506

Relative pressure transmitter for refrigeration technology

–1 … 0 – 60 bar

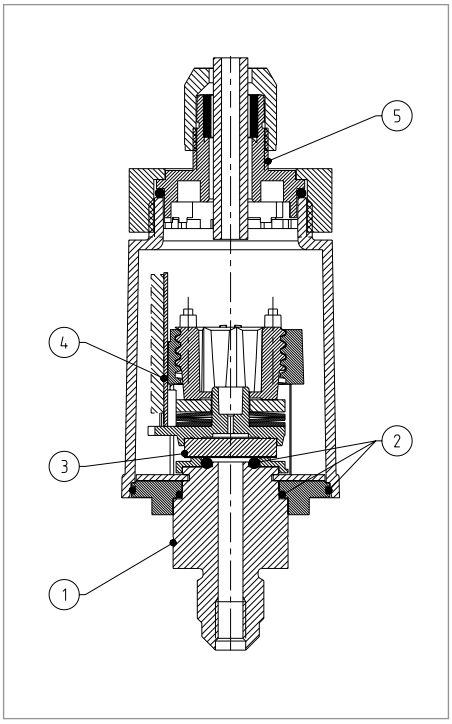
Huba Control

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

Technical overview

The pressure transmitter type 506 with proven ceramic technology, features adjusted and amplified sensor signals which are available as standardised current outputs.

Specially developed for use within the industrial refrigeration technology.



Legend to cross-section drawing

1 Pressure connection
2 Seals
3 Ceramic element
4 Hybrid electronics
5 Cable junction with PG7 screw connection

The distinct advantages

- Compact construction
- Automated manufacture in large quantities for ideal price / performance ratio
- Robust ceramic sensor technology
- High resistance to extreme temperatures
- No mechanical creepage

Medium

Prevalent refrigerants except NH3
(for NH3 see type 510)

Pressure ranges

Relative	–1 … 7 – 60 bar

Tolerable overload

2 x Measuring range (fs)
but as a maximum 80 bar

Rupture pressure

3 x Measuring range (fs)
but as a maximum 90 bar

Materials in contact with the medium

Pressure connection:
stainless steel 1.4305 / AISI 303
Diaphragm: Ceramic Al_2O_3 (96%)
Sealing material: CR (chlorine caoutchouc)

Case material

Cover PA 6, colour red

Temperature

Medium and ambiance	–40 … +80 °C
Storage	–40 … +80 °C

Output	Power supply
3-wire	
0 … 5 VDC	9 … 33 VDC
1 … 6 VDC	10.4 … 33 VDC
0 … 10 VDC	16.2 … 33 VDC
Ratiom. 10 … 90%	5 VDC (4.75 … 5.25)
2-wire	
4 … 20 mA	8 … 33 VDC
4 … 20 mA	10 … 33 VDC

Load

3-wire	> 10 kOhm / < 100 nF
2-wire	$\leq \frac{\text{supply voltage} - 10\ \text{V}}{0.02\ \text{A}}$ [Ohm]

Current consumption

At nominal pressure

3-wire	
0 … 5 V	< 5 mA
1 … 6 V	< 5 mA
0 … 10 V	< 6 mA
Ratiom. 10 … 90%	< 3 mA
2-wire	
4 … 20 mA	20 mA

Dynamic response

Suitable for static and dynamic measurements

Response time	< 5 ms
Load cycle	< 50 Hz

Electrical connection

Cable 1.5 meters
Connector DIN EN 175301-803-A
Connector DIN EN 175301-803-C
(mini DIN)

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 connection

Inside thread 7/16-20 UNF Schrader
Outside thread 7/16-20 UNF, 1/4-18 NPT
Other pressure connections on request

Installation arrangement

Unrestricted
Recommended:
Pressure connection downwards

Tests / Admissions

CE conform

Weight

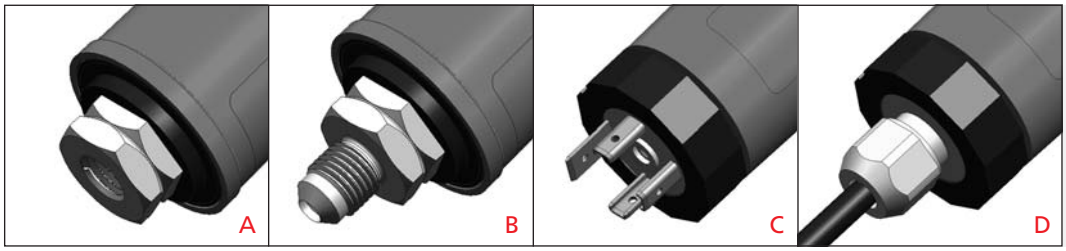
Inside thread, DIN connector	approx. 95 g
Outside thread, DIN connector	approx. 110 g
With cable 1.5 m, additional	approx. 40 g

Packaging

Please state on order

Single packaging
in cardboard

Multiple packaging
in cardboard (25 pcs)



Versions

A – Inside thread 7/16-20 UNF Schrader

B – Outside thread 7/16-20 UNF

C – Connector DIN EN 175301-803-A

D – Cable junction with PG7 screw connection

Accuracy

Transmitter-Type Parameter		Unit	7 … 10 bar	> 10 … 60 bar
Tolerance zero point	max.	% fs	± 1.0	± 1.0
Tolerance full scale	max.	% fs	± 1.0	± 1.0
Resolution		% fs	0.1	0.1
Total of linearity, hysteresis and repeatability	max.	% fs	± 1.0	± 0.5
Long term stability acc. to DIN IEC 60770		% fs	± 1.0	± 1.0
TC zero point [1]	max.	% fs/10 K	± 0.4	± 0.4
TC sensitivity [1]	typ.	% fs/10 K	– 0.2	– 0.15
TC sensitiitity [1]	max.	% fs/10 K	– 0.3	– 0.3

Test conditions: 25 °C, 45% RH, Power supply 24 VDC
TC z. p. / TC s. –40 … +80 °C

Order code selection table

				506. X X X X X X X X X X X
Relative pressure				9
Pressure range	0 … 10 bar			30
	0 … 16 bar			31
	0 … 25 bar			32
	0 … 40 bar			33
	0 … 60 bar			40
	▲ Fullscale signal at these pressures			
Sealing material [2]	CR chlorine caoutchouc			A
Adjustment	Factory			0
Output and power supply	0 … 5 V	9 … 33 VDC	3-wire cable	1
	1 … 6 V	10.4 … 33 VDC	3-wire cable	6
	0 … 10 V	16.2 … 33 VDC	3-wire cable	2
	4 … 20 mA	10 … 33 VDC	2-wire cable	3
	4 … 20 mA	8 … 33 VDC	2-wire cable	8
	10 … 90% ratiom.	4.75 … 5.25 VDC	3-wire cable	4
Electrical connection	Cable1.5 m		IP 65	0
	Connector [3]	DIN EN 175301-803-A	IP 65	1
	Connector [3]	DIN EN 175301-803-C (mini DIN)	IP 65	2
Pressure connection	Inside thread	7/16-20 UNF Schrader		01
	Outside thread	7/16-20 UNF		02
	Outside thread	1/4-18 NPT		03
Pressure tip orifice	Without			1
	With			2
Pressure range variation	Indicate W and state range on order (min. 7 bar fs)			W

Storage versions

		Pressure ranges	Order number
Output	4 … 20 mA		
Power supply	10 … 33 VDC	–0.5 … 7 bar	506.930A23101W –0.5…7 bar
Electrical connection [3]	Connector DIN EN 175301-803-A, IP 65	0 … 25 bar	506.932A23101W 0 … 25 bar
Pressure connection	Inside thread 7/16-20 UNF		
Sealing material	CR (chlorine caoutchouc)		
Colour of cover	Black		

Accessories

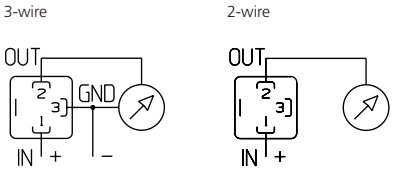
			Order number
Female connector	DIN EN 175301-803-A	with seal (IP 65, when installed and latched)	103510
Female connector	DIN EN 175301-803-C (mini DIN)	with seal (IP 65, when installed and latched)	104244

1) TC = Temperature coefficient
2) According to ISO standard R 1629, other sealing materials on request
3) Delivery without female connector, see accessories

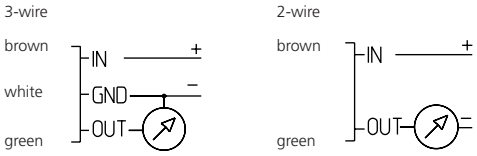
Dimensions in mm

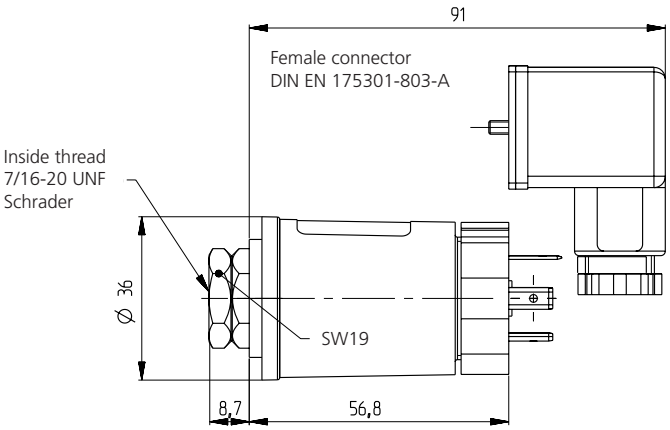
Electrical connections

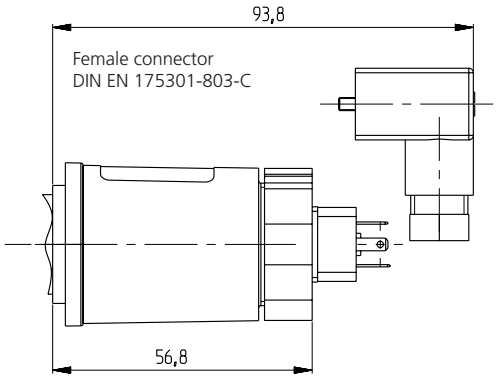
Connector version

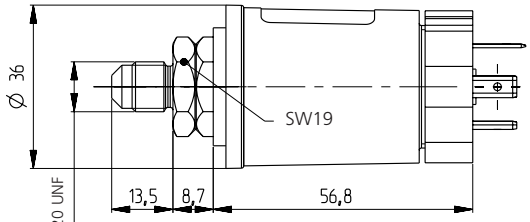


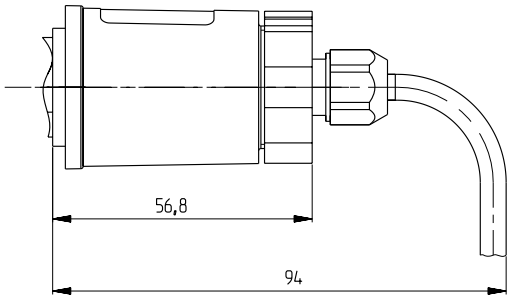
Cable version

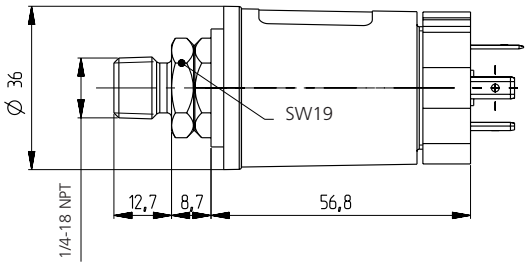




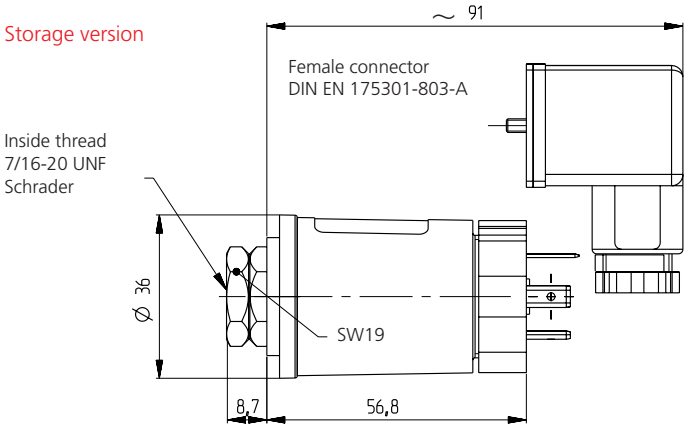








Storage version



Electromagnetic compatibility

CE conformity (EMC) by application of harmonized standards: Interference stability EN 61000-6-2 and EN 61326-1, Interference emit EN 6100063 and EN 61326-1

Interference stability	Test standard			Effect
Electrostatic discharge (ESD)	EN 61000-4-2	8 kV air, 6 kV contact		no effect
High-frequency electromagnetic radiation (HF)	EN 61000-4-3	10 V/m, 80 … 1000 Mz 3 V/m, 1 … 3 GHz		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	Line-Line, Line-Case Line-Line	500 V, 12 Ohm, 9 µF 1 kV, 42 Ohm, 0.5 µF 500 V, 2 Ohm, 18 µF	no failure
Magnetic fields	EN 61000-4-8	30 A/m, 50 Hz		no effect
Insulation voltage		500 VDC 350 VAC	no effect	

Interference emit	Test standard		Effect
Conducted interference	EN 55022 (CISPR 22)	0.15 ... 30 MHz	no emission
Radiation from housing		30 ... 1000 MHz, 10 m	no emission