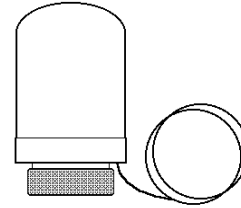


Control Types 68, 690, 69C Electric and Electronic Controls Installation & Operating Instructions

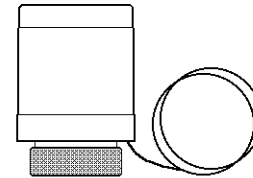
NEW INSTALLATIONS

Ammark low voltage electric controls may be fitted to any Ammark thermostatic radiator valve. Do not mount the drive facing down, as dripping water may cause the drive to malfunction.



Type 68 Control

When installing a control with a new valve, first follow all of the instructions enclosed with the valve pertaining to valve installation. After the valve is completely installed, remove the protective cap from the valve and follow the instructions for the appropriate control type.



Type 69 Control

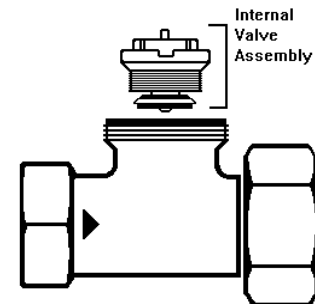
MAINTENANCE REPLACEMENTS

When replacing a control which is not functioning, remove the old control from the valve by loosening the connecting ring which holds the control on the valve.

If the old control was damaged by steam or water leaking from the valve stem, maintenance is required. All seals and moving parts of the the valve are incorporated into an easily serviced Internal Valve Assembly (IVA), which is common to all valve types and sizes. Service the valve as follows:

- Remove the IVA with Ammark Part #ICT (it is not necessary to turn-off or drain the system).
- If the ICT tool is not available, the system must be shut-off (and drained if it is a water system). Use an adjustable wrench to remove the IVA.
- If the IVA requires replacement, install a new one using an adjustable wrench or the ICT tool.
- Press the valve stem to make sure it moves up and down freely. Observe the assembly under pressure to make sure it doesn't leak.

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After completing the maintenance, follow the installation instructions for the appropriate control.

TYPE 68 CONTROL

The Type 68 DDC Control is attached to the valve by screwing the control onto the valve until hand-tight. Tools should not be used to attach or tighten the control to the valve. Never attempt to remove the permanent control housing. Do not mount the control below the valve axis, as dripping water could damage the control.

The Type 68 Control is a normally closed, electrically-powered DDC Control. The control is powered by 24V AC and controlled by a 0-10V DC signal to produce proportional actuator lift for accurate temperature control. Electrical connections and specifications are as follows:

**TYPE 68
CONTROL
(continued)**

Control Type	68												
Normal Position	Closed without current												
Operating Voltage	24V AC (-10%, +20%)												
Power Rating	2W												
Control Voltage	0-10V DC												
Input Resistance	100 kOhms												
Electrical Connections	<table style="border: none;"> <tr> <td style="padding-right: 10px;">1 Red</td> <td style="padding-right: 10px;">+</td> <td style="border-bottom: 1px solid black; width: 50px;"></td> <td style="padding-left: 10px;">0-10V DC</td> </tr> <tr> <td style="padding-right: 10px;">2 Blue</td> <td style="padding-right: 10px;">0</td> <td style="border-bottom: 1px solid black; width: 50px;"></td> <td style="padding-left: 10px;">24V~ AC</td> </tr> <tr> <td style="padding-right: 10px;">3 Black</td> <td style="padding-right: 10px;">24V~</td> <td style="border-bottom: 1px solid black; width: 50px;"></td> <td style="padding-left: 10px;">24V~ AC</td> </tr> </table>	1 Red	+		0-10V DC	2 Blue	0		24V~ AC	3 Black	24V~		24V~ AC
1 Red	+		0-10V DC										
2 Blue	0		24V~ AC										
3 Black	24V~		24V~ AC										
Max Ambient Temp	122 °F												
Mean Actuating Time	75s/mm												

**TYPE 69
CONTROL**

The Type 69 Control is attached to the valve by screwing the control onto the valve until hand-tight. Tools should not be used to attach or tighten the control to the valve. Never attempt to remove the permanent control housing. Do not mount the control below the valve axis, as dripping water could damage the control.

The Type 69 is a two-point (opened or closed), 24V Control. Specifications are as follows:

Control Type	69O & 69C (69C special order only)
Normal Position	69O - Open without current. 69C - Closed without current
Operating Voltage	24V ± 10%
Power Consumption - Short term during valve closing - In permanent operation	.7A 130 mA, 3W
Opening Time	Approx 2 min.
Closing Time	Approx 3 min.
Max Ambient Temp	122 °F

If required, several Type 69 Controls can be connected in parallel, depending on the maximum operating current of the room thermostat. Divide the maximum operating current of the thermostat by .7A to determine the number of controls which may be operated in parallel. For example, a thermostat with maximum operating current of 6 A would allow eight Type 69s to be connected in parallel.