

DC Range

IP67 ROTARY DC ACTUATORS

USE

- automation systems on vessels
- automation systems for civil and industrial vehicles industrial
- systems with hot and cold fluids
- drinking water systems (with suitable ball valve) systems
- using sustainable energy
- compressed air systems

KEY FEATURES

- 12V and 24V DC power supply
- electrical on/off control 2 points and 3 points (ALL IN ONE)
- different operating times
- auxiliary opening and closing microswitches as standard



Direct
CURRENT

TECHNICAL FEATURES	Diamant DC		Compact DC		Universal DC	
Power supply	24V DC	12V DC	24V DC	12V DC	24V DC	12V DC
Supply voltage tolerance			± 10%			
Power consumption at nominal torque (standard operating time)	0,3A	0,5A	0,25A	0,4A	0,4A	0,7A
Maximum consumption	1,0A	1,5A	1,0A	1,5A	1,0A	1,5A
Operation	ON / OFF					
Electrical control	ALL IN ONE; 2 / 3 points					
Electrical connections	Internal terminal block					
Connection with ball valve	Comparato ISO 5211 F03 / F05		ISO 5211 F03 / F05		ISO 5211 F05 / F057	
Motor	Bidirectional DC					
Electrical position signalling	Additional microswitches with clean contact (C-NO-NC) opening and closing					
Electrical capacity of additional microswitches	1 A resistive					
Protezione contro le sovracorrenti	Fuse*		Fuse		Fuse	
Angle of rotation	90° • 180°					
Operating times (90° rotation) **	1 • 3 • 5 • 8 • 12 • 30		10 • 30		20 • 70	
Rated torque	11 Nm • 5Nm (1sec)		22 Nm		40 Nm	
Operational room temperature	-10°C ...+50°C					
Protection degree	IP67					
Outer shell material	Glass-filled "polyarylamide" technopolymer					
Material of external components	AISI 303 • Brass • Silicone seals					
Maximum noise (at 1 m distance - Standard operating time)	47 dB(A)		52 dB(A)		67 dB(A)	
Storage and transport conditions	- 40°C... +80°C, RH max 95% - no condensation					
Required maintenance	None					
Certification	CE					

* Only for operating time of 30 seconds • ** The highlighted operating times (12 ; 30 ; 20) are those for standard models



COMPARATO NELLO S.r.l.

UNI EN ISO 9001:2015 CERTIFIED COMPANY

DC Range

IP67 ROTARY DC ACTUATORS

VERSIONS

Actuator	Rotation angle	Operating time	Power supply	Basic code
Diamant DC COMPARATO 	90°	12 sec	24V DC	DY242PC
	90°	12 sec	12V DC	DY252PC
	180°	24 sec	24V DC	DY342PC
	180°	24 sec	12V DC	DY352PC
Diamant DC ISO 5211 	90°	12 sec	24V DC	DY242PCF
	90°	12 sec	12V DC	DY252PCF
	180°	24 sec	24V DC	DY342PCF
	180°	24 sec	12V DC	DY352PCF
Compact DC 	90°	30 sec	24V DC	CY242PC
	90°	30 sec	12V DC	CY252PC
	180°	60 sec	24V DC	CY342PC
	180°	60 sec	12V DC	CY352PC
Universal DC 	90°	20 sec	24V DC	UY242PC
	90°	20 sec	12V DC	UY252PC
	180°	40 sec	24V DC	UY342PC
	180°	40 sec	12V DC	UY352PC

ACCESSORIES

The **DC Range** actuators can have different operating times by adding the corresponding symbol at the end of the code.

Diamant DC Diamant DC ISO 5211 DY242PC	Operating times 1 = 1 sec (90°) • 5 Nm T = 3 sec (90°) • 8 Nm C = 5 sec (90°) • 11 Nm S = 8 sec (90°) • 11 Nm 3 = 30 sec (90°) • 11 Nm	Operating times D = 10 sec (90°) 22 Nm
Compact DC CY242PC		
Universal DC UY242PC	Operating times 7 = 70 sec (90°) • 40 Nm	

DC Range

IP67 ROTARY DC ACTUATORS

ELECTRICAL CONNECTIONS

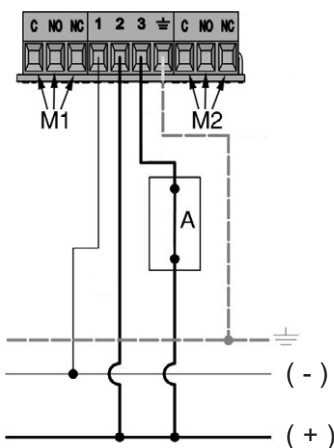
The actuator's internal electrical circuit is of the **ALL IN ONE** type.

It is possible to connect the actuator with either **2 POINTS** or **3 POINTS** control.

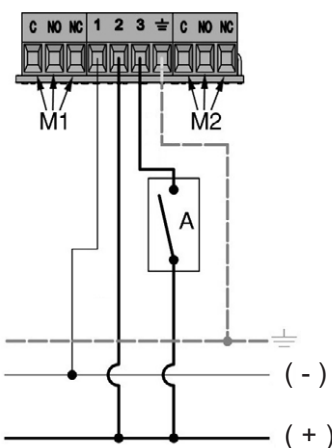
2-POINT CONTROL – ON/OFF (SWITCH)

One electric control can activate several actuators.

OPENING ACTUATOR



CLOSING ACTUATOR

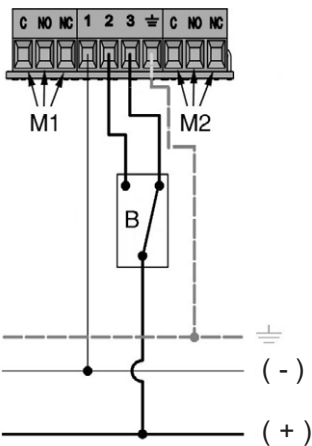


- 1 - Negative (-)
- 2 - Closing control (+)
- 3 - Opening control (+)
- M1 - Opening auxiliary micro
- M2 - Closing auxiliary micro
- A - Switch-type control
- ≡ - Earth

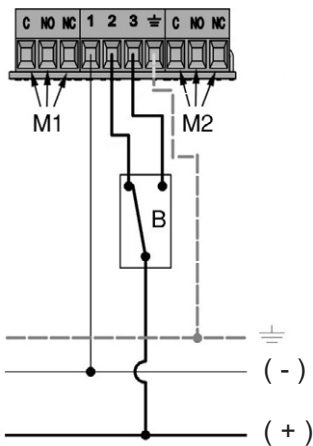
3-POINT CONTROL – ON/OFF (DIVERTER)

Each actuator must be operated by a single electric control.

OPENING ACTUATOR



CLOSING ACTUATOR



- 1 - Negative (-)
- 2 - Closing control (+)
- 3 - Opening control (+)
- M1 - Opening auxiliary micro
- M2 - Closing auxiliary micro
- B - Switch-type control
- ≡ - Earth

The opening manoeuvre is performed with a clockwise rotation

The closing manoeuvre is performed with a counter-clockwise rotation

NOTE: Do not plan to reverse the control during normal operation.

If it becomes necessary to reverse the direction of rotation before the end position (0° or 90°) is reached, provide a power or control interruption (brown and green wires) of at least 1 second before applying the new control.



DC Range

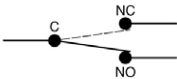
IP67 ROTARY DC ACTUATORS

AUXILIARY MICROSWITCHES

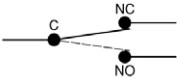
The layout of the extra microswitch contacts is shown in the following pictures:

M1 • OPENING AUXILIARY MICROSWITCH

OPEN VALVE

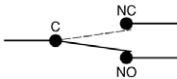


NON-OPEN VALVE

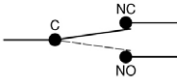


M2 • CLOSING AUXILIARY MICROSWITCH

CLOSED VALVE



NON-CLOSED VALVE

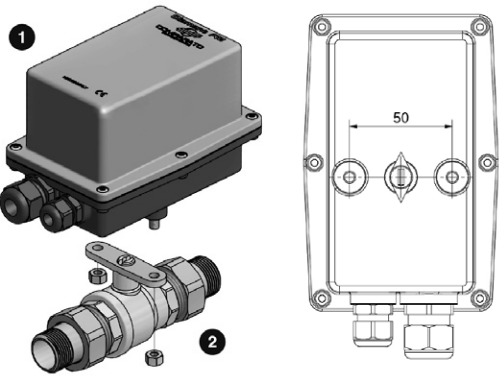


CONNECTION TO THE BALL VALVE

Direct connection to the ball valve

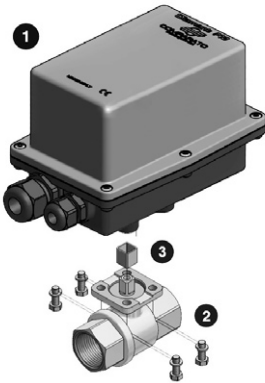
DC Range servos can be coupled directly to their ball valve as follows; for ISO 5211 ball valves, please refer to the table on page 8 to check the coupling between actuator and valve body. When combining with third-party ISO 5211 ball valves, check that the bore, frame and operating torque are compatible.

**Diamant DC
COMPARATO connection**

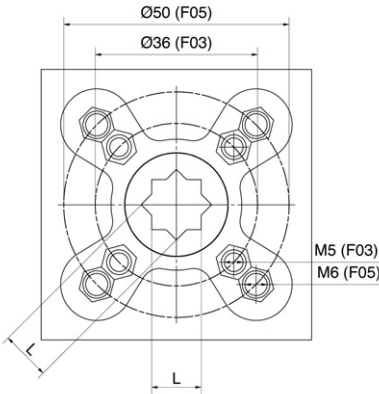


- 1 : Diamant DC COMPARATO connection
- 2 : Ball valve

**Diamant DC ISO 5211 connection
Compact DC**

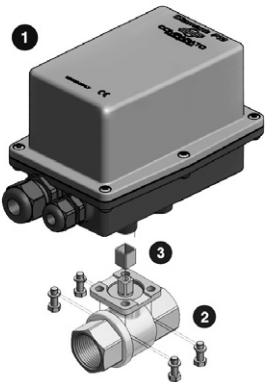


- 1 : DC range actuator ISO 5211 connection
- 2 : Ball valve
- 3 : Square adapter (if required)



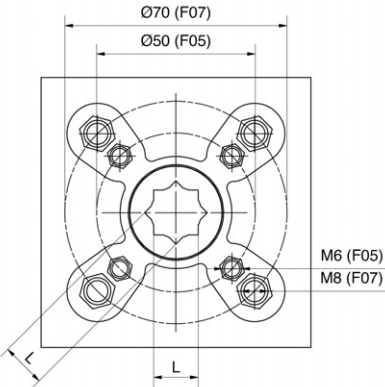
ISO 5211 connection	L
F03	9 mm
F05	11 mm

Universal DC



- 1 : DC range actuator ISO 5211 connection
- 2 : Ball valve
- 3 : Square adapter (if required)

* With supplied square adapter



ISO 5211 connection	L
F03	11 mm *
F05	14 mm



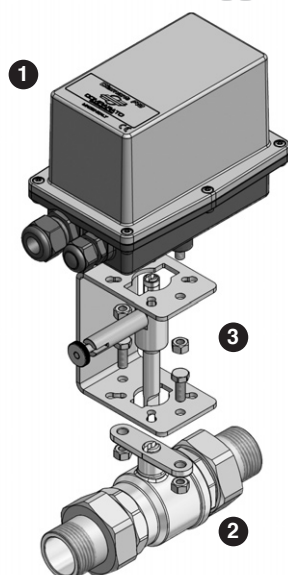
DC Range

IP67 ROTARY DC ACTUATORS

Connection to the ball valve via spacer

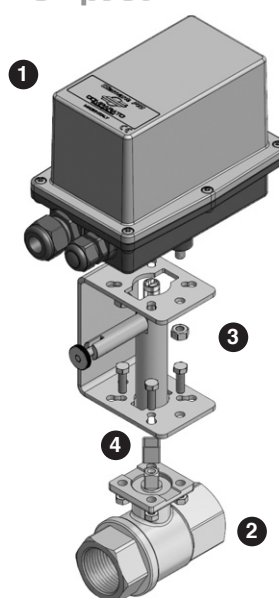
A spacer can be interposed between the ball valve and actuator for insulation, direct or manual opening. In the case of Diamant ball valves with ISO 5211 connection, installation of the spacer converts the connection to the actuator to a COMPARATO connection.

Diamant DC COMPARATO connection



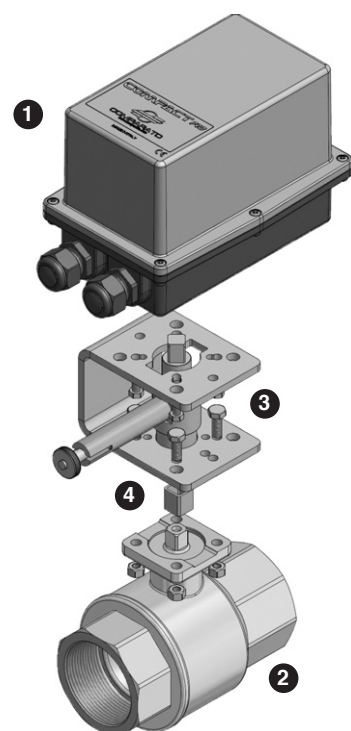
- 1: Diamant DC COMPARATO connection
- 2: Ball valve COMPARATO connection
- 3: Spacer COMPARATO / COMPARATO connection

Diamant DC ISO 5211 connection Compact DC



- 1: Diamant DC COMPARATO connection
- 2: Ball valve COMPARATO connection
- 3: Spacer ISO 5211 / COMPARATO connection
- 4: Square adapter (if required)

Compact DC / Universal DC



- 1: Compact DC / Universal DC
- 2: Ball valve ISO 5211 connection
- 3: Spacer ISO 5211 / COMPARATO connection
- 4: Square adapter (if required)

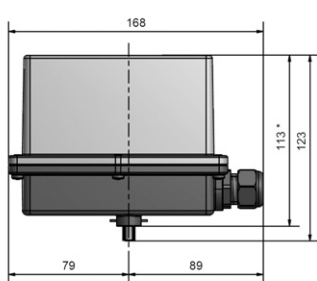


DC Range

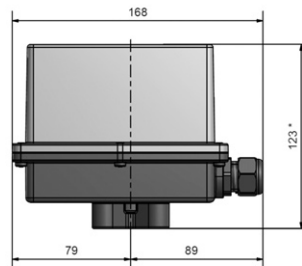
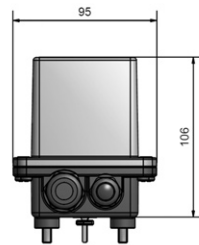
IP67 ROTARY DC ACTUATORS

OVERALL SIZE

ACTUATORS

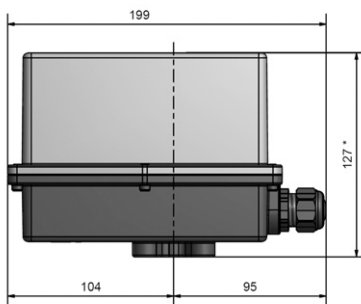


Diamant DC
COMPARATO connection

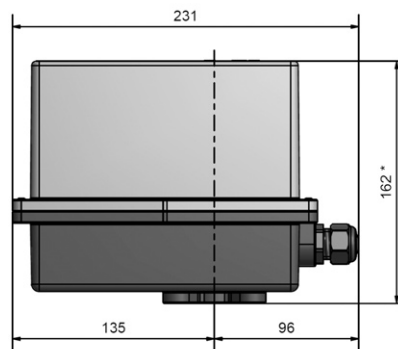
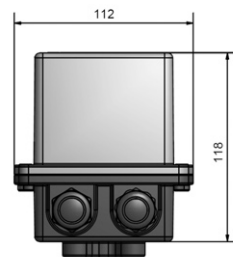


Diamant DC
ISO 5211 connection

* overall dimensions to be considered when coupling the actuator to the ball valve.



Compact DC



Universal DC

* overall dimensions to be considered when coupling the actuator to the ball valve.

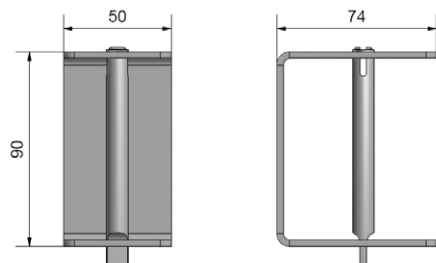


DC Range

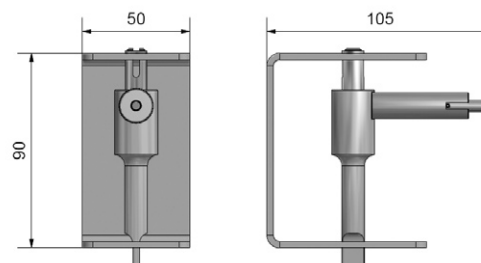
IP67 ROTARY DC ACTUATORS

OVERALL SIZE

SPACERS DIAMANT DC COMPARATO - COMPARATO

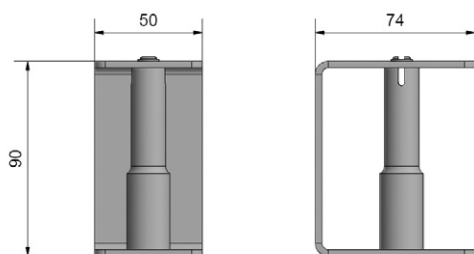


Spacer for insulation
COMPARATO - COMPARATO connection • cod. ADSTD1

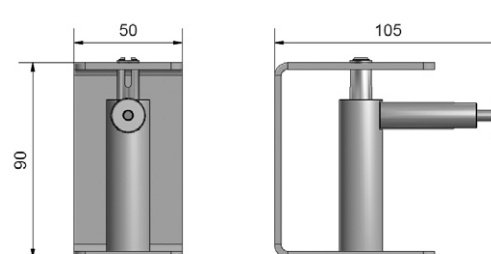


Spacer for insulation with manual opening
COMPARATO - COMPARATO connection • cod. ADSTD2

SPACERS DIAMANT DC COMPARATO - ISO 5211 F03 / F04 / F05 □9 / □11

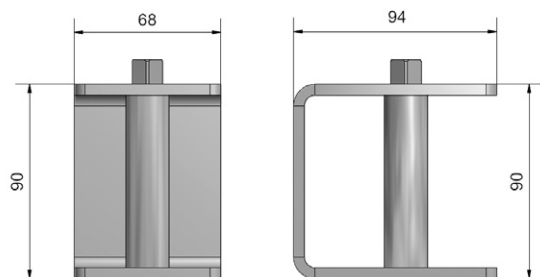


Spacer for insulation
COMPARATO - ISO 5211 connection • cod. DIDM01

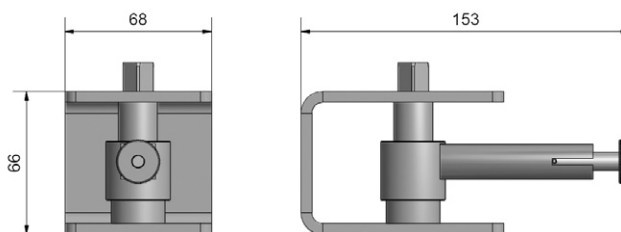


Spacer for insulation with manual opening
COMPARATO - ISO 5211 connection • cod. DIDM02

SPACERS COMPACT DC ISO 5211 - ISO5211 F03 / F04 / F05 □9 / □11

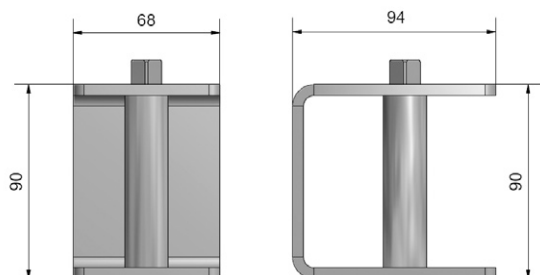


Spacer for insulation
ISO 5211 - ISO 5211 connection • cod. DICOM35

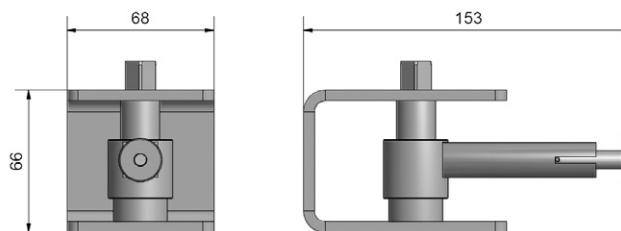


Spacer for insulation with manual opening
ISO 5211 - ISO 5211 connection • cod. DICO05ADC

SPACERS UNIVERSAL DC ISO 5211 - ISO5211 F03 / F04 / F05 / F07 □11 / □14



Spacer for insulation
ISO 5211 - ISO 5211 connection • cod. DICOM57



Spacer for insulation with manual opening
ISO 5211 - ISO 5211 connection • cod. DICO07ADC



DC Range

IP67 ROTARY DC ACTUATORS

BALL VALVE ASSIGNMENT - LISTED COUPLINGS



DN	Ø	2-way BRASS	3-way BRASS	3-way BRASS Mixing Diverting	2-way INOX	3-way INOX	2-way PVC	3-way PVC	2-way FLANGED BALL VALVE cast iron	BUTTERFLY
-	1/4"	DIAMANT DC ISO	DIAMANT DC ISO	-	-	DIAMANT DC ISO	-	-	-	-
10	3/8"	DIAMANT DC ISO	DIAMANT DC ISO	-	-	DIAMANT DC ISO	DIAMANT DC ISO	AVAILABLE ON DIAMANT DC WITH COMPARATO CONNECTION	-	-
15	1/2"	DIAMANT DC ISO	DIAMANT DC ISO	DIAMANT DC ISO	DIAMANT DC ISO	DIAMANT DC ISO COMPACT DC	DIAMANT DC ISO		-	-
20	3/4"	DIAMANT DC ISO	DIAMANT DC ISO COMPACT DC	DIAMANT DC ISO	DIAMANT DC ISO	COMPACT DC	DIAMANT DC ISO		-	-
25	1"	DIAMANT DC ISO	COMPACT DC	DIAMANT DC ISO COMPACT DC	DIAMANT DC ISO COMPACT DC	COMPACT DC UNIVERSAL DC	DIAMANT DC ISO		COMPACT DC	-
32	1"1/4	DIAMANT DC ISO COMPACT DC	COMPACT DC UNIVERSAL DC	COMPACT DC	COMPACT DC	UNIVERSAL DC	DIAMANT DC ISO		COMPACT DC UNIVERSAL DC	COMPACT DC
40	1"1/2	COMPACT DC	UNIVERSAL DC	COMPACT DC UNIVERSAL DC	COMPACT DC UNIVERSAL DC	-	DIAMANT DC ISO COMPACT DC	COMPACT DC	UNIVERSAL DC	COMPACT DC
50	2"	COMPACT DC UNIVERSAL DC	UNIVERSAL DC	UNIVERSAL DC	UNIVERSAL DC	-	COMPACT DC UNIVERSAL DC	COMPACT DC	UNIVERSAL DC	UNIVERSAL DC
65	2"1/2	UNIVERSAL DC	-	-	-	-	UNIVERSAL DC	-	-	UNIVERSAL DC
80	3"	UNIVERSAL DC	-	-	-	-	UNIVERSAL DC	-	-	UNIVERSAL DC
100	4"	UNIVERSAL DC	-	-	-	-	UNIVERSAL DC	-	-	UNIVERSAL DC

Other combinations available on request

EXAMPLE OF SPECIFICATIONS

DIAMANT DC ISO ACTUATOR • ALL IN ONE 2/3-point ON/OFF, nominal torque: 11 Nm, power supply: 24V DC, operating time: 5 sec / 90°, operating angle: 90°, protection degree: IP67, for ball valve: 2/3-way, connection to the ball valve via ISO 5211 F03/F05 connection, 2 auxiliary microswitches.

Brand: **COMPARATO**

Code: **DY242PCFC**

UPDATED DATA SHEETS AVAILABLE AT www.comparato.com

In order to provide an up-to-date service, Comparato Nello S.r.l. reserves the right to modify technical data, drawings, graphs and photos of this data sheet at any time, without prior notice.

BIM
BUILDING
INFORMATION
MODELING



HYDROTHERMAL SYSTEMS
COMPARATO NELLO S.r.l.

17014 CAIRO MONTENOTTE (SV) ITALIA VIALE DELLA LIBERTÀ • LOCALITÀ FERRANIA • Tel. +39 019 510.371 - FAX +39 019 517.102

www.comparato.com

e-mail: info@comparato.com

UNI EN ISO 9001:2015 CERTIFIED COMPANY