

Differenz-Drucktransmitter

Differential pressure transmitter

Transmetteur de pression différentielle

0 ... 0.1 – 25 bar



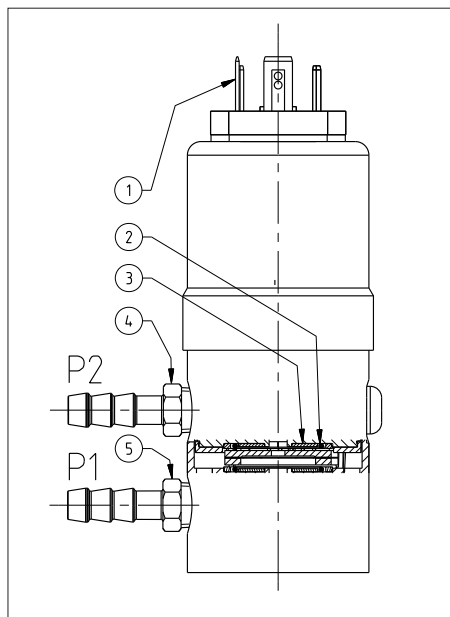
Huba Control

FEINE MESSIDEEN FÜR DRUCK UND STRÖMUNG
FOR FINE PRESSURE AND FLOW MEASUREMENT
LA FINESSE DES MESURES DE PRESSION ET DE DEBIT

Technical overview

The differential pressure transmitter of type series 692 with proven, unique ceramic technology, features adjusted and amplified sensor signals which are available as standardised voltage or current outputs.

Various application-specific pressure and electrical connections and housing materials suitable for different media can be provided.



Legend to cross-section drawing

- 1 Electrical connection
- 2 Seals
- 3 Ceramic element
- 4 P2 Pressure connection (lower pressure)
- 5 P1 Pressure connection (higher pressure)

The distinct advantages

- Very low temperature sensitivity
- High resistance to extreme temperatures
- No mechanical creepage
- Modular system and choice of materials to suit individual applications

Medium

Liquids and neutral gases

Pressure ranges

0 ... 0.1 – 25 bar

Tolerable overload on one side

See order code selection table

System pressure

25 bar on
differential pressure range ≤ 6 bar
50 bar on
differential pressure range ≥ 10 bar

Rupture pressure

1.5 x system pressure

Setting range

(Only adjustable versions)
Zero point and full scale $\pm 10\%$ fs

Materials in contact with the medium

Pressure connection:
Stainless steel 1.4305 / AISI 303, PVDF,
CuZn vni
Diaphragm: Ceramic Al_2O_3 (96%)
Sealing material: FPM, EPDM, NBR, MVQ

Case material

Stainless steel 1.4305 / AISI 303

Temperature

Medium and ambient $-15 \dots +85$ °C
Storage $-40 \dots +85$ °C

Output

3-wire
0 ... 5 VDC $11 \dots 33$ VDC
 24 VAC $\pm 15\%$
0 ... 10 VDC $18 \dots 33$ VDC
 24 VAC $\pm 15\%$
2-wire
4 ... 20 mA $11 \dots 33$ VDC

Power supply

Load

3-wire > 10 kOhm
2-wire $\leq \frac{\text{supply voltage} - 11 \text{ V}}{0.02 \text{ A}}$ [Ohm]

Current consumption

At nominal pressure
3-wire < 5 mA
2-wire < 20 mA

Dynamic response

Suitable for static and dynamic measurements

Response time < 5 ms
Load cycle < 50 Hz

Electrical connection

Connector DIN EN 175301-803-A
Round connector DIN EN 60130-9
Cable 1.5 m

Polarity reversal protection

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

Protection standard

IP 65

Pressure connections

Pressure-tube tip $\varnothing 4$ mm / 6 mm
Screw fitting $\varnothing 6$ mm / 8 mm
Outside thread 7/16-20 UNF, G1/8
Inside thread 1/8-27 NPT, G1/8

Installation arrangement

Unrestricted

Mounting

Mounting bracket

Tests / Admissions

CE conformity

Weight

Approx. 520 g without pressure connections
Approx. 575 g with pressure connections

Packaging

Single packaging
in cardboard, accessories included

Accuracy

Transmitter-Type Parameter	Unit	Versions with overload on one side		
		≤ 2 x nominal pressure	≤ 3 x nominal pressure	≤ 7.5 x nominal pressure
Tolerance zero point	max. % fs	± 0.4	± 0.75	± 1.25
Tolerance full scale	max. % fs	± 0.4	± 0.75	± 1.25
Resolution	% fs	0.1	0.16	0.26
Total of linearity, hysteresis and repeatability	max. % fs	± 0.5	± 0.8	± 1.3
Long term stability acc. to DIN IEC 60770	% fs	± 0.5	± 0.5	± 0.5
TC zero point ¹⁾	max. % fs/10 K	See order code selection table	See order code selection table	See order code selection table
TC sensitivity ¹⁾	max. % fs/10 K	± 0.15	± 0.22	± 0.37

Test conditions: 25 °C, 45% RH, Power supply 24 VDC TC z.p. / TC s. -15 ... +80 °C

Order code selection table

692. 9 X X X X X X X X X X

Pressure range ²⁾	Tolerable overload on one side		TC z.p. (fs/10K)												
	P 1	P 2													
0 ... + 0.1 bar	max. 0.6 bar (6 x Nominal pressure)	0.6 bar ±1.2 %	0	0											
0 ... + 0.2 bar	max. 1.2 bar (6 x Nominal pressure)	1.2 bar ±1.2 %	0	2											
0 ... + 0.2 bar	max. 0.6 bar (3 x Nominal pressure)	0.6 bar ±0.6 %	4	0											
0 ... +0.25 bar	max. 1.2 bar (4.8 x Nominal pressure)	1.2 bar ±1.0 %	0	3											
0 ... +0.25 bar	max. 0.6 bar (2.4 x Nominal pressure)	0.6 bar ±0.5 %	4	1											
0 ... + 0.3 bar	max. 0.6 bar (2 x Nominal pressure)	0.6 bar ±0.4 %	0	1											
0 ... + 0.4 bar	max. 1.2 bar (3 x Nominal pressure)	1.2 bar ±0.6 %	0	4											
0 ... + 0.4 bar	max. 2 bar (5 x Nominal pressure)	2 bar ±1.0 %	0	5											
0 ... + 0.5 bar	max. 1.2 bar (2.4 x Nominal pressure)	1.2 bar ±0.5 %	0	6											
0 ... + 0.5 bar	max. 3 bar (6 x Nominal pressure)	3 bar ±0.8 %	0	7											
0 ... + 0.6 bar	max. 1.2 bar (2 x Nominal pressure)	1.2 bar ±0.4 %	0	8											
0 ... + 0.6 bar	max. 3 bar (5 x Nominal pressure)	3 bar ±0.7 %	0	9											
0 ... + 1 bar	max. 2 bar (2 x Nominal pressure)	2 bar ±0.4 %	1	1											
0 ... + 1 bar	max. 5 bar (5 x Nominal pressure)	5 bar ±1.0 %	1	2											
0 ... + 1.6 bar	max. 3.2 bar (2 x Nominal pressure)	3.2 bar ±0.4 %	1	3											
0 ... + 1.6 bar	max. 12 bar (7.5 x Nominal pressure)	12 bar ±1.0 %	1	4											
0 ... + 2.5 bar	max. 5 bar (2 x Nominal pressure)	5 bar ±0.4 %	1	5											
0 ... + 2.5 bar	max. 12 bar (4.8 x Nominal pressure)	12 bar ±0.6 %	1	6											
0 ... + 4 bar	max. 8 bar (2 x Nominal pressure)	8 bar ±0.4 %	1	7											
0 ... + 4 bar	max. 12 bar (3 x Nominal pressure)	12 bar ±0.5 %	1	8											
0 ... + 6 bar	max. 12 bar (2 x Nominal pressure)	12 bar ±0.4 %	1	9											
0 ... + 10 bar	max. 20 bar (2 x Nominal pressure)	12 bar ±0.4 %	3	0											
0 ... + 16 bar	max. 32 bar (2 x Nominal pressure)	12 bar ±0.4 %	3	1											
0 ... + 25 bar	max. 50 bar (2 x Nominal pressure)	12 bar ±0.4 %	3	2											
▲ Fullscale signal at these pressures															
Sealing material	FPM Fluoro-elastomer												0		
	EPDM Ethylene propylene												1		
	NBR Butadiene Acrylonitrile												2		
	MVQ Silicone polymer												3		
Adjustment	Factory													0	
	Factory, with adjustable zero point and full scale													1	
Output and power supply	0 ... 5 V 11.0 ... 33.0 VDC / 24 VAC ±15%	3-wire cable													0
	0 ... 10 V 18.0 ... 33.0 VDC / 24 VAC ±15%	3-wire cable													1
	4 ... 20 mA 11.0 ... 33.0 VDC	2-wire cable													7
Electrical connection	Cable 1.5 m, PG7	IP 65													0
	Connector ³⁾	DIN EN 175301-803-A	IP 65												1
	Round plug connector ³⁾	DIN EN 60130-9	IP 65												3
Pressure connections	Inside thread	Stainless steel 1/8-27 NPT	PVDF G1/8												0
	Hose connection	CuZn vni	for tube inside Ø 4 mm												1
	Hose connection	Stainless steel 1.4571 / AISI 316Ti	for tube inside Ø 4 mm												E
	Hose connection	CuZn vni	for tube inside Ø 6 mm												2
	Hose connection	PVDF	for tube inside Ø 6 mm												3 2
	Hose connection	Stainless steel 1.4571 / AISI 316Ti	for tube inside Ø 6 mm												D
	Screw fitting	CuZn vni	for pipe outside Ø 6 mm												4
	Screw fitting	Stainless steel 1.4305 / AISI 303	for pipe outside Ø 6 mm												5
	Screw fitting	PVDF	for pipe outside Ø 6 mm												8 2
	Screw fitting	CuZn vni	for pipe outside Ø 8 mm												6
	Screw fitting	Stainless steel 1.4305 / AISI 303	for pipe outside Ø 8 mm												7
	Screw fitting	PVDF	for pipe outside Ø 8 mm												9 2
	Outside thread 7/16-20 UNF	CuZn vni													A
	Adapter inside thread G1/8	Stainless steel 1.4305 / AISI 303													B
	Adapter outside thread G1/8	CuZn vni													C
Case	Stainless steel 1.4305 / AISI 303														1
	PVDF all ranges up to 6 bar max., overload on one side and system pressure max. 12 bar														2
	Stainless steel with pressure tip orifice														4
	Stainless steel, free of oil and grease (only seal FPM, not compound-filled)														5
	Stainless steel with pressure tip orifice free of oil and grease (only seal FPM, not compound-filled)														6
Variation (optional)	Of pressure range or output signal														
	Indicate W and state on order (e.g. 0 ... 9 bar / Out 0 ... 10 V)														W

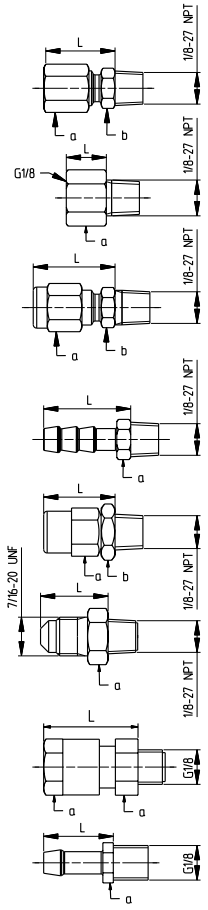
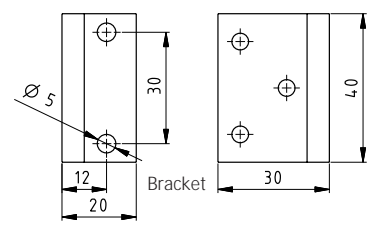
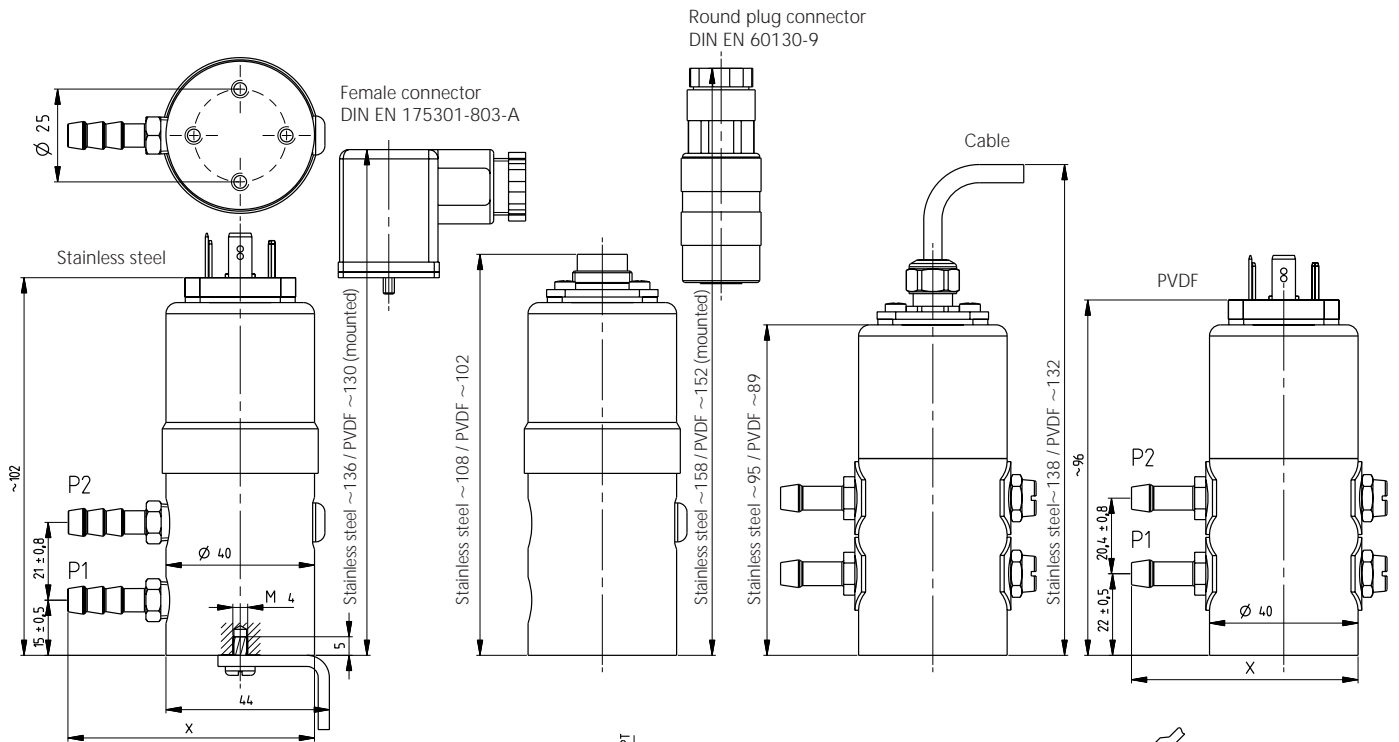
Accessories

			Order number
Female connector with seal	DIN EN 175301-803-A	IP 65 when installed and screwed	103510
Round plug connector	DIN EN 60130-9	IP 65 when installed and screwed	103524
Mounting bracket incl. screws			101999
Calibration certificate			104551

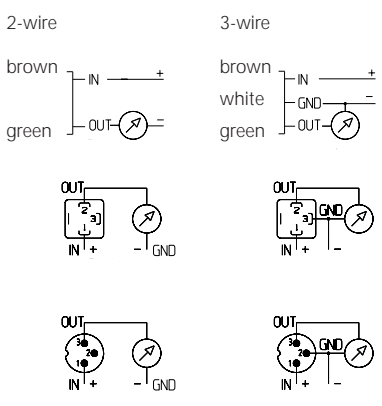
¹⁾ TC = Temperature coefficient

²⁾ Other pressure ranges on request

³⁾ Without female connector



Stainless steel 1.4305 AISI 303	Screw fitting for pipe outside Ø 6	a = 10	L ~24	X ~65
	Screw fitting for pipe outside Ø 8	b = 12	L ~26	X ~67
Stainless steel 1.4305 AISI 303	Inside thread G1/8	a = 14	L ~12	X ~53
CuZn vni	Screw fitting for pipe outside Ø 6	a = 10	L ~24	X ~65
	Screw fitting for pipe outside Ø 8	a = 12	L ~25	X ~66
CuZn vni Stainless steel 1.4571 AISI 316Ti	Hose connection for tube Ø 4	a = 10	L ~20	X ~61
	Hose connection for tube Ø 6	b = 10	L ~25	X ~66
CuZn vni	Outside thread G1/8	a = 10	L ~20	X ~61
CuZn vni	Outside thread 7/16-20 UNF	a = 14	L ~18	X ~59
PVDF	Pressure fitting for pipe outside Ø 6	a = 12	L ~20	X ~61
	Pressure fitting for pipe outside Ø 8	b = 14	L ~23	X ~64
PVDF	Hose connection for tube Ø 6	a = 10	L ~20	X ~61



Electromagnetic compatibility

CE conformity (EMC) by application of harmonised standards: Interference stability EN 61000-6-2 and EN 61000-6-3, Interference emit EN 61000-6-3 and EN 61326-1			
	Test standard		Effect
Interference stability			
Electrostatic discharge (ESD)	EN 61000-4-2	8 kV air, 4 kV contact	no effect
High-frequency electromagnetic radiation (HF)	EN 61000-4-3	10 V/m, 80 ... 1000 MHz	no effect
Conducted HF interference	EN 61000-4-6	10 V, 0.15 ... 80 MHz	no effect
Fast transients (burst)	EN 61000-4-4	2 kV	no effect
Surge	EN 61000-4-5	max. tolerable cable length 10 m	no test
Magnetic fields	EN 61000-4-8	30 A/m, 50 Hz	no effect
Interference emit			
Conducted interference	EN 55022 (CISPR 22)	0.15 ... 30 MHz	no emission
Radiation from housing		30 ... 1000 MHz, 10 m	no emission

Headquarters

Huba Control Schweiz

Industriestrasse 17
CH-5436 Würenlos
Telefon ++41 (0) 56 436 82 00
Telefax ++41 (0) 56 436 82 82
info.ch@hubacontrol.com

Huba Control Deutschland

Schlattgrabenstrasse 24
72141 Walddorfhäslach
Telefon (07127) 23 93-00
Telefax (07127) 23 93-20
info.de@hubacontrol.com

Huba Control France

Technopôle Forbach-Sud
57602 Forbach Cedex
Téléphone 03 87 84 73 00
Télécopieur 03 87 84 73 01
info.fr@hubacontrol.com

Huba Control Nederland

Hamseweg 20A
3828 AD Hoogland
Telefoon 033 433 03 66
Telefax 033 433 03 77
info.nl@hubacontrol.com

Huba Control United Kingdom

Unit 3 Network Point, Range Road
Witney Oxfordshire OX29 0YD
Phone 01993 776667
Fax 01993 776671
info.uk@hubacontrol.com

www.hubacontrol.com

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