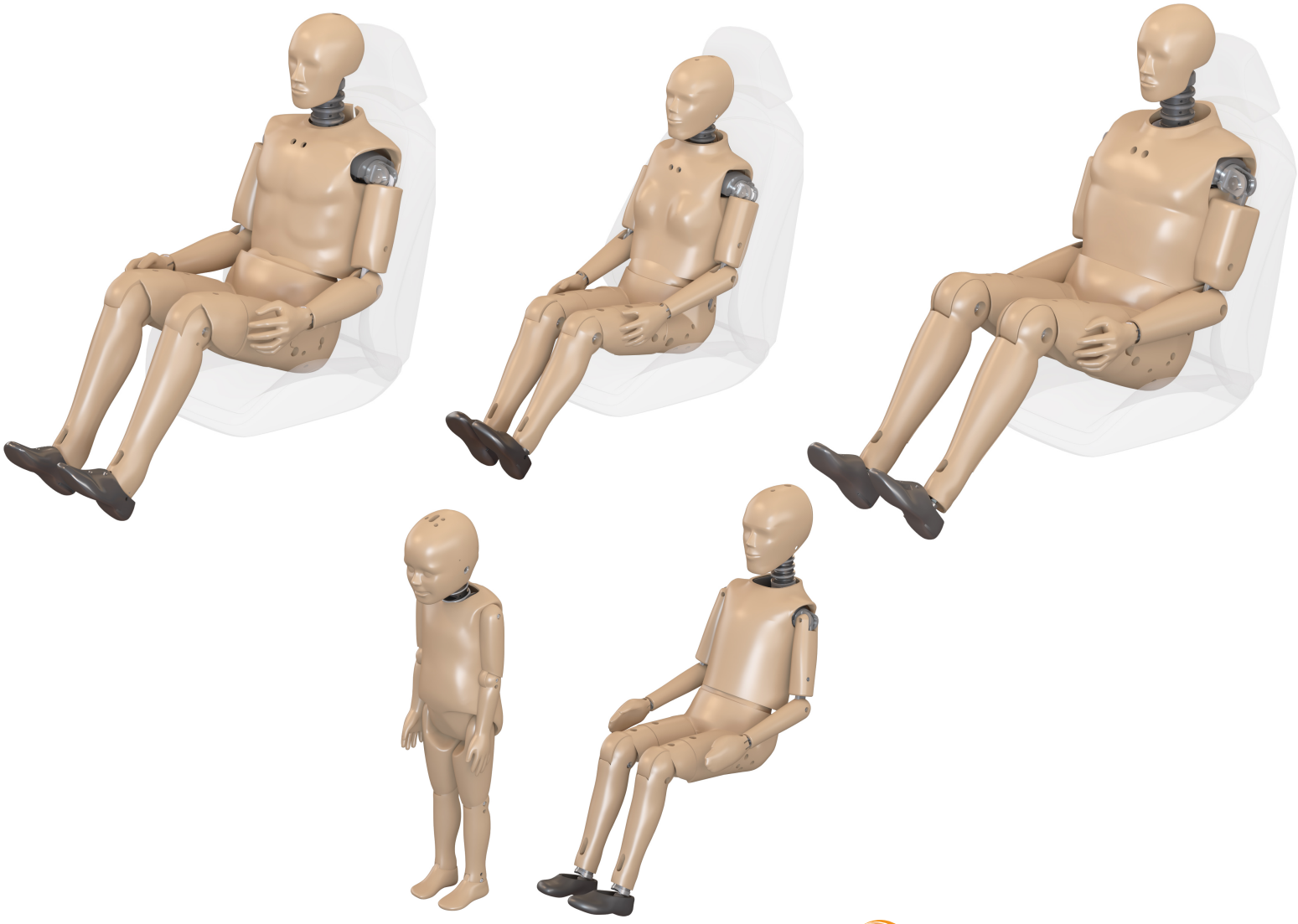
Crash Test Dummy Load Cells

Hybrid III Family

TECHNICAL DATA SHEETS



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MG-SENSOR
A HUMANETICS COMPANY

Technical Data Sheet

F1ACA11A

Load Cell, 1-axial

Location: Femur, Upper

Force direction
- F_z

Application
- H2-50%
- H3-5%
- H3-50%
- H3-95%

Equivalent types
- Denton: 2121J

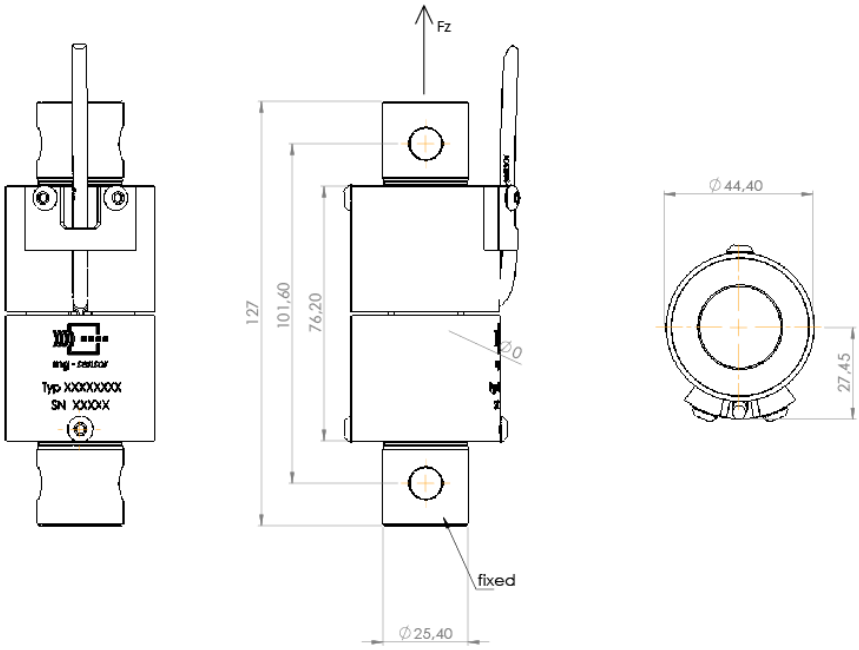
Measurement specification
- Resistive
- Strain gauges

Options
- ID-Module integrated in sensor
- Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F1ACA11A

Technical specification

	Unit	Value
		F_z
Measuring range	kN	13.5
Sensitivity[1)]	µV/V/kN	104
Output signal[1), 2)]	mV/V	1.4
Bridge resistance	Ω	350
Zero signal[1)]	mV/V	≤ 0.05
Amplitude non-linearity[3)]	%	≤ 1.0
Hysteresis[3)]	%	≤ 1.0
Channel cross talk[3)]	%	–
Supply voltage	V	2–15
Ultimate load	%	150
Insulation resistance	MΩ	> 100
Temperature range	°C	-30…+70
Weight (approximate)	g	630

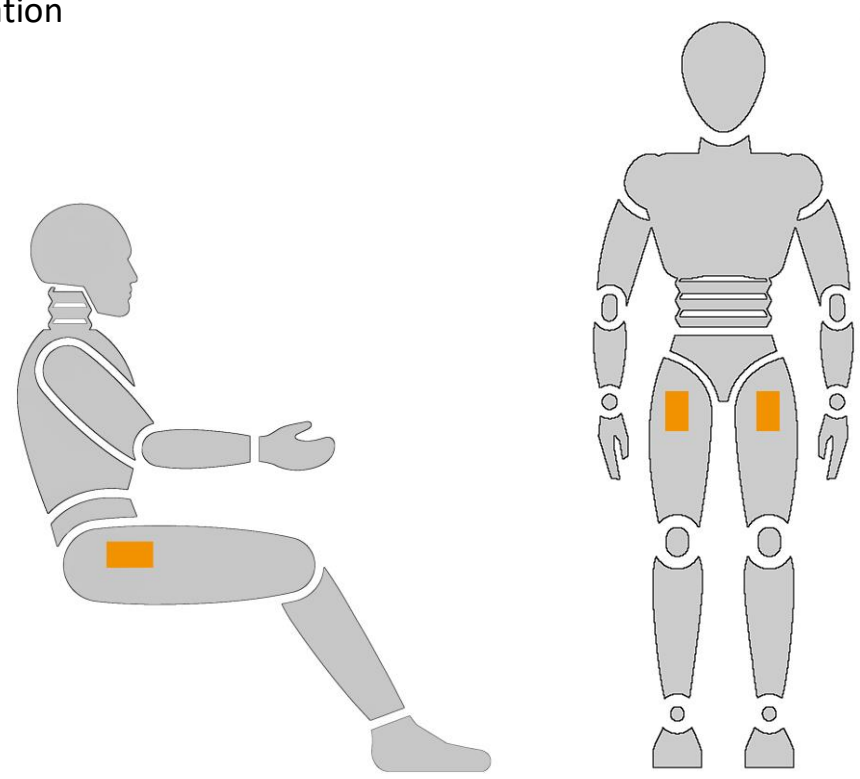
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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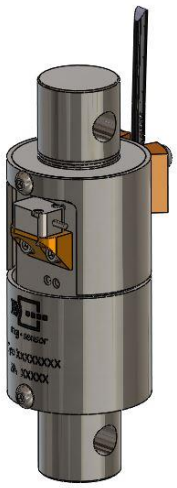
Technical Data Sheet

F1ACG11A

Load Cell, 1-axial

Location: Femur



Force direction
F_z

Application
H3-5%
H3-50%
H3-95%

Equivalent types
Denton: similar 6321 (2121)

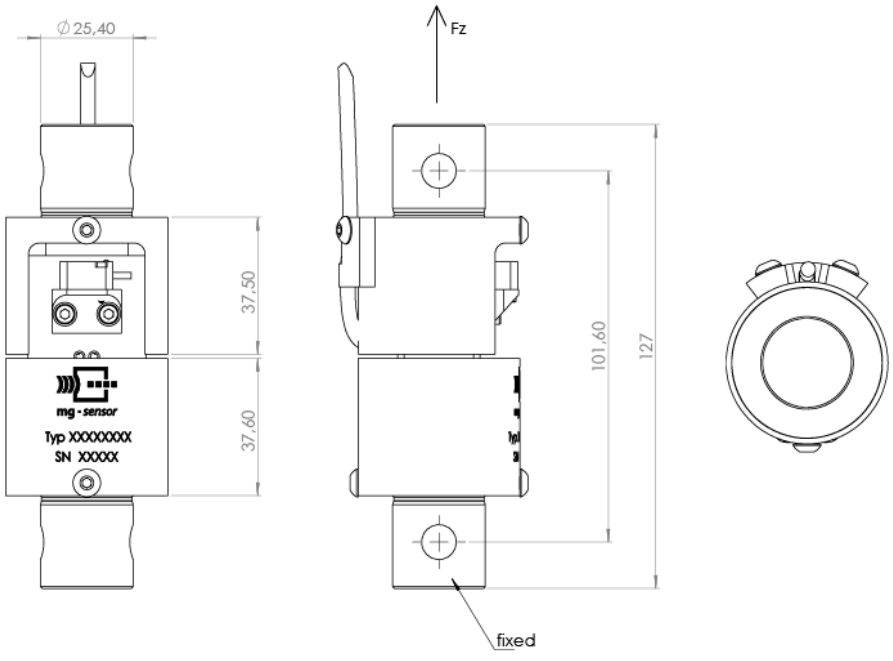
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F1ACG11A

Technical specification

	Unit	Value
		F_z
Measuring range	kN	13.4
Sensitivity[1)]	µV/V/kN	105
Output signal[1), 2)]	mV/V	1.4
Bridge resistance	Ω	350
Zero signal[1)]	mV/V	≤ 0.05
Amplitude non-linearity[3)]	%	≤ 1.0
Hysteresis[3)]	%	≤ 1.0
Channel cross talk[3)]	%	–
Supply voltage	V	2–15
Ultimate load	%	150
Insulation resistance	MΩ	> 100
Temperature range	°C	-30…+70
Weight (approximate)	g	630

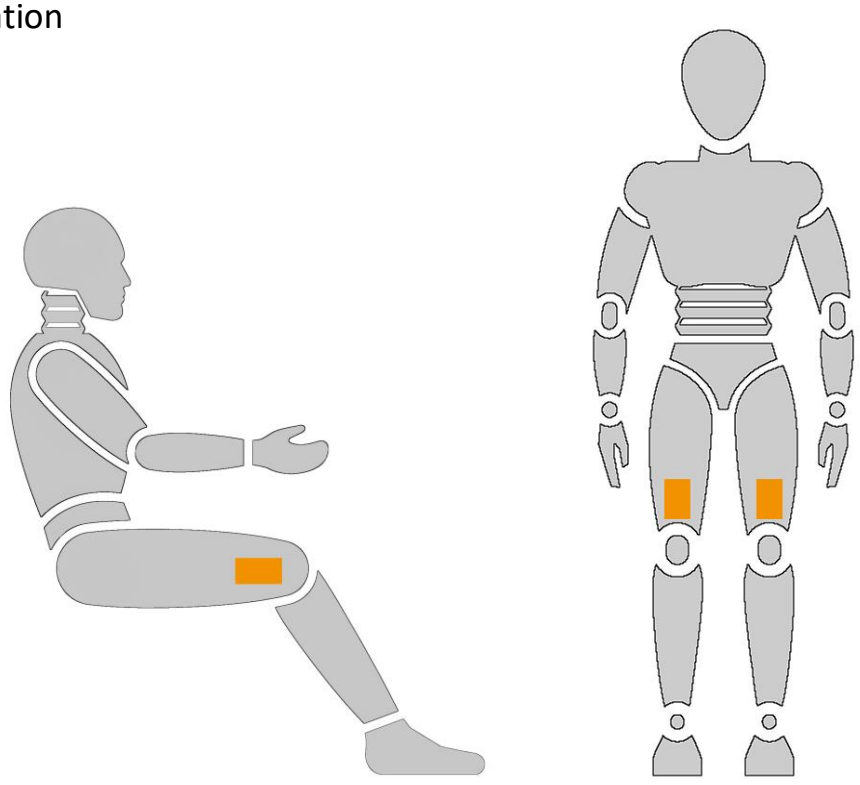
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

F2A9A11A

Load Cell, 2-axial

Location: Knee Clevis

Force direction
- F_z x 2

Application
- H3-50%
- FAA
- BioSID

Equivalent types
- Denton: 1587
- FTSS: IF-803

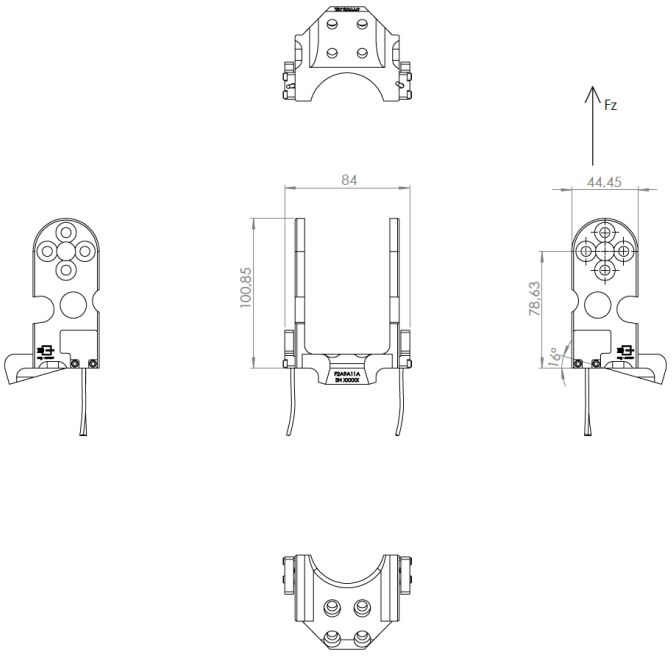
Measurement specification
- Resistive
- Strain gauges

Options
- ID-Module integrated in sensor
- Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F2A9A11A

Technical specification

	Unit	Value	
		F_z	F_z
Measuring range	kN	8.9	8.9
Sensitivity[1)]	µV/V/kN	146	146
Output signal[1), 2)]	mV/V	1.3	1.3
Bridge resistance	Ω	350	350
Zero signal[1)]	mV/V	≤ 0.05	
Amplitude non-linearity[3)]	%	≤ 1.0	
Hysteresis[3)]	%	≤ 1.0	
Channel cross talk[3)]	%	–	
Supply voltage	V	2–15	
Ultimate load	%	150	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-30…+70	
Weight (approximate)	g	630	

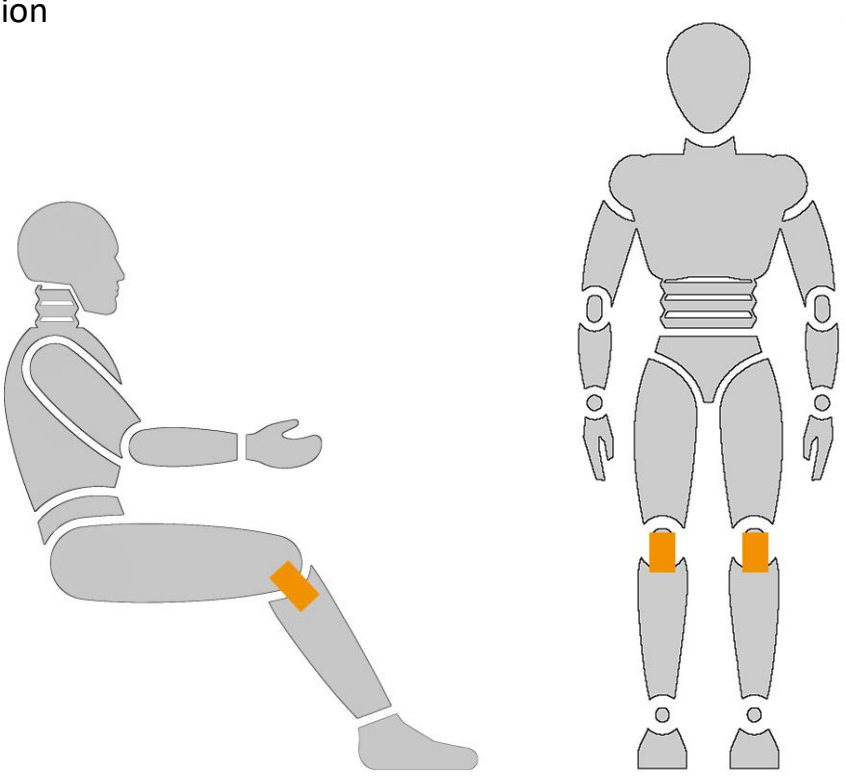
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

F2A9C11A

Load Cell, 2-axial

Location: Knee Clevis

Force direction
F_{z_R}, F_{z_L}

Application
H3-95%

Equivalent types
Denton: 2372
FTSS: IF-823

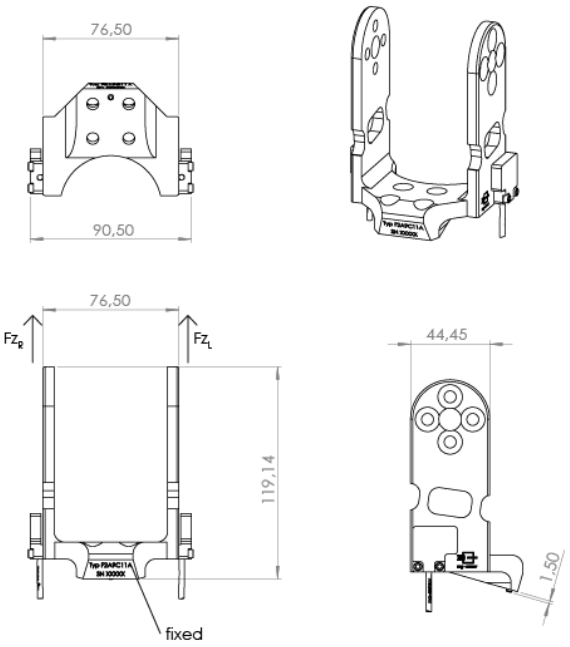
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F2A9C11A

Technical specification

	Unit	Value	
		F_{z_R}	F_{z_L}
Measuring range	kN	8.9	8.9
Sensitivity[1)]	µV/V/kN	225	225
Output signal[1), 2)]	mV/V	2.0	2.0
Bridge resistance	Ω	350	350
Zero signal[1)]	mV/V	≤ 0.05	
Amplitude non-linearity[3)]	%	≤ 1.0	
Hysteresis[3)]	%	≤ 1.0	
Channel cross talk[3)]	%	≤ 5.0	
Supply voltage	V	2–15	
Ultimate load	%	150	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-30…+70	
Weight (approximate)	g	600	

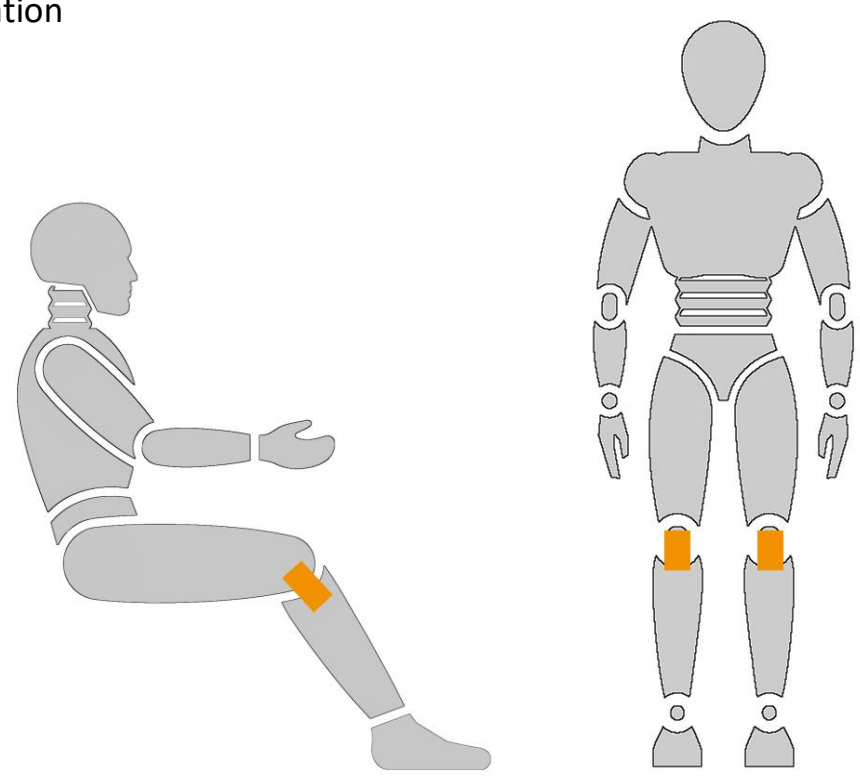
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

F2ACA11A

Load Cell, 2-axial

Location: Femur

Force direction
F_z, F_z

Application
H2-50%
H3-5%/ H3-50%/ H3-95%
FAA

Equivalent types
Denton: 3821

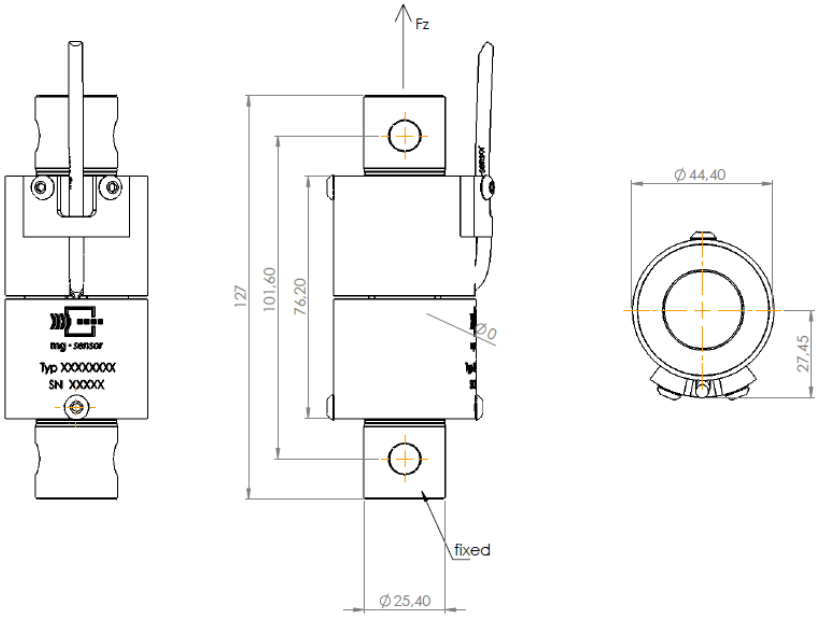
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F2ACA11A

Technical specification

	Unit	Value	
		F_z	F_z
Measuring range	kN	13.6	13.6
Sensitivity[1)]	µV/V/kN	110	110
Output signal[1), 2)]	mV/V	1.5	1.5
Bridge resistance	Ω	350	350
Zero signal[1)]	mV/V	≤ 0.05	
Amplitude non-linearity[3)]	%	≤ 1.0	
Hysteresis[3)]	%	≤ 1.0	
Channel cross talk[3)]	%	≤ 5.0	
Supply voltage	V	2–15	
Ultimate load	%	150	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-30…+70	
Weight (approximate)	g	–	

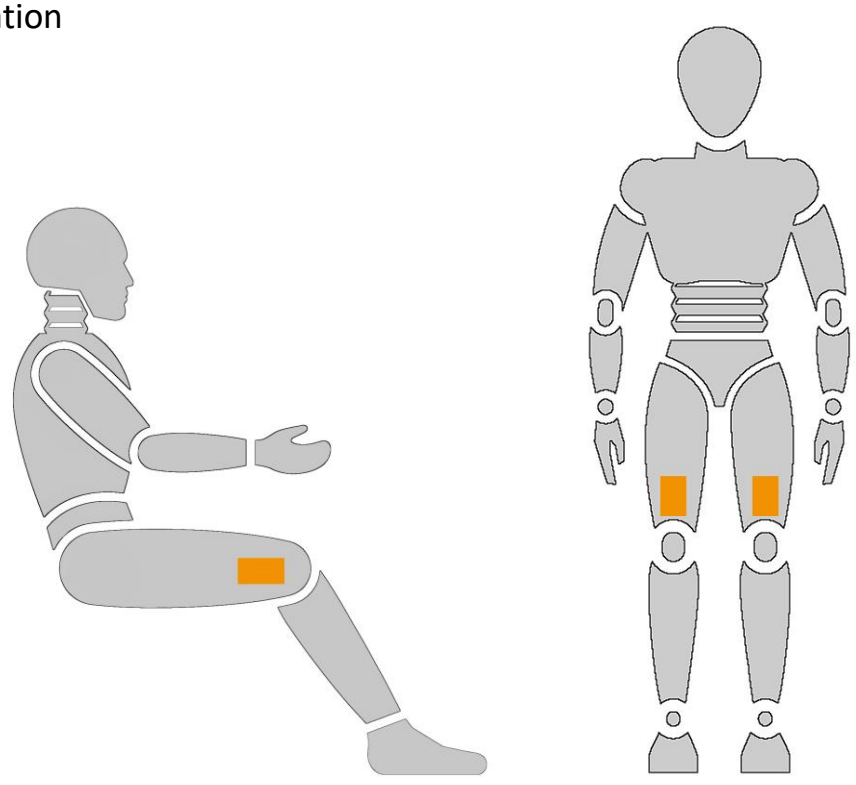
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy Application



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Technical Data Sheet

F3AJC11A

Load Cell, 3-axial

Location: Neck, Upper

Force direction
F_x, F_y, F_z

Application
H3-3YO

Equivalent types
Denton: 3303
FTSS: IF-234

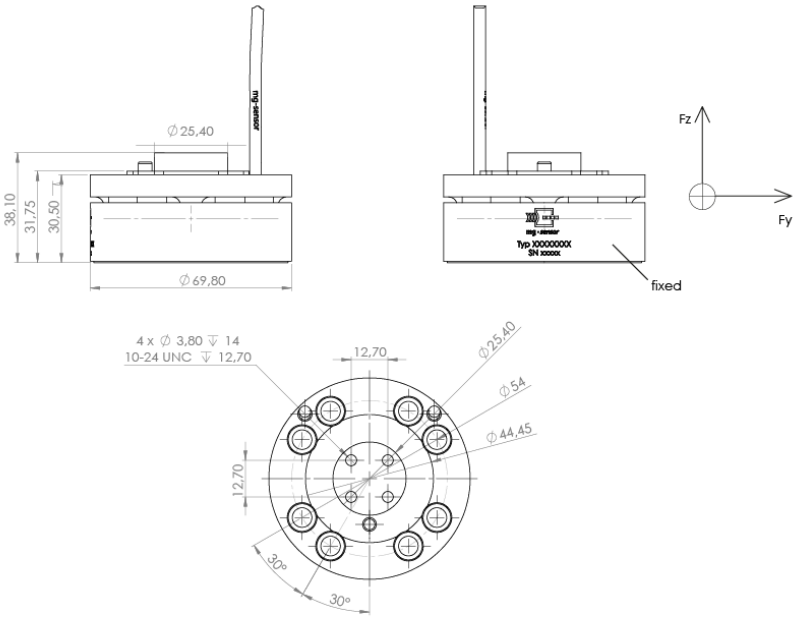
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

F3AJC11A

Technical specification

	Unit	Value		
		F_x	F_y	F_z
Measuring range	kN	4.5	4.5	6.7
Sensitivity[1)]	µV/V/kN	422	422	190
Output signal [1), 2)]	mV/V	1.9	1.9	1.3
Bridge resistance	Ω	350	350	700
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel crosstalk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	230		

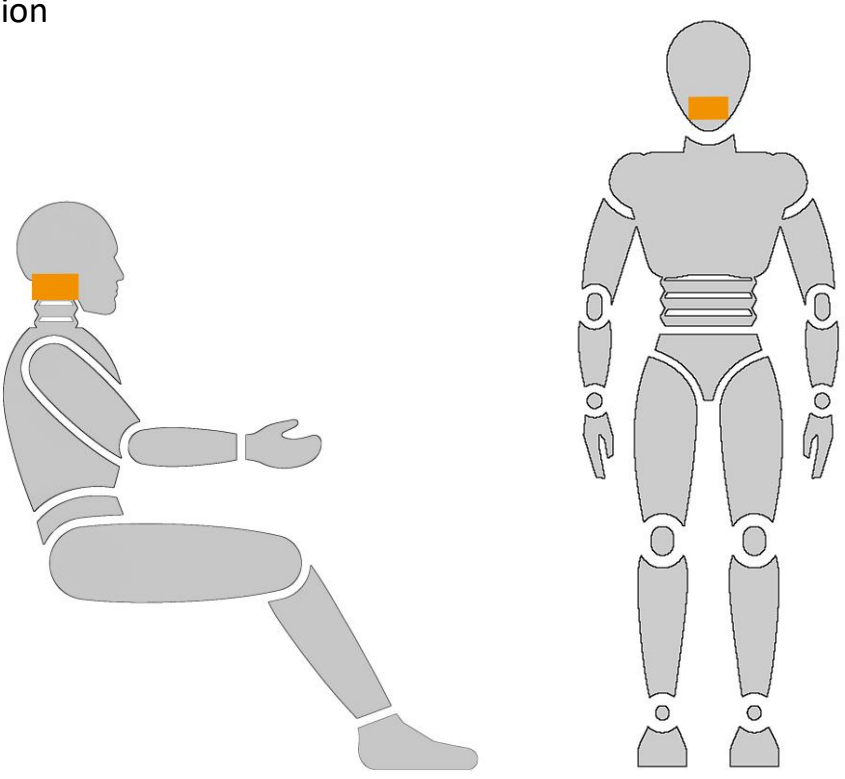
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N2AXA11A

Load Cell, 2-axial

Location: A.S.I.S. Iliac Spine

Model: N2AXB11A (left)
N2AXC11A (right)

Force direction
F_x, M_y

Application
H3-5%

Equivalent types
Denton: 2656 (3743/3744)
FTSS: IF-517 (IF-5171/5172)

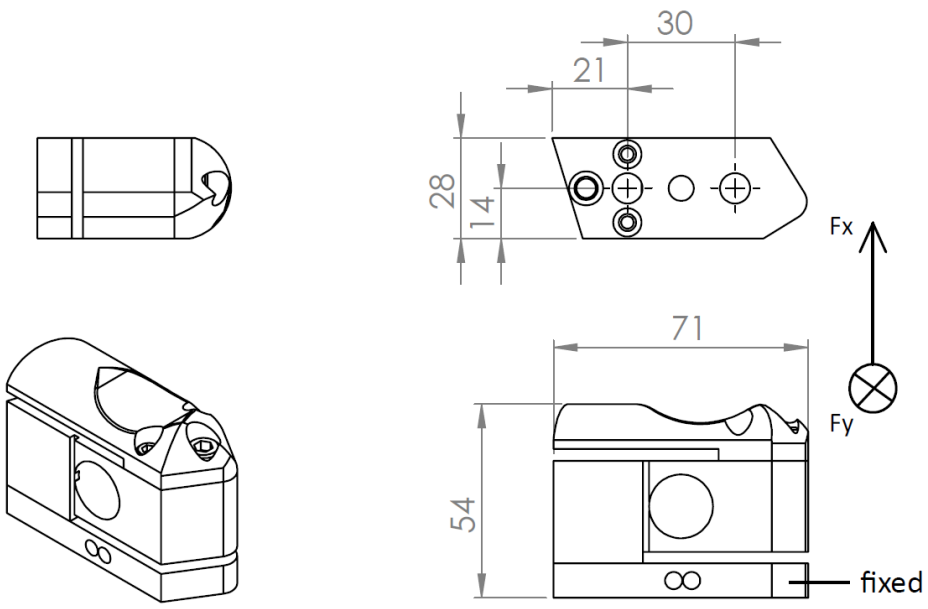
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N2AXA11A

Technical specification

	Unit	Value	
		F_x	M_y
Measuring range	kN Nm	8.9	 226
Sensitivity[1)]	µV/V/kN µV/V/Nm	190	 5.5
Output signal [1), 2)]	mV/V	1.7	1.2
Bridge resistance	Ω	350	350
Zero signal[1)]	mV/V	≤ 0.05	
Amplitude non-linearity[3)]	%	≤ 1.0	
Hysteresis[3)]	%	≤ 1.0	
Channel crosstalk[3)]	%	≤ 5.0	
Supply voltage	V	2–15	
Ultimate load	%	150	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-30…+70	
Weight (approximate)	g	550	

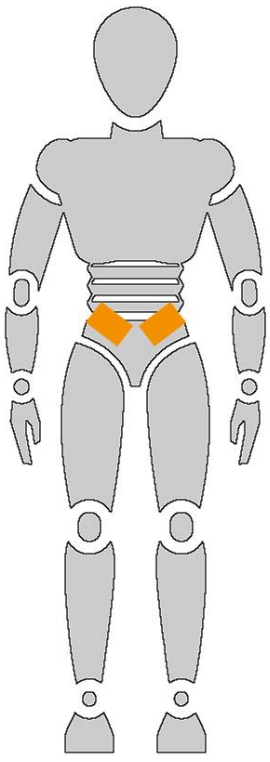
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N3AIA11A

Load Cell, 3-axial

Location: Lumbar Spine

Force direction
F_x, F_z, M_y

Application
H3-50%
H3-95%

Equivalent types
Denton: 1842
FTSS: IF-402

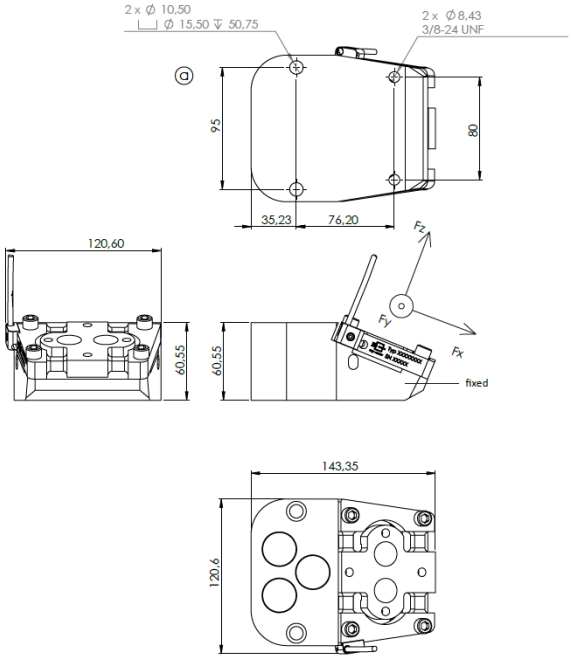
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N3AIA11A

Technical specification

	Unit	Value		
		F_x	F_z	M_y
Measuring range	kN Nm	13.5	13.5	 564
Sensitivity[1)]	µV/V/kN µV/V/Nm	89	89	 1.2
Output signal [1), 2)]	mV/V	1.2	1.2	0.7
Bridge resistance	Ω	350	350	700
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel crosstalk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	670/7200 (without/with mass block)		

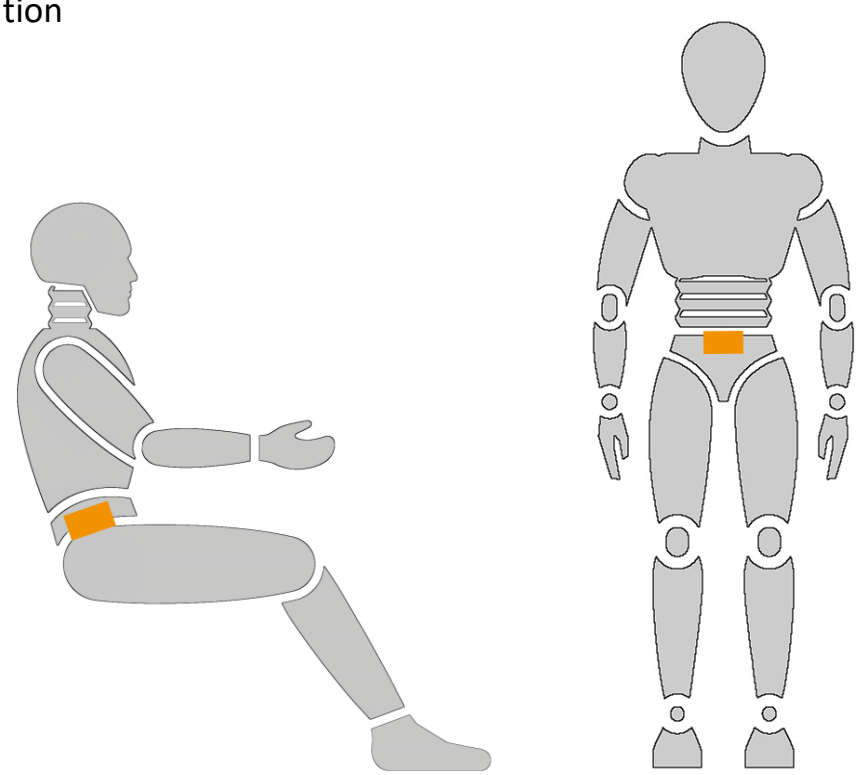
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N3AIC11A

Load Cell, 3-axial

Location: Lumbar Spine

Force direction
F_x, F_z, M_y

Application
H3-5%

Equivalent types
Denton: 5092

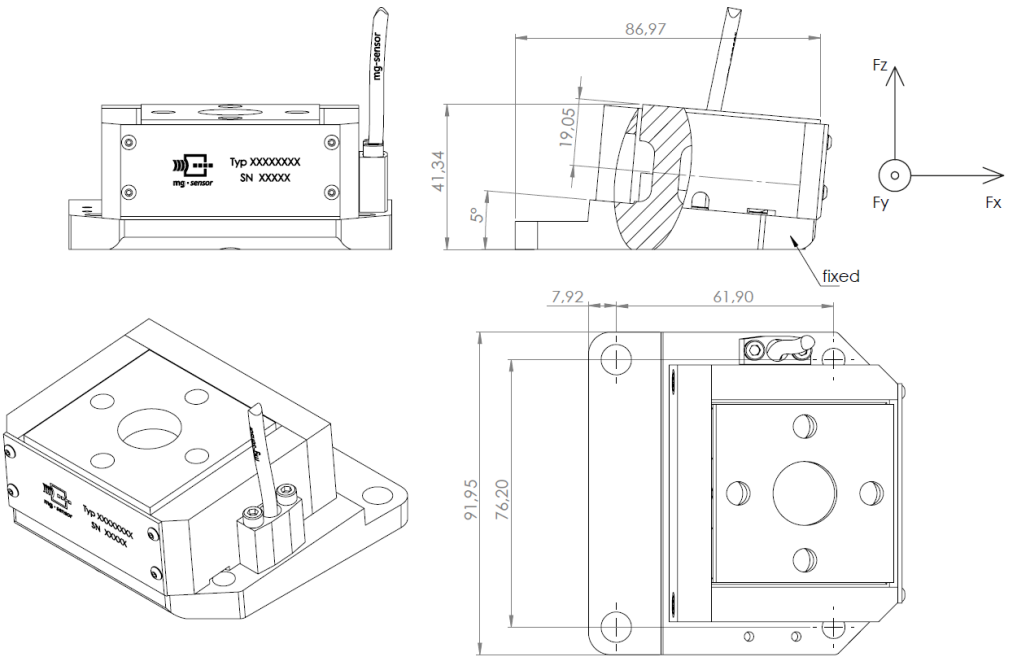
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N3AIC11A

Technical specification

	Unit	Value		
		F_x	F_z	M_y
Measuring range	kN Nm	13.4	17.8	 683
Sensitivity[1)]	µV/V/kN µV/V/Nm	155	29	 2.6
Output signal [1), 2)]	mV/V	2.0	0.5	1.8
Bridge resistance	Ω	350	1400	700
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel crosstalk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	1000		

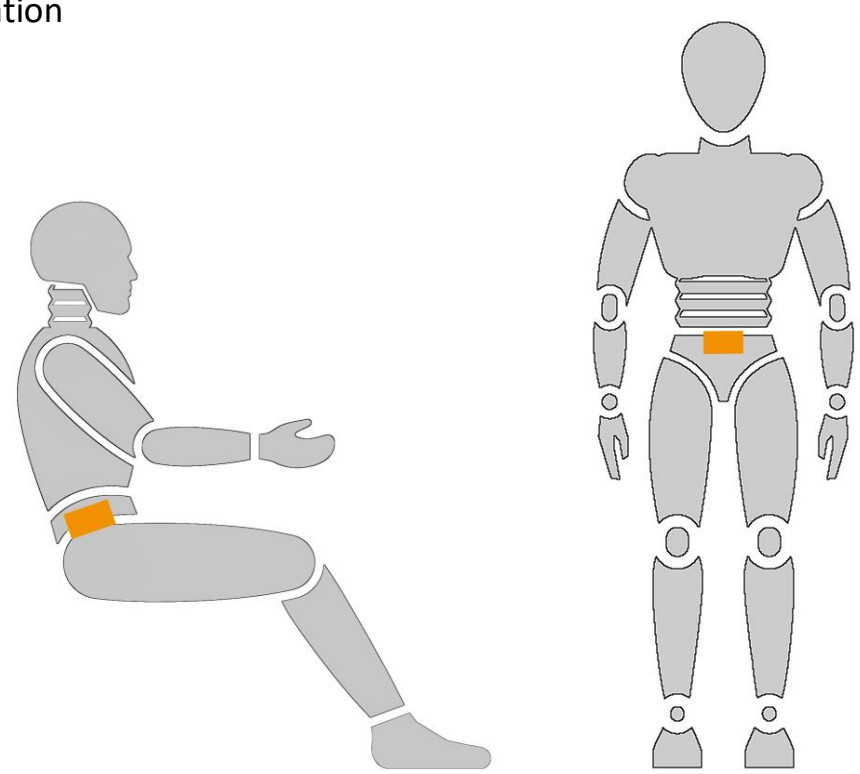
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N3ALA11A

Load Cell, 3-axial

Location: Neck, Upper

Force direction
F_x, F_z, M_y

Application
H3-5%, H3-50%, H3-95%,
SID2s, H3-6YO, H3-10YO

Equivalent types
Denton: 2564 (1716 6-axis)
FTSS: (IF-205 6-axis)

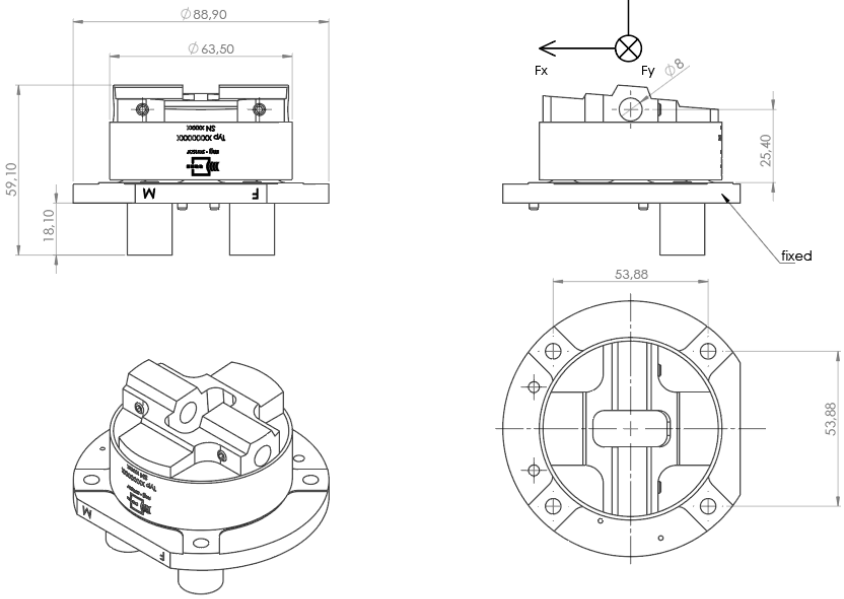
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N3ALA11A

Technical specification

	Unit	Value		
		F_x	F_z	M_y
Measuring range	kN Nm	8.9	13.3	 282
Sensitivity[1)]	µV/V/kN µV/V/Nm	191	105	 6.0
Output signal[1), 2)]	mV/V	1.7	1.4	1.7
Bridge resistance	Ω	350	700	350
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel cross talk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	680		

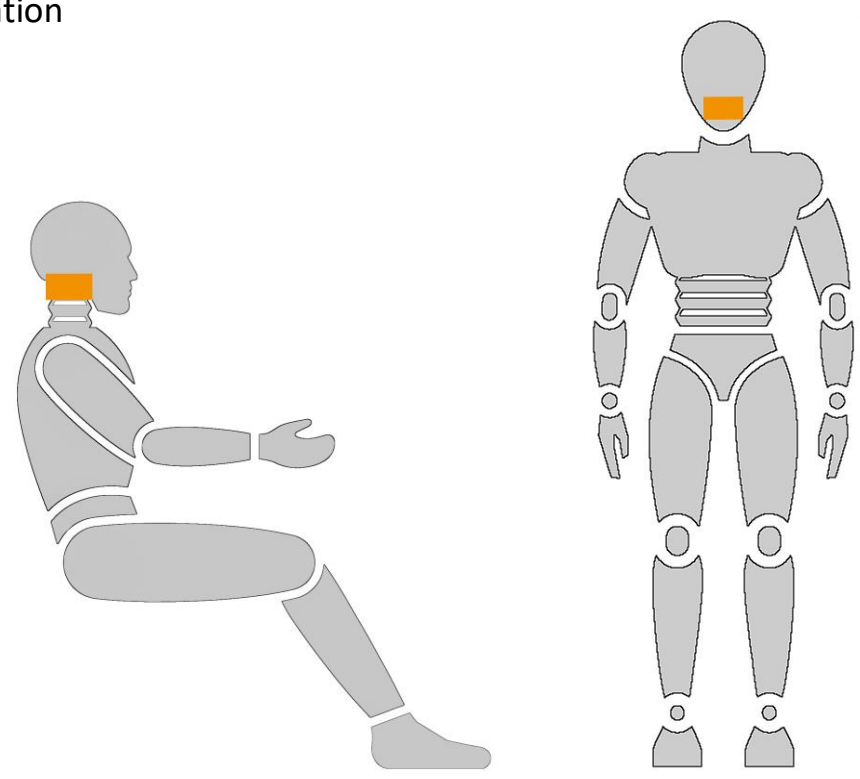
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N3ASA11A

Load Cell, 3-axial

Location: Thoracic Spine

Force direction
F_x, F_z, M_y

Application
H3-50%, H3-95%
Thor

Equivalent types
FTSS: IF-315, (IF-310), (IF-319)

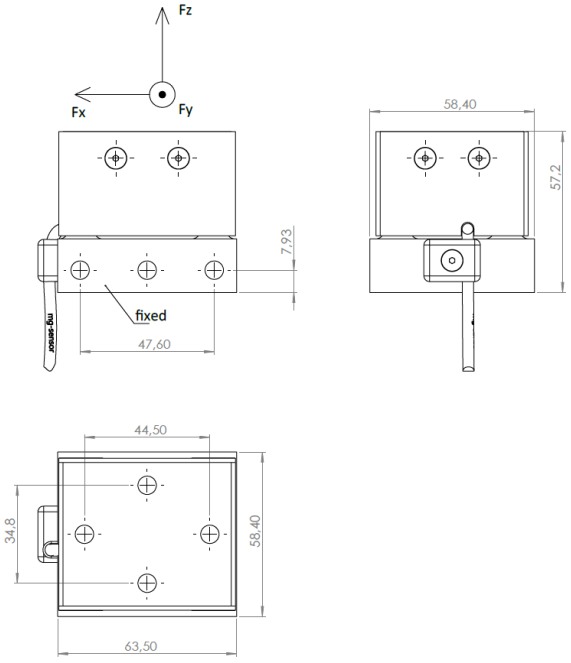
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N3ASA11A

Technical specification

	Unit	Value		
		F_x	F_z	M_y
Measuring range	kN Nm	13.3	17.8	 900
Sensitivity[1)]	µV/V/kN µV/V/Nm	135	56	 1.8
Output signal[1), 2)]	mV/V	1.8	1.0	1.6
Bridge resistance	Ω	350	700	350
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel cross talk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	1000		

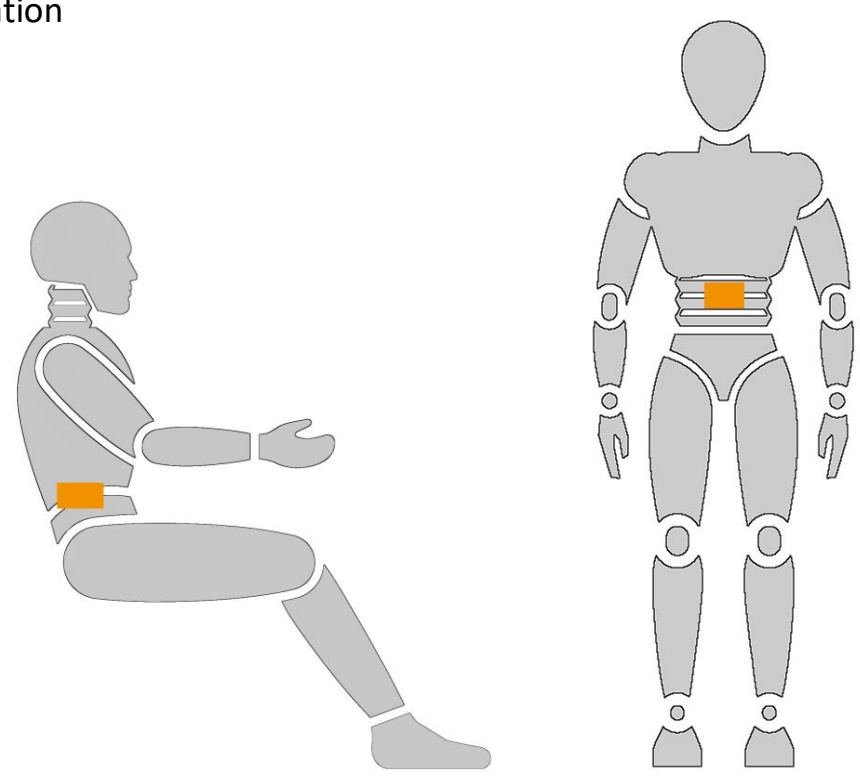
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N3AUA11A

Load Cell, 3-axial

Location: Tibia, Upper

Force direction
F_z, M_x, M_y

Application
H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types
Denton: 3292

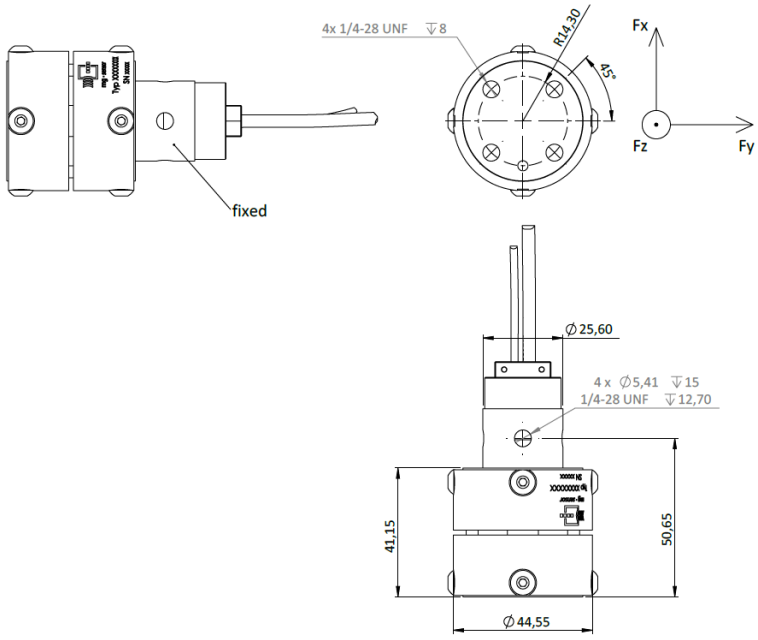
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N3AUA11A

Technical specification

	Unit	Value		
		F_z	M_x	M_y
Measuring range	kN Nm	11.1	 395	 395
Sensitivity[1)]	µV/V/kN µV/V/Nm	90	 7.6	 7.6
Output signal [1), 2)]	mV/V	1.0	3.0	3.0
Bridge resistance	Ω	700	350	350
Zero signal[1)]	mV/V	≤ 0.05		
Amplitude non-linearity[3)]	%	≤ 1.0		
Hysteresis[3)]	%	≤ 1.0		
Channel crosstalk[3)]	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30…+70		
Weight (approximate)	g	500		

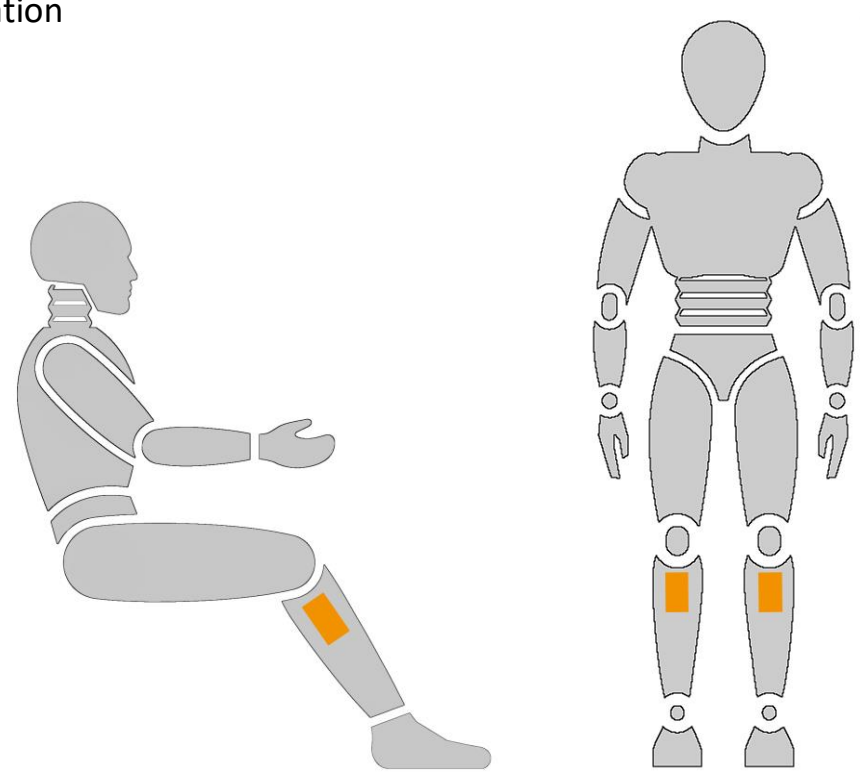
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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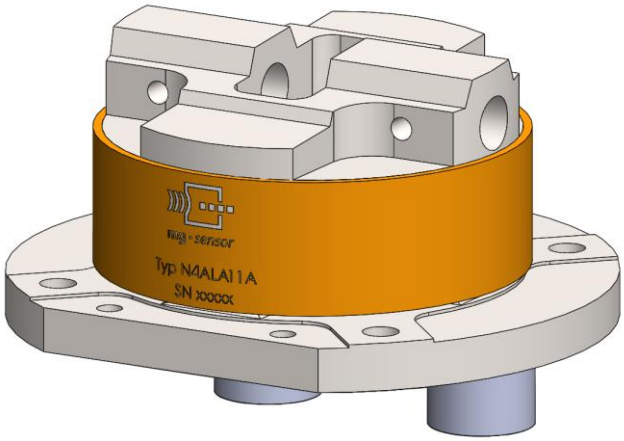
Technical Data Sheet

N4ALA11A

Load Cell, 4-axial

Location: Neck



Force direction
F_x, F_y, F_z, M_y

Application
H3-5%, H3-50%, H3-95%,
H3-6YO, H3-10YO
SIDIIs

Equivalent types
FTSS: IF-256

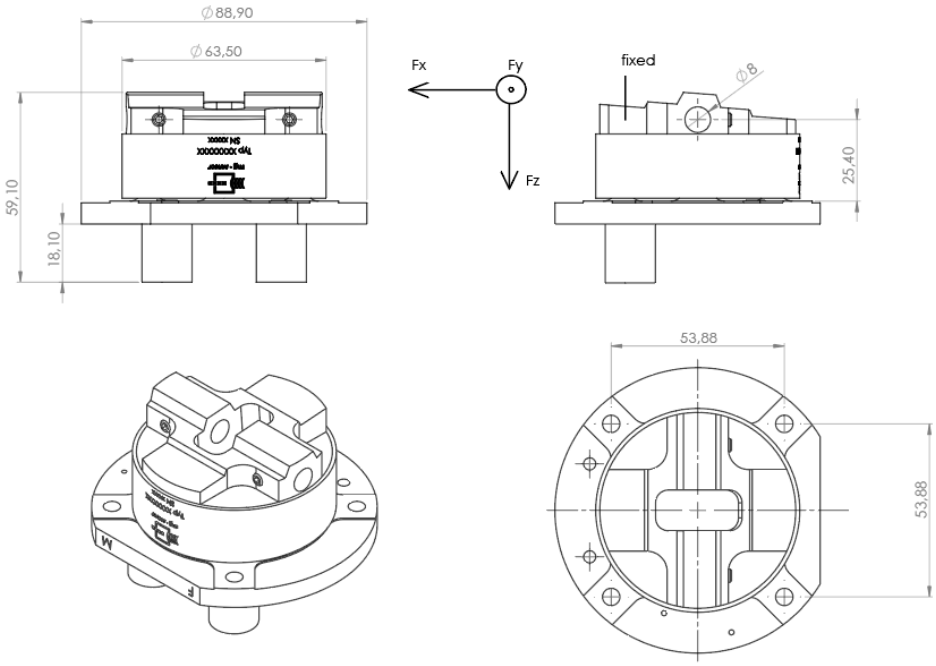
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N4ALA11A

Technical specification

	Unit	Value			
		F_x	F_y	F_z	M_y
Measuring range	kN Nm	8.9	8.9	13.3	 282
Sensitivity[1)]	µV/V/kN µV/V/Nm	191	191	105	 6.0
Output signal [1), 2)]	mV/V	1.7	1.7	1.4	1.7
Bridge resistance	Ω	350	350	700	350
Zero signal[1)]	mV/V	≤ 0.05			
Amplitude non-linearity[3)]	%	≤ 1.0			
Hysteresis[3)]	%	≤ 1.0			
Channel crosstalk[3)]	%	≤ 5.0			
Supply voltage	V	2–15			
Ultimate load	%	150			
Insulation resistance	MΩ	> 100			
Temperature range	°C	-30…+70			
Weight (approximate)	g	630			

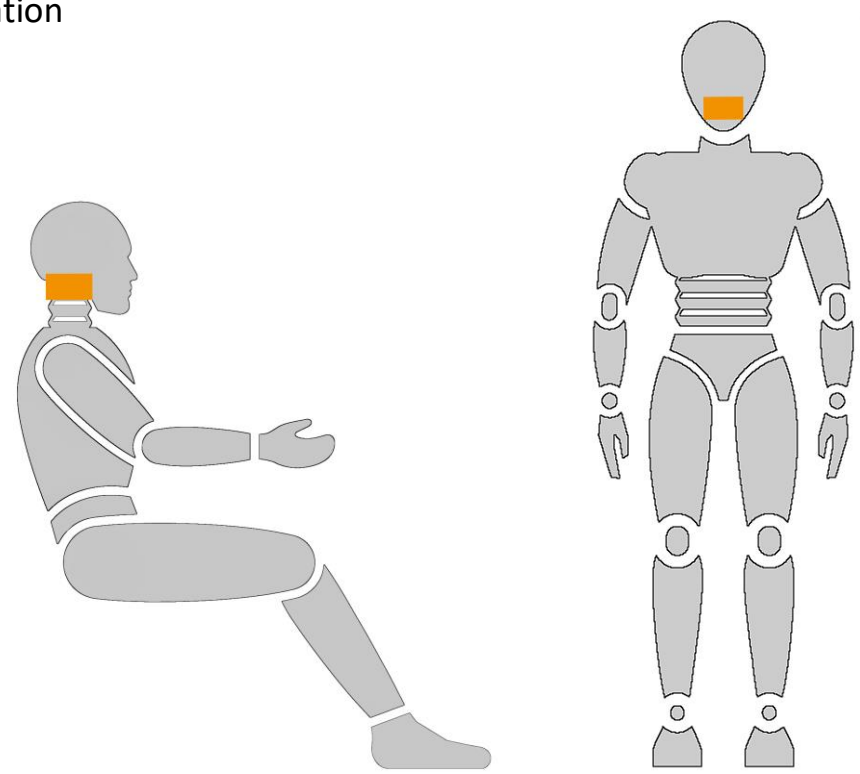
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N4ATA11A

Load Cell, 4-axial

Location: Tibia, Lower

Force direction

F_x, F_z, M_x, M_y

Application

H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types

Denton: 3287J
FTSS: IF-825

Measurement specification

Resistive
Strain gauges

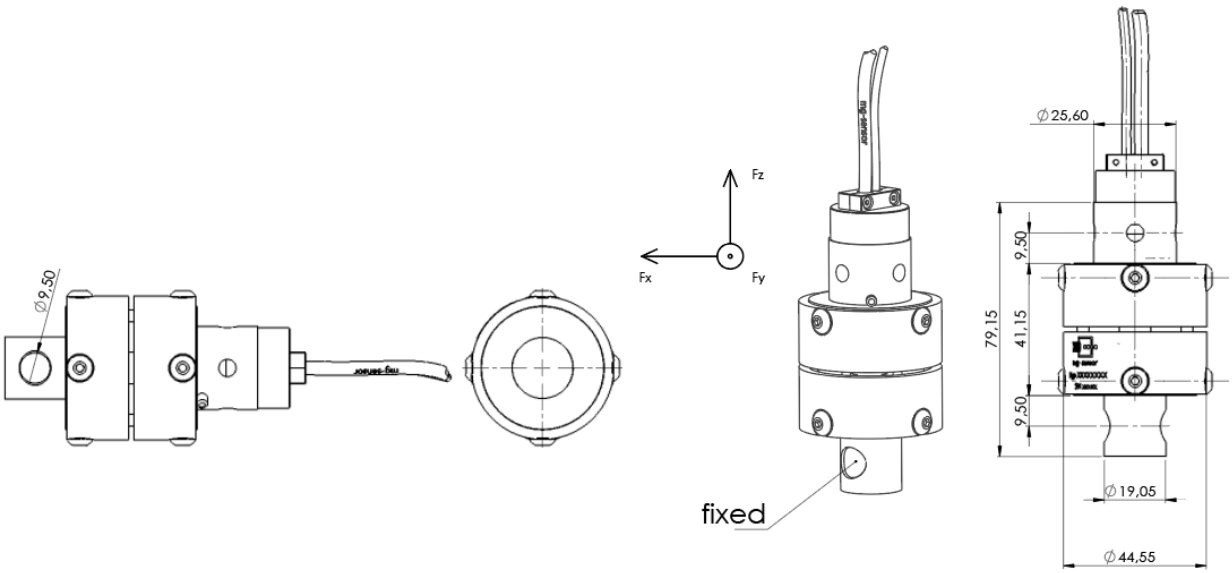
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N4ATA11A

Technical specification

	Unit	Value			
		F_x	F_z	M_x	M_y
Measuring range	kN Nm	11	11	 395	 395
Sensitivity[1)]	µV/V/kN µV/V/Nm	182	91	 7.6	 7.6
Output signal [1), 2)]	mV/V	2.0	1.0	3.0	3.0
Bridge resistance	Ω	350	700	350	350
Zero signal[1)]	mV/V	≤ 0.05			
Amplitude non-linearity[3)]	%	≤ 1.0			
Hysteresis[3)]	%	≤ 1.0			
Channel crosstalk[3)]	%	≤ 5.0			
Supply voltage	V	2–15			
Ultimate load	%	150			
Insulation resistance	MΩ	> 100			
Temperature range	°C	-30…+70			
Weight (approximate)	g	500			

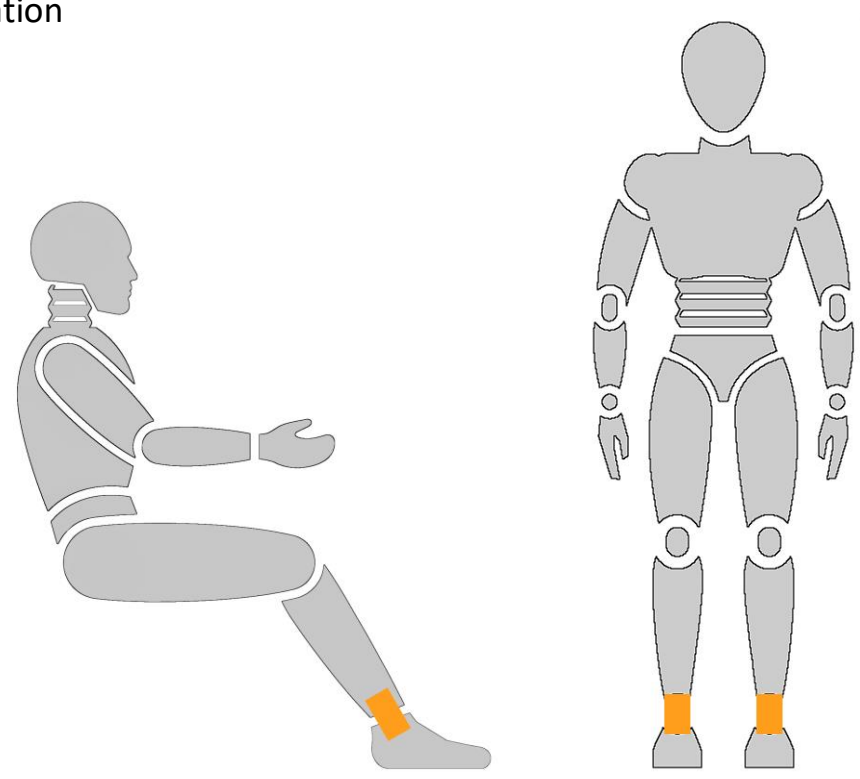
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N4AUA11A

Load Cell, 4-axial

Location: Tibia, Upper

Force direction

F_x, F_z, M_x, M_y

Application

H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types

Denton: 3115
FTSS: IF-820

Measurement specification

Resistive
Strain gauges

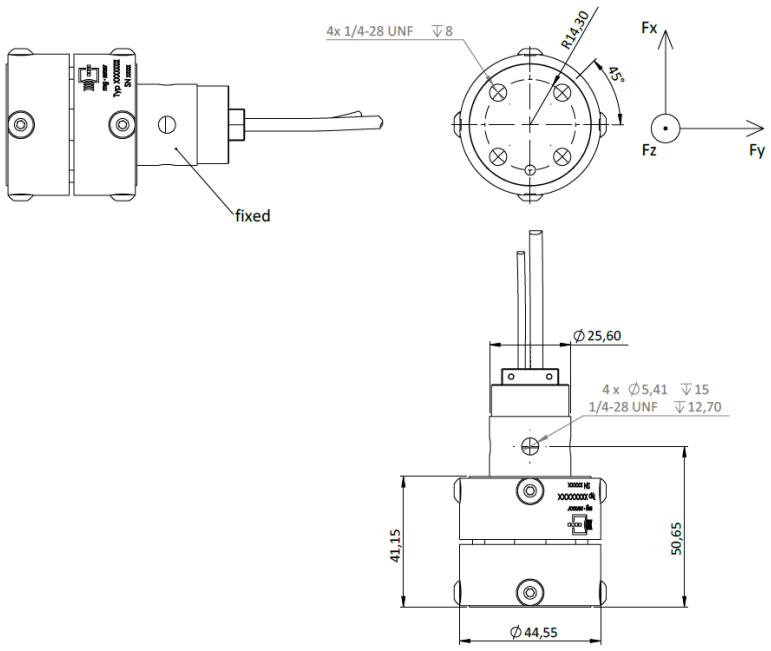
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N4AUA11A

Technical specification

	Unit	Value			
		F_x	F_z	M_x	M_y
Measuring range	kN Nm	11.1	11.1	 396	 396
Sensitivity[1)]	µV/V/kN µV/V/Nm	180	90	 7.6	 7.6
Output signal [1), 2)]	mV/V	2.0	1.0	3.0	3.0
Bridge resistance	Ω	350	700	350	350
Zero signal[1)]	mV/V	≤ 0.05			
Amplitude non-linearity[3)]	%	≤ 1.0			
Hysteresis[3)]	%	≤ 1.0			
Channel crosstalk[3)]	%	≤ 5.0			
Supply voltage	V	2–15			
Ultimate load	%	150			
Insulation resistance	MΩ	> 100			
Temperature range	°C	-30…+70			
Weight (approximate)	g	500			

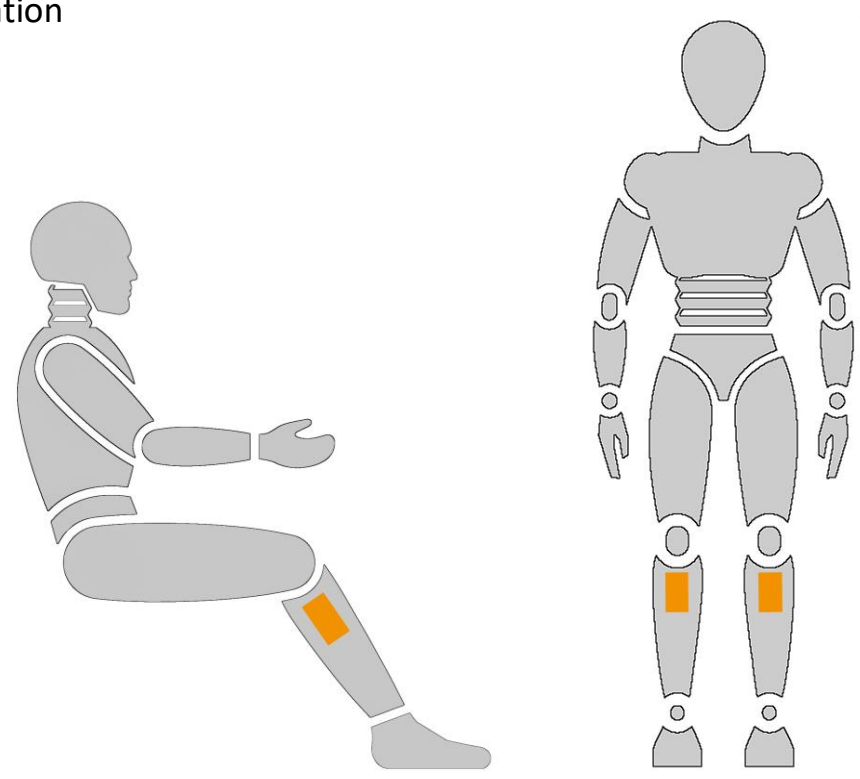
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N5ASA11A

Load Cell, 5-axial

Location: Thoracic Spine

Force direction
F_x, F_y, F_z, M_x, M_y

Application
H3-50%, H3-95%
Thor

Equivalent types
Denton: 1911
FTSS: IF-310, (IF-315), (IF-319)

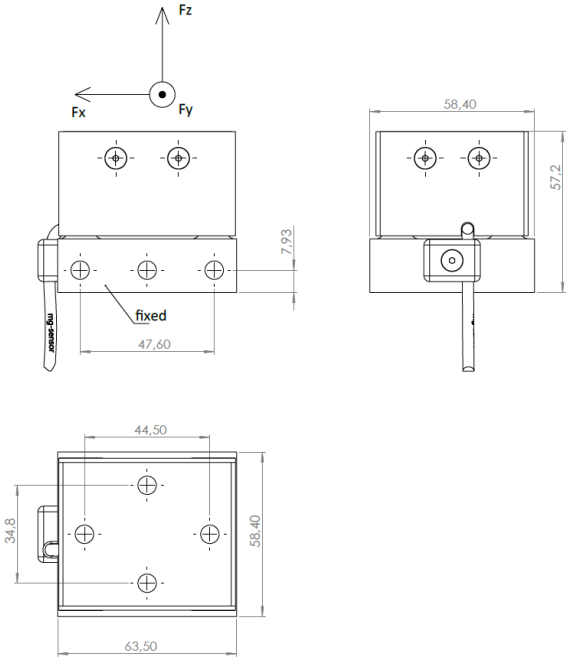
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N5ASA11A

Technical specification

	Unit	Value				
		F_x	F_y	F_z	M_x	M_y
Measuring range	kN Nm	13.3	13.3	17.8	 678	 905
Sensitivity[1)]	µV/V/kN µV/V/Nm	94	94	19.6	 1.6	 1.3
Output signal[1), 2)]	mV/V	1.25	1.25	0.35	1.1	1.2
Bridge resistance	Ω	350	350	700	350	350
Zero signal[1)]	mV/V	≤ 0.05				
Amplitude non-linearity[3)]	%	≤ 1.0				
Hysteresis[3)]	%	≤ 1.0				
Channel cross talk[3)]	%	≤ 5.0				
Supply voltage	V	2–15				
Ultimate load	%	150				
Insulation resistance	MΩ	> 100				
Temperature range	°C	-30…+70				
Weight (approximate)	g	1000				

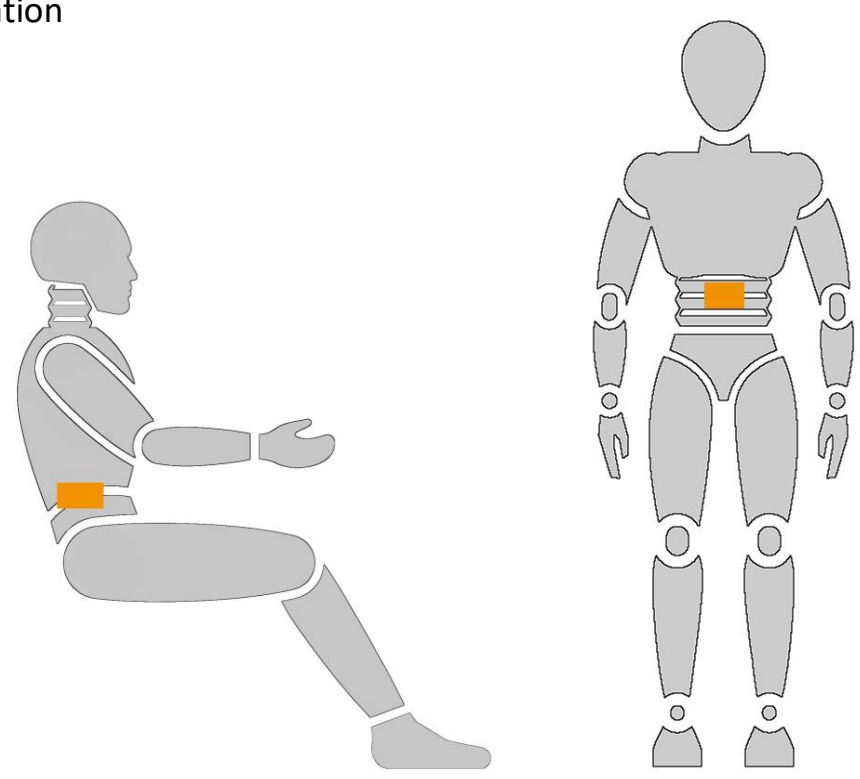
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N5ASB11A

Load Cell, 5-axial

Location: Thoracic Spine

Force direction
F_x, F_y, F_z, M_x, M_y

Application
H3-5%

Equivalent types
Denton: 2151
FTSS: IF-302

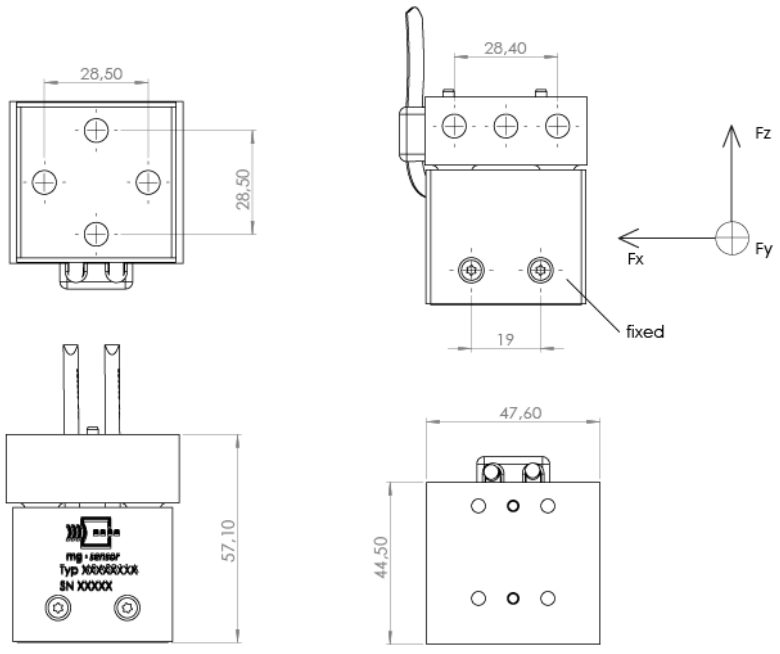
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N5ASB11A

Technical specification

	Unit	Value				
		F_x	F_y	F_z	M_x	M_y
Measuring range	kN Nm	13.3	13.3	17.8	 565	 565
Sensitivity[1)]	µV/V/kN µV/V/Nm	105	105	22	 1.6	 1.6
Output signal[1), 2)]	mV/V	1.4	1.4	0.4	0.9	0.9
Bridge resistance	Ω	350	350	1400	700	700
Zero signal[1)]	mV/V	≤ 0.05				
Amplitude non-linearity[3)]	%	≤ 1.0				
Hysteresis[3)]	%	≤ 1.0				
Channel cross talk[3)]	%	≤ 5.0				
Supply voltage	V	2–15				
Ultimate load	%	150				
Insulation resistance	MΩ	> 100				
Temperature range	°C	-30…+70				
Weight (approximate)	g	1000				

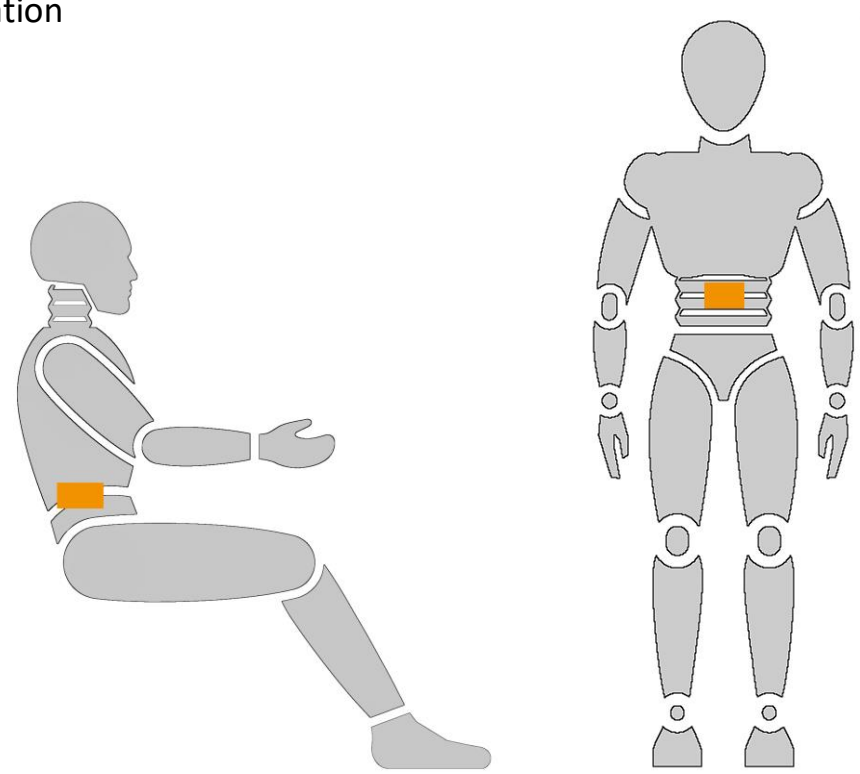
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N5ATA11A

Load Cell, 5-axial

Location: Tibia, Lower

Force direction

F_x, F_y, F_z, M_x, M_y

Application

H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types

Denton: 3644
FTSS: IF-853

Measurement specification

Resistive
Strain gauges

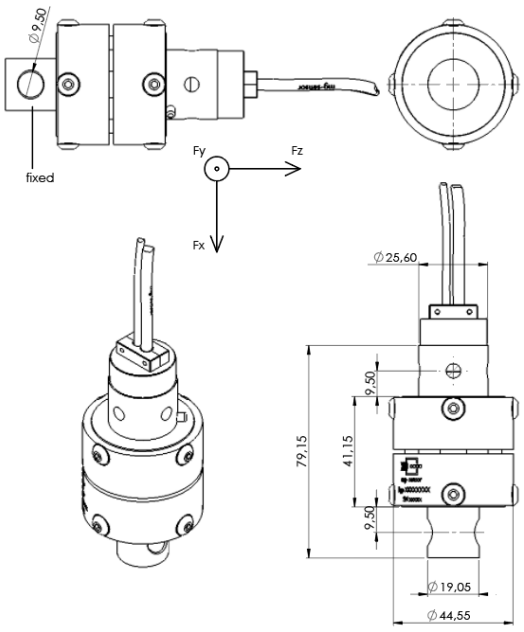
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N5ATA11A

Technical specification

	Unit	Value				
		F_x	F_y	F_z	M_x	M_y
Measuring range	kN Nm	11	11	11	 390	 390
Sensitivity[1)]	µV/V/kN µV/V/Nm	180	180	95	 8.0	 8.0
Output signal[1), 2)]	mV/V	2.0	2.0	1.0	3.0	3.0
Bridge resistance	Ω	350	350	700	350	350
Zero signal[1)]	mV/V	≤ 0.05				
Amplitude non-linearity[3)]	%	≤ 1.0				
Hysteresis[3)]	%	≤ 1.0				
Channel crosstalk[3)]	%	≤ 5.0				
Supply voltage	V	2–15				
Ultimate load	%	150				
Insulation resistance	MΩ	> 100				
Temperature range	°C	-30…+70				
Weight (approximate)	g	500				

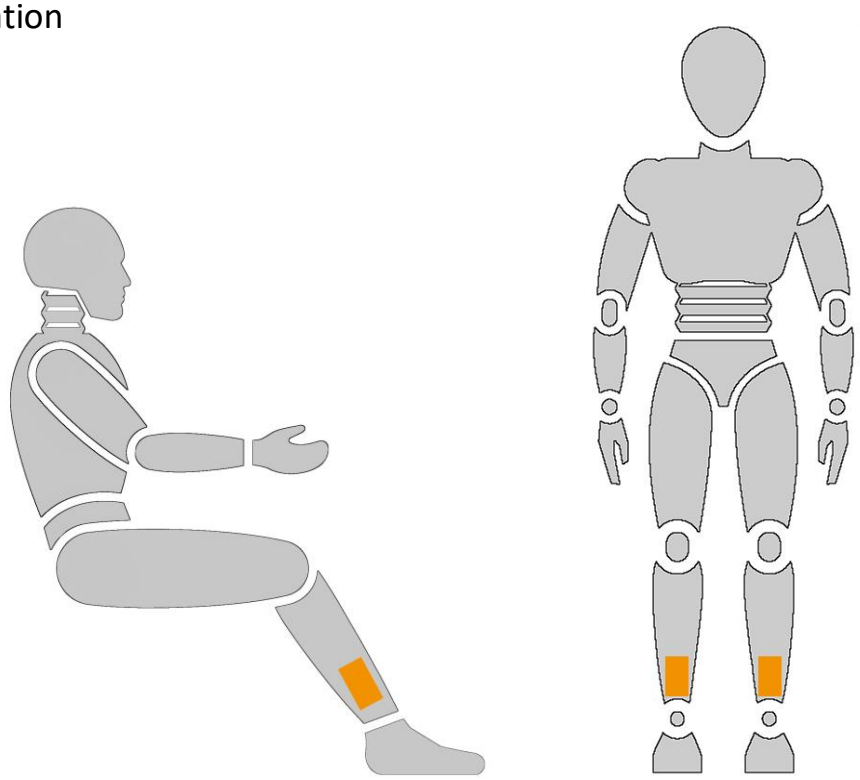
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N5AUA11A

Load Cell, 5-axial

Location: Tibia, Upper

Force direction
F_x, F_y, F_z, M_x, M_y

Application
H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types
Denton: 3643
FTSS: IF-857

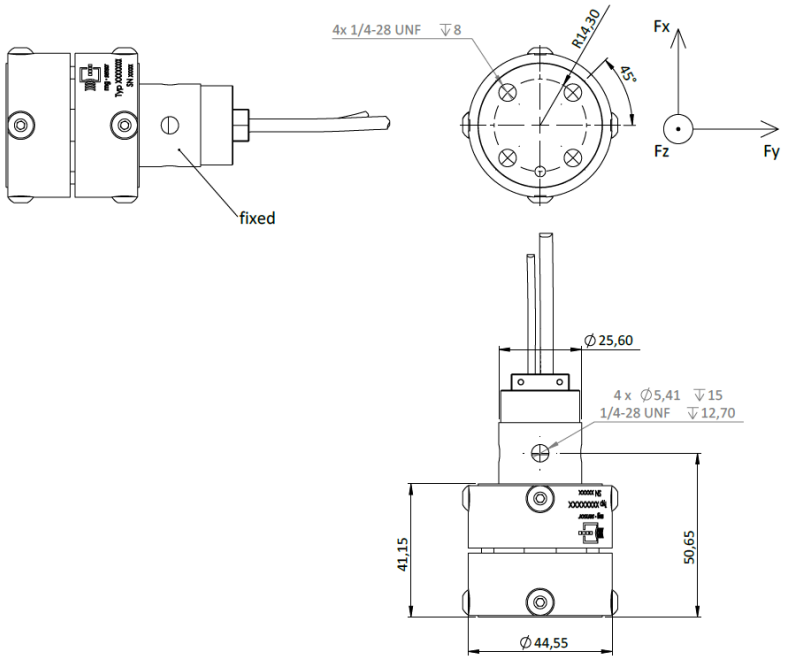
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N5AUA11A

Technical specification

	Unit	Value				
		F_x	F_y	F_z	M_x	M_y
Measuring range	kN Nm	11	11	11	 390	 390
Sensitivity[1)]	µV/V/kN µV/V/Nm	200	200	91	 7.9	 7.9
Output signal[1), 2)]	mV/V	2.2	2.2	1.0	3.1	3.1
Bridge resistance	Ω	350	350	700	350	350
Zero signal[1)]	mV/V	≤ 0.05				
Amplitude non-linearity[3)]	%	≤ 1.0				
Hysteresis[3)]	%	≤ 1.0				
Channel crosstalk[3)]	%	≤ 5.0				
Supply voltage	V	2-15				
Ultimate load	%	150				
Insulation resistance	MΩ	> 100				
Temperature range	°C	-30…+70				
Weight (approximate)	g	500				

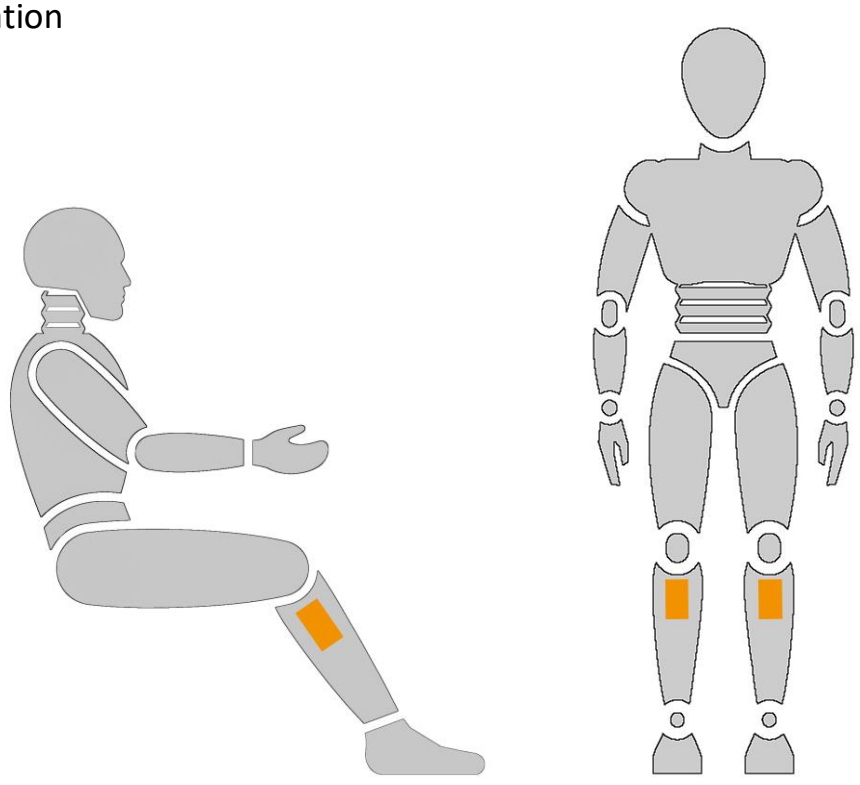
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



TD N5AUA11A 220211e.docx

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Technical Data Sheet

N6ACB11A

Load Cell, 6-axial

Location: Femur

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H2-50%, H3-5%, H3-50%, H3-95%, Thor, BioSID, EUROSID, ES2, ES1, SIDIIs

Equivalent types

Denton: 4257
FTSS: IF-631

Measurement specification

Resistive
Strain gauges

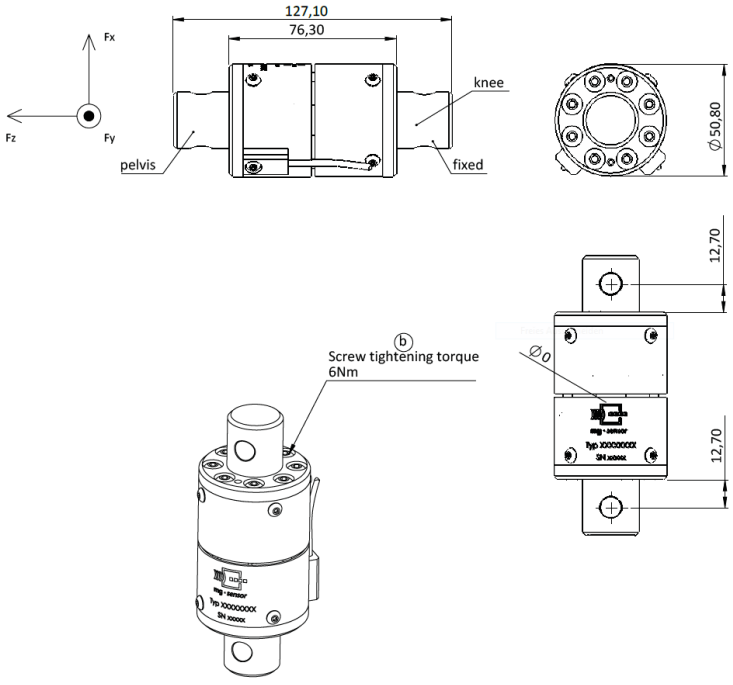
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6ACB11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.4	13.4	22.3	 340	 340	 340
Sensitivity[1)]	µV/V/kN µV/V/Nm	112	112	58.3	 4.1	 4.1	 6.7
Output signal[1), 2)]	mV/V	1.5	1.5	1.3	1.4	1.4	2.3
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	900					

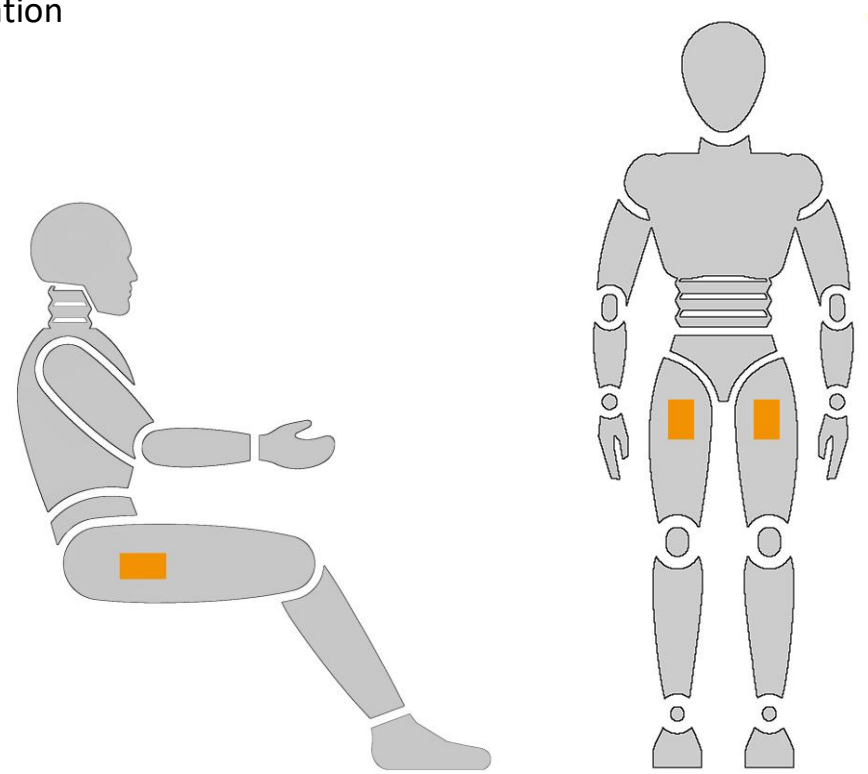
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6ACC11A

Load Cell, 6-axial

Location: Femur

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H2-50%, H3-5%, H3-50%, H3-95%, Thor, BioSID, EUROSID, ES2, ES1, SIDIIs

Equivalent types

FTSS: IF-625

Measurement specification

Resistive

Strain gauges

Options

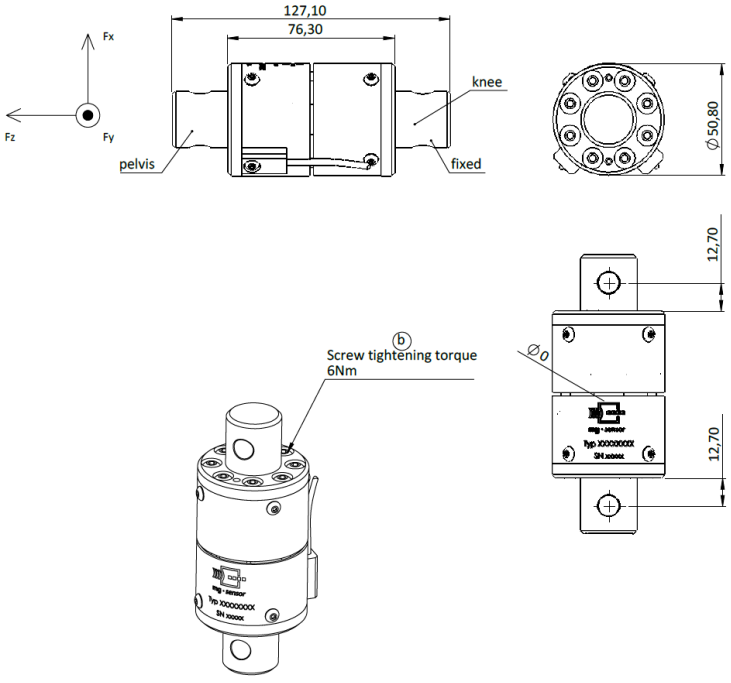
ID-Module integrated in sensor

Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6ACC11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.4	13.4	22.3	 340	 340	 340
Sensitivity[1)]	µV/V/kN µV/V/Nm	113	113	58.3	 4.1	 4.1	 6.6
Output signal[1), 2)]	mV/V	1.5	1.5	1.3	1.4	1.4	2.3
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	1000					

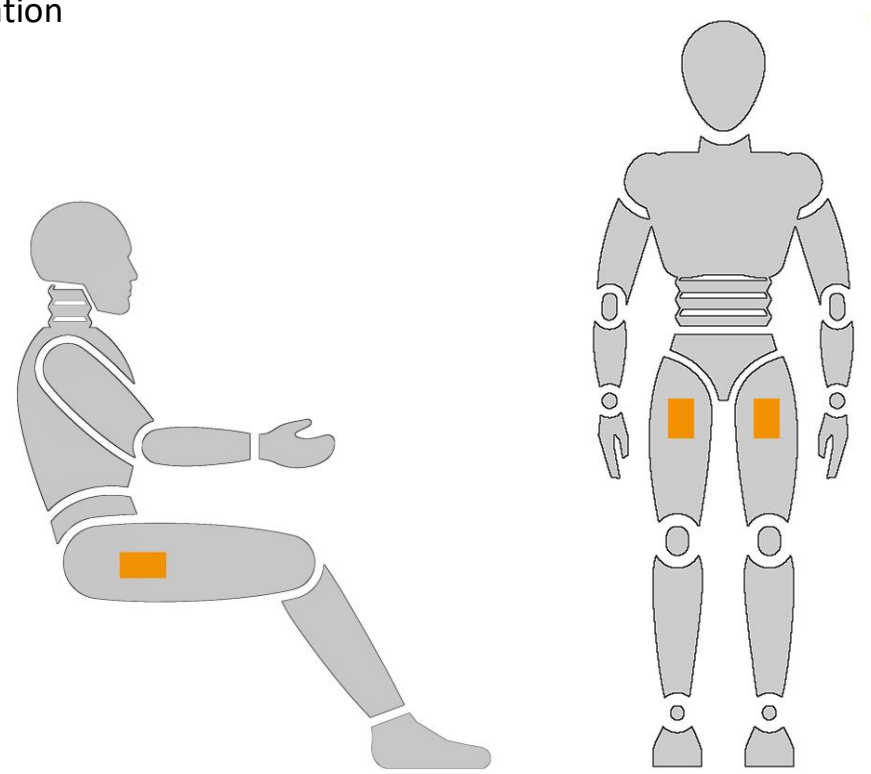
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6ACG11A

Load Cell, 6-axial
with 3-axial ARS integration
Location: Femur

Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-5%, H3-50%, H3-95%,
BioSID, EUROSID, SIDIIs

Equivalent types

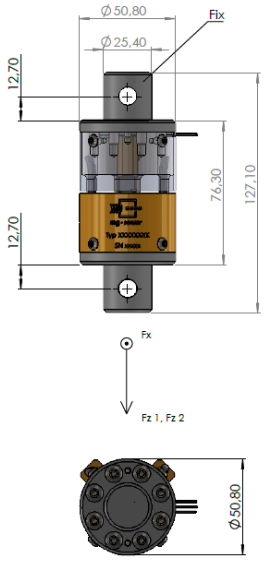
Measurement specification
Resistive
Strain gauges

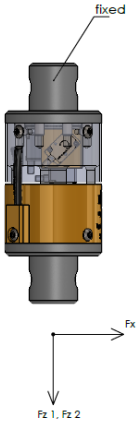
Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions





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Technical Data Sheet

N6ACG11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.4	13.4	22.3	 340	 340	 340
Sensitivity[1)]	µV/V/kN µV/V/Nm	112	112	62.8	 4.1	 4.1	 6.7
Output signal[1), 2)]	mV/V	1.5	1.5	1.4	1.4	1.4	2.3
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	900					

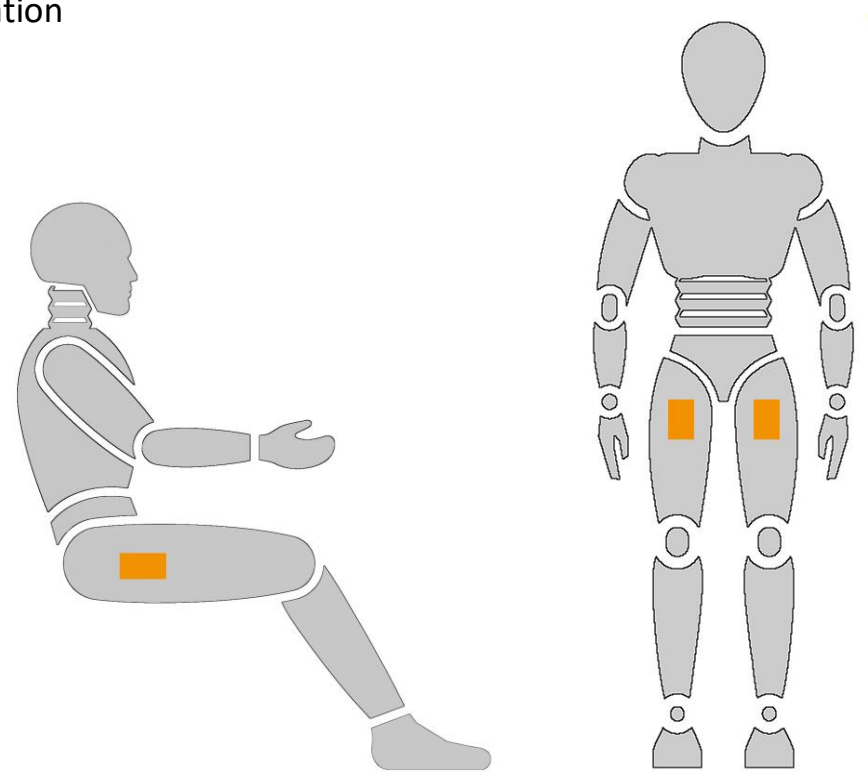
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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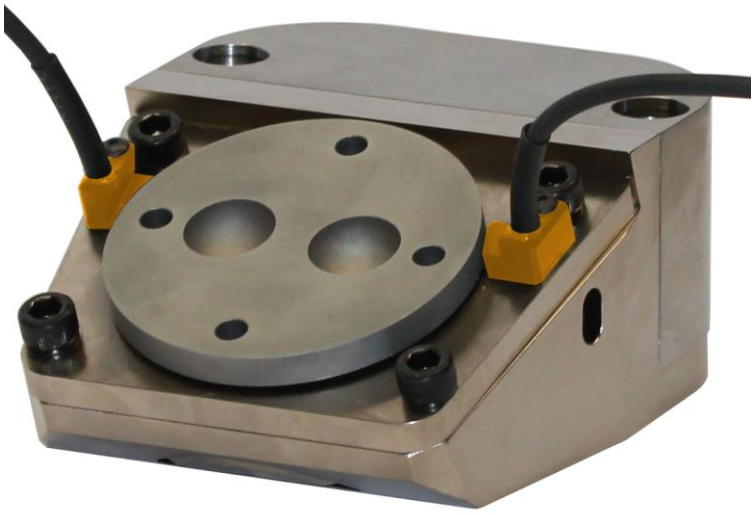
Technical Data Sheet

N6AIA61A

Load Cell, 6-axial

Location: Lumbar Spine



Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-50%

H3-95%

Equivalent types

Denton: 4502J

Measurement specification

Resistive

Strain gauges

Options

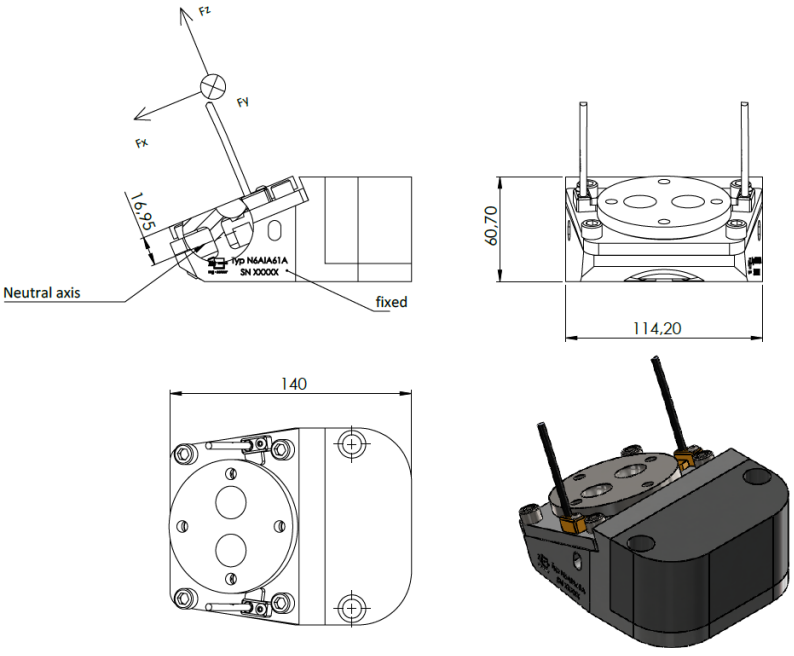
ID-Module integrated in sensor

Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AIA61A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	15	15	20	 600	 600	 350
Sensitivity[1)]	µV/V/kN µV/V/Nm	153	153	30	 3.0	 3.0	 3.5
Output signal[1), 2)]	mV/V	2.3	2.3	0.6	1.8	1.8	1.7
Bridge resistance	Ω	350	350	1400	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel cross talk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	7200					

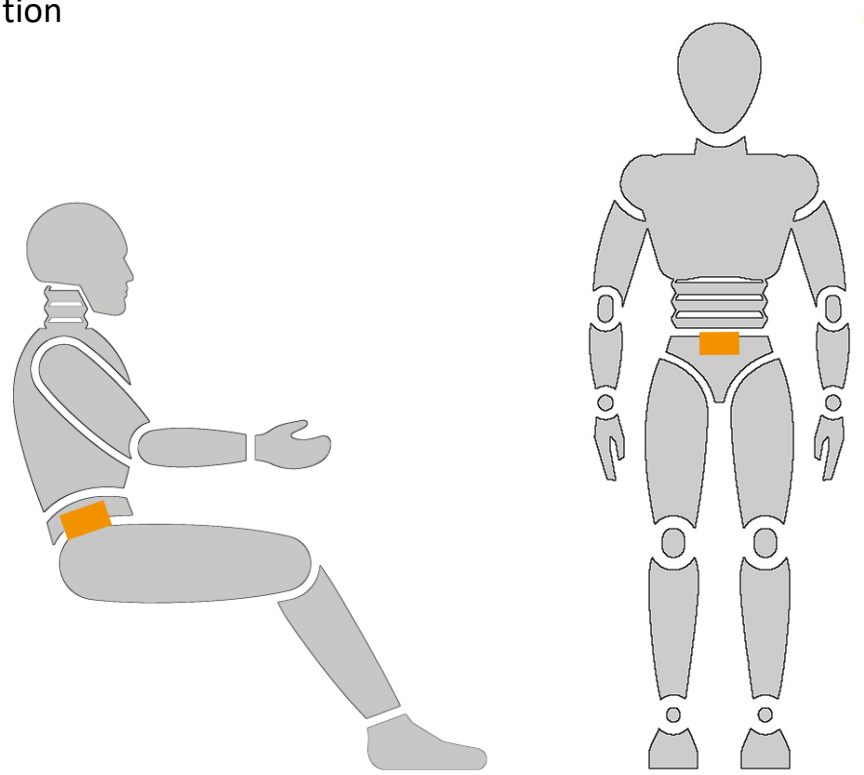
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy Application



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Technical Data Sheet

N6AII11A

Load Cell, 6-axial

Location: Straight Lumbar Spine

Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-50%

Equivalent types
Denton: 5462J

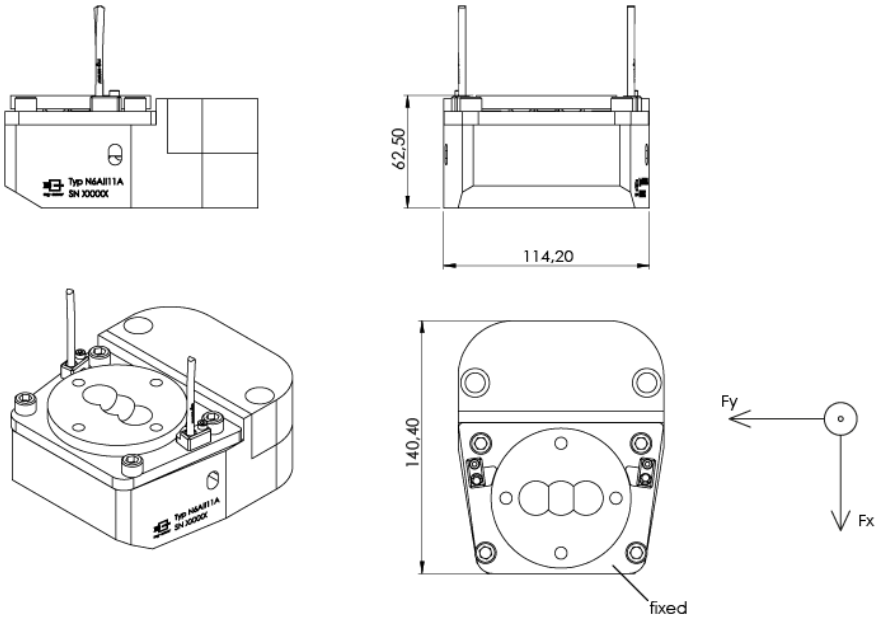
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AII11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	15	15	20	 600	 600	 350
Sensitivity[1)]	µV/V/kN µV/V/Nm	160	160	30	 3.2	 3.2	 5.2
Output signal[1), 2)]	mV/V	2.4	2.4	0.6	1.9	1.9	1.8
Bridge resistance	Ω	350	350	1400	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	7200					

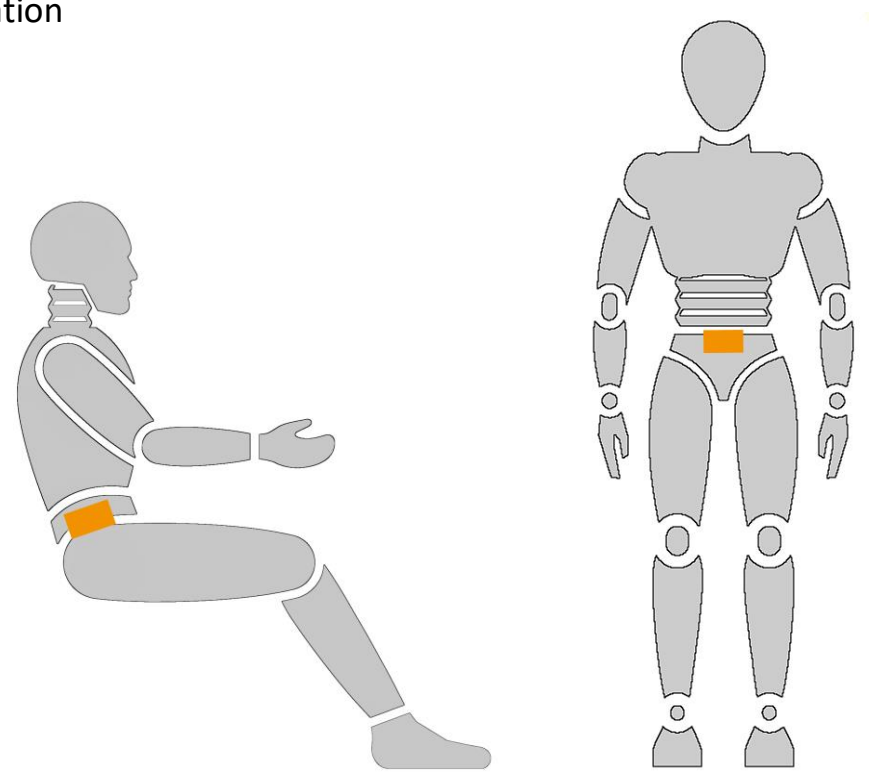
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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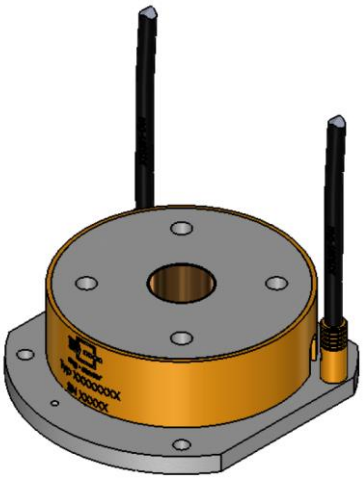
Technical Data Sheet

N6AJB11A

Load Cell, 6-axial

Location: Neck, Lower/ Lumbar Spine



Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

Crabi 6, Crabi 12, Crabi 18
P1 ½
ES1

Equivalent types

Denton: 2554
FTSS: IF-954

Measurement specification

Resistive
Strain gauges

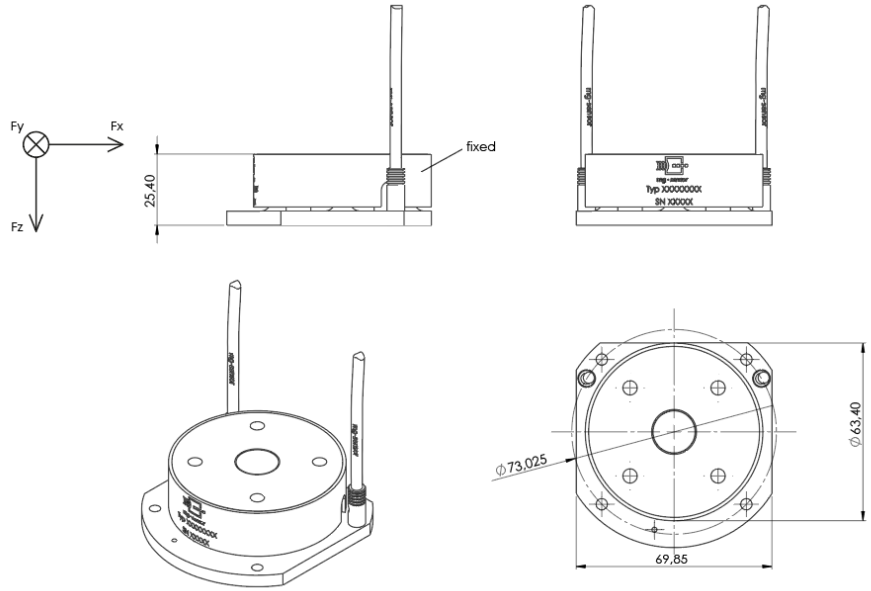
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AJB11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	0.9	0.9	2.2	 56	 56	 34
Sensitivity[1)]	µV/V/kN µV/V/Nm	1111	1111	364	 23.2	 23.2	 38.2
Output signal[1), 2)]	mV/V	1.0	1.0	0.8	1.3	1.3	1.3
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	150					

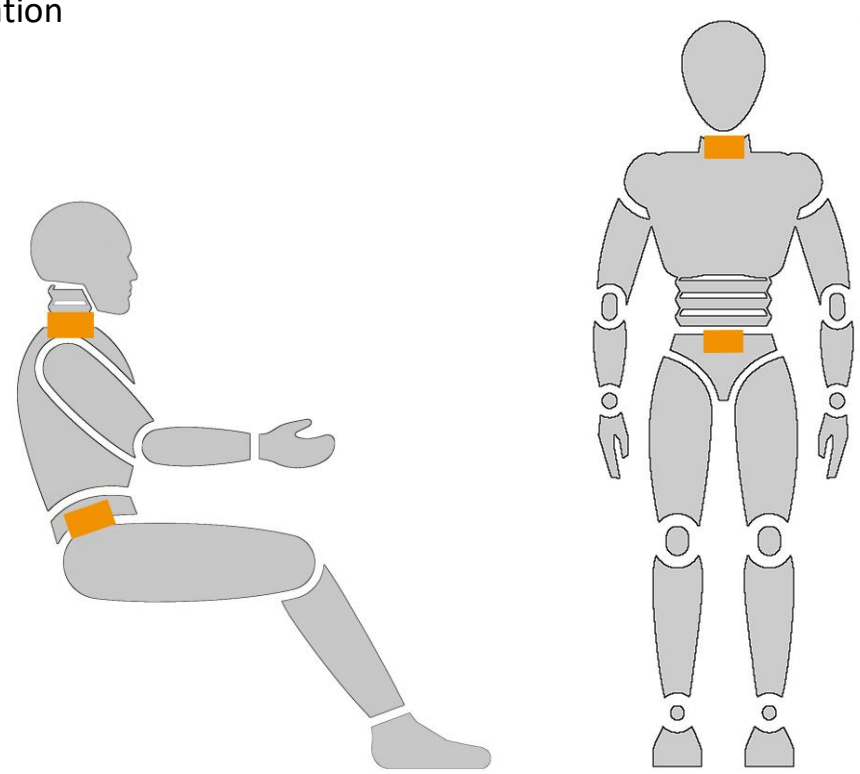
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6AJC11A

Load Cell, 6-axial

Location: Neck, Upper

Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-3YO

Equivalent types
Denton: 3303
FTSS: IF-234

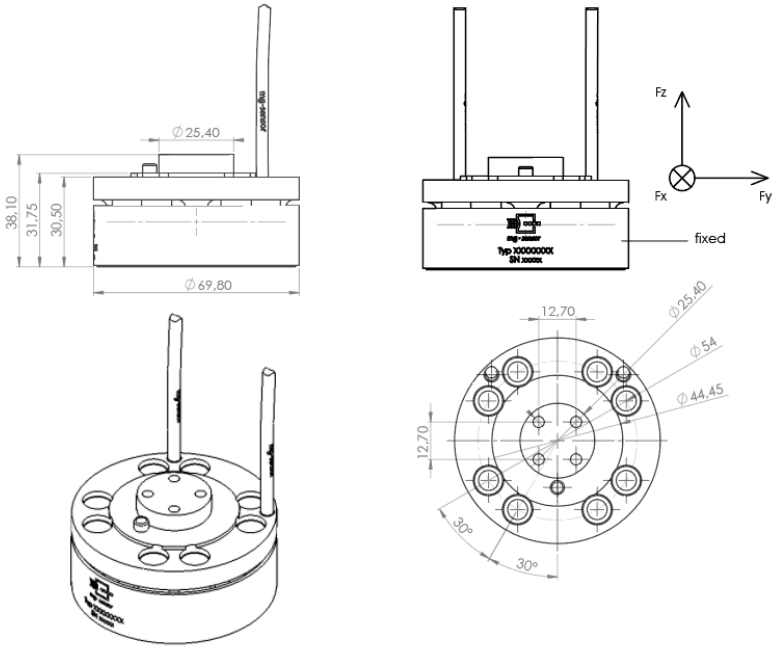
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AJC11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	4.5	4.5	6.7	 170	 170	 113
Sensitivity[1)]	µV/V/kN µV/V/Nm	422	422	194	 11	 11	 18
Output signal[1), 2)]	mV/V	1.9	1.9	1.3	1.8	1.8	2.0
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	230					

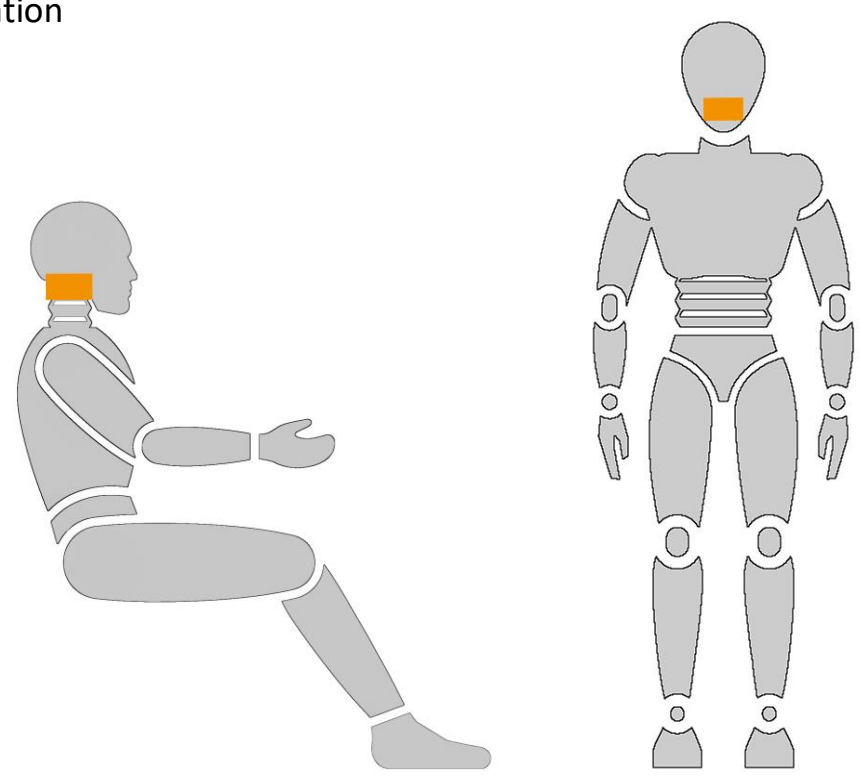
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6AJF11A

Load Cell, 6-axial

Location: Neck, Lower

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-3YO

Equivalent types

Denton: 3304

Measurement specification

Resistive

Strain gauges

Options

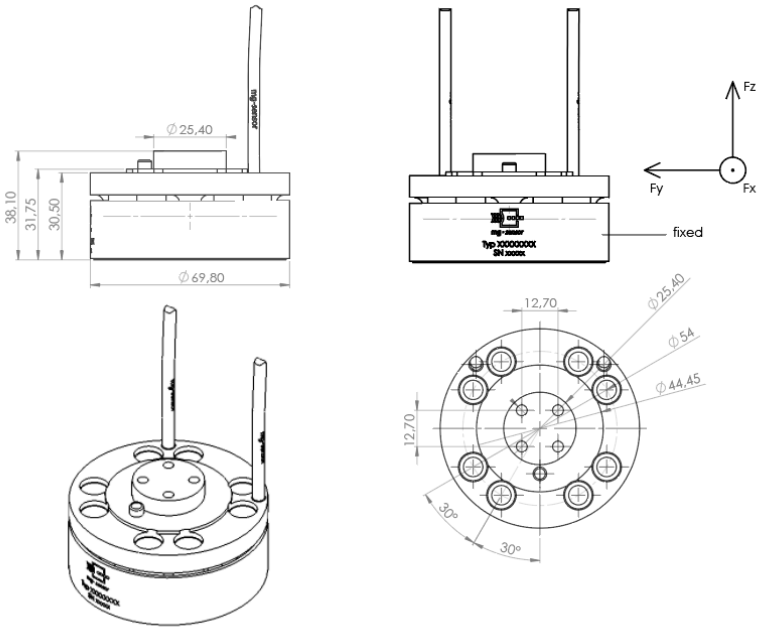
ID-Module integrated in sensor

Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AJF11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	4.5	4.5	6.7	 170	 170	 113
Sensitivity[1)]	µV/V/kN µV/V/Nm	422	422	194	 11	 11	 18
Output signal[1), 2)]	mV/V	1.9	1.9	1.3	1.8	1.8	2.0
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	230					

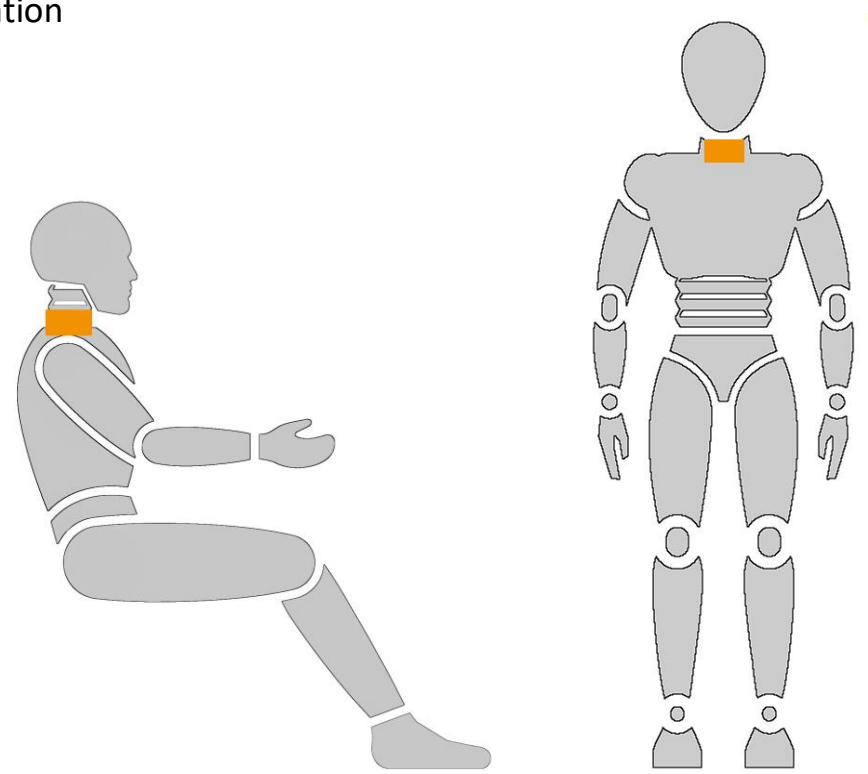
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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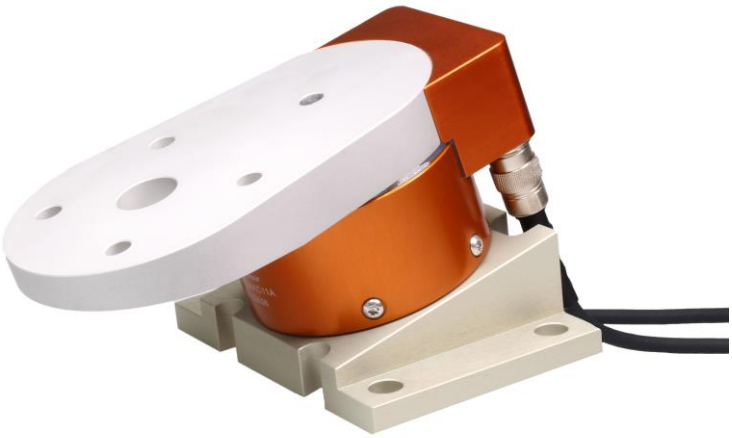
Technical Data Sheet

N6AKC11A

Load Cell, 6-axial

Location: Neck, Lower



Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

- H3-50%
- H3-95%
- BioSID

Equivalent types

- Denton: 1794
- FTSS: IF-210

Measurement specification

- Resistive
- Strain gauges

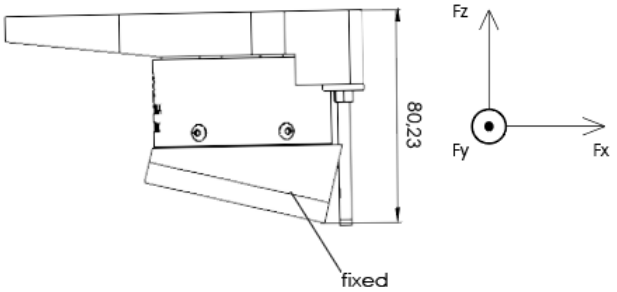
Options

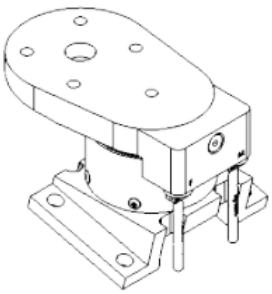
- ID-Module integrated in sensor
- Polarity according to SAE J211

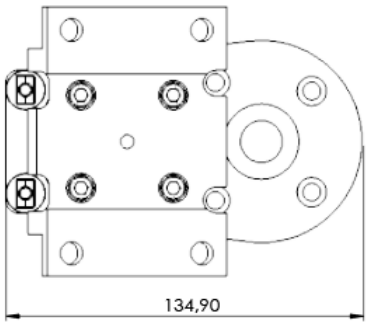
Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions







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Technical Data Sheet

N6AKC11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.3	13.3	13.3	 450	 450	 450
Sensitivity[1)]	µV/V/kN µV/V/Nm	105	105	68	 3.7	 3.7	 6.6
Output signal[1), 2)]	mV/V	1.4	1.4	0.9	1.7	1.7	3.0
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	830					

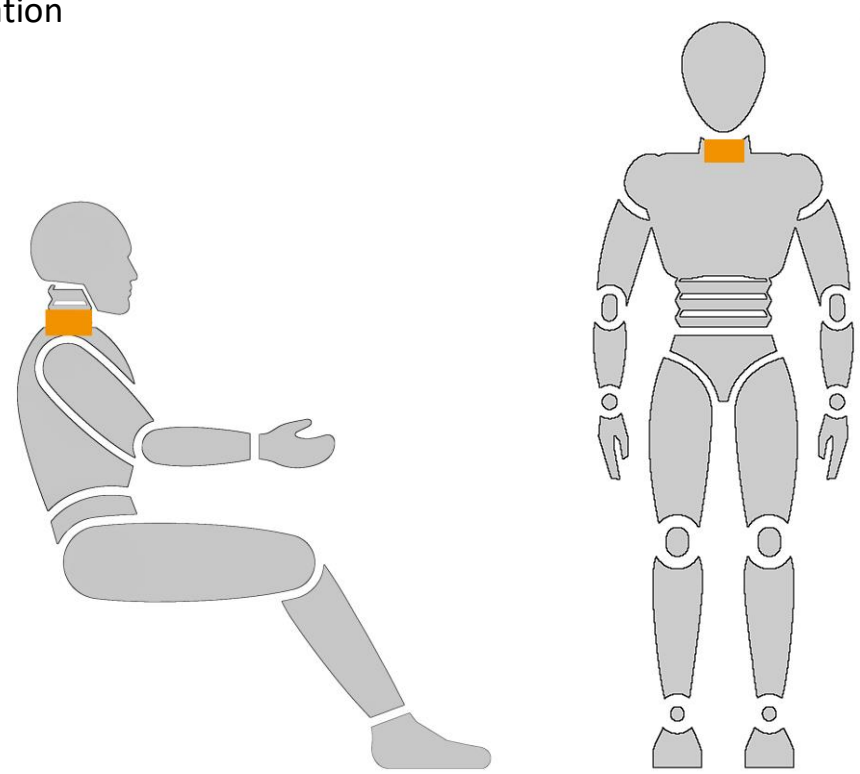
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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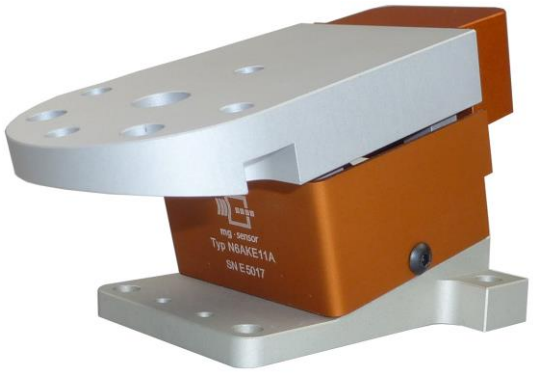
Technical Data Sheet

N6AKE11A

Load Cell, 6-axial

Location: Neck, Lower



Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-6YO

Equivalent types
Denton: 2430
FTSS: IF-222

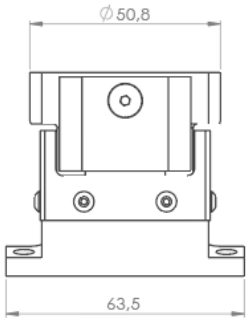
Measurement specification
Resistive
Strain gauges

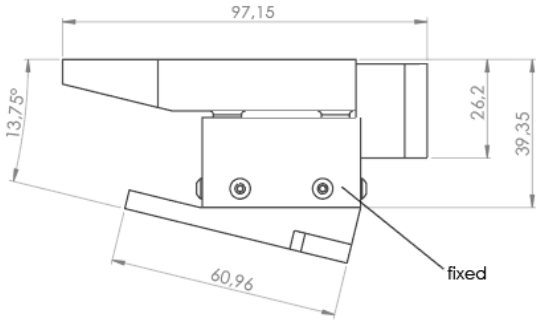
Options
ID-Module integrated in sensor
Polarity according to SAE J211

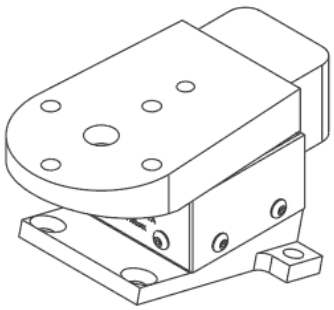
Technical description

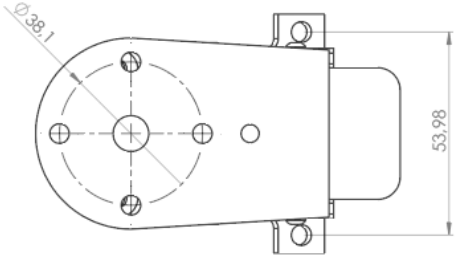
The applied force causes compression or strain of the base body. The deformation is measured using strain gauges. The wiring of multiple strain gauges for a full bridge circuit compensates for the temperature influence on the zero signal and the cross-influence from other force and torque application.

Dimensions









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Technical Data Sheet

N6AKE11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	4.5	4.5	7.2	 226	 226	 141
Sensitivity[1)]	µV/V/kN µV/V/Nm	490	490	83	 9.3	 9.3	 16.3
Output signal[1), 2)]	mV/V	2.2	2.2	0.6	2.1	2.1	2.3
Bridge resistance	Ω	350	350	1400	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	300					

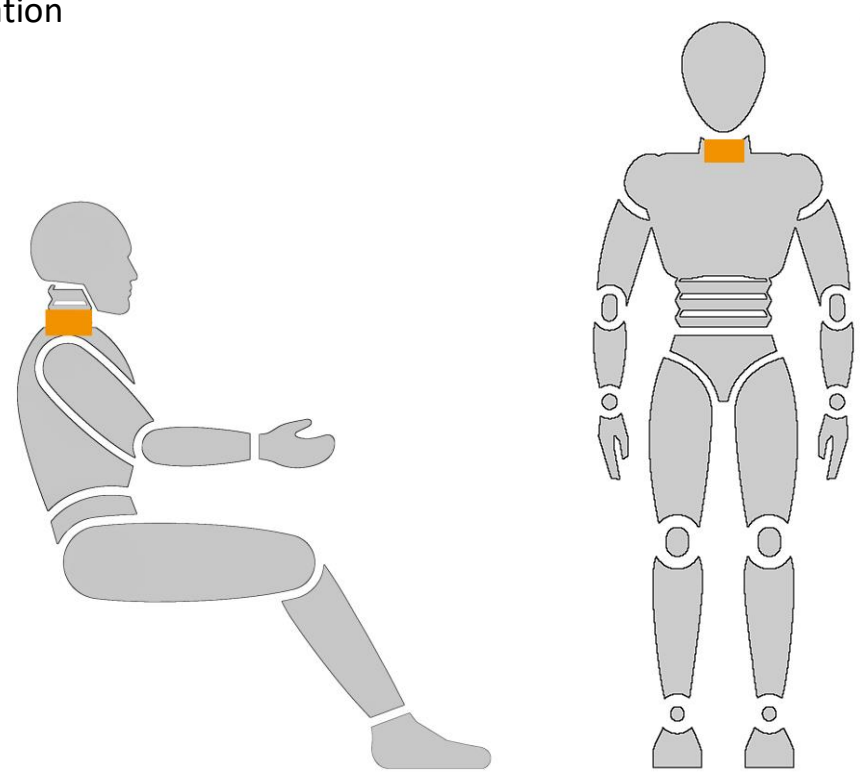
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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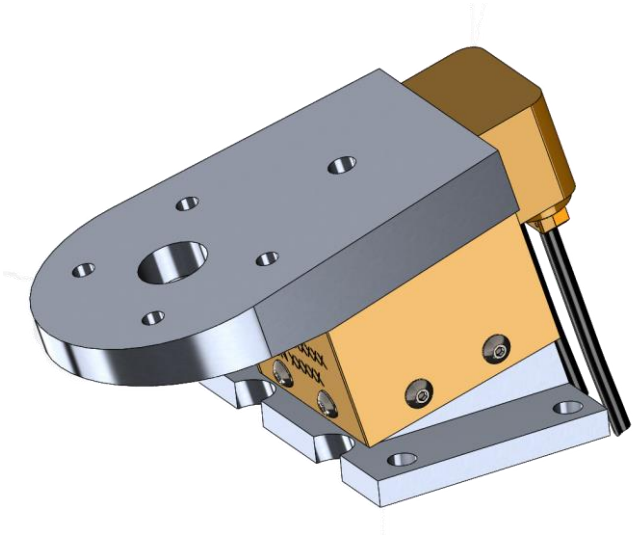
Technical Data Sheet

N6AKH11A

Load Cell, 6-axial

Location: Neck, Lower



Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-5%

Equivalent types
Denton: 1838
FTSS: IF-238

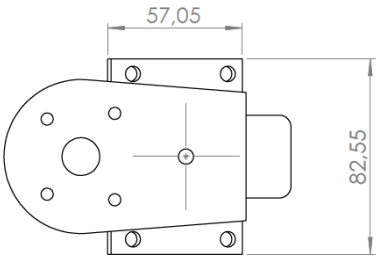
Measurement specification
Resistive
Strain gauges

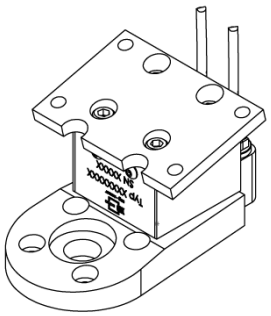
Options
ID-Module integrated in sensor
Polarity according to SAE J211

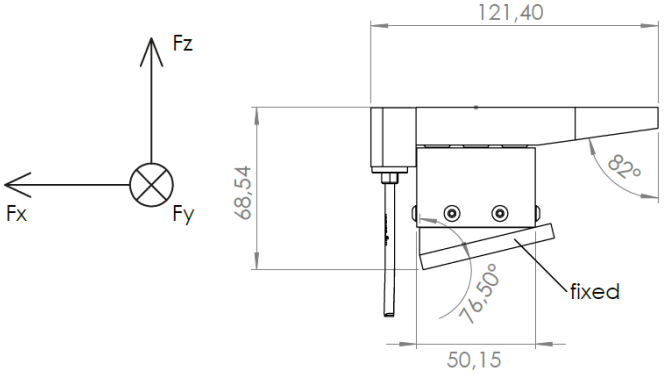
Technical description

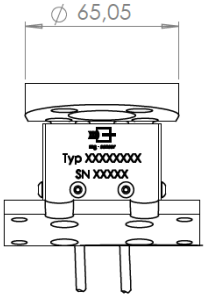
The applied force causes compression or strain of the base body. The deformation is measured using strain gauges. The wiring of multiple strain gauges for a full bridge circuit compensates for the temperature influence on the zero signal and the cross-influence from other force and torque application.

Dimensions









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Technical Data Sheet

N6AKH11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	11.1	11.1	11.1	 339	 339	 226
Sensitivity[1)]	µV/V/kN µV/V/Nm	225	225	99	 7.7	 7.7	 15.9
Output signal[1), 2)]	mV/V	2.5	2.5	1.1	2.6	2.6	3.6
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	530					

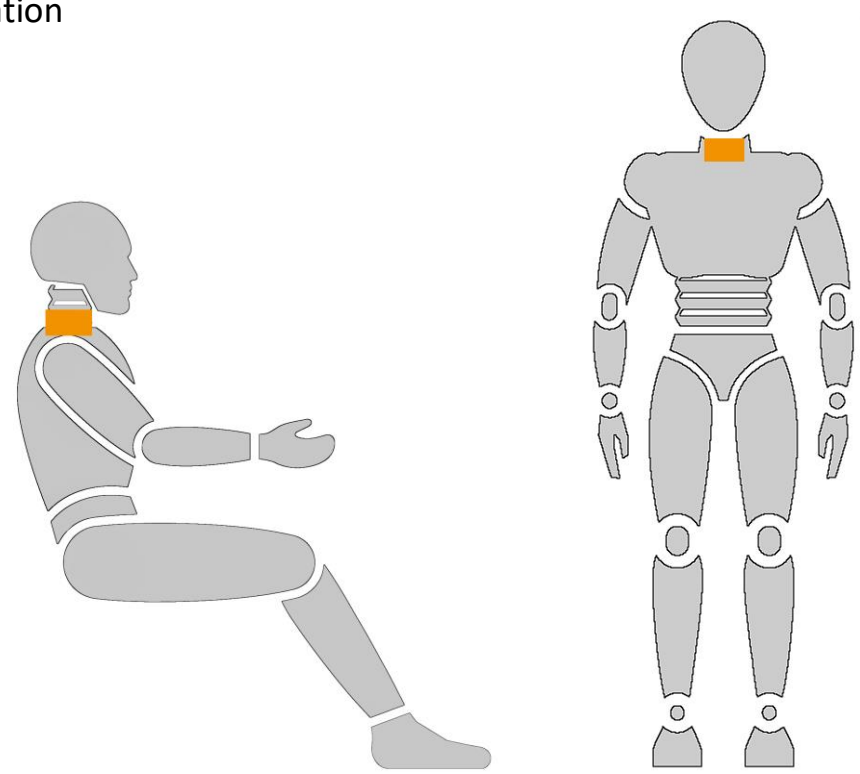
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6AKI11A

Load Cell, 6-axial

Location: Neck, Lower adjustable

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-50%
H3-95%
BioSID

Equivalent types

Denton: 2992
FTSS: IF-219

Measurement specification

Resistive
Strain gauges

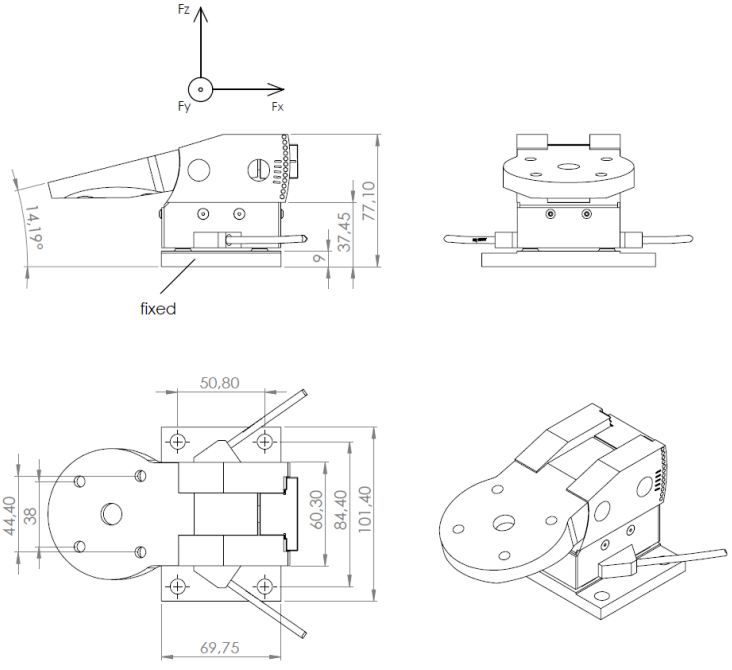
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AKI11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	6.7	6.7	8.9	 340	 340	 226
Sensitivity[1)]	µV/V/kN µV/V/Nm	270	270	67	 4.1	 4.1	 5.8
Output signal[1), 2)]	mV/V	1.8	1.8	0.6	1.4	1.4	1.3
Bridge resistance	Ω	350	350	1400	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	920					

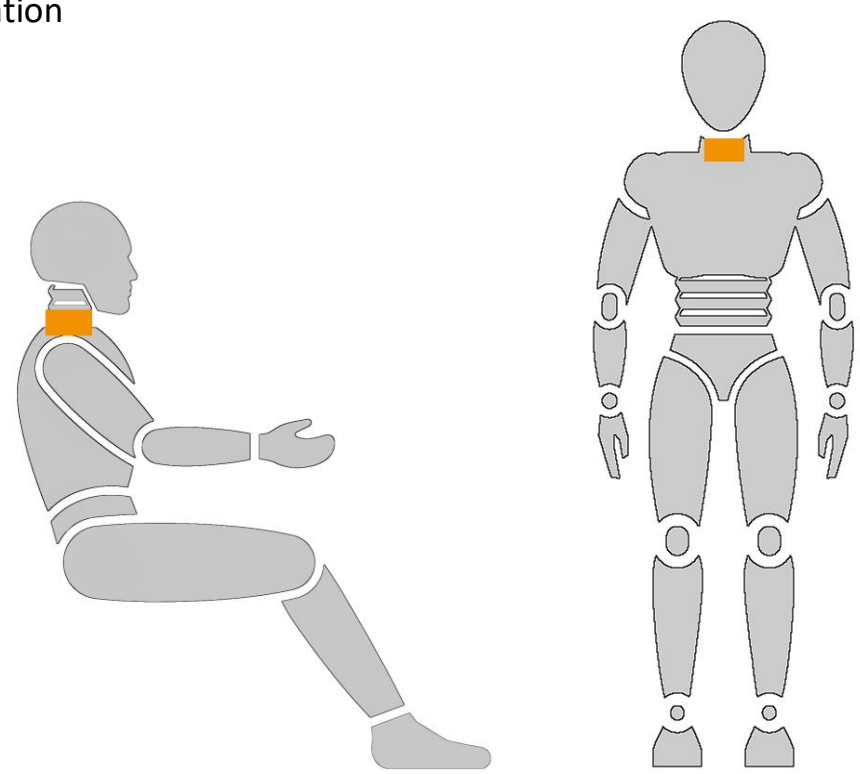
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6AKJ11A

Load Cell, 6-axial

Location: Neck, Lower adjustable

Force direction
F_x, F_y, F_z, M_x, M_y, M_z

Application
H3-50%
H3-95%

Equivalent types
Denton: 5832
FTSS: IF-219HC

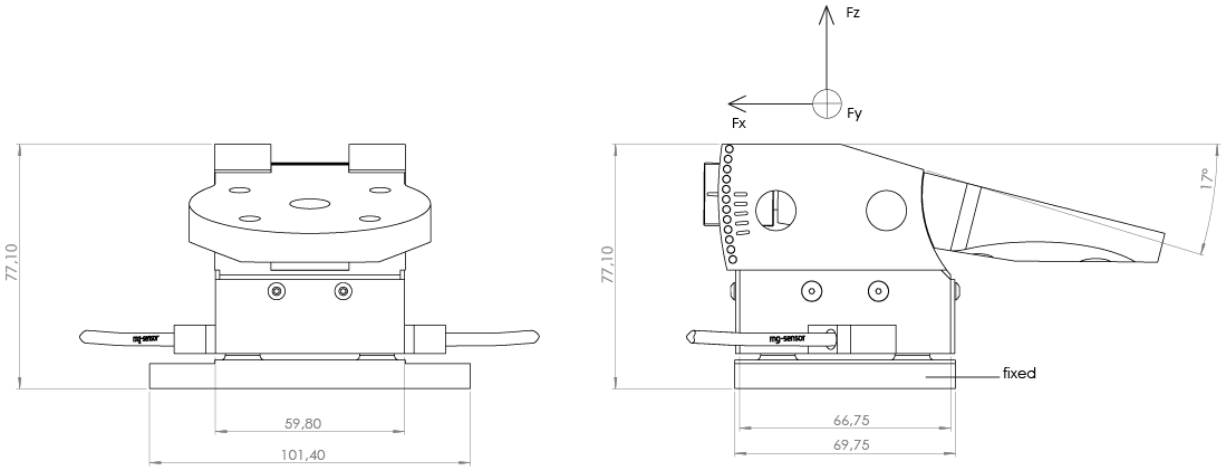
Measurement specification
Resistive
Strain gauges

Options
ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AKJ11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	15.5	15.5	22.2	 675	 675	 450
Sensitivity[1)]	µV/V/kN µV/V/Nm	129	129	36.4	 2.5	 2.5	 2.9
Output signal[1), 2)]	mV/V	2.0	2.0	0.8	1.7	1.7	1.3
Bridge resistance	Ω	350	350	700	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	480					

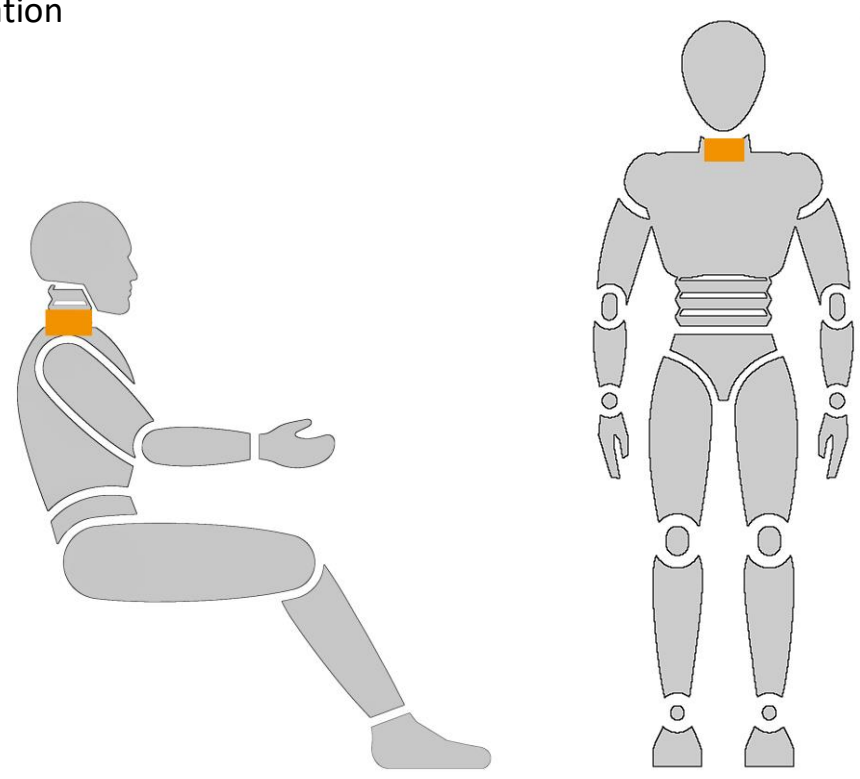
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6ALB11A

Load Cell, 6-axial

Location: Neck, Upper

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-5%, H3-50%, H3-95%,
SIDIIs, H3-6YO, H3-10YO

Equivalent types

Denton: 1716
FTSS: IF-205

Measurement specification

Resistive
Strain gauges

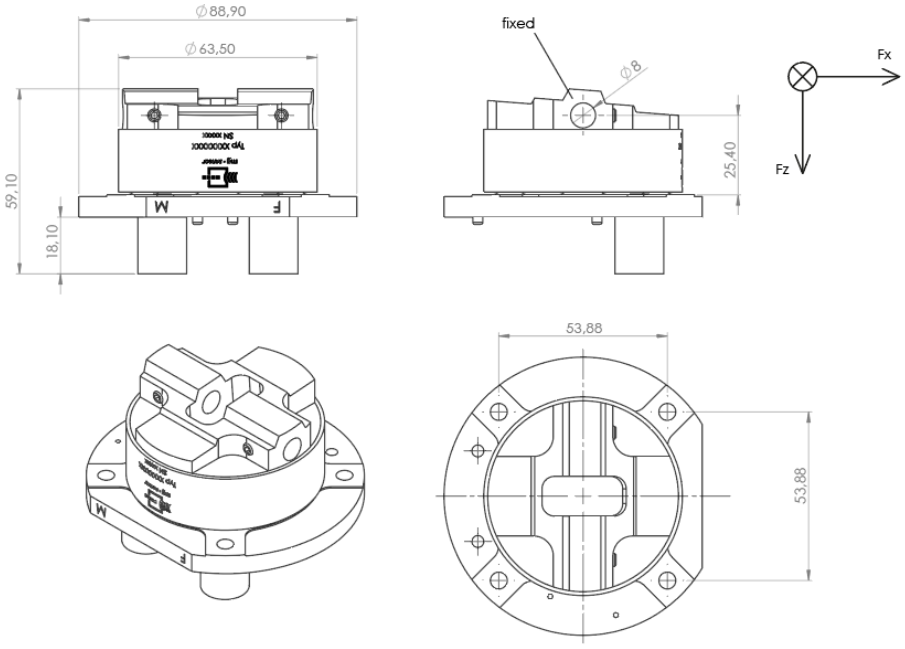
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6ALB11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	8.9	8.9	13.5	 283	 283	 283
Sensitivity[1)]	µV/V/kN µV/V/Nm	180	170	90	 5.3	 5.3	 7.8
Output signal[1), 2)]	mV/V	1.6	1.5	1.2	1.5	1.5	2.2
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	630					

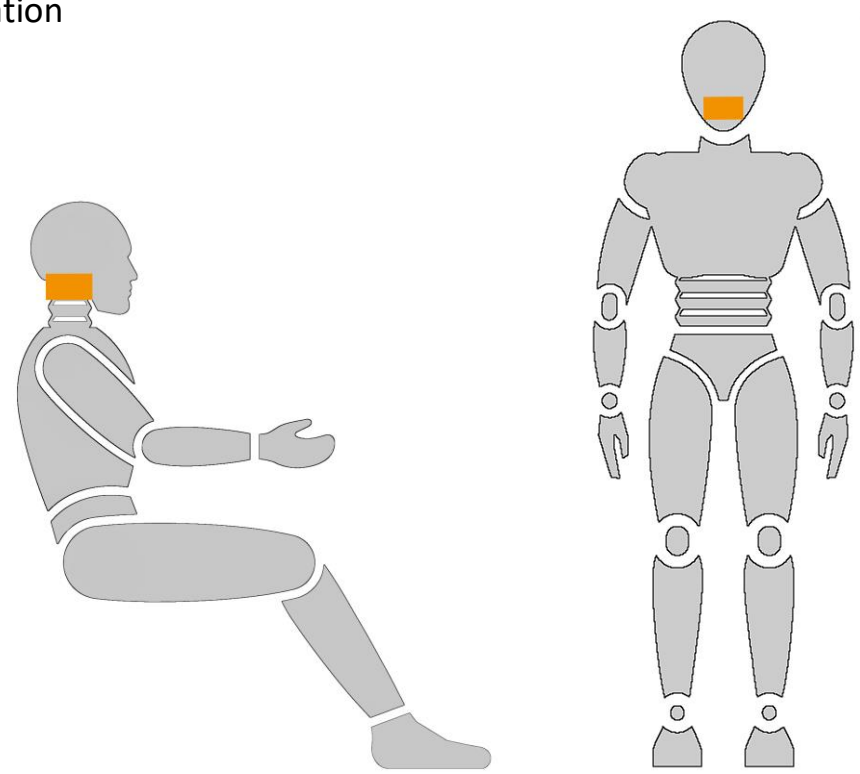
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6ASA11A

Load Cell, 6-axial

Location: Thoracic Spine

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-50%
H3-95%
Thor

Equivalent types

Denton: 1911
FTSS: IF-319, (IF-310), (IF-315)

Measurement specification

Resistive
Strain gauges

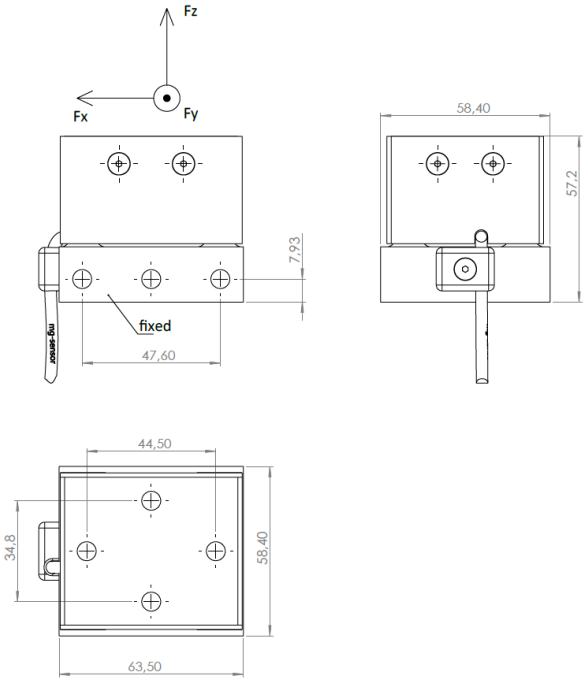
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6ASA11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.3	13.3	17.8	 900	 900	 340
Sensitivity[1)]	µV/V/kN µV/V/Nm	135	135	56	 1.8	 1.8	 5.3
Output signal[1), 2)]	mV/V	1.8	1.8	1.0	1.6	1.6	1.8
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel crosstalk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	1000					

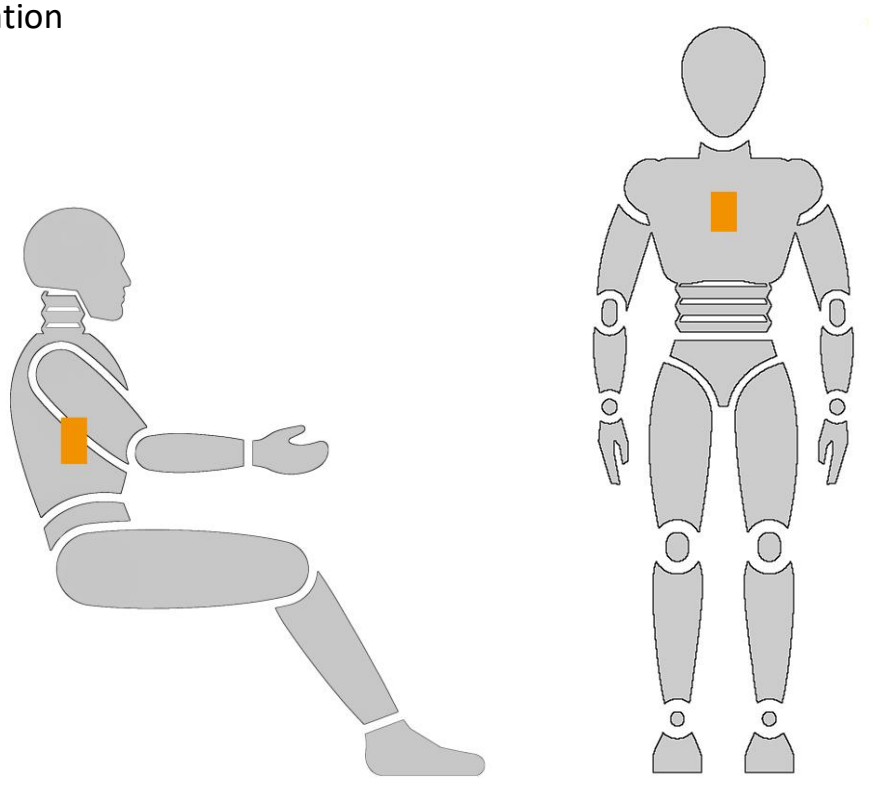
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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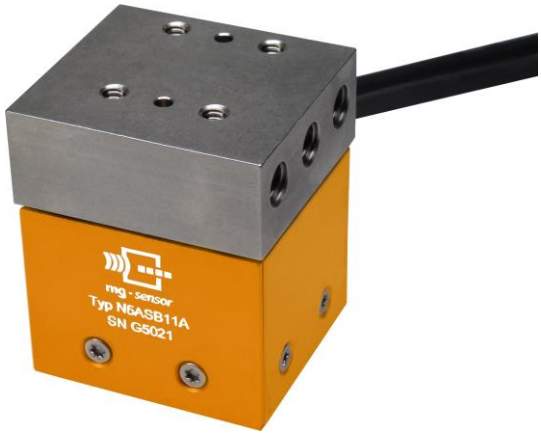
Technical Data Sheet

N6ASB11A

Load Cell, 6-axial

Location: Thoracic Spine



Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-5%

Equivalent types

Denton: 3881

Measurement specification

Resistive

Strain gauges

Options

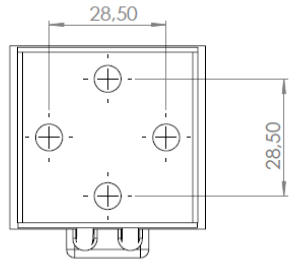
ID-Module integrated in sensor

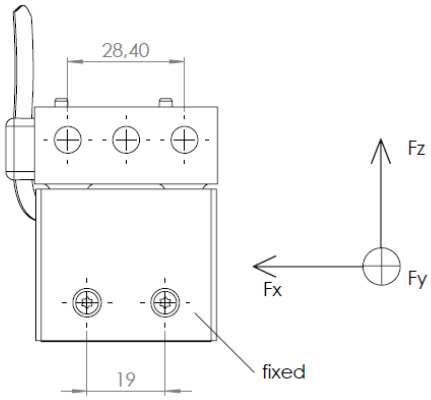
Polarity according to SAE J211

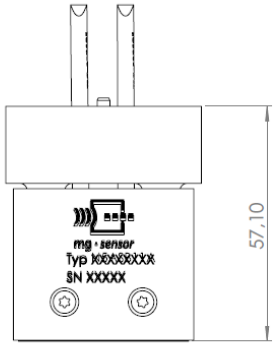
Technical description

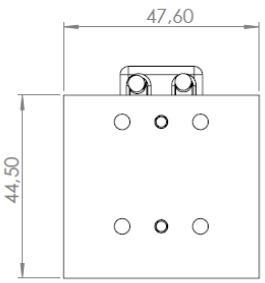
The applied force causes compression or strain of the base body. The deformation is measured using strain gauges. The wiring of multiple strain gauges for a full bridge circuit compensates for the temperature influence on the zero signal and the cross-influence from other force and torque application.

Dimensions









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Technical Data Sheet

N6ASB11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	13.3	13.3	17.8	 565	 565	 339
Sensitivity[1)]	µV/V/kN µV/V/Nm	105	105	22	 1.6	 1.6	 4.4
Output signal[1), 2)]	mV/V	1.4	1.4	0.4	0.9	0.9	1.5
Bridge resistance	Ω	350	350	1400	700	700	350
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel cross talk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	1000					

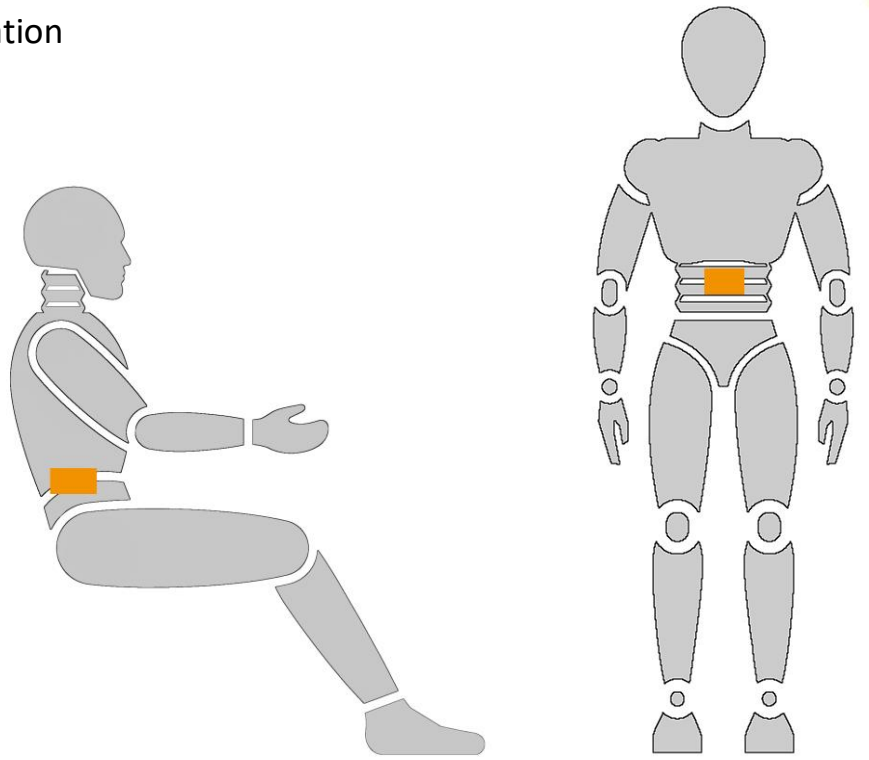
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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Technical Data Sheet

N6AUA11A

Load Cell, 6-axial

Location: Tibia, Upper

Force direction

F_x, F_y, F_z, M_x, M_y, M_z

Application

H3-5%, H3-50%, H3-95%
FAA
BioSID

Equivalent types

Measurement specification

Resistive
Strain gauges

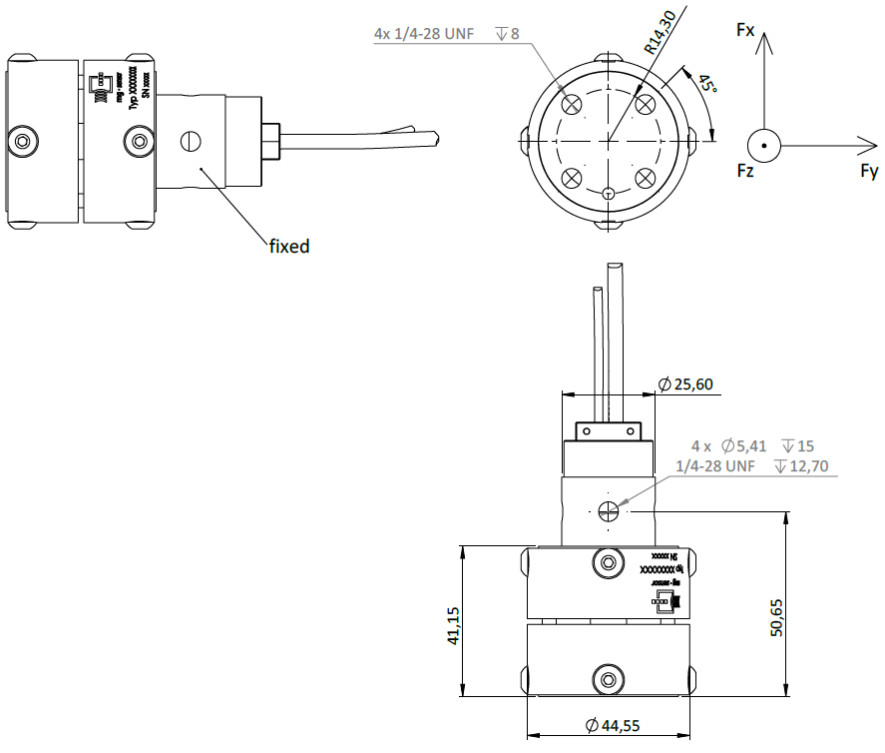
Options

ID-Module integrated in sensor
Polarity according to SAE J211

Technical description

The applied force causes compression or strain 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 and the cross-influence from other force and torque application.

Dimensions



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Technical Data Sheet

N6AUA11A

Technical specification

	Unit	Value					
		F_x	F_y	F_z	M_x	M_y	M_z
Measuring range	kN Nm	11.1	11.1	11.1	 396	 396	 226
Sensitivity[1)]	µV/V/kN µV/V/Nm	180	180	90	 7.6	 7.6	 13.3
Output signal[1), 2)]	mV/V	2.0	2.0	1.0	3.0	3.0	3.0
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal[1)]	mV/V	≤ 0.05					
Amplitude non-linearity[3)]	%	≤ 1.0					
Hysteresis[3)]	%	≤ 1.0					
Channel cross talk[3)]	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30…+70					
Weight (approximate)	g	500					

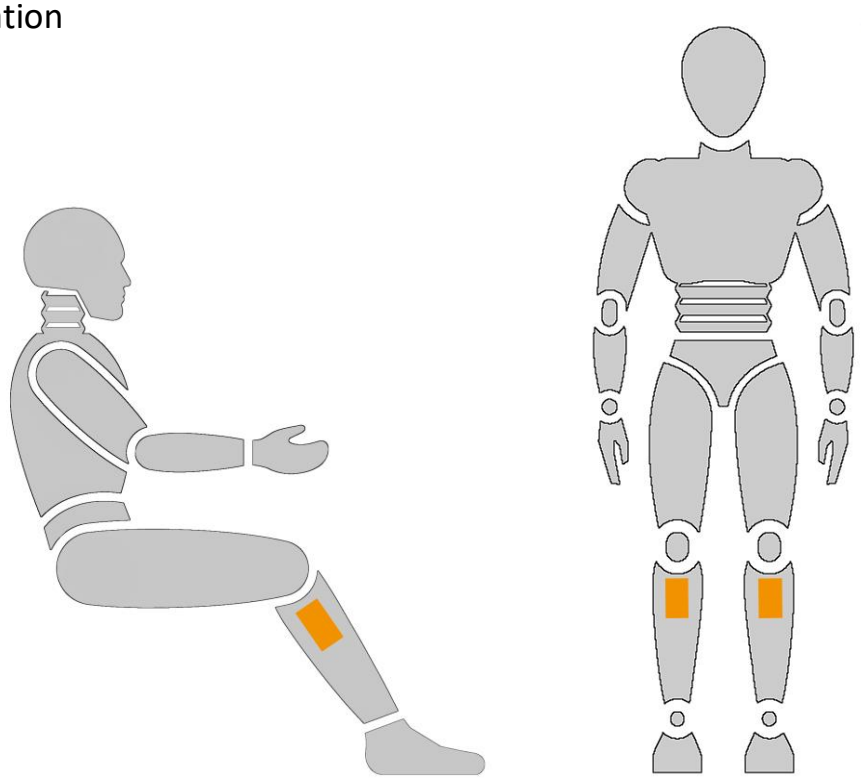
All values measured at 10 V sensor supply voltage and at 23 °C.

[1)] Typical value

[2)] At nominal load

[3)] Relative nominal range

Dummy application



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