

# 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

www.stahl.de



13914E00



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**Yodalex range**  
Visual signal designed for use in hazardous or harsh environments.

	ATEX / IECEx						Zone	NEC 505 Class I			NEC 506			Division	NEC 500					
	0	1	2	20	21	22		0	1	2	20	21	22		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

**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 GD Ex d IIB+H2 T4 Gb (Ta = -20 ... +60 °C) ⊗ II 2 GD Ex tb IIIC T135 °C Db IP 66 (Ta = -20 ... +60 °C) ⊗ II 2 GD Ex d IIB+H2 T6 Gb (Ta = -20 ... +40 °C) ⊗ II 2 GD Ex tb IIIC T85 °C Db IP 66 (Ta = -20 ... +40 °C)
IIB	⊗ II 2 GD Ex d IIB T4 Gb (Ta = -35 ... +60 °C) ⊗ II 2 GD Ex tb IIIC T135 °C Db IP 66 (Ta = -35 ... +60 °C) ⊗ II 2 GD Ex d IIB T6 Gb (Ta = -35 ... +40 °C) ⊗ II 2 GD Ex tb IIIC T85 °C Db IP 66 (Ta = -35 ... +40 °C)

### USA and Canada (UL variants)

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, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D  Class 1 Zone 1 AEx d IIB + H <sup>2</sup> T4 Class 1 Zone 1 Ex d IIB + H <sup>2</sup> T4  Operating temperature -25 ... +66 °C Visual signal appliance private mode
IIB	Class I, Div. 1, Groups B, C and D Class I, Div. 2, Groups B, C and D  Class 1 Zone 1 AEx d IIB T4 Class 1 Zone 1 Ex d IIB T4  Operating temperature -35 ... +66 °C Visual signal appliance private mode

### Russia (GOST R)

Gas and dust

Marking and certification based on and line with the ATEX product.

### Certifications and certificates

Certificates

IECEX, ATEX, Brazil (INMETRO), India (PESO), Kazakhstan (GOST K), Russia (GOST R), Taiwan (ITRI), USA (UL)

### Functional safety (IEC 61508)

Test report

SIL 1 IEC61508-2:2010

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## Technical Data

### 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	24 V DC	5 J	220 mA
		10 J	500 mA
		20 J	1100 mA
	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

### Luminous characteristics

Effective candela	<b>5 J</b>	Clear lens	30 cd			
		Yellow lens	29 cd			
		Amber lens	17 cd			
		Red lens	9 cd			
		Blue lens	6 cd			
		Green lens	7 cd			
	<b>10 J</b>	Clear lens	96.02 cd			
		<b>20 J</b>	Clear lens	301 cd		
			Candela seconds	5 J	5.90	Clear Lens
				10 J	19.23	Clear Lens
				20 J	60.38	Clear Lens
			Flash energy	5, 10 or 20 J		
Flash rate	60 FPM					

### Ambient conditions

Operating temperature range	version			
	IIB	Europe	T4	- 35 ... + 60 °C
			T6	- 35 ... + 40 °C
	IIB + H <sub>2</sub>	Europe	T4	- 20 ... + 60 °C
			T6	- 20 ... + 40 °C
	IIB	USA	T4	- 35 ... + 66 °C
			T4	- 25 ... + 66 °C

### Mechanical data

Material	
Enclosure	aluminium, seawater resistant
Lens cover	polycarbonate
Fixings	stainless steel
Mounting bracket	mild steel with black polyester powder coat finish; supplied as standard
Product label	metalised polyester UL certified variants supplied with stainless steel label
Degree of protection	IP66 – IEC 60529 NEMA 4X – UL 50
Cable entries	2 cable entries, equipped with stopping plug (1x) and dust cap (1x) UL devices: equipped with M20 / 1/2" adaptors (2x)

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**Selection Table**

Version	Group	Flash energy	Rated operational voltage	Lens colour	Order number	Art. no.	Weight
FL60 Strobe, ATEX certification, standard devices	IIB + H <sub>2</sub>	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, UL certification, standard devices	B	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	5.000
FL60 Strobe, IECEx certification, standard devices	IIB + H <sub>2</sub>	5 Joule	24 V DC	amber	FL60/C/D50/A/IN	212368	5.080
				red	FL60/C/D50/R/IN	205139	5.080
			115 V AC	amber	FL60/C/L50/A/IN	212369	5.080
				red	FL60/C/L50/R/IN	212370	5.080
			230 V AC	amber	FL60/C/N50/A/IN	212371	5.080
				red	FL60/C/N50/R/IN	211551	5.080
FL60 Strobe, GOST R certification, standard devices	IIB + H <sub>2</sub>	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 Type code: please fill in fields		Order Number
FL60 Strobe, devices acc. to specification			FL60 / - / - / - / - / -
	<b>Gas group</b>		
	EU, IN and RU units	IIB	B
		IIB + H <sub>2</sub>	C
	UL units	C, D gas groups	C
		B gas groups	B
	<b>Rated operational voltage</b>		
	24 V DC		D
	48 V DC		F
	115 V AC		L
	230 V AC		N
	<b>Flash energy</b>		
	5 Joule		50
	10 Joule		100
	20 Joule		200
	<b>Lens colour</b>		
	amber		A
	red		R
	green		G
	opal		O
	blue		B
	clear		C
	yellow		Y
	<b>Certification</b>		
	ATEX		EU
	UL		UL
	IECEx		IN
	GOST R		RU
	<b>Additions</b>		
	activation	telephone initiate	TI
	additional approvals		L




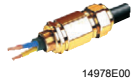
Note

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

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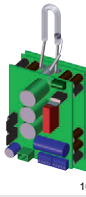
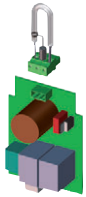
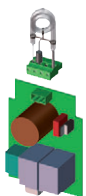


## Accessories and Spare Parts

Designation	Figure	Description	Group	Order number	Art. no.	WebCode
Cable gland	 14976E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Unarmoured Cables	IIB + H <sub>2</sub> and IIC	<b>8163/2-20- PXSS2K-M20</b>	<b>138888</b>	8163J
	 14742E00	Compound Barrier Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB + H <sub>2</sub> and IIC	<b>8163/2-20- PX2K-M20</b>	<b>138875</b>	8163I
	 14977E00	Cable Glands Ex d and Ex e for Unarmoured Cables	IIB	<b>8163/2-20- A2F-M20</b>	<b>138772</b>	8163A
	 14978E00	Triton CDS Cable Glands Ex d and Ex e for all Types of Armoured Cables	IIB	<b>8163/2-20- T3CDS-M20</b>	<b>138902</b>	8163K

Note Approvals of cable entries have to be observed.

## Accessories and Spare Parts

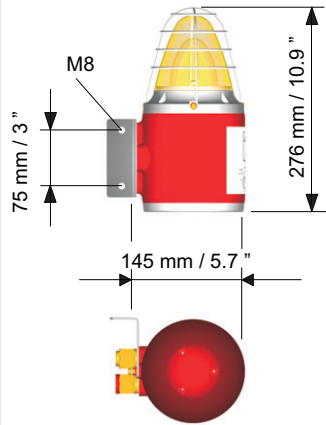
Designation	Figure	Description	Art. no.
Mounting bracket	 15795E00	stainless steel bracket fixing kit accessories	<b>210794</b>
Replacement PCB assembly	 16672E00	24 V DC / 5 J	<b>222971</b>
		48 V DC / 5 J	<b>223072</b>
	 16675E00	115...230 V AC / 5 J	<b>209503</b>
	 16678E00	24 V DC / 10 J	<b>209508</b>
		48 V DC / 10 J	<b>209509</b>
		115 V AC / 10 J	<b>209506</b>
		230 V AC / 10 J	<b>209507</b>
	 16673E00	24 V DC / 20 J	<b>209512</b>
		48 V DC / 20 J	<b>209513</b>
115 V AC / 20 J		<b>209510</b>	
230 V AC / 20 J		<b>209511</b>	

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## Dimensional Drawings (All Dimensions in mm / inches) - Subject to Alterations



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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.