

Pubic Load Cell

Type M50241A...

Uniaxial

Type M50241A... is designed to measure forces in the pubic of the crash test dummies WorldSID-50 % (WS) and WorldSID-5 % (W5).

- Uniaxial (F_y)
- Bridge resistance 700 Ω
- UPS 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.

In order to avoid linearity errors, the deformation paths are constructively held small (high rigidity). 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 UPS module which is 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.)	$\mu\text{V}/\text{V}/\text{kN}$	190
Bridge resistance	Ω	700
Ultimate load, static	%	150
Supply voltage ¹⁾	VDC	2,5 ... 15
Insulation resistance ²⁾	G Ω	>10
Operating temperature range	$^{\circ}\text{C}$	-20 ... 80
Storage temperature range	$^{\circ}\text{C}$	-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 $^{\circ}\text{C}$ and rated at 10 V sensor supply, unless otherwise specified.

¹⁾ With UPS modul 9 ... 12 VDC

²⁾ All wires to load cell housing, measured with 500 V (DC)

Application

The load cell is directly assembled at the designated location in the dummy and provides important information about the loads on the human body occurring during a crash test.

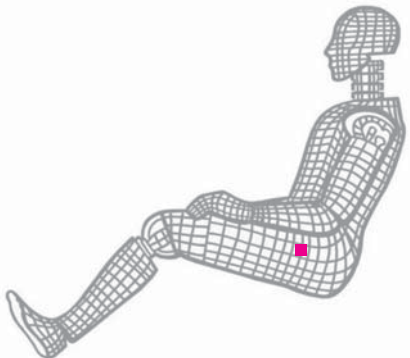


Fig. 1: Dummy application, location pubic

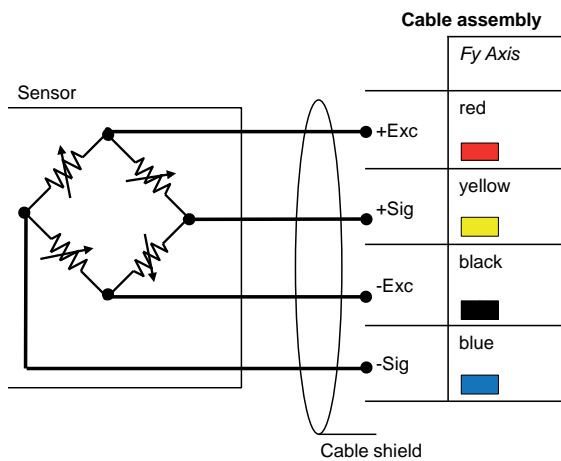


Fig. 2: Cable assembly

Included Accessories

- None

Optional Accessories

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

Type No.

M015KABID
on request
M015KABID
on request

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	-#				

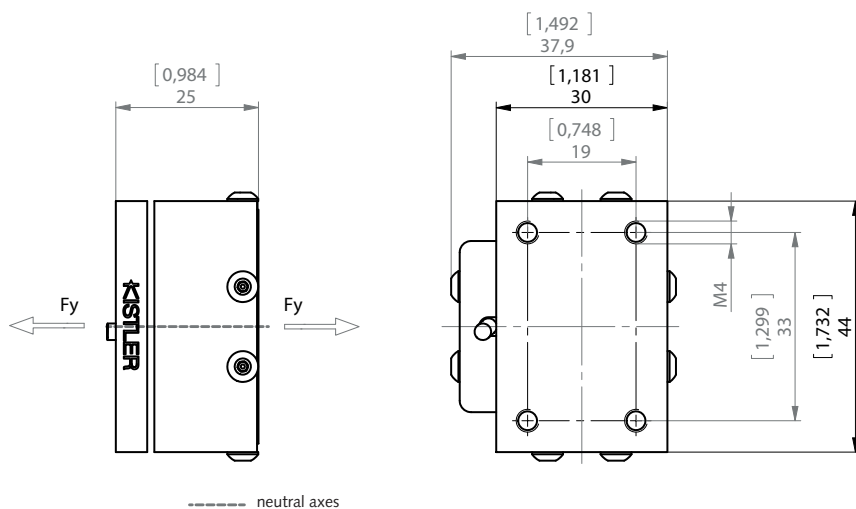


Fig. 3: Dimensions (mm)

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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