

Modbus pressure transmitters RS485 communication only series ERS.307



All st. steel housing of wetted parts
with Declaration of Conformity, CE
The RS485 interface communicates
using the Modbus® protocol

General features

- Piezosistive Silicon Pressure Transmitters for industrial applications
- Pressure range from -1...0 bar to 0...1000 bar
- Wiring with DIN43650A L-connector or various connectors
- Ingress Protection: The achievable IP rating depends on the electrical connection and mating connector used.
- Housing parts of stainless steel

Application area

- Hydraulic and pneumatic control systems
- Pump and compressors
- Control equipments and air conditioning system
- Pressure checking system

General specification

Pressure ranges

-1...0 bar to 0...1000 bar

Accuracy

A4: $\leq \pm 0.5\%$ FS

A7: $\leq \pm 0.25\%$ FS

A9: $\leq \pm 0.1\%$ FS, higher than 1 bar

including non-linearity, hysteresis, zero point and full scale error according to IEC 61298-2

Overpressure

1.3 X pressure range

Output type

Digital Interface : RS485 (Half-duplex)

Communication protocols : Modbus RTU

Power supply

Ref. power: DC 24V

Available power: 9...30 VDC

Response time $\leq 5\text{ms}$

Isolation $> 100\text{M}\Omega$ at 100 VDC

Materials

Wetted parts: st. steel 316L

Sensor sealing: FKM

Body: st. steel 304



Pressure Transmitter series ERS.307

Temperature range of

Compensated temperature range: -10...80 °C

Operating: -20...100 °C

Ambient: -40...+125 °C [option]

Storage: -20...100 °C

Storage: -40...125 °C

Thermal error

Zero thermal error: $\pm 0.75\%$ FS @ 25 °C, typical

Span thermal error: $\pm 0.75\%$ FS @ 25 °C, typical

Electrical connection & protection

M12 Plug IP67

mpm plug IP65

DIN 43650 A IP65

Pressure connection

G 1/4", DIN 3852-E with sealing by DIN 3869 ring seals

G 3/8"

G 1/2"

R 1/4"

R 3/8"

R 1/2"

Weight

Approx. 140g



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Technical specifications

Input pressure range

Nominal pressure:
-1...0 bar up to 0...1000 bar

Permissible static pressure:
1.3 x pressure range, max.1100 bar

Output signal / Supply

Modbus protocol via RS485 interface
Baud rates : 9,600 and 115,200 bps
Data type : Float32
Unit of Pressure : bar, kPa, MPa, kgf/cm²,
psi, mmH₂O, mmHg
Unit of Temperature : °C
Supply : 9...30 VDC

Performance

¹Accuracy: ≤ ±0.5%FSO @ 25°C
≤ ±0.25%FSO @ 25°C
≤ ±0.1%FSO @ 25°C
¹ accuracy according to IEC 60770 - limit point adjustment
including non-linearity, hysteresis as well as repeatability

Influence effects:
Longterm stability: ≤ ±0.5%FS / year
Sampling rate : <5ms

Thermal effects (Offset and Span) / Permissible temperatures

FS thermal error: ±0.75%FS @ 25°C, typical
Zero thermal error: ±0.75%FS @ 25°C, typical
Operating temperature: -20...100°C
-40...+125 °C [option]
Compensated temperature: -10...80°C

Electrical protection

Electromagnetic compatibility:
Emission and immunity according to
EN 61326-2-3:20B CCISPR II Group 1, Class A
EN IEC 61000-3-2:2019

Insulation: the transmitter is grounded via
the process connection

Mechanical stability

Vibration: No change at 10 g RMS (20...2000) Hz
Shock: 0.1 g (1m/s) Max.

Materials

Pressure port: stainless steel 316L
Housing / body: stainless steel 304
Sensor diaphragm: stainless steel 316L
Wetted parts: stainless steel 316L

Weather protection grade

■ Ingress protection: IP rating depends
on the electrical connection
and mating connector used.

EMC Test report for CE conformance

■ EN 61326-2-3:2013 / Class A
■ EN 61326-2-3: 2013 / IEC 61326-1:2012

Ordering information

Model code

ERS.307 · · · · · B · option

Accuracy

A4	≤ 0.5 % F.S
A7	≤ 0.25 % F.S
A9	≤ 0.1 % F.S [but, ≥ 1 bar]

Output signal

O11	RS485 communication
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Electrical connection

M	M12 plug, Straight
MA	M12 plug, 90 Angle
P	mpm plug
D	DIN43650 A

Process connection

G2	G 1/2" (PF 1/2")
G3	G 3/8" (PF 3/8")
G4	G 1/4" (PF 1/4")
R2	R 1/2" (BSPT 1/2")
R3	R 3/8" (BSPT 3/8")
R4	R 1/4" (BSPT 1/4")

Pressure range code, unit bar

Code	Range
R01	-1...50
R02	-1...35
R05	-1...24
R07	-1...15
R09	-1...9
R11	-1...5
R19	-1...0
R23	0...1
R26	0...1.6
R28	0...2.5
R30	0...4
R32	0...6
R33	0...10
R35	0...16
R37	0...25
R39	0...40
R41	0...60
R43	0...100
R45	0...160
R47	0...250
R50	0...400
R53	0...600
R55	0...1000
RYY	Others on request

Option code

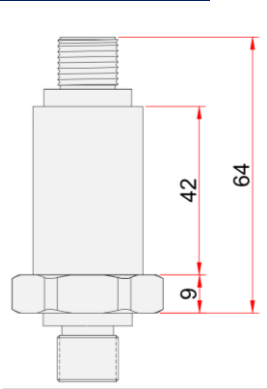
Code	Description
PAA	absolute pressure range [5...6 weeks delivery]
xL	x m cable exstension (0 : 5L = 5 m, 3L = 3 m)
T4	-40...+125 °C
AC25	Restrictor screw in socket hole
TP	St. steel tag plate, 60 x 20 x 0.5t
DMCC	Manufacture calibration certificate
KC	KOLAS Ilac-MRA calibration certificate

How to order

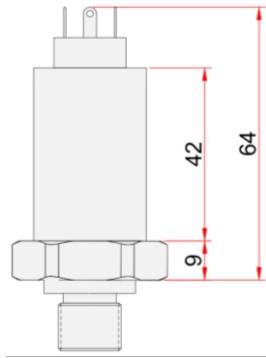
ERS.307.A4.O11.M.G4.BR35

ERS.307, 0.5%, RS485, M12 plug, G 1/4", 0...16 bar

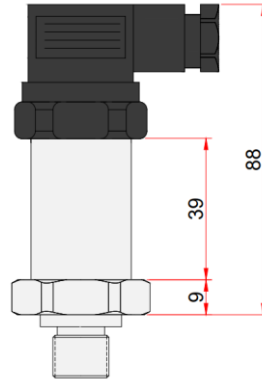
Outline drawing



M12 plug type
/ IP67

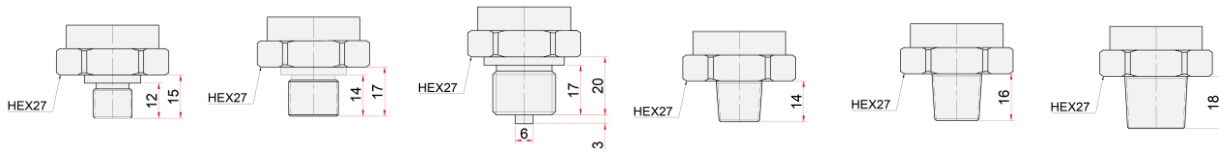


mpm type [option]
/ IP65



DIN 43650A type [option]
/ IP65

Process connection



G1/4" A
DIN EN ISO 1179-2

G3/8" A
DIN EN ISO 1179-2

G1/2" B
EN 837-1

R1/4"
ISO 7

R3/8"
ISO 7

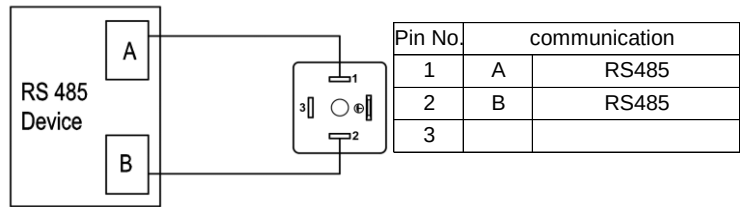
R1/2"
ISO 7

Pin assignment

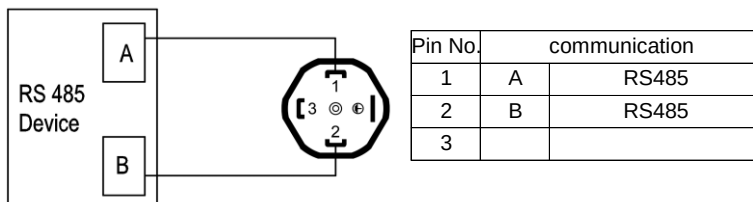
■ Circular connector, M12 x 1, 5-pin / male

Pin No.	communication
1	
2	
3	
4	A Signal RS-485
5	B Signal RS-485

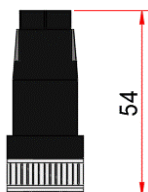
■ mpm plug



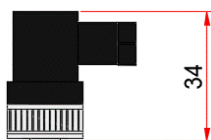
■ DIN 43650A plug



Mating plug to M12 x 1, 5-pin



Straight type



Angle type

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