

# MARINE PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The economic pressure transmitter ECTN 8477 is based on the tried and true ECT line of transmitters. The wide media temperature range from -25 to 125°C in combination with a comprehensive set of features and options makes the ECTN 8477 pressure transmitter a versatile solution suitable for marine applications.



## Applications

- Shipbuilding
- Engine manufacturing



## Features

- Measuring ranges from 100 mbar
- Excellent media compatibility
- Relative or absolute pressure measurement
- Titanium version optional
- Frontal membrane optional

## Technical Data

Measuring principle	Thick-film-on-ceramic	Media temperature	-25°C ... +125°C
Measuring range	0 ... 0.1 to 0 ... 250 bar 0 ... 1.5 to 0 ... 3000 psi	Ambient temperature	Max. -25°C ... +125°C
Output signal	4 ... 20 mA	Approval / conformity	DNV-GL EU RO Mutual Recognition Type Approval Certificate
Accuracy @ 25°C typ.	± 0.3 % FS typ. (± 0.5 % FS typ., ± 1 % FS typ.)		

07/2019

Data sheet H72322h

Subject to change

## Ordering information/type code

				8477 . XX	XX	XX	XX	XX	XX	
<b>Measuring range <sup>1)</sup></b>	<b>Pressure measurement range [bar]</b>	<b>Over pressure [bar]</b>	<b>Burst pressure [bar]</b>							
	0 ... 0.1	1.2	2	<b>66</b>	0 ... 1.5	15	30	<b>F6</b>		
	0 ... 0.16	1.2	2	<b>67</b>	0 ... 2	15	30	<b>F7</b>		
	0 ... 0.2	1.2	2	<b>68</b>	0 ... 2.5	15	30	<b>F8</b>		
	0 ... 0.4	1.2	2	<b>69</b>	0 ... 5	15	30	<b>F9</b>		
	0 ... 0.6	2	3	<b>70</b>	0 ... 7.5	30	45	<b>G0</b>		
	0 ... 1.0	2	3	<b>71</b>	0 ... 15	30	45	<b>G1</b>		
	0 ... 1.6	3.2	4.8	<b>73</b>	0 ... 20	40	70	<b>G3</b>		
	0 ... 2.5	5	7.5	<b>75</b>	0 ... 30	60	90	<b>G5</b>		
	0 ... 4	8	12	<b>76</b>	0 ... 50	100	150	<b>G6</b>		
	0 ... 6	12	15	<b>77</b>	0 ... 100	200	250	<b>G7</b>		
	0 ... 10	20	25	<b>78</b>	0 ... 150	300	375	<b>G8</b>		
	0 ... 16	32	40	<b>79</b>	0 ... 250	500	625	<b>G9</b>		
	0 ... 25	50	75	<b>80</b>	0 ... 400	800	1200	<b>H0</b>		
	0 ... 40	80	100	<b>81</b>	0 ... 500	1000	1250	<b>H1</b>		
	0 ... 60	120	180	<b>82</b>	0 ... 1000	2000	3000	<b>H2</b>		
	0 ... 100 <sup>4)</sup>	200	300	<b>83</b>	0 ... 1500 <sup>4)</sup>	3000	4500	<b>H3</b>		
	0 ... 160 <sup>4)</sup>	320	480	<b>85</b>	0 ... 2000 <sup>4)</sup>	4000	6000	<b>H5</b>		
	0 ... 250 <sup>4)</sup>	500	750	<b>74</b>	0 ... 3000 <sup>4)</sup>	6000	9000	<b>G4</b>		
	<b>Sensor</b>	<b>with temperature compensation</b>				<b>without temperature compensation</b>				
		Relative pressure, Material pressure connection and housing: 1.4404/1.4435 (AISI316L)			<b>56</b>	Relative pressure, Material pressure connection and housing: 1.4404/1.4435 (AISI316L) <sup>10)</sup>			<b>59</b>	
		Relative pressure, Material pressure connection and housing: 1.4462 (AISI318LN) <sup>4)</sup>			<b>50</b>	Relative pressure, Material pressure connection and housing: 1.4462 (AISI318LN) <sup>4)</sup> <sup>10)</sup>			<b>52</b>	
Relative pressure, Material pressure connection and housing: titanium grade 5 <sup>4)</sup>				<b>51</b>	Relative pressure, Material pressure connection and housing: titanium grade 5 <sup>4)</sup> <sup>10)</sup>			<b>53</b>		
Absolute pressure, Material pressure connection and housing: 1.4404/1.4435 (AISI316L) <sup>3)</sup>				<b>86</b>	Absolute pressure, Material pressure connection and housing: 1.4404/1.4435 (AISI316L) <sup>3)</sup> <sup>10)</sup>			<b>89</b>		
Absolute pressure, Material pressure connection and housing: 1.4462 (AISI318LN) <sup>3)</sup> <sup>4)</sup>				<b>80</b>	Absolute pressure, Material pressure connection and housing: 1.4462 (AISI318LN) <sup>3)</sup> <sup>4)</sup> <sup>10)</sup>			<b>82</b>		
Absolute pressure, Material pressure connection and housing: titanium grade 5 <sup>3)</sup> <sup>4)</sup>				<b>81</b>	Absolute pressure, Material pressure connection and housing: titanium grade 5 <sup>3)</sup> <sup>4)</sup> <sup>10)</sup>			<b>83</b>		
<b>Pressure connection</b>	G1/4" female <sup>4)</sup>							<b>10</b>		
	G1/4" male							<b>17</b>		
	G1/2" male DIN3852-A <sup>4)</sup>							<b>21</b>		
	G1/2" male DIN3852-E <sup>4)</sup>							<b>41</b>		
	1/4" NPT male <sup>4)</sup>							<b>30</b>		
	7/16"-20UNF male SAE4 (J1926) <sup>4)</sup>							<b>42</b>		
	R1/4" male, DIN3858							<b>19</b>		
G3/4" frontal membrane <sup>4)</sup> <sup>6)</sup>							<b>52</b>			
<b>Electrical connection</b>	Male electrical plug EN 175301-803-A, Mat. PA, -25°C ... +90°C							<b>05</b>		
	Male electrical plug M12x1, 5-pole, Mat. PBT							<b>35</b>		
	Cable Raychem, cable gland PA 6-3, -20°C ... +100°C <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>							<b>08</b>		
<b>Output signal</b>	<b>Signal output</b>	<b>Load resistance</b>	<b>I (supply)</b>	<b>U (supply)</b>						
	4 ... 20 mA	(U <sub>supply</sub> -9 V) / 20 mA		9 ... 30 VDC				<b>19</b>		

<b>Accessories</b>	Seal FKM (-20°C ... +125°C)	61
	Seal EPDM (-25°C ... +125°C)	63
	Female electrical connector EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0	46
	Female electrical connector EN 175301-803-A (DIN43650-A)/Silicone, -40°C ... +125°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0	56
	Female electrical connector EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9.5 mm, flammability standard UL94-V2	58
	Female electrical plug M12x1, 5-pole	33
	Pressure peak damping element ø 0.4 mm, material 1.4404 <sup>5)</sup>	44
	Pressure peak damping element ø 1.0 mm, material 1.4305 <sup>5)</sup>	40
	Special electrical connection: Pin 1 +, Pin 2 - (only for output signal 4 ... 20 mA and male electrical plug EN175301-803-A / DIN43650-A)	92
	Cable length 1.5 m	1M
	Cable length 3.0 m	3M
	Cable length 5.0 m	5M
	Housing nut for electrical connection EN175301-803-A (DIN43650-A) secured with Loctite (max. 85°C)	L9
	Multiple packaging <sup>11)</sup>	VM

<sup>1)</sup> Extended overpressure as well as customized pressure ranges upon request

<sup>2)</sup> Media -10°C ... +85°C

<sup>3)</sup> Absolute ranges max. 40 bar

<sup>4)</sup> Upon request

<sup>5)</sup> Not for pressure connections 10, 52

<sup>6)</sup> Only for pressure ranges ≤ 25 bar or 400 psi

<sup>7)</sup> Cable length see accessories (max. length 50 m, in 5-meter sections)

<sup>8)</sup> IP68, max. 3 m, Media +10°C ... +35°C

<sup>9)</sup> Cable length max. 3 m, for pressure ranges ≤ 16 bar

<sup>10)</sup> ≥ 1 bar

<sup>11)</sup> The order quantity must be a multiple of 50

## Standard products (extra short lead time)

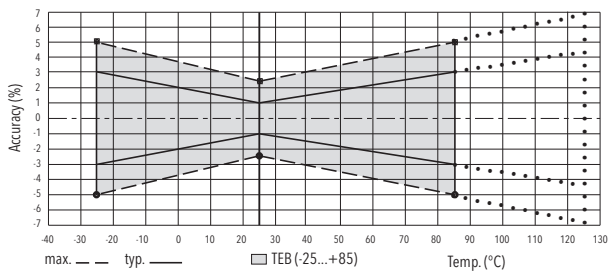
Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Signal output	Supply [VDC]
ECTN1.0A	8477 71 5917 05 0000 0000 19 58 61	0 ... 1	2	4 ... 20 mA	9 ... 30
ECTN2.5A	8477 75 5917 05 0000 0000 19 58 61	0 ... 2.5	5	4 ... 20 mA	9 ... 30
ECTN4.0A	8477 76 5917 05 0000 0000 19 58 61	0 ... 4	8	4 ... 20 mA	9 ... 30
ECTN6.0A	8477 77 5917 05 0000 0000 19 58 61	0 ... 6	12	4 ... 20 mA	9 ... 30
ECTN10.0A	8477 78 5917 05 0000 0000 19 58 61	0 ... 10	20	4 ... 20 mA	9 ... 30
ECTN16.0A	8477 79 5917 05 0000 0000 19 58 61	0 ... 16	32	4 ... 20 mA	9 ... 30
ECTN25.0A	8477 80 5917 05 0000 0000 19 58 61	0 ... 25	50	4 ... 20 mA	9 ... 30
ECTN40.0A	8477 81 5917 05 0000 0000 19 58 61	0 ... 40	80	4 ... 20 mA	9 ... 30

Specifications		
<b>Electrical Data</b>	Output / supply voltage	4 ... 20 mA: 24 (9 ... 30) VDC
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Switch-on-delay	100 ms
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	4...20 mA: to $U_s = 30$ VDC
<b>Environmental conditions</b>	Media temperature	-25°C ... +125°C
	Ambient temperature	Max. -25°C ... +125°C
	Protection <sup>1)</sup>	IP65, IP67, IP68
	Humidity	IEC 60068-2-30 (damp heat, cyclic, 100 % RH @ +55°C)
	Vibration	20 g (10...2000 Hz)
	Shock	50 g / 3 ms
<b>EMC Protection</b>	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
<b>Mechanical Data</b>	Sensor (wetted parts)	Ceramic, Al <sub>2</sub> O <sub>3</sub> (96 %)
	Pressure connection (wetted parts)	59/89: 1.4404/1.4435 (AISI316L) 52/82: 1.4462 (AISI318LN) 53/83: Titanium Grade 5
	Housing	59/89: 1.4404/1.4435 (AISI316L) 52/82: 1.4462 (AISI318LN) 53/83: Titanium Grade 5
	Sealing	FKM 70 Sh, EPDM
	Male electrical plug	See ordering information
	Weight	~ 110 g
	Mounting torque	15...20 Nm

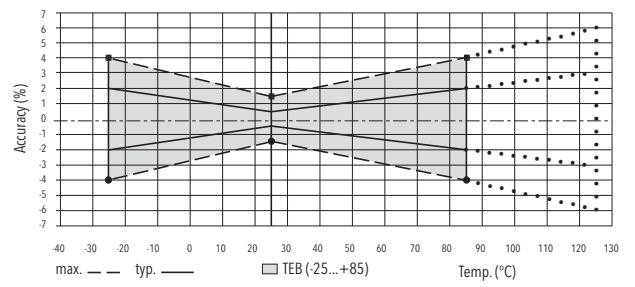
<sup>1)</sup> See electrical connection

Accuracy					
		Sensors		Sensors	
		59/89/52/82/53/83	56/86/50/80/51/81		
<b>Pressure measuring range</b>	<b>[bar]</b>	≥ 0 ... 1	> 0 ... 0.4	0 ... 0.2	0 ... 0.1
	<b>[psi]</b>	≥ 0 ... 15	> 0 ... 5	0 ... 0.4	0 ... 0.16
				0 ... 2.5	0 ... 1.5
				0 ... 5	0 ... 2
TEB @ -25 ... +85°C	[% FS typ.]	± 3.0	± 1.0	± 2.0	± 3.0
Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3	± 0.5	± 1.0
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.2	± 0.3	± 0.3
TC zero point and span	[% FS/K typ.]	± 0.03	± 0.02	± 0.02	± 0.02
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.3	± 0.2	± 0.2	± 0.2

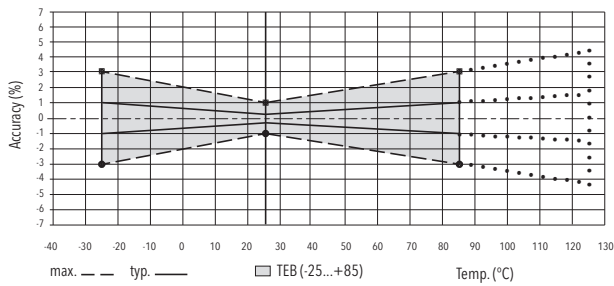
## Sensors 56/86/50/80/51/81 0 ... 0.1 to 0 ... 0.16 bar



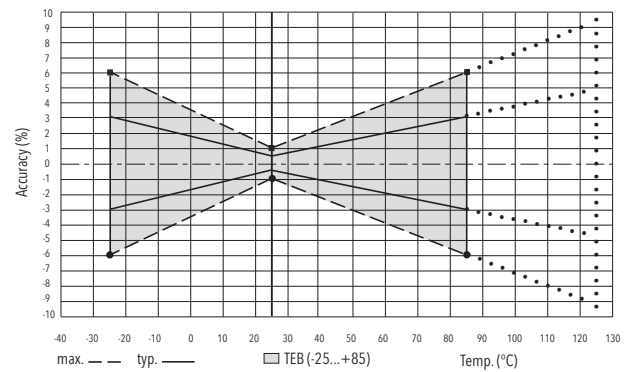
## Sensors 56/86/50/80/51/81 0 ... 0.2 to 0 ... 0.4 bar



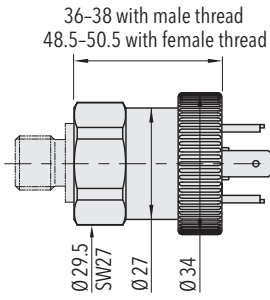
## Sensors 56/86/50/80/51/81 > 0 ... 0.4 bar



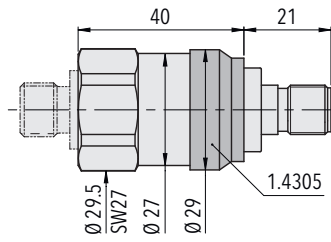
## Sensors 59/89/52/82/53/83 ≥ 0 ... 1 bar



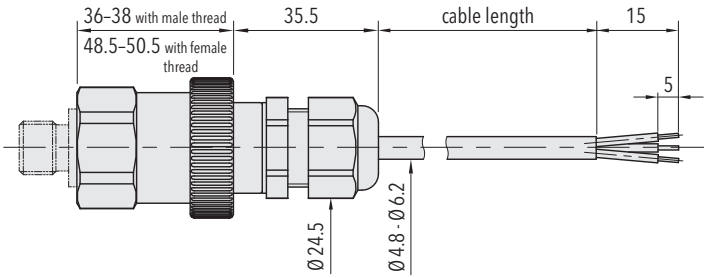
## Dimensions



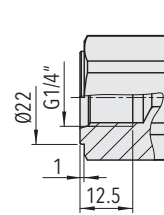
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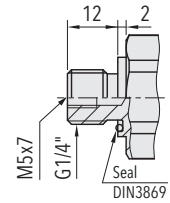
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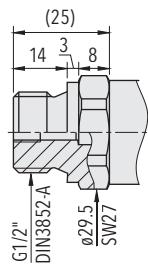
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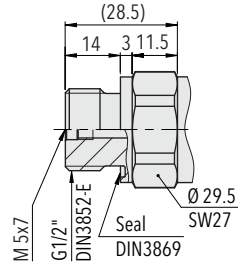
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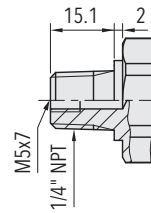
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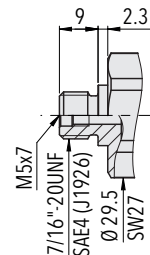
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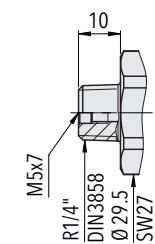
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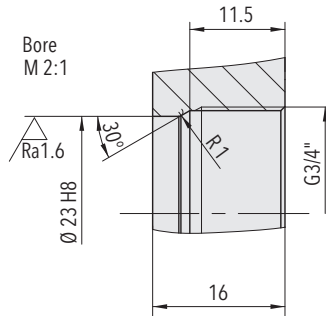
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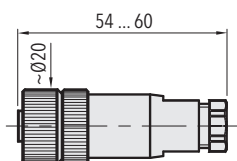
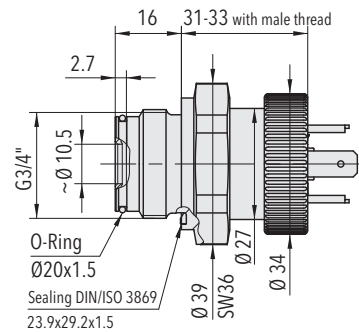
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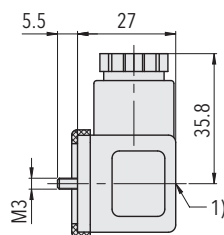
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8477.XX.XX52.XX.XX.XX

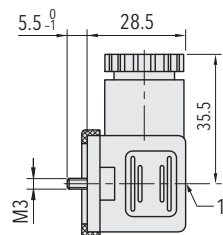


8477.XX.XXXX.XX.XX.33



1) Tightening torque 50...60 Ncm

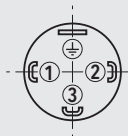
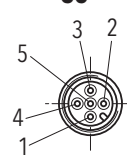

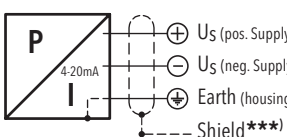
8477.XX.XXXX.XX.XX.46/56



1) Tightening torque 50...60 Ncm

8477.XX.XXXX.XX.XX.58

## Electrical connection

		Protection / electrical connection		
		IP65 <sup>*)</sup>	IP67 <sup>*)</sup>	IP68 max. 3 m
		Industrial standard EN175301-803A <sup>**)</sup>	M12x1 <sup>**)</sup> 5-pole	Cable <sup>**)</sup>
		<b>05</b> 	<b>35</b> 	<b>08</b> 
Output signal		Standard	<b>92</b>	
		2 1 ⊕	1 2 ⊕	4 1 5
				red black green
<b>8477.XX.XXXX.XX.19</b>				

<sup>\*)</sup> Provided female connector is mounted according to instructions

<sup>\*\*)</sup> Ventilation via male electric plug/cable end

<sup>\*\*\*)</sup> Only cable versions or female electrical plug with shield connection

### Additional information

#### Documents

Data sheet	<a href="http://www.trafag.com/H72322">www.trafag.com/H72322</a>
Instructions	<a href="http://www.trafag.com/H73324">www.trafag.com/H73324</a>
Flyer	<a href="http://www.trafag.com/H70688">www.trafag.com/H70688</a>