

SF₆ Accessories



Pressure Switch

PSP-400

for hydraulic operating mechanisms
of high-voltage circuit breakers

Pressure Switch PSP-400

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The pressure switch PSP-400 continuously measures the hydraulic pressure in the relevant operating mechanism. The measurements are performed by a precise and sturdy polysilicon pressure sensor. Relays indicate when the measured values are below or above the variable limits; the measured data can be read out by way of an RJ45 interface. Data export facilitates reliable control of the hydraulic pump and the activation of lockouts and alarm signals.

- Pressure range 0 to 400 bar (0 ... 5800 psi)
- Measured values can be read out by way of an RJ45 interface
- 7 or 10 limit values, set by PC
- Reliable signaling in case of limit violations
- Self-diagnostic sensor
- Strong construction, long service life
- Redundant power supply for fail-safe operation



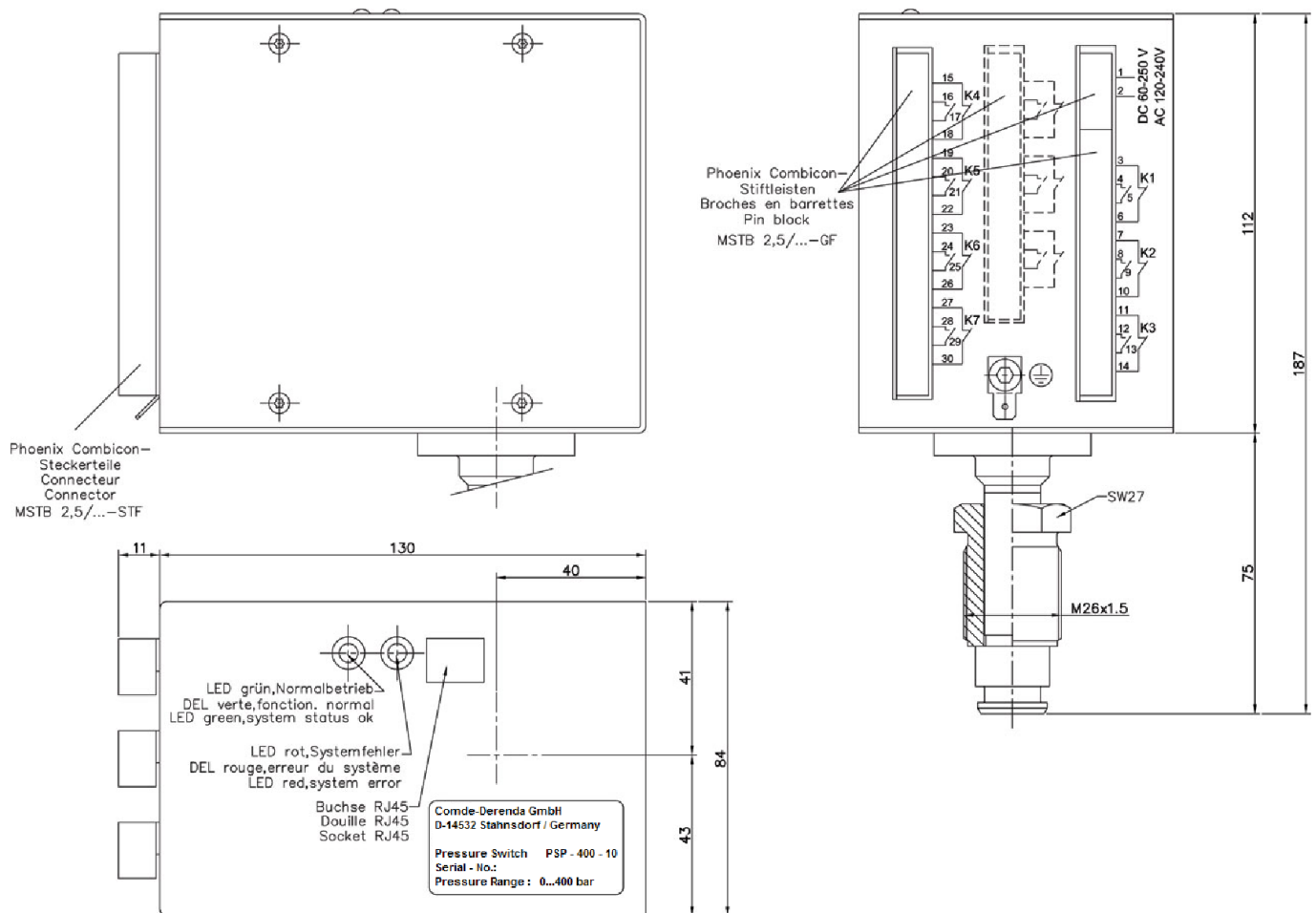
Design

The PSP-400 consists of the following principal components:

- Strong stainless steel enclosure
- Stainless steel pressure connection
- Polysilicon pressure sensor with self-diagnostic capability
- Evaluation unit with microprocessor
- Relays with floating contacts for signaling limit violations
- LED status display
- Plug-in connectors (Phoenix Combicon)
- RJ45 data output

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Operating principle

Before the device is put into service, the desired hydraulic limits are set with a PC or notebook computer. During operation the polysilicon sensor of the PSP-400 continuously measures the hydraulic pressure in the connected system. The current measured values are output by way of the RJ45 interface. Limit violations activate the floating NC/NO contacts (relays) and trigger the relevant signal. In addition, LEDs on the unit display the current status (green LED: normal operation, red LED: limit violation). The output measured values and signals facilitate precise control of the hydraulic pump and the reliable activation of lockouts and alarms in case of a malfunction.

Benefits

High operating reliability is ensured by the sensor's self-diagnostic capability and an additional relay for error messages. The set limit values are retained even in the event of a power failure. The electronic pressure switch is designed for a service life of > 30 years. It is impossible for an undefined condition to arise at the relay outputs in case of a malfunction of the sensor, evaluation unit (microprocessor, memory, A/D converter, DC to DC converter etc.), or output device (relays). Apart from monitoring the hydraulic operating mechanisms of high-voltage circuit breakers, the PSP-400 is also suitable for other hydraulic pressure applications.

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Technical Data

Connector with screw base	Phoenix Combicon, IEC 60947, max. 2.5 mm ²
Interface	RJ-45
Optional data converters	RJ-45 / RS-232 and RJ-45 / USB-B
Protection	IP 20 IAW IEC 60529
Supply voltage	60 ... 250 VDC; 120 ... 240 VAC

Pressure range	0 ... 400 bar / 0 ... 5800 psi
Overload pressure	600 bar / 8700 psi
Linearity	< 0.2 % FS (typ.)
Hysteresis	< 0.05 % FS (typ.)
TK Zero	< 0.02 % FS (typ.)
TK Sensitivity	< 0.01 % FS (typ.)
Long-term stability	< 0.1 % FS (typ.)

Electrostatic discharge	IEC 61000-4-2 Class 2
High frequency irradiation	IEC 61000-4-3 Class 3
Burst	IEC 61000-4-4 Class 4
Surge voltage	IEC 60255-5: 5 kV (1.2/50 µs)
Interference	IEC 61000-4-6 Class 3
Isolation test	IEC 61180-1: 2 kV 50 Hz
Oscillation	IEC 60100-4-12: 100 kHz and 1 MHz
Sinusoidal oscillation	IEC 60068-2-6: 10 ... 150 Hz, 2 g
Vibration	IEC 60068-2-27: ± 10 g, ± 1 mm
Seismic endurance	IEC 60068-2-3: 1.6 ... 35 Hz 4 mm / 1 g

Electrical switch rating, Resistive load (inductive load)	DC 250 V, 0.28 (0.4) A DC 220 V, 0.3 (0.45) A DC 125 V, 0.5 (0.7) A DC 110 V, 0.56 (0.8) A DC 60 V, 4.2 (6) A DC 48 V, 5.6 (8) A
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Operating temperature	-40 ... +70 °C / -40 ... +158 °C
Storage temperature	-50 ... +70 °C / -58 ... +158 °C
Weight PSP-400-07	1518 g
Weight PSP-400-10	1580 g

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