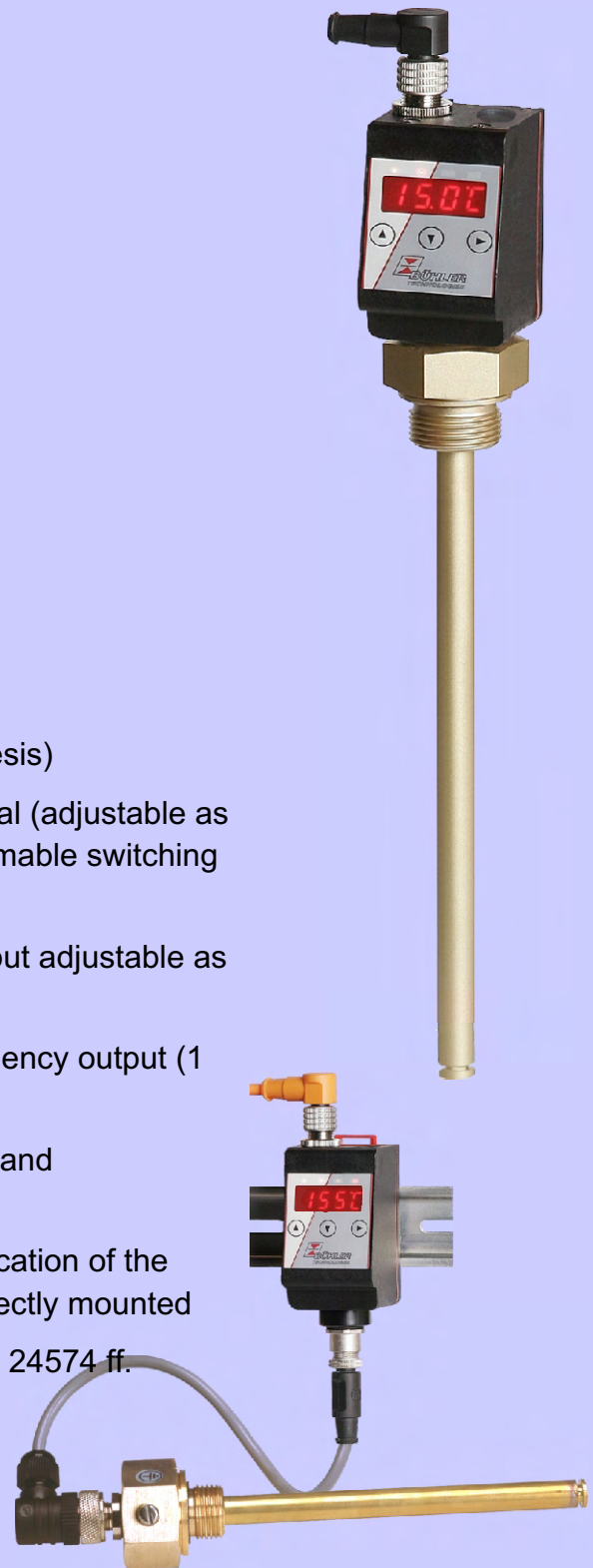


## ***Thermotronik TT-77***

- Electronic temperature switch
- Up to four programmable outputs (hysteresis)
- Alternatively continuous temperature signal (adjustable as current or voltage) plus one free programmable switching output
- Output characteristic of the 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 with status indication of the switching outputs, turnable 270° when directly mounted
- Menu structure based on VDMA guideline 24574 ff.
- Min/Max memory, logbook
- Probe length up to 1 m



## Technical data

## Thermotronik TT-77F

### Version tank top installation

#### Design

material probe  
max. operating pressure  
connection  
operating temperature  
lengths

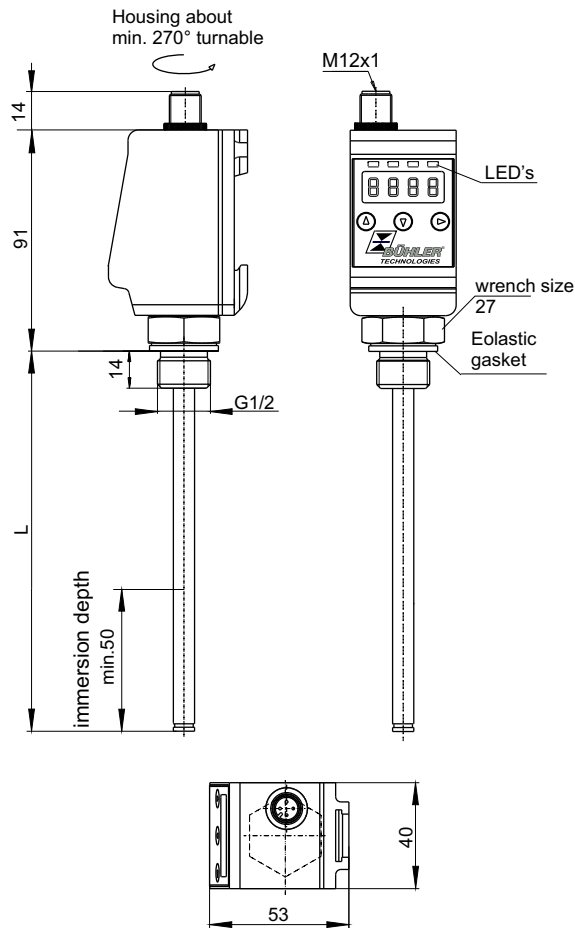
<b>MS</b>	<b>VA</b>
brass	1.4571
5 bar	10 bar
G1/2	G1/2
-40 °C to +100 °C	
L = 280, 370, 500 (standard)	
variable from 70 to 1000 mm	

#### Display

temperature display range -20 °C to +120 °C (4 °F to 248 °F)  
alarm setting range 0 °C to 100 °C (32 °F to 178 °F)  
accuracy 1%  
resolution 0,5 °C (1 °F)  
protection class IP65  
display 4 digit 7 segment LED display  
operation over 3 buttons  
current consumption at power up approx. 100 mA for 100 ms  
operating consumption approx. 50 mA  
supply voltage (U<sub>B</sub>) 10 V to 30 V DC  
(nominal voltage 24 V DC)

ambient temperature -20 °C to +70 °C  
material display housing PA

**Temperature sensor:** Pt 100 (RTD) class B, DIN EN 60 751



Following temperature outputs are available:

Type	-2T	-1T-KT	-4T
connector (base)	M12 - 4 pol	M12 - 4 pol	M12 - 8 pol.
max. contact load	1A	1A	1A
PNP transistor output,	2 x free programmable,	1 x free programmable,	4 x free programmable,
current PNP output	max 0,5 A per output	max. 0,5 A per output	max. 0,5 A per output
analogue output		1 x 4 - 20 mA, 2-10 V, 0-10 V or 0-5 V	
load analogue output		max. 500 Ω	

ALTERNATIVE

## Product code for Thermotronik TT-77 Version Tank top installation

TT-77F-□□□

#### Design

**MS** brass  
**VA** stainless steel

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

#### Length (max. 1000 mm)

**280**  
**370**  
**500**  
Variable (please specify)

### Accessories

Part-No. 4-pole	Part-No. 8-pole	Description
9144 05 0010	9144 05 0048	Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)
9144 05 0046	9144 05 0049	Connecting cable M12x1, 3,0 m, elbow connector (female) and straight connector (male)
9144 05 0047	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: Thermotronik TT-77F-MS-1T-KT / 470

## Technical data

## Thermotronik TT-77W

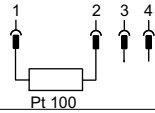
### Temperature probe Pt 100 (RTD)

#### Design

material probe  
max. operating pressure  
connection  
operating temperature  
lengths

connector  
probe element  
tolerance

#### Pin assignment



### Version remote indication

#### 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 )

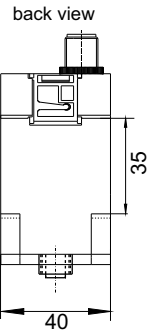
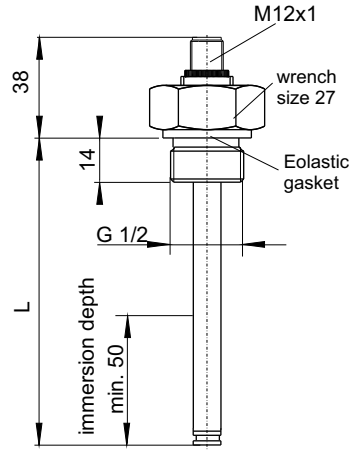
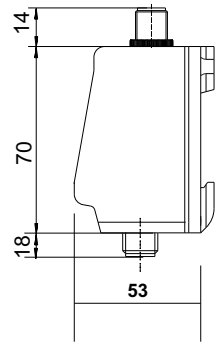
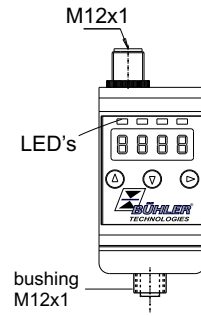
Pt 100 (RTD) class B DIN EN 60 751  
±0,8 °C

#### Display

temperature display range  
alarm setting range  
accuracy  
resolution  
protection class  
display  
operation  
current consumption at power up  
operating current consumption  
supply voltage (U<sub>B</sub>)

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 mounting



Following temperature outputs are available:

#### Type

bushing (sensor input)  
connector (base)  
PNP transistor output,  
current PNP output  
contact load overall  
analogue output

load analogue output

#### -2T

M12 - 4 pol  
M12 - 4 pol  
2 x free programmable  
max 0,5 A per output  
max. 1A

#### -1T-K

M12 - 4 pol  
M12 - 4 pol  
1 x free programmable  
max. 0,5 A per output  
max. 1A  
1 x 4 - 20 mA, 2-10V,  
0-10V or 0-5V  
max. 500Ω

#### -4T

M12 - 4 pol  
M12 - 8 pol.  
4 x free programmable  
max. 0,5 A per output  
max. 1A

A  
L  
T  
E  
R  
N  
A  
T  
I  
V

## Product code for Thermotronik TT-77 Version remote indication

TT-77W-□□□

#### Design

MS brass  
VA stainless steel

A  
L  
T.

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

Length (max. 1000 mm)

280  
370  
500  
Variable (please specify)

### Accessories

Part-No. 4-pole Part-No. 8-pole Description


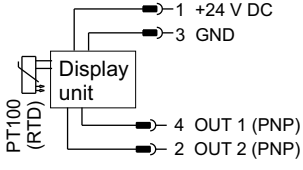
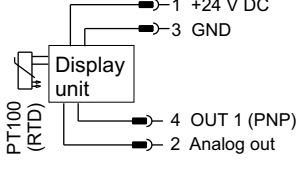
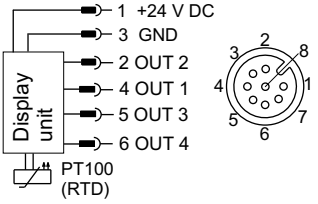
9144 05 0010 9144 05 0048 Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)  
9144 05 0046 9144 05 0049 Connecting cable M12x1, 3,0 m, elbow connector (female) and straight connector (male)  
9144 05 0047 9144 05 0033 Connecting cable M12x1, 5,0 m, elbow connector (female) and wire

### Example for order

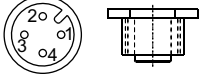
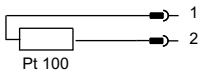
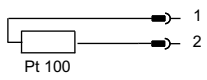
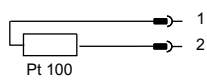
You need: Electronic controller remote indication version, design brass, length L= 470mm,  
1 temperature contact and analogue output

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

## Pin assignment Thermotronik TT-77F

Pin assignment	TT-77F...-2T	TT-77F...-1T-KT	TT-77F...-4T
			

## Pin assignment Thermotronik TT-77W

Pin assignment	TT77W...-2T	TT77W...-1T-K	TT77W...-4T
bushing - remote indication (sensor input) 			
Connector (base) 