KISTLER
measure. analyze. innovate.

Upper and Lower Neck Load Cell

Type M55556A...

Six-axial

Type M55556A... is designed to measure forces and moments in the upper and lower neck of the crash test dummy WorldSID.

- Six-axial (F_x, F_y, F_z, M_x, M_y, M_z)
- 350/700 Ω measuring bridge
- ID module available
- Low linearity errors and hysteresis errors
- Kistler system cabeling
- 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 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 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, either a UPS module (Universal Parameter Memory) or a Dallas module can be chosen for this functionality. These modules are integrated in an external housing in the wiring or in the connector. Customized cable lengths and connectors with specific pin assignments are optionally available.

Line-up of equivalent load cells:

	Type
Kistler	M55556A...
Denton	W50-71001 lower
	W50-71005 upper

Technical Data

Axial Data		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN	10	10	12			
	N·m				300	300	200
Bridge output voltage (typ.)	mV/V	2,6	2,6	1,2	1,95	1,95	2,2
Sensitivity (typ.)	µV/V/kN	260	260	100			
	µV/V/N·m				6,5	6,5	11
Bridge resistance	Ω	350	350	700	350	350	700
Ultimate load, static	%	150	150	150	150	150	150

General Data		
Supply voltage		
without ID module	VDC	5 ... 15
with ID module	VDC	9 ... 12
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
Bridge zero output (typ./max.)	mV/V	0,02/0,03
Weight (without cable)	grams	357

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 M55556A... is designed to measure forces and moments in the upper and lower neck of the crash test dummy WorldSID.

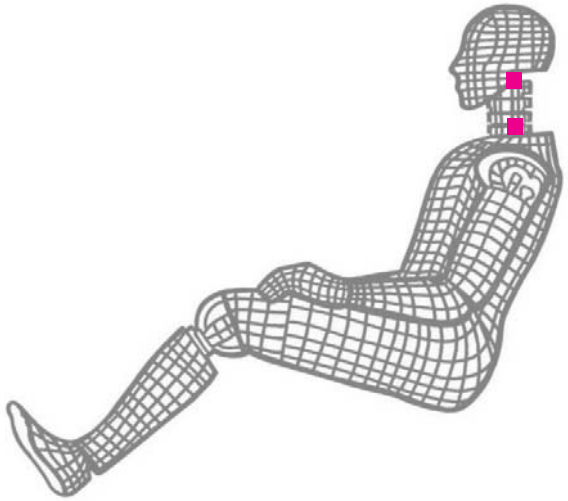

Fig. 1: Dummy application, location upper & lower neck

Ordering Key

Type M55556A ☐☐☐☐☐

Design

Standard	**UM**

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 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	**-#**

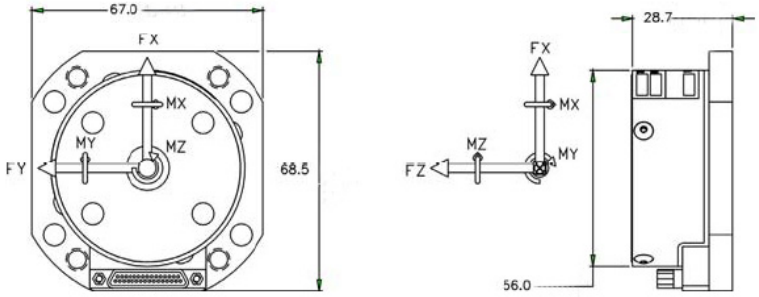

Fig. 2: Dimensions in mm

Included Accessories

- None

Optional Accessories	Type No.
• Add. label with serial number, plug side	M015KABID
• ID module	on request
• Add. label with ID number at sensor	M015KABID
• Add. shunt	on request