

# EARTHQUAKE SENSITIVE SAFETY VALVE WITH MANUAL REARMING model GrShake

## DESCRIPTION

GrShake is an automatic seismic safety gas valve, certified for explosive atmosphere in ATEX Zone 1 hazardous areas, according to Directives 94/9 and 99/92 CE ATEX. It is designed for limiting the uncontrolled gas leaks caused by seismic events downstream the installation location of the device. Its switching threshold is set to allow the discrimination between the seismic events capable to cause significant building damages and the vibrations caused by human activity or low intensity earthquakes.

## TYPICAL APPLICATIONS

- Gas distribution installations
- Interior gas installations
- LPG distribution installations

## TECHNICAL FEATURES

**Power**  
Mains power is not required. The device is powered by a 3 Vdc heavy duty Lithium battery. The optional capacitive keyboard is also powered by a 3 Vdc heavy duty Lithium battery. The battery life depends on the operating and ambient conditions (temperature, humidity etc.). Typically, the battery life is 10 years long. It may be replaced by qualified personnel only.

**Operating temperature:** - 20 °C ÷ + 60 °C (- 68 °F ÷ + 140 °F)

**Maximal operating pressure :** 35 mbar

**Compatible gases:** Groups 1; 2 and 3 according to UNI EN 437

### Switching

Sinusoidal strain switching band:

- acceleration  $\geq 2,1 \text{ m/s}^2$
- horizontal strain duration  $\geq 1 \text{ s}$
- frequency  $1 \div 3,3 \text{ Hz}$

Sinusoidal strain non-switching band:

- acceleration  $\leq 1,4 \text{ m/s}^2$
- frequency  $1 \div 3,3 \text{ Hz}$

**Available sizes:** 3/4", 1" și 1 1/4", with various connection solutions

### User interface (two modes available)

- REED contacts switched by permanent magnet (supplied)
- PIN security function capacitive keyboard (user customisable)

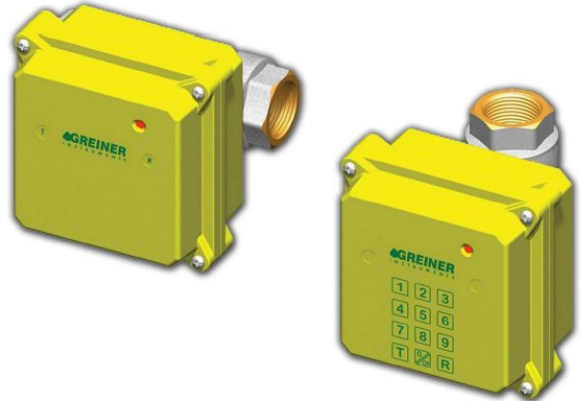
### Installation

The device must be firmly fastened on a rigid structure, capable to carry the seismic event, without attenuation or amplification.

Proper mounting examples:

- transversely on the steel stirrup, supplied as an accessory
- by direct wall mounting of the pipe which is to be controlled by the valve, with collars placed at 25 cm max. from the valve itself
- as a part of the gas meter mounting kit.

The valve may be installed either horizontally or vertically, depending on the model, with a  $\pm 5$  degree max. level tolerance. Do not expose to direct sunlight; if necessary, the valve shall be screened. Avoid the electrostatic charging on the surface of the yellow plastic case during the installation.



### Flow direction

The gas flow through the valve shall be as indicated by the arrow on the body, i.e.:

- from left to right on a horizontally mounted valve
- from bottom to top on a vertically mounted valve.

See also „DIMENSIONS” paragraph.

### Case

PA6 glass fiber armed polyamide, small sized (124 x 124 x 81 mm) case, protection degree IP66. Given the valve is installed in locations where the mechanical shock hazard exceeds 4 Joule impact energy, an additional mechanical protection is required.

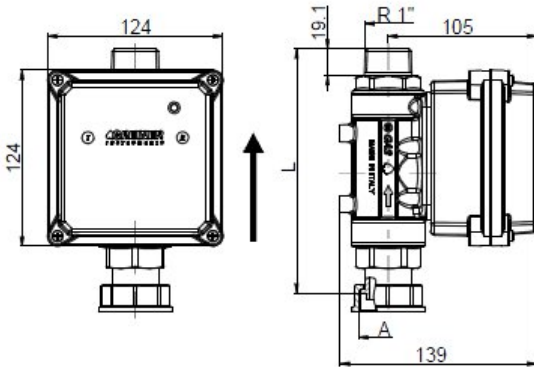
INLET	OUTLET	HORIZONTAL		VERTICAL	
		REED contact	keyboard	REED contact	keyboard
F 3/4"	F 3/4"	GRSORZ00007	GRSORZ00012	GRSVRT00008	GRSVRT00021
F 1"	F 1"	GRSORZ00001	GRSORZ00016	GRSVRT00001	GRSVRT00017
F 1.1/4"	F 1.1/4"	GRSORZ00010	GRSORZ00020	GRSVRT00012	GRSVRT00025
F 1"	M 1"	GRSORZ00003	GRSORZ00013	GRSVRT00006	GRSVRT00018
F 1.1/4"	M 1.1/4"	GRSORZ00008	GRSORZ00017	GRSVRT00009	GRSVRT00022
Fe 1"	Fe 1"	GRSORZ00006	GRSORZ00021	GRSVRT00011	GRSVRT00015
Cap nut 1"	M 1"	GRSORZ00004	GRSORZ00014	GRSVRT00014	GRSVRT00019
Cap nut 1 1/4"	M 1"	GRSORZ00011	GRSORZ00018	GRSVRT00002	GRSVRT00023
F 1"	Dielectric F 1"	GRSORZ00002	GRSORZ00022	GRSVRT00010	GRSVRT00016
F 1"	Dielectric M 1"	GRSORZ00009	GRSORZ00015	GRSVRT00013	GRSVRT00024
Dielectric F 1"	Dielectric F 1"	GRSORZ00005	GRSORZ00019	GRSVRT00007	GRSVRT00020

## OPERATING PARAMETERS

- high insensitivity to vertical strains with strength up to  $40 \text{ m/s}^2$ : therefore, undesired activation due to human activity is being avoided;
- low sensitiveness to horizontal strains with frequency higher than 5 Hz: therefore, undesired activation due to human activity is being avoided;
- abnormal state signaling, via red blinking LED;
- device triggering (closing) signaling, consequent to a seismic event, via red blinking LED;
- effective closing check facility, accessible through the TEST command (periodical check at least once a year is recommended).

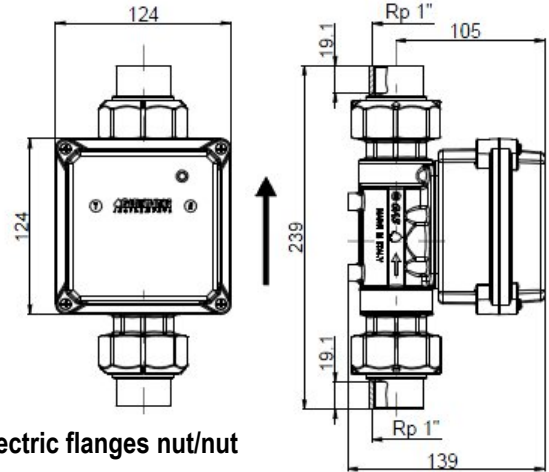
## AVAILABLE MODELS

The above described models (with REED contact or capacitive keyboard, for horizontal or vertical installation) are available in several connection solutions (the arrow indicates the gas flow direction):

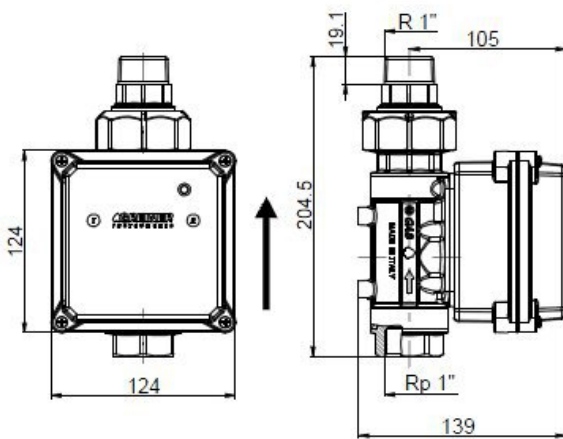


A	G 1"	G 1.¼"
L	170	172

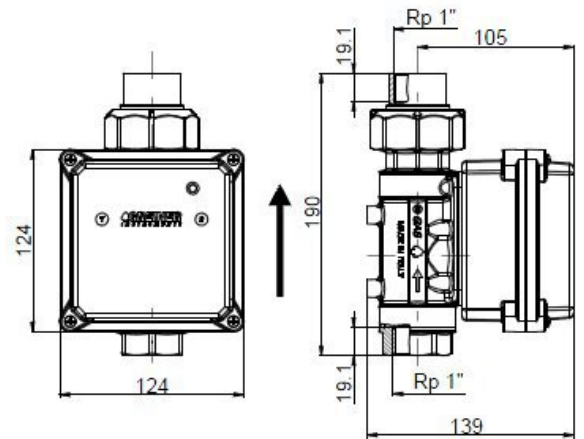
cap nut/screw connections



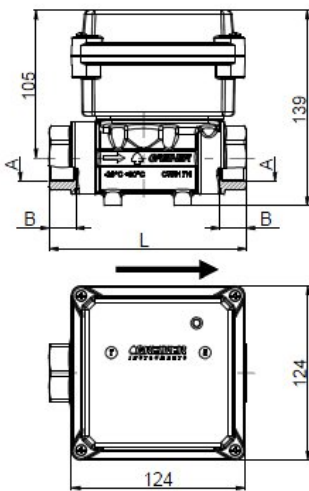
dielectric flanges nut/nut



nut/screw dielectric flange connections

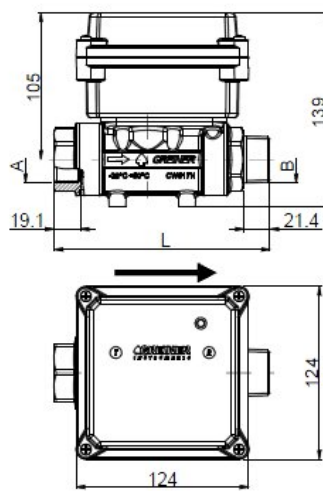


nut/nut dielectric flange connections



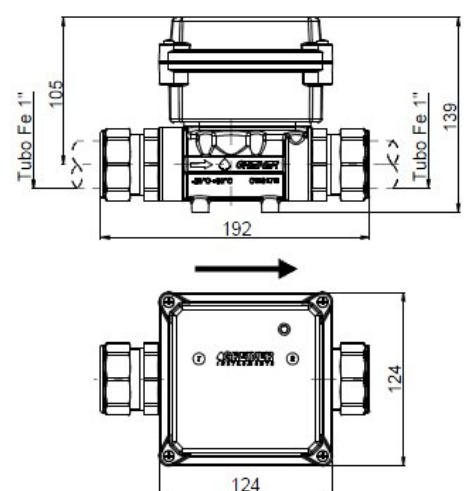
A	Rp ¼"	Rp 1"	Rp 1.¼"
B	16.3	19.1	21.4
L	141	141	149

nut/nut connections



A	Rp 1"	Rp 1.¼"
B	R 1"	R 1.¼"
L	155	161.5

nut/screw connections



pipe tightening connections