

- ◆ using in areas with steams and gases explosive risk
- ◆ Exia spark-safe circuit
- ◆ using also in zone 0 with explosive risk of hydrogen and mines surface objects
- ◆ verified by the Physical technical and testing laboratory in Ostrava - Radvanice



## Purpose

SV156Ex vibration accelerometer is determined for the vibration measurement for environment with steams and gases explosive risk, namely for environment with explosive risk of hydrogen – for chemical plants and for environment with explosive risk of methane, for risk environment in mines sufrage objects. The sensor is determined for connection into the spark-safe circuits till the nominal voltage 30V and max. current 20mA, in temperature range from -40 up to +125°C. The sensor is a piezoelectric shear-type accelerometer. The output quantity is the electric charge proportional to vibration acceleration.

## Use

The sensor is set up on device which vibration will be measured. It is mounted in the measuring place with M8 screw with depth min. 8 mm. The machine contact surface must have the diameter min. 17 mm and has to be sized so that the surface roughness will be better than 3  $\mu\text{m}$ . The sensor is screwed up by the torque moment 3 up to 5 Nm. The surface contacts of sensor and measured objects have to be vaseline lubricated before the assembly. At using in environment with explosive risk, the sensor is connecting only to the sequential electronic devices authorized for using with sensor for given environment. We can mention from AURA products the C9 charge amplifier determined for the separation of protected circuits from the mains voltage. The sensor could be used for environment with steam and gas explosive risk till the zona 0 under conditions there it is necessary to avoid the possibility of arising of electrostatic charge on surface of protective metal tubing in zone 0 by the construction solution. In installations where could arise the charge e.g. by the air flow (fans), there it is necessary to place the leading so that air doesn't flow around the protective tubing (e.g. by means of setting up to the metal protective pipe). Outside the zone 0 the leading along the conductive surface with tubing fixing to this surface min. every 20 cm is sufficient.

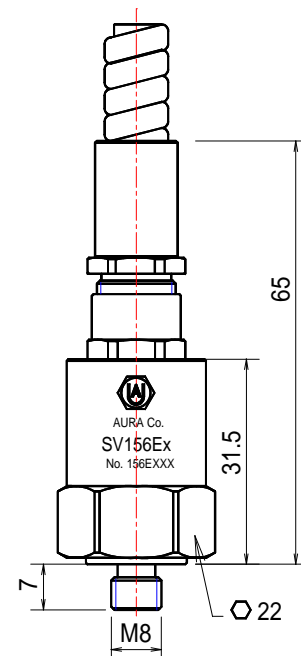


Fig. 1 Sensor SV156Ex

## Preliminary parameters

Parameters <sup>1</sup>	Units	Value
accelerometer type	-	piezoelectric, close
output quantity	-	charge/voltage
design	-	Disc Shear®
nominal charge sensitivity	PC/ms <sup>-2</sup>	3,16
capability	pF	400
weight	g	74
lateral sensitivity	%	<2
resonance frequency (mount. 180 g)	kHz	>22
max. surge acceleration	kms <sup>-2</sup>	10
sensitivity to magnetic field	ms <sup>-2</sup> /T	2
sensitivity to temperature step	ms <sup>-2</sup> /K	0,2
temperature range	°C	-40 up to 125 -40 up to 60 for Zone 0
cover material	-	stainless steel AISI 304
sensitive element	-	piezoelectric
seismic mass	g	10
distance of seismic mass gravity centre from basis	mm	11,5
connector	-	10-32UNF
outlet	-	axial
mount. screw	-	M8
recommended screw	-	-

<sup>1</sup> according to ISO 5347 standard

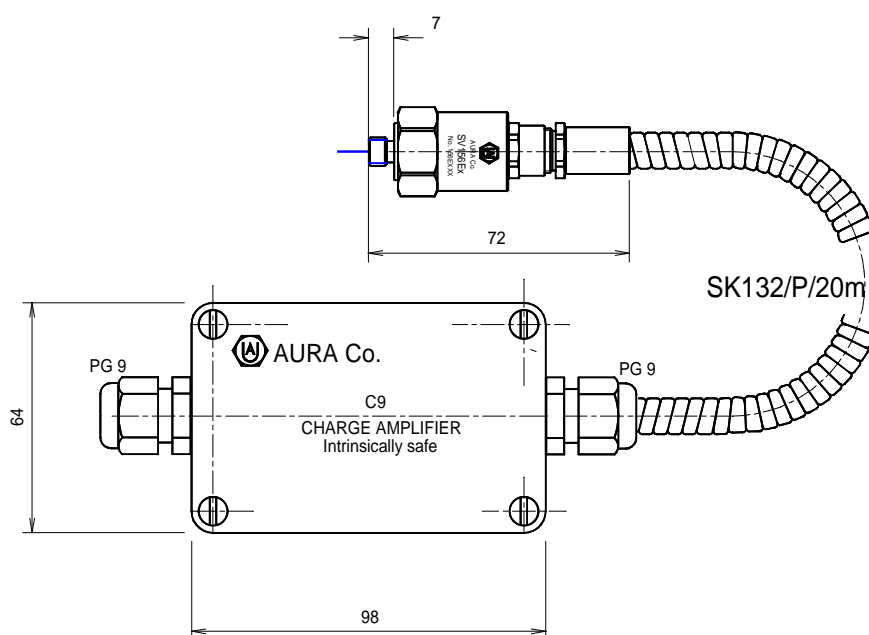


Fig. 2 Set of sensor with amplifier