SCHNEIDER
MESSTECHNIK

IP121

Datasheet Pressure Transmitter **IP121**

PERFORMANCE FEATURES

- Dry capacitive ceramic sensor
- Smallest measuring range: 0…40 mbar
- Largest measuring range: 0…250 bar
- Negative pressure measuring range: up to -1 bar
- Accuracy ≤ 0,2%
- High overload capability
- Compact and rugged design
- Optionally in plastic PP or PVDF
- Analog output: 4…20 mA, 2-wires
  0…10 V, 3-wires
- DNV certified
- Ex II 1G Ex ia IIC T4 Ga
  I M2 Ex ia I Mb

AREAS OF APPLICATION

- Gaseous media
- Potentially explosive areas
- Liquid media
- Abrasive media
- Aggressive media
- Maritime applications

The IP121 model was designed for use in harsh industrial environments. It features a high-resolution ceramic sensor, ATEX certification, and numerous configuration options. DNV certified, the sensor also finds use in marine applications and provides excellent mechanical resistan-ce. The ceramic sensor element is resistant to aggressive and abrasive media. The capacitive measuring principle enables a very accurate and long-term stable measure- ment, even at lowest pressures and high overload resistance. Its compact housing is made of high-quality stainless steel 1.4404 and is therefore suitable for almost all media. For highly aggressive chemicals, variants in PP or PVDF are recommended. Our modular design concept provides a wide variety of products. Feel free to contact us if you need a customization that is not listed in this datasheet.

ICS Schneider Messtechnik GmbH
Briesestraße 59
D-16562 Hohen Neuendorf / OT Bergfelde

Tel.: 03303 / 504066
Fax: 03303 / 504068

info@ics-schneider.de
www.ics-schneider.de

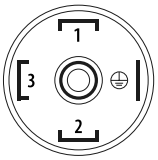
TECHNICAL DATA

Measuring range	
Pressure range	See table "Measuring ranges" others on request
Output	
Analog output	4…20 mA 2-wires 0…10 V 3-wires
Power supply	
20 mA output	9…30 V DC
10 V output	15…30 V DC
EX Version	12…30 V DC
Signal characteristics	
Accuracy	≤ ± 0,2 % FS @ 25 °C ≤ ± 0,5 % FS @ 25 °C at pressure range ≤ 60 mbar ≤ ± 0,5 % FS @ 25 °C at pressure range ≥ 100 bar
Long term stability	≤ ± 0,15 % FS / Year
Response time	200 ms - others on request
Swich-on time	< 1 s
Temperature coefficient	
Zero	≤ ± 0,015 % FS / Kelvin
Span	≤ ± 0,01 % FS / Kelvin
Temperature ranges	
Medium temperature	-40…100 °C (125 °C < 0,5 h) -20…80 °C with EX ia IIC T4
Surrounding temperature	-25…80 °C -20…80 °C with EX ia IIC T4
Storage temperature	-40…85 °C
Electrical protections	
Short-circuit resistance	Permanent
Reverse polarity protection	Protection against reverse polarity, but no function
Electromagnetic compatibility	Interference emissions and immunity acc. to EN 61326
Mechanical resistance	
Vibration	4g with 3-axis resonance frequency according to DIN EN 60068-2-6:2008
Wetted materials	
Process connection	Stainless steel 1.4404, PP or PVDF
Sensor	Ceramic Al_2O_3 - FDA
Sensor seal	FPM (Viton), NBR, EPDM, FKKM (Chemraz / Kalrez)
Surroundings	
Protection type	see "Electrical connection" in Ordering Code
Exemplary weight	
	Approx. 260 g

-400-G11 (figure p. 1)

ELECTRICAL CONNECTION

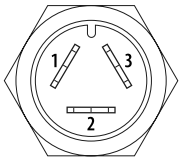
Connector EN 175301-803A



4…20 mA 2-wires
PIN 1: Signal +
PIN 2: Signal –

0 …10 V 3-wires
PIN 1: in +
PIN 2: in -
PIN 3: out +

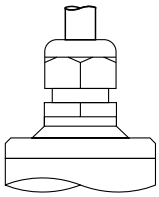
Quickon-Connector



4…20 mA 2-wires
PIN 1: Signal +
PIN 2: Signal –

0 …10 V 3-wires
PIN 1: in +
PIN 2: in -
PIN 3: out +

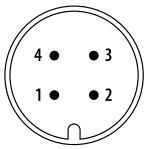
Cable connection



4…20 mA 2-wires
red: Signal +
black: Signal –

0 …10 V 3-wires
red: in +
black: in -
white: out +

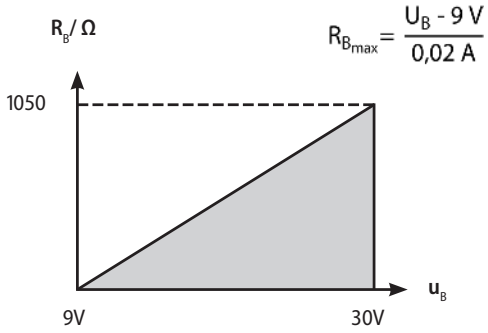
M12 Connector



4…20 mA 2-wires
PIN 1: Signal +
PIN 3: Signal –

0 …10 V 3-wires
PIN 1: in +
PIN 3: in -
PIN 4: out +

LOAD



MEASURING RANGE

Measuring ranges	Relative	Absolute	Overload (bar)
0…40 mbar / 0…4 kPa *	A8		-0,3/4
0…50 mbar / 0…5 kPa*	B0		-0,3/4
0…60 mbar / 0…6 kPa*	A9		-0,3/4
0…100 mbar / 0…10 kPa	00		-0,3/4
0…160 mbar / 0…16 kPa	01		-0,6/6
0…200 mbar / 0…20 kPa	B1		-1/6
0…250 mbar / 0…25 kPa	02		-1/6
0…400 mbar / 0…40 kPa	03		-1/6
0…500 mbar / 0…50 kPa	B7		-1/6
0…600 mbar / 0…60 kPa	04	29	-1/6
0…1 bar / 0…100 kPa	05	30	-1/10
0…1,6 bar / 0…160 kPa	06	31	-1/15
0…2 bar / 0…200 kPa	B3	B4	-1/15
0…2,5 bar / 0…250 kPa	07	32	-1/15
0…4 bar / 0…400 kPa	08	33	-1/25
0…5 bar / 0…500 kPa	F1	F2	-1/40
0…6 bar / 0…600 kPa	09	34	-1/40
0…10 bar / 0…1 MPa	10	35	-1/40
0…16 bar / 0…1,6 MPa	11	36	-1/40
0…20 bar / 0…2 MPa	B5	B6	-1/40
0…25 bar / 0…2,5 MPa	12	37	-1/40
0…40 bar / 0…4 MPa	13	38	-1/60
0…50 bar / 0…5 MPa***	F3	F4	-1/100
0…60 bar / 0…6 MPa***	14	39	-1/100
0…100 bar / 0…10 MPa * / **	15	40	-1/250
0…160 bar / 0…16 MPa * / **	16	41	-1/400
0…250 bar / 0…10 MPa * / **	17	42	-1/600
0,8…1,2 bar / 80…120 kPa		B9	-1/10
-25…25 mbar / -2,5…2,5 kPa*	E6		-0,3/4
-50…50 mbar / -5…5 kPa	C3		-0,3/4
-100…0 mbar / -10…0 kPa	C4		-0,3/4
-100…100 mbar / -10…10 kPa	C5		-1/6
-200…0 mbar / -20…0 kPa	D2		-1/6
-200…200 mbar / -20…20 kPa	D3		-1/6
-1…0 bar / -100…100 kPa	D4		-1/10
-1…1 bar / -100…100 kPa	D6		-1/10
-1…3 bar / -100…300 kPa	D8		-1/25
-1…5 bar / -100…500 kPa	D9		-1/40
-1…9 bar / -100…900 kPa	E1		-1/40
-1…15 bar / -0,1…1,5 MPa	E2		-1/40
-1…19 bar / -0,1…1,9 MPa	E3		-1/40

* Accuracy 0,5%
** Only with process connection 2, 3, G (others on request)
*** not available in PP/PVDF
connection types 1, 4, A, B from 400 mbar optional also in IP67

ORDERING CODE

Output signal
1 0…10 V 3-wires
4 4…20 mA 2-wires
H 4…20 mA 2-wires high temperature version -25…120 °C
EX 4…20 mA 2-wires, II 1G Ex ia IIC T4 Ga
MX 4…20 mA 2-wires, I M2 Ex ia I Mb

Ranges
Measuring ranges see table
99 Non-standard range (on request)

Process connection and material
D G 1/4 A, DIN EN ISO 1179-2, 1.4404
3 G 1/2 B, EN 837-1, 1.4404
G G 1/2 A a. 11,8 mm drill hole, ISO 228-1, 1.4404
GL G 1/2 A a. 11,8 mm drill hole, ISO 228-1, 1.4539
4 G 1/2 A a. G 1/4 inside, ISO 228-1, 1.4404
DN 1/4 - 18 NPT, 1.4404
2 1/2 - 14 NPT, 1.4404
G2 G 1/2 A, 10 mm borehole, ISO 228-1, PP (no EX possible)
GP G 1/2 A, 10mm, borehole, ISO 228-1, PVDF (no EX possible)
9 Others (on request)

Sensor seal
1 FPM (Viton), standard
2 NBR (Perbuan), max. 80 °C
3 EPDM
5 FFKM (Chemraz / Kalrez)
9 Others (on request)

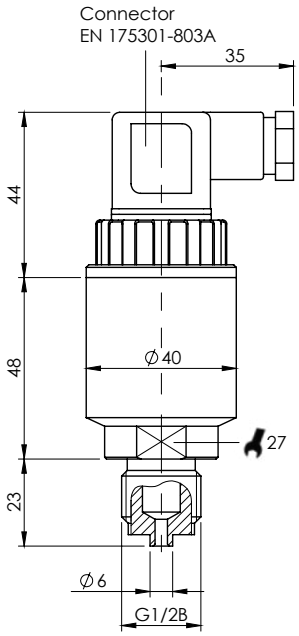
Electrical connection
1 Connector EN 175301-803A IP 65
4 Connector EN 175301-803A IP 65, potted electronics
A Connector M12x1 IP 65
B Connector M12x1 IP 65, potted electronics
F Quickon-Connector IP 65
G Quickon-Connector IP 65, potted electronics
0 5 m cable, IP67
5 5 m cable, potted electronics, IP67
6 2 m cable, IP67
7 2 m cable, potted electronics, IP67
9 Others (on request)

Options (Multiple selections possible)
R Ceramic sensor 99,9%
T Minimized case volume
D DNV certified*

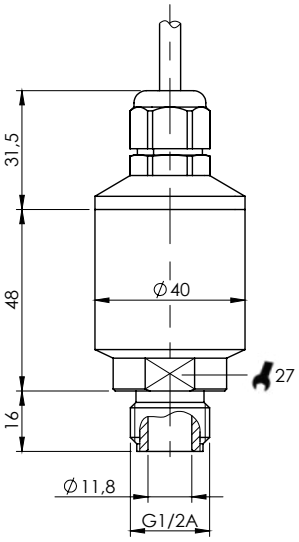
IP121 – …

* If the option "DNV certified" is selected, an FEP cable is used for the cable outlet.

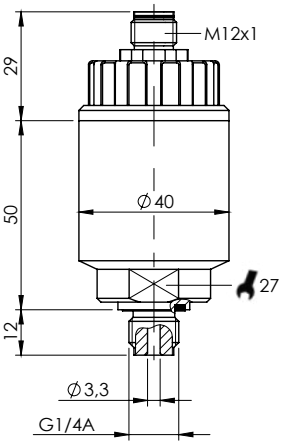
DIMENSIONS



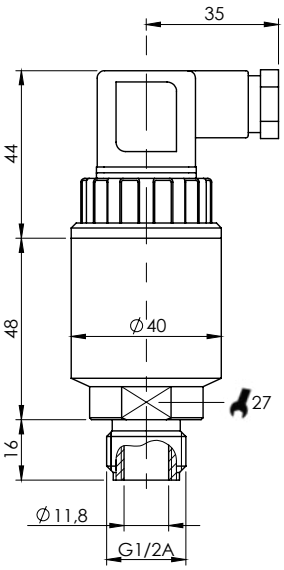
PROCESS CONNECTION **TYPE 3**



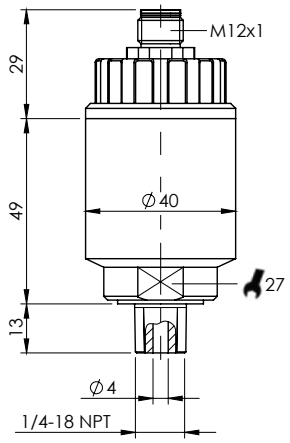
TYPE G



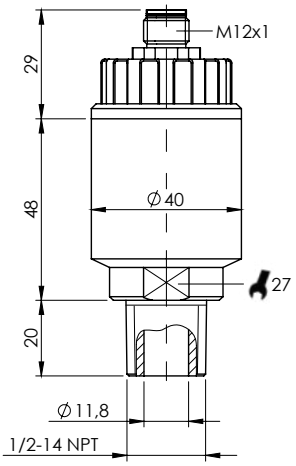
TYPE D



PROCESS CONNECTION **TYPE 4**

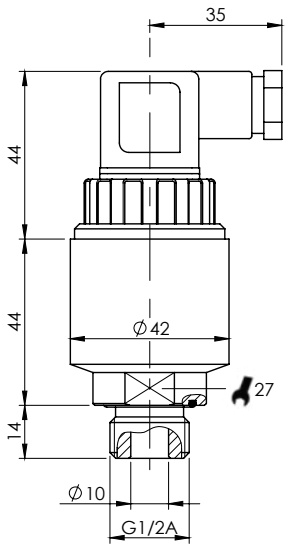


TYPE DN



TYPE 2

DIMENSIONS



PROCESS CONNECTION **TYPE G2/GP**

ICS Schneider Messtechnik GmbH
Briesestraße 59
D-16562 Hohen Neuendorf / OT Bergfelde

Tel.: 03303 / 504066
Fax: 03303 / 504068

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