

Pubic Load Cell

Type M531A1A...

Uniaxial

Type M531A1A... is designed to measure the pubic force of the crash test dummies E1 and E2.

- Measuring range 20 kN
- ID module integrable
- Low linearity and hysteresis
- Kistler system cabling
- Polarities according to SAE J211/1



Description

This sensor is based on the principle of a tensile strut. In order to reduce the cross impact, the strut is divided in four struts with equivalent sections. The force induced creates mechanical stretching respectively compression inside the gaging member.

Line-up of equivalent load cells:

	Type
Kistler	M531A1A...
FTSS	IF-556
Denton	3096

By means of strain gages, arranged as full bridge circuit, the resistance changes, which are proportional to the affected force, are measured and evaluated.

The load cell is available with ID modules. Customized cable lengths and connectors with specific pin assignments are optionally available.

Technical Data

Measuring range	kN	20
Sensitivity (typ.)	$\mu\text{V/V/kN}$	125
Bridge resistance	Ω	700
Ultimate load	%	150
Supply voltage		
without ID module	VDC	5 ... 15
with ID module	VDC	9 ... 12
Power input of the load cell (typ.)		
without ID module	mA	15
with ID module	mA	25
Insulation resistance (min.) ¹⁾	$M\Omega$	>90
Operating temperature range	$^{\circ}\text{C}$	-20 ... 80
Storage temperature range	$^{\circ}\text{C}$	-30 ... 90
Amplitude non-linearity (typ.)	%	± 1
Hysteresis (typ.)	%	± 1
ZMO (typ./max.)	mV	$\pm 1/\pm 3$
ID modules	unit	1
Weight	grams	127
Material		steel
Dimensions	mm	57x32x28

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

M531A1A_000-784e-12.10

Application

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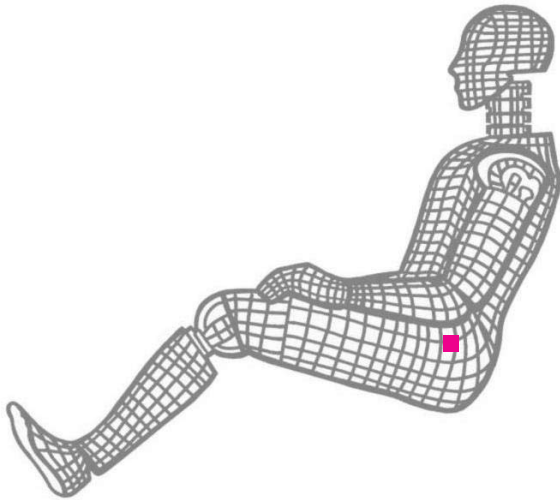


Fig. 1: Dummy application, location "Pubic"



Fig. 2: Application sample

Included Accessories

- None

Optional Accessories

- ID module

Art. No.

on request

Ordering Key

Type M531A1A

Design

Standard	DM
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Cable Length Before Electronics

<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#

Electronics

No electronics	A
UPS	B
Dallas	C
Dallas with E ²	D

Cable Length After Electronics

<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 FB-1004	#-
Conn. type assignment, as per FB-1004	-#

M531A1A_000-784e-12.10

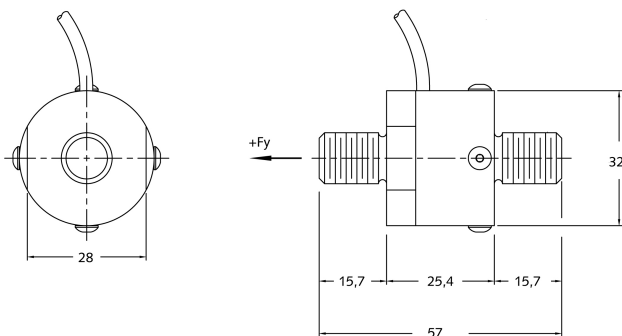


Fig. 3: Dimensions in mm