




IO-Link

Relative pressure transmitter Type 520 IO-Link



 **IO-Link**

The pressure transmitter Type 520 for industrial applications impresses with its compact and robust design as well as high accuracy and reliability. The hermetically welded stainless steel sensor offers very high overpressure safety and is suitable for use in gases, liquids and all common refrigerants including ammonia.

Huba Control offers with the Type 520 a universally applicable pressure transmitter with IO-Link communication technology. IO-Link is a standardized, digital point-to-point connection that allows the user to easily wire the unit and access a wide range of specific device and process data. IO-Link offers numerous possibilities for device diagnostics, allowing the status of the pressure transmitter to be continuously monitored.

This makes the 520 IO-Link the ideal pressure transmitter for your Industry 4.0 application.

Pressure range

-1 ... 9 bar /

0 ... 2.5 – 1000 bar

- + Compact, rugged construction
- + Welded without sealing parts, no elastomer seals
- + Communication via IO-Link 1.1 (Smart Sensor Profile ED2)
- + Sensor diagnosis function
- + High flexibility of process connections

Technical overview

Pressure range

Relative -1 ... 9 bar / 0 ... 2.5 - 1000 bar

Operating conditions

Medium Liquids, gases and refrigerants (incl. ammonia)

Temperature Medium -40 ... +100 °C

Ambient -30 ... +85 °C

Storage -50 ... +100 °C

Tolerable overload ≤ 6 bar 5 x fs

> 6 bar 3 x fs (max. 1500 bar)

Rupture pressure ≤ 6 bar 10 x fs

> 6 bar 6 x fs (max. 2500 bar)

Materials

Cover Stainless steel 1.4404 / AISI 316L

Plug accommodation Polyarylamide 50% GF UL 94 V-0

Materials in contact with medium Pressure connection Stainless steel 1.4404 / AISI 316L (inside thread Schrader 1.4305 / AISI 303)

Sensor Stainless steel

Electrical overview

4 wire Output Power supply Permanent current load Current consumption

IO-Link 18 ... 33 VDC 100 mA per switching output < 15 mA²⁾

Polarity reversal protection Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.

Insulation voltage 500 VDC

IO-Link

Specification V1.1

Port type Class A

Baud rate COM2 (38.4 k Baud)

Output function PNP, NPN, PushPull

Offset

Filter

Switching points

Programming options Hysteresis- / filter function, N/C contact or N/O contact

min./max. pressure value, pressure peak counter

Operating hours counter

Dynamic response

Startup time 50 ms

Response time typ. < 2 ms

Process cycle time < 3.3 ms

Load cycle < 100 Hz

Electrical connection

Connector M12x1

Protection standard

IP 67

Protection class

III

Pressure connection

Inside thread $\frac{7}{16}$ -20 UNF without or with Schrader

$\frac{1}{2}$ -14 NPT (≤ 60 bar)

G $\frac{1}{4}$ with O-Ring seal FPM (-30 ... +135 °C)

$\frac{7}{16}$ -20 UNF sealing cone

$\frac{1}{4}$ -18 NPT

$\frac{7}{16}$ -20 UNF sealed at back SAE 4 with O-Ring seal FPM (-20 ... +135 °C)

G $\frac{1}{4}$ sealed at back DIN 3852-E with profile seal ring in FPM (-30 ... +135 °C)

G $\frac{1}{4}$ sealed at back and manometer (combi) with profile seal ring in FPM (-30 ... +135 °C) (≤ 60 bar)

Outside thread R $\frac{1}{4}$ EN 10226

G $\frac{1}{2}$ sealed at back and manometer (combi) with profile seal ring in FPM (-30 ... +135 °C)

$\frac{1}{8}$ -27 NPT (≤ 60 bar)

G $\frac{1}{8}$ sealed at front (≤ 60 bar)

G $\frac{1}{8}$ sealed at back DIN 3852-E with profile seal ring in FPM (-30 ... +135 °C) (> 60 bar)

M10x1 sealed at back DIN 3852-E with Profile seal ring in FPM (-30 ... +135 °C) (≤ 60 bar)

M20x1.5 sealed at front and manometer (combi)

G $\frac{1}{2}$, G $\frac{1}{4}$ sealed at front

Installation arrangement

Unrestricted

Tests / Admissions

Electromagnetic compatibility CE conformity acc. EN 61326-2-3

Enhanced EMC protection EN 50121-3-2

Shock acc. IEC 68-2-27 100 g, 11 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x)

Constant shock acc. IEC 68-2-29 40 g for 6 ms, 1000x all 3 directions

Vibration acc. IEC 68-2-6 20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load

UL ANSI/UL 61010-1 acc. E325110

EAC

Weight

~ 90 g

Packaging (Please state on order)

Single packaging in cardboard

accessories integrated

Multiple packaging in cardboard (25 pcs)

¹⁾ without switching output

²⁾ typ.; max. 25 mA

Accuracy

Parameter	Unit	
Characteristic line a ¹⁾	% fs	± 0.3
Resolution	% fs	0.1
Thermal characteristic ²⁾	max. % fs/10K	± 0.2
Long term stability acc. EN 60770-1	max. % fs	± 0.25

Test conditions: 25 °C, 45% RH, power supply 24 VDC

Order code selection table in bar			1	2	3	4	5	6	7	8	9	10	
			520.	X	X	X	X	X	X	X	X	X	
Pressure range ³⁾	-1 ... 9 bar		9	0	6								
	0 ... 2.5 bar		9	1	4								
	0 ... 4 bar		9	1	5								
	0 ... 6 bar		9	1	7								
	0 ... 10 bar		9	3	0								
	0 ... 16 bar		9	3	1								
	0 ... 25 bar		9	3	2								
	0 ... 40 bar		9	3	3								
	0 ... 60 bar		9	4	0								
	0 ... 100 bar		9	4	1								
	0 ... 160 bar		9	4	2								
	0 ... 250 bar		9	4	3								
	0 ... 400 bar		9	5	4								
	0 ... 600 bar		9	5	5								
0 ... 1000 bar		9	5	7									
Application	standard					S	0						
Output / power supply	IO-Link	18 ... 33 VDC						L					
Electrical connection	M12x1	4L: L+ = 1 / L- = 3 / C/Q = 4 / DI/DQ = 2							P				
Pressure connection ³⁾	Inside thread	⁷ / ₁₆ -20 UNF sealing cone with schrader								0	0	N	
		⁷ / ₁₆ -20 UNF sealing cone								K		1	
		¹ / ₂ -14 NPT ⁵⁾									D		1
		G ¹ / ₄ with O-Ring seal FPM									1		1
	Outside thread	⁷ / ₁₆ -20 UNF sealing cone									2		1
		¹ / ₄ -18 NPT									3		1
		G ¹ / ₄ sealed at back DIN 3852-E with profile seal ring in FPM									4		1
		G ¹ / ₄ sealed at back and manometer with profile seal ring in FPM									5	0	1
		R ¹ / ₄ acc. to EN 10226									7		1
		G ¹ / ₂ sealed at back and manometer with profile seal ring in FPM									8		1
		⁷ / ₁₆ -20 UNF sealed at back SAE 4 with O-Ring seal FPM									G		1
		¹ / ₈ -27 NPT ⁴⁾									A		1
		G ¹ / ₈ sealed at front ⁴⁾									M		1
		G ¹ / ₈ sealed at back DIN 3852-E with Profile seal ring in FPM ⁵⁾									H		1
		M10x1 sealed at back DIN 3852-E with profile seal ring in FPM ⁴⁾									F		1
		M20x1.5 sealed at front and manometer (combi)									E		1
G ¹ / ₄ sealed at front									J		1		
G ¹ / ₂ sealed at front									9		1		
Pressure orifice	without (inclusive pressure tip orifice from 100 bar on)										0		
	with										2		
Material	Stainless steel 1.4305 / AISI 303											N	
pressure connection	Stainless steel 1.4404 / AISI 316L											1	

¹⁾ typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability)

²⁾ -15 ... 85 °C

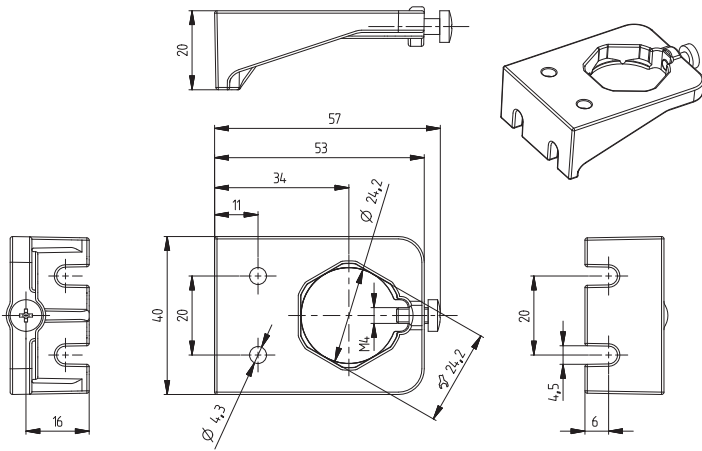
³⁾ Other pressure ranges or pressure connections on request

⁴⁾ (≤ 60 bar)

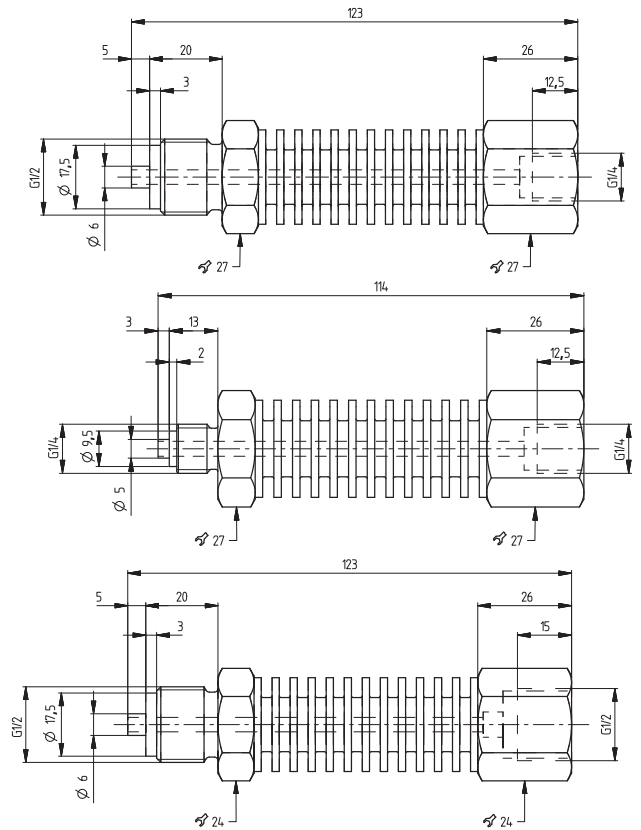
⁵⁾ Rupture pressure 1000 bar

Corner-wire box for connector M12x1 with cable 2.0 m	114604
Straight-wire box for connector M12x1 with cable 2.0 m	114605
Mounting bracket with screw	118716
Heat sink with outside thread G 1/2 sealed at front - inside thread G 1/2	105631
Heat sink with outside thread G 1/2 sealed at front - inside thread G 1/4	105073
Heat sink with outside thread G 1/4 sealed at front - inside thread G 1/4	105074
Calibration certificate (≤ 600 bar)	104551

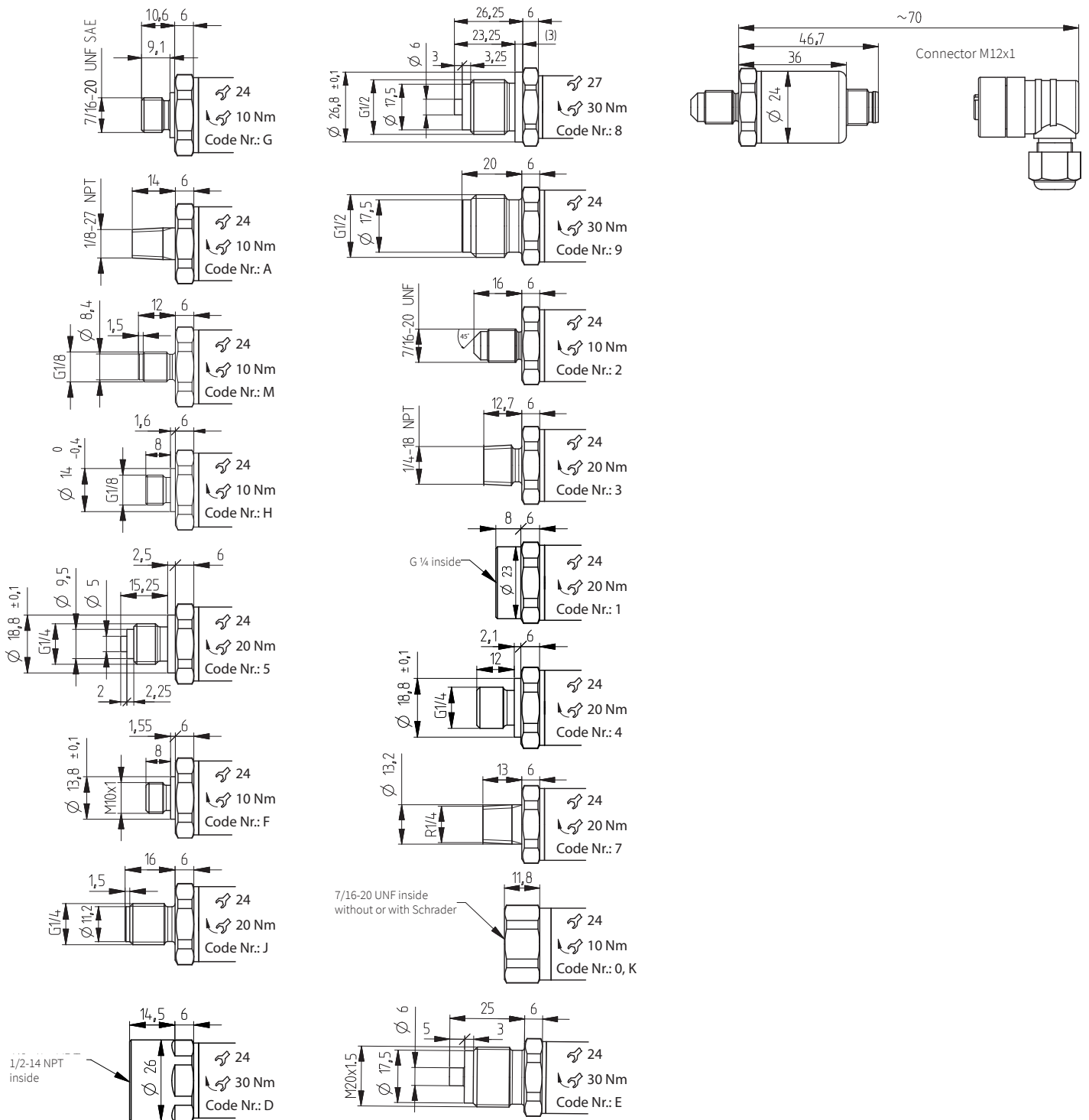
Mounting bracket



Heat sink



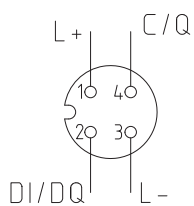
Dimensions in mm



Electrical connections

4 wire

Connector M12x1



Legend:
 L+ = power supply +
 L- = power supply -
 C/Q = IO-Link/switching output 1
 DI/DQ = switching output 2

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