

# SINTESI SMART

## ROTARY ACTUATOR FOR BALL VALVES WITH PROPORTIONAL CONTROL

### USE

- zone heating / cooling systems
- HVAC
- drinking water systems
- systems using alternative energy
- thermal solar systems, with suitable ball valve
- household automation systems

### KEY FEATURES

- powered-on or current mode proportional control
- power supply 24V AC/ DC - 100...240V 50/60Hz
- position feedback 2...10V
- fast push connection with SINTESI ball valve range
- manual operation



SINTESI  
SMART

TECHNICAL FEATURES	SINTESI SMART
Power supply	12V DC • 24V ± 10% DC/AC 50/60Hz • 100...240V ± 10% 50/60Hz
Power consumption during operation	3,5 W
Power consumption during standby	0,3 W
Feeder cable	Length 80 cm
Nominal torque	6 Nm
Maximum torque	8 Nm
Position signal	0-10V DC • 2-10V DC • 0-20 mA • 4-20 mA
Position signal impedance	100 kΩ voltage signal / 500 Ω current signal
Position signal impedance range	-0,5V ... 12V
Dead band on position signal	2%
Position indicator	Rotating arrow
Position feedback signal	DC 2-10V
Maximum position feedback current	1 mA
Operating angle	95°
Operating time (90°)	30 sec * • 60 sec • 120 sec
Positioning accuracy	± 3%
Maximum noise (at 1m distance)	40 dB(A)
Installation	Indoor, protected from frost **
Operational room temperature	+5°C ... +50°C
Ambient humidity	Max 95% RH, no condensation
Protection degree	IP54
Insulation degree	II - double insulation <input type="checkbox"/>
Outlet shell material	Polyamide PA 6, 30% fiberglass
Maintenance	None
Certification	CE

\* not available with 12V DC power supply

\*\* the actuator must be installed indoors and far from the direct sunlight

**Notes and Warnings:** The device is designed to be used in heating systems, cooling systems, ventilation systems and - in general - in civil installations with features corresponding to the above-mentioned specifications. It can not be used outside the intended application field.



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### VERSIONS

POWERED-ON piloting	Operating time	Code	CURRENT MODE piloting	Operating time	Code
0 - 10V 24V AC / DC	30 sec 60 sec 120 sec	SM4010F030 SM4010F060 SM4010F120	0 - 20mA 24V AC / DC	30 sec 60 sec 120 sec	SM4020T030 SM4020T060 SM4020T120
2 - 10V 24V AC / DC	30 sec 60 sec 120 sec	SM4210F030 SM4210F060 SM4210F120	4 - 20mA 24V AC / DC	30 sec 60 sec 120 sec	SM4420T030 SM4420T060 SM4420T120

### CURRENT MODE PILOTING OPTIONS

Power supply 100... 240V AC replace the **4** with the **2** in the code - example SM2420T030

12V DC power supply \* replace the **4** with the **5** in the code - example SM5420T060

\* 30-second operating time not available.

For powered-on piloting versions with double half-wave AC power supply, please contact our technical office

### FUNCTIONS

#### ● Proportional positioning

The **SINTESI SMART** motorised valve receives an analogue positioning command which the actuator translates into a proportional angular movement of the valve. Therefore, with an analogical signal ranging from 0V and 10V, a 5V command positions the actuator on a 45° angle corresponding to the 50% of the nominal stroke.

#### ● Auto-calibration

The actuator is programmed in order to make a calibration cycle every 2000 inversion of the sense of rotation commands. The purpose of the procedure is reaching the calibration point located at the complete closed position of the actuator. Afterwards, the actuator resumes its normal operation and the counter is reset to zero.

**Note:** the procedure does not take place if the actuator reaches the close position before the 2000 inversion commands.

#### ● Positioning feedback

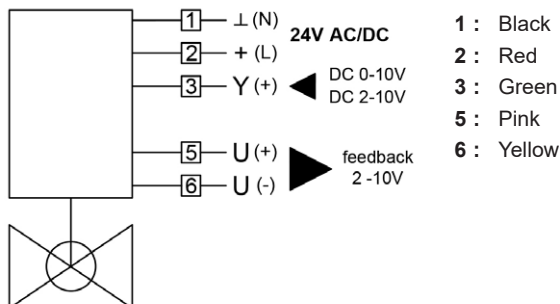
The positioning feedback is an analogical voltage signal, which is electronically generated and ranging from 2 to 10V. This signal is proportional to the angular position reached by the actuator and it can be used with monitoring systems or to control a second motorised valve. When the feedback generates an outlet of 0V the actuator detects a fault and needs to cut and restore the power supply in order to reset the system.

**Caution:** The system does not guarantee any matching between the feedback value and the real position of the motorised valve.

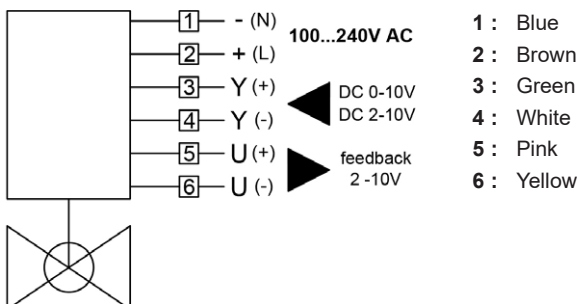
### ELECTRICAL CONNECTIONS

#### POWERED-ON PILOTING 0-10V / 2-10V

##### LOW VOLTAGE



##### HIGH VOLTAGE



**WARNING!** The version with 24V supply and voltage control has a single half-wave power stage: the negative reference of the proportional control is in shared with the negative one of the power supply.

**NOTES** • The versions with the voltage position signal can be connected in parallel. • The connection of the power cable should be made inside a branch box with at least an IP54 protection.



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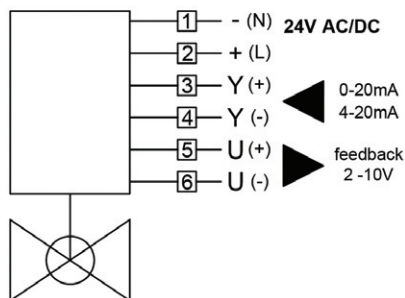
# SINTESI SMART

## ROTARY ACTUATOR FOR BALL VALVES WITH PROPORTIONAL CONTROL

### ELECTRICAL CONNECTIONS

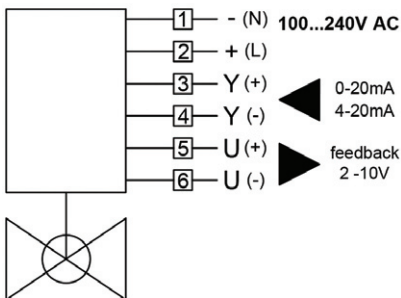
#### CURRENT MODE PILOTING 0-20mA / 4-20mA

##### LOW VOLTAGE



1 : Black  
2 : Red  
3 : Green  
4 : White  
5 : Pink  
6 : Yellow

##### HIGH VOLTAGE



1 : Blue  
2 : Brown  
3 : Green  
4 : White  
5 : Pink  
6 : Yellow

NOTES • The connection of the power cable should be made inside a branch box with at least an IP54 protection.

### COUPLING SEQUENCE TO BALL VALVES WITH FAST CONNECTION



### MOTOIRISED VALVE SEALING WITH LEAD

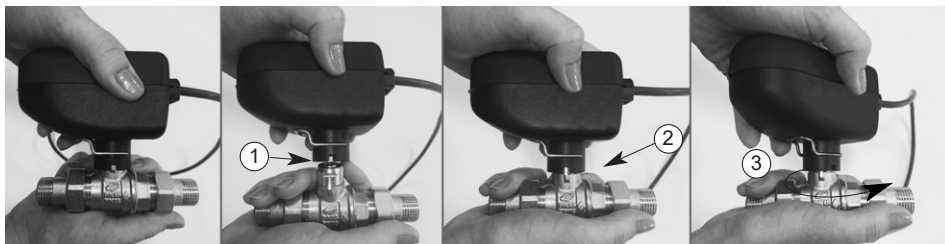


By means of special seals (not included), it is possible to seal the motorised valve with lead, in order to prevent the actuator to be removed from the ball valve.

### MANUAL OPERATION

In case of need, it is possible to open/close the ball valve manually, as follows:

1. Release the actuator from the ball valve;
2. Insert the actuator in the body of the valve, without pressing it;
3. Proceed with the desired manual activation, using the actuator as a knob.



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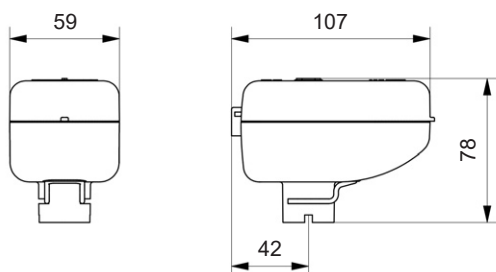
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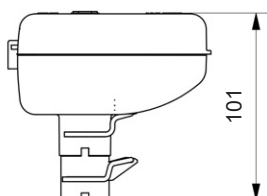
ROTARY ACTUATOR FOR BALL VALVES WITH PROPORTIONAL CONTROL

## OVERALL SIZE

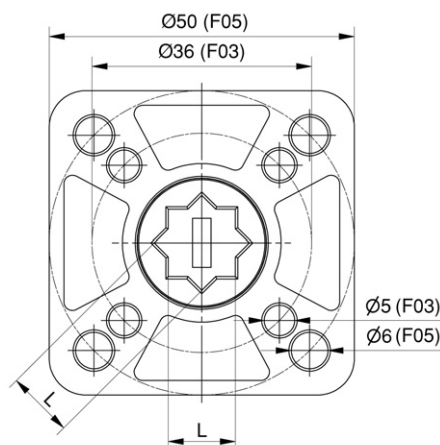
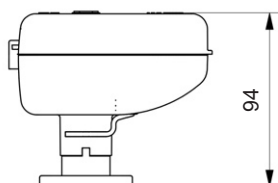
### ACTUATOR



### SPACER • cod. DISN04



### ISO 5211 CONNECTION KIT • cod. AIST01



ISO Connection	L
F03	9
F05	11

## EXAMPLE OF SPECIFICATIONS

**SINTESI SMART actuator**, 0-10V proportional control, 2-10V positioning feedback, maximum torque: 8 Nm, power supply: 24V AC/DC, single half-wave, operating time: 30 sec / 90°, operating angle: 90°, degree of protection: IP54, for ball valve: 2-way / 3-way / 6-way / PICV / by-pass, connection to the ball valve via Sintesi fast push connection.

Brand: **COMPARATO**  
Code: **SM4010F030**

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