

Explosion Proof Visual Signal - 5, 10 or 20 Joule Series FL60



- > 5, 10 or 20 Joule xenon strobe
- > Lens available in seven different colours
- > IP66 rated as standard
- > Aluminium enclosure with stainless steel fasteners
- > Flash rate 1 per second
- > Lens guard and mounting bracket supplied as standard
- > Telephone initiate option available
- > SIL 1 IEC61508-2:2010

www.stahl.de



13914E00



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Yodalex range

Product Series FL60 is designed to provide a visual alarm which can be used to alert, warn or draw attention to machine malfunction/ start up or any number of safety related issues in hazardous areas. Visual signal designed for use in hazardous or harsh environments.

		ATEX / IECEx									NEC 505			NEC 506						NEC 500					
		0	1	2	20	21	22	Zone			Class I						Division			Class I		Class II		Class III	
Zone		0	1	2	20	21	22	Zone	0	1	2	20	21	22	Division	1	2	1	2	1	2	1	2		
For use in			x	x		x	x	For use in		x	x		x	x	For use in	x	x	x	x	x	x	x	x		

WebCode FL60B

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Explosion Protection

Global (IECEX)

Gas and dust

IIB+H2	IECEX BAS 05.0087X
IIB	IECEX BAS 05.0086X
IIB+H2, IIB	IEC 60079-0: 2011 / IEC 60079-1: 2007-04 / IEC 60079-31: 2008
IIB+H2	Ex d IIB+H2 T4 Gb (Ta = -20 ... +60 °C) Ex tb IIIC T135°C Db IP 66 (Ta = -20 ... +60 °C) Ex d IIB+H2 T6 Gb (Ta = -20 ... +40 °C) Ex tb IIIC T85°C Db IP 66 (Ta = -20 ... +40 °C)
IIB	Ex d IIB T4 Gb (Ta = -35 ... +60 °C) Ex tb IIIC T135°C Db IP 66 (Ta = -35 ... +60 °C) Ex d IIB T6 Gb (Ta = -35 ... +40 °C) Ex tb IIIC T85°C Db IP 66 (Ta = -35 ... +40 °C)

Europe (ATEX)

Gas and dust

IIB+H2	Baseefa02ATEX0222X
IIB	Baseefa02ATEX0212X
IIB+H2, IIB	EN 60079-0: 2009 / EN 60079-1: 2007 / EN 60079-31: 2009
IIB+H2	⊗ II 2 G Ex d IIB+H2 T4 Gb (Ta = -20 ... +60 °C) ⊗ II 2 D Ex tb IIIC T135°C Db IP 66 (Ta = -20 ... +60 °C) ⊗ II 2 G Ex d IIB+H2 T6 Gb (Ta = -20 ... +40 °C) ⊗ II 2 D Ex tb IIIC T85°C Db IP 66 (Ta = -20 ... +40 °C)
IIB	⊗ II 2 G Ex d IIB T4 Gb (Ta = -35 ... +60 °C) ⊗ II 2 D Ex tb IIIC T135°C Db IP 66 (Ta = -35 ... +60 °C) ⊗ II 2 G Ex d IIB T6 Gb (Ta = -35 ... +40 °C) ⊗ II 2 D Ex tb IIIC T85°C Db IP 66 (Ta = -35 ... +40 °C)

North America (cULus listed)

Gas and dust

IIB+H2, IIB	E168831
IIB+H2, IIB	USL: UL 60079-0 / UL 60079-1 / UL 1203 / UL 1638 CNL: CSA C22.2 No. 30-M1986 / CSA C22.2 No. 25-M1966 / CSA E60079-0-7 / CSA E60079-1
IIB+H2	CLASS I, DIVISION 1, GROUPS B, C and D, T4; CLASS II, DIVISION 1, GROUPS E, F and G; CLASS III CLASS I, ZONE 1 AEx d IIB+H2 T4 CLASS I, ZONE 1 Ex d IIB+H2 T4 Operating temperature -25 ... +66 °C Visual signal appliance private mode
IIB	CLASS I, DIVISION 1, GROUPS C and D, T4; CLASS II, DIVISION 1, GROUPS E, F and G; CLASS III CLASS I, ZONE 1 AEx d IIB T4 CLASS I, ZONE 1 Ex d IIB T4 Operating temperature -35 ... +66 °C Visual signal appliance private mode

Certifications and certificates

Certificates

IECEX, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (TR), Russia (TR), Taiwan (ITRI), USA & Canada (cULus), Belarus (TR)

Functional safety (IEC 61508)

Test report

SIL 1 IEC61508-2:2010

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Technical Data

Technical data

Product weight 5.08 kg

Electrical data

Rated operational voltage 24 V DC, 48 V DC, 115 V AC and 230 V AC operational parameters + or -10 %

Rated operational current	5 J	220 mA
24 V DC	10 J	500 mA
	20 J	1100 mA
	48 V DC	
48 V DC	5 J	135 mA
	10 J	300 mA
	20 J	560 mA
115 V AC	5 J	90 mA
	10 J	105 mA
	20 J	260 mA
230 V AC	5 J	45 mA
	10 J	53 mA
	20 J	107 mA

Mechanical data

Material	
Enclosure	aluminium, seawater resistant
Lens cover	polycarbonate
Fixings	stainless steel
Cable entries	2 cable entries, equipped with stopping plug (1x) and dust cap (1x) UL devices: equipped with M20 / 1/2" adapters (2x)
Degree of protection	IP66 – IEC 60529 NEMA 4X – UL 50

Operating temperature range

Variant dependant see Explosion protection

Luminous characteristics

Effective candela	5 J		
	Clear lens	46 cd	
	Yellow lens	42 cd	
	Amber lens	28 cd	
	Red lens	14 cd	
	Blue lens	13 cd	
	Green lens	10 cd	
	Magenta lens	N/A	
	10 J		
	Clear lens	127 cd	
	20 J		
	Clear lens	265 cd	
	Candela seconds	5 J	9.3 lumens
10 J		25 lumens	Clear lens
20 J		53 lumens	Clear lens
Flash energy	5, 10 or 20 J		
Flash rate	60 FPM		

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Selection Table

Version	Group	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight kg
FL60 Strobe, ATEX & IECEx certification, standard devices	IIB + H2	5 Joule	24 V DC	amber	FL60/C/D50/A/EU	205129	5.080
				red	FL60/C/D50/R/EU	205133	5.080
			115 V AC	amber	FL60/C/L50/A/EU	212366	5.080
				red	FL60/C/L50/R/EU	205145	5.080
			230 V AC	amber	FL60/C/N50/A/EU	205150	5.080
				red	FL60/C/N50/R/EU	205153	5.080
FL60 Strobe, North America cULus certification, standard devices	B, C, D	5 Joule	24 V DC	amber	FL60/B/D50/A/UL	205156	5.080
				red	FL60/B/D50/R/UL	205160	5.080
			115 V AC	amber	FL60/B/L50/A/UL	205163	5.080
				red	FL60/B/L50/R/UL	205165	5.080
			230 V AC	amber	FL60/B/N50/A/UL	212367	5.080
				red	FL60/B/N50/R/UL	211406	5.080
FL60 Strobe, EAC TR certification, standard devices	IIB + H2	5 Joule	24 V DC	amber	FL60/C/D50/A/RU	206976	5.080
				red	FL60/C/D50/R/RU	212381	5.080

Note Variations in gas group, flash energy, voltage and lens colour are available, please use the Selection Table

Selection Table








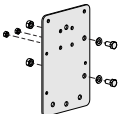

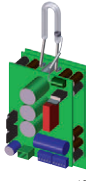
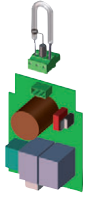
Version	Variations	Order Number
FL60 Strobe, devices acc. to specification	Type code: please fill in fields	FL60 / _ / _ / _ / _ / _ / _ / _
	Gas group	
	EU and RU units	IIB B
		IIB + H2 C
	UL units	C, D gas groups C
		B gas groups B
	Rated operational voltage	
	24 V DC	D
	48 V DC	F
	115 V AC	L
	230 V AC	N
	Flash energy	
	5 Joule	50
	10 Joule (ATEX, IECEx & EAC TR variants only)	100
	20 Joule (ATEX, IECEx & EAC TR variants only)	200
	Lens colour	
	amber	A
	red	R
	green	G
	opal	O
blue	B	
clear	C	
yellow	Y	
Certification		
ATEX & IECEx	EU	
UL	UL	
EAC TR	RU	
Additions		
activation	telephone initiate (5 Joule ATEX, IECEx & EAC TR variants only)	TI
additional approvals		L

Note Duty + tag labels are available on request. Please contact your local sales office for more details.

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Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Cable glands	 15793E00	Ex d & Ex e Compound barrier cable gland for all types of unarmoured and braid armour cables (nickel plated brass) RapidEx liquid pour sealing system	CMP - 20PXSS2K	109441	PXSS2KA
	 15791E00	Ex d & Ex e Compound barrier cable gland for all types of armoured cables (SWA, braided, tape) (nickel plated brass) RapidEx liquid pour sealing system	CMP - 20PX2K	109428	PX2KA
	 14977E00	Ex d & Ex e cable gland for all types of unarmoured and braid armour cables (nickel plated brass)	CMP - 20A2F	243464	A2FA
	 14978E00	Ex d & Ex e cable gland for all types of armoured cables (SWA, braided, tape) (nickel plated brass) with unique compensating displacement seal system (CDS)	CMP - 20T3CDS	246561	T3CDSA
Stopping plugs	 04840E00	made of stainless steel, Series 8294			
		8294/123-M20x1,5 1 piece	8294 / 123 - M20x1,5	143652	8294A
Mounting bracket	 15795E00	Stainless steel L-bracket - see dimensional drawings		221711	
Pipe clamp	 09349E00	R 1 1/4 "		120812	
		R 1 1/2 "		120819	
		R 2 "		120823	
Fastening set adapter plates	 18552E00	Adaptor plate for use in conjunction with pipe clamp		256519	
Replacement PCB assembly	 16672E00	24 V DC / 5 J		222971	
		48 V DC / 5 J		223072	
	 16675E00	115 ... 230 V AC / 5 J		209503	
	 16676E00	24 V DC / 10 J		209508	
		48 V DC / 10 J		209509	
		115 V AC / 10 J		209506	
230 V AC / 10 J			209507		

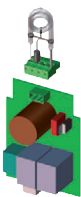
Note Approvals of cable entries have to be observed.

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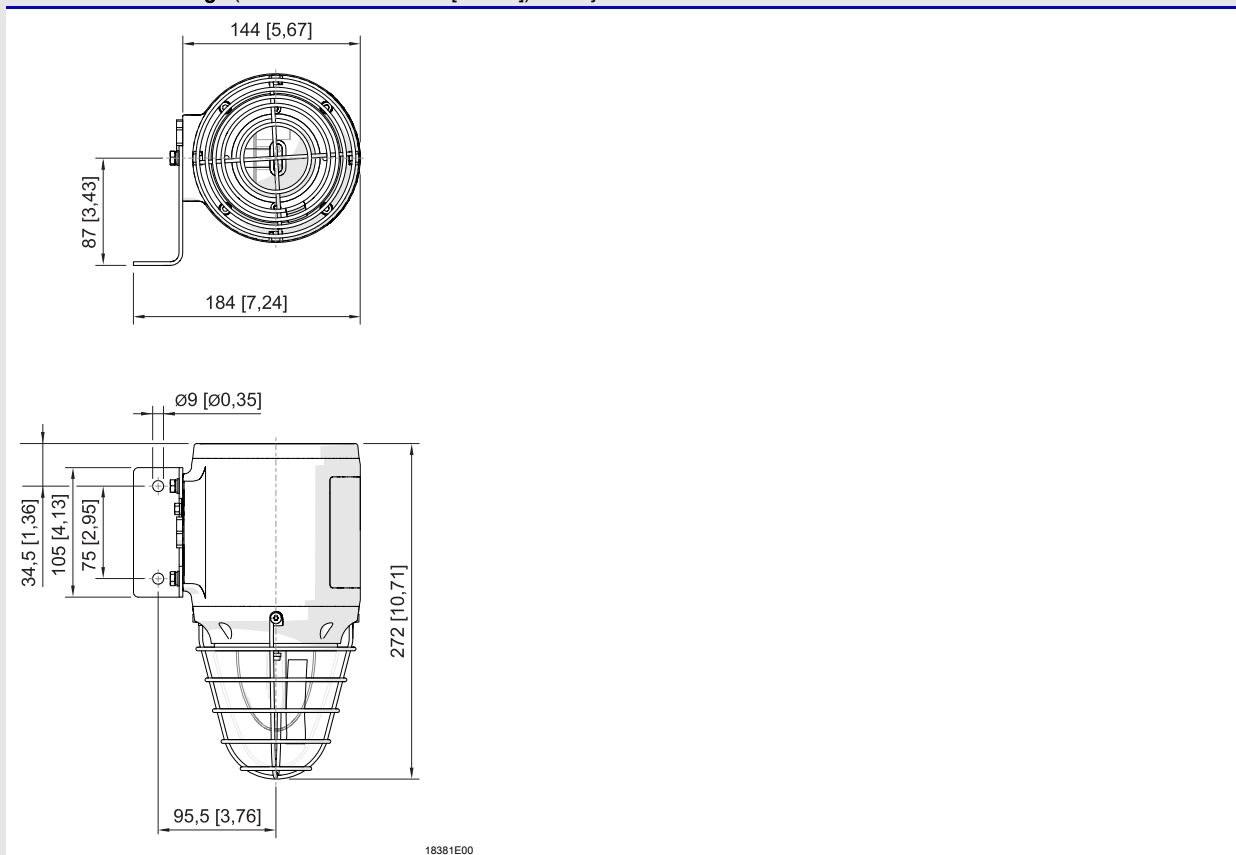
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Accessories and Spare Parts

Designation	Figure	Description	Order number	Art. no.	WebCode
Replacement PCB assembly		24 V DC / 20 J		209512	
		48 V DC / 20 J		209513	
		115 V AC / 20 J		209510	
		230 V AC / 20 J		209511	

Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.