

Pressure transmitters & on/off relay switches

HD402... SERIES - RELATIVE & DIFFERENTIAL PRESSURE TRANSMITTERS & SWITCHES

INTRODUCTION

The HD402... series consists of pressure transmitters and pressure ON/OFF relay switches for relative pressure (to atmosphere) or differential pressure measurement. Depending on model, it covers ranges from 50 Pa up to 200 kPa and uses a high-stability silicon piezoresistive sensor with temperature compensation for excellent linearity, repeatability and long-term stability. Factory-calibrated and ready to use, the series is available with multiple output types and optional 4-digit LCD for local reading (relay switch versions always include the display).

FEATURES

Accurate & Reliable Sensor

High-accuracy piezoresistive sensing element with temperature compensation for stable performance over time.

Orientation-Independent Installation

Insensitive to mounting orientation and position for easy, flexible installation.

Output Flexibility by Model

Choose the output interface that best fits your controller, PLC or BMS

- 0...10 V and 0/4...20 mA active (HD402Tx)
- 2-wire 4...20 mA loop powered (HD402ATx)
- RS485 Modbus-RTU (HD402STx)
- ON/OFF relay switch SPDT (HD402TRx)

Local Indication (LCD + Alarm Signalling)

Optional 4-digit LCD for direct reading; relay models include alarm LED and internal buzzer.

Low Maintenance / Auto-Zero (low range relay model)

High sensor stability reduces maintenance; HD402TR1L includes an auto-zeroing feature for stable low-range measurements over time without recalibration.

CONFIGURATION & MEASUREMENT

Fast Setup (PC or On-board Dip Switches)

Configuration via serial connection to PC or via quick dip switches on the PCB (model dependent).

Analog Models: Range & Polarity Selection

For analog output models it is possible to select full scale (high / intermediate / low range) and set unipolar (0...+f.s.) or bipolar (-f.s...+f.s.) output scaling.

Relay Models: Local Configuration via Internal Buttons

Relay versions include internal buttons for configuration through the display.

Measuring Ranges

Depending on model: from ± 50 Pa up to ± 200 kPa (relative or differential).



PRECISION YOU CAN TRUST

Temperature-compensated sensor for stable readings over time.



CHOOSE YOUR OUTPUT

Voltage, current, 2-wire loop, Modbus-RTU or relay - depending on the model.



READ IT AT A GLANCE

Optional 4-digit LCD for immediate local indication.



FAST COMMISSIONING

Factory calibrated and ready to use, with quick configuration options.



LOW-DRIFT PERFORMANCE

Long-term stability; auto-zero available on low-range relay version.

Measurement specifications

Sensor	Piezoresistive, High stability
Measuring range	See table
Resolution	See table
Accuracy - FSS = nominal range (= 2 x f.s. high range)	
HD402TR1	±(0.8% measure + 0.5 Pa) @ 0...50 °C
HD402xT1	±1.5% FSS @ 25 °C / ± 3% FSS @ 0...50 °C
HD402xx2	±0.75% FSS @ 25 °C / ± 1% FSS @ 0...50 °C
HD402xx3/4/5	±1% FSS @ 0...50 °C
Long term stability (1000 h) @ 25 °C	
HD402TR1	±0,2 Pa with auto-zero
HD402xT1 /	±0.5% FSS
HD402xx2	
HD402xx3	±0.35% FSS
HD402xx4/5	±0.25% FSS
Overpressure limit	
HD402xx1/2/3	50 kPa
HD402xx4	200 kPa
HD402xx5	400 kPa

Technical specifications

Output	0...10 Vdc or active 0/4...20 mA (HD402T...) 2-wire 4...20 mA (HD402AT...) - RS485 Modbus-RTU (HD402ST...) - ON/OFF relay switch with SPDT contact (HD402TR...)
Alarm (only HD402TR)	Front red LED and internal buzzer
Power supply	24 Vac ± 10% or 18...40 Vdc (HD402T...) 12...30 Vdc (HD402AT... and HD402ST...) 24 Vac ± 10% or 15...36 Vdc (HD402TR...)
Absorption	< 1 W @ 24 Vdc (HD402T..., HD402AT..., HD402TR...) < 100 W @ 12 Vdc (HD402ST...)
Electrical connections	Screw terminal block, max 1.5 mm ² , PG9 cable gland
Connection to PC	Modbus model: RS485 serial port. Connection to a USB port by using RS48 adapter. All other models: RS232 serial port. Connection to a USB port by using CP27 cable.
Response time	0.5 s for the display updating Configurable 0.125, 1, 2 or 4 s for analog and RS485 output
Zero calibration	Automatic for HD402TR1L, manual for the other models

Ordering codes

HD402	Display Blank = without LCD (except HD402TR...) L = with LCD Measuring range 1 = range ± 250 Pa / 25 mmH₂O / 1 inchH₂O / 2.5 mbar 2 = range ± 1000 Pa / 100 mmH₂O / 4 inchH₂O / 10 mbar 3 = range ± 10 kPa / 50 mmHg / 1.5 PSI / 100 mbar 4 = range ± 100 kPa / 500 mmHg / 15 PSI / 1000 mbar 5 = range ± 200 kPa / 1000 mmHg / 30 PSI / 2000 mbar Type of output T = 0...10 V and 0/4...20 mA active analog output AT = 2-wire 4...20 mA analog output ST = RS485 Modbus RTU digital output TR = ON/OFF relay switch output
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Supplied with 2 m of silicone tubing Ø5 mm internal/ Ø8 mm external and two plastic fittings for ducts. PC connecting cable must be ordered separately.

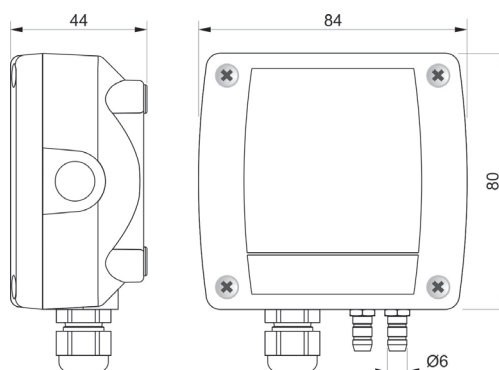
	Measuring range	Resolution
HD402...1	± 50/100/250 Pa	0.1 Pa
HD402...2	± 250/500/1000 Pa	1 Pa
HD402...3	± 2.5/5/10 kPa	0.01 kPa
HD402...4	± 25/50/100 kPa	0.1 kPa
HD402...5	± 50/100/200 kPa	0.1 kPa

For corresponding measuring ranges and resolution in mmH₂O, inchH₂O, mbar, kindly refer to the manual.

Physical specifications

Pressure connections	Ø 6 mm
Compatible media	Only air and non-aggressive dry gases
Operating conditions	-10...+60 °C / 0...95 %RH
Storage temperature	-20...+70 °C
Materials	Housing: ABS Pressure connections: nickel-plated brass
Protection degree	IP65

Dimensions



vs2.0