

# Lower Neck Load Cell

Type M56116A...

## Six-axial, Adjustable

Typ M56116A... is used in the crash test dummy HF to measure forces and moments in the lower neck.

- Six-axial ( $F_x$ ,  $F_y$ ,  $F_z$ ,  $M_x$ ,  $M_y$ ,  $M_z$ )
- UPS module available
- Low linearity errors and hysteresis
- Adjustable in 2,0° steps
- 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. 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	13,3	13,3	13,3			
	N·m				339	339	180
Bridge output voltage (typ.)	mV/V	2,0	2,0	1,2	1,4	1,4	0,9
Sensitivity (typ.)	$\mu\text{V/V/kN}$	146	146	90			
	$\mu\text{V/V/N·m}$				4,1	4,1	5,0
Bridge resistance	$\Omega$	350	350	700	700	700	350
Ultimate load, static	%	150	150	150	150	150	150

### General Data

Supply voltage <sup>1)</sup>	VDC	2,5 ... 15
Insulation resistance <sup>2)</sup>	G $\Omega$	>10
Operating temperature range	°C	-20 ... 80
Storage temperature range	°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
Weight, without cable and plug	grams	530

All specifications are typical at 25 °C and rated at 10 V sensor supply, 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

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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. The inclination of the neck to the upper part of the body is adjustable in 2,0° steps.

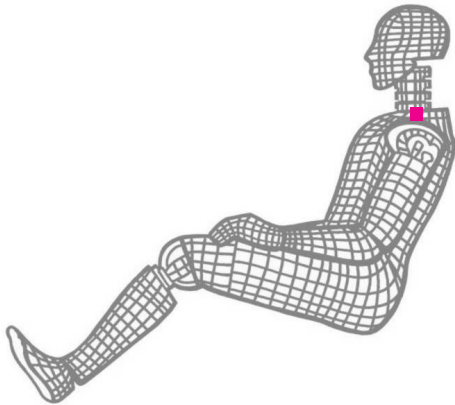


Fig. 1: Dummy application, location lower neck

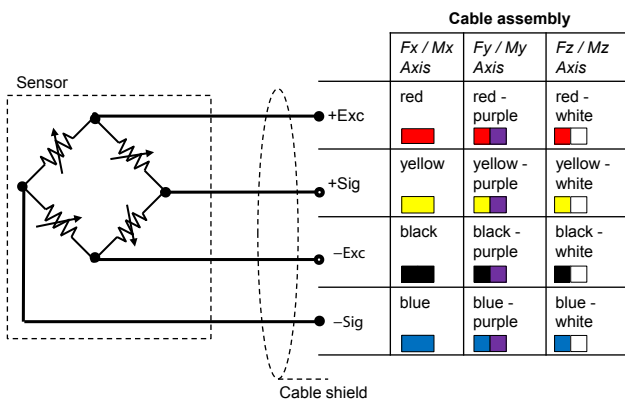


Fig. 2: Cable assembly

**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 M56116A		
<b>Design</b>	Standard	GM
<b>Cable Length before Electronics</b>	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#
<b>Additional Electronics</b>	Sensor detail, as per type declaration force-moment TP-650-2	#
<b>Cable Length after Electronics</b>	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#
<b>Connector</b>	Conn. type, as per TP-600	#-
	Conn. assignment, as per TP-600	-#

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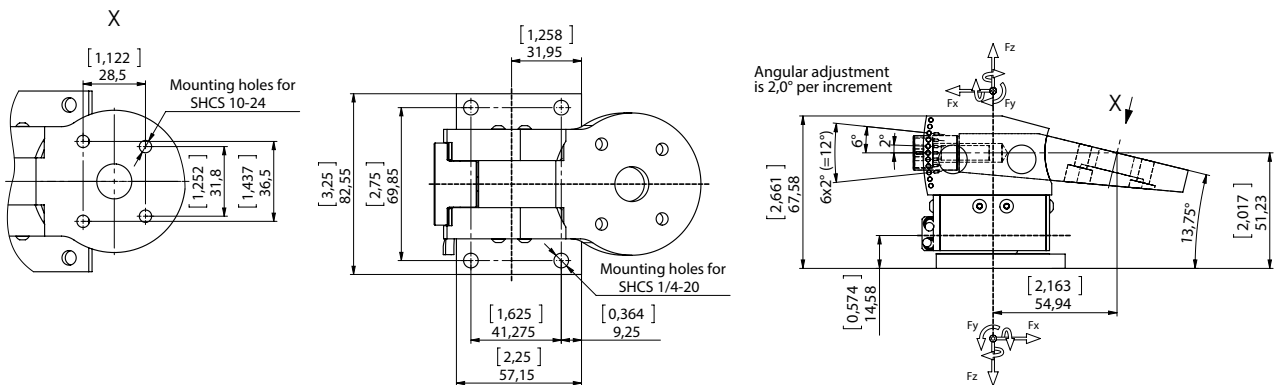


Fig. 3: Dimensions in mm

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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