

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

## Model MRI-S-XX-L-2

### PROFILE MRI OEM SENSOR

The MRI 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 contact less inclinometer, is developed for very precise inclination measurements in the filed 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  $5^\circ$  to  $30^\circ$
- Input Voltage 8 to 14 VDC
- Infinite resolution
- Operating temperature  $-20^\circ\text{C}$   $+80^\circ\text{C}$
- 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.

*L = Wire output, T = Pin output*

*-1= non-compensated*

*-2= Temperature compensated*



### Electrical and Mechanical Specifications

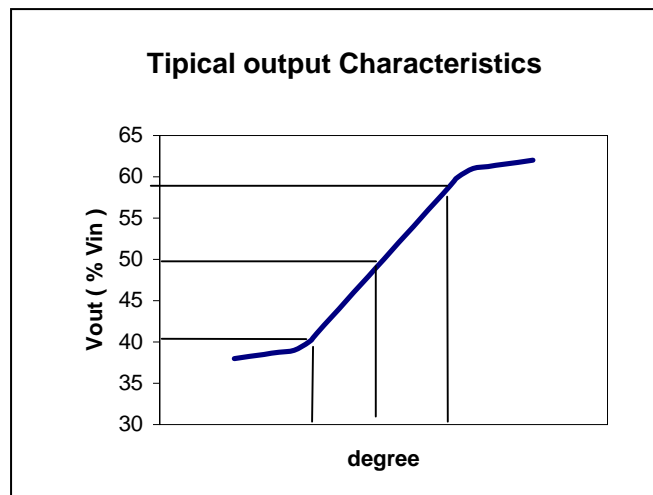
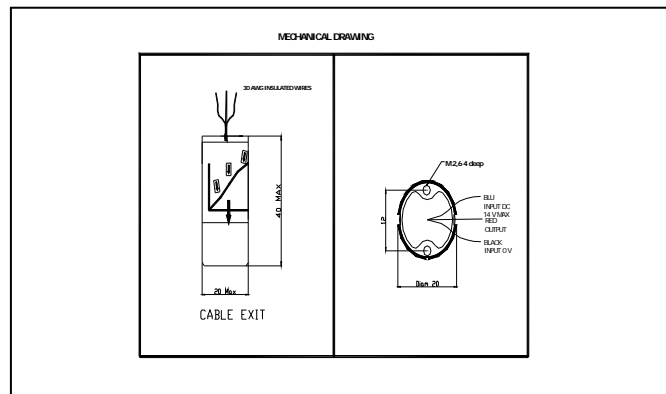
	MRI-S5 $\pm 5^\circ$	MRI-S10 $\pm 10^\circ$	MRI-S20 $\pm 20^\circ$	MRI-S30 $\pm 30^\circ$
Tilt angle electrical	$\pm 5$ (FS $10^\circ$ )	$\pm 10$ (FS $20^\circ$ )	$\pm 20$ (FS $40^\circ$ )	$\pm 30$ (FS $60^\circ$ )
Tilt angle mechanical	$\pm 6$ min	$\pm 12$ min	$\pm 24$ min	$\pm 40$ min
Zero based linearity	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$
Conformity	$\pm 0,5$ FS	$\pm 0,5$ FS	$\pm 0,5$ FS	$\pm 0,5$ FS
Resolution	$0.005^\circ$	$0.01^\circ$	$0.02^\circ$	$0.05^\circ$
Output sensitivity	$1.3 \pm 0.3$ %Vin / $^\circ$	$0.8 \pm 0.15$ %Vin / $^\circ$	$0.39 \pm 0.11$ %Vin / $^\circ$	$0.22 \pm 0.07$ %Vin / $^\circ$
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 impeance	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 - 55 ....85 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
Hysteresis	°	< 0.03 ( function of the models )
Life time	Mil Cycle	500
Reproducibility	% 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 E213 B	100 g
Dimensions	mm.	H 40 Diam 20
Weight	gr	35
Damper oil		Silicon oil 200 cps
Pendulum natural frequency	Sec.	0.1



## MECHANICAL DRAWING

