Technisches Datenblatt

- preliminary -

Triax Seat Force Load Cell

Model 5921B/3SF

- **Triaxial (Fx, Fy, Fz)**
- **Measuring Range 44,5 kN in all Axes**
- **High Stiffness of the System**
- **Low Non-Linearity and Hysteresis**
- **1.5 times Overload-proof**

Application

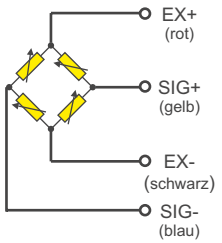
This model measures the seat forces inside the vehicle and on the test stand. Therefore it is installed between the seat adaptation mechanism and the car body. Due to its minimum installation height and its central fixing point at the seat adaptation mechanism this can be easily done.

Functional Concept

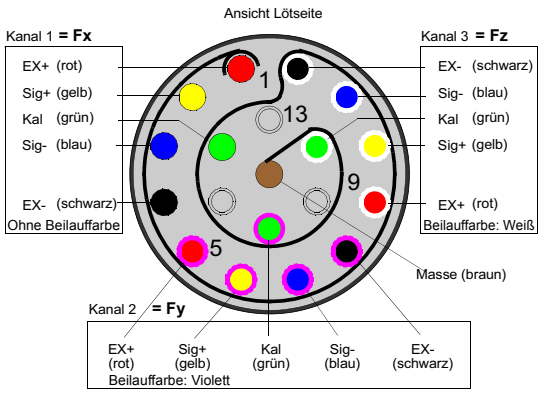
The transducer is made of elements, which are affected by forces and moments. The strain gage-applied deformation body serves the transformation of mechanical impacts to electric signals. The force or the moment to be measured generates mechanical strains and compressions inside the gaging member.

To avoid non-linearities, the deformation paths are being held constructively small (high stiffness). In doing so a proportional behaviour is realized. The force and moment-proportional resistance variations are measured by a Wheatstone-type bridge circuit.

The transducer will be delivered with a 2F Lemosa connector and 30 cm cable by default (see also options). For the pin assignment of the 2F connector please see sketch on the right.



Schematic Diagram



Colour indication code with axis allocation
Pin assignment refers to TP-121: Connector assignment A

Options

- Customized cable lengths
- Connectors with customer-specific pin assignment
- Integrated MSC Idendification Modules (UPS or Dallas version)
- Conversion to a transducer with digital interface using the MSC „**A**nalog**I**nput**M**odule".

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Technical Specifications

All specifications are typical at 25°C and rated at 10V transducer supply voltage, unless otherwise specified.

Axis-specific Data	Unit	**Fx**	**Fy**	**Fz**
Measurement Range (full scale)[1]	kN	44,5	44,5	44,5
Bridge Output Voltage at full scale	mV/V	1,78	1,78	1,3
Sensitiviy	µV/V/kN	40	40	29
Bridge resistance	Ohm	350	350	700
Ultimate load with respect to full scale	%	150	150	150

[1] From the technical sight a measurement range extension, without a permanent modification of the technical specifications, up to 120% is ensured, see "General Data". Please read out the individual data out of the calibration certificate.

General Data		Unit	Value	Remark
Supply Voltage		V DC	2,5 ... 12 9 ... 12	without ID modules with ID modules (optionally available)
Insulation Resistance[1]		MOhm	> 90	
Working Temperature Storage Temperature		°C	-20 ... +80 -20 ... +80	unbedewed ''
Temperature Coefficient of Sensitivity		%/K	0,054	range 10° ... 40°C
Zero Measurand Output		mV (typ.) mV (max.)	0,3 1	
Non-linearity		%	< 1	with respect to full scale
Hysteresis		%	< 1	with respect to full scale
Cross Talk		%	< 5	with respect to full scale
Warm-up Period		s (typ.)	240	transducer unmounted
Cable Type			CM16A30-85SH	standard cable length 30cm screen not attached to sensor
Connector Type			M16F	on Lemo 2F Basis
ID Modules (optionally)			3	UPS or Dallas version
Fixing Screws		4 units	M8 x 25 DIN912 8.8	torque moment 13,5 Nm
Screw-in Tap Hole	exterior interior	1 unit	3/4''-16 M12	torque moment 13,5 Nm
Transducer Mass		Grams	1100	

[1] All wires to screen (GND), measured with 10V DC.

Model/OptionCode: 5921B/3SF-KT-ST

5921B/3SF:	Model indication
-KT:	Cable type resp. cable length in cm
-ST:	Connector type

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