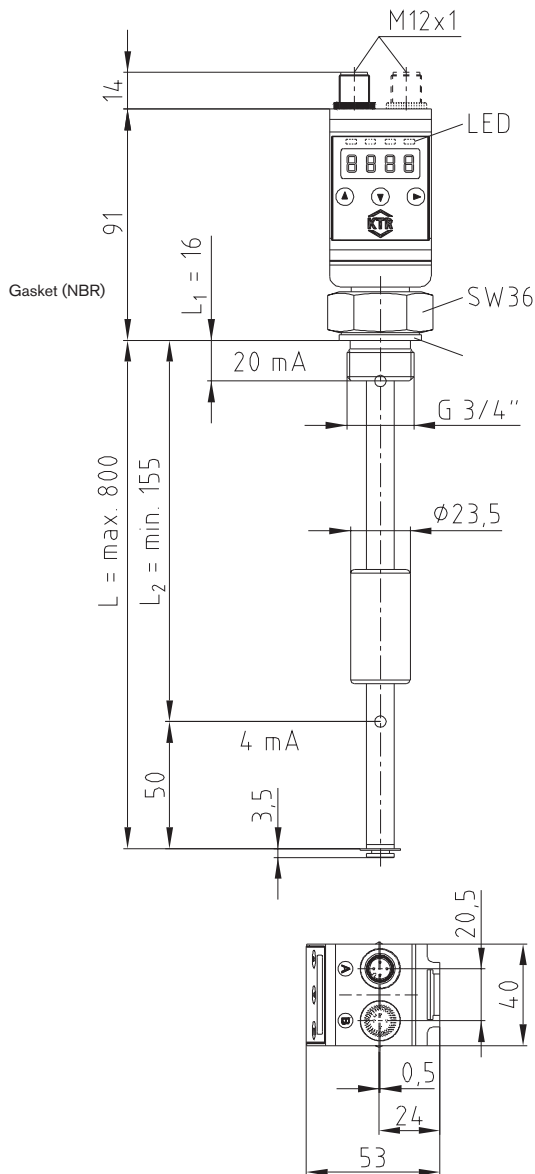


Electronic level and temperature control



Technical data

Operating pressure:	max. 1 bar
Operating temperature:	-20 °C up to +80 °C
Ambient temperature:	-20 °C up to +70 °C
Weight:	approx. 400g
Sealing fluid:	min. 0.8 kg/dm ³
Float:	PU
Immersion pipe:	MS
G 3/4 flange:	MS
Measuring resistor:	Reed chain
Resolution:	10 mm
Temperature sensor:	PT100 class B DIN 60751

Display and control unit

Display:	4-digit 7-segment LED display
Operation:	over 3 keys
Memory:	Min. and max. value memory
Current consumption with starting:	approx. 100 mA for 100 ms
Current consumption during operation:	approx. 50 mA
Supply voltage (UB):	10-32 V DC (nominal voltage 24V DC)
Protection class:	IP 65
Display units:	Level: %, cm, L, i, Gal Temperature: -20 °C to +120 °C or -4 °F to 248 °F
Setting range:	Level: e. g. 0-100 % Temperature: 0 °C to +100 °C or 32 °F to 212 °F
Accuracy:	1% of final value

Ordering example:

NVT-E	20	4	M12
Type	20 = 200 mm contact tube 28 = 280 mm contact tube 37 = 370 mm contact tube 50 = 500 mm contact tube	4 = Switching points to be assigned freely 2NT = 2 switch. terminals to be programmed freely and 2 analogue outputs (level and temp.)	M12 = M12 plug base 4 poles

TEMPERATURE CONTROL AND MONITORING HYDRAULIC COMPONENTS

Temperature probe TE-PT-100



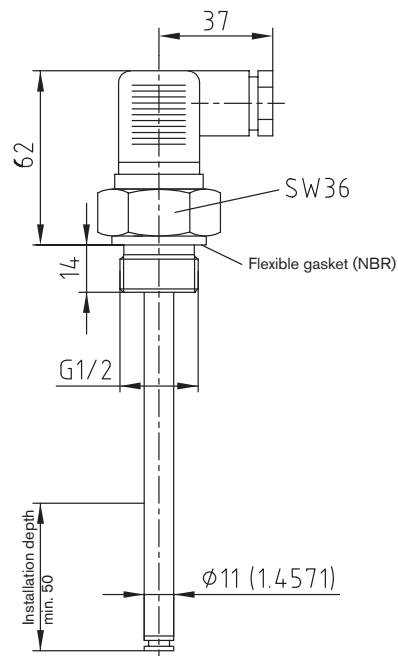
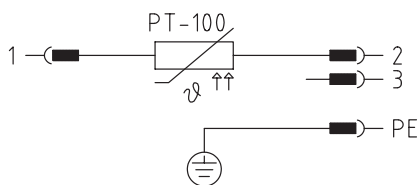
Temperature probe TE-PT-100

Basic values of precision resistor PT-100												
°C	0	10	20	30	40	50	60	70	80	90	100	
Ohm	100,00	103,90	107,79	111,67	115,54	119,40	123,24	127,07	130,89	134,70	138,50	

Technical data

Screwing and immersion sleeve:	1.4571 (stainless steel) – brass on request
Lengths available:	100, 200 and 300 mm from stock (special lengths up to 1000 mm)
Operating pressure:	10 bar (immersion sleeve of stainless steel)
Operating temperature/ measuring range:	- 40 °C up to + 100 °C
Resistance feeler element:	PT-100 class B DIN/IEC 751
Max. S-wire current PT-100:	1 mA
Plug:	acc. to DIN 43650 – 3 poles + PE, protection IP 65, cable screwing PG11

Connection diagram:

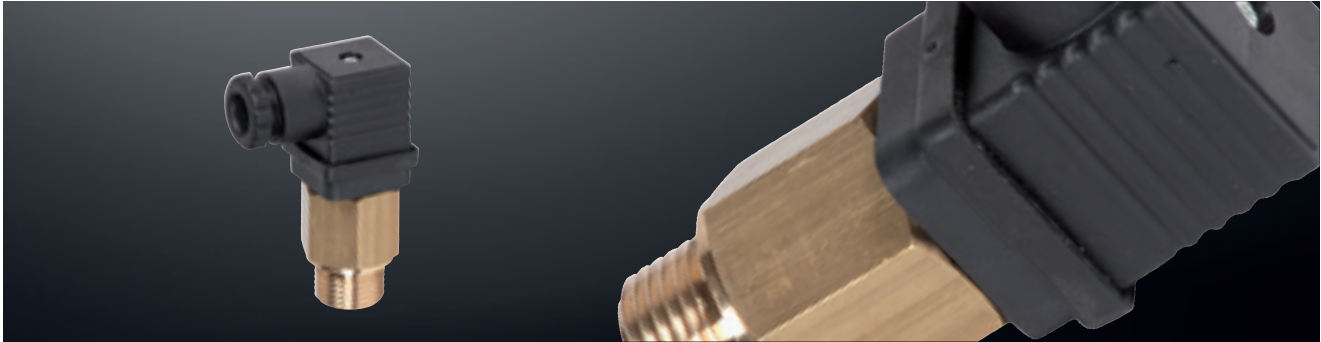


Ordering
example:

TE	PT-100	300
Electronic temperature probe	Resistance feeler element	Length of immersion sleeve

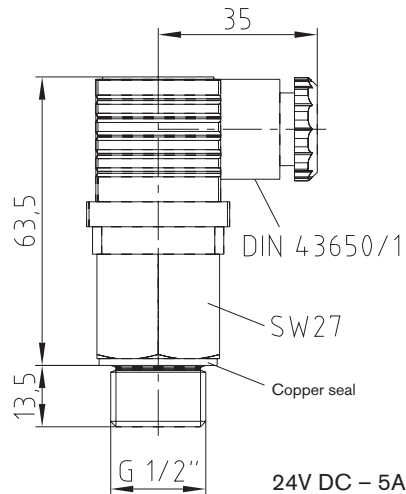
TEMPERATURE CONTROL AND MONITORING HYDRAULIC COMPONENTS

Temperature switch TSC



- Simple, solid design
- Electric insert easy to disassemble
- For plug acc. to DIN 43650 straight cable outlet direction swinging by 360°
- Copper seal
- Protective class IP65

Technical data		
Control element:	Bi metal	Switching point:
Switching operation:	NO = make contact	TSC 40 = 40 °C
Switching temperature:	+25 °C up to +80 °C	TSC 50 = 50 °C
Material of probe:	Brass	TSC 60 = 60 °C
Operating pressure max.:	15 bar	TSC 70 = 70 °C
Operating temperature:	20 °C up to +100 °C	
Plug:	acc. to DIN 43650 – 3 poles + PE, protection IP 65, cable screwing PG11	



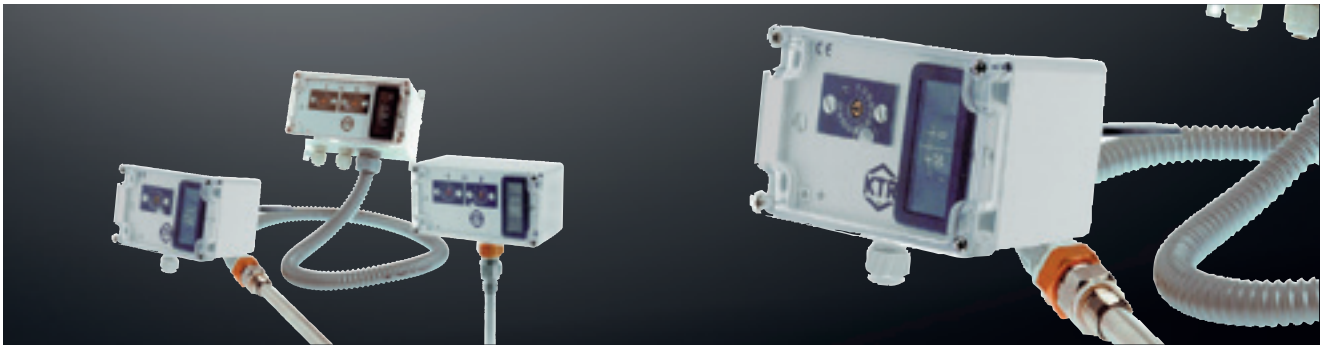
Temperature contacts:	Max. operating voltage	250 V AC - 8 A
	Max. switching current	2 A
	Tolerance	± 5 K
	Difference of shift back	15 K ± 3 K

Ordering example:

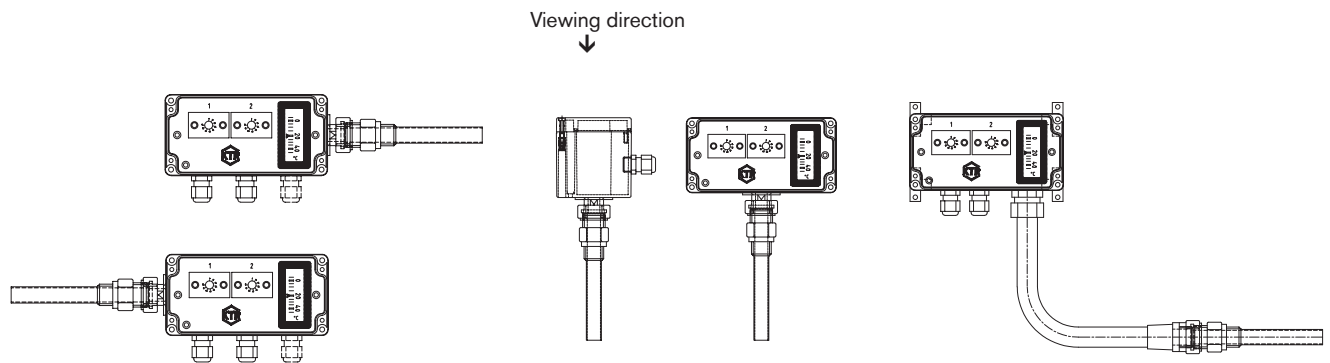
TSC	50
Temperature switch	Switching point 50 °C

TEMPERATURE CONTROL AND MONITORING HYDRAULIC COMPONENTS

Industrial controller IR



Industrial controller: Type/position of immersion sleeve



Type R and L

- R:** Immersion sleeve on the right
L: Immersion sleeve on the left

Type H and U

- H:** Immersion sleeve in the back
U: Immersion sleeve at the bottom

Type S₁

- S₁:** with 1 hose
S₃: with 2 hoses

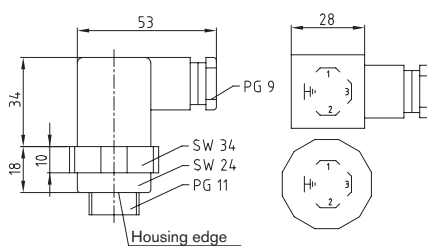
Lengths of hose: S₁ = 1500 mm and S₃ = 2 x 1500 mm

Electrical connections (IR)

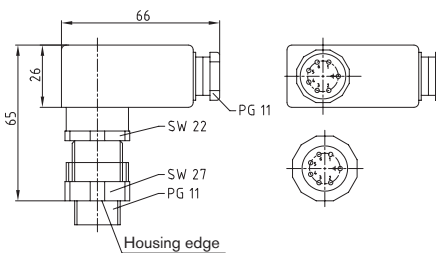
A01 standard: flat plug 6.3 x 0.8; receptacles attached to DIN 46247/3

A04 special design: European terminal strip fully cabled

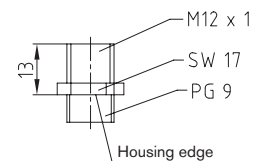
Connectors A02, A03 and A05 see illustrations.



Plug A02
DIN 43650



Plug A03
DIN 43651



Contacts

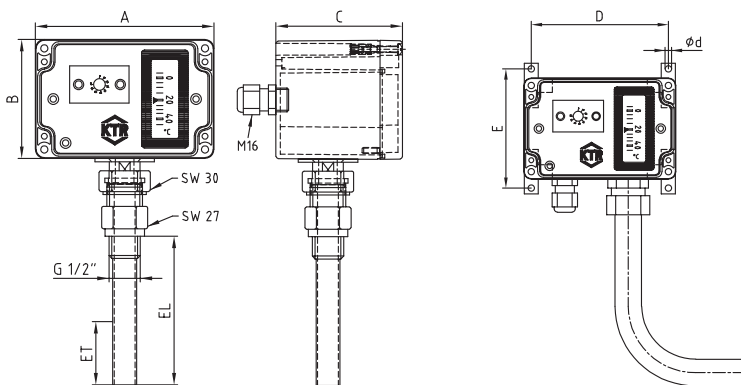


Plug A05
M12 - 4 poles

Controllers and temperature display (IR)

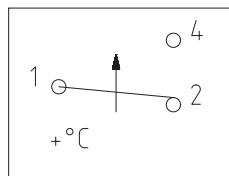
Type	Operation	Range	Max. probe temperature limiting temperature	Switching difference Kelvin
00	Adjustable controller	-30 °C up to +40 °C	80	~5
02	Adjustable controller	0 °C up to +80 °C	120	~5
03	Adjustable controller	+10 °C up to +120 °C	160	~5
04	Adjustable controller	+10 °C up to +120 °C	160	~10
05	Adjustable controller	+60 °C up to +160 °C	200	~5
07	Adjustable controller *	0 °C up to +150 °C	200	~5
T1	Thermometer	0 °C up to +120 °C	140	
T2	Thermometer	-40 °C up to +80 °C	100	

* Manual adjustment



Pin connection each controller IR

PE connection (customer)



Controller 1 ... X
Connection 6,3 AMP
Insulated plug

Type IR						
Dimensions of housing [mm]						
Number of functions	A	B	C	Type S1 - S3		
				D	E	d
1	82	80	85	70	94	5,2
2	120	80	85	108	94	5,2
3	160	80	85	148	94	5,2
4 / 5 / 6 / 7	240	120	100	228	134	5,2

Technical data	
16 A (2,5)/250 VAC	0,5 K/min.
10 A (1,5)/400 VAC	
T max. depending on type	

Dimensions of the immersion sleeve IR						
Type/EL - Installation length	100	200	300	400	500	900
ET - mm minimum depth of immersion referring to the number of functions installed						
1 - 3 functions	90					
4 - 6 functions	180					
7 functions	270					

Type IR

Technical data

Contact selection:	Unipolar changer	Accuracy of display:	Class 3 according to DIN 16203
Contact material:	Hard silver Ag	Housing material:	Polycarbonate (Makrolon)
Setting range:	~ 30 °C to 160 °C	Immersion sleeve:	1.4301
Switching accuracy:	~ 4 °C	Cable screwing:	Polyamide
Ambient temperature:	~ 35 °C to 80 °C	Probe + capillary tube:	Cu
Test certificates:	VDE 0631, NF, SEMKO, Demko,	Switching power:	16 A (2.5)/250 VAC
Insulation:	ÖVE, KEMA		10 A (1.5)/400 VAC
Protection class:	Acc. to VDE		0.5 A/24 VDC
Cable screwing:	IP 65		Further data on request
Max. operating pressure of immersion sleeve:	M16 with strain relief	Dielectric strength:	2000 VAC between combined contacts and mass
Display of thermometer:	~ 30 °C to 160 °C		1150 VAC between open contacts

LED 12 -24 V	Index	LED 240 V	Index
green	2	green	5
red	3	red	6
red + green	4		

Ordering example:	IR	200	H	A01	03 - 02 - 02 - T1
Type	Lenght of immersion sleeve	Position of immersion sleeve	Electric connection	Requested controller or thermometer (max. 7). Sequence as requested. If LED is requested to be assembled, the figure 0 in the controller name is replaced by the respective index number (e. g. controller 02 and LED red = 32).	

Any questions? Please contact us.

Morskate Aandrijvingen BV

Oosterveldsingel 47A
7558 PJ Hengelo (Ov)
The Netherlands

NL

T +31 (0)74 - 760 11 11
info@morskateaanrijvingen.nl
www.morskateaanrijvingen.nl

DE

T +49 692 - 222 34 95
info@morskateantriebstechnik.de
www.morskateantriebstechnik.de

EN

T +31 (0)74 - 760 11 11
info@morskatedrivetechnology.com
www.morskatedrivetechnology.com