

Linearized Velocity Sensor

LVS-101 M1 (Horizontal)
LVS-201 M1 (Vertical)

FEATURES

- Frequency response down to 0.5Hz
- Built-in linearization micro-electronics circuit for low frequency amplitude and phase compensation
- Models for horizontal and vertical mounting position
- Stainless steel body
- OK feature to check proper operation of sensor



LVS-101 M3 model

Monitoring solution



Shaft & bearing vibration - absolute

Typical applications



Hydrogenerators



Pumps, fan, cooling towers...



Gas & steam turbines

DESCRIPTION

The LVS-101 and LVS-201 velocity sensors have been designed for low frequency vibration monitoring applications of rotating machines. More specifically, the sensors fulfil the special low frequency requirements of very low speed hydroelectric machines.

The LVS sensors operate in accordance with the electrodynamic principle and are used for measuring the bearing absolute vibration of the machines.

The sensing element of the sensor is a coil supported by high precision springs moving around a permanent magnet which produces a voltage directly proportional to the vibration velocity.

By design, the sensor has an excellent sensitivity and linearity down to very low vibration levels. The built-in electronics allows the sensor to accurately monitor vibration frequency down to 0.5Hz.

Horizontal and vertical model of sensors are available. The sensor provides two voltage outputs proportional to the vibration velocity :

- A raw output corresponding to buffered non-linearized signal
- Low frequency compensated dynamic vibration velocity signal for monitoring purposes down to 0.5 Hz and signal analysis

The sensor can be powered with +24VDC or -24VDC depending on the ordered version.

GLOBAL SPECIFICATIONS

OPERATION

Sensitivity	100mV/mm/s $\pm 1\%$ @80Hz	
Transverse sensitivity	< 7% max. of nominal	
Maximum displacement	1.8mm peak-peak	
Natural frequency	8Hz ± 0.75 Hz of measuring element	
Output	Linearized	Raw
Impedance	4k Ω	4k Ω
Output bias voltage	+6V ± 1 V for +24V _{DC}	~+13V for +24V _{DC}
	-6V ± 1 V for -24V _{DC}	~-11V for -24V _{DC}
Maximum output voltage	5V peak	5V peak
Temperature coefficient	0.1%/°C typ.	n/a
Typical frequency response at 2mm/s	0.5Hz to 1.5kHz (<-3dB)	8Hz to 1.5kHz (<-3dB)
	0.7Hz to 900Hz (<-10%)	
Power		
Voltage	+24V _{DC} nominal $\pm 10\%$ or -24V _{DC} nominal $\pm 10\%$	
Current consumption	approx. 15mA	

ENVIRONMENTAL

Temperature range		
Operation	-20° to +80°C	
Non-destructive (short time)	-40° to +100°C	
Humidity	resistant to 100% RH	
Acceleration limit		
Shock	50g	
Continuous vibration	5g	
EMC	acc. to EN 61326-2-3:2006	
Fluid compatibility	withstands contact with water, oil, solvents	
Ingress Protection	IP68 as per DIN 40 050	

PHYSICAL

Sensor dimensions [mm]	ø42 x 75	
Body material	Stainless steel 1.4301	
Weight (without) cable	400g	
Integral cable	ø5 cable protected by ø10 flexible metal conduit covered by	
Mounting stud (included)	M10x1.5, length 20mm, stainless steel	

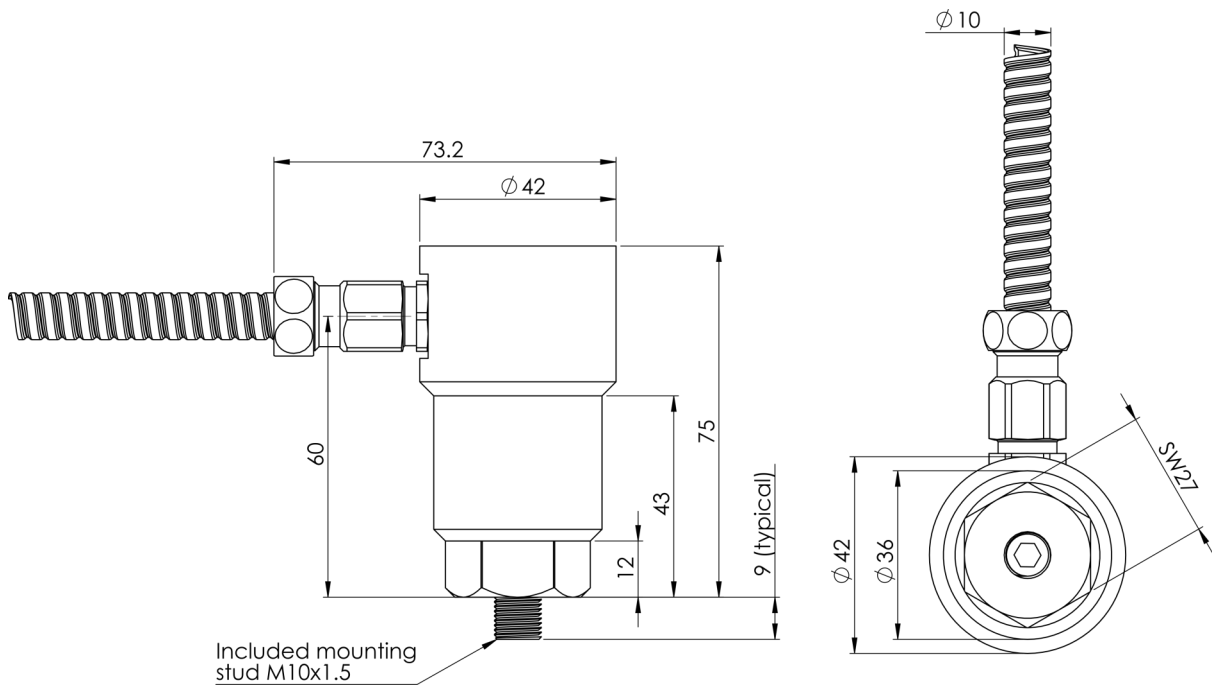
FIELD WIRING

Termination colour	+24V _{DC} version	-24V _{DC} version
Brown	+24V	0V
White	0V	-24V
Green	Linearized output	
Yellow	Non-linearized output (raw)	
Black	Shield	

ORDERING INFORMATION

Part type	Stainless steel linearized velocity sensor with integral cable			
Ordering code	05.X01.000 Y B L			
	X - mounting position	Y - power supply	B - bias voltage	L - integral cable length
	1 Horizontal (LVS-101)	0 +24V	6 6V	5m
	2 Vertical (LVS-201)	1 -24V		10m

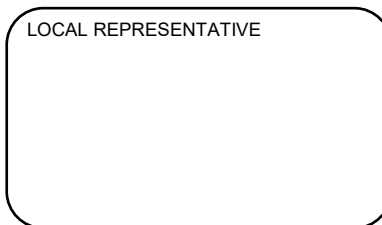
MECHANICAL DRAWING



MC-monitoring Quality certifications



LOCAL REPRESENTATIVE



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