Linearized Velocity Sensor

LVS-101 M3 (Horizontal)
LVS-201 M3 (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 positon
- Stainless steel body
- OK feature to check proper operation of sensor
- Push-Pull Connector for easier installation

Monitoring solution

Shaft & bearing vibration - absolute

Typical applications

Hydrogenerators

Pumps, fan, cooling towers...

Gas & steam turbines

LVS-101 M3 model

DESCRIPTION

The LVS-101 M3 and LVS-201 M3 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 M3 version is equivalent to the standard version except it is equipped with a push-pull connector, so the extension cable can be detached during installation.
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

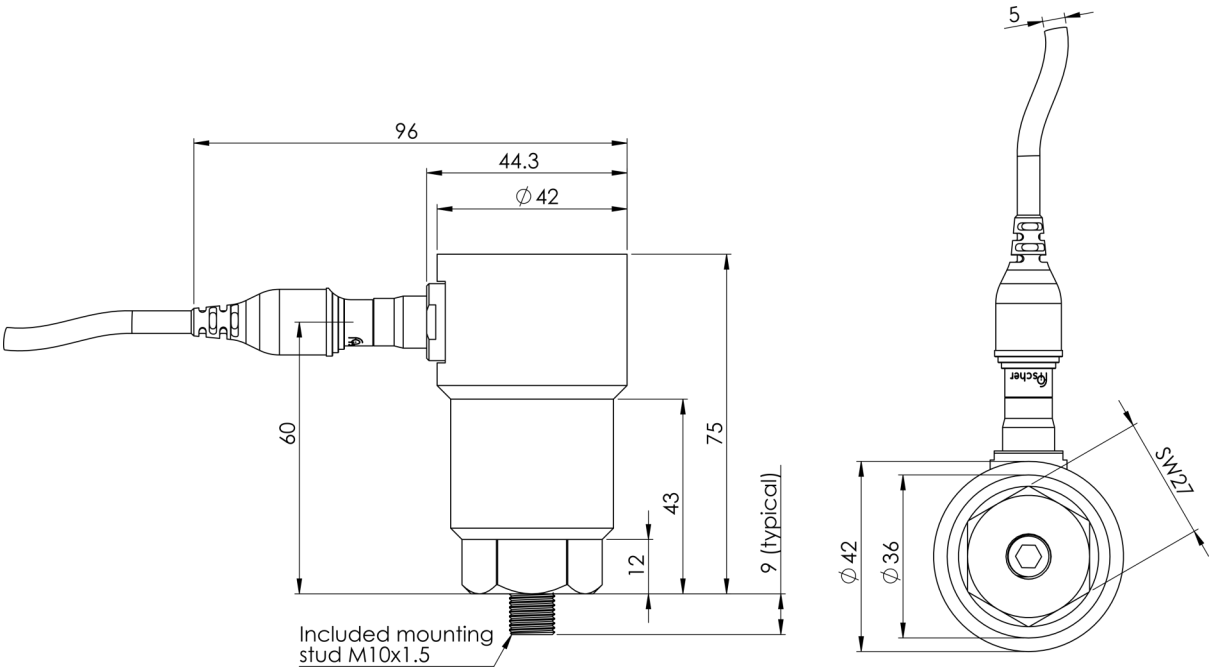
OPERATION		
Sensitivity	100mV/mm/s ±1% @80Hz	
Transverse sensitivity	< 7% max. of nominal	
Maximum displacement	1.8mm peak-peak	
Natural frequency	8Hz ±0.75Hz of measuring element	
Output	**Linearized**	**Raw**
Impedance	4kΩ	4kΩ
Output bias voltage	+6V ±1V for +24V_{DC} -6V ±1V for -24V_{DC}	~+13V for +24V_{DC} ~-11V for -24V_{DC}
Maximum output voltage	5V peak	5V peak
Temperature coefficient	0.1%/°C typ.	n/a
Typical frequency response	0.5Hz to 1.5kHz (< -3dB) 0.7Hz to 900Hz (<-10%)	8Hz to 1.5kHz (<-3dB)
Power		
Voltage	+24V_{DC} nominal ±10% or -24V_{DC} nominal ±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	400g	
Integral cable	ø5mm cable with top radial exit via push-pull connector and open end termination	
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)	
Clear	Shield	

ORDERING INFORMATION

Part type	Stainless steel linearized velocity sensor with integral cable
Ordering code	05.**X**01.000 M3 **Y B L**

X - mounting position	**Y** - power supply	**B** - bias voltage	**L** - extension cable length
1 Horizontal (LVS-101)	0 +24V	6 6V	5m
2 Vertical (LVS-201)	1 -24V		10m

MECHANICAL DRAWING



Due to the continual development of our products we reserve the right to modify the specifications without notification

LOCAL REPRESENTATIVE

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