FREEZE STATS SERIES

Installation & Operation Instructions

Phone: 1-888-967-5224
Website: workaci.com

GENERAL INFORMATION

The FS Series are low limit controllers, also known as "Freeze Stats". These devices were designed for use on HVAC equipment that require low-temperature cutout protection to prevent cooling coils from freezing. They should be mounted between the heating and cooling coils on the supply side of the fan unit and respond to the lowest temperature sensed along any one foot section of the sensing element. The FS Series has manual and automatic reset versions, as well as, models that feature one or two sets of SPDT contacts. Numerous capillary lengths are also available.

MOUNTING INSTRUCTIONS

• Do not uncoil more element or capillary than is required for the application.

• Do not sharply bend the element or capillary more than necessary bending hardens the element and makes it brittle. If the element or capillary can be subjected to vibration, protect any surface that makes contact.

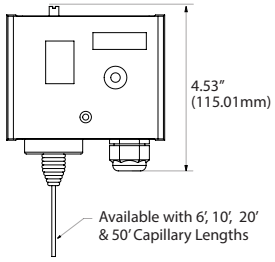
Strap the element on a coil; for example, in an area where freezing can occur, or mounted in a duct. Use as much of the element as necessary for maximum protection. Use metal straps to fasten the element to the coil to be controlled. Use clips for mounting the element in a duct.

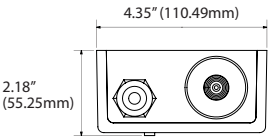
Locate the sensing element where it can sense the average temperature of the space to be controlled.

Locate the thermostat case where the ambient temperature is always warmer than the set point.

FIGURE1: DIMENSIONS

FS-1
FS-2
FS-3
FS-4
FS-50





FS-5
FS-6

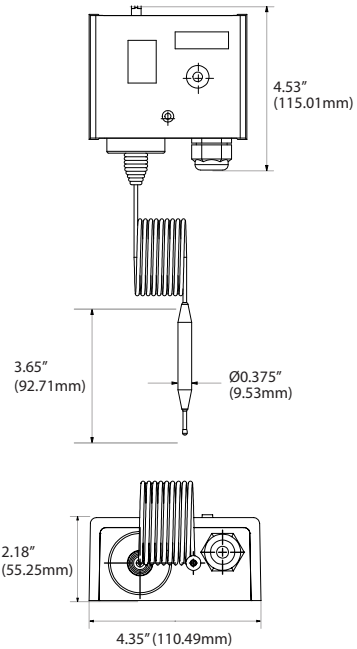


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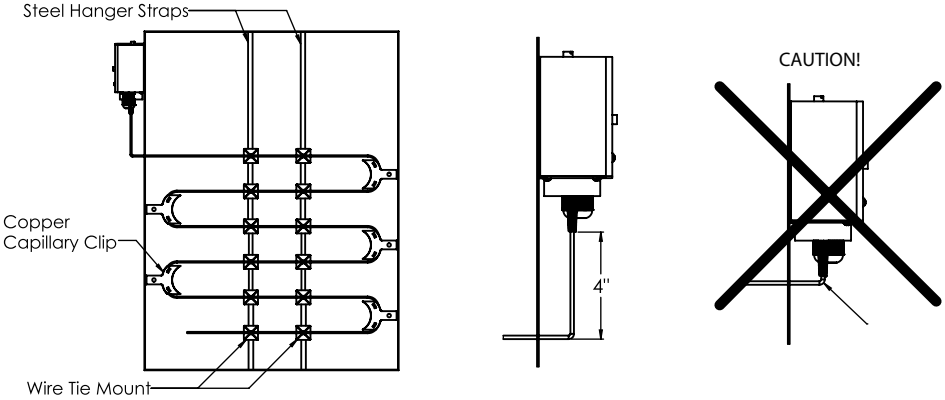
FIGURE 2: MOUNTING



Thermostat enclosure to be surface mounted; avoid locations subject to excessive vibration.

Mount to flat surface using oval holes only. (See Wiring Diagrams) Mounting with round holes in middle of freeze stat may damage the instrument and cause improper operation.

Install the capillary sensing element across the face of the coil, horizontally serpentine only. If too much of the element is vertical, it will not operate properly.

Avoid sharp bends or kinks in the sensing element.

Install the thermostat in an upright position so that the bellows point down and the capillary tube exits the bottom of the unit..

WIRING INSTRUCTIONS

All wiring should comply with National and Local Electrical Codes.

A M20 watertight fitting is installed in the ½" conduit knockout. If the ½" knockout is needed, remove the M20 fitting and install the appropriate conduit fitting in the 0.830" knockout in the bottom of the enclosure.

Maximum wire size is 14 AWG (2.5mm) two copper wires. Use a screwdriver to loosen the terminal connections screws. Strip wire ends 3/8" and insert into box connectors on the switch block and securely retighten the screws.

Now replace the cover and tighten the screw on the front cover.

Note: The Freeze Thermostat is factory set at 39°F. This is the ideal setting that will provide the best protection while avoiding nuisance trips.

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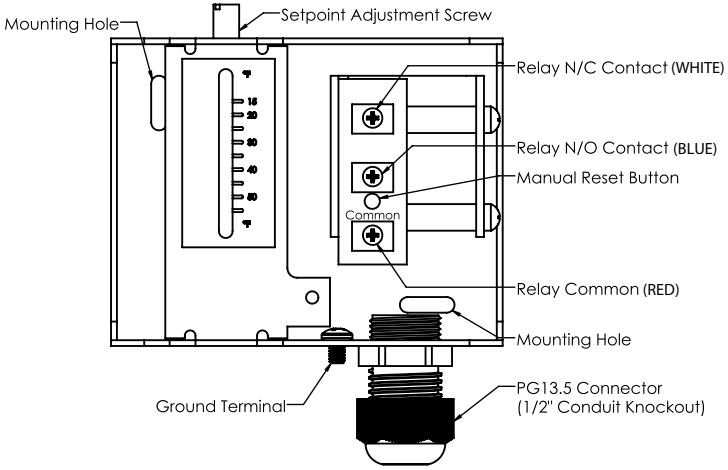
FIGURE 2: WIRING

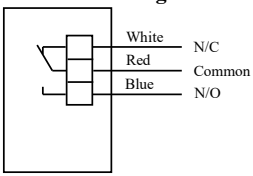
FS-1
FS-1A
FS-3
FS-3A
FS-5
FS-5A
FS-6



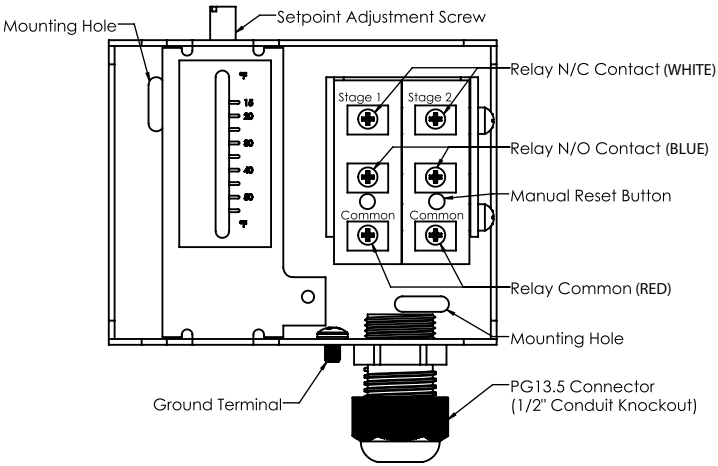
Note: Falling Temperature and attained low cut-out point

Contact Connection: Red to Blue

Schematic Diagram



FS-2
FS-2A
FS-4
FS-4A
FS-6
FS-6A
FS-50
FS-50A



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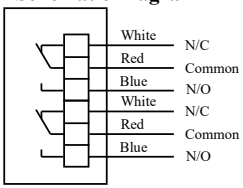

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PRODUCT SPECIFICATIONS

NON-SPECIFIC INFORMATION	
Thermostat Type:	Self-contained, electromechanical
Sensing Element:	Vapor-filled capillary
Sensing Media:	Temperature in air
Sensing Temperature Operating Range:	14°F to 54°F (-10°C to 12°C)
Sensing Capillary Overload Temperature:	392°F (200°C), maximum 60 minutes
Sensing Response:	To lowest temperature sensed by any 1 ft section of the capillary element
Sensing Capillary Material:	Copper
Sensing Capillary Length:	Duct and across coil mounted
Sensing Capillary Diameter:	Ø0.08 in. (2 mm) (6' Length models have a larger bulb at the end)
Type of Control:	ON/OFF, low-level single-stage or cut-out control, with One (1) microswitch output
Low-Level Setpoint (Factory Set):	At 39°F (4°C), and safety-lock secured
Low-Level Setpoint Visual Range:	14°F to 54°F
Low-Level Setpoint Adjustment:	Over full operating range, via screwdriver slot
Contact Form:	Form 1C (SPDT Contact)
Maximum Contact Switching Voltage:	250 VAC
Maximum Contact Switching Current:	15 (8) A
Switching Differential:	1.8°F (1°K), auto- or manual reset
Enclosure Operating Temperature Range:	14°F to 131°F (-10°C to 55°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Storage Temperature Range:	14°F to 158°F (-10°C to 70°C)
Enclosure Base Material:	Steel, galvanized
Enclosure Cover Material:	ABS, fire retardant

WARRANTY

The Freeze Stat Series is covered by ACI's Two (2) Year Limited Warranty, which is located in the front of ACI'S SENSORS & TRANSMITTERS CATALOG or can be found on ACI's website: www.workaci.com.

W.E.E.E. DIRECTIVE

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with household waste. Do not burn.

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