EPN-S 8320

Electronic Pressure Switch

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

Product description

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.

CE EMC: 2014/30/EU

UKCA S.I. 2016 No. 1091

RoHS/Reach compliant

DNV

Technical Data

Measuring principle	Thin-film-on-steel
Measuring range	0 ... 2.5 to 0 ... 600 bar 0 ... 30 to 0 ... 7500 psi
Output signal	Switching output: 1 PNP
Media temperature	max. -40°C ... +125°C
Ambient temperature	Standard: -25°C ... +85°C Optional: -40°C ... +125°C

Additional information

Data sheet	www.trafag.com/H72333
Instructions	www.trafag.com/H73333
Accessories	www.trafag.com/H72258
Video	https://youtu.be/eyknnj5Cpj4

EPN-S 8320

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)3)4)]								**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), Material 1.4301 (AISI304)										**04**			
	Male electrical connector EN 175301-803-A (DIN 43650-A), Material PA [5)]										**05**			
	Cable with shield: Material FDR 25 (Raychem) 4 x 0.5mm², -40°C ... +125°C (Cable length see section: Accessories) [5)]										**78**			
	Cable with shield: Material Radox Tenuis-TW 600V MM S (EN45545), 4 x 0.5mm², -40°C … +120°C (Cable length see section: Accessories) [5)]										**88**			
Output signal	1 Transistor out: Switchpoint "ON": ... (bar); Switchpoint "OFF": ... (bar); Delay time: ... Standard 5 (ms); Range: 5 ... 10000 (ms) Option: Switchpoint factory set ≤250 bar (Switchpoint > 250 bar on request)											**T1**		
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 (DIN 43650-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 (DIN 43650-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**	
	Cable length 1.5 m												**1M**	
	Cable length 3.0 m												**3M**	
	Cable length 5.0 m												**5M**	
	Pin configuration, see table: Electrical connection													

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

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

Compatibility matrix pressure connection and accessories

		Damping		Seal
Code	**Pressure connection**	Ø 0.4 mm (Code 40)	Ø 1.0 mm (Code 43)	FKM
17	G1/4" male (Seal)	✓	✓	✓
30	1/4" NPT male	✓	✓	
21	G1/2" male (DIN 3852-A)	✓	✓	✓
22	M14x1.5 male (DIN 3852-A)	✓	✓	✓
51	1/2" NPT male	✓	✓	

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.

EPN-S 8320

Specifications

Electrical data	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
	Resistance of insulation	> 10 MΩ, 250 VDC > 10 MΩ, 500 VDC with accessory 11
	Dielectric strength	250 VAC, 50 Hz 500 VAC, 50 Hz with accessory 11
Environmental conditions	Media temperature	max. -40°C ... +125°C
	Ambient temperature	Standard: -25°C ... +85°C Optional: -40°C ... +125°C
	Storage temperature	-20°C ... +40°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
Electrical 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
	Mounting torque	25 Nm

[1] See ordering information for sensor

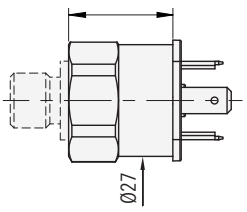
EPN-S 8320

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

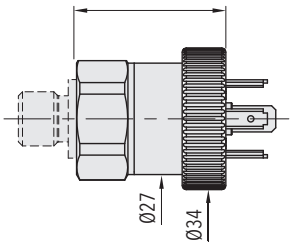
28.9 (p≤2.5 bar)
27.0 (p>2.5 bar)



8320.XX.XXXX.**04**.XX.XX

Switchpoint factory set or programmable on site with Trafag Sensor Communicator SC

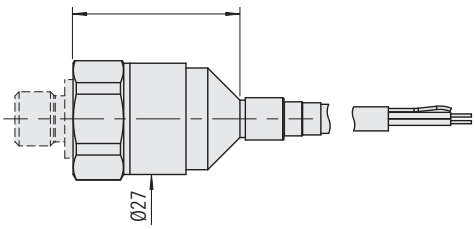
38.5 (p≤2.5 bar, p>250 bar)
36.6 (2.5 bar <p≤250 bar)



8320.XX.XXXX.**05**.XX.XX

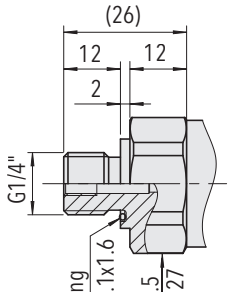
Switchpoint factory set

58.5 (p≤2.5 bar, p>250 bar)
56.4 (2.5 bar <p≤250 bar)

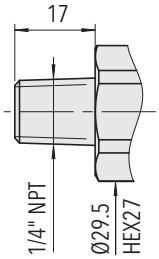


8320.XX.XXXX.**78**.XX.XX
8320.XX.XXXX.**88**.XX.XX

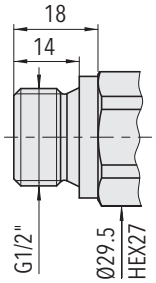
Switchpoint factory set



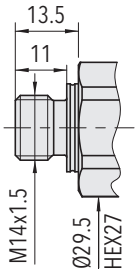
8320.XX.XX **17**.XX.XX.XX



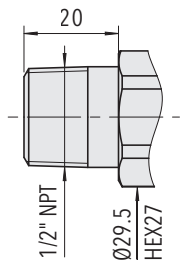
8320.XX.XX **30**.XX.XX.XX



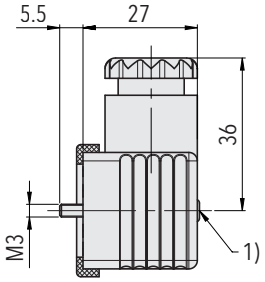
8320.XX.XX **21**.XX.XX.XX



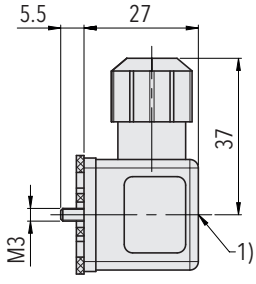
8320.XX.XX**22**.XX.XX.XX



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



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

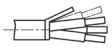
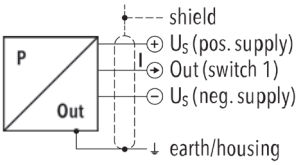


8320.XX.XXXX.XX.XX.**46**/**56**

1) Tightening torque 50 ... 60 Ncm

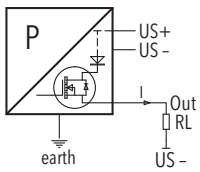
EPN-S 8320

Electrical connection

	Industrial standard EN175301-803A	Industrial standard EN175301-803A	Cable [2]
			
Electrical connection type code	04	05	78/88
IP protection	IP65 [1]	IP65 [1]	IP69K
Ambient temperature	-25°C ... +85°C [3]	-25°C ... +85°C [3]	-40°C ... +125°C [3]
Pin assignment type code	F9	97	
Output signal **8320.xx.xxxx.xx.T1** 	1 2 3 Earth	1 3 2 Earth	Brown Blue Black Yellow/Green

[1] Provided female electrical plug is mounted according to instructions
[2] Ventilation via cable end
[3] With option 67 (Higher operating temperature: -40 °C ... +125°C)

Empty 'Pin Assignment Type Code' field: Default pinout

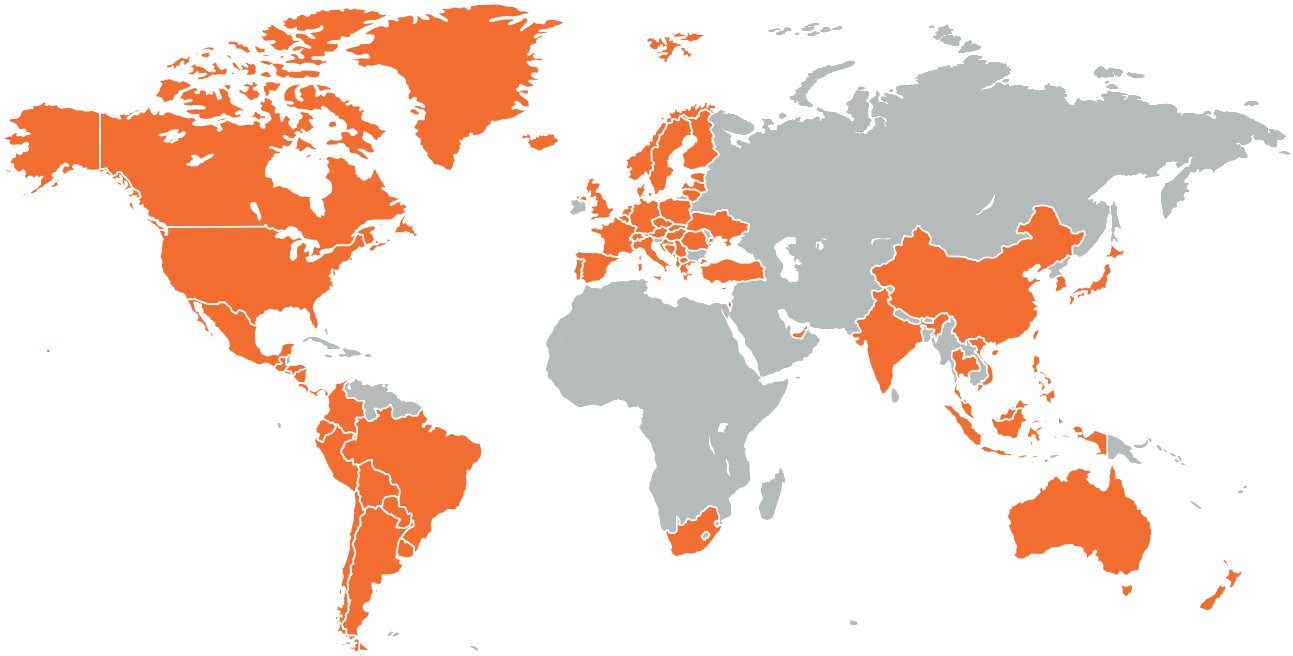


Connection of loads to switch contacts

Reliable quality

Worldwide represented, globally trusted, Swiss based

Trafag develops, produces and distributes robust, reliable and precise instruments for monitoring pressure, temperature and gas density.
The broad portfolio of pressure and temperature measuring instruments is tailored for use in test benches through to applications in harsh environments. The research and development departments in Switzerland and Germany develop all important components from the sensor to the application-specific microchip, which are then manufactured in the production facilities in Switzerland, Germany, the Czech Republic, and India. Strict quality management according to ISO 9001 and ISO 14001 ensures that Trafag products meet the required quality and sustainability standards.
Trafag is headquartered in Switzerland, was founded in 1942 and has an extensive sales and service network in more than 40 countries worldwide.



Headquarters Switzerland

Trafag AG
Industriestrasse 11
8608 Bubikon (Switzerland)
+41 44 922 32 32
trafag@trafag.com
www.trafag.com

Coordinates of representatives can be found at **www.trafag.com/trafag-worldwide**

Pressure transmitters | Electronic pressure switches | Mechanical pressure switches | Pressure gauge | Thermostats | Temperature transmitters | Gas density