

DIFFERENTIAL PRESSURE INDICATOR DPI



Model summary

Each device has 4 selectable measuring ranges. Each device is individually temperature compensated.

4 range model - AZ for autozero element* - 2R for 2 relays - D for display	range 1	range 2	range 3	range 4	Accuracy %/FS **) Within operation temp. -10...+50°C	Long term stability typical 1 year	
						-AZ	without -AZ
DPI+/-500 (-AZ-2R) -D	±100Pa	±250Pa	±300Pa	±500Pa	±0,7% (±1,5% initial)	≤ ± 1 Pa	≤ ± 8 Pa
DPI2500 (-AZ-2R) -D	100Pa	250Pa	1000Pa	2500Pa	±0,7% (±1,5% initial)	≤ ± 1 Pa	≤ ± 8 Pa

*) -AZ model recommended when measuring pressures below 250 Pa.

**) %/FS from highest pressure range (including: general accuracy, temperature drift, linearity, hysteresis and repetition error).

Initial value is the factory calibration accuracy, better accuracy can be achieved with span point calibration.

The device has 0...10V output and 1 or 2 relay outputs (depending on the model).

The Differential Pressure Indicator is delivered individually packed with standard accessories (see accessories).

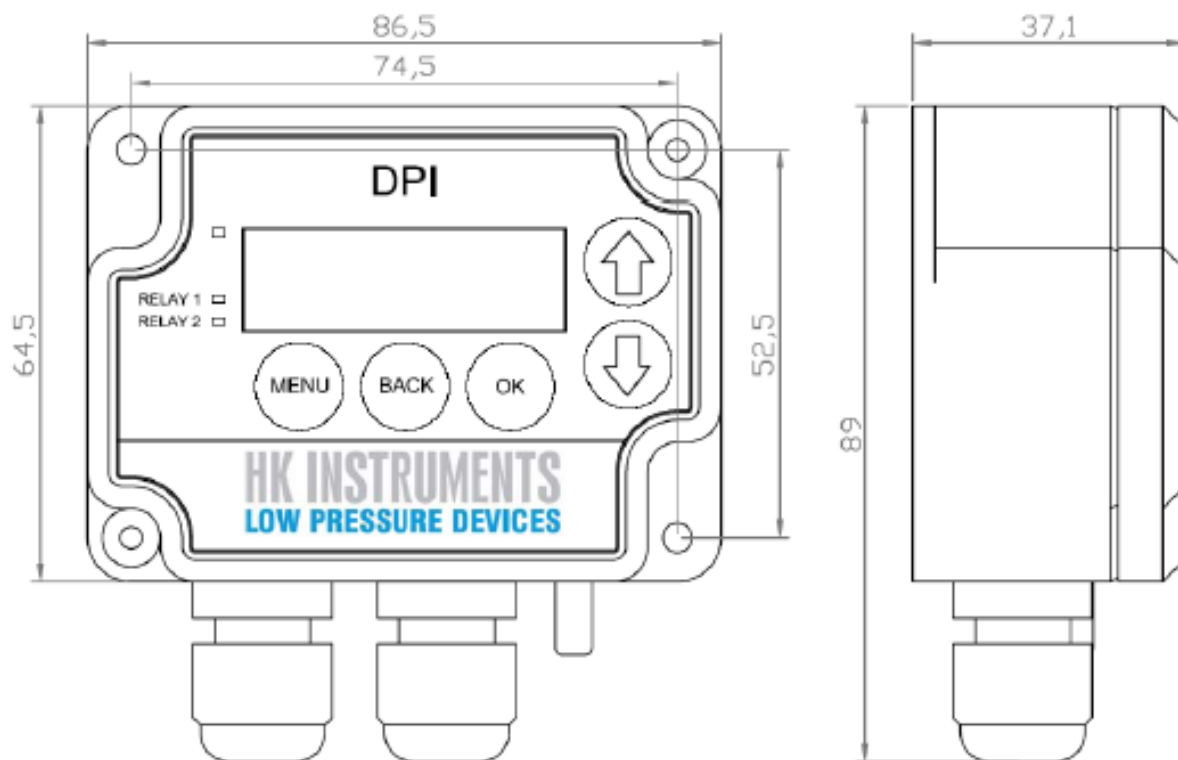
Technical data

Bursting pressure	30 kPa
Suitable media	Air and non-aggressive gases
Measuring element	Piezoresistive
Electrical interface	Supply voltage 21-35VDC/24VAC \pm 10%, with AZ option 24VDC/VAC \pm 10% Current consumption 35mA + relays (7mA each) + AZ (20mA) + 0...10V output (10mA) Output signals, basic version Relay output (250VAC / 30VDC / 6A) 0...10V, L min 1k Ω Output signals, 2R version Relay output 1 (250VAC / 30VDC / 6A) Relay output 2 (250VAC / 30VDC / 6A) 0...10V, L min 1k Ω
Materials	Housing ABS Cover PC Pressure connections ABS Duct connectors ABS Tubing PVC, soft
Connections	Electrical connections Power and 0...10V out 3 x screw terminals, max 1.5 mm ² Relays 2 x SPDT 6 x screw terminals, max 1.5 mm ² Cable entries M16 and M20 Pressure connections Male \varnothing 5,0 mm and 6,3 mm
Weight	150 grams, with accessories 290 grams
Dimensions	90,0 x 71,5 x 36,0 mm
General ambient condition	Temperature range Operation -10...+50°C (-5...+50°C for -AZ model) Storage -20...+70°C Ambient humidity 0 to 95% RH
Safety	Protection standard IP54 Conformance Meets the requirements for CE marking: EMC directive 89/336/EEC Rohs Directive 2002/95/EY

Accessories

Standard accessories:	Optional accessories:
<ul style="list-style-type: none">○ 2 fixing screws○ 2 plastic duct connectors○ 2 m tube \varnothing 4 / 7 mm	<ul style="list-style-type: none">* Metallic duct connector

Dimensions

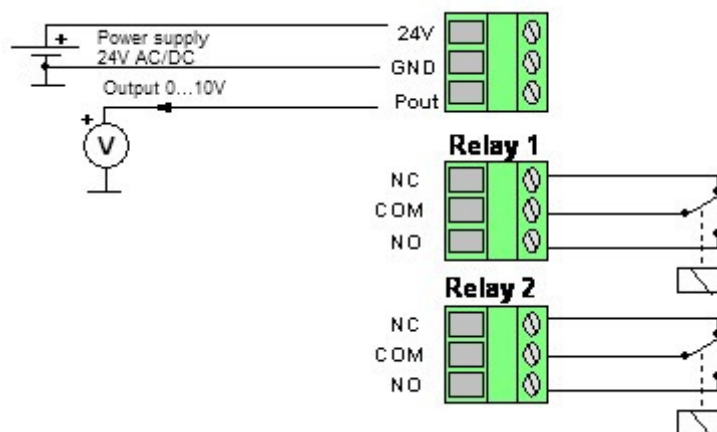


Installation

Notes when using high voltage for relays (115VAC...250VAC)!

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

Electrical connection diagram



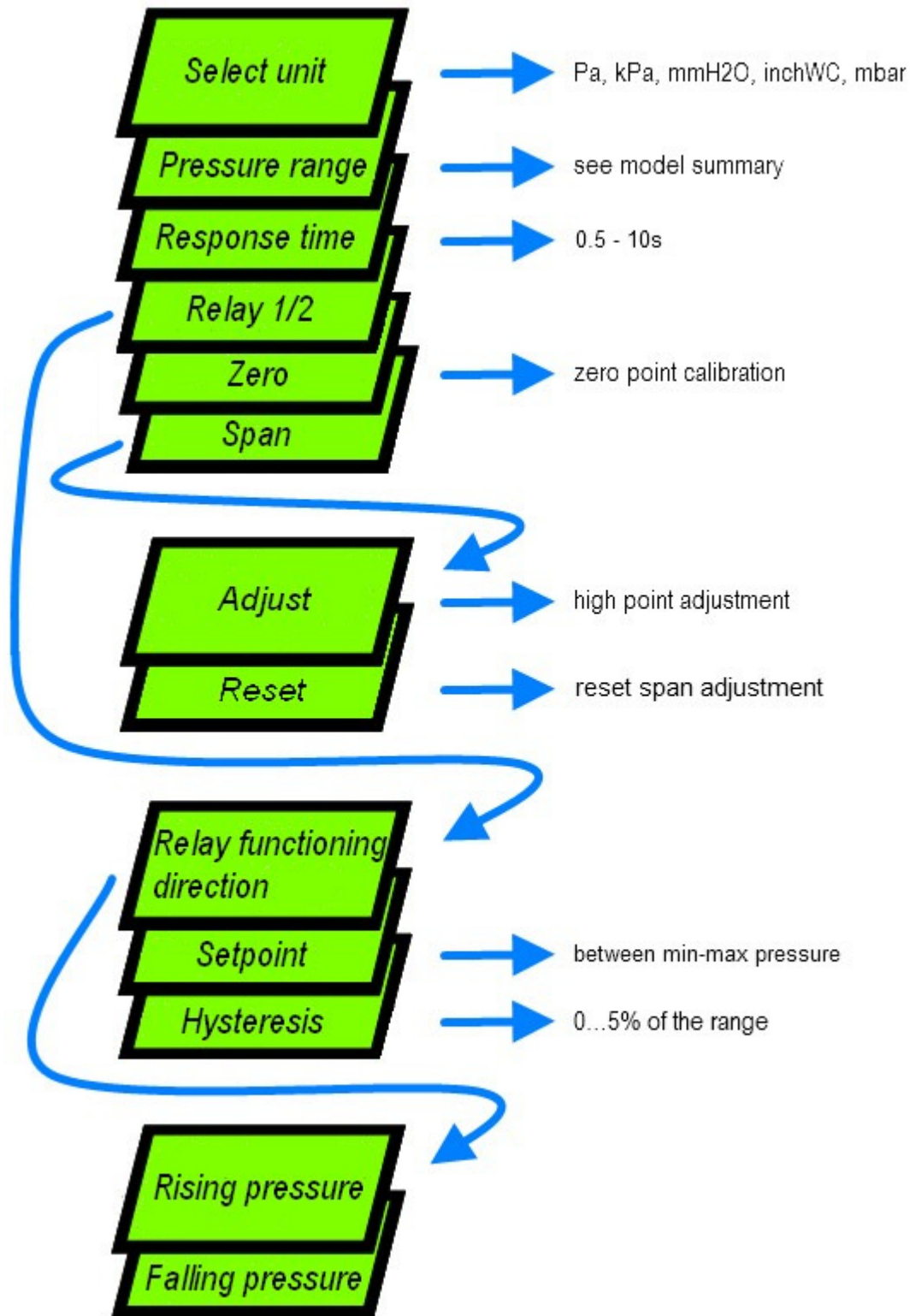
The settings are done according to the instructions below:

with the **MENU** button you can enter the menu by pressing the button for 3 seconds, when in menu you can exit anywhere without making changes

with the **BACK** button you can return without making changes

with the **OK** button you can open new options or confirm changes and return to previous display

with the **↓** **↑** buttons you can scroll the menus



Zero point adjustment

Note! Supply voltage must be connected one hour before the 0-point adjustment is carried out.

- 1) Disconnect both tubes from the pressure inlets + and –
- 2) Push both arrow buttons or select "Zero" from the menu → green led turns off and "Zero" text followed by a counter from 3 to 0 seconds is displayed
- 3) Wait until the green led turns on again and then connect the tubes back to the pressure inlets

It is recommended to adjust the zero point every 12 months during normal operation.

* If the transmitter is equipped with automatic zero element the manual push button adjustment is not required.

* Auto zero element

Optional auto zero element makes the DPI maintenance free of periodical push button zeroing. The AZ element automatically adjusts the zero point of the transmitter from time to time; this eliminates the zero point long term drift of the piezo resistive sensing element.

Zero point adjustment takes about 4 seconds to perform and it is carried out every 10 minutes. Initially after power on, zero point is adjusted more often. After some time it is carried out every 10 minutes. During zero point adjustment the 0...10V output and relay outputs maintain their values and the display shows "zero" text.

If zero point is adjusted manually there is no need to disconnect the tubes when transmitter is equipped with the auto zero element.

High point adjustment (span)

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

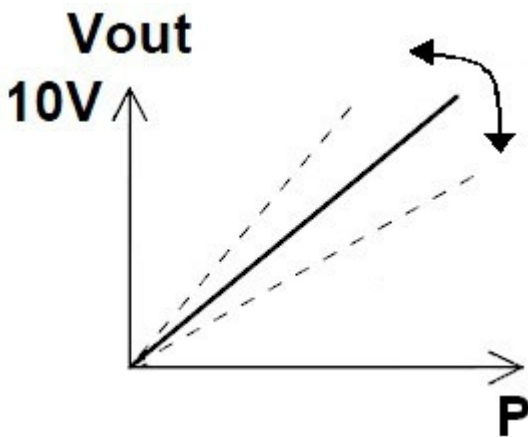
Note! **Span point must not be adjusted without input pressure.** If the span point is adjusted with 0 Pa or close to 0 Pa input pressure the device may lose its accuracy and will not give out correct readings. In this case go to menu and select "Span" and then "Reset". This resets the span adjustment.

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 meter's value using the arrow buttons and confirm by pressing OK

*see section "Zero point adjustment"



How span adjustment affects the measurement