


K281X012

Description

K281 actuator serves for the control of the mixing valves R298 and R298N in heating and cooling systems.

The proportional version 0-10 V, K281X012, can be driven by KPM30 or KMPM31 regulators.

Versions and product codes

Product code	Supply	Type
K281X012	24 Vac	Proportional 0-10 V

Accessories

P19Y001: M30x1,5 mm bush for adaptation on R298 or R298N valves with M28x1,5 mm thread. With plastic cap for protection and regulation/manual interception (alternative to the actuator).

Technical data

Product code	K281X012
Actuator model	0-10 V
Regulation type to be combined with	KPM30 or KPM31 regulators
Supply	24 V; 50/60 Hz
Control type	Automatic
Thrust force	120 N +30 % -20 %
Maximum stroke	6,3 mm
Opening time to max. stroke	50 sec.
Absorption	2,5 VA / 1,5 W
Protection class	IP43
Storage temperature range	-20÷65 °C with U.R. non condensing
Room temperature range of operation	0÷50 °C with U.R. non condensing
Electrical connections	cabl lenght 1,5 m (3 x 0,35 mm ²)
Operation noise	< 30 dB(A)

Materials

- Cover: ABS + PC
- Stem: PA66 - GF30
- Thread nut: UNI EN 12164 - CW614N brass

Main features

- Bush for fixing to the valve body M30x1,5mm, brass
- Two-colour LED (green/red); indicator of the operation status
- Colour: white

Operation

Calibration Cycle

When the power is applied, the actuator self-calibrates performing a complete cycle. The actuator moves the stem down for a complete mechanical valve stroke until no changes are detected. Once the auto-zero is detected the actuator moves the stem accordingly with the input signal. When the input signal increases (eg. from 0V to 10V) the actuator stem extends if the actuator is configured as Direct Action (DA) or retracts if the actuator is configured as Reverse Action (RA). When the input signal decreases (eg. from 10 V to 0 V) the actuator stem retracts if the actuator is configured as Direct Action (DA) or extends if the actuator is configured as Reverse Action (RA).

End of stroke confirmation

When the input signal is at 100% the actuator turns on every 2 hours and drives in the signal direction for approximately 60 seconds to confirm the end of stroke position.

Action	Input	Direction
Direct Acting	0...10 Vdc	↓ Actuator stem extends
	10...0 Vdc	↑ Actuator stem retracts
Reverse Acting	0...10 Vdc	↑ Actuator stem retracts
	10...0 Vdc	↓ Actuator stem extends

Indication about the operation status

The proportional models are equipped with a bi-colour LED (green-red) which provides the information about the operating status and diagnostic as follow:

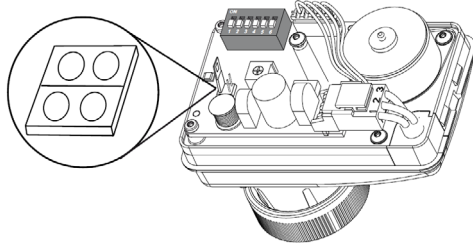
Led	Meaning
Off	No power supply
Green blinking	Moving to position
Green blinking	End stroke confirmation
Green steady on	Position reached
Red blinking	Cycle
Red steady on	4/20 mA or 2/10 Vdc signal lost

The led is visible by opening the motor cover, with the help of a screw-driver.

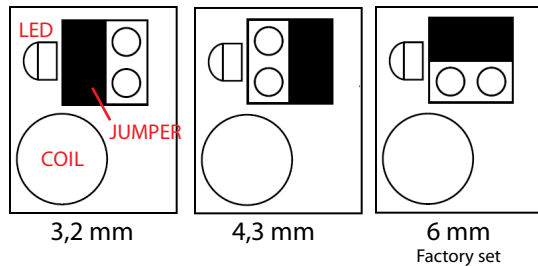


JUMPER setting

All the proportional models have one JUMPER which allow the user to change the following parameters:

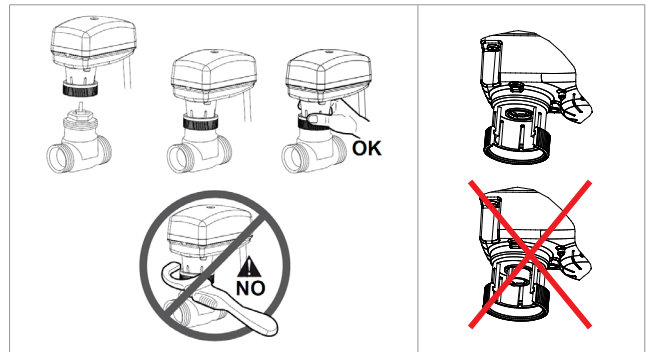
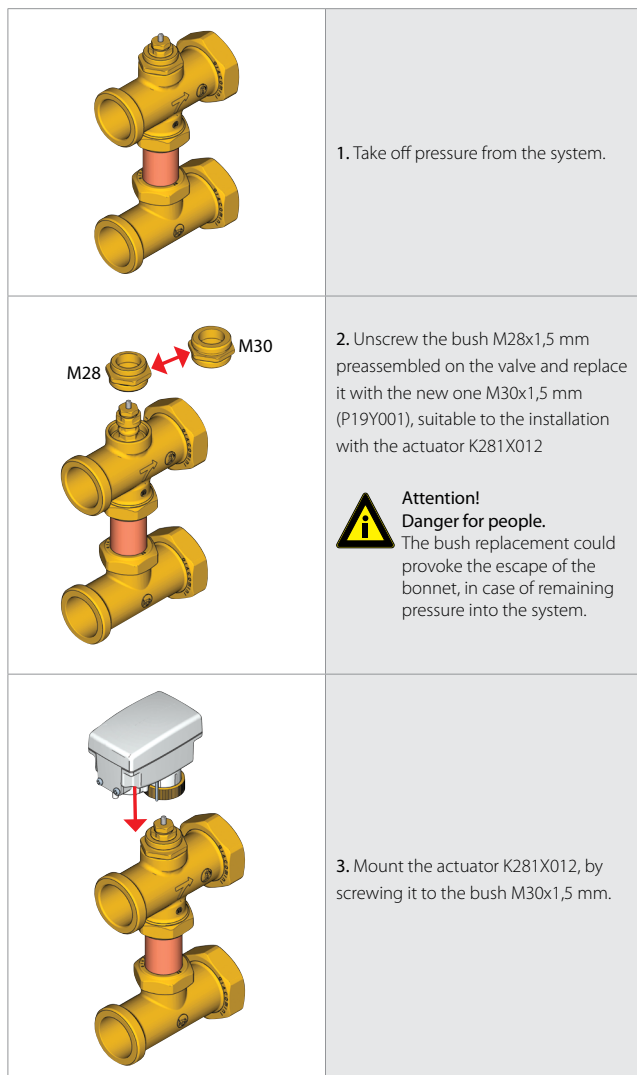


The actuator is factory set with 6.0 mm but at convenience the stroke can be changed to 3.2 mm or 4.3 mm.



Installation

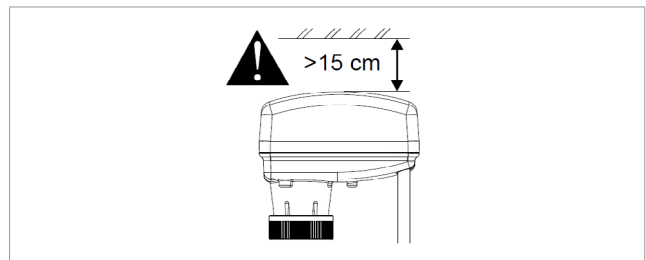
The actuator K281X012 can be mounted on the mixing valves with bonnet, series R298 or R298N, upon replacement on these last one of the threaded bush M28x1,5 with the bush M30x1,5 mm.



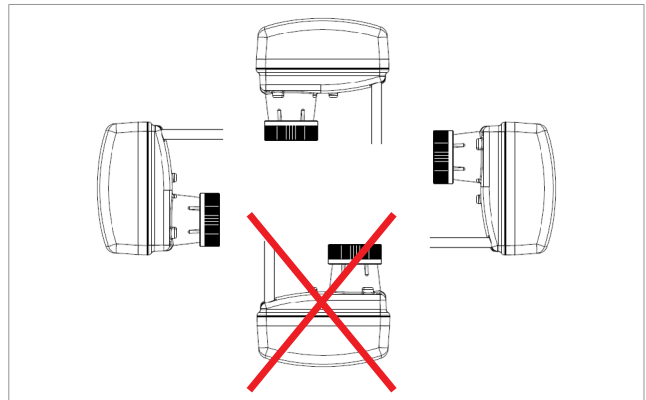
Attention!

Never use the actuator as a mounting lever.

- It is recommended that the valves be mounted upright or at angles not greater than 90° in an easily accessible location.
- Do not mount the actuator upside down to avoid dripping water, which could enter the housing and damage the mechanism or motor.
- Do not cover with insulating material.
- Sufficient clearance must be allowed for actuator removal (refer to the dimension drawings).



Allowed installation positions



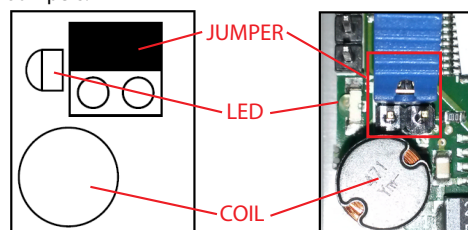
Use of the motor combined with KPM30 or KPM31 regulators

In case of use of the motor with the KPM30 or KPM31 regulators (0-10 V), set the DIP SWITCHES and the JUMPERS in the following position:

Dip Switches:



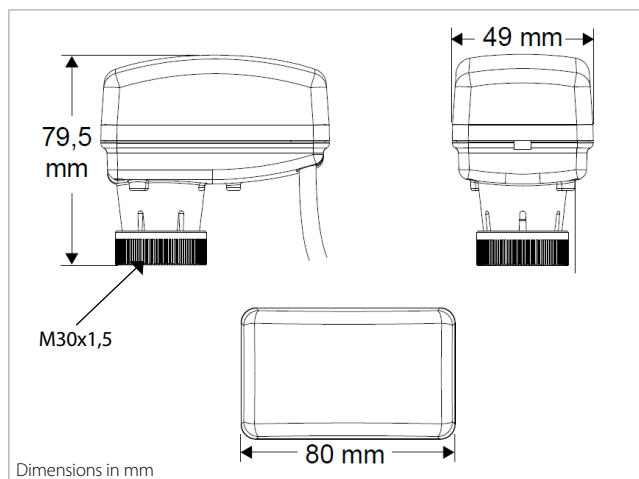
Jumpers:



esempio



Dimensions



Conformity

- CE marking
- 2004/108/CE EMC
- 2006/95/CE Low voltage Directive

Product specifications

K281X012

Proportional 0-10 V actuator, to control mixing valves R298 or R298N. Fixing bush to the valve body type M30x1,5 made of brass. Supply 24 V; 50/60 Hz. Thrust force 120 N +30% -20%. Absorption 2.5 VA; 1,5 W. Maximum stroke 6,3 mm. Opening time to max. stroke 50 sec. Protection class IP43. Operation room conditions 0÷50 °C with not condensing R.H.. Dimensions 80x79,5x49 mm (LxHxD). CE marked. Complying with Directive EMC 2004/108/CE and Low Voltage Directive 2006/95/CE. It can be controlled automatically through KPM30 or KPM31 regulators.

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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