

## Series A19ARC/BRC/AQC/AQF/BQC Thermostats Splash-proof and Dust-tight Enclosure

### Introduction

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.



**A19ARC**  
 Thermostat with style 1b bulb

### Description

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.

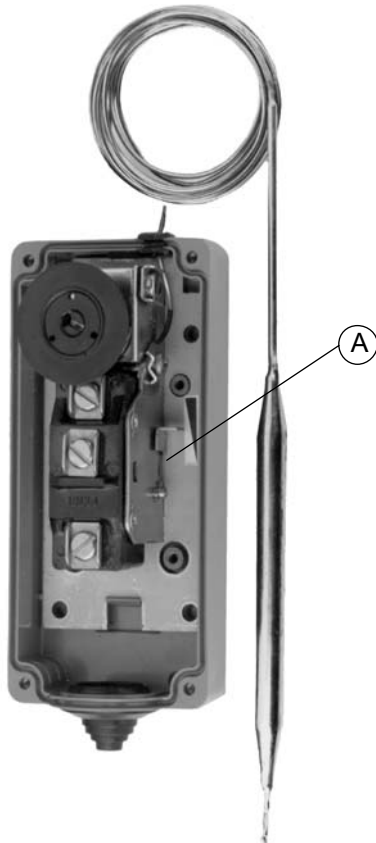
**Note:** To facilitate ordering wholesaler codes have been added on some universal models.

#### Feature and Benefits

<input type="checkbox"/> <b>Liquid filled sensing element</b>	No cross ambient temperature problems Contact differential over the whole range
<input type="checkbox"/> <b>Dust tight Penn switch</b>	Prevents pollution of the contacts by electrostatic influences.
<input type="checkbox"/> <b>IP65 protection class</b>	Suitable for outdoor applications
<input type="checkbox"/> <b>Front adjustment</b>	Less mounting space required.

## 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.

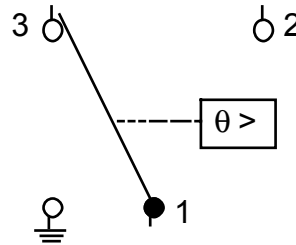


**Fig.1**  
**Thermostat A19ARC, cover removed**  
A Differential adjustment lever.

## Adjustment

The dial set point indicates the low switch point (1 - 2 open, 1 - 3 closed). The high switch point (1 - 2 closed, 1 - 3 open) is obtained by adding the differential to the low switch point. Adjustable differential models can be adjusted by means of the differential adjustment lever (A). (See Fig.1)

## Contact functions

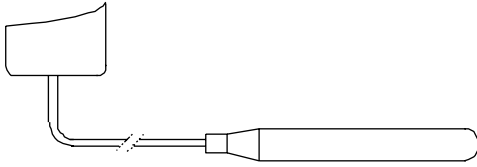


**Fig.2**  
1-2 closes on temperature increase

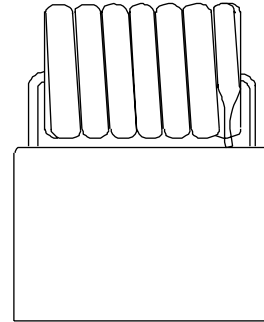
## Repair and replacement

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.

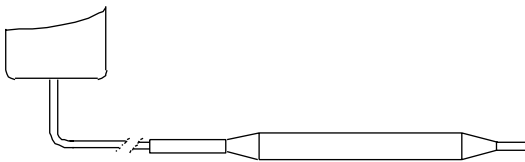
## Sensor styles



**Fig. 3**  
**Style 1a (drawn bulb)**



**Fig. 5**  
**Style 3 (coil)**



**Fig. 4**  
**Style 1b swaged bulb, can be used with  
closed-tank connector FTG13A-600R**

## Bulb size and finish, bulb wells

Range (°C)	Style	Bulb size (mm)	Finish	Bulb well (optional)
-35 to +10	1b	9.5 x 110	Tin-plated	<b>WEL14A602R</b>
-35 to +10	3	-	Stainless Steel	-
-35 to +40	1b	9.5 x 135	Tin-plated	<b>WEL14A602R</b>
-35 to +40	3	-	Stainless Steel	-
-20 to +65	1a	7.4 x 75	-	<b>WEL11A601R</b>
-10 to +50	1b	9.5 x 110	-	<b>WEL14A602R</b>
- 5 to +5	1a	9.3 x 80	-	<b>WEL16A601R</b>
- 5 to +28	1b	9.5 x 135	Tin-plated	<b>WEL14A603R</b>
- 5 to +28	3	-	Stainless Steel	-
0 to 43	3	-	Stainless Steel	-
1 to 60	1b	9.5 x 115	-	<b>WEL14A602R</b>
5 to 50	1	10.5 x 110	Neoprene coated	-
0 to 10	1a	9.3 x 80	-	<b>WEL16A601R</b>
40 to 120	1b	9.5 x 110	-	<b>WEL14A602R</b>

**T**ype number selection table:

Range (°C)	Diff. (K)	Bulb style	Cap. length	Max. bulb temp.	Wholesaler code	Order number
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**Type A19ARC Capillary thermostat, adjustable differential, knob adjustment**

-35 to +10	2.8 to 11	1b	2 m	60 °C	A19-AS1	<b>A19ARC-9100</b>
-35 to +40	2.8 to 11	1b	2 m	60 °C	A19-AS4	<b>A19ARC-9113</b>
-20 to +65	3.5 to 13	1a	3.5 m	85°C		<b>A19ARC-9104</b>
-5 to +28	2 to 8	1b	2 m	60°C	A19-AS2	<b>A19ARC-9101</b>
1 to 60	2 to 8	1b	3 m	85°C	A19-AS3	<b>A19ARC-9109</b>
40 to 120	3.5 to 13	1b	2 m	143°C		<b>A19ARC-9107</b>

**Type A19ARC Capillary thermostat, adjustable differential, concealed adjustment**

-10 to +50	2.5 to 11	1b	2m	80°C		<b>A19ARC-9110</b>
40 to 120	3.5 to 13.5	1b	2m	143°C		<b>A19ARC-9112</b>

**Cooling tower thermostat, neoprene coated bulb and capillary, concealed adjustment**

5 to 50	2.5 to 11	1	2 m	100°C		<b>A19ARC-9105</b>
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**Cooling tower thermostat, concealed adjustment fixed differential**

-5 to +55	2.5	2	-	85 °C	A19-A3	<b>A19AQC-9200</b>
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**A19AQC Ice bank thermostat, case compensation, concealed adjustment, fixed differential**

-5 to +5	2	1a	2 m	80°C		<b>A19AQC-9101</b>
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**A19AQC capillary thermostat, fixed differential, knob adjustment**

-5 to +28	2	1b	2 m	60 °C		<b>A19AQC-9102</b>
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**Type A19AQF Milkcool thermostat, small fixed differential, concealed adjustment, case compensation**

0 to 13	1.5	1a	2 m	80°C		<b>A19AQF-9100</b>
0 to 13	1.5	1a	3 m	80°C		<b>A19AQF-9102</b>

**Type A19BRC Space thermostat, adjustable differential, knob adjustment**

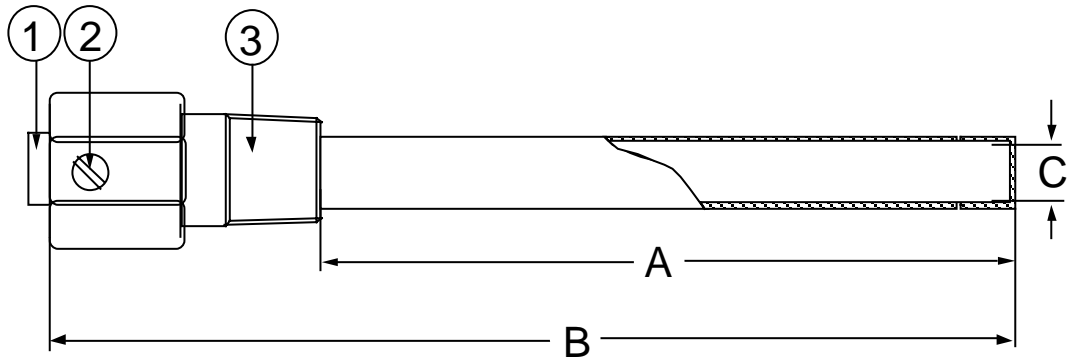
-35 to +10	2.8 to 11	3	-	60 °C	A19-BS1	<b>A19BRC-9252</b>
-35 to +40	2.8 to 11	3	-	60 °C	A19-BS4	<b>A19BRC-9253</b>
-5 to +28	2 to 8	3	-	60 °C	A19-BS2	<b>A19BRC-9250</b>
0 to 43	2 to 8	3	-	60 °C	A19-BS3	<b>A19BRC-9251</b>

**Outdoor change-over thermostat, concealed adjustment. For bivalent heatpumps**

-5 to +25	2	3	-	60°C		<b>A19BQC-9252</b>
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**Note:** If what you need is not in the type number selection table then please contact your representative.

## Accessories (optional)



Order no.	Dimension A	Dimension B	Dimension C Internal
WEL11A601R	60 mm	118 mm	7.3 mm
WEL14A602R	125 mm	171 mm	9.8 mm
WEL14A603R	147 mm	193 mm	9.8 mm
WEL16A601R	71 mm	117 mm	9.5 mm

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

Fig. 6  
Bulb well (brass, copper pipe)

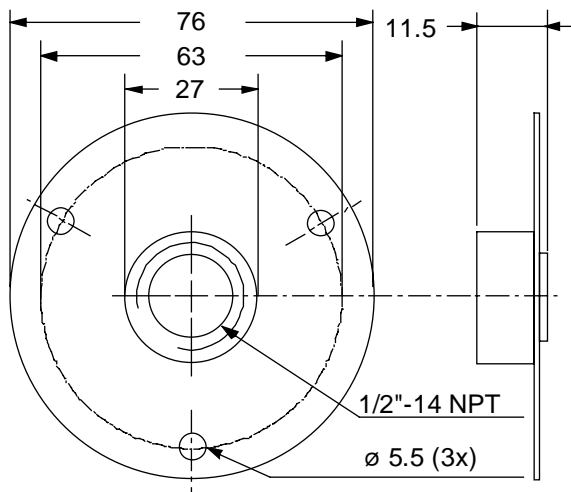
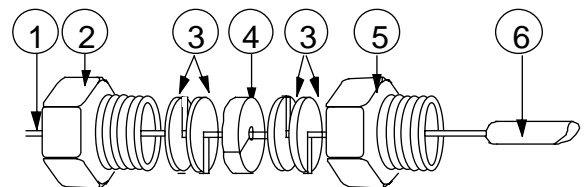
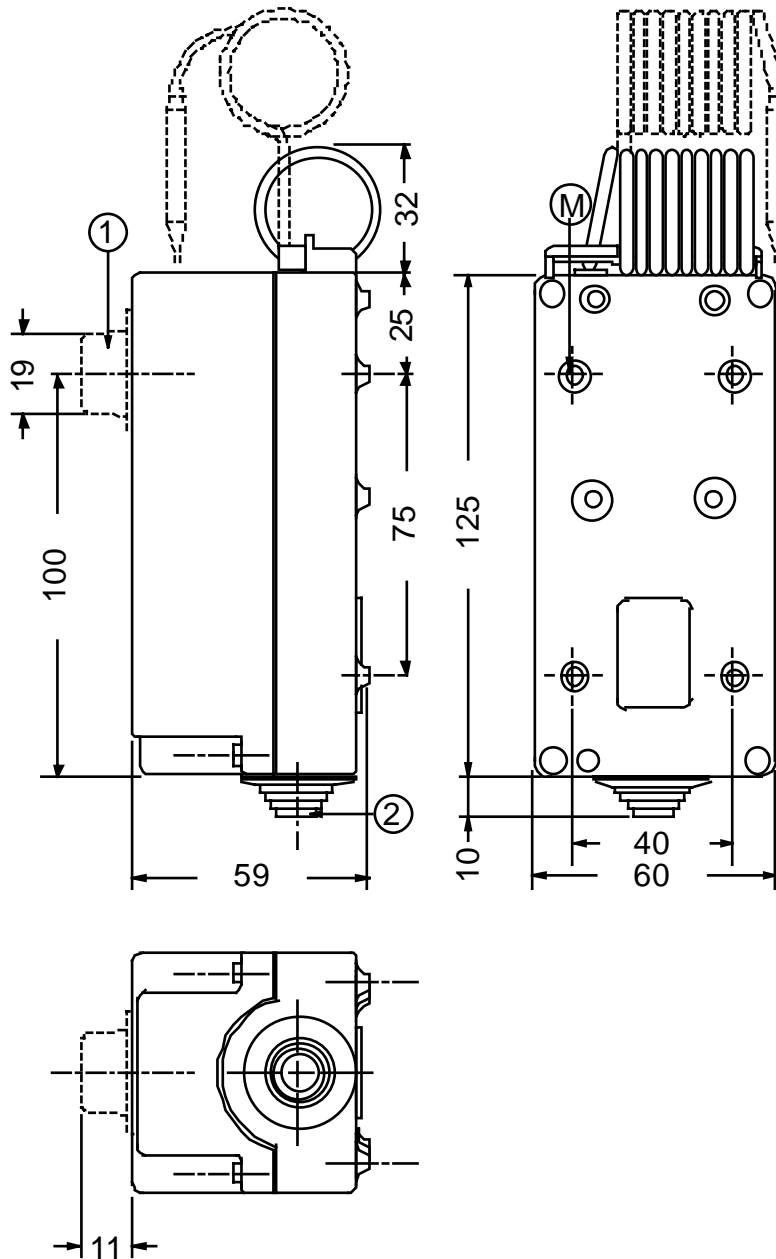


Fig. 7  
Duct flange to be used with closed-tank  
connector FTG13A-600RR.  
Order number **T-752-1001**



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

Fig. 8  
Closed-tank connector  
Order number **FTG13A-600R**

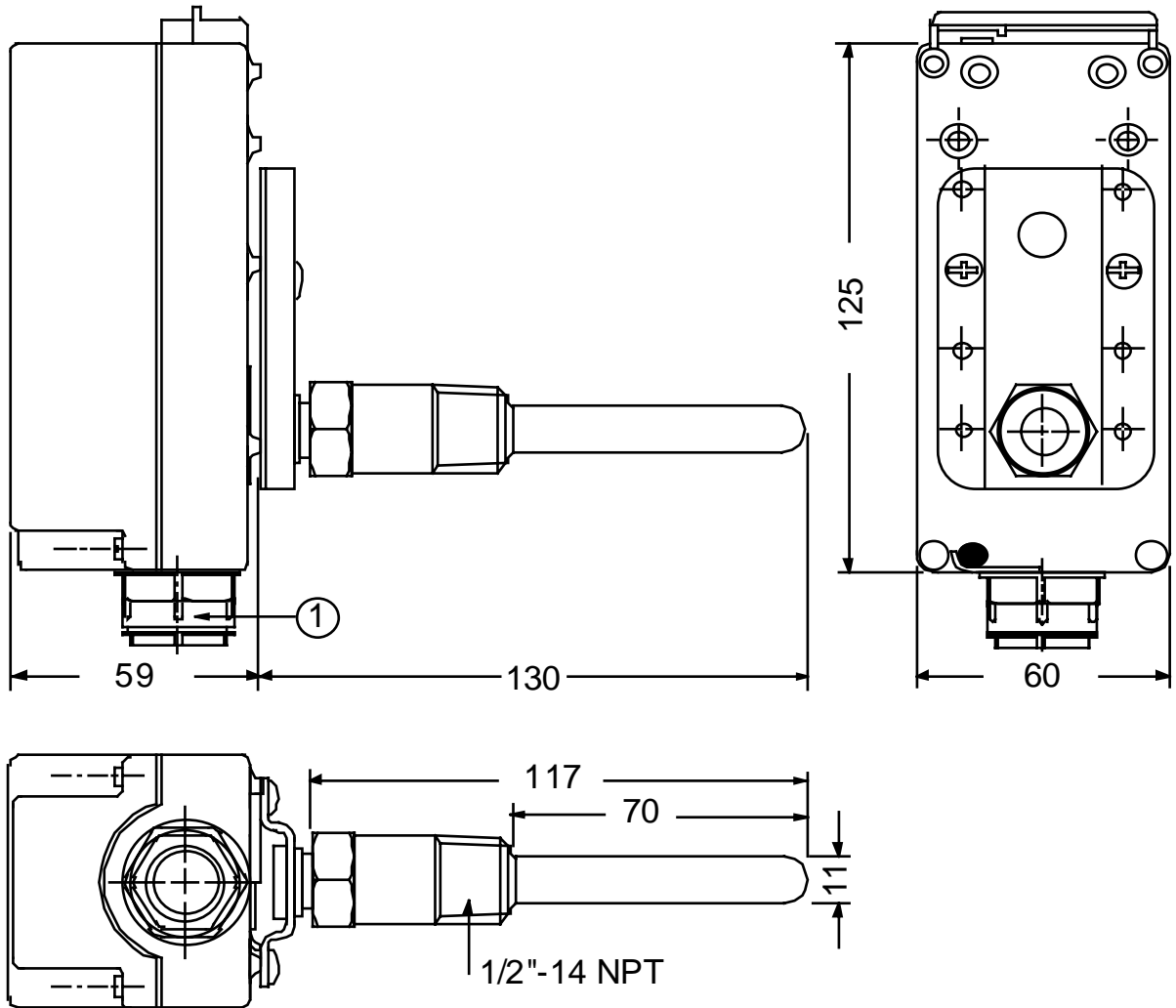
**D**imensions (mm)

- 1 Knob (knob models only)
- 2 Cable grommet  $\varnothing$  5 to  $\varnothing$  13 mm
- M 4 Mounting holes  $\varnothing$  4.5 mm use 2 holes only

Fig. 9

# Dimensions (mm)

## A19AQC-9200



1 PG16 connector

Fig. 10

## Specifications

<b>CE Conformity</b>	According to low voltage directive and EMC directive	
<b>Operating range</b>	-35 to +120 °C. See type number selection table.	
<b>Differential</b>	See type number selection table.	
<b>Differential adjustments</b>	Controls with adjustable differential (types A19ARC and A19BRC) have an adjustment lever under the cover	
<b>Sensor styles</b>	1a, 1b, 3 and 2 (see page 3)	
<b>Electrical ratings</b>	~15(8)A 230V; except A19AQC-9101 ~15(5)A 230V; A19AQF ~15(3)A 230V	
<b>Ambient temp. limits</b>	-35 to +55 °C	
<b>Conduit connector</b>	Cable grommet. Conduit opening also applicable for PG16 connector.	
<b>Material</b>	<b>Case/Cover</b>	Polycarbonate
<b>Protection Class</b>	Dust-tight, splash-proof IP65	
<b>Shipping weight</b>	<b>Individual pack</b>	0.5 kg
	<b>Overpack</b>	12 kg (24 pcs) (A19AQC-9200 =14 pcs.)
<b>Dimensions</b>	(see dimension drawing)	

*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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