

Lumbar Spine Load Cell

Type M56826A...

Six-axial

Type M56826A... is designed to measure forces and moments in the lumbar spine of the crash test dummy WorldSID.

- Six-axial (F_x , F_y , F_z , M_x , M_y , M_z)
- ID modules 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 stiffness). Thus a proportional behavior is realized. The force and moment proportional resistance variations are measured by a Wheatstone-type bridge circuit.

Line-up of equivalent load cells:

	Type
Kistler	M56826A...
Denton	W50-71120

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

Axial Data		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN	10	10	12			
	N·m				300	300	200
Bridge output voltage (typ.)	mV/V	1,6	1,6	1,0	1,8	1,8	1,8
Sensitivity (typ.)	$\mu\text{V/V/kN}$	160	160	83			
	$\mu\text{V/V/N·m}$				6	6	9
Bridge resistance	Ω	350	350	700	350	350	700
Ultimate load (static)	%	150	150	150	150	150	150

General Data

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 (typ.)	%	<1
Hysteresis (typ.)	%	<1
Channel cross talk	%	<5
Bridge zero output (typ./max.)	mV/V	0,01/0,03
Weight (without cable)	grams	475

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

M56826A_000-975e-12.11

Application

Type M56826A... is designed to measure forces and moments in the lumbar spine of the crash test dummy WorldSID.

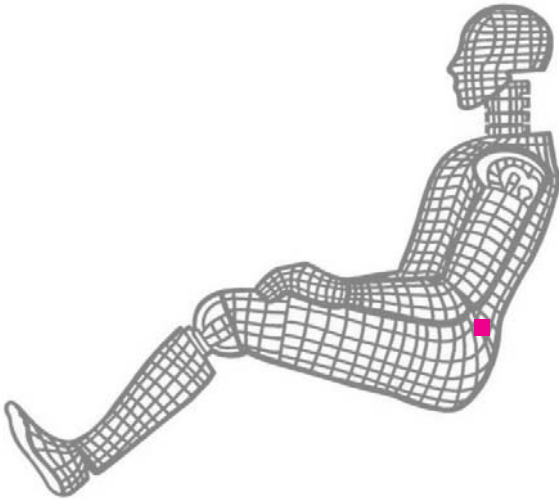


Fig. 1: Dummy application, location lumbar spine

Ordering Key

Type M56826A

Application

Standard	IM
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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	#
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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	-#

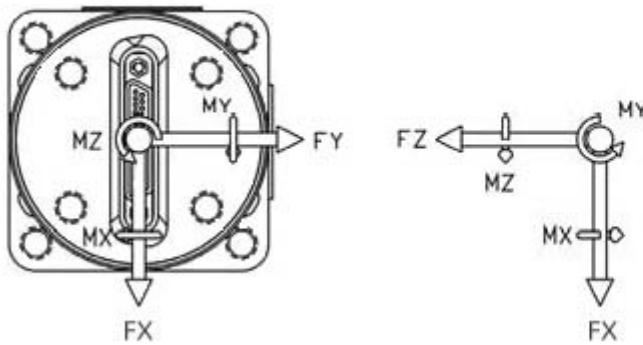
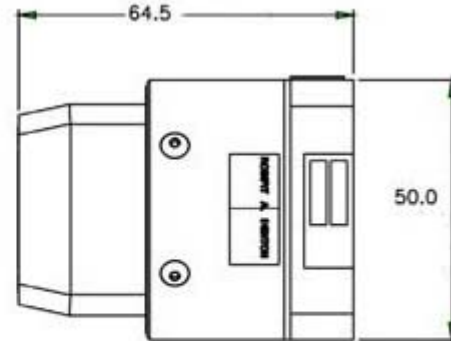


Fig. 2: Dimensions



Included Accessories

- None

Optional Accessories

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

Type No.

M015KABID
on request
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on request

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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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