

Knee Clevis Load Cell

Type M55102A...

Biaxial

Type M55102A... is designed to measure forces in the knee clevis of the crash test dummy HF.

- Biaxial (2 x F_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.

Line-up of equivalent load cells:

	Type
Kistler	M55102A...
FTSS	IF-805
Denton	2154

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.



Technical Data

Measuring range	kN	2x6,7
Bridge output voltage	mV/V	2x1,7
Sensitivity	μ V/V/kN	2x250
Bridge resistance	Ω	2x350
Ultimate load	%	2x150
Supply voltage		
without ID module	VDC	5 ... 15
with ID module	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
Weight (without cable)	grams	490

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 M55102A... is designed to measure forces in the knee clevis of the crash test dummy HF.

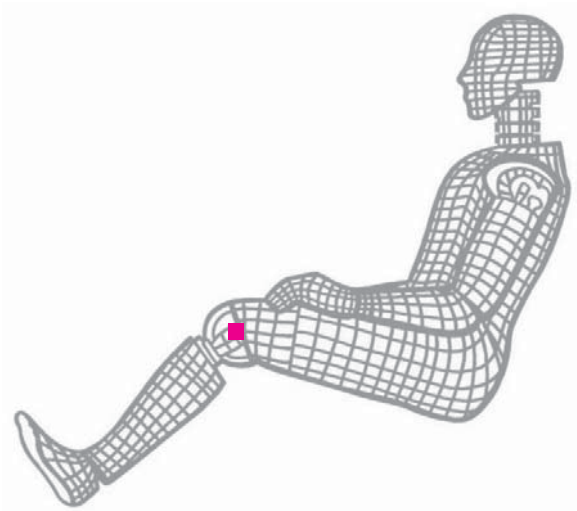


Fig. 1: Dummy application, location knee clevis

Included Accessories

- Fixing screws, 1/4-28 UNFx5/8" (DIN912), 4 units

Type No.

on request

Optional Accessories

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

Type No.

M015KABID
on request
on request

Ordering Key

Type M55102A		□	□	□	□	□
Design	Standard	JM				
Cable Length before Electronics	0 cm	0				
	<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	0				
	<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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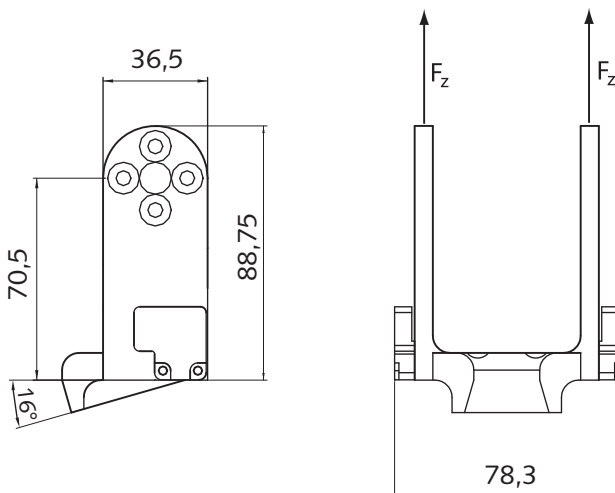


Fig. 2: Dimensions