

Upper Neck Load Cell

Six-axial

Type M555A6A...,
M555A6C...

Type M555A6... is designed to measure forces and moments in the upper neck of the crash test dummies H3-5 %, H3-50 %, H3-95 %, H3-6Y and SID IIs.

- Six-axial (F_x , F_y , F_z , M_x , M_y , M_z)
- ID 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 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	M555A6...
FTSS	IF-205
Denton	1716

Technical Data

Axial Data		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN	9	9	13			
	N·m				280	280	280
Bridge output voltage (typ.)	mV/V	1,6	1,6	1,2	1,6	1,6	2,3
Sensitivity (typ.)	$\mu\text{V/V/kN}$	180	180	90			
	$\mu\text{V/V/N·m}$				6	6	8
Bridge resistance	Ω	350	350	700	350	350	700
Ultimate load, static	%	150	150	150	150	150	150

General Data

Supply voltage		
without ID modules	VDC	5 ... 15
with ID modules	VDC	9 ... 12
Insulation resistance ¹⁾	M Ω	>90
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
Bridge zero output (typ./max.)	mV/V	0,01/0,03
Weight, without cable	grams	640

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

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

M555A6A_000-790e-12.11

Application

Type M555A6... is designed to measure forces and moments in the upper neck of the crash test dummies H3-5 %, H3-50 %, H3-95 %, H3-6Y and SIDIIIs.

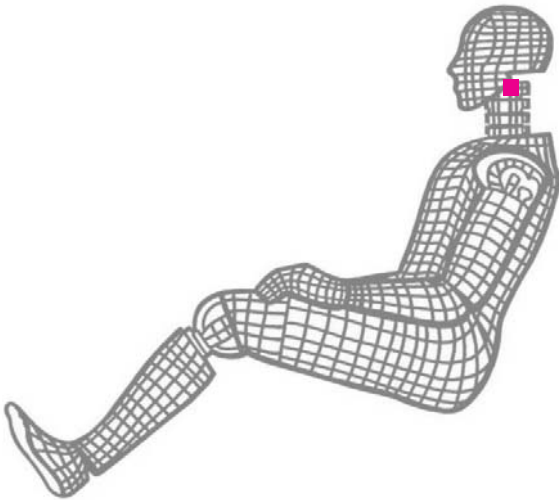


Fig. 1: Dummy application, location upper neck

Included Accessories

- Calibration adapter
- Mounting screws, imperial 1/4-28 UNFx7/8 (DIN 912)

Art. No.
on request

Optional Accessories

- ID module

Art. No.
on request

Ordering Key

		Type M555A6				
		↑	↑	↑	↑	↑
Design						
Standard	AFM					
With MIKQ socket	CFM					
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. assignment, as per TP-600	-#					

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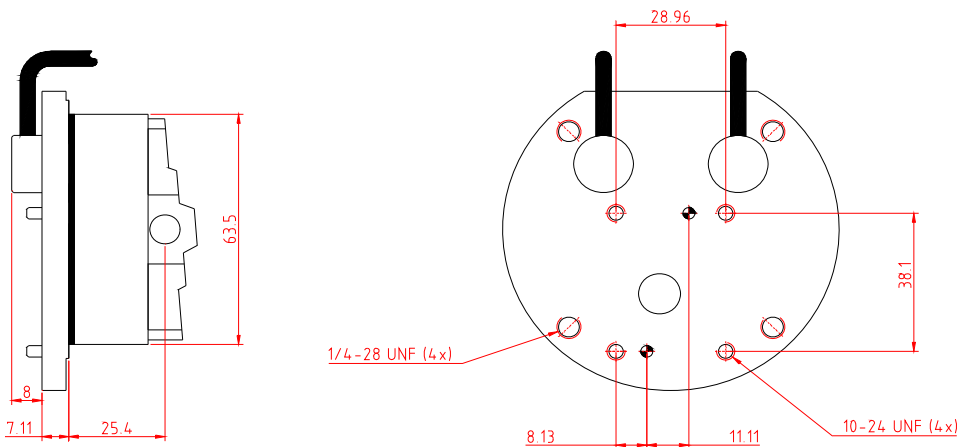


Fig. 2: Dimensions

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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