

Femur Load Cell

Type M50616A...

Six-axial

Type M50616A... is designed to measure forces and moments in the femur of the crash test dummies E1 and E2.

- Six-axial (F_x , F_y , F_z , M_x , M_y , M_z)
- ID module available
- Low linearity errors and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1
- Low weight



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. Customized cable lengths and connectors with specific pin assignments are optionally available.

Line-up of equivalent load cells:

	Type
Kistler	M50616A...
FTSS	IF-631

Technical Data

Axial Data		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN	13,3	13,3	22,2			
	N·m				340	340	340
Bridge output voltage	mV/V	1,7	1,7	1,4	1,5	1,5	2,3
Sensitivity	$\mu V/V/kN$	128	128	63			
	$\mu V/V/N\cdot m$				4,4	4,4	6,8
Bridge resistance	Ω	350	350	700	350	350	700
Ultimate load	%	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	$^{\circ}C$	-20 ... 80
Storage temperature range	$^{\circ}C$	-30 ... 90
Amplitude non-linearity	%	<1
Hysteresis	%	<1
Channel cross talk	%	<5
Weight, without cable and plug	grams	853

All specifications are typical at 25 $^{\circ}C$ 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 M50616A... is designed to measure forces and moments in the femur of the crash test dummies E1 and E2.

Included Accessories

- None

Optional Accessories

- ID module

Art. No.

on request

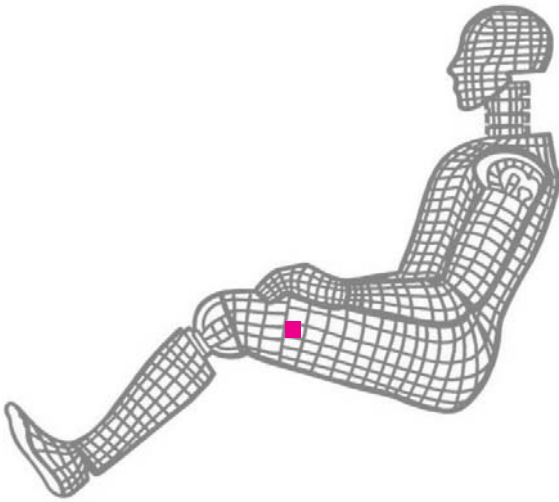


Fig. 1: Dummy application, location femur

Ordering Key

Type M50616A

Design

Standard	BM
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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	#
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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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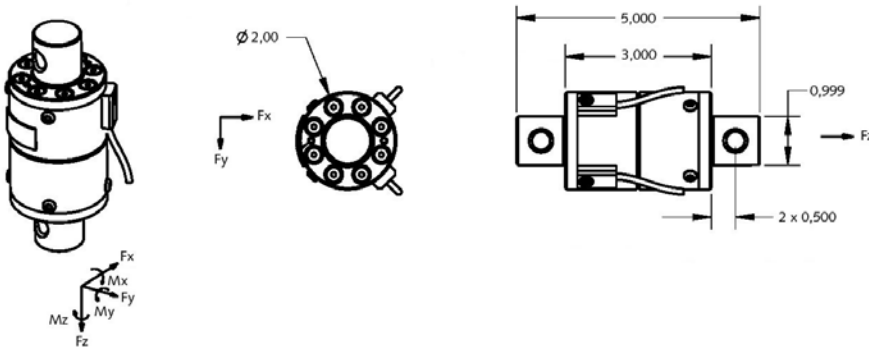


Fig. 2: Dimensions (in inches) and direction of action

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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