

Upper Neck Load Cell

Type M55526A...

Six-axial

Type M55526A... is designed to measure forces and moments in the upper neck of the crash test dummies E1 and E2.

- Six-axial (F_x , F_y , F_z , M_x , M_y , M_z)
- Measuring ranges 10 ... 15 kN and 280 N·m
- ID module available
- Low linearity errors and hysteresis errors
- 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 | M55526A... |
| FTSS | IF-240 |
| Denton | 4085 |



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.

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 | 15 | | | |
| | N·m | | | | 280 | 280 | 280 |
| Bridge output voltage | mV/V | 1,8 | 1,8 | 1,5 | 1,7 | 1,7 | 2,5 |
| Sensitivity | $\mu\text{V/V/kN}$ | 180 | 180 | 100 | | | |
| | $\mu\text{V/V/N}\cdot\text{m}$ | | | | 5,7 | 5,7 | 8,3 |
| Bridge resistance | Ω | 350 | 350 | 700 | 350 | 350 | 700 |
| Ultimate load | % | 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 |
| Weight (without cable) | grams | 600 |

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 M5526A... is designed to measure forces and moments in the upper neck of the crash test dummies E1 and E2.

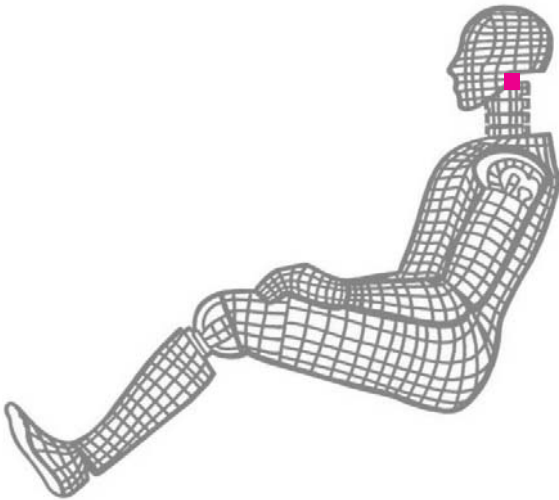


Fig. 1: Dummy application, location upper neck

Ordering Key

Type M5526A

Design

| | |
|----------|----|
| Standard | FM |
|----------|----|

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 | -# |

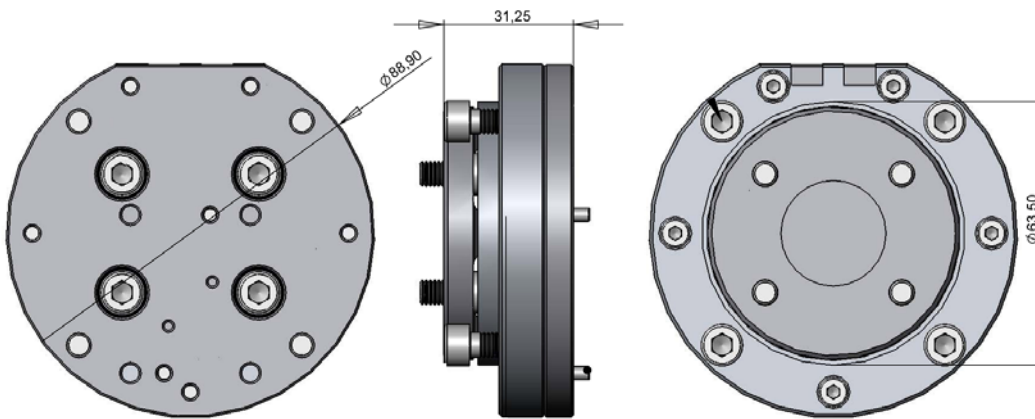


Fig. 2: Dimensions in mm

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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