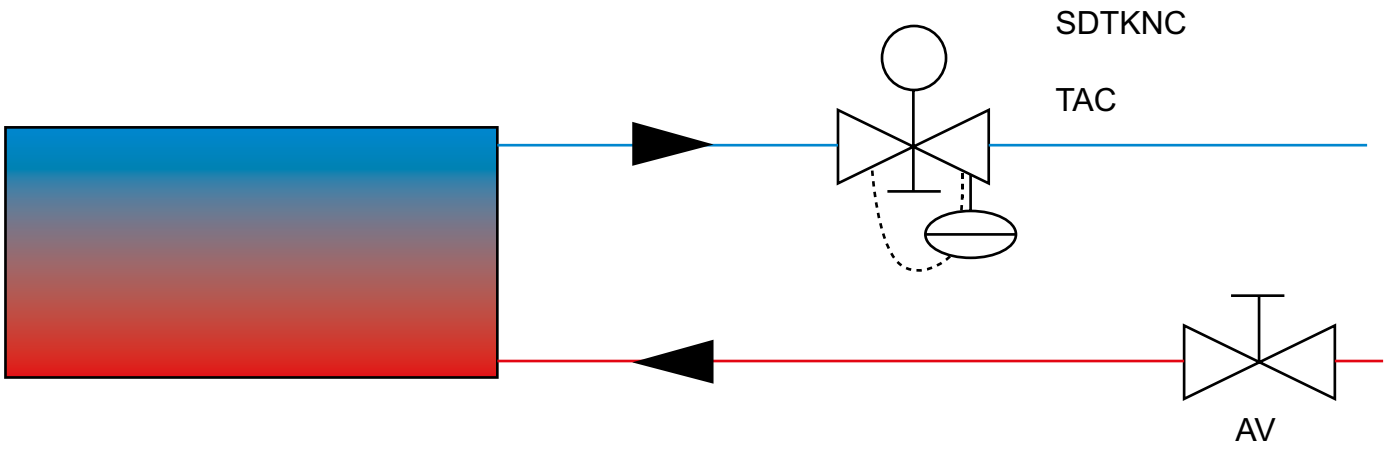
VPTK15LF/15NF/20/25/32NC



TAC

AV

SDTKNC

VPTKxxNC, pressure independent valve kit on/off

Two way pressure independent control and adjustment valve with on/off actuator and shut-off valve. DN15/20/25/32. 230V.

Components

TAC

AV

SDTKNC

VPTK15LFNC

Type		Specification
TAC15LF	Two way pressure independent regulation and adjustment valve	Low flow, DN15 (G20, ¾" outside thread)
SDTKNC	Actuator on/off 230V	230V~
AV15	Shut off valve	DN15, (G15 ½" inside thread)

VPTK15NFNC

Type		Specification
TAC15NF	Two way pressure independent regulation and adjustment valve	Normal flow, DN15 (G20, ¾" outside thread)
SDTKNC	Actuator on/off 230V	230V~
AV15	Shut off valve	DN15, (G15 ½" inside thread)

VPTK20NC

Type		Specification
TAC20	Two way pressure independent regulation and adjustment valve	Normal flow, DN20 (G25, 1" outside thread)
SDTKNC	Actuator on/off 230V	230V~
AV20	Shut off valve	DN20, (G20, ¾" inside thread)

VPTK25NC

Type		Specification
TAC25	Two way pressure independent regulation and adjustment valve	Normal flow, DN25 (G32, 1 ¼" outside thread)
SDTKNC	Actuator on/off 230V	230V~
AV25	Shut off valve	DN25, (G25, 1" inside thread)

VPTK32NC

Type		Specification
TAC32	Two way pressure independent regulation and adjustment valve	Normal flow, DN32 (G40, 1 ½" outside thread)
SDTKNC	Actuator on/off 230V	230V~
AV32	Shut off valve	DN32, (G32, 1 ¼" inside thread)

VPTKxxNC, pressure independent valve system on/off

The valve system consists of the following:

- TAC, pressure independent regulation and adjustment valve
- SDTKNC, actuator on/off 230V
- AV, shut off valve

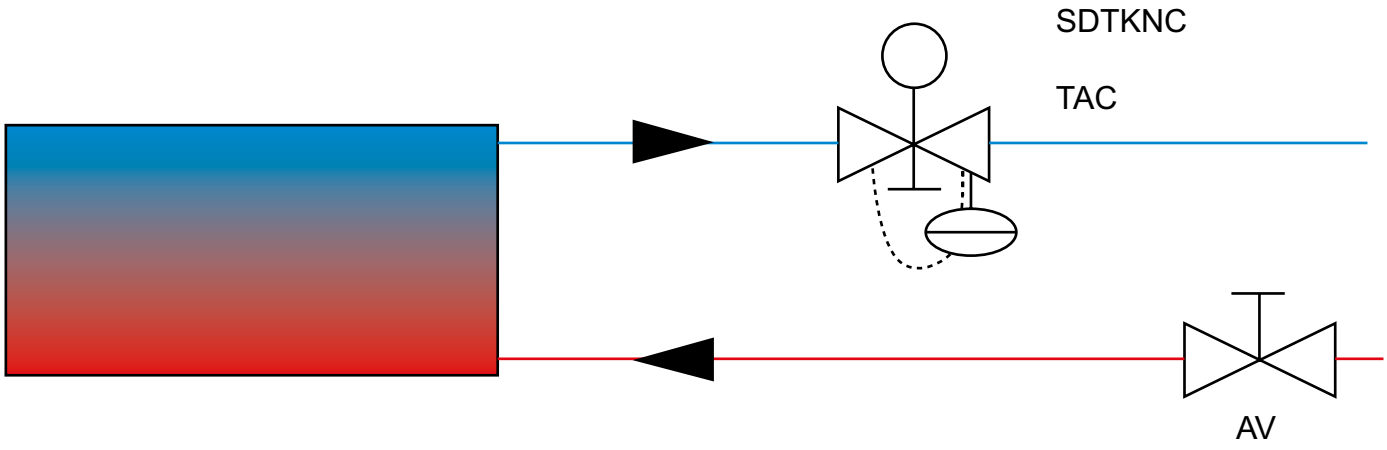
The shut off valve (AV) consists of a ball valve which is either open or closed and is used to shut off the flow, when servicing for example.

The regulation and adjustment valve (TAC) can be used to finely adjust or shut off the water flow manually. TAC is independent of the available differential pressure, which contributes to stable and accurate regulation (ensures the correct flow to the heater even if the differential pressure in the rest of the pipe system changes). The water flow is set using the grey adjustment knob on the valve

The actuator (SDTKNC) controls the heat supply on/off. In unpowered mode, SDTKNC is closed.

The valve set is available in four different valve dimensions: DN15, DN20, DN25, and DN32.

Used with controller FCR230/FCR230AC.

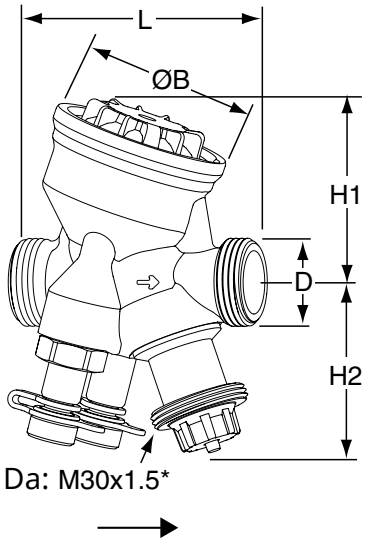


Two way pressure independent regulation and adjustment valve TAC

Dimensions and technical specifications

Type	D	Da*1	L [mm]	H1 [mm]	H2 [mm]	B [mm]
TAC15LF	G3/4	M30x1,5	74	55	55	54
TAC15NF	G3/4	M30x1,5	74	55	55	54
TAC20	G1	M30x1,5	85	64	55	64
TAC25	G1 1/4	M30x1,5	93	64	61	64
TAC32	G1 1/2	M30x1,5	112	78	61	78

*1) Connection to actuator.



Type	DN	Flow	Weight [kg]
TAC15LF	15	Low	0,54
TAC15NF	15	Normal	0,54
TAC20	20	Normal	0,69
TAC25	25	Normal	0,79
TAC32	32	Normal	1,5

Pressure class: PN16
Max. working temperature: 90°C
Min. working temperature: -10°C
Lift: 4 mm

Material
Valve body: AMETAL®
Valve insert: AMETAL®
Valve plug: Brass
Spindle: Stainless steel
Spindle seal: EPDM O-ring
Δp insert: PPS
Membrane: EPDM and HNBR
Springs: Stainless steel
O-rings: EPDM

AMETAL® is a dezincification resistant alloy.

Media
Water or neutral fluids, water-glycol mixtures.

Flow range
The flow (qmax) can be set within the range:
DN15 LF: 44–245 l/h (0,012–0,068 l/s)
DN15 NF: 88–470 l/h (0,024–0,131 l/s)
DN20: 210–1150 l/h (0,058–0,319 l/s)
DN25: 370–2150 l/h (0,103–0,597 l/s)
DN32: 800–3700 l/h (0,222–1,028 l/s)
q_{max} = l/h at each setting and fully open valve plug.

Differential pressure (ΔpV)
Max. differential pressure (ΔpV_{max}):
400 kPa = 4 bar
Min. differential pressure (ΔpV_{min}):
DN15, DN20 = 15 kPa = 0,15 bar
DN25, DN32 = 23 kPa = 0,23 bar
(Valid for position 10, fully open. Other positions will require lower differential pressure.)
ΔpV_{max} = The maximum allowed pressure drop over the valve, to fulfi ll all stated performances.
ΔpV_{min} = The minimum recommended pressure drop over the valve, for proper differential pressure control.

Leakage rate
Leakage flow ≤ 0,01% of max. q_{max} (setting 10) and correct flow direction.
(Class IV according to EN 60534-4).

Connection
Male thread according to ISO 228.

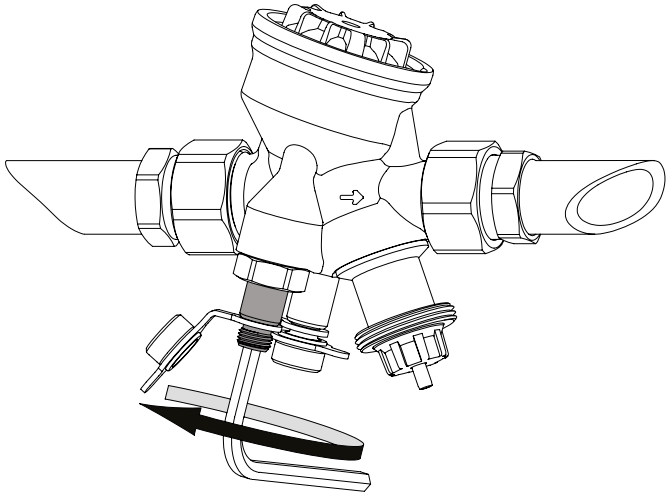
Marking
TA, IMI, PN 16, DN and flow direction arrow. Grey setting wheel: TAC and DN. For low flow version also LF.

Application
The regulation and adjustment valve (TAC) can be used to finely adjust or shut off the water flow manually. TAC is independent of the available differential pressure, which contributes to stable and accurate regulation (ensures the correct flow to the heater even if the differential pressure in the rest of the pipe system changes). The water flow is set using the gray adjustment knob on the valve.

Functions
- Control
- Pre-setting (max. flow)
- Differential pressure control
- Measuring (ΔH, T, q)
- Shut-off

Measuring q
1. Remove any actuator.
2. Connect TA* balancing instrument to the measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.

Measuring ΔH



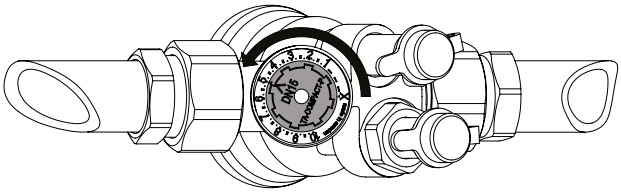
1. Remove any actuator.
2. Close the valve according to “Shut-off”.
3. Bypass the Δp part by opening the bypass spindle ≈1 turn anticlockwise, with a 5 mm Allen key.
4. Connect TA* adjustment instrument to the measuring points and measure.

Important! Close the bypass spindle after the measurement is completed.

* www.imi-hydronic.com/

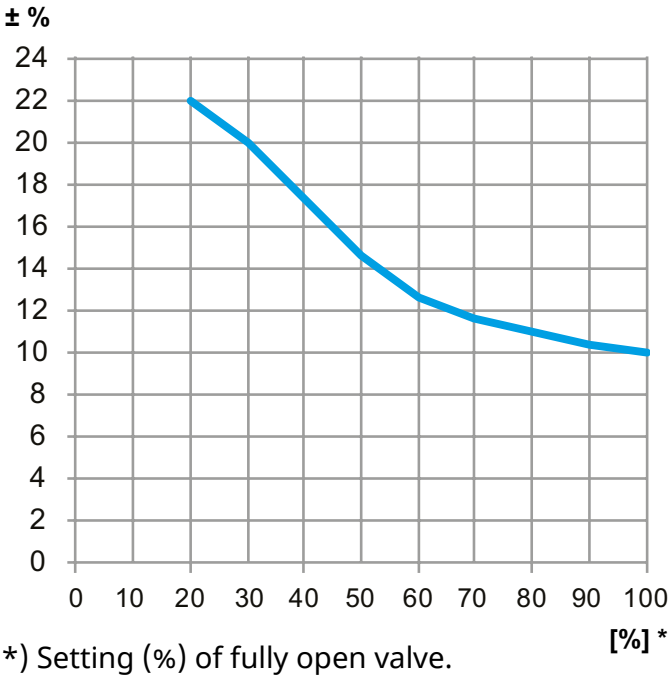
Noise
In order to avoid noise in the installation the valve must be correctly installed and the water de-aerated.

Setting



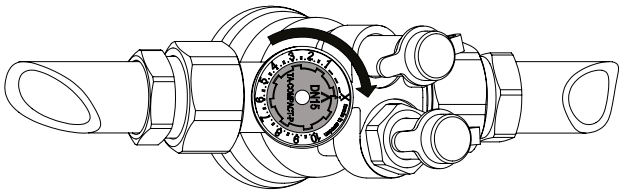
1. Turn the setting wheel to desired value, e.g. 5.0.

Measuring accuracy
Maximum flow deviation at different settings.



*) Setting (%) of fully open valve.

Shut-off



1. Turn the setting wheel clockwise to X.

Sizing

1. Choose the smallest valve size that can obtain the design flow with some safety margin, see "q_{max} values". The setting should be as open as possible.
2. Check that the available ΔpV is within the working range 15–400 kPa or 23–400 kPa.

q_{max} values

	Position									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
DN15LF	44	71	97	123	148	170	190	210	227	245
DN15	88	150	200	248	295	340	380	420	450	470
DN20	210	335	460	575	680	780	890	990	1080	1150
DN25	370	610	830	1050	1270	1490	1720	1870	2050	2150
DN32	800	1220	1620	2060	2450	2790	3080	3350	3550	3700

q_{max} = l/h at each setting and fully open valve plug.
LF = low flow

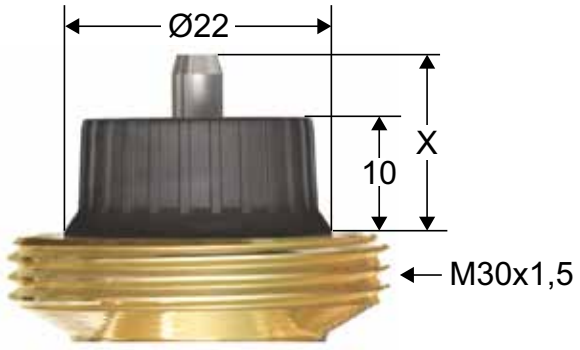
Closing force

Working range: X (closed - fully open) = 11,6–15,8
Closing force: Min. 125 N (max. 500 N)

The maximum recommended pressure drop over a valve and actuator combination for close off (ΔpV_{close}) and to fulfill all stated performances (ΔpV_{max}).

	kPa*
DN15	400
DN20	400
DN25	400
DN32	400

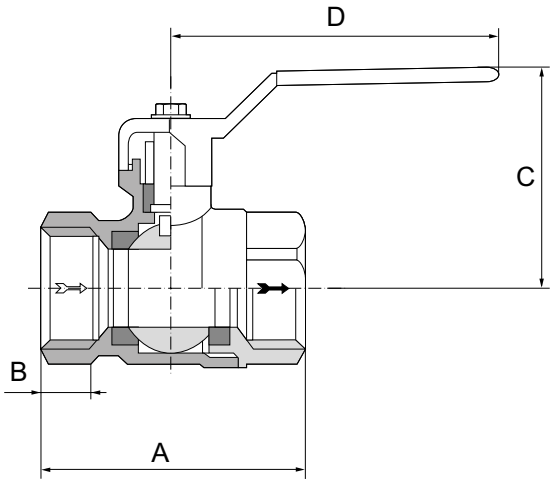
*) Closing force 125 N.



ΔpV_{close} = The maximum pressure drop that the valve can close against from an opened position, with a specified force (actuator) without exceeding stated leakage rate.
ΔpV_{max} = The maximum allowed pressure drop over the valve, to fulfill all stated performances.

Shut off valve (AV15/20/25/32)

Dimensions and technical specifications



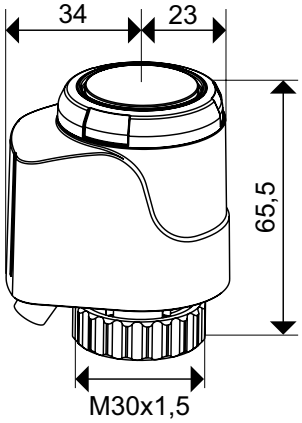
Type	DN	A [mm]	B [mm]	C [mm]	D [mm]	Weight [kg]
AV15	15	49	11,5	53	90	0,23
AV20	20	58	12	57	90	0,31
AV25	25	67	14,5	65	125	0,51
AV32	32	81	16	71	125	0,81

Application

The shut off valve is used to shut off the water flow to the unit and consists of a ball valve which is either open or closed. The shut off valve have no adjustment function and is only used for maintance and service.

Actuator (SDTKNC)

Dimensions and technical specifications



Action	On/Off-regulation, linear motion
Supply voltage	230V, 50-60 Hz
Power consumption	58 W (starting) 1,5 W (in operation)
Stroke force	125 N
Stroke length	4,7 mm
Full stroke time	4 min
Protection class	IP54 (in all positions)
Screw-nut	M30x1,5
Cable length	0,8 m
Isolation class	II
Surrounding temp.	-5–50°C

Application

The electrical actuator in combination with the valve is used for regulating the heat supply to the unit. It's function is to open or close the valve (on/off). In unpowered mode SDTKNC is closed.

The electrical actuator can be mounted and rotated after that the valve has been installed.

For regulating the actuator in combination with valve, complement with FCR230/FCR230AC.

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