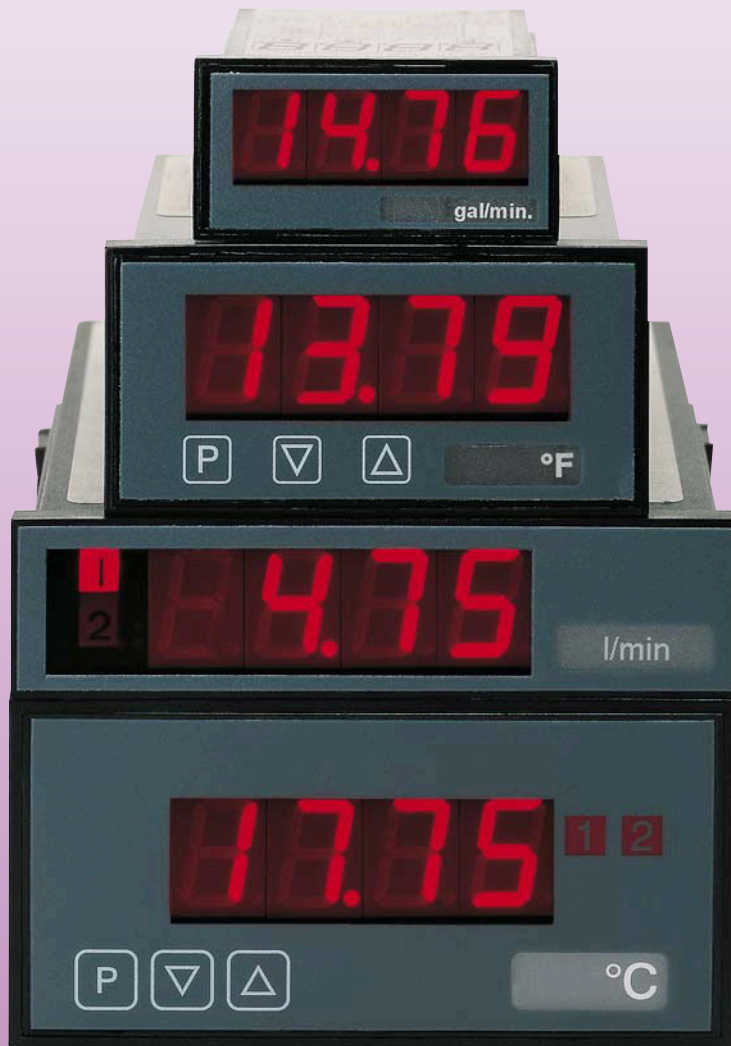# Processor-Based Digital Indicating Units
with Limit Switches and Analogue Output

KOBOLD

measuring
•
monitoring
•
analysing

Model DAG-1...
48 x 24 mm

gal/min.

Model DAG-2...
72 x 36 mm

°F

Model DAG-3...
96 x 24 mm

l/min

Model DAG-4...
96 x 48 mm

°C

- ● Programmable
- ● 96x48; 96x24; 72x36; 48x24 mm
- ● Input: temperature, current, voltage, frequency
- ● Analogue output, contacts, min./max. memory

Model:
DAG...

23

Description

Price competitive and reliable digital indicating units for measurement of temperature, current and voltage. As option the units can be supplied with analogue output and an additional sensor supply. The units can be delivered with a factory calibration. In case of models with current or voltage input the decimal point and digits before the decimal point can be determined with help of jumpers. The display can be adapted with help of a potentiometer whereas the dimension with replaceable labels.

● **Sensor Supply (optional)**

In order to supply the connected transmitter with current or voltage output, the units may be delivered with an additional sensor supply. Please note that digital displays must be supplied with at least 20 V_{DC} (galvanic separated version) or 26 V_{DC} (not galvanic separated version).

● **Galvanic separated version (optional)**

The voltage supply is galvanic separated from measured input and analogue output. The measured inputs are not galvanic separated from the analogue output. Because by all measurement methods errors may occur because of earth currents, only units with galvanic separation should be used when possible.

● **Pluggable Terminals (optional)**

To facilitate the installation and dismantling of the units, pluggable connection terminals may be supplied as an option. Pluggable terminals should not be used on units with a temperature measurement input because of increased contact resistance.

Technical Details

Display:	7-segment red LED, 14 mm high 3 ½-segment (1999 digit) or 4 ½-segment (19999 digit)
Accuracy:	Pt 100 (-50..+199.9 °C) ±0.2 °C, ±0.5 °C Resolution: 0.1 °C Pt 100 (-100..+600 °C) ±1 °C Thermocouples: ±1 % of m. value ±1 digit Resolution: 1 °C, Current, voltage: ±0.1 % of measured value ±1 digit
Measuring rate:	1 measurement per second
Power input:	approx. 5 VA (Input current, voltage) approx. 2 VA (Pt 100) approx. 4 VA (thermocouples)
Max. temperature:	0 to +60 °C operating, -20 to +80 °C storage
Case material:	PC/ABS-BLEND, colour black
Mounting:	latching snap-on fixing
Protection type:	Standard: front IP 40, terminal IP 00 Option: front IP 65, terminal IP 00
Dimensions:	96 x 48 x 135 mm (W x H x D) 96 x 48 x 148 with pluggable option
Cut-out dimensions:	92 x 45 mm
Weight:	approx. 0.35 kg

Order Details (Example: **DAG-D1 0 0 0 000**)

Display 14 mm	Input	Model	Supply	Output	Sensor supply for current/voltage input only	Options Pluggable terminal not for temperature input
3½-digit	Pt100/2-wire (-50...+199.9 °C)	**DAG-D1**	**0**= 115/230 V_{AC} **1** = 18-30 V_{DC} **2**= 18-30 V_{DC} electrically isolated	**0** = without **1** = 0-20 mA **4** = 4-20 mA **6** = 0-10 V_{DC}	**0** = without **V** = 10 V_{DC} / 20 mA **W** = 24 V_{DC} / 50 mA	**000**= standard **S00**=IP 65, Poti back **K00**=terminal pluggable **L00**=IP 65/ terminal pluggable
	Pt100/2-wire (-100...+600 °C)	**DAG-D2**				
	Pt100/2+3-wire (-50...+199.9 °C)	**DAG-D3**				
	Pt100/2+3-wire (-100...+600 °C)	**DAG-D4**				
	NiCr-Ni (-100...+800 °C)	**DAG-DK**				
	Fe-CuNi (USA) -50...+500 °C	**DAG-DJ**				
	Fe-CuNi (DIN) -50...+500 °C	**DAG-DL**				
	0(4)-20 mA, 0-200 mA and 0-10, 50, 200, 600 V_{DC}	**DAG-DV**				
4½-digit	0(4)-20 mA, 0-200 mA and 0-10, 50, 200, 600 V_{DC}	**DAG-HV**		**0** = without		

02 / 06-2007

Description

Processor-based digital indicating units for measuring frequency, temperature, current and voltage. The measured input is calibrated at the factory. The scale of the unit may be altered with replaceable labels.

The following parameters may be set by the customer from a tactile keypad:

● Desired indicated value and offset

● Position of point, display time, measurement frequency

● Full scale value and offset of analogue output

● Switch point, hysteresis, closed-circuit current/load current

The units may be provided with the following:

● Two changeover contacts

● Min./max. memory (not for frequency)

● Output: 0-20 mA, 4-20 mA, 0-10 V (optional)

● Sensor supply (optional for current input, voltage input, or frequency input)

● **Sensor Supply (optional)**

   In order to supply the connected transmitter with current or voltage output, the units may be delivered with an additional sensor supply. Please note that digital displays must be supplied with at least 20 V_{DC}.

● **Pluggable Terminals (optional)**

   To facilitate the installation and dismantling of the units, pluggable connection terminals may be supplied as an option. Pluggable terminals should not be used on units with a temperature measurement input because of increased contact resistance.

Technical Details

Display:	7-segment red LED, 14 mm high
Accuracy:	Pt 100 (-100...+600 °C)
	±0.2 °C, ±1 digit, resolution: 0.1 °C
	Thermocouples: ±1 °C, ±1 digit
	Resolution: 1 °C,
	Frequency: ±0.04 % of display, ±1 digit
	Resolution: 0 to 9999
	Current, voltage: ±0.2 % of measured value, ±1 digit
Display time:	0.2-10 seconds, adjustable
Power input:	5 VA (max.)
Max. temperature:	0 to +60 °C operating, -20 to +80 °C storage
Case material:	ABS, colour black
Mounting:	latching snap-on fixing
Protection type:	Standard: front IP 40, terminal IP 00 Option: front IP 65, terminal IP 00
Output/load:	0(4)-20 mA / 500 Ω
Relay:	2 changeover contacts max. 230 V_{AC}/2A-120 V_{DC}/0.5 A
Dimensions:	96 x 48 x 131 mm (W x H x D) 96 x 48 x 148 with pluggable option
Cut-out dimensions:	92 x 45 mm
Weight:	approx. 0.45 kg

Order Details (Example **DAG-42 2 0 0 0 2M**)

Display 14 mm	Input	Model	Supply	Output	Sensor supply for current/voltage input only	Options Pluggable terminal, not for temperature input	Contacts/ memory
4-digit	Pt 100/2-wire (-100.0...+600.0 °C) Pt 100/2+3-wire (-100.0...+600.0 °C) Pt 100/4-wire (-100.0...+600.0 °C) NiCr-Ni (-250...+1350 °C) Fe-CuNi (USA) -200...+1200 °C) Fe-CuNi (DIN) -100...+900 °C) 0(4)-20 mA, 0-10 V_{DC}	**DAG-42..** **DAG-44..** **DAG-45..** **DAG-4K..** **DAG-4J..** **DAG-4L..** **DAG-4V..**	**2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC} **0**= 230 V_{AC}	**0**=without **1**=0-20 mA **4**=4-20 mA **6**=0-10 V_{DC}	**0**= without **V**= 10 V_{DC}/ 20 mA **W**=24 V_{DC}/ 50 mA	**0**= standard **S**=IP 65, **K**=IP 40/ terminal pluggable **L**=IP 65/ terminal pluggable	**2M**=2 change-over contacts incl. min/max.- memory
4-digit	1 Hz...500 kHz	DAG-4F..	**2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC} **0**= 230 V_{AC}	**0**=without **1**=0-20 mA **4**=4-20 mA **6**=0-10 V_{DC}	**V**= 10 V_{DC}/ 20 mA **W**=24 V_{DC}/ 50 mA	**0**= standard **S**=IP 65 **K**=IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**20**= 2 change-over contacts

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Description

Processor-based digital indicating units for measuring frequency, temperature, current and voltage. The measured input is calibrated at the factory. The scale of the unit may be altered with replaceable labels.

The following parameters may be set by the customer from a tactile keypad:

- Desired indicated value and offset
- Position of point, display time, measurement frequency
- Full scale value and offset of analogue output
- Switch point, hysteresis, closed-circuit current/load current

The units may be provided with the following:

- Two changeover contacts
- Min./max. memory (not for frequency)
- Output: 0-20 mA, 4-20 mA, 0-10 V (optional)
- Sensor supply (optional for current input, voltage input, or frequency input)

- **Sensor Supply (optional)**

  In order to supply the connected transmitter with current or voltage output, the units may be delivered with an additional sensor supply. Please note that digital displays must be supplied with at least 20 V_{DC}.

- **Pluggable Terminals (optional)**

  To facilitate the installation and dismantling of the units, pluggable connection terminals may be supplied as an option. Pluggable terminals should not be used on units with a temperature measurement input because of increased contact resistance.

Technical Details

Display:	7-segment red LED, 14 mm high
Accuracy:	Pt100 (-100.0 to +600.0°C) ± 0.2°C, ± 1 digit, resolution: 0.1°C Thermocouples: 1°C, Frequency: ±0.04 % of display, ± 1 digit Resolution: 0 to 9999 Current, voltage: ± 0.2 % of measured value, ± 1 digit
Display time:	0.2-10 seconds, adjustable
Power input:	5 VA (max.)
Max. temperature:	0 to +60°C operating, -20 to +80°C storage
Case material:	ABS, colour black
Mounting:	latching snap-on fixing
Protection:	Standard: front IP 40, terminal IP 00 Option: front IP 65, terminal IP 00
Output/load:	0(4)-20 mA / 500 Ω
Relay:	2 changeover contacts max. 230 V_{AC} / 2 A - 120 V_{DC} / 0.5 A
Dimensions:	96 x 24 x 131 mm (W x H x D) 96 x 24 x 148 with pluggable option
Cut-out dimensions:	92 x 22 mm
Weight:	approx. 0.29 kg

Order Details (Example: **DAG-32 0 0 0 0 2M**)

Display 14 mm	Input	Model	Supply	Output	Sensor supply for current/voltage input only	Options Pluggable terminal, not for temperature input	Contacts/memory
4-digit	Pt100/2-wire (-100.0...+600.0°C) Pt100/2+3-wire (-100.0...+600.0°C) Pt100/4-wire (-100.0...+600.0°C) NiCr-Ni (-250...+1350°C) Fe-CuNi (USA) -200...+1200°C) Fe-CuNi (DIN) -100...+900°C) 0(4)-20 mA, 0-10 V_{DC}	**DAG-32..** **DAG-34..** **DAG-35..** **DAG-3K..** **DAG-3J..** **DAG-3L..** **DAG-3V..**	**2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC} **0**= 230 V_{AC}	**0**=without **1**=0-20 mA **4**=4-20 mA **6**=0-10 V_{DC}	**0**= without **V**= 10 V_{DC}/ 20 mA **W**=24 V_{DC}/ 50 mA	**0**= standard **S**= IP 65, **K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**2M**=2 changeover contacts incl. min/max.-memory
4-digit	1 Hz...500 kHz	**DAG-3F..**	**2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC} **0**= 230 V_{AC}	**0**=without **1**=0-20 mA **4**=4-20 mA **6**=0-10 V_{DC}	**V**= 10 V_{DC}/ 20 mA **W**=24 V_{DC}/ 50 mA	**0**= standard **S**= IP 65 **K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**20**= 2 changeover contacts

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02 / 06-2007

Description

Processor-based digital indicating units for measuring frequency, temperature, current and voltage. The measured input is calibrated at the factory. The scale of the unit may be altered with replaceable labels.

The following parameters may be set by the customer from a tactile keypad:

- Desired indicated value and offset
- Position of point, display time, measurement frequency
- Full scale value and offset of analogue output
- Switch point, hysteresis, steady state current/load current

The units may be provided with the following:

- 1 open collector /1 changeover contact (for units without analogue output)
- Min./max. memory (not for frequency)
- Output: 0-20 mA, 4-20 mA, 0-10 V (optional)

- **Sensor Supply**
  Not available

- **Pluggable Terminals (optional)**
  To facilitate the installation and dismantling of the units, pluggable connection terminals may be supplied as an option. Pluggable terminals should not be used on units with a temperature measurement input because of increased contact resistance.

Technical Details

Display:	7-segment red LED, 14 mm high
Accuracy:	Pt 100 (-100.0 to +600.0 °C)
	± 0.2 % of measured value, ± 1 digit,
	Resolution: 0.1 °C
	Thermocouples: ± 1 °C, ± 1 digit
	Resolution: 1 °C,
	Frequency: ± 0.04 % of display
	Resolution: 0 to 9999
	Current, voltage: ± 0.2 % of measured value ± 1 digit
Display time:	0.2-10 seconds, adjustable
Power input:	3 VA (max.)
Max. temperature:	0 to +60 °C operating, -20 to +80 °C storage
Case material:	PC/ABS-Blend, colour black
Mounting:	latching snap-on fixing
Protection:	Standard: front IP 40, terminal IP 00 Option: front IP 65, terminal IP 00
Output/load:	0(4)-20 mA / 500 Ω
Relay:	1 changeover contact max. 230 V_{AC} / 2 A-120 V_{DC} / 0.5 A
Open collector:	U_B = 5-40 V_{DC} / I_{max} = 100 mA, PNP (supply by customer) (units without analogue output)
Dimensions:	72 x 36 x 97 mm (W x H x D) 72 x 36 x 115 with pluggable option
Cut-out dimensions:	68 x 33 mm
Weight:	approx. 0.19 kg

Order Details (Example: **DAG-22 0 00 0 5M**)

Display 14 mm	Input	Model	Supply	Output	Options	Contacts / memory
4- digit	Pt100/2-wire (-100.0..+600.0 °C) Pt100/2+3-wire (-100.0..+600.0 °C) NiCr-Ni (-250...+1350 °C) Fe-CuNi (USA) -200...+1200 °C) Fe-CuNi (DIN) -100...+900 °C) 0(4)-20 mA, 0-10 V_{DC}	**DAG-22..** **DAG-24..** **DAG-2K..** **DAG-2J..** **DAG-2L..** **DAG-2V..**	**0**= 230 V_{AC} **2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC}	**00** =without **10** =0-20 mA **40** =4-20 mA **60** =0-10 V_{DC}	**0**= standard **S**= IP 65 **K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**5M**=1 open collector/ 1 changeover cont. min/max.-memory incl. (units **without** analogue output) **1M**=1 changeover cont. min/max.-memory (units **with** analogue output)
4-digit	1 Hz...500 kHz	DAG-2F..	**0**= 230 V_{AC} **2**= 20-30 V_{DC} electrically isolated **4**= 115 V_{AC}	**00** =without **10** =0-20 mA **40** =4-20 mA **60** =0-10 V_{DC}	**0**= standard **S**= IP 65 **K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**50**= 1 open collector/ 1 changeover cont. (units **without** analogue output) **10**= 1 changeover cont. (units **with** analogue output)

02 / 06-2007

No responsibility taken for errors; subject to change without prior notice.

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27

Description

Processor-based digital indicating units for measuring frequency, temperature, current and voltage. The measured input is calibrated at the factory. The scale of the unit may be altered with replaceable labels.

The following parameters may be set by the customer from a tactile keypad:

● Desired indicated value and offset

● Position of point, display time, measurement frequency

● Full scale value and offset of analogue output

● Switch point, hysteresis, closed-circuit current/load current

The units may be provided with the following:

● 2 open collectors
   (for units without analogue output)

● Min./max. memory (not for frequency)

● Output: 0-20 mA, 4-20 mA, 0-10 V (optional)

● **Sensor Supply**
   not available

● **Pluggable Terminals**
   To facilitate the installation and dismantling of the units, pluggable connection terminals are supplied.

Technical Details

Display:	7-segment red LED, 10 mm high
Accuracy:	Pt 100 (-100.0 to +600.0 °C) ± 0.2 % of meas. value, ± 1 digit, Resolution: 0.1 °C Thermocouples: ± 1 °C, ± 1 digit Resolution: 1 °C, Frequency: ± 0.04 % of display Resolution: 0 to 9999 Current, voltage: ± 0.2 % of measured value, ± 1 digit
Display time:	0.2-10 seconds, adjustable
Power input:	5 VA (max.)
Max. temperature:	0...+60 °C operating, -20...+80 °C storage
Case material:	PC/ABS-Blend, colour black
Mounting:	latching snap-on fixing
Protection:	Standard: front IP 40, terminal IP 00 Option: front IP 65, terminal IP 00
Output/load:	0(4)-20 mA / 500 Ω
Open collector:	$U_B = 5-40 V_{DC} / I_{max} = 100$ mA, PNP (supply by customer)
Dimensions:	48 x 24 x 90 mm (W x H x D) 48 x 24 x 101 with pluggable option
Cut-out dimensions:	45 x 22.2 mm
Weight:	approx. 75 g

Order Details (Example: **DAG-12 2 00 K 6M**)

Display 10 mm	Input	Model	Supply	Output	Options	Contacts / memory
4-digit	Pt100/2-wire (-100.0...+600.0 °C) NiCr-Ni (-250...+1350 °C) Fe-CuNi (USA) -200...+1200 °C) Fe-CuNi (DIN) -100...+900 °C) 0(4)-20 mA, 0-10 V_{DC}	**DAG-12..** **DAG-1K..** **DAG-1J..** **DAG-1L..** **DAG-1V..**	**2**= 20-30 V_{DC} electrically isolated	**00** =without **10** =0-20 mA **40** =4-20 mA **60** =0-10 V_{DC}	**K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**6M**=2 open collectors min/max.-memory incl. (units without analogue output) **0M**=without contacts min/max.-memory incl. (units with analogue output)
4-digit	1 Hz...500 kHz	**DAG-1F..**	**2**= 20-30 V_{DC} electrically isolated	**00** =without **10** =0-20 mA **40** =4-20 mA **60** =0-10 V_{DC}	**K**= IP 40/ terminal pluggable **L**= IP 65/ terminal pluggable	**60**= 2 open collectors (units without analogue output) **00**= without contacts (units with analogue output)