

# ACTUATORS Diamant

DC-CURRENT ACTUATORS

# ACTUATORS Diamant

**USE**

**Diamant 12V DC** and **Diamant 24V DC** motorized valves are used with direct current supply. An important feature is the ability to reach high pick-up torques and very fast operating times. In particular, they are widely used for regulating and intercepting fluids in:

- automation systems on watercrafts
- automation systems on civil and industrial vehicles
- industrial systems in general using hot and cold fluids
- systems using alternative energy
- automation systems in general
- zootechnical systems



TECHNICAL FEATURES	Diamant 12V DC	Diamant 24V DC
Electric control	2-point or 3-point	
Operation (see also the Electrical connections section)	ON/OFF	
Connection with valve body	COMPARATO connection	
	ISO 5211 F03 • F05 connection	
Rotation	90° clockwise and counterclockwise	
	180° clockwise and counterclockwise	
Compatible valve bodies (Please see Diamant PRO technical data sheet for body valves that can be combined)	2-way	
	3-way with switch	
	3-way with mixer	
	by-pass	
Motor	bidirectional DC	
Power supply	12 V DC/AC	24 V DC/AC
Electrical connection	by means of a terminal block inside the actuator	
Operating time ( $\triangle$ 90°) and relative rated torque (for a 180° operation, double the provided times)	1 second • 5 Nm	
	3 seconds • 8 Nm	
	5 seconds • 11 Nm	
	8 seconds • 11 Nm	
	12 seconds • 11 Nm (standard version)	
Nominal torque absorption (standard version)	30 seconds • 11 Nm	
	0,5 A	0,3 A
Overcurrent protection	fuse - 30 second version	
Maximum current tolerated by extra microswitches	1 A resistive	
Maximum noise (at a 1 meter distance)	47 dB(A) (standard version)	
Operational room temperature	- 10° C ÷ 50° C	
Protection degree	IP 67	
External covering	featuring a ribbed surface, in a glass-reinforced "polyarylamide" techno-polymer, particularly sturdy and damp-proof	
Material of external metal components	AISI 303 GVR and brass CW617N	
Washers material	silycone	
Type of reduction unit	top performance COMPARATO	
Maintenance	none	
Certification	EC	

**VALVE BODIES**

**Diamant** DC actuators can be paired with all the valve bodies described on the **Diamant 2000** and **Diamant PRO** technical sheets within the limit set by the operating torque.

**ELECTRICAL CONNECTION ONLY VERSION**

**Diamant** DC actuators can be connected to 2 or 3 POINTS without distinction, in DIRECT current or ALTERNATING current, with no need to operate the actuator.



COMPARATO NELLO SRL

UNI EN ISO 9001: CERTIFIED COMPANY 2015

# ACTUATORS Diamant

DC-CURRENT ACTUATORS

# ACTUATORS Diamant

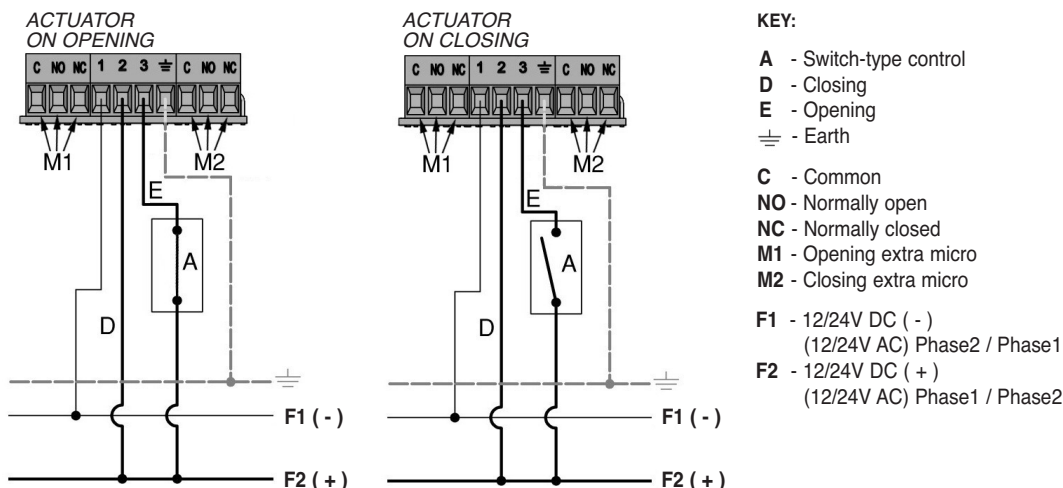
## ELECTRICAL CONNECTIONS

### 2-POINT CONTROL – ON/OFF (SWITCH)

- terminal 1: negative polarity (DC) or phase 1 (AC);
- terminal 2: positive polarity (DC) or **fixed** phase 2 (AC) for closing;
- terminal 3: positive polarity (DC) or phase 2 (AC) for opening.

La tensione al morsetto 3 può essere fornita tramite un interruttore.

**Più servocomandi possono essere azionati da un singolo comando elettrico.**



The figures show the wiring diagram of the actuator with a **2-POINT ON/OFF** control device.

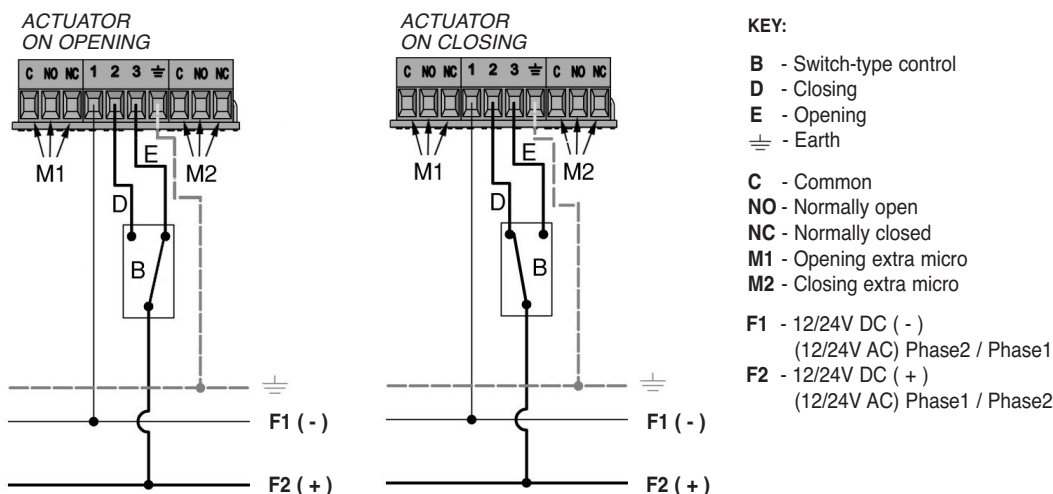
The wiring diagram is shown open and closed, respectively. Supplying power voltage across terminal 2 closes the valve (electrical automatic closing); supplying power across terminal 3, too, opens the valve.

### 3-POINT CONTROL – ON/OFF (DIVERTER)

- terminal 1: negative polarity (DC) or phase 1 (AC);
- terminal 2: positive polarity (DC) or phase 2 (AC) for closing;
- terminal 3: positive polarity (DC) or phase 2 (AC) for opening.

Voltage shall be diverted to terminal 2 or terminal 3.

**Each actuator must be operated by a single electric control.**



The figures show the wiring diagram of the actuator with a **3-POINT ON/OFF** control device.

The wiring diagram is shown open and closed, respectively. When the voltage flows across terminal 3, the valve opens; on the contrary, when the phase flows across terminal 2, the valve closes.



COMPARATO NELLO SRL

UNI EN ISO 9001: CERTIFIED COMPANY 2015

# ACTUATORS Diamant

DC-CURRENT ACTUATORS

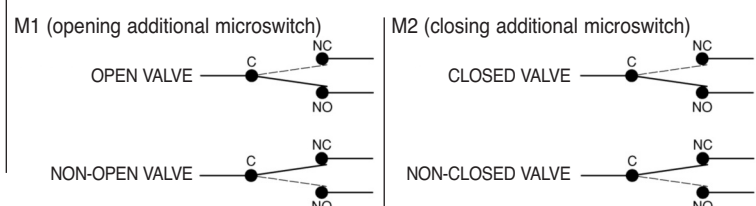
# ACTUATORS Diamant

Should power fail, the actuator remains in the position it was when the power outage occurred.

**Diamant** DC actuators have the following features:

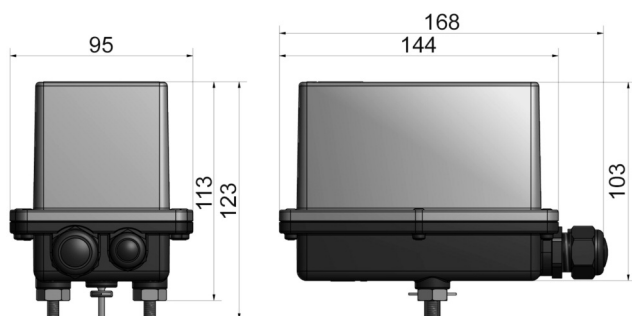
- one additional opening feedback microswitch (free contact) which is electrically closed when the valve is open.  
Example of use: notification of opening, pump relay actuation, boiler control, notification to PLC, etc.
- an additional closing feedback microswitch (free contact) which is electrically closed when the valve is closed.  
Example of use: notification of closing, relay actuation, notification to PLC, etc.

The layout of the additional microswitch contacts is shown in the following figures.

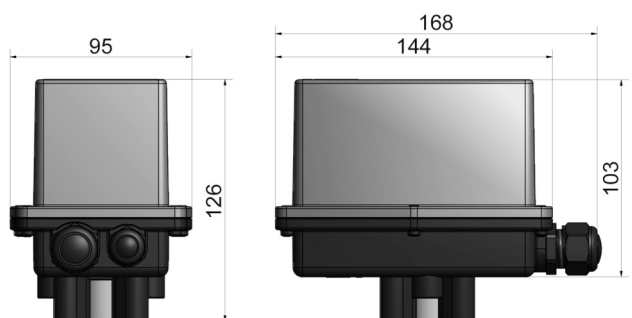


**WARNING:** versions featuring the overcurrent protection fuse can not instantly reverse the direction of rotation during the moving phase.

## OVERALL SIZE

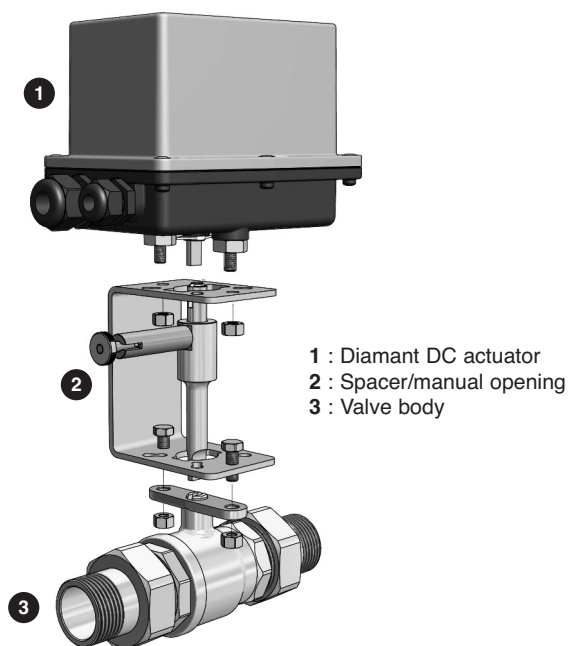


**Diamant 12/24V DC • COMPARATO connection**



**Diamant 12/24V DC • ISO 5211 connection**

## Exploded view FOR THE ASSEMBLY OF SPACER-FITTED MOTORIZED VALVES



When the installation does not require a spacer, directly couple the actuator to the valve.



COMPARATO NELLO SRL

UNI EN ISO 9001: CERTIFIED COMPANY 2015

ACTUATORS

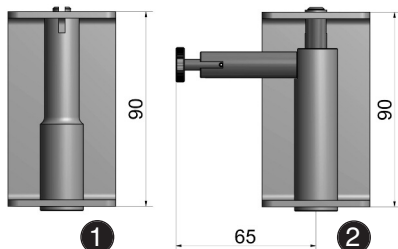
12V DC

**Diamant**

DC-CURRENT ACTUATORS

ACTUATORS

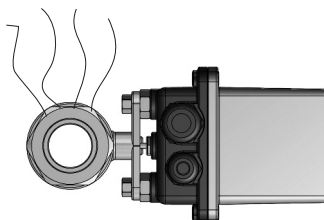
24V DC

**Diamant****OPTIONAL SPACERS FOR INSULATION AND/OR DIAMANT MANUAL OVERRIDE****DIAMANT**

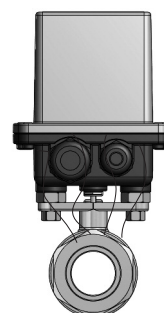
- 1 : spacer for insulation  
2 : spacer for insulation and manual override

**INSTALLATION**

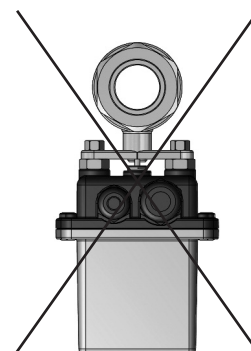
The valve should be installed in such a way that the actuator connection is not facing down. When the valve works with low-temperature fluids (possible frost formation on the valve stem) or with high-temperature fluids (danger of actuator overheating), it is advisable to install it in the recommended position, as shown in the picture.



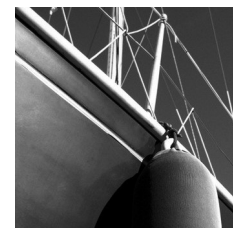
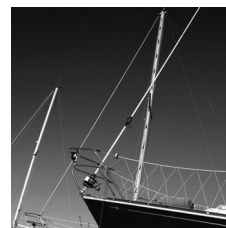
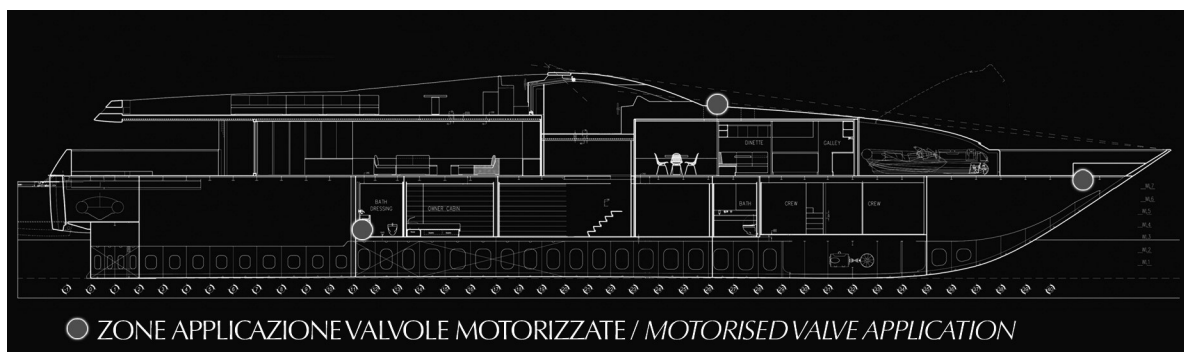
RECOMMENDED POSITION



ALLOWED POSITION



FORBIDDEN POSITION

INDUSTRY  
**MARINE**

Motorized valves for: sea water intakes, sedimentation tanks, chain washing, motorized bilge system, black and grey water systems, board water diversion, mixed hot sanitary water, automatic accumulation of water in board tanks (e.g. desalinators), drinking water shipment, ballast system, oil systems, sludge systems, glass-washing system, motorized bilge intake manifolds, fluid regulation in general.

UPDATED DATA SHEETS AVAILABLE AT [www.comparato.com](http://www.comparato.com)



**HYDROTHERMAL SYSTEMS**  
**COMPARATO NELLO SRL**

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

[www.comparato.com](http://www.comparato.com)

e-mail: [info@comparato.com](mailto:info@comparato.com)

UNI EN ISO 9001: CERTIFIED COMPANY 2015