

Type M536x3A...

Shoulder Load Cell

Triaxial

Type M536x3A... is designed to measure forces in the shoulder of the crash test dummy Q 10 year old (QA).

- 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.



left shoulder Type M53663A...

right shoulder Type M53673A...

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Technical data

Axial data		Fx	Fy	Fz
Measuring range	kN	2	4	2
Bridge output voltage (typ.)	mV/V	1.3	0.5	1.3
Sensitivity (typ.)	µV/V/kN	640	130	640
Bridge resistance	Ω	700	350	700
Ultimate load, static	%	150	150	150
Supply voltage ¹⁾	VDC	2	2.5 15	5
Insulation resistance ²⁾	GΩ		>10	
Operating temperature range	°C	-	-20 8	0
Storage temperature range	°C	-	-30 9	0
Amplitude non-linearity (typ.)	%		<1	
Hysteresis (typ.)	%		<1	
Channel crosstalk	%		<5	
Bridge zero output (typ. / max.)	mV/V	0.	.01 / 0.0)3
Weight (without cable)	grams		90	

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

¹⁾ With UPS module 9 ... 12 VDC

²⁾ All wires to load cell housing, measured with 500 VDC

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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Application

Type M536x3A... 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 left shoulder



Fig. 2: Cable assembly



Fig. 3: Dimensions in mm and direction of action for right design

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Included accessories

None

Optional accessories

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

Туре по.

M015KABID on request M015KABID on request

Ordering key

	Type M53	6 🖂				
		1	1	1	1	1
Design						
Left shoulder	63AK					
Right shoulder	73AK					

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		

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	-#

30,5

6,04

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