





Modulo Compact / Modulo Plus

Motorized ball valves

Technical sheet | Edition EN05

EN

comfort delivered by EMMETI

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Applications

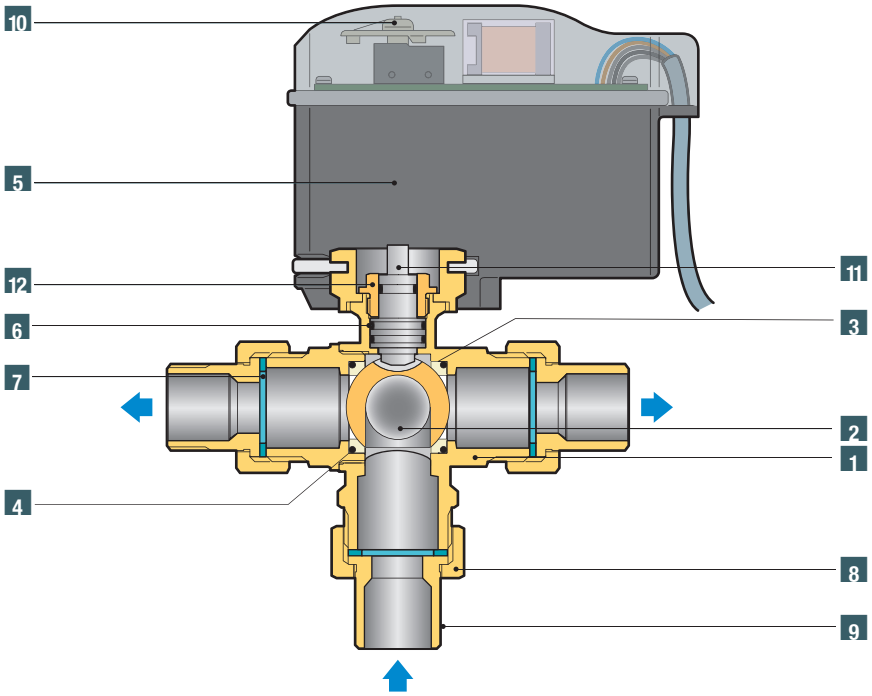
The Modulo Compact and Modulo Plus motorized ball valve are suitable for separate-zone heating systems, alternative energy plants, automatic irrigation systems and, more generally, for civil and industrial systems with non-aggressive cold and hot fluids (see chemical resistance table on technical data sheet Ball valves).
The servo-motor, in sizes 1/2", 3/4" and 1", is equipped with indicators for: "open valve" for 2-way models, "flow direction" for 3-way models; "diverted flow" for 4-way models.
In sizes 1"1/4, 1" and 2"1/2 is sealed, and is equipped with marker indicating "valve open" in 2-way models and "flow diverted"in 3-way models.
There is also a free output contact to enable a boiler, counter, a circulator or a generic use powered from 6 to 230 V.
The coupling for the valve and servo-motor is extremely strong and accurate, and it is fastened by simple fork insertion.
4-way models have an adjustable gap and minimum dimensions, allowing metal or plastic boxes to be used, with depth 90 mm.



Modulo Compact valve

IP 43 | IP 40





Modulo Compact construction (body valves size 1/2", 3/4" and 1")

1. Nickel-plated brass body UNI EN 12165 CW617N
2. Ball valve in chrome-plated brass UNI EN 12165 CW617N
3. Ball valve seals in PTFE
4. Supplementary O-Ring in NBR
5. Servomotor
6. Control shaft seals in HNBR
7. Synthetic fibre seal (FASIT)
8. Nickel-plated brass nut UNI EN 12165 CW617N
9. Nickel-plated brass threaded spigot UNI EN 12165 CW617N with internal key grip
10. Indicator
11. Brass shaft UNI EN 12164 CW614N
12. Brass shaft-press (ring nut) UNI EN 12164 CW614N

Valve technical data

Valve body made brass UNI EN 12165 CW617N with nickel finish
Ball made brass UNI EN 12165 CW617N chromium plated
Operating temperature range from -40 to 100 °C (circulating fluid)
Operating pressure PN 40
Maximum differential pressure 6 bar
Seals PTFE
Fittings for operating rod HNBR
Threads UNI EN ISO 228-1

Note: in the 3-way type is granted the flow port during the running operations.

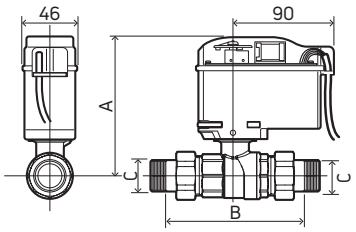
Servomotor technical data

Power supply 230 V / 50 Hz or 24 Vac in function of model
Absorption 4 VA
Rotation angle 90° (2 ways) - 180° (3 ways) - 90/270° (4 ways)
Rotation time 60" (2 ways) - 120" (3 ways) - 60/180" (4 ways)
Torque: 8 Nm
Auxiliary contact 1-free 3 A / 230 V (on-off)
Protection class IP 43 IP 40
Insulating class: II
Indicator open valve (2 ways) diverted flux c-sx c-dx (3 ways)

Range and dimensions [mm]

Modulo Compact 230 Vac 2-ways with pipe union connection with thread

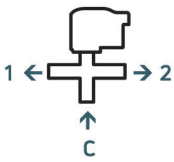


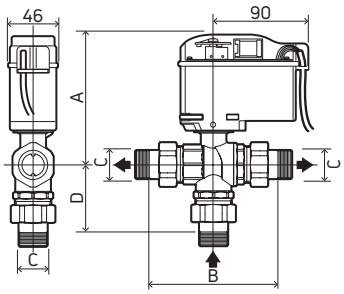


Size	DN [mm]	A [mm]	B [mm]	C	g
1/2"	15	113	98	G 1/2	893
3/4"	20	116	117	G 3/4	1142
1"	25	120	135	G G 1	1558

Modulo Compact 230 Vac 3-ways diverter with pipe union connection with thread



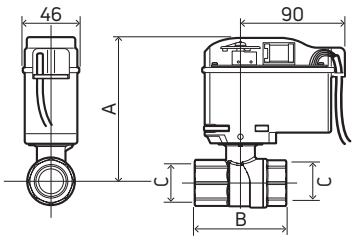




Size	DN [mm]	A [mm]	B [mm]	C	D [mm]	g
1/2"	15	113	98	G 1/2	52	1063
3/4"	20	116	117	G 3/4	62	1322
1"	25	120	135	G 1	72	1859

Modulo Compact 230 Vac 2-ways, Female-Female thread

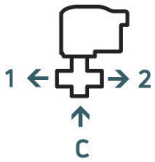


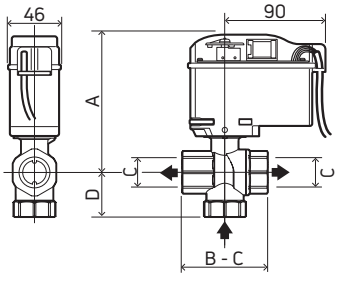


Size	DN [mm]	A [mm]	B [mm]	C	g
1/2"	15	113	64	Rp 1/2	781
3/4"	20	116	73	Rp 3/4	925
1"	25	120	88	Rp 1	1235

Modulo Compact 230 Vac 3-ways diverter, Female-Female thread

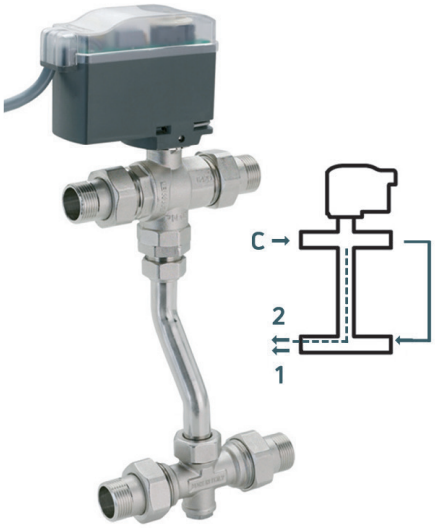


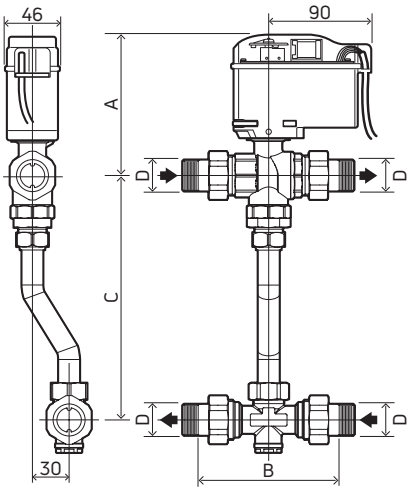




Size	DN [mm]	A [mm]	B [mm]	C	D [mm]	g
1/2"	15	113	64	Rp 1/2	36	913
3/4"	20	116	73	Rp 3/4	38	993
1"	25	120	88	Rp 1	47	1378

Modulo Compact 4-ways diverter, take-off 190÷210 mm for by-pass for Topway manifolds

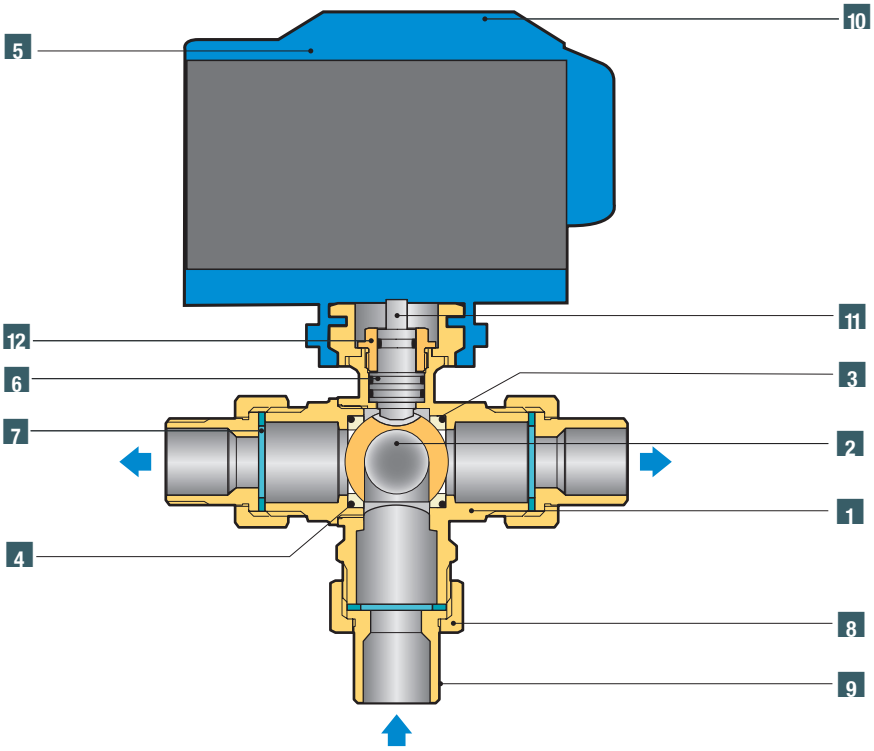




Size	DN [mm]	A [mm]	B [mm]	C [mm]	D	g
3/4"	20	116	117	190÷210	G 3/4	1767
1"	25	120	129	190÷210	G 1	2410

Modulo Plus valve

IP 43 | IP 40



Modulo Plus construction (body valves size 1"1/4, 1"1/2 and 2")

1. Nickel-plated brass body UNI EN 12165 CW617N
2. Ball valve in chrome-plated brass UNI EN 12165 CW617N
3. Ball valve seals in PTFE
4. Supplementary O-Ring in NBR
5. Cover servomotor in reinforced polyamide
6. Control shaft seals in HNBR
7. Synthetic fibre seal (FASIT)
8. Nickel-plated brass nut T UNI EN 12165 CW617N
9. Nickel-plated brass threaded spigot UNI EN 12165 CW617N with internal key grip
10. Indicator open valve (2-ways) and diverted flow (3-ways)
11. Brass shaft UNI EN 12164 CW614N
12. Brass shaft-press (ring nut) UNI EN 12164 CW614N

Valve technical data

Valve body made brass UNI EN 12165 CW617N with nickel finish
Ball made brass UNI EN 12165 CW617N chromium plated
Operating temperature range from -40 to 100 °C (circulating fluid)
Operating pressure PN 40
Maximum differential pressure 6 bar
Seals PTFE
Fittings for operating rod HNBR
Threads UNI EN ISO 228-1

Note: in the 3-way type is granted the flow port during the running operations.

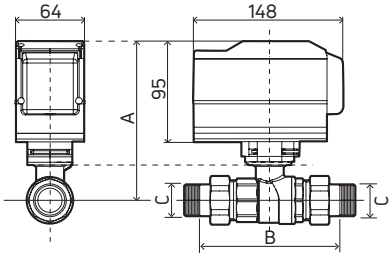
Servomotor technical data

Power supply 230 V / 50 Hz
Absorption 4 VA
Rotation angle 90° (2 ways) - 180° (3 ways)
Rotation time 60" (2 ways) - 120" (3 ways)
Moximum torque 28 Nm (230 V)
Auxiliary contact 1-free 3 A / 230 V (on-off)
Protection class IP 43 IP 40
Insulating class: II
Indicator open valve (2 ways) diverted flux c-sx c-dx (3 ways)

Range and dimensions [mm]

Modulo Plus 230 Vac 2-ways with pipe union connection with thread

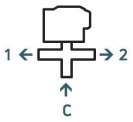


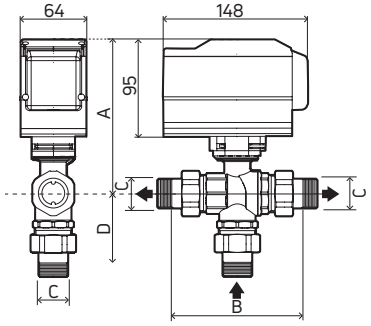


Size	DN [mm]	A [mm]	B [mm]	C	g
1"1/4	32	152	151	G 1 1/4	1920
1"1/2	40	166	168	G 1 1/2	2750
2"	50	173	204	G 2	4347

Modulo Plus 230 Vac 3-ways diverter with pipe union connection with thread



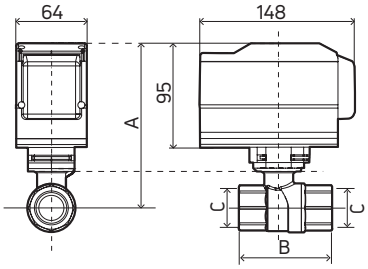




Size	DN [mm]	A [mm]	B [mm]	C	D [mm]	g
1"1/4	32	152	151	G1 1/4	86	2422
1"1/2	40	166	168	G 1 1/2	96	3531
2"	50	173	204	G 2	117	4601

Modulo Plus 230 Vac 2-ways, Female-Female thread

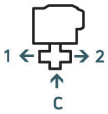


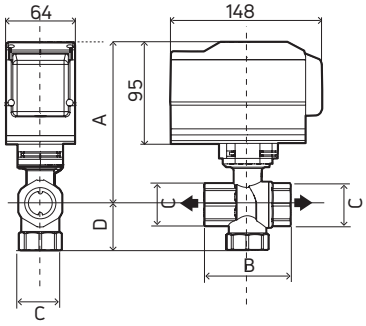


Size	DN [mm]	A [mm]	B [mm]	C	g
1"1/4	32	152	101	Rp 1 1/4	1491
1"1/2	40	166	112	Rp 1 1/2	2182
2"	50	173	132	Rp 2	3069

Modulo Plus 230 Vac diverter 3-ways, Female-Female thread







Size	DN [mm]	A [mm]	B [mm]	C	D [mm]	g
1"1/4	32	152	101	Rp 1 1/4	59	1679
1"1/2	40	166	112	Rp 1 1/2	65	2653
2"	50	173	132	Rp 2	82	4183

Bodies for motorized valves

Body for Modulo 2-ways with pipe union connection with thread



Size	Type of motorised valve recommended
1/2"	Modulo Compact
3/4"	Modulo Compact
1"	Modulo Compact
1"1/4	Modulo Plus
1"1/2	Modulo Plus
2"	Modulo Plus

Thread UNI EN ISO 228-1

Body for Modulo 2-ways Female Female thread



Size	Type of motorised valve recommended
1/2"	Modulo Compact
3/4"	Modulo Compact
1"	Modulo Compact
1"1/4	Modulo Plus
1"1/2	Modulo Plus
2"	Modulo Plus

Thread UNI EN ISO 228-1

Body for Modulo 3-ways diverter with pipe union connection with thread



Size	Type of motorised valve recommended
1/2"	Modulo Compact
3/4"	Modulo Compact
1"	Modulo Compact
1"1/4	Modulo Plus
1"1/2	Modulo Plus
2"	Modulo Plus

Thread UNI EN ISO 228-1

Body for Modulo 3-ways diverter Female Female thread

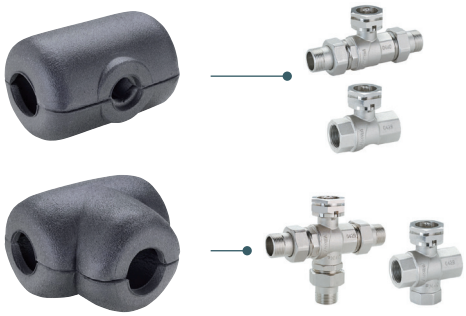


Size	Type of motorised valve recommended
1/2"	Modulo Compact
3/4"	Modulo Compact
1"	Modulo Compact
1"1/4	Modulo Plus
1"1/2	Modulo Plus
2"	Modulo Plus

Thread UNI EN ISO 228-1

Insulating shells

Insulating shells for Modulo motorized ball valves



	Size
For ball valves 2-ways	1/2"
For ball valves 2-ways	3/4"
For ball valves 2-ways	1"
For ball valves 2-ways	1"1/4
For ball valves 2-ways	1"1/2
For ball valves 2-ways	2"
For ball valves 3-ways	1/2"
For ball valves 3-ways	3/4"
For ball valves 3-ways	1"
For ball valves 3-ways	1"1/4
For ball valves 3-ways	1"1/2
For ball valves 3-ways	2"

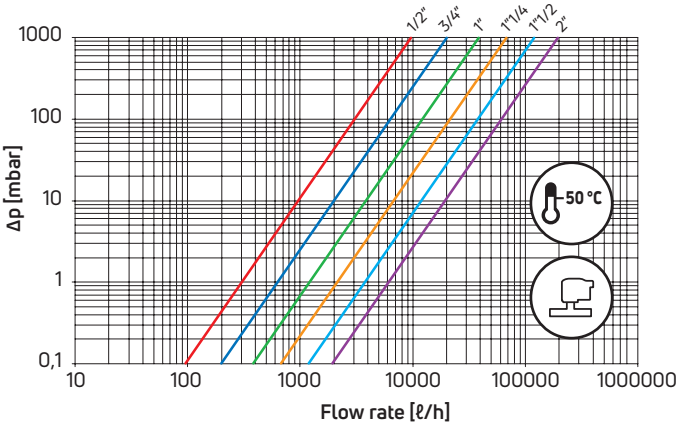
In close-cell expanded polyethylene

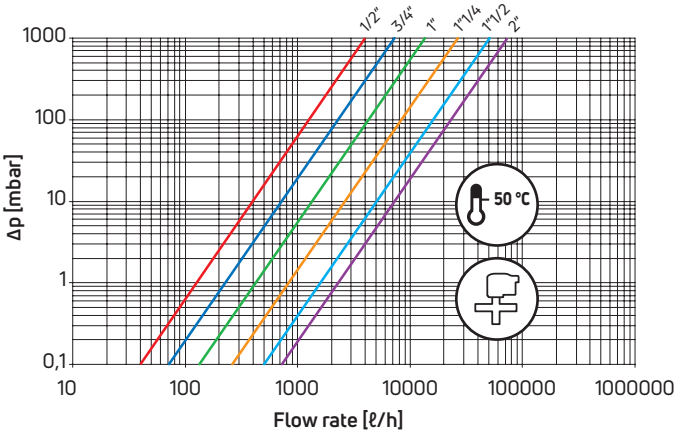
Insulating shells for servomotor for Modulo Compact motorized ball valves

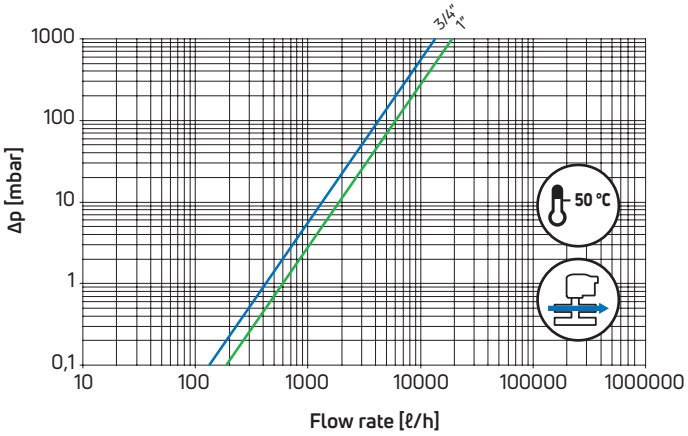


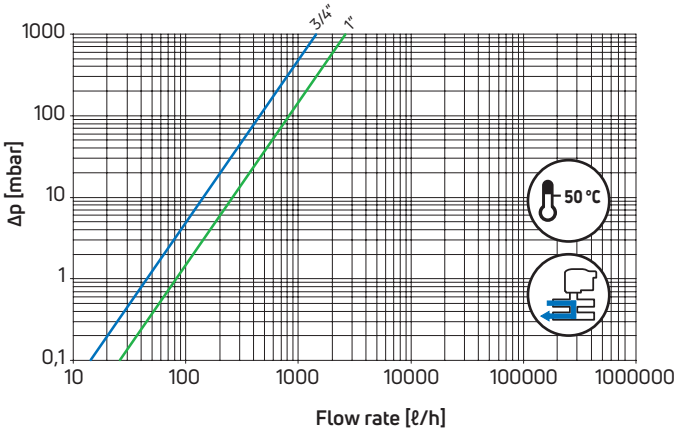
In close-cell expanded polyethylene

Charge loss


1/2"
3/4"
1"
1"1/4
1"1/2
2"
1000
100
10
1
0,1
Δp [mbar]
10
100
1000
10000
100000
1000000
Flow rate [ℓ/h]
50 °C


1/2"
3/4"
1"
1"1/4
1"1/2
2"
1000
100
10
1
0,1
Δp [mbar]
10
100
1000
10000
100000
1000000
Flow rate [ℓ/h]
50 °C


3/4"
1"
1000
100
10
1
0,1
Δp [mbar]
10
100
1000
10000
100000
1000000
Flow rate [ℓ/h]
50 °C


3/4"
1"
1000
100
10
1
0,1
Δp [mbar]
10
100
1000
10000
100000
1000000
Flow rate [ℓ/h]
50 °C

Accessories and spare parts

Spare ring and rod



Size
1/2" - 3/4"
1" - 1"1/4
1"1/2 - 2"

Servomotor for motorized ball valve Modulo Compact

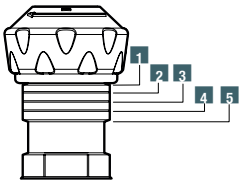


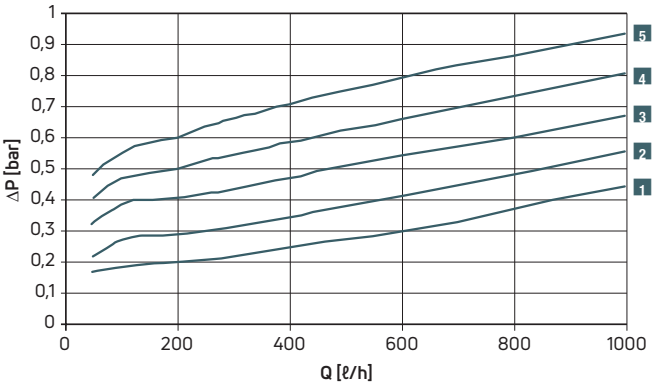
Size
2-ways - 230 Vac
3-ways - 230 Vac
4-ways - 230 Vac

Differential valve for bypass

Pressure relief valve adjustable from 0.2 to 0.5 bar to be fitted to the lower connection of the Modulo Compact 4-ways valve.







Servomotor for motorized ball valve Modulo Plus



Size
2-ways - 230 Vac
3-ways - 230 Vac

Overpressure valve



Applications

For systems with separate zones or with thermostatic valves and single circulator, it is advisable to install a pressure control valve to avoid hydraulic imbalance that might occur when cutting off one or more zones.
By creating a by-pass for the inactive part of the circuit, the capacity is prevented from becoming too low and the maximum differential pressure is limited to the ends of the separate circuits..

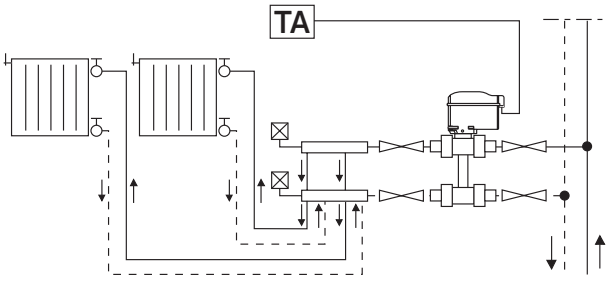
Technical data

Maximum operating temperature:	110 °C
Maximum operating pressure:	10 bar
Setting range:	from 0,1 to 0,6 bar

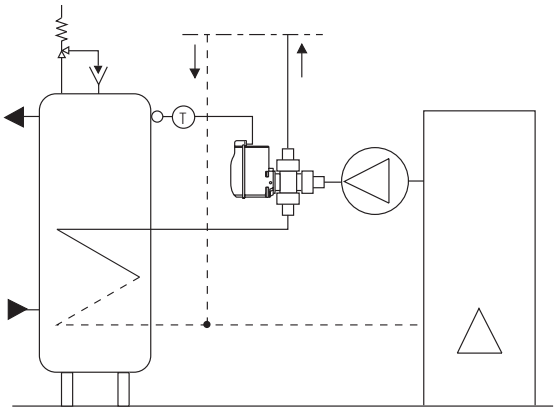
Size
3/4" for copper pipe connection Ø 22

Installation examples

Modular heating systems

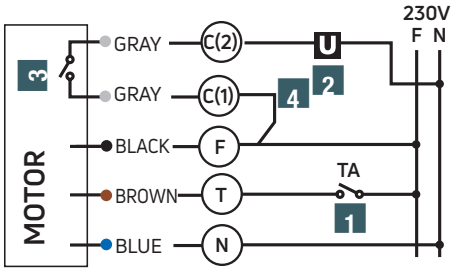


Boiler temperature adjustment



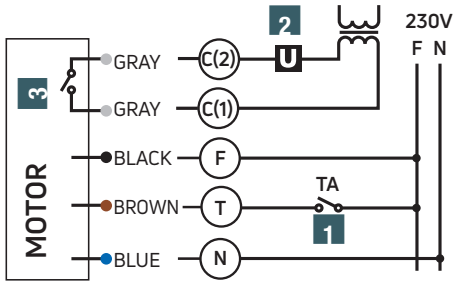
Electrical connections

Electrical connection diagram with user U powered at 230V (5 A max) through the valve



1 Room thermostat or other enabling switch for the motorized valve
2 User
3 Auxiliary contact
4 Electric bridge

Electrical connection diagram with user U with independent po-wer supply (max 230V 5 A)



1 Room thermostat or other enabling switch for the motorized valve
2 User
3 Auxiliary contact

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