



# PAC50

TURNS PRESSURE INTO COLORS

Pressure sensors

**SICK**  
Sensor Intelligence.



## 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 (PWIS-free). Equipped with a dust-proof and water-proof 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/cm<sup>2</sup>.



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 lock (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: SP1)
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 point

## 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 ¼ thread or as a push-in fitting for 4 mm pneumatic hoses. The PAC50 also has a second pressure connection with G ¼ thread on the back of the housing. It is possible to screw in a ¼" NPT adapter on the bottom of the device as an option. This means that all G ¼" variants are also available as NPT variants.

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.
- In the fully equipped variant, PAC50-xxF, all available switching outputs and signals can be found together: PNP, NPN, push-pull, IO-Link, and analog output

### THE PAC50: EASY TO NETWORK

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

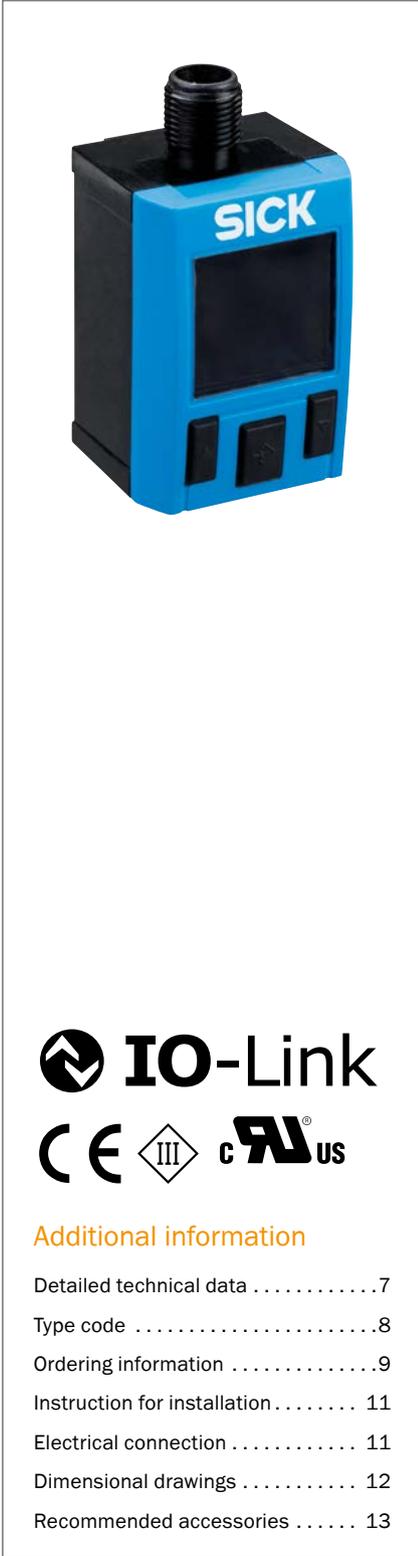


### THE PAC50: RELIABLE AND RUGGED

- Dust-proof and water-proof housing (IP65 and IP67 enclosure rating), making it ideal for use in industrial environments, even under demanding ambient conditions.



# URNS PRESSURE INTO COLORS



### Additional information

- Detailed technical data . . . . . 7
- Type code . . . . . 8
- Ordering information . . . . . 9
- Instruction for installation . . . . . 11
- Electrical connection . . . . . 11
- Dimensional drawings . . . . . 12
- Recommended accessories . . . . . 13

### Product description

For improved monitoring of air pressure, the PAC50 electronic pressure switch from SICK offers 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 IP65/IP67 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) between -1 bar ... 0 bar
- Individually programmable switching outputs and optional analog output
- Installation on a mounting rail, wall or in a control panel

### Your benefits

- Bi-color display (green/red) clearly shows the output state to recognize whether the pressure is within the target range
- Quick overview of important system parameters due to advanced display functions
- Intuitive operation allows simple and quick commissioning
- Pressure connections on the back and bottom, various mounting options and configurable output signals provide installation flexibility
- High reliability due to the rugged design (IP65/IP67 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

→ [www.sick.com/PAC50](http://www.sick.com/PAC50)

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



## Detailed technical data

## Features

<b>Medium</b>	Dry compressed air
<b>Compressed air quality</b>	According to ISO 8573-1:2010 Max. particle size: $\leq 40 \mu\text{m}$ Oil content: $0\text{--}40 \text{ mg/m}^3$ The pressure dew point must be at least $15^\circ\text{C}$ below the ambient and medium temperatures and must not exceed $3^\circ\text{C}$
<b>Measuring ranges</b>	
Gauge pressure	$-1 \text{ bar} \dots 0 \text{ bar}$ ; $-1 \text{ bar} \dots +1 \text{ bar}$ ; $0 \text{ bar} \dots +6 \text{ bar}$ ; $0 \text{ bar} \dots +10 \text{ bar}$ ; $-1 \text{ bar} \dots +10 \text{ bar}$
<b>Process temperature</b>	$0^\circ\text{C} \dots +60^\circ\text{C}$
<b>Analog output signal and maximum ohmic load <math>R_A</math></b>	Optional, $4 \text{ mA} \dots 20 \text{ mA} / 0 \text{ V} \dots 10 \text{ V}$ . Automatic detection depending on connected load or programmable. Output signals can be inverted: $20 \text{ mA} \dots 4 \text{ mA} / 10 \text{ V} \dots 0 \text{ V}$ Load resistance for current output $< 600 \text{ Ohm}$ Load resistance for voltage output $> 3 \text{ kOhm}$
<b>Zero point adjustment</b>	Max. 5 % of span
<b>Switching output</b>	Available transistor output switches: refer to type code PNP/NPN/push-pull programmable (variant with IO-Link: switching output 1: IO-Link/PNP and switching output 2: PNP/NPN/push-pull programmable) Function: normally open/normally closed, window/hysteresis function freely programmable Switching voltage: supply voltage $L^+ - 2 \text{ V [V DC]}$ Max. switching current per switching output: $100 \text{ mA}$ Switching delay: $0 \text{ s} \dots 50 \text{ s}$ (programmable) Switching time $\leq 5 \text{ ms}$ Variants with IO-Link: IO-Link revision 1.1
<b>Diagnostics output</b>	Switching output 2 can be set as diagnostics output
<b>Display</b>	LCD with LED backlight (green/red), can be rotated electronically by $180^\circ$ Pressure display: 4 digits, 16 segments Pressure unit in display can be switched: bar, MPa, kPa, psi, and inHg Update: $1,000 \text{ ms}$ , $500 \text{ ms}$ , $200 \text{ ms}$ und $100 \text{ ms}$ (programmable)

## Performance

<b>Non-linearity</b>	$\leq \pm 0.5 \%$ of span (Best Fit Straight Line, BFSL) according to IEC 61298-2
<b>Accuracy</b>	$\leq \pm 1.5 \%$ of span (including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement according to IEC 61298-2)) $\leq \pm 2 \%$ of span incl. temperature error (including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement according to IEC 61298-2))
<b>Non-repeatability</b>	$\leq \pm 0.2 \%$ of span
<b>Rated temperature range</b>	$+10^\circ\text{C} \dots +60^\circ\text{C}$

## Mechanics/electronics

<b>Process connection</b>	$2 \times G \frac{1}{4} \text{ }^1$ PIF 4 mm + $G \frac{1}{4} \text{ }^2$ $\frac{1}{4}''$ NPT female $\text{}^3$
<b>Housing material</b>	Housing: polycarbonate, Buttons: TPE, DIN rail mounting: POM, seals: NBR
<b>Electrical connection</b>	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 analog output
<b>Supply voltage</b>	$17 \text{ V DC} \dots 30 \text{ V DC}$
<b>Power consumption</b>	Max. $40 \text{ mA}$ at $L^+ = 24 \text{ V DC}$

<sup>1</sup> Bottom side: thread  $G \frac{1}{4}$  female, back side: thread  $G \frac{1}{4}$  female, both according to ISO 1630.

<sup>2</sup> Bottom side: push-in fitting for 4 mm pneumatic hose, back side: thread  $G \frac{1}{4}$  female according to ISO 16030.

<sup>3</sup> Bottom side:  $\frac{1}{4}''$  NPT female thread, pre-installed NPT adapter in  $G \frac{1}{4}$  female thread; rear:  $G \frac{1}{4}$  female thread.

<b>Initialization time</b>	300 ms
<b>Electrical safety</b>	Protection class: III Overvoltage protection: 32 V DC Short-circuit protection: Q <sub>A</sub> , Q <sub>1</sub> , Q <sub>2</sub> towards M and L <sup>+</sup> Reverse polarity protection: L <sup>+</sup> towards M
<b>CE-conformity</b>	EMC directive: 2004/108/EC, EN 61326-2-3
<b>Weight sensor</b>	Approx. 40 g
<b>Enclosure rating</b>	IP65 / IP67 according to IEC 60529, when plugged in with a suitable mating connector
<b>RoHS certificate</b>	✓
<b>cULus certificate</b>	✓

<sup>1)</sup> Bottom side: thread G ¼ female, back side: thread G ¼ female, both according to ISO 1630.

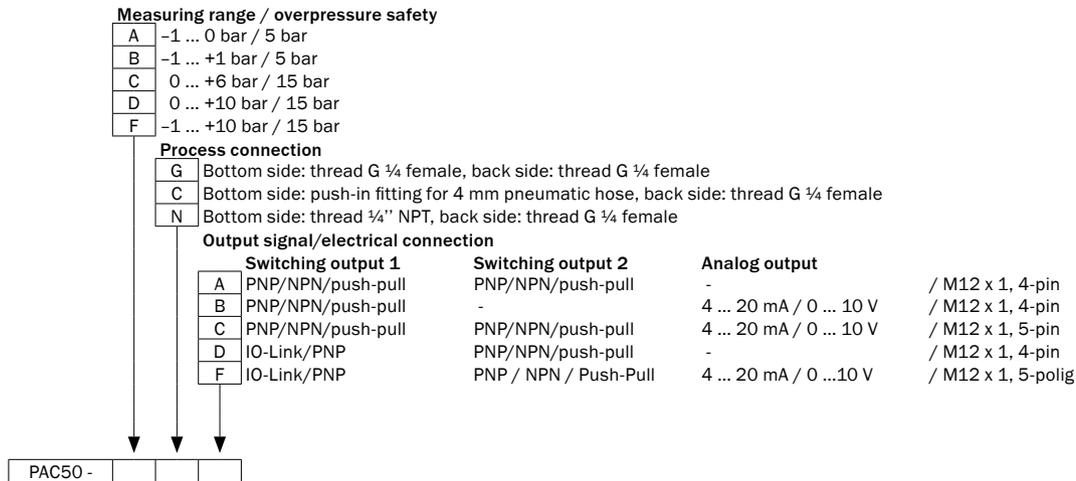
<sup>2)</sup> Bottom side: push-in fitting for 4 mm pneumatic hose, back side: thread G ¼ female according to ISO 16030.

<sup>3)</sup> Bottom side: ¼" NPT female thread, pre-installed NPT adapter in G ¼ female thread; rear: G ¼ female thread.

### Ambient data

<b>Ambient temperature</b>	0 °C ... +60 °C
<b>Storage temperature</b>	-20 °C ... +80 °C
<b>Relative humidity</b>	< 90 %
<b>Shock load</b>	Max. 30 g, xyz according to IEC 60068-2-27 (11 ms, mechanical shock)
<b>Vibration load</b>	Max. 5 g (10 ... 150 Hz), xyz, according to EN 60068-2-6 (10 to 150 Hz, vibration with resonance)

### Type code



Not all variations of the type code can be combined!

## Ordering information

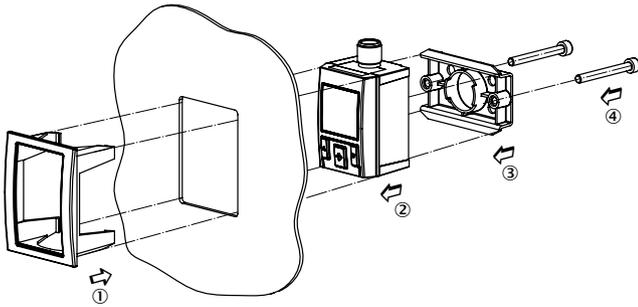
- Gauge pressure
- **Process temperature:** 0 °C ... +60 °C
- **Accuracy:** ≤ ± 1.5 % of the span

Ausgangssignal	Prozessanschluss	Messbereich	Typ	Artikelnr.	
PNP/NPN/Push-Pull + 4 mA ... 20 mA / 0 V ... 10 V	PIF 4 mm + G ¼	0 bar ... 10 bar	PAC50-DCB	1062990	
		0 bar ... 6 bar	PAC50-CCB	1062978	
		-1 bar ... 1 bar	PAC50-BCB	1062965	
		-1 bar ... 0 bar	PAC50-ACB	1062952	
	2 x G ¼	0 bar ... 10 bar	PAC50-DGB	1062984	
		0 bar ... 6 bar	PAC50-CGB	1062971	
		-1 bar ... 10 bar	PAC50-FGB	1077856	
		-1 bar ... 1 bar	PAC50-BGB	1062959	
		-1 bar ... 0 bar	PAC50-AGB	1062946	
IO-Link/PNP + PNP/NPN/Push-Pull	¼" NPT innen	0 bar ... 10 bar	PAC50-DNF	1086914	
		0 bar ... 6 bar	PAC50-CNF	1086913	
		-1 bar ... 1 bar	PAC50-BNF	1086912	
		-1 bar ... 0 bar	PAC50-ANF	1086911	
	PIF 4 mm + G ¼	0 bar ... 10 bar	PAC50-DCD	1062992	
			PAC50-DCF	1062994	
		0 bar ... 6 bar	PAC50-CCD	1062980	
			PAC50-CCF	1062982	
		-1 bar ... 10 bar	PAC50-FCF	1086916	
			PAC50-BCD	1062967	
			PAC50-BCF	1062969	
			PAC50-ACD	1062954	
			PAC50-ACF	1062957	
	2 x G ¼	0 bar ... 10 bar	PAC50-DGD	1062986	
			PAC50-DGF	1062988	
		0 bar ... 6 bar	PAC50-CGD	1062974	
			PAC50-CGF	1062976	
		-1 bar ... 10 bar	PAC50-FGD	1077858	
			PAC50-FGF	1086915	
			PAC50-BGF	1062936	
			PAC50-BGD	1062961	
			PAC50-AGD	1062948	
			PAC50-AGF	1062950	
	2 x PNP/NPN/Push-Pull + 4 mA ... 20 mA / 0 V ... 10 V	PIF 4 mm + G ¼	0 bar ... 10 bar	PAC50-DCC	1062991
			0 bar ... 6 bar	PAC50-CCC	1062979
			-1 bar ... 1 bar	PAC50-BCC	1062966
			-1 bar ... 0 bar	PAC50-ACC	1062953
		2 x G ¼	0 bar ... 10 bar	PAC50-DGC	1062985
0 bar ... 6 bar			PAC50-CGC	1062973	
-1 bar ... 10 bar			PAC50-FGC	1077857	
			PAC50-BGC	1062960	
			PAC50-AGC	1062947	

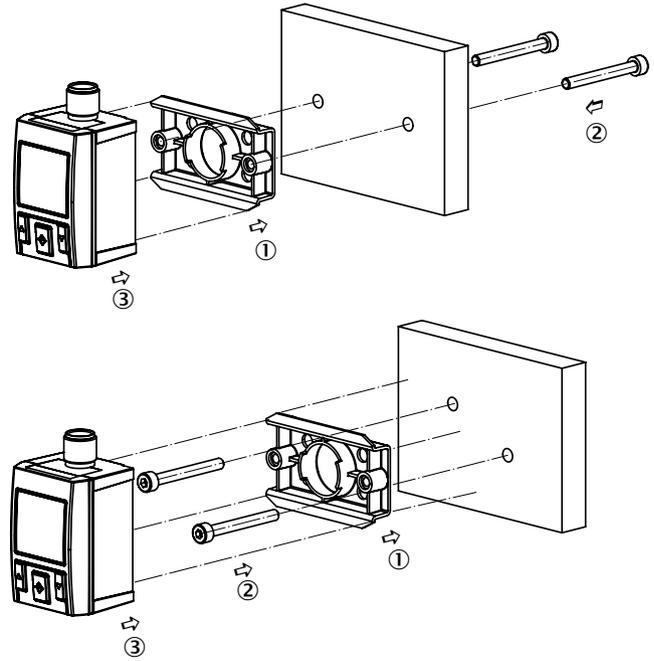
Ausgangssignal	Prozessanschluss	Messbereich	Typ	Artikelnr.
2 x PNP/NPN/Push-Pull	PIF 4 mm + G ¼	0 bar ... 10 bar	PAC50-DCA	1062989
		0 bar ... 6 bar	PAC50-CCA	1062977
		-1 bar ... 1 bar	PAC50-BCA	1062964
		-1 bar ... 0 bar	PAC50-ACA	1062951
	2 x G ¼	0 bar ... 10 bar	PAC50-DGA	1062983
		0 bar ... 6 bar	PAC50-CGA	1062970
		-1 bar ... 10 bar	PAC50-FGA	1077855
		-1 bar ... 1 bar	PAC50-BGA	1062958
		-1 bar ... 0 bar	PAC50-AGA	1062945

### Instruction for installation

#### Switch panel mounting set

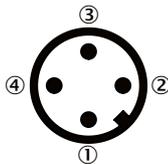


#### Installation with a wall mounting set



### Electrical connection

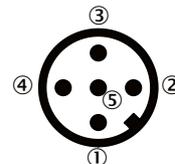
#### M12 round connector x 1, 4-pin



Output signals	Type code	Pin assignment
2 x digital	PAC50-xxA	L* = 1, M = 3, Q <sub>1</sub> = 4, Q <sub>2</sub> = 2
1 x digital + analog	PAC50-xxB	L* = 1, M = 3, Q <sub>1</sub> = 4, Q <sub>A</sub> = 2
1 x IO-Link/digital + analog	PAC50-xxD	L* = 1, M = 3, C/Q <sub>1</sub> = 4, Q <sub>2</sub> = 2

- L\*: Positive supply connection
- M: Negative supply connection
- Q<sub>1</sub>: Switching output 1
- C/Q<sub>1</sub>: With IO-Link: Communication/ switching output 1
- Q<sub>2</sub>: Switching output 2
- Q<sub>A</sub>: Analog output

#### Round connector M12 x 1, 5-pin

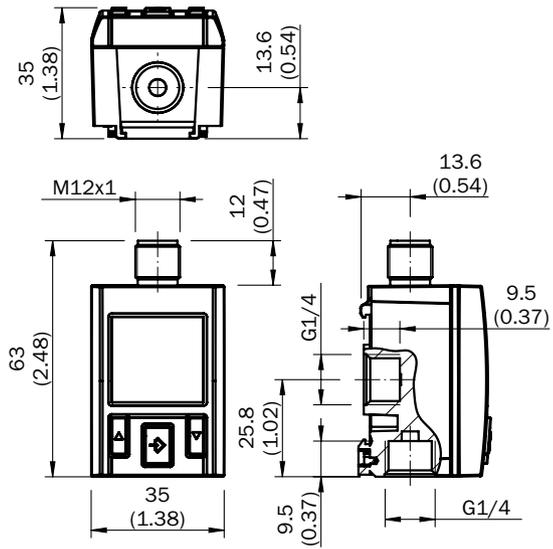


Output signals	Type code	Pin assignment
2 x digital + analog	PAC50-xxC	L* = 1, M = 3, Q <sub>1</sub> = 4, Q <sub>2</sub> = 2, Q <sub>A</sub> = 5

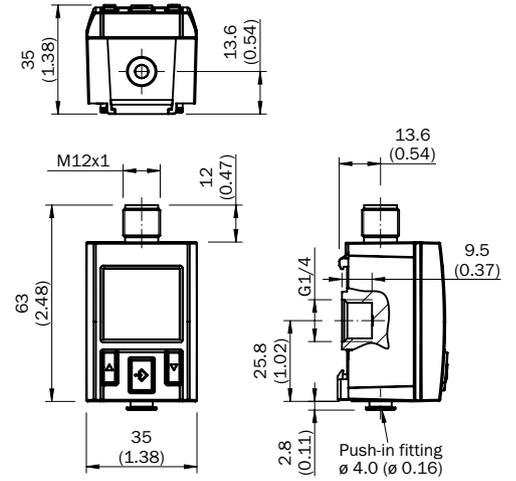
- L\*: Positive supply connection
- M: Negative supply connection
- Q<sub>1</sub>: Switching output 1
- C/Q<sub>1</sub>: With IO-Link: Communication/ switching output 1
- Q<sub>2</sub>: Switching output 2
- Q<sub>A</sub>: Analog output

Dimensional drawings (Dimensions in mm (inch))

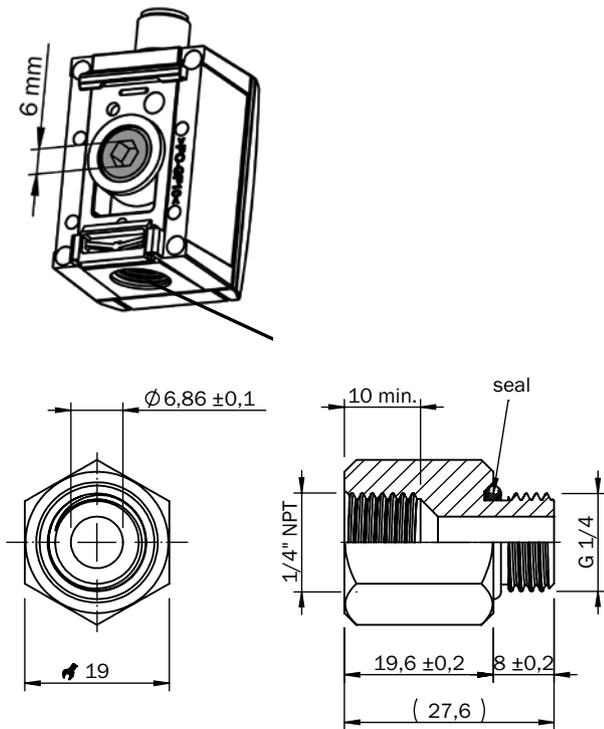
Bottom side: thread G 1/4 female, back side: thread G 1/4 female



Bottom side: push-in fitting for 4 mm pneumatic hose, back side: thread G 1/4 female



1/4" NPT female

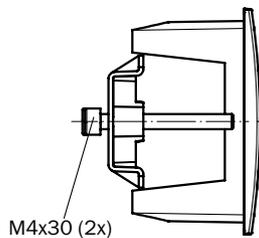
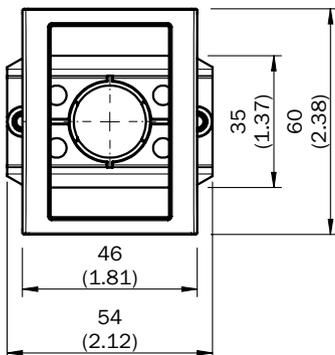
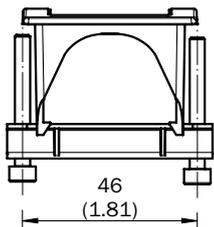


Recommended accessories

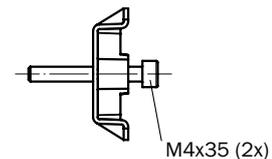
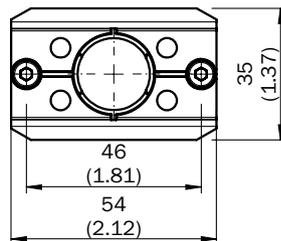
	Accessory category	Enclosure rating	Cable length	Brief description	Type	Part no.
	Mounting brackets/ plates	-	-	Wall-mounting kit; mounting element for wall-mounting of pressure switch PAC50	BEF-MA-WLMNTS-PAC5	2069198
	Terminal and alignment brackets	-	-	Panel-mounting set, for installation of pressure switch PAC50 in a panel. Maximum thickness of panel 5mm.	BEF-MA-CTRLPS-PAC5	2069200
	Modules/gateways	IP 65, IP 67	-	Number of IO-Link ports: 4; Communication mode: COM1/COM2/COM3; Switching input: PNP; Supply voltage Vs, IO-Link ports: DC 24 V; Current loading: 800 mA; Data transmission rate: Max. 12 MBaud, Autobaud; Address space occupation: 1 bis 126; Connection type: Connector M12; Connection type, IO-Link ports: Connector M12, 5-pin; Supply voltage Vs, module: DC 18 ... 30 V; Power consumption: Typ. 75 mA / max. 100 mA (at UL with DC 24 V), Typ. 25 mA + sensor current / max. 800 mA (at Us with DC 24 V)	IOLSHPB-P3104R01	6039728
	Plug connectors and cables	IP 67, IP 69K	2 m	-	DOL-1204-G02MN	6028128
			5 m	-	DOL-1204-G05MN	6028130
			10 m	-	DOL-1204-G10MN	6028132
			2 m	-	DOL-1205-G02MN	6028140
			5 m	-	DOL-1205-G05MN	6028141
			10 m	-	DOL-1205-G10MN	6028142

Dimensional drawings

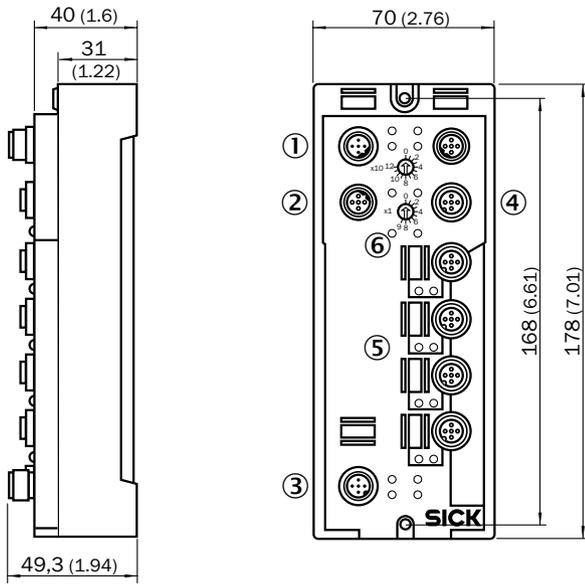
Panel-mounting set



Wall-mounting kit

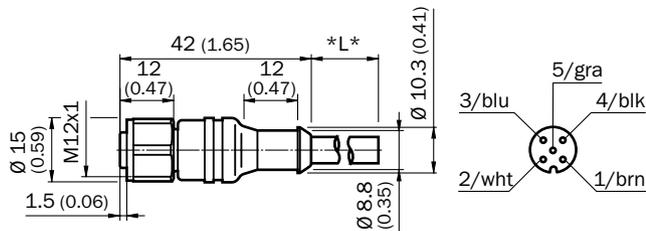


IOLSHPB-P3104R01

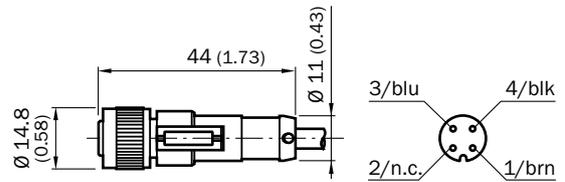


- ① Bus IN
- ② Bus OUT
- ③ Power supply IN
- ④ Power supply OUT
- ⑤ Port 1 ... 4
- ⑥ Bus address rotary switch

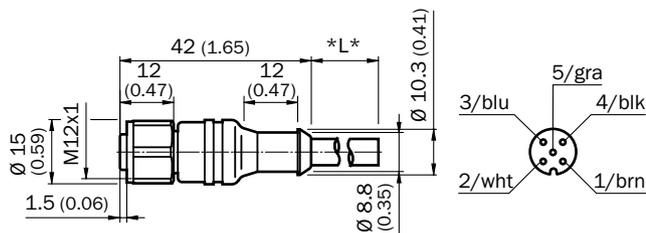
DOL-1204-G02MN



DOL-1204-G05MN  
DOL-1204-G10MN

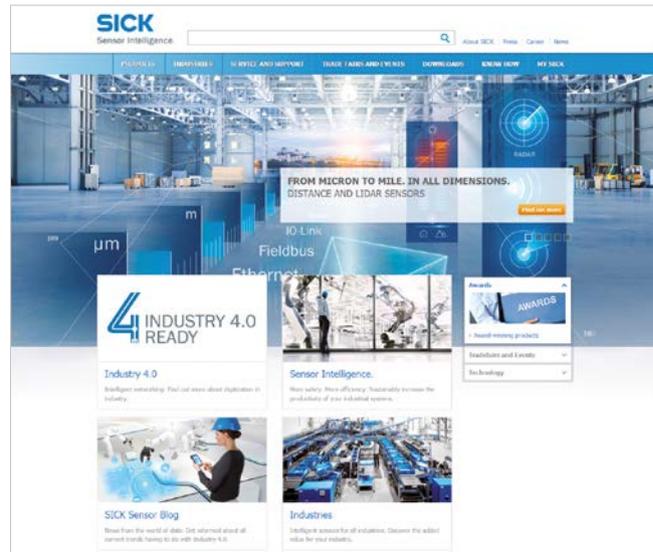


DOL-1205-G02MN  
DOL-1205-G05MN  
DOL-1205-G10MN



## REGISTER AT WWW.SICK.COM TO TAKE ADVANTAGE OF OUR FOLLOWING SERVICES FOR YOU

- ✔ Access information on net prices and individual discounts.
- ✔ Easily order online and track your delivery.
- ✔ Check your history of all your orders and quotes.
- ✔ Create, save, and share as many wish lists as you want.
- ✔ Use the direct order to quickly order a big amount of products.
- ✔ Check the status of your orders and quotes and get information on status changes by e-mail.
- ✔ Save time by using past orders.
- ✔ Easily export orders and quotes, suited to your systems.



## SERVICES FOR MACHINES AND PLANTS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



- 
**Consulting and design**  
 Safe and professional
- 
**Product and system support**  
 Reliable, fast, and on-site
- 
**Verification and optimization**  
 Safe and regularly inspected
- 
**Upgrade and retrofits**  
 Easy, safe, and economical
- 
**Training and education**  
 Practical, focused, and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,800 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)