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Keeping the World Flowing

Solenoid Valves



alcon
SOLENOID VALVES

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m&m
international

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Rotork is the global market leader in valve automation and flow control. Our products and services are helping organisations around the world to improve efficiency, assure safety and protect the environment.

We strive always for technical excellence, innovation and the highest quality standards in everything we do. As a result, our people and products remain at the forefront of flow control technology.

Uncompromising reliability is a feature of our entire product range, from our flagship electric actuator range through to our pneumatic, hydraulic and electro-hydraulic actuators, as well as instruments, gearboxes and valve accessories.

Rotork is committed to providing first class support to each client throughout the whole life of their plant, from initial site surveys to installation, maintenance, audits and repair. From our network of national and international offices, our engineers work around the clock to maintain our position of trust.

Rotork. Keeping the world flowing.

Introduction

Part of the Rotork Group, Alcon Solenoid Valves and M&M International are leading manufacturers of combustion, industrial, medical and laboratory gas control solenoid valves. Whether designing solutions for stand-alone valves or a customised OEM installation we have developed an enviable reputation for quality products, reliability and innovation.

With facilities based in the UK, Italy and the USA, and sales offices worldwide, we can provide solenoid valves to function in the most arduous of conditions and extreme temperatures, anywhere in the world.

Our product line covers a full range of valves for general and special-purpose including:

- Air
- Water
- Potable Water
- Steam
- Automation
- Cryogenics
- Gases
- Oil & Fuel
- Actuation
- High Pressure
- Hazardous Area
- Aggressive Media
- Vacuum

Our solenoid valves can be manufactured with increased safety electrical coils and enclosures covered by ATEX, UL, IECEx or CSA approvals, to meet application demands.

The advantages of solenoid valves manufactured by Alcon and M&M include:

- Robust construction for industrial applications featuring stainless steel orifice on most models
- Stainless steel operators with low residual magnetism according to 1.4105 EN 10088 (AISI 430F)
- High quality seal materials
NBR, FKM, EPDM, PTFE, Sigodur (filled PTFE), Ruby, Kalrez®
- Fully interchangeable coils* with a wide range of AC and DC voltages. Coil orientation possible through 360°
- Coils tested 100% in compliance with the current EC directives compliance to RoHS directive and to relevant international standards upon request
- Development and realisation of special projects

*where applicable



Solenoid Valve Selection

Series	Function	Body Material	Pipe Size	OPD ¹	Kv (m ³ /hr)	Type ²
B298	2/2 N/C compact	Stainless Steel	1/8"	0 to 22	0.08 to 0.21	DA
D298/299	2/2 N/C	Stainless Steel	1/8" & 1/4"	0 to 24	0.07 to 0.45	DA
D262/263	2/2 N/C	Brass	1/8" & 1/4"	0 to 30	0.03 to 0.48	DA
D248/249	2/2 N/C	Brass	1/8" & 1/4"	0 to 25	0.09 to 0.27	DA
D237/238/239	2/2 N/C	Brass	1/4" to 1/2"	0 to 17	0.51 to 1.50	DA
D884/885/886	2/2 N/C	Brass	1/4" to 1/2"	0 to 16	1.26 to 1.50	assisted lift
D264/265/266	2/2 N/C	Brass	1/4" to 1/2"	0.1 to 16	1.26 to 1.50	PO
B203 TO 222	2/2 N/C	Brass	1/4" to 1"	0.3 to 16	1.56 to 9.60	PO
D223/224/225	2/2 N/C	Brass	1 1/4" to 1"	0.5 to 16	22.20 to 32.40	PO
ACD	2/2 N/C	See datasheet for options	3/8" to 2"	0 to 14	3 to 26	assisted lift
ACP	2/2 N/C	See datasheet for options	1/2" to 2"	0.3 to 10.3	4.2 to 21	PO
D201	2/2 N/C	Brass	Flanged	0 to 24	0.08 to 0.27	DA
B397	3/2 N/C	Brass	1/8"	0 to 18	0.03 to 0.21	DA
B398	3/2 N/C	Stainless Steel	1/8"	0 to 15	0.04 to 0.16	DA
D398/399	3/2 N/C	Brass	1/8" & 1/4"	0 to 18	0.08 to 0.27	DA
D362/363	3/2 N/C	Brass	1/8" & 1/4"	0 to 18	0.08 to 0.48	DA
LC203/204/205	2/2 N/C Latching	Brass	1/4" to 1/2"	0.3 to 5	1.56 to 3.78	PO
RD298/299	2/2 N/O	Stainless Steel	1/8" & 1/4"	0 to 100	0.04 to 0.27	DA
RD262/263	2/2 N/O	Brass	1/4"	0 to 30	0.03 to 0.27	DA
RD236	2/2 N/O	Brass	1/4"	0 to 25	0.03 to 0.51	DA
RB203 TO 222	2/2 N/O	Brass	1/4" to 1"	0.3 to 16	1.56 to 9.60	PO
ACDN	2/2 N/O	See datasheet for options	3/8" to 2"	0 to 10	3 to 26	-
RD223/224/225	2/2 N/O	Brass	1 1/4" to 1"	0.5 to 16	22.20 to 32.40	PO
RD398/399	3/2 N/O	Brass	1/8" & 1/4"	0 to 15	0.08 to 0.27	DA
RD362/363	3/2 N/O	Brass	1/8" & 1/4"	0 to 16	0.08 to 0.27	DA
B297	2/2 N/C compact	Brass	1/8"	0 to 30	0.03 to 0.18	DA
D301	2/2 N/C	Brass	Flanged	0 to 18	0.08 to 0.27	DA
RB297	2/2 N/O compact	Brass	1/8"	0 to 25	0.03 to 0.18	DA
RD301	2/2 N/O	Brass	Flanged	0 to 15	0.08 to 0.27	DA
SB397	2nd Service 3/2 N/O compact	Brass	1/8"	0 to 6	0.04 to 0.06	DA
RB397	3/2 N/O compact	Brass	1/8"	0 to 15	0.03 to 0.21	DA
GD362/363	Universal 3/2 (N/O)	Brass	1/8" to 1/4"	0 to 8	0 to 0.13	DA
SD362/363	2nd Service 3/2 (N/O)	Brass	1/8" to 1/4"	0 to 15	0.08 to 0.20	DA
DD362/363	Diverting 3/2 (N/O)	Brass	1/8" to 1/4"	0 to 20	0.08 to 0.13	DA
D298/299DR-1	2/2 N/C	Stainless Steel	1/8" & 1/4"	0 to 200	0.04 to 0.27	DA
D262/263DR-1	2/2 N/C	Brass	1/8" & 1/4"	0 to 200	0.04 to 0.27	DA
D634/635/636DTT1	2/2 N/C	Brass	1/4" to 1/2"	0.3 to 140	1.26 to 1.50	PO
D232/233/234	2/2 N/C	Brass	3/8" to 3/4"	1 to 50	2.52 to 2.88	PO
RD232/233/234	2/2 N/C	Brass	3/8" to 3/4"	1 to 50	2.52 to 2.88	PO
RD236DR-1	2/2 N/O	Brass	1/4"	0 to 180	0.03 to 0.21	DA
RD201	2/2 N/O	Brass	Flanged	0 to 55	0.08 to 0.27	DA
RB214	2/2 N/O	Brass	1/8"	0 to 14	0 to 0.07	DA
RD213	2/2 N/O	Brass	1/8"	0 to 16	0 to 0.14	DA

Solenoid Valve Selection (cont'd)

	General Purpose	Potable Water	Automation	High Pressure	Compressed Air	Chemical Industry/ Aggressive Fluids	Steam	Vacuum	Combustion	Cryogenice	Actuation	Dry Armature	Atex	Page
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Solenoid Valve Selection (cont'd)

Series	Function	Body Material	Pipe Size	OPD ¹	Kv (m ³ /hr)	Type ²
D204/205/206/222	2/2 N/C	Stainless Steel	3/8" to 1"	0.3 to 16	3.3. to 9.60	PO
RD204/205/206/222	2/2 N/O	Stainless Steel	3/8" to 1"	0.03 to 16	3.3. to 9.60	PO
D262/263DL	2/2 N/C	Brass	1/8" to 1/4"	0 to 9	0.03 to 0.27	DA
D398/399CL	3/2 N/C	Brass	1/8" to 1/4"	0 to 9	0.08 to 0.27	DA
D238/239DL	2/2 N/C	Brass	3/8" to 1/2"	0 to 9	0.27 to 0.30	DA
D634/635/636	2/2 N/C	Brass	1/4" to 1/2"	0.3 to 9	1.26 to 1.50	PO
ACPX	2/2 N/C	See datasheet for options	1/2" to 2"	0.3 to 8.6	4.2 to 21	PO
RD236DL	2/2 N/O	Brass	1/4"	0 to 9	0.03 to 0.21	DA
D606/622 & RD606/622	2/2 N/O	Brass	3/4" to 1"	1 to 9	to 7.20	DA
D211	2/2 N/C	Brass	3/8"	0 to 0.2	See flow chart	DA
D262/263	2/2 N/C	Brass	1/8" to 1/4"	-0.9 to 1	0.03 to 0.48	DA
D362/363	2/2 N/C	Brass	1/8" to 1/4"	0 to -0.95	0.13 to 0.36	DA
D203/204/205	2/2 N/C	Brass	1/4" to 1/2"	-0.2 to -0.95	1.56 to 3.78	PO
D237/238/239 & CD237/238/239	2/2 N/C	Brass	1/4" to 1/2"	0 to -0.95	1.27 to 1.50	DA
D223/224/225	2/2 N/C	Brass	1 1/4" to 2"	-0.5 to -0.95	22.20 to 32.40	PO
GB	2/2 N/C	Aluminium	1/4" to 1"	0 to 140 mBar	3.6 to 13.6	DA
GB	2/2 N/C	Aluminium	1 1/4" to 2"	0 to 50 mBar	0 to 33	PO c/w assisted lift
HWA	2/2 N/C	Aluminium	1 1/4" to 6"	0 to 345 mBar	46.5 to 365	EH
FACHL	2/2 N/C	See datasheet for options	1/2" to 6"	0 to 2	3 to 331	MR
68 Series	2/2 N/C	See datasheet for options	1/4" to 2"	0 to 8.0	0.43 to 18	PO
67 Series	3/2 Univ	Stainless Steel	1/4" to 1/2"	0 to 10 bar	3 to 4.7	DA
NAMUR	3/2, 5/2	Aluminium	1/4"	2.5 to 10	0 to 1.2	-
21 Series Ex	2/2 N/C	See datasheet for options	1/4"	0 to 40	0.10 to 0.60	DA
ACD Ex	2/2 N/C	See datasheet for options	3/8" to 2"	0 to 14	3 to 26	assisted lift
ACDN Ex	2/2 N/O	See datasheet for options	3/8" to 2"	0 to 10	3 to 26	assisted lift
ACP Ex	2/2 N/C	See datasheet for options	1/2" to 2"	0.3 to 10.3	4.2 to 21	PO
31/33 Series Ex	3/2 N/C / Univ	See datasheet for options	1/4"	0 to 10.6	0.10 to 0.30	-
NAMUR Ex	3/2, 5/2	Aluminium	1/4"	2.5 to 10	0 to 1.2	-

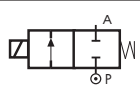
¹ Operating pressure differential is in 'bar' unless stated otherwise

² DA Direct Acting PO Pilot Operated MR Manual Reset EH Electro-hydraulic

Solenoid Valve Selection (cont'd)

	General Purpose	Potable Water	Automation	High Pressure	Compressed Air	Chemical Industry/ Aggressive Fluids	Steam	Vacuum	Combustion	Cryogenic	Actuation	Dry Armature	Atex	Page
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B298 Series, General Purpose & Chemical Industry – 2/2 Normally Closed

Specifications	
Function	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube ¹	Stainless Steel (AISI 303)
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	AC +10% to -15%
	DC +10% to -5%
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7W

¹ With special nut, different from Standard.

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.09	0.08	0 - 22	0 - 18	1.5	FKM	B298DVC
1/8"	0.13	0.11	0 - 18	0 - 8	2.0	FKM	B298DVE
1/8"	0.19	0.16	0 - 13	0 - 2.5	2.5	FKM	B298DVG
1/8"	0.25	0.21	0 - 8	0 - 1	3.0	FKM	B298DVH
1/8"	0.09	0.08	0 - 24	0 - 24	1.5	KALREZ®	B298DKC
1/8"	0.13	0.11	0 - 18	0 - 15	2.0	KALREZ®	B298DKE
1/8"	0.19	0.16	0 - 15	0 - 3	2.5	KALREZ®	B298DKG

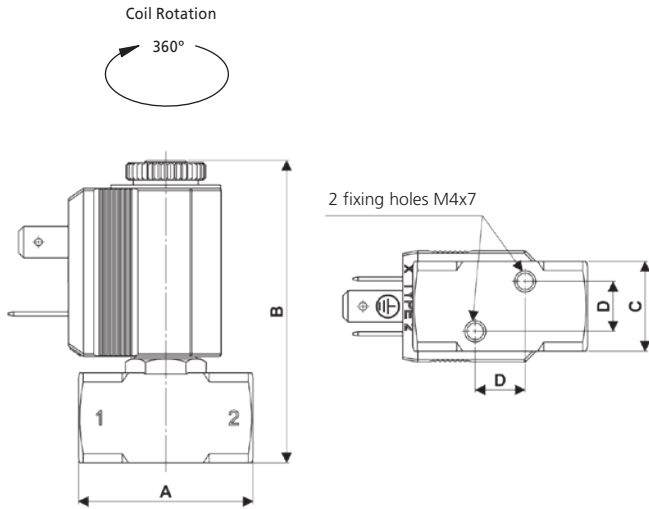
Options Available

Valve Options (see coding chart)
Anticorrosion treatment recommended with aggressive fluids

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
Kalrez® Spectrum™ (-10 °C to 130 °C)	Chemicals	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

B298 Series, General Purpose & Chemical Industry – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	35	60.6	18	10	0.1

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

Seals					Orifice			Option		Voltage / Frequency - Class F				Plug	
V	FKM	C	1.5	F	Anticorrosion treatment ¹	2250	24 VDC								w/o plug
K	KALREZ®	E	2.0		w/o option	2200	24 V / 50/60 Hz								0B1
		G	2.5			2400	110 V / 50 Hz - 120 V / 60 Hz								
		H	3.0			2600	200 V / 50 Hz - 220 V / 60 Hz								
						2700	230 V / 50 Hz - 240 V / 60 Hz								

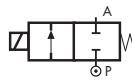
B	2	9	8	D
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¹ Recommended with aggressive fluids.

Product coding example:

B298DKC 2250
1/8" G, auto operation, stainless steel body, Kalrez® seals, 24 VDC, without plug.

D298/299 Series, General Purpose & Chemical Industry – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Wide range of available orifices
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.08	0.07	0 - 24	0 - 24	1.5	FKM EPDM	D299DVC D299DEC
¼"	0.23	0.20	0 - 18	0 - 18	2.5	FKM EPDM	D299DVG D299DEG
¼"	0.32	0.27	0 - 15	0 - 10	3.0	FKM EPDM	D299DVH D299DEH
¼"	0.42	0.36	0 - 10	0 - 5.5	4.0	FKM EPDM	D299DVL D299DEL
¼"	0.53	0.45	0 - 5	0 - 2.5	5.0	FKM EPDM	D299DVN D299DEN
¼"	0.16	0.14	0 - 20	0 - 20	2.0	KALREZ®	D299DKE
¼"	0.23	0.20	0 - 18	0 - 16	2.5	KALREZ®	D299DKG
¼"	0.32	0.27	0 - 15	0 - 8	3.0	KALREZ®	D299DKH

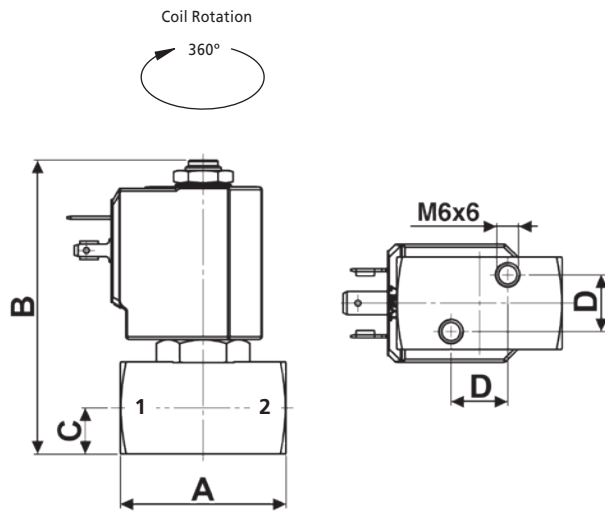
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT threads (minimum batch may be required)
Anticorrosion treatment recommended with aggressive fluids
Silver shading ring

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C
Kalrez® Spectrum™ (-10 °C to +130 °C)	Chemicals	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D298/299 Series, General Purpose & Chemical Industry – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	80	12.5	15.4	0.36

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E538



Coding chart

Main Valve Assembly

Pipe Size	
8	1/8"
9	1/4"

Seals		Orifice	
V	FKM	C	1.5
E	EPDM	E	2.0
K	KALREZ [®]	G	2.5
		H	3.0
		L	4.0 ¹
		N	5.0 ¹

Option	
A	Silver shading ring
F	Anticorrosion treatment ²
N	NPT
	w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug	
	w/o plug
0A1	c/w plug



¹ Not available with Kalrez[®] seals.

² Recommended with aggressive fluids.

Product coding example:

D298DVC 7250 0A1
 1/8" G, auto operation, stainless steel body, FKM seals, 1.5 mm orifice, 24 VDC, with plug.

D262/263 Series, General Purpose – 2/2 Normally Closed

Specifications	
Function (single acting)	<p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 30	0 - 30	1.0	FKM EPDM	D263DVA D263DEA
¼"	0.09	0.08	0 - 24	0 - 24	1.5	FKM EPDM	D263DVC D263DEC
¼"	0.24	0.20	0 - 18	0 - 16	2.5	FKM EPDM	D263DVG D263DEG
¼"	0.32	0.27	0 - 15	0 - 10	3.0	FKM EPDM	D263DVH D263DEH
¼"	0.42	0.36	0 - 10	0 - 5	4.0	FKM EPDM	D263DVL ¹ D263DEL ¹
¼"	0.53	0.45	0 - 5	0 - 2.5	5.0	FKM EPDM	D263DVN ¹ D263DEN ¹
¼"	0.56	0.48	0 - 3	0 - 1	6.0	FKM EPDM	D263DVP ¹ D263DEP ¹

¹ Manual override not available for orifice > Ø 3mm.

Options Available

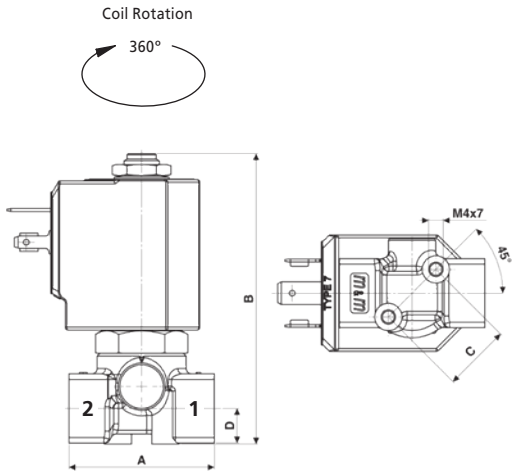
Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Manual override
Electroless nickel plating

Vacuum Version
See pages 114-115

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D262/263 Series, General Purpose – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	77.5	18.5	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
2	1/8"
3	1/4"

Seals		Orifice	
V	FKM	A	1.0
E	EPDM	C	1.5
		G	2.5
		H	3.0
		L	4.0
		N	5.0
		P	6.0

Option	
N	NPT
M	Manual Override ¹
K	Electroless nickel plating
	w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug	
	w/o plug
0A1	c/w plug



¹ Manual override not available for orifice > 3.0mm.

Product coding example:

D263DVA 7250
1/4" G, auto operation, brass body, FKM seals, 1.0 mm orifice, 24 VDC, without plug.

D248/249 Series, Compressed Air – 2/2 Normally Closed

Specifications	
Function (single acting)	<p>Flow direction 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.11	0.09	0 - 25	0 - 24	1.7	FKM EPDM	D249DVD D249DED
¼"	0.17	0.14	0 - 18	0 - 16	2.2	FKM EPDM	D249DYF D249DEF
¼"	0.32	0.27	0 - 15	0 - 10	3.0	FKM EPDM	D249DYH ¹ D249DEH ¹

¹ Minimum batch may be required.

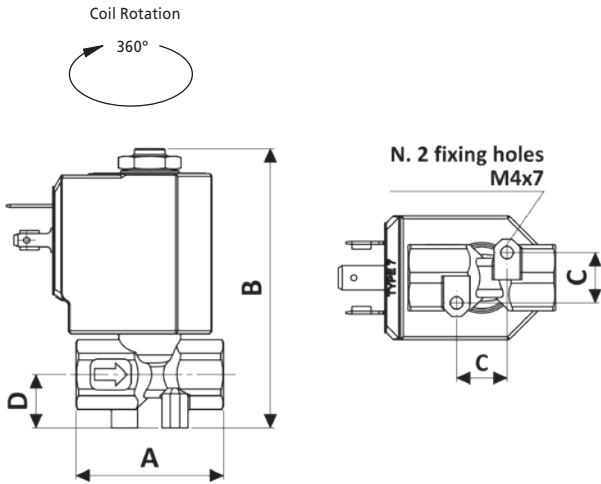
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D248/249 Series, Compressed Air – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	38	72.1	13	13.8	0.18

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
8	1/8"
9	1/4"

Seals		Orifice	
V	FKM	D	1.7
E	EPDM	F	2.2
		H	3.0 ¹

Option	
N	NPT
	w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
0A1	c/w plug
	w/o plug

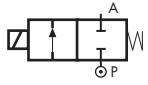


¹ Minimum batch may be required.

Product coding example:

D249DVF 7700 0A1
1/4" G, auto operation, brass body, FKM seals, 2.2 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz AC, with plug.

D237/238/239 Series, Automation – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std) ¹	Brass CW617N (EN 12165)
Orifice Material ²	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange ³	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

¹ Body as D264/265/266 (on pages 16 - 17).

² Not for D237D-U, D238D-U and D239D-U.

³ D237D-U, D238D-U and D239D-U carries an additional flange HEX 30 in Brass CW614N (EN 12164) between body and flange tube, see dimensional drawing on the right.

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.47	1.26	0 - 0.4	0 - 0.2	10.5	FKM	D237D-U
						EPDM	D237D-EU
						NBR	D237D-BU
⅜"	1.76	1.50	0 - 0.4	0 - 0.2	10.5	FKM	D238D-U
						EPDM	D238D-EU
						NBR	D238D-BU
½"	1.76	1.50	0 - 0.4	0 - 0.2	10.5	FKM	D239D-U
						EPDM	D239D-EU
						NBR	D239D-BU
⅜"	0.42	0.36	0 - 8	0 - 5	4.0	FKM	D238D-VL ⁴
						EPDM	D238D-EL ⁴
						NBR	D238D-BL ⁴
⅜"	0.53	0.45	0 - 5	0 - 2	5.0	FKM	D238D-VN ⁴
						EPDM	D238D-EN ⁴
						NBR	D238D-BN ⁴
⅜"	0.60	0.51	0 - 3.5	0 - 1.1	6.0	FKM	D238D-VP ⁴
						EPDM	D238D-EP ⁴
						NBR	D238D-BP ⁴
½"	0.32	0.27	0 - 17	0 - 12	3.0	FKM	D239D-VH ⁴
						EPDM	D239D-EH ⁴
						NBR	D239D-BH ⁴
½"	0.42	0.36	0 - 8	0 - 5	4.0	FKM	D239D-VL ⁴
						EPDM	D239D-EL ⁴
						NBR	D239D-BL ⁴
½"	0.53	0.45	0 - 5	0 - 2	5.0	FKM	D239D-VN ⁴
						EPDM	D239D-EN ⁴
						NBR	D239D-BN ⁴
½"	0.60	0.51	0 - 3.5	0 - 1.1	6.0	FKM	D239D-VP ⁴
						EPDM	D239D-EP ⁴
						NBR	D239D-BP ⁴

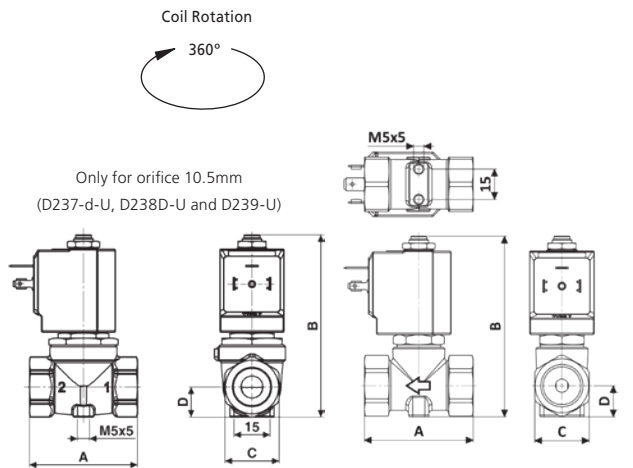
⁴ Same flange tube as D262/263 (on pages 12 - 13) see dimensional drawing on the right.

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D237/238/239 Series, Automation – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	Orifice (mm)	A	B	C	D	Weight (kg)
¼" - ⅜" - ½"	10.5	54	89	HEX 27	15	0.45
¼" - ⅜" - ½"	from 3 to 6	54	89.35	HEX 27	15	0.45

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
7	¼"
8	⅜"
9	½"

Seals		Orifice	
V	FKM	U	10.5
E	EPDM	H	3.0
B	NBR	L	4.0
		N	5.0
		P	6.0

Option	
	w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

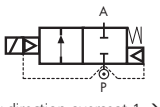
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D237DVU 7250
 ¼" G, auto operation, brass body, FKM seals, 10.5 mm orifice, 24 VDC, without plug.

D884/885/886 Series, General Purpose – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange ¹	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

¹ This valve carries an additional flange HEX 30 in Brass CW614N (EN 12164) between body and flange tube.

Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Silver shading ring

Features and Benefits

- Pilot operated with assisted lift
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 50 to 500 ms

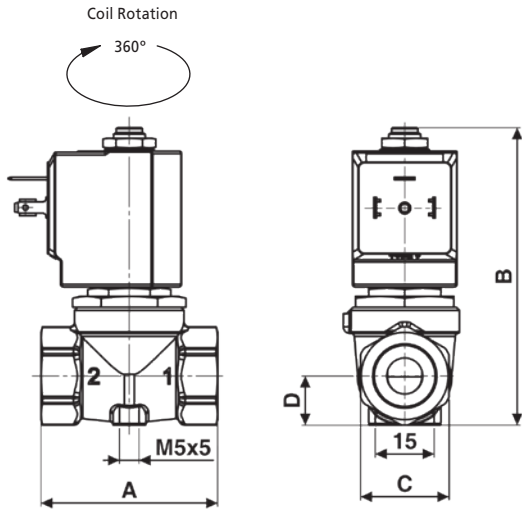


Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.47	1.26	0 - 16	0 - 6	10.5	FKM	D884D <u>Y</u> U
⅜"	1.68	1.44				FKM	D885D <u>Y</u> U
½"	1.76	1.50				FKM	D886D <u>Y</u> U

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D884/885/886 Series, General Purpose – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	54	89	HEX 27	15	0.45
¾" - 1½"	54	89	HEX 27	15	0.4

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
4 ¼"
5 ¾"
6 ½"

Option
N NPT
A Silver shading ring
w/o option

Voltage / Frequency - Class F
7250 24 VDC
7200 24 V / 50/60 Hz
7400 110 V / 50 Hz - 120 V / 60 Hz
7600 200 V / 50 Hz - 220 V / 60 Hz
7700 230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug
w/o plug
0A1 c/w plug

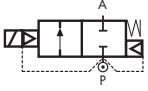


Product coding example:

D884DVU 7250
¼" G, auto operation, brass body, FKM seals, 10.5 mm orifice, 24 VDC, without plug.

D264/265/266 Series, General Purpose and Compressed Air

2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange ¹	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

¹ This valve carries an additional flange HEX 30 in Brass CW614N (EN 12164) between body and flange tube.

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.47	1.26	0.1- 16	0.1- 7	10.5	NBR	D264DBU
						FKM	D264DYU
¾"	1.68	1.44	0.1- 16	0.1- 7	10.5	NBR	D265DBU
						FKM	D265DYU
½"	1.76	1.50	0.1- 16	0.1- 7	10.5	EPDM	D264DEU
						NBR	D266DBU
½"	1.76	1.50	0.1- 16	0.1- 7	10.5	FKM	D266DYU
						EPDM	D264DEU

Options Available

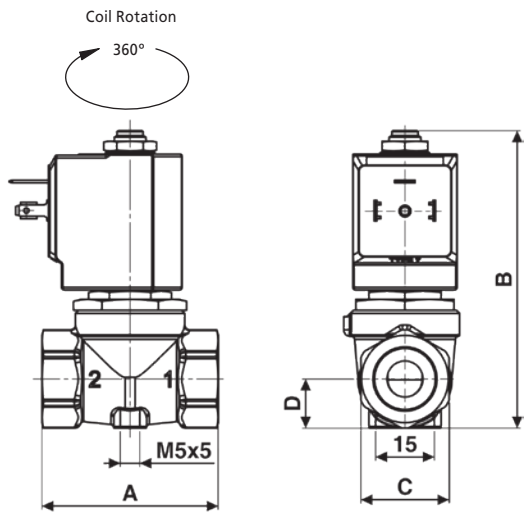
Valve Options (see coding chart)
NPT threads (minimum batch may be required)

Seal Material ² and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

² See corrosion reference guide and sealing solutions for material compatibility.

D264/265/266 Series, General Purpose and Compressed Air

2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/4"	54	89	HEX 27	15	0.45
3/8" - 1/2"	54	89	HEX 27	15	0.4

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
4 1/4"
5 3/8"
6 1/2"

Seals	
B	NBR
V	FKM
E	EPDM

Option	
N	NPT
w/o option	

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

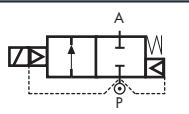
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D264DBU 7250
1/4" G, auto operation, brass body, NBR seals, 10.5 mm orifice, 24 VDC, without plug.

B203/204/205/206/222 Series, General Purpose – 2/2 Normally Closed

Specifications	
Function (single acting)	 Flow direction overseat 1 → 2
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code	
			AC Voltages	DC Voltages				
¼"	1.83	1.56	0.3 - 16	0.3 - 16	13	NBR	B203DBZ	
						FKM	B203DVZ	
						EPDM	B203DEZ	
⅜"	3.86	3.30			21	25	NBR	B204DBZ
							FKM	B204DVZ
							EPDM	B204DEZ
½"	4.42	3.78	25	25	NBR	B205DBZ		
					FKM	B205DVZ		
					EPDM	B205DEZ		
¾" compact	7.02	6.00	25	25	NBR	B206DBX		
					FKM	B206DVX		
					EPDM	B206DEX		
¾"	9.83	8.40	25	25	NBR	B206DBY ¹		
					FKM	B206DYY ¹		
					EPDM	B206DEY ¹		
1"	11.23	9.60	25	25	NBR	B222DBY		
					FKM	B222DYY		
					EPDM	B222DEY		

¹ Non standard, MOQ required.

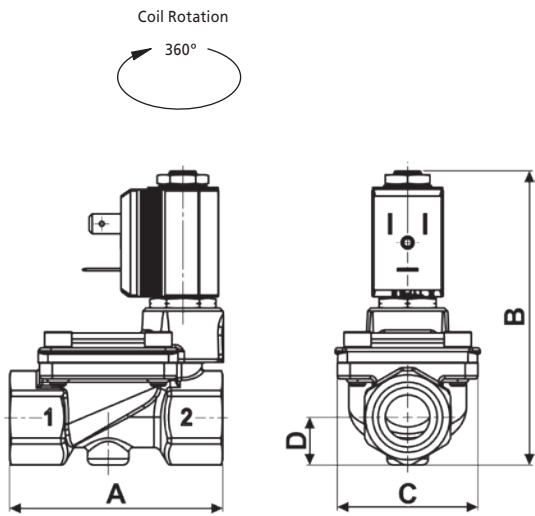
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual override
Electroless nickel plating treatment
Speed control screw (on DN25 only)

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

B203/204/205/206/222 Series, General Purpose – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼" - 3/8" - ½"	67	90	45.6	15	0.4
¾" compact	82	105	51.6	20.25	0.6
¾" to 1"	96	115	72	23	1.2

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: Industrial form B
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
03 ¼"
04 3/8"
05 ½"
06 ¾" (compact)
06 ¾" 1"
22 1"

Seals		Orifice ²	
B	NBR	Z	13
V	FKM	X	21
E	EPDM	Y	25

Option	
N	NPT
M	Manual Override
K	Electroless nickel plating
V	Speed control screw ³
w/o option	

Coil options

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug
w/o plug
0B1 c/w plug

B	2	.	.	D
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¹ Non standard, MOQ required.

² DN13 only for B203/204/205, DN21 only for B206 compact, DN25 only for B206 and B222.

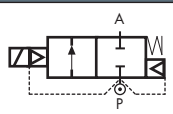
³ Speed control screw available on B206D-Y and B222D-Y.

Product coding example:

B203DBZ 2250

¼" G, auto operation, brass body, NBR seals, 13 mm orifice, 24 VDC, without plug.

D223/224/225 Series, General Purpose – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Speed control screw as standard
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1 ¼"	25.97	22.20	0.5 - 16	0.5 - 16	40	NBR	D223D _B K
						FKM	D223D _V K
1 ½"	28.08	24.00	0.5 - 16	0.5 - 16	40	EPDM	D223D _E K
						NBR	D224D _B K
2"	37.91	32.40	0.5 - 16	0.5 - 16	50	FKM	D224D _V K
						EPDM	D224D _E K
2"	37.91	32.40	0.5 - 16	0.5 - 16	50	NBR	D225D _B J
						FKM	D225D _V J
2"	37.91	32.40	0.5 - 16	0.5 - 16	50	EPDM	D225D _E J
						NBR	D225D _B J

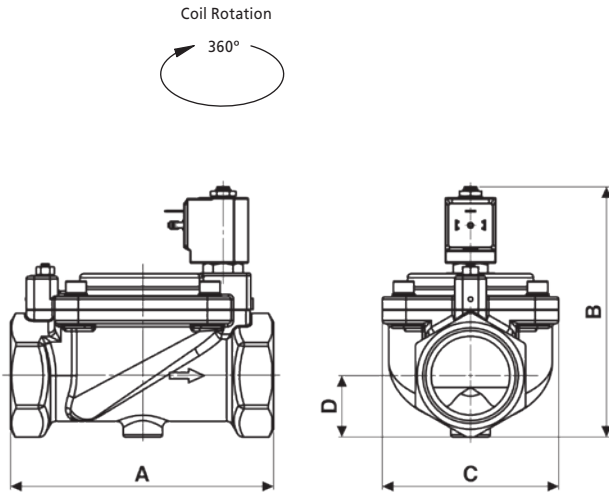
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual override
Electroless nickel plating
Vacuum Version
See page 122

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D223/224/225 Series, General Purpose – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1 ¼" - 1 ½"	140	140	96	31.5	2.8
2"	167	158	112	39	3.9

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
23 1 ¼"
24 1 ½"
25 2"

Seals		Orifice ¹	
B	NBR	K	40
V	VKM	J	50
E	EPDM		

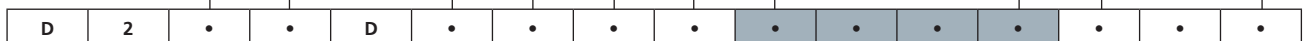
Option	
N	NPT
K	Electroless nickel plating
	w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0A1	c/w plug

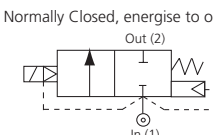


¹ DN40 only for D223 and D224, DN50 only for D225.

Product coding example:

D223DBK 7250
 1 ¼" G, auto operation, brass body, NBR seals, 40 mm orifice, 24 VDC, without plug.

ACD Series – 2/2 Normally Closed

Specifications	
Function	Normally Closed, energise to open 
Maximum Viscosity	115 SSU
³ / ₈ " - 1" Body Material (Std)	Brass CZ122
1 ¹ / ₄ " - 2" Body Material (Std)	Bronze
Flange Tube	Stainless Steel 303
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Two way shut-off valves for the control of gases and liquids compatible with max viscosity and materials
- Zero bar minimum operating pressure
- Satisfy all relevant EC directives
- Suitable for vacuum applications when fitted with FKM seals (10-3 TORR) 0 rated options only
- Robust Valve Design
- Diaphragm Operation
- Fully Ported Orifices for high flow
- Choice of valve body material and seals
- Sizes ³/₈" to 1" WRAS approved when used with EPDM seals
- Response time 1" 15-60 ms
- Response time 2" 60-120 ms
- EN264 for fuel oils



WRAS
Water Regulations Advice Scheme

Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
³ / ₈ "	3.5	3.0	0-14	0-10.3	50	16.00	0.90
¹ / ₂ "	4.9	4.2	0-14	0-10.3		16.00	0.90
³ / ₄ "	5.4	4.7	0-14	0-10.3		16.00	0.90
1"	8.2	7.0	0-14	0-10.3		20.00	1.20
1 ¹ / ₄ "	26.7	23	0-4	-		40.00	3.00-3.20
1 ¹ / ₂ "	26.7	23	0-4	-		40.00	3.00-3.20
2"	30.16	26	0-4	-		40.00	3.00-3.20
1 ³ / ₄ " ²	26.7	23	0.3-10	0.3-10		40.00	3.00-3.20
1 ¹ / ₂ " ²	26.7	23	0.3-10	0.3-10		40.00	3.00-3.20
2" ²	30.2	26	0.3-10	0.3-10		40.00	3.00-3.20

² Pressure assisted to achieve a greater OPD. e.g. code :19G11Z1A1-1A21.

Options Available

Exd & Exm Solenoid Enclosure	
Protection Class	See separate datasheet
Exd T6 (IP67)	
Exd T4 (IP67)	
Exm T5 (IP65)	

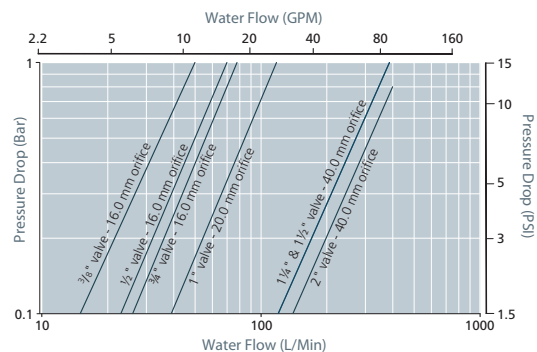
Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50
EPDM (-50 °C to +120 °C)	-10	50
FKM (-20 °C to +150 °C)	-10	50

¹ See corrosion reference guide and sealing solutions for material compatibility.

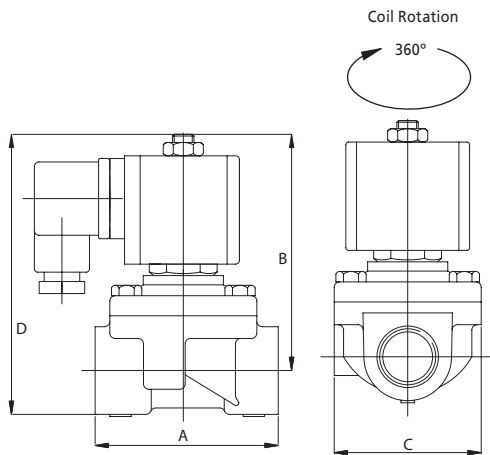
How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

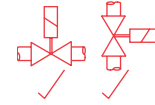
Main Valve Body Options	
Stainless Steel 316 (available up to and including 1")	
NPT threads	
Flanged Option (PN16 Std) for alternative flange options consult Rotork Midland	
Manual Override	
Oxygen cleaning (consult Rotork Midland for product code)	



ACD Series – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
3/8" - 3/4"	69.5	88	55	104
1"	85	90	55	112
1 1/4" - 2"	137	103	120	152

Dimensions given in mm
Stainless steel option dimensions vary from table - consult factory.

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
17 ACD AC VOLTAGE	C 3/8"	1 B521	1 AUTO
18 ACD DC ³ VOLTAGE	D 1/2"	2 BSP G (1 1/4" and above)	2 MANUAL OVERRIDE
19 Pressure assisted option 1 1/4" to 2"	E 3/4"	3 NPT	
	F 1"	4 FLANGED (PN16 STD)	
	G 1 1/4"		
	H 1 1/2"		
	J 2"		

Body Material	Seals	Style
1 Brass (standard on valves up to and including 1")	A NBR B EPDM C FKM	1 Standard
2 Bronze (standard on valves above 1")		
5 316 Stainless Steel (option available up to and inc 1")		

Coil options

Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	A1 230 V / 50 Hz	1 DIN plug 9 mm
	A2 110 V / 50 Hz & 120 V / 60 Hz	
	A3 24 V / 50 Hz	
	A7 220 V / 50 Hz	
	B2 24 VDC	
B3 12 VDC		
B5 110 VDC		

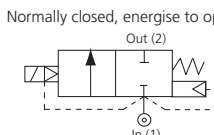
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³ '0' pressure rated options are not available in DC voltage above 1".

Product coding example:

17G21Z2A1-1A11 - ACD Series
1 1/4" BSPG, auto operation, bronze body, NBR seals, 230 V / 50 Hz DIN Plug 9 mm.

ACP Series – 2/2 Normally Closed

Specifications	
Function	Normally closed, energise to open 
Maximum Viscosity	115 SSU
3/8" - 1" Body Material (Std)	Brass CZ122
1 1/4" - 2" Body Material (Std)	Bronze
Flange Tube	Stainless Steel 303
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Heavy duty valve design
- Piston operation
- Choice of valve body material and seals
- Wide temperature range capabilities
- Response time up to 1" 40 - 100 ms
- Response time up to 2" 60 - 1000 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)	P. Max Bar	Orifice (mm)	Weight (kg)
1/2"	4.9	4.2	0.3-10.3	50	16.00	1.4
3/4"	6.3	5.4	0.3-10.3		16.00	1.4
1"	14.5	12.5	0.3-10.3		25.00	2.3
1 1/4"	20.9	18	0.3-10.3		30.00	3.0
1 1/2"	20.9	18	0.3-10.3		30.00	3.0
2"	24.4	21	0.3-10.3		32.00	5.2

Options Available

Exd & Exm Solenoid Enclosure	
Protection Class	
Exd T6 (IP67)	See separate datasheet
Exd T4 (IP67)	
Exm T5 (IP65)	

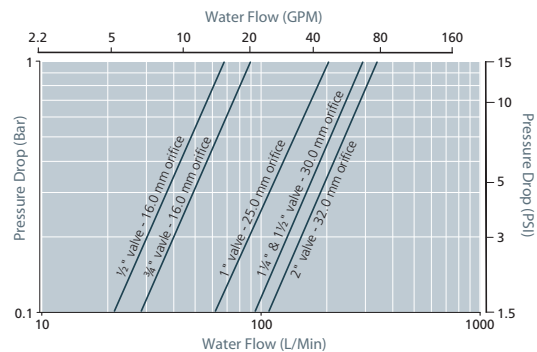
Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50
EPDM (-50 °C to +120 °C)	-10	50
FKM (-20 °C to +150 °C)	-10	50

Main Valve Body Options
Stainless steel body 316 (available up to 1")
Oxygen Cleaning (Consult Rotork Midland for product code)
NPT Threads
Stainless steel tagging

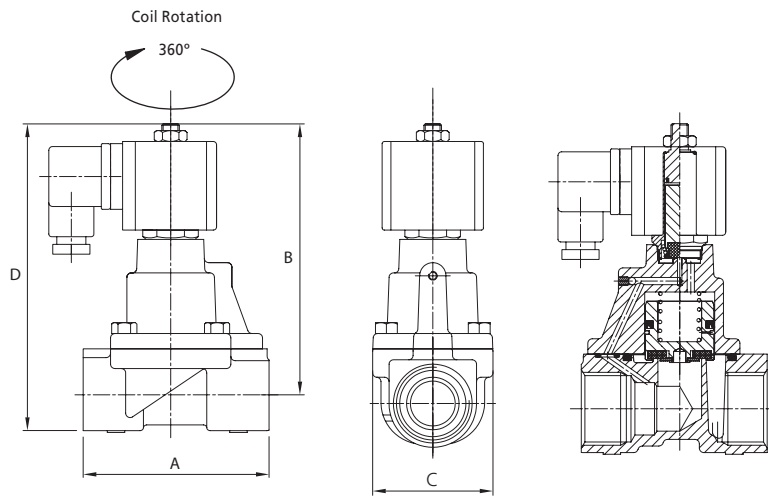
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



ACP Series – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
1/2"	85	126	75*	150
3/4" - 1"	85	135	75 inc. plug	155
1 1/4" - 1 1/2"	117	133	82	209
2"	146	145	103	209

Dimensions given in mm

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
22	ACP	D 1/2"	1 AUTO
		E 3/4"	2 MANUAL OVERRIDE
		F 1"	
		G 1 1/4"	
		H 1 1/2"	
		J 2"	

Body Material	Seals	Style
1 Brass (standard on valves up to and including 1")	A NBR B EPDM C FKM	1 Standard
2 Bronze (standard on valves above 1")		
5 316 Stainless Steel (option available up to and inc 1")		

Coil options

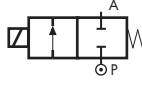
Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	A1 230 V / 50 Hz	1 Din plug 9 mm
	A2 110 V / 50 Hz & 120 V / 50 Hz	
	A3 24 V / 50 Hz	
	A7 220 V / 50 Hz	
	B2 24 VDC	
B3 12 VDC		
B5 110 VDC		

22	•	•	•	Z	•	•	1	-	1	••	1
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Product coding example:

22D11Z1A1-1A11 - ACP Series
1/2" B521, auto operation, brass body, NBR seals, 230 V / 50 Hz DIN Plug 9 mm.

D201 Series, General Purpose – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	Flanged 32x32mm
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
Flanged	0.09	0.08	0 - 24	0 - 24	1.5	FKM EPDM	D201DVC D201DEC
Flanged	0.15	0.13	0 - 20	0 - 20	2.0	FKM EPDM	D201DVE D201DEE
Flanged	0.24	0.20	0 - 18	0 - 18	2.5	FKM EPDM	D201DVG D201DEG
Flanged	0.32	0.27	0 - 15	0 - 10	3.0	FKM EPDM	D201DVH D201DEH

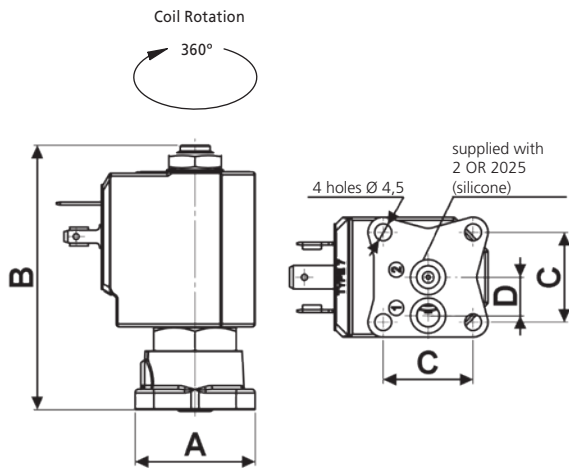
Options Available

Valve Options (see coding chart)
Manual override

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air,	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D201 Series, General Purpose – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
Flanged	32	70.6	24	10.25	0.25

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Seals		Orifice		Option	
V	FKM	C	1.5	M	Manual Override
E	EPDM	E	2.0		w/o option
		G	2.5		
		H	3.0		

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D201DVC 7700
G, auto operation, brass body, FKM seals, 1.5 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz, without plug.

B397 Series, General Purpose – 3/2 Normally Closed

Specifications	
Function (single acting)	<p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Low lead content Brass CW719R (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Valve suitable for contact with food media as per the EEC Directives and Regulations. Please consult supplier for more details
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.04	0.03	0 - 18	0 - 18	1.0	FKM EPDM	B397CVA B397CEA
1/8"	0.05	0.04	0 - 15	0 - 15	1.2	FKM EPDM	B397CVB B397CEB
1/8"	0.07	0.06	0 - 10	0 - 10	1.5	FKM EPDM	B397CVC B397CEC
1/8"	0.13	0.11	0 - 5	0 - 5	2.0	FKM EPDM	B397CVE B397CEE
1/8"	0.25	0.21	0 - 2	0 - 2	3.0	FKM EPDM	B397CVH B397CEH

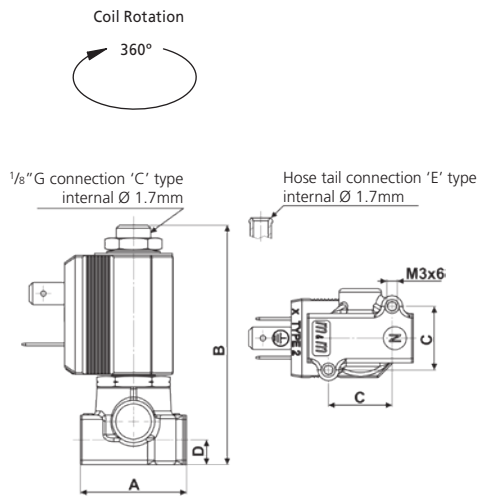
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual Override
Electroless nickel plating treatment
Top port connection with hose tail Ø 6mm

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

B397 Series, General Purpose – 3/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	30	67.8	18	7	0.15

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Top Port Connection		Seals		Orifice		Option	
C	1/8" G	V	FKM	A	1.0	N	NPT
E	Hose tail Ø 6mm	E	EPDM	B	1.2	M	Manual Override
				C	1.5	K	Electroless nickel plating
				E	2.0		w/o option
				H	3.0		

Coil options

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
0B1	c/w plug
	w/o plug



Product coding example:

B397CVAM 2250
1/8" G, auto operation, brass body, FKM seals, 1.0 mm orifice, with manual override, 24 VDC, without plug.

B398 Series, General Purpose – 3/2 Normally Closed

Specifications	
Function (single acting)	<p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube ¹	Stainless Steel (AISI 303)
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

¹ With special nut, different from Standard.

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms

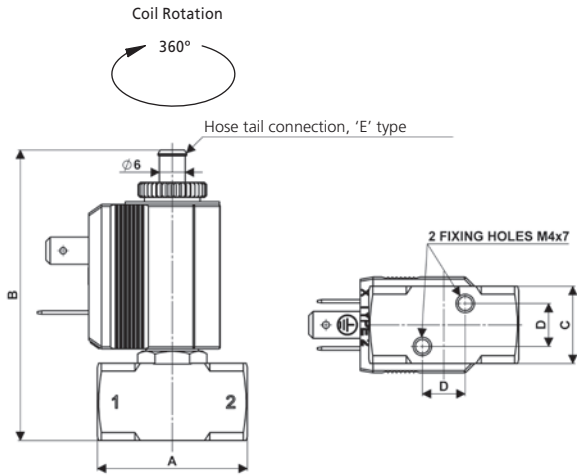


Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.05	0.04	0 - 15	0 - 15	1.2	FKM	B398EVB
1/8"	0.07	0.06	0 - 10	0 - 10	1.5	FKM	B398EVC
1/8"	0.13	0.11	0 - 5	0 - 5	2.0	FKM	B398EVE
1/8"	0.19	0.16	0 - 3	0 - 3	2.5	FKM	B398EVG

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

B398 Series, General Purpose – 3/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	35	68	18	10	0.1

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

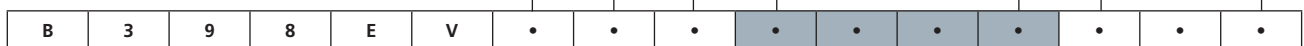
Plug

Orifice	
B	1.2
C	1.5
E	2.0
G	2.5

Option	
	w/o option

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

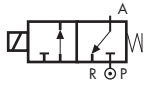
Plug	
0B1	c/w plug
	w/o plug



Product coding example:

B398EVB 2250
1/8" G, auto operation, stainless steel body, FKM seals, 1.2 mm orifice, 24 VDC, without plug.

D398/399 Series, General Purpose – 3/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.09	0.08	0 - 18	0 - 18	1.5	FKM EPDM	D399CVC D399CEC
¼"	0.15	0.13	0 - 10	0 - 10	2.0	FKM EPDM	D399CVE D399CEE
¼"	0.24	0.20	0 - 7	0 - 7	2.5	FKM EPDM	D399CVG D399CEG
¼"	0.32	0.27	0 - 5	0 - 5	3.0	FKM EPDM	D399CVH D399CEH

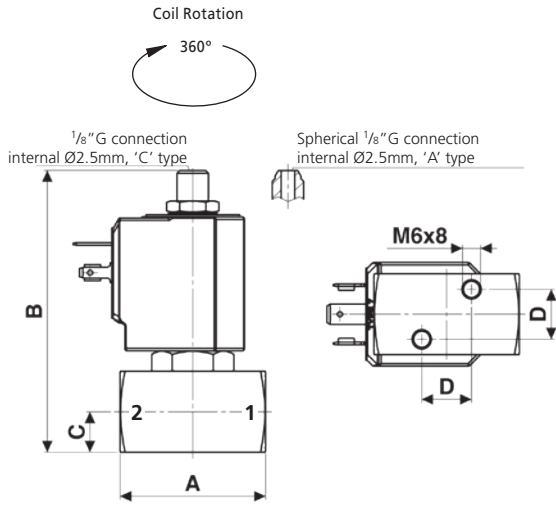
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Silver shading ring
Top port connection with spherical 1/8" G

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D398/399 Series, General Purpose – 3/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	87	12.5	15.4	0.35

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

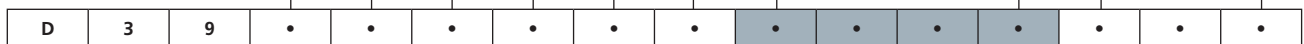
Pipe Size	Top Port Connection	Seals	Orifice	Option
8 1/8"	C 1/8" G	V FKM	C 1.5	A Silver shading ring
9 1/4"	A Spherical 1/8" G	E EPDM	E 2.0	N NPT
			G 2.5	w/o option
			H 3.0	

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

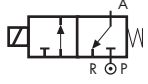




Plug	
0A1	c/w plug
	w/o plug



Product coding example:

D399CECA 7700
1/4" G, auto operation, stainless steel body, EPDM seals, 1.5 mm orifice, with silver shading ring, 230 V / 50 Hz - 240 V / 60 Hz AC, without plug.

D362/363 Series, General Purpose – 3/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
 Coil Voltage DC (=)	24 V
 Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
 Coil Voltage AC 60 Hz (-)	120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W
Power Rating ()	AC 15 VA (holding) AC 30 VA (inrush) DC 10 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.09	0.08	0 - 18	0 - 18	1.5	FKM EPDM	D363CVC D363CEC
¼"	0.15	0.13	0 - 10	0 - 10	2.0	FKM EPDM	D363CVE D363CEE
¼"	0.24	0.20	0 - 7	0 - 7	2.5	FKM EPDM	D363CVG D363CEG
¼"	0.32	0.27	0 - 5	0 - 5	3.0	FKM EPDM	D363CVH D363CEH
¼"	0.42	0.36	0 - 3.5	0 - 3.5	4.0	FKM EPDM	D363CVL¹ D363CEL¹
¼"	0.53	0.45	0 - 2.5	0 - 2.5	5.0	FKM EPDM	D363CVN¹ D363CEN¹
¼"	0.56	0.48	0 - 1.5	0 - 1.5	6.0	FKM EPDM	D363CVP¹ D363CEP¹

¹ Manual override not available for orifice > Ø3mm.

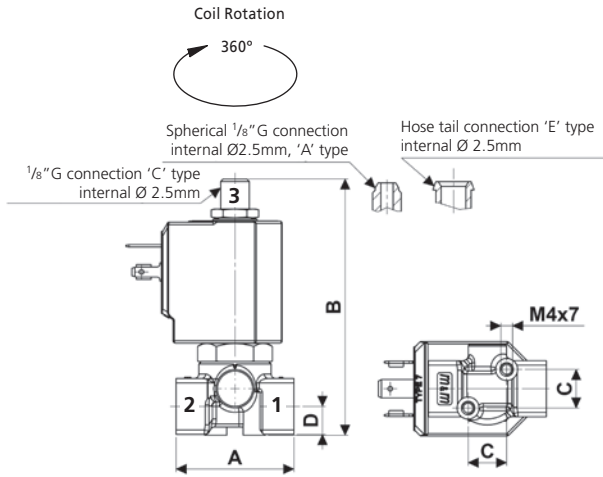
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Manual override
Vacuum Version
See page 116-117

Seal Material¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D362/363 Series, General Purpose – 3/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	87	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



7--R cULus Type Coil - Insulation class F

- Encapsulation material: PET 815ER Rynite®
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (P180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*
- UL approved, file No: E193928



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	Top Port Connection	Seals	Orifice	Option
2	1/8" C	1/8" G V	FKM C	1.5 N
3	1/4" A	spherical 1/8" G E	EPDM E	2.0
	E	Hose tail Ø 6mm	G	2.5
			H	3.0
			L	4.0
			N	5.0
			P	6.0
				M
				w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz
Voltage / Frequency - Class F - cULus approved	
725R	24 VDC
720R	24 V / 50 Hz
740R	110 V / 50 Hz - 120 V / 60 Hz
770R	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug
w/o plug
0A1 c/w plug

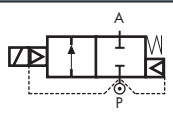
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¹ Manual override not available for orifice > Ø3mm.

Product coding example:

D363AVC 7250
1/4" G, auto operation, brass body, FKM seals, 1.5 mm orifice, with top port connection spherical 1/8" G, 24 VDC, without plug.

LC203/204/205 Series, General Purpose – 2/2 Normally Closed, Latching

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Brass CW614N (EN 12164)
Magnet	Neodym-Iron-Boron
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Low Power Coil Voltage DC (=)	24 V
Voltage Tolerance	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Low Power)	DC 3 W ¹
Coil Absorption (20 °C)	500mA for 20Q0 250mA for 21Q0 125mA for 22Q0

Features and Benefits

- Pilot operated, latching
- Special operator with reduced stroke for low power coils
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code ¹
			AC Voltages	DC Voltages			
¼"	1.83	1.56	-	0.3 - 5	13	NBR	LC203DBZ
						FKM	LC203DVZ
						EPDM	LC203DEZ
⅜"	3.86	3.30				NBR	LC204DBZ
						FKM	LC204DVZ
						EPDM	LC204DEZ
½"	4.42	3.78				NBR	LC205DBZ
						FKM	LC205DVZ
						EPDM	LC205DEZ

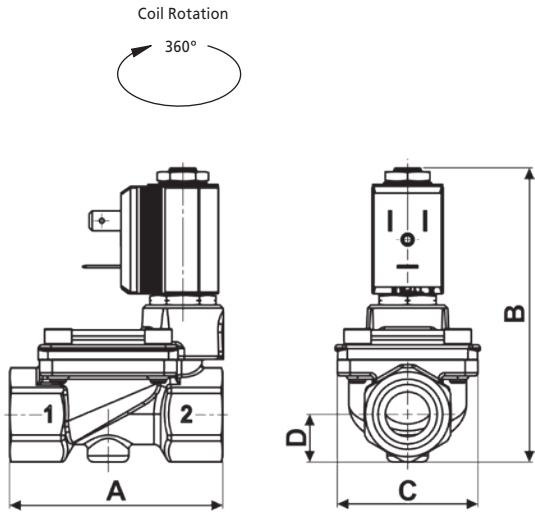
¹ Non standard, MOQ required.

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

LC203/204/205 Series, General Purpose – 2/2 Normally Closed, Latching



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/4" - 3/8" - 1/2"	67	90	45.6	15	0.4

Dimensions (mm)

Solenoid enclosures

2-Q0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
03	1/4"
04	3/8"
05	1/2"

Seals	
B	NBR
V	FKM
E	EPDM

Option	
	w/o option

Coil options

Voltage / Frequency - Class F, Low Power	
20Q0	6 VDC
21Q0	12 VDC
22Q0	24 VDC

Plug

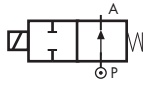
Plug	
	w/o plug
0B1	c/w plug



Product coding example:

LC205DBZ 20Q0
1/2" G, auto operation, brass body, NBR seals, 13 mm orifice, 6 VDC, without plug.

RD298/299 Series, General Purpose & High Pressure – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Troublefree operation with coils class H
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.04	0 - 30	0 - 30	1.0	FKM EPDM	RD299DVA RD299DEA
¼"	0.16	0.14	0 - 20	0 - 20	2.0	FKM EPDM	RD299DVE RD299DEE
¼"	0.23	0.20	0 - 14	0 - 14	2.5	FKM EPDM	RD299DVG RD299DEG
¼"	0.32	0.27	0 - 9	0 - 9	3.0	FKM EPDM	RD299DVH RD299DEH
¼"	0.04	0.04	0 - 100	0 - 100	1.0	RUBY	RD299DRA**
¼"	0.05	0.04	0 - 85	0 - 85	1.2	RUBY	RD299DRB**
¼"	0.08	0.07	0 - 55	0 - 55	1.5	RUBY	RD299DRC**
¼"	0.16	0.14	0 - 25	0 - 25	2.0	RUBY	RD299DRE**
¼"	0.23	0.20	0 - 19	0 - 19	2.5	RUBY	RD299DRG**
¼"	0.32	0.27	0 - 10	0 - 10	3.0	RUBY	RD299DRH**

** Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

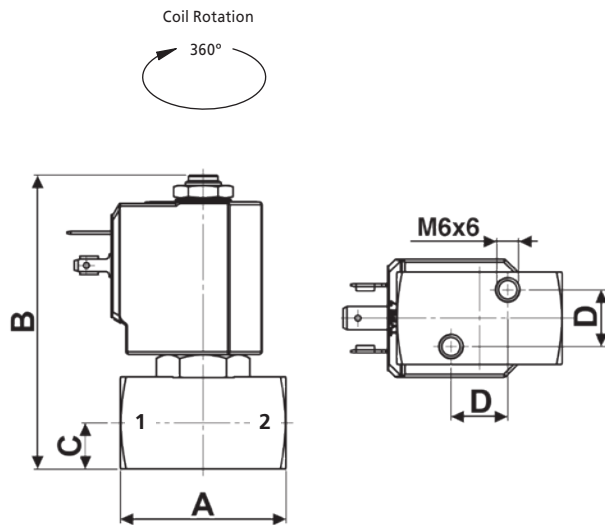
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT threads (minimum batch may be required)
Anticorrosion treatment recommended with aggressive fluids
Silver shading ring

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C
RUBY (-10 °C to +130 °C)	Water, liquids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD298/299 Series, General Purpose & High Pressure – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	80	12.5	15.4	0.36

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

External material: PPS (glass fiber & mineral filled)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
8	1/8"
9	1/4"

Seals		Orifice ¹	
V	FKM	A	1.0
E	EPDM	B	1.2
R	RUBY	C	1.5
		E	2.0
		G	2.5
		H	3.0

Option	
A	Silver shading ring
F	Anticorrosion treatment ²
N	NPT
	w/o option

Coil options

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0A1	c/w plug

RD	2	9	.	D
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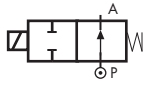
¹ See characteristics table for availability.

² Recommended with aggressive fluids.

Product coding example:

RD299DVA 7251
 1/4" G, auto operation, stainless steel body, FKM seals, 1.0 mm orifice, 24 VDC, without plug.

RD262/263 Series, General Purpose – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass (CW617N EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 30	0 - 30	1.0	FKM EPDM	RD263DVA RD263DEA
¼"	0.09	0.08	0 - 24	0 - 24	1.5	FKM EPDM	RD263DVC RD263DEC
¼"	0.24	0.20	0 - 16	0 - 16	2.5	FKM EPDM	RD263DVG RD263DEG
¼"	0.32	0.27	0 - 10	0 - 10	3.0	FKM EPDM	RD263DVH RD263DEH

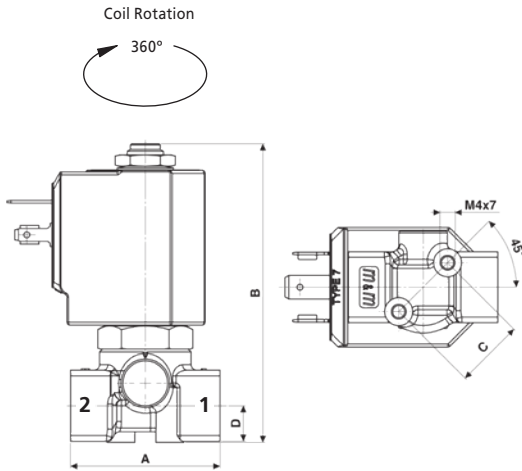
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
Electroless nickel plating
For steam version with filled PTFE seal see valve model RD236DL pages 108-109
For high pressure version with RUBY seals see valve model RD236DR-1 pages 86-87

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD262/263 Series, General Purpose – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	77.7	18.5	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
2	1/8"
3	1/4"

Seals		Orifice	
V	FKM	A	1.0
E	EPDM	C	1.5
		E	2.0
		G	2.5
		H	3.0

Option	
N	NPT
K	Electroless nickel plating
	w/o option

Coil options

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

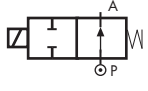
Plug	
	w/o plug
0A1	c/w plug

RD	2	6	.	D
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Product coding example:

RD263DVHK 7251 0A1
1/4" G, auto operation, brass body, FKM seals, 3.0 mm orifice, with electroless nickel plating treatment, 24 VDC, with plug.

RD236 Series, General Purpose – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms

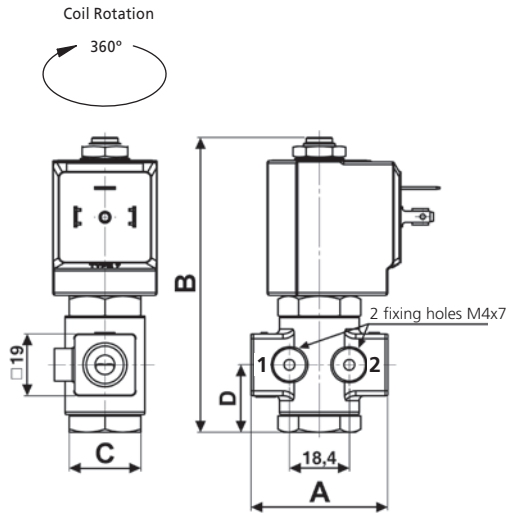


Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 25	0 - 25	1.0	FKM EPDM	RD236DV A RD236D E A
¼"	0.09	0.08	0 - 20	0 - 20	1.5	FKM EPDM	RD236DV C RD236D E C
¼"	0.14	0.12	0 - 18	0 - 18	2.0	FKM EPDM	RD236DV E RD236D E E
¼"	0.20	0.17	0 - 15	0 - 15	2.5	FKM EPDM	RD236DV G RD236D E G
¼"	0.25	0.21	0 - 12	0 - 12	3.0	FKM EPDM	RD236DV H RD236D E H
¼"	0.39	0.33	0 - 5	0 - 5	4.5	FKM EPDM	RD236DV M RD236D E M
¼"	0.60	0.51	0 - 2	0 - 2	6.0	FKM EPDM	RD236DV P RD236D E P

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD236 Series, General Purpose – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	47	91	Hex 22	20.75	0.25

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

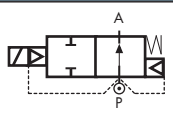
Seals					Orifice		Option		Voltage / Frequency - Class F				Plug	
V	FKM	A	1.0			w/o option		7250	24 VDC			0A1	c/w plug	
E	EPDM	C	1.5					7200	24 V / 50/60 Hz				w/o plug	
		E	2.0					7400	110 V / 50 Hz - 120 V / 60 Hz					
		G	2.5					7600	200 V / 50 Hz - 220 V / 60 Hz					
		H	3.0					7700	230 V / 50 Hz - 240 V / 60 Hz					
		M	4.5											
		P	6.0											

RD	2	3	6	D
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Product coding example:

RD236DVC 7200 0A1
¼" G, auto operation, brass body, FKM seals, 1.5 mm orifice, 24 V / 50 Hz/60 Hz AC, with plug.

RB203/204/205/206/222 Series, General Purpose – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange Tube ¹	Brass CW614N (EN 12164)
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

¹ With special brass nut for NO operator (different from Standard).

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC ³ Voltages			
¼"	1.83	1.56	0.3 - 16	0.3 - 16	13	NBR	RB203DBZ
						FKM	RB203DVZ
						EPDM	RB203DEZ
NBR	RB204DBZ						
FKM	RB204DVZ						
EPDM	RB204DEZ						
½"	4.42	3.78			21	NBR	RB205DBZ
						FKM	RB205DVZ
						EPDM	RB205DEZ
¾" compact	7.02	6.00	25	NBR	RB206DBX		
				FKM	RB206DVX		
				EPDM	RB206DEX		
¾"	9.83	8.40		FNBR	RB206DBY ²		
				FKM	RB206DLY ²		
				EPDM	RB206DEY ²		
1"	11.23	9.60	NBR	RB222DBY			
			FKM	RB222DLY			
			EPDM	RB222DEY			

² Non standard, MOQ required.

³ For continuous service in DC we recommend the use of M&M coils 10 Watt, class H (example 24 VDC 10W class H code 22V1, see options on page 163).

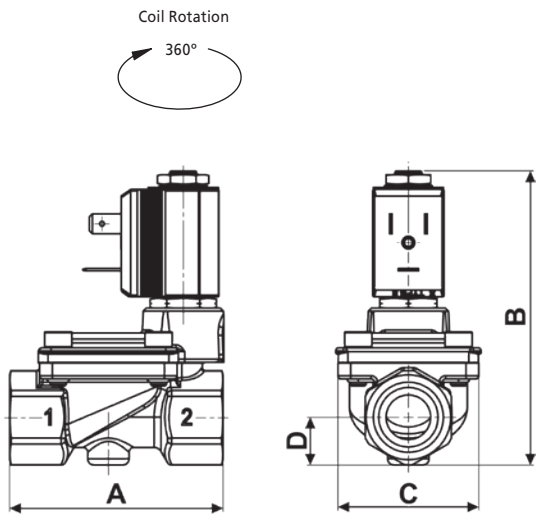
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Electroless nickel plating treatment
Speed control screw

Seal Material ³ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

³ See corrosion reference guide and sealing solutions for material compatibility.

RB203/204/205/206/222 Series, General Purpose – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼" - 3/8" - ½"	67	92.5	45.6	15	0.4
¾" compact	82	107.5	51.6	20.25	0.6
¾" to 1"	96	117.5	72	23	1.2

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: Industrial form B
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
03	¼"
04	⅜"
05	½"
06	¾" (compact)
06	¾" ¹
22	1"

Seals		Orifice ²	
B	NBR	Z	13
V	FKM	X	21
E	EPDM	Y	25

Option	
N	NPT
K	Electroless nickel plating
V	Speed control screw ³
	w/o option

Coil options

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0B1	c/w plug



¹ Non standard, MOQ required.

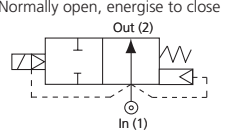
² DN13 only for RB203/204/205, DN21 only for RB206 compact, DN25 only for RB206 and RB222.

³ Speed control screw available on RB206D-Y and RB222D-Y.

Product coding example:

RB203DBZ 2250
 ¼" G, auto operation, brass body, NBR seals, 13 mm orifice, 24 VDC, without plug.

ACDN Series – 2/2 Normally Open

Specifications	
Function	Normally open, energise to close 
Maximum Viscosity	115 SSU
³ / ₈ " - 1" Body Material (Std)	Brass CZ122
1 ¹ / ₄ " - 2" Body Material (Std)	Bronze DIN1705
Flange Tube	Stainless Steel 303
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Robust Valve Design
- Diaphragm Operation
- Fully Ported Orifices for high Kv
- Choice of valve body material and seals
- Sizes ³/₈" - ³/₄" WRAS approved when used with EPDM seals
- Response time 1" 15-60 ms
- Response time 2" 60-120 ms



WRAS
Water Regulations Compliance Scheme

Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
³ / ₈ "	3.5	3.0	0-10	0-10	50	16.00	0.9
¹ / ₂ "	4.9	4.2	0-10	0-10		16.00	0.9
³ / ₄ "	5.4	4.7	0-10	0-10		16.00	0.9
1"	8.2	7.0	0-10	0-10		20.00	1.2
1 ¹ / ₄ "	26.7	23	0.3-10	0.3-10		40.00	3.0
1 ¹ / ₂ "	26.7	23	0.3-10	0.3-10		40.00	3.0
2"	30.2	26	0.3-10	0.3-10		40.00	3.0

Options Available

Exd & Exm Solenoid Enclosure	
Protection Class	
Exd T6 (IP67)	See separate datasheet
Exd T4 (IP67)	
Exm T5 (IP65)	

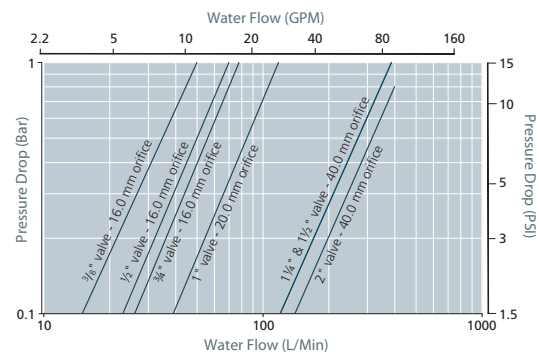
Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50
EPDM (-50 °C to +120 °C)	-10	50
FKM (-20 °C to +150 °C)	-10	50

Main Valve Body Options
Stainless Steel 316 (available up to and including 1")
NPT threads
Flanged Option (PN16 Std) for alternative options consult Rotork Midland
Oxygen cleaning (consult Rotork Midland for product code)

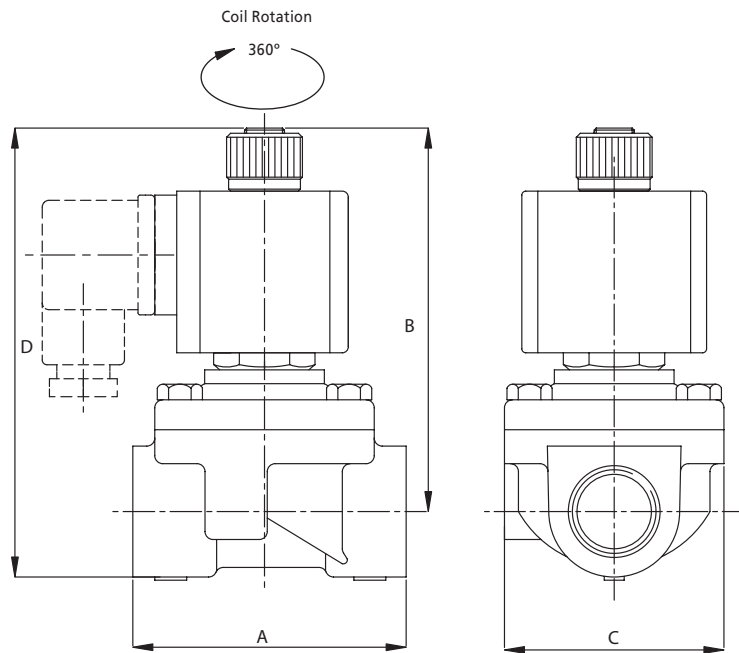
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

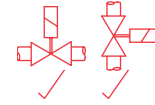
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



ACDN Series – 2/2 Normally Open



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
3/8" - 3/4"	69.5	80	75	97
1"	85	80	75	126
1 1/4" - 2"	137	103	120	136

Dimensions given in mm

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
27 ACDN (1 1/4 and above)	C 3/8"	1 B521	1 AUTO
56 ACDN (3/8"-1")	D 1/2"	2 BSP G (1 1/4" and above)	
	E 3/4"		
	F 1"		
	G 1 1/4"	3 NPT	
	H 1 1/2"	4 FLANGED (PN16 STD)	
	J 2"		

Body Material	Seals	Style
1 Brass (standard on valves up to and including 1")	A NBR	1 Standard
	B EPDM	
	C FKM	
2 Bronze (standard on valves above 1")		
5 316 Stainless Steel (option available up to and inc 1")		

Coil options

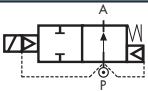
Enclosure	Voltage / Frequency	Electrical Connection	Label
1 Weather proof IP65	A1 230 V / 50 Hz	1 DIN plug 9 mm	48 N/O Module
	A2 110 V / 50 Hz & 120 V / 60 Hz		
	A3 24 V / 50 Hz		
	A7 220 V / 50 Hz		
	B2 24 VDC		
B3 12 VDC			
B5 110 VDC			

•	•	•	1	Z	•	•	1	-	1	••	1	•
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Product coding example:

27G21Z2A1-1A1148 - ACDN Series
N/O 1 1/4" BSPG, auto operation, bronze body, NBR seals, 230 V / 50 Hz DIN Plug 9 mm.

RD223/224/225 Series, General Purpose – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange Tube	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Troublefree operation with coils class H
- Speed control screw as standard
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1 ¼"	25.97	22.20	0.5 - 16	0.5 - 16	40	NBR FKM EPDM	RD223DBK RD223DVK RD223DEK
1 ½"	28.08	24.00			40	NBR FKM EPDM	RD224DBK RD224DVK RD224DEK
2"	37.91	32.40			50	NBR FKM EPDM	RD225DBJ RD225DVJ RD225DEJ

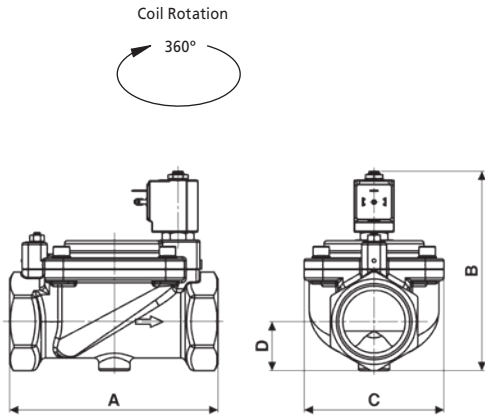
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Electroless nickel plating

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD223/224/225 Series, General Purpose – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1 ¼" - 1 ½"	140	140	96	31.5	2.8
2"	167	158	112	39	3.9

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

External material: PPS (glass fiber & mineral filled)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

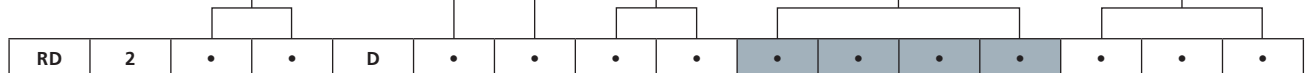
Pipe Size
23 1 ¼"
24 1 ½"
25 2"

Seals		Orifice ¹	
B	NBR	K	40
V	VKM	J	50
E	EPDM		

Option	
N	NPT
K	Electroless nickel plating
	w/o option

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug	
	w/o plug
0A1	c/w plug



¹ DN40 only for RD223 and RD224 only, DN50 only for RD225.

Product coding example:

RD223DBK 7251
 1 ¼" G, auto operation, brass body, NBR seals, 40 mm orifice, 24 VDC, without plug.

RD398/399 Series, General Purpose – 3/2 Normally Open

Specifications	
Function (single acting)	<p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4305 EN 10088 (AISI 303)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.09	0.08	0 - 15	0 - 15	1.5	FKM	RD399CVC
¼"	0.15	0.13	0 - 10	0 - 10	2.0	FKM	RD399CVE
¼"	0.32	0.27	0 - 4	0 - 4	3.0	FKM	RD399CVH

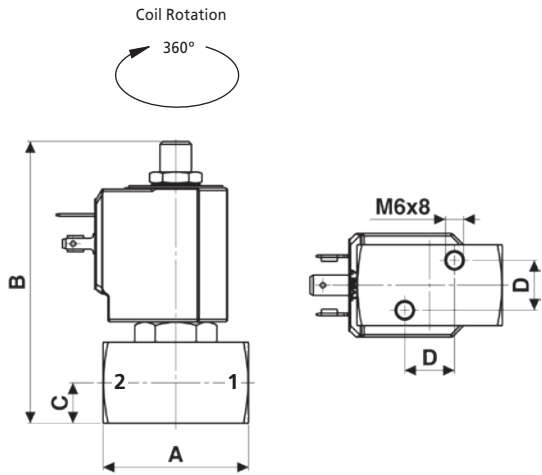
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Anticorrosion treatment recommended with aggressive fluids

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD398/399 Series, General Purpose – 3/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	87	12.5	15.4	0.35

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

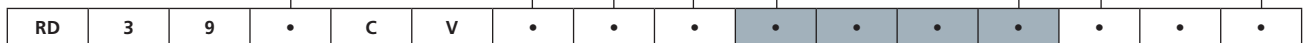
Pipe Size
8 1/8"
9 1/4"

Orifice
C 1.5
E 2.0
H 3.0

Option
N NPT
F Anticorrosion treatment ¹
w/o option

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug
0A1 c/w plug
w/o plug

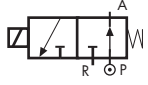


¹ Recommended with aggressive fluids.

Product coding example:

RD399CVE 7251
1/4" G, auto operation, stainless steel body, FKM seals, 2.0 mm orifice, 24 VDC, without plug.

RD362/363 Series, General Purpose – 3/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.09	0.08	0 - 16	0 - 13	1.5	FKM	RD363CVC
¼"	0.15	0.13	0 - 10	0 - 10	2.0	FKM	RD363CUE
¼"	0.24	0.20	0 - 7	0 - 7	2.5	FKM	RD363CVG
¼"	0.32	0.27	0 - 4	0 - 4	3.0	FKM	RD363CVH

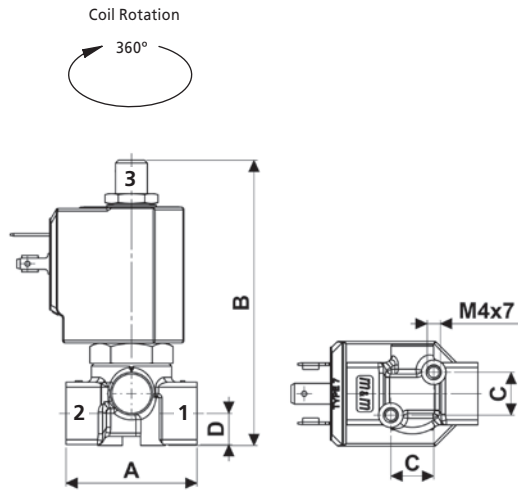
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD362/363 Series, General Purpose – 3/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	86.4	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
2	1/8"
3	1/4"

Orifice	
C	1.5
E	2.0
G	2.5

Option	
N	NPT
	w/o option

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

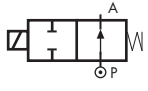
Plug	
0A1	c/w plug
	w/o plug

RD	3	6	.	C	V
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Product coding example:

RD362CVC 7251
1/8" G, auto operation, brass body, FKM seals, 1.5 mm orifice, 24 VDC, without plug.

B297 Series, Automation – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Low lead content Brass CW719R (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Valve suitable for contact with food media as per the EEC Directives and Regulations. Please consult supplier for more details
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.04	0.03	0 - 30	0 - 28	1.0	FKM EPDM	B297DVA B297DEA
1/8"	0.05	0.04	0 - 25	0 - 22	1.2	FKM EPDM	B297DVB B297DEB
1/8"	0.07	0.06	0 - 22	0 - 18	1.5	FKM EPDM	B297DVC B297DEC
1/8"	0.12	0.10	0 - 18	0 - 9	2.0	FKM EPDM	B297DVE B297DEE
1/8"	0.16	0.14	0 - 13	0 - 3	2.5	FKM EPDM	B297DVG B297DEG
1/8"	0.21	0.18	0 - 8	0 - 1	3.0	FKM EPDM	B297DVH B297DEH

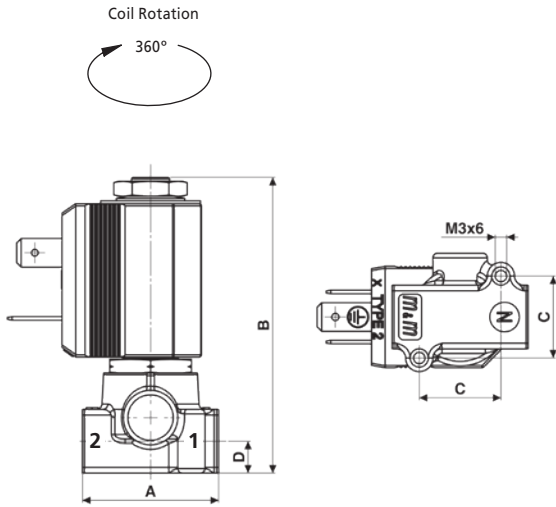
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual Override
Electroless nickel plating treatment

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

B297 Series, Automation – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	30	65	18	7	0.15

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

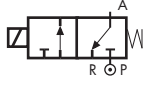
Seals				Orifice		Option		Voltage / Frequency - Class F				Plug	
V	FKM	A	1.0	N	NPT	2250	24 VDC						w/o plug
E	EPDM	B	1.2	M	Manual Override	2200	24 V / 50/60 Hz						0B1
		C	1.5	K	Electroless nickel plating	2400	110 V / 50 Hz - 120 V / 60 Hz						
		E	2.0		w/o option	2600	200 V / 50 Hz - 220 V / 60 Hz						
		G	2.5			2700	230 V / 50 Hz - 240 V / 60 Hz						
		H	3.0										

B	2	9	7	D
---	---	---	---	---	---	---	---	---	---	---	---	---	---

Product coding example:

B297DVAN 2250
1/8" NPT, auto operation, brass body, FKM seals, 1.0 mm orifice, 24 VDC, without plug.

D301 Series, Automation – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	Flanged 26x26 mm
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Zero pressure rated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



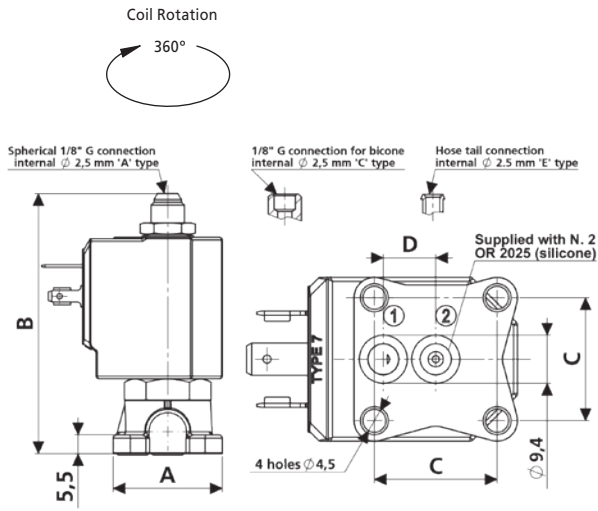
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
Flanged	0.09	0.08	0 - 18	0 - 18	1.5	FKM	D301CVC
Flanged	0.15	0.13	0 - 10	0 - 10	2.0	FKM	D301CVE
Flanged	0.24	0.20	0 - 7	0 - 7	2.5	FKM	D301CVG
Flanged	0.32	0.27	0 - 5	0 - 5	3.0	FKM	D301CVH

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D301 Series, Automation – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
Flanged	32	77	24	10.25	0.25

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538

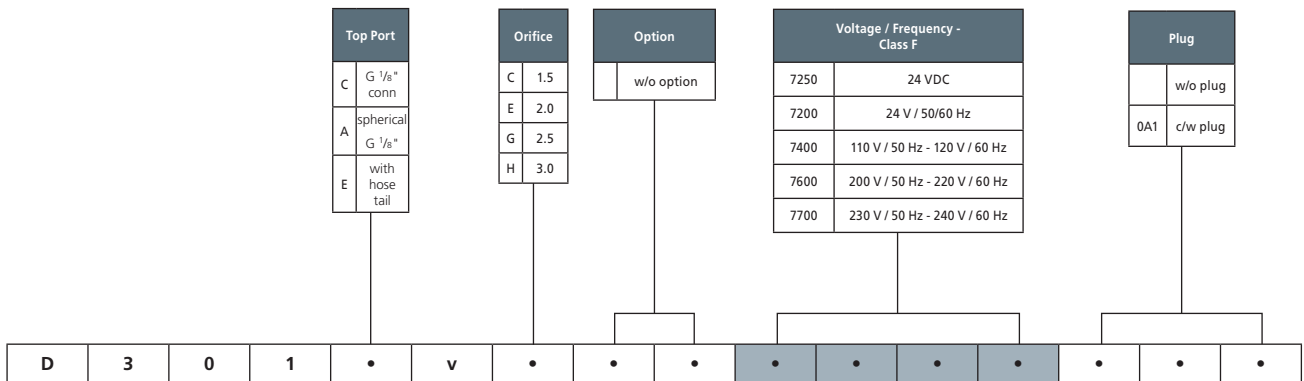


Coding chart

Main Valve Assembly

Coil options

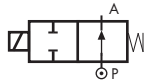
Plug



Product coding example:

D301CVC 7250
Flanged, auto operation, brass body, FKM seals, 1.5 mm orifice, 24 VDC, without plug.

RB297 Series, Automation – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Low lead content Brass CW719R (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube ¹	Brass CW614N (EN 12164)
Plunger and Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7W

¹ With special nut for NO operator (different from Standard).

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms
- Valve suitable for contact with food media as per EEC Directives and Regulations. Please consult supplier for more details.



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC ² Voltages			
1/8"	0.04	0.03	0 - 25	0 - 25	1.0	FKM EPDM	RB297DVA RB297DEA
1/8"	0.05	0.04	0 - 20	0 - 20	1.2	FKM EPDM	RB297DVB RB297DEB
1/8"	0.07	0.06	0 - 15	0 - 15	1.5	FKM EPDM	RB297DVC RB297DEC
1/8"	0.12	0.10	0 - 10	0 - 10	2.0	FKM EPDM	RB297DVE RB297DEE
1/8"	0.16	0.14	0 - 5	0 - 5	2.5	FKM EPDM	RB297DVG RB297DEG
1/8"	0.21	0.18	0 - 4.5	0 - 4.5	3.0	FKM EPDM	RB297DVH RB297DEH

² For continuous service in DC we recommend the use of M&M coils 10 Watt, class H (example 24 VDC 10W class H code 22V1, see options on page 163).

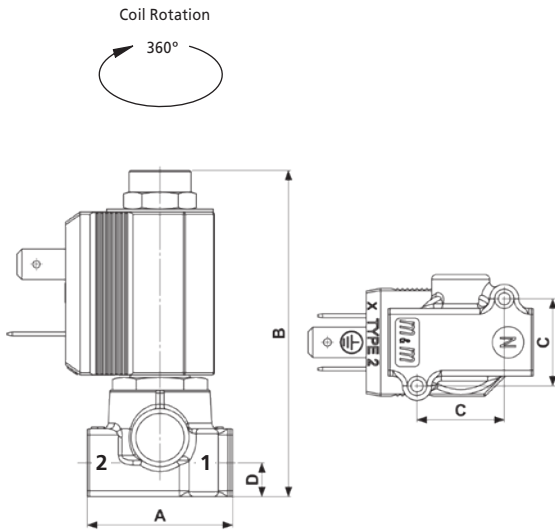
Options Available

Valve Options
NPT threads (minimum batch may be required)
Electroless nickel plating treatment

Seal Material ³ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

³ See corrosion reference guide and sealing solutions for material compatibility.

RB297 Series, Automation – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	30	67.5	18	7	0.15

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Seals		Orifice	
V	FKM	A	1.0
E	EPDM	B	1.2
		C	1.5
		E	2.0
		G	2.5
		H	3.0

Option	
N	NPT
K	Electroless nickel plating
	w/o option

Coil options

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

Plug

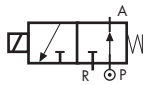
Plug	
	w/o plug
0B1	c/w plug

RB	2	9	7	D
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Product coding example:

RB297DEE 2250
1/8" G, auto operation, brass body, EPDM seals, 2.0 mm orifice, 24 VDC, without plug.

RD301 Series, Automation – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material	Foodgrade FKM
Connection Type (Std)	Flanged 26x26 mm
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Zero pressure rated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



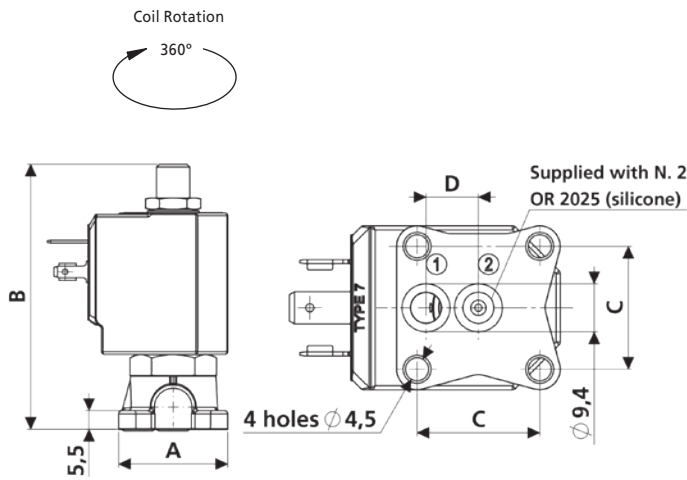
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
Flanged	0.09	0.08	0 - 15	0 - 15	1.5	FKM	RD301CVC
Flanged	0.15	0.13	0 - 10	0 - 10	2.0	FKM	RD301CVE
Flanged	0.32	0.27	0 - 4	0 - 4	3.0	FKM	RD301CVH

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD301 Series, Automation – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
Flanged	32	77.7	24	10.25	0.26

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

External material: PPS (glass fiber & mineral filled)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538

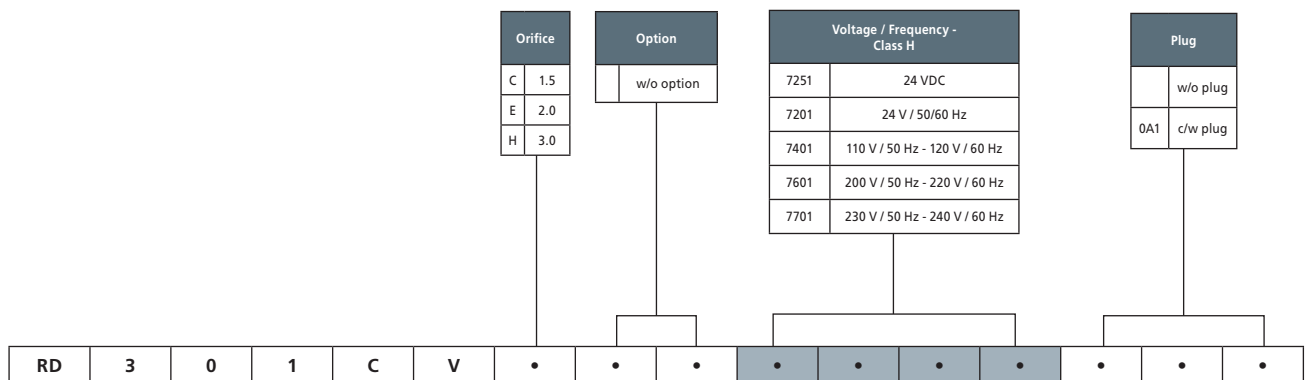


Coding chart

Main Valve Assembly

Coil options

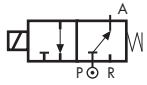
Plug



Product coding example:

RD301CVC 7251
 Flanged, auto operation, brass body, FKM seals, 1.5 mm orifice, 24 VDC, without plug.

SB397 Series, Automation – 2nd Service 3/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction OFF 3 → 1 - ON 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Low lead content Brass CW719R (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Valve suitable for contact with food media as per the EEC Directives and Regulations. Please consult supplier for more details
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)		Seal Material	Valve Code
			AC Voltages	DC Voltages	1→2	1→3		
1/8"	0.05	0.04	0 - 6	0 - 3	1.2	1.7	FKM	SB397CUB
1/8"	0.07	0.06	0 - 4.5	0 - 2	1.5	1.7	FKM	SB397CVC

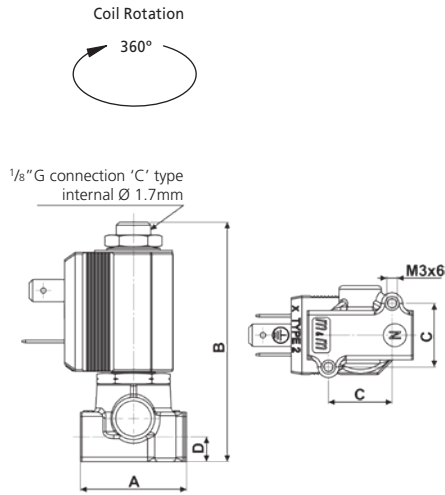
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual Override
Electroless nickel plating treatment

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

SB397 Series, Automation – 2nd Service 3/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	30	67.8	18	7	0.15

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*

* Plug and gasket not supplied as standard, must be ordered separately.



Type 600 001- Plug

- Rated Voltage (max.): 250 vAC / 300 vDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538

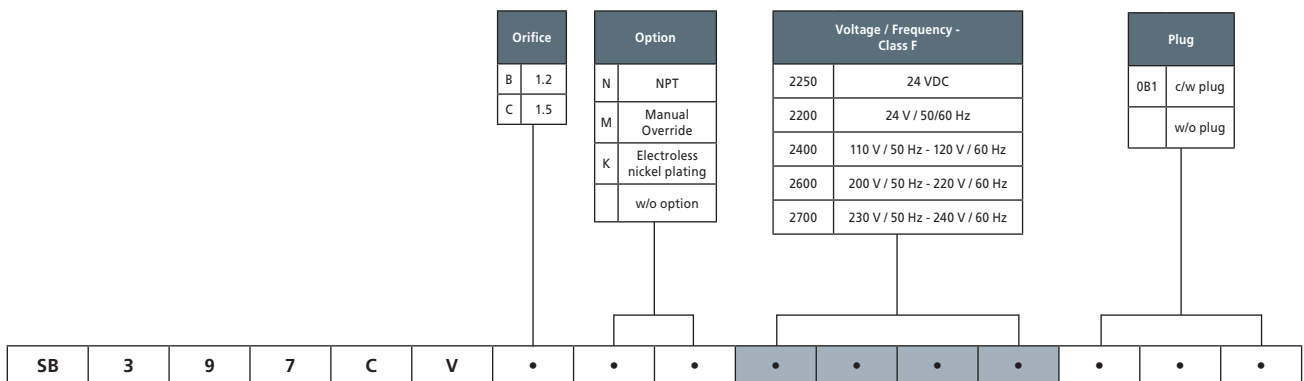


Coding chart

Main Valve Assembly

Coil options

Plug



Product coding example:

SB397CVB 2250
 1/8" G, auto operation, brass body, FKM seals, 1.2 mm orifice, with manual override, 24 VDC, without plug.

RB397 Series, Automation – 3/2 Normally Open

Specifications	
Function (single acting)	<p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Low lead content Brass CW719R (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Valve suitable for contact with food media as per the EEC Directives and Regulations. Please consult supplier for more details
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.04	0.03	0 - 15	0 - 12	1.0	FKM EPDM	RB397CV RB397CEA
1/8"	0.05	0.04	0 - 15	0 - 12	1.2	FKM EPDM	RB397CVB RB397CEB
1/8"	0.07	0.06	0 - 10	0 - 8	1.5	FKM EPDM	RB397CV RB397CEC
1/8"	0.13	0.11	0 - 8	0 - 6	2.0	FKM EPDM	RB397CV RB397CEE
1/8"	0.18	0.15	0 - 4	0 - 4	2.5	FKM EPDM	RB397CV RB397CEG
1/8"	0.25	0.21	0 - 3.5	0 - 3.5	3.0	FKM EPDM	RB397CV RB397CEH

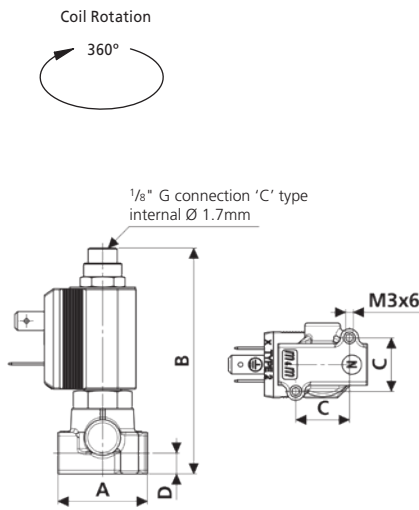
Options Available

Valve Options (see coding chart)
Electroless nickel plating treatment

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RB397 Series, Automation – 3/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	30	75.9	18	7	0.15

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

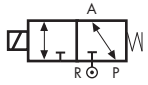
Seals					Orifice		Option		Voltage / Frequency - Class F				Plug		
V	FKM	A	1.0	K	Electroless nickel plating	2250	24 VDC	0B1	c/w plug	E	EPDM	B	1.2		w/o plug
		C <td>1.5</td> <td></td> <td>w/o option</td> <td>2200 <td>24 V / 50/60 Hz</td> <td></td> <td></td> <td>G <td>2.5</td> <td></td> <td></td> <td></td> <td></td> </td></td>	1.5		w/o option	2200 <td>24 V / 50/60 Hz</td> <td></td> <td></td> <td>G <td>2.5</td> <td></td> <td></td> <td></td> <td></td> </td>	24 V / 50/60 Hz			G <td>2.5</td> <td></td> <td></td> <td></td> <td></td>	2.5				
		E <td>2.0</td> <td></td> <td></td> <td>2400 <td>110 V / 50 Hz - 120 V / 60 Hz</td> <td></td> <td></td> <td>H <td>3.0</td> <td></td> <td></td> <td></td> <td></td> </td></td>	2.0			2400 <td>110 V / 50 Hz - 120 V / 60 Hz</td> <td></td> <td></td> <td>H <td>3.0</td> <td></td> <td></td> <td></td> <td></td> </td>	110 V / 50 Hz - 120 V / 60 Hz			H <td>3.0</td> <td></td> <td></td> <td></td> <td></td>	3.0				
		G <td>2.5</td> <td></td> <td></td> <td>2600 <td>200 V / 50 Hz - 220 V / 60 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </td>	2.5			2600 <td>200 V / 50 Hz - 220 V / 60 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	200 V / 50 Hz - 220 V / 60 Hz								
		H <td>3.0</td> <td></td> <td></td> <td>2700 <td>230 V / 50 Hz - 240 V / 60 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </td>	3.0			2700 <td>230 V / 50 Hz - 240 V / 60 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	230 V / 50 Hz - 240 V / 60 Hz								

RB	3	9	7	C	•	•	•	•	•	•	•	•	•	•	•
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Product coding example:

RB397CVB 2400
 1/8" G, auto operation, brass body, FKM seals, 1.2 mm orifice, 110 V / 50 Hz - 120 V / 60 Hz, without plug.

GD362/363 Series, Automation – Universal Service 3/2 (Normally Open)

Specifications	
Function (single acting)	 <p>Pressure can be connected to any port</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)		Seal Material	Valve Code
			AC Voltages	DC Voltages	1→2	1→3		
¼"	0.15	0.13	0 - 8	0 - 7	2.0	2.0	FKM	GD363C <u>VE</u>

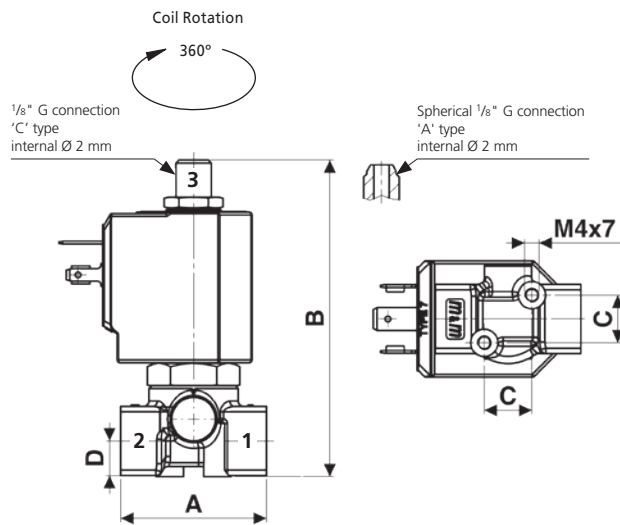
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT threads (minimum batch may be required)

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

GD362/363 Series, Automation – Universal Service 3/2 (Normally Open)



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	87	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	Top Port Connection
2 1/8"	C 1/8" G
3 1/4"	A spherical 1/8" G

Option	
N	NPT
	w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

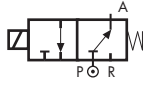
Plug	
0A1	c/w plug
	w/o plug

GD	3	6	.	.	V	E
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Product coding example:

SD363CVE 7250
1/4" G, auto operation, universal, brass body, FKM seals, 2.0 mm orifice, with top port connection 1/8" G, 24 VDC, without plug.

SD362/363 Series, Automation – 2nd Service 3/2 (Normally Open)

Specifications	
Function (single acting)	 <p>Flow direction OFF 3 → 1 - ON 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)		Seal Material	Valve Code
			AC Voltages	DC Voltages	1→2	1→3		
¼"	0.09	0.08	0 - 15	0 - 15	1.5	1.5	FKM	SD363C _Y C
¼"	0.15	0.13	0 - 15	0 - 15	2.0	2.0	FKM	SD363C _Y E
¼"	0.24	0.20	0 - 13	0 - 13	2.5	2.5	FKM	SD363C _Y G

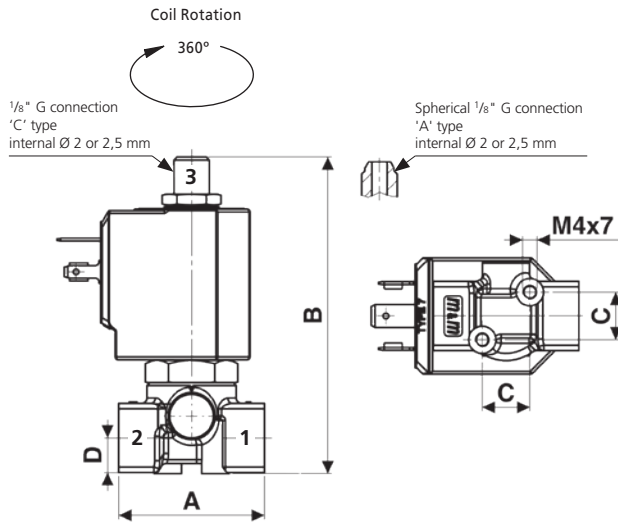
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT threads (minimum batch may be required)
Manual Override

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

SD362/363 Series, Automation – 2nd Service 3/2 (Normally Open)



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	87	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	Top port connection
2 1/8"	C 1/8" G
3 1/4"	A spherical 1/8" G

Orifice
C 1.5
E 2.0
G 2.5

Option
N NPT
M Manual Override
w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

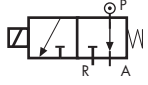
Plug
0A1 c/w plug
w/o plug

SD	3	6	.	.	V
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Product coding example:

SD362AVG 7400
1/8" G, auto operation, 2nd service, brass body, FKM seals, 2.5 mm orifice, with top port connection spherical 1/8" G, 110 V / 50 Hz - 120 V / 60 Hz, without plug.

DD362/363 Series, Automation – Diverting 3/2 (Normally Open)

Specifications	
Function (single acting)	 <p>Flow direction OFF 1 → 3 - ON 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)		Seal Material	Valve Code
			AC Voltages	DC Voltages	1→2	1→3		
¼"	0.09	0.08	0 - 20	0 - 20	1.5	2.5	FKM	DD363CVC
¼"	0.15	0.13	0 - 20	0 - 20	2.0	2.5	FKM	DD363CUE

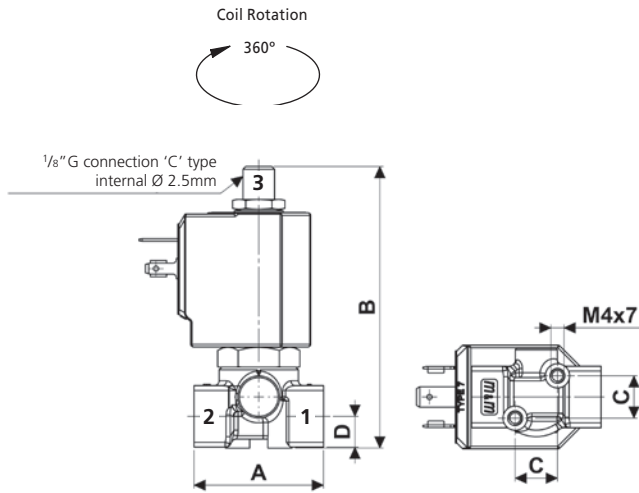
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Manual Override

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

DD362/363 Series, Automation – Diverting 3/2 (Normally Open)



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	87	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7-0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	Orifice	Option	Voltage / Frequency - Class F	Plug
2	C 1.5	N NPT	7250 24 VDC	0A1 c/w plug
3	E 2.0	M Manual Override	7200 24 V / 50/60 Hz	w/o plug
		w/o option	7400 110 V / 50 Hz - 120 V / 60 Hz	
			7600 200 V / 50 Hz - 220 V / 60 Hz	
			7700 230 V / 50 Hz - 240 V / 60 Hz	

Pipe Size	Orifice	Option	Voltage / Frequency - Class F	Plug
2	C 1.5	N NPT	7250 24 VDC	0A1 c/w plug
3	E 2.0	M Manual Override	7200 24 V / 50/60 Hz	w/o plug
		w/o option	7400 110 V / 50 Hz - 120 V / 60 Hz	
			7600 200 V / 50 Hz - 220 V / 60 Hz	
			7700 230 V / 50 Hz - 240 V / 60 Hz	

Pipe Size	Orifice	Option	Voltage / Frequency - Class F	Plug
2	C 1.5	N NPT	7250 24 VDC	0A1 c/w plug
3	E 2.0	M Manual Override	7200 24 V / 50/60 Hz	w/o plug
		w/o option	7400 110 V / 50 Hz - 120 V / 60 Hz	
			7600 200 V / 50 Hz - 220 V / 60 Hz	
			7700 230 V / 50 Hz - 240 V / 60 Hz	

Coil options

Pipe Size	Orifice	Option	Voltage / Frequency - Class F	Plug
2	C 1.5	N NPT	7250 24 VDC	0A1 c/w plug
3	E 2.0	M Manual Override	7200 24 V / 50/60 Hz	w/o plug
		w/o option	7400 110 V / 50 Hz - 120 V / 60 Hz	
			7600 200 V / 50 Hz - 220 V / 60 Hz	
			7700 230 V / 50 Hz - 240 V / 60 Hz	

Plug

Pipe Size	Orifice	Option	Voltage / Frequency - Class F	Plug
2	C 1.5	N NPT	7250 24 VDC	0A1 c/w plug
3	E 2.0	M Manual Override	7200 24 V / 50/60 Hz	w/o plug
		w/o option	7400 110 V / 50 Hz - 120 V / 60 Hz	
			7600 200 V / 50 Hz - 220 V / 60 Hz	
			7700 230 V / 50 Hz - 240 V / 60 Hz	

DD	3	6	.	C	V
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Product coding example:

DD362CVE 7250
1/8" G, auto operation, diverting, brass body, FKM seals, 2.0 mm orifice, 24 VDC, without plug.

D298/299 Series, High Pressure – 2/2 Normally Closed

Specifications	
Function (single acting)	<p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Ruby
Standard Connection Type	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
High Power Coil Voltage DC (=)	24 V
High Power Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
High Power Coil Voltage AC 60 Hz (-)	24 V, 120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (High Power)	AC 25 VA (holding) AC 50 VA (inrush) DC 22 Watts

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Wide range of available orifices
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code ¹
			AC Voltages	DC Voltages			
¼"	0.05	0.04	0 - 200	0 - 110	1.2	RUBY	D299DRB1
¼"	0.08	0.07	0 - 200	0 - 80	1.5	RUBY	D299DRC1
¼"	0.16	0.14	0 - 140	0 - 30	2.0	RUBY	D299DRE1
¼"	0.23	0.20	0 - 90	0 - 23	2.5	RUBY	D299DRG1
¼"	0.32	0.27	0 - 50	0 - 14	3.0	RUBY	D299DRH1

NOTE: Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

¹ ATTENTION: when high pressure valves are supplied without a coil, their nameplates display the max OPD of the valve when equipped with an AC (25VA) and DC(22W) coil. If fitting coils with a different power rating OPD will vary, please consult supplier for more details.

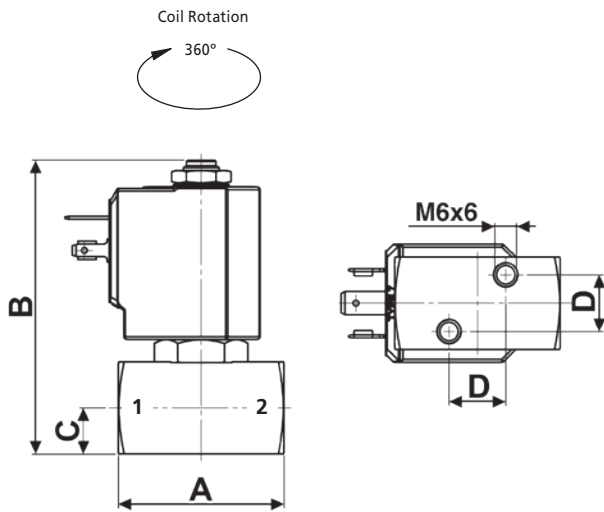
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT Threads (minimum batch may be required)
Anticorrosion treatment recommended with aggressive fluids
Silver shading ring

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
RUBY (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D298/299 Series, High Pressure – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	80	12.5	15.4	0.36

Dimensions (mm)

Solenoid enclosures

7-K1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
8	1/8"
9	1/4"

Orifice	Option
B 1.2	A Silver shading ring
C 1.5	F Anticorrosion treatment ¹
E 2.0	N NPT
G 2.5	w/o option
H 3.0	

Voltage / Frequency - Class H, High Power	
72Z1	24 VDC
72K1	24 V / 50/60 Hz
74K1	110 V / 50 Hz - 120 V / 60 Hz
77K1	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0A1	c/w plug

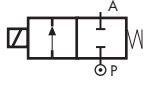
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¹ Recommended with aggressive fluids.

Product coding example:

D298DRC1 72Z1 0A1
1/8" G, auto operation, stainless steel body, RUBY seals, 1.5 mm orifice, 24 VDC, with plug.

D262DR-1/263DR-1 Series, High Pressure – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	RUBY
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
High Power Coil Voltage DC (=)	24 V
High Power Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
High Power Coil Voltage AC 60 Hz (-)	24 V, 120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (High Power)	AC 25 VA (holding) AC 50 VA (inrush) DC 22W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.05	0.04	0 - 200	0 - 60	1.2	RUBY	D263DRB1
¼"	0.09	0.08	0 - 200	0 - 35	1.5	RUBY	D263DRC1
¼"	0.15	0.13	0 - 120	0 - 25	2.0	RUBY	D263DRE1
¼"	0.32	0.27	0 - 50	0 - 11	3.0	RUBY	D263DRH1

NOTE: Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

ATTENTION: when high pressure valves are supplied without a coil, their nameplates display the max OPD of the valve when equipped with an AC (25VA) and DC(22W) coil. If fitting coils with a different power rating OPD will vary, please consult supplier for more details.

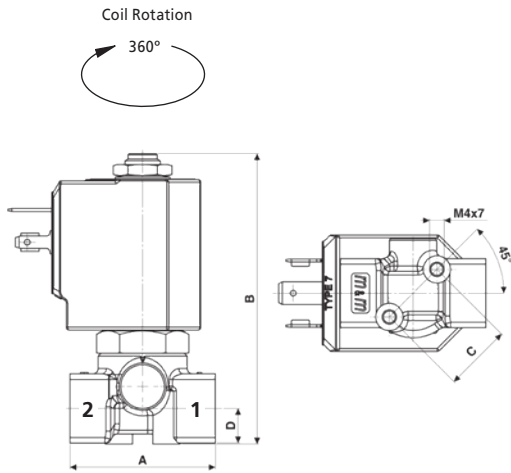
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
RUBY (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D262DR-1/263DR-1 Series, High Pressure – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	77.5	18.5	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7-K1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
2	1/8"
3	1/4"

Orifice	
B	1.2
C	1.5
E	2.0
H	3.0

Option	
N	NPT
M	Manual override
	w/o option

Voltage / Frequency - Class H, High Power	
72Z1	24 VDC
72K1	24 V / 50/60 Hz
74K1	110 V / 50 Hz - 120 V / 60 Hz
77K1	230 V / 50 Hz - 240 V / 60 Hz

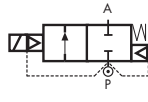
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D263DRB1 72Z1 0A1
1/4" G, auto operation, brass body, RUBY seals, 1.2 mm orifice, 24 VDC, with plug.

D634/635/636DTT1 Series, High Pressure – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Piston Material	Brass CW614N (EN 12164)
Springs	Stainless Steel AISI 302
Seal Material (Std)	PTFE
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
High Power Coil Voltage DC (=)	24 V
High Power Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
High Power Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (High Power)	AC 25 VA (holding) AC 50 VA (inrush) DC 22 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.47	1.26	0.3 - 140	0.3 - 35	10	PTFE	D634DIT1
⅜"	1.68	1.44	0.3 - 140	0.3 - 35	10	PTFE	D635DIT1
½"	1.76	1.50	0.3 - 140	0.3 - 35	10	PTFE	D636DIT1

NOTE: Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

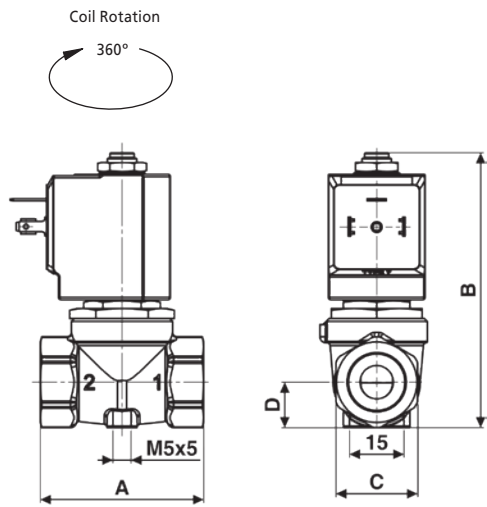
ATTENTION: when high pressure valves are supplied without a coil, their nameplates display the max OPD of the valve when equipped with an AC (25VA) and DC(22W) coil. If fitting coils with a different power rating OPD will vary, please consult supplier for more details.

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
PTFE (-10 °C to +130 °C)	Water, oil, liquids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D634/635/636DTT1 Series, High Pressure – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	54	100	HEX 27	15	0.5
¾" to ½"	54	100	HEX 27	15	0.45

Dimensions (mm)

Solenoid enclosures

7-K1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
4	¼"
5	¾"
6	½"

Coil options

Option	Voltage / Frequency - Class H, High Power
w/o option	72Z1 24 VDC
	72K1 24 V / 50/60 Hz
	74K1 110 V / 50 Hz - 120 V / 60 Hz
	77K1 230 V / 50 Hz - 240 V / 60 Hz

Plug

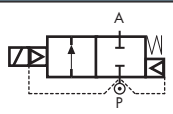
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D634DTT1 72Z1
¼" G, auto operation, brass body, PTFE seals, 10 mm orifice, 24 VDC, without plug.

D232/233/234 Series, High Pressure & Compressed Air – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Operator Seal Material ¹	RUBY
Diaphragm Material	FKM
Main Seal Material ¹	PTFE
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

¹ For D23-D_W operator seal material is foodgrade FKM and main seal material is FKM.

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	2.95	2.52	1 - 50	1 - 50	16	PTFE	D232D _I W ²
1/2"	3.23	2.76	1 - 50	1 - 50	16	PTFE	D233D _I W ²
3/4"	3.37	2.88	1 - 50	1 - 50	16	PTFE	D234D _I W ²
3/8"	2.95	2.52	1 - 25	1 - 25	16	FKM	D232D _W W ³
1/2"	3.23	2.76	1 - 25	1 - 25	16	FKM	D233D _W W ³
3/4"	3.37	2.88	1 - 25	1 - 25	16	FKM	D234D _W W ³

² Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

³ Non standard, MOQ required.

Options Available

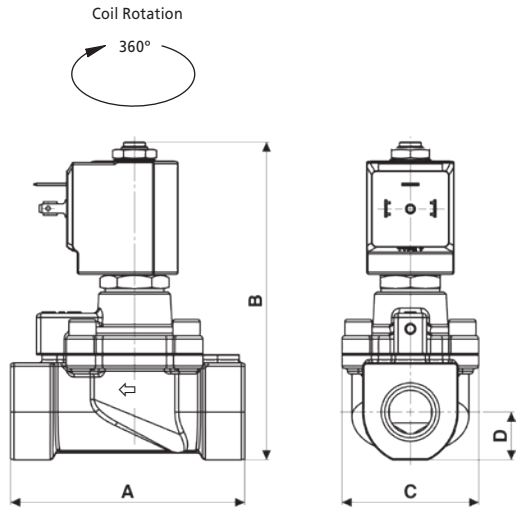
Valve Options (see coding chart)
NPT threads (minimum batch may be required)

Seal Material ⁴ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
PTFE (-10 °C to +130 °C)	Water ⁵ , oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water ⁵ , oil, air	-10 °C	+50 °C

⁴ See corrosion reference guide and sealing solutions for material compatibility.

⁵ When using liquid fluids waterhammer and pressures higher than 20 barg can cause the diaphragm to tear.

D232/233/234 Series, High Pressure & Compressed Air – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/8"	86	116.5	50.2	17.5	1
1/2" - 3/4"	86	116.5	50.2	17.5	0.9

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
2 3/8"
3 1/2"
4 3/4"

Seals	
T	PTFE
V	FKM

Option	
N	NPT
	w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

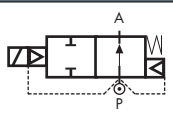
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D232DTW 7200
3/8" G, auto operation, brass body, PTFE main seal, 16 mm orifice, 24 V / 50/60 Hz, without plug.

RD232/233/234 Series, High Pressure – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Operator Seal Material ¹	RUBY
Diaphragm Material	FKM
Main Seal Material ¹	PTFE
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

¹ For RD23-D_W operator seal material is foodgrade FKM and main seal material is FKM.

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	2.95	2.52	1 - 50	1 - 50	16	PTFE	RD232D _I W ²
1/2"	3.23	2.76	1 - 50	1 - 50	16	PTFE	RD233D _I W ²
3/4"	3.37	2.88	1 - 50	1 - 50	16	PTFE	RD234D _I W ²
3/8"	2.95	2.52	1 - 25	1 - 25	16	FKM	RD232D _W ³
1/2"	3.23	2.76	1 - 25	1 - 25	16	FKM	RD233D _W ³
3/4"	3.37	2.88	1 - 25	1 - 25	16	FKM	RD234D _W ³

² Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

³ Non standard, MOQ required.

Options Available

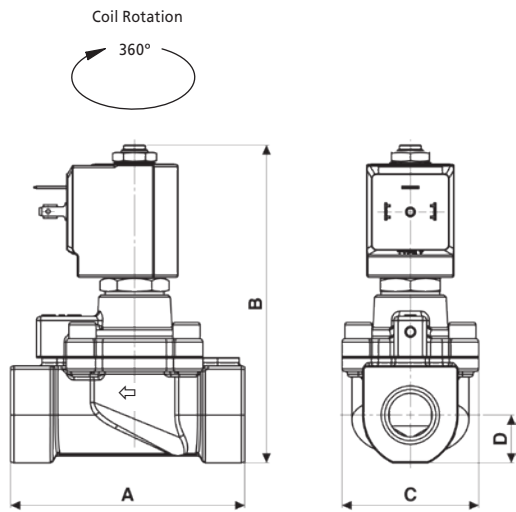
Valve Options (see coding chart)
NPT threads (minimum batch may be required)

Seal Material ⁴ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
PTFE (-10 °C to +130 °C)	Water ⁵ , oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water ⁵ , oil, air	-10 °C	+50 °C

⁴ See corrosion reference guide and sealing solutions for material compatibility.

⁵ When using liquid fluids waterhammer and pressures higher than 20 barg can cause the diaphragm to tear.

RD232/233/234 Series, High Pressure – 1/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/8"	86	116.5	50.2	17.5	1
1/2" - 3/4"	86	116.5	50.2	17.5	0.9

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
2
3
4

Seals
T PTFE
V FKM

Option
N NPT
w/o option

Coil options

Voltage / Frequency - Class H
7251 24 VDC
7201 24 V / 50/60 Hz
7401 110 V / 50 Hz - 120 V / 60 Hz
7601 200 V / 50 Hz - 220 V / 60 Hz
7701 230 V / 50 Hz - 240 V / 60 Hz

Plug

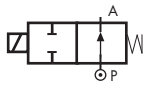
Plug
w/o plug
0A1 c/w plug

RD	2	3	.	D	.	W
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Product coding example:

RD233DTW 7701 0A1
1/2" G, auto operation, brass body, PTFE seals, 16.5 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz, with plug.

RD236DR-1 Series, High Pressure – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cSt (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Ruby
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
High Power Coil Voltage DC (=)	24 V
High Power Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
High Power Coil Voltage AC 60 Hz (-)	24 V, 120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (High Power)	AC 25 VA (holding) AC 50 VA (inrush) DC 22 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 180	0 - 180	1.0	RUBY	RD236DRA1
¼"	0.09	0.08	0 - 150	0 - 150	1.5	RUBY	RD236DRC1
¼"	0.14	0.12	0 - 60	0 - 60	2.0	RUBY	RD236DRE1
¼"	0.20	0.17	0 - 37	0 - 37	2.5	RUBY	RD236DRG1
¼"	0.25	0.21	0 - 28	0 - 28	3.0	RUBY	RD236DRH1

NOTE: Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

ATTENTION: when high pressure valves are supplied without a coil, their nameplates display the max OPD of the valve when equipped with an AC (25VA) and DC(22W) coil. If fitting coils with a different power rating OPD will vary, please consult supplier for more details.

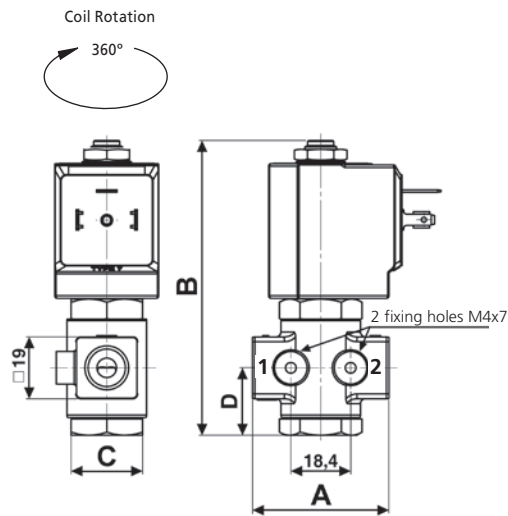
Options Available

Valve Options (see coding chart)
Coils with additional protection by impregnation with Loctite® Resinol RTC for humid environments

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
RUBY (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD236DR-1 Series, High Pressure – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	47	91	Hex 22	20.75	0.25

Dimensions (mm)

Solenoid enclosures

7-K1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

Orifice	
A	1.0
C	1.5
E	2.0
G	2.5
H	3.0

Option	
w/o option	

Voltage / Frequency - Class H, High Power	
72Z1	24 VDC
72K1	24 V / 50/60 Hz
74K1	110 V / 50 Hz - 120 V / 60 Hz
77K1	230 V / 50 Hz - 240 V / 60 Hz
Voltage / Frequency - Class H, High Power, Impregnated	
D2Z1	24 VDC
D2K1	24 V / 50/60 Hz
D4K1	110 V / 50 Hz - 120 V / 60 Hz
D7K1	230 V / 50 Hz - 240 V / 60 Hz

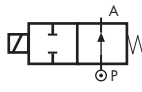
Plug	
0A1	c/w plug
	w/o plug

RD	2	3	6	D	R	.	1
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Product coding example:

RD236DRC1 72K1
¼" G, auto operation, brass body, RUBY seals, 1.5 mm orifice, 24 VDC, without plug.

RD201 Series High Pressure – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Ruby
Connection Type (Std)	Flanged 32x32mm
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



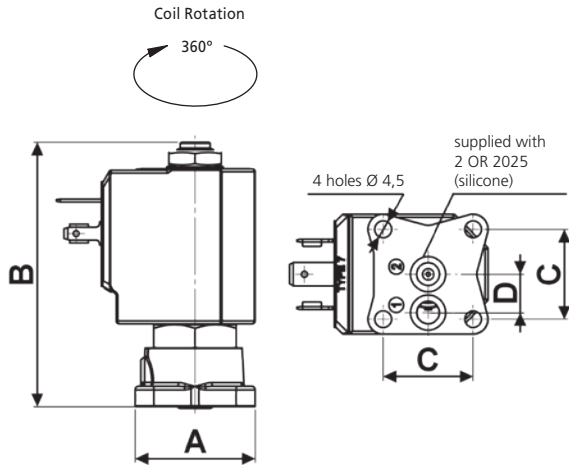
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
Flanged	0.09	0.08	0 - 55	0 - 55	1.5	Ruby	RD201DR _C
Flanged	0.24	0.20	0 - 25	0 - 25	2.0	Ruby	RD201DR _E
Flanged	0.32	0.27	0 - 10	0 - 10	3.0	Ruby	RD201DR _H

NOTE: Not 100% leak-proof when used with air/gases. Approx leak rate is 1.5ml/min at max OPD.

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
RUBY (-10 °C to +130 °C)	Water, oil, liquids	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD201 Series High Pressure – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
Flanged	32	68.4	24	10.25	0.3

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

Plug

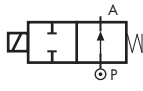
Main Valve Assembly						Coil options				Plug		
Orifice		Option		Voltage / Frequency - Class H				Plug				
C	1.5	w/o option		7251	24 VDC			w/o plug				
E	2.0			7201	24 V / 50/60 Hz			0A1				
H	3.0			7401	110 V / 50 Hz - 120 V / 60 Hz			c/w plug				
				7601	200 V / 50 Hz - 220 V / 60 Hz							
				7701	230 V / 50 Hz - 240 V / 60 Hz							

RD	2	0	1	D	R
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Product coding example:

RD201DRC 7201
Flanged connection, auto operation, brass body, RUBY seals, 1.5 mm orifice, 24 V / 50 Hz/60 Hz, without plug.

RB214 Series, Compressed Air – 2/2 Normally Open

Specifications	
Function (single acting)	
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW614N (EN 12164)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4105 EN 10088 (AISI 430F) or equivalent
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to industrial form B
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 10 VA (holding) AC 16 VA (inrush) DC 7 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.08	0.07	0 - 14	0 - 14	1.7	FKM EPDM	RB214CVD RB214CED

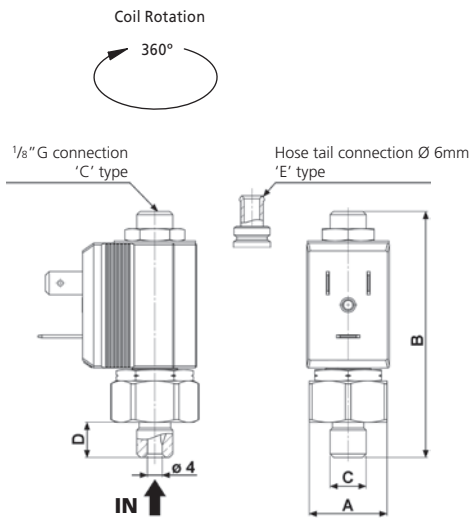
Options Available

Valve Options (see coding chart)
Top port connection with hose tail Ø 6 mm

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RB214 Series, Compressed Air – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	21	72.1	1/8"	9.5	0.06

Dimensions (mm)

Solenoid enclosures

2--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: Industrial form B
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 001- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Top Port Connection		Seals	
C	1/8" G	V	FKM
E	Hose tail Ø 6mm	E	EPDM

Option
w/o option

Voltage / Frequency - Class F	
2250	24 VDC
2200	24 V / 50/60 Hz
2400	110 V / 50 Hz - 120 V / 60 Hz
2600	200 V / 50 Hz - 220 V / 60 Hz
2700	230 V / 50 Hz - 240 V / 60 Hz

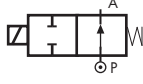
Plug	
0B1	c/w plug
	w/o plug

RB	2	1	4	.	.	D
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Product coding example:

RB214CVD 2250
1/8" G, auto operation, brass body, FKM seals, 1.7 mm orifice, 24 VDC, without plug.

RD213 Series, Compressed Air – 2/2 Normally Open

Specifications	
Function (single acting)	
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW614N (EN 12164)
Tube	Stainless Steel AISI 304
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1/8"	0.17	0.14	0 - 16	0 - 16	2.5	FKM EPDM	RD213CVG RD213CEG

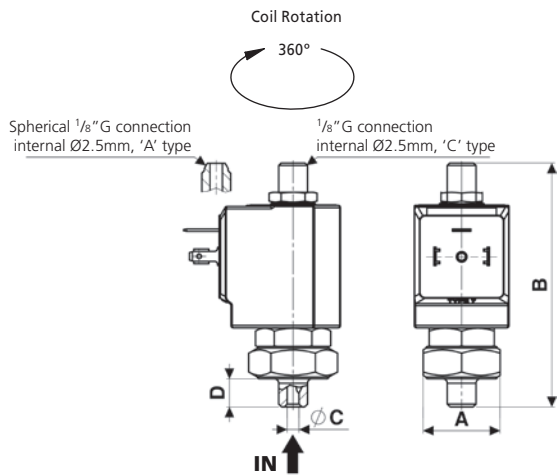
Options Available

Valve Options (see coding chart)
Top port connection with spherical 1/8" G

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD213 Series, Compressed Air – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8"	Hex 26	82.5	4	9.5	0.1

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Top Port Connection	Seals
C 1/8" G	V FKM
A Spherical 1/8" G	E EPDM

Option
w/o option

Coil options

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

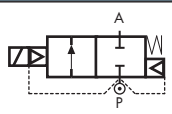
Plug
0A1 c/w plug
w/o plug

RD	2	1	3	.	.	G
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Product coding example:

RD213CVG 7700 0A1
1/8" G, auto operation, brass body, FKM seals, 2.5 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz AC, with plug.

D204/205/206/222 Series, Aggressive Fluids, Stainless Steel – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless steel AISI 316L (ASME SA351/351M GRADE CF3M)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Silver
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	3.86	3.30	0.3 - 16	0.3 - 16	13	FKM	D204D \underline{V} ZI
		NBR				D204D \underline{B} ZI	
		EPDM			D204D \underline{E} ZI		
1/2"	4.42	3.78			13	FKM	D205D \underline{V} ZI
						NBR	D205D \underline{B} ZI
					EPDM	D205D \underline{E} ZI	
3/4"	9.83	8.40			25	FKM	D206D \underline{V} YI
						NBR	D206D \underline{B} YI
					EPDM	D206D \underline{E} YI	
1"	11.23	9.60			25	FKM	D222D \underline{V} YI
						NBR	D222D \underline{B} YI
						EPDM	D222D \underline{E} YI

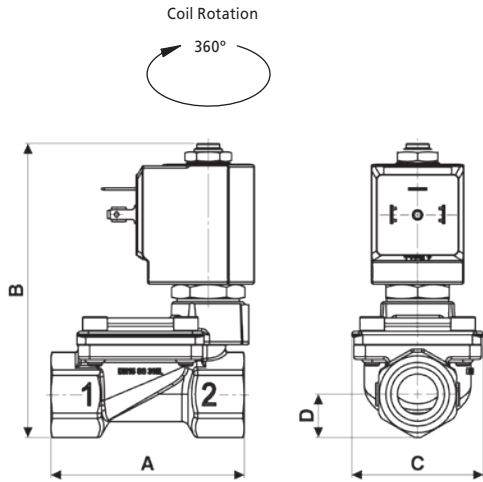
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Manual override
Anticorrosion treatment recommended with aggressive fluids

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D204/205/206/222 Series, Aggressive Fluids, Stainless Steel – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/8" - 1/2"	67	102	45.6	15	0.49
3/4" - 1"	96	125	72	23	1.1

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

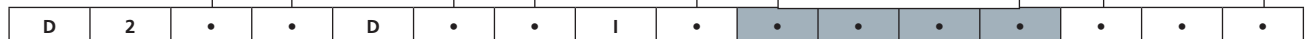
Pipe Size
04 3/8"
05 1/2"
06 3/4"
22 1"

Seals	Orifice ¹
V VKM	Z 13
E EPDM	Y 25
B NBR	

Option
N NPT
F Anticorrosion treatment
M Manual override
w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug
w/o plug
0A1 c/w plug

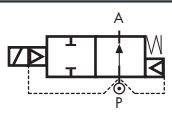


¹ DN13 for D204 and D205, DN25 for D206 and D222.

Product coding example:

D204DVZI 7250
 3/8" G, auto operation, stainless steel body, FKM seals, 13 mm orifice, 24 VDC, without plug.

RD204/205/206/222 Series, Aggressive Fluids, Stainless Steel – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless steel AISI 316L (ASME SA351/351M GRADE CF3M)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Silver
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Speed control screw as standard
- Response time 50 to 500 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	3.86	3.30	0.3 - 16	0.3 - 16	13	FKM	RD204DYZI
		NBR				RD204DBZI	
		EPDM			RD204DEZI		
1/2"	4.42	3.78			13	FKM	RD205DYZI
						NBR	RD205DBZI
					EPDM	RD205DEZI	
3/4"	9.83	8.40			25	FKM	RD206DYZI
						NBR	RD206DBZI
					EPDM	RD206DEZI	
1"	11.23	9.60			25	FKM	RD222DYZI
						NBR	RD222DBZI
					EPDM	RD222DEZI	

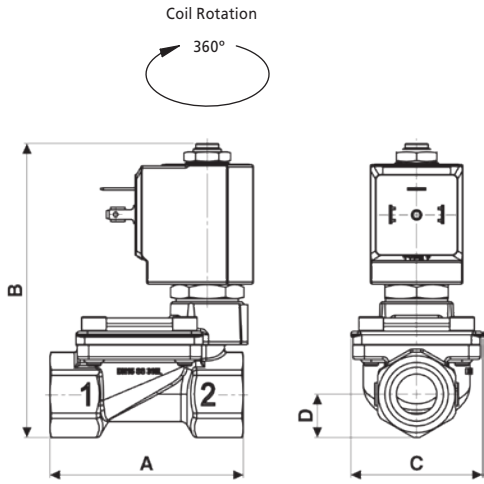
Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)
Anticorrosion treatment recommended with aggressive fluids

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
FKM (-10 °C to +130 °C)	Water, oil, air, aggressive fluids	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD204/205/206/222 Series, Aggressive Fluids, Stainless Steel – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/8" - 1/2"	67	100	45.6	15	0.49
3/4" - 1"	96	123	72	23	1.1

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

External material: PPS (glass fiber & mineral filled)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
04 3/8"
05 1/2"
06 3/4"
22 1"

Seals		Orifice ¹	
V	VKM	Z	13
E	EPDM	Y	25
B	NBR		

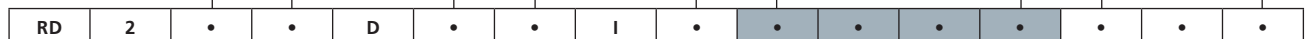
Option	
N	NPT
F	Anticorrosion treatment
	w/o option

Coil options

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

Plug	
	w/o plug
0A1	c/w plug

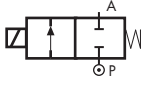


¹ DN13 for RD204 and RD205, DN25 for RD206 and RD222.

Product coding example:

RD204DVZI 7250 3/8" G, auto operation, stainless steel body, FKM seals, 13 mm orifice, 24 VDC, without plug.

D262DL/263DL Series, Steam – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Sigodur (filled PTFE)
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (-)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 9	0 - 9	1.0	Filled PTFE	D263DLA
¼"	0.09	0.08	0 - 9	0 - 9	1.5	Filled PTFE	D263DLC
¼"	0.24	0.20	0 - 9	0 - 8	2.5	Filled PTFE	D263DLG
¼"	0.32	0.27	0 - 9	0 - 5	3.0	Filled PTFE	D263DLH

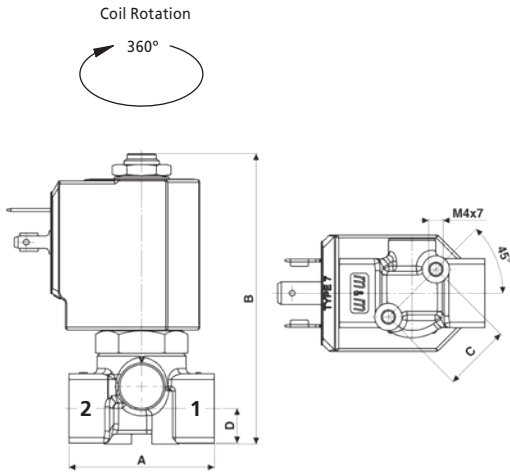
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"
NPT threads (minimum batch may be required)
Manual override

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
Filled PTFE (-10 °C to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D262DL/263DL Series, Steam – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	77.5	18.5	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
2	1/8"
3	1/4"

Orifice	
A	1.0
C	1.5
G	2.5
H	3.0

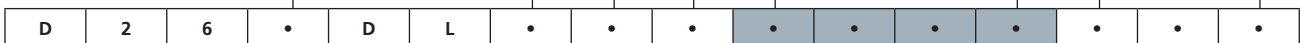
Option	
N	NPT
M	Manual override
	w/o option

Coil options

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

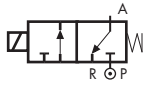
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D263DLA 7251
1/4" G, auto operation, brass body, filled PTFE seals, 1.0 mm orifice, 24 VDC, without plug.

D398/399CL Series, Steam – 3/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Sigodur (filled PTFE)
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.09	0.08	0 - 9	0 - 9	1.5	filled PTFE	D399CLC
¼"	0.15	0.13	0 - 9	0 - 9	2.0	filled PTFE	D399CLE
¼"	0.32	0.27	0 - 5	0 - 5	3.0	filled PTFE	D399CLH

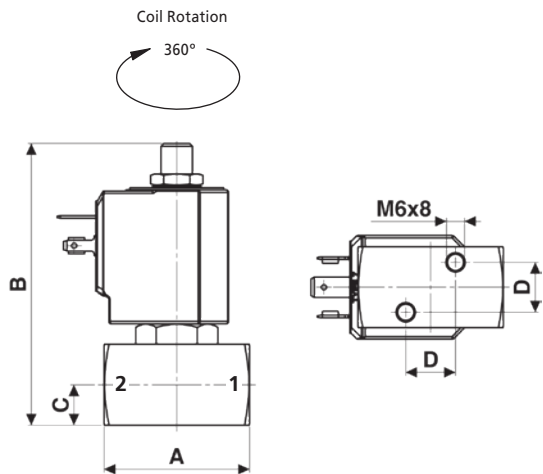
Options Available

Valve Options (see coding chart)
Body threaded connection G ½"
NPT threads (minimum batch may be required)
Silver shading ring

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
Filled PTFE (-10 °C to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D398/399CL Series, Steam – 3/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	45	87	12.5	15.4	0.35

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
8	1/8"
9	1/4"

Orifice	
C	1.5
E	2.0
H	3.0

Option	
A	Silver shading ring
N	NPT
	w/o option

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

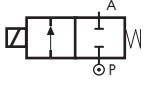
Plug	
0A1	c/w plug
	w/o plug



Product coding example:

D398CLE 7251
1/8" G, auto operation, stainless steel body, filled PTFE seals, 2.0 mm orifice, 24 VDC, without plug.

D238/239 Series, Steam – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Sigodur (filled PTFE)
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms

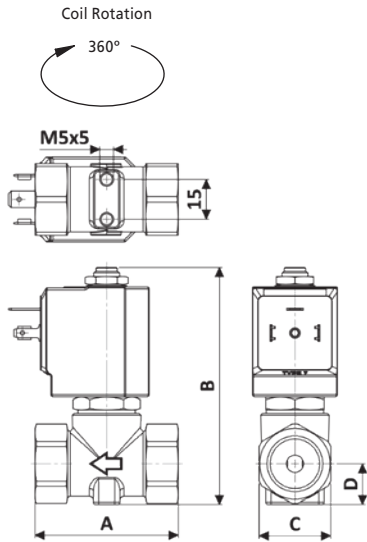


Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	0.32	0.27	0 - 9	0 - 8	3.0	Filled PTFE	D238D _L H
3/8"	0.53	0.45	0 - 5	0 - 2	5.0	Filled PTFE	D238D _L N
1/2"	0.35	0.30	0 - 9	0 - 5	3.5	Filled PTFE	D239D _L J

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
Filled PTFE (-10 °C to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

D238/239 Series, Steam – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
$\frac{3}{8}$ " - $\frac{1}{2}$ "	54	89.35	HEX 27	15	0.45

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

External material: PPS (glass fiber & mineral filled)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
8	$\frac{3}{8}$ "
9	$\frac{1}{2}$ "

Orifice	
H	3.0
I	3.5
N	5.0

Option	
	w/o option

Coil options

Voltage / Frequency - Class H	
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

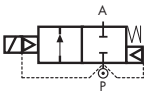
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D238DLH 7251
 $\frac{3}{8}$ " G, auto operation, brass body, filled PTFE seals, 3.0 mm orifice, 24 VDC, without plug.

D634/635/636 Series, Steam – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Piston Material	Brass CW614N (EN 12164)
Springs	Stainless Steel AISI 302
Seal Material (Std)	PTFE
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)*	AC 18 VA (holding) AC 36 VA (inrush) DC 22 W

* For DC only High power coil mandatory.

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 50 to 500 ms



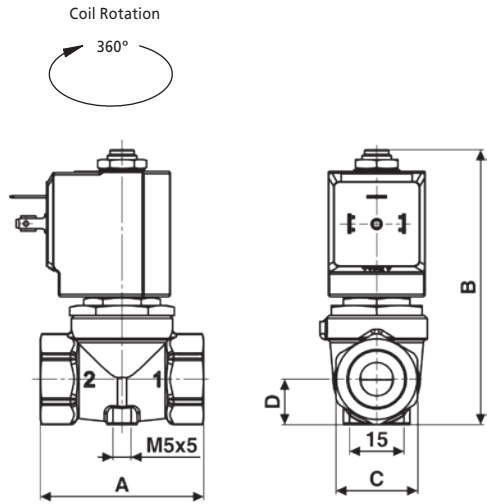
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.47	1.26	0.3 - 9	0.3 - 9	10	PTFE	D634DIT
⅜"	1.68	1.44			10	PTFE	D635DIT
½"	1.76	1.50			10	PTFE	D636DIT

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
PTFE (+80 °C ² to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

² For correct functioning, the minimum working temperature of the solenoid valve cannot be below 80 °C.

D634/635/636 Series, Steam – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	54	100	HEX 27	15	0.5
¾" to ½"	54	100	HEX 27	15	0.45

Dimensions (mm)

Solenoid enclosures

7--1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size	
4	¼"
5	¾"
6	½"

Option	
	w/o option

Voltage / Frequency - Class H (High Power DC only)	
72Z1	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

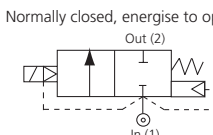
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D634DTT 72Z1
¼" G, auto operation, brass body, PTFE seals, 10 mm orifice, 24 VDC, without plug.

ACPX Series: Steam – 2/2 Normally Closed

Specifications	
Function	Normally closed, energise to open 
Maximum Viscosity	115 SSU
1/2" - 1" Body Material (Std)	Brass CZ122
1 1/4" - 2" Body Material (Std)	Bronze DIN 1705
Flange Tube	Stainless Steel 303
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	PTFE
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Heavy Duty Valve Design
- Piston Operation
- Wide temperature range capabilities
- Choice of valve body material seals



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
1/2"	4.9	4.2	0.3-8.6	0.3-4.8	50	16.00	1.3
3/4"	6.3	5.4	0.3-8.6	0.3-4.8		16.00	1.3
1"	8.2	7.1	0.3-8.6	0.3-4.8		25.00	2.3
1 1/4"	20.9	18	0.3-8.6	0.3-4.8		30.00	3.0
1 1/2"	20.9	18	0.3-8.6	0.3-4.8		30.00	3.0
2"	24.4	21	0.3-8.6	0.3-4.8		32.00	5.2

Options Available

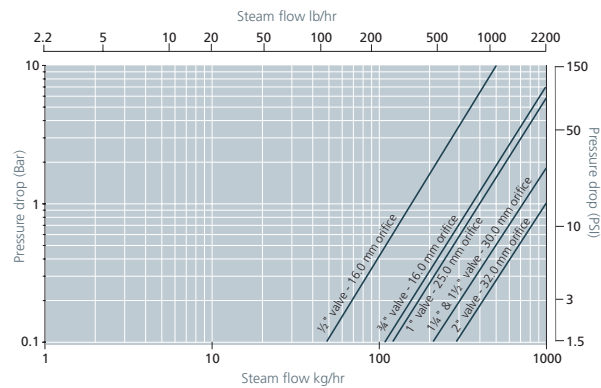
Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
PTFE (-200 °C to +180 °C)	-10	50

¹ See corrosion reference guide and sealing solutions for material compatibility.

Main Valve Assembly Options
Stainless steel body 316 (available up to 1")
NPT Threads
Stainless steel tagging

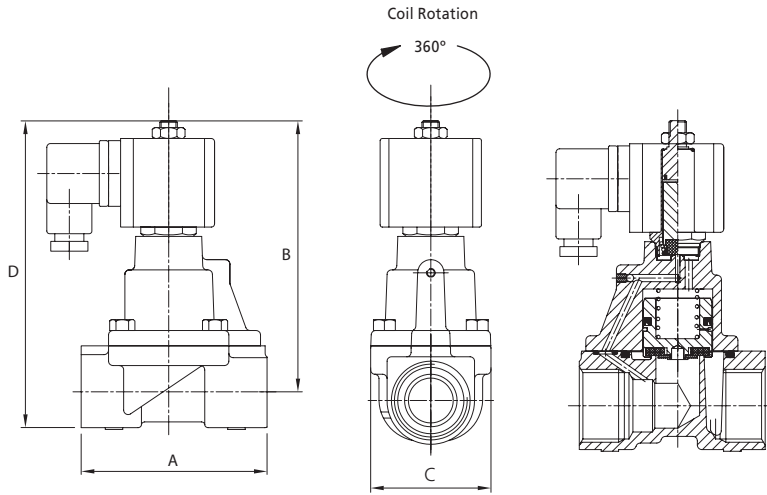
How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

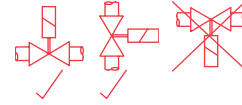


Flow shown is with steam at 4.0 bar

ACPX Series: Steam – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
½"	85	126	75 inc. plug	150
¾" - 1"	85	135	75 inc. plug	155
1¼" - 1½"	117	133	82	209
2"	146	145	103	209

Dimensions given in mm

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
22	ACPX	D ½"	1 AUTO
		E ¾"	2 MANUAL OVERRIDE
		F 1"	3
		G 1¼"	4
		H 1½"	
		J 2"	

Body Material	Seals	Style
1 Brass (standard on valves up to and including 1")	E PTFE	1 Standard
2 Bronze (standard on valves above 1")		
5 316 Stainless Steel (option available up to and inc 1")		

Coil options

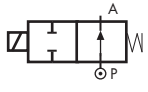
Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	A1 230 V / 50 Hz	1 Din plug 9 mm
	A2 110 V / 50 Hz & 120 V / 50 Hz	
	A3 24 V / 50 Hz	
	A7 220 V / 50 Hz	
	B2 24 VDC	
B3 12 VDC		
B5 110 VDC		

22	•	•	•	Z	•	E	1	-	1	••	1
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Product coding example:

22D11Z1E1-1A11 - ACPX Series
½" BS21, auto operation, brass body, PTFE seals, 230 V / 50 Hz DIN Plug 9 mm.

RD236DL Series, Steam – 2/2 Normally Open

Specifications	
Function (single acting)	 <p>Flow direction 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Sigodur (filled PTFE)
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms

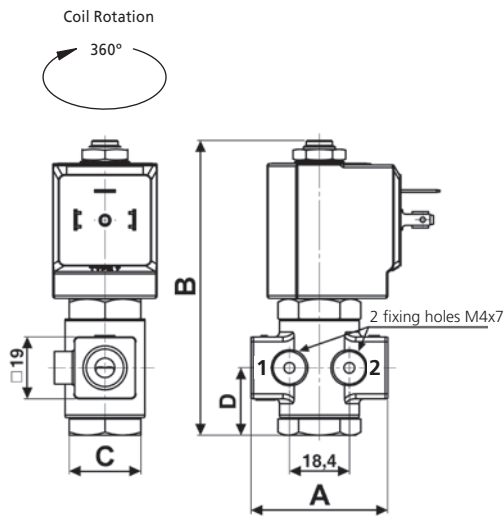


Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	0 - 9	0 - 9	1.0	filled PTFE	RD236DLA
¼"	0.09	0.08	0 - 9	0 - 9	1.5	filled PTFE	RD236DLC
¼"	0.14	0.12	0 - 9	0 - 9	2.0	filled PTFE	RD236DLE
¼"	0.25	0.21	0 - 9	0 - 9	3.0	filled PTFE	RD236DLH

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
Filled PTFE (-10 °C to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

RD236DL Series, Steam – 2/2 Normally Open



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
¼"	47	91	Hex 22	20.75	0.25

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Coil options

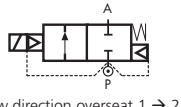
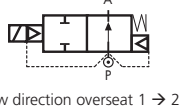
Plug

Main Valve Assembly						Coil options				Plug	
Orifice	Option					Voltage / Frequency - Class H				Plug	
A 1.0	w/o option					7251	24 VDC			0A1	c/w plug
C 1.5						7201	24 V / 50/60 Hz				w/o plug
E 2.0						7401	110 V / 50 Hz - 120 V / 60 Hz				
H 3.0						7601	200 V / 50 Hz - 220 V / 60 Hz				
						7701	230 V / 50 Hz - 240 V / 60 Hz				
RD	2	3	6	D	L

Product coding example:

RD236DLE 7251
¼" G, auto operation, brass body, filled PTFE seals, 2.0 mm orifice, 24 VDC, without plug.

D606/622 Series, Steam – 2/2 NC & RD606/622 Series, Steam – 2/2 NO

Specifications	
Function NC (single acting)	 Flow direction overseat 1 → 2
Function NO (single acting)	 Flow direction overseat 1 → 2
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	PTFE
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	12V, 24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal material
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¾"	8.42	7.20	1 - 9	1 - 9	24	PTFE	D606DIY
¾"	8.42	7.20	1 - 9	1 - 9	24	PTFE	D622DIY
1"	8.42	7.20	1 - 9	1 - 9	24	PTFE	RD606DIY
1"	8.42	7.20	1 - 9	1 - 9	24	PTFE	RD622DIY

Options Available

Valve Options (see coding chart)
NPT threads (minimum batch may be required)

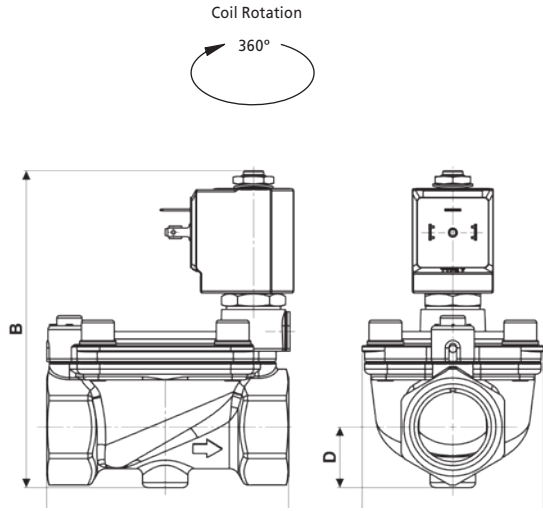
Seal Material ¹ and Media Temperature Range	Media ²	Ambient Temperature Range	
		Min	Max
Filled PTFE (+80 °C ³ to +180 °C)	Steam	-10 °C	+70 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

² Water and high content of condensate can damage the diaphragm.

³ For a correct functioning, the minimum working temperature of the solenoid valve cannot be below +80 °C.

D606/622 Series, Steam – 2/2 NC & RD606/622 Series, Steam – 2/2 NO



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/4" - 1"	96	126	72	24	1.3

Dimensions (mm)

Solenoid enclosures

7--1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Valve Type	
D	NC
RD	NO

Pipe Size	
06	3/4"
22	1"

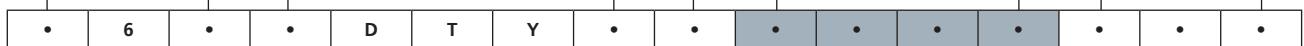
Option	
N	NPT
	w/o option

Coil options

Voltage / Frequency - Class H	
7151	12 VDC
7251	24 VDC
7201	24 V / 50/60 Hz
7401	110 V / 50 Hz - 120 V / 60 Hz
7601	200 V / 50 Hz - 220 V / 60 Hz
7701	230 V / 50 Hz - 240 V / 60 Hz

Plug

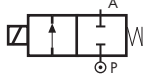
Plug	
0A1	c/w plug
	w/o plug



Product coding example:

D606DTY 7251
 3/4" G, auto operation, brass body, PTFE seals, 1.5 mm orifice, 24 VDC, without plug.

D211 Series, Dry Armature – 2/2 Normally Closed

Specifications	
Function (single acting)	
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange Tube (Seamless)	Stainless Steel 1.4305 EN 10088 (AISI 303)
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Silicone FDA compliant
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal material
- Total separation between internal parts and medium
- Response time 5 to 25 ms



Options Available

Valve Options (see coding chart)
Electroless nickel plating

Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
3/8"	see flow chart		0 - 0.3	-	10.5	Silicone FDA	D211D\$U
3/8"			-	0 - 0.2	10.5	Silicone FDA	CD211D\$U

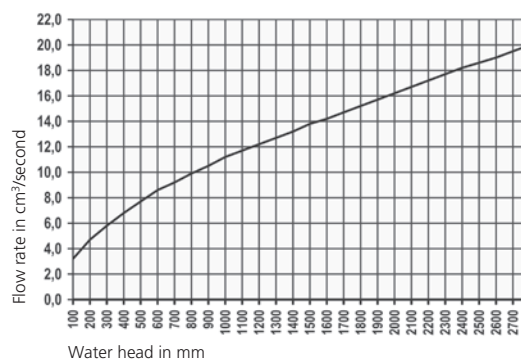
Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
Silicone FDA compliant (-10 °C to +95 °C)	Water and beverages	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility.

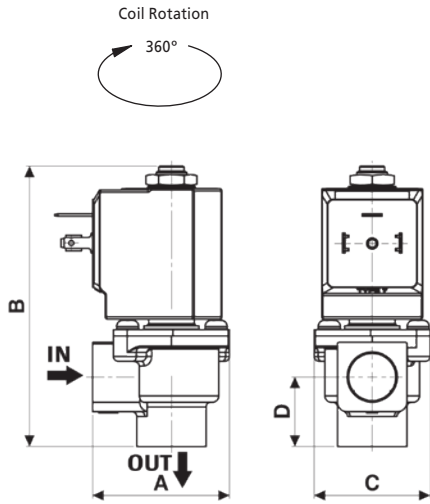
How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

Flow chart



D211 Series, Dry Armature – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
3/8"	43.4	88.8	36	22	0.34

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Valve Type	
D	AC
CD	DC

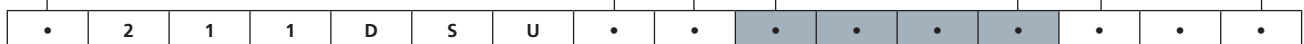
Coil options

Option	
K	Electroless nickel plating
	w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug

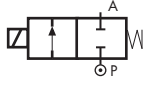
Plug	
0A1	c/w plug
	w/o plug



Product coding example:

D211DSU 7250
3/8" G, auto operation, brass body, silicone FDA seals, 10.5 mm orifice, 24 VDC, without plug.

D262/263 Series, Vacuum – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Configuration suitable for vacuum
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.04	0.03	-0.9 to 1	-0.9 to 1	1.0	FKM NBR	D263DV ¹ AL D263DB ¹ AL
¼"	0.09	0.08	-0.9 to 1	-0.9 to 1	1.5	FKM NBR	D263DV ¹ CL D263DB ¹ CL
¼"	0.24	0.20	-0.9 to 1	-0.9 to 1	2.5	FKM NBR	D263DV ¹ GL D263DB ¹ GL
¼"	0.32	0.27	-0.9 to 1	-0.9 to 1	3.0	FKM NBR	D263DV ¹ H ¹ L D263DB ¹ H ¹ L
¼"	0.42	0.36	-0.9 to 1	-0.9 to 1	4.0	FKM NBR	D263DV ¹ LL D263DB ¹ LL
¼"	0.53	0.45	-0.9 to 1	-0.9 to 1	5.0	FKM NBR	D263DV ¹ NL D263DB ¹ NL
¼"	0.56	0.48	-0.9 to 1	-0.9 to 1	6.0	FKM NBR	D263DV ¹ PL D263DB ¹ PL

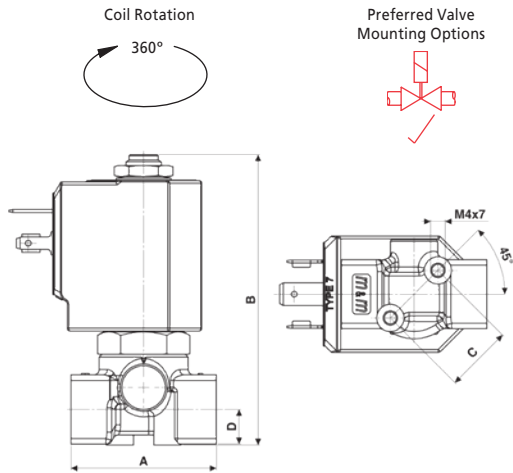
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"

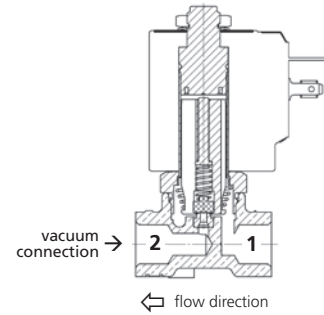
Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility. Other seals material on request.

D262/263 Series, Vacuum – 2/2 Normally Closed



Connection scheme



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	77.5	18.5	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

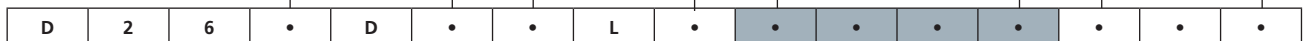
Pipe Size	
2	1/8"
3	1/4"

Seals		Orifice	
V	FKM	A	1.0
B	NBR	C	1.5
		G	2.5
		H	3.0
		L	4.0
		N	5.0
		P	6.0

Option
w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

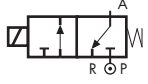




Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D263DBPL 7700
1/4" G, auto operation, brass body, FKM seals, 6.0 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz, without plug.

D362/363 Series, Vacuum – 3/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Orifice Material	Stainless Steel 1.4305 EN 10088 (AISI 303)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	Foodgrade FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard and Class H Coil Voltage DC (=)	24 V
Standard and Class H Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard and Class H Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
 Coil Voltage DC (=)	24 V
 Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
 Coil Voltage AC 60 Hz (-)	120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard and Class H)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W
Power Rating ()	AC 15 VA (holding) AC 30 VA (inrush) DC 10 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Configuration suitable for vacuum
- Zero pressure rated
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 5 to 25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	0.15	0.13	0 to -0.95	0 to -0.95	2.0	FKM	D363C_VEL
¼"	0.24	0.20	0 to -0.95	0 to -0.95	2.5	FKM	D363C_VGL
¼"	0.32	0.27	0 to -0.95	0 to -0.95	3.0	FKM	D363C_VHL
¼"	0.42	0.36	0 to -0.95	0 to -0.95	4.0	FKM	D363C_VLL

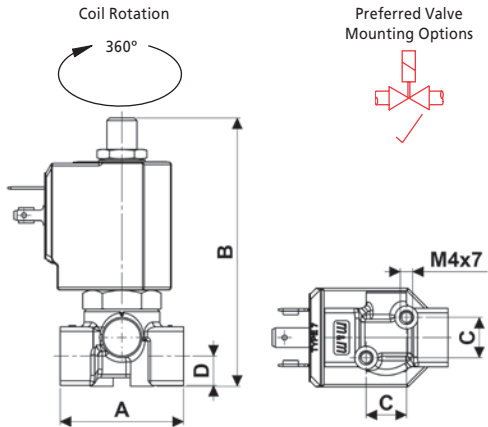
Options Available

Valve Options (see coding chart)
Body threaded connection G 1/8"

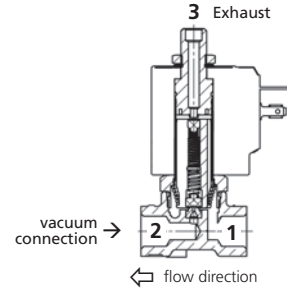
Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility. Other seals material on request.

D362/363 Series, Vacuum – 3/2 Normally Closed



Connection scheme



Pipe Size	A	B	C	D	Weight (kg)
1/8" - 1/4"	40	87	13	9.5	0.26

Dimensions (mm)

Solenoid enclosures

7--0 & 7--1 Type Coil - Insulation class F & H

- External material (7--0): PBT (reinforced fiberglass 30%)
- External material (7--1): PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



7--R cULus Type Coil - Insulation class F

- Encapsulation material: PET 815ER Rynite®
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (P180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*
- UL approved, file No: E193928



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Pipe Size
2 1/8"
3 1/4"

Orifice
E 2.0
G 2.5
H 3.0
L 4.0

Coil options

Option	Voltage / Frequency - Class F		Voltage / Frequency - Class H	
	w/o option	7250 24 VDC	7251 24 VDC	7200 24 V / 50/60 Hz
	7400 110 V / 50 Hz - 120 V / 60 Hz	7401 110 V / 50 Hz - 120 V / 60 Hz	7600 200 V / 50 Hz - 220 V / 60 Hz	7601 200 V / 50 Hz - 220 V / 60 Hz
	7700 230 V / 50 Hz - 240 V / 60 Hz	7701 230 V / 50 Hz - 240 V / 60 Hz		
Voltage / Frequency - Class F - cULus approved				
	725R 24 VDC			
	720R 24 V / 50 Hz			
	740R 110 V / 50 Hz - 120 V / 60 Hz			
	770R 230 V / 50 Hz - 240 V / 60 Hz			

Plug

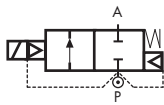




Plug
w/o plug
0A1 c/w plug

D	3	6	.	C	V	.	L
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Product coding example:

D362CVGL 7250
1/8" G, auto operation, brass body, FKM seals, 2.5 mm orifice, 24 VDC, without plug.

D203/204/205 Series, Vacuum – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
 Coil Voltage DC (=)	24 V
 Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
 Coil Voltage AC 60 Hz (-)	120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W
Power Rating ()	AC 15 VA (holding) AC 30 VA (inrush) DC 10 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Configuration suitable for vacuum
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Response time 50 to 500 ms



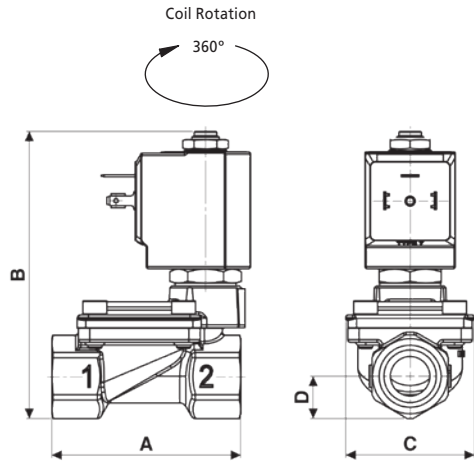
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.83	1.56	-0.2	-0.2	13	NBR	D203DBZL
⅜"	3.86	3.30	to	to	13	NBR	D204DBZL
½"	4.42	3.78	-0.95	-0.95	13	NBR	D205DBZL

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility. Other seals material on request.

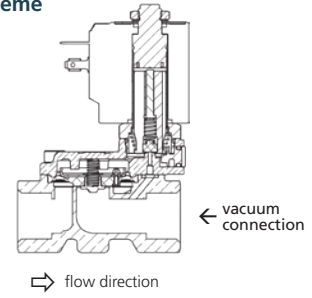
D203/204/205 Series, Vacuum – 2/2 Normally Closed



Preferred Valve Mounting Options



Connection scheme



Pipe Size	A	B	C	D	Weight (kg)
¼" to ½"	67	102	45.6	15	0.49

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

- External material: PBT (reinforced fiberglass 30%)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



7--R cULus Type Coil - Insulation class F

- Encapsulation material: PET 815ER Rynite®
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (P180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



UL approved, file No: E193928

* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



Coding chart

Main Valve Assembly

Pipe Size	
203	¼"
204	⅜"
205	½"

Coil options

Option	Voltage / Frequency - Class F
w/o option	7250 24 VDC
	7200 24 V / 50/60 Hz
	7400 110 V / 50 Hz - 120 V / 60 Hz
	7600 200 V / 50 Hz - 220 V / 60 Hz
	7700 230 V / 50 Hz - 240 V / 60 Hz
Voltage / Frequency - Class F - cULus approved	
	725R 24 VDC
	720R 24 V / 50 Hz
	740R 110 V / 50 Hz - 120 V / 60 Hz
	770R 230 V / 50 Hz - 240 V / 60 Hz

Plug

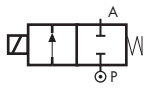
Plug	
w/o plug	
0A1	c/w plug



Product coding example:

D205DBZL 725R
 ½" G, auto operation, brass body, NBR seals, 13 mm orifice, 24 V / 50/60 Hz cULus approved, without plug.

D237/238/239 & CD237/238/239 Series, Vacuum – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Additional Flange (HEX 30)	Brass CW614N (EN 12164)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
High Power Coil Voltage DC (=)	24 V
High Power Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
High Power Coil Voltage AC 60 Hz (-)	24 V, 120 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class H 180 °C
Power Rating (High Power)	AC 25 VA (holding) AC 50 VA (inrush) DC 22 W

Features and Benefits

- Direct Acting
- Robust construction for industrial applications
- Configuration suitable for vacuum
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- Choice of high quality seal materials
- Response time 5 to 25 ms



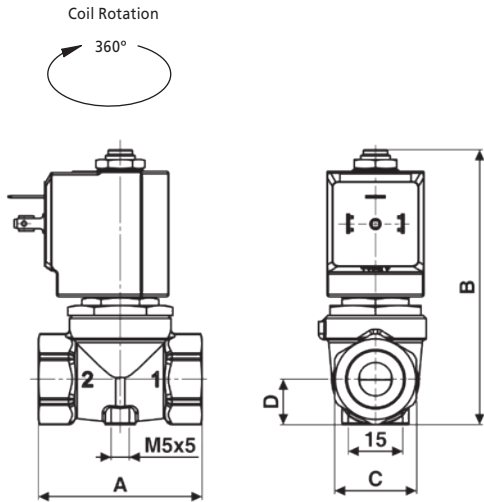
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
¼"	1.49	1.27	0 to -0.95	-	10.5	NBR EPDM	D237DBU1 D237DEU1
⅜"	1.68	1.44	0 to -0.95	-	10.5	NBR EPDM	D238DBU1 D238DEU1
½"	1.76	1.50	0 to -0.95	-	10.5	NBR EPDM	D239DBU1 D239DEU1
¼"	1.49	1.27	-	0 to -0.95	10.5	NBR EPDM	C D237DBU1 C D237DEU1
⅜"	1.68	1.44	-	0 to -0.95	10.5	NBR EPDM	C D238DBU1 C D238DEU1
½"	1.76	1.50	-	0 to -0.95	10.5	NBR EPDM	C D239DBU1 C D239DEU1

Options Available

Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR 60 shore (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C
EPDM (-10 °C to +120 °C)	Water, hot water	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility. Other seals material on request.

D237/238/239 & CD237/238/239 Series, Vacuum – 2/2 Normally Closed



Preferred Valve Mounting Options



Pipe Size	A	B	C	D	Weight (kg)
1/4" - 3/8" - 1/2"	54	89	HEX 27	15	0.45

Dimensions (mm)

Solenoid enclosures

7-K1 & 7-Z1 Type Coil - Insulation class H

- External material: PPS (glass fiber & mineral filled)
- Electrical connection: DIN EN 175301-803 form A
- Winding insulation: Class H (E180)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

- Rated Voltage (max.): 250 VAC / 300 VDC
- Nominal Current: 10A (rated) / 16A (max)
- Wire cross-section: 1.5 mm² max
- Cable Entry: PG9 (6 to 8 mm)
- Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
- Insulation class: group C- VDE 0110
- Housing colour: black
- UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately.

Coding chart

Main Valve Assembly

Valve Type	
D	AC version
CD	DC version

Pipe Size	
7	1/4"
8	3/8"
9	1/2"

Seals	
E	EPDM
B	NBR

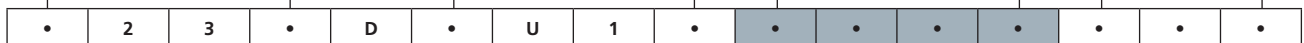
Option
w/o option

Coil options

Voltage / Frequency - Class H, High Power	
72Z1	24 VDC
72K1	24 V / 50/60 Hz
74K1	110 V / 50 Hz - 120 V / 60 Hz
77K1	230 V / 50 Hz - 240 V / 60 Hz

Plug

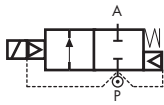
Plug	
	w/o plug
0A1	c/w plug



Product coding example:

D238DEU1 77K1
 3/8" G, auto operation, brass body, EPDM seals, 10.5 mm orifice, 230 V / 50 Hz - 240 V / 60 Hz, without plug.

D223/224/225 Series, Vacuum – 2/2 Normally Closed

Specifications	
Function (single acting)	 <p>Flow direction underseat 2 → 1</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel AISI 302
Seal Material (Std)	NBR
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding) AC 36 VA (inrush) DC 14 W

Features and Benefits

- Pilot operated
- Robust construction for industrial applications
- Configuration suitable for vacuum
- Stainless steel AISI 430F operators with low residual magnetism
- Manufactured in compliance to RoHS directive and to relevant international standards
- High quality seal materials
- Speed control screw as standard
- Response time 50 to 500 ms



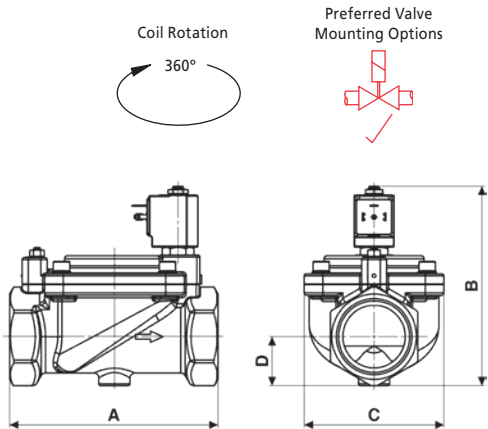
Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (bar)		Orifice (mm)	Seal Material	Valve Code
			AC Voltages	DC Voltages			
1 ¼"	25.97	22.20	-0.5	-0.5	40	NBR	D223DBKL
1 ½"	28.08	24.00	to	to	40	NBR	D224DBKL
2"	37.91	32.40	-0.95	-0.95	50	NBR	D225DBJL

Options Available

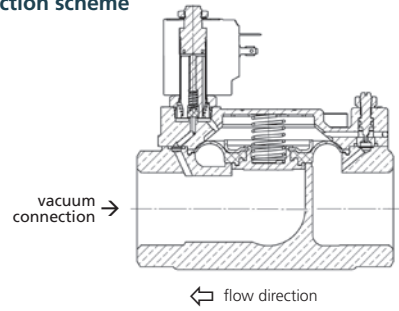
Seal Material ¹ and Media Temperature Range	Media	Ambient Temperature Range	
		Min	Max
NBR (-10 °C to +90 °C)	Water, oil, air	-10 °C	+50 °C

¹ See corrosion reference guide and sealing solutions for material compatibility. Other seals material on request.

D223/224/225 Series, Vacuum – 2/2 Normally Closed



Connection scheme



Pipe Size	A	B	C	D	Weight (kg)
1 1/4" - 1 1/2"	140	140	96	31	2.8
2"	168	158	112	39	3.9

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



* Plug and gasket not supplied as standard, must be ordered separately

Coding chart

Main Valve Assembly

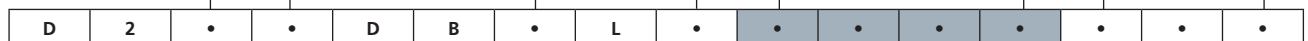
Pipe Size
23 1 1/4"
24 1 1/2"
25 2"

Orifice ¹
K 40
J 50

Option
w/o option

Voltage / Frequency - Class F	
7250	24 VDC
7200	24 V / 50/60 Hz
7400	110 V / 50 Hz - 120 V / 60 Hz
7600	200 V / 50 Hz - 220 V / 60 Hz
7700	230 V / 50 Hz - 240 V / 60 Hz

Plug
w/o plug
0A1 c/w plug

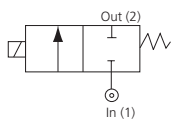


¹ DN40 for D223 and D224; DN50 for D225.

Product coding example:

D225DBJL 7250
 2" G, auto operation, brass body, NBR seals, 50 mm orifice, 24 VDC, without plug.

GB Series: 1/4" to 1" – 2/2 Normally Closed

Specifications	
Function	Normally closed, energise to open 
Body Material (Std)	Aluminium
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	1/4" - 1/2" (19 VA / 14 watt) 3/4" - 1" (32 VA / 22 watt) 1/4" - 1" (24 VDC) (14 watt)

Features and Benefits

- Approved for mains gas safety shut off
- Suitable for automatic burners
- Suitable for fire protection systems
- Ideal for low pressure Natural gas
- Approved to EN161 when fitted with a standard E5 type enclosure
- Compliant with Gas Appliance Regulation
- Fully ported orifices for high flow
- Zero pressure rated
- Optional pressure test points
- Suitable for 1st, 2nd and 3rd family gases
- Suitable for LPG
- Response time up to 1/2" 15 - 25 ms
- Response time up to 1" 20 - 40 ms
- Panic buttons & electro thermal links available for controlling valve
- Classification: Group 2 controls (BS EN 13611)



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (mBar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
1/4"	4.2	3.6	0 - 140	0 - 50	1	12.70	0.23
3/8"	5.8	5	0 - 140	0 - 50		12.70	0.23
1/2"	6.3	5.4	0 - 140	0 - 50		12.70	0.23
3/4"	15.0	12.9	0 - 100	0 - 50		19.00	0.27
1"	15.7	13.6	0 - 100	0 - 50		19.00	0.32

Kv = Flow rate measured with differential pressure at 2.5 mbar

Options Available

Solenoid Enclosure	
Protection Class	
Exm T5 (IP65) (up to 1/2")	Consult Rotork Midland for product codes

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	0	60

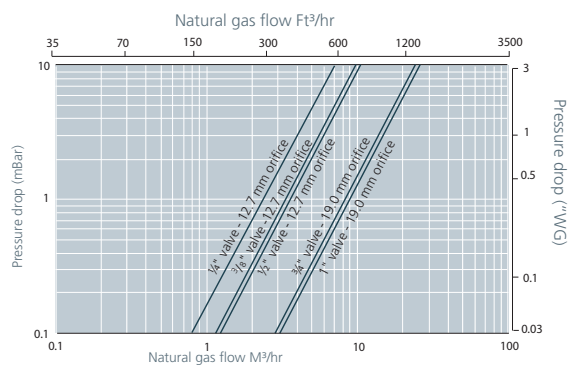
Main Valve Assembly Options
NPT Threads
Stainless steel tagging

See solenoid enclosures for specific details.

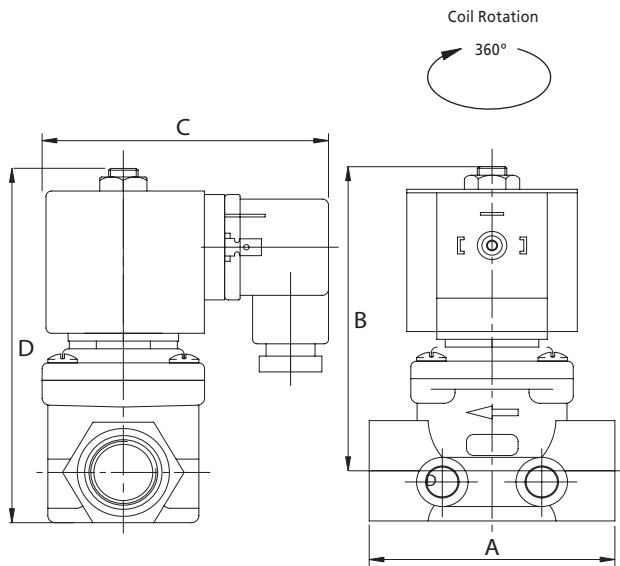
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

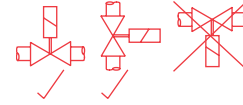
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



GB Series: 1/4" to 1" – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
1/4"	57	87	56	101
3/8"	67	87	56	101
1/2"	67	87	56	101
3/4"	86	90	56	107
1"	106	93	56	115

Dimensions given in mm

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
34 GB	B 1/4"	1 BS21	1 AUTO
	C 3/8"	3 NPT	
	D 1/2"		
	E 3/4"		
	F 1"		

Body Material	Seals	Style
3 Aluminium	A NBR	1 Standard

Coil options

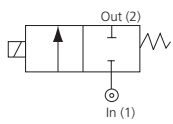
Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	A1 230 V / 50 Hz (19 VA / 14 Watt) 1/4" - 1/2" valves only	1 Din plug 9 mm
	A2 110 V / 50 Hz & 120 V / 50 Hz (19 VA / 14 Watt) 1/4" - 1/2" valves only	
	A8 230 V / 50 Hz (32 VA / 22 Watt) 3/4" - 1" valves only	
	A9 110 V / 50 Hz (32 VA / 22 Watt) 3/4" - 1" valves only	
	B2 24 VDC (14 Watt) 1/4" - 1" valves only	

34	•	•	1	Z	3	A	1	-	1	••	•
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Product coding example:

34F11Z3A1-1A81 - GB Series
1" BS21, auto operation, aluminium, NBR seals, 230 V / 50 Hz DIN Plug 9 mm.

GB Series: 1 1/4" to 2" – 2/2 Normally Closed

Specifications	
Function	Normally closed, energise to open 
Body Material (Std)	Aluminium
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120v, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	1 1/4" - 2" (34 watt)

Features and Benefits

- Approved for mains gas safety shut off
- Suitable for automatic burners
- Suitable for fire protection systems
- Ideal for low pressure Natural gas
- Approved to EN161
- Compliant with Gas Appliance Regulation
- Fully ported orifices for high flow
- Zero pressure rated
- Optional pressure test points
- Suitable for 1st, 2nd and 3rd family gases
- Suitable for LPG
- Response time up to 1 1/4" 60-120 ms
- Panic buttons & electro thermal links available for controlling valve
- Classification: Group 2 controls (BS EN 13611)



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (mBar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
1 1/4"	38.3	33	0-50	0-50	1	40.00	3.08
1 1/2"	38.3	33	0-50	0-50		40.00	3.08
2"	38.3	33	0-50	0-50		40.00	3.08

Options Available

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	0	60

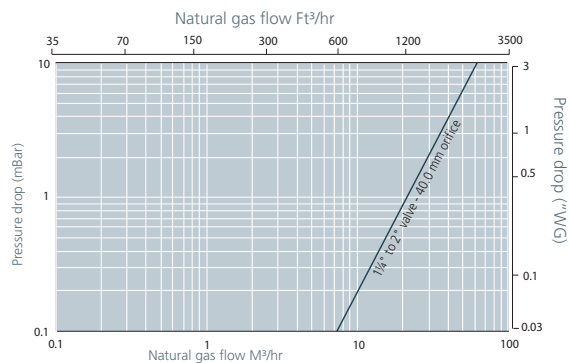
¹ See corrosion reference guide and sealing solutions for material compatibility.

Main Valve Assembly Options

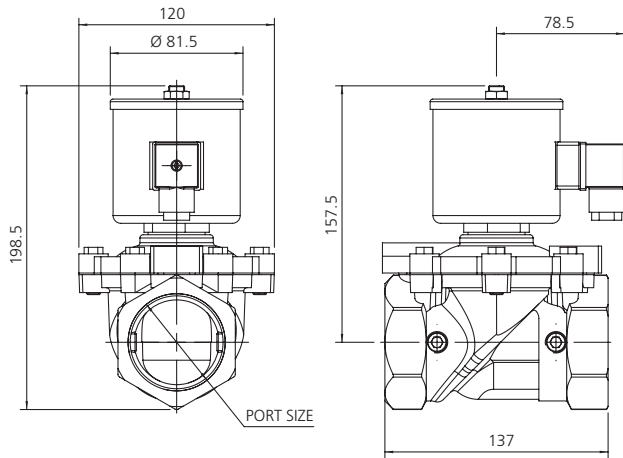
NPT Threads
Stainless steel tagging

How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

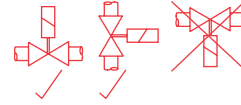


GB Series: 1 1/4" to 2" – 2/2 Normally Closed



Dimensions given in mm

Preferred Valve Mounting Options



Solenoid enclosures



S50 enclosure protection class IP65

External material: Pressed steel
 Electrical connection: DIN Plug to ISO 4400
 Winding insulation: Class H
 Enclosure: Conforms to IP65 when correct plug gasket is fitted

Coding chart

Main Valve Assembly

Model		Valve Body Conn. Size		Connection Type		Operation	
34	GB	G	1 1/4"	1	BS21	1	AUTO
		H	1 1/2"	3	NPT		
		J	2"				

Coil options

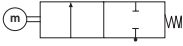
Enclosure		Voltage/Frequency/Electrical Connection	
1	Weather proof IP65	N13	230 V / 50 Hz / PR1 AC Voltage
		N23	110 V / 50 Hz / PR1 AC Voltage
		N41	24 VDC / Din plug 9mm DC Voltage

34	•	•	1	Z	3	A	1	-	1	•••
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Product coding example:

34H11Z3A1-1N13 - GB Series
 1 1/2" BS21, auto operation, aluminium, NBR seals, 230 V / 50 Hz PR1.

HWA Series – 2/2 Normally Closed

Specifications	
Function	Normally Closed, energise to open 
Body Material up to 3"	Aluminium
Body Material above 3"	Cast Iron
Closing Time:	Less than 1 second
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21 & flanged PN16
Electrical Characteristics	
Coil Voltage AC 50 Hz (-)	110 V, 230 V
Voltage Tolerance	+10% / -15%
Protection Class (Std)	IP5X (BS EN 60529)
Electrical Connection (Std)	Suitable for M20 Conduit
Power Rating (Std)	90 VA, 50 W (Inrush), 9 VA, 9 W (Hold)

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	0	60

¹ See corrosion reference guide and sealing solutions for material compatibility.

Electro-Thermal Links

Rotork also offers a range of electro-thermal links that can be wired into the power supply of the HWA series valve offering shut down in the event of a fire.



Part Number	Description
10904209	Electro-thermal link 73 °C

How to use the flow chart

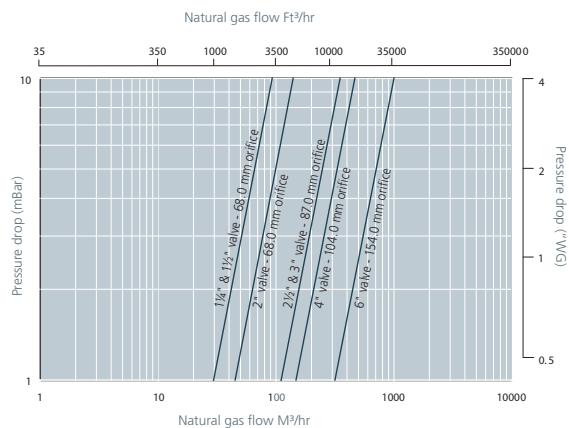
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

Features and Benefits

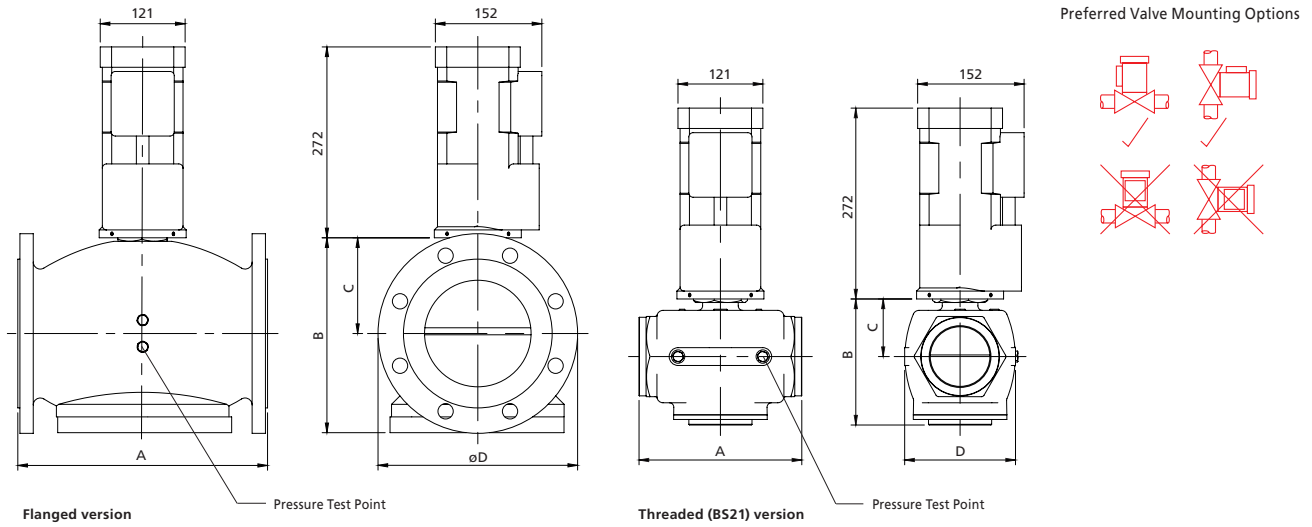
- Approved for mains gas safety shut off
- Suitable for automatic burners
- Suitable for fire protection systems
- Ideal for low pressure natural gas
- Fully ported orifices for high flow
- Zero pressure rated
- Slow opening
- Closed position volt free contacts available
- Fitted with pressure test points as standard
- First, second and third family gases
- Approved to EN161
- Compliant with Gas Appliance Regulation (EU) 2016/426 (GAR)
- Classification: Group 2 controls (BS EN 13611)



Pipe Size	Connection Type	Cv (gpm)	Kv (m ³ /h)	OPD (mBar)	P. Max Bar	Hold VA	Orifice (mm)	Weight (kg)
1¼"	BS21	54	46.5	0-345	5	9	68.00	9.6
1½"	BS21	54	46.5	0-345			68.00	9.6
2"	BS21	95	82	0-345			68.00	9.6
2"	Flanged	95	82	0-345			68.00	11.6
2½"	BS21	157	135	0-345			87.00	10.5
2½"	Flanged	157	135	0-345			87.00	13.1
3"	BS21	188	162	0-345			87.00	10.5
4"	Flanged	226	195	0-345			104.00	38.4
6"	Flanged	423	365	0-200			154.00	62.4



HWA Series – 2/2 Normally Closed



Dimensions

Pipe Size	A	B (without CPI)	B (with CPI)	C (without CPI)	C (with CPI)	D
1¼" BS21	177.5	150.3	185.7	70.9	106.3	123.1
1½" BS21	177.5	150.3	185.7	70.9	106.3	123.1
2" BS21	177.5	150.3	185.7	70.9	106.3	123.1
2" Flanged	210	150.3	185.7	70.9	106.3	165
2½" BS21	232	180.5	215.9	83.7	119.1	158

Pipe Size	A	B (without CPI)	B (with CPI)	C (without CPI)	C (with CPI)	D
2½" Flanged	290	180.5	215.9	83.7	119.1	185
3" BS21	232	180.5	215.9	83.7	119.1	158
4" Flanged	292	227.8	263.2	94.3	129.7	220
6" Flanged	356	277.8	313.2	136.4	171.8	285

Standard flange size PN16 all others screwed BS21
Dimensions given in mm

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size ¹	Connection Type	Operation	Body Material	Seals	Style	Enclosure	Voltage / Frequency	Electrical Connection		
49	HWA	G 1¼" H 1½" J 2" K 2½" L 3" M 4" N 6"	1 BS21 4 FLANGED (PN16 STD)	1 AUTO	3 Aluminium (up to and including 3") 4 Cast Iron (4" and above)	A NBR	1 Standard	7 Motorised	K1 110 V / 50 Hz K2 110 V / 50 Hz inc. Closed Position Indicator K5 230 V / 50 Hz K6 230 V / 50 Hz inc. Closed Position Indicator	0 M20 Conduit	
49	•	•	1	Z	•	A	1	-	7	••	0

¹ See features chart for available connection types.

Product coding example:

49M41Z4A1-7K60 - HWA Series
4" Flanged, closed position indicator, auto operation, cast iron, NBR seals, 230 V / 50 Hz.

Coil options

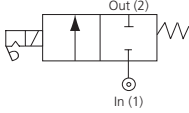
Enclosure	Voltage / Frequency	Electrical Connection
7 Motorised	K1 110 V / 50 Hz K2 110 V / 50 Hz inc. Closed Position Indicator K5 230 V / 50 Hz K6 230 V / 50 Hz inc. Closed Position Indicator	0 M20 Conduit

Spares

Part Number	Description
7K10SA	110 V / 50 Hz actuator (without closed position indicator)
7K20SA	110 V / 50 Hz actuator (with closed position indicator)
7K50SA	230 V / 50 Hz actuator (without closed position indicator)
7K60SA	230 V / 50 Hz actuator (with closed position indicator)

Important Note: The new HWA actuator is not compatible with pre-1995 models, identified by an alpha-numeric date code on the valve body. The digits indicate the year and the letter indicates the month i.e. A = January, B = February, etc with M = December - (note the letter 'I' is not used). For example 94J = September 1994. In addition, pre-1995 valves have a flanged centre boss that is fitted to the body with 4 socket head screws, valves post 1995 have a centre boss with a screw in post.

FACHL Series – 2/2 Normally Closed (Manual Reset)

Specifications	
Function	Normally closed, energise to open 
Maximum Viscosity	115 SSU
1/2" - 1" Body Material (Std)	Brass CZ122
1 1/4" - 2 1/2" Body Material (Std)	Bronze DIN 1705
3"+	Cast Iron Coated
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120v, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	G9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5/S50 Type)
Power Rating	14.5 Watts, 22 Watts, 19 VA

Features and Benefits

- Heavy Duty Valve design
- For use with fire protection systems
- Manual Lever reset operation
- No voltage release safety feature
- AC version fitted with DC internal Rectifier
- Designed for Gas, Oil and Liquids
- Suitable for 1st, 2nd and 3rd gas families



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (Bar)	P. Max Bar	Power (Watts)	Orifice (mm)	Weight (kg)
1/2"	3	3	0-2.0	16	14.5	16	1.40
3/4"	9	8	0-2.0		14.5	19	1.90
1"	11	9.5	0-2.0		14.5	22	1.90
1 1/4"	27	23	0-0.35		14.5	38	3.10
1 1/2"	27	23	0-0.35		14.5	38	3.10
2"	55	47	0-0.35		14.5	51	3.70
2 1/2"	74	64	0-0.2		14.5	76	7.80
3"	89	77	0-0.2		14.5	76	7.80
4"²	194	167	0-0.8		22	102	40.50
6"²	384	331	0-0.3		22	152	70.50

² These valves are all flanged connections as standard PN10/16.

Options Available

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50
EPDM (-50 °C to +120 °C)	-10	50
FKM (-20 °C to +150 °C)	-10	50

Main Valve Assembly Options
NPT Threads
Stainless steel tagging

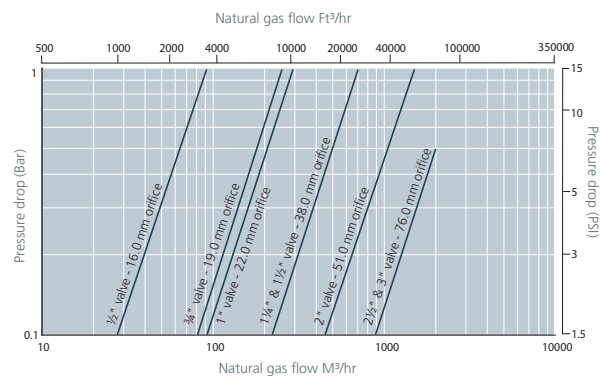
¹ See corrosion reference guide and sealing solutions for material compatibility.

Notes

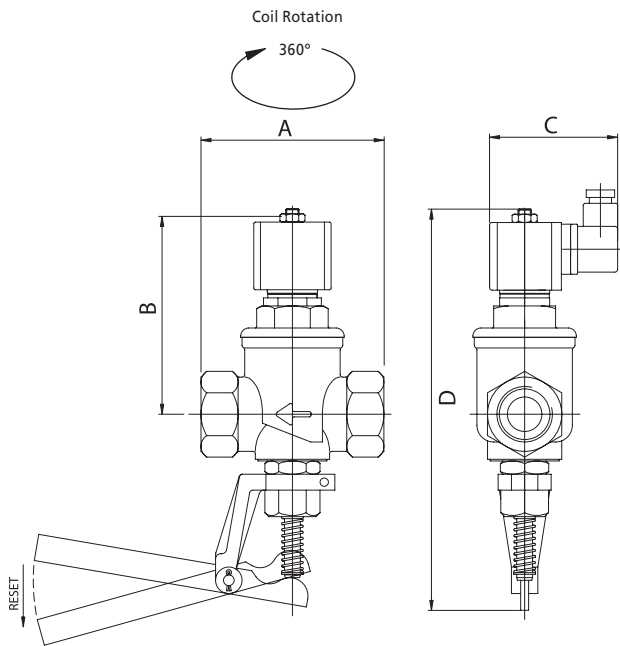
- If the inlet pressure on the seat area exceeds 18kg the inlet pressure must be exhausted to open the valve.
- Consult factory for flow figures for valves above 2 1/2".

How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



FACHL Series – 2/2 Normally Closed (Manual Reset)



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D
½"	70	100	75 inc plug	184
¾"-1"	109	116	75 inc plug	246
1½"	122	122	75 inc plug	258
2"	140	132	75 inc plug	233
2½"	260	137	75 inc plug	273
3"	197	137	75 inc plug	273
4"	292	285	190	577
6"	356	330	260	686

Dimensions given in mm

Solenoid enclosures

E5 Type enclosure protection class IP65

External material: Glass reinforced nylon
 Electrical connection: DIN Plug to ISO 4400
 Winding insulation: Class H
 Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied
 Used on FACHL valves up to and including 3"



S50 enclosure protection class IP65

External material: Pressed steel
 Electrical connection: DIN Plug to ISO 4400
 Winding insulation: Class H
 Enclosure: Conforms to IP65 when correct plug gasket is fitted
 Used on FACHL valves 4" and above



Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
41	FACHL		
	D ½"	2 BSP G	3 MANUAL RESET
	E ¾"	3 NPT	
	F 1"		
	G 1¼"	4 FLANGED (PN16 STD)	
	H 1½"		
	J 2"		
	K 2½"		
	L 3"		
	M 4"		
	N 6"		

Body Material	Seals	Style
2 Bronze	A NBR	1 Standard
4 Cast Iron (4" and above)	B EPDM	
	C FKM	

Coil options

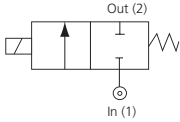
Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	B1 230 V / 50 Hz	1 Din plug 9 mm (For DC only)
	B4 110 V / 50 Hz	
	B2 24 VDC	3 Din plug 9 mm PR1 220/240 110/120
	L1 230 V / 50 Hz (4" and above)	
	L9 110 V / 50 Hz (4" and above)	
	L6 24 VDC (4" and above)	

41	•	•	3	Z	•	•	1	-	1	••	•
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Product coding example:

41H23Z2A1-1B21 - FACHL Series
 1½" BSPG, manual reset, bronze body, NBR seals, 24 VDC DIN Plug 9 mm.

68 Series: Cryogenic – 2/2 Normally Closed

Specifications	
Function	Normally Closed, energise to open, 
Maximum Viscosity	65cST
1/4" - 1" Body Material	Brass (CZ122)
1 1/4" - 2" Body Material	Bronze
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	PTFE
Connection Type (Std)	BS21
Shading Ring	Copper (Std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Controls Cryogenic Media down to -196 °C
- Larger Porting for High Kv
- Teflon® - PTFE seals
- Choice of Brass or Stainless steel valve body

Special Features

- Oxygen Degreased and individually packed for use on liquids down to -196 °C



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
1/4"	0.52	0.43	0-8.3	0-8.3	50	4.50	0.35
1/4"	0.60	0.52	0-8	0-8		6.0	0.35
3/8"	3.5	3.0	0.3-8.6	0.3-8.6		16.00	1.20
1/2"	4.9	4.2	0.3-8.6	0.3-8.6		16.00	1.20
3/4"	6.3	5.4	0.3-8.6	0.3-8.6		16.00	1.20-2.30
1"	8.24	7.1	0.3-8.6	0.3-8.6		25.00	1.20-2.30
1 1/4"	20.9	18	0.3-8.6	0.3-8.6		32.00	3.10
1 1/2"	20.9	18	0.3-8.6	0.3-8.6		32.00	3.10
2"	20.9	18	0.3-8.6	0.3-8.6		32.00	5.20

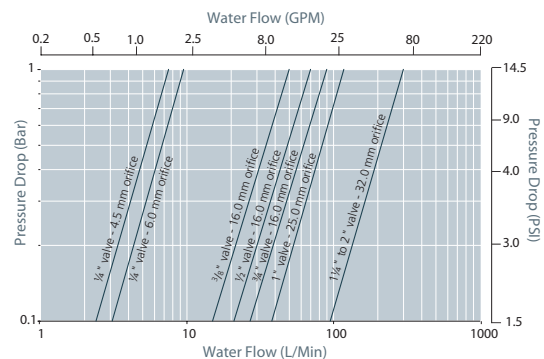
Options Available

Exd Solenoid Enclosure		Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C		Main Valve Body Options	
Protection Class	Consult Rotork Midland for product codes		Min	Max	Stainless Steel body 316 (available up to and including 1 inch)	
Exd T6 (IP67)		PTFE (-196 °C to +180 °C)	-10	50	NPT Threads	
					Stainless Steel Tagging (consult factory for product code)	

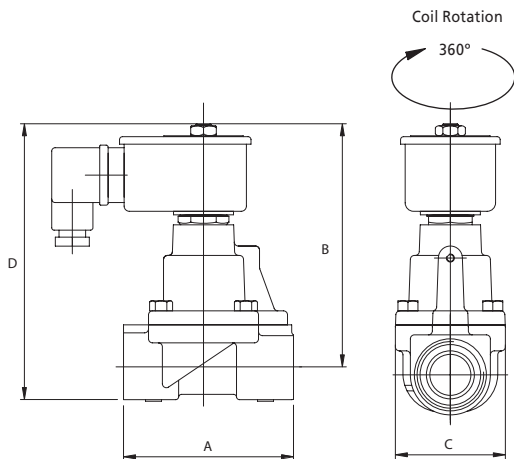
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

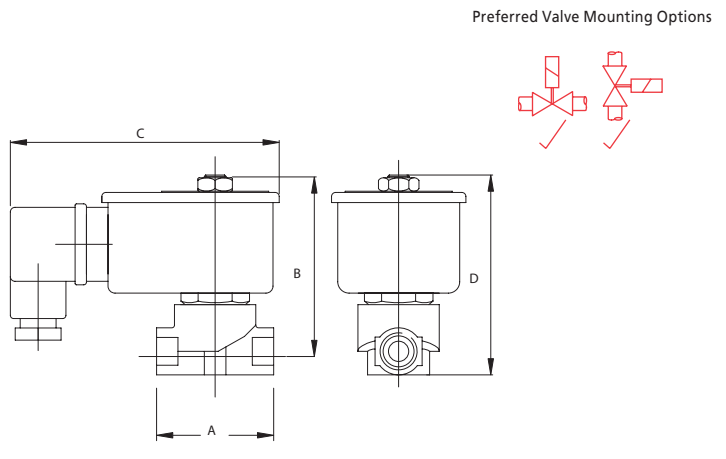
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



68 Series: Cryogenic – 2/2 Normally Closed



Pipe Size	A	B	C	D
3/8" - 1/2"	85	105	105*	122
3/4" - 1"	85	135	105*	155
1 1/4" - 1 1/2"	117	133	82.5	209
2"	146	145	103	209



Pipe Size	A	B	C	D
1/4"	44	70	105	78

Dimensions given in mm
* Dimensions including Din Plug

Solenoid enclosures



S4 Type enclosure protection class IP50

- External material: Pressed steel powder coated
- Electrical entry: Conduit boss 20 mm or 1/2" NPT
- Electrical connection: Screwed terminals or 0.5 mm flying leads, or DIN connector for cryogenic applications
- Winding insulation: Class H

Coding chart

Main Valve Assembly

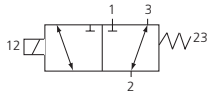
Model	Valve Body Conn. Size	Connection Type	Operation	Orifice (mm)	Body Material	Seals	Style
37	B 1/4"	1 BS21	1 AUTO	H 4.5	1 Brass (standard on valves up to and including 1")	E PTFE	1 Standard
	C 3/8"			J 6.0			
	D 1/2"	Z Default					
	E 3/4"	2 BSP G (1 1/4" and above)		2 Bronze (standard on valves above 1")			
	F 1"				3 NPT		
	G 1 1/4"	5 316 Stainless Steel (option available up to and inc 1")					
	H 1 1/2"			1			
	J 2"				2		

Coil options

Enclosure	Voltage / Frequency	Electrical Connection
2 S4 type enclosure metal can	E2 230 V / 50 Hz	1 DIN plug 9 mm
	H2 110 V / 50 Hz & 120 V / 60 Hz	
	F1 24 VDC	

Product coding example:

37C11Z1E1-2E21 - 68 Series cryogenic
3/8" BS21, auto operation, brass body, PTFE seals, S4 enclosure 230 V / 50 Hz DIN Plug 9 mm.

Specifications	
Function	Normally Closed, energise to open 
Maximum Viscosity	115 SSU
Body Material (Std)	Stainless Steel 316L
Flange Tube	Stainless Steel 303
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (~)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (~)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- 316L stainless steel body construction
- Manual override option
- Satisfy all relevant EC directives
- Normally open, normally closed and diverting (universal)
- Diaphragm Operation
- Compact unit
- Response time 1" 75-100 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Weight (kg)
			AC Voltages	DC Voltages			
¼"	3.5	3.0	0-10	0-10	20	8.80	0.90
⅜"	4.9	4.2	0-10	0-10		8.80	0.90
½"	5.4	4.7	0-10	0-10		8.80	0.90

Options Available

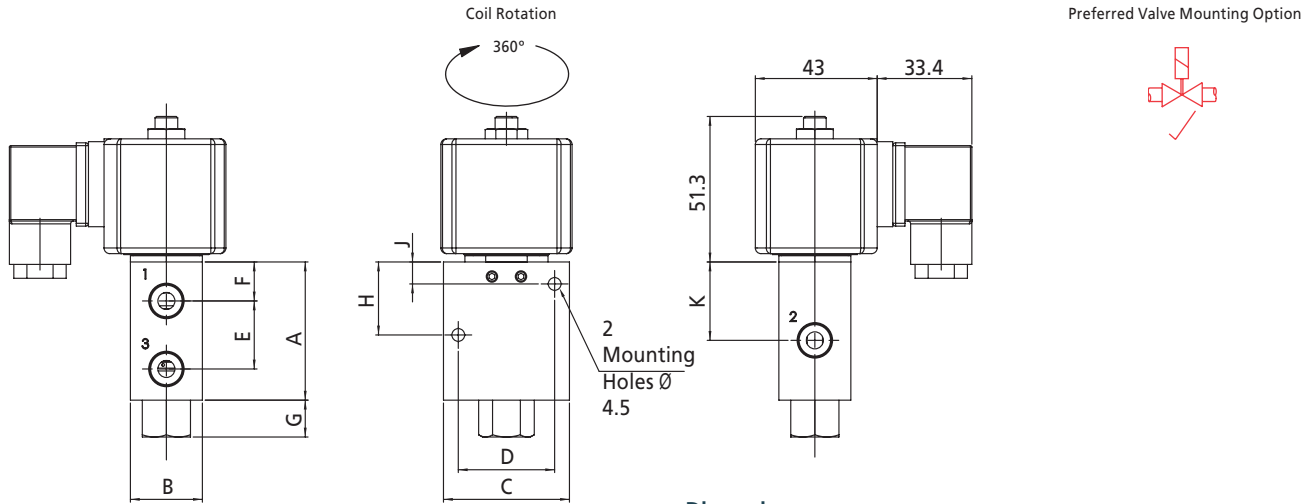
Exd Solenoid Enclosure	
Protection Class	See PUB117-011-00
Exd T6 (IP67)	
Exd T4 (IP67)	
Exm T5 (IP65)	

Main Valve Body Options
NPT threads
Manual Override
Oxygen cleaning (consult Rotork Midland for product code)

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50
EPDM (-50 °C to +120 °C)	-10	50
FKM (-20 °C to +150 °C)	-10	50

¹ See corrosion reference guide and sealing solutions for material compatibility.

67 Series – 3/2 Universal



Dimensions

Size	A	B	C	D	E	F	G	H	J	K	K
1/4"	48.75	25.4	44.45	34	24	13.75	13	25.75	7.75	27.65	27.65
3/8"	65.65	31.75	63.5	42	33.5	16.75	13	33.25	9.25	33.25	33.25
1/2"	65.65	31.75	63.5	42	33.5	16.75	13	33.25	9.25	33.25	33.25

Dimensions given in mm

Solenoid enclosures



E5 Type enclosure protection class IP65

- External material: Glass reinforced nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class H
- Enclosure: Conforms to IP65 when correct plug gasket is fitted as supplied

Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation
33 67 Series 3/2	B 1/4"	1 BS21	1 AUTO
	C 3/8"	3 NPT	2 MANUAL OVERRIDE
	D 1/2"		

Body Material	Seals	Style
5 316 Stainless Steel	A NBR	1 Standard
	B EPDM	
	C FKM	

Coil options

Enclosure	Voltage / Frequency	Electrical Connection
1 Weather proof IP65	B1 230 V / 50 Hz	1 ¹ DIN plug 9 mm
	B4 110 V / 50 Hz & 120 V / 60 Hz	
	B2 24 V / 50 Hz	3 ² Plug Rectified A/C
	B2 24 VDC	
	B3 12 VDC	
B5 110 VDC		

33	.	.	.	Z	5	.	1	-	1	..	.
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¹ DC only
² AC only

Product coding example:

33B31Z5A1-1B13 - 67 Series
1/4" NPT, auto operation, stainless steel body, NBR seals, 230 V / 50 Hz PR 1220/240.

Namur Series – 3/2 or 5/2 Universal

Specifications	
Function	
Media	Air
Maximum Viscosity	115 SSU
Body Material (Std)	Anodised Aluminium
Flange Tube	Brass
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Std)	IP65 (BS EN 60529) (plug supplied as standard)
Electrical Connection (Std)	PG9 Din Connector DIN 43650/ISO 4400 (EN 175301-803) Form 'A'
Coil Insulation	Class F (BS EN 60085) 155 °C (E5 type)
Power Rating	5 watts

Features and Benefits

- Ideal for in-line system service and repair
- Choice of valve body material seals
- Manual Override
- Low power LED Light
- Dual Coil option
- Exd, Exia and Exm compatible
- Max cycle frequency 5/sec



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (Bar)	P. Max Bar	Weight
¼"	1.4	1.2	2.5-10	10	0.50

Options Available

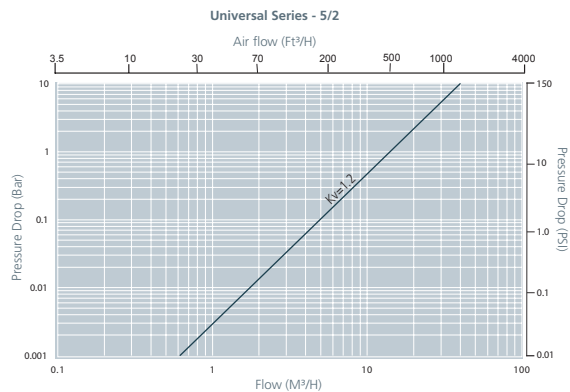
Exd & Exm Solenoid Enclosure	
Protection Class	See separate datasheet
Exd T6 (IP67)	
Exd T4 (IP67)	
Exm	
Exia	

Seal Material ¹ and Media Temp. Range	Ambient Temperature Range °C	
	Min	Max
NBR (-10 °C to +80 °C)	-10	50

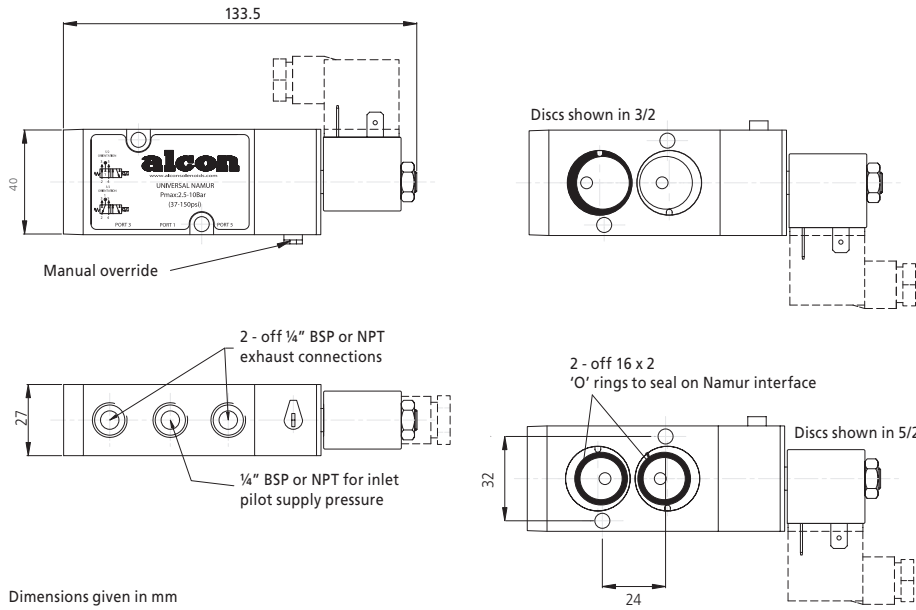
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

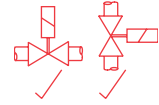
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



Namur Series – 3/2 or 5/2 Universal



Preferred Valve Mounting Options



Dimensions given in mm

Solenoid enclosures



S7 enclosure protection class IP65

- External material: Nylon
- Electrical connection: DIN Plug to ISO 4400
- Winding insulation: Class F
- Conforms to IP65 when correct plug seal gasket is fitted

Coding chart

Main Valve Assembly

Model		Valve Body Conn. Size		Connection Type		Operation	
65	Namur	B	1/4"	3	NPT	2	MANUAL OVERRIDE

Body Material		Seals		Style	
3	Aluminium	A	NBR	1	Standard

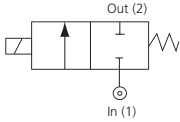
Coil options

Enclosure		Voltage / Frequency			Electrical Connection	
1	Weather Proof IP65	R5	230 V / 50 Hz		1	Din Plug 9 mm
		QY	110 V / 50 Hz 120 V / 60 Hz			
		R1	24 VDC			

65	B	3	2	Z	3	A	1	-	1	**	1
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Product coding example:

65B3Z3A1-1R51 - Namur Series
1/4" NPT, manual override, aluminium, NBR seals, 230 V / 50 Hz DIN Plug 9 mm.

Specifications	
Function	Normally Closed, energise to open, 
Maximum Viscosity	115 SSU
Body Material (Std)	Brass CZ122
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Protection Class (Exm)	Exm II 2 G T5 (-20 °C to +40 °C) (IP65 BS EN 60529)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Electrical Connection (Exm)	2 metre lead 3 core
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 type)
Power Rating	19 VA ,14.5 Watts

Features and Benefits

- Compact valve design
- Zero pressure rated
- Wide range of available orifices
- Choice of valve body material and seals
- Exd and Exm options
- Choice of electrical connections
- ATEX approved
- Response time 5-25 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Protection Class	Weight (kg) excluding Solenoid
			AC Voltages	DC Voltages				
¼"	0.12	0.10	0-45	0-40	60	1.6	Exd T6	0.4
¼"	0.24	0.21	0-20	0-20		2.4	Exd T6	
¼"	0.35	0.30	0-15	0-10		3.0	Exd T6	
¼"	0.53	0.46	0-7.0	0-5.5		4.5	Exd T6	
¼"	0.70	0.60	0-4.0	0-2.7		6.0	Exd T6	
¼"	0.12	0.10	0-45	0-40	60	1.6	Exm T5	0.4
¼"	0.24	0.21	0-20	0-20		2.4	Exm T5	
¼"	0.35	0.30	0-15	0-10		3.0	Exm T5	
¼"	0.53	0.46	0-7.0	0-5.5		4.5	Exm T5	
¼"	0.70	0.60	0-4.0	0-2.7		6.0	Exm T5	

Options Available

Solenoid Enclosure		
Protection Class	Electrical Entry	Enclosure Material
Exd T6 (IP67)	M20 x 1.5 Female (Std)	Aluminium (Std)
Exd T4 (IP67)	(½" NPT conduit entry option)	Stainless Steel optional
Exm T5 (IP65)	M16 x 1.5 male flying lead	Powder coated metal

Seal Material ¹ and Media Temp. Range	EXD		
	Ambient Temperature Range °C		
	Min	Max (T6)	Max (T4)
NBR (-10 °C to +80 °C)	-10	40	70
EPDM (-50° to +120 °C)	-50	40	70
FKM (-20 °C to +150 °C)	-20	40	70
PTFE (-200 °C to +180 °C)	-50	40	70

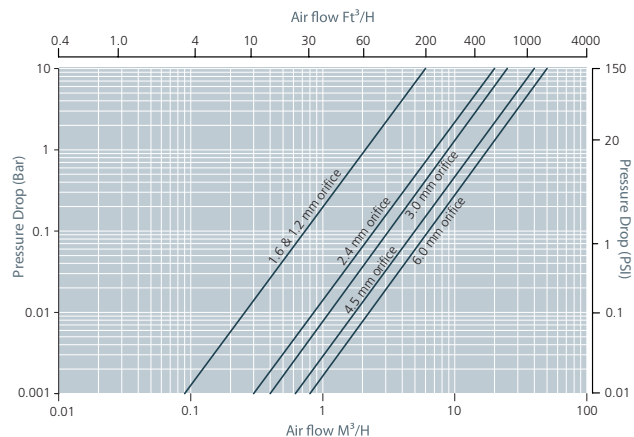
EXM	
Ambient Temperature Range °C	
Min	Max (Exm)
-10	40
-20	40
-20	40
-20	40

Main valve body options
Stainless Steel 316
Manual Override
NPT Threads
Stainless Steel Tagging (consult factory for product code)

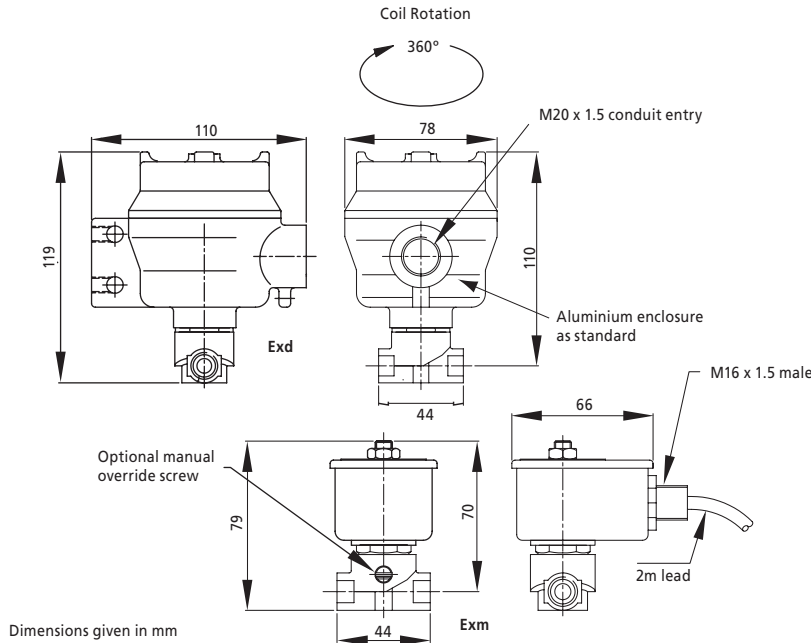
1 See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

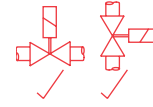
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



21 Series Exd & Exm – 2/2 Normally Closed



Preferred Valve Mounting Options



Solenoid enclosures



Exd enclosure

Power consumption: Holding 19 VA, 12 V to 230 V 50 / 60 Hz.
14.5 W, 12 V to 212 VDC

External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate

Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry

Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C

Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C

Additional Weight 0.8 kg - Aluminium or 1.5 kg - Stainless Steel

Exm enclosure

Power consumption: Holding 16 VA, 12 V to 230 V 50 / 60 Hz.
10W 12, 24 VDC

External material: powder coated metal enclosure with st.st. nameplate

Electrical entry: 2 metre length of approved 3 core cable with M16 conduit male winding insulation class

Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C

Additional weight: 0.5 kg

Coding chart

Main Valve Assembly

Model	Size	Connection Type	Operation	Orifice (mm)	Body Material	Seals	Style
11	21 Series	B	1/4"	1 BS21	1 AUTO	C 1.6	1 Standard (inc.Exm)
		3 NPT	2 MANUAL OVERRIDE	E 2.4	5 316 Stainless Steel	B EPDM	3 Exd
				F 3.0		C FKM	
				H 4.5		E PTFE	
				J 6.0			

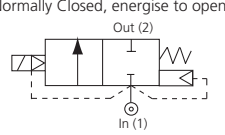
Coil options

Enclosure	Voltage / Frequency	Electrical connection	Approval
5 Exd Aluminium	E2 230 V / 50 Hz	5 M20 x 1.5	9 Atex T6
6 Exd Stainless Steel	H2 110 V / 50 Hz & 120 V / 60 Hz	9 1/2" NPT	949 Atex T4
	F1 24 V / DC		

Enclosure	Voltage / Frequency	Electrical connection
4 Exm	M1 230 V / 50 Hz	E 3 meter lead M16 Exm option only
	M2 110 V / 50 Hz	
	M4 24 V / DC	

Product coding example:

11B11E5A3-6E259 - 21 Series
1/4" BS21, auto operation, 2.4 mm orifice stainless steel body, NBR seals, Exd T6, stainless steel housing 230 V / 50 Hz M20 x 1.5.

Specifications	
Function	Normally Closed, energise to open 
Maximum Viscosity	115 SSU
3/8" - 1" Body Material (Std)	Brass CZ122
1 1/4" - 2" Body Material (Std)	Bronze DIN 1705
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	24 V, 110 V
Coil Voltage AC 50 Hz (-)	110 V, 230 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Protection Class (Exm)	Exm II 2 G T5 (-20 °C to +40 °C) (IP65 BS EN 60529)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Electrical Connection (Exm)	2 metre lead 3 core
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Robust Valve Design
- Diaphragm Operation
- Fully Ported orifices for high Kv
- Choice of valve body material seals
- Response time up to 1" 15 - 60 ms
- Response time up to 2" 60 - 120 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Protection Class	Weight (kg) excluding Solenoid
			AC Voltages	DC Voltages				
3/8"	3.5	3.0	0-14	0-10.3	50	16.00	Exd T6	0.9
1/2"	4.9	4.2	0-14	0-10.3		16.00		
3/4"	5.4	4.7	0-14	0-10.3		16.00		
1"	8.2	7.0	0-14	0-10.3		20.00		
1 1/4"	26.7	23	0-4	-		40.00		
1 1/2"	26.7	23	0-4	-		40.00		
2"	30.2	26	0-4	-		40.00		
1 1/4"²	26.7	23	0.3-10	0.3-10		40.00		
1 1/2"²	26.7	23	0.3-10	0.3-10		40.00		
2"²	30.2	26	0.3-10	0.3-10		40.00		
3/8"	3.5	3.0	0-14	0-10.3		16.00	Exm T5	0.9
1/2"	4.9	4.2	0-14	0-10.3		16.00		
3/4"	5.4	4.7	0-14	0-10.3		16.00		
1"	8.2	7.0	0-14	0-10.3		20.00		
1 1/4"	26.7	23	0-4	-		40.00		
1 1/2"	26.7	23	0-4	-		40.00		
2"	30.2	26	0-4	-	40.00			
1 1/4"²	26.7	23	0.3-10	0.3-10	40.00			
1 1/2"²	26.7	23	0.3-10	0.3-10	40.00			
2"²	30.2	26	0.3-10	0.3-10	40.00			

Options Available

Solenoid Enclosure		
Protection Class	Electrical Entry	Enclosure Material
Exd T6 (IP67)	M20 x 1.5 Female (Std)	Aluminium (Std) Stainless Steel optional
Exd T4 (IP67)	(1/2" NPT conduit entry option)	
Exm T5 (IP65)	M16 x 1.5 male flying lead	Powder coated metal

Main Valve Body Options	
Stainless Steel 316 (available up to and including 1")	
NPT threads	
Flanged Option (PN16 Std) for alternative options consult Rotork Midland	
Manual Override	

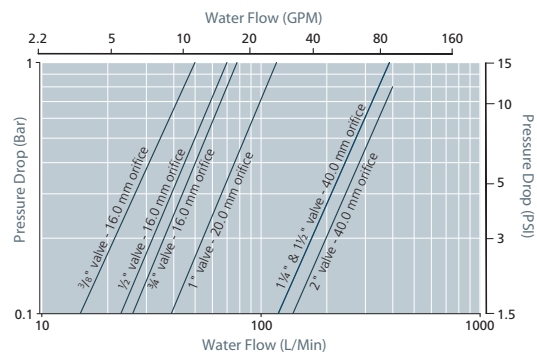
¹ See corrosion reference guide and sealing solutions for material compatibility.

² Pressure assisted to achieve a greater OPD. e.g. code: 19G1125C3-6H299.

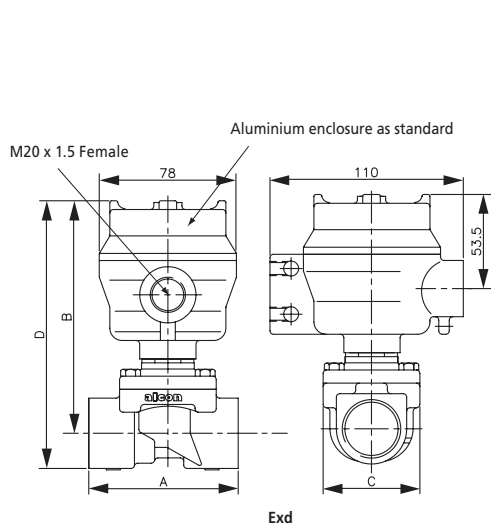
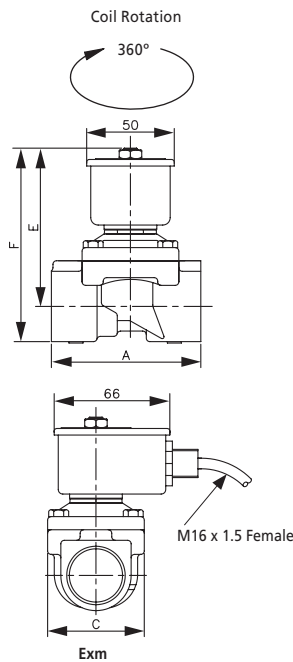
How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

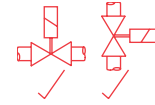
Seal Material ¹ and Media Temp. Range	EXD			EXM	
	Ambient Temperature Range °C			Ambient Temperature Range °C	
	Min	Max (T6)	Max (T4)	Min	Max (Exm)
NBR (-10 °C to +80 °C)	-10	40	70	-10	40
EPDM (-50 °C to +120 °C)	-50	40	70	-20	40
FKM (-20 °C to +150 °C)	-20	40	70	-20	40



ACD Series Exd & Exm – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D	E	F
3/8" - 3/4"	69.5	123	55	140	80	97
1"	85	123	55	140	80	97
1 1/4" - 2"	137	147	120	180	103	136

Dimensions given in mm

Solenoid enclosures

S4 Type enclosure

Power consumption: Holding 19 VA, 12 V to 230 V 50 / 60 Hz.
14.5 W 12 V to 212 VDC

External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate

Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry

Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C

Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C

Additional Weight 0.8 kg - Aluminium or 1.5 kg - Stainless Steel



S4 Type enclosure

Power consumption: Holding 16 VA, 12 V to 230 V 50 / 60 Hz.
10 W 12, 24 VDC

External material: powder coated metal enclosure with st.st. nameplate

Electrical entry: 2 metre length of approved 3 core cable with M16 conduit male winding insulation class

Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C

Additional weight: 0.5 kg



Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Conn. Type	Operation	Body Material	Seals	Style
17	C 3/8"	1	BS21	1	A NBR	1 Standard (inc. Exm)
18	D 1/2"	2	BSP G (1 1/4" and above)	2	B EPDM	3 Exd (S4)
19	F 1"	3	NPT	3	C FKM	5
	G 1 1/4"					
	H 1 1/2"					
	J 2"	4	FLANGED (PN16 STD)	5		

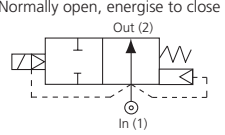
³ '0' pressure rated options are not available in DC voltage above 1".

Product coding example:

17F31Z1C3-5H259 - ACD Series
1" NPT, auto operation, brass body, FKM seals, Exd T6 Aluminium Housing 110 V / 50 Hz M20 x 1.5.

Coil options

Enclosure	Voltage / Frequency	Electrical Connection	Approval
5	E2 230 V / 50 Hz	5	9 Atex T6
6	H2 110 V / 50 Hz & 120 V / 60 Hz	9	949 Atex T4
	F1 24 VDC		
4	M1 230 V / 50 Hz	E	
	M2 110 V / 50 Hz		
	M4 24 VDC		

Specifications	
Function	Normally open, energise to close 
Maximum Viscosity	115 SSU
3/8" - 1" Body Material (Std)	Brass CZ122
1 1/4" - 2" Body Material (Std)	Bronze DIN 1705
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	24 V, 110 V
Coil Voltage AC 50 Hz (-)	110 V, 230 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Protection Class (Exm)	Exm II 2 G T5 (-20 °C to +40 °C) (IP65 BS EN 60529)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Electrical Connection (Exm)	2 metre lead 3 core
Coil Insulation	Class H (BS EN 60085) 180 °C
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Robust Valve Design
- Diaphragm Operation
- Fully Ported orifices for high Kv
- Choice of valve body material seals
- Sizes 3/8" - 1" Advantica approved to BS EN 60730-2-8 for household use
- Response time up to 1" 15-60 ms
- Response time up to 2" 60-120 ms



Pipe Size	Cv (gpm)	Kv (m ³ /h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Protection Class	Weight (kg) excluding Solenoid	
			AC Voltages	DC Voltages					
3/8"	3.5	3.0	0-10	0-10	50	16.00	Exd T6	0.9	
1/2"	4.9	4.2	0-10	0-10		16.00			
3/4"	5.4	4.7	0-10	0-10		16.00			
1"	8.2	7.0	0-10	0-10		20.00			
1 1/4"	26.7	23	0.3-10	0.3-10		40.00	3.0		
1 1/2"	26.7	23	0.3-10	0.3-10		40.00			
2"	30.2	26	0.3-10	0.3-10		40.00			
3/8"	3.5	3.0	0-10	0-10		16.00		Exm T5	0.9
1/2"	4.9	4.2	0-10	0-10		16.00			
3/4"	5.4	4.7	0-10	0-10		16.00			
1"	8.2	7.0	0-10	0-10		20.00			
1 1/4"	26.7	23	0.3-10	0.3-10		40.00	3.0		
1 1/2"	26.7	23	0.3-10	0.3-10		40.00			
2"	30.2	26	0.3-10	0.3-10		40.00			

Options Available

Solenoid Enclosure		
Protection Class	Electrical Entry	Enclosure Material
Exd T6 (IP67)	M20 x 1.5 Female (Std)	Aluminium (Std) Stainless Steel optional
Exd T4 (IP67)	1/2" NPT conduit entry option)	
Exm T5 (IP65)	M16 x 1.5 male flying lead	Powder coated metal

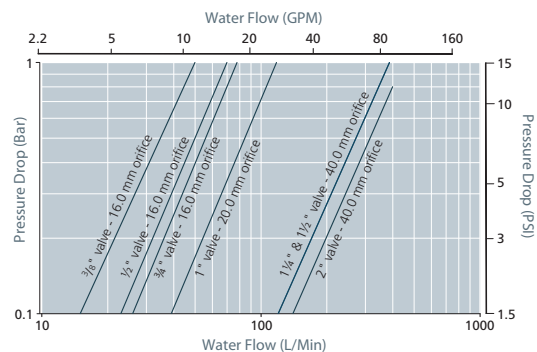
Main valve body options
Stainless Steel 316 (available up to and including 1")
NPT threads
Flanged Option (PN16 Std) for alternative options consult Rotork Midland

Seal Material ¹ and Media Temp. Range	EXD			EXM	
	Ambient Temperature Range °C			Ambient Temperature Range °C	
	Min	Max (T6)	Max (T4)	Min	Max (Exm)
NBR (-10 °C to +80 °C)	-10	40	70	-10	40
EPDM (-50 °C to +120 °C)	-50	40	70	-20	40
FKM (-20 °C to +150 °C)	-20	40	70	-20	40

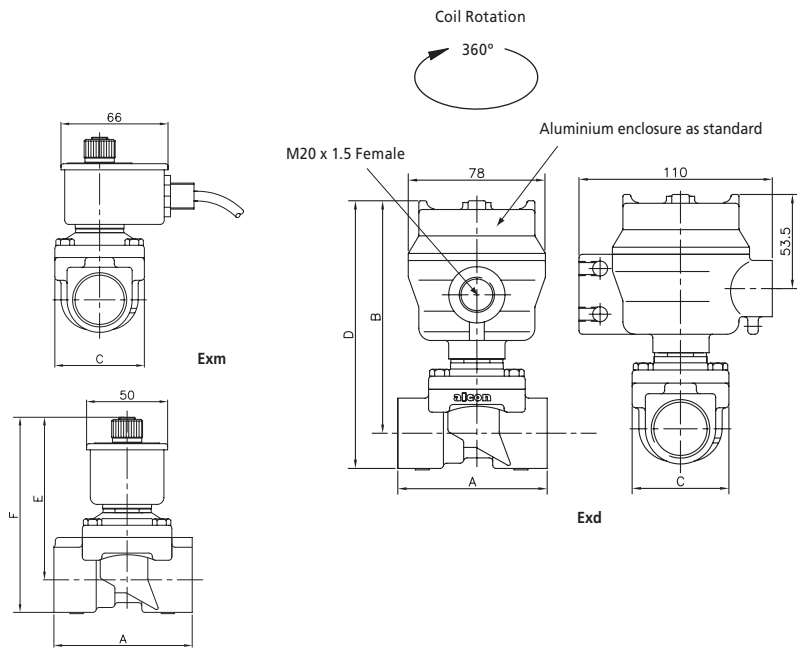
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

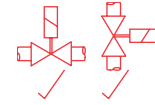
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



ACDN Series Exd & Exm – 2/2 Normally Open



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D	E	F
3/8" - 3/4"	69.5	123	75	140	88	105
1"	69.5	123	75	140	88	105
1 1/4" - 2"	137	103	120	180	127	143

Dimensions given in mm

Solenoid enclosures

S4 Type enclosure

Power consumption: Holding 19 VA, 12 V to 230 V, 50 / 60 Hz.
14.5 W, 12 V to 212 VDC

External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate

Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry

Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C

Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C

Additional Weight 0.8 kg - Aluminium or 1.5 kg - Stainless Steel



S4 Type enclosure

Power consumption: Holding 16 VA, 12 V to 230 V, 50 / 60 Hz.
10 W 12, 24 VDC

External material: powder coated metal enclosure with st.st. nameplate

Electrical entry: 2 metre length of approved 3 core cable with M16 conduit male winding insulation class

Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C

Additional weight: 0.5 kg



Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation	Body Material	Seals	Style
27	ACDN (1 1/4 and above)	C 3/8"	1 BS21	1 Brass (standard on valves up to and including 1")	A NBR	1 Standard (inc. Exm)
56	ACDN (3/8"-1")	D 1/2"	2 BSP G (1 1/4" and above)		B EPDM	3 Exd (S4)
	E 3/4"	3 NPT		2 Bronze (standard on valves above 1")	C FKM	
	F 1"		4 FLANGED (PN16 STD)			
	G 1 1/4"					
	H 1 1/2"	5 316 Stainless Steel (option available up to and inc 1")				
J 2"						

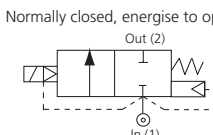
Coil options

Enclosure	Voltage / Frequency	Electrical Connection	Approval
D N/O Exd Aluminium	E2 230 V / 50 Hz	5 M20 x 1.5	9 Atex T6
E N/O Exd Stainless Steel	H2 110 V / 50 Hz & 120 V / 60 Hz	9 1/2" NPT	949 Atex T4
	F1 24 VDC		

Enclosure	Voltage / Frequency	Electrical Connection	Solenoid Label
4 Exm	M1 230 V / 50 Hz	E 3 metre lead M16 EXM	48 N/O module
	M2 110 V / 50 Hz		
	M4 24 VDC		

Product coding example:

56E11Z1A3-DF159 - ACDN Series
N/O 3/4" BS21, auto operation, bronze body, NBR seals, Exd T6 Aluminium 24 VDC M20 x 1.5.

Specifications	
Function	Normally closed, energise to open 
Maximum Viscosity	115 SSU
½" - 1" Body Material (Std)	Brass CZ122
1¼" - 2" Body Material (Std)	Bronze DIN 1705
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	24 V, 110 V
Coil Voltage AC 50 Hz (-)	110 V, 230 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Protection Class (Exm)	Exm II 2 G T5 (-20 °C to +40 °C) (IP65 BS EN 60529)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Electrical Connection (Exm)	2 metre lead 3 core
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 Type)
Power Rating	14.5 Watts, 19 VA

Features and Benefits

- Heavy duty valve design
- Piston Operation
- Wide temperature range capabilities
- Choice of valve body material seals
- ATEX approved
- Response time up to 1" 40-100 ms
- Response time up to 2" 60-1000 ms



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)	P. Max Bar	Orifice (mm)	Protection Class	Weight (kg) excluding Solenoid
½"	4.9	4.2	0.3-10.3	50	16.00	Exd T6	1.4
¾"	6.3	5.4	0.3-10.3		16.00		2.3
1"	14.5	12.5	0.3-10.3		25.00		3.0
1¼"	20.9	18	0.3-10.3		30.00		5.2
1½"	20.9	18	0.3-10.3		30.00		1.4
2"	24.4	21	0.3-10.3		32.00	Exm T5	2.3
½"	4.9	4.2	0.3-10.3		16.00		3.0
¾"	6.3	5.4	0.3-10.3		16.00		5.2
1"	14.5	12.5	0.3-10.3		25.00		1.4
1¼"	20.9	18	0.3-10.3		30.00		2.3
1½"	20.9	18	0.3-10.3	30.00	3.0		
2"	24.4	21	0.3-10.3	32.00	5.2		

Options Available

Solenoid Enclosure		
Protection Class	Electrical Entry	Enclosure Material
Exd T6 (IP67)	M20 x 1.5 Female (Std)	Aluminium (Std) Stainless Steel optional
Exd T4 (IP67)	(½" NPT conduit entry option)	
Exm T5 (IP65)	M16 x 1.5 male flying lead	Powder coated metal

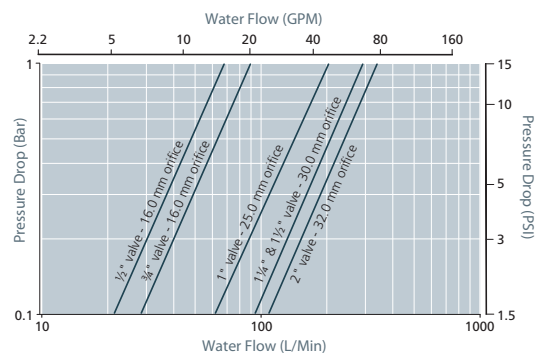
Main Valve Body Options	
Stainless steel body 316 (available up to 1")	
Oxygen Cleaning (Consult Rotork Midland for product code)	
NPT Threads	
Stainless steel tagging	

¹ See corrosion reference guide and sealing solutions for material compatibility.

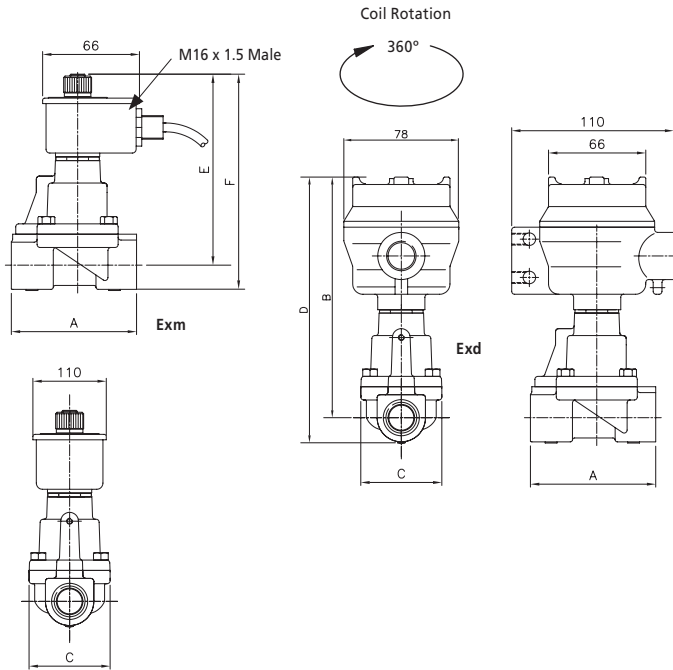
How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

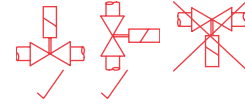
Seal Material ¹ and Media Temp. Range	EXD			EXM	
	Ambient Temperature Range °C			Ambient Temperature Range °C	
	Min	Max (T6)	Max (T4)	Min	Max (Exm)
NBR (-10 °C to +80 °C)	-10	40	70	-10	40
EPDM (-50 °C to +120 °C)	-50	40	70	-20	40
FKM (-20 °C to +150 °C)	-20	40	70	-20	40



ACP Series Exd & Exm – 2/2 Normally Closed



Preferred Valve Mounting Options



Dimensions

Pipe Size	A	B	C	D	E	F
3/8" - 3/4"	85	149	75	165	105	122
1"	85	179	75	198	135	155
1 1/4" - 1 1/2"	117	177	83	252	133	209
2"	146	189	103	252	145	209

Dimensions given in mm

Solenoid enclosures

S4 Exd enclosure

Power consumption: Holding 19 VA, 12 V to 230 V, 50 / 60 Hz.
14.5 W, 12 V to 212 VDC

External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate

Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry

Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C

Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C

Additional Weight 0.8 kg - Aluminium or 1.5 kg - Stainless Steel



S4 Exm enclosure

Power consumption: Holding 16 VA, 12 V to 230 V, 50 / 60 Hz.
10 W 12, 24 VDC

External material: powder coated metal enclosure with st.st. nameplate

Electrical entry: 2 metre length of approved 3 core cable with M16 conduit male winding insulation class

Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C

Additional weight: 0.5 kg



Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation	Body Material	Seals	Style
22 ACP Exd	D 1/2"	1 BS21	1 AUTO	1 Brass (standard on valves up to and including 1")	A NBR	1 Standard (Inc Exm)
	E 3/4"	2 BSP G	2 MANUAL OVERRIDE		B EPDM	3 Exd
	F 1"	3 NPT			C FKM	
	G 1 1/4"	4 FLANGED (PN16 STD)		2 Bronze (standard on valves above 1")		
	H 1 1/2"			5 316 Stainless Steel (option available up to and inc 1")		
	J 2"					

Coil options

Enclosure	Voltage / Frequency	Electrical Connection	Approval
5 Exd Aluminium	E2 230 V / 50 Hz	5 M20 x 1.5	9 Atex T6
6 Exd Stainless Steel	H2 110 V / 50 Hz & 120 V / 60 Hz	9 1/2" NPT	949 Atex T4
	F1 24 VDC		

• • • 9

Enclosure	Voltage / Frequency	Electrical Connection
4 Exm	M1 230 V / 50 Hz	E 3 metre lead M16 EXM
	M2 110 V / 50 Hz	
	M4 24 VDC	

Product coding example:

22H21Z2A3-5E259 - ACP Series
1 1/2" BSPG, auto operation, bronze body, NBR seals, Exd Aluminium 230 V / 50 Hz M20 x 1.5.

Specifications	
Function	<p>31 Series, 3/2 Normally Closed</p> <p>33 Series, 3/2 Universal</p>
Maximum Viscosity	115 SSU
Body Material (Std)	Brass CZ122
Flange Tube	Stainless Steel 303
Plunger and top stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Connection Type (Std)	BS21
Shading Ring	Copper (std), Silver (stainless steel option)
Electrical Characteristics	
Coil Voltage DC (=)	24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 230 V
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Coil Insulation	Class H (BS EN 60085) 180 °C (E5 type)
Power Rating	19 VA, 14.5 Watts

Features and Benefits

- Compact valve design
- Zero pressure rated
- Wide range of available orifices
- Choice of valve body material and seals
- ATEX approved
- Response time 5-25 ms

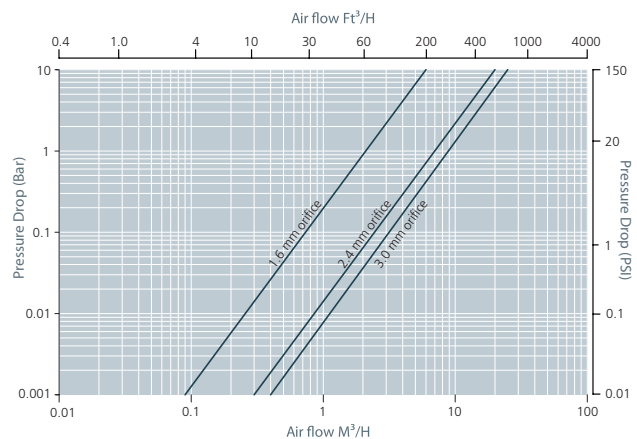


Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Orifice (mm)	Protection Class	Function	Weight (kg) excluding Solenoid
			AC Voltages	DC Voltages					
¼"	0.12	0.10	0-10.6	0-10.6	60	1.6	Exd T6	N/C	0.35
¼"	0.24	0.21	0-7.0	0-7.0		2.4			
¼"	0.35	0.30	0-5.8	0-5.8		3.0			
¼"	0.12	0.10	0-7.5	0-7.5		1.6			
¼"	0.24	0.21	0-3.5	0-3.5		2.4			
¼"	0.35	0.30	0-2.0	0-2.0		3.0			

Options Available

Solenoid Enclosure			Seal Material ¹ and Media Temp. Range	EXD			Main valve body options	
Protection Class	Electrical Entry (Std)	Enclosure Material		Ambient Temperature Range °C			Stainless Steel 316	NPT threads
			Min	Max (T6)	Max (T4)	Manual override		
Exd T6 (IP67)	M20 x 1.5 Female (Std)	Aluminium (Std)	NBR (-10 °C to +80 °C)	-10	40	70	Stainless steel tagging (consult factory for product code)	
Exd T4 (IP67)	(½" NPT conduit entry option)	Stainless Steel optional	EPDM (-50° to +120 °C)	-50	40	70		
			FKM (-20 °C to +150 °C)	-20	40	70		

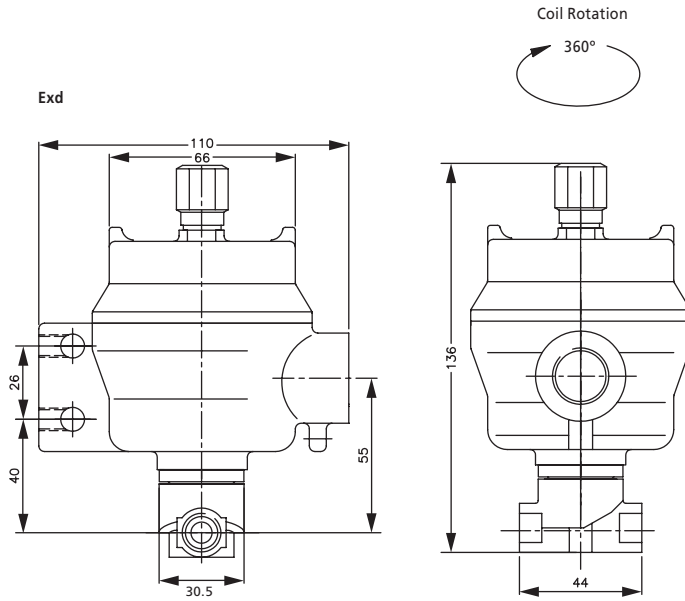
1 See corrosion reference guide and sealing solutions for material compatibility.



How to use the flow chart

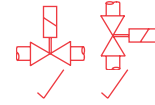
1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.

31/33 Series Exd – 3/2 Closed / Universal



Dimensions given in mm

Preferred Valve Mounting Options



Solenoid enclosures



Exd enclosure

- Power consumption: Holding 19 VA, 12 V to 230 V 50 / 60 Hz. 14.5 W, 12 V to 212 VDC
- External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate
- Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry
- Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C
- Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C
- Additional Weight: 0.8 kg - Aluminium or 1.5 kg - Stainless Steel

Coding chart

Main Valve Assembly

Model		Size		Connection Type		Operation		Orifice (mm)		Body Material		Seals		Style	
29	31 Series (N/C)	B	1/4"	1	BS21	1	AUTO	C	1.6	1	Brass CZ122	A	NBR	3	Exd
32	33 Series (UNIV)			3	NPT	2	MANUAL OVERRIDE	E	2.4	5	316 Stainless Steel	B	EPDM		
								F	3.0			C	FKM		

Coil options

Enclosure	Voltage / Frequency		Electrical connection		Approval		
9	3 way Exd Aluminium	E2	230 V / 50 Hz	5	M20 x 1.5	9	Atex T6
A	3 way Exd Stainless Steel	H2	110 V / 50 Hz & 120 V / 60 Hz	9	1/2" NPT	949	Atex T4
		F1	24 V / DC				

••	B	•	•	•	•	•	•	•	•	•	••	•	•
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Product coding example:

29B11C1A3-9E259 - 31 Series
1/4" BS21, auto operation, 1.6 mm orifice brass body, NBR seals, Exd T6 Aluminium 230 V / 50 Hz M20 x 1.5.

Specifications	
Function	
Media	Air
Maximum Viscosity	115 SSU
Body Material (Std)	Anodised Aluminium
Flange Tube	Brass
Plunger and Top Stop	Stainless Steel 430FR
Springs	Stainless Steel 302
Seal Material (Std)	NBR
Electrical Characteristics	
Coil Voltage DC (=)	12 V, 24 V, 110 V
Coil Voltage AC 50 Hz (-)	24 V, 110 V, 120 V, 230 V
Coil Voltage AC 60 Hz (-)	24 V, 110 V, 120 V, 220v
Voltage Tolerance	+10% or -10%
Duty Cycle	100% ED
Protection Class (Exd)	Exd IIC T6 (-50 °C to +40 °C) (IP67 BS EN 60529)
Protection Class (Exm)	Exm II 2 G T5 (-20 °C to +40 °C) (IP65 BS EN 60529)
Protection Class (Exia)	Exia IIC T6 (-40 °C to +50 °C)
Electrical Connection (Exd)	Via terminal block (max wire diameter 1.6 mm)
Electrical Connection (Exm)	2 metre lead 3 core
Electrical Connection (Exia)	PG9 via DIN plug connector DIN 43650-A
Coil Insulation (Exd & Exm)	Class H (BS EN 60085) 180 °C
Coil Insulation (Exia)	Class F (BS EN 60085) 155 °C
Power Rating	5 watts

Features and Benefits

- Ideal for in-line system service and repair
- Choice of valve body material seals
- Manual Override
- Low power LED Light
- Dual Coil option
- Exd, Exia and Exm compatible
- Max cycle frequency 5/sec



Pipe Size	Cv (gpm)	Kv (m³/h)	OPD (Bar)		P. Max Bar	Weight (kg) excluding Solenoid
			AC Voltages	DC Voltages		
¼"	1.4	1.2	2.5-10	2.5-10	10	0.5

Options Available

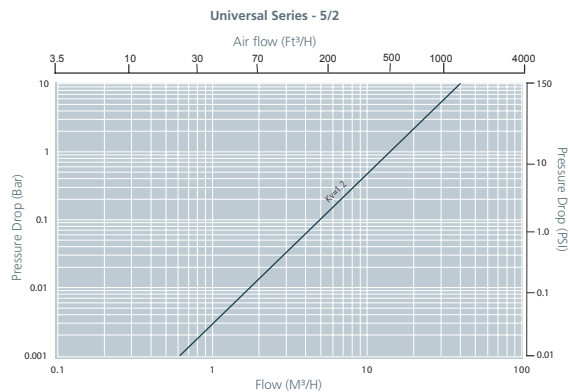
Solenoid Enclosure	
Protection Class	Electrical Entry
Exd T6 (IP67)	M20 x 1.5 Female (Std) (½" NPT conduit entry option)
Exd T4 (IP67)	
Exm	M16 x 1.5 Male flying lead
Exia	PG9 via Din Plug Connector Din 43650-A

Seal Material ¹ and Media Temp. Range	EXD			EXM	
	Ambient Temperature Range °C			Ambient Temperature Range °C	
	Min	Max (T6)	Max (T4)	Min	Max (Exm)
NBR (-10 °C to +80 °C)	-10	40	70	-10	40

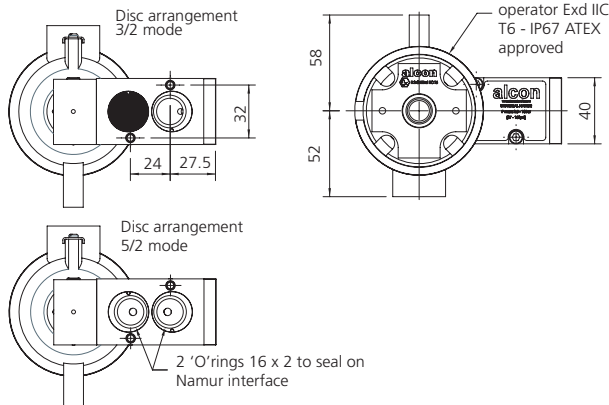
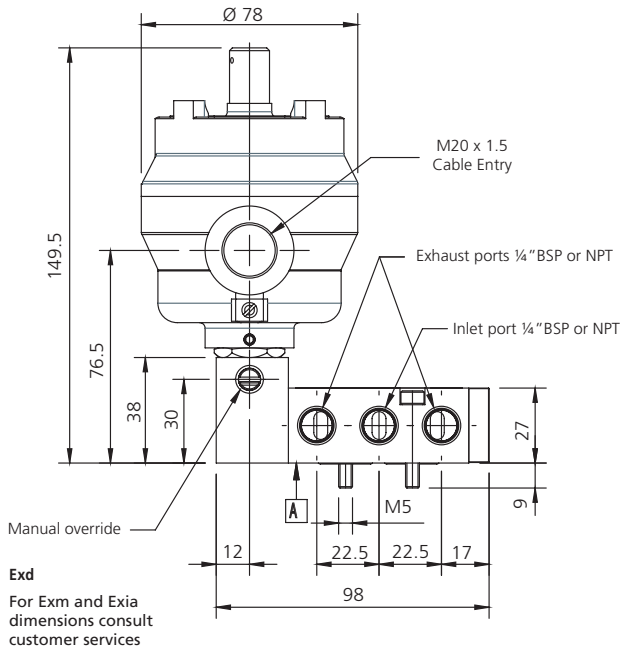
¹ See corrosion reference guide and sealing solutions for material compatibility.

How to use the flow chart

1. Select the required flow.
2. Note the corresponding pressure drop.
3. Based on where the two points intersect select the most appropriate model.



Namur Series Exd, Exm & Exia Series – 3/2 or 5/2 Universal



Solenoid enclosures



Intrinsically safe enclosure (ATEX approved)

External material: Thermoset resin
 Electrical connection: PG9 via DIN plug connector Din 43650-A
 Max power: consumption Exia 1.6 watts DC.
 Winding: insulation Class F
 Protection class: Exia IIC T6, ATEX approved for ambient temperatures -40 °C to +50 °C
 Maximum valve media temperature of 70 °C. Weatherproof to IP65
For Exia option use product code 65B32Z3A5-1QJ1.
For all other coding options see below:

Exd enclosure

Power consumption: Holding 19 VA, 12 V to 230 V, 50 / 60 Hz. 14.5 W, 12 V to 212 VDC
 External material: Powder coated aluminium or 316 st.st. enclosure with st.st. nameplate
 Electrical entry: M20 x 1.5 or 1/2" NPT conduit entry
 Protection Class: II 2 G Exd IIC T6 for ambient temp -50 °C to +40 °C
 Optional: II 2 G Exd IIC T4 for ambient temp -50 °C to +70 °C
 Additional Weight: 0.8 kg - Aluminium or 1.5 kg - Stainless Steel



Exm enclosure

Power consumption: Holding 16 VA, 12 V to 230 V, 50 / 60 Hz. 10 W 12, 24 VDC
 External material: powder coated metal enclosure with st.st. nameplate
 Electrical entry: 2 metre length of approved 3 core cable with M16 conduit male winding insulation class.
 Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C
 Additional weight: 0.5 kg



Coding chart

Main Valve Assembly

Model	Valve Body Conn. Size	Connection Type	Operation	Body Material	Seals	Style	
65	Namur	B 1/4"	3 NPT	2 MANUAL OVERRIDE	3 Aluminium	A NBR	1 Exm 3 Exd

65 B 3 2 Z 3 A • -

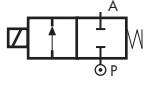
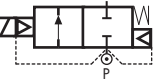
Coil options

Enclosure	Voltage / Frequency	Electrical Connection	Approval
9 Exd Aluminium	E2 230 V / 50 Hz H2 110 V / 50 Hz & 120 V / 60 Hz F1 24 VDC	5 M20 x 1.5 9 1/2" NPT	9 ATEX T6 K ATEX T4
9	••	•	•
4	••	E	
Enclosure	Voltage / Frequency	Electrical Connection	
4 Exm	M1 230 V / 50 Hz M2 110 V / 50 Hz M4 24 VDC	E 3 metre lead M16 EXM	

Product coding example:

65B32Z3A3-9E259 - Namur Series
 1/4" NPT, manual override, aluminium, NBR seals, Exd T6 Aluminium 230 V / 50 Hz M20 x 1.5.

ADV Series, Compressed Air – with Solenoid Valves

Specifications ¹	
Function (single acting)	 <p>Direct Acting flow direction overseat 1 → 2</p>
	 <p>Pilot Operated flow direction overseat 1 → 2</p>
Maximum Viscosity	Max. 21cST (3 °E)
Body Material (Std)	Brass CW617N (EN 12165)
Flange	Stainless Steel 1.4305 EN 10088 (AISI 303)
Tube	Stainless Steel AISI 304
Plunger	Stainless Steel 1.4106 EN 10088 (AISI 430F)
Top Stop	Stainless Steel 1.4105 EN 10088 (AISI 430F)
Springs	Stainless Steel 302
Seal Material (Std)	FKM
Connection Type (Std)	G parallel thread (ISO 228-1)
Shading Ring	Copper
Electrical Characteristics	
Standard Coil Voltage DC (=)	24 V
Standard Coil Voltage AC 50 Hz (-)	24 V, 110 V, 200 V, 230 V
Standard Coil Voltage AC 60 Hz (-)	24 V, 120 V, 220 V, 240 V
Voltage Tolerance	+10% to -15% (AC)
	+10% to -5% (DC)
Duty Cycle	100% ED
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Electrical Connection	to EN 175301 - 803 - A (ex DIN 43650)
Coil Insulation	Class F 155 °C
Power Rating (Standard)	AC 18 VA (holding)
	AC 36 VA (inrush)
	DC 14 W

¹ For more information about detailed solenoid valve and timer please refer to each single datasheet.

Options Available

ADV Options ²
Strainers, NPT thread, impregnated coils with additional protection by impregnation with Loctite® Resinol RTC for humid environments

² ADV code changes depending on the required options codes in the selection table refer to the listed combination of components only.

Features and Benefits

- Preassembled systems consisting of solenoid valve, timer and connector
- Application: time adjusted condensate discharge of tanks with compressed air, separators, mains drainage, dryers and filters
- Direct acting and pilot operated valve
- Adjustable to suit your system requirements
- Indoor / outdoor installations
- Reliable, long life
- Cost effective
- Visual indication of operation
- Manual override - test button
- Discharge time (timer ON): from 0.5 to 10 s
- Interval time (timer OFF): from 30 s to 45 minutes

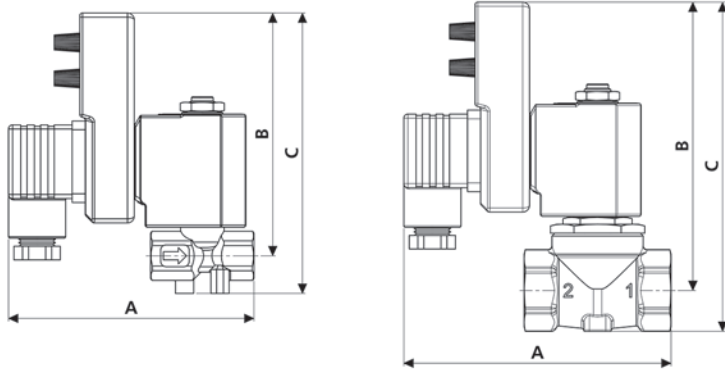


Pipe Size	OPD (bar)		Orifice (mm)	Valve Code	Conn. Code	Timer Code	Coil code	ADV Code ²
	AC Volt	DC Volt						
With Direct Acting Solenoid Valves								
¼"	0 - 18	-	2.2	D249DVF	600 011-	AT2000C02I	7400	888 120 00-
¼"	0 - 18	-	2.2	D249DVF	600 011-	AT2000C02I	7700	888 121 00-
¼"	-	0 - 16	2.2	D249DVF	600 011-	AT2000C02I	7250	888 122 00-
With Pilot Operated Solenoid Valves								
¼"	0.1 - 16	-	10.5	D264DVU	600 011-	AT2000C02I	7400	888 123 00-
¼"	0.1 - 16	-	10.5	D264DVU	600 011-	AT2000C02I	7700	888 124 00-
¼"	-	0.1 - 7	10.5	D264DVU	600 011-	AT2000C02I	7250	888 125 00-
⅜"	0.1 - 16	-	10.5	D265DVU	600 011-	AT2000C02I	7400	888 126 00-
⅜"	0.1 - 16	-	10.5	D265DVU	600 011-	AT2000C02I	7700	888 127 00-
⅜"	-	0.1 - 7	10.5	D265DVU	600 011-	AT2000C02I	7250	888 128 00-
½"	0.1 - 16	-	10.5	D266DVU	600 011-	AT2000C02I	7400	888 129 00-
½"	0.1 - 16	-	10.5	D266DVU	600 011-	AT2000C02I	7700	888 130 00-
½"	-	0.1 - 7	10.5	D266DVU	600 011-	AT2000C02I	7250	888 131 00-

Seal Material ³ and media temperature range	Media	Ambient Temperature Range	
		Min	Max
FKM (-10 °C to +130 °C)	Water, oil, air	-10 °C	+50 °C

³ See corrosion reference guide and sealing solutions for material compatibility.

ADV Series, Compressed Air – with Solenoid Valves



Valve Series	A	B	C	Weight (kg)
D248/249	90	89	103	-
D264/265/266	98	106	121	-

Dimensions (mm)

Solenoid enclosures

7--0 Type Coil - Insulation class F

External material: PBT (reinforced fiberglass 30%)
 Electrical connection: DIN EN 175301-803 form A
 Winding insulation: Class H (E180)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with plug and gasket correctly fitted*



* Plug and gasket not supplied as standard, must be ordered separately.

Type 600 011- Plug

Rated Voltage (max.): 250 VAC / 300 VDC
 Nominal Current: 10A (rated) / 16A (max)
 Wire cross-section: 1.5 mm² max
 Cable Entry: PG9 (6 to 8 mm)
 Enclosure classification: Conforms to IP65 (according to EN 60529) with supplied gasket
 Insulation class: group C- VDE 0110
 Housing colour: black
 UL approved, file No: E205538



AT2000, Analog Electronic Timer

Specifications	
Operation Temperature	-10°C to +50°C
Timing Temperature Coefficient	± 0.005% - °C
Time ON	from 0.5 to 10 seconds
Time OFF	from 30 seconds to 45 minutes
Set/reset/test	membrane key
Indicators	green LED for 'power ON'
	red LED for 'valve open'
Manual Override	test
Electrical Characteristics	
Supply Voltage (AC/DC)	from 120 V to 240 V - 50/60 Hz (UL)
	from 24 V to 240 V - 50/60 Hz (CE)
Switch Holding Voltage	400 V max.
Switch Capacity	1A
Inrush Current	10A for 10 ms
Absorption	4 mA max.
Duty Cycle	100% ED
Switch Life	3 • 10 ⁸
Repeat Accuracy	±1%
Protection Class	IP65 (EN 60529) with plug and gasket correctly fitted *
Circuit	UL 94 V0

Features and Benefits

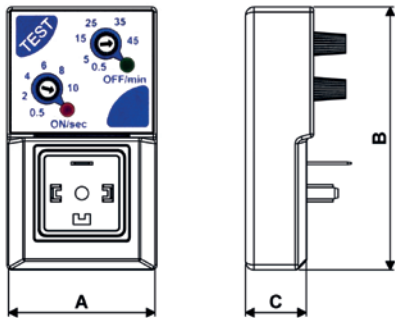
- Ideal for: automatic drain valve, sampling valves, lubrication system, air dryers
- Black colour
- UL file number: E200580



Notes

In case of DC supply, polarity should be reversed: left fast-on positive (+), right fast-on negative (-). Please refer to product instructions for use.

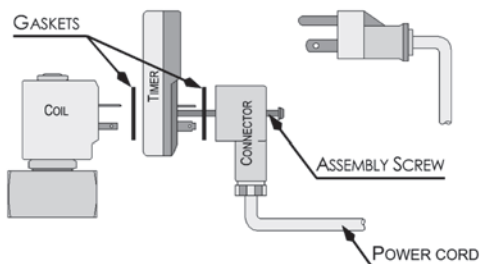
Supplied in single boxes with two squared gaskets and M3x50 fixing screw (see assembling scheme)



Valve Series	A	B	C	Weight (kg)
AT2000C02I	44	77	20	0.077

Dimensions (mm)

Assembling scheme



Customised Products

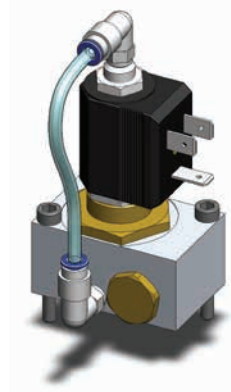
Rotork is constantly evolving and developing new products, enabling us to remain competitive in an ever changing market and keeping at the forefront of technological advances. For many years Rotork has operated in the most diverse industrial sectors and therefore acquired vast experience with a multitude of specialist applications. Our experience enables us to understand, design and manufacture to our customers' specific requirements.

We can develop new customised solenoid valve solutions according to the customers' technical requirements and needs, concentrating on increasing functionality, optimising space and reducing costs of existing systems.

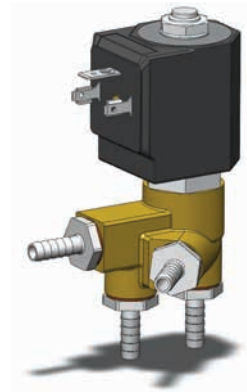
Please find below some examples:



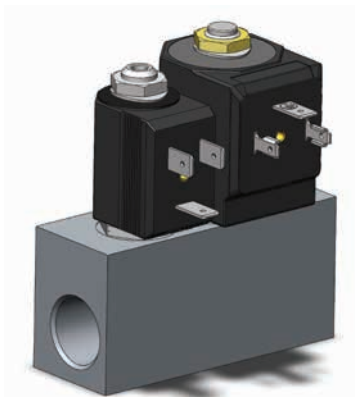
CAR AIR CONDITIONING REFILLER



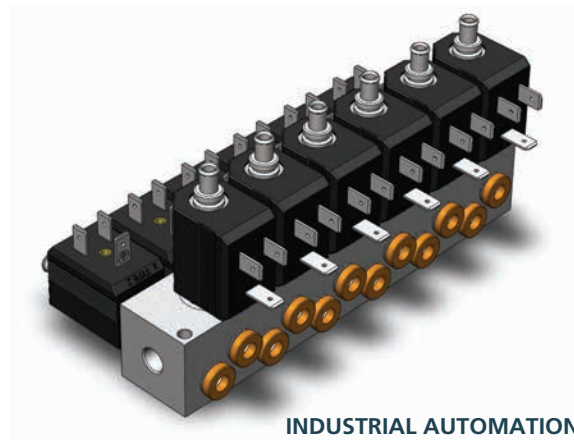
COMPRESSED AIR TREATMENT



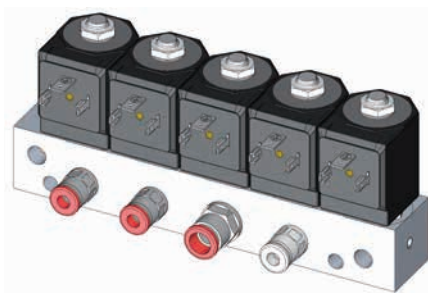
STERILIZERS



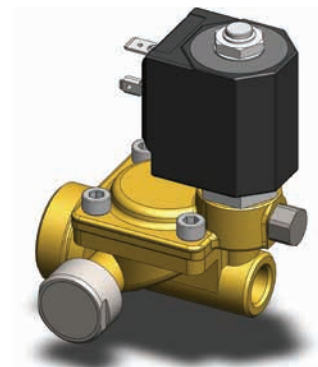
**PACKAGING WITH
VACUUM SYSTEMS FOR INDUSTRY**



INDUSTRIAL AUTOMATION



COOLING SYSTEM



FIREFIGHTING SYSTEMS

Technical Information

The following points should be considered to ensure a correct choice of valve:

Connections and Nominal Diameters

Threaded connections are either "G"- inches (ISO 228) or metric. Nominal diameters (DN) are expressed in millimetres and correspond to the diameter of the valve's main orifice.

Performances (OPD)

Pressure values shown in this catalogue are the max values expressed in relative bar with no pressure at outlet.

For 3/2 way solenoid valves the pressure range can vary when used in other functions or systems.

The maximum pressure (PN) that the valve can tolerate is tested to 1.5 times the maximum value of the operating pressure differential (OPD).

Pressure (units of measurement)

The SI unit of pressure is the pascal (Pa), defined as 1 newton of force per square metre (1 N/m²).

As Pa is such a small unit, the kPa (1 kilonewton/m²) or MPa (1 Meganewton/m²) tend to be more appropriate to fluid engineering.

However, the most popular metric unit used to measure the pressure in fluid engineering field is the bar, which is equal to 105 N/m², and approximates to 1 atmosphere. This unit is used throughout this publication.

Other units often used include lb/in² (PSI), kg/cm², atm in H₂O (atmosphere) and mm Hg. Conversion factors are readily available from many sources.

Absolute pressure (bar a)

This is the pressure measured from the datum of a perfect vacuum: i.e. a perfect vacuum has a pressure of 0 bar a.

Gauge pressure (bar g)

This is the pressure measured from the datum of the atmospheric pressure. Although in reality the atmospheric pressure will depend upon the climate and the height above sea level, a generally accepted value of 1.013 bar a (1 atm) is often used. This is the average pressure exerted by the air of the earth's atmosphere at sea level.

Gauge pressure = Absolute pressure - Atmospheric pressure

Pressure above atmospheric will always yield a positive gauge pressure. Conversely a vacuum or negative pressure is the pressure below that of the atmosphere. A pressure of -1 bar g corresponds closely to a perfect vacuum.

Differential pressure

This is simply the difference between two pressures. When specifying a differential pressure, it is not necessary to use the suffixes 'g' or 'a' to denote either gauge pressure or absolute pressure respectively, as the pressure datum point becomes irrelevant. Therefore the difference between two

pressures will have the same value whether these pressures are measured in gauge pressure or absolute pressure, as long as the two pressures are measured from the same datum.

Flow

The flow is the quantity of fluid that passes through the valve's main orifice which has the nominal diameter (DN) shown in the tables.

The flow is given with a constant Kv value (according to VDI/VDE 2173) that shows how many cubic meters of water, at a temperature of 20 °C, flow through the valve in one hour with a pressure difference of one bar across the valve.

To determine the flow at higher pressures, multiply the Kv value by the square root of the differential pressure. Flow values shown in the selection tables are subject to a tolerance of $\pm 15\%$.

Viscosity

Viscosity of a fluid (liquid or gas) is its resistance to flow freely in a duct.

This phenomenon is also called internal friction and depends on existing cohesion forces among the fluid molecules. The viscosity of liquids decreases as the temperature rises; the viscosity of gases grows if the volume does not change.

According to the International System of Units (SI), the physical quantities are: force **F** \Rightarrow in Newton **N**, distance **h** \Rightarrow in meters **m**, area **A** \Rightarrow in square meters **m²**, speed **u** \Rightarrow in meters per second **m/s**, the unit of measurement of the **dynamic viscosity** is Pascal per second (Pa•s) or Newton multiplied by second per square meter (N•s/m²).

Dividing the dynamic viscosity of the liquid by its density, you can obtain the **kinematic viscosity**. Its unit of measurement is expressed in square meter per second (m²/s). Since the given numerical values are too small, the most common used unit is 10.000 times smaller: the stokes (stox) **St**,

$$1 \text{ St} = 1 \cdot 10^{-4} \text{ m}^2/\text{s} \text{ or } 10.000 \text{ St} = 1 \text{ m}^2/\text{s}$$

as well as the additional unit centistokes **cSt**

$$1 \text{ cSt} = 1 \cdot 10^{-2} \text{ St}$$

Coil power supply

It is important that the exact voltage and frequency of the coil is used for the valve to operate correctly. Provided the coil is fitted correctly on the operator and that the armature is not obstructed, the valve can be operated for an indefinite time within the temperature limitations indicated. All solenoid valves have a copper shading ring to reduce vibrations caused by alternating currents. **Remark: The same valve fitted with coils of different power may have different pressure ratings than standard combinations indicated in each datasheet in this catalogue.**

Media and Ambient Temperatures

Temperature limits for the media in the datasheets and should be used as a guide to valve selection. Normally the maximum ambient temperature can reach +50 °C for

solenoid valves with coils in class "F", +70 °C for class "H". For applications outside these limits please contact our Technical Department.

General purpose solenoid valves

Solenoid valves shown in this catalogue, either normally open or normally closed, are intended to control the flow of fluids and cannot be used as safety valves.

Valve Installation

To ensure proper valve function please observe following instructions:

Water hammer or fluid hammer

Water hammer (or, more generally, fluid hammer) is a pressure surge or wave resulting when a fluid (usually a liquid but sometimes also a gas) in motion is forced to stop or change direction suddenly (momentum change).

Water hammer commonly occurs when a valve is closed suddenly at an end of a pipeline system, and a pressure wave propagates in the pipe. It may also be known as hydraulic shock.

When using liquid fluids water-hammer can occur at pressure of 6 relative bar or higher.

This pressure wave can cause major problems, from noise and vibration to pipe collapse. It is possible to reduce the effects of the water hammer pulses with accumulators and other features.

Mitigating measures:

– **Air vessels** typically have an air cushion above the fluid level, which may be regulated or separated by a bladder. Sizes of air vessels may be up to hundreds of cubic meters on large pipelines. They come in many shapes, sizes and configurations. Such vessels often are called accumulators or expansion tanks.

– **Water Hammer Arrestors** are hydropneumatic devices similar to shock absorbers that can be installed between the water pipe and the machine to absorb the shock and stop the banging.

Safety

This product is not a safety device and must not be used as sole device to prevent the over-pressure of some parts of the plant or the containment of dangerous fluids.

Always connect the coil's earth terminal to ground to ensure the safety of the user and installation. The coil provides the basic insulation only. Install the product in a protected place to prevent electric shocks.

The coil should not be energized if it is not fitted onto a valve or without a plunger inside the valve, as it would overheat and get damaged. Do not touch the energized coil: risk of high temperature.

Do not use the tubes for conveying fluid to ground electrical devices.

Before disconnecting or disassembling the valve, make sure that there is no pressure inside the tubing or the valve itself. Accidental shocks due to fall or collision may damage the operator and/or the integrity of the coil encapsulation thus causing malfunctions such as loss of insulation, seizure of the moving parts and overheating.

Installation

Check for the operating conditions on product label and on the technical documents.

Check for compatibility between medium and valve materials. In case of doubt, please contact the manufacturer.

Keep the valve operator in a vertical position, facing upwards. This prevents limescale or dirt particles in the operator tube which could restrict the armature or create excessive noise whilst operating.

Whilst tightening or unscrewing the valve must be held or revolved only and exclusively by the hexagon or the frame set (in order to avoid damage to its components such as coil, armature tube, etc.).

The recommended **tightening torque of the coil nut is 0,5 Nm maximum**, a higher torque may cause damage to the valve armature tube.

The recommended **tightening torque of the connector screw is 0,5 Nm maximum**, a higher torque may cause an excessive yield stress with consequent damages to the coil rivet and/or plastic encapsulation.

Connections

To ensure that the solenoid valve works properly, do not connect to pipework with an internal diameter less than the nominal diameter (DN) of the valve. Clean all pipework before connection to the solenoid valve: care should be taken to prevent foreign bodies – dirt or material chips – from entering the valve during the assembly phase.

Use suitable seal material on the valve threads. Where liquid sealants are used, it is important to prevent them from entering the valve and block the movement.

Flow Direction

Respect the direction of flow across the valve, shown with an arrow or by numbers on the valve body, depending on the model type.

Filtration

If the fluid contains dirt particles it is necessary to install a filter upstream of the solenoid valve. Dirt is the most frequent cause of malfunction.

Environment

Coils fitted with suitable connectors have a protection class of IP65. However, it is advisable not to use the solenoid valve outside or in very damp conditions without adequate protection. Provide sufficient ventilation for the solenoid valve. **During continuous service the coil of the solenoid valve becomes hot and should not be touched.**

Sealing Solutions

NBR (BunaN)

Trade Names:

Chemigum Hycar (Zeo (Goodyear)n Chemical), Ny Syn (Copolymer), Paracril (Uniroyal), Krynac (Polysar), PerNitrilen (Mobay)

This is the most widely used O-Ring elastomer. It has excellent resistance to petroleum products. Excellent compression set, tear and abrasion resistance. Suitable for air, oil, water, acetylene, kerosene, lime solutions, liquefied petroleum gases and turpentine.

- NBR/ BunaN is Alcon's preferred sealing solution unless otherwise stated.
- Please note NBR (BunaN) is not recommended for highly aromatic petroleum / gasoline's or acids.

EPDM (EPR or EPDM) EPDM (EPR)

Excellent resistance to weathering and ozone, water and steam, with good performance in castor and some phosphate ester based fluids and poor on petroleum/gasoline. It's low and high temperature capabilities are good, having excellent resistance to set with good resilience, this low compression set provides a suitable solution for steam sealing. EPDM is suitable for temperatures above the NBR range. Ethylene-propylene is generally suitable for most photographic solutions as well as numerous chemical solutions. EPDM has served to replace the formerly used butyl.

- Please note EPDM should NEVER be used in contact with mineral based fluids or DI ester based lubricants, due to excessive swell and deterioration. When lubrication is required silicone grease or fluids should be used.

FKM (FPM FLUORELASTOMER)

It has high temperature capabilities, excellent resistance to hydraulic oils, petrol and many other chemicals. FKM O-Rings are used in automobile and other mechanical devices requiring maximum resistance to elevated temperature and to many functional fluids. FKM is a fluorocarbon elastomer. Primarily developed for handling hydrocarbons such as jet fuels, gasoline's, solvent, etc., which normally caused detrimental swelling to NBR. FKM has a high temperature range similar to ethylene propylene but is more resistant to "dry heat". FKM has a rather wide range of chemical compatibility.

***PTFE / Teflon®**

PTFE is a fluorocarbon resin known as a disc sealing material solution where all other synthetic materials have failed. Rulon is a form of Teflon® having fillers which have been added for improved mechanical properties. Teflon® with fillers are considered more of a plastic than a resilient-type material. They are virtually unattacked by any fluid. PTFE provides sealing solutions for cryogenic and steam applications.

*Teflon® is a registered trademark of Du-Pont. It must be noted that PTFE sealing will allow slight let-by.

Silicone

This elastomer provides high and low temperature solutions under certain conditions for numerous applications (it must be noted that silicone is not suitable for steam applications). It can handle hydrogen peroxide and some acid solutions. Silicone's retention of properties at high temperatures is superior to other elastic materials.

It must be noted that Silicone has poor tensile strength, tear resistance and abrasion resistance.

Neoprene

Neoprene is commonly used for refrigeration systems sealing as an external seal. Suitable for alcohol, mild acids, water, air, ammonia, argon gas and other gases.

Sigodur (filled PTFE) & Ruby

Stiff materials particularly suitable for heavy duty applications.

KALREZ® Spectrum™ 6375

KALREZ® Spectrum™ 6375 is a compound specifically designed for the chemical process industry. This compound has excellent broad chemical resistance, good mechanical properties, and outstanding hot-air aging properties. Kalrez® 6375 is well suited for use in mixed process streams because of its excellent resistance to acids, bases and amines. It is also recommended for use in hot water, steam, pure ethylene oxide and propylene oxide.

Metals

Ag (silver)

Silver is a soft, malleable metal with a characteristic sheen. It has the highest thermal and electrical conductivity of all metals. Alcon provide shading coil material for stainless steel valves in silver.

Al (aluminium)

Derived from the Latin ALUMEN for ALUM (Potassium aluminium sulphate). A lightweight material that offers high strength and rigidity along with good corrosion resistance and heat dissipation. Alcon provide die-cast bodies, solenoid enclosures and shading coils made from aluminium.

Cu (copper)

Copper is an important engineering material since it is widely used in its pure state and also in alloys with other metals. In its pure state it is the most important material in the electrical industry. It has high electrical conductivity and corrosion resistance and is easy to fabricate. It has reasonable tensile strength, controllable annealing properties and general soldering and joining characteristics. Alcon provide as standard shading rings produced from Copper.

CU Sn (bronze)

Bronze alloys consist of copper and tin primarily and these can be known as "tin bronzes". Since phosphorus is usually added to these alloys as a deoxidising agent during casting, the tin bronzes are commercially known as "phosphor bronzes". These alloys possess desirable properties such as high strength, wear resistance, and good sea water resistance. Alcon provide bodies from bronze.

Cu Zu (brass)

Brass is probably the best known of the "yellow metals" and it is produced in a wide variety of forms with many different characteristics and attributes. It is a basic alloy of copper and zinc and it finds many engineering applications. Alcon provide forged bodies from brass this forging brass has a composition of 58% copper, 2% lead and 40% zinc.

Fe CrNi 300 Series Stainless Steel (18-8) Austenitic

303 Stainless Steel is essentially low-carbon steel to which chromium has been added. It is the addition of chromium, in amounts of 18%, that adds strength and gives stainless steel its unique 'stainless', corrosion-resisting properties. The corrosion resistance, as well as other useful properties of the steel, is enhanced by the addition of other elements such as 8% nickel. Alcon provide flange tubes, bodies & springs in 300 series stainless steel.

316 Stainless Steel

316 Stainless Steel is essentially low-carbon steel to which chromium has been added. It is the addition of chromium, in amounts of 18%, that adds strength and gives stainless steel its unique 'stainless', corrosion-resisting properties. The corrosion resistance, as well as other useful properties of the steel, is enhanced by the addition of other elements such as 12% nickel. Alcon provide valve bodies flange tubes and coil enclosures in 316 series stainless steel.

430F & 430FR Magnetic Stainless Steel

Type 430F is a solenoid grade stainless steel that has the best magnetic properties and lowest residual magnetism. Type 430FR stainless, used for corrosive service for many years, also offers improved wear resistance, higher electrical resistivity and increased hardness. Alcon's plunger and top stop materials are produced using the 430F series. Basic composition 18% chromium, remainder iron.

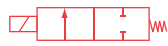
Modes of Operation

Valve Selection

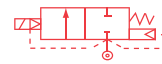
A solenoid valve should be chosen whenever the following conditions are met:

- ✓ Media without dirt particles
- ✓ Moderate flow volumes
- ✓ Average differential pressures
- ✓ High speed in operation
- ✓ Media with a viscosity not higher than 21 cST(3°E)

2/2 N/C Normally Closed



*Solenoid Operated
Direct Acting*

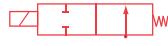


*Solenoid
Pilot Operated*

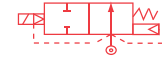
2 way, normally closed, energise to open, on/off operation (de-energise to close), with one inlet and one outlet connection. There are 2 types of valve operation – Direct Acting and Pilot Operated.

- a) Direct Acting – The coil supplies all the power to open the valve and the valve will operate from zero pressure.
- b) Pilot Operated – this can either be diaphragm or piston operated. These valves have a pilot hole which is opened/closed by the coil acting upon a plunger and diaphragm or piston used to control the main orifice. The operation relies on the media pressure difference between the inlet and outlet and a minimum operating pressure is required to operate these valves unless stated as zero.

2/2 N/O Normally Open



*Solenoid
Direct Acting*



*Solenoid
Pilot Operated*

2 way, normally open, energise to close, de-energise to open, with one inlet and one outlet connection. Can be either direct acting or pilot operated.

3/2 N/C Normally Closed



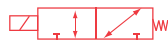
Valve open when energised, closed when de-energised. This valve operates on the same principle as the 2/2 N/C version except the valve has 3 connections, 2 orifices, one permanently open, one permanently closed. The use of these are for operation of actuators for large valves where single cylinder spring return system is employed.

3/2 N/O Normally Open



Valve open when de-energised, closed when energised.

3/2 UNI Universal



Valve may be used as normally closed, normally open or diversion/selector valve.

5/2



These valves are available in 2 forms;

- a) Single Solenoid – 2 position, spool and sleeve type, which is based on an air pilot return mechanism. When de-energised, the valve allows one inlet and one outlet to be connected, exhausting the other inlet/outlet connection through an exhaust port. On energisation, the action reverses.
- b) Dual Solenoid Valves – these spool and sleeve type solenoid valves are momentary contact type. When one coil is energised, one inlet is connected to one outlet, with the other inlet/outlet connection connected to an exhaust port, when the coil is de-energised and other coil energised, the action is reversed.

These valves are for use on double acting cylinder applications.

Modes of Operation

2/2 N/C Normally Closed Pneumatic



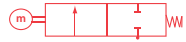
2 way, normally closed, pressurise to open, de-pressurise to close with the aid of a return spring, having one inlet and one outlet connection. Can be direct acting air operated against a return spring. Note: These valves are operated via a 3 way solenoid valve which is always required.

2/2 N/O Normally Open Pneumatic



2 way, normally open, pressurise to close, de-pressurise to open with the aid of a return spring, having one inlet and one outlet connection. Can be direct acting air operated against a return spring. Note: These valves are operated via a 3 way solenoid valve which is always required.

2/2 N/C Normally Closed Motorised



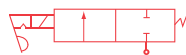
2 way, normally closed, energise to open – (slow opening) de-energise to close – (quick closing) with one inlet and one outlet connection. Motor driven against a return spring.

2/2 N/O Normally Open Motorised



2 way, normally open, energise to close – (slow closing) de-energise to open – (quick opening).

2/2 N/C Normally Closed Manual Reset (Solenoid)



These valves operate on the same principle as 2/2 N/C direct acting version except – once the coil is energised the valve will not open until manually opened by either a lever or push reset device.

2/2 N/C Normally Closed Manual Reset (Motorised)



The operation is similar to 2/2 N/C Normally Closed Manual Reset (Solenoid) except, once the motor is energised the valve will not open till a manual reset/relay button is operated, either remote or integral to the actuator. General use is for both manual reset or safety systems where knowledge of an electrical failure is required.

Optional Features

Manual Override

Normally closed direct acting and pilot operated solenoid valves (only versions specified in each datasheet) can be supplied with a manual override which allows the valve to be opened independently of electrical current.

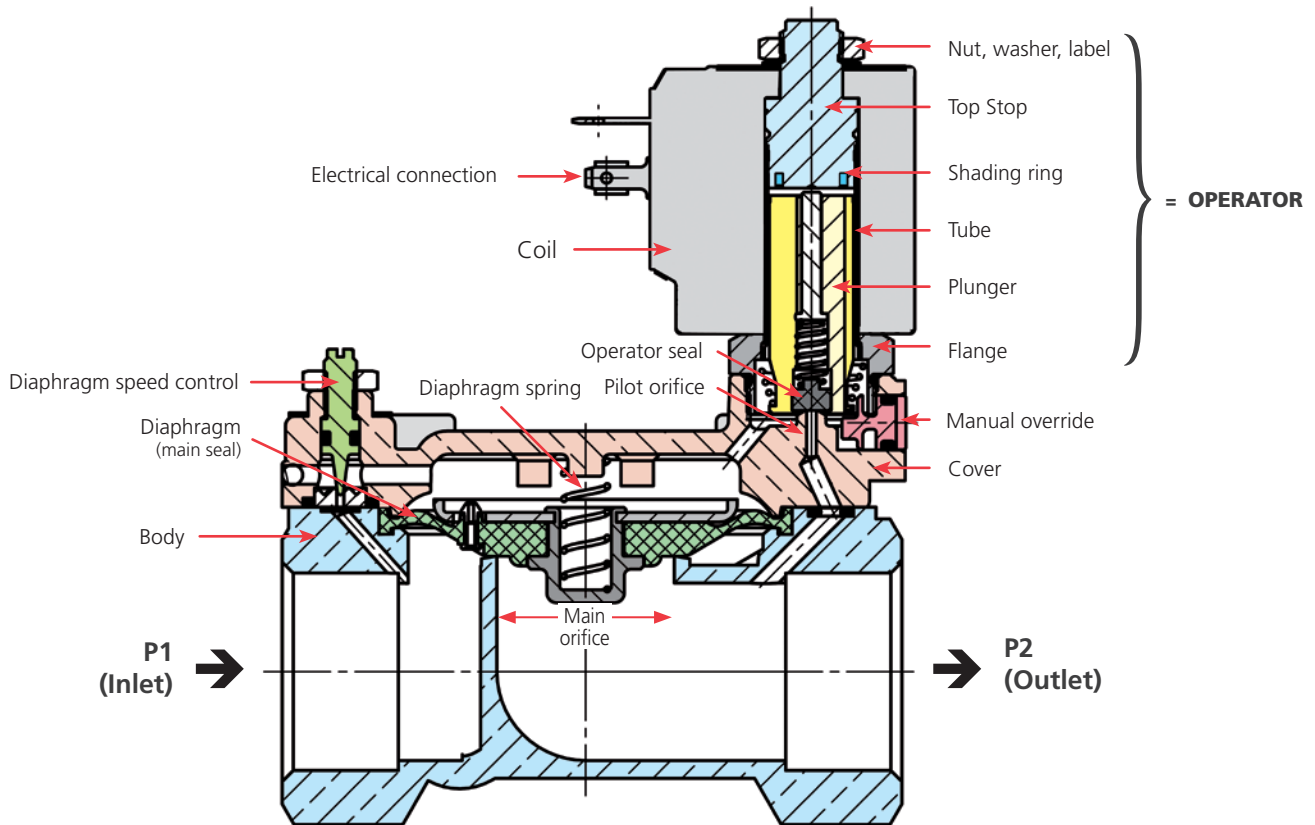
Waterhammer Control

Pilot operated solenoid valves (only versions specified in each datasheet) can be supplied with a system that regulates the closing speed of the diaphragm in order to control waterhammer.

The seal closing speed is operated by the adjusting screw: by screwing it clockwise (in the “+” direction) when using liquid, the valve will close slower reducing any waterhammer effect that may occur in the solenoid valve and the upstream pipes.

In the case of larger valves (1¼”, 1½” and 2”), please adjust the anti-waterhammer screw to ensure that that valve closes as slowly as possible in order to avoid causing any damage that may affect the functioning of the equipment and valve due to the waterhammer effect.

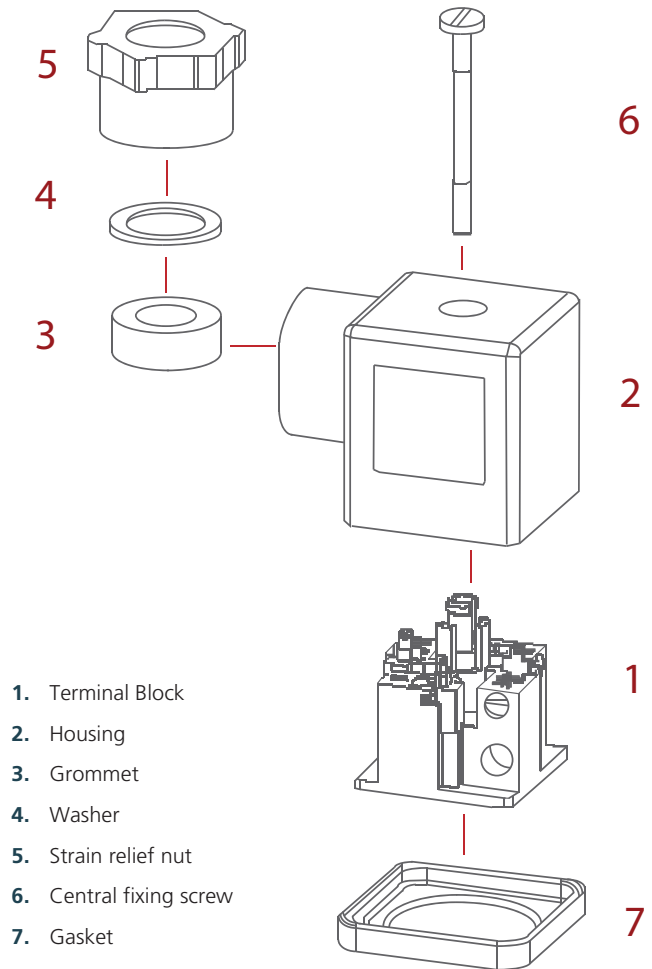
Scheme of Components of Solenoid Valves



Din Plug Connectors

Features

- Dust and splash proof protected (IEC60529-IP65)
- Impact resistant plastic housing.
- Easy to install cable harness.
- Optional integrated electronic circuit, optional indicator LED with or without rectifiers etc.
- Retained central fixing screw.
- Special versions on request.



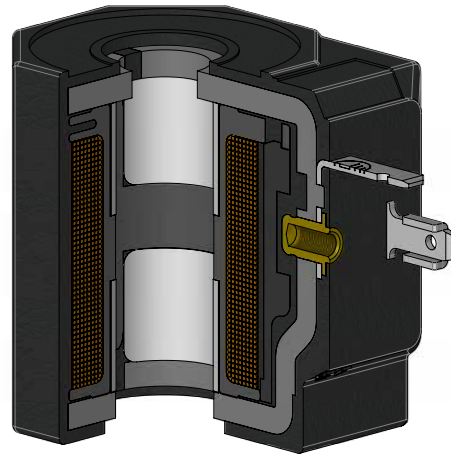
Copper Winding Temperature Classification

Insulation systems are arranged in order of their insulation level and classified by a letter symbol or by a numerical value.

The numerical value relates to the temperature classification of the insulation system.

The temperature classification indicates the maximum (hotspot) temperature at which the insulation system can be operated for normal expected service life.

In general, all materials used in a given insulation system should be rated for temperatures equal to, or exceeding, the temperature classification of the system.



Insulation Systems*	Temperature Classification
Class A Class 105	105 °C (221 °F)
Class E** Class 120	120 °C (248 °F)
Class B Class 130	130 °C (266 °F)
Class F Class 155	155 °C (311 °F)
Class H Class 180	180 °C (356 °F)
Class N Class 200	200 °C (392 °F)

* IEEE Std.117.

** Used in European equipment.

Solenoid Enclosures (Safe Area)

Series 2000 & 7000

Coils manufactured by Rotork are designed for continuous duty in conformity to the EN 60730 safety standards. They are encapsulated in a self-extinguishing synthetic material and offer high mechanical protection and excellent thermal dissipation. They are fully interchangeable on all Rotork solenoid valves, thereby reducing warehouse inventories.

Common Features

Electrical connection: fast on connection 6,3x0,8

Protection class: IP 65 (according to EN60529) - NEMA 4 (UL 50) with connector and gasket

Operation: continuous (ED 100%)

Voltage tolerance: AC +10% ÷ -15%

DC +10% ÷ -5%

Notes

All coils manufactured by Rotork with the RoHS Directive (2011/65/EU)

Insulation class according to EN 60730-1 see the below table

All windings are realised with class 'H' wires (180 °C)

Custom voltages and low power consumption available: please contact Sales Department

Minimum batch quantity required for some voltage ratings

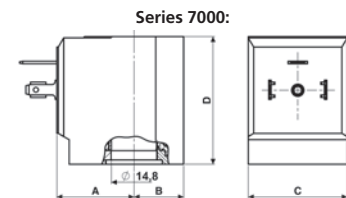
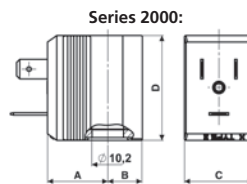


SERIES: 2000



SERIES: 7000

Dimensions & Weights		Series 2000	Series 7000
A	(mm)	19.5	25
B	(mm)	11.2	16
C	(mm)	22.3	32
D	(mm)	33.7	41.4
Weight	(kg)	0.060	0.146



Coils	Voltage	Power		Class	Ambient Temperature		Media Temperature ¹	
		Holding	Inrush		Min.	Max.	Min.	Max.
Code	-			-				
2150	12 VDC	7 W	—	F 155 °C	-10 °C	+50 °C	-10 °C	+130 °C
2250	24 VDC	7 W	—					
2750	230 VDC	7 W	—					
2100	12 V / 50/60 Hz	10 VA	16 VA					
2200	24 V / 50/60 Hz	10 VA	16 VA					
2300	48 V / 50/60 Hz	10 VA	16 VA					
2400	110 V / 50 Hz - 120 V / 60 Hz	10 VA	16 VA					
2600	200 V / 50 Hz - 220 V / 60 Hz	10 VA	16 VA					
2700	230 V / 50 Hz - 240 V / 60 Hz	10 VA	16 VA	F 155 °C	-10 °C	+60 °C	-10 °C	+130 °C
215R	12 VDC	6 W	—					
225R	24 VDC	6 W	—					
220R	24 V / 50 Hz	9 VA	14 VA					
226R	24 V / 60 Hz	9 VA	14 VA					
240R	110 V / 50 Hz - 120 V / 60 Hz	9 VA	14 VA					
270R	230 V / 50 Hz - 240 V / 60 Hz	9 VA	14 VA					
B150	12 VDC	7 W	—					
B250	24 VDC	7 W	—					
B200	24 V / 50/60 Hz	10 VA	16 VA					
B400	110 V / 50 Hz - 120 V / 60 Hz	10 VA	16 VA					
B700	230 V / 50 Hz - 240 V / 60 Hz	10 VA	16 VA					
21V1	12 VDC	10 W	—	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
22V1	24 VDC	10 W	—					

Series 2000 - Standard

Connection: to DIN 46244

Series 200R - UL approved

UL approved coils recognized component, file number E193928

Series B000 - Impregnated

Impregnated coils for humid environments (e.g. code B400)

Series 2001 - Class 'H'

¹ Some valve configurations allow a max. fluid temperature up to 180 °C, please check valve datasheets.

Solenoid Enclosures (Safe Area)

Coils	Voltage	Power		Class	Ambient Temperature		Media Temperature ¹	
		Holding	Inrush		Min.	Max.	Min.	Max.
Code	-			-				
715 <u>Q</u>	12 VDC	14 W	—	F 155 °C	-10 °C	+50 °C	-10 °C	+130 °C
725 <u>Q</u>	24 VDC	14 W	—					
775 <u>Q</u>	230 VDC	14 W	—					
710 <u>Q</u>	12 V / 50/60 Hz	18 VA	36 VA					
720 <u>Q</u>	24 V / 50/60 Hz	18 VA	36 VA					
730 <u>Q</u>	48 V / 50/60 Hz	18 VA	36 VA					
740 <u>Q</u>	110 V / 50 Hz - 120 V / 60 Hz	18 VA	36 VA					
760 <u>Q</u>	200 V / 50 Hz - 220 V / 60 Hz	18 VA	36 VA					
770 <u>Q</u>	230 V / 50 Hz - 240 V / 60 Hz	18 VA	36 VA					
725 <u>R</u>	24 VDC	10 W	—					
720 <u>R</u>	24 V / 50 Hz	15 VA	30 VA					
740 <u>R</u>	110 V / 50 Hz - 120 V / 60 Hz	15 VA	30 VA					
770 <u>R</u>	230 V / 50 Hz - 240 V / 60 Hz	15 VA	30 VA					
725 <u>1</u>	24 VDC	14 W	—	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
720 <u>1</u>	24 V / 50/60 Hz	18 VA	36 VA					
740 <u>1</u>	110 V / 50 Hz - 120 V / 60 Hz	18 VA	36 VA					
770 <u>1</u>	230 V / 50 Hz - 24 V / 60 Hz	18 VA	36 VA					
71Z1	12 VDC	22 W	—	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
72Z1	24 VDC	22 W	—					
72K1	24 V / 50/60 Hz	25 VA	50 VA					
74K1	110 V / 50 Hz - 120 V / 60 Hz	25 VA	50 VA					
77K1	230 V / 50 Hz - 240 V / 60 Hz	25 VA	50 VA					

Series 7000 - Standard

Connection: to DIN EN 175301-803 form A (ex DIN 43650-A)

OPTIONS

Impregnated coils for humid environments (e.g. code D400)

Series 700R - UL approved

UL approved coils recognized component, file number E193928

Series 7001 - Class 'H'

OPTIONS

Impregnated coils for humid environments (e.g. code D701)

Series 700Q - High Power




OPTIONS

Impregnated coils for humid environments (e.g. code D7K1)

¹ Some valve configurations allow a max. fluid temperature up to 180 °C, please check valve datasheets.

Solenoid Enclosures (Safe Area)

Type : E5, S50, S4, S7

<p>E5 Type Enclosure Protection Class IP65 External Material: Glass reinforced nylon Electrical Connection: DIN Plug to ISO 4400 Winding insulation Class H Enclosure conforms to IP65 when correct plug gasket is fitted as supplied. Standard enclosure for most popular Alcon valves.</p>	
<p>S50 Type Enclosure Protection Class IP65 Material: Pressed steel Electrical Connection: DIN Plug to ISO 4400 Winding insulation Class H This enclosure conforms to IP65 when correct plug seal gasket is fitted Enclosure for the following types: FACHL, GB8.</p>	
<p>S4 Type Enclosure Protection Class IP50 External Material: Pressed steel Powder Coated Electrical Entry: Conduit boss 20 mm or 1/2" NPT Electrical Connection: Screwed terminals or 0.5 mm flying leads, or DIN connector for cryogenic applications Winding insulation Class H Optional enclosure for the following types: ACD, ACDN, GB.</p>	
<p>S7 Type Enclosure Protection Class IP65 Material: Nylon Electrical Connection: DIN Plug to ISO 4400 Standard Enclosure for Universal Namur Valves Winding insulation Class F This enclosure conforms to IP65 when correct plug seal gasket is fitted as supplied.</p>	

Solenoid Enclosures (Hazardous Area)



Explosion-proof / Weatherproof

Enclosure S4 Type Exd ATEX or IECEx / CSA / cCSAus approved.

Intended for use in potentially explosive atmospheres Directive 2014/34/EU.

Compliance with essential health and safety requirements EN60529 (IP67), EN60079-1 and EN60079-0

Features

- Special purpose solenoid valves are used for controlling gases or liquids where a potentially explosive gas/air mixture is present in the atmosphere for long periods or likely to occur in normal operation
- Alcon flameproof enclosures are suitable for hazardous areas Zone 1 and Zone 2, for the control of Group IIA, IIB, IIC gases.

Application

- Valves configured for Hazardous Areas
- User to consult all applicable codes, such as N.E.C., EU directive 99/92/EC, for definitions, performance and safety requirements associated with Hazardous Area Classification, Apparatus Group, Zones, Division and Temperature Classification

Protection Class: II 2 G Exd IIC T6 for ambient temperatures -50 °C to +40 °C

Optional: II 2 G Exd IIC T4 for ambient temperatures -50 °C to +70 °C

Certificate No: Sira 03ATEX1319 (ATEX)
IECEX CSA 07.0002
1676463 (CSA cCSAus)

Weatherproof to IP67

Technical Specification

Power Consumption: Holding – 19 VA, 12 V to 230 V
50 / 60 Hz. 14.5 W 12 V to 212 VDC

Material: Powder coated Aluminium or 316 St. St enclosure with St. St nameplate

Electrical Entry: M20 x 1.5 or ½" NPT Conduit Entry

**Applicable to the following types:
ACD, ACP, GB, FACHL, NAMUR**



Explosion-proof / Weatherproof

Enclosure S4 Type Exm ATEX or IECEx approved

Intended for use in potentially explosive atmospheres Directive 2014/34/EU

Compliance with essential health and safety requirements EN60079-0 and EN60079-18

Features

- Special purpose solenoid valves are used for controlling gases or liquids where a potentially explosive gas/air mixture is present in the atmosphere for long periods or likely to occur in normal operation
- Alcon flameproof enclosures are suitable for hazardous areas Zone 1 and Zone 2, for the control of Group II gases.

Application

- Valves configured for Hazardous Areas
- User to consult all applicable codes, such as N.E.C., EU directive 99/92/EC, for definitions, performance and safety requirements associated with Hazardous Area Classification, Apparatus Group, Zones, Division and Temperature Classification
- Applicable to all catalogue valves except HWA.

Protection Class: II 2 G Exm II T5 for ambient temperatures -20 °C to +40 °C

Hazardous area certificates:

Baseefa06ATEX0302X (ATEX)
IECEX BAS06.0080X

Weatherproof to IP65

Technical Specification

Power Consumption: Holding – 16 VA, 12 V to 230 V
50 / 60 Hz. 10 W, 12, 24 VDC

Material: Powder coated metal enclosure with stainless steel nameplate

Electrical Entry: 2 metre length of approved 3 Core cable with M16 conduit male winding insulation class.

**Applicable to the following types:
ACD, ACP, GB, FACHL (24 VDC)**

Solenoid Enclosures (Hazardous Area)



Intrinsically Safe Enclosures (ATEX approved)

Complies with EN60079-0 and EN60079-11

Protection Class: Exia IIC T6, ATEX approved for ambient temperatures -40 °C to + 50 °C

Maximum valve media temperature of 70 °C

Certificate No: PTB 02 ATEX 2154

Weatherproof to IP65

Technical Specification

Winding insulation: Class F

Rated Voltage: 24 VDC with typical 300 ohm zener barrier

Max Power Consumption: Exia 1.6 watts DC

Material: Thermoset resin

Electrical Entry: PG9 via Din Plug Connector
Din 43650-A

**Applicable to the following types:
UNIVERSAL NAMUR**

Protection Class, IP Ratings & Hazardous Areas

Enclosure Protection - Non Hazardous locations, Comparison of American Nema classification & European CENELEC IP classification

Nema type & relevant tests	Description	Equivalent degree of protection
1	General purpose - indoor	IP30
2	Drip proof - indoor	IP32
3	Dust and rain tight - outdoor	IP54
3R	Rain proof - outdoor	IP54
4	Water tight and dust tight - indoor and outdoor	IP65
4X	Water tight, dust tight and corrosion resistant - indoor and outdoor	IP65
6	Submersible, water tight and dust tight - indoor and outdoor	IP67
12	Industrial use, dust tight and drip proof - indoor	IP52
13	Oil tight and dust tight - indoor	IP55

IP No.	First number - protection against solids	Second number - protection against liquids
0	No protection	No protection
1	Protected against solid objects over 50 mm Ø	Protected against vertically falling drops of water
2	Protected against solid objects over 12 mm Ø	Protected against direct sprays up to 15° from vertical
3	Protected against solid objects over 2.5 mm Ø	Protected against direct sprays up to 60° from vertical
4	Protected against solid objects over 1 mm Ø	Protected against direct sprays from all directions limited ingress permitted.
5	Protected against dust - limited ingress permitted	Protected against low pressure jets from all directions limited ingress permitted
6	Totally protected against dust	Protected against strong jets from all directions limited ingress permitted
7		Protected against effects of immersion from 15 cm - 1m
8		Protected against long periods of immersion under pressure

International Standards - Temperature classification

IEC 79-8 & CENELEC		American NEC	
Class	Max. surface temp (°C)	Class	Max. surface temp (°C)
T1	450	T1	450
T2	300	T2	300
		T2A	280
		T2B	260
		T2C	230
		T2D	215
T3	200	T3	200
		T3B	165
		T3C	160
T4	135	T4	135
		T4A	120
T5	100	T5	100
T6	85	T6	85

Zones & divisions - Define the likelihood of the hazard being present in potentially explosive concentrations

UK / CENELEC / IEC		USA & CANADA	
Hazard continuously present (>1000 hrs / year)	Zone 0	Division 1	Hazard likely to be present: N.B. where the hazard is continuously present, electrical apparatus is avoided if possible.
Hazard likely to be present	Zone 1		
Hazard unlikely to be present: typically only for short periods or under fault conditions (<10 Hrs/year)	Zone 2	Division 2	Hazard unlikely to be present - likely to be confined. An area adjacent to a Division 1 area.
Fully defined in BS5345 and IEC 79-10 (Guideline figures)			

Conversions

Capacity & flow rate

Multiply number of	by	to obtain	m ³ /h	l/s	l/m	m ³ /s (cumeq)	UK gpm	US gpm	ft ³ /s (cusec)	Water	
										UK ton/h	tonne/h
1 m ³ /h			1	0.278	16.66	0.000278	3.666	4.4	0.00981	0.982	1
1 l/s			3.6	1	60	0.001	13.2	15.83	0.00353	3.528	3.6
1 l/m			0.06	0.0167	1	1.66 x 10 ⁻⁵	0.2199	0.264	0.000588	0.059	0.06
1 m ³ /s			3600	1000	60,000	1	13,200	15,800	35,315	3532	3600
1 UK gpm			0.272	0.0757	4.546	0.000757	1	1.2	0.002267	0.268	0.272
1 US gpm			0.227	0.0632	3.785	0.00063	0.833	1	0.00223	0.223	0.227
1 ft ³ /s			101.9	28.32	1698	0.0283	374	449	1	100	101.9
1 UK ton/h			1.02	0.283	17	0.000283	3.73	4.48	0.01	1	1.02
1 tonne/h			1.005	0.278	16.7	0.000278	3.666	4.41	0.0098	0.98	1

Volumetric rate of flow

Multiply number of	by	to obtain	Litres per sec	Litres per minute	Cubic metres per hour	Cubic Ft per hour	Cubic Ft per min	Imperial Gallons per min	U.S. Gallons per min	U.S. Barrels per day
Litres per sec			1	60	3.6	127.1	21.19	13.2	15.85	543.4
Litres per min			0.1667	1	0.06	2.119	0.03532	0.22	0.2642	9.057
Cubic metres per hour			0.2778	16.67	1	35.31	0.5886	3.666	4.403	150.9
Cubic Feet per hour			0.007865	0.4719	0.02832	1	0.01667	0.1038	0.1247	4.275
Cubic Feet per min			0.4719	28.32	1.6999	60	1	6.229	7.481	256.5
Imperial Gallons per min			0.07577	4.546	0.2727	9.633	0.1606	1	1.201	41.17
U.S. Gallons per min			0.06309	3.785	0.2271	8.021	0.1337	0.8327	1	34.29
U.S. Barrels per day			0.00184	0.1104	0.0006624	0.2339	0.0003899	0.02428	0.02917	1

1 MGD = 189.4 m³/h 1 scfm = 1.699 Nm³/h

Temperature

To convert from	To Fahrenheit	To Celcius	To Kelvin
Fahrenheit (F)	F	(F-32) * 5/9	(F-32) * 5/9 + 273.15
Celcius (C)	(C*9/5) + 32	C	C + 273.16
Kelvin (K)	(K - 273.15) * 9/5 + 32	K - 273.15	K

Pressure

Multiply number of	by	to obtain	bar	Psi (lbf/in ²)	Cm water (39.2 °F, 4 °C)	Inch of water (39.2 °F, 4 °C)	Foot of water (39.2 °F, 4 °C)	Kilopascal (kPa)
Bar			1	14.503 77	1019.74	401.474	33.456 2	100
Psi (lbf/in ²)			0.068 947 57	1	70.308 9	27.680 7	2.306 73	6.894 757
Cm water (39.2 °F, 4 °C)			0.000 980 638	0.014 223 0	1	0.393 701	0.032 808 4	0.098 063 8
Inch of water (39.2 °F, 4 °C)			0.002 490 82	0.036 123 3	2.54	1	0.083 333 4	0.249 082
Foot of water (39.2 °F, 4 °C)			0.029 889 8	0.433 515	30.48	12.021 3	1	2988 98
Kilopascal (kPa)			0.01	0.145 037 7	10.197 4	4.014 74	0.334 562	1

Corrosion Reference Guide

This chart is for general recommendation only. When ordering valves for corrosive duty application details are to be given, particularly media, % concentration, temperature and ambient temperature. For additional support please contact us.

Material	Valve Body					Seals				Notes
	Alum	Brass	Brz	CI	Stainless	NBR	EPDM	FKM	PTFE	
Acetic Acid 10%	NR	NR	NR	NR	•	NR	•	NR	•	1
Acetone	•	•	•	•	•	NR	•	NR	•	
Acetylene	NR	•	•	NR	•	NR	•	•	•	1
Air	•	•	•	•	•	•	•	•	•	
Ammonia Gas Anhydrous 20%	NR	NR	NR	•	•	NR	•	NR	•	
Argon Gas	•	•	•	NR	•	NR	•	•	•	
Beer	NR	NR	NR	NR	•	•	•	•	NR	
Benzene	•	•	•	NR	•	NR	NR	•	•	
Bromine (Liquid)	NR	NR	NR	NR	NR	NR	NR	•	NR	1
Butane	•	•	•	•	•	•	NR	•	•	
Carbon Dioxide (Gas)	•	•	•	•	•	•	•	•	•	
Carbon Dioxide (Liquid)	NR	NR	NR	NR	•	NR	NR	NR	•	
Carbon Tetrachloride (Dry)	NR	•	•	NR	•	NR	NR	•	•	
Carbonated Water	NR	NR	NR	NR	•	•	•	NR	•	
Caustic Soda 30%	NR	NR	NR	NR	•	NR	•	NR	•	
Chrome Acid 20% - 20C	NR	NR	NR	NR	•	NR	NR	•	•	
Chlorine Gas (Dry)	NR	NR	NR	NR	NR	NR	NR	•	•	1
Chlorine Liquid	NR	NR	NR	NR	NR	NR	NR	•	•	1
Chlorine in Water	NR	•	•	NR	•	•	•	NR	•	2
Coke Oven Gas	•	NR	NR	•	•	•	NR	NR	•	
Coolant	NR	•	•	NR	•	•	NR	•	•	
Creosote	•	NR	NR	NR	•	NR	NR	•	•	
Crude Oil	•	NR	NR	NR	•	•	NR	•	•	
De-ionized Water	NR	NR	NR	NR	•	•	•	•	•	
De-mineralised Water	NR	NR	NR	NR	•	•	•	•	•	
Detergents	NR	•	•	NR	•	•	•	•	•	
Diesel Oil	•	•	•	•	•	•	NR	•	•	
Distilled Water	NR	•	•	NR	•	•	•	•	•	
Ethyl Alcohol	NR	•	•	NR	•	•	•	•	•	
Ethylene Glycol	•	•	•	NR	•	•	•	•	•	
Ethylene Oxide	NR	NR	NR	NR	•	NR	NR	NR	NR	1
Food Products	NR	NR	NR	NR	•	•	NR	•	NR	
Freon 12	NR	•	•	•	•	NR	NR	NR	•	
Freon 22	NR	NR	NR	NR	•	NR	NR	NR	•	
Freon Solvents	NR	•	•	NR	•	•	NR	NR	•	
Fuel Oil	•	•	•	NR	•	•	NR	•	•	
Gasoline	NR	•	•	NR	•	NR	NR	•	•	
Helium	•	•	•	NR	•	•	•	•	•	
Hydraulic Fluids	NR	•	•	NR	•	NR	NR	•	•	
Hydrochloric Acid	NR	NR	NR	NR	NR	NR	NR	NR	•	1
Hydrogen Gas	•	•	•	•	•	•	•	•	•	3
Hydrogen Sulphide (dry)	NR	NR	NR	NR	•	NR	•	•	•	
Jet Fuel	•	NR	NR	NR	•	•	NR	•	•	
Kerosene	•	•	•	•	•	•	NR	•	•	

Notes:

1. Non-standard materials of construction are required.
2. Chlorine must not exceed 5 parts per million.
3. We are required to provide industry standard degreasing, cleaning and individual packaging with appropriate label.

• = Recommended
NR = Not Recommended

Corrosion Reference Guide

This chart is for general recommendation only. When ordering valves for corrosive duty application details are to be given, particularly media, % concentration, temperature and ambient temperature. For additional support please contact us.

Material	Valve Body					Seals				Notes
	Alum	Brass	Brz	Cl	Stainless	NBR	EPDM	FKM	PTFE	
LPG	•	•	•	NR	•	•	NR	•	•	
Lubricating Oil	•	•	•	•	•	NR	•	•	•	
Methane Gas	•	•	•	•	•	•	NR	•	•	
Methyl Alcohol	NR	•	•	•	•	•	•	•	•	
Mineral Oil	•	•	•	•	•	•	NR	•	•	
Natural Gas	•	•	•	•	•	•	•	•	•	
Natural Gas Liquid	NR	•	•	NR	•	NR	NR	NR	•	3
Nitric Acid 50% 20C	NR	NR	NR	NR	•	NR	NR	•	•	
Nitrogen gas	•	•	•	•	•	•	•	•	•	
Nitrogen Liquid	NR	•	•	NR	•	NR	NR	NR	•	3
Nitrous Oxide	NR	NR	NR	NR	•	NR	•	NR	•	
Oxygen Gas	NR	•	•	NR	•	NR	NR	•	•	3
Oxygen Liquid	•	•	•	NR	•	NR	NR	NR	•	3
Paraffin	•	•	•	NR	•	•	•	•	•	
Perchlrenthylene 20C	NR	•	•	NR	•	NR	NR	•	•	
Phosperic Acid 30%	NR	NR	NR	•	NR	NR	•	•	•	1
Photographic solution	NR	NR	NR	NR	NR	NR	NR	NR	•	1
Potable water	NR	•	•	NR	•	•	•	•	•	
Potassium Sulphate	NR	NR	NR	•	•	•	•	•	•	
Propane	•	•	•	NR	•	•	NR	•	•	
Salt Water	NR	NR	•	NR	•	•	•	•	•	1
Sea Water	NR	NR	•	NR	•	•	•	•	•	1
Soapy Water	NR	•	•	NR	•	•	NR	•	•	
Sodium Hydroxide 70%	NR	NR	NR	NR	•	NR	•	•	•	
Sodium Hypochorite 5%	NR	NR	NR	NR	•	NR	•	•	•	
Steam 0 - 50 psi	NR	•	•	NR	•	NR	•	NR	•	
Steam 0 - 125 psi	NR	•	•	NR	•	NR	NR	NR	•	
Steam Condensate	NR	•	•	NR	•	NR	•	NR	•	
Sulphur Dioxide	NR	NR	NR	NR	•	NR	•	NR	•	
Sulphuric Acid 40%	NR	NR	NR	NR	NR	•	•	•	•	1
Sulphurous Acid 5% - 20C	NR	NR	NR	NR	NR	NR	NR	•	•	1
Toluene	•	•	•	NR	•	NR	NR	NR	•	
Town Gas	•	•	•	•	•	•	NR	•	•	
Trichlorethylene (Dry)	NR	NR	NR	NR	•	NR	NR	•	•	
Turpentine	•	•	•	NR	•	•	NR	•	•	
Vegetable Oil	NR	NR	NR	NR	•	•	NR	•	•	
Vinegar	NR	NR	NR	NR	•	NR	•	NR	•	1
Water (mains)	NR	•	•	•	•	•	•	•	•	
Water 80 - 120 °C	NR	•	•	NR	•	NR	•	•	•	
Water 120 - 150 °C	NR	•	•	NR	•	NR	NR	•	•	
Water 150 - 180 °C	NR	•	•	NR	•	NR	NR	NR	•	
Water boiler feed	NR	NR	NR	NR	•	•	•	NR	•	
Water/Glycol Solutions	NR	•	•	NR	•	NR	•	•	•	
White Spirit	•	•	•	•	•	NR	NR	•	•	

Notes:

1. Non-standard materials of construction are required.
2. Chlorine must not exceed 5 parts per million.
3. We are required to provide industry standard degreasing, cleaning and individual packaging with appropriate label.

• = Recommended
NR = Not Recommended

Viscosity Reference Guide

Redwood 1 (Seconds)	Redwood 11 (Seconds)	Saybolt Universal SSU (Seconds)	Saybolt Fural (Seconds)	Engler (Degrees)	Kinematic (Centistokes)
30	-	-	-	1.05	1.5
32	-	34	-	1.15	2.5
34	-	37	-	1.25	3.4
36	-	40	-	1.3	4.2
38	-	42	-	1.4	5
40	-	45	-	1.45	5.7
45	-	50	-	1.6	7.5
50	-	57	-	1.8	9.4
55	-	62	-	1.9	11
60	-	68	-	2.1	12.6
65	-	74	-	2.2	14.2
70	-	79	-	2.4	15.5
75	-	85	-	2.6	17
80	-	92	-	2.7	18.6
85	-	98	-	2.9	20
90	-	103	-	3	21.3
95	-	109	-	3.2	22.8
100	-	115	15	3.4	24.1
110	-	125	16	3.7	26.7
120	-	137	17	4	29.2
130	-	148	18	4.3	31.7
140	-	160	20	4.6	34.2
150	-	171	21	4.9	36.8
160	-	183	22	5.2	39
180	-	205	24	5.9	44
200	-	228	26	6.5	49
225	-	256	28	7.3	55
250	-	285	31	8.1	62
275	-	313	34	8.9	68
300	-	342	37	9.8	74
325	34	370	40	10.6	80
350	36	399	42	11.4	86
375	38	428	45	12.2	93
400	41	456	48	13	99
450	46	513	53	14.7	111
500	51	570	59	16.3	124
550	56	628	65	17.9	136
600	61	684	71	19.5	148
700	71	799	82	22.8	173
800	81	912	94	26.1	198
900	91	1025	105	29.3	222
1000	100	1142	117	32.6	247
1100	110	1257	128	35.9	272
1200	120	1368	140	39	296
1400	140	1599	163	46	346
1600	160	1825	186	52	395

Viscosity Reference Guide

Redwood 1 (Seconds)	Redwood 11 (Seconds)	Saybolt Universal SSU (Seconds)	Saybolt Fural (Seconds)	Engler (Degrees)	Kinematic (Centistokes)
1800	180	2050	209	59	444
2000	200	2280	232	65	493
2200	220	2510	255	72	534
2400	240	2735	278	78	592
2600	260	2965	302	85	642
2800	280	3190	325	91	691
3000	300	3420	348	98	741
3500	350	3990	406	114	864
4000	400	4560	464	130	987
4500	450	5140	522	147	1112
5000	500	5700	580	163	1235
5500	550	6280	639	179	1359
6000	600	6840	696	195	1482
6500	650	7415	754	212	1605
7000	700	7990	814	228	1730
7500	750	8550	869	244	1850
8000	800	9120	928	261	1957

Quality Standards

Rotork has a management system certified to ISO 9001, ISO 14001 & OHSAS 18001.

Certifications and approvals



The Ex mark signifies that a product complies with the ATEX Directive 94/9/EC (applicable up to 20th April 2016 but already implemented by Directive 2014/34/EU, effective from 18th April 2014).

The ATEX Directive sets the safety requirements of protection equipment and systems to be used in an environment with a potentially explosive atmosphere.

The Ex mark on a product enables its free movement within the European market (EEA).



Underwriters
Laboratories
Quality Certificate

The UL Listing mark on a product signifies that the product meets UL's Standards for Safety. The UL Listing mark appears on products and components suitable for factory and field installation.

All of the products carrying a UL Listing mark are covered by UL's Follow-up services program to verify that the products continue to be manufactured in compliance with UL's Safety Requirements.

We manufacture and resell valve coils and timers complying with UL 429 and 746C.

The cURus Listing mark on the products indicates that the compliance is accepted both in USA and Canada.

RoHS

The Restriction of Hazardous Substances Directive (RoHS) 2011/65/EU regards the restriction of the use of Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB) and Polybrominated diphenyl ether (PBDE) in electrical and electronic equipment sold in the European Union.

RoHS is meant to prevent the release of these substances into the environment and protect the human, animal and environmental health, especially during the waste treatment. The CE mark on a product guarantees the compliance with the RoHS Directive.



European
Community
Conformity

The CE marking was introduced in 1993 upon establishment of the European Economic Area. It regulates the entire life cycle of a product: design, manufacturing, placing on the market, disposal and enables its free movement within the European market (EEA).

CE marking signifies that the product conforms with the essential applicable EC requirements, such as safety, public health, consumer protection, and gives the product the presumption of conformity.

By affixing the CE mark on a product, manufacturers and importers are declaring, at their sole responsibility, conformity with all of the legal requirements of the Directive. EC directives that apply to our products are:

Machinery directive

EMC Directive

Low Voltage Directive (2006/95/EC)

The directive 97/23/EC concerns safety of pressure bearing equipment.

The directive 2011/65/EU (RoHS) limits the use of dangerous substances in electrical and electronic equipment.

Miscellaneous

Upon request (to be specified at the time of the Purchase Order) we can provide the following inspection documents, which are also related to requirements of the PED Directive 2014/68/EC as additional evidence of the technical requirements of supplies:

For metal parts in stainless steel AISI 316L or 304L the inspection certificate 3.1 according to the standard EN 10204 (this certificate is mandatory only for products in categories above I, see PED 2014/68/EC ANNEX I, art. 4.3).

For all products the Test Report 2.2 according to the standard EN 10204, is relevant for products in category I or SEP.



Keeping the World Flowing

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