



K282X002

Description

K282X002 is an actuator that works both as motor and regulator, to control the delivery temperature with three way mixing valve.

The actuator can be used on three way valves: it controls fixed delivery temperature both heating and cooling, in "stand-alone" functioning;

Versions and product codes

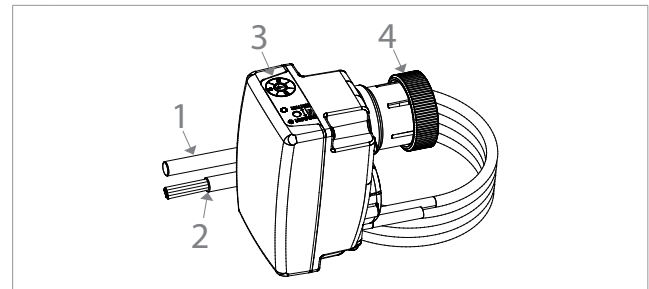
Product code	Supply	Type	Valve connection
K282X002	24 Vac	3-point floating with integrated regulator	M28 x 1,5 mm

Technical data

- Type of actuator: 3-point floating
- Power supply: 24 V 50/60 Hz
- Type of command: automatic only
- Propulsion force: 120 N ±20 %
- Maximum stroke: 6,5 mm
- Opening time at maximum speed: 85 sec
- Electricity absorption: 5 VA
- Protection class: IP40
- Storage temperature range: -34÷55 °C with R.H non-condensing
- Operating ambient temperature range: 0÷55 °C with R.H non-condensing
- Electric cable length: 1,5 m (7 x 0,14 mm²)
- Ring nut for fixing to valve body: M28x1,5 mm, in brass
- Delivery temperature probe:
 - NTC sensor 30 kΩ at 25 °C,
 - sensor bulb 47 mm long, external Ø 6 mm
 - 2x0,22 mm² cable, 1,5 m long, external Ø = 3 mm,
- Black external sheath, self-extinguishing
- Dual color LED (green/red), function status indicator
- Color: white/grey

Main features

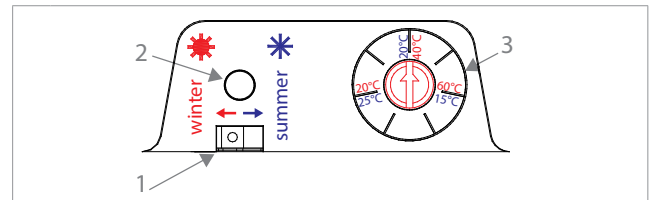
- M28x1,5 mm brass ring fixing to valve body.
- Immersion probe for delivery water temperature with bulb, length 47 mm and Ø 6 mm, connected to the actuator body.
- Proportional-integral (PI) digital electronic regulator inserted in the actuator body.
- Motorized manual control (open ring) of the valve by selecting the opening position (from 0% to 100%).
- Stand-alone functioning: manual selection by summer/winter mode selector.
- Stand-alone functioning: manual selection of the working set by rotating potentiometer with double adjustment scale. Winter mode from 20 °C to 60 °C; summer mode from 15 °C to 25 °C.



Legend

1	Delivery temperature probe
2	Multipole cable for electric connections
3	Frontal side and frontal panel of the actuator
4	Ring fixing to valve body

Control elements



Legend

1	SUMMER/WINTER mode selector
2	RED/GREEN signalling led
3	Rotating potentiometer with double adjustment scale

The summer/winter mode selector and the rotating potentiometer with double adjustment scale to select the fixed set for the delivery temperature control are on the frontal side of K282 actuator.

Once summer/winter switching has been made through selector, position the rotating potentiometer at the desired set according to the appropriate graduated scale: the scale working during the winter is indicated with red numbers (range from 20 °C to 60 °C ascending clockwise); the scale working during the summer is indicated with blue numbers (range from 15 °C to 25 °C ascending anticlockwise).



Warning.

In stand-alone functioning of K282 actuator, after summer/winter switching through selector, position the rotating potentiometer at the desired set according to the appropriate graduated scale.



Signalling elements

The led on the frontal side of actuator provides status information.

- Fixed red: indicates stand-alone functioning in WINTER mode.
- Fixed green: indicates stand-alone functioning in SUMMER mode.

Electrical connection

Conductor colour	Function
BROWN (marrone)	24 V~ supply connection
GRAY (grigio)	24 V~ supply connection

When 24 V supply is activated to K282 actuator, the integrated electronic regulator starts a cycle of adjustment in which the stem of the actuator is led to complete by-pass position (the whole stem has gone back in the actuator body).

Connection to bus

Warning.
The connection to the Bus conductor is compatible only with the Giacoklima thermoregulation (KPM20 regulator and accessories)

Warning.
Before connecting K282 actuator, make sure that network tension IS NOT CONNECTED and that it corresponds to the one written on the back of the device (24 V~). The device must be installed by qualified staff only.

Conductor color	Function
YELLOW (giallo)	RT+ Signal (RS485 standard)
GREEN (verde)	RT- Signal (RS485 standard)
WHITE (bianco)	Com Common (signal + supply)
BLUE (blu)	V SELV supply

Addressing

Legend	
1	Jumper for manual control (open ring) of the actuator
2	8 way microswitch for actuator addressing

The addressing through microswitch with several ways is not relevant when K282 actuator is used as single device (stand-alone configuration): it is not necessary to make any configuration in this application.

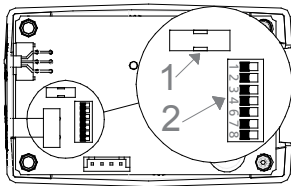
All microswitch sliders are positioned on "OFF" (side with 1-8 numbers) on delivery. K282 actuator uses selectors from 1 to 6 to assign an address between 0 and 31: check the address to assign on the design documentation of the system.

Addr.	Position of microswitch ways					
	1	2	3	4	5	6
0	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF
17	ON	OFF	OFF	OFF	ON	OFF
18	OFF	ON	OFF	OFF	ON	OFF
19	ON	ON	OFF	OFF	ON	OFF
20	OFF	OFF	ON	OFF	ON	OFF
21	ON	OFF	ON	OFF	ON	OFF
22	OFF	ON	ON	OFF	ON	OFF
23	ON	ON	ON	OFF	ON	OFF
24	OFF	OFF	OFF	ON	ON	OFF
25	ON	OFF	OFF	ON	ON	OFF
26	OFF	ON	OFF	ON	ON	OFF
27	ON	ON	OFF	ON	ON	OFF
28	OFF	OFF	ON	ON	ON	OFF
29	ON	OFF	ON	ON	ON	OFF
30	OFF	ON	ON	ON	ON	OFF
31	ON	ON	ON	ON	ON	OFF

Warning.
Make sure that the assigned address is correct: it is not possible to have two devices with the same address in the same system.



Motorized manual control of the valve



Legend

1	Jumper for manual control (open ring) of the actuator
2	8 way microswitch for actuator addressing

The manual positioning (open ring) of the mixing valve is useful when starting a system or in order to check the functioning. This operation can be made with K282 actuator by extracting the apposite jumper on the board, after removing the upper shell: the rotating potentiometer position represents the required opening for the mixing valve in this manual state of functioning. The opening of the direct way from the boiler of the valve increases by rotating the potentiometer clockwise when Giacomini mixing valves are used. The stem of the actuator is completely retracted (0%) and the mixing valve closes the direct way completely (by-pass position), when the rotating potentiometer is completely rotated anticlockwise; the stem of the actuator is protruding (100%) and the mixing valve opens the direct way completely, when potentiometer is completely rotated clockwise.

For the manual positioning:

- 1) Remove 24 V~ supply to K282 actuator.
- 2) Loosen the actuator ring fixing to valve body and unscrew the actuator completely.
- 3) Remove the upper shell of the actuator by removing the 4 fixing screws.
- 4) Extract the jumper placed on the electronic board as shown in the picture.
- 5) Position the upper shell of the actuator again through the 4 fixing screws.
- 6) Assemble K282X002 actuator on the valve body again.
- 7) Activate 24 V~ supply. The actuator resets completely until it closes the direct way completely (0%). The actuator positions at the indicated opening through the rotating potentiometer.

When the functioning test is finished, follow the instructions and insert the jumper placed on the electronic board.



Warning.

Manual positioning tests of the valve must be carried out once the jumper on the electronic board has been extracted and after assembling again and fixing with the 4 apposite screws the upper shell of the actuator. Do not activate 24 V~ supply before assembling the upper shell again. The manual positioning of the valve must be carried out by qualified staff only.



Warning.

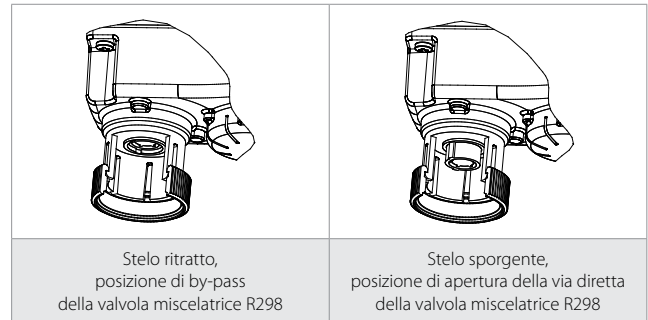
The reading of immersion delivery temperature probe is not taken into account during the manual positioning test of the valve. Make sure that the delivery temperature is not over or under the safety limits according to the kind of system. The manual positioning of the valve must be carried out by qualified staff only.

Installation

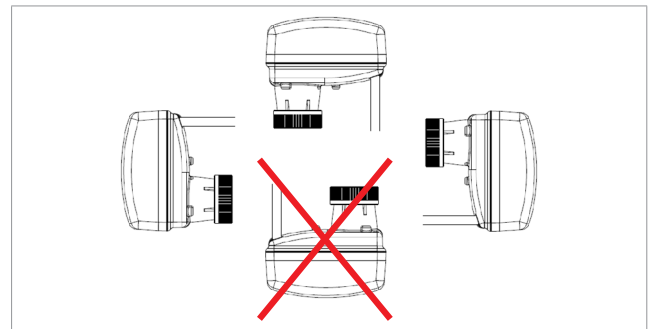
- 1) Unscrew the handwheel protecting body before assembling and adjust the shutter manually on R298 or R298N valve.
- 2) Fix K282X002 actuator through its apposite brass fixing ring: the ring must be screwed to the valve body up to end stroke in order to ensure max. stroke to the shutter.
- 3) Insert the immersion probe in a R227 pit, downstream of the secondary circulator, and block by means of the fixing screw.

Positions of the linear stem of the actuator

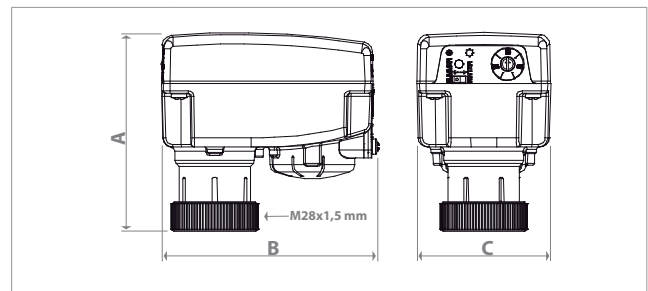
The action of the digital regulator integrated in K282X002 actuator associates the stem completely retracted to the position of complete closure (0%) as shown in the picture; the stem completely protruding from the actuator body is associated to the position of complete opening (100%).



Correct installation positions of K282 actuator



Dimensions



Codice	A [mm]	B [mm]	C [mm]
K282X002	70	78	48

Reference standards

- CE marked
- EMC 2004/108/CE
- Low voltage directive 2006/95/CE

ACTUATOR FOR MIXING VALVES

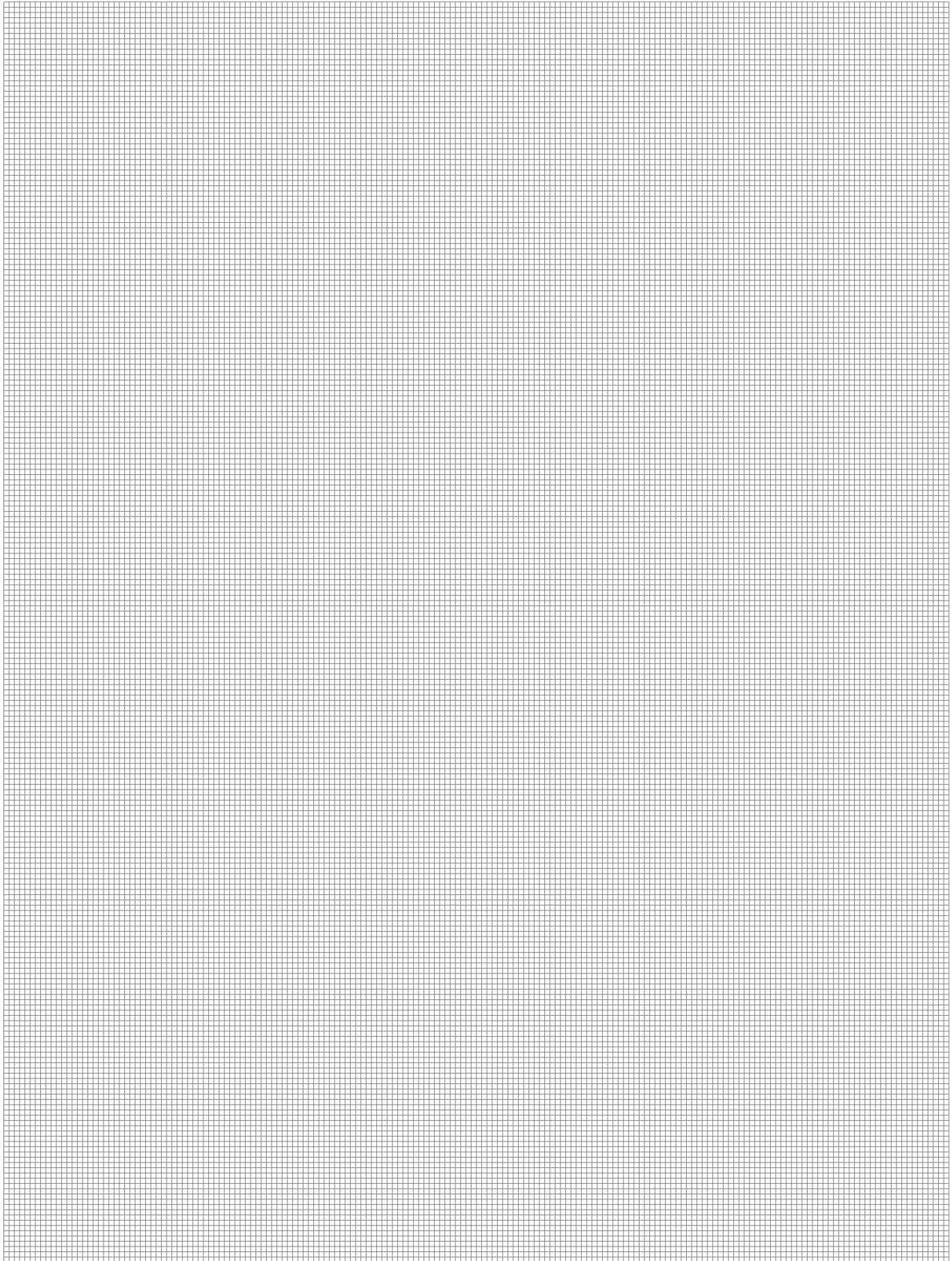
0262EN March 2016

047U31758

**3-POINT FLOATING ACTUATOR (CONNECTION M28 x 1,5 mm)
WITH INTEGRATED REGULATOR
FOR R298 AND R298N MIXING VALVES - K281 SERIES**



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WATER E-MOTION



Additional information

For additional information please check the website www.giacomini.com or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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Giacomini S.p.A. Via per Alzo, 39 - 28017 San Maurizio d'Opaglio (NO) Italy



K282X022

Description

K282X022 is an actuator that works both as motor and regulator, to control the delivery temperature with three way mixing valve.

The actuator can be used on three way valves: it controls fixed delivery temperature both heating and cooling, in "stand-alone" functioning;

Versions and product codes

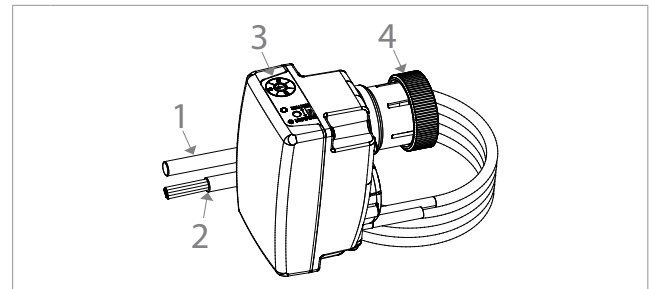
Product code	Supply	Type	Valve connection
K282X022	24 Vac	3-point floating with integrated regulator	M30 x 1,5 mm

Technical data

- Type of actuator: 3-point floating
- Power supply: 24 V 50/60 Hz
- Type of command: automatic only
- Propulsion force: 120 N ±20 %
- Maximum stroke: 6,5 mm
- Opening time at maximum speed: 85 sec
- Electricity absorption: 5 VA
- Protection class: IP40
- Storage temperature range: -34÷55 °C with R.H non-condensing
- Operating ambient temperature range: 0÷55 °C with R.H non-condensing
- Electric cable length: 1,5 m (7 x 0,14 mm²)
- Ring nut for fixing to valve body: M30x1,5 mm, in brass
- Delivery temperature probe:
 - NTC sensor 30 kΩ at 25 °C,
 - sensor bulb 47 mm long, external Ø 6 mm
 - 2x0,22 mm² cable, 1,5 m long, external Ø = 3 mm,
- Black external sheath, self-extinguishing
- Dual color LED (green/red), function status indicator
- Color: white/grey

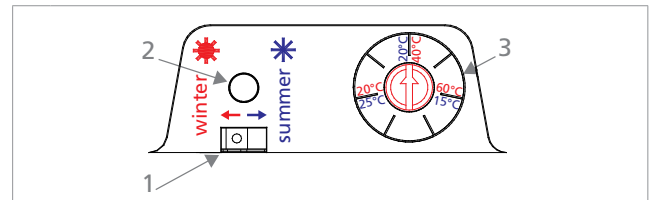
Main features

- M30x1,5 mm brass ring fixing to valve body.
- Immersion probe for delivery water temperature with bulb, length 47 mm and Ø 6 mm, connected to the actuator body.
- Proportional-integral (PI) digital electronic regulator inserted in the actuator body.
- Motorized manual control (open ring) of the valve by selecting the opening position (from 0% to 100%).
- Stand-alone functioning: manual selection by summer/winter mode selector.
- Stand-alone functioning: manual selection of the working set by rotating potentiometer with double adjustment scale. Winter mode from 20 °C to 60 °C; summer mode from 15 °C to 25 °C.



Legend	
1	Delivery temperature probe
2	Multipole cable for electric connections
3	Frontal side and frontal panel of the actuator
4	Ring fixing to valve body

Control elements



Legend	
1	SUMMER/WINTER mode selector
2	RED/GREEN signalling led
3	Rotating potentiometer with double adjustment scale

The summer/winter mode selector and the rotating potentiometer with double adjustment scale to select the fixed set for the delivery temperature control are on the frontal side of K282 actuator.

Once summer/winter switching has been made through selector, position the rotating potentiometer at the desired set according to the appropriate graduated scale: the scale working during the winter is indicated with red numbers (range from 20 °C to 60 °C ascending clockwise); the scale working during the summer is indicated with blue numbers (range from 15 °C to 25 °C ascending anticlockwise).

Warning.
In stand-alone functioning of K282 actuator, after summer/winter switching through selector, position the rotating potentiometer at the desired set according to the appropriate graduated scale.



Signalling elements

The led on the frontal side of actuator provides status information.

- Fixed red: indicates stand-alone functioning in WINTER mode.
- Fixed green: indicates stand-alone functioning in SUMMER mode.

Electrical connection

Conductor colour	Function
BROWN (marrone)	24 V~ supply connection
GRAY (grigio)	24 V~ supply connection

When 24 V supply is activated to K282 actuator, the integrated electronic regulator starts a cycle of adjustment in which the stem of the actuator is led to complete by-pass position (the whole stem has gone back in the actuator body).

Connection to bus

Warning.
The connection to the Bus conductor is compatible only with the Giacoklima thermoregulation (KPM20 regulator and accessories)

Warning.
Before connecting K282 actuator, make sure that network tension IS NOT CONNECTED and that it corresponds to the one written on the back of the device (24 V~). The device must be installed by qualified staff only.

Conductor color	Function
YELLOW (giallo)	RT+ Signal (RS485 standard)
GREEN (verde)	RT- Signal (RS485 standard)
WHITE (bianco)	Com Common (signal + supply)
BLUE (blu)	V SELV supply

Addressing

Legend	
1	Jumper for manual control (open ring) of the actuator
2	8 way microswitch for actuator addressing

The addressing through microswitch with several ways is not relevant when K282 actuator is used as single device (stand-alone configuration): it is not necessary to make any configuration in this application.

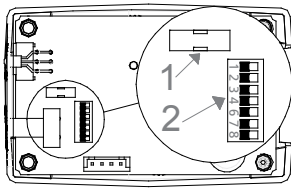
All microswitch sliders are positioned on "OFF" (side with 1-8 numbers) on delivery. K282 actuator uses selectors from 1 to 6 to assign an address between 0 and 31: check the address to assign on the design documentation of the system.

Addr.	Position of microswitch ways					
	1	2	3	4	5	6
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7	ON	ON	ON	OFF	OFF	OFF
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9	ON	OFF	OFF	ON	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF
17	ON	OFF	OFF	OFF	ON	OFF
18	OFF	ON	OFF	OFF	ON	OFF
19	ON	ON	OFF	OFF	ON	OFF
20	OFF	OFF	ON	OFF	ON	OFF
21	ON	OFF	ON	OFF	ON	OFF
22	OFF	ON	ON	OFF	ON	OFF
23	ON	ON	ON	OFF	ON	OFF
24	OFF	OFF	OFF	ON	ON	OFF
25	ON	OFF	OFF	ON	ON	OFF
26	OFF	ON	OFF	ON	ON	OFF
27	ON	ON	OFF	ON	ON	OFF
28	OFF	OFF	ON	ON	ON	OFF
29	ON	OFF	ON	ON	ON	OFF
30	OFF	ON	ON	ON	ON	OFF
31	ON	ON	ON	ON	ON	OFF

Warning.
Make sure that the assigned address is correct: it is not possible to have two devices with the same address in the same system.



Motorized manual control of the valve



Legend

1	Jumper for manual control (open ring) of the actuator
2	8 way microswitch for actuator addressing

The manual positioning (open ring) of the mixing valve is useful when starting a system or in order to check the functioning. This operation can be made with K282 actuator by extracting the apposite jumper on the board, after removing the upper shell: the rotating potentiometer position represents the required opening for the mixing valve in this manual state of functioning. The opening of the direct way from the boiler of the valve increases by rotating the potentiometer clockwise when Giacomini mixing valves are used. The stem of the actuator is completely retracted (0%) and the mixing valve closes the direct way completely (by-pass position), when the rotating potentiometer is completely rotated anticlockwise; the stem of the actuator is protruding (100%) and the mixing valve opens the direct way completely, when potentiometer is completely rotated clockwise.

For the manual positioning:

- 1) Remove 24 V~ supply to K282 actuator.
- 2) Loosen the actuator ring fixing to valve body and unscrew the actuator completely.
- 3) Remove the upper shell of the actuator by removing the 4 fixing screws.
- 4) Extract the jumper placed on the electronic board as shown in the picture.
- 5) Position the upper shell of the actuator again through the 4 fixing screws.
- 6) Assemble K282X022 actuator on the valve body again.
- 7) Activate 24 V~ supply. The actuator resets completely until it closes the direct way completely (0%). The actuator positions at the indicated opening through the rotating potentiometer.

When the functioning test is finished, follow the instructions and insert the jumper placed on the electronic board.



Warning.

Manual positioning tests of the valve must be carried out once the jumper on the electronic board has been extracted and after assembling again and fixing with the 4 apposite screws the upper shell of the actuator. Do not activate 24 V~ supply before assembling the upper shell again. The manual positioning of the valve must be carried out by qualified staff only.



Warning.

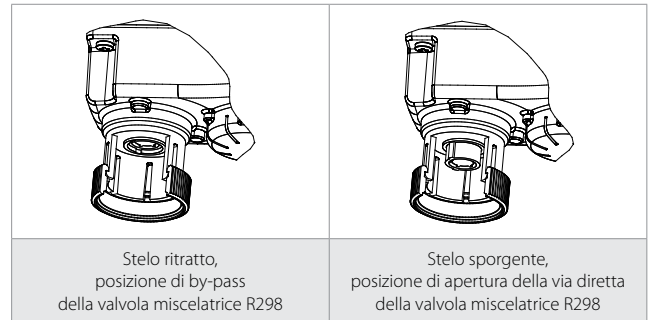
The reading of immersion delivery temperature probe is not taken into account during the manual positioning test of the valve. Make sure that the delivery temperature is not over or under the safety limits according to the kind of system. The manual positioning of the valve must be carried out by qualified staff only.

Installation

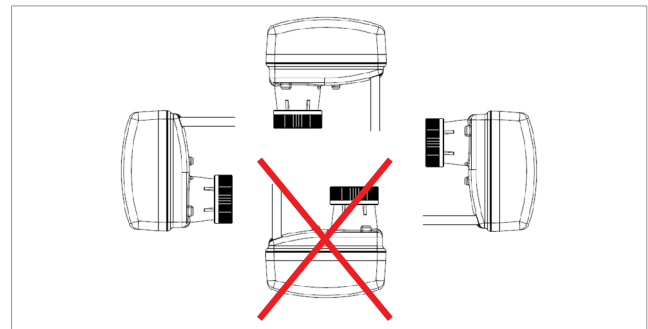
- 1) Unscrew the handwheel protecting body before assembling and adjust the shutter manually on R298 or R298N valve.
- 2) Fix K282X022 actuator through its apposite brass fixing ring: the ring must be screwed to the valve body up to end stroke in order to ensure max. stroke to the shutter.
- 3) Insert the immersion probe in a R227 pit, downstream of the secondary circulator, and block by means of the fixing screw.

Positions of the linear stem of the actuator

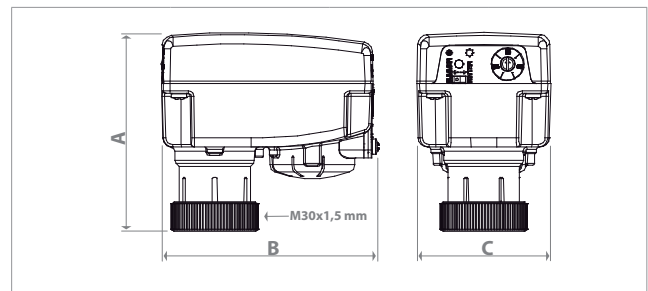
The action of the digital regulator integrated in K282X022 actuator associates the stem completely retracted to the position of complete closure (0%) as shown in the picture; the stem completely protruding from the actuator body is associated to the position of complete opening (100%).



Correct installation positions of K282 actuator



Dimensions



Codice	A [mm]	B [mm]	C [mm]
K282X022	70	78	48

Reference standards

- CE marked
- EMC 2004/108/CE
- Low voltage directive 2006/95/CE

ACTUATOR FOR MIXING VALVES

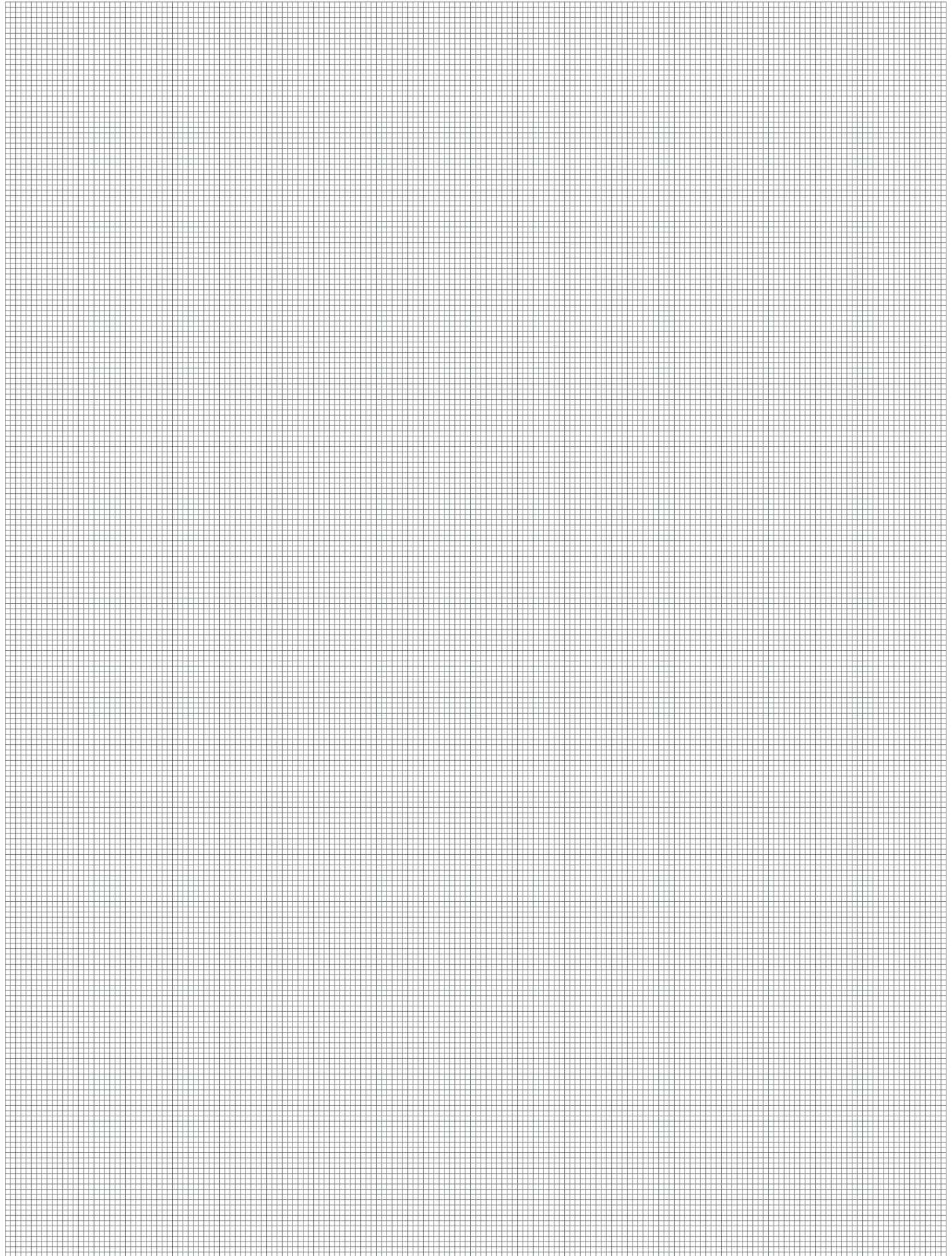
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**3-POINT FLOATING ACTUATOR (CONNECTION M30 x 1,5 mm)
WITH INTEGRATED REGULATOR
FOR R298 AND R298N MIXING VALVES - K281 SERIES**



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Additional information

For additional information please check the website www.giacomini.com or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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