

Column level indicators

with temperature electrical probe, technopolymer

MATERIAL

Transparent polyamide based (PA-T) technopolymer. Highly resistant to shocks, solvents, oils with additives, aliphatic and aromatic hydrocarbons, petrol, naphtha, phosphoric esters. Avoid contact with alcohol or detergents containing alcohol.

SCREW, NUTS AND WASHERS

Zinc-plated steel.

PACKING RINGS

NBR synthetic rubber O-Ring.
Suggested roughness of the packing ring application surface $R_a = 3 \mu m$.

TEMPERATURE ELECTRICAL PROBE

Zinc-plated steel screw with built-in probe. The probe is made out of a platinum resistor whose ohmic resistance changes according to the temperature.

For a correct assembly see Warnings (see page 1777).

SWIVELLING TWO-PIN CONNECTOR

With built-in cable gland and contact holder. Front or side output (right or left) including protection against water sprays (protection class IP 65 according to EN 60529 table on page A23) that can be increased during installation with the necessary adjustments. Flat NBR synthetic rubber packing rings.

CONTRAST SCREEN

White lacquered aluminium. The housing, in the appropriate external rear slot, guarantees the best protection from direct contact with fluid.

It can be taken out from the inclined side, before assembly to allow the insertion of level lines or words.

MOUNTING

When fitting is not possible from the inside of the reservoir and the walls are not thick enough, the screws can be used together with Fast Mounting Kit (see page 1768).

MAXIMUM CONTINUOUS WORKING TEMPERATURE

90°C (with oil).

FEATURES AND PERFORMANCES

This column level indicator generates an analogic electric signal of the oil temperature.

Ultrasound welding to guarantee a perfect seal.

Maximum fluid level visibility even from side positions.

Lens effect for a better visibility of the fluid level and temperature.

TECHNICAL DATA

In laboratory tests carried out with mineral oil type CB68 (according to ISO 3498) at 23°C for a limited period of time, the weld stood up to: 18 bar (HCX.127-STL) 12 bar (HCX.254-STL).

For use with other fluids and under different pressure and temperature conditions, please contact ELESa Technical Department.

In any case we suggest to verify the suitability of the product under the actual working conditions.

SPECIAL EXECUTIONS ON REQUEST

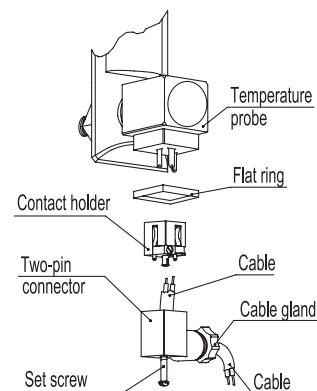
- Level indicators for use with fluids containing alcohol or with hot water.
- UV resistant transparent technopolymer indicators.
- Indicators with two red ball-shaped floats.



ELESa Original design

TWO-PIN CONNECTOR ASSEMBLY INSTRUCTIONS

1. Remove the connector from the indicator by unscrewing the set screw placed in the bottom, take the contact holder out and loosen the cable gland.
2. Slip on the two-pole cable into the connector (standard connector) and connect the wires to the terminals nr. 1 and nr. 2 of the contact holder.
3. Assemble by pressing the contact holder into the connector in the required position.
4. Screw the connectors to the indicator and then tighten the cable glands.



FUNCTIONING OF THE TEMPERATURE ELECTRICAL PROBE

The working principle of the temperature probe is to measure the variation of resistance of a platinum element: 100 ohm = 0°C, 138.4 ohm = 100°C.

The function between temperature (T) and resistance (R) is approximately linear over a small temperature range: for example, if you assume that it is linear over the 0° to 100°C range, the error at 50°C is 0.4°C.

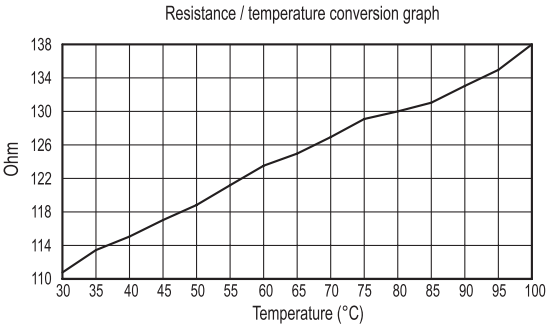
For precision measurement, it is necessary to linearise the resistance to give an accurate temperature. The most recent definition of the function between resistance and temperature is International Temperature Standard 90 (ITS-90). The function between resistance and temperature, obtained in laboratory tests, measuring directly the resistance value on the contacts is shown in the graph.

We suggest, anyway, to set the system in order to compensate both heat dissipation and cable resistance.

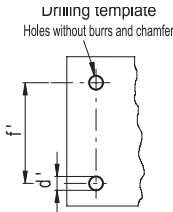
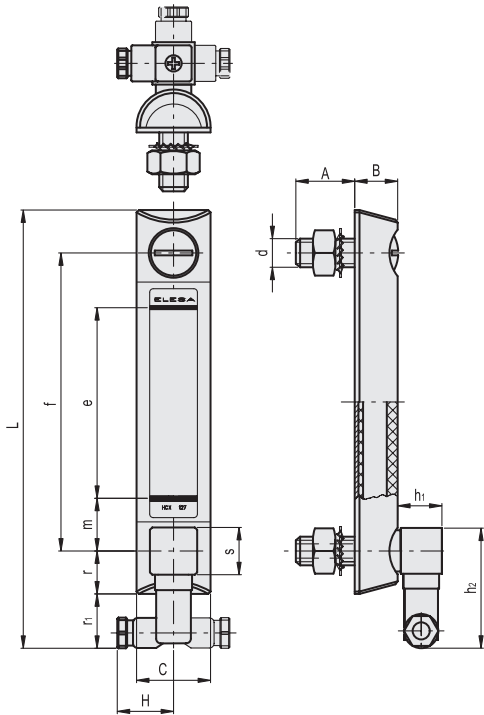
A 1°C temperature change will cause a 0.384 ohm change in resistance, so even a small error in measurement of the resistance (for example, the resistance of the wires leading to the sensor) can cause a large error in the measurement of the temperature.

Because of the low signal levels, it is important to keep any cables away from electric cables, motors, switchgear and other devices that may emit magnetic or electrical noise. Using screened cable, with the screen grounded at one end, may help to reduce interference.

When using long cables, it is necessary to check that the measuring equipment is able to handle the cable resistance.



Electrical features	Temperature probe
Tension feed	AC/DC
Maximum current	2 mA
Cable gland	Pg 7 (for cables in sheath with Ø 6 or 7 mm)
Conductors cross-section	Max 1.5 mm²



Code	Description	f	d	A	B	C	H	L	e	h1	h2	m	r	r1	s	d'±0.2	f'±0.2	C# [Nm]	⚖
11166	HCX.127-STL-M12	127	M12	23	18	31	27	187	80	21	54	23	17	26	22	12.5	127	12	220
11176	HCX.254-STL-M12	254	M12	21	18	35	27	315	203	21	54	26	18.5	24	22	12.5	254	10	265

Maximum tightening torque