

Series 270XT Freeze Protection Thermostats

Introduction

These controls are designed for protection against freeze-up of hydronic heating coils, cooling coils and similar application.

Description

Sensing element is 3 or 6 meters long to permit attaching across the surface of a coil to guard against freezing at any point. When any 30 cm or more of this element senses a temperature as low as the control setpoint, it will "switch off".

A special version is available with bulb and 2 m capillary, range -24/+18°C for clamp-on or immersion purposes.

SPDT change over contacts permit the use of an alarm signal.

Note

These controls are designed for use only as operating controls. Where an operating control failure would result in personal injury or loss of property it is the responsibility of the installer to add devices or systems that protect against, or warn of, control failure.



270XT-95008
 (with 6 m 'wrap-around' capillary)

Feature and Benefits

<input type="checkbox"/> Dust tight Pennswitch	Prevent pollution of the contacts by electrostatic influences
<input type="checkbox"/> SPDT contacts	Change-over contacts permits the use of an alarm signal
<input type="checkbox"/> 270XTAN provided with trip-free manual reset	Safety lock-out, override is not possible in the control function
<input type="checkbox"/> Controls have adjustable range	Suitable for several applications

Mounting

The control can be wall mounted either by using two screws through the holes in the back of the case or using the standard mounting bracket. The control must be mounted in that position where the sensing element is downside the control.

Note

The control should be installed where the ambient temperature surrounding the case and bellows is always higher than the control setting. If the ambient temperature around the enclosure drops below the control setting the bellows rather than the sensing element will operate the control.

Adjustment

The controls have a field adjustable setting and a fixed differential. A low limit stop, factory setting at 3 °C can be supplied at additional cost for quantity orders only.

Contact functions

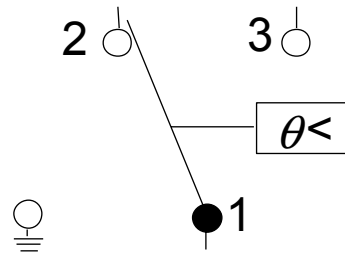


Fig. 1
1-2 open on temperature decrease

Repair and replacement

Repair is not possible. In case of an improperly functioning control, please check with your nearest supplier. When contacting the supplier for a replacement you should state the type/model number of the control. This number can be found on the data plate or cover label.

Type number selection table

Range °C	Diff. °C	Bulb and capillary	Bulb well no (not incl.)	Sensing element	Max. bulb temp. °C	Order number
-10 to +12	3 fixed	3 m cap. style 9**	-	3.2 mm x 3 m	200	270XT-95078
-10 to +12	manual reset	3 m cap. style 9**	-	3.2 mm x 3 m	200	270XTAN-95088
-10 to +12	3 fixed	6 m cap. style 9**	-	3.2 mm x 6 m	200	270XT-95008
-10 to +12	manual reset	6 m cap. style 9**	-	3.2 mm x 6 m	200	270XTAN-95008
-24 to +18	4 fixed	2 m cap. style 1*	WEL14A602R	9.5 x 77 mm bulb and 2 m cap.	120	270XT-95068
-24 to +18	manual reset	2 m cap. style 1*	WEL14A602R	9.5 x 77 mm bulb and 2 m cap.	120	270XTAN-95048

* With 7.5 cm bulb support to apply packing nut FTG13A-600 for direct immersion applications.

** With 6 m "wrap-around" capillary, when any 30 cm or more of this element senses a temperature as low as the cut-out point, the contact will open.

Optional accessories (for 270XT and 270XTAN, with "wrap-around" cap.

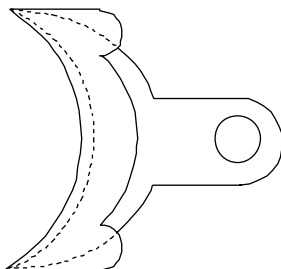


Fig. 2
Bracket:
Order number KIT012N600 (6 pcs)

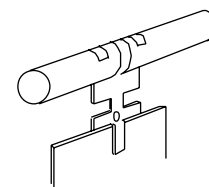
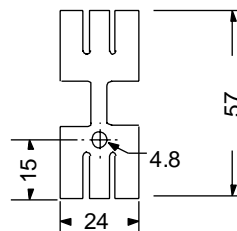
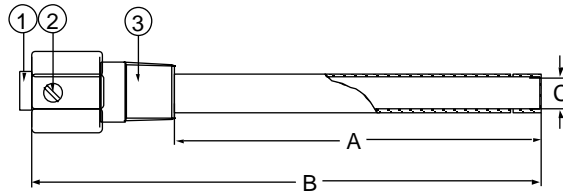


Fig. 3
Mounting clip:
Order number T-275-101

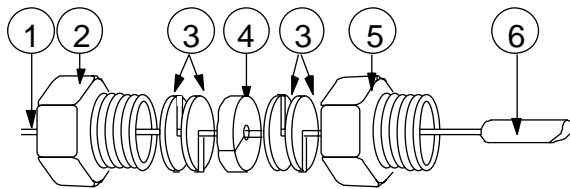
Optional accessories (for 270XT and 270XTAN with 2 m capillary and bulb)



Order no.	DIM.'A'	DIM.'B'	DIM. 'C' Internal
WEL14A602R	125 mm	171 mm	10mm

Fig. 4
Bulb well

1. Bushing
2. Set screw
3. Adapter, 1/2" - 14 NPT



1. Style 1b bulb support tube
2. Packing nut
3. Washer
4. Packing
5. Adapter, 1/2" - 14 NPT
6. Bulb

Fig. 5
Closed-tank-connector
Order number FTG13A-600R

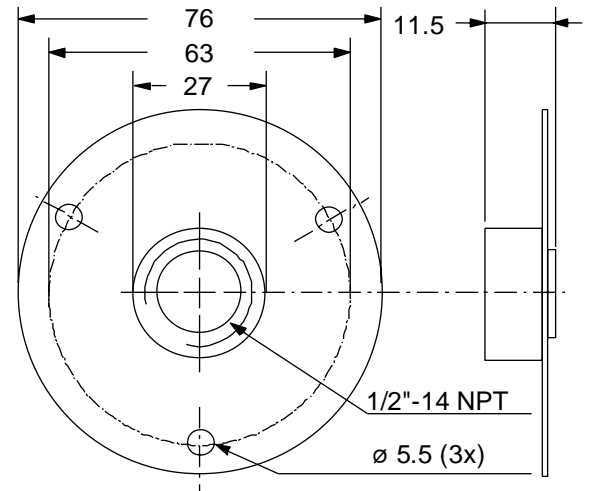


Fig. 6
Duct flange
Order number T-752-1001

Dimensions (mm)

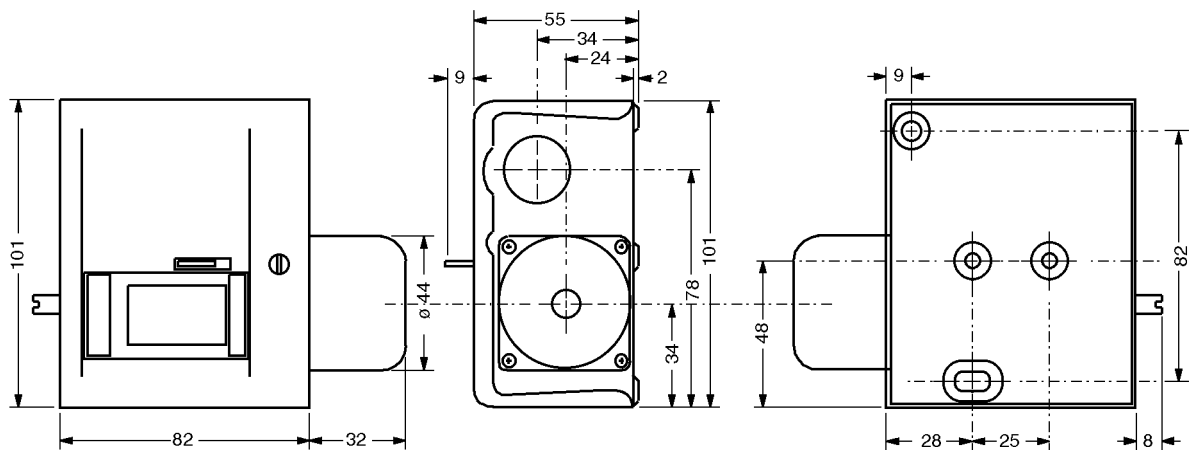


Fig. 7

Specifications

Product type	270XT / 270XTAN	
Operating range	-24 to + 18 °C (refer to type number selection table)	
Differential	fixed (refer to type number selection table)	
Range adjustment	Screwdriver, external scale	
Electrical rating	~15(8)A, 230V	
Contact function	SPDT	
CE Conformity	According to low voltage directive and EMC directive	
Max. ambient temperature	55 °C Note: The operating ambient temperature of the control should always be higher than the sensing element temperature	
Material	Case	Cold-rolled zinc plated steel
	Cover	blue coloured cold-rolled steel
Enclosure (protection class)	IP30	
Dimensions (HxWxD)	82 x 101 x 53 mm (excl. bellows)	
Shipping weight	Individual pack standard	
Ind. pack	270XT-95078/270XTAN-95088	1.00 Kg
	270XT-95008/270XTAN-95008	1.15 Kg
	270XT-95068/270XTAN-95048	0.9 Kg
Overpack	270XT-95078/270XTAN-95088	13 Kg (13 pcs.)
	270XT-95008/270XTAN-95008	15 Kg (13 pcs.)
	270XT-95068/270XTAN-95048	12 Kg (13 pcs.)

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office or representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.



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