KISTLER
measure. analyze. innovate.

Shoulder Load Cell

Type M53633A...

Triaxial

Type M53633A... is designed to measure forces in the shoulder of the crash test dummy SID IIs.

- Three-axial (F_x, F_y, F_z)
- Measuring range 4,5 kN
- ID module integrable
- 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.

Line-up of equivalent load cells:

	Type
Kistler	M53633A...
FTSS	IF-344
Denton	3167

In order to avoid linearity errors, the deformation paths are constructively held small (high stiffness). 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 ID modules. Customized cable lengths and connectors with specific pin assignments are optionally available.

Technical Data

Axial Data		F_x	F_y	F_z
Measuring range	kN	4,5	4,5	4,5
Bridge output voltage	mV/V	2,4	1,0	2,4
Sensitivity	µV/V/kN	530	220	530
Bridge resistance	Ω	350	700	350
Ultimate load	%	150	150	150
Supply voltage				
without ID module	VDC	5 ... 15		
with ID module	VDC	9 ... 12		
Power input (typ.)				
without ID module	mA/chan.			
with ID module	mA/chan.			
Insulation resistance[1)]	MΩ	>90		
Operating temperature range	°C	–20 ... 80		
Storage temperature range	°C	–30 ... 90		
Amplitude non-linearity (typ.)	%	<1		
Hysteresis (typ.)	%	<1		
Channel cross talk	%	<5		
ID modules	units	3		
Weight (without cable)	grams	60		
Dimensions	mm	50,8x25,4x38,1		

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

1) All wires to screen (GND), measured with 10 VDC

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Application

Type M53633A... is designed to measure forces in the shoulder of the crash test dummy SID IIs.

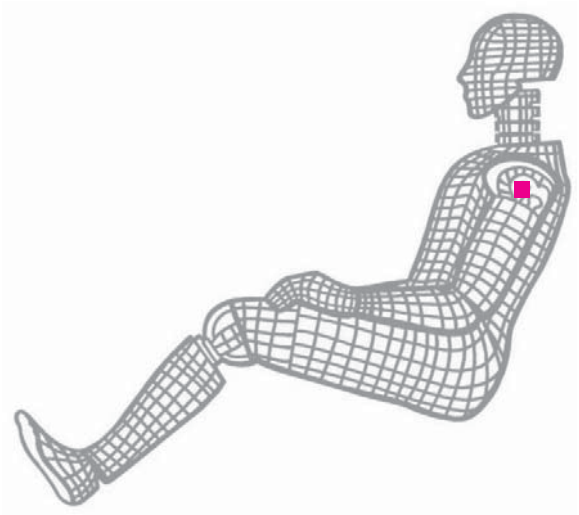

Fig. 1: Dummy application, location "Shoulder"

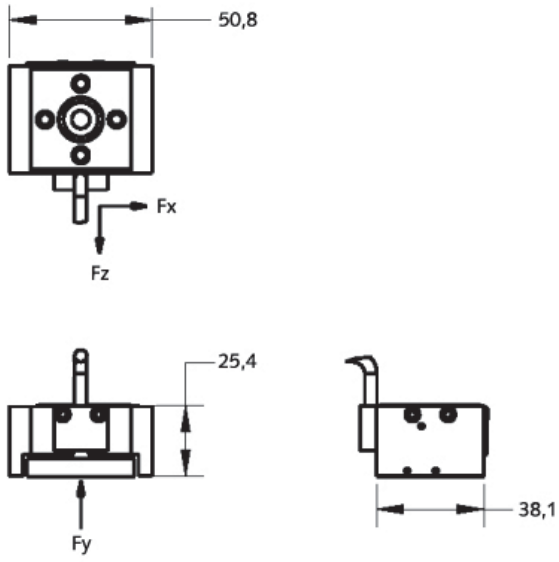

Fig. 2: Dimensions in mm

Included Accessories

- None

Optional Accessories	Type No.
• Add. label, customized	M015KABID
• ID module	on request
• Add. shunt	on request

Ordering Key

Type M53633A ☐☐☐☐☐☐

Design

Standard	KM

Cable Length Before Electronics

<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 Length After Electronics

<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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