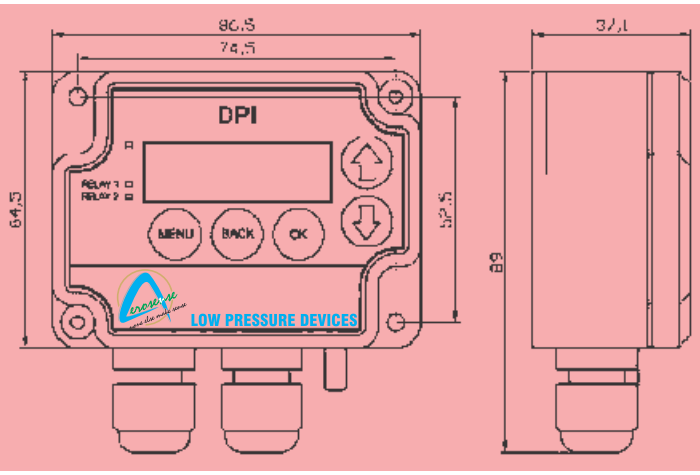
AEROSENSE™

SERIES DPI

AEROSENSE DIFFERENTIAL PRESSURE CONTROLLER



The **DPI** series electronic pressure measuring devices are engineered for building automation in the HVAC/R industry. The most technologically advanced and versatile electronic differential pressure switches on the market, combining up to two relay outputs and 0–10 V output options.

Application:

Series DPI devices are commonly used in HVAC/R systems for:

- Fan, blower and filter monitoring
- Staircase pressure monitoring and alarm
- Pressure monitoring in clean rooms
- Boiler pressure monitoring and alarm

Auto Zero Feature:

AZ-calibration is a function in the form of an automatic zeroing circuit built into the PCB board. The AZ-calibration electronically adjusts the transmitter zero at predetermined time intervals (every 10 minutes). The AZ-calibration eliminates all output signal drift due to thermal, electronic or mechanical effects, as well as the need for technicians to remove high and low pressure tubes when performing initial or periodic transmitter zero point calibration.

The AZ adjustment takes 4 seconds. To avoid conflict with the BAS system, the output and display values will freeze to the latest measured value, after which the device returns to its normal measuring mode. Transmitters equipped with the AZ-calibration are virtually maintenance free.

When the AZ-calibration option is not selected, the product is provided with a manual pushbutton autozero. To maintain proper functionality and accuracy of the transmitter, it is recommended that the manual pushbutton autozero point calibration is performed annually, at a minimum.

Technical Specification:

Service: Dry air or non-aggressive gases
Measuring units: PA, kPA, MM WC, IN. WC, mBar selectable via menu
Measuring element: Piezo resistive
Operating Temperature:
Without autozero: -10...50 °C
With autozero: -5...50 °C
Storage temperature: -20...70 °C
Humidity: 0 to 95 % RH, non-condensing
Accuracy: ±0.5 % F.S.
Long term stability: Typical 1 year
With autozero: ±1 Pa
Without autozero: ±8 Pa
Overpressure:
Proof pressure: 25 kPA
Burst pressure: 30 kPA
Zero point calibration: Automatic with autozero (-AZ) circuit or Manual via menu
Response time: 0.5/10 s, selectable via menu
Dimensions: 89 x 86.5 x 37.1 mm
Weight: 150 g
Materials: ABS
Protection standard: IP54
Touch sensitive buttons on the lid: Menu, Back, OK, down arrow, up arrow
Display: 3 1/2 digit LCD backlit display
Size: 46.0 W x 14.5 H mm
Electrical connections:
V out: Terminal block (24 V, GND, 0–10 V)
Wire: 12–24 AWG (0.2–1.5 mm²)
Relay 1: Terminal block (NC, COM, NO)
Wire: 12–24 AWG (0.2–1.5 mm²)
Relay 2: Terminal block (NC, COM, NO)
Wire: 12–24 AWG (0.2–1.5 mm²)
Cable entries:
Strain relief: M16 & M20
Knockout: 16 mm
Knockout: 20 mm
Pressure fittings: 5.2 mm barbed brass
Circuit: 3-wire (24 V, GND, 0–10 V)
Input:
Without autozero: 21–35 VDC/ 24 VAC, ±10 %
With autozero: 24 VAC or VDC, ±10 %
Output:
Analog: 0–10 VDC, Relay 1: 250 VAC / 30 VDC / 6 A
Relay 2: 250 VAC / 30 VDC / 6 A
Resistance minimum: 1 kΩ
Current consumption: 35 mA relays (7 mA each) AZ circuit (20 mA) 0–10 V output (10 mA)
Conformance: Meets requirements for CE marking

Model Selection Table:

Model	Field Selectable **Measuring Range** using menu
DPI2500-2R-D	100 / 250 / 1000 / 2500 PA
DPIC500-2R-D	±100 Pa / ±250 / ±300 / ±500 PA

Add –AZ for models with Auto-Zero Feature.
For E.g.: DPI2500-2R-AZ-D

www.aerosense.sg
sales@aerosense.sg

Enquiry: +91-22-25126500

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High point adjustment (span)

Note! Supply voltage should be connected one hour before the span point adjustment is carried out.

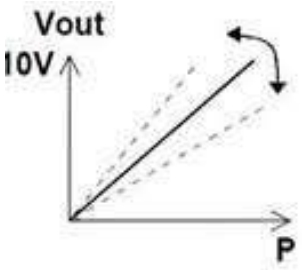
Note! Span point must not be adjusted without input pressure. If the span point is adjusted with 0 Pa or close to 0 Pa input pressure the device may lose its accuracy and will not give out correct readings.

In this case go to menu and select “Span” and then “Reset”. This resets the span adjustment.

To adjust the span, you need an accurate reference meter.

Follow these steps to correctly adjust the span

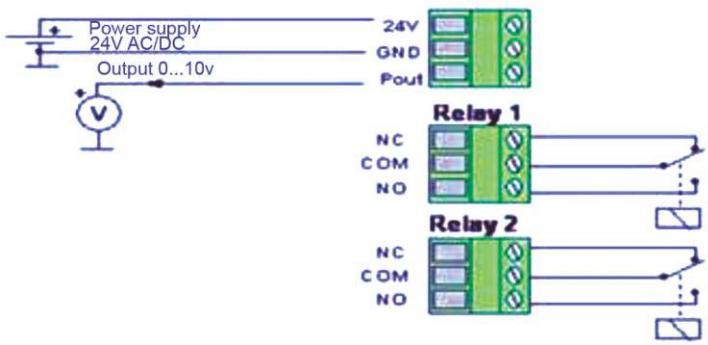
1. Set the zero point
2. Connect the input pressure
3. From the menu select “Span” and then “Adjust”
4. Adjust the display or 0….10V value to match the reference meters’ value using the arrow buttons and confirm by pressing OK



Installation

Notes when using high voltage for relays (115VAC…….250VAC)
The supply cable and control cable for relays should be separate if high voltage
(115VAC…250VAC) is used in relay contacts. Both cables have their own cable entry

Electrical connection diagram:



The settings are done according to the instructions below: