

Grounding Systems / Ground Monitoring Device

Series 8146/5075 and 8125/5071

STAHL



- > Monitored electrostatic grounding of tank containers and drums during loading
- > Continuous monitoring of correct grounding
- > Robust design
- > Weather-protected plastic enclosure (IP66) or stainless steel enclosure (IP66)
- > Easy installation and operation
- > 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



14834E00

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The ground monitoring device ensures that tank containers and drums 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

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Selection Table

Version	Description	Art. no.	Weight kg
 12753E00 Ground monitoring device 8146/5075	Ground monitoring device series 8146/5075 without cable. The ground monitoring device ensures that drums and tank containers are correctly electrostatically grounded and continuously monitors the connection.	136216	5.800
 14728E00 Ground monitoring device 8125/5071	Ground monitoring device series 8125/5071 without cable. The ground monitoring device ensures that drums and tank containers are correctly electrostatically grounded and continuously monitors the connection. For use up to SIL 2.	209056	6.500
 12056E00 Grounding clamp with cable	10 m cable with robust ergonomic grounding clamp, stainless steel, and fast-action plug - II 1 GD T6. *)	105536	1.900
 12055E00 Grounding clamp with spiral cable	5 m of cable with robust ergonomic grounding clamp, stainless steel, and fast-action plug - II 1 GD T6	105538	1.350
	10 m of cable with robust ergonomic grounding clamp, stainless steel, and fast-action plug - II 1 GD T6.	105539	1.900
 12715E00 Grounding clamp with automatic cable winder	Automatic winder with 15 m of insulated cable and robust ergonomic grounding clamp, stainless steel, and fast-action plug - II 1 GD T6. Self retracting reel with 15 m Hytrel isolated cable	105544	16.000
 09003E00 Grounding clamp	Robust ergonomic grounding clamp, stainless steel, and fast-action plug - II 1 GD T6.	203148	0.800
Note	*) Special cable length possible on request. Price and date of delivery differ from the standard.		

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Explosion Protection

Global (IECEX)		
Version	8146/5075	8125/5071
Gas and dust	IECEX PTB 06.0090 Ex d e [ia] IIC T4 Ex tD A21 IP66 T80°C	IECEX PTB 06.0079 Ex d e [ia] IIC T4 Ex tD A21 IP66 T80°C
Europe (ATEX)		
Gas and dust	PTB 01 ATEX 1024 ⊕ II 2 G Ex d e [ia] IIC T4 ⊕ II 2 D Ex tD A21 IP66 T80°C	PTB 00 ATEX 3116 ⊕ II 2 G Ex d e [ia] IIC T4 ⊕ II 2 D Ex tD A21 IP66 T80°C
Certificates and approvals		
Certificates	IECEX, ATEX, Brazil (UL do Brasil), Russia (GOST-R), Belarus (GOST-B)	IECEX, ATEX, Brazil (UL do Brasil), Russia (GOST-R), Belarus (GOST-B)
Other approvals	ship approval (DNV)	ship approval (DNV)
Further parameters		
Installation	in Zones 1, 2, 21, 22	in Zones 1, 2, 21, 22

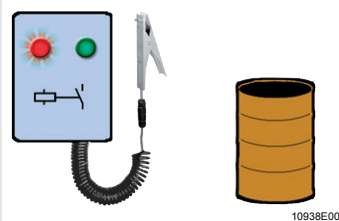
Technical Data

Electrical data

Power supply	
Rated voltage	120 / 230 V
Nominal voltage range	96 ... 253 V AC
Frequency range	48 ... 62 Hz
Rated 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 principle:

State of grounding process

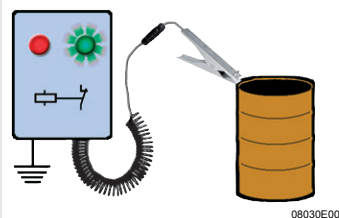


Clamp is not connected,
grounding equipment not
in use

Reaction of the ground monitoring device

Grounding incorrect

- Red indicating lamp ON
- Green indicating lamp OFF
- Contact OPEN



Clamp connected to tank
container or drum.

Grounding ok

- Red indicating lamp OFF
- Green indicating lamp ON
- Contact CLOSED

Functional safety (IEC 61508)

Version	8146/5075	8125/5071
Test report	--	applied for
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

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Technical Data

Ambient conditions

Ambient temperature	- 20 ... + 55 °C
Storage temperature	- 40 ... + 80 °C

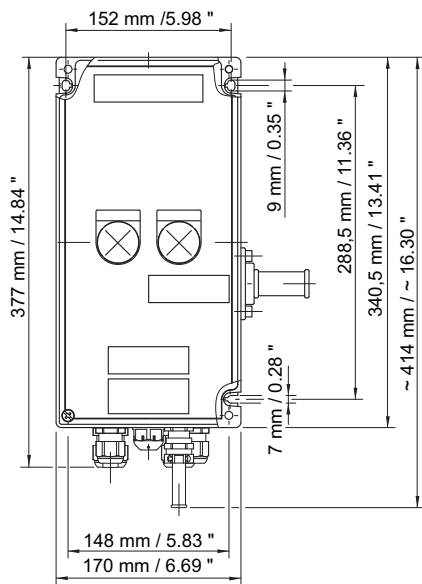
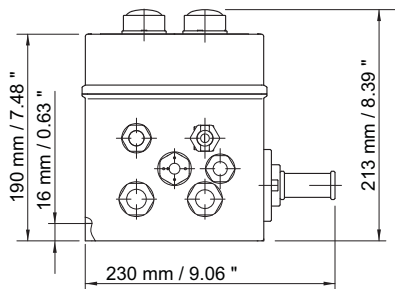
Mechanical data

Version	8146/5075	8125/5071
Degree of protection	IP66	IP66
Material		
Enclosure	Glass-fibre-reinforced polyester resin, flame-resistant	Stainless steel (1.4404 (AISI 316L))
Grounding clamp	Stainless steel with sharp non-wear contact points made of tungsten carbide	Stainless steel with sharp non-wear contact points made of tungsten carbide
Cable diameter range of cable gland (M25)	6 ... 12 mm	6 ... 12 mm
Weight	5.8 kg	6.5 kg

Assembly / Installation

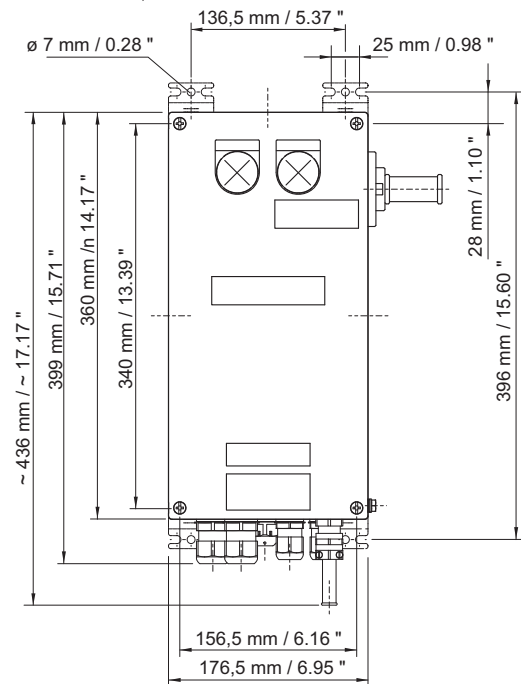
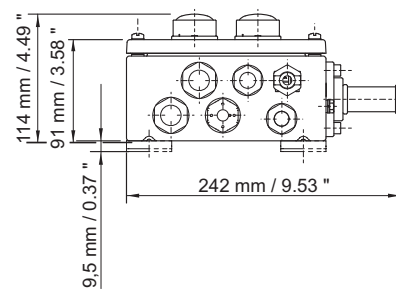
Connection	grey & green/yellow	blue
Connection single-wire		
- rigid	0.2 ... 6 mm ²	0.2 ... 4 mm ²
- flexible	0.2 ... 4 mm ²	0.2 ... 2.5 mm ²
- flexible, cable end sleeves with plastic cover	0.25 ... 2.5 mm ²	0.25 ... 1.5 mm ²
- flexible, cable end sleeves without plastic cover	0.25 ... 4 mm ²	0.25 ... 2.5 mm ²

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



08029E00

Grounding monitoring device 8146/5075



14867E00

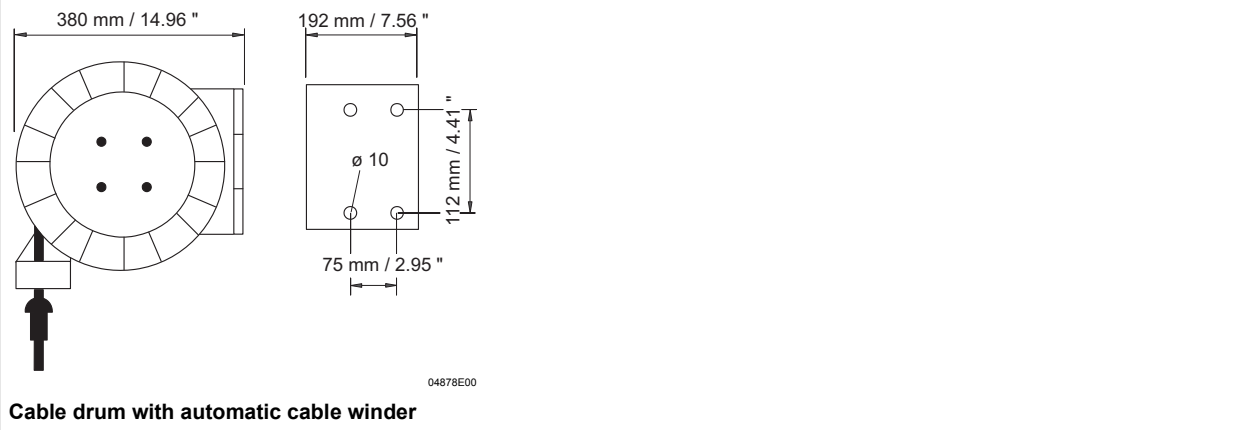
Grounding monitoring device 8125/5071

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Dimensional Drawings (All Dimensions in mm) - 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.

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