

Pubic Load Cell

Type M53111A...

Uniaxial

Type M53111A... is designed to measure forces in the pubic of the crash test dummy SidlIs.

- Measuring range 8,9 kN
- ID module available
- Low linearity errors and hysteresis errors
- Kistler system cabling
- Polarities according to SAE J211/1

Description

The load cell is based on the principle of a tensile/compression bar. In order to reduce cross impacts, the tensile bar is divided into four bars with equivalent cross section.

The induced force creates a mechanical stretching respectively buckling in the body. The resistance changes, which are proportional to the force, are measured by means of strain gage, designed as full bridge circuit.

Line-up of equivalent load cells:

	Type
Kistler	M53111A...
FTSS	IF-529
Denton	3168

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	8,9
Current consumption, at 10 V	mA/channel	15
Sensitivity	$\mu\text{V}/\text{V}/\text{kN}$	135
Bridge resistance	Ω	700
Bridge zero signal (typ./max.)	mV/V	0,01/0,03
Supply voltage		
without ID module	VDC	5 ... 15
with ID module	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	%	<1
Hysteresis	%	<1
Channel cross talk	%	-
Weight (without cable)	grams	75

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

Application

Type M53111A... is designed to measure forces in the pubic of the crash test dummy SidII.

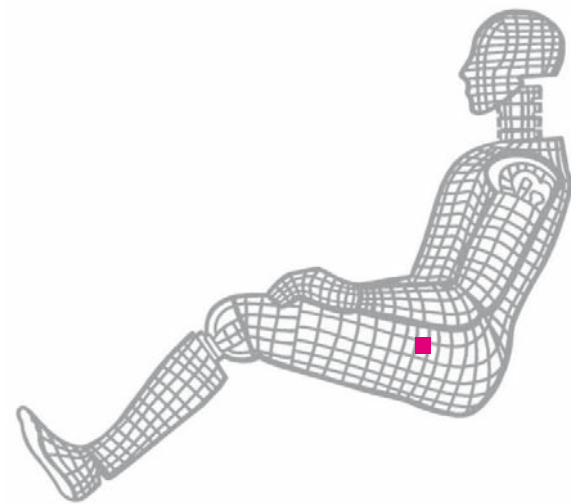


Fig. 1: Dummy application, location pubic

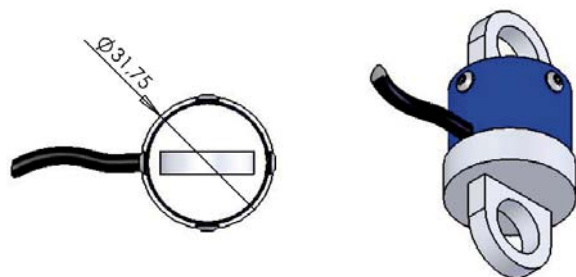
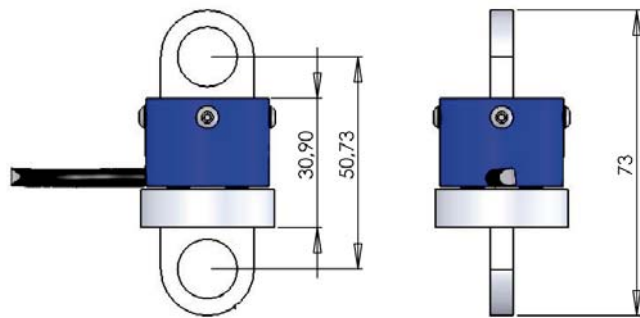


Fig. 2: Dimensions

Included Accessories

- None

Optional Accessories

- Add. label with serial number, plug side
- Add. label with ID number at sensor
- ID module
- Add. shunt

Type No.

M015KABID
M015KABID
on request
on request

Ordering Key

Type M53111A

Design

Standard	DM
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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	#
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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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