

Upper Neck Load Cell

Type M55526A...

Six-axial

The load cell of Type M55526A... is designed to measure forces and moments in the upper neck of the crash test dummy EuroSID-2 with Rib Extension (ER).

- Six-axial (F_x , F_y , F_z , M_x , M_y , M_z)
- UPS module available
- Low linearity errors and hysteresis errors
- 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.

Technical Data

Axial Data		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN	10	10	15			
	N·m				280	280	280
Bridge output voltage (typ.)	mV/V	1,8	1,8	1,5	1,7	1,7	2,5
Sensitivity	$\mu\text{V/V/kN}$	180	180	100			
	$\mu\text{V/V/N·m}$				5,7	5,7	8,3
Bridge resistance	Ω	700 ¹⁾	700 ¹⁾	700	350	350	350 ¹⁾
Ultimate load	%	150	150	150	150	150	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
Channel cross talk	%	<5
Weight (without cable)	grams	600

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

¹⁾ Up to serial number 0004628079 (up to year of construction 2015) the bridge resistance of the load cells is 350 Ω (F_x , F_y) resp. 700 Ω (M_z). Please mind the first calibration!

²⁾ With UPS module 9 ... 12 VDC

³⁾ All wires to load cell housing, measured with 500 VDC

Application

Type M55526A... 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.

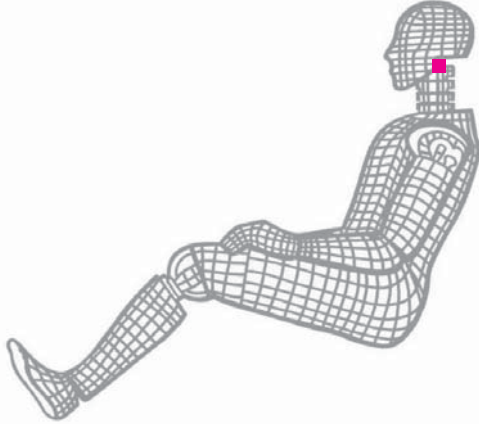


Fig. 1: Dummy application, location upper neck

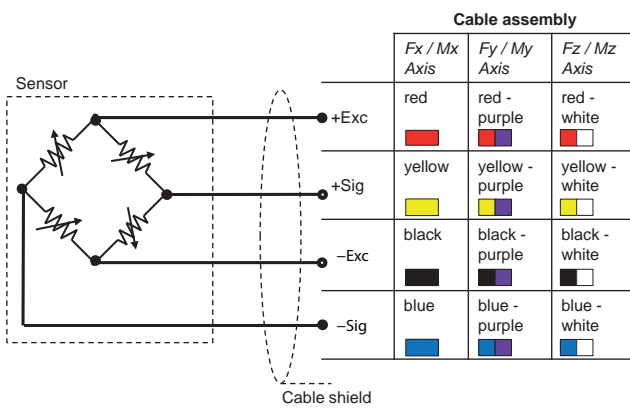


Fig. 2: Cable assembly

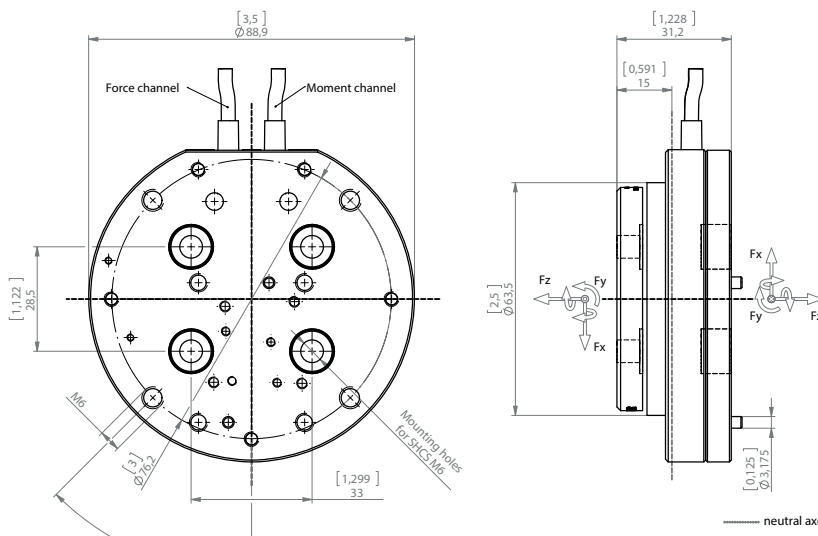


Fig. 3: Dimensions in mm

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 M55526A

Design

Standard	FM
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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	-#

M55526A_000-950e-10.15