CRV-815/816

- multi range differential pressure transmitter for gas and compressed air
- differential pressure: from 0...1.6 mbar up to 0...1000 mbar
- output signal: 2-wire: 4 ... 20 mA; 3-wire: 0...10 V / 0...20 mA (0...5 V, 4...20 mA switchable)
- silicon sensor
- accuracy 0.5 % span
- adjustable ranges and damping
- high overpressure capability
- compact form
- LC-display, two-line

The pressure transmitter **CRV-815/816** was developed for the di erential pressure measuring for dry, non aggressive gases and compressed air and can be used for several HVAC applications. The CRV-815/816 is a multi-range transmitter with up to three adjustable ranges.
The device is equipped with a two-line LC display optionally and can be simply parameterized. Values, status of the contact and the unit are shown on the display.

PREFERRED AREAS OF USE ARE

Medical

HVAC

TECHNICAL DATA

Input pressure range						
Nominal pressure P_N [mbar] (di erential, gauge pressure)	1,6	4	10	40	250	1000
Adjustable to P_N [mbar]	1,0	2,5	6	25	60 / 160	400 / 600
Nominal pressure P_N symmetric (di erential pressure) [mbar]	±1.6	±4	±10	±40	±250	±1000
Max. static pressure [mbar]	200	200	200	345	1000	3000

Output signal / Supply			
Standard	3-wire:	0 ... 10 V / 0 ... 20 mA	V_S = 19 ... 32 V_{DC}
	switchable on:	0 ... 5 V / 4 ... 20 mA	
		with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}
Option	2-wire:	4 ... 20 mA	V_S = 11 ... 32 V_{DC}
		with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}
Performance			
Accuracy	for P_N < 6 mbar: ≤ ± 0,5 % span BFSL	for P_N ≥ 6 mbar ≤ ± 1 % span BFSL	
Permissible load	voltage 3-wire: R_{min} = 10 kW	current 3-wire: 330 W	
	current 2-wire: $R_{max} = [(V_S - V_{S\,min}) / 0{,}02\ A]$ W		
Influence e ects	supply: 0.05 % span / 10 V	load: 0.05 % span / kW	
Response time T_{90}	< 100 ms; adjustable by potentiometer in the range of 0 msec up to 5000 msec		
Turn on time	500 ms		
Long term stability	≤ ± 0.5% span / year at reference conditions, for P_N < 6 mbar ≤ ± 0.2% span / year at reference conditions, for P_N ≥ 6 mbar		
Measuring rate	12,5 Hz		

Contact (optional)		
	3-wire version	2-wire version (optional)
Number, form	2 x relay-output (NO/NC)	2 x PNP-open-collector-contact
switching current switching voltage switching capacity	max. 2 A max. 220 V_{DC}; max. 250 V_{AC} max. 60 W	max. 125 mA resistant; short-circuit-proof
Accuracy of switching points	≤ ± 2 % span	≤ ± 2 % span
Accuracy of repeatability	≤ ± 0.5 % span	≤ ± 0.5 % span
Switching frequency	5 Hz	5 Hz
Switching cycles	< 100 x 10^6	< 100 x 10^6

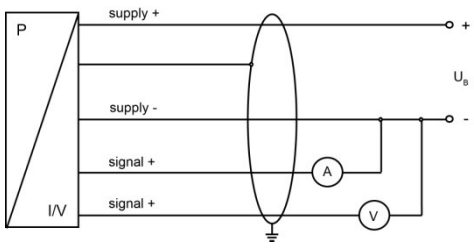
Thermal e ects / Permissible temperatures	
Thermal error (o set and span)	for P_N < 6 mbar: ≤ ± 0,5 % span / 10 K (typ.) for P_N ≥ 6 mbar : ≤ ± 0,3 % span / 10 K (typ.)
in compensated range	0 ... 50 °C
Permissible temperatures	medium: 0 … 50°C electronics / environment: 0 … 50°C storage: -10 … 70°C
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic protection	EMC directive: 2014/30/EU emission and immunity according to EN 61326
Materials	
Pressure port	brass nickel plated
Housing	ABS
Sensor	Ceramic, silicon, epoxy, RTV
Media wetted parts	pressure port, PVC / silicone tube, sensor
Display (optional)	
Performance	two-line LC-Display, visible range 32.5 x 22.5 mm; 5-digit 7-segment-main display, digit size 8 mm, range of indication: ±9999; 8-digit 14-segment-additional display, digit size 5 mm; 52-segment-bargraph; accuracy: 0,1% ±1 digit
Functions	- parameterisation of contacts - selection of units - selection of signal (linear, square root extraction) - cut-off-function (only with square root extraction) - min- / max-value - re calibration - auto zeroing - factory setting
Miscellaneous	
Current consumption	2-wire: max. 22 mA 3-wire: max. 30 mA (during automatic zero adjustment: +23 mA)
Weight	Approx. 200 g
Ingress protection	IP 54
Installation position	vertical [1]
[1]The devices are calibrated in a vertical position with the pressure port down. If this position is changed on installation there can be slight deviations in the zero point.	
Mechanical connections (dimensions in mm)	
Standard	Ø 6,6 x 11 (for flex. tubes Ø 6)
Option	Ø 4,4 x 10 (for flex. tubes Ø 4)
Electrical connections (conductor cross-section)	
without ferrule	1.5 mm²
with ferrule	1 mm²

ELECTRICAL CONNECTION

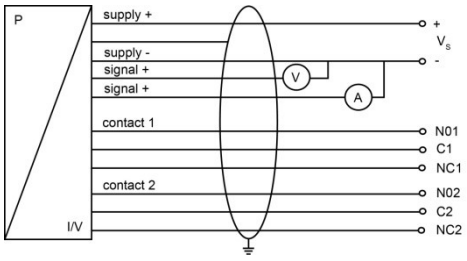
Pin configuration		
Standard	cable gland M16x1,5	
Electrical connections	3-wire	2-wire
supply +	VS +	VS +
supply –	VS -	VS -
signal + (only for 3-wire)	Iout / Vout	-
contact 1	C1 / NO1 / NC1	S1
contact 2	C2 / NO2 / NC2	S2

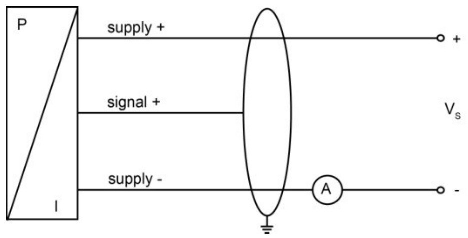
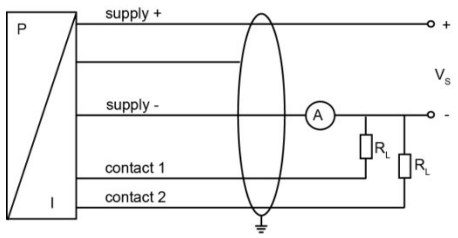
Wiring diagram

3-wire-system (current / voltage)



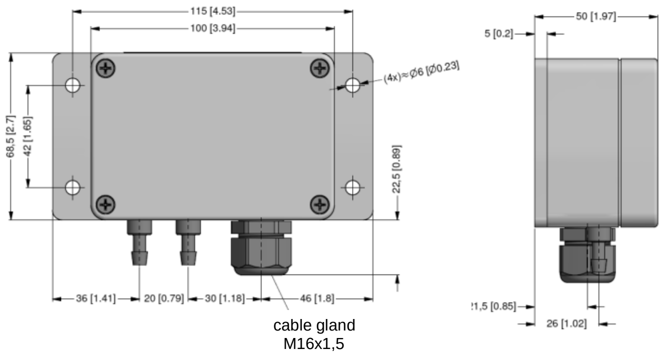
3-wire-system (current / voltage) with 2 contacts



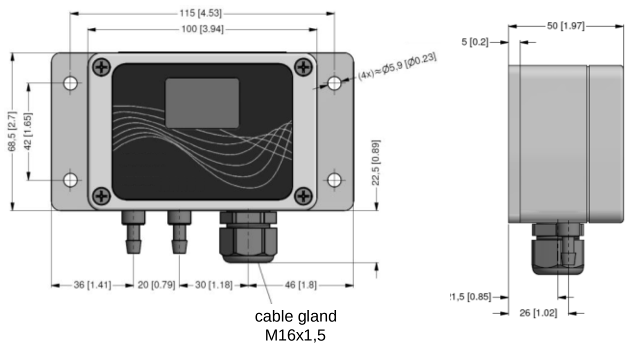
2-wire-system (current)	2-wire-system (current) with 2 contacts
	

DIMENSION DRAWINGS

without display



with display



ORDER CODE

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Pressure	
Differential pressure	8 1 5
Gauge pressure	8 1 6
Input [mbar]	
0 … 1,6	0 0 1 6
0 … 4	0 0 4 0
0 … 10	0 1 0 0
0 … 40	0 4 0 0
0 … 250	2 5 0 0
0 … 1000	1 0 0 1
-1.6 … 1,6	S 1 K 6
-4 … 4	S 0 0 4
-10 … 10	S 0 1 0
-40 … 40	S 0 4 0
-250 … 250	S 2 5 0
-1000 … 1000	S 1 0 2
Customer	9 9 9 9
Customer - underpressure	X X X X
Output	
3-wire: 0 … 5 V/ 0 … 10 V / 0 … 20 mA / 4 … 20 mA (switchable)	3Z
2-wire: 4 … 20 mA	1
Customer	2
Switching Outputs	
Without	0
2 switching contacts (only in combination with display)	B
Accuracy	
1% ($P_N \geq 6$ mbar)	8
2% ($P_N < 6$ mbar)	G
Display	
Without display	0
LC display	C
Customer	9

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Mechanical connection								
Ø 6,6 x 11 (for flex. tubes Ø 6)	Y	0	0					
Ø 4,5 x 10 (for flex. tubes Ø 4)	Y	0	2					
Customer	9	9	9					
Pressure port								
Brass nickel plated				M				
Customer				9				
Special version								
Standart					0	0	0	
Automatic zeroing					6	0	0	
Squere-root extraction (only in combination with display)					6	0	5	
Customer					9	9	9	

Manufacturer reserves the right to change sensor specifications without further notice.