Technical Datasheet

SONOCONTROL 14

Type of equipment	SONOCONTROL 14 Type 1, Type 2, Type 3, Type 4, Type 7: ultrasonic position switch for - piston detection in piston accumulators (without piston pole) - piston detection in hydraulic cylinders - level control
Sensor construction	Compact sensor unit, consisting of sensor element and evaluation electronics
Measuring principle	Contactless ultrasonic impulse echo method - no contact between sensor and liquid - no structural changes of the piston accumulator necessary, since it measures from the outside through the wall
Operating mode / Number of sensors	1 sensor → single operating mode 2 sensors → synchronous operating mode
Measuring frequency	Max. 155 Hz
Attachment at the cylinder/vessel **Coupling**	Mounting at required position with mounting plate + tightening strap + lock Coupling with coupling medium to cylinder / vessel
Reproducibility	Static ± 1 mm (at same conditions of measurement)
Specified and (feasible) cylinder/vessel dimensions	Type 1, Type 2 and Type 7: External diameter: (60) 98 … 600 (950) mm Internal diameter: (50) 70 … 500 (800) mm Type 3 and Type 4: External diameter: (150) 200 … 950 (1600) mm Internal diameter: (120) 160 … 800 (1500) mm
Hydraulic fluid	Mineral oil (HL, HLP), HFA, (HFB), HFC, HFD water and water-like liquids, 20 µm purity
Max. absolute viscosity	100 cSt for Type 1, Type 2, Type 7 500 cSt for Type 3, Type 4
Power supply	18 ... 30 VDC, max. 80 mA, ripple 10 % - low voltage identification - inverse-polarity protection - overvoltage protection
Switching output	NPN or PNP - max. switching voltage: positive operating voltage - max. switching capacity: 1,8 W (Requires external fuse!)
Serial interface	One-wire-interface for synchronisation and configuration (with programming adapter and PC)

Connections	Sensor plug-in connector M12 (Type 1, 3, 7) for censor cable with elbow plug connector or fixed cable (Type 2, 4) Cable, 4-pole without shielding Brown: positive operating voltage 18 ... 30 VDC Blue: negative operating voltage (GND) Black: switching output White: synchronisation, serial programming for configuration
Sensor cable length	Type 1, 3, 7: 5 (or 10) meters with elbow plug connector Type 2, 4: 5 meters of fixed cable
Switching point indicator	Type 1, 3, 7: Integrated LED within elbow plug connector Type 2, 4: Externally only
Temperature range	Temperature of cylinder or vessel: -20 ... +80 °C Ambient temperature: -20 ... +60 °C Storage temperature: -40 ... +85 °C **Attention:** The range of working temperature is further restricted by the absolute viscosity.
Protection class	IP 67, oil resistant
Housing	Type 1, 3, 7: Aluminium anodized, earthed against GND Type 2, 4: Stainless steel 1.4571, earthed against GND
Weight	Approx. 170 g … 500 g
CE Conformity	Ingress protection: DIN EN 60529:1991 + A1:2000 EMC active: DIN EN 61326-1:2006 EMC passive: IEC61000-4-2, -3, -4, -5, -6
Scope of delivery	Sensor, mounting element, coupling medium, connecting cable, operating manual, optional parameterizing adapter

Configuration	Thread	Housing	Max. absolute viscosity	NPN	PNP	Ex mb
Type 1	M30x1,5	Aluminium	100 cSt	x	x	-
Type 2	M30x1,5	1.4571	100 cSt	x	x	-
Type 3	M45x1,5	Aluminium	500 cSt	x	x	-
Type 4	M45x1,5	1.4571	500 cSt	x	x	-
Type 5*[1]	M30x1,5	1.4571	100 cSt	x	x	x
Type 6*[1]	M45x1,5	1.4571	500 cSt	x	x	x
Type 7	M30x1,0	Aluminium	100 cSt	x	x	-

Tab. 1.: SONOCONTROL 14 – Configuration of available types

*[1] sensors for hazardous areas, type of ignition protection Ex mb, -> particular datasheet

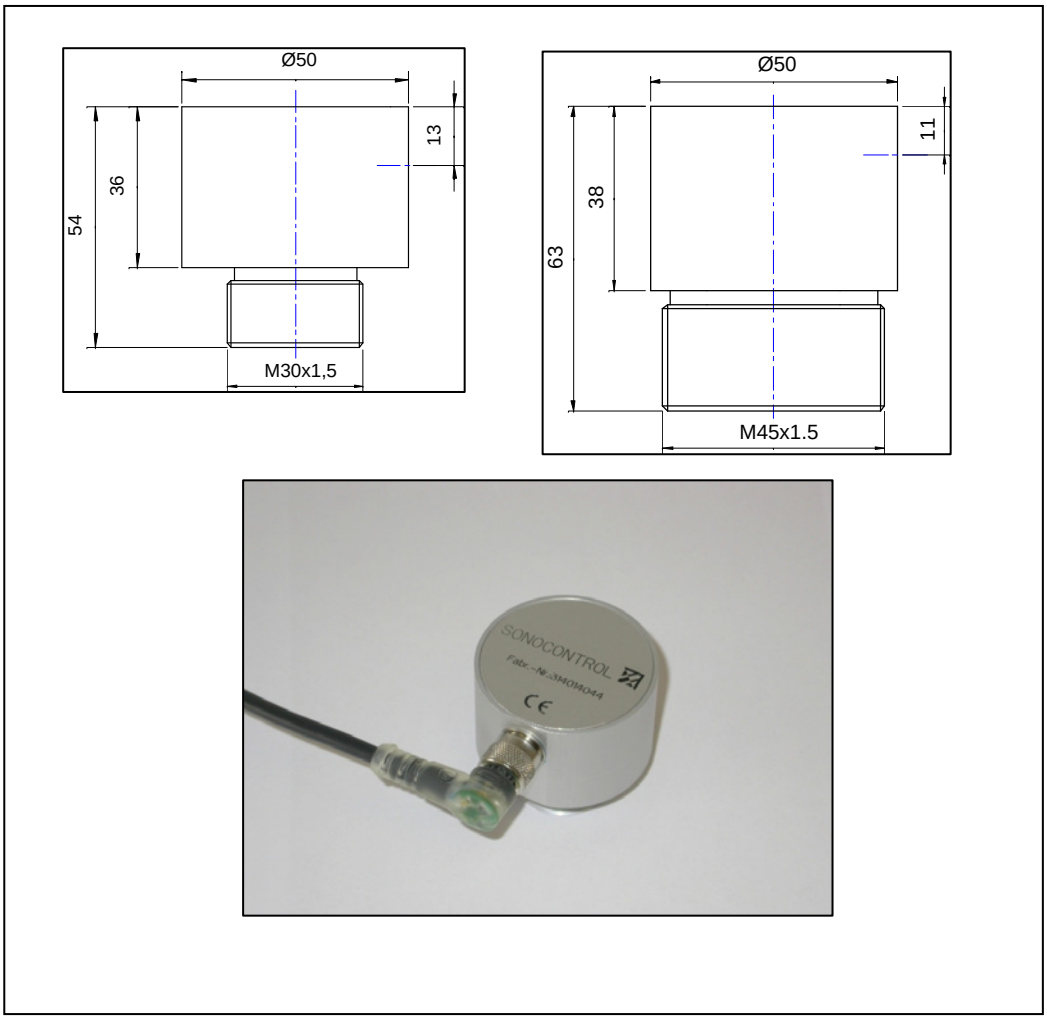

Fig. 1: SONOCONTROL14 sizes (left: Type 1, 2, 7; right: Type 3, 4)
Photo: SONOCONTROL14 Type 1 with elbow plug connector

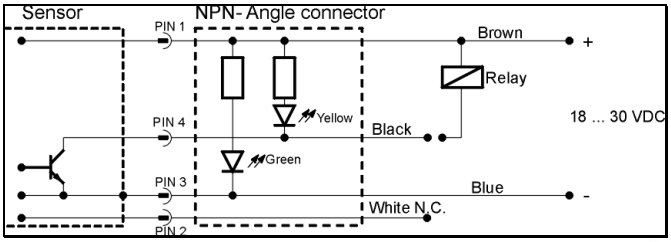

Fig. 2: pin assignment NPN

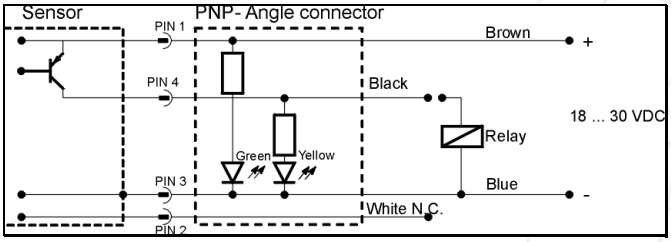

Fig. 3: pin assignment PNP

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