

**Ammeter / Voltmeter**

Series 8402, 8403, 8405, 8404

www.stahl.de



- > Fast comparison of measured with set values
- > Versions available
  - Ammeter Series 8405, 8403 and 8402
  - Voltmeter Series 8404



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The ammeters and voltmeters from R. STAHL are explosion protected, electrical components with a moving iron instrument of the accuracy class 2.5. Integrated in enclosures with the type of protection "Ex e", they are used to measure and indicate current and voltage values.

The externally adjustable red pointer of the device allows a rapid measurement comparison. The current transformer (CT) versions (1 A and 5 A) allow a rapid and easy measurement range assignment on site due to the scale plate which can be slid in from the side.





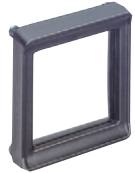
Zone	ATEX / IECEx						Class I (NEC 505) (NEC 506)						Division	Class I		Class II		Class III	
	0	1	2	20	21	22	0	1	2	20	21	22		1	2	1	2	1	2
8402, 8403, 8404: For use in	x	x																	
8405: For use in	x	x						x						x					

**WebCode 8402A**

## Ammeter / Voltmeter

Series 8402, 8403, 8405, 8404

Selection Table

Version	Description	Overload scale	Measuring range	Order number	Weight kg
 02414E00 Ammeter for Ex i circuits Series 8402, 72 x 72 mm	direct measuring without scale*	without	1 ... 20 mA resp. 4 ... 20 mA, for connection to certified intrinsically circuits only	<b>8402/5</b>	0.222
	 01841E00 Ammeter Series 8403, 72 x 72 mm	direct measuring without scale*	2 times	0 ... 20 / 40 mA	<b>8403/2-0,02/0,04- .</b>
			4 ... 20 / 40 mA	<b>8403/2-0,02/0,04- .</b>	0.220
direct measuring with scale		2 times	4 ... 20 / 40 mA	<b>8403/2-100%/200%</b>	0.218
			0 ... 1 / 2 A	<b>8403/2-1/2</b>	0.216
			0 ... 4 / 8 A	<b>8403/2-4/8</b>	0.222
			0 ... 10 / 20 A	<b>8403/2-10/20</b>	0.222
			0 ... 15 / 30 A	<b>8403/2-15/30</b>	0.222
			0 ... 25 / 50 A	<b>8403/2-25/50</b>	0.264
	for CT without scale*	2 or 5 times	sek. 1 A	<b>8403/2-1</b>	0.216
			sek. 5 A	<b>8403/2-5</b>	0.216
 01842E00 Ammeter Series 8405, 48 x 48 mm	direct measuring without scale*	2 times	0 ... 20 / 40 mA	<b>8405/2-0,02/0,04- .</b>	0.122
			0 ... 1 / 2 A	<b>8405/2-1/2</b>	0.124
			0 ... 4 / 8 A	<b>8405/2-4/8</b>	0.118
			0 ... 10 / 20 A	<b>8405/2-10/20</b>	0.120
			0 ... 15 / 30 A	<b>8405/2-15/30</b>	0.120
		for CT without scale*	2 or 5 times	1 A	<b>8405/2-1</b>
			5 A	<b>8405/2-5</b>	0.125
 01843E00 Voltmeter Series 8404, 72 x 72 mm	direct measuring with scale	without	0 ... 10 V	<b>8404/2-10</b>	0.216
			0 ... 100 V	<b>8404/2-100</b>	0.216
			0 ... 150 V	<b>8404/2-150</b>	0.216
			0 ... 250 V	<b>8404/2-250</b>	0.274
			0 ... 500 V	<b>8404/2-500</b>	0.216
 01845E00 Bezel	Bezel □ 64 mm (for ammeter Series 8405)			<b>8603A0740-11-0</b>	0.500
	Bezel □ 72 mm (for ammeter Series 8403 and voltmeter Series 8404)			<b>8603A0145-21-0</b>	0.025
Note	* Please order scales separately. Further measuring ranges or scales on request.				

# Ammeter / Voltmeter

Series 8402, 8403, 8405, 8404



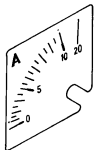
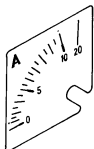
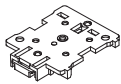
Explosion Protection				
Version	Ammeter Ex i Series 8402	Ammeter Series 8403	Ammeter Series 8405	Voltmeter Series 8404
<b>Global (IECEX)</b>				
Gas	IECEX PTB 06.0006 Ex ib IIC T6	IECEX PTB 06.0017 U Ex e II/I, Ex em II/I	IECEX PTB 06.0017 U Ex e II/I, Ex em II/I	IECEX PTB 06.0017 U Ex e II/I, Ex em II/I
<b>Europe (ATEX)</b>				
Gas	PTB 98 ATEX 2101 Ⓢ II 2 G Ex ib IIC T6	PTB 01 ATEX 2158 U Ⓢ II 2 G Ex e II	PTB 01 ATEX 2158 U Ⓢ II 2 G Ex e II	PTB 01 ATEX 2158 U Ⓢ II 2 G Ex e II
<b>Certificates and approvals</b>				
Certificates	Canada (CSA), Russia (CTB), Belarus (Gospromnadzor)	Belarus (Gospromnadzor)	Canada (UL, CSA), USA (UL, FM), Belarus (Gospromnadzor)	Belarus (Gospromnadzor)
<b>Technical Data</b>				
<b>Electrical data</b>				
Version	Ammeter Ex i Series 8402	Ammeter Series 8403	Ammeter Series 8405	Voltmeter Series 8404
Isolating voltage	--	690 V	690 V	690 V
Type of current	--	AC 15 ... 100 Hz, DC calibration possible	AC 15 ... 100 Hz, DC calibration possible	AC 15 ... 100 Hz, DC calibration possible
Power input	--	max. 0.43 W	max. 0.43 W	max. 2,1 VA
Max. short circuit current	max. 150 mA	--	--	--
Internal resistance	~ 2.93 Ω	--	--	--
Internal inductance	68.5 μH	--	--	--
Internal capacitance	~ 0	--	--	--
<b>Ambient conditions</b>				
Ambient temperature	-20 ... +40 °C			
<b>Mechanical data</b>				
Version	Ammeter Ex i Series 8402	Ammeter Series 8403	Ammeter Series 8405	Voltmeter Series 8404
Enclosure material	Polyamide - polyester			
Connection cross-section				
Finely stranded	--	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Solid	--	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup>	4.0 mm <sup>2</sup>
<b>Assembly / Installation</b>				
Mounting	on TS35 rail			
<b>Movement</b>				
Version	Ammeter Ex i Series 8402	Ammeter Series 8403	Ammeter Series 8405	Voltmeter Series 8404
Movement	Moving coil instrument			
Accuracy	Class 1.5			
Scale	0 - 100 linear, Quadrant scale, Length 63 mm			
Overload capacity		2 x I <sub>N</sub> 25 sec 50 x I <sub>N</sub> 1 sec Related to the measuring range end value	2 x I <sub>N</sub> 25 sec 50 x I <sub>N</sub> 1 sec Related to the measuring range end value	1,2 times continuous 2 times 60 sec
<b>Bezel</b>				
Version	Ammeter Ex i Series 8402	Ammeter Series 8403	Ammeter Series 8405	Voltmeter Series 8404
Material	Glass - polyester			
Degree of protection	IP66			
Gaskets	Neoprene			
Impact strength	≥ 7 J			
Sizes	□ 72 mm	□ 72 mm	□ 64 mm	□ 72 mm

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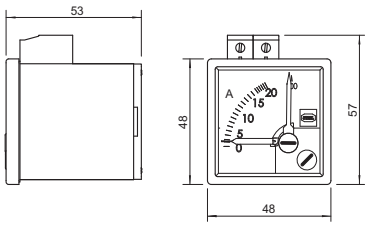
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Series 8402, 8403, 8405, 8404

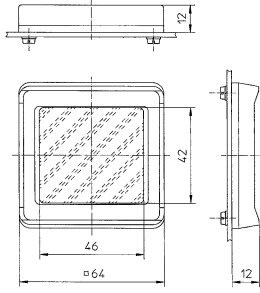
## Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg
Push-in scales for the 8405 series and the 8403 series		For the 8405 series and the 8403 series Measuring range - double overload 0 A ... 1 A 5 A 10 A 15 A 20 A 25 A 30 A 40 A 50 A 60 A 75 A 100 A 150 A 200 A 300 A 500 A	Specify measuring range	--
		For the 8405 series and the 8403 series Measuring range - quintuple overload 0 A ... 1 A 5 A 10 A 15 A 20 A 25 A 30 A 40 A 50 A 60 A 75 A 100 A 150 A 200 A 250 A 300 A 500 A		
Assembly accessories		For 8405 series To engage on TS 35 mounting rail	130954	0.022

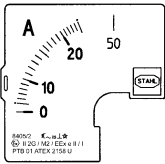
## Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



**Ammeter Series 8405**



Bezel assembly code 740  
for ammeter Series 8405



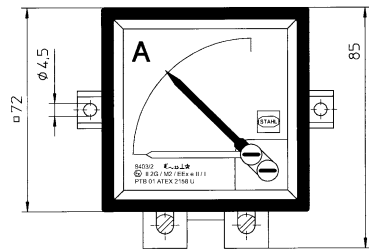
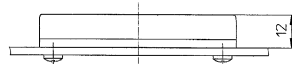
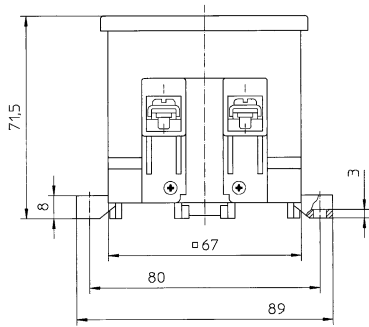
Slide-in scale for ammeter  
Series 8405 with CT

# Ammeter / Voltmeter

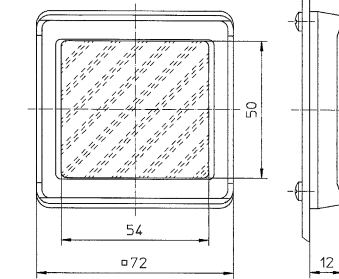
Series 8402, 8403, 8405, 8404



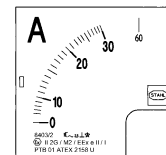
## Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



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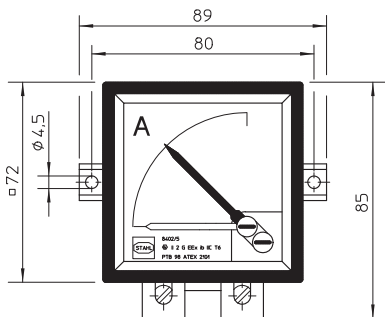
Bezel assembly code 145  
for ammeter Series 8403 and  
voltmeter Series 8404



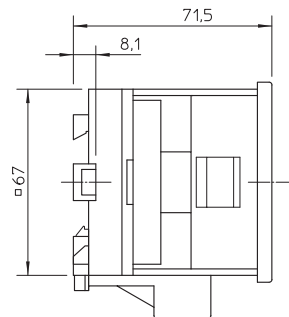
03348E00

04492E00

Slide-in scale for ammeter  
Series 8403 with CT



Ammeter Series 8402



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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.

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