

ASSEMBLY ENDS

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour.

SUPPORT

Aluminium in natural colour.

GRADUATED CONTRAST SCREEN

White lacquered aluminium. It can be taken out before assembly to allow the insertion of level lines or words.

BRACKET WITH SENSORS

Watertight glass-fibre reinforced polyamide based (PA) technopolymer, black colour.

SWIVELLING CONNECTOR

With built-in cable gland and contact holder. Front or axial output (high or low) ensuring protection against water sprays (protection class IP 65 according to table EN 60529).

STANDARD EXECUTIONS

See configuration table.

SPECIAL EXECUTIONS ON REQUEST

- Column level window in transparent methylmethacrylate (PMMA) for max 70°C use.
- Polyamide based technopolymer float (from HCK.127) red colour.
- Expanded NBR float (from HCK.176) black colour with AISI 316 stainless steel spiral for special executions, viscous liquids, high temperatures.
- Indicators with level visibility (e) up to 1429 mm and fixing holes with hole centre distance (f) up to 1.500 mm.
- Packing rings in special material depending on the customer's needs.
- Special screw with nickel-plated brass tap to be fitted to the lower assembly end for any maintenance operation requiring the indicator exclusion.

TECHNICAL DATA

In laboratory tests carried out for a relatively limited time with the following liquids at a temperature of 23° C: mineral oil type CB68 (according to ISO 3498) for HCK, mineral oil type CB68 (according to ISO 3498) water or water/glycol-based solutions (50%) for HCK-GL, the resistance values were much higher than 35 bar.

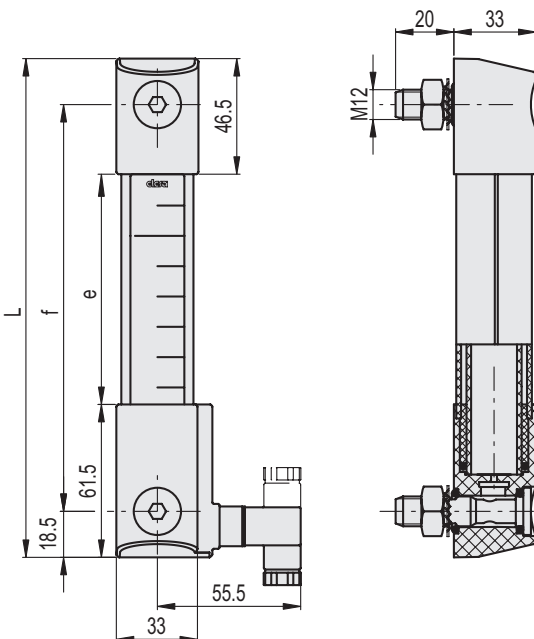
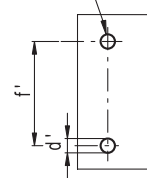
For use with other fluids and under different pressure and temperature conditions, please contact ELESA Technical Department.

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



ELESA Original design

Drilling template
Holes without burrs and chamfer



f	L	e	d'.02	f'	C# [Nm]	⚖️
127	164	56	12.5	127±0.5	12	228
176	213	105	12.5	176±0.5	12	258
254	291	183	12.5	254±0.5	12	305
381	418	310	12.5	381±0.5	12	384
508	545	437	12.5	508±0.5	12	462

Maximum tightening torque.



Accessories for hydraulic systems



FUNCTIONING OF THE MAX TEMPERATURE SENSOR

- NO: the electrical contact closes when the pre-set temperature is reached at 80°C.
- NC: the electrical contact opens when the pre-set temperature at 80°C is reached.

Electrical features	MAX temperature sensor	
Tension feed	AC/DC	
Electric contacts	NO normally open	
	NC normally closed	
Voltage / Maximum current	250 Vac - 2 A	(resistive loads)
	115 Vac - 3 A	
	24 Vdc - 3 A	
	12 Vdc - 4 A	
Minimum current	50 mA	
Cable gland	Pg 7 (for cables in sheath with Ø 6 or 7 mm)	
Conductors cross-section	Max. 1.5 mm ²	

CONNECTOR ASSEMBLY INSTRUCTIONS

1. Remove the connector from the indicator by unscrewing the set screw placed on the connector, take the contact holders out and loosen the cable gland.
2. See Fig.3 to proceed with the wiring according to the chosen product.
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.

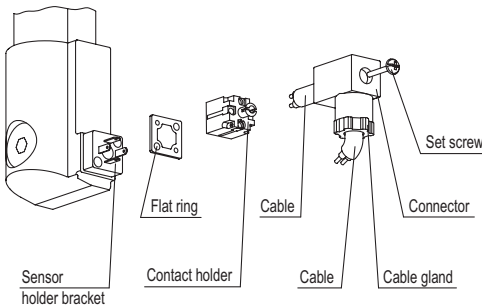
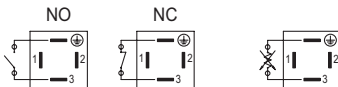


Fig.3

HCK-ST

HCK-STL



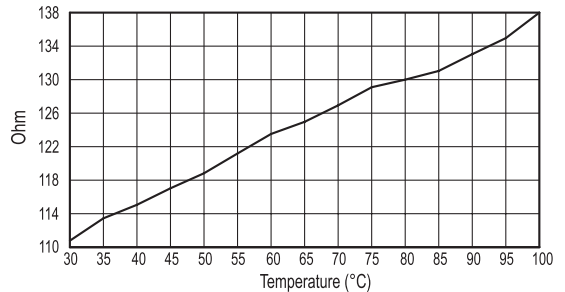
FUNCTIONING OF THE TEMPERATURE ELECTRICAL PROBE

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.

Resistance / temperature conversion graph



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	1mA
Cable gland	Pg 7 (for cables in sheath with Ø 6 or 7 mm)
Conductors cross-section	Max. 1.5 mm ²
Do not mount this indicator in proximity to magnetic fields.	

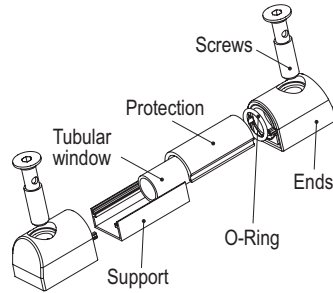


TABLE FOR THE CONFIGURATION OF THE STANDARD EXECUTIONS

HCK.	-	127	-	ZN	-	M12	-	NBR	-	PC	-	P	-	ST80-NO
		①		②				③		④		⑤		⑥
①	Hole centre distance (f)	127								127 mm				
		176								176 mm				
		254								254 mm				
		381								381 mm				
		508								508 mm				
②	Screws, nuts and washers	ZN		Zinc-plated steel.										
		SST		AISI 303 stainless steel screws, AISI 304 stainless steel nuts and washers.										
③	Packing rings	NBR		NBR synthetic rubber O-Ring for use with maximum continuous working temperature 100°C.										
		FKM		FKM synthetic rubber O-Ring type VITON® for use with maximum continuous working temperature 130°C.										
④	Level tubular window	PC		Polycarbonate transparent tube for use with oil.										
		GL		PYREX glass transparent tube for use with oil, water or water/glycol-based solutions (50%), supplied with front protection (P) paragraph 5.										
⑤	Transparent front protection	P		Polycarbonate (PC). Removable for cleaning operations.										
		NP		Without protection (for execution PC paragraph 4).										
⑥	Sensor / Temperature probe	ST80-NO		Temperature electrical sensor MAX = 80°C with electric contacts normally open.										
		ST80-NC		Temperature electrical sensor MAX = 80°C with electric contacts normally closed.										
		STL		PT100 temperature electrical probe.										

VITON® Registered trademark by DuPont Dow Elastomers.
 PYREX® Registered trademark by Corning Inc.



Accessories for hydraulic systems



Accessories for hydraulic systems

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* See table for the configuration of the standard executions.

HCK-ZN-PC-P		HCK-ZN-GL-P		HCK-ZN-PC-NP	
Code	Description*	Code	Description*	Code	Description*
113003	HCK.127-ZN-M12-NBR-PC-P-ST80-NC	113045	HCK.127-ZN-M12-NBR-GL-P-ST80-NC	113003-NP	HCK.127-ZN-M12-NBR-PC-NP-ST80-NC
113005	HCK.127-ZN-M12-NBR-PC-P-ST80-NO	113047	HCK.127-ZN-M12-NBR-GL-P-ST80-NO	113005-NP	HCK.127-ZN-M12-NBR-PC-NP-ST80-NO
113007	HCK.127-ZN-M12-NBR-PC-P-STL	113049	HCK.127-ZN-M12-NBR-GL-P-STL	113007-NP	HCK.127-ZN-M12-NBR-PC-NP-STL
114003	HCK.176-ZN-M12-NBR-PC-P-ST80-NC	114045	HCK.176-ZN-M12-NBR-GL-P-ST80-NC	114003-NP	HCK.176-ZN-M12-NBR-PC-NP-ST80-NC
114005	HCK.176-ZN-M12-NBR-PC-P-ST80-NO	114047	HCK.176-ZN-M12-NBR-GL-P-ST80-NO	114005-NP	HCK.176-ZN-M12-NBR-PC-NP-ST80-NO
114007	HCK.176-ZN-M12-NBR-PC-P-STL	114049	HCK.176-ZN-M12-NBR-GL-P-STL	114007-NP	HCK.176-ZN-M12-NBR-PC-NP-STL
116103	HCK.254-ZN-M12-NBR-PC-P-ST80-NC	116145	HCK.254-ZN-M12-NBR-GL-P-ST80-NC	116103-NP	HCK.254-ZN-M12-NBR-PC-NP-ST80-NC
116105	HCK.254-ZN-M12-NBR-PC-P-ST80-NO	116147	HCK.254-ZN-M12-NBR-GL-P-ST80-NO	116105-NP	HCK.254-ZN-M12-NBR-PC-NP-ST80-NO
116107	HCK.254-ZN-M12-NBR-PC-P-STL	116149	HCK.254-ZN-M12-NBR-GL-P-STL	116107-NP	HCK.254-ZN-M12-NBR-PC-NP-STL
117003	HCK.381-ZN-M12-NBR-PC-P-ST80-NC	117045	HCK.381-ZN-M12-NBR-GL-P-ST80-NC	117003-NP	HCK.381-ZN-M12-NBR-PC-NP-ST80-NC
117005	HCK.381-ZN-M12-NBR-PC-P-ST80-NO	117047	HCK.381-ZN-M12-NBR-GL-P-ST80-NO	117005-NP	HCK.381-ZN-M12-NBR-PC-NP-ST80-NO
117007	HCK.381-ZN-M12-NBR-PC-P-STL	117049	HCK.381-ZN-M12-NBR-GL-P-STL	117007-NP	HCK.381-ZN-M12-NBR-PC-NP-STL
117903	HCK.508-ZN-M12-NBR-PC-P-ST80-NC	117945	HCK.508-ZN-M12-NBR-GL-P-ST80-NC	117903-NP	HCK.508-ZN-M12-NBR-PC-NP-ST80-NC
117905	HCK.508-ZN-M12-NBR-PC-P-ST80-NO	117947	HCK.508-ZN-M12-NBR-GL-P-ST80-NO	117905-NP	HCK.508-ZN-M12-NBR-PC-NP-ST80-NO
117907	HCK.508-ZN-M12-NBR-PC-P-STL	117949	HCK.508-ZN-M12-NBR-GL-P-STL	117907-NP	HCK.508-ZN-M12-NBR-PC-NP-STL
113133	HCK.127-ZN-M12-FKM-PC-P-ST80-NC	113177	HCK.127-ZN-M12-FKM-GL-P-ST80-NC	113133-NP	HCK.127-ZN-M12-FKM-PC-NP-ST80-NC
113135	HCK.127-ZN-M12-FKM-PC-P-ST80-NO	113179	HCK.127-ZN-M12-FKM-GL-P-ST80-NO	113135-NP	HCK.127-ZN-M12-FKM-PC-NP-ST80-NO
113137	HCK.127-ZN-M12-FKM-PC-P-STL	113181	HCK.127-ZN-M12-FKM-GL-P-STL	113137-NP	HCK.127-ZN-M12-FKM-PC-NP-STL
114133	HCK.176-ZN-M12-FKM-PC-P-ST80-NC	114177	HCK.176-ZN-M12-FKM-GL-P-ST80-NC	114133-NP	HCK.176-ZN-M12-FKM-PC-NP-ST80-NC
114135	HCK.176-ZN-M12-FKM-PC-P-ST80-NO	114179	HCK.176-ZN-M12-FKM-GL-P-ST80-NO	114135-NP	HCK.176-ZN-M12-FKM-PC-NP-ST80-NO
114137	HCK.176-ZN-M12-FKM-PC-P-STL	114181	HCK.176-ZN-M12-FKM-GL-P-STL	114137-NP	HCK.176-ZN-M12-FKM-PC-NP-STL
116233	HCK.254-ZN-M12-FKM-PC-P-ST80-NC	116277	HCK.254-ZN-M12-FKM-GL-P-ST80-NC	116233-NP	HCK.254-ZN-M12-FKM-PC-NP-ST80-NC
116235	HCK.254-ZN-M12-FKM-PC-P-ST80-NO	116279	HCK.254-ZN-M12-FKM-GL-P-ST80-NO	116235-NP	HCK.254-ZN-M12-FKM-PC-NP-ST80-NO
116237	HCK.254-ZN-M12-FKM-PC-P-STL	116281	HCK.254-ZN-M12-FKM-GL-P-STL	116237-NP	HCK.254-ZN-M12-FKM-PC-NP-STL
117143	HCK.381-ZN-M12-FKM-PC-P-ST80-NC	117187	HCK.381-ZN-M12-FKM-GL-P-ST80-NC	117143-NP	HCK.381-ZN-M12-FKM-PC-NP-ST80-NC
117145	HCK.381-ZN-M12-FKM-PC-P-ST80-NO	117189	HCK.381-ZN-M12-FKM-GL-P-ST80-NO	117145-NP	HCK.381-ZN-M12-FKM-PC-NP-ST80-NO
117147	HCK.381-ZN-M12-FKM-PC-P-STL	117191	HCK.381-ZN-M12-FKM-GL-P-STL	117147-NP	HCK.381-ZN-M12-FKM-PC-NP-STL
118053	HCK.508-ZN-M12-FKM-PC-P-ST80-NC	118097	HCK.508-ZN-M12-FKM-GL-P-ST80-NC	118053-NP	HCK.508-ZN-M12-FKM-PC-NP-ST80-NC
118055	HCK.508-ZN-M12-FKM-PC-P-ST80-NO	118099	HCK.508-ZN-M12-FKM-GL-P-ST80-NO	118055-NP	HCK.508-ZN-M12-FKM-PC-NP-ST80-NO
118057	HCK.508-ZN-M12-FKM-PC-P-STL	118101	HCK.508-ZN-M12-FKM-GL-P-STL	118057-NP	HCK.508-ZN-M12-FKM-PC-NP-STL

HCK-SST-PC-P		HCK-SST-GL-P		HCK-SST-PC-NP	
Code	Description*	Code	Description*	Code	Description*
113303	HCK.127-SST-M12-NBR-PC-P-ST80-NC	113347	HCK.127-SST-M12-NBR-GL-P-ST80-NC	113303-NP	HCK.127-SST-M12-NBR-PC-NP-ST80-NC
113305	HCK.127-SST-M12-NBR-PC-P-ST80-NO	113349	HCK.127-SST-M12-NBR-GL-P-ST80-NO	113305-NP	HCK.127-SST-M12-NBR-PC-NP-ST80-NO
113307	HCK.127-SST-M12-NBR-PC-P-STL	113351	HCK.127-SST-M12-NBR-GL-P-STL	113307-NP	HCK.127-SST-M12-NBR-PC-NP-STL
114273	HCK.176-SST-M12-NBR-PC-P-ST80-NC	114317	HCK.176-SST-M12-NBR-GL-P-ST80-NC	114273-NP	HCK.176-SST-M12-NBR-PC-NP-ST80-NC
114275	HCK.176-SST-M12-NBR-PC-P-ST80-NO	114319	HCK.176-SST-M12-NBR-GL-P-ST80-NO	114275-NP	HCK.176-SST-M12-NBR-PC-NP-ST80-NO
114277	HCK.176-SST-M12-NBR-PC-P-STL	114321	HCK.176-SST-M12-NBR-GL-P-STL	114277-NP	HCK.176-SST-M12-NBR-PC-NP-STL
116383	HCK.254-SST-M12-NBR-PC-P-ST80-NC	116427	HCK.254-SST-M12-NBR-GL-P-ST80-NC	116383-NP	HCK.254-SST-M12-NBR-PC-NP-ST80-NC
116385	HCK.254-SST-M12-NBR-PC-P-ST80-NO	116429	HCK.254-SST-M12-NBR-GL-P-ST80-NO	116385-NP	HCK.254-SST-M12-NBR-PC-NP-ST80-NO
116387	HCK.254-SST-M12-NBR-PC-P-STL	116431	HCK.254-SST-M12-NBR-GL-P-STL	116387-NP	HCK.254-SST-M12-NBR-PC-NP-STL
117293	HCK.381-SST-M12-NBR-PC-P-ST80-NC	117337	HCK.381-SST-M12-NBR-GL-P-ST80-NC	117293-NP	HCK.381-SST-M12-NBR-PC-NP-ST80-NC
117295	HCK.381-SST-M12-NBR-PC-P-ST80-NO	117339	HCK.381-SST-M12-NBR-GL-P-ST80-NO	117295-NP	HCK.381-SST-M12-NBR-PC-NP-ST80-NO
117297	HCK.381-SST-M12-NBR-PC-P-STL	117341	HCK.381-SST-M12-NBR-GL-P-STL	117297-NP	HCK.381-SST-M12-NBR-PC-NP-STL
118203	HCK.508-SST-M12-NBR-PC-P-ST80-NC	118247	HCK.508-SST-M12-NBR-GL-P-ST80-NC	118203-NP	HCK.508-SST-M12-NBR-PC-NP-ST80-NC
118205	HCK.508-SST-M12-NBR-PC-P-ST80-NO	118249	HCK.508-SST-M12-NBR-GL-P-ST80-NO	118205-NP	HCK.508-SST-M12-NBR-PC-NP-ST80-NO
118207	HCK.508-SST-M12-NBR-PC-P-STL	118251	HCK.508-SST-M12-NBR-GL-P-STL	118207-NP	HCK.508-SST-M12-NBR-PC-NP-STL
113435	HCK.127-SST-M12-FKM-PC-P-ST80-NC	113477	HCK.127-SST-M12-FKM-GL-P-ST80-NC	113435-NP	HCK.127-SST-M12-FKM-PC-NP-ST80-NC
113437	HCK.127-SST-M12-FKM-PC-P-ST80-NO	113479	HCK.127-SST-M12-FKM-GL-P-ST80-NO	113437-NP	HCK.127-SST-M12-FKM-PC-NP-ST80-NO
113439	HCK.127-SST-M12-FKM-PC-P-STL	113481	HCK.127-SST-M12-FKM-GL-P-STL	113439-NP	HCK.127-SST-M12-FKM-PC-NP-STL
114413	HCK.176-SST-M12-FKM-PC-P-ST80-NC	114455	HCK.176-SST-M12-FKM-GL-P-ST80-NC	114413-NP	HCK.176-SST-M12-FKM-PC-NP-ST80-NC
114415	HCK.176-SST-M12-FKM-PC-P-ST80-NO	114457	HCK.176-SST-M12-FKM-GL-P-ST80-NO	114415-NP	HCK.176-SST-M12-FKM-PC-NP-ST80-NO
114417	HCK.176-SST-M12-FKM-PC-P-STL	114459	HCK.176-SST-M12-FKM-GL-P-STL	114417-NP	HCK.176-SST-M12-FKM-PC-NP-STL
116523	HCK.254-SST-M12-FKM-PC-P-ST80-NC	116565	HCK.254-SST-M12-FKM-GL-P-ST80-NC	116523-NP	HCK.254-SST-M12-FKM-PC-NP-ST80-NC
116525	HCK.254-SST-M12-FKM-PC-P-ST80-NO	116567	HCK.254-SST-M12-FKM-GL-P-ST80-NO	116525-NP	HCK.254-SST-M12-FKM-PC-NP-ST80-NO
116527	HCK.254-SST-M12-FKM-PC-P-STL	116569	HCK.254-SST-M12-FKM-GL-P-STL	116527-NP	HCK.254-SST-M12-FKM-PC-NP-STL
117433	HCK.381-SST-M12-FKM-PC-P-ST80-NC	117475	HCK.381-SST-M12-FKM-GL-P-ST80-NC	117433-NP	HCK.381-SST-M12-FKM-PC-NP-ST80-NC
117435	HCK.381-SST-M12-FKM-PC-P-ST80-NO	117477	HCK.381-SST-M12-FKM-GL-P-ST80-NO	117435-NP	HCK.381-SST-M12-FKM-PC-NP-ST80-NO
117437	HCK.381-SST-M12-FKM-PC-P-STL	117479	HCK.381-SST-M12-FKM-GL-P-STL	117437-NP	HCK.381-SST-M12-FKM-PC-NP-STL
118343	HCK.508-SST-M12-FKM-PC-P-ST80-NC	118385	HCK.508-SST-M12-FKM-GL-P-ST80-NC	118343-NP	HCK.508-SST-M12-FKM-PC-NP-ST80-NC
118345	HCK.508-SST-M12-FKM-PC-P-ST80-NO	118387	HCK.508-SST-M12-FKM-GL-P-ST80-NO	118345-NP	HCK.508-SST-M12-FKM-PC-NP-ST80-NO
118347	HCK.508-SST-M12-FKM-PC-P-STL	118389	HCK.508-SST-M12-FKM-GL-P-STL	118347-NP	HCK.508-SST-M12-FKM-PC-NP-STL

