

CONTACTLESS INCLINOMETER $\pm 5^\circ \dots \pm 30^\circ$

Model MRI-S-XX-L-1

PROFILE

The inclinometer is based on contactless magneto- resistive principle. Unlike all the other sensors available on the market, there are not sliding contacts during its working and it warrants a higher lifetime. The contactless inclinometer, is developed for very precise inclination measurements in the field of civil engineering , construction machineries , geological instruments and industrial automation. The inclinometer includes a magneto-resistive element of high resistance and sensibility . The strong and compact construction allows the use in all the applications where space and weight are considered important factors.

Main Characteristics

- Range 5° to 30°
- Input Voltage 8 to 14 VDC
- Infinite resolution
- Operating temperature -20°C to $+80^\circ\text{C}$
- No sliding contact
- Low noise
- Very long life-time
- Vibration resistance (DIN IEC68T2/6 20g)
- High sensitivity and repeatability
- Magneto-resistive element
- Protection class IP67.



Electrical and Mechanical Specifications

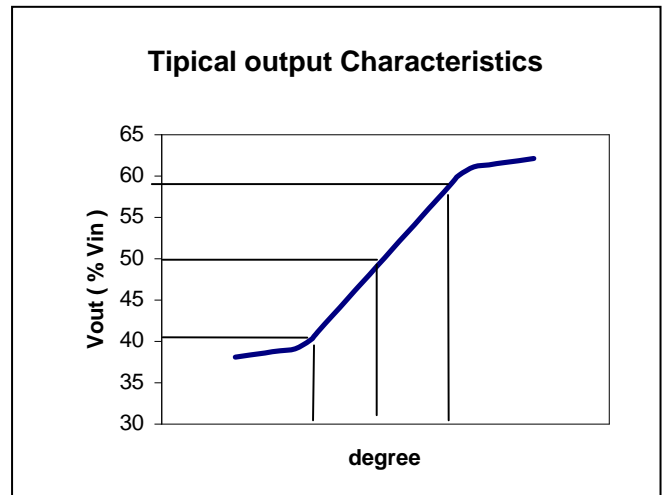
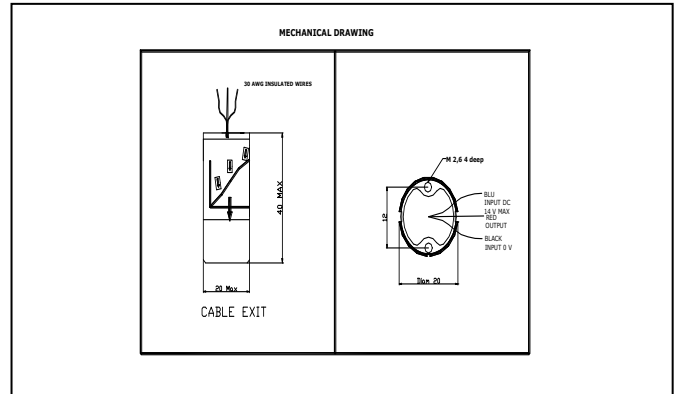
	MRI-S5 $\pm 5^\circ$	MRI-S10 $\pm 10^\circ$	MRI-S20 $\pm 20^\circ$	MRI-S30 $\pm 30^\circ$
Tilt angle electrical	± 5 (FS 10°)	± 10 (FS 20°)	± 20 (FS 40°)	± 30 (FS 60°)
Tilt angle mechanical	± 6 min	± 12 min	± 24 min	± 40 min
Zero based linearity	± 1	± 1	± 1	± 1
Conformity	$\pm 0,5$ FS	$\pm 0,5$ FS	$\pm 0,5$ FS	$\pm 0,5$ FS
Resolution	0.005°	0.01°	0.02°	0.05°
Output sensitivity	1.3 ± 0.3 % Vin /°	0.8 ± 0.15 % Vin /°	0.39 ± 0.11 % Vin /°	0.22 ± 0.07 % Vin /°
Response time	0.3	0.3	0.3	0.3

Description

- Galvanized steel housing
- Wiring terminations
- Silicon Damper oil 200cps
- Protection with isolating polymeric.
- Influence of magnetic field 0.001 %/Oersted.
- Resistant to nuclear radiations

Technical Characteristics

Electrical Range	°	+/- 5 ° to +/- 30 °
Input Voltage	Volt	8 to 14 volt
Input impedance	Kohm	30 ± 30%
Output Voltage	% Vin	Refer to the models
Insulation resistance	Mohm	> 100 Mohm @500Vdc
Dielectric Strength	Volt	500 Vrms @ 50 Hz for one minute
Operating temperature	° C	-20+80
Storage temperature	° C	-40+ 80 - 5585 optional
Temperature Coefficient -20 °C + 80 °C	% Vout / °	0.05 max (a zero degree)
Linearity	% FS	< 1 (typically better to 0.5)
Index Point	% Vin	50 ± 3
Isteresy	°	< 0.03 (function of the models)
Life time	Mil Cicli	500
Riproducibility	% Vin	0,1 % Vin Max
Response Time	sec	0.3 (200 cps oil)
Vibration resistance	MIL STD 202E 204 C	20 g (10 to 2000 Hertz)
Shock resistance	MIL- STD 202 E 213 B	100 g
Dimensions	mm .	H 40 Diam 20
Weight	gr	35
Damper oil		Silicon oil 200 cps
Pendulum natural frequency	Sec/ciclo	0.1



MECHANICAL DRAWING

