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Pressure and differential pressure transmitters

General application

Pressure and differential pressure transmitters Type 4304 are suitable for measuring overpressure, vacuum and differential pressure of non-corrosive gases.
Preferred areas of application are: HVAC, level measurement (bubbling-through method), flow measurement and monitoring, and filter technology.
On request, the instrument can be supplied with LC display or with LC display and limit contact(s).

Technical data

Reference conditions
to DIN 16 086 and DIN IEC 770/5.3

Measuring ranges
see ordering details

Overload limit
ranges 0 to 400 mbar
5× full scale
ranges above 400 mbar
2× full scale

Maximum system pressure
(for Δp measurements)
1 bar (on each side)

Bursting pressure
for all ranges > 2 bar

Parts in contact with medium
Ni, Al, CuBe, PU

Output
0 to 10 V, burden ≥ 2 kΩ
0/4 to 20 mA, burden ≤ 500 Ω
4 to 20 mA, burden ≤ (U_B - 12 V) ÷ 0.02 A
2-wire

Burden error
≤ 0.2 %

Zero offset
≤ 0.5 % of full scale

Ambient temperature error
within range +10 to +50 °C
(compensated temperature range)
zero: ≤ 0.02 %/°C typical,
≤ 0.05 %/°C max.
span: ≤ 0.02 %/°C typical,
≤ 0.05 %/°C max.

Characteristic
standard: linear
on request: square root

Deviation from characteristic
≤ 1 % of full scale
(limit point adjustment, incl. hysteresis and repeatability)

Response time
≤ 20 msec

Stability per year
≤ 0.5 % of full scale

Supply
see ordering details

Ripple
max. 1 V_{pp}

Max. current drawn
approx. 25 mA

Supply voltage error
≤ 0.02 % per V
(with rated supply voltage DC 24 V)

Permissible ambient temperature
-10 to +50 °C

Storage temperature
-10 to +70 °C

Permissible temperature of medium
-10 to +50 °C

Electromagnetic compatibility
to basic standards EN 50081-1 and EN 50082-1

Mechanical shock
10 g/0.1 msec

Mechanical vibration
5 g max. at 15 to 2000 Hz

Protection
IP65 to EN 60529
(connecting cable dia. 5 mm min., 7 mm max.)

Housing
ABS

Process connection
see ordering details

Electrical connection
cable gland M12 × 1.5;
internal screw terminals,
for conductor cross-sections up to 1.5 mm²

Limit contact
- contact rating: 6 A, AC 230 V
- adjustability: 0 to 100 % of full scale
- differential: adjustable, 1 to 99 % of set limit
- output per limit contact: 1 relay changeover contact (floating)

Nominal position
standard: vertical ⊥
on request: horizontal ▭
please specify when ordering

Weight
300 g approx.
(400 g approx. with AC supply)

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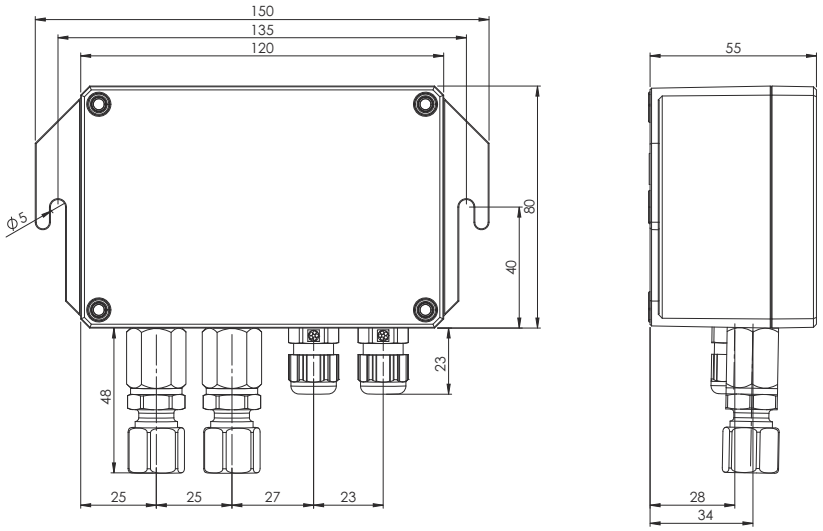
Electrical connection

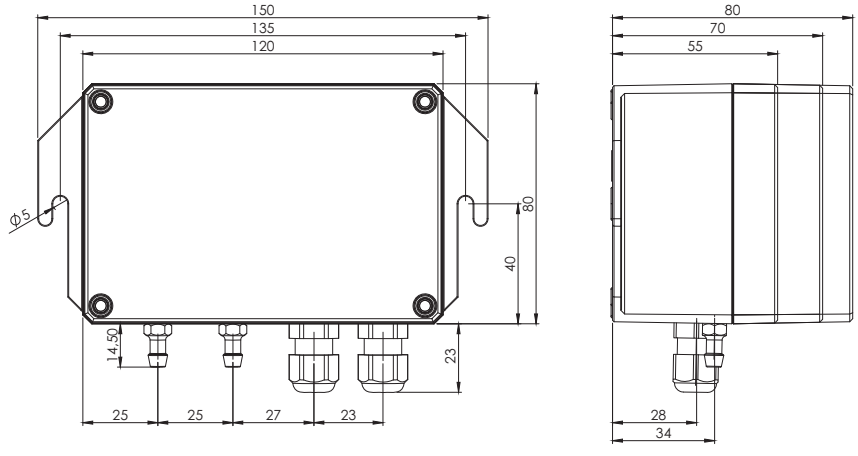
Connection			Terminals Terminal block
Voltage supply DC 19 to 31 V		L - L +	1 2
Voltage supply AC 230 V or AC 115 V or AC 24 V		N L 1	1 2
Output 0 to 10 V, 0/4 to 20 mA, 3-wire		- +	3 4
Output 4 to 20 mA, 2-wire proportional current in voltage supply		- +	1 2

Dimensions

for compression fitting 8 mm (process connection 296)



for hose connection Ø 6.6 × 11 mm (process connection 298)



* 80 for basic type extensions “011”, “012”, “014”, “015” and square root

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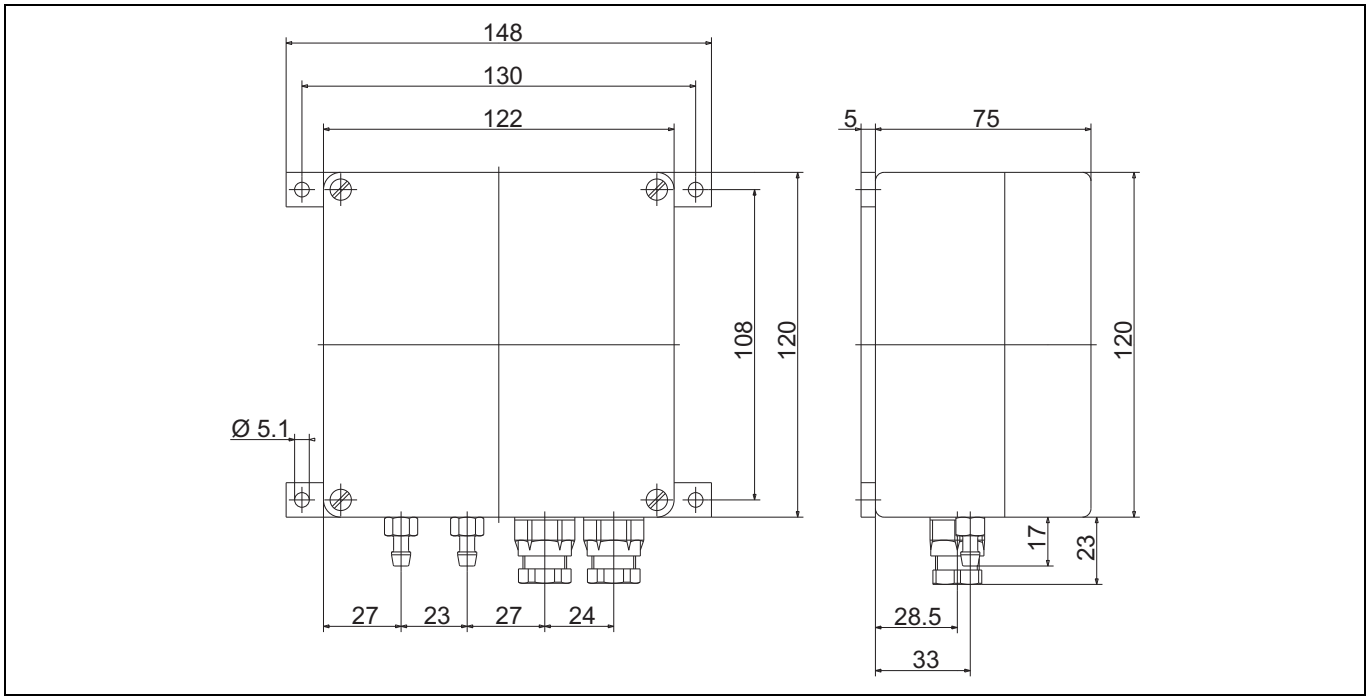
for ranges ≤ 40 Pa (with automatic zeroing)



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Ordering details

	(1)	Basic type
404304/000		Pressure and differential pressure transmitter with inductive measuring system
404304/011		Pressure and differential pressure transmitter with one limit contact[a]
404304/012		Pressure and differential pressure transmitter with two limit contacts[a]
404304/013		Pressure and differential pressure transmitter with LCD display 3 1/2-digit
404304/014		Pressure and differential pressure transmitter with one limit contact and LCD display 3 1/2-digit[a]
404304/015		Pressure and differential pressure transmitter with two limit contacts and LCD display 3 1/2-digit[a]
	(2)	Input
396		0 to 10 Pa[b]
397		0 to 20 Pa[b]
398		0 to 30 Pa[b]
399		0 to 40 Pa[b]
400		0 to 0.5 mbar relative pressure
401		0 to 0.6 mbar relative pressure
402		0 to 1 mbar relative pressure
403		0 to 1.6 mbar relative pressure
404		0 to 2.5 mbar relative pressure
405		0 to 4 mbar relative pressure
406		0 to 5 mbar relative pressure
407		0 to 6 mbar relative pressure
408		0 to 10 mbar relative pressure
409		0 to 16 mbar relative pressure
410		0 to 25 mbar relative pressure
411		0 to 40 mbar relative pressure
412		0 to 50 mbar relative pressure
413		0 to 60 mbar relative pressure
414		0 to 100 mbar relative pressure
415		0 to 160 mbar relative pressure
451		0 to 0.25 bar relative pressure
452		0 to 0.4 bar relative pressure
453		0 to 0.6 bar relative pressure
454		0 to 1.0 bar relative pressure
423		800 to 1000 mbar absloute pressure[c]
422		800 to 1200 mbar absloute pressure[c]
421		900 to 1100 mbar absloute pressure[c]
420		950 to 1050 mbar absloute pressure[c]
488		0 to 1,0 bar absloute pressure
999		Special measuring range relative pressure
	(3)	Output
402		0 to 20 mA, three-wire
403		0 to 20 mA, three-wire, square root
404		4 to 20 mA, two-wire, squre root
405		4 to 20 mA, two-wire
406		4 to 20 mA, three-wire
407		4 to 20 mA, three-wire, square root
415		0 to 10 V, three-wire
416		0 to 10 V, three-wire, square root
451		0 to 20 mA, three-wire, extended response time
452		0 to 20 mA, three-wire, extended response time, square root
453		4 to 20 mA, two-wire, extended response time

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454		4 to 20 mA, three-wire, extended response time
455		4 to 20 mA, three-wire, extended response time, square root
456		0 to 10 V, three-wire, extended response time
457		0 to 10 V, three-wire, extended response time, square root
	(4)	**Voltage supply**
02		AC 230 V, -10 to +6 %, 50 to 60 Hz
05		AC 115 V, -10 to +6 %, 50 to 60 Hz
08		AC 24 V, -10 to +6 %, 50 to 60 Hz
27		DC 12 to 32 V (only with output 4 to 20 mA, 2-wire)
28		DC 19 to 31 V ±0 %
	(5)	**Process connection**
296		Compression fitting 8 mm
298		Hose connection 6.6 mm × 11 mm dia.

[a] Devices with basic type extensions shown above can not be delivered with square root outputs (403, 407, 416, 452, 455, 457) an two-wire outputs (405, 453) also not with DC 12 bis 32 V (voltage supply 27).

[b] Devices with inputs shown above can not be delivered with two-wire outputs (405, 453) and DC 12 to 32 V (voltage supply 27). The housing is 122 mm × 120 mm × 75 mm. An automatic zeroing is possible.

[c] These inputs are for barometric pressure measurement (if applicable, state site altitude a.m.s.l.).

	(1)		**(2)**		**(3)**		**(4)**		**(5)**
Order code		-		-		-		-	
Order example	404304/000	-	414	-	405	-	27	-	298

Lagerausführungen

Article	**Part no.**
404304/000-408-405-27-298	00382800
404304/000-410-405-27-298	00384775