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

- Pressure ranges from 0.4 to 2000 bar
- ATEX and IECEx
- II 1G Ex ia IIC T4/T6 Ga
  II 1D Ex ia IIIC T_{200}160°C Da
  I M1 Ex ia I Ma
  II 1/2G Ex ia IIC T4/T6 Ga/Gb
- Optional with hydrogen-compatible sensor
- EC79/2009 certified by the KBA Kraftfahrt-Bundesamt

02/2023
Data sheet H72329aa
Subject to change

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

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Ordering information/type code

8292 . XX XX XX XX XX XX

Measuring range [1]

Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]		Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]	
0 ... 0.4	1.2	25	**69**	0 ... 5	18	350	**F9**
0 ... 0.6	1.5	25	**70**	0 ... 10	25	350	**G0**
0 ... 1.0	2.0	25	**71**	0 ... 15	30	350	**G1**
0 ... 1.6	3.5	80	**73**	0 ... 25	50	1200	**G3**
0 ... 2.5	5	100	**75**	0 ... 30	30	720	**G5**
0 ... 4	8	100	**76**	0 ... 50	120	860	**G6**
0 ... 6	12	100	**77**	0 ... 100	170	1450	**G7**
0 ... 10	20	200	**78**	0 ... 150	290	2900	**G8**
0 ... 16	32	200	**79**	0 ... 250	460	2900	**G9**
0 ... 25	50	300	**80**	0 ... 400	730	4350	**H0**
0 ... 40	80	300	**81**	0 ... 500	1160	4350	**H1**
0 ... 60	120	500	**82**	0 ... 1000	1740	5800	**H2**
0 ... 100	200	500	**83**	0 ... 1500	2900	7250	**H3**
0 ... 160	320	1000	**85**	0 ... 2000	4640	10850	**H5**
0 ... 250	500	1000	**74**	0 ... 3000	7250	14500	**G4**
0 ... 400	800	1500	**84**	0 ... 5000	11600	21750	**H4**
0 ... 600	1000	2000	**86**	0 ... 7500	14500	29000	**H6**
0 ... 1000 [9]	1600	3000	**88**	0 ... 15000 [9]	25000	45000	**H8**
0 ... 1600	3000	4000	**89**	0 ... 25000	45000	60000	**H9**
0 ... 2000	3000	4000	**90**	0 ... 30000	45000	60000	**J0**

Sensor

Relative pressure, accuracy: 0.3% (> 1 bar)	**23**
Relative pressure, accuracy: 0.5% (> 1 bar)	**25**
Relative pressure, accuracy: 0.5% (≤ 1 bar)	**26**
Relative pressure, accuracy: 0.5 %, wetted parts hydrogen compatible [7] [8]	**35**
Relative pressure, accuracy: 0.3 %, wetted parts hydrogen compatible [7] [8]	**33**

Pressure connection

G1/4" male [3]	**17**
G1/4" male (Manometer) EN 837 [3] [8]	**53**
G1/4" female [3] [8]	**10**
G1/2" male [3] [8]	**21**
G1/2" male (Manometer) EN 837 [3] [8]	**11**
R1/4" male [3] [8]	**19**
1/4" NPT male [3] [8]	**30**
M18x1.5 male (conical seal: 58°) [4] [8]	**29**

Electrical connection

Male electrical connector EN 175301-803-A, plastic	**05**
Male electrical connector M12x1, 5-pole, metal	**35**
Male electrical connector MIL-C 26482, 6-pole, metal [5]	**02**
Male electrical connector Binder 723, 5-pole, metal	**14**
Cable with shield, material FDR 25 (Raychem), 4 x 0.5mm² (cable length see "Accessories") - not ship approved [10]	**78**
Cable intrinsically safe with shield, material PVC, 2 x 0.75mm² (-40...+80°C), (cable length see "Accessories") - not ship approved [10]	**80**

Output signal

Signal output	Load resistance	I (supply)	U (supply)	
4 ... 20 mA	(Usupply-10 V) / 20 mA		10 ... 30 VDC	**19**

		8292 . XX	XX	XX	XX	XX	XX
Accessories	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 (DIN 43650-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 [11]						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
	Seal FKM, -18°C ... +125°C [13]						61
	Seal EPDM, -40°C ... +125°C [13]						63
	Pressure peak damping element ø 0.4 mm						44
	Pressure peak damping element ø 1.0 mm						40
	Cable length 1.5 m [6]						1M
	Cable length 3.0 m [6]						3M
	Cable length 5.0 m [6]						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
	Type label e1 (EC79) [12]						HC
	Zener barrier ATEX/IECEX 28V/93mA; R ≈300Ω: Ordering no ZEN28VDC						
	Damping elements and snubber see data sheet H72258						

[1] Extended overpressure as well as customized pressure ranges upon request
[3] For pressure ranges ≤ 600 bar
[4] For pressure ranges > 600 bar
[5] For pressure ranges < 40 bar upon request
[6] Other cable lengths upon request
[7] Pressure ranges 0 … 1 to 0 … 1000 bar, max. ambient and media temperature +85°C
[8] Upon request
[9] With sensors 33 and 35: Overpressure 1300 bar/19000 psi, Burst pressure 2600 bar/38000 psi
[10] Cable length max. 20 m
[11] Without ship approval DNV-GL
[12] Only for process connections 17 (max. 350 bar) and 30
[13] Only for pressure connections 17 and 21

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

Specifications		
Electrical data	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
Environmental conditions	Media temperature	Max. –40°C ... +120°C (see electrical connection)
	Ambient temperature	Max. –40°C ... +120°C (see electrical connection)
	Protection [1)]	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
EMC protection	Emission	IEC 61000–6–4
	Immunity	IEC 61000–6–2
Mechanical data	Sensor (wetted parts)	1.4542 (AISI630), optional hydrogen-compatible steel
	Pressure connection (wetted parts)	Pressure ranges ≤ 16 bar: 1.4542 Pressure ranges > 16 bar: 1.4404 Optional hydrogen-compatible steel
	Housing	1.4301 (AISI304)
	Sealing	FKM/EPDM
	Male electrical connector	See ordering information
	Weight	~ 165 g
	Mounting torque	25 Nm Pressure connection 29: 30 Nm

[1)] See electrical connection

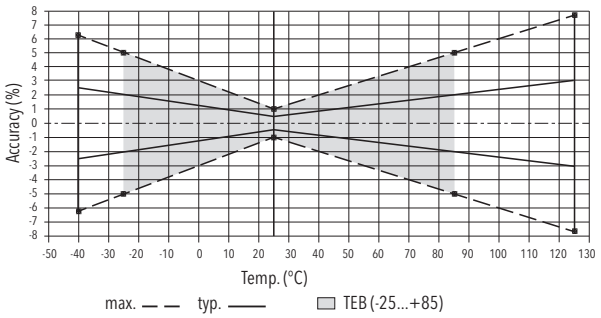
EC79/2009 Certificate	
Nominal working pressure (NWP) @15°C	0.08 … 70 MPa
Maximum allowable working pressure	0.1 … 100 MPa
Classification	Class 0, Class 1 und Class 2*
Pressure codes	71 … 88
Process connection	Code 17: Up to NWP 35 MPa
	Code 30: Up to NWP 70 MPa
Seal	Codes 61 and 63

* The transmitters of class 0 were tested, Because the most highly loaded case was tested the results can be applied to the whole product family with pressure ranges from 0.8bar to 700bar.

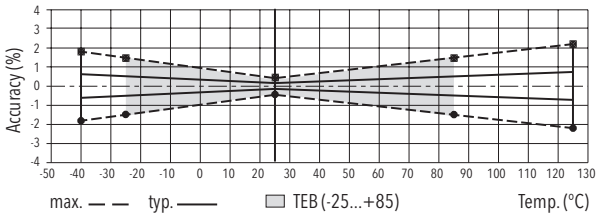
Accuracy		**Class 0.5 %** Ordering No. 25/35 (> 1 bar)	**Class 0.3 %** Ordering No. 23/33 (> 1 bar)	**Class 0.5 %** Ordering No. 26 (≤ 1bar)
TEB @ -25 ... +85°C	[% FS typ.]	± 2.0	± 0.5	± 1.0
Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3	± 0.5
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.1	± 0.1
TC zero point and 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

Additional information		
Documents	Data sheet	www.trafag.com/H72329
	Instructions	www.trafag.com/H73329
	Flyer	www.trafag.com/H70657

Class 0.5 %



Class 0.3 %



Electrical connection

		Protection / electrical connection					
		IP65*)	IP67	IP67	IP65*)	IP67*)	IP65*)
		Industrial standard EN175301-803A **05**	Cable **) (4 x 0.5 mm²) **78** Shield	Cable **) (2 x 0.75 mm²) **80** Shield	Binder 723 **14**	MIL-C 26482 **02**	M12x1 5-pole **35**
Output signal	P, 4-20mA, I; Us (pos. Supply), Us (neg. Supply), Earth (housing), Shield***) **8292** .xx.xxxx.xx.**19**	Standard / **92**					
		2 / 1	brown	1 (black)	3	A	4
		1 / 2	black	2 (black)	1	C	1
		⏚ / ⏚	yellow / green	–	5	F	5
			(blue = not connected)				
T-Range	Ambient and media temperature T4	-40 ... +120°C 1)	-40 ... +120°C 1)	-40 ... +80°C	-30 ... +95°C 1)	-40 ... +120°C 1)	-40 ... +120°C 1)
	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		

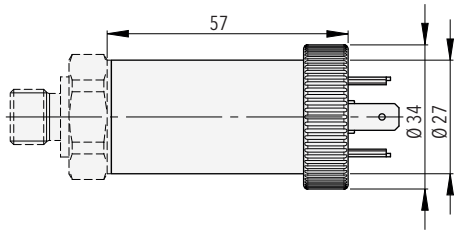
*** Attention!** Additional measure against static charges are required for Zone 0 to 20 for these cables (laid with earthed metal braid, metal hose or metal pipe).

*) Provided female connector is mounted according to instructions
**) Ventilation via cable end
***) Only cable versions or female electrical plug with shield connection
1) With sensors 33 and 35: max. +85°C

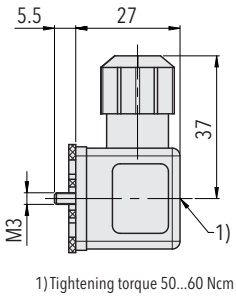
Marking

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

Dimensions

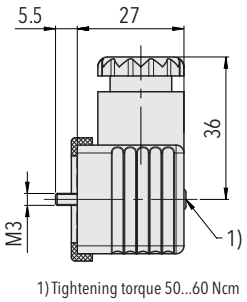


8292.XX.XXXX.**05**.XX.XX



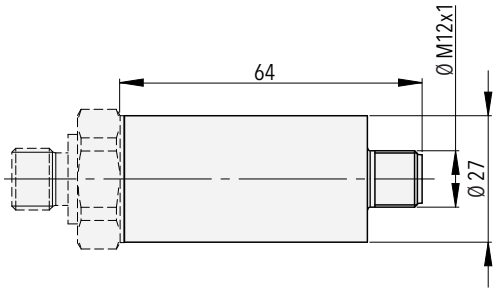
1) Tightening torque 50...60 Ncm

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

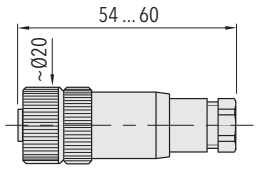


1) Tightening torque 50...60 Ncm

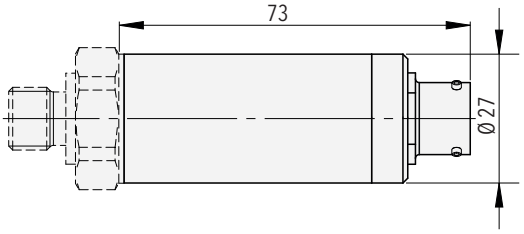
8292.XX.XXXX.XX.XX.**58**



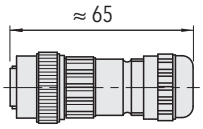
8292.XX.XXXX.**35**.XX.XX



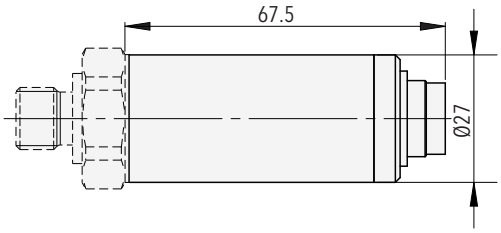
8292.XX.XXXX.XX.XX.**33/35**



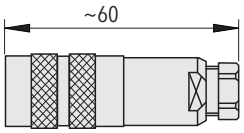
8292.XX.XXXX.**02**.XX.XX



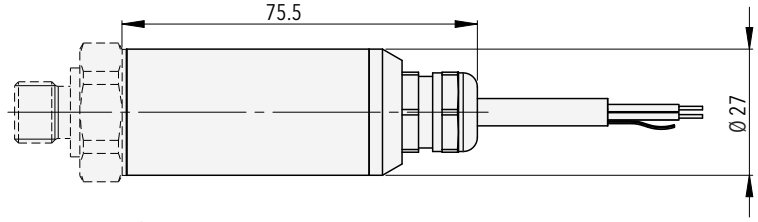
8292.XX.XXXX.XX.XX.**32**



8292.XX.XXXX.**14**.XX.XX

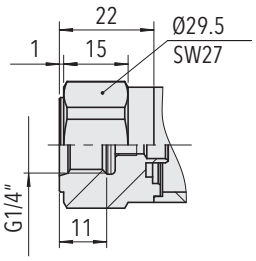


8292.XX.XXXX.XX.XX.**37**

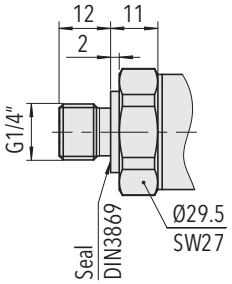


8292.XX.XXXX.**78/80**.XX.XX

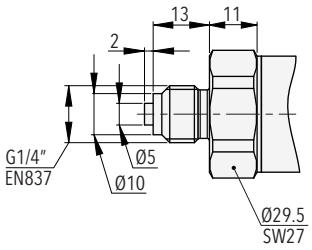
Dimensions



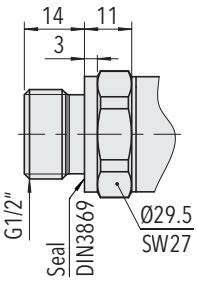
8292.XX.XX**10**.XX.XX.XX
(≤ 600 bar)



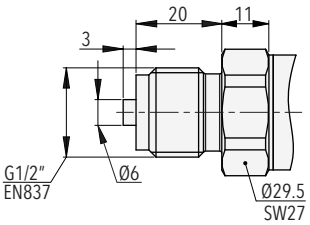
8292.XX.XX**17**.XX.XX.XX
(≤ 600 bar)



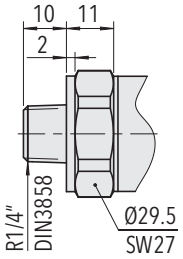
8292.XX.XX**53**.XX.XX.XX



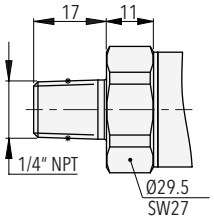
8292.XX.XX**21**.XX.XX.XX
(≤ 600 bar)



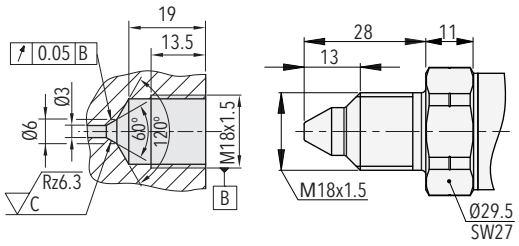
8292.XX.XX**11**.XX.XX.XX
(≤ 600 bar)



8292.XX.XX**19**.XX.XX.XX
(≤ 600 bar)



8292.XX.XX**30**.XX.XX.XX
(≤ 1000 bar)



8292.XX.XX**29**.XX.XX.XX
(> 600 bar)