ELECTRONIC PRESSURE SWITCH

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The Electronic Pressure Switch EPN-S is based on the well-proven EPN transmitter family. It stands for reliable accuracy over a wide temperature range and excellent long-term stability even in harshest environments in the shipbuilding and railway industry. The switchpoint is factory set or can be programmed on site using Trafag's Sensor Communicator SC.

Applications

- Shipbuilding
- Engine manufacturing
- Railways
- Machine tools
- Hydraulics
- HVAC

Features

- Rugged design for harsh environments
- Wide temperature range
- Excellent long-term stability
- Very compact design
- Switchpoint factory set or programmable on site with Trafag Sensor Communicator SC

09/2024
Data sheet H72333m
Subject to change

Technical Data			
Measuring principle	Thin-film-on-steel	Media temperature	-40°C ... +125°C
Measuring range	0 ... 2.5 to 0 ... 600 bar 0 ... 30 to 0 ... 7500 psi	Ambient temperature	Standard: -25°C ... +85°C Option accessory 67: -40°C ... +125°C
Output signal	Switching output: 1 PNP	Approval / conformity	DNV-GL, RMRS EN 50155 (Railways) EN 45545-2 (Fire protection, railways)
Accuracy @ 25°C typ.	± 0.5 % FS typ. (Switchpoint)		

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trafag sensors controls

Ordering information/type code

8320 . 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 ... 2.5	5	100	**75**	0 ... 30	30	720	**G5**
0 ... 4	8	100	**76**	0 ... 50	115	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	464	2900	**G9**
0 ... 25	50	300	**80**	0 ... 400	725	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**

Sensor

Relative pressure, accuracy class: 0.3 %; Material pressure connection and housing: 1.4542 (AISI630)	**23**
Relative pressure, accuracy class: 0.3 %; Material pressure connection and housing: 1.4404 (AISI316L) [2] [4] [5]	**33**

Pressure connection

G1/4" male (Seal)	**17**
1/4" NPT male	**30**
G1/2" male (DIN 3852-A) [2]	**21**
M14x1.5 male (DIN 3852-A) [2]	**22**
1/2" NPT male [2]	**51**

Electrical connection

Male electrical connector EN 175301-803-A (DIN 43650-A), Mat. 1.4301 (AISI304)	**04**
Male electrical connector EN 175301-803-A (DIN 43650-A), Mat. PA [3]	**05**
Cable with shield: Material: FDR 25 (Raychem) 4 x 0.5mm², -40°C ... +125°C, (Cable lenght see "Accessories") [3]	**78**
Cable with shield: Material: Radox Tenuis-TW 600V MM S (EN45545), 4 x 0.5mm², -40°C ... +120°C, (Cable lenght see "Accessories") [3]	**88**

Output signal

1 Transistor out: switchpoint "ON": ... (bar); switchpoint "OFF": ... (bar); delay time: standard 5 (ms), ... (ms) range: 5...10000 (ms)	**T1**
Option: Switchpoint factory set ≤250 bar (switchpoint > 250 bar on reques)	

Accessories

Pressure peak damping element ø 0.4 mm	**44**
Pressure peak damping element ø 1.0 mm	**40**
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	**58**
Railways version (500 VAC/DC), with shielded cable only	**11**
Higher operating temperature: -40°C ... +125°C	**67**
Special electrical connection: Pin 1 +, Pin 2 Out, Pin 3 - (only for switching output and male electrical connector code 04 EN 175301-803-A / DIN 43650-A)	**F9**
Special electrical connection: Pin 1 +, Pin 2 -, Pin 3 Out (only for switching output and male electrical connector code 05 EN 175301-803-A / DIN 43650-A)	**97**
Cable length 1.5 m	**1M**
Cable length 3.0 m	**3M**
Cable length 5.0 m	**5M**

[1] Customized pressure ranges upon request
[2] Upon request
[3] Switchpoint setting by factory setting only
[4] Only with pressure connection 17 (G1/4")
[5] Only for pressure ranges ≥ 10 bar

Ordering No. for "Programming device Sensor Communicator SC"

- Sensor Communicator SC: F88030
- Programming cable with connector EN 175301-803A: F88049

Manuals for Sensor Communicator SC: www.trafag.com/H73699

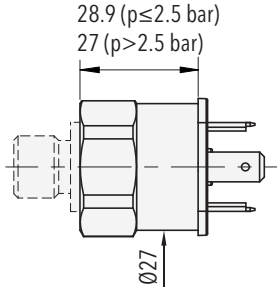
trafag sensors controls

Specifications		
Accuracy	Accuracy @ 25°C typ.	± 0.5 % FS typ. (Switchpoint)
	Temperature dependence switching point	Switchpoint @ +25°C: ± 0.5 % FS typ. Switchpoint @ -25°C ... +85°C: ± 1.0 % FS typ. Switchpoint @ -40°C ... +125°C: ± 1.3 % FS typ. (Accessory 67: higher operating temperature -40°C ... +125°C)
	Long term stability 1 year typ.	≤ ± 0.15 % FS typ.
Electrical data	Supply voltage	24 (9 ... 32) VDC
	Resistance of insulation	>10 MΩ, 250 VDC 🚢 >10 MΩ, 500 VDC
	Dielectric strength	250 VAC, 50 Hz 🚢 500 VAC, 50 Hz
	Output / supply voltage	Transistor (open source): 24 (9 ... 32) VDC
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	integrated
	Current consumption / power consumption	≤ 15 mA
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	Standard: -25°C ... +85°C Option accessory 67: -40°C ... +125°C
	Protection	Electrical connection 04/05: IP65 Electrical connection 78/88: IP69K
	Humidity	Max. 95 % relative
	Vibration	15 g (50...2000 Hz)
	Shock	50 g / 11 ms
EMC protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical data	Sensor (wetted parts)	1.4542 (AISI630)
	Pressure connection (wetted parts)	Pressure ranges ≤ 250 bar and > 600 bar: 1.4542 (AISI630) or 1.4404 (AISI316L) [1)] Pressure ranges > 250 bar and ≤ 600 bar: 1.4301 (AISI304)
	Housing	1.4301 (AISI304)
	Sealing	FKM 70 Sh
	Male electrical connector	See ordering information
	Weight	~ 85 ... 110 g
	Mounting torque	25 Nm

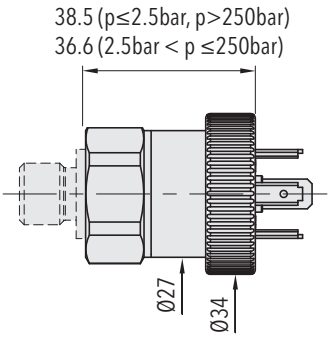
[1)] See ordering information for sensor

Switching output	
Output signal	1 Transistor (open source)
Switchpoint setting	Switchpoint factory set or programmable on site with Trafag Sensor Communicator SC
Setting range	0 … 100 % FS
Switching hysteresis	≥ 1 % FS
Switching current	≤ 0.5 A @ -40°C ... +85°C ≤ 0.4 A @ +85°C ... +125°C (only with accessory 67: higher operating temperature -40°C ... +125°C)
Switching resistance	≤ 3Ω
Delay time	Standard adjustment: 5 ms Adjustable with Trafag Sensor Communicator (only electrical connection 04): 5 ms ... 10 s
Lifetime	>100 x 10^6 cycles

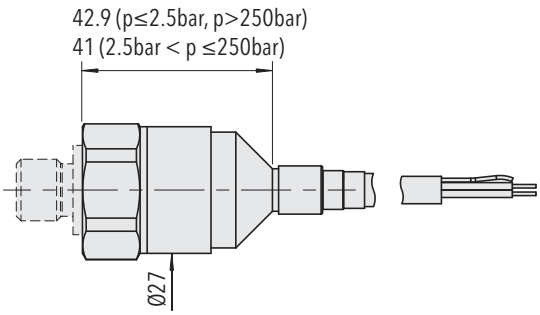
Dimensions



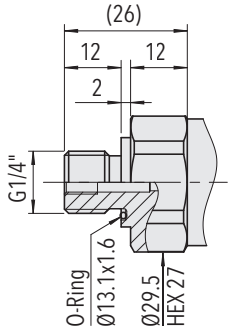
8320.XX.XXXX.**04**.XX.XX
Switchpoint factory set or programmable on site with Trafag Sensor Communicator SC



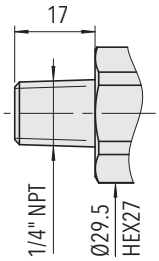
8320.XX.XXXX.**05**.XX.XX
Switchpoint factory set



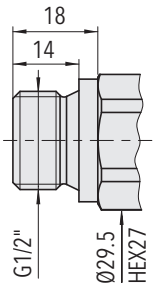
8320.XX.XXXX.**78**.XX.XX Switchpoint factory set
8320.XX.XXXX.**88**.XX.XX



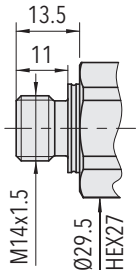
8320.XX.XX**17**.XX.XX.XX



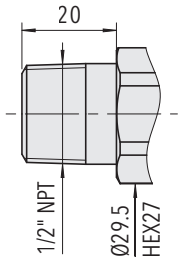
8320.XX.XX **30**.XX.XX.XX



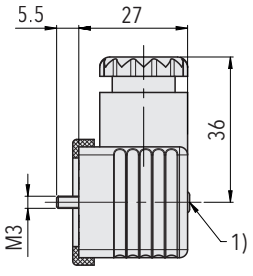
8320.XX.XX **21**.XX.XX.XX



8320.XX.XX **22**.XX.XX.XX

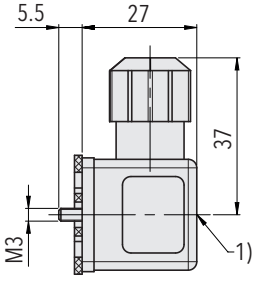


8320.XX.XX**51**.XX.XX.XX



1) Tightening torque 50...60 Ncm

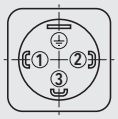
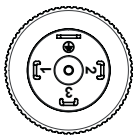
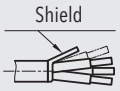
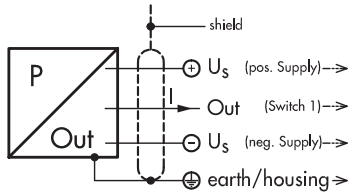
8320.XX.XXXX.XX.XX.**58**



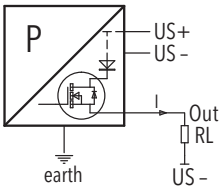
1) Tightening torque 50...60 Ncm

8320.XX.XXXX.XX.XX.**46/56**

Electrical connection

	Protection / electrical connection		
	IP65 *)	IP65 *)	IP69K
	Industrial standard EN175301-803A **04** 	Industrial standard EN175301-803A **05** 	Cable **) **78/88** 
Output signal  **8320**.xx.xxxx.xx.**T1**	**F9**	**97**	
shield			
+ U_S (pos. Supply)-->	1	1	brown
Out (Switch 1)-->	2	3	blue
− U_S (neg. Supply)-->	3	2	black
⏚ earth/housing	⏚	⏚	yellow / green

*) Provided female electrical plug is mounted according to instructions
**) Ventilation via cable end



Connection of loads to switch contacts

Additional information		
Documents	Data sheet	www.trafag.com/H72333
	Instructions	www.trafag.com/H73333