Technical Data Sheet

F1B1D11A

Load Cell, 1-axial

Location: Seat Belt

Force direction
Force (F)

Application
Measurement of forces at the seat belt during automotive crash or sled tests

Equivalent types
Customized versions

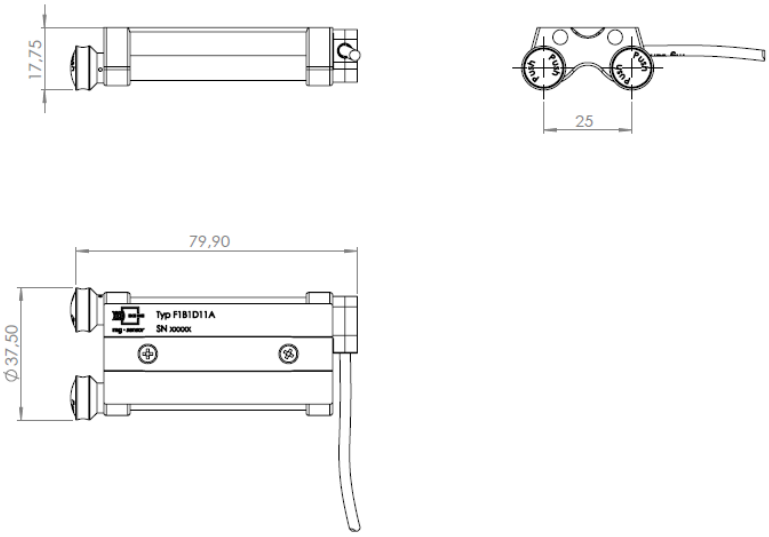
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Linearizing circuit

Technical description

The strap is routed under two completely detachable shafts over the measurement body (sensor). The shafts can be detached using a ball locking device by pressing a button. The shafts can still be rotated in the locked state.
The applied force causes strain of the measuring point of the base body. The deformation is measured using strain gauges. The wiring of multiple strain gauges for a full bridge circuit compensates for the temperature influence on the zero signal. The very light belt force sensor made of aluminum minimizes the influence of the measuring system due to the low own weight of the sensor. The system-inherent non-linearity can be partially compensated for by an optional integrated linearization circuit.
The standard version without linearization is already shipped with calibration according to ISO/ TS 17242 (third degree polynomial approximation).

Dimensions



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Technical specification

	Unit	Linearizing circuit	
		Without	
Measuring range	kN	6.0	
Sensitivity[1)]	µV/V/kN	383	
Output signal[1), 2)]	mV/V	2.3	
Bridge resistance	Ω	350	
Zero signal[1)]	mV/V	≤ 0.05	
Amplitude non-linearity[3)]	%	≤ 1.0	
Hysteresis[3)]	%	–	
Supply voltage	V	2–15	
Ultimate load	%	150	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-30…+70	
Band thickness	mm	≤ 1.3	
Band width	mm	50.8 (2“)	
Weight (approximate)	g	52	

All values measured at 10 V sensor supply voltage and at 23 °C,
with standard Berger 08022/2/0702 belt type.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

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