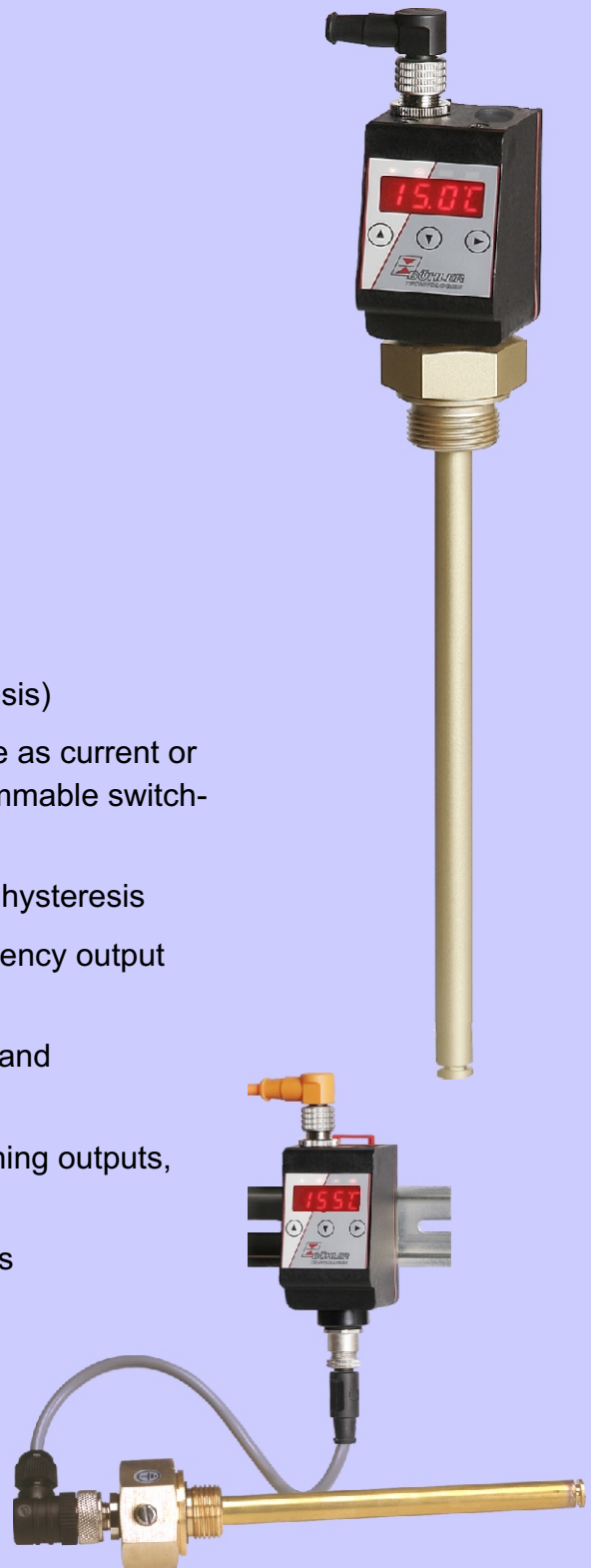


Thermotronik TT-77

- Electronic temperature switch
- Up to four programmable outputs (hysteresis)
- Continuous temperature signal (adjustable as current or voltage) plus one, two or four free programmable switching outputs
- Switching output adjustable as window or hysteresis
- Two switching outputs adjustable as frequency output (1 to 100 Hz)
- Direct or external mounting of the display and control unit
- Highly visible LED display indicates switching outputs, able to rotate 270° when directly mounted
- Menu structure based on VDMA guidelines
- Min/Max memory, logbook function
- Probe length up to 1 m



Technical data

Thermotronic TT-77F

Version tank top installation

Design

material probe
max. operating pressure
connection
operating temperature
lengths

MS

brass
5 bar
G1/2
-40 °C to +100 °C
L = 280, 370, 500 (standard)
variable from 70 to 1000 mm

VA

1.4571
10 bar
G1/2

Display

temperature display range
alarm setting range
accuracy
resolution
protection class
display
operation
current consumption at power up
operating consumption
supply voltage (U_B)

-20 °C to +120 °C (4 °F to 248 °F)
0 °C to 100 °C (32 °F to 178 °F)
1%
0.5 °C (1 °F)
IP65
4 digit 7 segment LED display
over 3 buttons
approx. 100 mA for 100 ms
approx. 50 mA
10 V to 30 V DC
(nominal voltage 24 V DC)

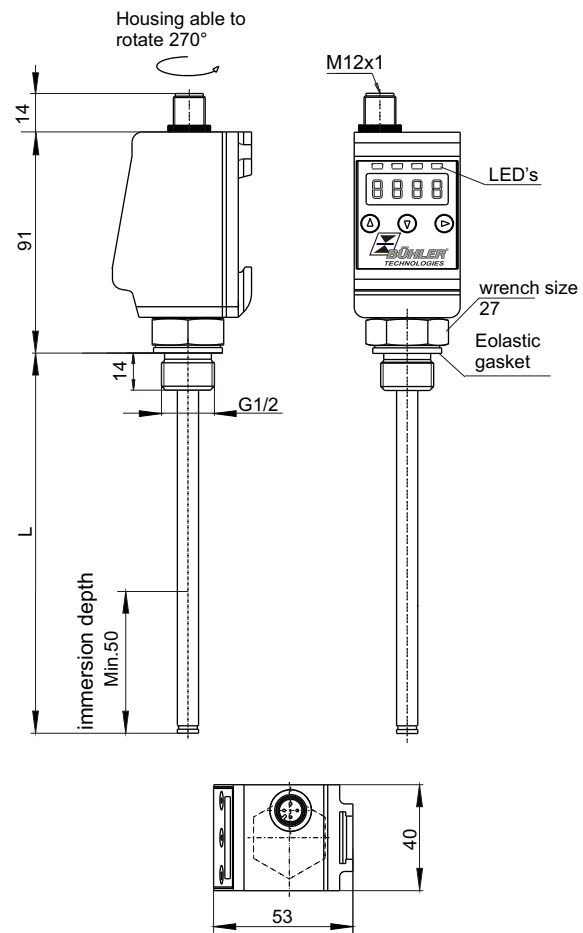
ambient temperature
material display housing

-20 °C to +70 °C

PA

Temperature sensor:

Pt 100 (RTD) class B, DIN EN 60 751



Following temperature outputs are available:

Typ	-2T	-4T	-1T-KT	2T-KT	4T-KT
connector (base)	M12 - 4 pol	M12 - 8 pol.	M12 - 4 pol	M12 - 5 pol	M12 - 8 pol
PNP transistor output	2 x	4 x	1 x	2 x	4 x
free programmable	yes	yes	yes	yes	yes
max. current per output	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
contact load max.	1A	1A	1A	1A	1A
analogue output 1 x 4 - 20 mA	no	no	yes	yes	yes
2-10 V, 0-10 V or 0-5 V load Ω analogue output			(U _B -8V) / 0,02A	(U _B -8V) / 0,02A	(U _B -8V) / 0,02A

Product code for Thermotronic TT-77 Version Tank top installation

TT-77F-

Design

MS brass
VA stainless steel

ALTERN

-2T 2 x PNP output
-4T 4 x PNP output
-1T-KT 1 x PNP output / 1 x Analogue output
-2T-KT 2 x PNP output / 1 x Analogue output
-4T-KT 4 x PNP output / 1 x Analogue output

Length (max. 1000 mm)

280
370
500
Variable (please specify)

Accessories

Part-No. 4-pol.	Part-No. 5-pol.	Part-No. 8-pol.	Description
9144 05 0010	9144 05 0016	9144 05 0048	Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)
9144 05 0046	9144 05 0017	9144 05 0049	Connecting cable M12x1, 3,0 m, elbow connector (female) and straight connector (male)
9144 05 0047	9144 05 0018	9144 05 0033	Connecting cable M12x1, 5,0 m, elbow connector (female) and wire

Example for order

You need: Electronic controller for tank top installation, design brass, length L= 470 mm,
1 temperature contact and analogue output

You order: Thermotronic TT-77F-MS-1T-KT / 470

Technical data

Thermotronik TT-77W

Temperature probe Pt 100 (RTD)

Design

material probe
max. operating pressure
connection
operating temperature
lengths

connector
probe element
tolerance

Pin assignment

Remote indicator version

MSVA

brass 1.4571
5 bar/10 bar
G1/2G1/2
-40 °C to +100 °C
L = 280, 370, 500 (standard)
variable from 70 to 1000 mm

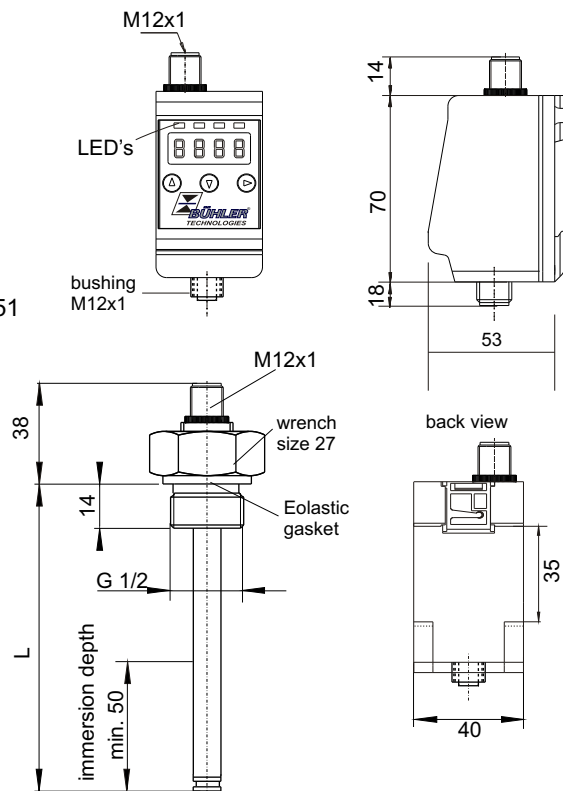
M12 (base)
Pt 100 (RTD) class B DIN EN 60 751
± 0.8 °C

Display

temperature display range
alarm setting range
accuracy
resolution
protection class
display
operation
current consumption at power up
operating current consumption
supply voltage (U_B)

ambient temperature
mounting:

-20 °C to +120 °C (4 °F to 248 °F)
0 °C to 100 °C (32 °F to 178 °F)
1%
0.5 °C (1 °F)
IP65
4 digit 7 segment LED display
over 3 buttons
approx. 100 mA for 100 ms
approx. 50 mA
10 V to 30 V DC
(nominal voltage 24 V DC)
-20 °C to +70 °C
35 mm simply rail mount



Following temperature outputs are available:

Typ	-2T	-4T	-1T-KT	2T-KT	4T-KT
connector (female) sensor input	M12 - 4 pol	M12 - 8 pol	M12 - 4 pol	M12 - 4 pol	M12 - 4 pol
connector (base)	M12 - 4 pol	M12 - 8 pol	M12 - 4 pol	M12 - 5 pol	M12 - 8 pol
PNP transistor output	2 x	4 x	1 x	2 x	4 x
free programmable	yes	yes	yes	yes	yes
max. current per output	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
contact load max.	1A	1A	1A	1A	1A
analogue output 1 x 4 - 20 mA	no	no	yes	yes	yes
2-10 V, 0-10 V or 0-5 V					
load Ω analogue output			(U _B -8V) / 0,02A	(U _B -8V) / 0,02A	(U _B -8V) / 0,02A

Product code for Thermotronik TT-77 Remote Indicator Version

TT-77W-

Design	MS	VA
	brass	stainless steel
A L T E R N	-2T	2 x PNP output
	-4T	4 x PNP output
	-1T-KT	1 x PNP output / 1 x Analogue output
	-2T-KT	2 x PNP output / 1 x Analogue output
	-4T-KT	4 x PNP output / 1 x Analogue output

Length (max. 1000 mm)
280
370
500
Variable (please specify)

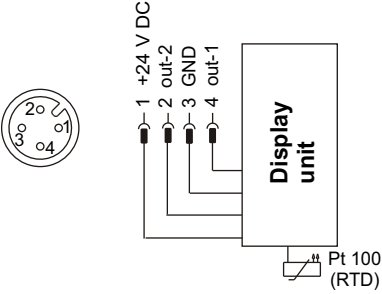
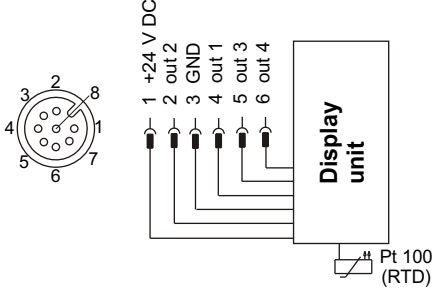
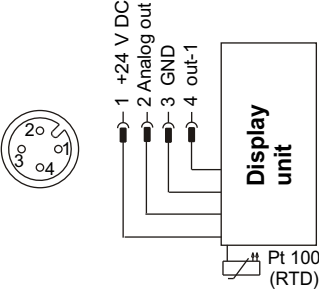
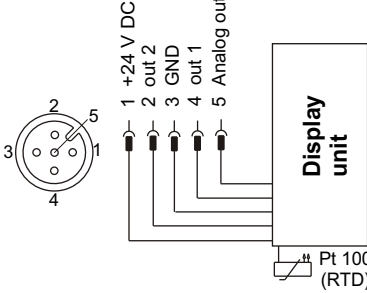
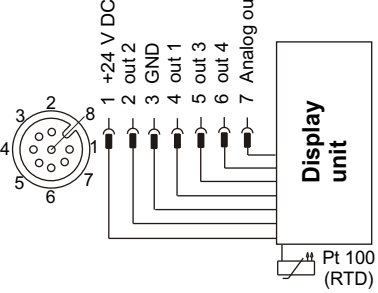
Accessories

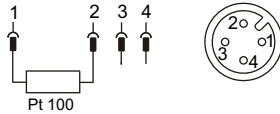
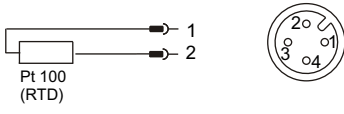
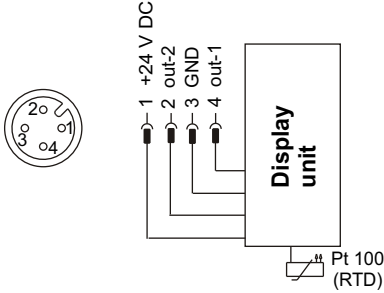
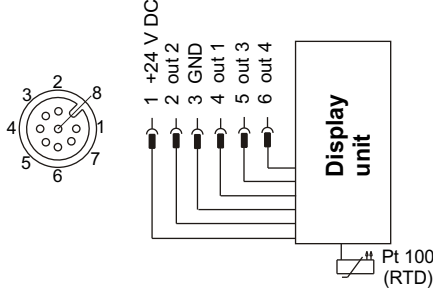
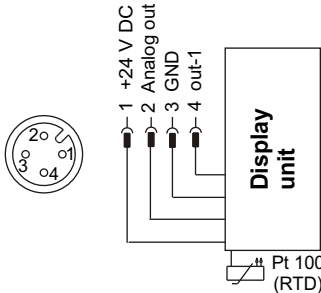
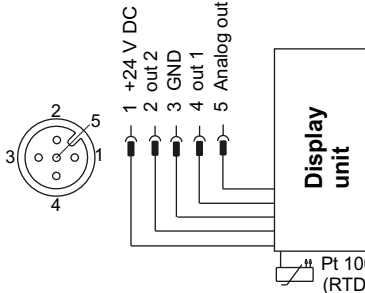
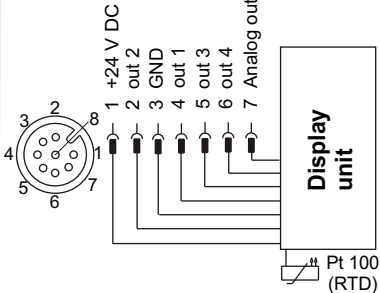
Part-No. 4-pol.	Part-No. 5-pol	Part-No. 8-pol.	Description
9144 05 0010	9144 05 0016	9144 05 0048	Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)
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Example for order

You need: Electronic controller remote indicator version, design brass, length L= 470 mm, 1 temperature contact and analogue output

You order: Thermotronik TT-77W-MS-1T-KT / 470

Pin assignment Thermotronik TT-77F			
	TT-77F...-2T		TT-77F...-4T
 connector M12 x 1 (base)			
	TT-77F...-1T-KT	TT-77F...-2T-KT	TT-77F...-4T-KT
 connector M12 x 1 (base)			

Pin assignment Thermotronic TT-77W				
	1. Temperature sensor PT100		2. Sensor input remote display	
 connector M12 x 1 (base)			 connector M12 x 1 (female)	
3. Output Thermotronic				
	TT-77W...-2T		TT-77W...-4T	
 connector M12 x 1 (base)				
	TT-77W...-1T-KT		TT-77W...-2T-KT	TT-77W...-4T-KT
 connector M12 x 1 (base)				

Note:
If the switching output is measured with high-impedance measuring equipment or if the frequency output is used, connect a 10 kΩ resistor between output and ground to avoid faulty measurements.