

de pala
Italian OEM Technology

DE PALA "FRIGO" MOTORISED BALL VALVES

2 / 3 WAYS 1/2" ÷ 1" 1/2 IP65 - USE IN REFRIGERATION

The valves are made of nickel-plated brass and are especially designed for use in refrigeration. The full flow ball shutter guarantees minimum pressure drop and no leakage even after long periods of use. The threaded connections can be chosen female or with unions. The 3-way valves have different flow configurations, adapting to a variety of system situations.

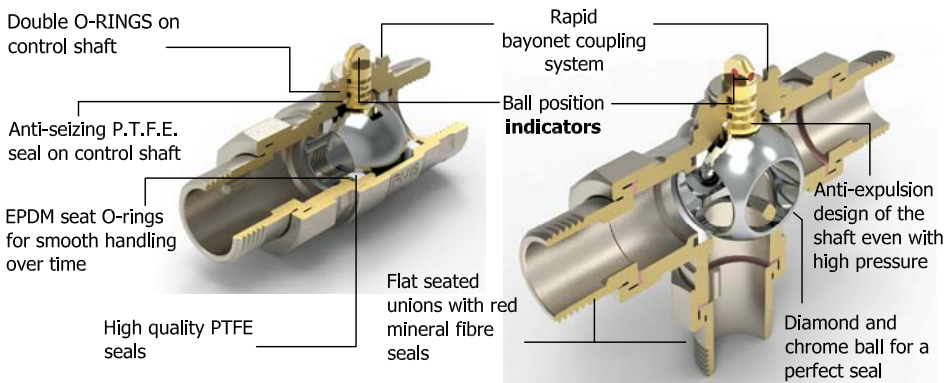
The practical preformed cross-linked polyethylene insulation shells and spacers for the actuators allow quick installation, facilitating insulation operations.

The actuators are hermetically sealed and have IP65. The electrical connection is made without opening the casing, by connecting the pre-wired cable or the optional IP68 plug-socket connector. De Pala actuators only absorb current during operation, unlike spring return actuators for example, and have precise and repeatable positioning.



TOTAL FLOW

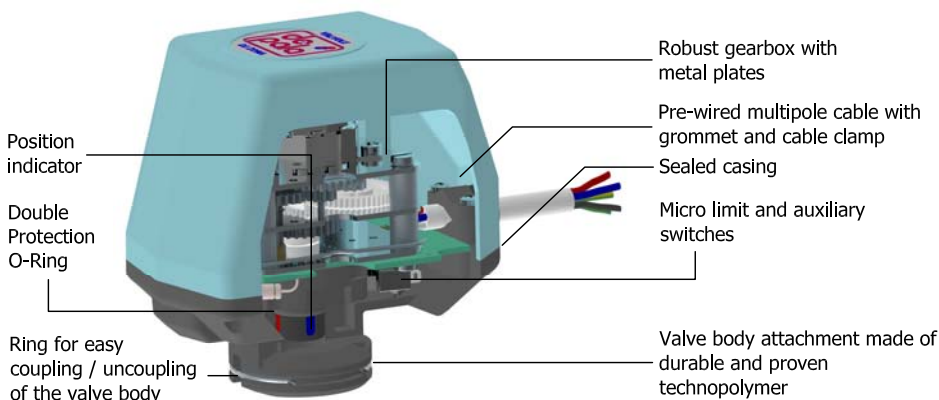
CONSTRUCTIONAL CHARACTERISTICS OF VALVE BODIES



NICKEL-PLATED VALVE BODY

Valve body : BRASS CW617N (UNI 12165)
Chromed brass ball CW617N
CW614N brass turned shaft
Maximum working pressure: 16 bar
Maximum differential pressure: 6 bar
Fluid temperature limits: -15 ÷ 110 °C
Usable liquids: water and liquids compatible with EPDM and PTFE
Glycol max. 50%
Consult De Pala if in doubt about material compatibility

CONSTRUCTIONAL CHARACTERISTICS OF ACTUATORS



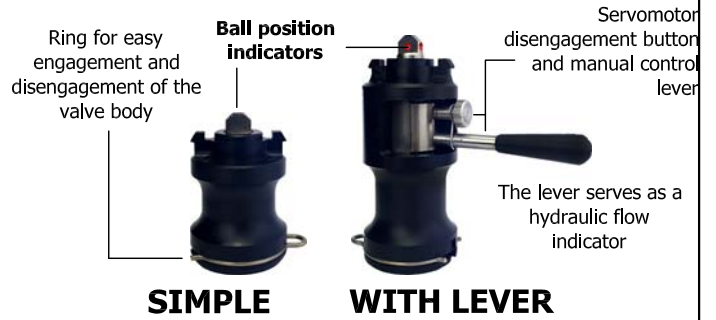
Power supply: 230 or 24 Vac 12 or 24 Vdc according to the models
Power consumption: approx. 4 VA only during operation
Uni or bi-directional rotation
Type of control: 2 or 3 wires
Starting torque: up to 12 Nm
Working times: from 8 to 120 sec.
Working environment temperature: 0÷65 °C
Electrical protection grade: IP65
Cable length: 1 meter
Clean auxiliary contact
Auxiliary contact rating: 6 (2) A for 230 Vac 0.3 (0.1) A for 24 Vac or direct current
Special models, e.g. with heating element

SPACERS FOR INSULATION

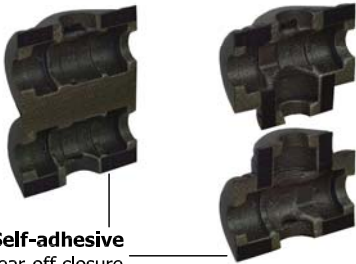
Must have accessory when working with low temperatures of the fluid, conducted to safeguard the actuator and to allow insulation of the valve body.



AISI 303 stainless steel shaft
Maximum insulation thickness: 40 mm
Quick connection to valve and actuator
Models with a lever allow the servomotor to be disengaged and the valve body to be controlled manually, which is useful, for example, in emergency situations or during plant tests.
Caution: Levered spacer cannot be used with unidirectional servomotors.



INSULATION SHELLS



Closed-cell, cross-linked polyethylene foam
Conductivity λ less than 0.04 W/m°C
Scratch-resistant outer layer
Suitable for thermal insulation and prevention of condensation formation

QUICK CONNECTOR SOCKET - PLUG

Optionally, the actuators can be supplied wired with an **IP68** plug-type connector. On site, the electrical connection is easily completed starting from the control panel and wiring the socket. It is possible to order multi-polar cable in various lengths.



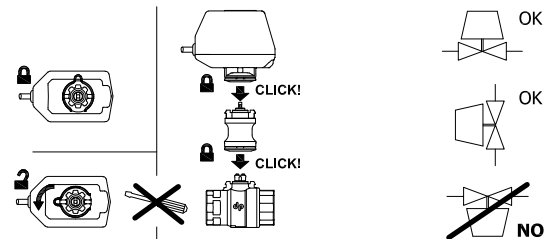
IP68 6-pin connector for multi-core cable
For multi-core cable 0.5 ÷ 4 mm ² with an external Ø min. 7 mm - max. 14 mm
De Pala supply cable: external Ø 7.5 mm multi-core 4 x 0.75 mm ² or 6 x 0.5 mm ²

PROTECTIVE COVER FOR OUTDOOR USE



AISI 304 stainless steel cover
Protects against UV radiation and weathering and allows installation in unprotected outdoor environments
Quick coupling and release

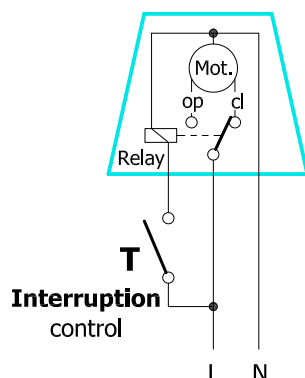
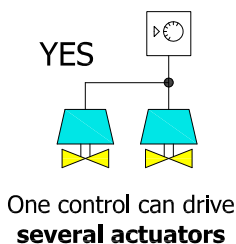
SIMPLE INSTALLATION



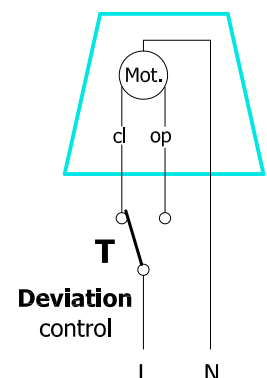
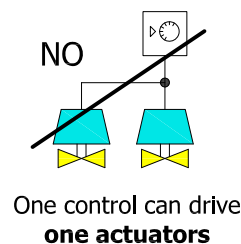
2-WIRES CONTROL - Actuators T or 3-WIRES CONTROL - Actuators P

The first letter of the actuator code identifies the type of control that can be implemented. T actuators have an internal relay, so one control can drive several actuators. This is not possible for P actuators, for which each control must drive only one actuator. The following figures illustrate the two types of control.

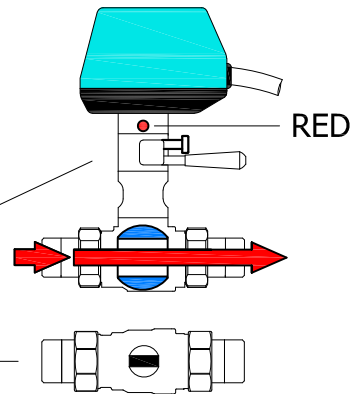
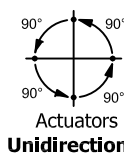
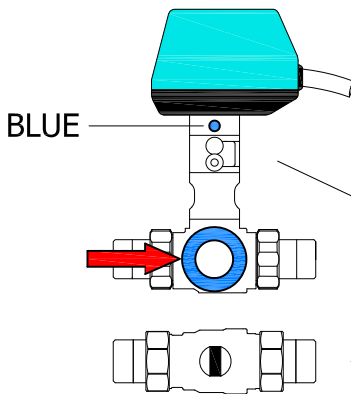
T 2-WIRES CONTROL



P 3-WIRES CONTROL



2-WAYS VALVE



The position of the valve body shaft or lever allows easy identification of flows

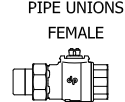
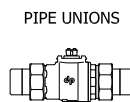
UNIDIRECTIONAL

DISTANCE
SIMPLE



DN 15 ÷ DN 40 Cod. K2S6

THREADED GAS CONNECTIONS
ISO 228-1



CONNECTIONS FOR SEALING WITH FLAT GASKET



	FEMALE	PIPE UNIONS	PIPE UNIONS FEMALE
1/2" DN 15	Cod. 632 FN	Cod. 632 BN	Cod. 632 FBN
3/4" DN 20	Cod. 602 FN	Cod. 602 BN	Cod. 602 FBN
1" DN 25	Cod. 612 FN	Cod. 612 BN	Cod. 612 FBN
1" 1/4 DN 32	Cod. 622 FN	Cod. 622 BN	Cod. 622 FBN
1" 1/2 DN 40	Cod. 642 FN	Cod. 642 BN	Cod. 642 FBN

	MALE
3/4" DN 15	Cod. 602 MN
1" DN 20	Cod. 612 MN
1" 1/4 DN 25	Cod. 622 MN
1" 1/2 DN 32	Cod. 642 MN

3-WIRES P actuators

One thermostat can control **only one** actuator



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	P6A2		P6S2	P6B2		P6C2	P6X2		P6Y2
15" x 90°	P6A2W		P6S2W	P6B2W		P6C2W	P6X2W		P6Y2W
8" x 90°	P6A2X		P6S2X	P6B2X		P6C2X	P6X2X		P6Y2X

2-WIRES T actuators

One thermostat can control multiple actuators



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	T6A2		T6S2	T6B2		T6C2	T6X2		T6Y2
15" x 90°	T6A2W		T6S2W	T6B2W		T6C2W	T6X2W		T6Y2W
8" x 90°	T6A2X		T6S2X	T6B2X		T6C2X	T6X2X		T6Y2X

DC T actuators

One thermostat can control multiple actuators



	DC current 12 or 24 V					
	WITHOUT AUX	Height	WITH 1 AUX	Height	WITH 2 AUX	Height
50" x 90°	T6A2C 24VCC		T6B2C 24VCC		T6X2C 24VCC	
25" x 90°	T6A2C 12VCC		T6B2C 12VCC		T6X2C 12VCC	
12" x 90°	T6A2CW 24VCC		T6B2CW 24VCC		T6X2CW 24VCC	
7" x 90°	T6A2CW 12VCC		T6B2CW 12VCC		T6X2CW 12VCC	

BIDIRECTIONAL

The codes of the ACTUATORS are the same as those of the 3-way 3-hole valve.

ATTENTION: the VALVE BODIES must be ordered adding the letter D to the code, e.g. 612 FND

SIMPLE

SPACER



DN 15 ÷ DN 40 Cod. K2S6

SPACER WITH LEVER



DN 15 ÷ DN 40 Cod. K2M6

INSULATION SHELLS

DN 15	Cod. GC02
DN 20	
DN 25	
DN 32	
DN 40	



QUICK CONNECTOR

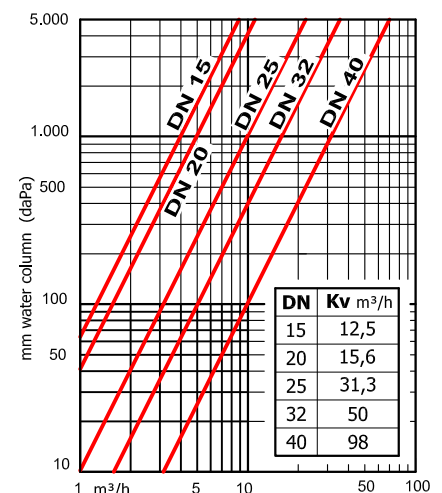


STAINLESS STEEL COVER

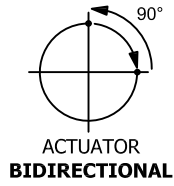
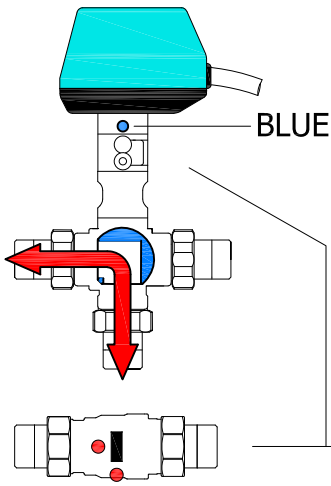


Cod. CMTP

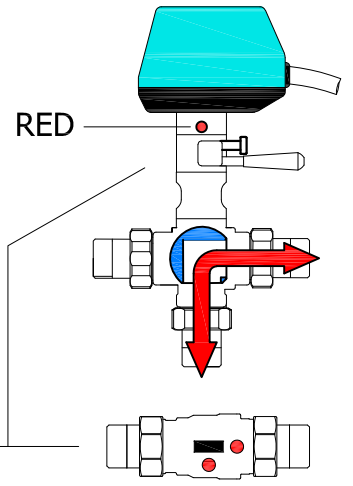
Add the letter K to the actuator code, e.g. P6A2K
Not available for models with 2 auxiliary contacts



3-WAYS "T" BORED BALL



During operation, all the ways are in communication with each other making it possible, for example, to operate the plant's circulator continuously without generating excess pressure.



The position of the valve body shaft or lever allows easy identification of flows

SIMPLE SPACER



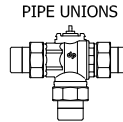
DN 15 ÷ DN 40 Cod. K3S7

SPACER WITH LEVER



DN 15 ÷ DN 40 Cod. K3M7

THREADED GAS CONNECTIONS ISO 228-1



	FEMALE	PIPE UNIONS
1/2" DN 15	Cod. 633 TN	Cod. 633 UN
3/4" DN 20	Cod. 603 TN	Cod. 603 UN
1" DN 25	Cod. 613 TN	Cod. 613 UN
1" 1/4 DN 32	Cod. 623 TN	Cod. 623 UN
1" 1/2 DN 40	Cod. 643 TN	Cod. 643 UN

CONNECTIONS FOR SEALING WITH FLAT GASKET



	MALE
3/4" DN 15	Cod. 603 VN
1" DN 20	Cod. 613 VN
1" 1/4 DN 25	Cod. 623 VN
1" 1/2 DN 32	Cod. 643 VN

3-WIRES P actuators

One thermostat can control **only one** actuator



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	P7A3		P7S3	P7B3		P7C3	P7X3		P7Y3
15" x 90°	P7A3W		P7S3W	P7B3W		P7C3W	P7X3W		P7Y3W
8" x 90°	P7A3X		P7S3X	P7B3X		P7C3X	P7X3X		P7Y3X

2-WIRES T actuators

One thermostat can control multiple actuators



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	T7A3		T7S3	T7B3		T7C3	T7X3		T7Y3
15" x 90°	T7A3W		T7S3W	T7B3W		T7C3W	T7X3W		T7Y3W
8" x 90°	T7A3X		T7S3X	T7B3X		T7C3X	T7X3X		T7Y3X

DC T actuators

One thermostat can control multiple actuators



	DC current 12 or 24 V					
	WITHOUT AUX	Height	WITH 1 AUX	Height	WITH 2 AUX	Height
50" x 90°	T7A3C 24VCC		T7B3C 24VCC		T7X3C 24VCC	
25" x 90°	T7A3C 12VCC		T7B3C 12VCC		T7X3C 12VCC	
12" x 90°	T7A3CW 24VCC		T7B3CW 24VCC		T7X3CW 24VCC	
7" x 90°	T7A3CW 12VCC		T7B3CW 12VCC		T7X3CW 12VCC	

QUICK CONNECTOR



Add the letter K to the actuator code, e.g. P6A2K
Not available for models with 2 auxiliary contacts

STAINLESS STEEL COVER

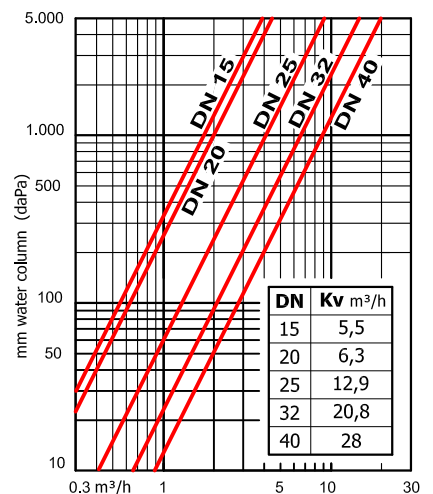


Cod. CMTF

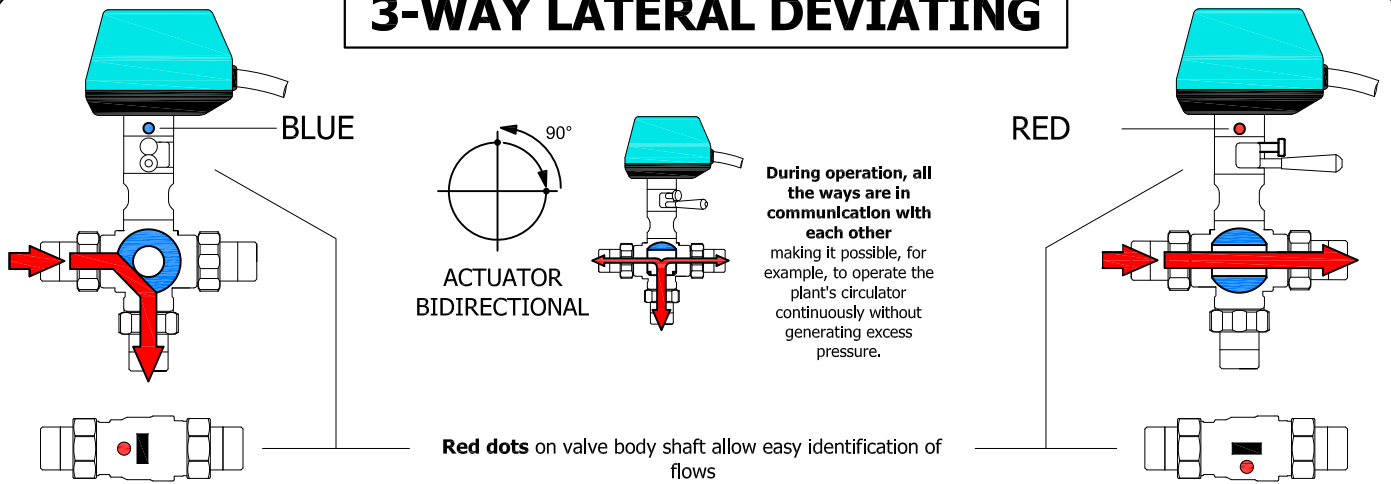
INSULATION SHELLS



DN 15	Cod. GC03
DN 20	Cod. GC13
DN 25	Cod. GC23
DN 32	Cod. GC33
DN 40	Cod. GC43



3-WAY LATERAL DEVIATING



SIMPLE SPACER



DN 15 ÷ DN 40 Cod. K3S71

SPACER WITH LEVER



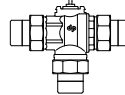
DN 15 ÷ DN 40 Cod. K3M71

THREADED GAS CONNECTIONS ISO 228-1

FEMALE



PIPE UNIONS



CONNECTIONS FOR SEALING WITH FLAT GASKET

MALE



	FEMALE	PIPE UNIONS
1/2" DN 15	Cod. 633 FC	Cod. 633 BC
3/4" DN 20	Cod. 603 FC	Cod. 603 BC
1" DN 25	Cod. 613 FC	Cod. 613 BC
1" 1/4 DN 32	Cod. 623 FC	Cod. 623 BC
1" 1/2 DN 40	Cod. 643 FC	Cod. 643 BC

3/4" DN 15	Cod. 603 MC
1" DN 20	Cod. 613 MC
1" 1/4 DN 25	Cod. 623 MC
1" 1/2 DN 32	Cod. 643 MC

3-WIRES P actuators

One thermostat can control **only one** actuator



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	P7A3		P7S3	P7B3		P7C3	P7X3		P7Y3
15" x 90°	P7A3W		P7S3W	P7B3W		P7C3W	P7X3W		P7Y3W
8" x 90°	P7A3X		P7S3X	P7B3X		P7C3X	P7X3X		P7Y3X

2-WIRES T actuators

One thermostat can control multiple actuators



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
60" x 90°	T7A3		T7S3	T7B3		T7C3	T7X3		T7Y3
15" x 90°	T7A3W		T7S3W	T7B3W		T7C3W	T7X3W		T7Y3W
8" x 90°	T7A3X		T7S3X	T7B3X		T7C3X	T7X3X		T7Y3X

DC T actuators

One thermostat can control multiple actuators



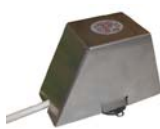
	DC current 12 or 24 V					
	WITHOUT AUX	Height	WITH 1 AUX	Height	WITH 2 AUX	Height
50" x 90°	T7A3C 24VCC		T7B3C 24VCC		T7X3C 24VCC	
25" x 90°	T7A3C 12VCC		T7B3C 12VCC		T7X3C 12VCC	
12" x 90°	T7A3CW 24VCC		T7B3CW 24VCC		T7X3CW 24VCC	
7" x 90°	T7A3CW 12VCC		T7B3CW 12VCC		T7X3CW 12VCC	

QUICK CONNECTOR



Add the letter K to the actuator code, e.g. P7A3K
Not available for models with 2 auxiliary contacts

STAINLESS STEEL COVER

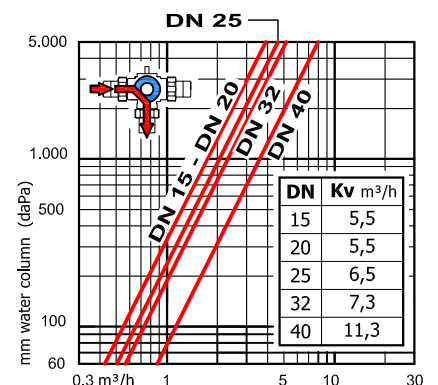
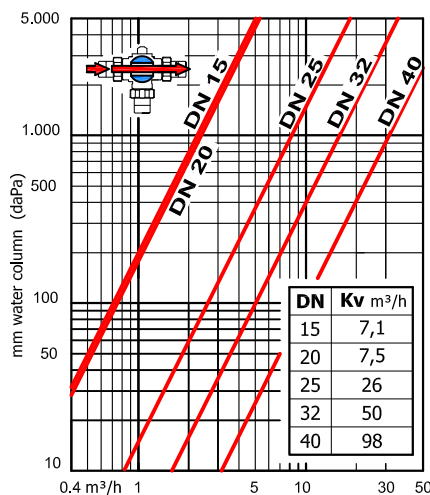


Cod. CMTP

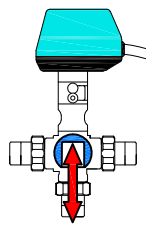
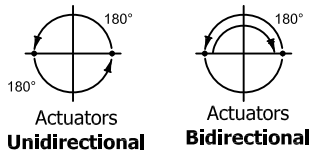
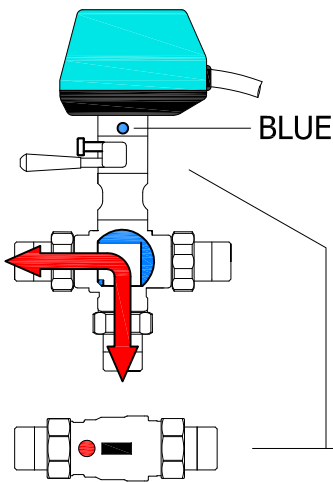
INSULATION SHELLS



DN 15	Cod. GC03
DN 20	Cod. GC13
DN 25	Cod. GC13
DN 32	Cod. GC23
DN 40	Cod. GC43



3-WAYS "L" BORED BALL



RED

During the operation, the left and right ways are never in communication with each other. Until one is not completely closed, the other does not open. Caution: For a short time around the midpoint position, the left and right ways are both closed.

Red dots on valve body shaft allow easy identification of flows

UNIDIRECTIONAL

THREADED GAS CONNECTIONS
ISO 228-1



CONNECTIONS FOR SEALING WITH FLAT GASKET



SIMPLE SPACER



DN 15 ÷ DN 32 Cod. K3S6

	FEMALE	PIPE UNIONS
1/2" DN 15	Cod. 633 FN	Cod. 633 BN
3/4" DN 20	Cod. 603 FN	Cod. 603 BN
1" DN 25	Cod. 613 FN	Cod. 613 BN
1" 1/4 DN 32	Cod. 623 FN	Cod. 623 BN

	MALE
3/4" DN 15	Cod. 603 MN
1" DN 20	Cod. 613 MN
1" 1/4 DN 25	Cod. 623 MN
1" 1/2 DN 32	Cod. 643 MN

3-WIRES P actuators

One thermostat can control **only one** actuator



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
120" x 180°	P6A3		P6S3	P6B3		P6C3	P6X3		P6Y3
30" x 180°	P6A3W		P6S3W	P6B3W		P6C3W	P6X3W		P6Y3W
16" x 180°	P6A3X		P6S3X	P6B3X		P6C3X	P6X3X		P6Y3X

2-WIRES T actuators

One thermostat can control multiple actuators



	WITHOUT AUX contact			WITH 1 AUX contact			WITH 2 AUX contact		
	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}	230 V _{ac}	Height	24 V _{ac}
120" x 180°	T6A3		T6S3	T6B3		T6C3	T6X3		T6Y3
30" x 180°	T6A3W		T6S3W	T6B3W		T6C3W	T6X3W		T6Y3W
16" x 180°	T6A3X		T6S3X	T6B3X		T6C3X	T6X3X		T6Y3X

DC T actuators

One thermostat can control multiple actuators



	DC current 12 or 24 V					
	SENZA AUX	Height	CON 1 AUX	Height	CON 2 AUX	Height
100" x 180°	T6A3C 24VCC		T6B3C 24VCC		T6X3C 24VCC	
50" x 180°	T6A3C 12VCC		T6B3C 12VCC		T6X3C 12VCC	
24" x 180°	T6A3CW 24VCC		T6B3CW 24VCC		T6X3CW 24VCC	
14" x 180°	T6A3CW 12VCC		T6B3CW 12VCC		T6X3CW 12VCC	

BIDIRECTIONAL

The codes of the BIDIRECTIONAL ACTUATORS can be obtained from those above by replacing P6 with U7 and T6 with V7, Ex. P6A3 becomes U7A3 e.g. T6B3 becomes V7B3

SPACER WITH LEVER



DN 15 ÷ DN 32 Cod. K3M6

INSULATION SHELLS

DN 15	Cod. GC03
DN 20	
DN 25	
DN 32	



QUICK CONNECTOR

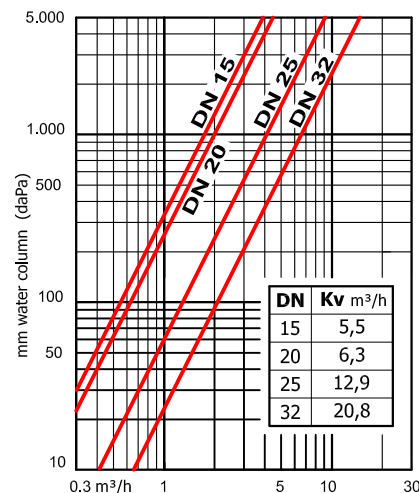


STAINLESS STEEL COVER



Add the letter K to the actuator code, e.g. P6B3K
Not available for models with 2 auxiliary contacts

Cod. CMTP

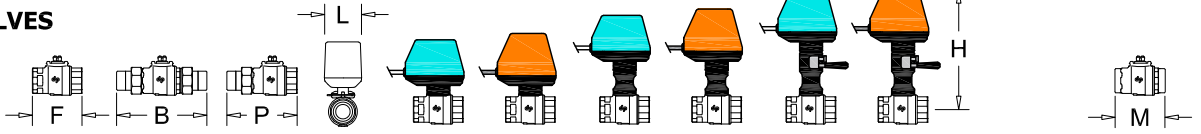


DIMENSIONS

Leave at least 20 mm above the servomotor

2-WAYS VALVES

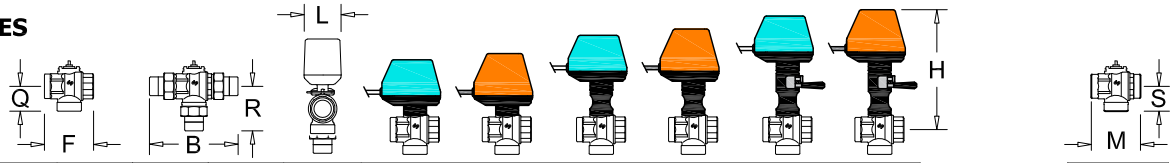
- FEMALE
- PIPE UNIONS
- FEMALE / PIPE UNIONS



	F	B	P	L	H						MALE	
												M
1/2" DN 15	77	131	105	64	117	127	159	169	193	203	3/4" DN 15	77
3/4" DN 20		139	108								1" DN 20	
1" DN 25	87	156	121		122	132	164	174	198	208	1" 1/4 DN 25	87
1" 1/4 DN 32	94	172	133	127	137	169	179	203	213	1" 1/2 DN 32	94	
1" 1/2 DN 40	108	193	151	72	135	145	177	187	211	221		

3-WAYS VALVES

- FEMM.
- BOCCHETT.



	F	Q=S	B	R	L	H						MALE	
												M	
1/2" DN 15	76	38	130	65	64	117	127	159	169	193	203	3/4" DN 15	77
3/4" DN 20			136	68								1" DN 20	
1" DN 25	86	43	155	78		122	132	164	174	198	208	1" 1/4 DN 25	87
1" 1/4 DN 32	94	47	172	86	127	137	169	179	203	213	1" 1/2 DN 32	94	
1" 1/2 DN 40	108	60	193	102	72	135	145	177	187	211	221		

WIRING DIAGRAMS

	WITHOUT AUX	WITH 1 AUX	WITH 2 AUX
3-WIRES P actuator 			
2-WIRES T actuators 			
DC T actuators 			