

178UM, 178SN, 179UM, 179SN, 1178UM, 1179UM, 188UM, 189UM, 1188UM, 1189UM Series

Thermostat-adaptable valves

Technical Data Sheet



Description

178UM, 178SN, 179UM, 179SN, 1178UM and 1179UM Series thermostat-adaptable valves without pre-setting, and **188UM, 189UM, 1188UM and 1189UM 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 male or 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.



028

178UM/178SN

Nickel-plated thermostat-adaptable valve. Right-angle body. Connection for iron pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN215 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

Type	Part No.	DN	Kv	Weight (g)
178UM	178UMSN38	3/8"	2.05	210
178UM	178UMSN12	1/2"	2.6	260
178UM	178UMSN34	3/4"	3.3	370
178SN*	178SN38	3/8"	2,05	210
178SN*	178SN12	1/2"	2,6	260
178SN*	178SN34	3/4"	3,3	370

*SN Series with conical tailpiece



028

179UM/179SN

Nickel-plated thermostat-adaptable valve. Straight body. Connection for iron pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN215 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

Type	Part No.	DN	Kv	Weight (g)
179UM	179UMSN38	3/8"	1.1	230
179UM	179UMSN12	1/2"	1.8	280
179UM	179UMSN34	3/4"	2.6	370
179SN*	179SN38	3/8"	1,1	230
179SN*	179SN12	1/2"	1,8	280
179SN*	179SN34	3/4"	2,6	370

*SN Series with conical tailpiece



1178UM

Nickel-plated thermostat-adaptable valve. Right-angle body. 1/2"M connection for copper or plastic pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators.

Type	Part No.	DN Body	DN Pipe	Kv	Weight (g)
1178UM	1178UMSN38X	3/8"	1/2"	2.6	200
1178UM	1178UMSN12	1/2"	1/2"	2.6	230



1179UM

Nickel-plated thermostat-adaptable valve. Straight body. 1/2"M connection for copper or plastic pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators.

Type	Part No.	DN Body	DN Pipe	Kv	Weight (g)
1179UM	1179UMSN38X	3/8"	1/2"	1.8	220
1179UM	1179UMSN12	1/2"	1/2"	1.8	260



188UM

Nickel-plated thermostat-adaptable valve equipped with pre-setting device. Right-angle body. Connection for iron pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN215 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

Type	Part No.	DN	Kvs	Weight (g)
188UM	188UMSN38	3/8"	2.05	230
188UM	188UMSN12	1/2"	2.6	280
188UM	188UMSN34	3/4"	3.3	350



189UM

Nickel-plated thermostat-adaptable valve equipped with pre-setting device. Straight body. Connection for iron pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators. UNI EN215 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

Type	Part No.	DN	Kvs	Weight (g)
189UM	189UMSN38	3/8"	1.1	250
189UM	189UMSN12	1/2"	1.8	350
189UM	189UMSN34	3/4"	2.6	390



1188UM

Nickel-plated thermostat-adaptable valve equipped with pre-setting device. Right-angle body. 1/2"M connection for copper or plastic pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators.

Type	Part No.	DN Body	DN Pipe	Kvs	Weight (g)
1188UM	1188UMSN38X	3/8"	1/2"	2.6	220
1188UM	1188UMSN12	1/2"	1/2"	2.6	250



1189UM

Nickel-plated thermostat-adaptable valve Nickel-plated thermostat-adaptable valve. Straight body. 1/2"M connection for copper or plastic pipe. Straight tailpiece with O-Ring. ABS handwheel with moving stem. Compatible with **148, 148A, 148SD** and **148CD Series** thermostatic actuators and **22C, 22CX, 22CX5** and **26LC Series** electrothermal actuators.

Type	Part No.	DN Body	DN Pipe	Kvs	Weight (g)
1189UM	1189UMSN38X	3/8"	1/2"	1.8	240
1189UM	1189UMSN12	1/2"	1/2"	1.8	280

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%

188UM-189UM-1188UM-1189UM

Features

- 1) Handwheel.
- 2) Pre-setting packing nut (stem seal), which can be replaced without de-pressurising the system.
- 3) Tailpiece with O-Ring on radiator side.
- 4) EPDM disc seal.
- 5) O-Ring on valve side.

The table below shows the nominal flow rates q_{ms} (in the various valve body pre-setting positions) and the flow rates q_{mN} of the CEN-certified valves with **148**, **148A**, **148SD** and **148CD Series** thermostatic actuators. As required by UNI EN 215, these values relate to a pressure differential $\Delta p=10kPa$. Using the formula set out below, it is therefore possible to calculate the Kv for each pre-setting set-point of the valves.

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



SERIES	DN	Pre-setting q_{ms} l/h							Pre-setting OFF q_{mN} l/h
		SP1	SP2	SP3	SP4	SP5	SP6	SP7	
130 188 178*	3/8"	80	175	220	220	220	220	220	220
	1/2"	80	175	220	220	220	220	220	220
	3/4"	80	180	240	240	240	240	240	240
131 189 179*	3/8"	75	160	205	205	205	205	205	205
	1/2"	75	175	225	225	225	225	225	225
	3/4"	80	180	240	240	240	240	240	240
Tolerance ± %		60	30	20	10	10	10	10	10

* q_{mN} value only

SERIE	DN	Authority (a)							Pre-setting OFF
		Pre-setting							
		SP1	SP2	SP3	SP4	SP5	SP6	SP7	
130 188 178*	3/8"	0,15	0,2	0,38	0,6	0,7	0,77	0,8	0,87
	1/2"	0,15	0,2	0,4	0,61	0,71	0,76	0,8	0,92
	3/4"	0,2	0,26	0,44	0,65	0,76	0,81	0,84	0,94
131 189 179*	3/8"	0,2	0,2	0,32	0,5	0,55	0,58	0,6	0,65
	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

*Only pre-setting value excluded

Application

These valves are designed for manual room temperature control, or automatic room temperature control if used in conjunction with thermostatic actuators (**148, 148A, 148SD** and **148CD 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) as required by Italian law 10/91 and subsequent amendments.

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.

188UM, 189UM, 1188UM and 1189UM Series valves are equipped with active-memory pre-setting, to allow precise balancing of the system when used with thermostatic or electrothermal actuators. To balance the system, turn the ring-nut located under the handwheel to limit the stroke of the disc. In particular, in the event of removal of the handwheel for thermostatic control of the system, the active-memory pre-setting permanently retains the set balance. The reliability of **178UM, 179UM, 1178UM, 1179UM Series** and **188UM, 189UM, 1188UM and 1189UM 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.

Flow curves

The fluid flow rate and pressure drop of the valve/actuator combination can be determined from the flow curves.

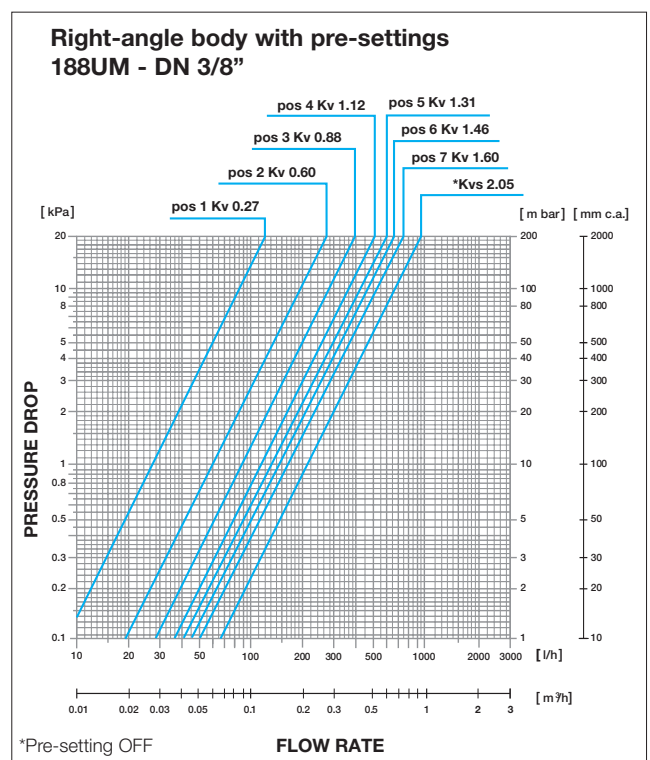
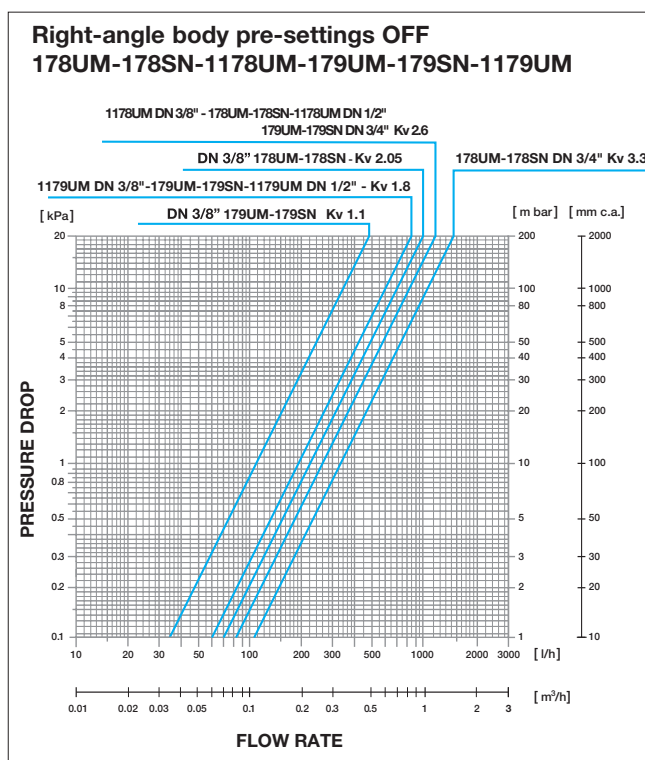
The nominal flow rate q_{mN} is as for a proportional band -2K when the pre-setting device is OFF. The graph shows the curves corresponding to the proportional bands -1K, -2K and MAX.

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:

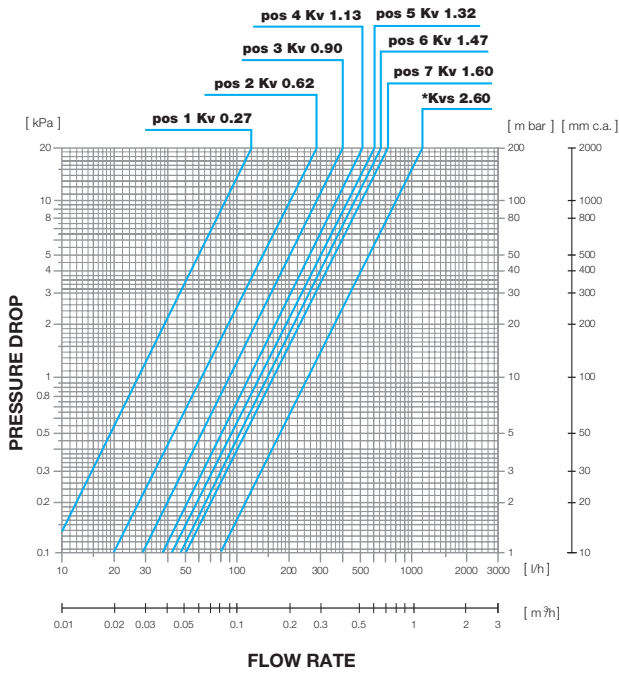
$$\Delta p = \left(\frac{0.01 \times q}{Kv} \right)^2$$

$$\Delta p = \left(\frac{0.01 \times 80}{0.65} \right)^2 = 1.52 \text{ kPa}$$

Determine the pressure drop of the 179UM+148 DN 3/8" thermostatic valve combination with a flow rate of 80 l/h.

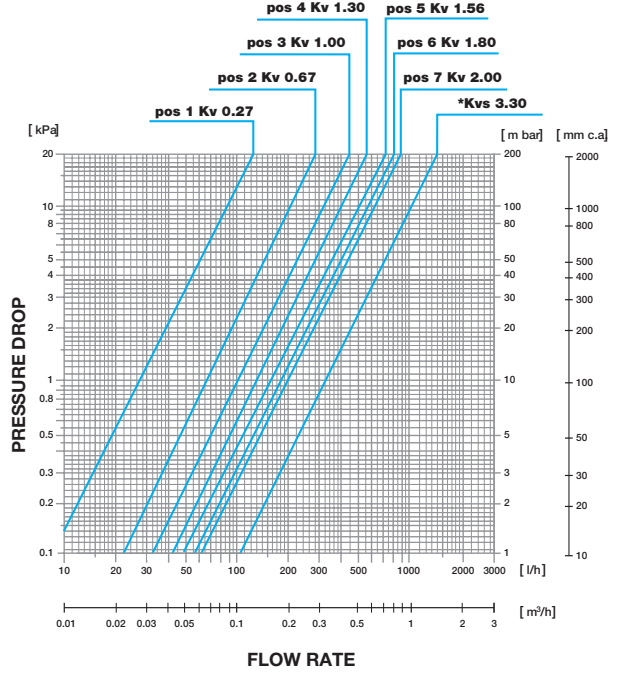


Right-angle body with pre-settings
188UM - 1188UM - DN 1/2" - 1188UM - DN 3/8"



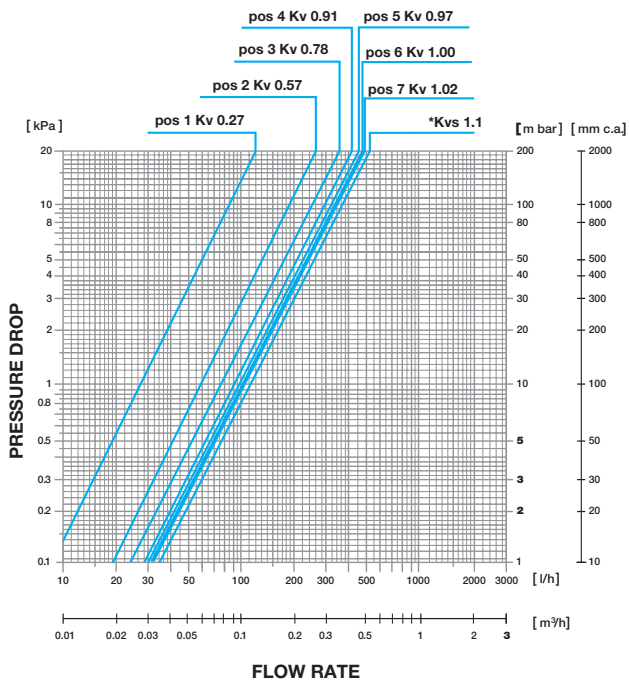
*Pre-setting OFF

Right-angle body with pre-settings
188UM - DN 3/4"



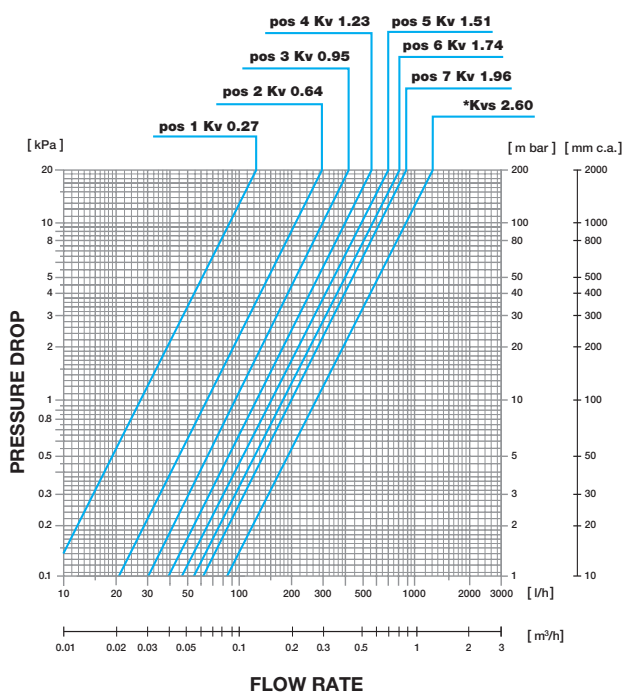
*Pre-setting OFF

Straight body with pre-settings
189UM - DN 3/8"



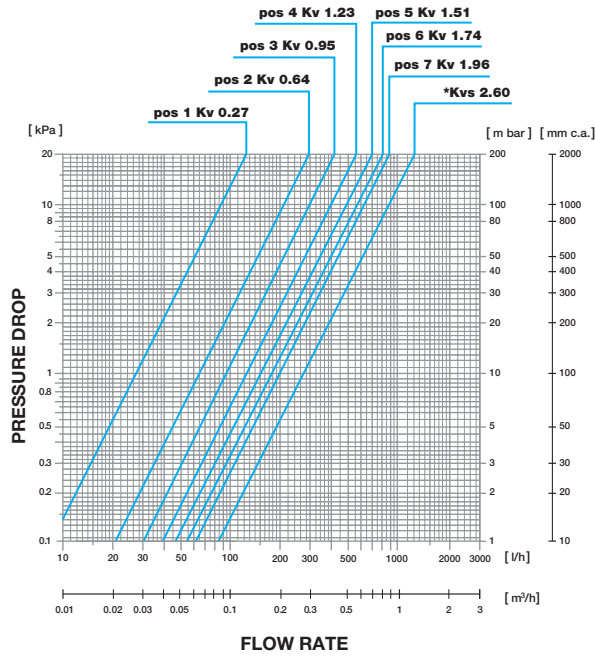
*Pre-setting OFF

Straight body with pre-settings
189UM - 1189UM - DN 1/2" - 1189UM - DN 3/8"



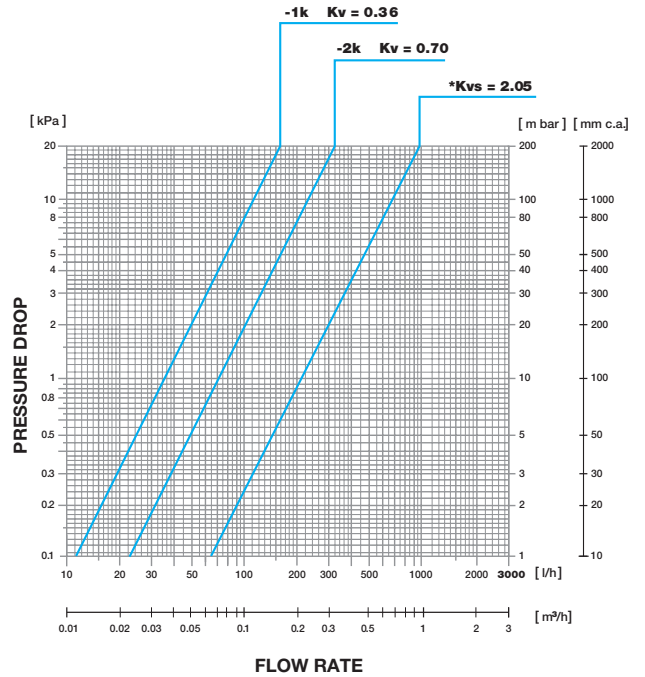
*Pre-setting OFF

**Straight body with pre-settings
189UM - DN 3/4"**



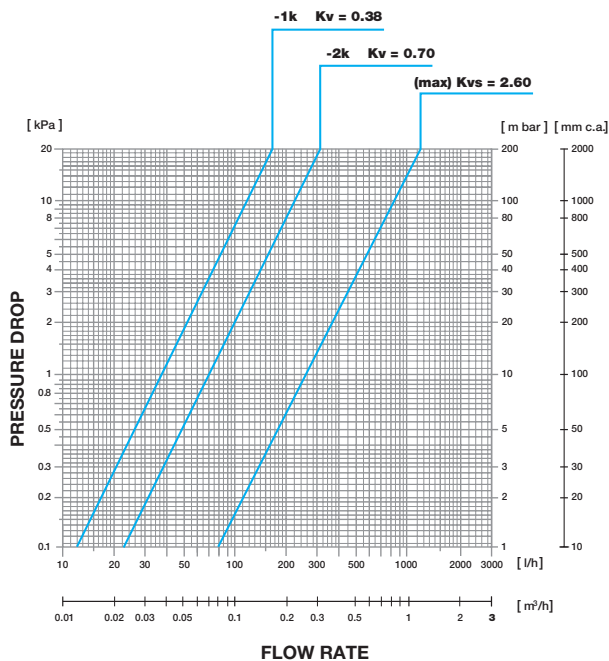
*Pre-setting OFF

**Right-angle body with actuator 148, 148A, 148SD and
148CD 188UM-178UM-178SN - DN 3/8"**
Pre-setting OFF

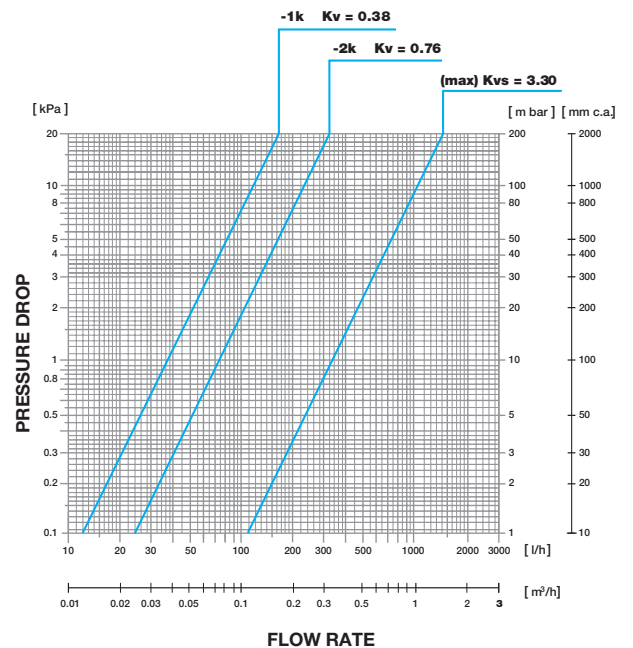


*Pre-setting OFF

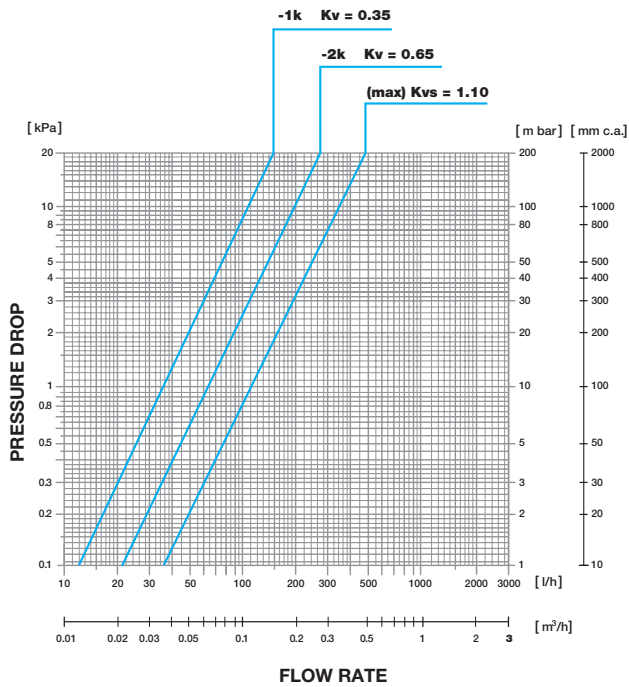
**Right-angle body with actuator 148, 148A, 148SD and
148CD
188UM-1188UM-178UM-178SN-1178UM - DN 1/2"**
1188UM-1178UM - DN 3/8".
Pre-setting OFF



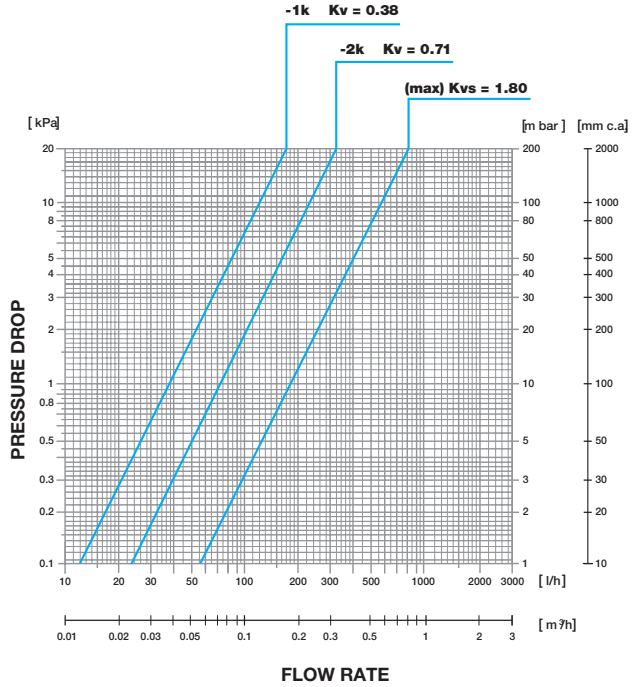
**Right-angle body with actuator 148, 148A, 148SD and
148CD
188UM-178UM-178SN - DN 3/4".
Pre-setting OFF**



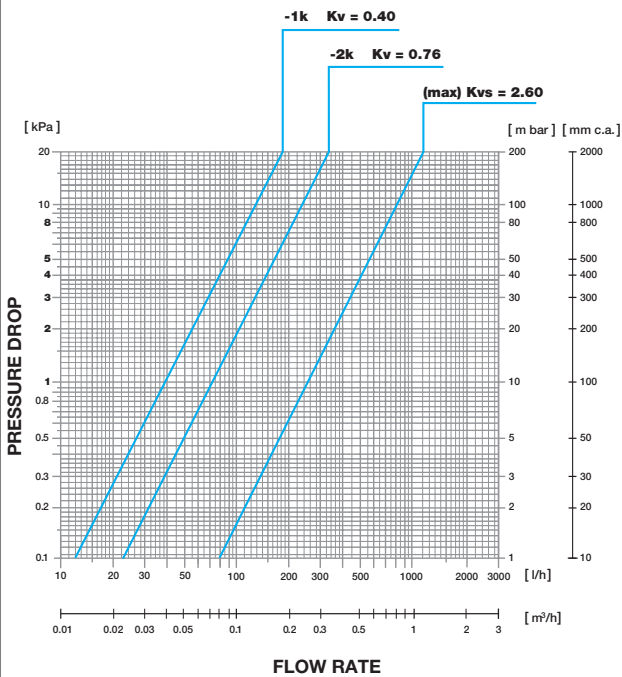
Straight body with actuator 148, 148A, 148SD and 148CD
189UM-178UM-178SN - DN 3/8"
Pre-setting OFF



Straight body with actuator 148, 148A, 148SD and 148CD
189UM-1189UM-179UM-179DN-1179UM - DN 1/2"
1189UM-1179UM - DN 3/8"
Pre-setting OFF



Right-angle body with actuator 148, 148A, 148SD and 148CD
189UM-179UM-179SN - DN 3/4"
Pre-setting OFF

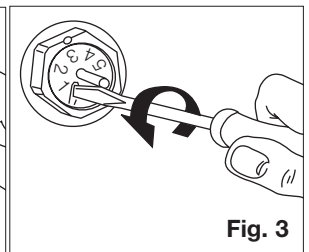
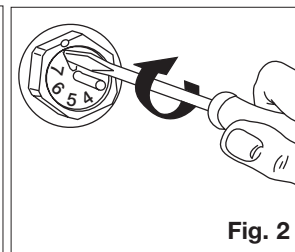
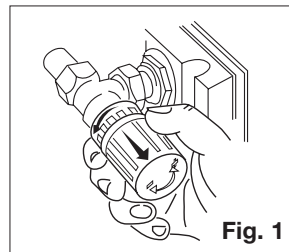


Installation

Valve and lockshield selection is based on the size of the connection to the radiator and the size of the connecting pipe. **178UM, 178SN, 179UM, 179SN, 1178UM and 1179UM Series** manual thermostat-adaptable valves without pre-setting, and **188UM, 1188UM, 189UM and 1189UM Series** thermostat-adaptable valves with pre-setting can be installed on heat emitters supplied by iron, copper or plastic pipes, in conjunction with **195UM, 196UM, 1195UM and 1196UM 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. Should you wish to create a thermostat-controlled system from the outset, you can use **130UM, 130SN, 131UM, 131SN, 1130UM and 1131UM Series** thermostat-adaptable valve bodies, which are identical in configuration but have no handwheel for manual control.

Pre-setting for 188UM, 189UM, 1188UM and 1189UM Series

- 1) Remove the handwheel (**Fig.1**).
- 2) Remove the ring-nut by turning it anti-clockwise.
- 3) Fully close the pre-setting ring-nut (**Fig.2**).
- 4) Open to the desired position by matching up the number with the reference notch (**Fig.3**).



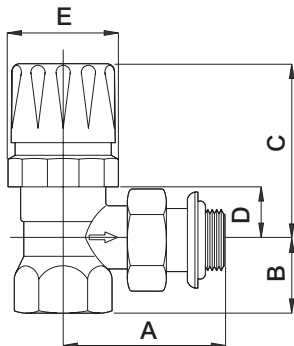
The setting is valid only within the first turn.

Kv values of the valve bodies only, in the various pre-setting positions							
Setting positions	188UM 3/8"	188UM 1/2" 1188UM 1/2" 1188UM 3/8"	188UM 3/4"	189UM 3/8"	189UM 1/2" 1189UM 1/2" 1189UM 3/8"	189UM 3/4"	Tol%
1	0.27	0.27	0.27	0.27	0.27	0.27	60
2	0.60	0.62	0.67	0.57	0.64	0.64	30
3	0.88	0.90	1.00	0.78	0.90	0.95	20
4	1.12	1.13	1.30	0.91	1.12	1.23	10
5	1.31	1.32	1.56	0.97	1.30	1.51	10
6	1.46	1.47	1.80	1.00	1.44	1.74	10
7	1.60	1.60	2.00	1.02	1.55	1.96	10
A*	2.05	2.60	3.30	1.10	1.80	2.60	10

*Pre-settings OFF

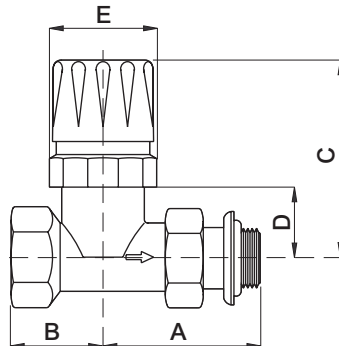
Overall dimensions (mm)

178UM/178SN



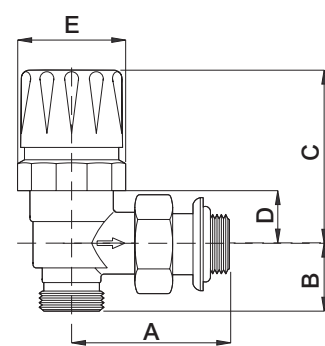
DN	A	B	C	D	E
3/8"	49	20	56	18	35
1/2"	53	23	56	18	35
3/4"	61	28	56	18	35

179UM/179SN



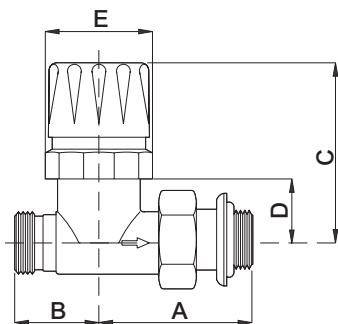
DN	A	B	C	D	E
3/8"	49	26	62	24.5	35
1/2"	53	29	62	24.5	35
3/4"	61	34	62	24.5	35

1178UM



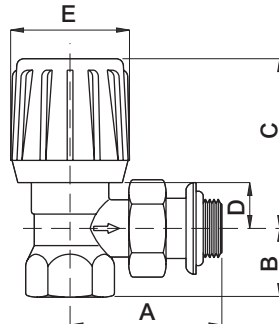
DN	A	B	C	D	E
1/2" x 3/8"	49	20.5	56	18	35
1/2" x 1/2"	53	20.5	56	18	35

1179UM



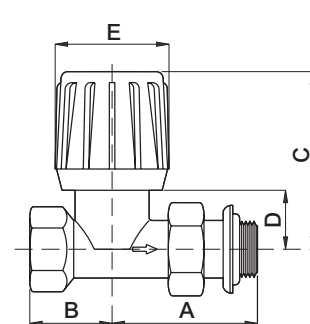
DN	A	B	C	D	E
3/8"	49	26	62	24.5	35
1/2"	53	26	62	24.5	35

188UM



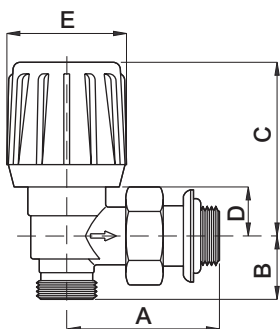
DN	A	B	C	D	E
3/8"	49	20	62	18	40
1/2"	53	23	62	18	40
3/4"	61	28	62	18	40

189UM



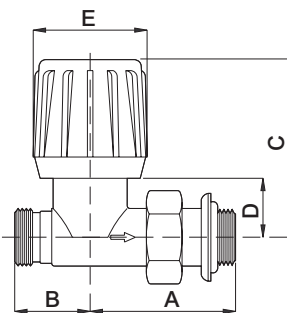
DN	A	B	C	D	E
3/8"	49	26	68	24.5	40
1/2"	53	29	68	24.5	40
3/4"	61	34	68	24.5	40

1188UM



DN	A	B	C	D	E
3/8"	49	20.5	62	18	40
1/2"	53	20.5	62	18	40

1189UM



DN	A	B	C	D	E
3/8"	49	26	68	24.5	40
1/2"	53	26	68	24.5	40

Specification text

178UM/178SN Series - Thermostat-adaptable valve without pre-setting **178UM, 178SN 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 178 stuffing box without draining the system. Manual ABS handwheel with moving stem. Straight tailpiece with O-ring and finishing washer for **Serie 178UM** and conical tailpiece for **Serie 178SN**. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 3/8”F-1/2”F-3/4”F. Kv: 2.05 (3/8”), 2.6 (1/2”), 3.3 (3/4”). Compatible with **148, 148A, 148SD and 148CD 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 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

179UM/179SN Series - Thermostat-adaptable valve without pre-setting **179UM, 179SN 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 for **Serie 179UM** and conical tailpiece for **Serie 179SN**. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 3/8”F-1/2”F-3/4”F. Kv: 1.1 (3/8”), 1.8 (1/2”), 2.6 (3/4”). Compatible with **148, 148A, 148SD and 148CD 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 EN 215 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

1178UM Series - Thermostat-adaptable valve without pre-setting **1178UM 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 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. Body connection: 3/8”M-1/2”M. Connection for copper or plastic/multi-layer pipe: 1/2”M. Kvs: 2.6. Compatible with **148, 148A, 148SD and 148CD 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.

1179UM Series - Thermostat-adaptable valve without pre-setting **1179UM 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. Body connection: 3/8”M-1/2”M. Connection for copper or plastic/multi-layer pipe: 1/2”M. Kvs at full opening: 1.8. Compatible with **148, 148A, 148SD, and 148CD 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.

188UM Series - Thermostat-adaptable valve with pre-setting **188UM Series** – WATTS brand. Right-angle body in pressed nickel-plated brass. Disc stroke limiting device with nine reference positions. 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 fixed stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 3/8”F-1/2”F-3/4”F. Kv: 2.05 (3/8”), 2.6 (1/2”), 3.3 (3/4”). Compatible with **148, 148A, 148SD and 148CD 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 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

189UM Series - Thermostat-adaptable valve with pre-setting **189UM Series** – WATTS brand. Straight body in pressed nickel-plated brass. Disc stroke limiting device with nine reference positions. 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 fixed stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Connection for iron pipe: 3/8”F-1/2”F-3/4”F. Kv: 1.1 (3/8”), 1.8 (1/2”), 2.6 (3/4”). Compatible with **148, 148A, 148SD and 148CD 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 certified, in conjunction with **148 and 148A Series** thermostatic actuators.

1188UM Series - Thermostat-adaptable valve with pre-setting **1188UM Series** – WATTS brand. Right-angle body in pressed nickel-plated brass. Disc stroke limiting device with nine reference positions. 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 fixed stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Body connection: 3/8”M-1/2”M. Connection for copper or plastic/multi-layer pipe: 1/2”M. Kv: 2.6. Compatible with **148, 148A, 148SD and 148CD 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.

1189UM Series - Thermostat-adaptable valve with pre-setting **1189UM Series** – WATTS brand. Straight body in pressed nickel-plated brass. Disc stroke limiting device with nine reference positions. 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 fixed stem. Straight tailpiece with O-ring and finishing washer. Max. operating temperature: 110°C. Maximum permissible static pressure: 10 bar. Body connection: 3/8”M-1/2”M. Connection for copper or plastic/multi-layer pipe: 1/2”M. Kv: 1.8. Compatible with **148, 148A, 148SD and 148CD 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.

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.

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Watts Industries Italia S.r.l.

Via Brenno, 21 • 20853 Biassono (MB) • Italy
Tel. +39 039 4986.1 • Fax +39 039 4986.222
infowattitalia@wattswater.com • www.wattswater.eu