

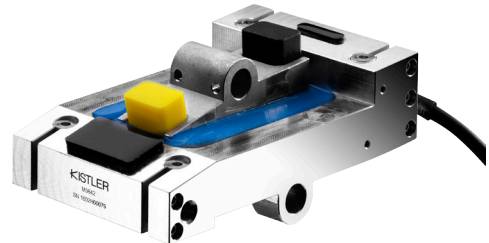
Thoracic Spine Load Cell

Type M56423A...

Triaxial

Type M56423A... measures forces and moments in the thoracic spine T1 of the dummy type BioRID (BR).

- Triaxial (F_x , F_z , M_y)
- UPS module integrable
- Low linearity errors and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1



Description

The load cell is made of elements on which forces are transmitted. The mechanical deformation element, applied with strain gage, serves for mechanical electrical deformation. The forces and moments to be measured create mechanical stretches and buckling in 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.

Technical Data

Axial Data		F_x	F_z	M_y
Measuring range	kN	5,0	5,0	
	N·m			125
Bridge output voltage (typ.)	mV/V	0,92	0,85	1,25
Sensitivity (typ.)	$\mu\text{V}/\text{V}/\text{kN}$	182	168	
	$\mu\text{V}/\text{V}/\text{N}\cdot\text{m}$			10
Bridge resistance	Ω	350	350	350
Ultimate load, static	%	150	150	150

General Data

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
Channel cross talk	%	<5
Bridge zero output (typ. / max.)	mV/V	0,01 / 0,03

All specifications are typical at 25 $^{\circ}\text{C}$ and rated at 10 V sensor supply, 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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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.

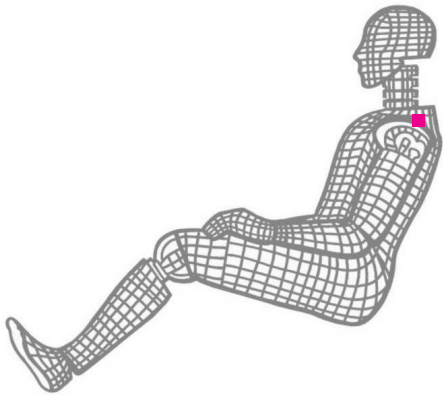


Fig. 1: Dummy application, location lumbar spine T1

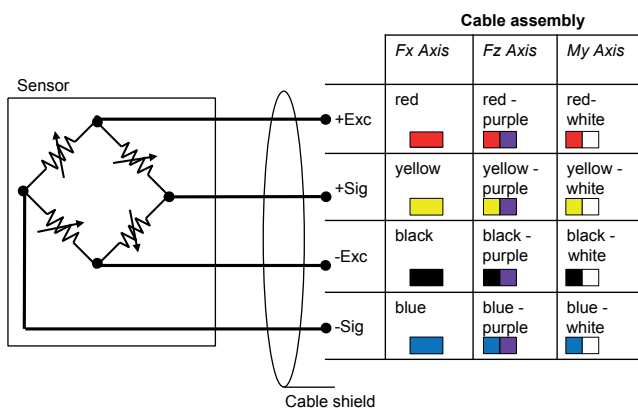


Fig. 2: Cable assembly

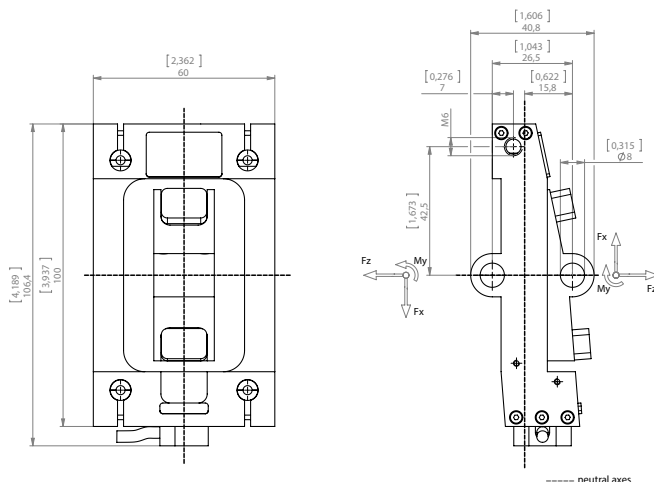


Fig. 3: Dimensions in mm (with mounting block)

Included Accessories

- None

Optional Accessories

- Add. label with serial number, plug side
- UPS module
- Add. label with ID number at sensor
- Add. shunt

Art. No.

M015KABID
on request
M015KABID
on request

Ordering Key

Type M56423A

Design

Standard	VM
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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	#
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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	-#

M56423A_003-205e-11.16