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STAHL

**F4** 

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



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

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

- 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 steal 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)





WebCode 8146H

Selection Table

Version       Description       Order number       Art. no.         Image: Comparing the set of \$146,0000 without cable.       The device ensures that drums and fank containers are correctly ensures that	Selection Table			
The device ensures that drums and tank containers are correctly device 814.05007Crossed device 814.05007Crossed device 812.05071 without cable containers are correctly envice 814.05007Crossed device 812.05071 without cable containers are correctly electrostatically grounded and continuously monitors the connection.Fits device 812.0507120056Crossed (crossed are conserved and continuously monitors the connection. Pelectrostatically grounded and continuously monitors the connection. For use up to SIL 2.215.507120056Crossed (crossed are conserved are conserved and continuously monitors the connection. For use up to SIL 2.10 molitority device 812.05071247673Crossed (crossed are conserved	Version	Description	Order number	
device 814465075     Consuding monitoring device 81255071 without cable. The device ensures that drums and tank containers are correctly ensures that drums and tank containers are correctly for use up to SIL 2.     8125/5071     209056       Image: Consuding monitoring ensures that drums and tank containers are correctly for use up to SIL 2.     Image: Consuding monitoring ensures that drums and tank containers are correctly ensures that drums and tank containers are correctly ensure that drums and tank correctly prove that are correctly ensure that drums and tank correctly are correctly ensure that drum		The device ensures that drums and tank containers are correctly	8146/5075	136216
The device ensures that drums and tank containers are correctly       Interview         Ground monitoring clamp       The device ensures that drums and tank containers are correctly         Ground monitoring clamp       10 m oil and petrol resistant cable with robust ergonomic grounding clamp       247673         Grounding clamp       5 m oil and petrol resistant cable with robust ergonomic grounding clamp       247674         Image: Steel, and fast-action plug       247674       247674         Image: Steel, and fast-action plug       247660       247660         Image: Steel, and fast-action plug       247660 <t< td=""><td>Ű</td><td></td><td></td><td></td></t<>	Ű			
Image: Descent of the section of th	Ground monitoring	The device ensures that drums and tank containers are correctly electrostatically grounded and continuously monitors the connection.	8125/5071	209056
5 m oil and petrol resistant spiral cable with robust ergonomic grounding of stainless steel, and fast-action plug24767210 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug24767410 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug24767410 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug24767410 m oil and petrol resistant spiral cable with robust ergonomic grounding ergonomic grounding clamp of stainless steel, and fast-action plug.24767410 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767010 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767010 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767010 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767110 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767110 m oil and petrol resistant cable with robust ergonomic cable24767110 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767110 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug.24767110 m oil and petrol resistant cable with robust ergonomic	12056E00	10 m oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug		247673
Camp of stainless steel, and fast-action plugCalculation of stainlessCalculation of stainless	with cable			047670
Counting clampClamp of stainless steel, and fast-action plugClamp of stainless steel, and fast-action plugClamp of stainless steel, and fast-action plugCrounding clampAutomatic winder with 9 m of oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug, Plastic enclosure247660Crounding clampVergonomic grounding clamp of stainless steel, and fast-action plug, Plastic enclosure247671VinderAutomatic winder with 20 m of oil and petrol resistant cable with robust rogonomic grounding clamp of stainless steel, and fast-action plug, Numinium enclosure, protected cable duct with stopper247671Crounding clampAutomatic winder with 20 m of oil and petrol resistant cable with robust Numinium enclosure, protected cable duct with stopper247671Crounding clampAutomatic winder with 20 m of oil and petrol resistant cable with robust Aluminium enclosure, protected cable duct with stopper247671Crounding clampSobust ergonomic grounding clamp with 150 mm of cable and fast-action plug247675	1 million and the second secon	5 m oil and petrol resistant spiral cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug		24/0/2
ergonomic grounding clamp of stainless steel, and fast-action plug, Plastic enclosureergonomic grounding clamp of stainless steel, and fast-action plug, Plastic enclosureergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopperergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopperergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopperergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopperergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopperergonomic grounding clamp of stainless steel, and fast-action plug, ergonomic grounding clamp with 150 mm of cable and fast-action plugergonomic grounding clamp with 150 mm of cable and fast-action plugergonomic grounding clamp with 150 mm of cable and ergonomic grounding clamp with 150 mm of cable and fast-action plugergonomic grounding clamp with 150 mm of cable and fast-action plugergonomic grounding clamp with 150 mm of cable and ergonomic grounding clamp with 150 mm of cable and fast-action plugergonomic grounding clamp with 150 mm of cable and ergonomic grounding clamp with 150 mm of cable and ergonomic grounding clamp with 150 mm of cable and ergonomic grounding clamp with 150 mm of cable and <b< td=""><td>Grounding clamp</td><td></td><td></td><td>247674</td></b<>	Grounding clamp			247674
Grounding clamp       Instantial function in the form of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopper         Grounding clamp       Instantial function in the form of stainless steel, and fast-action plug, Aluminium enclosure, protected cable duct with stopper         Grounding clamp       Robust ergonomic grounding clamp with 150 mm of cable and fast-action plug.         Image: Transmosting clamp       Robust ergonomic grounding clamp with 150 mm of cable and fast-action plug.         Image: Transmosting clamp       Image: Transmosting clamp         Image: Transmosting clamp       Transmosting clamp         Image: Trans	Grounding clamp with automatic cable	ergonomic grounding clamp of stainless steel, and fast-action plug,		247660
Grounding clamp	Grounding clamp with automatic cable	ergonomic grounding clamp of stainless steel, and fast-action plug,		247671
				247675
		*) Special cable length possible on request. Price and date of delivery diffe	er from the standard	



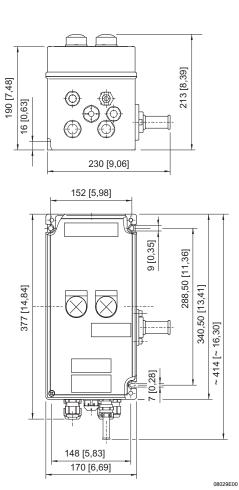
Version	Grounding monitoring devices 8146/5075		Grounding n 8125/5071	nonitoring devices
Global (IECEx)	8140/5075		0120/00/1	
Gas and dust	IECEx PTB 06.0090		IECEx PTB	06 0079
	Ex db eb [ia Ga] IIC T4 Gb			Ga] IIC T4 Gb
	Ex tb IIIC T80°C Db IP65		•	30°C Db IP65
Europe (ATEX)				
Gas and dust	PTB 01 ATEX 1024		PTB 01 ATE	X 1001
Gas and dust	<ul> <li>(ii) G Ex db eb [ia Ga] IIC T4 G</li> </ul>			
	$\bigcirc$ II 2 D Ex tb IIIC T80°C Db IP65	5		tb eb [ia Ga] IIC T4 Gb tb IIIC T80°C Db IP65
Certifications and certificates	W II 2 D EX to IIIC 180 C Do IF03		W II Z D LX	ID IIIC 180 C DD IF 03
Certificates	IECEx, ATEX, Brazil (INMETRO), K	azakhatan (T	D) Duccio (T	D) Poloruo (TD)
Ship approval	DNV	azakiistaii (1	r), russia (i	R), Delalus (TR)
	DINV			
Further parameters Installation	in Zanas 1, 2, 21, 22			
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	6 13 mm			
of cable gland (M20)				
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:			
	State of grounding			Reaction of the grounding
				monitoring device
		Clamp is not device not in		Grounding incorrect
	🏓 🗢 🎽	device not in	iuse	<ul> <li>red indicator lamp ON</li> </ul>
				green indicator lamp OFF
	$\varphi \rightarrow \langle$			<ul> <li>Šwitching contact OPEN</li> </ul>
	10938E00			
		Clamp conne container or	ected to tank	Grounding ok
		container or	urum.	<ul> <li>red indicator lamp OFF</li> </ul>
				<ul> <li>green indicator lamp ON</li> </ul>
				<ul> <li>Switching contact CLOSED</li> </ul>
	08030E00			
Functional safety (IEC 61508)				
	8146/5075		8125/5071	
Test report			Exida STAH	L 11/07-089 R022
Max. SIL			2	
Safe state			relay release	ed / no release
Safe Failure Fraction SFF			69 %	
PFD <sub>AVG</sub> at T <sub>[Proof]</sub>			T[Proof] 1	year 2 years 5 years
				8.83 x 10 <sup>-4</sup> 7.3 x 10 <sup>-4</sup> 1.77 x 10

Municipal Conditions				
Version	8146/5075	812	5/5071	
Ambient temperature	-20 +55 °C	-20	+40 °C	
Storage temperature	-40 +80 °C	-40 +80 °C		
lechanical data				
	8146/5075	812	5/5071	
Degree of protection	IP66	IP6	5	
Material				
Enclosure	Glass-fibre-reinforced polyester resin, flame-resistant	Stai	nless steel (1.4404 (Al	SI 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			
Iounting / Installation				
Connection			grey & green-yellow	blue
	Single-wire connection - rigid - flexible - flexible with core end sleeves with plastic sleev - flexible with core end sleeves without plastic sleeves		0.2 6 mm <sup>2</sup> 0.2 4 mm <sup>2</sup> 0.25 2.5 mm <sup>2</sup> 0.25 4 mm <sup>2</sup>	0.2 4 mm <sup>2</sup> 0.2 2.5 mm <sup>2</sup> 0.25 1.5 mm <sup>2</sup> 0.25 2.5 mm <sup>2</sup>

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			
	<ul> <li>II 2 G Ex ia IIC T6 Gb</li> </ul>			
	<ul> <li>II 2 D Ex la IIIC T135°C Db</li> </ul>			
	Maximum surface temperature: 70 °C			
	(dependent on ambient temperature, not on dev	ice)		
Certifications and certificates				
Certificates	ATEX			
Further parameters				
Installation	in Zones 1, 2, 21, 22			
Taskalasi Data				
Technical Data Design	Automatic cable winder with 20 m of cable	Automatic cable winder with 9 m of cable		
Design	(Art. no. 247671)	(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	1	1		
Mounting	Wall mounting with mounting plate	Wall mounting with mounting plate		
Connection	2.5 m, connection cable 3 x 1.5 mm <sup>2</sup>	2.5 m, connection cable 3 x 1.5 mm <sup>2</sup>		

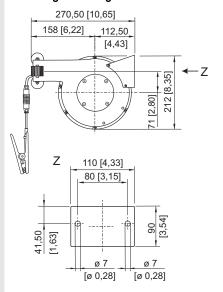
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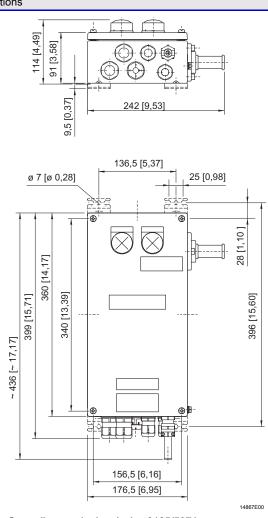


Dimensional Drawings (All Dimensions in mm [inches]) - Subject to Alterations

Grounding monitoring device 8146/5075

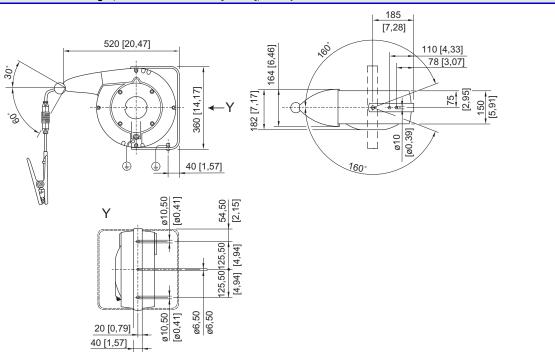


Cable drum with automatic cable winder (Art. no. 247660)



Grounding monitoring device 8125/5071

17658E00



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**

12053E00

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