

Abdomen Load Cell

Uniaxial

Type M530A1B...

Type M530A1B... is designed to measure forces in the abdomen of the crash test dummies EuroSID-1 (E1) and EuroSID-2 with Rib Extension (ER).

- Uniaxial
- UPS module available
- Low linearity errors and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1

Description

The sensor is built in a threesome in the left and/or right abdomen. Because of weight and balance reasons, the particular not instrumented side is assembled with the adequate replacement of the dummy kit.

This load cell is based on the principle of a double-sided fixed beam arrangement. The induced force creates a mechanical stretching respectively buckling in the carrier. By means of strain gage, arranged as full bridge circuit, the resistance changes, which are proportional to the affected force, are measured and evaluated.

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

Measuring range	kN	5
Sensitivity (typ.)	mV/V/kN	600
Bridge resistance ¹⁾	Ω	700
Ultimate load, static	%	150

General Data

Supply voltage ²⁾	VDC	2,5 ... 15
Insulation resistance ³⁾	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
ZMO (typ. / max.)	mV	$\pm 1 / \pm 3$
Weight		204
Material		steel
Dimensions	mm	124x20x12,8

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

- ¹⁾ According to customer wish
- ²⁾ With UPS module 9 ... 12 VDC
- ³⁾ All wires to load cell housing, measured with 500 VDC

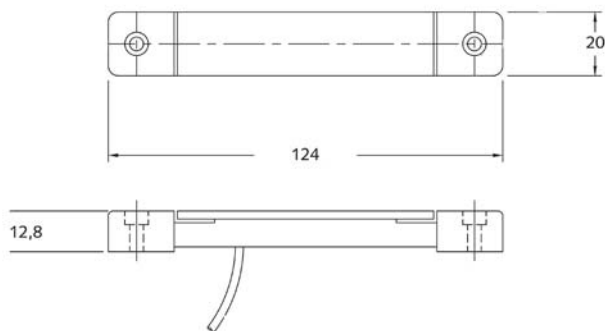


Fig. 1: Dimensions in mm

M530A1B_000-968e-11.15

Application

Type M530A1B... is designed to measure forces in the abdomen of the crash test dummies EuroSid 1 and ES-2 (RE).

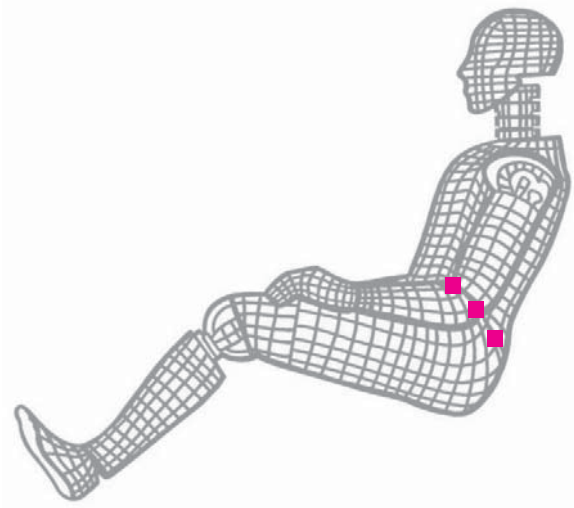


Fig. 2: Dummy application, location abdomen

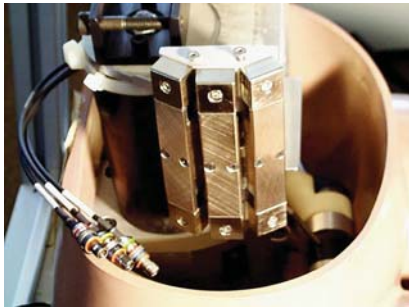


Fig. 3: Application sample

Included Accessories

- None

Optional Accessories

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

Type No.

M015KABID
on request
M015KABID
on request

Ordering Key

Type M530A1B

Design

Standard	LM
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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. type assignment, as per TP-600	-#