

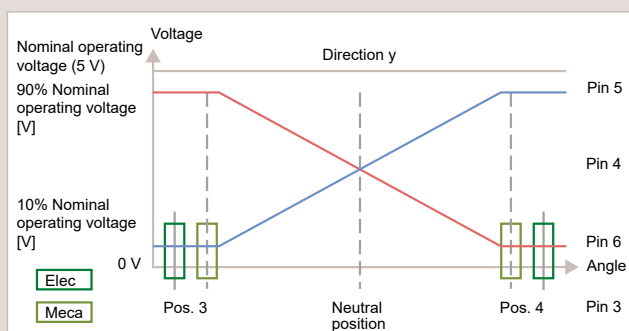
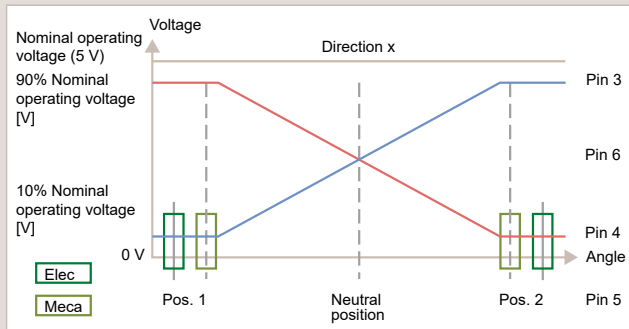


PACTO JOYSTICK

Due to its ergonomic and robust design, the Joystick PACTO offers a wide range of installation options. Its modular design and sensitive control allow it to be used ergonomically with the full hand. Further characteristics of the Joystick PACTO are its intuitive use and its long service life. Besides being used in the ACTRAJOY PLUS armrest, the Joystick is predestined for use in customer-specific applications. In addition a micro switch is available on the top of Joystick PACTO. These could be used for e.g. Horn-, release- or customer specific- functions.

- Contactless Hall-effect sensor technology
- Two axes
- Two analogue signals per axis, X characteristic
- Ergonomic design
- Protection class IP 65 if mounted, except plug
- Long service life of 4.0 million cycles except Button (1.0 million cycles)
- EMC in accordance with EN 12895
- Functional safety in accordance with EN ISO 13849, PL C

Transmission protocol



Technical data

Technology Contactless hall sensors

Mechanical data

Dimensions See drawing

Mechanical angle of rotation $\pm 20^\circ\text{C}$

Electrical data

Rated voltage 5 VDC $\pm 0.02\text{ V}$

Operating voltage range 4.5 – 5.5 V DC

Power current < 25 mA

Analogue output ratiometric X characteristic: 0.5 – 4.5 V DC

Operating conditions

Operating temperature -28°C bis $+65^\circ\text{C}$

Storage temperature -40°C bis $+85^\circ\text{C}$

Maximum force 0.25 Nm

Actuation force 20 Nm

Service life joystick 4.0 million cycles

Service life button 1.0 million cycles

Protection class IP 65 for assembly

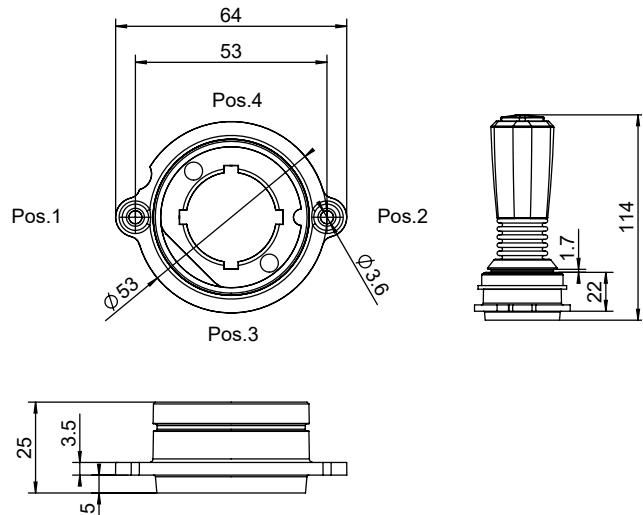
EMC 30 V/m according to EN 12896:2015-09

Connector pin assignment

8 pin, single row

PIN 1	Button out
PIN 2	Button in
PIN 3	Signal 2 – 2
PIN 4	Signal 2 – 1
PIN 5	Signal 1 – 2
PIN 6	Signal 1 – 1
PIN 7	GND
PIN 8	+ 5 V

Dimensions [mm]



Order data

Part No.	Designation
3111-012S3-XX	PACTO Joystick



MONO RIMBO FINGER JOYSTICK

Due to its space-saving design and precise controllability, the MONO RIMBO finger joystick is the ideal solution in limited installation space. The single-axis joystick's cap is available in several colours and can be laser-engraved with both standard and customer-specific symbols. The modular design allows it to be used in a wide number of industrial applications.

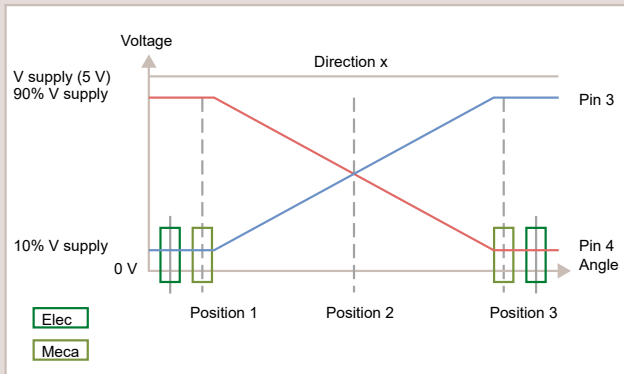
- Central zero position
- Angle of rotation $\pm 30^\circ$
- Contactless Hall-effect sensor technology
- Two analogue signals, X characteristic
- Sensitive control
- Ergonomic design
- Protection class IP 68, except plug
- Long service life of 5 million cycles
- EMC in accordance with EN 12895: 2015-09
- EMC 100 V/M in accordance with ISO 11452-2
- Functional safety in accordance with EN ISO 13849, PL d

Joysticks



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Transmission protocol



Technical data

Technology Contactless hall sensors

Mechanical data

Dimensions See drawing

Mechanical angle of rotation $\pm 30^\circ$

Electrical data

Rated voltage 5 VDC ± 0.02 V

Operating voltage range 4.5 – 5.5 V DC
(ratiometric output)

Power current < 50 mA

Analogue output @5 V X characteristic: 0.5 – 4.5 V DC

Operating conditions

Operating temperature -30°C to $+65^\circ\text{C}$

Storage temperature -40°C to $+85^\circ\text{C}$

Maximum force 0.09 Nm

Actuation force 8.5 Nm

Service life 5 million cycles

Protection class IP 68 (except for the
plug-in connector)

EMC EN 12595: 2015-09
100 V/M in accordance
ISO 11452-2

Connector pin assignment Molex Mini-Fit Jr.™

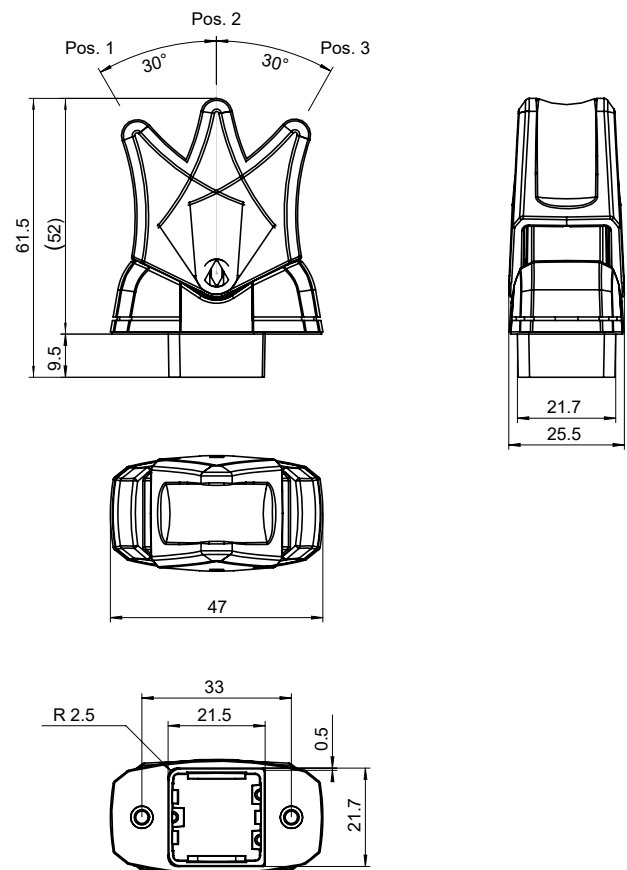
4 pin, dual row 39012040

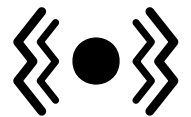
PIN 1	+ 5 V
PIN 2	GND
PIN 3	Signal 1
PIN 4	Signal 2

Order data

Part No.	Designation
3203-00958-00	MONO RIMBO Finger joystick

Dimensions [mm]





MONO VIBRO FINGER JOYSTICK

Due to its space-saving design and precise controllability, the MONO VIBRO finger joystick is the ideal solution in limited installation space. The single-axis joystick's cap consists of two parts, the inner part can be laser-engraved with both standard and customer-specific symbols. The outer part is available in several colours.

The modular design allows it to be used in a wide number of industrial applications. The MONO VIBRO finger joystick provides the operator with haptic feedback through vibration so that he can react correctly to the relevant situation.

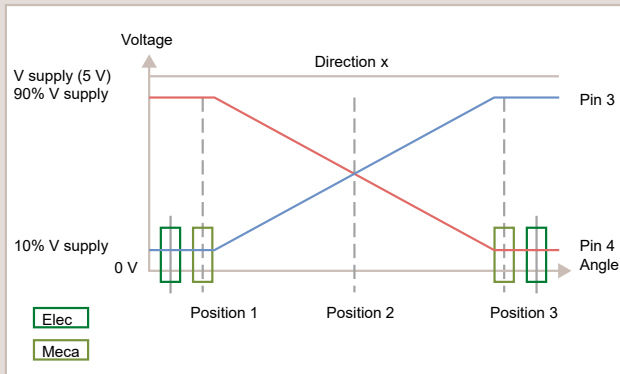
- Central zero position
- Angle of rotation $\pm 30^\circ$
- Contactless Hall-effect sensor technology
- Two analogue signals, X characteristic
- Sensitive control
- Ergonomic design
- Protection class IP 68 according to DIN EN 60529, electronic
- IP 5X vibration area, electronic
- Long service life of 5 million cycles, analogue output
1 million cycles, vibration area
- EMC in accordance with EN 12895: 2015-09
- EMC 100 V/M in accordance with ISO 11452-2
- Functional safety in accordance with
EN ISO 13849, PL d
- Haptic feedback with vibration
- Start and duration of vibration is configured
by customer

Joysticks



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Transmission protocol

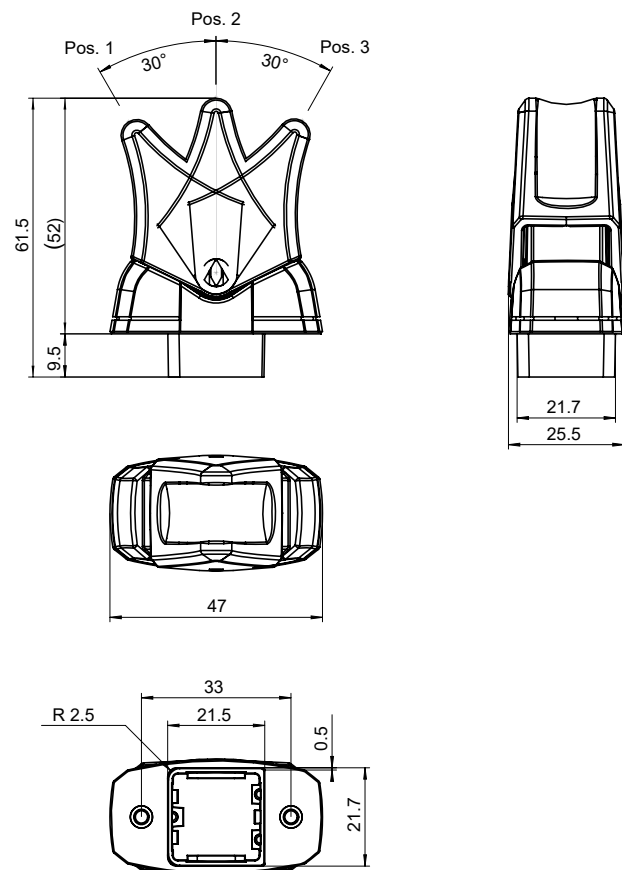


Technical data	
Technology	Contactless hall sensors
Mechanical data	
Dimensions	See drawing
Mechanical angle of rotation	$\pm 30^\circ\text{C}$
Electrical data	
Rated voltage	5 VDC ± 0.02 V
Operating voltage range	4.5 – 5.5 V DC (ratiometric output)
Power current	< 70 mA
Analogue output @5 V	X characteristic: 0.5 – 4.5 VDC
Operating conditions	
Operating temperature	-30°C to +65°C
Storage temperature	-40°C to +85°C
Maximum force	0.09 Nm
Actuation force	4.8 Nm
Service life	5 million cycles, analogue output 1 million cycles, vibration area
Protection class	IP 68 according to DIN EN 60529, electronic IP 5X vibration area, electronic
EMC	EN 12595: 2015-09 100 V/M in accordance ISO 11452-2

Connector pin assignment Molex Mini-Fit Jr.™ 6 pin, dual row 39012040

PIN 1	+ 5 V
PIN 2	GND
PIN 3	Signal 1
PIN 4	Signal 2
PIN 5	Vibration active 5 V
PIN 6	—

Dimensions [mm]



Order data

Part No.	Designation
3203-00981-XX	MONO VIBRO Finger joystick



MONO SCATTA FINGER JOYSTICK

Due to its space-saving design and precise controllability, the MONO RIMBO finger joystick is the ideal solution in limited installation space. The single-axis joystick's cap is available in several colours and can be laser-engraved with both standard and customer-specific symbols. The modular design allows it to be used in a wide number of industrial applications. The three-position latching function makes the MONO SCATTA ideal for use as a direction switch.

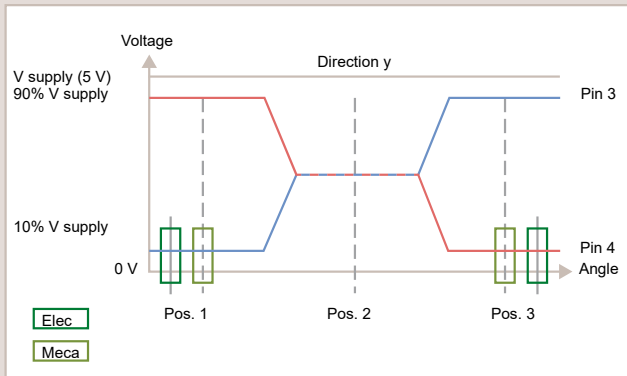
- Latching in 3 positions
- Angle of rotation $\pm 30^\circ$
- Contactless Hall-effect sensor technology
- Two analogue signals, X characteristic
- Sensitive control
- Ergonomic design
- Protection class IP 68, except plug
- Long service life of 5 million cycles
- EMC in accordance with EN 12895: 2015-09
- EMC 100 V/M in accordance with ISO 11452-2
- Functional safety in accordance with EN ISO 13849, PL d

Joysticks



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Transmission protocol



Technical data

Technology Contactless hall sensors

Mechanical data

Dimensions See drawing

Mechanical angle of rotation $\pm 30^\circ$

Electrical data

Rated voltage 5 VDC ± 0.02 V

Operating voltage range 4.5 – 5.5 V DC
(ratiometric output)

Power current < 50 mA

Analogue output @5 V X characteristic: 0.5 – 4.5 V DC

Operating conditions

Operating temperature -30°C to $+65^\circ\text{C}$

Storage temperature -40°C to $+85^\circ\text{C}$

Maximum force 0.09 Nm

Actuation force 8.5 Nm

Service life 3 million cycles

Protection class IP 68 (except for the
plug-in connector)

EMC EN 12595: 2015-09
100 V/M in accordance
ISO 11452-2

Connector pin assignment Molex Mini-Fit Jr.™

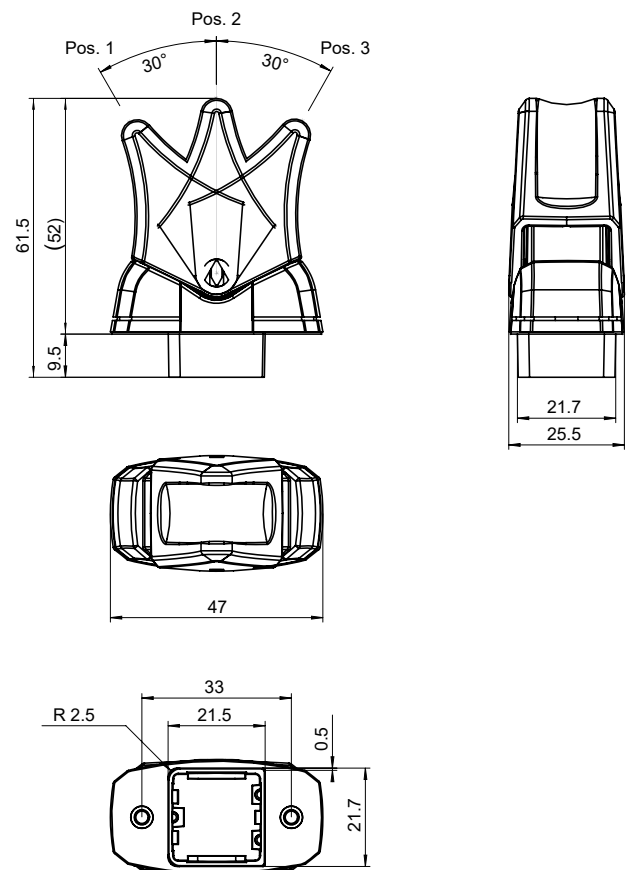
4 pin, dual row 39012040

PIN 1	+ 5 V
PIN 2	GND
PIN 3	Signal 1
PIN 4	Signal 2

Order data

Part No.	Designation
3203-00994-XX	MONO SCATTA Finger joystick

Dimensions [mm]



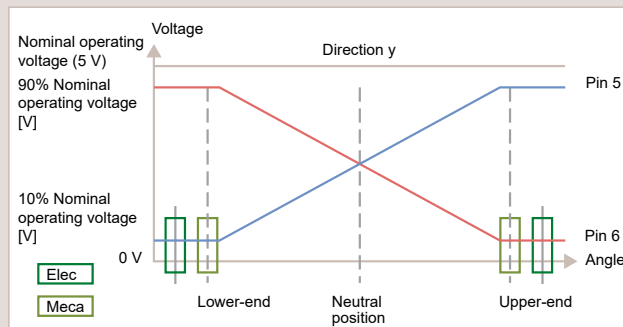
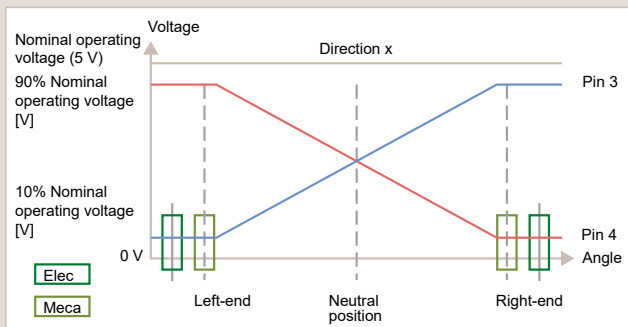


XENO THUMB JOYSTICK

Due to its compact and robust design, the XENOthumb joystick offers a wide range of installation options. Its modular design and sensitive control allow it to be used ergonomically with the fingertips. Further characteristics of the XENO thumb joystick are its intuitive use and its long service life. Besides being used in the BRAVA ACTRA MONO 400 PLUS armrest, the thumb joystick is predestined for use in customer-specific applications.

- Contactless Hall-effect sensor technology
- Two axes
- Two analogue signals per axis, X characteristic
- Ergonomic design
- Protection class IP 68, except plug
- Long service life of 3.5 million cycles
- EMC in accordance with EN 12895
- Functional safety in accordance with EN ISO 13849, PL d

Transmission Protocol



Technical data	
Technology	Contactless hall sensor
Mechanical data	
Dimensions	See drawing
Mechanical angle of rotation	+20°
Electrical data	
Nominal operating voltage	5 VDC ± 0.02 V
Operating voltage range	4.5 – 5.5 V DC
Power current	< 25 mA
Analogue output ratiometric	X characteristic: 0.5 – 4.5 VDC
Operating conditions	
Operating temperature	-30°C to +65°C
Storage temperature	-40°C to +85°C
Maximum force	0.07 Nm
Actuation force	1.5 Nm
Service life	3,5 million cycles
Protection class	IP 68
EMC	36 V/M after EN 12896: 2015-09

Connector pin assignment Molex Mini-Fit Jr.™	
6 pin, dual row 5557-06R (-210)	
PIN 1	+ 5 V
PIN 2	GND
PIN 3	Signal 1 – 1
PIN 4	Signal 1 – 2
PIN 5	Signal 2 – 1
PIN 6	Signal 2 – 2

Order data	
Part No.	Designation
3111-00XXXXXX	XENO Thumb joystick round

Dimensions [mm]

