

Self-operated temperature regulators



Temperature regulator with Double Adapter (Do1, DoS) Temperature regulator with Manual Adjuster (Ma, MaS)

Application

Temperature regulator with **Double Adapter Do1** for attachment of a second thermostat for control by a second process variable.

Temperature regulator with **Manual Adjuster Ma** for manual control of the process.

With **globe valves in DN 15 to DN 250** and **three-way valves in DN 15 to DN 150** · **Nominal pressures PN 16 to PN 40**

Note

Typetested devices with double adapter, for example temperature limiters (TL), are available. For details, see Information Sheet T 2040 EN.



On Type 1, Type 4, Type 8, and Type 9 Temperature Regulators, a double adapter can be mounted between the valve and the control thermostat. The double adapter is designed for attachment of the control thermostats listed in Table 1. In all device combinations, the signals received from the two thermostats are compared and the greater signal actuates the valve.

The double adapters have a mechanical travel indicator (optionally available with an additional switch which signalizes the closed position of the valve), which indicates the valve position on a scale. Instead of a double adapter, a manual adjuster can be attached to the valve. Manual adjusters are used to manually close the valve or to limit the valve travel. They are firmly attached to an intermediate piece that is identical in construction with the double adapter and has a mechanical travel indicator (optionally available with an additional switch which signalizes the closed position of the valve). The intermediate piece only allows one control thermostat to be attached to the valve.

Versions

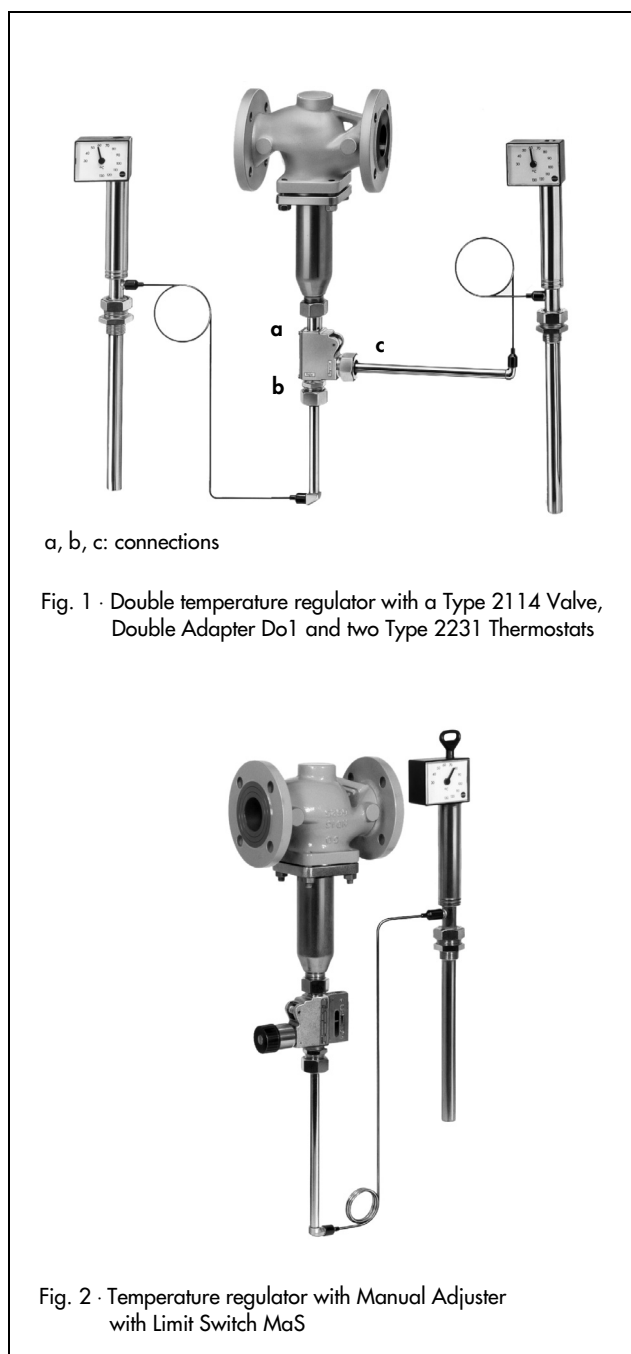
- **Double Adapter with Travel Indicator Do1** (Fig. 1). The version with G1 connections is suitable for attachment to Type 2111, 2114, 2118, and 2119 Valves as well as Type 2231 to Type 2235 Control Thermostats, and Type 2213 Safety Thermostat. The coupling pin is sealed at connection a.
- **Manual Adjuster with Travel Indicator Ma**
- **Double Adapter with Limit Switch and Mechanical Travel Indicator DoS** or **Manual Adjuster with Limit Switch and Mechanical Travel Indicator MaS** (Fig. 2). When the valve is closed, the electric switch is triggered and issues a signal to a signaling or alarm device.

Table 1 · Versions with Double Adapter Do1 or Manual Adjuster Ma

Regulator	Type 1	Type 4	Type 8	Type 9	
Data Sheet	T 2111 EN	T 2121 EN	T 2131 EN	T 2133 EN	
Valve	Globe valve		Three-way valve		
	Type	2111	2114	2118	2119
	DN	15 to 50	15 to 250	15 to 50	15 to 150

For details on Type 2231, Type 2232, Type 2234 and Type 2235 Control Thermostats, see Information Sheet T 2010 EN.

The technical data of the regulators can be found in the associated data sheets.



a, b, c: connections

Fig. 1 · Double temperature regulator with a Type 2114 Valve, Double Adapter Do1 and two Type 2231 Thermostats

Fig. 2 · Temperature regulator with Manual Adjuster with Limit Switch MaS

Principle of operation (Figs. 3 and 4)

The Double Adapter Do1 mounts between the valve (10) and the control thermostat (11) of the temperature regulator and allows an additional control thermostat (12) to be attached to the valve at connection c. Each thermostat produces a positioning force according to its process variable. The thermostat that produces the greater force is coupled to the valve plug. Depending on the connection of the thermostat exerting the greater force, the positioning force is transmitted either directly from connection b or via the lever (6) from connection c to the coupling pin (5) and thus to the plug stem (10.1) and valve plug. The indicator (5.1), which is firmly connected to the coupling pin (5), indicates the valve travel.

The Manual Adjuster Ma (Fig. 4) is fixed to connection c of the intermediate piece, which is identical in design with the double adapter, but only allows one thermostat to be attached to the valve. Turning the handle (8.1) will move the pin (8.2) and, via the lever (6), also the coupling pin (5).

The microswitch (9.1) of the Double Adapter with Limit Switch DoS or of the Manual Adjuster with Limit Switch MaS is located in an extra case. It is operated by the indicator (5.1) connected to the coupling pin (5) when the valve reaches its closed position. The screw (9.2) is used for fine adjustment of the switch.

Table 2 · Dimensions in mm · Weights · Techn. data · Materials

Version	Double Adapter				Manual Adjuster			
	Do1		DoS		Ma		MaS	
for DN 15 to 100	•		•		•		•	
for DN 125 to 250		•		•		•		•
Dimension A	128	170	128	170	128	170	128	170
Dimension A1	77	115	77	115	77	115	77	115
Dimension A2	62	88	62	88	-	-	-	-
Dimension A3, max.	-	-	-	-	100	125	100	125
Approx. weight in kg	1.1	1.8	1.5	2.3	1.5	2.3	1.8	2.6
Perm. temperature	0 to 130 °C							
Limit switch								
Load	230 V~, 10 A at ohmic load							
Materials (Material number according to DIN EN)								
Body	Brass CW604N, nickel-plated							
Coupling pin	Stainless steel 1.4301							
Sealing	EPDM seal between PTFE disks							

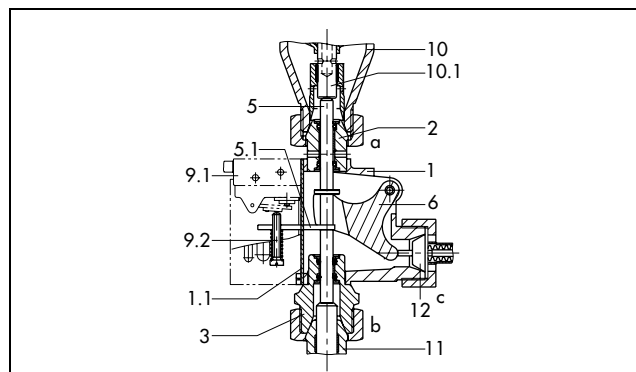


Fig. 3 · Double Adapter Do1
Double Adapter with Limit Switch DoS

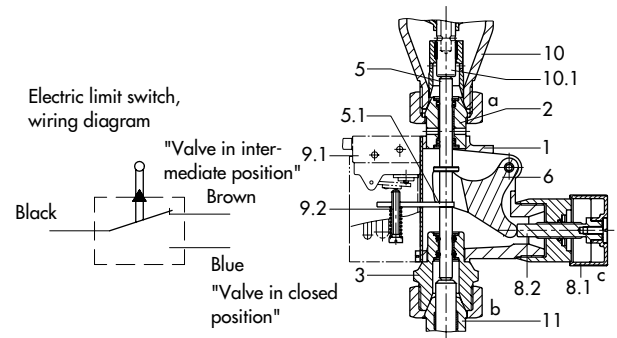


Fig. 4 · Manual Adjuster Ma
Manual Adjuster with Limit Switch MaS

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|-----|-------------------------|------|---------------------------------------|
| a | Connection | 8 | Manual adjuster |
| b | Connection | 8.1 | Handle |
| c | Connection | 8.2 | Coupling pin |
| 1 | Body | 9 | Limit switch |
| 1.1 | Cover plate | 9.1 | Microswitch |
| 2 | Connection with sealing | 9.2 | Screw for fine adjustment |
| 3 | Plug without sealing | 10 | Valve |
| 5 | Coupling pin | 10.1 | Plug stem of the valve |
| 5.1 | Indicator | 11 | Control thermostat |
| 6 | Lever | 12 | Additional thermostat at connection c |

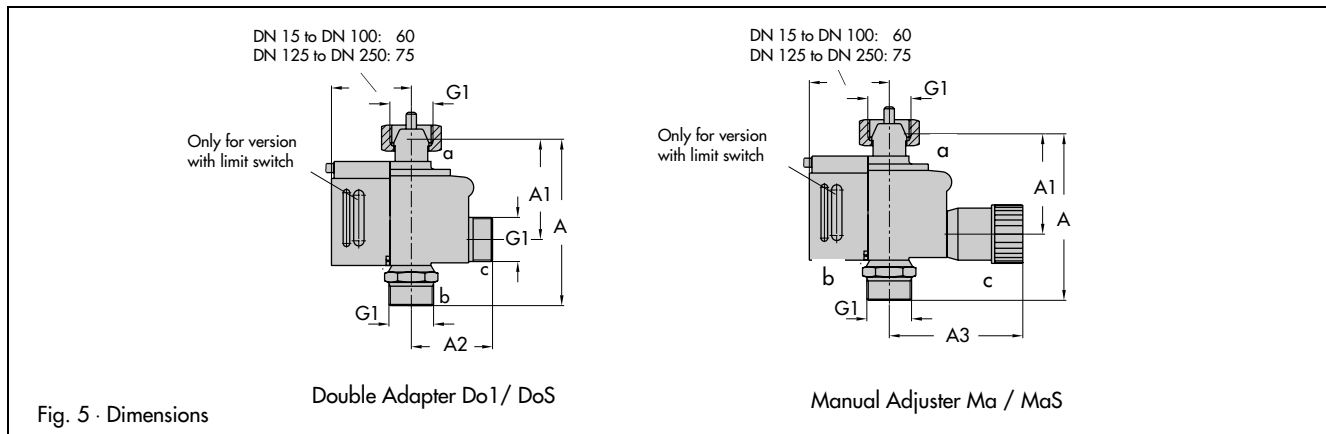


Fig. 5 · Dimensions

Specifications subject to change without notice.



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