

ASIS Iliac Wing Load Cell

Biaxial

Type M52292A...

Type M52292A... is designed to measure forces and moments on the ASIS iliac wing of the crash test dummy Thor-M (TH).

- Biaxial (F_x , M_y)
- UPS module available
- Low linearity and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1



Description

The load cell is made of elements which are affected by forces and moments. The strain gage-applied deformation body serves the transformation of mechanical impacts to electric signals.

The load cell's operation mode is comparable to the principle of a spiral spring. The force or the moment to be measured generates mechanical strains and compressions inside the gaging member.

In order to avoid linearity errors, the deformation paths are constructively held small (high rigidity). Thus a proportional behavior is realized. The force and moment proportional resistance variations are measured by a Wheatstone-type bridge circuit.

The load cell is available with UPS module which is integrated in an external housing in the wiring or in the connector. Customized cable lengths and connectors with specific pin assignments are optionally available.

Application

The load cell is directly assembled at the designated location in the dummy and provides important information about the loads on the human body occurring during a crash test.

Technical Data

		F_x	M_y
Measuring range	kN	13	
	N·m		320
Bridge output voltage (typ.)	mV/V	0,72	0,96
Sensitivity (typ.)	$\mu\text{V}/\text{V}/\text{kN}$	55	
	$\mu\text{V}/\text{V}/\text{N}\cdot\text{m}$		3
Bridge resistance	Ω	350	350
Ultimate load, static	%	150	150
Supply voltage ¹⁾	VDC	2,5 ... 15	
Insulation resistance ²⁾	G Ω	>10	
Operating temperature range	$^{\circ}\text{C}$	-20 ... 80	
Storage temperature range	$^{\circ}\text{C}$	-30 ... 90	
Amplitude non-linearity (typ.)	%	<1	
Hysteresis (typ.)	%	<1,5	
Channel cross talk	%	<5	
Bridge zero output (typ. / max.)	mV/V	0,01 / 0,03	
Weight (without cable)	grams	220	

All specifications are typical at 25 °C and rated at 10 V sensor supply voltage, unless otherwise specified.

¹⁾ With UPS module 9 ... 12 VDC

²⁾ All wires to load cell housing, measured with 500 VDC

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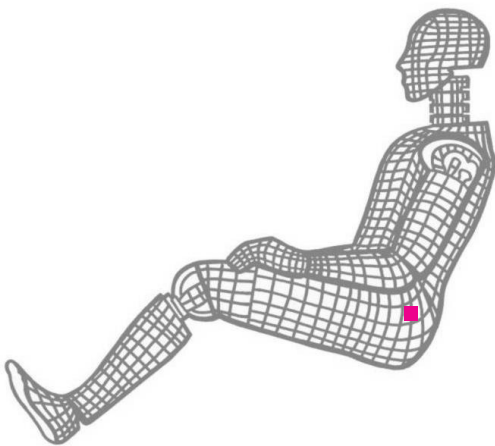


Fig. 1: Dummy application, location iliac wing

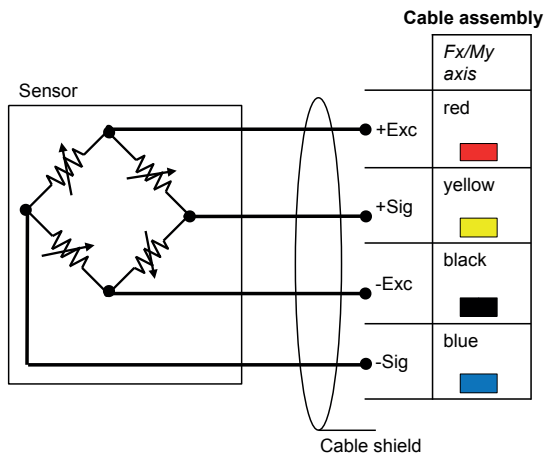


Fig. 2: Cable assembly

Included Accessories

- None

Optional Accessories

- Add. label, customized
- Add. shunt
- UPS module

Type No.
M015KABID
on request
on request

Ordering Key

Type M52292A		
Design	Standard	TM
Cable Length before Electronics	0 cm	00
	<10 cm (digit x 1 cm)	C#
	10 cm ... 9,9 m (digit x 10 cm)	##
	10 m ... 90 m (digit x 10 m)	D#
Additional Electronics	Sensor detail, as per type declaration force-moment TP-650-2	#
Cable Length after Electronics	0 cm	00
	<10 cm (digit x 1 cm)	C#
	10 cm ... 9,9 m (digit x 10 cm)	##
	10 m ... 90 m (digit x 10 m)	D#
Connector	Conn. type, as per TP-600	#-
	Conn. assignment, as per TP-600	-#

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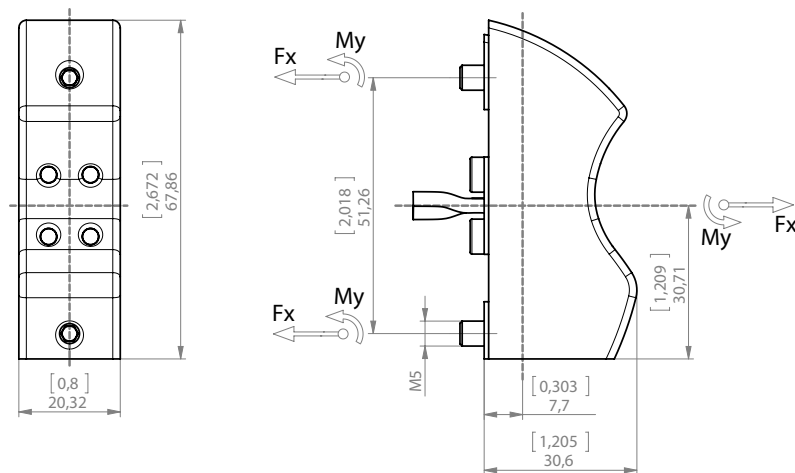


Fig. 3: Dimensions in mm