

# EX PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The EX pressure transmitter EXNT is based on Trafag's own thin-film-on-steel sensor technology with excellent long-term stability and offers reliable and accurate pressure measurement over a wide temperature range. The intrinsic safety design is certified for applications in Ex-Zones 0, 1, 2 (gas), 20, 21, 22 (dust) and mining.



## Applications

- Shipbuilding
- Ex Zones 0, 1, 2 (gas); 20, 21, 22 (dust) and mining
- Hydrogen

## Features

- II 1G Ex ia IIC T4/T6 Ga
- II 1D Ex ia IIIC T<sub>200</sub> 160°C Da
- I M1 Ex ia I Ma
- II 1/2G Ex ia IIC T4/T6 Ga/Gb (with plastic-type connector)
- Pressure ranges from 0.4 to 2000 bar
- Completely welded sensor system
- Optional with hydrogen-compatible sensor
- ATEX and IECEx

## Technical Data

Measuring principle	Thin-film-on-steel	Accuracy @ 25°C typ.	± 0.5 % FS typ. ± 0.3 % FS typ.
Measuring range	0 ... 0.4 to 0 ... 2000 bar 0 ... 5 to 0 ... 30000 psi	Media temperature	Max. -40°C ... +120°C (see electrical connection)
Output signal	4 ... 20 mA	Ambient temperature	Max. -40°C ... +120°C (see electrical connection)
NLH @ 25°C (BSL) typ.	± 0.2 % FS typ. ± 0.1 % FS typ.	Approval / conformity	DNV-GL, KRS, RMRS ATEX / IECEx, according to the norm EN/IEC 60079-0/EN 60079-11/ EN 60079-26/ EN 50303

10/2021

Data sheet H72329w

Subject to change

## Ordering information/type code

				8292 . 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 ... 0.4 <sup>2)</sup>	1.2	25	<b>69</b>	0 ... 5 <sup>2)</sup>	18	350	<b>F9</b>	
	0 ... 0.6 <sup>2)</sup>	1.5	25	<b>70</b>	0 ... 10 <sup>2)</sup>	25	350	<b>G0</b>	
	0 ... 1.0 <sup>2)</sup>	2.0	25	<b>71</b>	0 ... 15 <sup>2)</sup>	30	350	<b>G1</b>	
	0 ... 1.6	3.5	80	<b>73</b>	0 ... 25	50	1200	<b>G3</b>	
	0 ... 2.5	5	100	<b>75</b>	0 ... 30	30	720	<b>G5</b>	
	0 ... 4	8	100	<b>76</b>	0 ... 50	120	860	<b>G6</b>	
	0 ... 6	12	100	<b>77</b>	0 ... 100	170	1450	<b>G7</b>	
	0 ... 10	20	200	<b>78</b>	0 ... 150	290	2900	<b>G8</b>	
	0 ... 16	32	200	<b>79</b>	0 ... 250	460	2900	<b>G9</b>	
	0 ... 25	50	300	<b>80</b>	0 ... 400	730	4350	<b>H0</b>	
	0 ... 40	80	300	<b>81</b>	0 ... 500	1160	4350	<b>H1</b>	
	0 ... 60	120	500	<b>82</b>	0 ... 1000	1740	5800	<b>H2</b>	
	0 ... 100	200	500	<b>83</b>	0 ... 1500	2900	7250	<b>H3</b>	
	0 ... 160	320	1000	<b>85</b>	0 ... 2000	4640	10850	<b>H5</b>	
	0 ... 250	500	1000	<b>74</b>	0 ... 3000	7250	14500	<b>G4</b>	
	0 ... 400	800	1500	<b>84</b>	0 ... 5000	11600	21750	<b>H4</b>	
	0 ... 600	1000	2000	<b>86</b>	0 ... 7500	14500	29000	<b>H6</b>	
	0 ... 1000 <sup>9)</sup>	1600	3000	<b>88</b>	0 ... 15000 <sup>9)</sup>	25000	45000	<b>H8</b>	
	0 ... 1600	3000	4000	<b>89</b>	0 ... 25000	45000	60000	<b>H9</b>	
0 ... 2000	3000	4000	<b>90</b>	0 ... 30000	45000	60000	<b>J0</b>		
<b>Sensor</b>	Relative pressure, accuracy: 0.3% (> 1 bar)								<b>23</b>
	Relative pressure, accuracy: 0.5% (> 1 bar)								<b>25</b>
	Relative pressure, accuracy: 0.5% (≤ 1 bar)								<b>26</b>
	Relative pressure, accuracy: 0.5 %, wetted parts hydrogen compatible <sup>7) 8)</sup>								<b>35</b>
	Relative pressure, accuracy: 0.3 %, wetted parts hydrogen compatible <sup>7) 8)</sup>								<b>33</b>
<b>Pressure connection</b>	G1/4" male <sup>3)</sup>								<b>17</b>
	G1/4" male (Manometer) EN 837 <sup>3) 8)</sup>								<b>53</b>
	G1/4" female <sup>3) 8)</sup>								<b>10</b>
	G1/2" male <sup>3) 8)</sup>								<b>21</b>
	G1/2" male (Manometer) EN 837 <sup>3) 8)</sup>								<b>11</b>
	R1/4" male <sup>3) 8)</sup>								<b>19</b>
	1/4" NPT male <sup>3) 8)</sup>								<b>30</b>
	M18x1.5 male (conical seal: 58°) <sup>4) 8)</sup>								<b>29</b>
<b>Electrical connection</b>	Male electrical connector EN 175301-803-A, plastic								<b>05</b>
	Male electrical connector M12x1, 5-pole, metal								<b>35</b>
	Male electrical connector MIL-C 26482, 6-pole, metal <sup>5)</sup>								<b>02</b>
	Male electrical connector Binder 723, 5-pole, metal								<b>14</b>
	Cable with shield, material FDR 25 (Raychem), 4 x 0.5mm <sup>2</sup> (cable length see "Accessories") - not ship approved <sup>10)</sup>								<b>78</b>
	Cable intrinsically safe with shield, material PVC, 2 x 0.75mm <sup>2</sup> (-40...+80°C), (cable length see "Accessories") - not ship approved <sup>10)</sup>								<b>80</b>
<b>Output signal</b>	<b>Signal output</b>	<b>Load resistance</b>	<b>I (supply)</b>	<b>U (supply)</b>					
	4 ... 20 mA	(Usupply-10 V) / 20 mA		10 ... 30 VDC	<b>19</b>				

<b>Accessories</b>	Female electrical plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0	46
	Female electrical plug EN 175301-803-A (DIN43650-A)/silicone, -40°C ... +125°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0	56
	Female electrical plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9.5 mm, flammability standard UL94-V2 <sup>11)</sup>	58
	Female electrical plug M12x1, 5-pole, plastic (not for zones 0 (gas))	33
	Female electrical plug M12x1, 5-pole, metal	35
	Female electrical plug MIL-C 26482, 6-pole, metal	32
	Female electrical plug Binder 723, 5-pole, metal	37
	Pressure peak damping element ø 0.4 mm	44
	Pressure peak damping element ø 1.0 mm	40
	Cable length 1.5 m <sup>6)</sup>	1M
	Cable length 3.0 m <sup>6)</sup>	3M
	Cable length 5.0 m <sup>6)</sup>	5M
	Special electrical connection: Pin 1 +, Pin 2 - (only for output signal 4 ... 20 mA and male electrical connector EN175301-803-A / DIN43650-A)	92
	Zener barrier ATEX/IECEX 28V/93mA; R ≈300Ω; Ordering no ZEN28VDC	
	Damping elements and snubber see data sheet H72258	

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

<sup>2)</sup> Only with sensor 26 (0.5%)

<sup>3)</sup> For pressure ranges ≤ 600 bar

<sup>4)</sup> For pressure ranges > 600 bar

<sup>5)</sup> For pressure ranges < 40 bar upon request

<sup>6)</sup> Other cable lengths upon request

<sup>7)</sup> Pressure ranges 0 ... 40 to 0 ... 1000 bar, max. ambient and media temperature +85°C

<sup>8)</sup> Upon request

<sup>9)</sup> With sensors 33 and 35: Overpressure 1300 bar/19000 psi, Burst pressure 2600 bar/38000 psi

<sup>10)</sup> Cable length max. 20 m

<sup>11)</sup> Without ship approval DNV-GL

## Standard products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Supply [VDC]	Accuracy @ 25°C typ. [%]
EXNT0.4A	8292 69 2617 05 0000 0000 19 46 92	0 ... 0.4	1.2	10 ... 30	± 0.5
EXNT0.6A	8292 70 2617 05 0000 0000 19 46 92	0 ... 0.6	1.5	10 ... 30	± 0.5
EXNT1.0A	8292 71 2617 05 0000 0000 19 46 92	0 ... 1	2	10 ... 30	± 0.5
EXNT2.5A	8292 75 2517 05 0000 0000 19 46 92	0 ... 2.5	5	10 ... 30	± 0.5
EXNT4.0A	8292 76 2517 05 0000 0000 19 46 92	0 ... 4	8	10 ... 30	± 0.5
EXNT6.0A	8292 77 2517 05 0000 0000 19 46 92	0 ... 6	12	10 ... 30	± 0.5
EXNT10.0A	8292 78 2517 05 0000 0000 19 46 92	0 ... 10	20	10 ... 30	± 0.5
EXNT16.0A	8292 79 2517 05 0000 0000 19 46 92	0 ... 16	32	10 ... 30	± 0.5
EXNT25.0A	8292 80 2517 05 0000 0000 19 46 92	0 ... 25	50	10 ... 30	± 0.5
EXNT40.0A	8292 81 2517 05 0000 0000 19 46 92	0 ... 40	80	10 ... 30	± 0.5
EXNT100.0A	8292 83 2517 05 0000 0000 19 46 92	0 ... 100	200	10 ... 30	± 0.5
EXNT250.0A	8292 74 2517 05 0000 0000 19 46 92	0 ... 250	500	10 ... 30	± 0.5

## Additional information

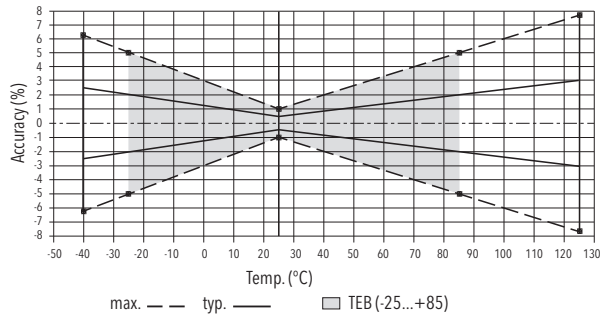
<b>Documents</b>	Data sheet	<a href="http://www.trafag.com/H72329">www.trafag.com/H72329</a>
	Instructions	<a href="http://www.trafag.com/H73329">www.trafag.com/H73329</a>
	Flyer	<a href="http://www.trafag.com/H70657">www.trafag.com/H70657</a>

Specifications		
<b>Electrical Data</b>	Output / supply voltage	4 ... 20 mA; 24 (10 ... 30) VDC
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Power-on delay time	Max. 1.5 s
<b>Environmental conditions</b>	Media temperature	Max. -40°C ... +120°C (see electrical connection)
	Ambient temperature	Max. -40°C ... +120°C (see electrical connection)
	Protection <sup>1)</sup>	Min. IP65 Electrical connection cable: IP67 Electrical connection 02: IP67
	Humidity	Max. 95 % relative
	Vibration	10 g (50...2000 Hz)
	Shock	50 g / 3 ms
<b>EMC Protection</b>	Emission	IEC 61000-6-4
	Immunity	IEC 61000-6-2
<b>Mechanical Data</b>	Sensor (wetted parts)	1.4542 (AISI630), optional hydrogen-compatible steel
	Pressure connection (wetted parts)	Pressure ranges ≤ 250 bar and > 600 bar: 1.4542 (AISI630) Pressure ranges > 250 bar and ≤ 600 bar: 1.4301 (AISI304) Optional hydrogen-compatible steel
	Housing	1.4301 (AISI304)
	Sealing	FKM 70 Sh
	Male electrical connector	See ordering information
	Weight	~ 165 g
	Mounting torque	25 Nm Pressure connection 29: 30 Nm

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

Accuracy				
		Class 0.5 % Ordering No. 25/35 (> 1 bar)	Class 0.3 % Ordering No. 23/33 (> 1 bar)	Class 0.5 % Ordering No. 26 (≤ 1 bar)
TEB @ -25 ... +85°C	[% FS typ.]	± 2.0	± 0.5	± 1.0
Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3	± 0.5
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.1	± 0.1
TC zero point and span	[% FS/K typ.]	± 0.03	± 0.005	± 0.01
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.2	± 0.2	± 0.2
Mounting dependency with 180° rotation (Vibration and shock: multiply this value with number of g)	[% FS typ.]	-	-	0 ... 1 bar: 0.05 0 ... 0.6 bar: 0.09 0 ... 0.4 bar: 0.13

## Class 0.5 %



## Class 0.3 %



## Electrical connection

		Protection / electrical connection						
		IP65*)	IP67 **)	IP67 **)	IP65*)	IP67*)	IP65*)	
		Industrial standard EN175301-803A	Cable (4 x 0.5 mm <sup>2</sup> )	Cable (2 x 0.75 mm <sup>2</sup> )	Binder 723	MIL-C 26482	M12x1 5-pole	
		<b>05</b>	<b>78</b>	<b>80</b>	<b>14</b>	<b>02</b>	<b>35</b>	
Output signal		Standard 2 1 ⊕	<b>92</b> 1 2 ⊕	brown black yellow / green  (blue = not connected)	1 (black) 2 (black) -	3 1 5	A C F	4 1 5
	<b>8292 .XX.XXXX.XX.19</b>							
T-Range	Ambient and media temperature T4	-40 ... +120°C <sup>1)</sup>	-40 ... +120°C <sup>1)</sup>	-40 ... +80°C	-30 ... +95°C <sup>1)</sup>	-40 ... +120°C <sup>1)</sup>	-40 ... +120°C <sup>1)</sup>	
	Ambient and media temperature T6	-40 ... +65°C	-40 ... +65°C	-40 ... +65°C	-30 ... +65°C	-40 ... +65°C	-40 ... +65°C	
For Ex zones		1, 2 20, 21, 22		0*, 1, 2 20, 21, 22		0, 1, 2 20, 21, 22		

\* **Attention!** Additional measure against static charges are required for Zone 0 to 20 for these cables (laid with earthed metal braid, metal hose or metal pipe).

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

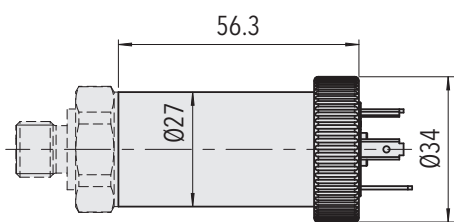
<sup>\*\*\*)</sup> Ventilation via cable end

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

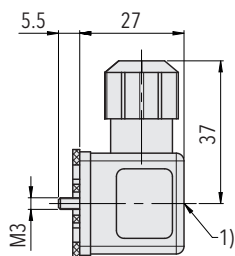
<sup>1)</sup> With sensors 33 and 35: max. +85°C

Marking	
For Ex zones	Marking
0, 1, 2, 20, 21, 22 M1, M2	 II 1G Ex ia IIC T4/T6 Ga II 1D Ex ia IIIC T <sub>200</sub> 160°C Da I M1 Ex ia I Ma
1, 2 20, 21, 22 M2	 II 2 G Ex ia IIC T4/T6 Gb (version with plastic type connector) II 1D Ex ia IIIC T <sub>200</sub> 160°C Da I M1 Ex ia I Ma

## Dimensions

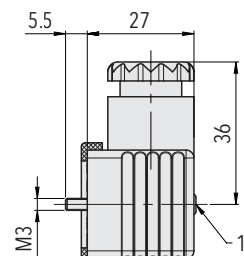


8292.XX.XXXX.05.XX.XX



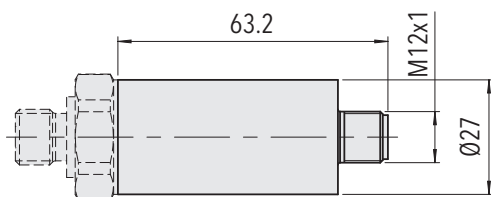
1) Tightening torque 50...60 Ncm

8292.XX.XXXX.XX.XX.46/56

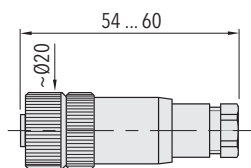


1) Tightening torque 50...60 Ncm

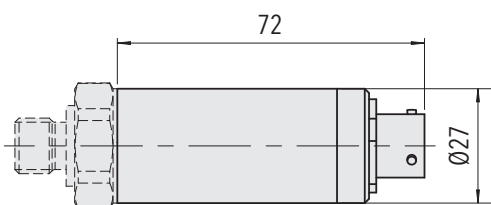
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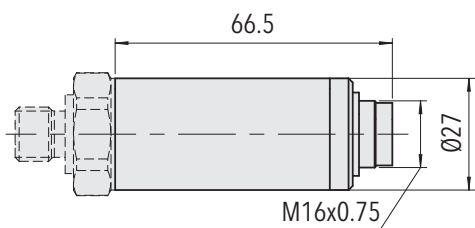
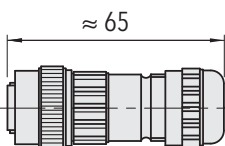
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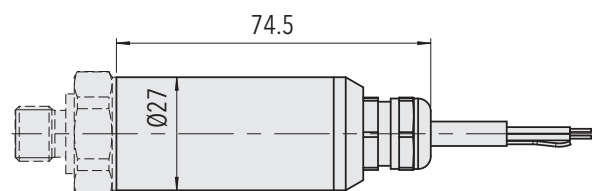
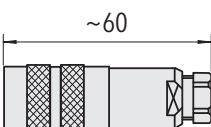
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8292.XX.XXXX.02.XX.32

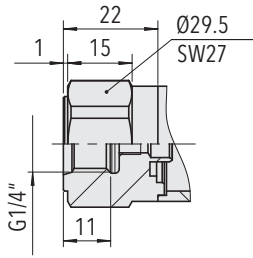


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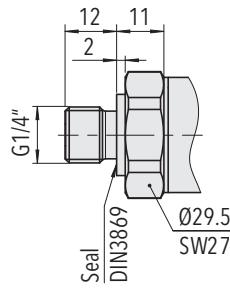


8292.XX.XXXX.78/80.XX.XX

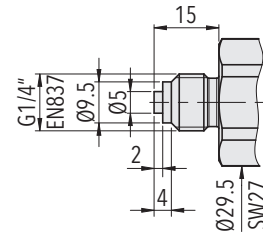
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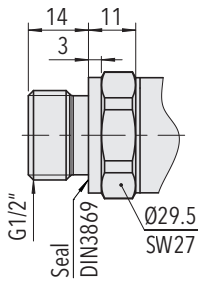
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(≤ 600 bar)



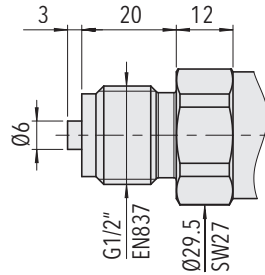
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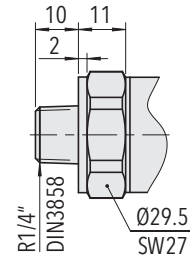
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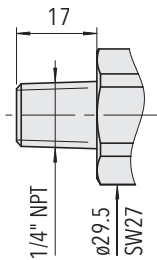
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(≤ 600 bar)



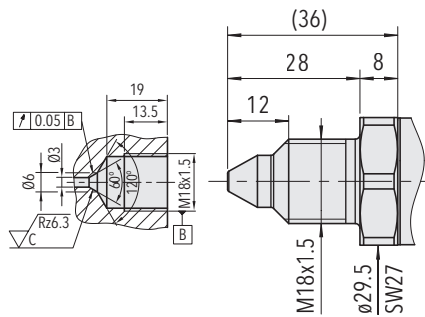
**8292.XX.XX11.XX.XX.XX**  
(≤ 600 bar)



**8292.XX.XX19.XX.XX.XX**  
(≤ 600 bar)



**8292.XX.XX30.XX.XX.XX**  
(≤ 1000 bar)



**8292.XX.XX29.XX.XX.XX**  
(> 600 bar)