

# Pubic Load Cell

Type M531A1A...

## Uniaxial

Type series M531A1A... is designed to measure the pubic force of the crash test dummies EuroSID-1 (E1) and EuroSID-2 with Rib Extension (ER).

- Uniaxial ( $F_y$ )
- UPS module integrable
- Low linearity and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1

### Description

This sensor is based on the principle of a tensile strut. In order to reduce the cross impact, the strut is divided in four struts with equivalent sections. The force induced creates mechanical stretching respectively compression inside the gaging member.

By means of strain gages, 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	20
Sensitivity (typ.)	$\mu\text{V/V/kN}$	125
Bridge resistance	$\Omega$	700
Ultimate load, static	%	150

#### General Data

Supply voltage <sup>1)</sup>	VDC	2,5 ... 15
Insulation resistance <sup>2)</sup>	$\text{G}\Omega$	>10
Operating temperature range	$^{\circ}\text{C}$	-20 ... 80
Storage temperature range	$^{\circ}\text{C}$	-30 ... 90
Amplitude non-linearity (typ.)	%	$\pm 1$
Hysteresis (typ.)	%	$\pm 1$
ZMO (typ. / max.)	mV	$\pm 1 / \pm 3$
Weight	grams	127
Material		steel
Dimensions	mm	57x32x28

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

<sup>1)</sup> With UPS module 9 ... 12 VDC

<sup>2)</sup> All wires to load cell housing, measured with 500 VDC

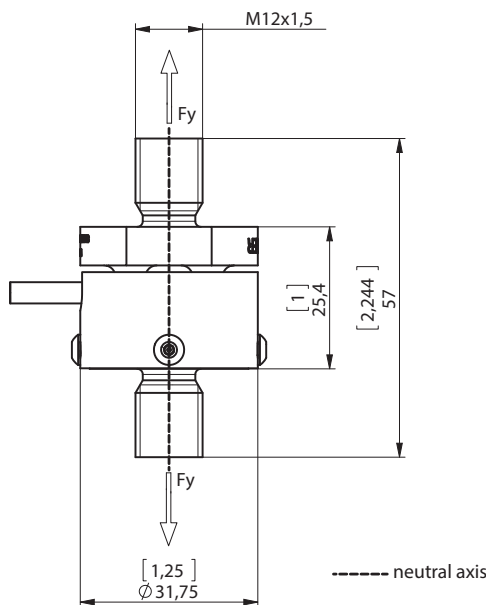


Fig. 1: Dimensions in mm

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### Application

Type M531A1A... is designed to measure the pubic force of the crash test dummies EuroSid 1 and ES-2 (RE).

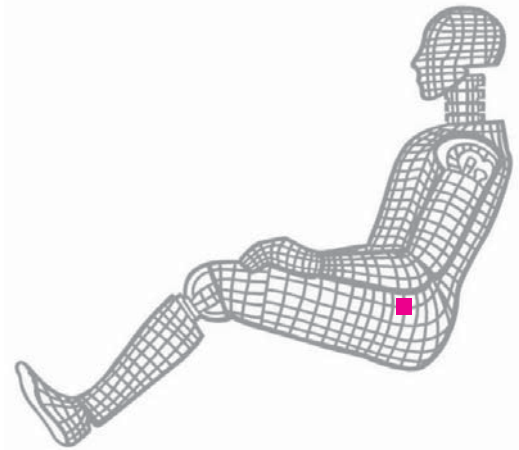


Fig. 2: Dummy application, location pubic



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 M531A1A

#### Design

Standard	DM
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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	-#

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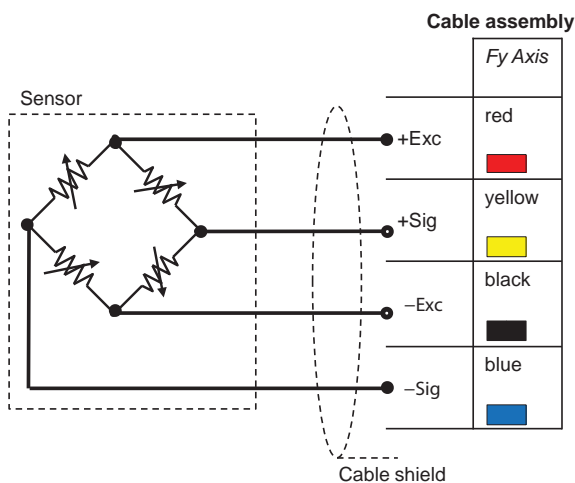


Fig. 4: Cable assembly