Technical description

Application:
Heating installations

Functions:
Regulating
Presetting
Shut-off

Pressure classe:
PN 10

Maximum differential pressure:
The maximum pressure difference allowed for the valve not to open against a closed thermostat: 100 kPa.

Temperature:
Maximum working temperature: 120 °C
Minimum working temperature: -10 °C

Materials:
Diverters RSD 801, 831, 802:
Valve body: Hot stamped brass
Valve stem: Brass
O-rings: EPDM rubber
Diverter TA UNI:
Valve body: Die cast AMETAL® or hot stamped brass
Radiator valves:
TRV-1, see catalogue leaflet
RVT and RVO:
Valve body: Hot stamped brass
Valve stem: AMETAL®
O-rings: EPDM rubber
Return spring and screw: Stainless steel
Others:
Connection pipes: Steel
Radiator valves: See each catalogoue
Radiator connections: AMETAL®

AMETAL® is the dezincification resistant alloy of TA Hydronics.

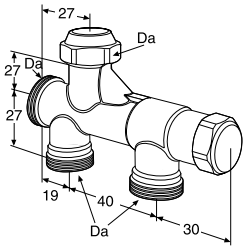
Surface treatment:
Nickel-plated

Identification:
The distributors are marked with TA and a flow arrow on the valve body.
FLOWRETT:
The **RSD 801** is marked on its cap with RSD 801 Kv = 1.2, and there are two turned grooves on the stem beneath the cap.
The **RSD 831** is marked on its cap with RSD 831 Kv = 2.8, and there is one turned groove on the stem beneath the cap.
TWORETT:
The **RSD 802** is marked on its cap with RSD 802, 2-pipe.
TA UNI:
The cap is marked with 1 or 2 to indicate whether it is set for one- or two-pipe application.

Diverter

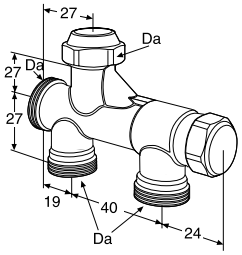
FLOWRETT/RSD 801/831

TWORETT/RSD 802



TA No	DN	Da	Kvs*	
50 801-100	10	M22x1,5	1,2	**RSD 801 1-pipe**
50 831-100	10	M22x1,5	2,8	**RSD 831 1-pipe**
50 802-100	10	M22x1,5	1,54	**RSD 802 2-pipe**

TA UNI

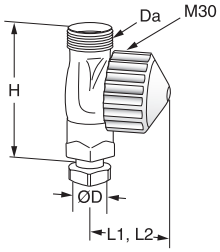


TA No	DN	Da	Kvs*	
50 600-100	10	M22x1,5	2.0	**1-pipe**
50 600-200	10	M22x1,5	1,0	**2-pipe**

*) Whole manifold assembly.

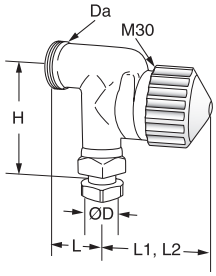
Valves with presetting

TRV-1 Straight
Thermostatic controlled



TA No	DN	D	Da	L	L1	L2	H	KvΔT2K
50 181-112	10	12	M22x1,5	-	36	107	50	0,468

TRV-1 Reversed angle
Thermostatic controlled

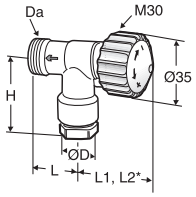


TA No	DN	D	Da	L	L1	L2	H	KvΔT2K
50 185-112	10	12	M22x1,5	27	47	118	46,5	0,468

L2 = Valve with fitted thermostatic head.

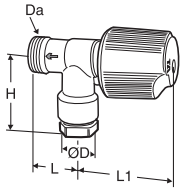
Valves without presetting

RVT Reversed angle
Thermostatic controlled



TA No	DN	D	Da	L	L1	L2	H	KvΔT2K	Kvs
50 520-112	10	12	M22x1,5	27	40	111	34	0,65	1,0

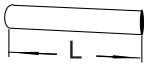
RVO Reversed angle
Hand controlled



TA No	DN	D	Da	L	L1	H	Kvs
50 610-112	10	12	M22x1,5	27	67	34	1,0

L2 = Valve with fitted thermostatic head.

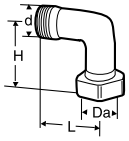
Connection pipe



TA No	Dy	L
50 629-001	12 mm	1100 mm

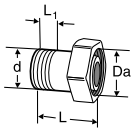
Radiator connections

Elbow



TA No	d	Da	L	H
50 702-510	M22x1,5	M22x1,5	27	26,5

Straight



TA No	d	Da	L	L1
50 701-510	R3/8	M22x1,5	25	8
50 701-516	R1/2	M22x1,5	25	10
50 707-510*	R3/8	M22x1,5	25	8
50 707-516*	R1/2	M22x1,5	25	10

*) With Dri-Seal® thread seal.
Dri-Seal is a water-based sealing paste. It has been applied to the threads and cured in the factory, after which it is dry to the touch.
Dri-Seal thread sealant is a single-use product. It does not set hard and does not swell.
Dri-Seal is a registered trade mark of LOCTITE Corporation.
Thermostatic head - see catalogue leaflet TERMORETT TRV 300.
Thermoelectric actuator - see catalogue leaflet TSE 150.
Other accessories - see catalogue leaflet ACCESSORIES.
Couplings - see catalogue leaflet FPL.

General

The TA Hydronics manifold assemblies forms a complete valve set for one- and two-pipe systems that can be used with most radiator types.
It consists of three main parts.

Diverters
FLOWRETT/RSD 801/831, one-pipe, which can be mounted to suit connection from below or from the side.
TWORETT/RSD 802, two-pipe, which can be mounted to suit connection from below or from the side, with built in shut-off.
TA UNI, which can be mounted to suit connection from below or from the side, convertible for one- or two-pipe application.

Radiator valves
TRV-1 can be fitted with a thermostat, but is supplied with a protection cap and KOMBI connection. Using straight valve, the valve body can be arranged parallel or perpendicular to the radiator.
TRV-1 has 6 fixed positions. **NOTE!** Do not set the valve between positions. The valve is delivered with presetting of 6, i.e. fully open valve. Presetting tool TA No 50 198-001.
RVT, RVO thermostat or hand controlled with KOMBI connection.
For further information about valve units, see each catalogue leaflet.

Connection pipes
Nickel-plated steel. 12 mm external diameter, standard length 1100 mm.
Subtract 80 mm from the radiator c/c distance for a straight valve and elbow.
When using the TRV-1 reversed angle valve, obtain the distance by subtracting 52 mm from the radiator c/c distance.
RVT and RVO reversed angle valve with 36 mm.

Accessories
Radiator connections.
Pipe connections: Steel, copper or PEX pipes can be connected to the diverter using TA Hydronics' couplings, see catalogue leaflet.
Thermostats: See catalogue leaflet TERMORETT TRV 300.
Actuator: See catalogue leaflet TSE 150.

Setting

Presetting, FLOWRETT
Preset the FLOWRETT one-pipe manifold directly at the diverter, using a 6 mm Allen key.
The diverter is preset for maximum percentage flow to the radiator when delivered.

Adjust the presetting by screwing in the stem to the bottom and then unscrewing it the requisite number of turns to provide the required flow through the radiator. The preset value can be noted on the sealing in the cap of the diverter so that it can be reset afterwards if the radiator is turned off.

Presetting is so designed that the total Kv value of the set does not change when the preset value is altered. This simplifies pressure drop calculation of one-pipe systems and allows each radiator to be correctly adjusted to provide the desired heat output.

Shut-off:
The radiator return from a bottom-connected FLOWRETT can be shut off by screwing in the presetting stem on the diverter fully home, using a 6 mm Allen key. The radiator supply can be shut off by closing the valve, after which the radiator can be removed without having to drain the system. The flow through the loop is unaffected, and the rest of the circuit continues to operate as normal.

Presetting, TWORETT
Preset the TWORETT two-pipe manifold fitted with TRV-1.

The Kv values, are given for the entire set.
When the unit is set to higher Kv values, there will be a slight difference relative to the TRV-1. The Kv values will therefore be slightly lower, as the pressure drop in the diverter, connec-tions and pipes are included in the measurement.

TA Hydronics method of balancing heating systems results in uniform temperature distribution and energy saving.
Some important features:
-Recommended pressure drop over the radiator valve, 8-10 kPa.
-Low pressure drop in the piping system.
-Correct flow to the radiator.
-The thermostat is adjusted (i.e. max. flow is restricted) so that it stops the energy supply to the radiator when the room temperature rises by 2K.

Shut-off:
The TWORETT can be shut off by screwing in the presetting stem on the distributor fully home, using a 6 mm Allen key. After which the radiator can be removed without having to drain the system.

Presetting, TA UNI
Converting one-/two-pipe the same as for RENOVETT, side entry. See catalogue leaflet RADIETT, RENOVETT.

Presetting, one-pipe:
Delivery setting 50% flow to radiator. Can be varied between 10-50% by resetting the outer spindle.

Presetting, two-pipe:
Presetting is carried out at the valve. To do this right, see the valve in question.

Tool for shut-off, converting and presetting:
Inner spindle: Allen key 2,5 mm
Outer spindle: Allen key 4 mm.

Noise

One-pipe system
There are no noise problems for the FLOWRETT/RSD 801 and RVT if the loop flow is less than 200 l/h or FLOWRETT/ RSD 831 and RVT if the loop flow is less than 500 l/h.

Two-pipe system
The following conditions must be fulfilled in order to avoid noise in the heating system:
1 Flows correctly balanced.
2 The water in the system must have been de-aerated.
3 Circulation pumps which do not give too high differential pressure.
The maximum recommended prssure drop in order to avoid noise: 30 kPa.

Kv values

FLOWRETT/RSD 801
Has a constant Kv value = 1.2. 0-50% of total flow range to the radiator is presettable.

FLOWRETT/RSD 831
Has a constant Kv value = 2.8. 0-20% of total flow range to the radiator is presettable.
FLOWRETT provides a constant Kv value (when bottom connected), regardless of how the diverter is set. This means that the flow through the loop is not affected when the distribution to the radiator is changed. This is an important feature, as it means that each loop is independent of the others when balancing the system.

TWORETT
Kvs, complete set: 0.66
KvΔT2K, complete set: 0.45

Manifold assembly with TA UNI
One-pipe system Kvs = 2.0
Two-pipe system Kvs = 1.0

Ordering

Complete manifold assembly is ordered by required diverter, valve, connection pipe, if any elbow and radiator connections.

Diagram FLOWRETT/RSD 801 + RVT One-pipe

Proportion of loop flow to radiator

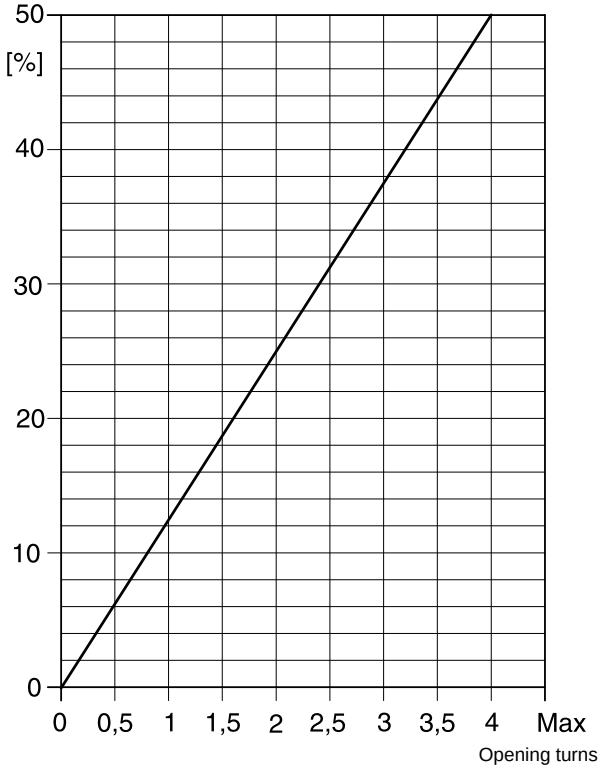


Diagram FLOWRETT/RSD 831 + RVT One-pipe

Proportion of loop flow radiator

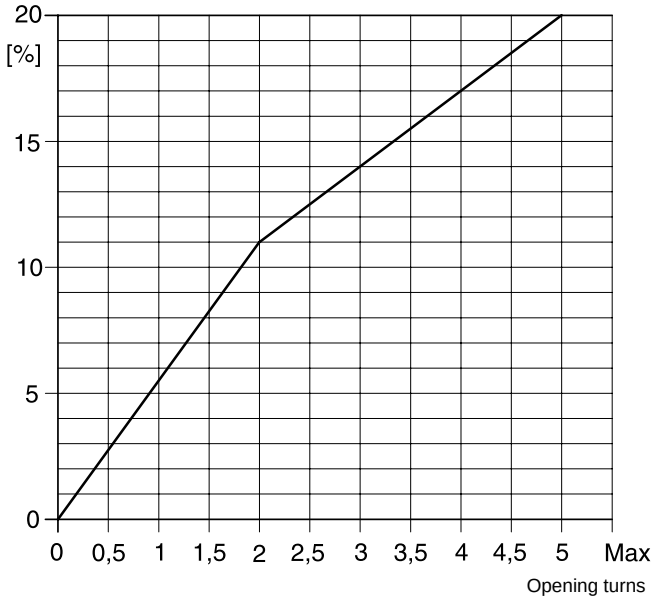
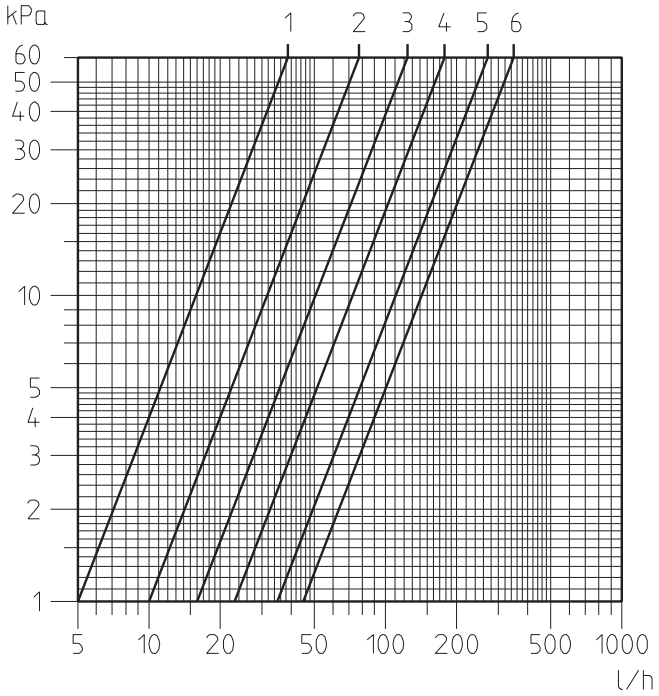


Diagram TWORETT/RSD 802 + TRV-1 Two-pipe

Opening turns

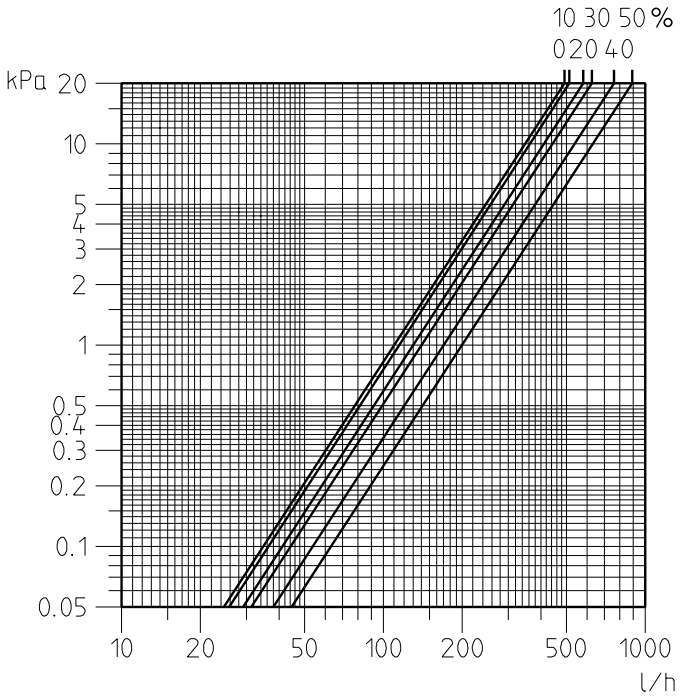


Presetting value	1	2	3	4	5	6
KvΔT2K**	0,05	0,10	0,16	0,23	0,35	0,45
Kv, fully open valve disc***	0,05	0,10	0,17	0,24	0,44	0,66*

*) Fully open valve.
**) The values are valid when used together with thermostic head TERMORETT TRV 300.
***) The values are valid for on/off regulation with, for example, thermo actuator TSE 150.

Diagram TA UNI One-pipe

Hand controlled
With valve RVT/RVO DN 10
Delivery setting 50% to radiator
On/off regulation with TSE 150

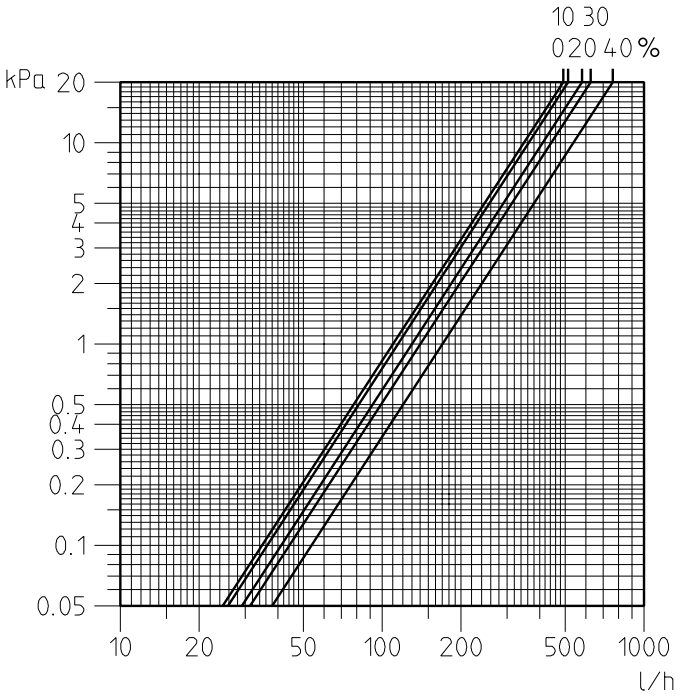


% flow to radiator	0	10	20	30	40	50
Kv	1,1	1,15	1,3	1,4	1,7	2
No of turns	**	4,5	3,75	3,5	2	*

*) Fully open
**) Closed

Diagram TA UNI One-pipe

Thermostatic coontrolled
With valve RVT DN 10
Delivery setting 40% to radiator

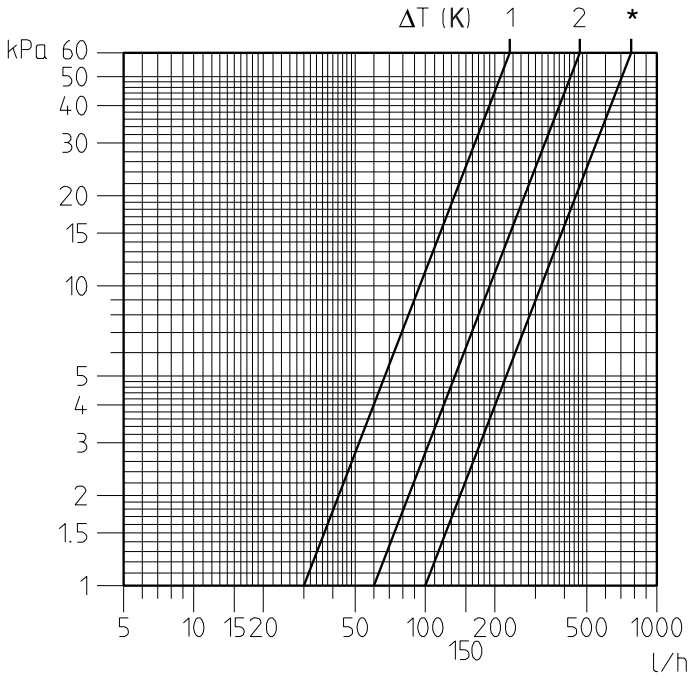


% flow to radiator	0	10	20	30	40
KvΔT2K	1,1	1,15	1,3	1,4	1,7
No of truns	**	4,5	3,75	3,5	*

*) Fully open
**) Closed

Diagram TA UNI Two-pipe

With valve RVT/RVO DN 10



ΔT	1 K	2 K	*
Kv	0,3	0,6	1

*) Fully open