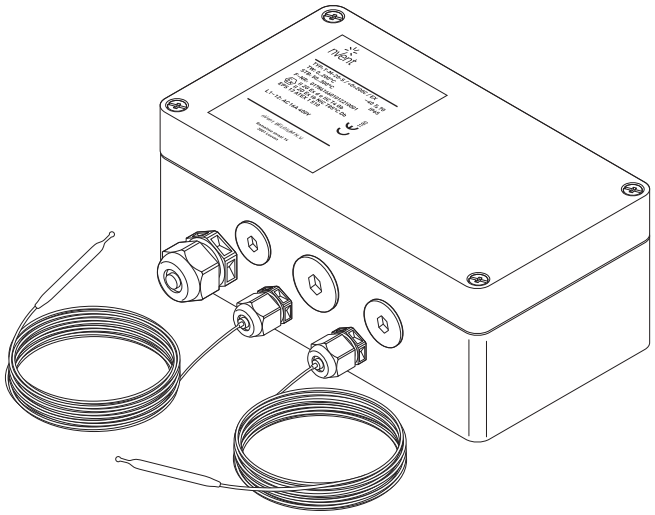
T-M-20-S/+X+Y/EX

CONNECT AND PROTECT

Surface sensing thermostat with safety limiter for hazardous area

PRODUCT OVERVIEW



A surface sensing thermostat providing temperature control and temperature limit in hazardous areas.

The safety limiter prevents the heating system exceeding a preset maximum temperature should the control function fail to operate or an unsafe process temperature occur. The maximum rated voltage is 400 VAC. The switching current capacity is 16 A maximum via independent Ex d single pole change over micro switches with volt-free contacts.

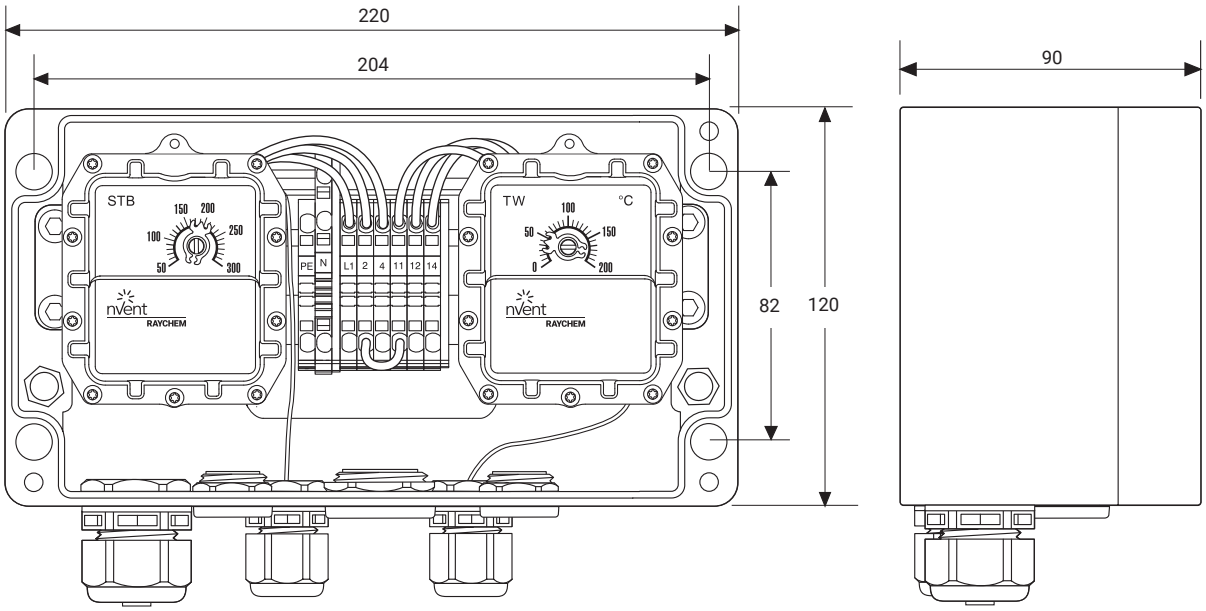
The switches are mounted within an Ex e enclosure together with a spring-type terminal block for fast easy connection. The sensors are 3 meter long stainless steel fluid filled bulb and capillary.

The thermostat is delivered with Ex approved power cable glands and plugs and the entries offer the possibility for a variety of connections such as connecting M25 and M20 glands for direct heating cable entry or alarm output.

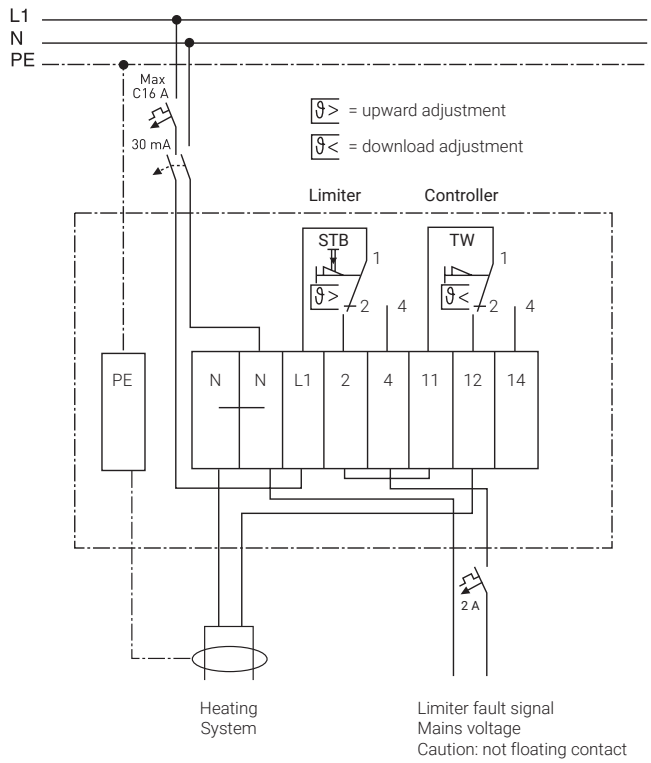
The thermostat with limiter is available in 3 temperature ranges: +0°C +120°C, +0°C +200°C and +50°C +300°C

PRODUCT SPECIFICATIONS

Dimensions (in mm)



Connection details



Technical details

		T-M-20-S/+0+120C/EX	T-M-20-S/+0+200C/EX	T-M-20-S/+50+300C/EX
Temperature setting	Controller	+0°C to +120°C	+0°C to +200°C	+50°C to +300°C
	Limiter	+0°C to +120°C	+50°C to +300°C	+50°C to +300°C
Switching type		Single pole change over (SPDT) >100.000 cycles at I nom	Single pole change over (SPDT) >100.000 cycles at I nom	Single pole change over (SPDT) >100.000 cycles at I nom
Switching capacity		Maximum 16 A at 400 Vac, resistive load	Maximum 16 A at 400 Vac, resistive load	Maximum 16 A at 400 Vac, resistive load
Hysteresis/ Differential	Controller	max. 2.5% range, calibrated downwards	max. 2.5% range, calibrated downwards	max. 2.5% range, calibrated downwards
	Limiter	max 7% calibrated upwards	max. 7.5%, calibrated upwards	max. 7.5%, calibrated upwards
Setting		Inside enclosure	Inside enclosure	Inside enclosure
Reset limiter		Inside enclosure by means of a screwdriver		
Terminal size		4 mm^2	4 mm^2	4 mm^2
Terminal type		spring-type terminals	spring-type terminals	spring-type terminals
Ambient operating temp. range		−60°C to +70°C	−40°C to +70°C	−40°C to +70°C

Output parameters

Control relay	Change-over switch	Change-over switch	Change-over switch
Limiter relay	Change-over switch with possibility for external alarm Capillary leakage detection system		

Enclosure

	T-M-20-S/+0+120C/EX	T-M-20-S/+0+200C/EX	T-M-20-S/+50+300C/EX
Protection	IP65	IP65	IP65
Dimension	220 x 120 x 90 mm	220 x 120 x 90 mm	220 x 120 x 90 mm
Materials body and lid	Black, glass filled polyester enclosure	Black, glass filled polyester enclosure	Black, glass filled polyester enclosure
Lid fixing	4 captive screws, stainless steel	4 captive screws, stainless steel	4 captive screws, stainless steel
Entries	6 entries: 1 x M25 gland (∅ 8-17 mm): power supply 1 x M25 stopping plug: output to heating cables 2 x M20 stopping plug: output to heating cables (possibility to connect single conductor heating element) 2 x M20: capillary sensors		

Temperature sensor

Type		Fluid filled capillary, 3 m long	Fluid filled capillary, 2 m long	Fluid filled capillary, 2 m long
Dimensions	Controller	∅ 6 mm; length sensing element = 90 mm	∅ 6 mm; length sensing element = 72 mm	∅ 4 mm; length sensing element = 135 mm
	Limiter	∅ 6 mm; length sensing element = 58 mm	∅ 4 mm; length sensing element = 78 mm	∅ 4 mm; length sensing element = 78 mm
Material			stainless steel	stainless steel
Temperature exposure	Controller	−40°C +138°C	−40°C +230°C	−40°C +345°C
	Limiter	−40°C +138°C	−40°C +345°C	−40°C +345°C
Minimum bending radius		5 mm for capillary (not for sensor)	5 mm for capillary (not for sensor)	5 mm for capillary (not for sensor)

Mounting method

Support bracket	SB-120, SB-125 or surface mounting via 4 fixing holes at 204 x 82 centres		
PN		SB-120	165886-000
		SB-125	1244-00603

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust)

Temperature classification

T6 ...T4

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION

Ordering References:	PN Number	Weight
T-M-20-S/+0+200C/EX	1244-013410	2 kg
T-M-20-S/+50+300C/EX	1244-013411	2 kg
T-M-20-S/+0+120C/EX	1244-016536	2 kg

Meaning of reference: nVent RAYCHEM T-M-20-S/+x+y/Ex

T = thermostat
M = mechanical thermostat
20 = control thermostat + limiter
S = surface sensing
x = min temperature of control range
y = max temperature of control range
Ex = hazardous area

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