

178WM, 179WM Series

Thermostat-adaptable valves

Technical Data Sheet



Description

178WM, 179WM Series thermostat-adaptable valves with pre-setting, are used as shut-off and control devices for heat emitters (radiators, fan coils, etc.) in heating and air conditioning systems. The valves are available in right-angle and straight configuration, with female thread, and must be installed on the flow side of the heat emitter. They are connected to the heat emitter by means of an O-ring-sealed straight tailpiece, using a hex wrench.

178WM



Nickel-plated thermostat-adaptable valve. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with **148WM Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN 215 compliant, in conjunction with **148WM (SE148) Series** thermostatic actuators.

Type	Part No.	DN	Kv	Weight (g)
178WM	178D12WM	1/2"	2.6	260

179WM



Nickel-plated thermostat-adaptable valve. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with **148WM Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN215 compliant, in conjunction with **148WM (SE148) Series** thermostatic actuators.

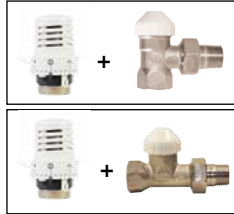
Type	Part No.	DN	Kv	Weight (g)
179WM	179D12WM	1/2"	1.8	280
179WM	179D34WM	3/4"	2.6	370

Technical/design features

Valve body	CW617N brass
Handwheel	ABS
O-ring	EPDM
Tailpiece	CW617N brass
Maximum permissible static pressure	10 bar
Maximum differential pressure	1.5 bar
Maximum temperature	110°C
Usable fluids	Water, including with glycol ≤ 50%

The table below shows the nominal flow rates q_{mN} of the UNI EN 215 compliant valves with **148WM Series** thermostatic actuators. As required by UNI EN 215, these values relate to a pressure differential $\Delta p=10\text{kPa}$. Using the formula set out below, it is therefore possible to calculate the Kv for each pre-setting set-point of the valves.

$$Kv = \frac{q_m}{316}$$



		Pre-setting q_{ms} l/h								Pre-setting OFF q_{mN} l/h
SERIES	TYPE	DN	SP1	SP2	SP3	SP4	SP5	SP6	SP7	
178WM	└	1/2"	80	175	220	220	220	220	220	220
179WM	—	1/2"	75	175	225	225	225	225	225	225
		3/4"	80	180	240	240	240	240	240	240
Tolerance \pm %			60	30	20	10	10	10	10	10

		Authority (a)								
		Pre-setting								Pre-setting OFF
SERIE	TIPO	DN	SP1	SP2	SP3	SP4	SP5	SP6	SP7	
178UM	└	1/2"	0,15	0,2	0,4	0,61	0,71	0,76	0,8	0,92
179UM	—	1/2"	0,2	0,27	0,37	0,58	0,7	0,75	0,79	0,84
		3/4"	0,15	0,2	0,36	0,61	0,74	0,81	0,84	0,91

Application

These valves are designed for manual room temperature control, or automatic room temperature control if used in conjunction with thermostatic actuators (**148WM Series**) or electrothermal actuators (**22C, 22CX, 22CX5** and **26LC Series**). The use of thermostatic valves makes it possible to install metering systems (see section on measuring and metering systems).

Operation

Valve operation is controlled by manual or automatic movement of the disc that shuts off the heat carrier fluid. The fluid flow rate and pressure drop of the valves can be determined from the appropriate flow curves.

In thermostatic mode, however, they assume the characteristics of the device in question.

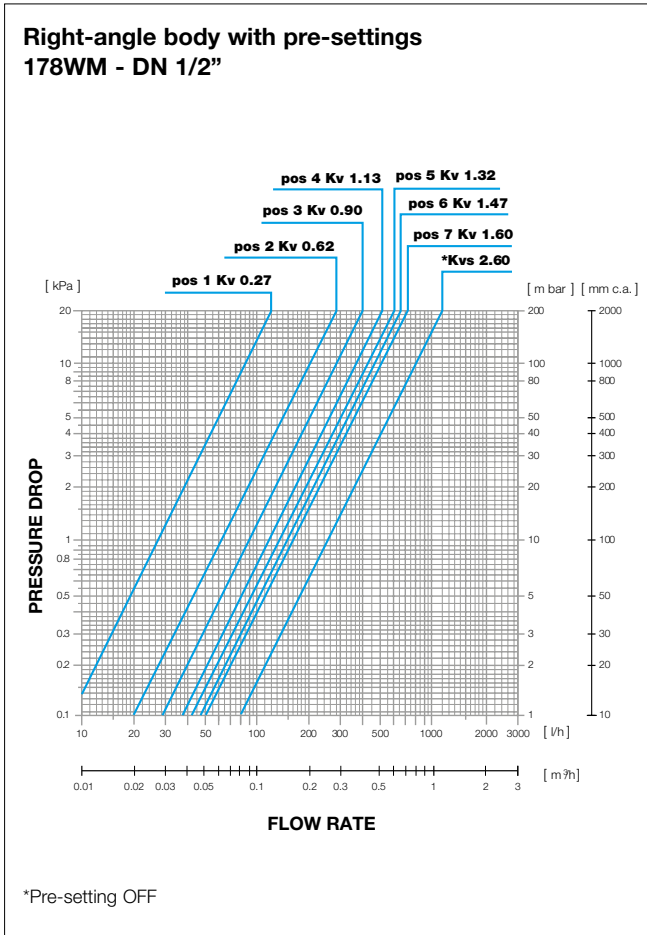
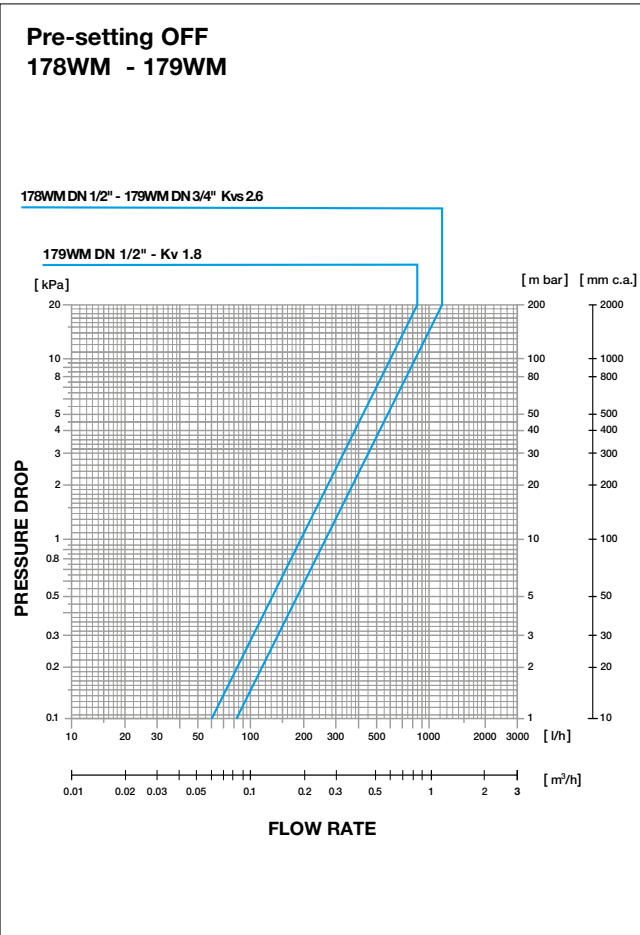
The reliability of **178WM, 179WM Series** thermostat-adaptable valves is guaranteed by the fact that every single product is tested to ensure the outward pressure tightness of the valve body and its components, and the pressure tightness of the disc when it shuts off the flow.

Charts

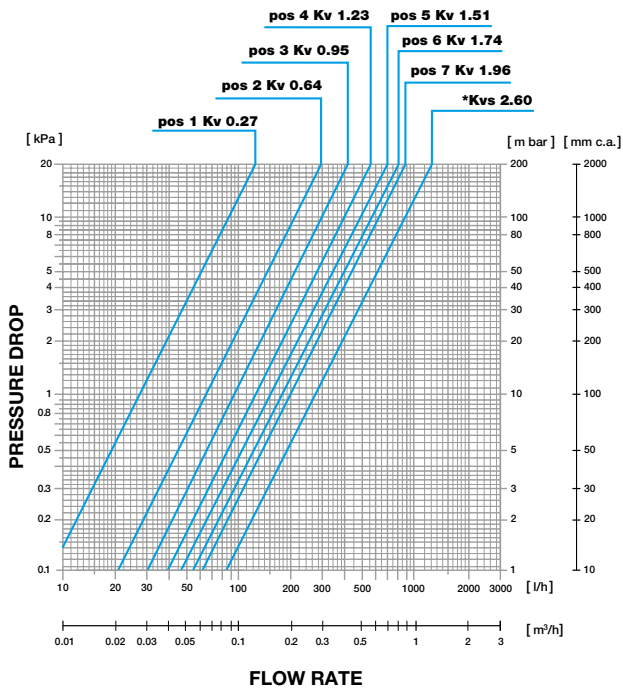
The fluid flow rate and pressure drop of the valve/actuator combination can be determined from the flow curves. The nominal flow rate q_{mN} is as for a proportional band -2K. The graph shows the curves corresponding to the proportional bands -1K and -2K and of the valve with actuator.

If you prefer to use an analytical method for determining the pressure drop Δp (kPa), where flow rate (l/h) and Kv are known, use the following formula:

$$\Delta p = \left(\frac{0.01 \cdot q}{Kv} \right)^2$$

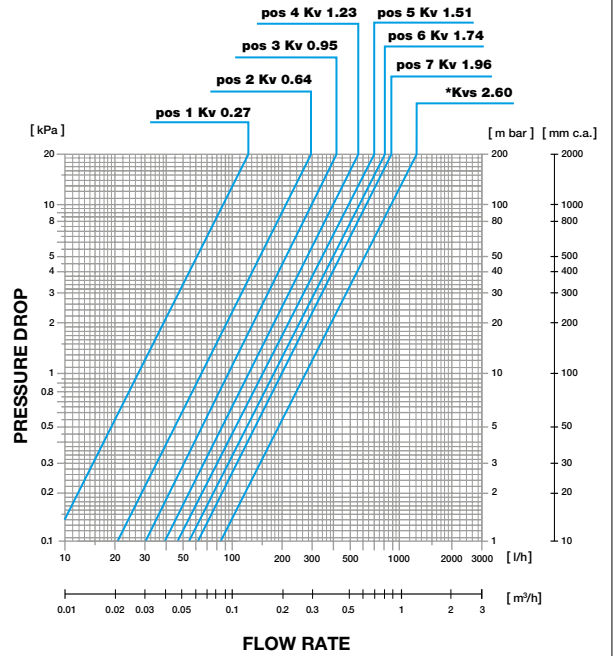


**Straight body with pre-settings
179WM DN 1/2"**



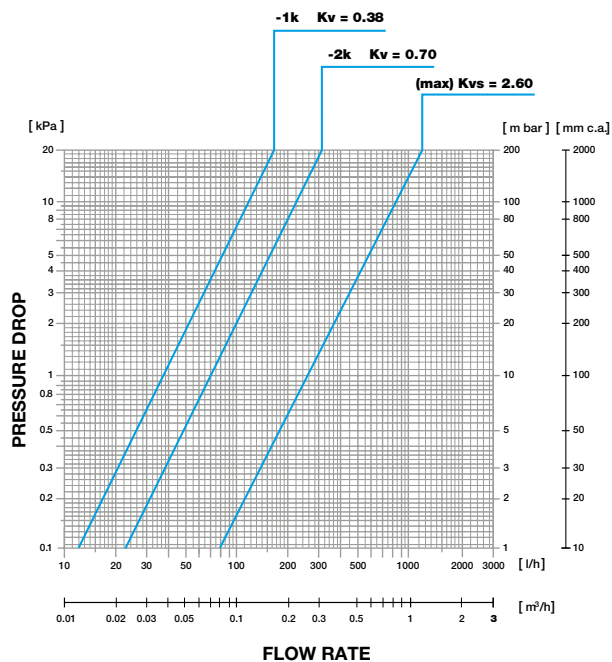
*Pre-setting OFF

**Straight body with pre-settings
179WM - DN 3/4"**

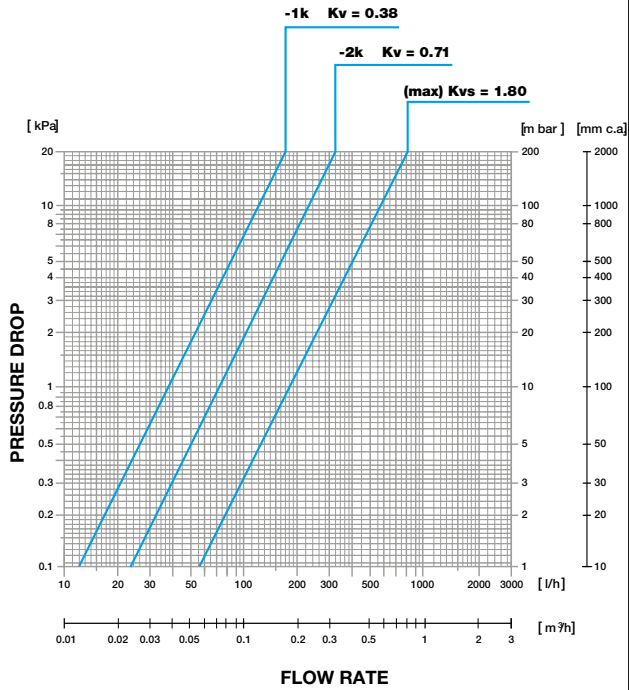


*Pre-setting OFF

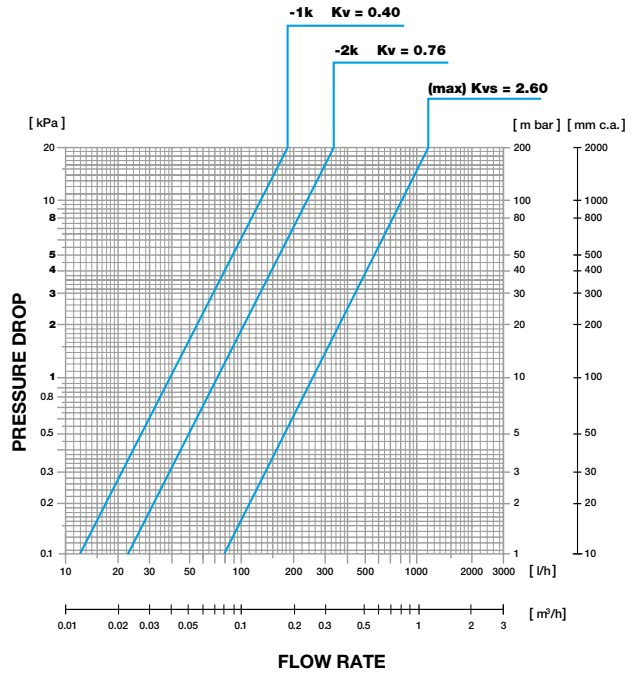
**Right-angle body with actuator 148WM
178WM DN 1/2"
Pre-setting OFF**



**Straight body with actuator 148WM
179WM - DN 1/2"
Pre-setting OFF**



**Right-angle body with actuator 148WM
179WM - DN 3/4"
Pre-setting OFF**

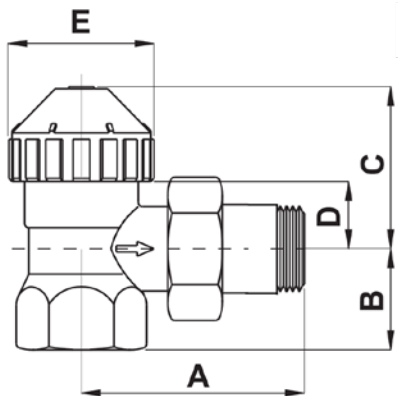


Installation

Valve and lockshield selection is based on the size of the connection to the radiator and the size of the connecting pipe. **178WM, 179WM Series** manual thermostat-adaptable valves with pre-setting, can be installed on heat emitters supplied by iron pipes, in conjunction with **195UM, 196UM Series** lockshields. Should it be necessary to apply a thermostat to the system, simply unscrew the control handwheel and replace it with a thermostatic or electrothermal actuator by tightening the ring-nut. All this can be done without any plumbing work and with the system running.

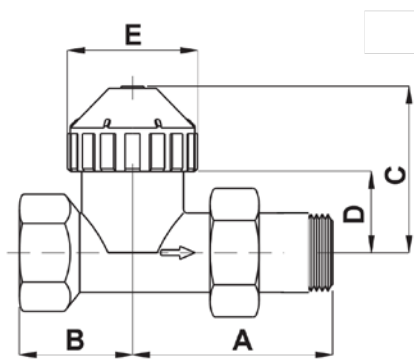
Overall dimensions (mm)

178WM



DN	A	B	C	D	E
1/2"	56,5	27	40	18	35

179WM



DN	A	B	C	D	E
1/2"	60	33	46,5	24,5	35
3/4"	66	40	46,5	24,5	35

Specification text

178WM Series - Thermostat-adaptable valve with pre-setting **178WM Series** – WATTS brand. Right-angle body in pressed nickel-plated brass. Disc assembly can be replaced without draining the system with key **225-RP130 Series** with EPDM seal. Replaceable spare part RI 130 stuffing box without draining the system. Manual ABS handwheel with moving stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 1/2"F-3/4"F. Kv: 2.6 (1/2"), 3.3 (3/4"). Compatible with **148WM (SE148) Series** thermostatic actuators with liquid-filled elements, and **22C, 22CX, 22CX5 and 26LC Series** electrothermal actuators. No special tools are required for assembly, which can be undertaken with the system running. UNI EN215 compliant, in conjunction with **148WM Series** thermostatic actuators.

179WM Series - Thermostat-adaptable valve with pre-setting **179WM Series** – WATTS brand. Straight body in pressed nickel-plated brass. Disc assembly can be replaced without draining the system with key **225-RP130 Series** with EPDM seal. Replaceable spare part RI 178 stuffing box without draining the system. Manual ABS handwheel with moving stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 1/2"F-3/4"F. Kv: 1.8 (1/2"), 2.6 (3/4"). Compatible with **148WM (SE148) Series** thermostatic actuators with liquid-filled elements, and **22C, 22CX, 22CX5 and 26LC Series** electrothermal actuators. No special tools are required for assembly, which can be undertaken with the system running. UNI EN215 compliant, in conjunction with **148WM Series** thermostatic actuators.



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