



# INCLINOMETERS

## DAS-XX-MA

### Description

DAS-XX-MA working principle is based on a micromachined silicon capacitive transducer (developed with MEMS technology). Output signal from the sensing element, coming as a duty-cycle modulated waveform with carrying frequency of 100 Hz, is acquired by a microprocessing unit. The microprocessor provides continuous sampling of X and Y axes every 25 ms and gives as an output the angular information after performing Arcsin (X,Y) calculation. The sensor is temperature-compensated and provides analog 12 bit data output for angular value coming from axis X and Y. Also RS-232-TTL communication is available for temperature and X,Y axis inclination values. This dual axis inclinometer was developed to satisfy the technological, assembling, maintenance needs of automotive wheel-testing machines ensuring a high degree of stability over time.

DAS-XX-MA



- MEMS sensor;
- Measuring range  $\pm 10^\circ, \pm 20^\circ, \pm 30^\circ$  and  $\pm 45^\circ$ ;
- Input voltage: 7 to 30 VDC (5V stabilized optional);
- Output: 0.5-4.5V or RS232 TTL;
- PCB mounted sensor, no housing provided;
- Dimensions: 45mm x 45 mm x 8mm;
- Weight: 35g.

### Features

- Low power;
- High resistance to mechanical shocks and vibrations;
- No trimmer used for setting;
- Extremely low cross axis sensitivity;
- EMC tests performed according CEI EN 61000-4-3:2003 ( 80MHz to1000MHz - 10V/m );
- Molex connector.

### Technical specifications

Measuring range	°	$\pm 10$	$\pm 20$	$\pm 30$	$\pm 45$
Input voltage	Volt	7 to 30			
Output	-	0.5 ÷ 4.5 RS232 TTL			
X-Y out zero	Volt	2.5 +/- 50 mV			
Sensitivity	MV/°	200	100	66.66	45.51
Zero based linearity	% FS	$\pm 0.2$	$\pm 0.5$	$\pm 0.5$	$\pm 0.5$
Resolution	°	<0.01	0.01	0.015	0.02
Insulation Resistance	MOhm	> 100 @500Vdc			
Temperature compensated Range	° C	-20 +80			
Stocking Temperature	° C	-40 +80			
Response time	s	0.3 ( factory calibrated )			
Zero temperature drift T 0-60°	°	< 0.1			
Temperature Sensitivity drift T 0-60°	°	< 0.1			
Transverse sensitivity	%FS	<0.5 at 45° cross angle			
Shock resistance	MIL- STD 202 E 213 B	1000 g			
Vibration resistance	MIL STD 202E 204 D	20 g ( 10 to 2000 Hertz)			

