KISTLER

measure. analyze. innovate.

Pubic Load Cell

Type M50241A...

Uniaxial

Type M50241A... is designed to measure forces in the pubic of the crash test dummy WorldSID.

- Measuring range 12 kN
- 350 Ω measurement bridge
- ID module available
- Low linearity error and hysteresis error
- 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.

Line-up of equivalent load cells:

	Type
Kistler	M50241A...
Denton	W50-71051

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.

Technical Data

Measuring range	kN	12
Sensitivity (typ.)	µV/V/kN	84
Bridge resistance	Ω	350
Ultimate load, static	%	150
Supply voltage		
without ID module	VDC	5 ... 15
with ID module	VDC	9 ... 12
Insulation resistance[1]	MΩ	>90
Operating temperature range	°C	–20 ... 80
Storage temperature range	°C	–30 ... 90
Amplitude non-linearity (typ.)	%	<1
Hysteresis (typ.)	%	<1
Bridge zero output (typ./max.)	mV/V	0,01/0,03
Weight (without cable)	grams	135

All specifications are typical at 25 °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 M50241A... is designed to measure forces in the pubic of the crash test dummy WorldSID.
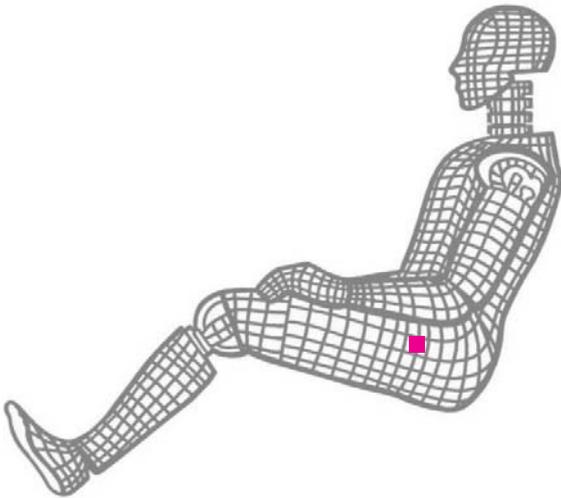
Fig. 1:   Dummy application, location pubic

Ordering Key

Type M50241A ☐ ☐ ☐ ☐ ☐

Design

Standard	DM

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. type assignment, as per TP-600	-#
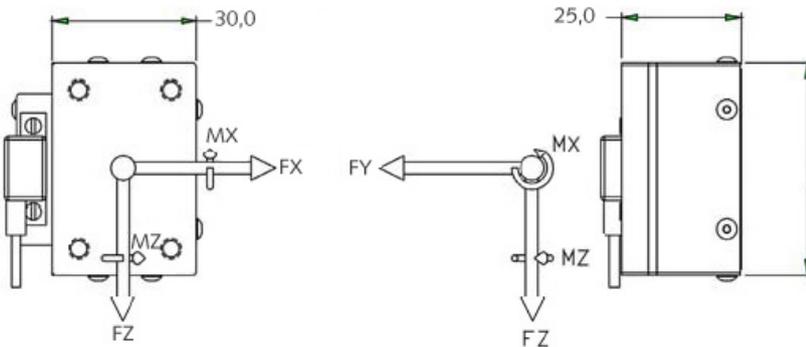
Fig. 2:   Dimensions (inch) and direction of action

Included Accessories

• None

Optional Accessories

	Type No.
• Add. label with serial number, plug side	M015KABID
• ID module	on request
• Add. label with ID number at sensor	M015KABID
• Add. shunt	on request

Page 2/2