

# Crash Test Dummy Load Cells

## Q-Dummy

TECHNICAL DATA SHEETS



## F1ANE11A

### ➤ Load Cell, 1-axial Location: Pubic

Force direction  
 $F_y$

Application  
Q10

Equivalent types  
FTSS: W50-71051S3

Measurement specification  
Resistive  
Strain gauges

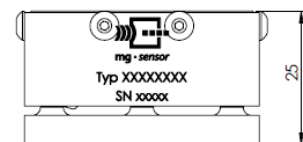
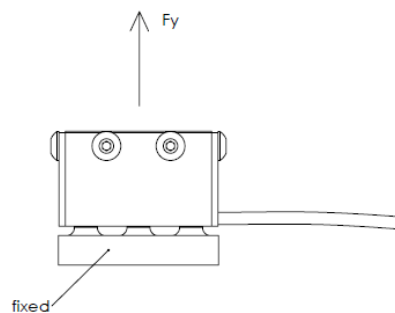
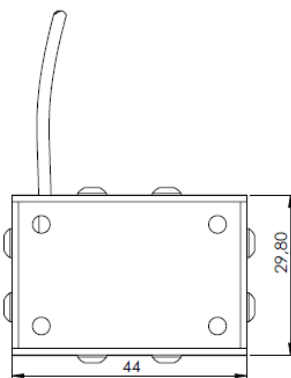
Options  
ID-Module integrated in sensor  
Polarity according to SAE J211



### 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



## F1ANE11A

### Technical specification

	Unit	Value
Measuring range	kN	12
Sensitivity <sup>1)</sup>	$\mu\text{V/V/kN}$	200
Output signal <sup>1), 2)</sup>	mV/V	2.4
Bridge resistance	$\Omega$	700
Zero signal <sup>1)</sup>	mV/V	$\leq 0.05$
Amplitude non-linearity <sup>3)</sup>	%	$\leq 1.0$
Hysteresis <sup>3)</sup>	%	$\leq 1.0$
Channel crosstalk <sup>3)</sup>	%	–
Supply voltage	V	2–15
Ultimate load	%	150
Insulation resistance	M $\Omega$	>100
Temperature range	$^{\circ}\text{C}$	-30...+70
Weight (approximate)	g	120

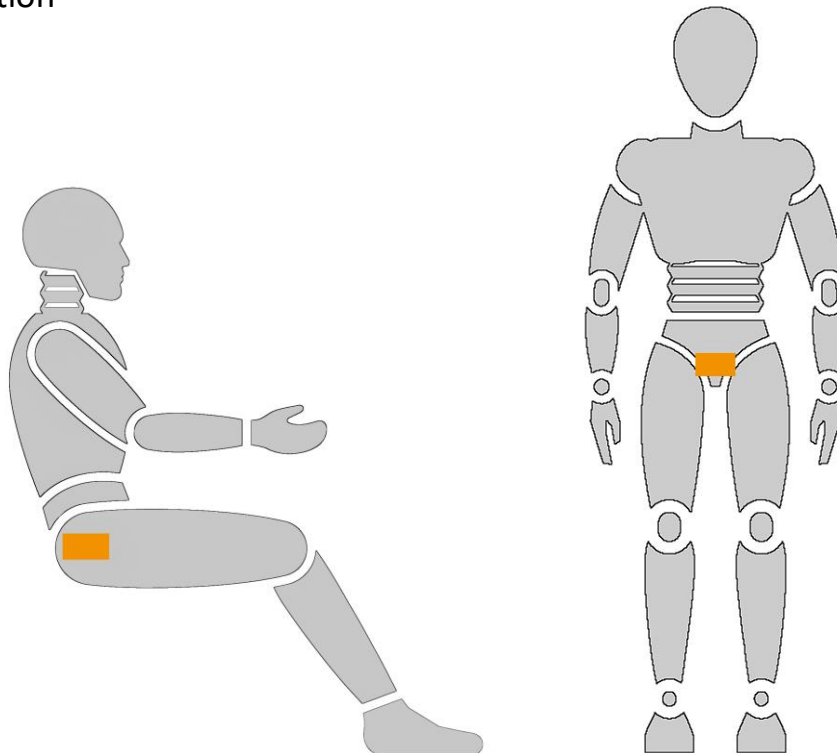
All values measured at 10 V sensor supply voltage and at 23  $^{\circ}\text{C}$ .

<sup>1)</sup> Typical value

<sup>2)</sup> At nominal load

<sup>3)</sup> Relative nominal range

### Dummy application



## F3AQH11A



Load Cell, 3-axial  
Location: Shoulder right

Force direction

$F_x, F_y, F_z$

Application

Q10/Q10s

Equivalent types

Humanetics: IH-10970JI4

Measurement specification

Resistive

Strain gauges

Options

ID-Module integrated in sensor

Polarity according to SAE J211

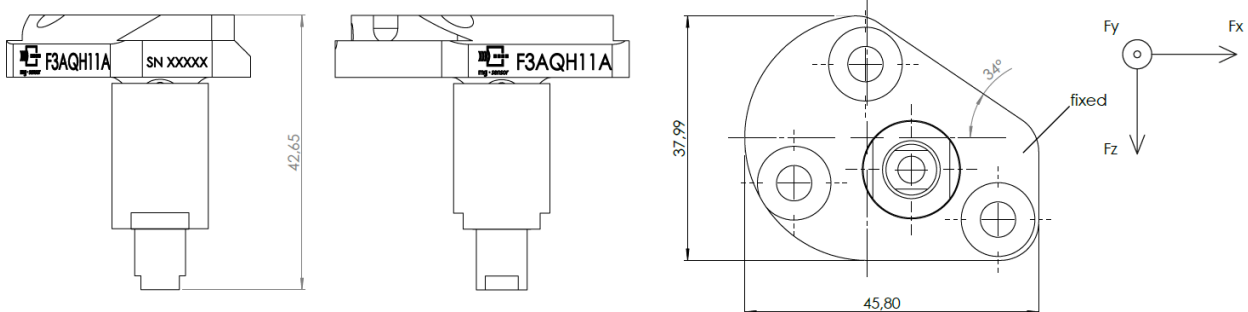


### Technical description

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



## F3AQH11A

### Technical specification

	Unit	Value		
		F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>
Measuring range	kN	2.0	4.0	2.0
Sensitivity <sup>1)</sup>	μV/V/kN	500	225	500
Output signal <sup>1), 2)</sup>	mV/V	1.0	0.9	1.0
Bridge resistance	Ω	350	350	350
Zero signal <sup>1)</sup>	mV/V	≤ 0.05		
Amplitude non-linearity <sup>3)</sup>	%	≤ 1.0		
Hysteresis <sup>3)</sup>	%	≤ 1.0		
Channel crosstalk <sup>3)</sup>	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30...+70		
Weight (approximate)	g	930		

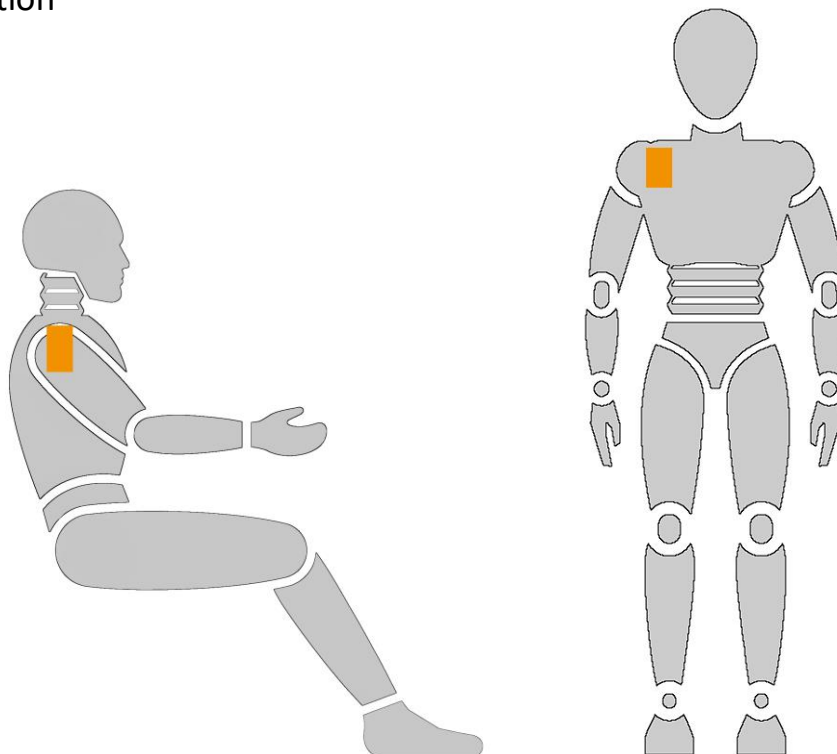
All values measured at 10 V sensor supply voltage and at 23 °C.

<sup>1)</sup> Typical value

<sup>2)</sup> At nominal load

<sup>3)</sup> Relative nominal range

### Dummy application



## F3AQI11A



### Load Cell, 3-axial

Location: Shoulder left

Force direction

$F_x, F_y, F_z$

Application

Q10/Q10s

Equivalent types

Humanetics: IH-10980JI4

Measurement specification

Resistive

Strain gauges

Options

ID-Module integrated in sensor

Polarity according to SAE J211

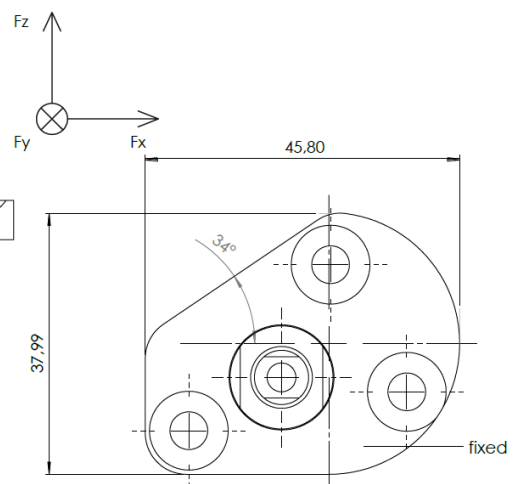
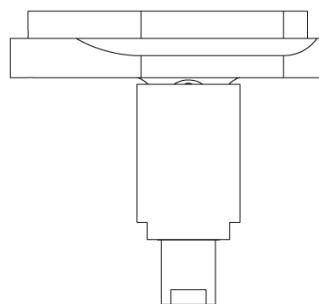
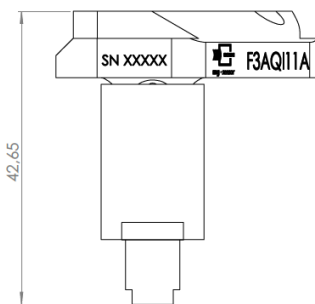


### Technical description

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



## F3AQI11A

### Technical specification

	Unit	Value		
		F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>
Measuring range	kN	2.0	4.0	2.0
Sensitivity <sup>1)</sup>	μV/V/kN	500	225	500
Output signal <sup>1), 2)</sup>	mV/V	1.0	0.9	1.0
Bridge resistance	Ω	350	350	350
Zero signal <sup>1)</sup>	mV/V	≤ 0.05		
Amplitude non-linearity <sup>3)</sup>	%	≤ 1.0		
Hysteresis <sup>3)</sup>	%	≤ 1.0		
Channel crosstalk <sup>3)</sup>	%	≤ 5.0		
Supply voltage	V	2–15		
Ultimate load	%	150		
Insulation resistance	MΩ	> 100		
Temperature range	°C	-30...+70		
Weight (approximate)	g	930		

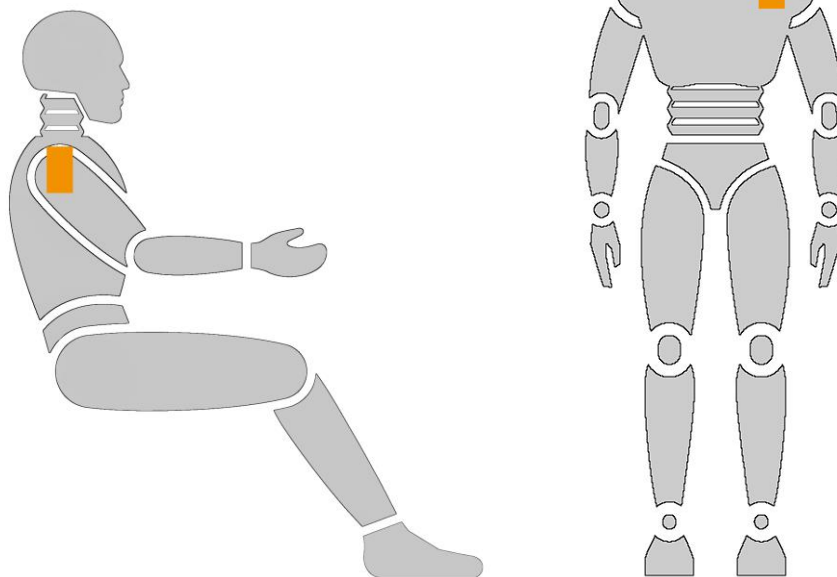
All values measured at 10 V sensor supply voltage and at 23 °C.

<sup>1)</sup> Typical value

<sup>2)</sup> At nominal load

<sup>3)</sup> Relative nominal range

### Dummy application



## N6AJA11A



### Load Cell, 6-axial

Location: Neck / Lumbar Spine

#### Force direction

$F_x, F_y, F_z, M_x, M_y, M_z$

#### Application

Q1.5, Q3, Q6

#### Equivalent types

Denton: 3715

FTSS: IF-217

#### Measurement specification

Resistive

Strain gauges

#### Options

ID-Module integrated in sensor

Polarity according to SAE J211

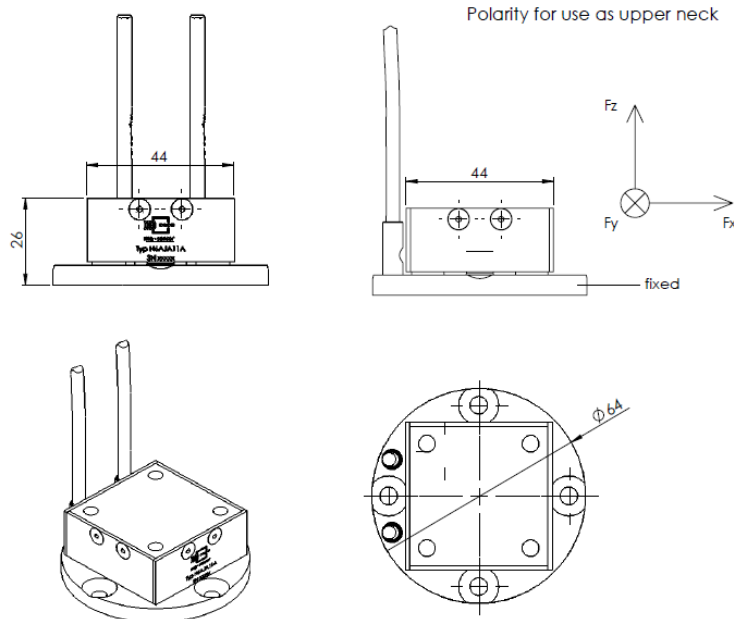


#### Technical description

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





## N6AJA11A

### Technical specification

	Unit	Value					
		F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
Measuring range	kN Nm	5.0	5.0	6.0	150	150	80
Sensitivity <sup>1)</sup>	μV/V/kN μV/V/Nm	380	380	180	12.7	12.7	26
Output signal <sup>1), 2)</sup>	mV/V	1.9	1.9	1.1	1.9	1.9	2.1
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal <sup>1)</sup>	mV/V	≤ 0.05					
Amplitude non-linearity <sup>3)</sup>	%	≤ 1.0					
Hysteresis <sup>3)</sup>	%	≤ 1.0					
Channel crosstalk <sup>3)</sup>	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30...+70					
Weight (approximate)	g	120					

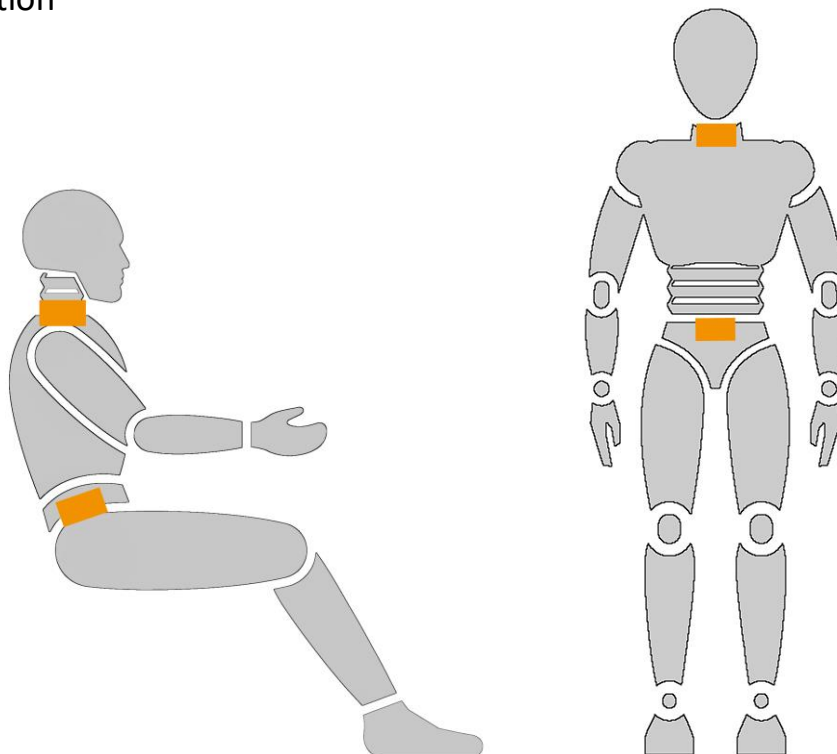
All values measured at 10 V sensor supply voltage and at 23 °C.

<sup>1)</sup> Typical value

<sup>2)</sup> At nominal load

<sup>3)</sup> Relative nominal range

### Dummy application



# Technical Data Sheet



## N6AJE11A



### Load Cell, 6-axial

Location: Neck / Lumbar Spine

Force direction

$F_x, F_y, F_z, M_x, M_y, M_z$

Application

Q10

Equivalent types

FTSS: IF-217 HC

Measurement specification

Resistive

Strain gauges

Options

ID-Module integrated in sensor

Polarity according to SAE J211

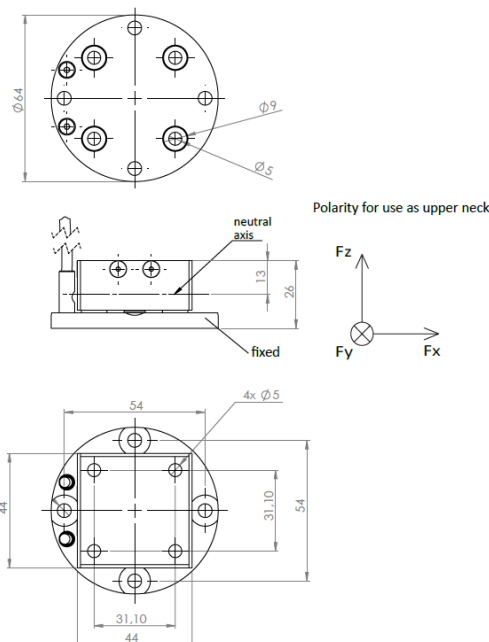


### Technical description

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



## N6AJE11A

### Technical specification

	Unit	Value					
		F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
Measuring range	kN Nm	13.3	13.3	17.8	452	452	226
Sensitivity <sup>1)</sup>	μV/V/kN μV/V/Nm	135	135	57	4.6	4.6	8.1
Output signal <sup>1), 2)</sup>	mV/V	1.8	1.8	1.0	2.1	2.1	1.8
Bridge resistance	Ω	350	350	700	350	350	700
Zero signal <sup>1)</sup>	mV/V	≤ 0.05					
Amplitude non-linearity <sup>3)</sup>	%	≤ 1.0					
Hysteresis <sup>3)</sup>	%	≤ 1.0					
Channel crosstalk <sup>3)</sup>	%	≤ 5.0					
Supply voltage	V	2–15					
Ultimate load	%	150					
Insulation resistance	MΩ	> 100					
Temperature range	°C	-30...+70					
Weight (approximate)	g	280					

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

<sup>1)</sup> Typical value

<sup>2)</sup> At nominal load

<sup>3)</sup> Relative nominal range

### Dummy application

