

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

270XT

Freeze Protection, IP30

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.

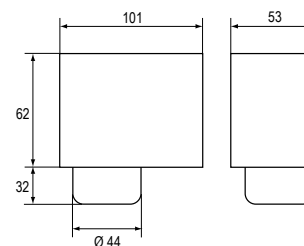
SPDT change over contacts permit the use of an alarm signal.

Features

- Dust tight Pennswitch
- SPDT contacts
- 270XTAN provided with trip-free manual reset
- Controls have adjustable range

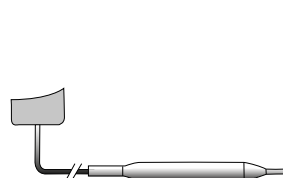
Application

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

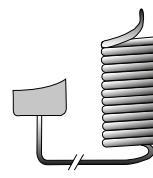


Dimensions in mm

Ordering Codes	Range (°C)	Diff. (K) Fixed	Style	Cap. Length (m)	Bulb Size (mm)	Switch 8A	Additional Features
270XT-95008	-10 to +12	3	9	---	3.2 x 6000	SPDT Open Low	Automatic Recycle
270XT-95078					3.2 x 3000		
270XT-95068	-24 to +18	4	1	2	9.5 x 80		Manual Reset
270XTAN-95008	-10 to +12	---	9	---	3.2 x 6000		
270XTAN-95088					3.2 x 3000		
270XTAN-95048	-24 to +18		1 (bulb)	2	9.5 x 80		



Style 1b



Style 9

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

A19

Capillary and Space Thermostats, IP30

These thermostats are available with fixed or adjustable differential. The various control ranges cover a broad range of temperature applications with a minimum number of models.

On request a built-in high or low limit stop is possible and can be adjusted quickly and easily in the field. All models have a universal way of adjustment. For this purpose a knob and sealing cap are enclosed.

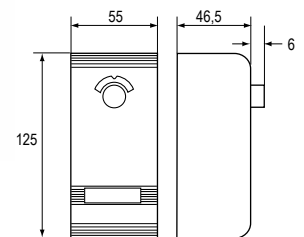
All are equipped with IP50 enclosure.

Features

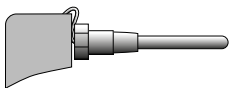
- Liquid filled sensing element
- Dust tight Penn switch
- Trip free manual reset
- Front adjustment

Application

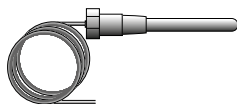
These thermostats are designed for refrigeration, cooling, heating, ventilation and air-conditioning applications. Standard models are provided for remote sensing or room sensing. Models with manual reset are available for low or high limit functions.



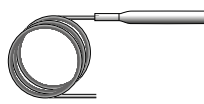
Dimensions in mm



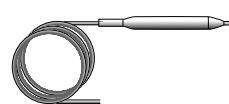
Style 2



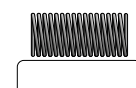
Style 4H



Style 1a



Style 1b



Style 3

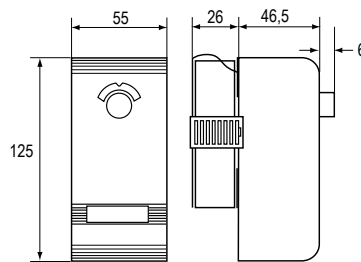
A19A Capillary Thermostats

Ordering Codes	Range (°C)	Diff. (K) Fixed	Style	Cap. Length (m)	Bulb Size (mm)	Switch 8A Auto Recycle	Additional Features	
A19AAC-9005	-5 to +28	2	1b	2	135	SPDT Open Low	---	
A19AAC-9009	40 to 120	3.5			100			
A19AAC-9102	-35 to +10	2.5	1a		110	SPDT Open High	Diam. 5 mm bulb	
A19AAC-9107	35 to 150	4			265			
A19AAC-9108	90 to 290	5.5			155			
A19AAC-9123	0 to 10	2.5	1b	5	80	SPDT Open Low	Bulb diam. 9.3 mm	
A19AAC-9124	-5 to +28	2			135		---	
A19AAC-9127	1 to 60	1.5			3		115	Maximum bulb temperature 85 °C
A19AAC-9130	-10 to +14	2.5			110		Case compensation, low limit stop at 2 °C	
A19AAF-9101	0 to 10	1.5	1a	2	80	SPDT Open Low	Diam. 9.3 mm bulb	
A19AAF-9102							Diam. 9.3 mm bulb, Case compensation	
A19AAF-9103	5 to 32	0.8	1b		155	SPDT Open High	---	

REFRIGERATION COMPONENTS Temperature Controls

Mechanical Thermostats

A19



Dimensions in mm

Ordering Codes	Range (°C)	Diff. (K) Fixed	Style	Cap. Length (m)	Bulb Size (mm)	Switch 8A Auto Recycle	Additional Features	
A19A Capillary Thermostats								
A19ABC-9011	40 to 120	3 to 13	2	---	---	SPDT Open High	1/2-14NPT connector	
A19ABC-9012			4H	2	---			
A19ABC-9036	-35 to +40	2.8 to 8	1b	6.5	110	5 A Switch, SPDT Open Low	Universal replacement	
A19ABC-9037	-35 to +40			3.5		---		
A19ABC-9103	-35 to +10	2.8 to 11		2		---		
A19ABC-9104	-5 to +28	2 to 8	2	2	135	SPDT Open Low	---	
A19ABC-9106	10 to 95	3.5 to 14	1a	3.5	75	SPDT Open High	Diam. 7.4 mm bulb	
A19ABC-9116	1 to 60	2 to 8.5	1b	3	115	SPDT Open Low	Max. bulb temp. 85 °C	
A19ABC-9117				5				
A19AGF-9101*	0 to 13	1.5 fixed	1a	2	80			
A19ACC Capillary Thermostat, lock-out low with Manual Reset								
A19ACC-9100	-35 to +10	6	1b	2	110	SPDT Open Low	---	
A19ACC-9101	-5 to +28	4		5	135			
A19ACC-9103				3.5	110			
A19ACC-9105	-35 to +10	6		3	135			Low limit stop set at 2 °C
A19ACC-9107	-5 to +28	4		5	110			---
A19ACC-9111	-35 to +10	6		6.5	110			Low limit stop set at 2 °C
A19ACC-9116				---	Low limit stop set at 3 °C, Universal replacement			
A19ADC Capillary Thermostat, lock-out high with Manual Reset								
A19ADC-9200	40 to 120	7	2	---	---	SPDT Open High	1/2-14 NPT connector	
A19B Space Thermostats								
A19BAC-9001	0 to 43	2	3	---	---	SPDT Open High	Vinyl coated element	
A19BAC-9250	-35 to +10	2.5				SPDT Open Low		
A19BAC-9251	-5 to +28	2				SPDT Open Low, 5A		
A19BBC-9275	-35 to +40	2.8 to 8						
A19D Strap-On Thermostats								
A19DAC-9001	40 to 120	4.5	20	---	---	SPDT Open High	8 A Switch, NEMA 1 enclosure, Universal adjustment, Including mounting strap	
A19DAF-9001	92 to 116	2	20				3 A Switch, Universal adjustment, Including mounting strap	

Note

* : Quantity orders only

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

A19

Capillary and Space Thermostat, IP65

These thermostats are available with fixed or adjustable differential. The various control ranges cover a broad range of temperature applications with a minimum number of models.

SPDT contacts are standard on all models.

Features

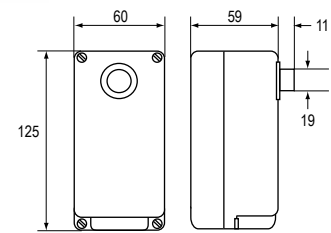
- Liquid filled sensing element
- Dust tight Penn switch
- IP65 protection class
- Front adjustment

Application

These thermostats are designed for applications where a splash-proof and/or dust-tight enclosure is required.

Four types are available:

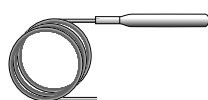
- Types A19ARC are general purpose capillary thermostats.
- Types A19BRC and A19BQC are space thermostats with coiled element to be used as farm control, outdoor thermostats or in cold storage rooms.
- Types A19AQF is specially designed for milkcool-tank applications.
- Type A19AQC-9101 is specially designed for ice-bank application.



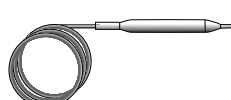
Dimensions in mm

A19A Capillary Thermostats

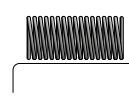
Ordering Codes	Range (°C)	Diff. (K) Adjust.	Style	Cap. Length (m)	Bulb Size (mm)	Switch 8A Auto Recycle	Additional Features
A19ARC-9100	-35 to +10	2.8 to 11	1b	2	110	SPDT Open Low	---
A19ARC-9101	-5 to +28	2 to 8	1b	2	135		---
A19ARC-9104	-20 to +65	3.5 to 13	1a	3.5	75		Diam. 7.4 mm bulb
A19ARC-9105	5 to 50	2.5 to 11	1b	2	110		Concealed scale, Screwdriver adjustment, Bulb and cap. rubber coated
A19ARC-9107	40 to 120	3.5 to 13.5	1a	2	100		---
A19ARC-9109	1 to 60	2 to 8.5	1a	3	115		Maximum bulb temperature 85 °C
A19ARC-9110	-10 to +50	2.5 to 11	1b	2	110		Concealed scale, Screwdriver adjustment
A19ARC-9113	-35 to +40	2.8 to 11	1b	2	110		---



Style 1a



Style 1b



Style 3

REFRIGERATION COMPONENTS

Temperature Controls

Mechanical Thermostats

A19

Ordering Codes	Range (°C)	Diff. (K) Adjust.	Style	Cap. Length (m)	Bulb Size (mm)	Switch 8A Auto Recycle	Additional Features
A19A Capillary Thermostats							
A19AQC-9101	-5 to +5	2 fixed	1a	2	80	SPDT Open Low	5 A switch, Ice bank control, bulb diam 9.3 mm, case compensation, concealed scale, screwdriver adjustment, scale calibrated at increasing temperature
A19AQC-9102	-5 to +28	2 fixed	1b	2	135		8 A switch, calibrated and set at 2 °C, case compensation, pointer adjust, PG16 connect., ½ - 14 NPT WELL connector
A19AQC-9104	-35 to +10	2 fixed	1b	2	110		Case compensation, knob adjustment
A19AQC-9200	-5 to +55	2.5 fixed	2	---	---		---
A19AQF-9100	0 to 13	1.5 fixed	1a	2	80		3 A switch, bulb diam. 9.3 mm, case compensation, concealed scale, screwdriver adjustment
A19AQF-9102	0 to 13	1.5 fixed	1a	3	80		3 A switch, cap. thermostat, bulb diam. 9.3 mm, case compensation, concealed scale, screwdriver adjustment
A19B Space Thermostats							
A19BRC-9250	-5 to +28	2 to 8	3	---	---	SPDT Open Low	Vinyl coated element
A19BRC-9251	0 to 43	2 to 8	3				
A19BRC-9252	-35 to +10	2.8 to 11	3				
A19BRC-9253	-35 to +40	2.8 to 11	3				
A19BQC-9252	-5 to +25	2 fixed	3				Concealed scale, screwdriver adjustment

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

A28

2-stage Capillary and Space Thermostat, IP30 / IP65

Controls are compact with fixed differential per stage and (on most models) adjustable differential between stages. Liquid filled element provides wide range, constant differential over whole range and no influence from barometric pressure.

Since the bulb contains the major portion of the total fill the thermostat may be considered as cross-ambient, capillary and cup temperature variations affect the operating point only slightly due to the small amount of fill they contain.

For quantity orders it is possible to have the below stated optional constructions:

- Without case and cover for panel mounting
- Close differential per stage
- Different capillary lengths

All standard IP30 enclosure models have a universal way of adjustment. For this purpose a knob and sealing cap are enclosed.

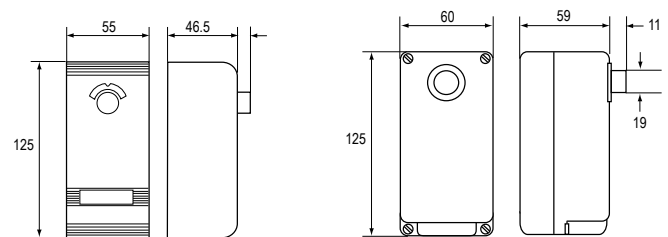
Features

- Liquid filled sensing element
- Dust tight Penn switch
- IP65 protection class models available
- Front adjustment

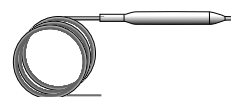
Application

These thermostats are designed for various types of heating, cooling, ventilation, or air-conditioning applications. All models have two SPDT switches providing the following control possibilities:

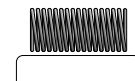
- 2 stage heating
- 2 stage cooling
- Heating/cooling with automatic changeover



Dimensions in mm



Style 1b



Style 3

REFRIGERATION COMPONENTS

Temperature Controls

Mechanical Thermostats

A28

Ordering Codes	Range (°C)	Diff. (K)		Style	Cap. Length (m)	Bulb Size (mm)	Switch 5A Auto Recycle	Additional Features NEMA 1 Enclosure
		stage	betw					
A28 Capillary and Space Thermostats, IP30								
A28AA-9006	-35 to +10	2	1 to 4	1b	2	110	SPDT Open Low	General purpose
A28AA-9007	-5 to +28	1.5			5	135		
A28AA-9106				0 to 43	3	---	---	SPDT Open High
A28AA-9113	1 to 60	2		1b	3	115	Max. bulb temp. 85 °C, general purpose	
A28 Capillary and Space Thermostats, IP65								
A28QA-9101	5 to 50	2	4	1b	2	110	SPDT Open Low	Concealed scale, screwdriver adjustment
A28QA-9110	-35 to +10		1.5					1 to 4
A28QA-9111	-5 to +28	3.5			110	---		
A28QA-9114	-35 to +40	2	3		---	---		Bulb stainless steel
A28QA-9113	0 to 43	1.5	1b	3	115	SPDT Open High	---	
A28QA-9115	1 to 60	2	3	---	---	Bulb stainless steel		
A28QA-9117	20 to 40	1.5	1 to 5	1b	3	100	SPDT Open Low	3 A Switch
A28QJ-9100	10 to 95							

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

A36

3- or 4- Stage Thermostat

Models are available in 'open' construction for panel mounting. Single knob adjustment moves the entire staging band up and down within the range of the control. The differential on each stage and sequencing between stages are factory set.

This permits the OEM to completely engineer the cycling of their equipment without the hazard of field mis-adjustments and erratic sequencing.

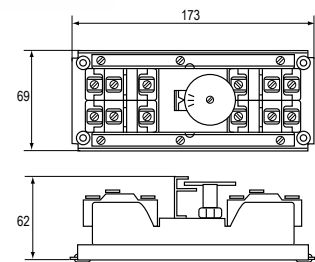
Features

- Dust-tight SPDT switches
- Cushion mounted
- Operation from a single, liquid filled element
- Case compensation standard on all models

Application

Designed for multi-stage thermostatic operation of electrically controlled equipment such as:

- Packaged liquid chillers
- Heat pumps
- Electric duct heaters
- Computer room airconditioners



Dimensions in mm

Ordering Codes	Range (°C)	Adjustment Code	Cap. Length (m)	Bulb Size (mm)	Switch Auto Recycle	Additional Features
A36 Series, 3-Stage Thermostats						
A36AGA-9101	-18 to +20	B1	5	125	5 A	Armored PVC capillary
A36AGA-9102				140		
A36AGA-9103	15 to 35	C1	3.5	140	3 A	
A36AGB-9103	-18 to +20	B2		125		
A36 Series, 4-Stage Thermostats						
A36AHA-9105	-18 to +20	B1	3.5	125	5 A	Armored PVC capillary
A36AHA-9107	-16 to +20		5			
A36AHA-9108	15 to 35	C1	3.5	140		
A36AHB-9103	10 to 95	D2	3	100	3 A	Max. bulb temp. 115 °C
A36AHB-9104	-18 to +20	B2	3.5	125		Armored PVC capillary
A36AHB-9105			5			Braided copper capillary
A36AHB-9109			-15 to +30			5

REFRIGERATION COMPONENTS
Temperature Controls

Mechanical Thermostats

T22 and T25

Stage Room Thermostat, Line Voltage, IP20

These thermostats with a sturdy steel cover are provided with a liquid filled sensing element. This element is formed to achieve maximum sensitivity to surrounding air temperature changes. Coupled with a highly efficient diaphragm and leverage mechanism, the element operates a totally enclosed Penn switch contact with a close differential switching action without the use of "heat or cool" anticipators.

Features

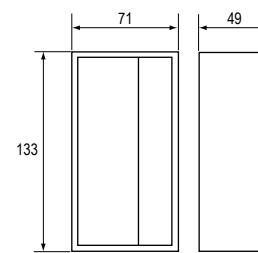
- Liquid filled elements
- Dust tight Penn switch
- Small differential
- 2-Stage Thermostats with dead band and automatic change over

Application

These room thermostats are designed to control heating and/or cooling equipment, in commercial industrial or residential installations. Typical uses are for unit heaters, fan coils, cooling rooms etc. Type T22SRX can be used for either heating or cooling.

Type T25B (2 stages) can be used for:

- 2-Stages heating
- 2-Stages cooling
- Heating/cooling with dead band and automatic change over



Dimensions in mm

Ordering Codes	Range (°C)	Diff. (K) Fixed	Adjustment	Thermometer	Switch 3A	Additional Features
T22 1-Stage Room Thermostat						
T22SRX-9100	5 to 32	1	Knob	●	SPDT Open High	Automatic Recycle
T22SRX-9101			---	---		
T22SRX-9104			Concealed	---		
T25 2-Stage Room Thermostat						
T25B-9101	1	1 to 3	Knob	---	SPDT Open High	---
T25B-9102			---	---		Concealed scale, screwdriver adjustment

REFRIGERATION COMPONENTS
Temperature Controls

Limit Control Manual Reset

A25

Rod and Tube Sensing Element, IP30

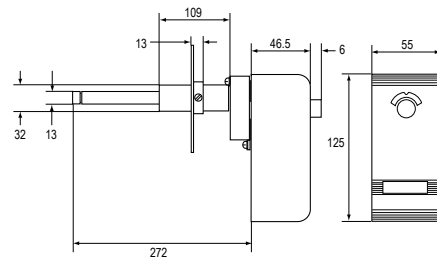
A rod and tube type sensing element actuate the switch contacts. Main contacts (1 - 2) are normally closed, and open when the temperature at the element rises to the dial setpoint. Contacts are re-closed only by operation of the reset lever. The reset lever is "trip-free" and cannot be used to block contacts in a closed position.

Features

- Rod and tube type of element
- Adjustable duct mounting flange
- Trip-free manual reset
- Dust-tight Penn switch

Application

These warm air limit controls "lock out" on a temperature increase to the control setpoint. Manual reset is required to re-close the electrical contacts. A typical application is to stop air-conditioning or ventilating fans in the event of excessive return air temperature, as from a fire.



Dimensions in mm

Ordering Codes	Range (°C)	Switch 8A Manual Reset	Additional Features
A25CN-9001	0 to 100	SPDT Open High	Visible scale, Knob adjustment, NEMA 1 enclosure, with flange for duct mounting

REFRIGERATION COMPONENTS
Float and Flow Controls

Mechanical Liquid Flow Switch

F61

Flow Switch for Liquid

The F61 liquid flow switches can be used in liquid lines carrying water, sea water, swimming pool water, ethylene glycol or other liquids not harmful to the specified materials.

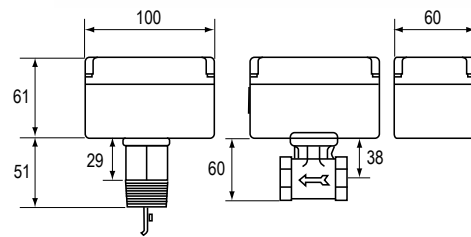
The switches have SPDT contacts and can be wired to energise one device and de-energise another when liquid flow either exceeds or drops below the set flow rate. Pipe insert models and the T-body types for low-flow applications are available.

The IP43 versions can be used for liquid temperatures above dewpoint (for use in other environments see the Product Data Sheet).

Typical applications are to shut down the compressor on liquid chiller systems, to prove flow on electric immersion heaters and to give a signal or alarm when the pump on condenser cooling system shuts down.

Features

- T-body and Pipe-insert types available
- Polycarbonate IP43 enclosure
- Vapour tight IP67 enclosure
- Stainless steel Pipe-insert type
- Large wiring space
- Range screw easy accessible.



Dimensions in mm

IP43

Ordering Codes	Range	Connection		Switch Action	Additional Features
F61SB-9100	0,15 dm ³ /s - 46 dm ³ /s	R1" DIN2999	(ISO R7)	SPDT Contacts, 15(8) Amp 230 V~	4 paddles 1", 2", 3", 6" St.St. AISI 301
F61SD-9150	0,04 dm ³ /s - 0,07 dm ³ /s	½ -14 NPTF	T-body		---
F61SD-9175		¾ -14 NPTF			

IP67

Ordering Codes	Range	Connection		Switch Action	Additional Features
F61TB-9100	0,15 dm ³ /s - 46 dm ³ /s	R1" DIN2999	(ISO R7)	SPDT contacts, 15(8) amp 220 V~	4 paddles, 1", 2", 3" and 6" St.St. AISI 301
F61TB-9104				SPDT contacts, 0,4 Amp 15 V~	Lowenergy gold flashcontacts 4 paddles, 1", 2", 3" and 6" St.St. AISI 301
F61TB-9200				SPDT contacts, 15(8) Amp 220 V~	Stainless steel body, bellows, rod, 3 St.St. AISI 304 paddles 1",2",3"
F61TD-9150	0,04 dm ³ /s - 0,07 dm ³ /s	½ -14 NPTF	T-body	---	---

Accessories for Flow Switches

Ordering Codes	Description
PLT69-11R	F61 - 6" stainless steel AISI 301 paddle
KIT21A602	F61 - 4 paddles 1", 2", 3" and 6" St.St. AISI 301

REFRIGERATION COMPONENTS
Float and Flow Controls

Mechanical Air Flow Switch

F62

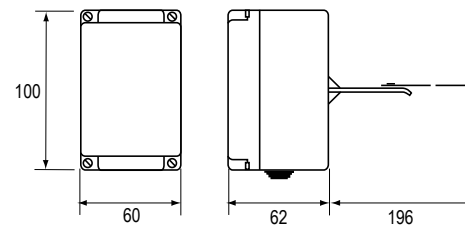
Air Flow Switch

The F62 airflow switch detects air flow or the absence of air flow by responding only to the velocity of air movement within a duct. The control can be wired to open one circuit and close a second circuit (SPDT) for either signaling or interlock purposes. Failure of air flow during normal operation of air handling systems may cause over-heating, coil icing and other conditions that may be detrimental to the equipment. Typical applications include make-up air systems, air cooling or heating processes and exhaust systems.



Features

- Polycarbonate IP43 enclosure
- Large wiring space
- Range screw easily accessible



Dimensions in mm

IP43

Ordering Codes	Max. air velocity	Switch Action	Enclosure	Additional Features
F62SA -9100	10 m/sec	SPDT Contacts 15(8) A, 230 V~	Plastic Enclosure IP43	With 55 mm paddle mounted, 80 mm separate

Accessories

Ordering Codes	Description
PLT112-1R	F62 - Air Flow plate 55 x 175 mm
PLT112-2R	F62 - Air Flow plate 80 x 175 mm

REFRIGERATION COMPONENTS
Float and Flow Controls

Mechanical Liquid Level Switch

F63

Liquid Level Float Switch

The F63 is a liquid level float switch for use in open or closed tanks where a desired liquid level has to be maintained and installations handling water, swimming pool water, sea water, brine, ethylene glycol or other liquids not harmful to the specified materials.

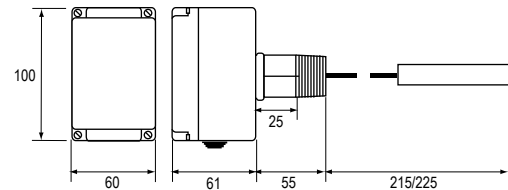
The switches have SPDT contacts and can be wired to close one circuit and open a second circuit when the liquid level rises above or falls below the required level.

The switch maintains the liquid level within (approx.) 13 mm.

There are three different types available. The phosphor bronze bellows version for use in applications where the liquid is not corrosive to phosphor bronze. The stainless steel bellows version for use in environments like cooling towers (water with high calcium content) and a complete stainless steel AISI 316L version. These float switches should not be used for liquids lighter than water (density less than 0.95 kg/dm³).

Features

- Solid polycarbonate float
- Vapour tight IP67 enclosure
- Convenient wiring terminals



Dimensions in mm

Ordering Codes	Connection	Switch Action	Enclosure	Additional Features
F63BT-9101	1-1½ NPT	SPDT Contacts 15(8) A, 230 V~	Plastic enclosure IP67	Plastic float, brass body, phosphor bronze bellows
F63BT-9102				Plastic float, stainless steel bellows
F63BT-9200	R1" DIN2999 (ISO R7)			Plastic float, stainless steel 316 L body, rod, bellows

Accessories

Ordering Codes	Description
FLT001N001R	F63 - Float