

506

Pressure transmitter for  
refrigeration technology  
Relative up to 60 bar



EDITION 07/2004

HUBA-REGISTERED TRADE MARK

 **Huba Control**

FOR FINE PRESSURE AND FLOW MEASUREMENT

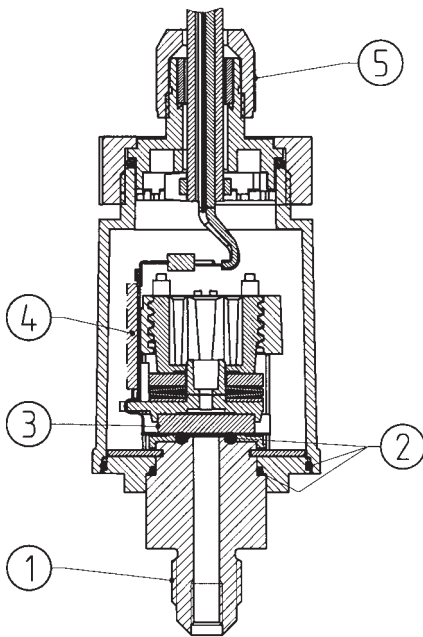


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### Technical overview

The pressure transmitter of type series 506 with proved ceramic technology, features calibrated and amplified sensor signals which are available as standardized current outputs.

Specially developed for use in the industrial refrigeration technology.



### Legend to cross-section drawing

- 1 Connection Fitting
- 2 Seals
- 3 Ceramic element
- 4 Hybrid electronics
- 5 Cable joint PG7

### Pressure ranges

Relative pressure/Gage (measurement of pressure relative to ambient pressure).  
Lowest pressure range 7 bar fs

### Overload

2x measuring range (fs)  
(40 ... 60 bar max. 80 bar)

### Rupture pressure

3x measuring range (fs)  
(40 - 60 bar max. 90 bar)

### Accuracy

Total of linearity, hysteresis and repeatability  
< +/- 0.5 % fs (> 10 - 60 bar)  
< +/- 1.0 % fs ( 7 - 10 bar)

Adjustment accuracy zero point and full scale (repeatable, stable)

0 - 5 V	± 50 mV
1 - 6 V	± 50 mV
0 - 10 V	± 100 mV
4 - 20 mA	± 0.16 mA
10 - 90 %	± 1%

### Housing material

Cover Pa 6

### Materials in contact with the medium

Ceramic/Stainless steel 1.4305 (AISI 303)

Sealing material: CR

### Temperature influences

Medium and ambient temperature  
-40 °C to +80 °C

TC zero point 10 to 60 bar  
< +/- 0.04 % fs/K  
7 - 10 bar < +/- 0.06 % fs/K

TC sensitivity  
typically < +/- 0.015 % fs/K  
7 - 10 bar < +/- 0.02 % fs/K typ.

### Load cycle

< 50 Hz

### Dynamic response

Suitable for static and dynamic measurements.  
Response time < 5 ms

### Pressure connections

Inside thread	7/16-20 UNF
Schrader	
Outside thread	7/16-20 UNF
Outside thread	1/4 - 18 NPT

### Weight

Inside thread	50 grams
Outside thread	70 grams

### Installation arrangement

Unrestricted

### Signal Power supply

• 0 - 5 V	11 - 33 VDC	3-wire cable
• 1 - 6 V	11 - 33 VDC	3-wire cable
• 0 - 10 V	18 - 33 VDC	3-wire cable
• 4 - 20 mA	11 - 33 VDC	2-wire cable
• 10 - 90%	4.5 - 6.0 VDC	3-wire cable ratiometric

• Short circuit-proof and protected against polarity reversal. Each connection against other with max. +/- supply voltage.

### Load

0 - 5 V	> 10 kOhm/<100 nF
1 - 6 V	> 10 kOhm/<100 nF
0 - 10 V	> 10 kOhm/<100 nF
4 - 20 mA	$\leq \frac{\text{supply voltage} - 11 \text{ V}}{0.02 \text{ A}}$ [Ohm]
10 - 90%	> 10 kOhm/<100 nF

### Current consumption

With max. signal output:

0 - 5 V	< 2 mA
1 - 6 V	< 2 mA
0 - 10 V	< 3 mA
4 - 20 mA	< 20 mA
10 - 90%	< 2 mA

### Electrical connections/protection class

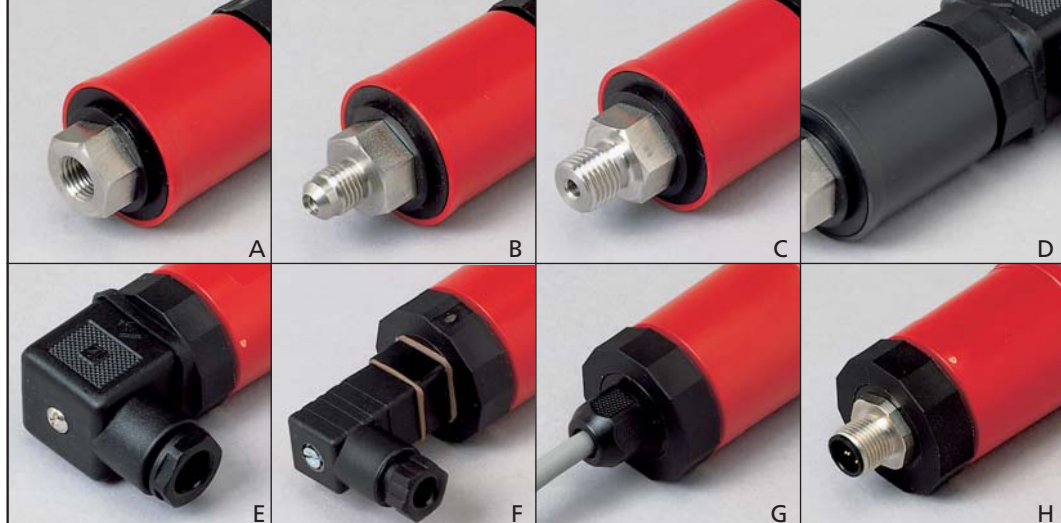
Cable 1.5 meters, IP 65  
Connector DIN 43650-A, IP 65  
Connector industrial standard, IP 65

### Calibration by customer

Calibrated in the factory.

### The distinct advantages

- Compact construction
- By automatic largescale manufacture ideal price/performance ratio
- Robust ceramic-sensor technology
- High resistance to extreme temperatures
- No mechanical aging
- No mechanical creepage



- A – Inside thread 7/16-20 UNF Schrader
- B – Outside thread 7/16-20 UNF
- C – Outside thread 1/4 - 18 NPT
- D – Storage version cover black
- E – Female connector DIN 43650-A
- F – Female connector industrial standard
- G – Electrical connection with PG 7
- H – Connector M12x1 (on request)

**Versions**

**Order code selection table**

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**506**

		X	X	X	X	X	X	X	X	X	X	X
<b>Relative pressure / Gage</b>												
			9									
<b>Pressure range</b>	Customer side (- 1 ... + 60 bar) (min. 7 bar FS)	X	X									
<b>Sealing material<sup>1</sup></b>	CR			A								
<b>Calibration</b>	Factory calibrated				0							
<b>Outputs and power supply</b>	0 – 5 V      11.0 – 33.0 VDC      3-wire cable								1			
	1 – 6 V      11.0 – 33.0 VDC      3-wire cable								6			
	0 – 10 V      18.0 – 33.0 VDC      3-wire cable								2			
	4 – 20 mA      11.0 – 33.0 VDC      2-wire cable								3			
	ratiometric (10-90%) 4.5 – 6.0 VDC      3-wire cable								4			
<b>Electrical connections<sup>2</sup></b>	Cable, 1.5 meters (protection standard IP 65)									0		
	Connector DIN 43650-A (protection standard IP 65)									1		
	Connector industrial standard (protection standard IP 65)									2		
<b>Pressure connections<sup>3</sup></b>	Inside thread 7/16-20 UNF Schrader										0	
	Outside thread 7/16-20 UNF										2	
	Outsidethread 1/4 - 18 NPT										3	
<b>Housing materials</b>	Stainless steel 1.4305 (AISI 303)											1
	Stainless steel 1.4305 (AISI 303) with pressure tip orifice											2
<b>Pressure range</b>	Indicate W and mention range on order (Must)											W

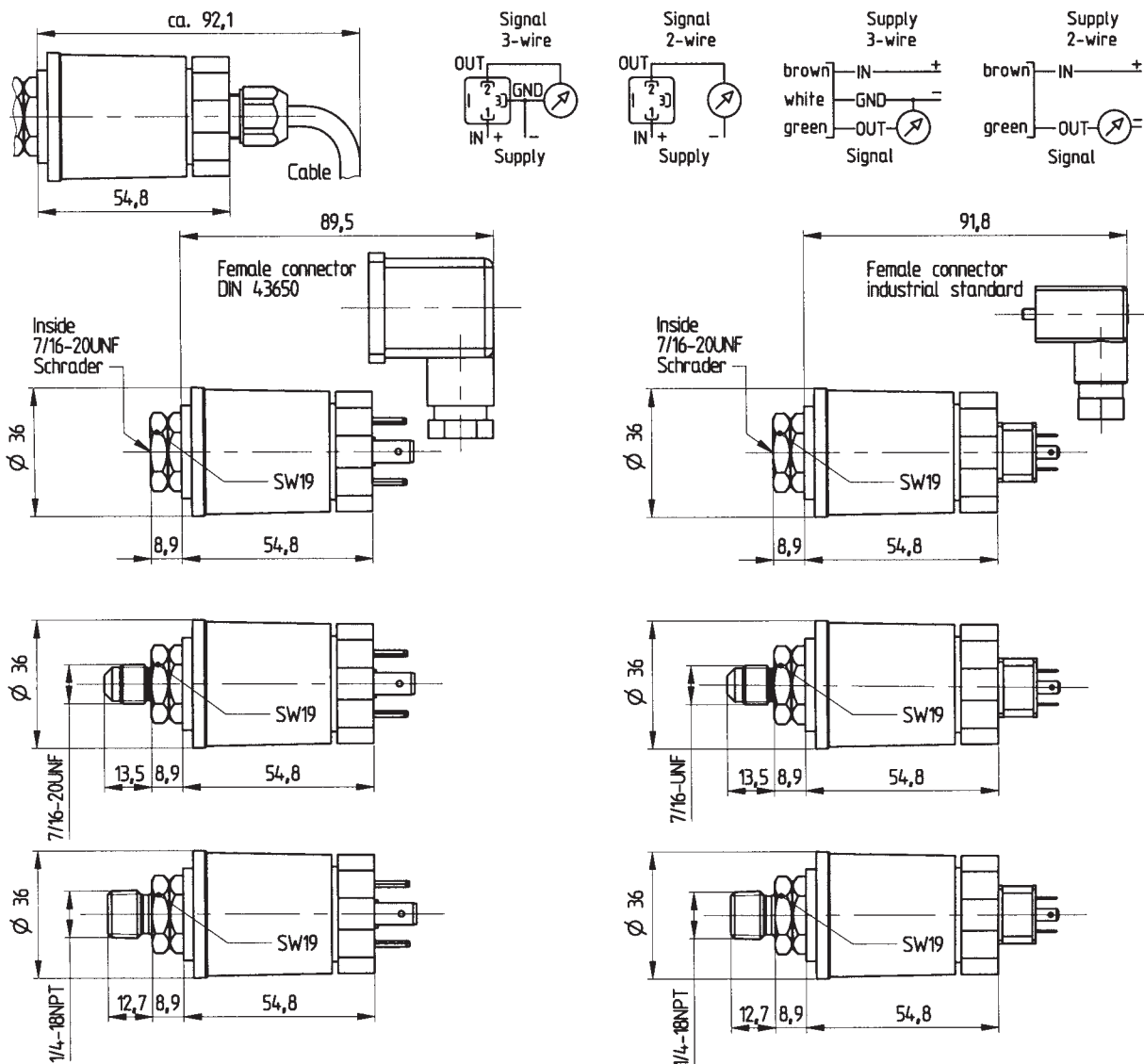
<b>Accessories</b>	Female connector DIN 43650-A with seal (IP 65 when installed and latched)				1	0	3	5	1	0
	Female connector (industrial standard) with seal (IP 65 when installed and latched)				1	0	4	2	4	4

- Packaging**      Mention on order:
- single packaging
  - multiple packaging (25 pcs)
  - single packaging with DIN-connector order-no 103510 or Connector industrial standard order-no 104244
  - multiple packaging (25 pcs) DIN-connector order-no 103510 or Connector industrial standard order-no 104244 enclosed separatly

Storage versions according separate specification.

Order example: specifications of customer: 506.9XXA02121W - 0,5 ... 7 bar turns to factory number: 506.930A02121W - 0,5 ... 7 bar

<sup>1</sup> According to ISO standard R 1629, other sealing materials on request.  
<sup>2</sup> Without female connector.  
<sup>3</sup> Other connections and materials on request.



Electromagnetic compatibility:  
CE conformity to EC directive 89/336 EEC (EMC) by application of harmonized standards EN 61000-6-1 and EN 61000-6-3.

Type of interference/Interference susceptibility	Test standard	Effects
Electrostatic discharge ESD	EN 61000-4-2 8 kV air, 4 kV contact	No failure except radiometric types
High-frequency electromagnetic radiation (HF)	EN 6100-4-3 3 V/m, 80...1000 MHz	No effect up to 3 V/m
Conducted HF interference	EN 61000-4-6 3 V, 0.15 ... 80 MHz	No effect
Fast transients (burst)	EN 61000-4-4 1 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
Type of interference/Emitted interference	Test standard	Effects
Conducted interference	EN 55022 (CISPR 22) 0.15...30 MHz	No effect
Radiation from housing	30...1000 MHz, 10 meters	No effect

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