

54D Pneumatic - electronic pressure sensor

- -1 ... 16 bar, with three pressures ranges
- Compact, robust and light weight with G1/8 port
- 2 switching outputs or 1 switching output (IO-Link configurable), 1 analogue (4 ... 20mA)
- Pressure display colour change configurable at switching point (red/green)
- High overpressure and vacuum resistance
- Option for set up as a differential pressure sensor
- UL-listed



Technical features

Medium:
Compressed air (filtered/lubricated/non-lubricated)

Pressure range:
- 1 ... 1 bar (-14,5 ... 14,5 psi)
- 1 ... 10 bar (-14,5 ... 145 psi)
0 ... 16 bar (0 ... 232 psi)

Pressure type:
Relative, and option for differential pressure

Switching pressure difference:
Programmable

Switching point:
Adjustable between 0 ... 100% of full scale (FS)

Reset point:
Adjustable between 0 ... 100% of full scale (FS)
(smallest adjustable pressure switching difference between switching point and reset point $\geq 0,5\%$ of full scale (FS))

Display:
Alphanumeric display, 4-digit (red/green), programmable pressure units: bar, kPa, psi, inHg

Mounting position:
Optional

Total accuracy:
 $\pm 0,5\%$ of full scale (FS) - without temperature sensitivity

Linearity:
 $\pm 0,25\% + 1$ display step size

Shock proof:
50 g, (11ms), DIN EN 60068-2-27

Vibration proof:
20 g, 10 ... 2000 Hz, DIN EN 60068-2-6

Degree of protection acc. DIN EN 60529:
IP65

Weight:
0,087 kg (0.19 lbs)

Temperature sensitivity:
Zero-point: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin
Pressure range: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin (at 0 ... 60°C)

Ambient/Media temperature:
Ambient:

0 ... +70°C (+32 ... +158°F)

Media:

0 ... +70°C (+32 ... +158°F)

Air supply must be dry enough to avoid ice formation at temperature below +2°C (+35°F)

Materials:
Housing:
PBT, FKM, Polyester
Wetted parts: Brass, FKM, Silicon (coated), PBT

Electronic features

Electrical connection:
M8

Power supply:
UB = 18 ... 32 VDC
reverse-polarity protected (according to EN 50178 SELV/ PELV)

Permissible residual ripple:
10% (within UB)

Current consumption:
< 50 mA

Switching mode:
PNP

Output signal:
Switching signal; IO-Link (configurable)

Contact rating:
Imax VDC = 100 mA

Switching time:
< 6 ms

Adjustable signal delay dS, dr[s]:
0; 0,002 ... 5

Service life:
Min. 50 million switching cycles

Switching logic:
NO/NC programmable

Operating mode:
Hysteresis and window mode separately selectable for each output

Electromagnetic compatibility:
EN 61000-6-2; EN 61000-6-3

Technical data - Output Signal 2 x PNP (1 x Diagnostic signal configurable)

Symbol	Port size	Pressure range (bar)	Pressure range (psi)	Over pressure*1 (bar)	Over pressure*1 (psi)	Type of Pressure	Output Signal	Model
	G1/8	-1 ... 1	-14.5 ... 14.5	20	290	Relative	2 x PNP	54D-V101G-DD0-AA
		-1 ... 10	-14.5 ... 145	20	290	Relative	2 x PNP	54D-V110G-DD0-AA
		0 ... 16	0 ... 232	20	290	Relative	2 x PNP	54D-P016G-DD0-AA

Technical data - Output Signal 1 x PNP (optional to be IO-Link configurable) / 1 x analogue

Symbol	Port size	Pressure range (bar)	Pressure range (psi)	Over pressure*1 (bar)	Over pressure*1 (psi)	Type of Pressure	Output Signal	Model
	G1/8	-1 ... 1	-14.5 ... 14.5	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-V101G-DA1-AA
		-1 ... 10	-14.5 ... 145	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-V110G-DA1-AA
		0 ... 16	0 ... 232	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-P016G-DA1-AA

*1) Short-term pressure peaks are not allowed to exceed this limit value during operation.

Operative utilization of the over pressure is not permitted. The over pressure corresponds to the maximum testing pressure

Electrical connection M8 x 1

(2 x PNP) (1 x Diagnostic signal configurable)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	Out 2 (PNP)	white
	3	0 Volt	blue
	4	Out 1 (PNP)	black

Electrical connection M8 x 1

(1 x PNP, 1 x analogue)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	analogue (4...20 mA)	white
	3	0 Volt	blue
	4	Out 1 (PNP)/IO-Link	black

Option selector

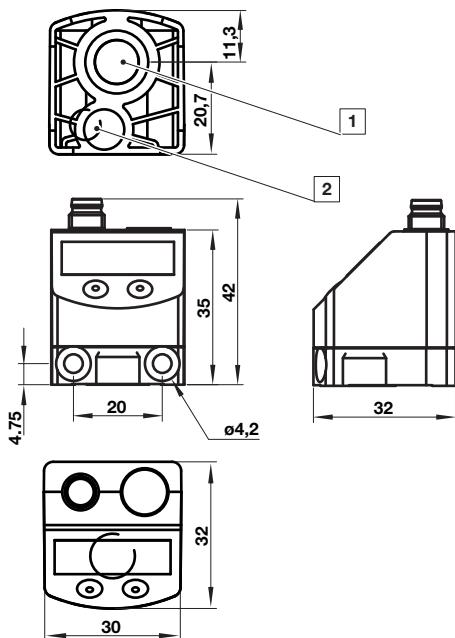
Pressure range (bar)	Substitute	54D-*****-★-★-AA	Analogue-Type	Substitute
-1 ... 1	V101G		Without IO-Link	0
-1 ... 10	V110G		IO-Link configurable	1
0 ... 16	P016G		Output Signal	Substitute
			2 x PNP	DD
			1 x PNP / 1 x Analogue	DA

Accessories

Connector M8 x 1	DIN-Railclip
	
0523449000000000 (1.5 m Cable, 4-pin)	0523446000000000 (1.5 m Cable, 4-pin, 90° angled)
0523447000000000 (5 m Cable, 4-pin)	0523448000000000 (5 m Cable, 4-pin, 90° angled)

Dimensions pressure switch

Dimensions in mm
Projection/First angle

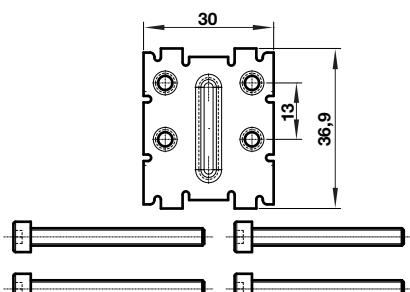


1 Main pressure connection (G1/8)
2 Auxiliary pressure connection for differential pressure sensing (M5)

Dimensions accessories

DIN-Railclip

54D-DINRAIL-CLIP



1 Mounting screws (Stainless steel, 1.4310/301)
 2x M4 x 35
 2x M4 x 40

Warning

These products are intended for use in industrial compressed air and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under »Technical features/data«. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure. System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.