

Features

- Super low mass titanium design
- Quick install and release axles
- Easy and quick cable replacement
- Optional linearized output
- Quasi-static calibration certificate per ISO/TS 17242 (Third-Degree Polynomial)

Applications

- Automotive crash test

EL22

Seat Belt Load Cell

Specifications

- Ranges 16 kN (tension only)
- Ultra rugged low-mass titanium design
- Seat belt restraint testing (Tension only)
- Quick install and release axles
- Replaceable cable
- Quasi-static calibration per ISO/TS 17242

Measurement Specialties has applied our decade of experience serving the automotive crash test industry to design the ultimate crash test seat belt restraint sensor.

The EL22 provides a super low mass titanium structure to minimize $F=MA$ errors during the crash event. All exterior surfaces are smoothed to prevent snagging on dummy or air bag materials; smoothed exterior profiles protect your expensive crash test dummy from damage while reducing drag and frictional error. The EL22 is offered with the new fast installation axles, unlocked by push button and a robust armoured cable exit from the device. The user-replaceable cable ensures that even if your cabling is damaged, replacement cables can be rapidly wired, and your test facility remains in full operation at all times.

The low noise Wheatstone bridge consists of metal foil strain gages which provide full scale outputs of typically 2 mV/V of excitation. Option B provides a linearized output signal by integrated circuit for a better accuracy.

The quasi-static calibration procedure per ISO/TS 17242 delivers a certificate with Linear equation and a Third-Degree Polynomial equation.

The EL22 can be configured with a variety of options to fine tune the instrument to your application: select from non-standard compensated temperature ranges, supply voltages, cable lengths, wired connector or specify unique combinations of these options.

The EL22 belt tension load cell can be fine-tuned to meet your crash test or military test needs.

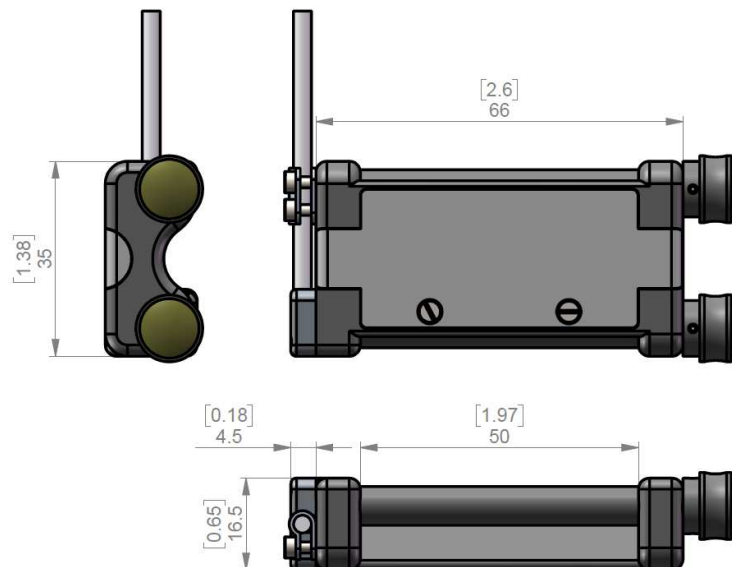
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Technical Specifications (typical values with 10 Vdc supply, at temperature 23°C)

Measuring range (FS)	16 kN
Over range without damage	1.5 x FS
Sensitivity ⁽¹⁾	2 mV/V
Supply Voltage	10 Vdc max. (5 to 10 Vdc for options B)
Zero offset	± 0.05 mV/V
Bridge resistance ⁽¹⁾	350 Ω
Current consumption (option B)	< 30 mA
Operating Temperature Range (OTR)	-40 to 120°C
Compensated Temperature Range (CTR)	0 to 60°C
Zero Shift in CTR	±1% FS /50°C
Non-linearity without option B ⁽²⁾	±3% FS
Non-linearity with option B ⁽²⁾	±1% FS
Deviation from Polynomial equation ⁽¹⁾	±1% FS
Insulation resistance	≥100 MΩ at 50 Vdc
Cable	4 x AWG30, shielded cable with Silicone jacket (7m length)
Sensor material	Titanium
Weight without cable	85 gr
Ingress Protection rating	IP50
Calibration method	per ISO/TS 17242
Test belt model	reference 2091 or equivalent

1. Typical value

2. Calculated per Best Fit Strait Line Method, with the max error value identified between 10% to 100% FS

Dimensions

Installation


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Connections

Wire color	Sensor Signal	CD7A option	CD7B option
Green	+Signal	3	3
Red	+Excitation	4	4
Black	-Excitation	5	5
White	-Signal	6	6
cable Shield	Not connected to sensor body	Connector housing	Connector housing
-	ID-Data	2	2
-	ID-GND	Connector housing	7

Options CD7A and CD7B provide a LEMO FGG-1B-307 wired at the end of cable with DS2401 inside

Options

B: Linearized output signal
Z1: Compensated temperature range -20 to 40°C (other temperature ranges available upon request)
V0: non-standard Supply Voltage. Replace "0" with Supply Voltage, lower than 10 Vdc (5 Vdc min for option B or D)
L10M: Special Cable Length of 10 meters (or other multiples of 5 meters also available: L15M ; L20M...)
CD7x: Wiring of Lemo FGG-1B-307 and Dallas DS2401 at cable end (see connection table informations for wiring details)

Accessories

SL1: Sleeve adapter for 38/42 mm (1.5 /1.65) strap width.	L00520 (to be ordered by pair)
SL2: Sleeve adapter for 28/32 mm (1.1 /1.26) strap width.	L00521 (to be ordered by pair)
SL3: Sleeve adapter for 24/28 mm (0.95 /1.1) strap width.	L00522 (to be ordered by pair)

Ordering Information



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