

# Femur Load Cell

Type M505A1A...

## Uniaxial

Type M505A1A... is designed to measure forces in the femur of the crash test dummies HIII-50 %, HIII-95 %, HIII-5 %, E1, E2 and SID IIs.

- Measuring range 13,5 kN
- ID module integrable
- Low linearity errors and hysteresis
- 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 forces to be measured create mechanical stretches and buckling in the gaging member.

Line-up of equivalent load cells:

	Type
Kistler	M505A1A...
FTSS	IF-604
Denton	2121A

In order to avoid linearity errors, the deformation paths are constructively held small (high stiffness). Thus a proportional behavior is realized. The force 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.



Type M505A1A...

### Technical Data

#### Axial Data F<sub>z</sub>

Measuring range	kN	13,5
Bridge output voltage	mV/V	1,4
Sensitivity	μV/V/kN	104
Bridge resistance	Ω	350
Ultimate load	%	150

#### General Data

Supply voltage		
without ID module	VDC	5 ... 15
with ID module	VDC	9 ... 12
Insulation resistance <sup>1)</sup>	MΩ	>9
Operating temperature range	°C	-20 ... 80
Storage temperature range	°C	-30 ... 90
Amplitude non-linearity	%	<0,5
Hysteresis	%	<0,5
Weight	grams	635

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

<sup>1)</sup> All wires to screen (GND), measured with 10 VDC

M505A1A\_000-781e-06.12

**Application**

Type M505A1A... is designed to measure forces in the femur of the crash test dummies HIII-50 %, HIII-95 %, HIII-5 %, E1, E2 and SID IIs.

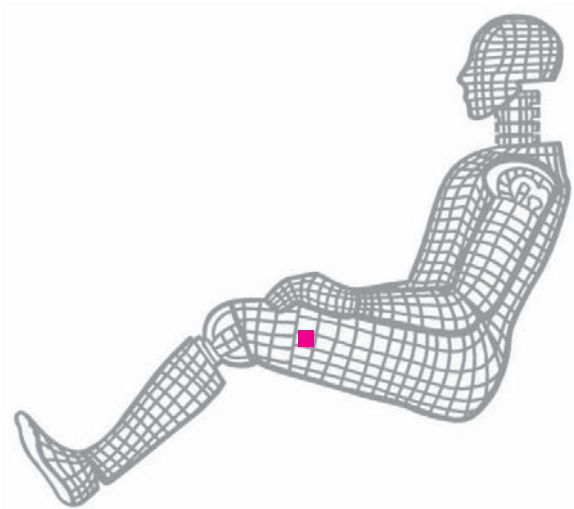


Fig. 1: Dummy application, location femur

**Ordering Key**

Type M505A1A

**Design**

Standard	BM
----------	----

**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	-#

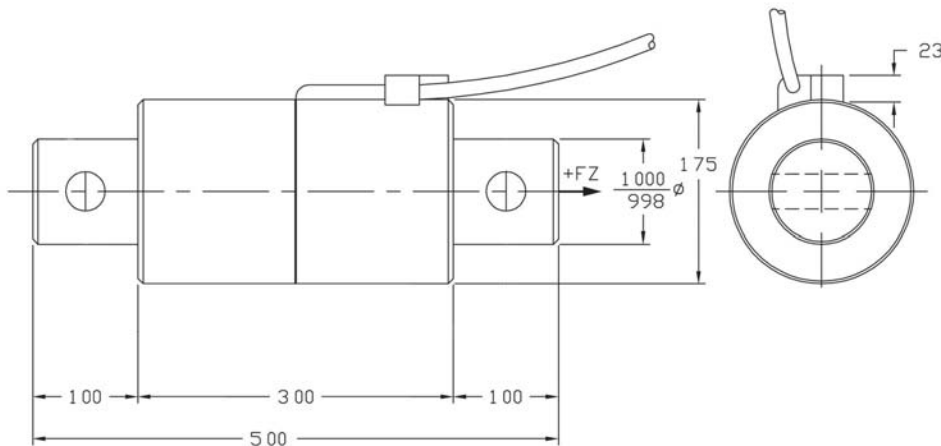


Fig. 2: Dimensions

**Included Accessories**

- None

**Optional Accessories**

- Add. label, customized
- ID module
- Add. shunt

**Type No.**

M015KABID  
on request  
on request

M505A1A\_000-781e-06.12