

# Seat Force Load Cell

Type M59223A...

## Triaxial

Type M59223A... measures the seat forces inside the vehicle and on the test stand.

- Triaxial ( $F_x$ ,  $F_y$ ,  $F_z$ )
- UPS module available
- Low linearity error and hysteresis error
- 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 effectiveness of the load cell resembles the behavior of a spiral spring. The forces 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.

### Application

Type M59223A... measures the seat forces inside the vehicle and on the test stand. Therefore it is installed between the seat adaption mechanism and the car body. Due to its minimum installatin height and its central fixing point at the seat adaptation mechanism this can be easily done.



### Technical Data

Axial Data		$F_x$	$F_y$	$F_z$
Measuring range <sup>1)</sup>	kN	55	55	55
Bridge output voltage (typ.)	mV/V	2,2	2,2	1,6
Sensitivity (typ.)	$\mu\text{V/V/kN}$	40	40	29
Bridge resistance	$\Omega$	350	350	700
Ultimate load, static	%	150	150	150
Supply voltage <sup>2)</sup>	VDC	2,5 ... 15		
Insulation resistance <sup>3)</sup>	G $\Omega$	>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 crosstalk	%	<5		
Bridge zero output (typ. / max.)	mV/V	0,01 / 0,03		
Weight (without cable)	grams	2 000		

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

<sup>1)</sup> A measurement range extension up to 120 % is technically ensured, without permanent modification of the technical data. For individual data please refer to the calibration certificate

<sup>2)</sup> With UPS module 9 ... 12 VDC

<sup>3)</sup> All wires to load cell housing, measured with 500 VDC

### Included Accessories

- Mounting screws DIN 912 8.8 metric (M8x25), 4 units

### Optional Accessories

- Add. label with serial number, plug side
- UPS module
- Add. label with ID number at sensor
- Add. shunt
- Screw-in tab hole exterior, 5 units
- Screw-in tab hole interior

### Type No.

on request

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M015KABID

on request

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on request

on request

on request

### Ordering Key

Type M59223A

#### Design

Standard	PM
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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 Lengths 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	-#

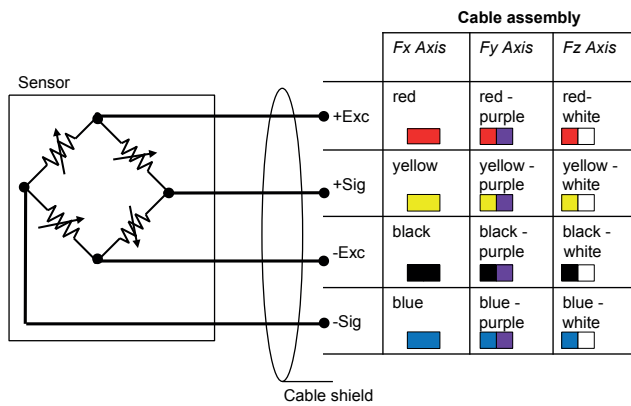


Fig. 1: Cable assembly

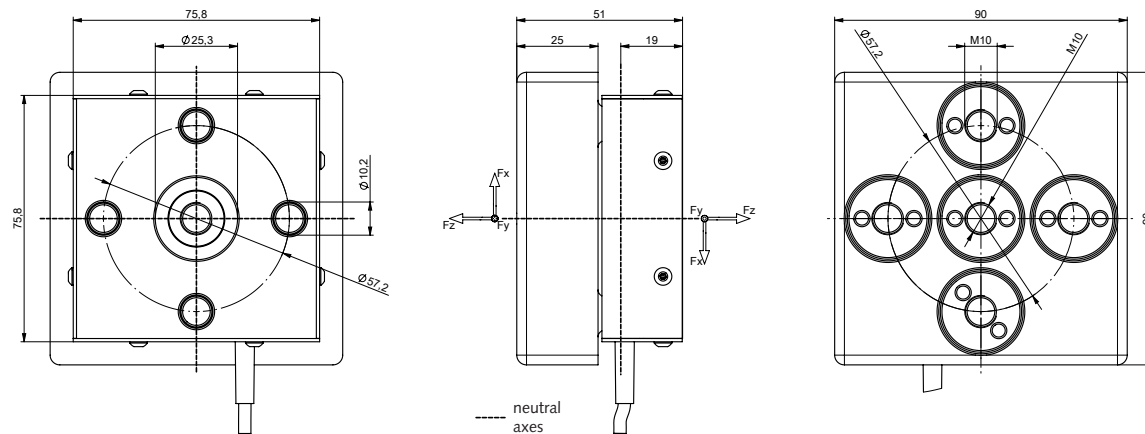


Fig. 2: Dimensions in mm

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