DIGITAL DIFFERENTIAL PRESSURE GAUGE/SWITCH

The Series CDPR Digital Differential Pressure Gauge/Switch combine the functions of digital differential pressure gauge of large led display with two relays for control function. Switch setting is easy to adjust with 3 key buttons.

FEATURES:

- Easy to read LED display provides immediate local alerts allowing corrective action to be taken quicker to eliminate problem from becoming widespread.
- 2 SPST relays with adjustable deadbands and alarm operation for hi-low limit.
- Multiple ranges, outputs and selectable engineering units.

APPLICATIONS:

- It can measure and control system pressure of fan, blower, filter, furnace draft and orifice plate and can apply to various clean room, biological safety cabinet, clean bench, dust collection systems, medical or pharmaceutical machine, etc.

MODEL CHART FOR DIGITAL DIFFERENTIAL PRESSURE GAUGE / SWITCH

Series	CDPR		Digital Differential Pressure Gauge/Switch
Range		x	Range Selection

SPECIFICATIONS:

Medium: Air & Non-Combustible, Non-corrosive air
Operating Temp.: 0-60°C
Materials: cast aluminum housing and PC plate
Storage Temp.: -20~70°C
Compensated Temp.: 0-50°C
Work pressure: 1, 2, 5 or 10kPa for different ranges overload 5xFS, burst 10xFS
Connection: 1/8" ID tubing, two pairs (on left side and back)
Display: 4 bits 0.8" red LED
Relay output: 2×SPST, 3A×30VDC/250VAC
Electrical wiring: cable terminals from back of the enclosure
Accuracy: ±1.0% FS
Long term stability: ±0.5%FS /Year
Thermal effect: <0.05%FS/°C(Zero), < 0.08%FS/°C(FS)
Response time: 0.5-30s
Power: 16-28V AC/ DC, optional 85-265V AC
Key: 3 buttons
Protection: IP65
Approval: CE

Code	UNIT & Range & Display Resolution					
	Pa	**Pa**	**kPa**	**in w.c.**	**mm w.c.**	**mbar**
0	0-25	25.00	0.025	0.100	2.500	0.250
Q	0-60	60.00	0.060	0.250	6.000	0.600
H	0-125	125.0	0.125	0.500	12.00	1.250
1	0-250	250.0	0.250	1.000	25.00	2.500
2	0-500	500.0	0.500	2.000	50.00	5.000
4	0-1000	1000	1.000	4.000	100.0	10.00
10	0-2500	2500	2.500	10.00	250.0	25.00
20	0-5000	5000	5.000	20.00	500.0	50.00
40	0-10000	10000	10.000	40.00	1000.0	100.00

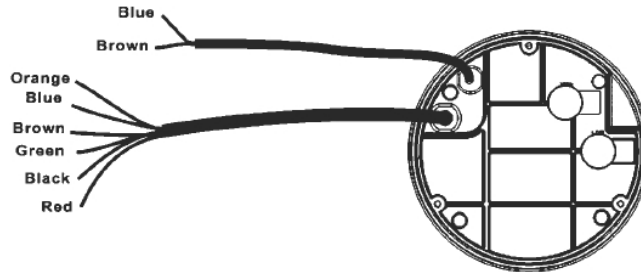For zero center models, add "Z" at the end of the model.
For example, CDPR-QL-LEDZ, means -60-0-60 Pa.
Range 20, 40 is not available with Zero Centre

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Connection

Different models have different electrical connections. Refer to the table as below (x means for any models).

Models	Six Cores Cable						Two Cores Cable	
CDPR	Cable Color	Red	Black	Green	Brown	Blue	Orange		
	Electrical Signal	+24V	GND	NO2	COM2	NO1	COM1		
CDPT(85-265V AC models)	Cable Color			Green	Brown	Blue	Orange	Brown	Blue
	Electrical Signal			NO2	COM2	NO1	COM1	220VAC-L	220VAC-N

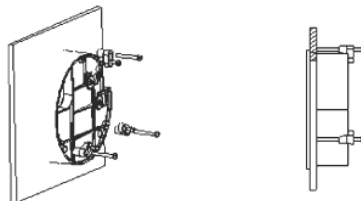## Operation Instruction

Refer to **CDPR DIGITAL DIFFERENTIAL PRESSURE GAUGE/SWITCH- Operation Instruction.**

Installation

Surface mount
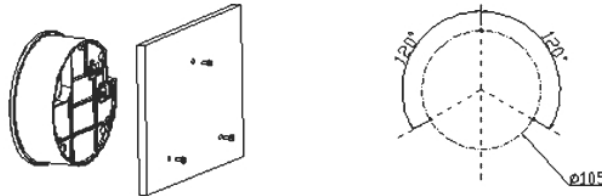
Embedded mount

Zero reset & Calibration

According to different environment and sensor's characteristics, after long period of using, the sensor's accuracy may reduce. The gauge should be zero reset after initial installed to meet the specified accuracy, and be zero reset periodically in every 6-12 months' using, or when the accuracy reduces. it is recommended to be zero reset after 7 days continuous using.

Zero reset: keep the high/low pressure ports unconnected in stable air, or directly connect the two, press the button ► for 5s to reset the actual "zero point". It means "remove the zero drift of the gauge in order to improve the accuracy". It is recommended that this operation could be done periodically.

Note: it should be clear that the "zero point" of the input differential pressure is different from the "zero output position" of the gauge. "zero point" means the point that the input differential pressure is 0, and "zero output position" means the low limit value of the measuring range.

Initial zero reset: when initial power on, it should be zero reset after fully warm-up and stable, to meet the specified accuracy.

Long term zero drift & reset: It may have long term zero drift after continuous working; customers can reset it periodically.

Re-calibration & zero reset: when re-calibration needed, zero reset should be done first. A qualified standard manometer is needed for re-calibration operation. Please follow the operation procedures below.

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Attention

It should be power OFF during installing and wiring. When using 24VAC, it is strongly recommended to power the unit with independent transformer. If sharing a 24VAC transformer with other equipments such as controllers, transmitters or actuators, please make sure the terminals 24V and GND are connected correctly. Otherwise, it may lead to severe damages.

Warranty

● It has limited warranty for twelve (12) months after the production date.

● It does not extend to any unit that has been subjected to misuse or accident.

● It is, in any event, strictly limited to the replacement or repair of the product itself.

CDPR DIGITAL DIFFERENTIAL PRESSURE GAUGE/SWITCH - Operation Instruction

Button definition:

Set/Save   Bit Select/decrease   Adjust/increase

Zero reset: keep the high/low pressure ports unconnected in stable air, or directly connect the two, press the button ► 5s to reset the actual "zero point". It means "remove the zero drift of the gauge in order to improve the accuracy". It is recommended that this operation could be done periodically.

Note: it should be clear that the "zero point" of the input differential pressure is different from the "zero output position" of the gauge. "Zero point" means the point that the input differential pressure is 0, and "zero output position" means the low limit value of the measuring range.

Operation instruction:

1."P810": Reset
User can resume the factory default set. Input "P810", "PRET" will flash, press button ●, all factory default set will restore.

2. "P075": Set the smoothing time (Default set: 0.7s, available range: 0.5-30.0s)
●→►/▲→P075→●→►/▲→XXX→●finish. (XXX means set time)

3. "P083": Check LED display function, it will display the 4 digits one by one.
●→►/▲→P083→●finish

4."P081": Set Engineering Unit (Default set: 1, for engineering unit Pa, available ranges: 1-5)
●→►/▲→P081→●→►/▲→XXX→● finish (XXX means the code of engineering unit), then the relevant LED on.
(Index: 1: Pa; 2: kPa; 3: mbar; 4: mmW.C.; 5: inW.C.)

5. "P401": Relay 1 Set (default set: 0, 50, 5, 0, 1)
●→►/▲→P401→●→►/▲→XXX→●→►/▲→XXX→●→►/▲→XXX→●→►/▲→XXX→●→►/▲→XXX→●finish
XXX means 5 settable parameters, stands for relay output mode, parameter #1, #2, #3 and #4 respectively.

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Mode	Description	Para. #1	Para. #2	Para. #3	Para. #4	Definition
0	Cancel relay alarm function	N/A	N/A	N/A	N/A	Relay OFF
1	Relay actuate when input is lower than setpoint	Setpoint	Deadband	Actuate delay	Restore delay	Relay ON ▲Deadband▼ Relay OFF ▲Setpoint
2	Relay actuate when input is higher than setpoint	Setpoint	Deadband	Actuate delay	Restore delay	Relay OFF▼ Deadband▲ Relay ON ▲ Setpoint
3	Relay actuate between high and low limits	Low limit	High limit	Actuate delay	Restore delay	Relay OFF▲ Relay ON▲ Relay OFF Low limit ▲ ▲ High limit
4	Relay actuate outside high and low limits	Low limit	High limit	Actuate delay	Restore delay	Relay ON▼ Relay OFF▼ Relay ON Low limit▲ ▲ High limit

Available actuate or restore delay: 0~100 seconds.

When negative parameters needed, should set any of the LEDs last 3 bits not to be zero, then press ▶ to make the first (thousand) bit flash, then use ▲ to set 0～9～0～-9 in cycle.

Relay pause hot key: in normal status press ▲ over 2 seconds, Alarm will pause actuate delay times.

6."P402": Relay 2 Set (default set: 0, 50, 5, 0, 1)

●→▶/▲→P402→●→▶/▲→XXX→●→▶/▲→XXX→●→▶/▲→XXX→●→▶/▲→XXX→●→▶/▲→XXX→● finish

XXX means 5 settable parameters, stands for relay output mode, parameter #1, #2, #3 and #4 respectively.

For other operation, the same as above "P401".

System Error signal:

Err 1   Keys input operation code is wrong

Err 2   Input data is not available

Err 6   Password Key input error