HYDRC STAR Meßtechnik GmbH

Hydraulic and Electronic Devices Special Plug Connections

Pressure Switch HS-11* Technical Specifications



General Information

Our mechanical pressure switches are entirely "Made in Germany". Hydrostar's extensive and long product experience along with continuous improvements in hydraulic pressure measurements enables the production of high-quality, accurate and reliable mechanical pressure switches. These properties have proven themselves consistently worldwide.

The core of the pressure switch line is the special extreme long-lasting sealing combined with the piston-springprinciple and its exceptionally accurate and reliable change-over switch. The minimum switching path with an additional throttle bore allows for a lengthy and durable life cycle.

Another special feature is the potential adjustability of the pressure switch on client-side, even after the installation.

🖋 Mechanical piston pressure switch for pressure monitoring

쓝 Pressure range 5 to 350 bar

Special Features

- 💉 Precise and Reliable
- 🖋 Compact Design
- 🖋 Change-over switch
- 🛷 High overpressure security







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Technical Information

- 🖋 Aluminium housing
- **# Mounting position** variable
- ✓ Process-fitting G ¼" or flange connection
- Reliable accuracy < 1% (depending on usage)</p>
- Hydraulic contact components piston (stainless steel), body material (brass), case (aluminium) and rod seal
- 🗲 Rod seal NBR-70 (standard)
- ₩ Acceptable temperatures 40 ... + 90 °C (standard)
- Hydraulic fluids mineral oil based, flame resistant and environmentally friendly. Additional fluids on request.
- 🗲 Weight approx. 0.27 kg
- Electronic connection EN 175301-803-A socket PG9 (clamping area 6 to 8 mm) or M12-A male connector (only for DC)
- **# Protection class** IP65
- 💉 Voltage AC 250 V

Maximum ohm resistant load AC 5 A Maximum inductive load AC 1 A

💉 Voltage DC 24 V

Maximum ohm resistant load DC $5 \cap$ Maximum inductive load DC $4 \cap$

Nominal range for positive pressure

Pressure ranges	🚿 Piston-Ø	🖋 Maximum pressure		
5 - 70 bar	5 mm	200 bar		
10 - 150 bar	5 mm	400 bar		
20 - 240 bar	4 mm	500 bar		
20 - 350 bar	4 mm	500 bar		









🗦 Terminal Assignment

HS-112 (N/O contact)

At the connector pin assignment, when pressure rises up to switching point, contact 1-2 closes while contact 1-3 opens.

1. Connector pin assignment HS-112 for unit plug EN175301-803-A (unpressurized)



2. Connector pin assignment HS-112 for cable plug M12-A (unpressurized)



HS-117 (N/C contact)

At the connector pin assignment, when pressure rises up to switching point, contact 1-3 closes while contact 1-2 opens.

1. Connector pin assignment HS-117 for unit plug EN175301-803-A (unpressurized)



2. Connector pin assignment HS-117 for cable plug M12-A (unpressurized)







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Special Function for M12x1 terminal

Status indication

Depending on the status of the pressure switch, the transparent connector casing will be illuminated in red or green through integrated LEDs. Therefore, the current state of the pressure switch is immediately visible.

- # HS-112 (N/O contact) = Unpressurized, status indication red, changing to green
- # HS-117 (N/C contact) = Unpressurized, status indication green, changing to red

Separate terminal assignment and electronical data applies:

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Max. resistive load 4A

*H***Electronic connection** M12-A

✗ Surrounding temperature -25℃ ... 85 ℃

★ Rated operating voltage 6 ... 24 VDC

- Heverse polarity protection yes
- **// Output voltage** ca. 2,5 VDC

Fail-safe-System

The Namur diagnostic function allows the easy identification of the switch whether it is "open" or "closed" along with the identification of cable breakage and short-circuit (DIN EN 60947-5-6) through two ports. The function of the change-over contact does not apply.

Diagnostic function fail-safe

ℋ HS-112,	Contact 1-2	closed	ορεη	Cable breakage	Short-circuit
pressure-operated	Resistor	1 kΩ	11 kΩ	∞	0 kΩ
HS-117, unpressurized	Contact 1-2	closed	ορen	Cable breakage	Short-circuit
	Resistor	1 kΩ	11 kΩ	∞	0 kΩ



















Hysteresis in mechanical pressure switch

The Hysteresis (reset differential pressure) of a mechanical pressure switch defines the pressure difference Δp , which applies in particular due to the inner friction between the increasing and decreasing switching point. Critical influence factors are the number of load changes, the quality of oil, temperature and viscosity.

Due to the physical nature, the Hysteresis increases with the pressure area and within the given settings. The upper line gives an orientation for the pressure range 5-70 bar, the bottom line for the pressure range with 20-350 bar.





























