

Grounding Systems / Grounding Monitoring Device Series 8146/5075 and 8125/5071

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14834E00

- > Monitored electrostatic grounding of tank containers, drums, road tankers, rail cars, IBCs and helicopters during loading
- > Continuous monitoring of correct grounding
- > Robust design
- > Weather-protected plastic enclosure (IP65) or stainless steel enclosure (IP65)
- > Potential-free contact for signalling to the process control system and external control devices
- > Insulated point of suspension
- > For use up to SIL 2 (IEC 61508)

E4



The ground monitoring device ensures that tank containers, drums, road tankers, rail cars, IBCs and helicopters are correctly electrostatically grounded during the loading of flammable liquids. The device provides a conductive connection to the ground and monitors in parallel the quality of the electrostatic grounding.

This guarantees that the electrostatic charge remains at a safe level and that no explosion hazard is generated by uncontrolled energy discharge.

The following recommendation requires grounding during loading and recommends interrupting loading in case of incorrect grounding:

- > CENELEC LC/TR 50404 recommendation for avoiding ignition hazards due to electrostatic charges.
- > TRBS 2153 for avoiding ignition hazards as a result of electrostatic charges










Zone	ATEX / IECEx					
	0	1	2	20	21	22
Ex i interface	x	x	x	x	x	x
For use in		x	x		x	x

WebCode 8146H

Grounding Systems / Grounding Monitoring Device

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Selection Table

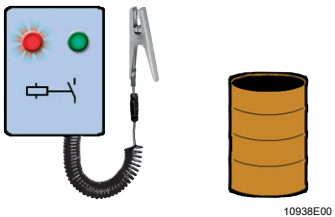
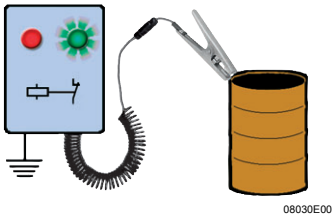
Version	Description	Order number	Art. no.
 <p>12753E00 Ground monitoring device 8146/5075</p>	Grounding monitoring device 8146/5075 without cable. The device ensures that drums and tank containers are correctly electrostatically grounded and continuously monitors the connection.	8146/5075	136216
 <p>14728E00 Ground monitoring device 8125/5071</p>	Grounding monitoring device 8125/5071 without cable. The device ensures that drums and tank containers are correctly electrostatically grounded and continuously monitors the connection. For use up to SIL 2.	8125/5071	209056
 <p>12056E00 Grounding clamp with cable</p>	10 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug		247673
 <p>12055E00 Grounding clamp with spiral cable</p>	5 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug		247672
	10 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug		247674
 <p>17637E00 Grounding clamp with automatic cable winder</p>	Automatic winder with 9 m of oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug, Plastic enclosure		247660
 <p>17636E00 Grounding clamp with automatic cable winder</p>	Automatic winder with 20 m of oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopper		247671
 <p>17638E00 Grounding clamp</p>	Robust ergonomic grounding clamp with 150 mm of cable and fast-action plug		247675
Note	*) Special cable length possible on request. Price and date of delivery differ from the standard.		

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Explosion Protection		
Version	Grounding monitoring devices 8146/5075	Grounding monitoring devices 8125/5071
Global (IECEX) Gas and dust	IECEX PTB 06.0090 Ex db eb [ia Ga] IIC T4 Gb Ex tb IIIC T80°C Db IP65	IECEX PTB 06.0079 Ex db eb [ia Ga] IIC T4 Gb Ex tb IIIC T80°C Db IP65
Europe (ATEX) Gas and dust	PTB 01 ATEX 1024 ⊕ II 2 G Ex db eb [ia Ga] IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80°C Db IP65	PTB 01 ATEX 1001 ⊕ II 2 G Ex db eb [ia Ga] IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80°C Db IP65
Certifications and certificates	IECEX, ATEX, Brazil (INMETRO), Kazakhstan (TR), Russia (TR), Belarus (TR)	
Certificates	IECEX, ATEX, Brazil (INMETRO), Kazakhstan (TR), Russia (TR), Belarus (TR)	
Ship approval	DNV	
Further parameters		
Installation	in Zones 1, 2, 21, 22	

Technical Data		
Electrical data		
Version	Grounding monitoring devices	
Power supply		
Rated voltage	120 / 230 V	
Nominal voltage range	96 ... 253 V AC	
Frequency range	48 ... 62 Hz	
Nominal current	50 mA	
Power consumption	3 VA	
Cable diameter range of cable gland (M20)	6 ... 13 mm	
Output		
Signalling contact	potential-free NO contact (Ex e)	
Maximum load AC	250 V / 4 A	
Maximum load DC	250 V / 2 A 40 V / 3 A	
Minimum load	12 V / 100 µA	
LED display		
	Operating mode:	Reaction of the grounding monitoring device
	State of grounding	
	Clamp is not connected, device not in use	Grounding incorrect • red indicator lamp ON • green indicator lamp OFF • Switching contact OPEN
	Clamp connected to tank container or drum.	Grounding ok • red indicator lamp OFF • green indicator lamp ON • Switching contact CLOSED

Functional safety (IEC 61508)		
	8146/5075	8125/5071
Test report	--	Exida STAHL 11/07-089 R022
Max. SIL	--	2
Safe state	--	relay released / no release
Safe Failure Fraction SFF	--	69 %
PFD _{AVG} at T _[Proof]	--	T _[Proof] 1 year 2 years 5 years PFD _{AVG} 3.83 x 10 ⁻⁴ 7.3 x 10 ⁻⁴ 1.77 x 10 ⁻³

E4

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Technical Data

Ambient conditions

Version	8146/5075	8125/5071
Ambient temperature	-20 ... +55 °C	-20 ... +40 °C
Storage temperature	-40 ... +80 °C	-40 ... +80 °C

Mechanical data

	8146/5075	8125/5071
Degree of protection	IP66	IP65
Material		
Enclosure	Glass-fibre-reinforced polyester resin, flame-resistant	Stainless steel (1.4404 (AISI 316L))
Grounding clamp	Stainless steel 1.4301 (tong limbs) and 1.4034 (clamping jaw)	Stainless steel 1.4301 (tong limbs) and 1.4034 (clamping jaw)
Cable diameter range of cable gland (M25)	6 ... 12 mm	6 ... 12 mm
Weight	5.8 kg	6.5 kg

Mounting / Installation

Connection	grey & green-yellow	blue
Single-wire connection		
- rigid	0.2 ... 6 mm ²	0.2 ... 4 mm ²
- flexible	0.2 ... 4 mm ²	0.2 ... 2.5 mm ²
- flexible with core end sleeves with plastic sleeve	0.25 ... 2.5 mm ²	0.25 ... 1.5 mm ²
- flexible with core end sleeves without plastic sleeve	0.25 ... 4 mm ²	0.25 ... 2.5 mm ²

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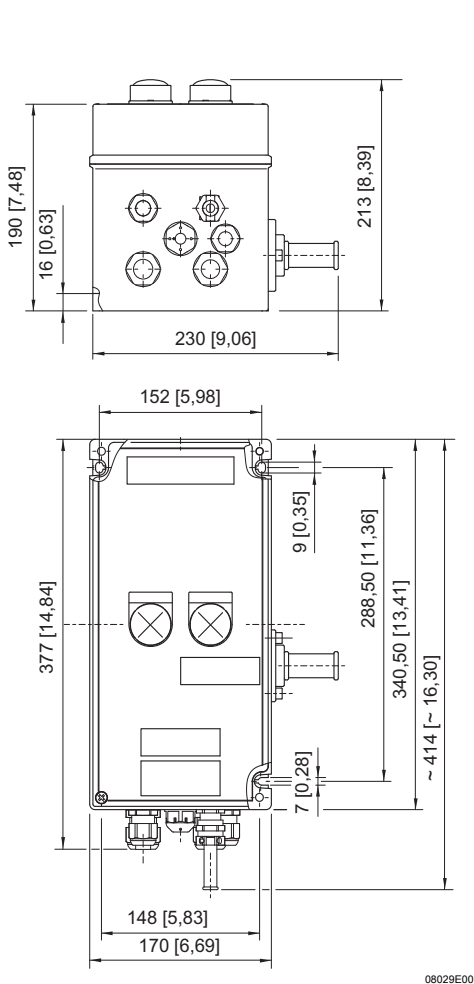
Explosion Protection		
Design	Grounding clamp with cable	
Europe (ATEX)		
Gas and dust	DMT 00 ATEX E 068 X Ⓜ II 2 G Ex ia IIC T6 Gb Ⓜ II 2 D Ex ia IIIC T135°C Db	
Certifications and certificates		
Certificates	ATEX	
Europe (ATEX)		
Gas and dust	DMT 00 ATEX E 068 X Ⓜ II 2 G Ex ia IIC T6 Gb Ⓜ II 2 D Ex ia IIIC T135°C Db	
Further parameters		
Installation	in Zones 1, 2, 21, 22	
Technical Data		
Design	Grounding clamp with cable	
Ambient conditions		
Ambient temperature	-20 ... +90 °C	
Storage temperature	-40 ... +90 °C	
Explosion Protection		
Design	Automatic cable winder	
Europe (ATEX)		
Gas and dust	DMT 00 ATEX E 068 X Ⓜ II 2 G Ex ia IIC T6 Gb Ⓜ II 2 D Ex ia IIIC T135°C Db Maximum surface temperature: 70 °C (dependent on ambient temperature, not on device)	
Certifications and certificates		
Certificates	ATEX	
Further parameters		
Installation	in Zones 1, 2, 21, 22	
Technical Data		
Design	Automatic cable winder with 20 m of cable (Art. no. 247671)	Automatic cable winder with 9 m of cable (Art. no. 247660)
Ambient conditions		
Ambient temperature	-20 ... +70 °C	-20 ... +70 °C
Mechanical data		
Degree of protection	IP43	IP42
Material		
Enclosure	Aluminium ribbed and reinforced, protected cable duct with stopper	Plastic, cable duct with rollers
Return mechanism	automatic, stopping device can be switched on and off	--
Grounding cable	20 m oil and petrol resistant grounding cable, 3 x 1.5 mm Temperature range: -20 ... +90 °C Connected 4-pole plug receptacle, IP67	9 m oil and petrol resistant grounding cable, 3 x 1.5 mm Temperature range: -20 ... +90 °C Connected 4-pole plug receptacle, IP67
Weight	approx. 14 kg with 20 m grounding cable	approx 7.0 kg with 9 m grounding cable
Fire resistance (UL 94)	--	HB
Mounting / Installation		
Mounting	Wall mounting with mounting plate	Wall mounting with mounting plate
Connection	2.5 m, connection cable 3 x 1.5 mm ²	2.5 m, connection cable 3 x 1.5 mm ²

E4

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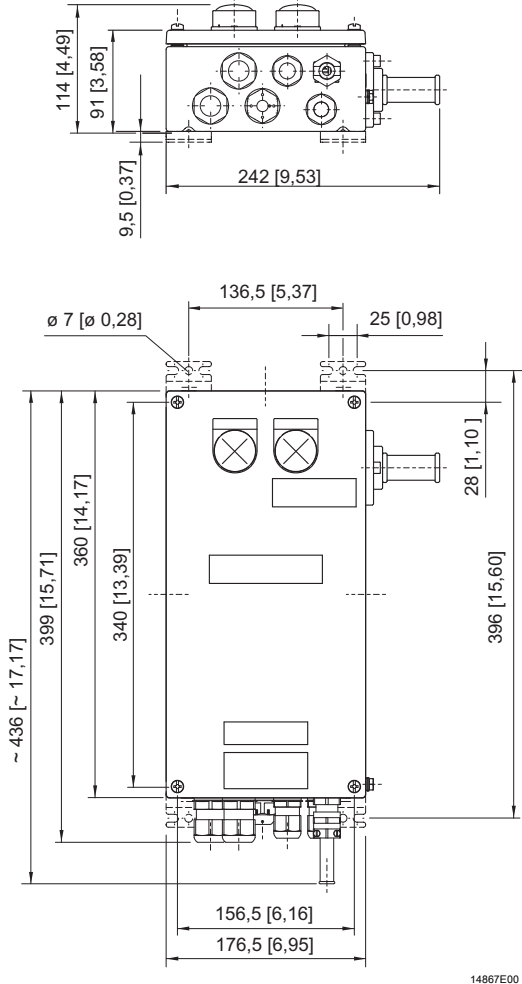
Series 8146/5075 and 8125/5071

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



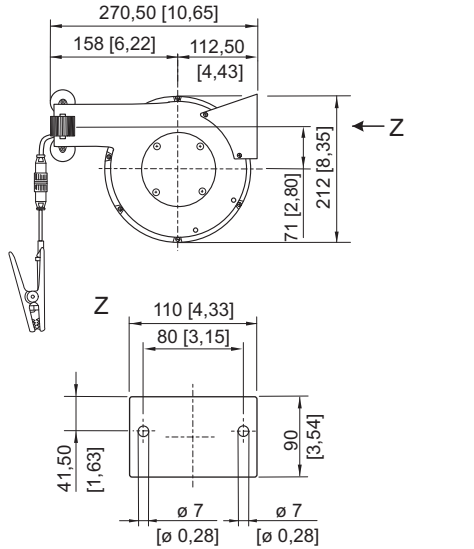
08029E00

Grounding monitoring device 8146/5075



14867E00

Grounding monitoring device 8125/5071



17658E00

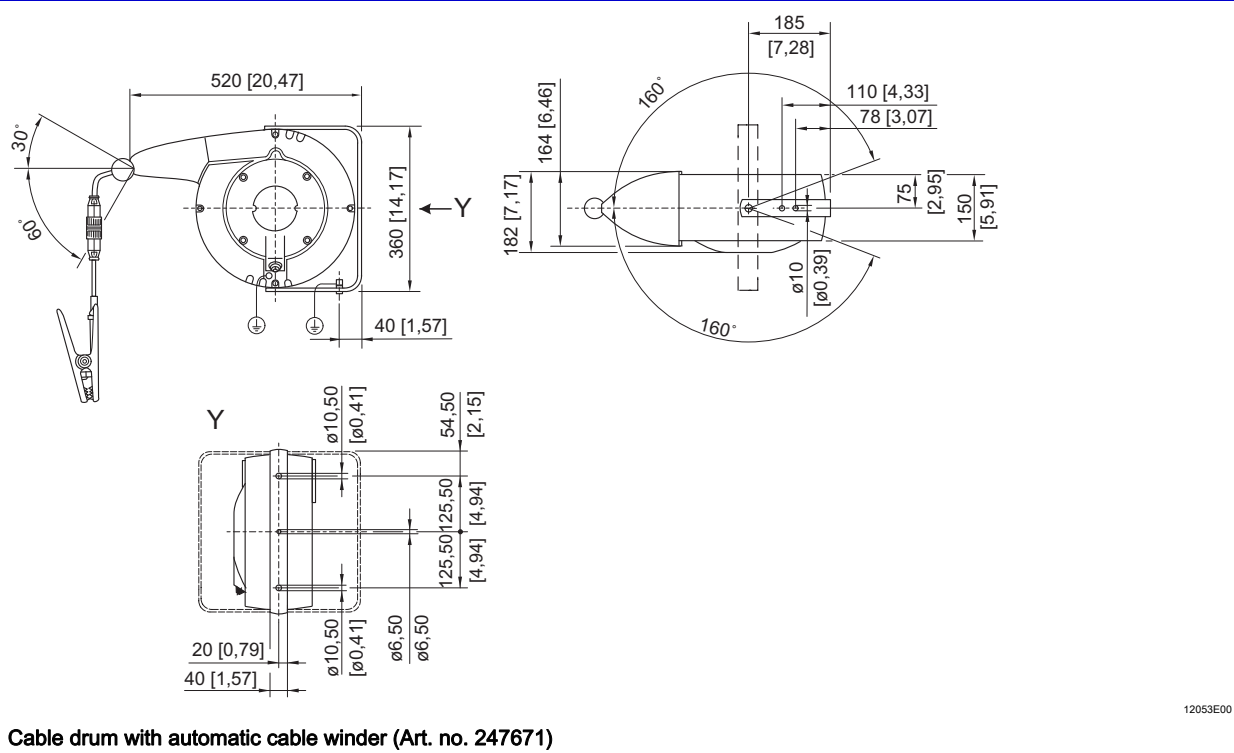
Cable drum with automatic cable winder (Art. no. 247660)

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



Cable drum with automatic cable winder (Art. no. 247671)

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.

E4