



IO-Link

Huba Control

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
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Operating conditions

Medium	Liquids, gases and refrigerants (incl. ammonia)	
	Medium	-40 ... +100 °C
Temperature	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 mA ²⁾
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

Electrical connection	Protection standard	Protection class
Connector M12x1	IP 67	III

Pressure connection

Inside thread	7/16 - 20 UNF	without or with Schrader
	1/2 - 14 NPT	(≤ 60 bar)
	G 1/4	with O-Ring seal FPM (-30 ... +135 °C)
	7/16 - 20 UNF	sealing cone
Outside thread	1/4 - 18 NPT	
	7/16 - 20 UNF	sealed at back SAE 4 with O-Ring seal FPM (-20 ... +135 °C)
	G 1/4	sealed at back DIN 3852-E with profile seal ring in FPM (-30 ... +135 °C)
	G 1/4	sealed at back and manometer (combi) with profile seal ring in FPM (-30 ... +135 °C) (≤ 60 bar)
	R 1/2	EN 10226
	G 1/2	sealed at back and manometer (combi) with profile seal ring in FPM (-30 ... +135 °C)
	1/8 - 27 NPT	(≤ 60 bar)
	G 1/8	sealed at front (≤ 60 bar)
	G 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 1/2, G 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
Resolution		% fs
Thermal characteristic ²⁾	max.	% fs/10K
Long term stability acc. EN 60770-1	max.	% fs

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

			1	2	3	4	5	6	7	8	9	10
Order code selection table in bar			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

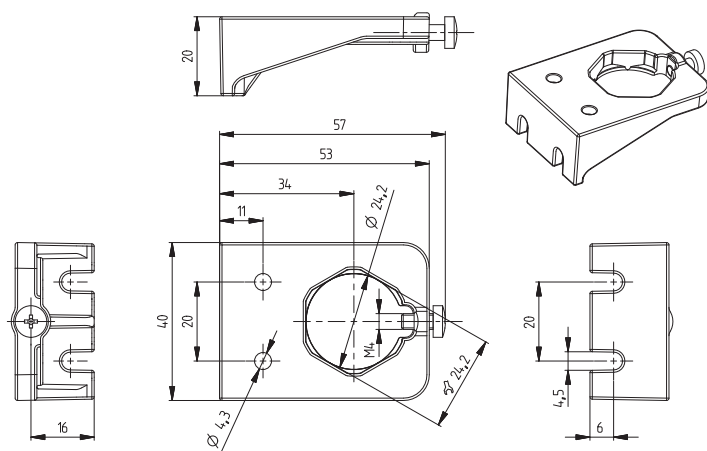
³⁾ Other pressure ranges or pressure connections on request

⁴⁾ (≤ 60 bar)

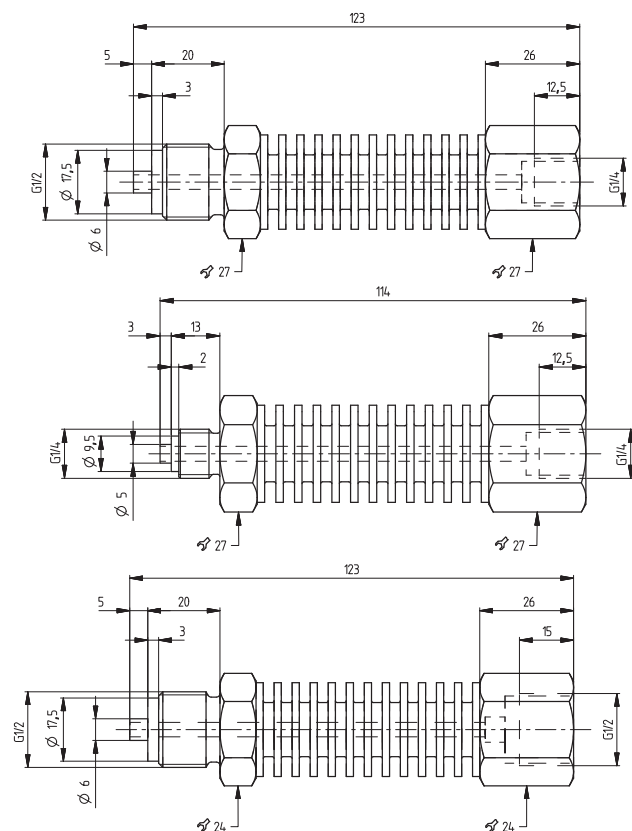
⁵⁾ Rupture pressure 1000 bar

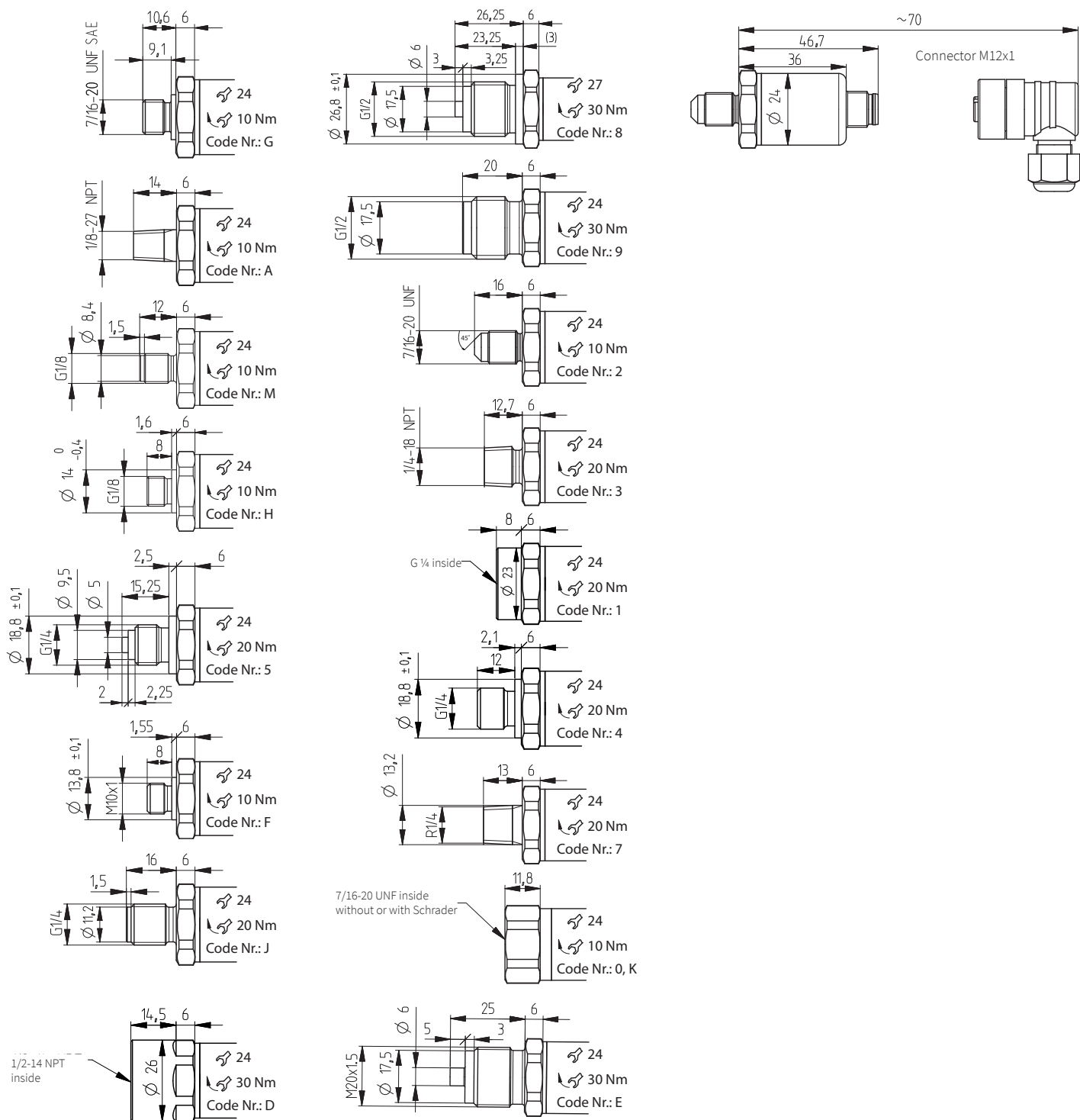
Accessories <i>(supplied loose)</i>	Order number
Corner-wire box for connector M12x1 with cable 2.0 m	114604
Straight-wire box for connector M12x1 with cable 2.0 m	114605
Mounting bracket with screw	118716
Heat sink with outside thread G ½ sealed at front - inside thread G ½	105631
Heat sink with outside thread G ½ sealed at front - inside thread G ¼	105073
Heat sink with outside thread G ¼ sealed at front - inside thread G ¼	105074
Calibration certificate (≤ 600 bar)	104551

Mounting bracket



Heat sink

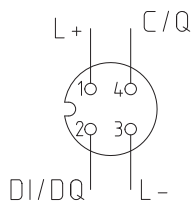




Electrical connections

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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