PAC50 TURNS PRESSURE INTO COLORS

Pressure sensors

WHY THE PAC50 OFFERS MORE AT A GLANCE

Optimal monitoring of relevant process parameters is essential for increasing efficiency and conserving resources. SICK offers a broad range of electronic pressure transmitters and pressure switches.

The PAC50 electronic pressure switch is designed for pneumatic applications. Three large function keys and a large display for easy operation. Easy to read, the colors of the digits change when the set switching points are reached. Flexible with measuring ranges for positive and negative pressures. Free of paint wetting impairment substances (PWS-free). Equipped with a dust-proof and waterproof housing. Optional IO-Link interface for easy networking – impressive advantages.
STRIKINGLY VISIBLE: THE PAC50 SHINES IN PNEUMATICS

The PAC50 shows color

The color of the digits on the display indicates whether the system pressure is within the target range. The color changes between green and red when the set switching points are reached. The output state is also clearly visible from a distance, a clear plus for operational safety.

The PAC50 responds to touch

Three large distinctive function keys facilitate error-free input. No more need for input aids or tools.

The PAC50 offers more at a glance

The display not only indicates system pressure, but also switching point settings and the output state of the digital outputs. The pressure display can be switched between bar, psi, MPa, inHg and kg/cm².

1. Indication of the applied pressure
2. Set pressure unit
3. Set values for switching points 1 and 2
4. "+" key: Displays important parameters values
5. Press and hold the "+" key to switch to programming mode
6. Set key loc (password protected)

The PAC50 is simple and straightforward

Information on the display simplifies parameter setting. For intuitive menu navigation, the clear menu structure is based on the VDMA standard 24574-1.

Parameter setting

Step 1: Select
1. Reference to which parameter is selected
2. "+" key: Navigate up in the menu
3. "-" key: Navigate down in the menu
4. Selection of the parameters to set using the middle "±" key
5. Parameter value currently set

Step 2: Set
1. Setting of the new parameter value (here: SPS)
2. "+" key: Increase value
3. "-" key: Decrease value
4. Confirmation of the value set by pressing the "±" key
5. Previous setting
6. For information: Corresponding reset pair
STRIKINGLY FLEXIBLE: THE APPLICATION POSSIBILITIES OF THE PAC50

With its positive and negative pressure ranges, the PAC50 is suitable for a variety of applications: Monitors the compressed-air supply of a system. Measures the system pressure in a pneumatic control. Determines the suction pressure in a vacuum gripper. Monitors the air pressure required for clamping a workpiece. The PAC50 reliably handles these different tasks, making an important contribution to safe operation of the system.

Flexible installation: The PAC50 has a pressure connection on the bottom of the housing. This pressure connection is available either as a G 1/4 thread or as a push-in fitting for 4 mm pneumatic hoses. The PAC50 also has a second pressure connection with G 1/4 thread on the back of the housing. In addition, the PAC50 has an integrated DIN rail mounting. A wall mounting kit and frame for panel mounting are also available as mounting accessories.

THE PAC50: THE ALL-ROUNDER

- The switching outputs are programmable: PNP, NPN or push-pull
- The optional analog output automatically detects if the attached control requires a current or voltage output signal and adjusts automatically.
- The analog output signals can be inverted specifically for negative measuring ranges.
- With just a few product versions, the PAC50 covers a wide range of requirements, thus reducing storage costs.

THE PAC50: EASY TO NETWORK

- The optional IO-Link interfaces make it possible to quickly and accurately set the PAC50 parameter settings from the attached control.
- Downtimes are reduced when switching formats and replacing sensors.

THE PAC50: RELIABLE AND RUGGED

- Dust-proof and waterproof housing (IP 65 and IP 67 enclosure rating), making it ideal for use in industrial environments, even under demanding ambient conditions.

### ELECTRONIC PRESSURE SWITCH

Electronic pressure switches from SICK offer more at a glance: the large bi-color display allows you to identify from a distance if the pressure falls within the target range. Three large function keys and intuitive menu navigation make operating the PAC50 easy. What makes the PAC50 so special? It offers up to two digital switching outputs and an optional analog output in just one device. The output signals can be easily adjusted to the available control system. Thanks to the optional IO-Link, the controller or PLC can quickly and accurately pass the device parameters to the sensor when changing the format or replacing the sensor, which significantly reduces downtime. The PAC50 is ideal for use in industrial environments due to its waterproof housing with an IP 65/ IP 67 enclosure rating.

At a glance:

- Electronic pressure switch for pneumatic applications
- Large display shows system pressure, output states and set switching points
- Three large function keys and intuitive menu navigation
- Measuring ranges for gauge pressure (vacuum and overpressure)
- Individually programmable switching outputs and optional analog output
- Installation on a mounting rail, wall or in a control panel
- High reliability due to the rugged design (IP 65/ IP 67 enclosure rating) and proven technology
- Low storage costs since a few product variants are able to meet a broad range of application requirements
- Reduced downtime when changing the format or replacing the sensor thanks to IO-Link

Additional information:

- Detailed technical data: 7
- Type code: 8
- Ordering information: 9
- Instruction for installation: 10
- Electrical connection: 10
- Dimensional drawings: 11
- Recommended accessories: 12

www.mysick.com/en/PAC50
Detailed technical data

Features

Medium
Dry compressed air

Compressed air quality
According to ISO 8573-1:2010
Max. particle size: < 40 μm
Oil content: 0–40 mg/m³
The pressure dew point must be at least 25°C below the ambient and medium temperatures and must not exceed 3°C

Measuring ranges
Gage pressure
-1 bar... 0 bar... 1 bar... 5 bar... 10 bar... 20 bar... 50 bar... 100 bar... 1 bar... 10 bar

Process temperature
0 °C... +60 °C

Analog output signal and maximum chronic load RA
Optional: 4 mA... 20 mA / 0 V... 10 V Automatic detection depending on connected load or programmable
Output signals can be inverted: 20 mA... 4 mA / 10 V... 0 V
Load resistance for current output < 500 Ohm
Load resistance for voltage output > 3 kΩ

Zero point adjustment
Max. 5 % of span

Switching output
Available transistor output switches: refer to type code
P/R/PNP/push-pull programmable (variant with IO-Link: switching output 1: IO-Link/PNP and switching output 2: PNP/PNP/push-pull programmable)
Function: normally open/normally closed, window/hysteresis function freely programmable
Switching voltage: supply voltage – 2 V [V DC]
Max. switching current per switching output: 100 mA
Switching delay: 0... 50 s (programmable)
Switching time ≤ 5 ms
Variants with IO-Link: IO-Link revision 1, 1

Diagnosis output
Switching output 2 can be set as diagnostics output

Display
LCD with LED backlight (green/red), can be rotated electronically by 180°
Pressure display: 4 digits, 16 segments
Pressure unit in display can be switched: bar, MPa, kPa, psi, and inHg
Update: 1000, 500, 200 and 100 ms (programmable)

Performance
Non-linearity
≤ ±3.5 % of span (Best Fit Straight Lines, BFSL) according to IEC 61598-2

Accuracy
≤ ±1.5 % of span (including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement according to IEC 61598-2)
≤ ±2 % of span (including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement according to IEC 61598-2)

Non-repeatability
≤ ±2.5 % of span

Rated temperature range
+10 °C... +60 °C

Mechanics/electronics
Process connection
2 x G 1/4
Housing material
Polycarbonate, Buttons: TPE, DIN tail mounting: POM, seals: NBR

Electrical connection
Round connector M12 x 1, 4-pin with 1 switching output + analog output and with 2 switching outputs
Round connector M12 x 1, 5-pin with 2 switching outputs and an analog output

Supply voltage
17 V DC... 30 V DC

Power consumption
Max. 40 mA at 17 V DC

Initialization time
300 ms

Pressure sensors PAC50

Electrical safety
Protection class: III
Overvoltage protection: 32 V DC
Short-circuit protection: Q3, Q5, Q2 towards M and L'
Reverse polarity protection: L' towards M

CE-conformity
EMC directive: 2004/108/EC, EN 61326-2-3

Weight sensor
Approx. 40 g

Endurance rating
IP65 / IP67 according to IEC 529, when plugged in with a suitable mating connector

RoHS certificate
✓

Climatic classification
A

Ambient data
Ambient temperature
0 °C... +60 °C
Storage temperature
-20 °C... +80 °C
Relative humidity
≤ 95 %

Shock load
Max. 30 g, vz according to IEC 60068-2-27 (11 ms, mechanical shock)

Vibration load
Max. 2 g (DC... 150 Hz), vz, according to DIN EN 60068-2-6 (10 to 150 Hz, vibration with resonance)

Type code

Not all varieties of the type code can be combined!
Ordering information

- Gauge pressure
- Process temperature: -25 °C ... +60 °C
- Accuracy: ± 1.5 % of the span

<table>
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<tr>
<th>Output signal</th>
<th>Process connection</th>
<th>Measuring range</th>
<th>Type</th>
<th>Part no.</th>
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Instruction for installation

Switch panel mounting set

Electrical connection

Round connector M12 x 1,4-pin

<table>
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<tr>
<th>Output signals</th>
<th>Type code</th>
<th>Pin assignment</th>
</tr>
</thead>
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<td>Digital analog</td>
<td>PAC50-eq</td>
<td>1, 2, 4, 5, 6, 7, 8</td>
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<tr>
<td>Digital/2-wire</td>
<td>PAC50-eq</td>
<td>1, 2, 4, 5, 6, 7, 8</td>
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<tr>
<td>Analog</td>
<td>PAC50-eq</td>
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Installation with a wall mounting set

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<th>Output signals</th>
<th>Type code</th>
<th>Pin assignment</th>
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<td>Analog</td>
<td>PAC50-eq</td>
<td>1, 2, 4, 5, 6, 7, 8</td>
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</table>
PRESSURE SENSORS PAC50

**Dimensional drawings:** Dimensions in mm (inch)

Bottom side; thread G ¼ female, back side; thread G ¼ female

Bottom side; push-in fitting for 4 mm pneumatic hose, back side; thread G ¼ female

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### Recommended accessories

<table>
<thead>
<tr>
<th>Accessory category</th>
<th>Enclosure rating</th>
<th>Cable length</th>
<th>Brief description</th>
<th>Type</th>
<th>Part no.</th>
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<tbody>
<tr>
<td>Mounting bracket/plates</td>
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<td>Wall-mounting kit mounting element for wall-mounting of pressure switch PAC50</td>
<td>DEF-MA-W-L-MNTS-PAC50</td>
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<td>Terminal and alignment bracket</td>
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<td>Panel mounting kit for installation of pressure switch PAC50 in a panel. Maximum thickness of panel 5mm</td>
<td>DEF-MA-CL-PL-PAC50</td>
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<td>Modules/gateway</td>
<td>IF 85, IF 67</td>
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<td>Communication mode: COM1, COM2; COM3; Switching input; NPN; Supply voltage 24V, I-O Link ports: DC 24 V; Current loading: 800 mA; Data transmission rate: Max. 1200 baud; Address space occupation: 1 byte; L20; Connection type: Connectors V12, Connection type: I-O Link ports: Connector M12, 9-pins; Supply voltage vs. module DC 18...30 V; Power consumption: Typ. 75 mA / max. 100 mA at 24 V; Typ. 21 mA + sensor current / max. 60 mA at 24 V</td>
<td>IDS-HPB-P5104R01</td>
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<td>Plug connectors and cables</td>
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