Inductive Proximity Switches

Inductive proximity switches are used to monitor the current position of automation components. They are available from SCHUNK in the versions IN (sensor with 30 cm molded cable and cable connector) or INK (sensor with 2 m long feeder cable and litz wires for wiring).

Function description

With their oscillator coil, inductive proximity switches produce a high-frequency, alternating magnetic field. This field occurs on the active surface of the sensor. If a metal object enters the field, it draws energy from the magnetic field, thereby reducing the oscillation amplitude. This change is detected, and the sensor switches.

Your advantages and benefits

Mounting through bracket
for simple, fast assembly

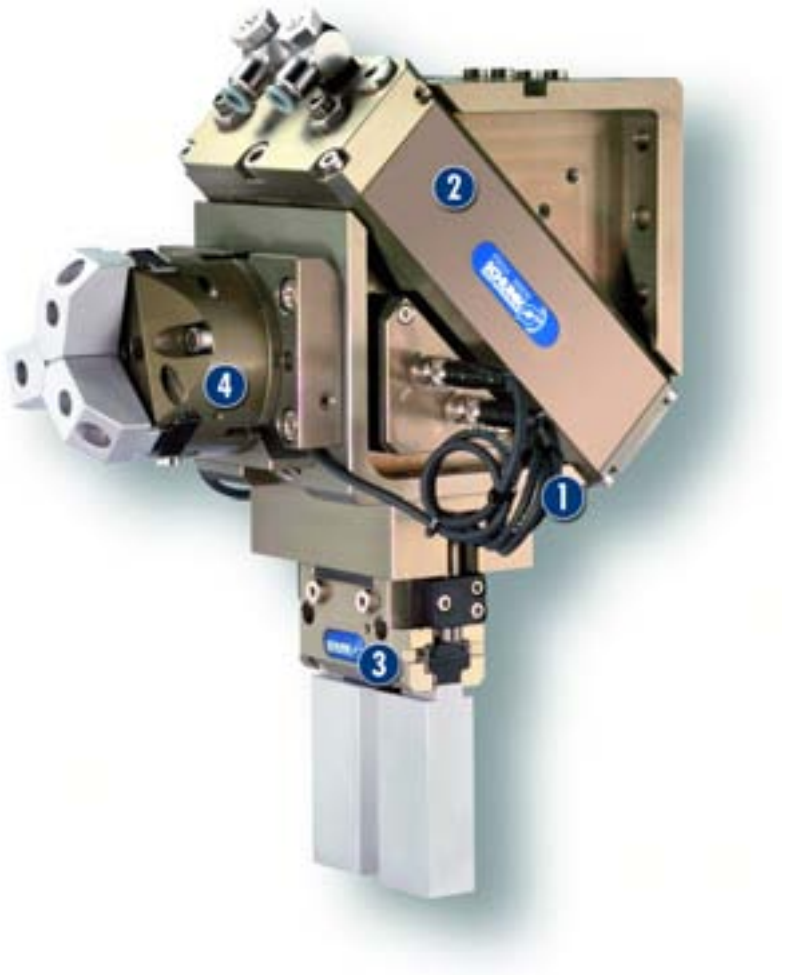
Version with LED display
for checking the switching state directly at the sensor

Version with connector
for easy, rapid replacement of the extension cable

Ultra-flexible PUR cable
for a long life and resistance to many chemicals

Proximity switch can be installed flush
for minimal interfering contours in the application

Application example



1 **Plug-in IN Sensors**

2 **PSK Swivel Head**

3 **PGN 2-Finger Parallel Gripper with ABR finger blanks**

4 **PZN 3-Finger Centric Gripper with workpiece-specific gripper fingers**

Area of application

For monitoring of gripping and rotary modules, linear modules and robot accessories. Inductive SCHUNK sensors detect metals without contact and are resistant to vibration, dust and humidity.

General information

Protection class according to DIN 40050
IP 67 in connected condition for use in clean or dusty environments or in the event of contact with water. Contact with other media (cooling lubricants, acidic or caustic substances, etc.) frequently does not impair the function, but this cannot be guaranteed by SCHUNK.

Voltage
10 – 30 V DC, residual ripple < 15 %

Switching method
PNP switching

Warranty
24 months

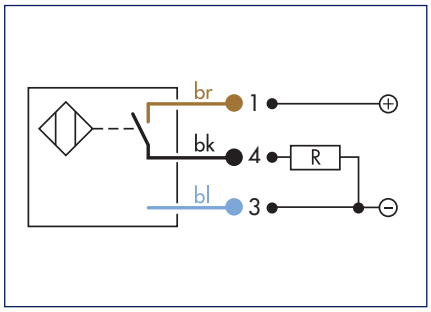
Notes

SCHUNK gripping, rotary and linear modules and robot accessory components must always be ordered from SCHUNK with the matching sensors, as these are ideally adapted to work together.

If major characteristics such as switching distance, switching function, hysteresis and voltage are largely the same, then proximity switches from other manufacturers may be used instead of inductive proximity switches (IN, INK) from SCHUNK.

However, if proximity switches from other manufacturers are used, SCHUNK cannot guarantee either their function or their functional reliability.

Circuit diagram of closer

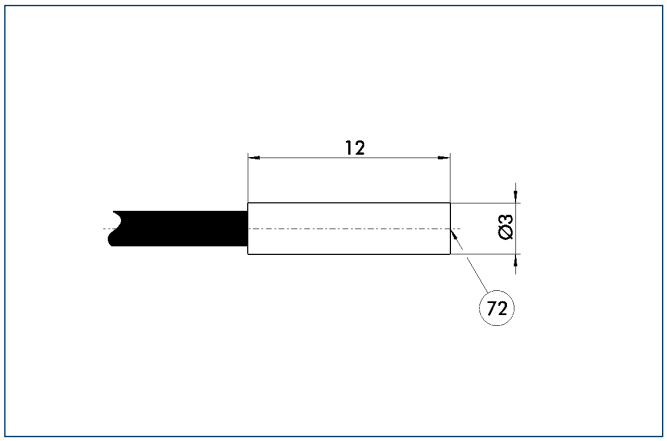


Technical data

Description		IN 3-S-M8-PNP
	ID	0301466
Switching function		Closer
Switching distance	[mm]	0.6
Hysteresis of nominal switching distance		< 5%
Switching method		PNP
Cable length	[cm]	20.0
Cable connector/cable end		M8
Type of voltage		DC
Nominal voltage	[V]	24.0
Min. voltage	[V]	10.0
Max. voltage	[V]	30.0
Voltage drop	[V]	1.5
Max. power on contact	[A]	0.1
Min. ambient temperature	[°C]	-25.0
Max. ambient temperature	[°C]	75.0
Max. switching frequency	[Hz]	1000.0
IP class (sensor)		67
IP class (connector, plugged in)		67
LED display on sensor		Yes
Cable diameter	[mm]	2.5
Min. bending radius (dynamic)	[mm]	25.0
Min. bending radius (static)	[mm]	12.5
No. of wires		3
Wire cross section	[mm²]	0.14

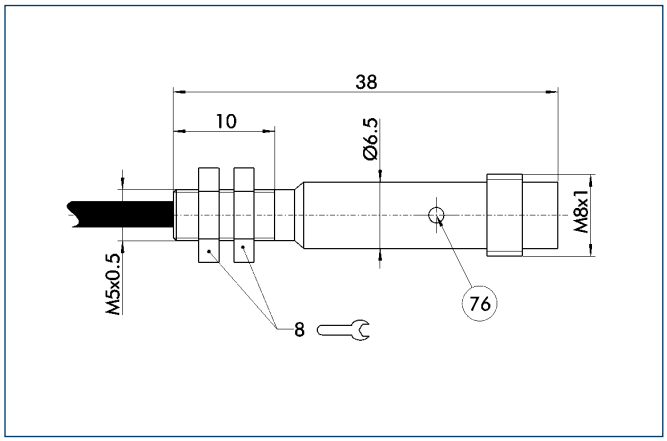
ⓘ The cable between the sensor and the club must not be disconnected in any case.

IN 3 sensor



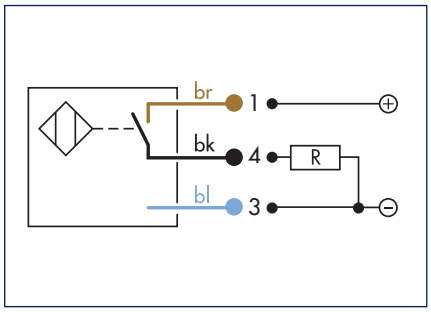
72 Active sensor surface

M8 connector



76 LED

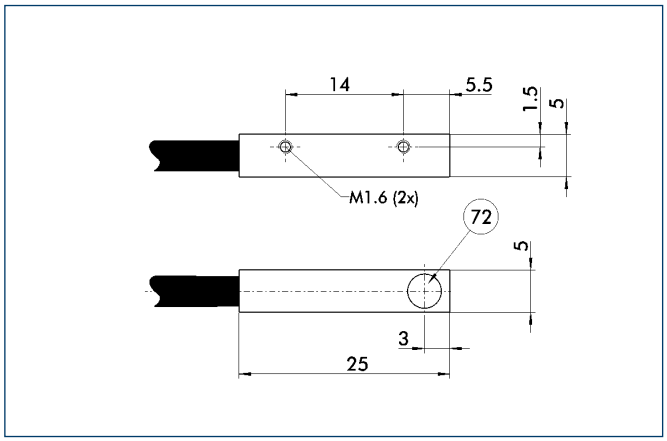
Circuit diagram of closer



Technical data

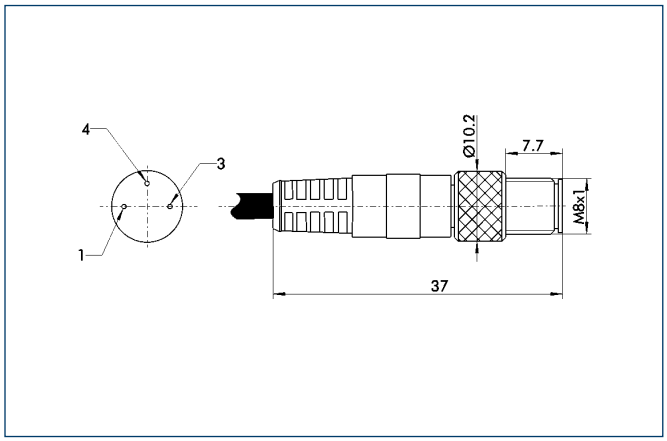
Description		IN 5-S-M8	IN 5-S-M12	INK 5-S
	ID	0301469	0301569	0301501
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.0	1.0	1.0
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67
IP class (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

IN 5/S sensor

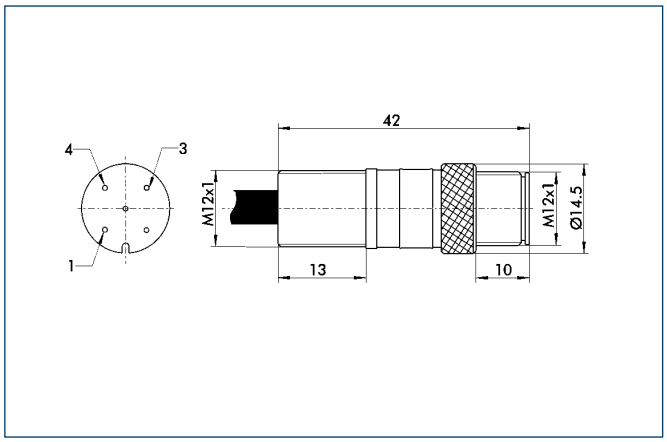


(72) Active sensor surface

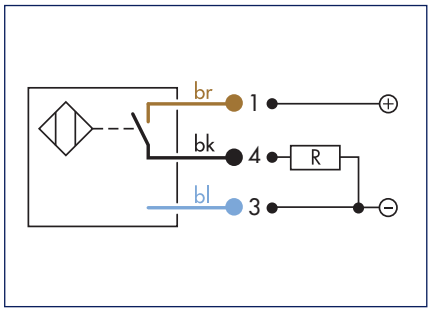
M8 connector



M12 connector



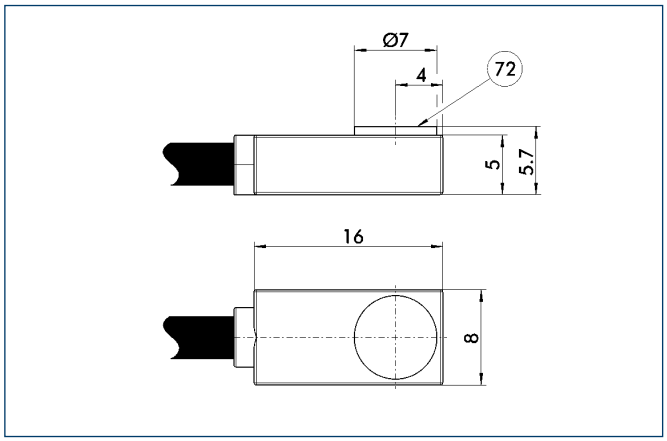
Circuit diagram of closer



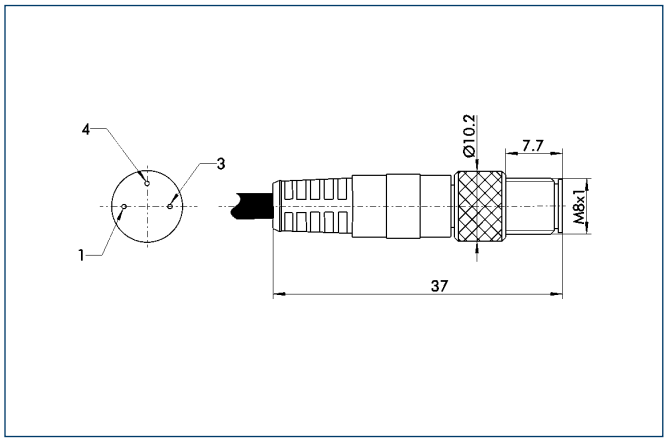
Technical data

Description		IN 8-S-M8	IN 8-S-M12	INK 8-S
	ID	0301481	0301581	9700052
Switching function		Closer	Closer	Closer
Switching distance	[mm]	0.8	0.8	0.8
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67
IP class (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

IN 8/S sensor

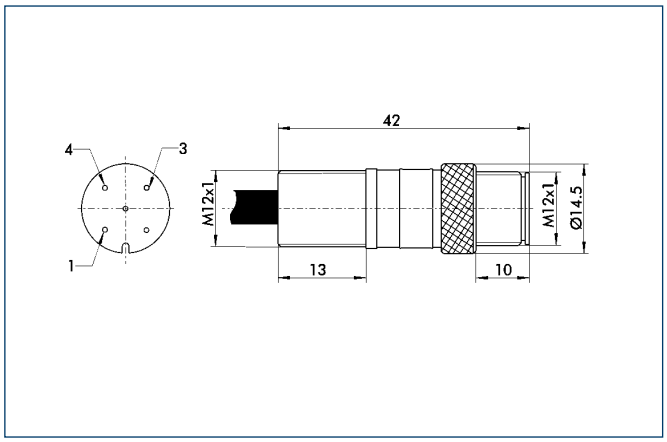


M8 connector

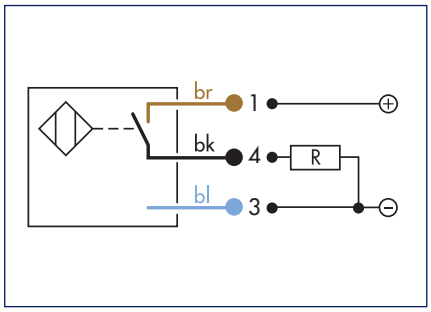


(72) Active sensor surface

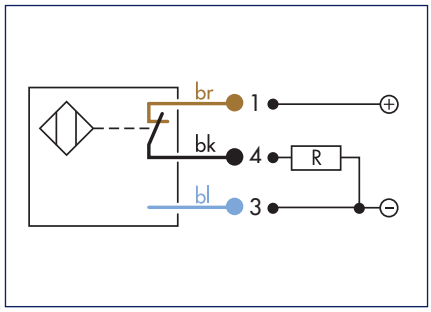
M12 connector



Circuit diagram of closer



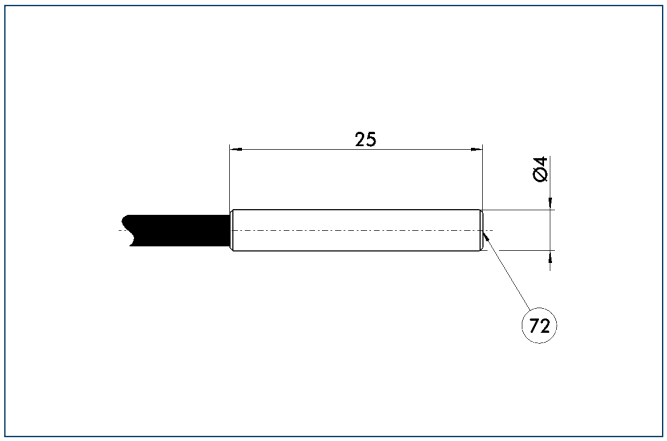
Circuit diagram of opener



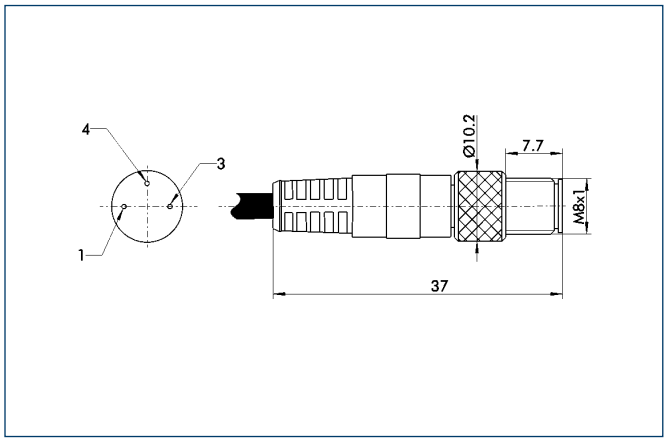
Technical data

Description		IN 40-S-M8	IN 40-S-M12	INK 40-S	IN 40-O-M8	IN 40-O-M12	INK 40-O	IN 40-S-M5-PNP	IN 40-S-M5-NPN
	ID	0301474	0301574	0301555	0301484	0301584	0301556	0301491	0301492
Switching function		Closer	Closer	Closer	Opener	Opener	Opener	Closer	Closer
Switching distance	[mm]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%	< 15%	< 15%	< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP	PNP	PNP	PNP	PNP	NPN
Cable length	[cm]	30.0	30.0	200.0	30.0	30.0	200.0	30.0	30.0
Cable connector/cable end		M8	M12	Open wire	M8	M12	Open wire	M5	M5
Type of voltage		DC	DC	DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67	67	67	67	67	67
IP class (connector, plugged in)		67	67	67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
No. of wires		3	3	3	3	3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14

IN 40 sensor

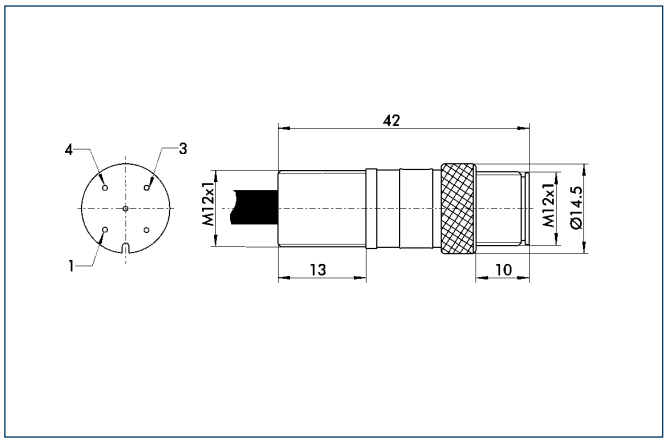


M8 connector

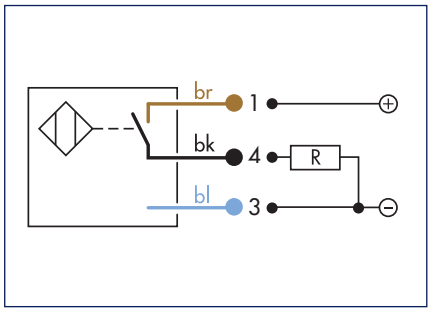


(72) Active sensor surface

M12 connector



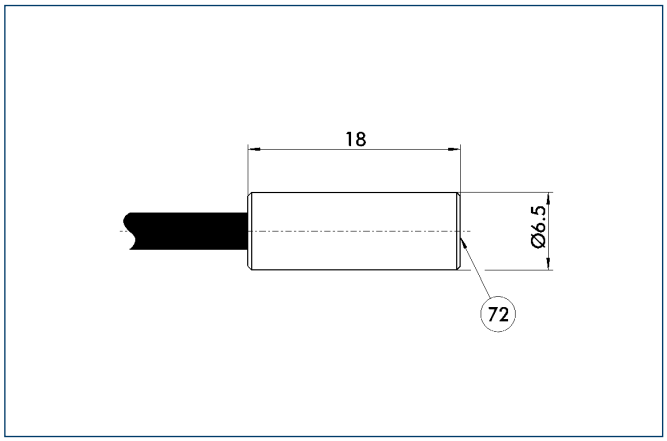
Circuit diagram of closer



Technical data

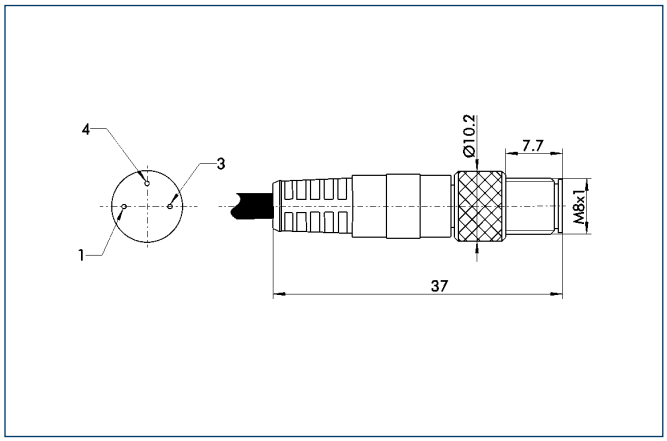
Description		IN 60-S-M8	IN 60-S-M12	INK 60-S
	ID	0301485	0301585	0301553
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67
IP class (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

IN 60/S sensor

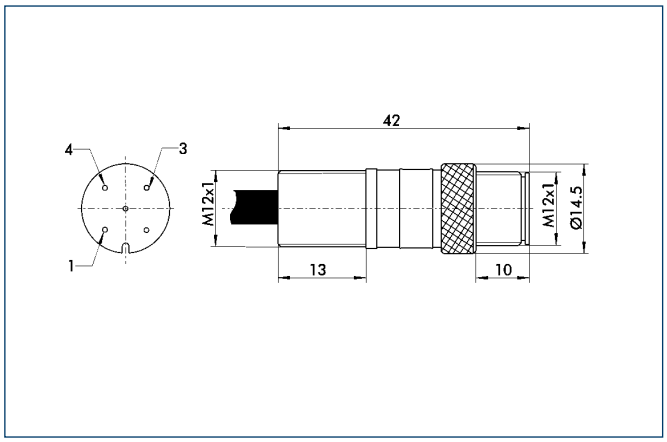


72 Active sensor surface

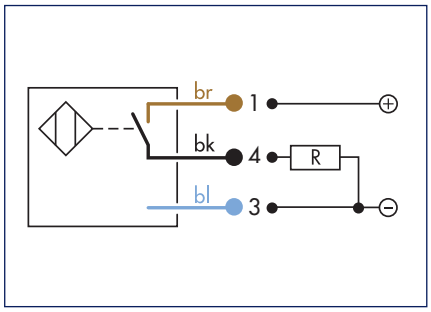
M8 connector



M12 connector



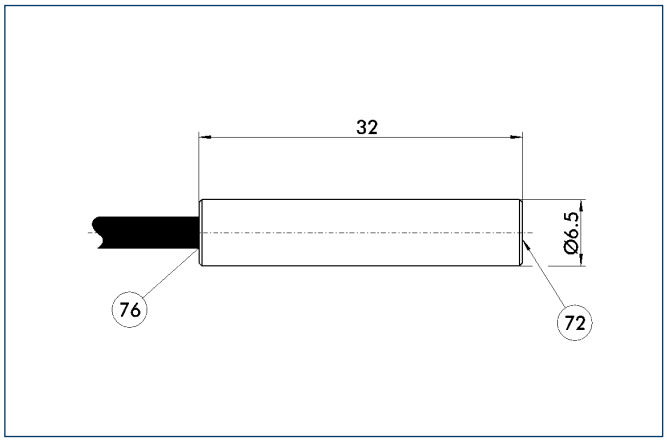
Circuit diagram of closer



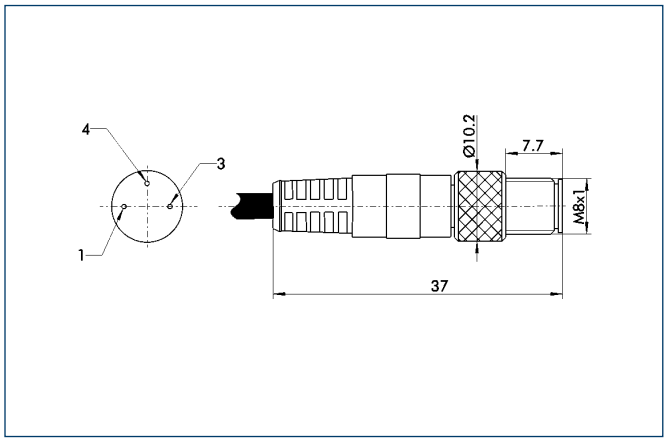
Technical data

Description		IN 65-S-M8	IN 65-S-M12	INK 65-S
	ID	0301476	0301576	0301554
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67
IP class (connector, plugged in)		67	67	67
LED display on sensor		Yes	Yes	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

IN 65/S sensor

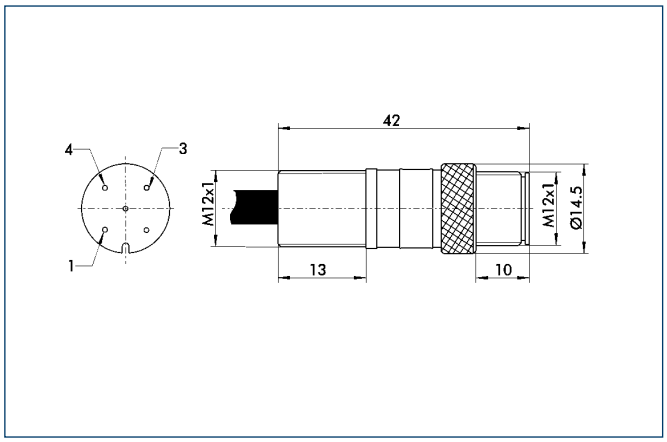


M8 connector

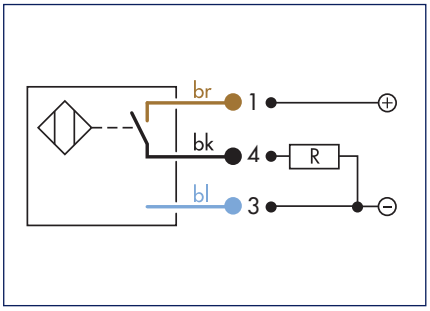


(72) Active sensor surface
(76) LED

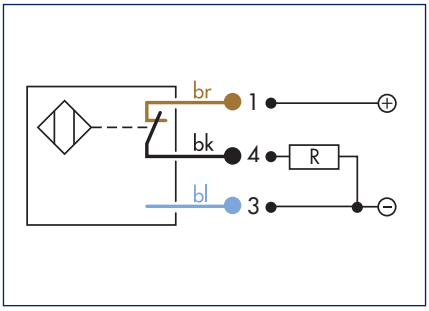
M12 connector



Circuit diagram of closer



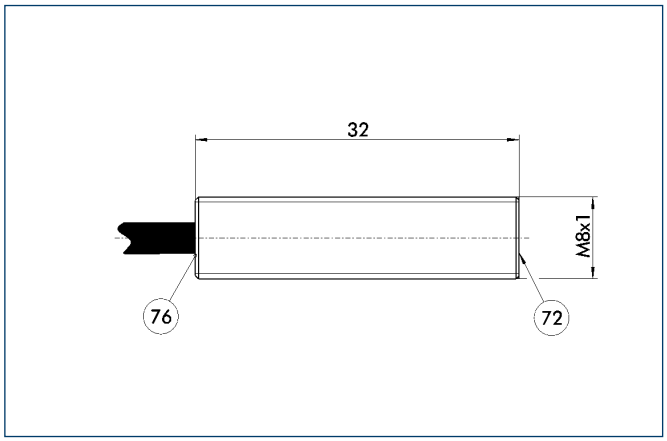
Circuit diagram of opener



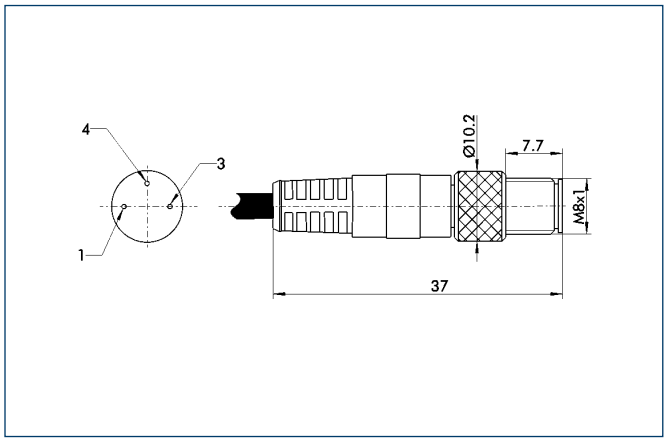
Technical data

Description		IN 80-S-M8	IN 80-S-M12	INK 80-S	IN 80-O-M8	IN 80-O-M12	INK 80-O
	ID	0301478	0301578	0301550	0301488	0301588	0301551
Switching function		Closer	Closer	Closer	Opener	Opener	Opener
Switching distance	[mm]	1.5	1.5	1.5	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%	< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP	PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire	M8	M12	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
IP class (sensor)		67	67	67	67	67	67
IP class (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	3.5	3.5	3.5	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5	17.5	17.5	17.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14	0.14	0.14	0.14

IN 80 sensor

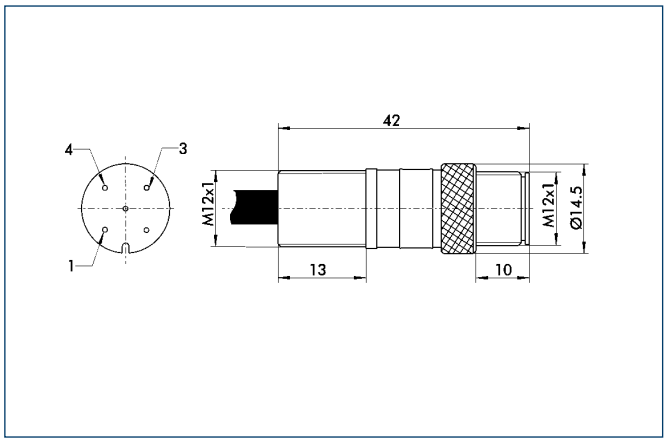


M8 connector



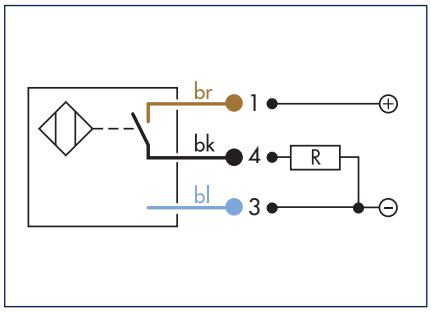
(72) Active sensor surface
(76) LED

M12 connector



IN C-80/80SL

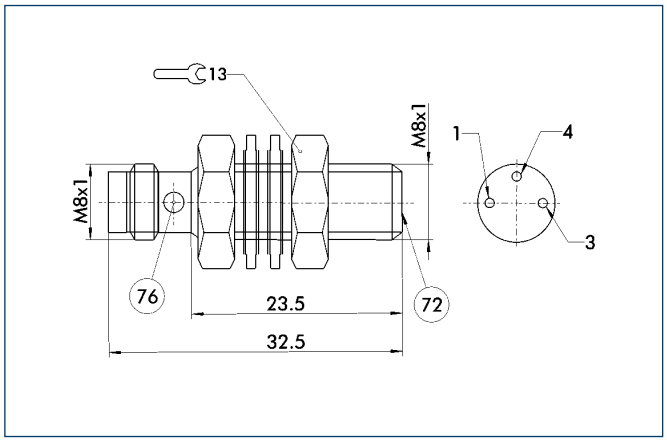
Circuit diagram of closer



Technical data

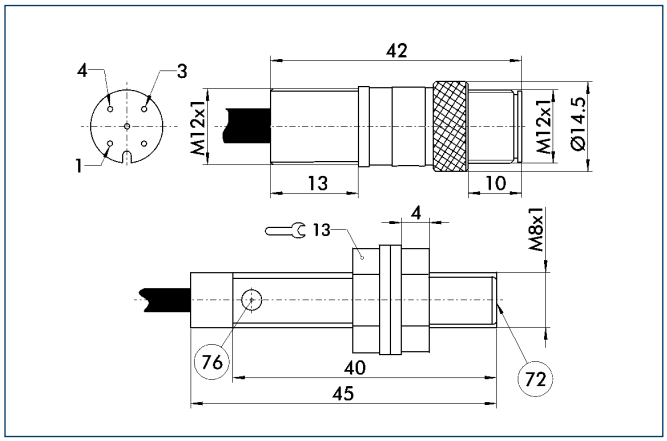
Description		IN-C 80-S-M8	IN 80-SL-M12	INK 80-SL
	ID	0301475	0301529	0301579
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	3.0	3.0
Hysteresis of nominal switching distance			< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]		30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	2.5	1.5	1.5
Max. power on contact	[A]	0.1	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	3000.0	1000.0	1000.0
IP class (sensor)		68	67	67
IP class (connector, plugged in)		68	67	67
LED display on sensor		Yes	Yes	Yes
Cable diameter	[mm]		3.5	3.5
Min. bending radius (dynamic)	[mm]		35.0	35.0
Min. bending radius (static)	[mm]		17.5	17.5
No. of wires/contacts		3	3	3
Wire cross section	[mm²]		0.14	0.14

IN C-80 sensor



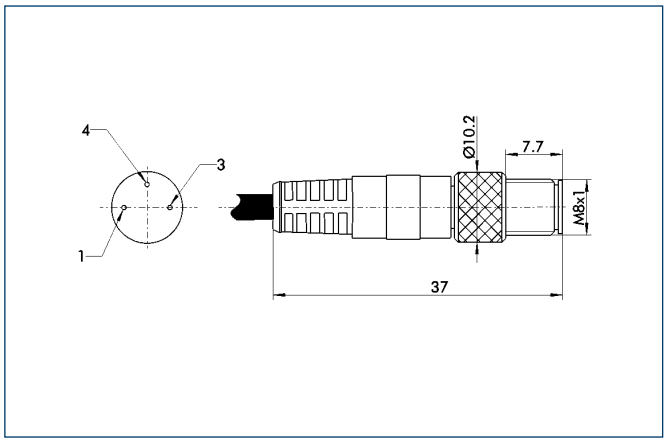
72 Active sensor surface
76 LED

IN 80/SL sensor

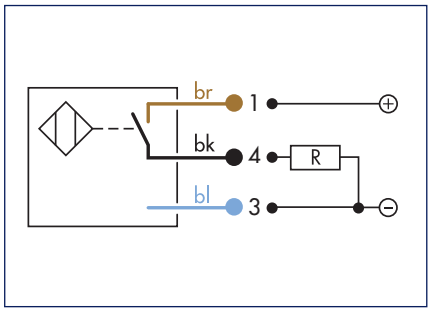


72 Active sensor surface
76 LED

M8 connector



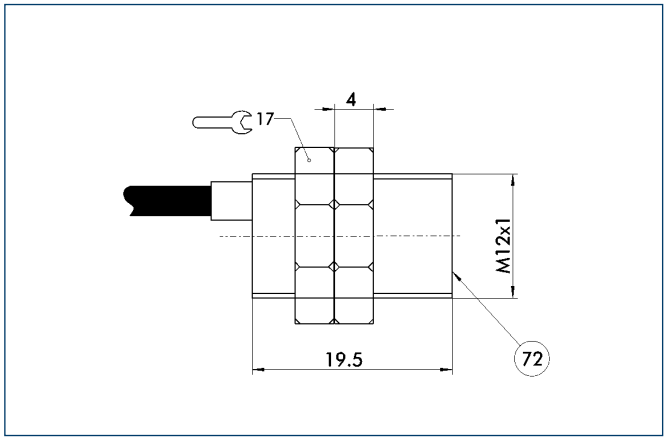
Circuit diagram of closer



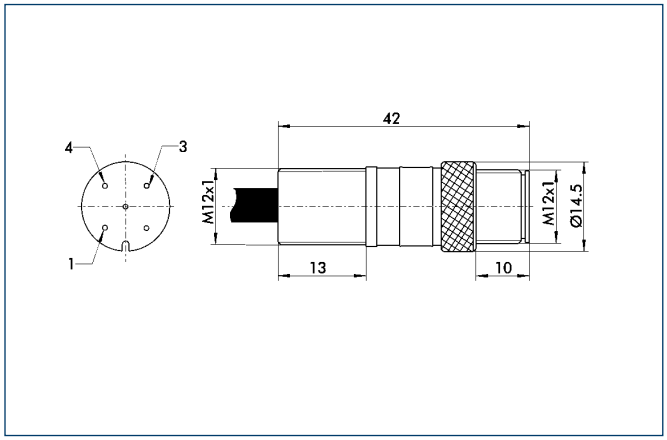
Technical data

Description		IN 120-S-M12	INK 120-S
	ID	0301592	0301562
Switching function		Closer	Closer
Switching distance	[mm]	2.0	2.0
Hysteresis of nominal switching distance		< 15%	< 15%
Switching method		PNP	PNP
Cable length	[cm]	30.0	200.0
Cable connector/cable end		M12	Open wire
Type of voltage		DC	DC
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Voltage drop	[V]	1.5	1.5
Max. power on contact	[A]	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0
IP class (sensor)		67	67
IP class (connector, plugged in)		67	67
LED display on sensor		No	No
Cable diameter	[mm]	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5
No. of wires		3	3
Wire cross section	[mm²]	0.14	0.14

IN 120/S sensor



M12 connector



(72) Active sensor surface

Reed Switches

Reed switches are mechanical switches that react to the presence of magnetic fields (magnets). They are frequently used as low-price alternatives to electronic magnetic switches (MMS).

Function description

Reed switches consist of tiny, metal contacts (reeds). Under the influence of a magnetic field, they bend and touch one another, closing the contact.

Your advantages and benefits

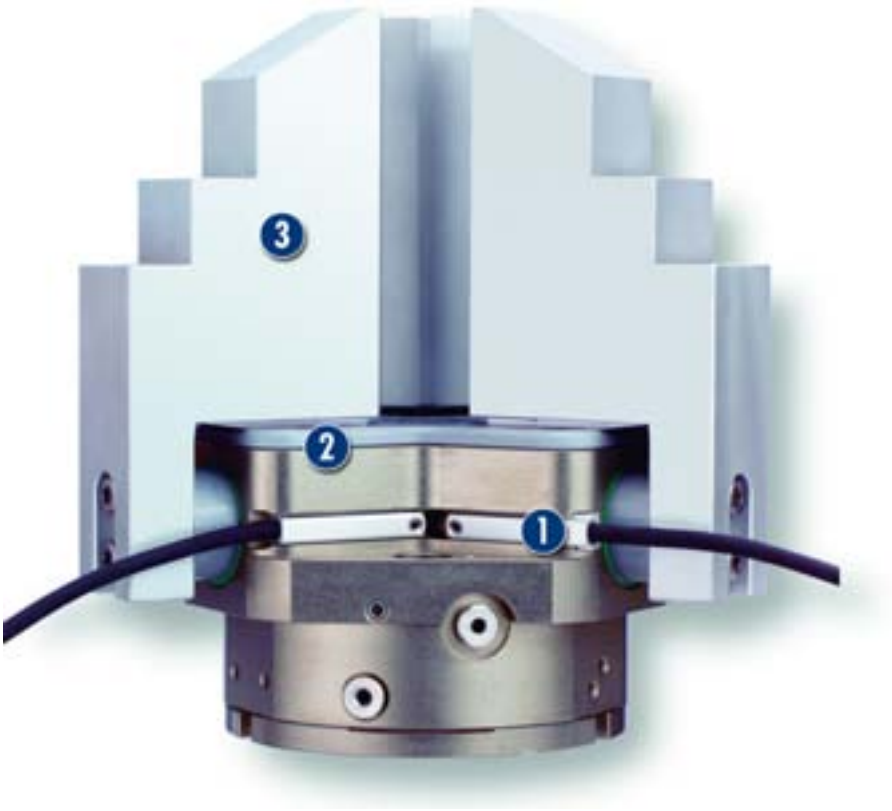
Economical
for cost-saving applications

Installed in the sensor slot
for space-saving, simple and fast assembly

Version with connector
for easy, rapid replacement of the extension cable

Ultra-flexible PUR cable
for a long life and resistance to many chemicals

Application example



Area of application

For monitoring of gripping and rotary modules, linear modules and robot accessories. Reed switches from SCHUNK detect metals without contact or wear and are resistant to dust and humidity. Magnetic switches are fitted in slots and therefore do not form any additional interfering contours. Please note that not all SCHUNK products with sensor slot can be monitored using low-cost reed switches.

1. RMS Reed Switches for mounting in the C-slot of the gripper
2. Sealed 3-Finger Centric Gripper
3. Workpiece-specific Gripper Fingers

General information

Material
Sensor housing: PA in the RMS 22 and RZN, stainless steel in the RMS 80
Cable: PUR sheath

Fastening
Clamps in sensor slot (RMS 22/RZN) / brackets (RMS 80)

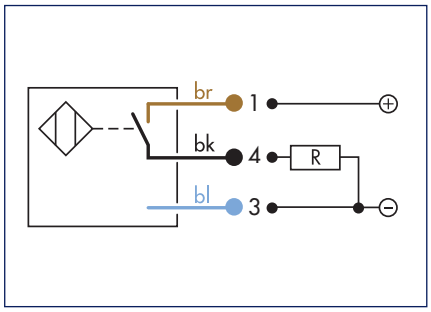
Protection class according to DIN 40050
IP 67 in connected condition for use in clean or dusty environments or in the event of contact with water. Contact with other media (cooling lubricants, acidic or caustic substances, etc.) frequently does not impair the function, but this cannot be guaranteed by SCHUNK.

Warranty
24 months

Notes

SCHUNK gripper, rotary and linear modules and robot accessory components that are to be monitored by slot-fitted reed switches can generally only be reliably monitored with the appropriate reed switches from SCHUNK. Sensors and products are matched on the basis of the relationships between the parameters type and field strength of the magnet, distance, wall thickness and wall material of the magnet and the sensor, and the orientation and sensitivity of the sensor itself. For this reason, sensors from other manufacturers employed in SCHUNK products rarely give satisfactory switching results.

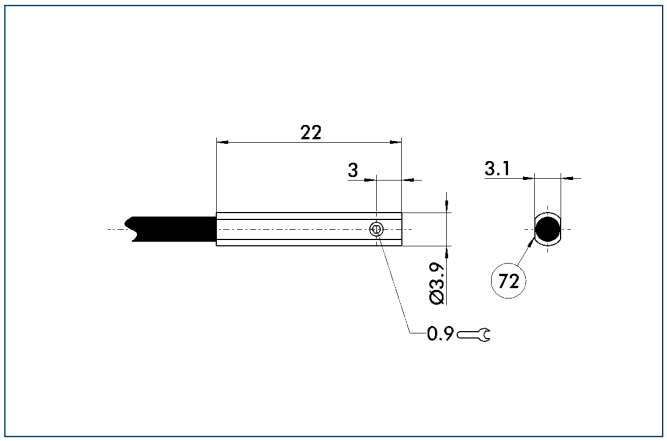
Circuit diagram of closer



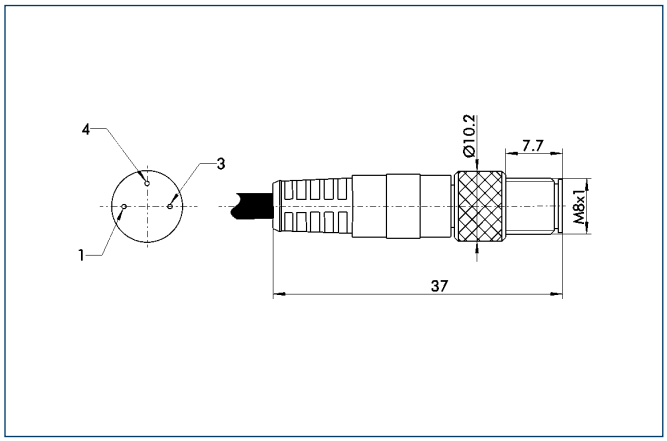
Technical data

Description		RMS 22-S-M8
	ID	0377720
Switching function		Closer
Switching method		PNP, NPN
Cable length	[cm]	30.0
Cable connector/cable end		M8
Type of voltage		DC
Max. voltage DC	[V]	120.0
Voltage drop DC	[V]	0.0
Max. power on contact DC	[A]	0.4
Type of voltage		AC
Max. voltage AC	[V]	120.0
Voltage drop AC	[V]	0.0
Max. power on contact AC	[A]	0.4
Min. ambient temperature	[°C]	-5.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.01
IP class (sensor)		67
IP class (connector, plugged in)		67
LED display on sensor		No
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	21.0
Min. bending radius (static)	[mm]	10.5
No. of wires		2
Wire cross section	[mm^2]	0.14

RMS 22 sensor

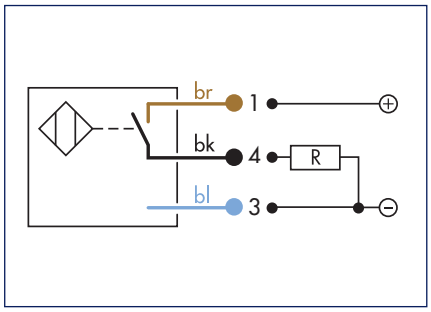


M8 connector



(72) Active sensor surface

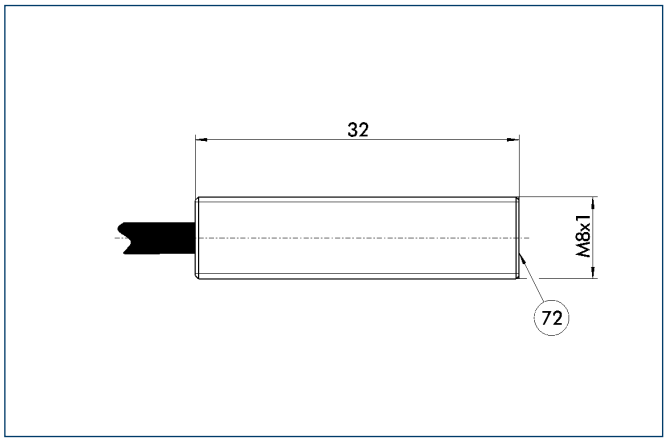
Circuit diagram of closer



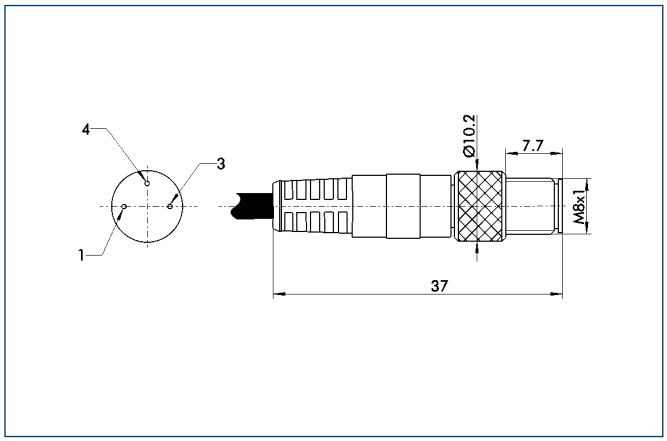
Technical data

Description		RMS 80-S-M8
	ID	0377721
Switching function		Closer
Switching method		PNP, NPN
Cable length	[cm]	30.0
Cable connector/cable end		M8
Type of voltage		DC
Max. voltage DC	[V]	120.0
Voltage drop DC	[V]	0.0
Max. power on contact DC	[A]	0.4
Type of voltage		AC
Max. voltage AC	[V]	120.0
Voltage drop AC	[V]	0.0
Max. power on contact AC	[A]	0.4
Min. ambient temperature	[°C]	-5.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.01
IP class (sensor)		67
IP class (connector, plugged in)		67
LED display on sensor		No
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	21.0
Min. bending radius (static)	[mm]	10.5
No. of wires		2
Wire cross section	[mm^2]	0.14

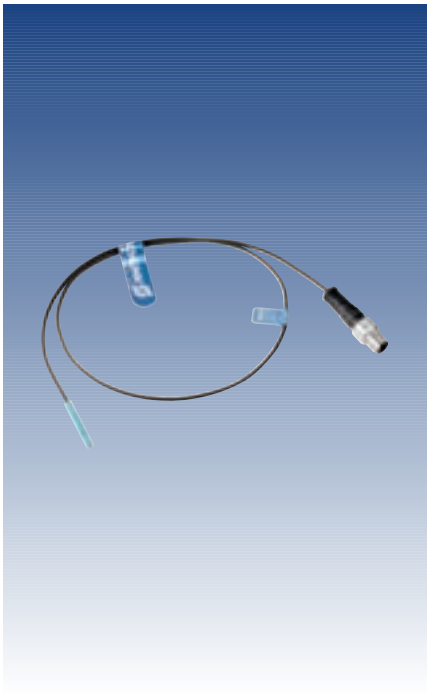
RMS 80 sensor



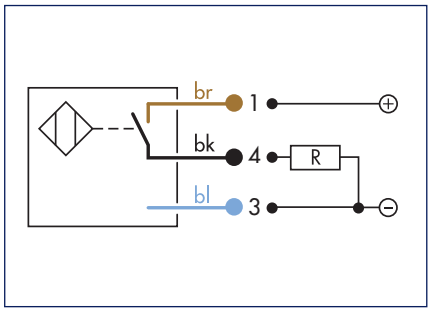
M8 connector



(72) Active sensor surface



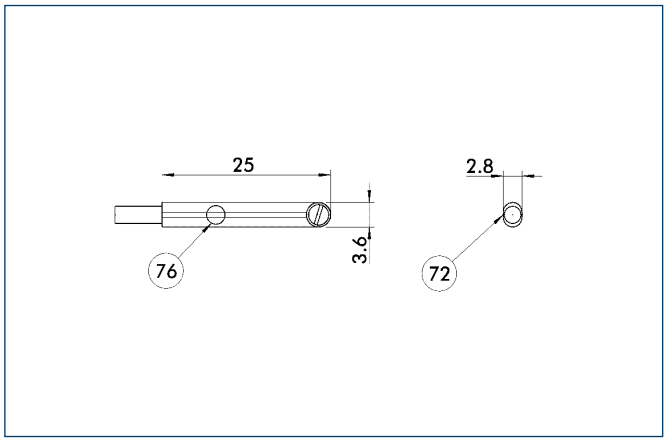
Circuit diagram of closer



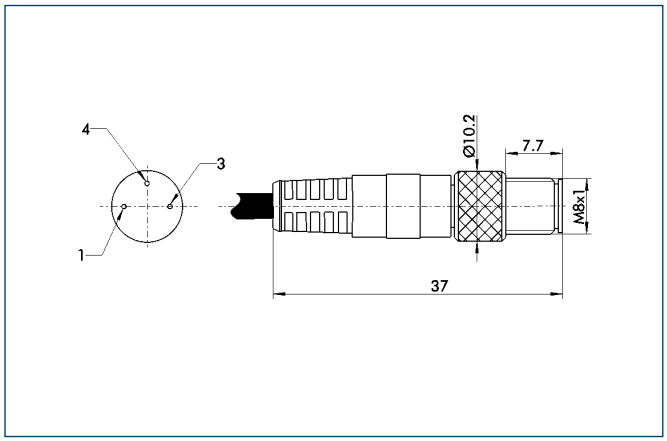
Technical data

Description		RZN 1-05ZRS-KRD
	ID	0312991
Switching function		Closer
Switching method		PNP, NPN
Cable length	[cm]	50.0
Cable connector/cable end		M8
Type of voltage		DC
Nominal voltage	[V]	24.0
Min. voltage	[V]	10.0
Max. voltage	[V]	30.0
Voltage drop	[V]	0.0
Max. power on contact	[A]	0.5
Min. ambient temperature	[°C]	-25.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.002
IP class (sensor)		67
IP class (connector, plugged in)		67
LED display on sensor		Yes
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	25.0
Min. bending radius (static)	[mm]	12.0
No. of wires		3
Wire cross section	[mm²]	

RZN sensor



M8 connector



(72) Active sensor surface
(76) LED

Magnetic Switches

Magnetic switches are used for monitoring the position of automation components. They detect the approach of a magnet without contact and, above a certain switching threshold, enable their output.

Function description

Magnetic switches react to magnetic fields. The resistors in the sensor consist of several ferromagnetic and non-magnetic layers. Two shielded and two non-shielded resistors are combined in a bridge circuit, which produces a signal proportional to the magnetic field when one is present. Above a threshold value, an output signal is switched via a comparator, and the sensor reacts.

Your advantages and benefits

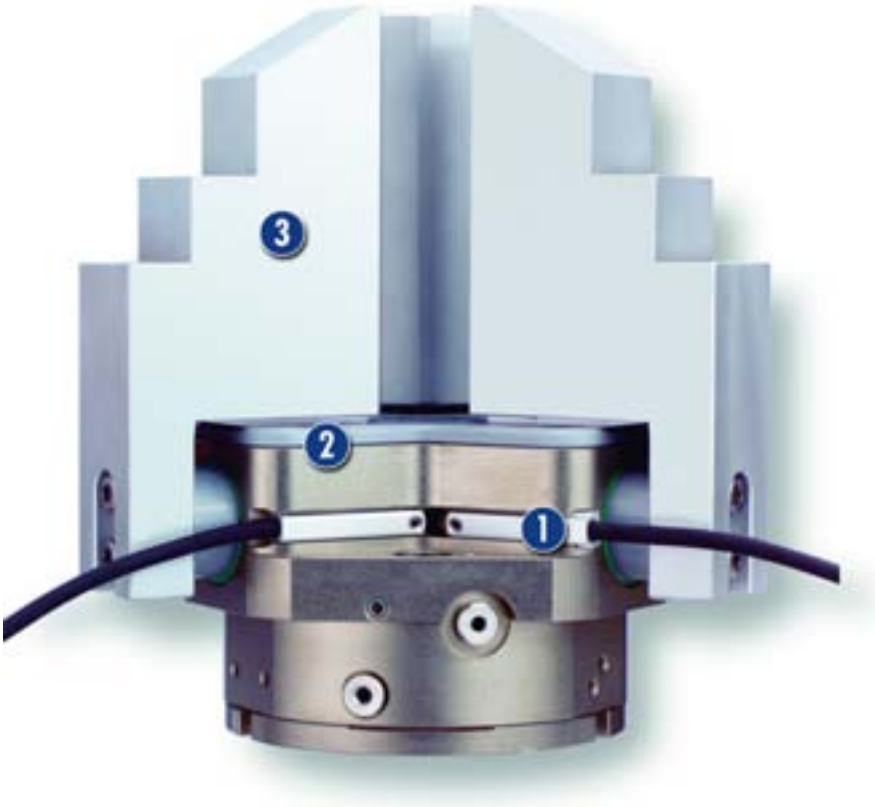
Installation in the sensor slot
for space-saving, simple and fast assembly

Version with LED display
for checking the switching position directly at the sensor

Version with connector
for easy, rapid replacement of the extension cable

Ultra-flexible PUR cable
for a long life and resistance to many chemicals

Application example



1 MMS Electronic Magnetic Switches for mounting in the C-slot of the gripper

2 Sealed 3-Finger Centric Gripper

3 Workpiece-specific Gripper Fingers

Area of application

For use in the monitoring of gripping and rotary modules, linear modules and robot accessories. Magnetic switches from SCHUNK detect metals without contact or wear and are resistant to vibration, dust and humidity. Magnetic switches are fitted in slots and therefore do not form any additional interfering contours.

General information

Material

Sensor housing: PA in the MMS 22 and MZN, aluminum in the MMS 30
Cable: with PUR sheath

Fastening

Clamps in the sensor slot

Protection class according to DIN 40050

IP 67 in connected condition for use in clean or dusty environments or in the event of contact with water. Contact with other media (cooling lubricants, acidic or caustic substances, etc.) frequently does not impair the function, but this cannot be guaranteed by SCHUNK.

Voltage

10 – 30 V DC at < 10 % residual ripple

Switching method

PNP switching / NPN switching

Warranty

24 months

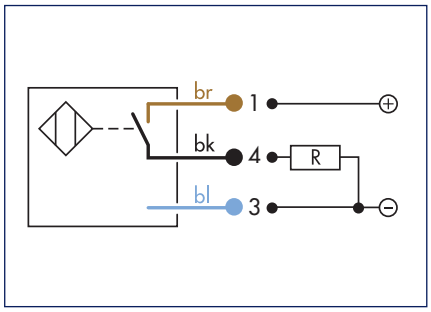
Notes

SCHUNK gripper, rotary and linear modules and robot accessory components that are to be monitored with electromagnetic slot-fitted switches can generally only be reliably monitored with the appropriate electromagnetic switches from SCHUNK.

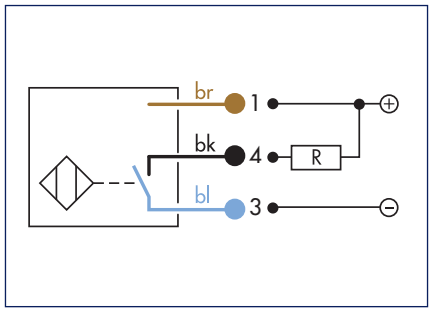
Sensors and products are matched on the basis of the relationships between the parameters type and field strength of the magnet, distance, wall thickness and wall material of the magnet and the sensor, and the orientation and sensitivity of the sensor itself.

For this reason, sensors from other manufacturers employed in SCHUNK products rarely give satisfactory switching results.

Circuit diagram of closer



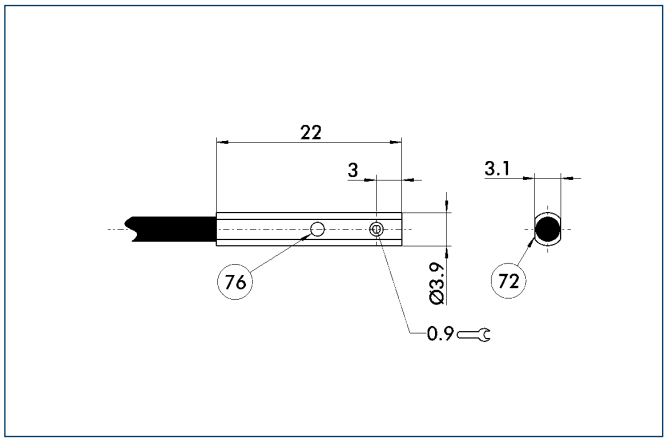
Circuit diagram of NPN closer



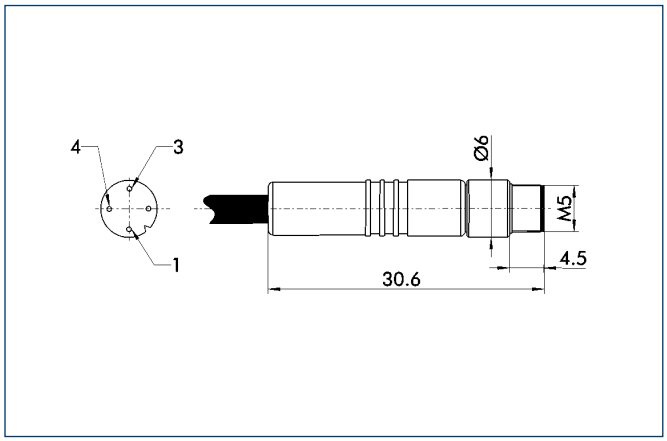
Technical data

Description		MMS 22-S-M5-PNP	MMS 22-S-M5-NPN	MMS 22-S-M8-PNP	MMS 22-S-M8-NPN	MMSK 22-S-PNP	MMSK 22-S-NPN
	ID	0301438	0301439	0301432	0301433	0301434	0301435
Switching function		Closer	Closer	Closer	Closer	Closer	Closer
Switching method		PNP	NPN	PNP	NPN	PNP	NPN
Cable length	[cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end		M5	M5	M8	M8	Open wire	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001	0.001	0.001	0.001
IP class (sensor)		67	67	67	67	67	67
IP class (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic)	[mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14	0.14	0.14	0.14

MMS 22 sensor

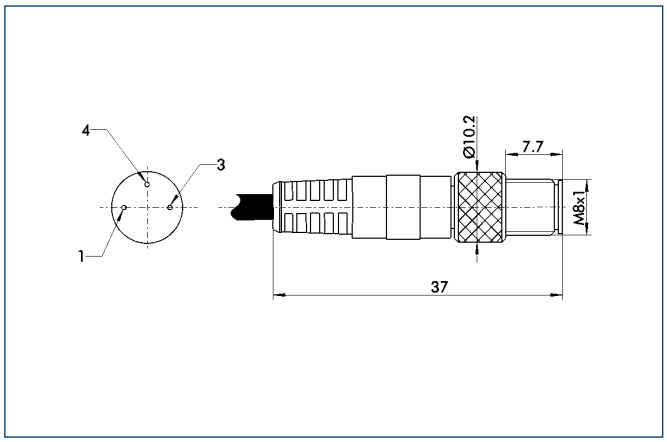


M5 connector



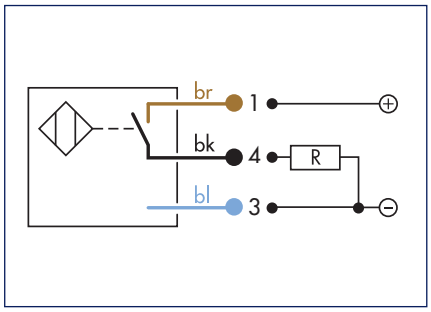
(72) Active sensor surface
(76) LED

M8 connector

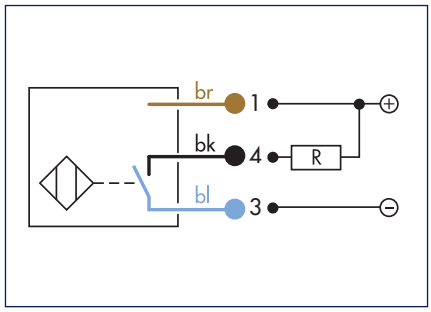


MMS 22-SA

Circuit diagram of closer



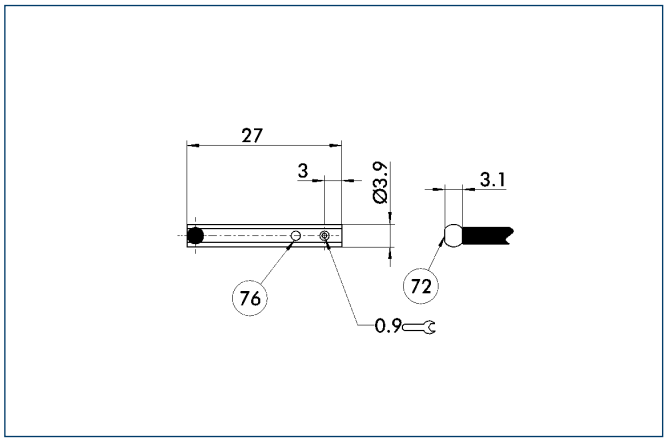
Circuit diagram of NPN closer



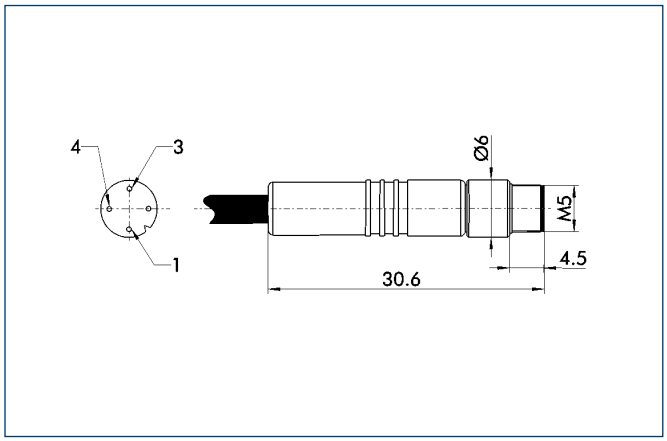
Technical data

Description		MMS 22-S-M5-PNP-SA	MMS 22-S-M5-NPN-SA	MMS 22-S-M8-PNP-SA	MMS 22-S-M8-NPN-SA	MMSK 22-S-PNP-SA	MMSK 22-S-NPN-SA
	ID	0301448	0301449	0301442	0301443	0301444	0301445
Switching function		Closer	Closer	Closer	Closer	Closer	Closer
Switching method		PNP	NPN	PNP	NPN	PNP	NPN
Cable length	[cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end		M5	M5	M8	M8	Open wire	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001	0.001	0.001	0.001
IP class (sensor)		67	67	67	67	67	67
IP class (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic)	[mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14	0.14	0.14	0.14

MMS 22-SA sensor

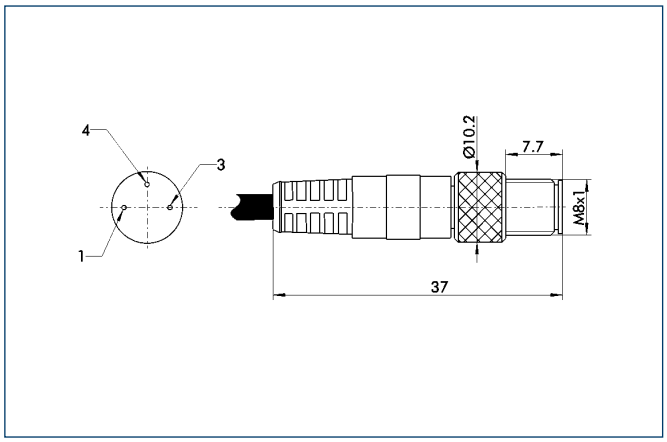


M5 connector

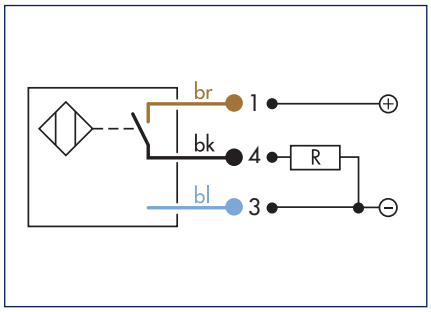


(72) Active sensor surface
(76) LED

M8 connector



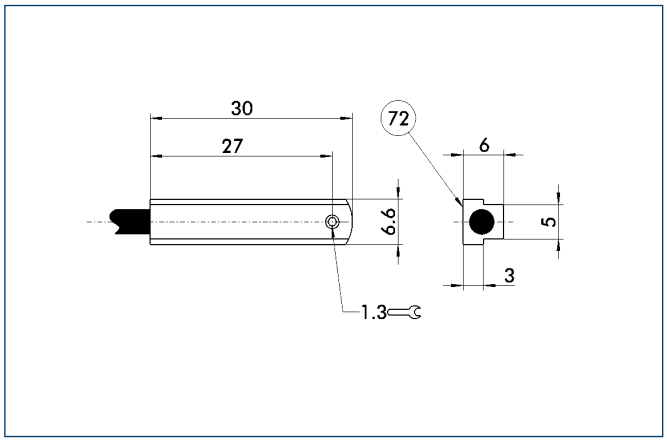
Circuit diagram of closer



Technical data

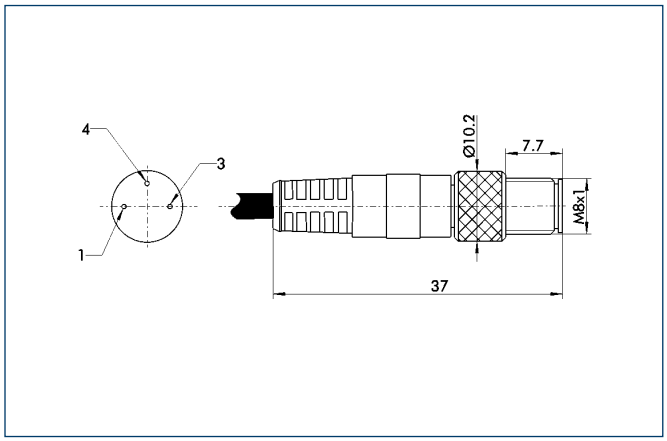
Description		MMS 30-S-M8-PNP	MMS 30-S-M12-PNP	MMSK 30-S-PNP
	ID	0301471	0301571	0301563
Switching function		Closer	Closer	Closer
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001
IP class (sensor)		67	67	67
IP class (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14

MMS 30 sensor

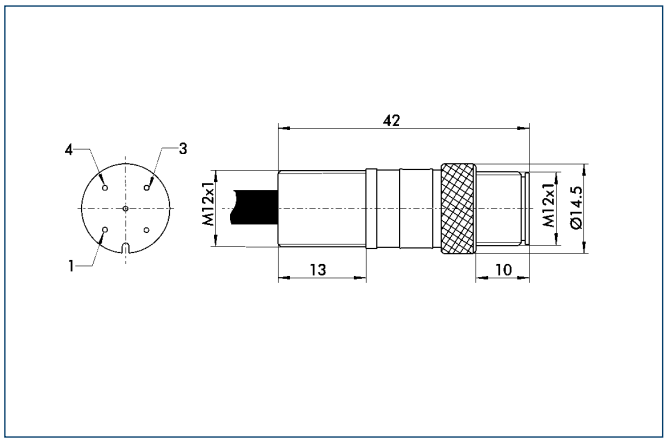


(72) Active sensor surface

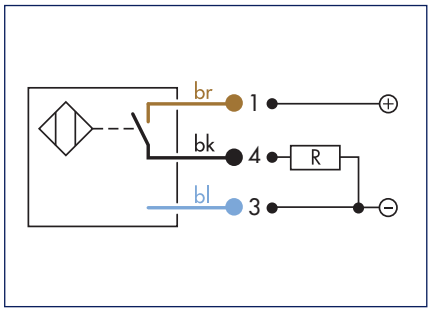
M8 connector



M12 connector



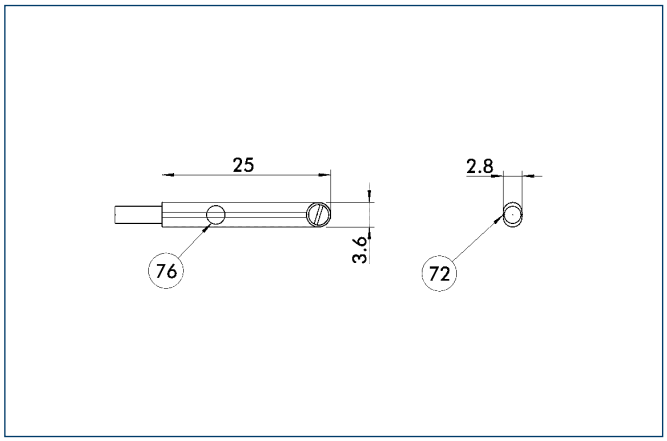
Circuit diagram of closer



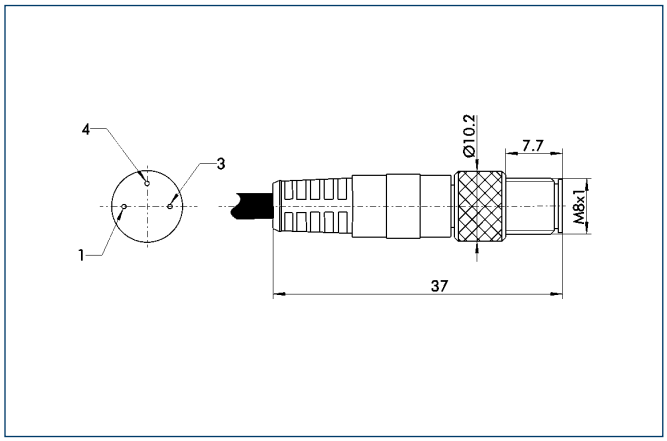
Technical data

Description		MZN 1-06VPS-KRD
	ID	0312990
Switching function		Closer
Switching method		PNP
Cable length	[cm]	50.0
Cable connector/cable end		M8
Type of voltage		DC
Nominal voltage	[V]	24.0
Min. voltage	[V]	10.0
Max. voltage	[V]	30.0
Voltage drop	[V]	2.5
Max. power on contact	[A]	0.07
Min. ambient temperature	[°C]	-25.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.001
IP class (sensor)		67
IP class (connector, plugged in)		67
LED display on sensor		Yes
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	25.0
Min. bending radius (static)	[mm]	12.0
No. of wires		3
Wire cross section	[mm²]	

MZN sensor

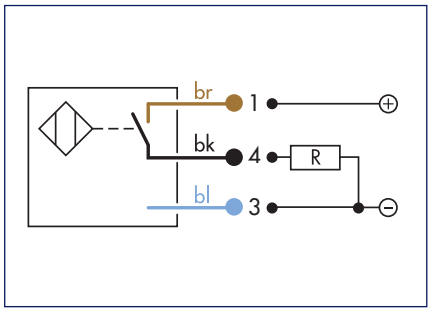


M8 connector

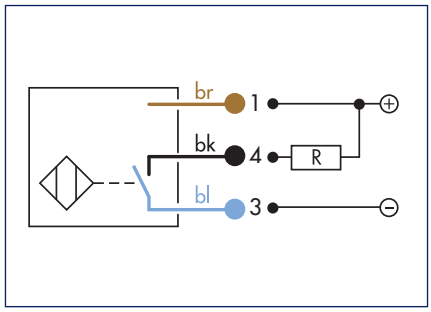


(72) Active sensor surface
(76) LED

Circuit diagram of closer

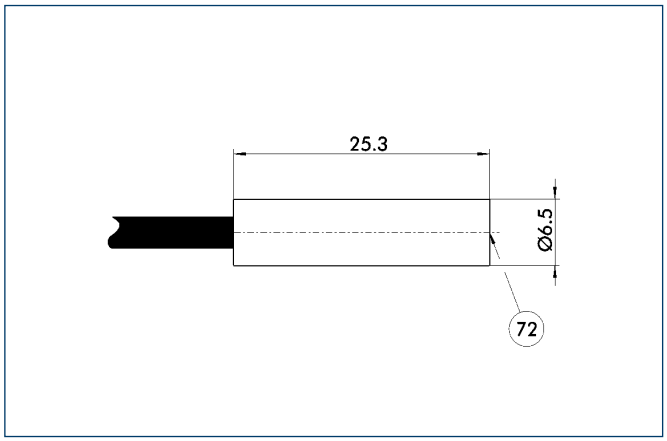


Circuit diagram of NPN closer



Description		MMS-K 65-5-PNP	MMS-K 65-5-NPN
	ID	0301423	0301424
Switching function		Closer	Closer
Switching method		PNP	NPN
Cable length	[cm]	200.0	200.0
Type of voltage		DC	DC
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Max. power on contact	[A]	0.2	0.2
Min. ambient temperature	[°C]	-20.0	-20.0
Max. ambient temperature	[°C]	70.0	70.0
IP class (sensor)		67	67
IP class (connector, plugged in)		67	67
No. of wires		3	3
Wire cross section	[mm^2]	0.14	0.14

MMSK 65/S sensor



72 Active sensor surface

Optical Switch

Function description

The optical sensor ONS emits light via the optical wave guide ONS-LWL. By analyzing the quantity of reflected light, the ONS can detect positions of the gripper being monitored and set or delete its output based on the programming.

Your advantages and benefits

Easy programming
for short commissioning times

LED display
for fast and easy functional checks

Light optical wave guide
for low weight on the gripper

Application example

1 Gripper

2 Optical wave guide

3 Force/torque sensor system controller

Area of application

Use in clean environments in connection with the corresponding SCHUNK grippers.

General information

Warranty
24 months

Notes

The ONS sensor is attractive due to its low sales price. It is based on the product FS-V31P from Keyence. By specifying the hardware and software, the user friendliness was increased for use with SCHUNK grippers and the functions optimized. For technical details see the operating manual.

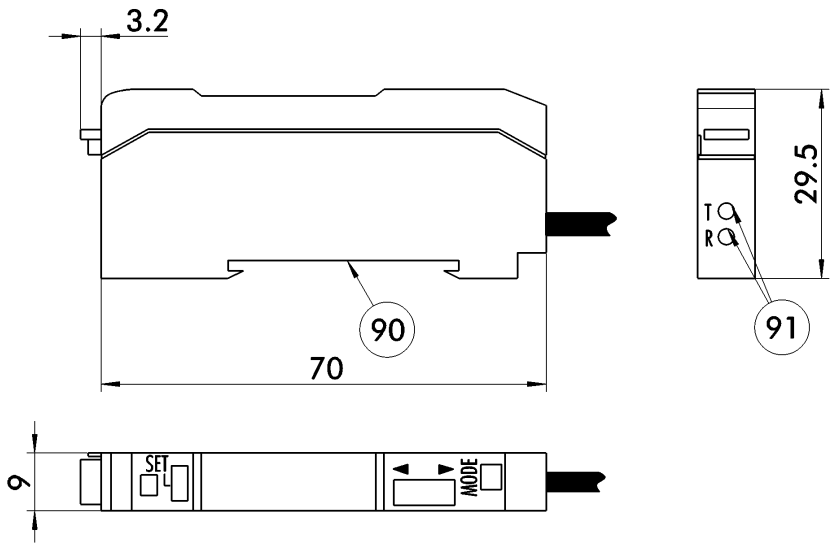
ONS 01

Technical data

Description		ONS 01
	ID	301390
Voltage supply		DC
Min. voltage	[V]	12
Max. voltage	[V]	24
number of digital switching outputs		1
Max. power on contact	[mA]	100
Min. ambient temperature	[°C]	-10
Max. ambient temperature	[°C]	55
IP class		20

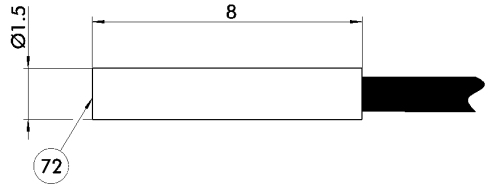
Description		ONS 01-LWL
	ID	301391
Cable diameter	[mm]	1
Diameter of cable end	[mm]	1.5
Cable length	[m]	1
Min. bending radius (dynamic)	[mm]	40
Min. bending radius (static)	[mm]	30

Main views of the ONS 01



90 Assembly rail
91 Connection for sensor

ONS 01-LWL



72 Active sensor surface

ⓘ One optical wave guide ONS 01-LWL is needed for each ONS 01.

Sensor Tester

The SST sensor tester enables the rapid testing and adjustment of inductive sensors, magnetic switches and reed contacts. The necessary power is supplied by a 9 V compound battery.

Function description

The sensor is connected to the M8 - M12 or terminal connection of the sensor tester and the ON button pressed. The sensor position is displayed visually by LEDs and output acoustically via a signal buzzer.

Your advantages and benefits

Visual and acoustic signal
for simple function checking and adjustment

For 2 and 3-wire DC technology
enabling the connection of reed contacts, capacitive and inductive sensors

Tests possible without dismantling sensors
for short maintenance times

Connections for M8 and M12 or open cable ends possible
ensuring suitability for all SCHUNK sensors

PNP and NPN sensors can be tested

Operating voltage with 9 V compound battery
for mobile use

Automatic cut-off function
for an extended battery life

Application example

Area of application

Sensor testing and adjustment of the switching point (sensor calibration)

1 Sensor tester SST

2 Inductive proximity switches IN 80

3 Metal plate

General information

Scope of delivery

Sensor tester incl. assembly and operating manual with manufacturer's declaration, 9 V compound battery

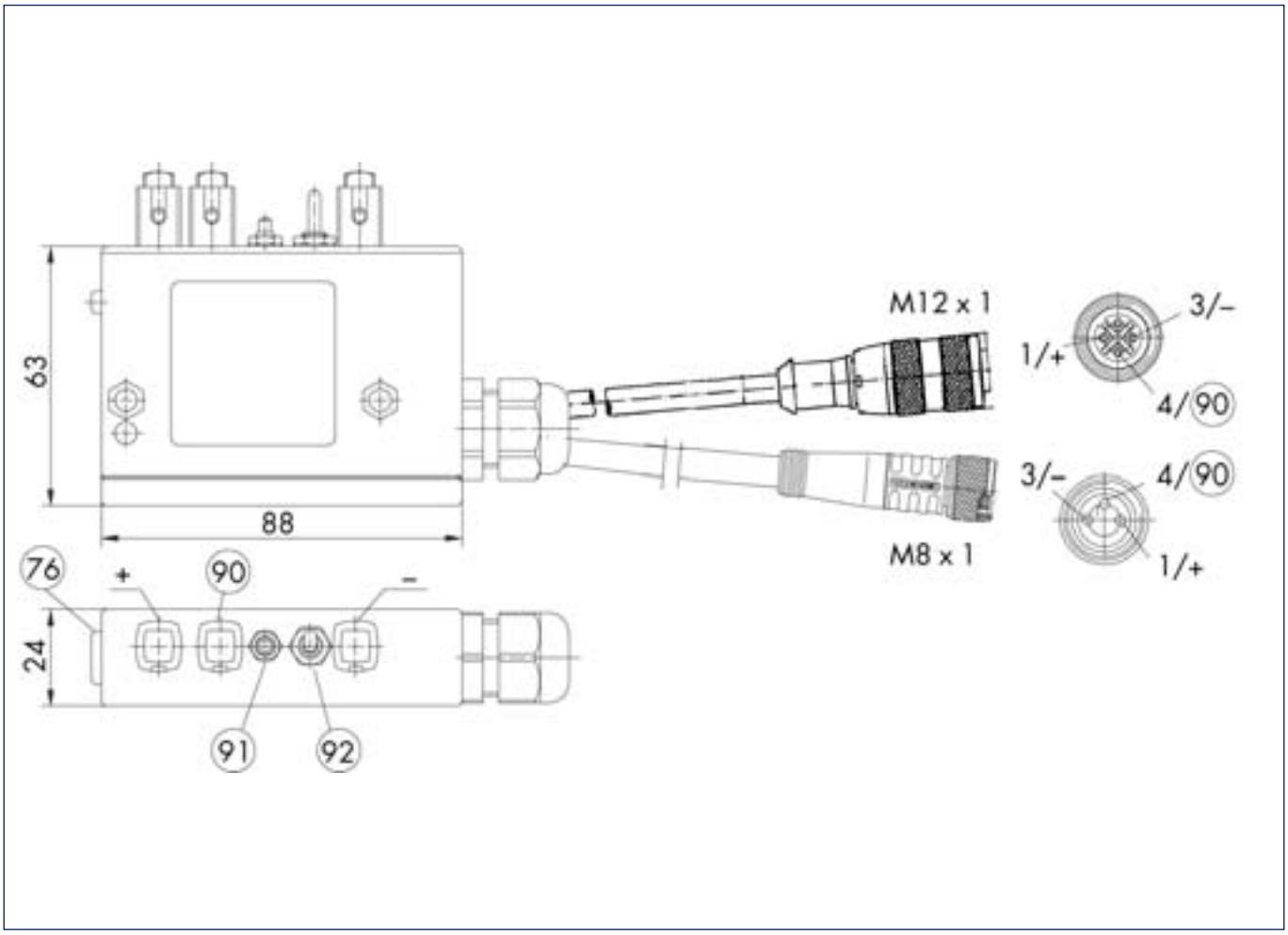
Notes

Please note that only one SST input (M8 or M12 or cable terminal input) can be used at once.
If the toggle switch is towards the sticker (nameplate), PNP is selected, if not, NPN

Technical data

Description	SST
ID	0301400
Battery	9 V DC (compound battery Type LR 61)
Connection 1	M12*1
Connection 2	M8*1
Connection 3	direct clamping
Housing material	plastic
IP class	20

Main views



76 LED
90 Output
91 ON button
92 PNP / NPN changeover switch

Adjustable housing for proximity switch

The adjustable housings enable the position of the sensor to be set once only. If the sensor is changed, the sensor position is retained.

Function description

The sensor is inserted in the adjustable housing and fastened with the coupling ring. Next, the switching position is set. When the sensor is changed, the adjustable housing remains in the same location – only the sensor is changed by removing the coupling ring.

Your advantages and benefits

Setting has to be carried out only once
for rapid sensor replacement without recalibration

Corrosion-free material
for a long service life

Switches are protected against shocks
preventing mechanical destruction

Application example

Area of application

For universal use in the monitoring of automation modules with proximity switches

1 NHG adjustable housing

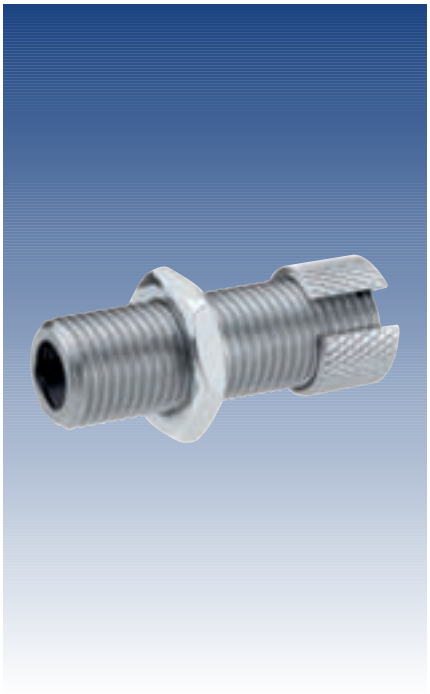
2 SRU 63 Flat Rotary Actuator

General information

Warranty
24 months

Notes

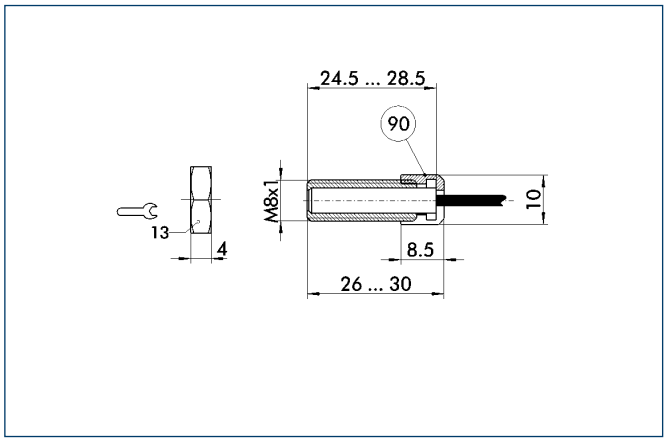
The coupling ring is slotted for fitting onto the cable.



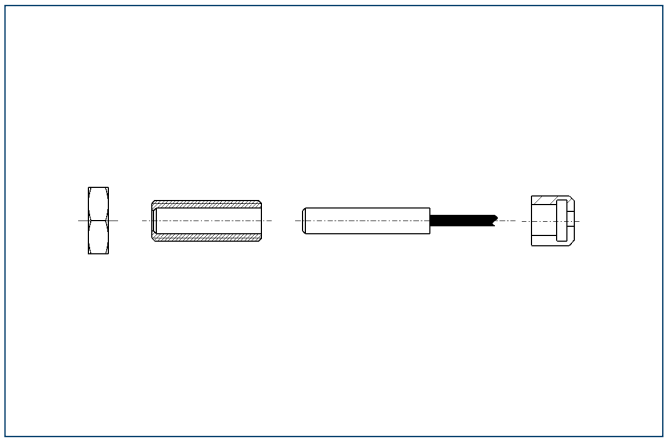
Technical data

Description		NHG 5	NHG 8
	ID	9646006	9646007
Suitable sensor Ø		M5	M8
Min. sensor length	[mm]	24.5	31.5
Max. sensor length	[mm]	28.5	35.5
Weight	[kg]	0.006	0.008
Material		Steel	Steel

NHG 5

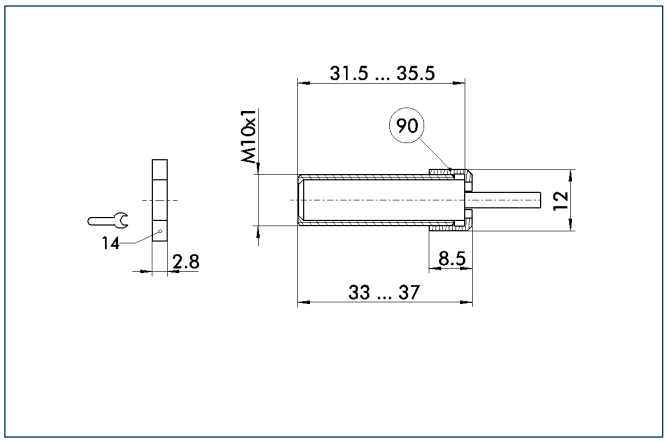


NHG 5 assembly

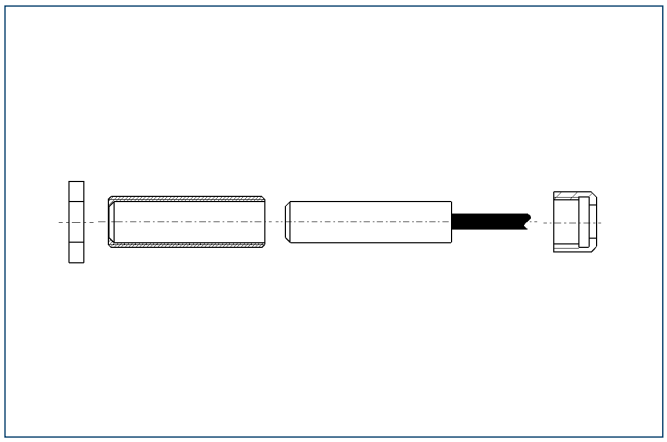


(90) Coupling ring is slotted for fitting onto the cable

NHG 8



NHG 8 assembly



(90) Coupling ring is slotted for fitting onto the cable

Sensor Distributor

For connecting all SCHUNK sensors and sensor systems (IN/INK/MMS/APS-M1, etc.). In the versions 2 (V2), 4 (V4) and 8 (V8).

Function description

Distributors collect incoming signals and forward them in a single cable. This dispenses with unnecessary cables. The switching state of the connected components can be checked by the LEDs integrated in the distributor.

Your advantages and benefits

Status and switching display via LED
for directly checking the switching state

One feeder cable
making it ideal for feeding through signals

Sturdy PA housing
for a long life and resistance to many chemicals

Application example

Area of application

Sensor distributors from SCHUNK are universal and resistant to vibration, dust and humidity. They are therefore suitable for use in both clean and dirty environments.

1. **V 8 Sensor Distributor**
2. **SRU 63 Flat Rotary Actuator**
3. **PHE Stroke Module**
4. **PGN 2-Finger Parallel Gripper with workpiece-specific gripper fingers**

General information

Materials
Housing: PA 6 GF 30, black
Cable: PUR sheath

Fastening
with screws

Protection class according to DIN 40050
IP 67 in connected condition for use in clean or dusty environments or in the event of contact with water. Contact with other media (cooling lubricants, acidic or caustic substances, etc.) frequently does not impair the function, but this cannot be guaranteed by SCHUNK.

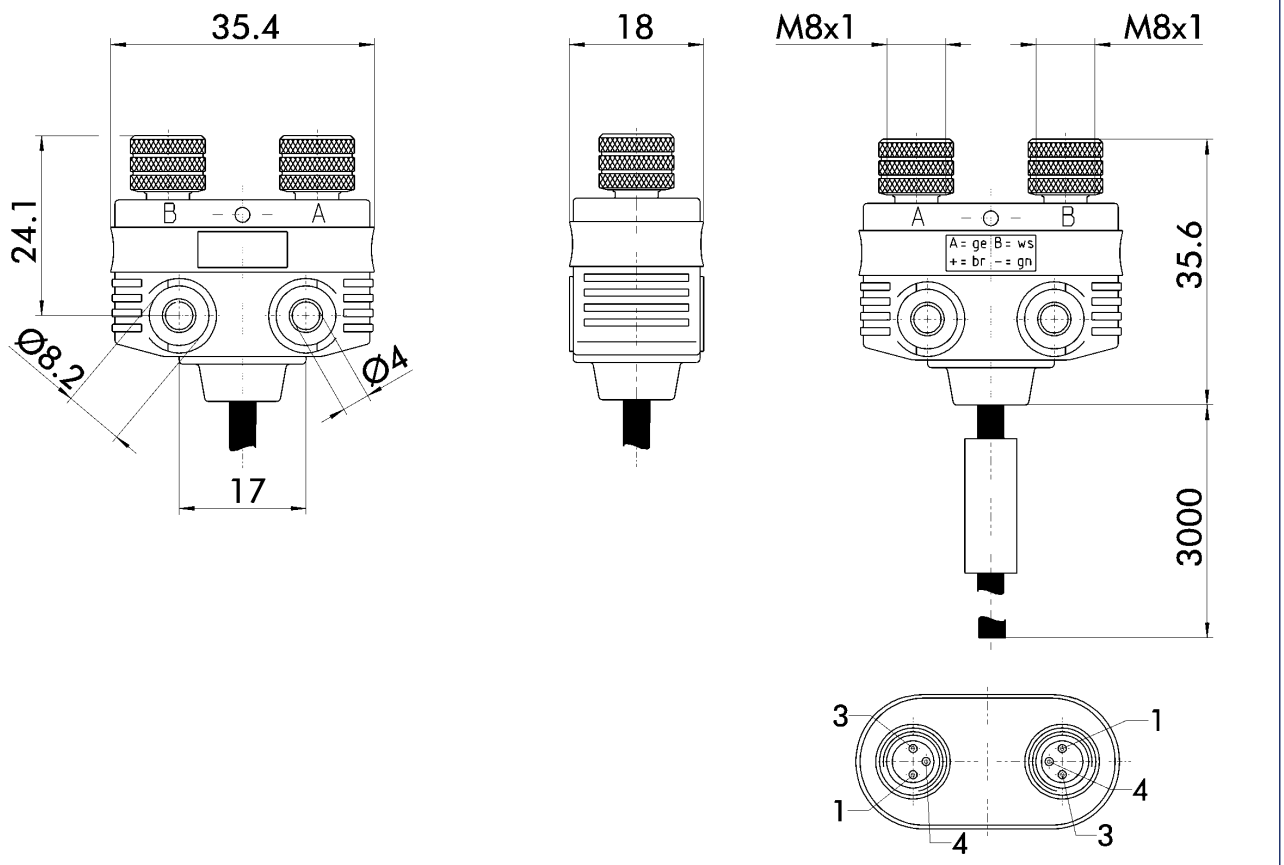
Scope of delivery
Complete incl. sealing plugs for sealing unused connections, 1 set of labels

Warranty
24 months

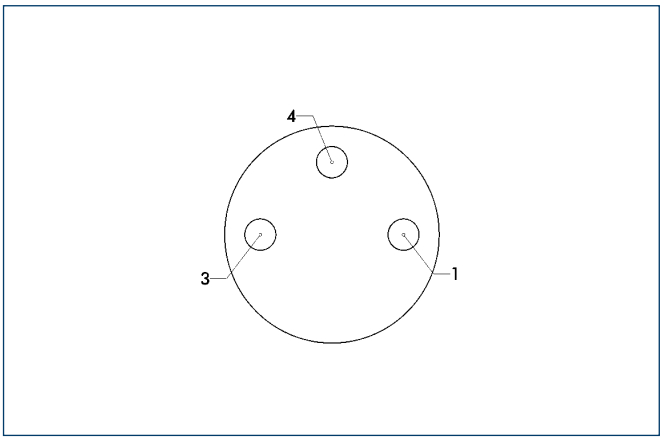
Technical data

Description		V 2-M8	V 2-M12
	ID	0301900	0301589
Socket		M8*1	M12*1
Cable length	[m]	3.0	3.0
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Max. current per wire	[A]	2.0	2.0
Max. overall current		2.0	2.0

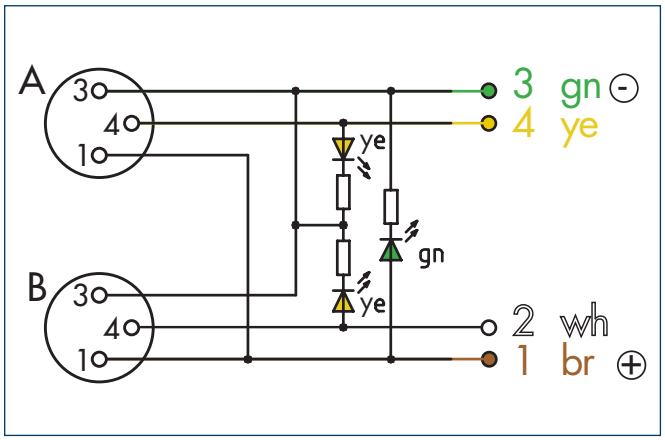
Main views of the V 2-M8



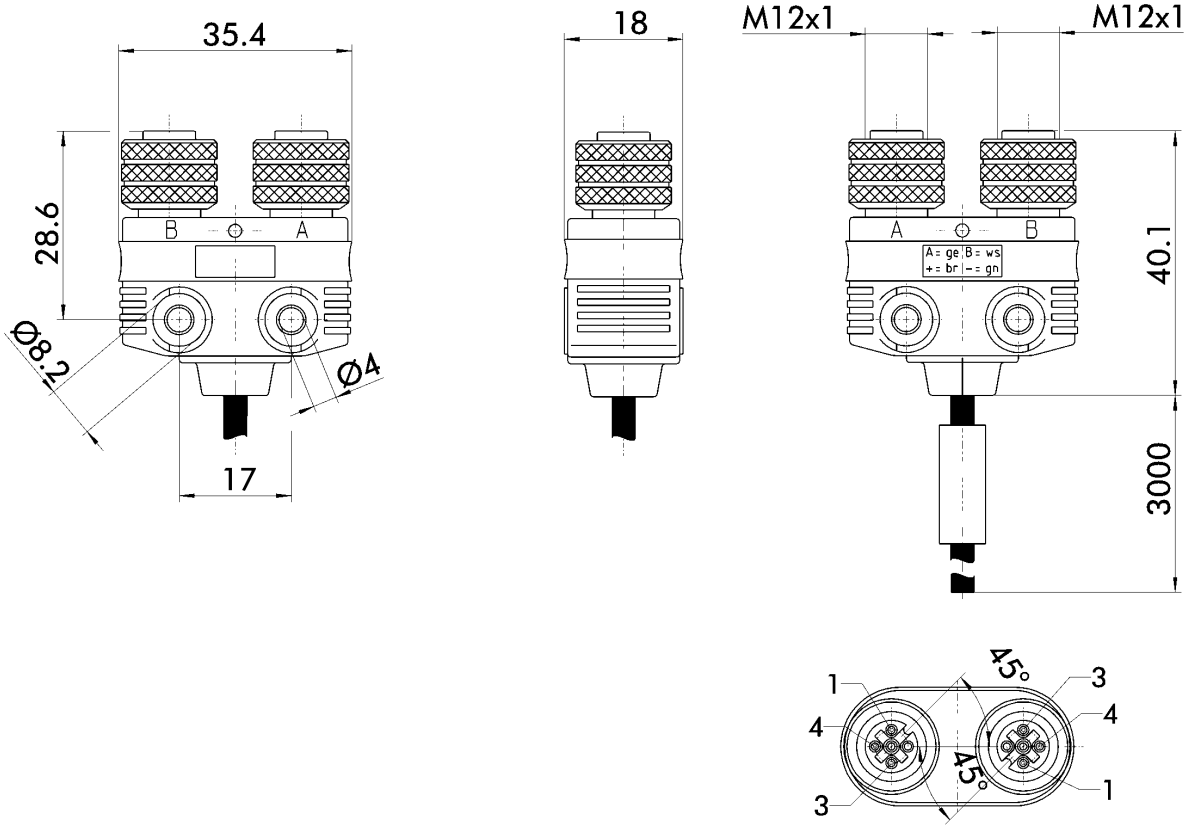
M8 contact assignment



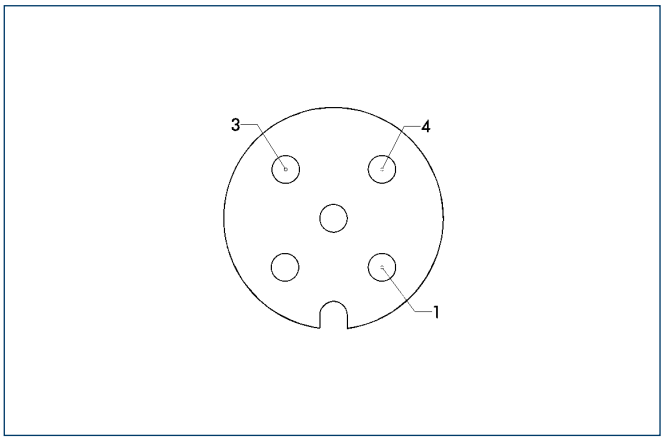
Wiring diagram



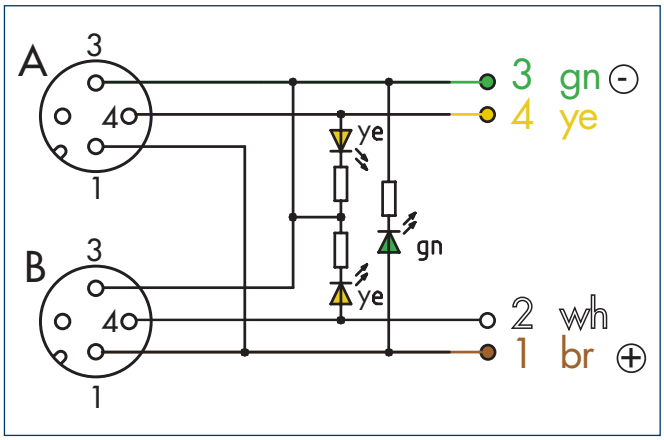
Main views of the V 2-M12



M12 contact assignment



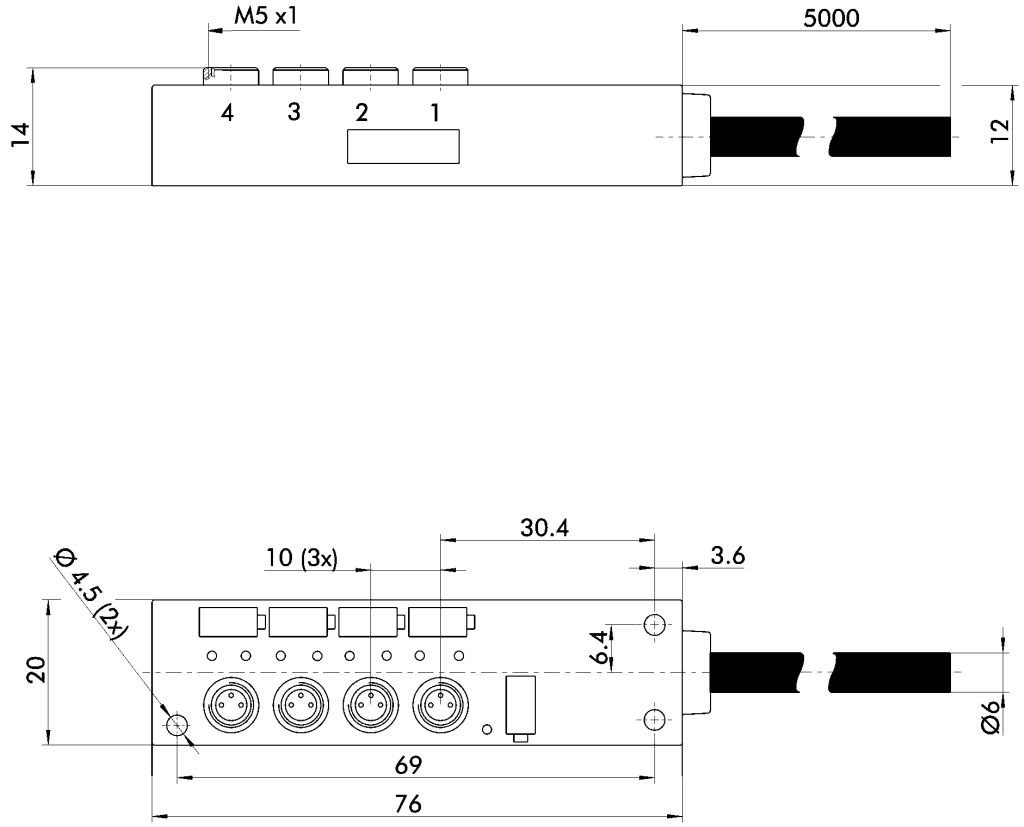
Wiring diagram



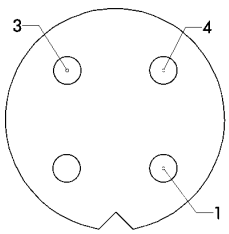
Technical data

Description		V 4-M5	V 4-M8	V 4-M12
	ID	0301661	0301904	0301902
Socket		M5*1	M8*1	M12*1
Cable length	[m]	3.0	3.0	3.0
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Max. current per wire	[A]	2.0	2.0	2.0
Max. overall current		2.0	2.0	2.0

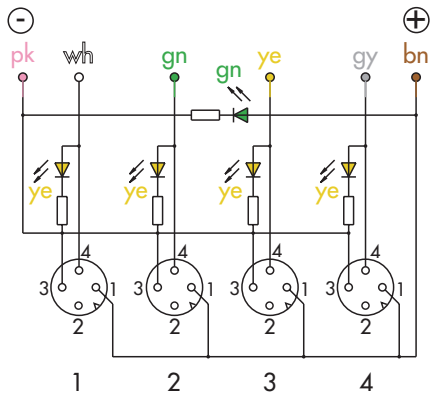
Main views of the V 4-M5



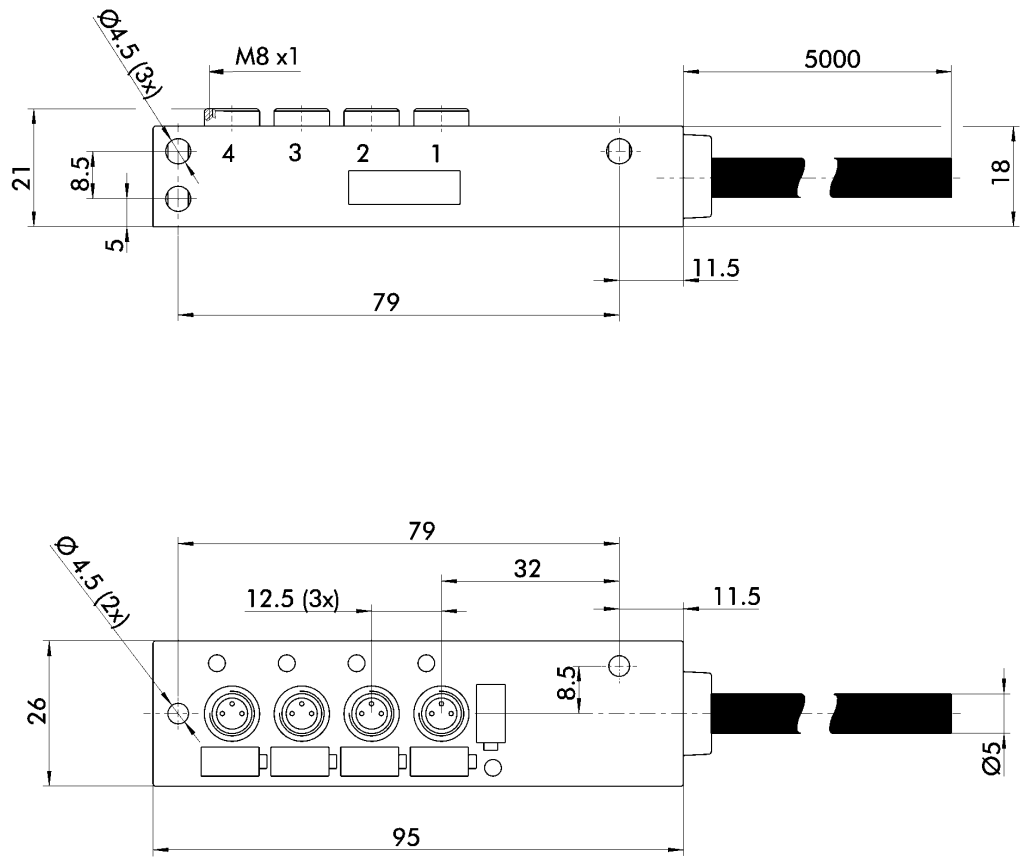
M5 contact assignment



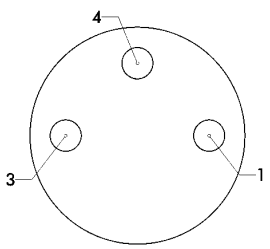
Wiring diagram



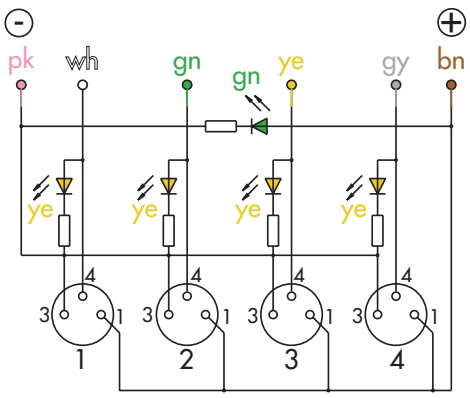
Main views of the V 4-M8



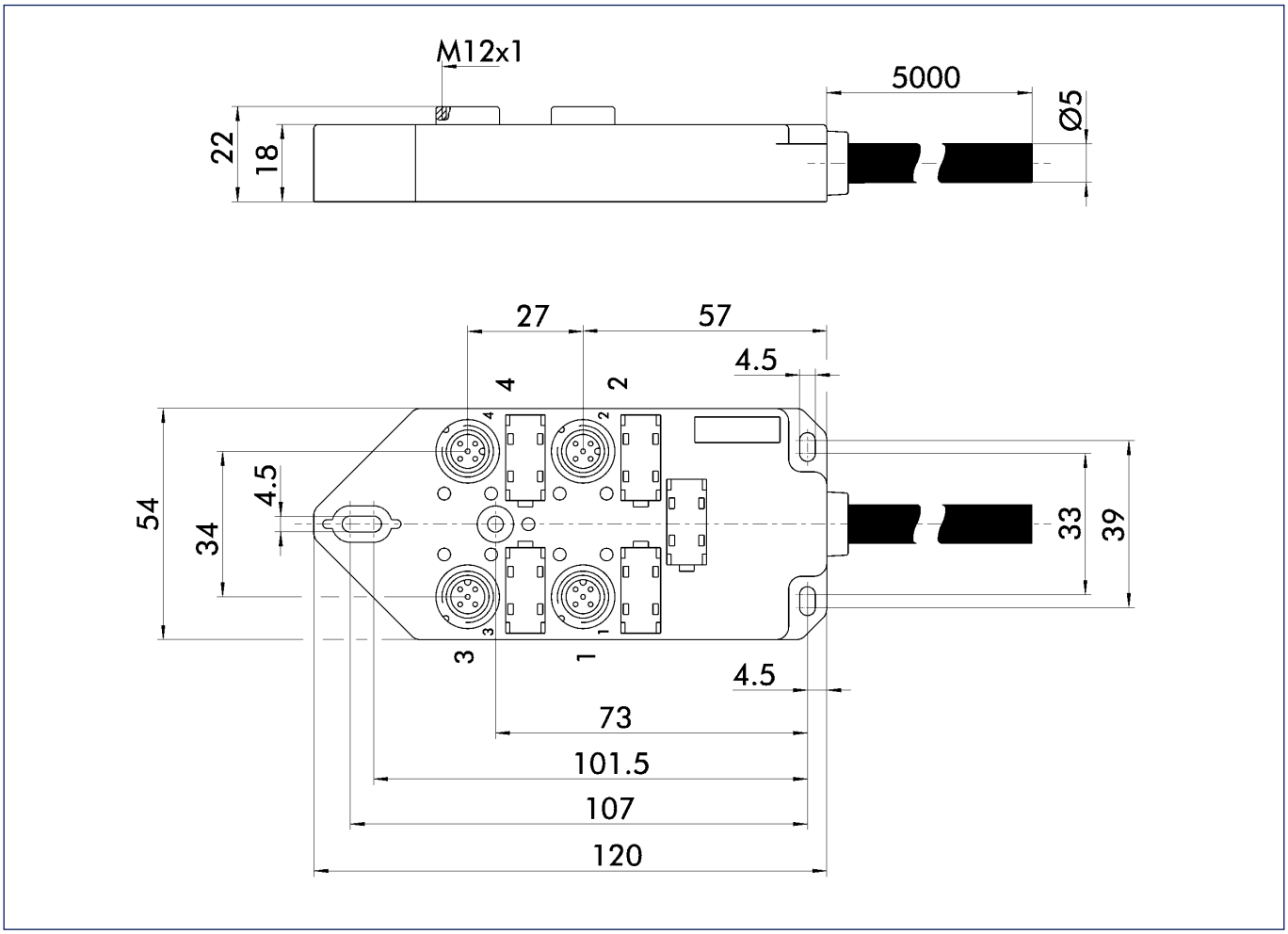
M8 contact assignment



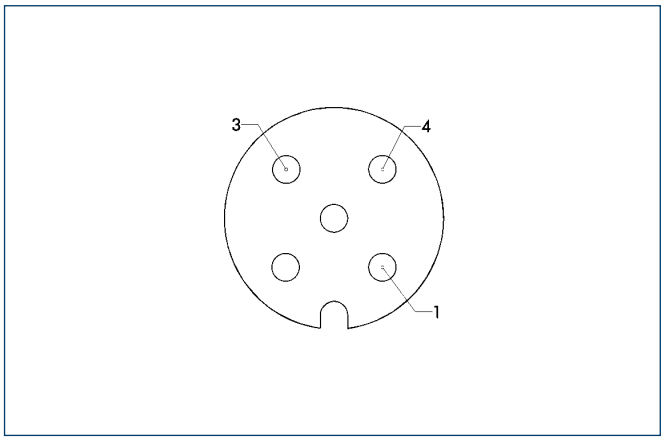
Wiring diagram



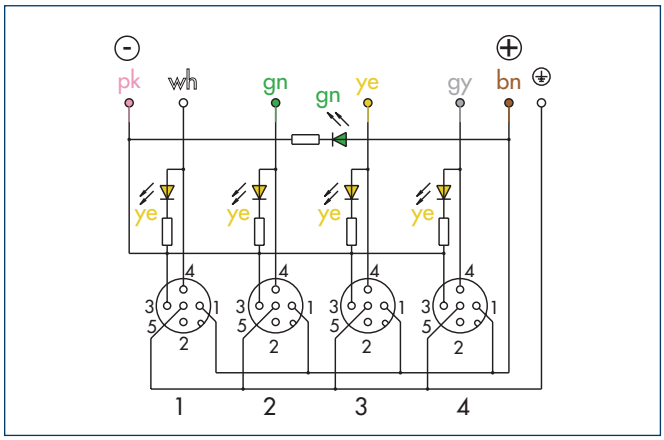
Main views of the V 4-M12



M12 contact assignment



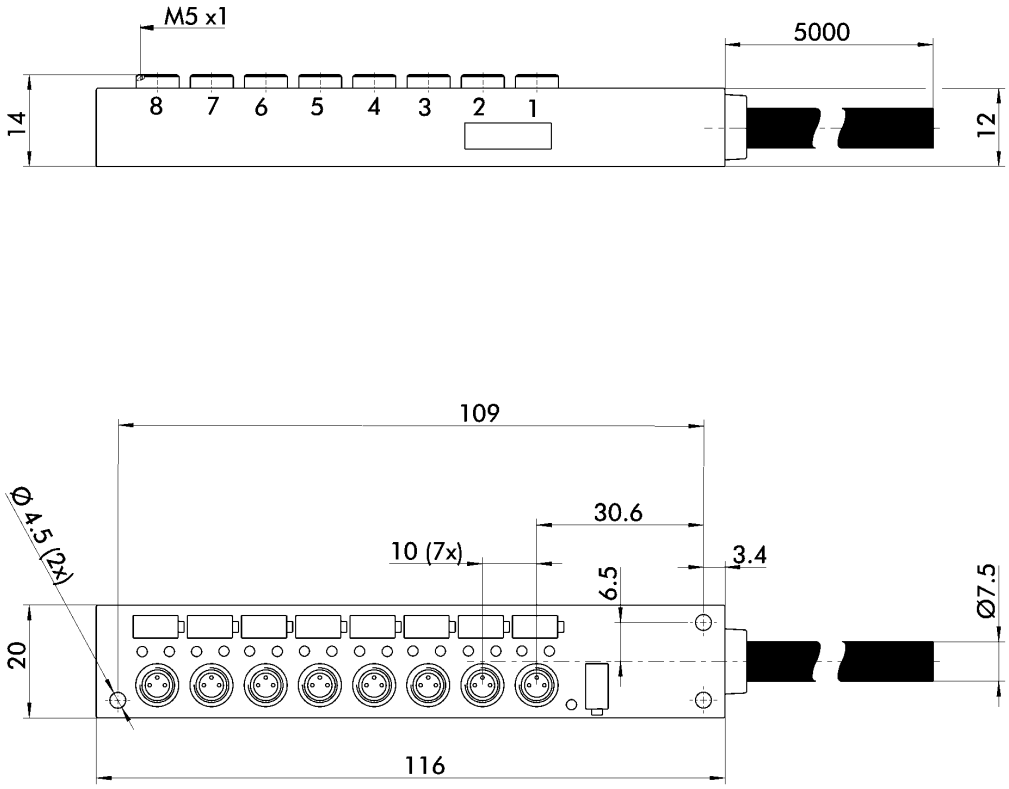
Wiring diagram



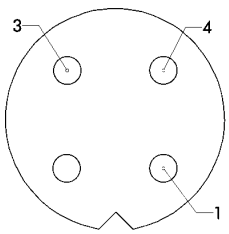
Technical data

Description		V 8-M5	V 8-M8	V 8-M12
	ID	0301662	0301906	0301590
Socket		M5*1	M8*1	M12*1
Cable length	[m]	3.0	3.0	3.0
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Max. current per wire	[A]	2.0	2.0	2.0
Max. overall current		2.0	2.0	2.0

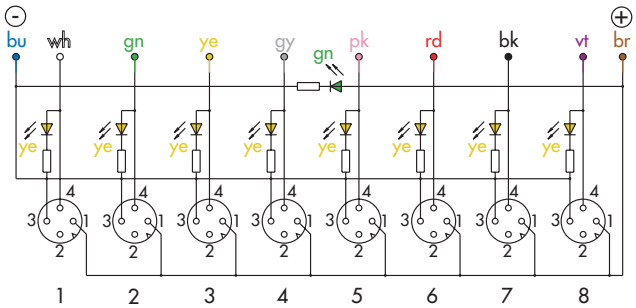
Main views of the V 8-M5



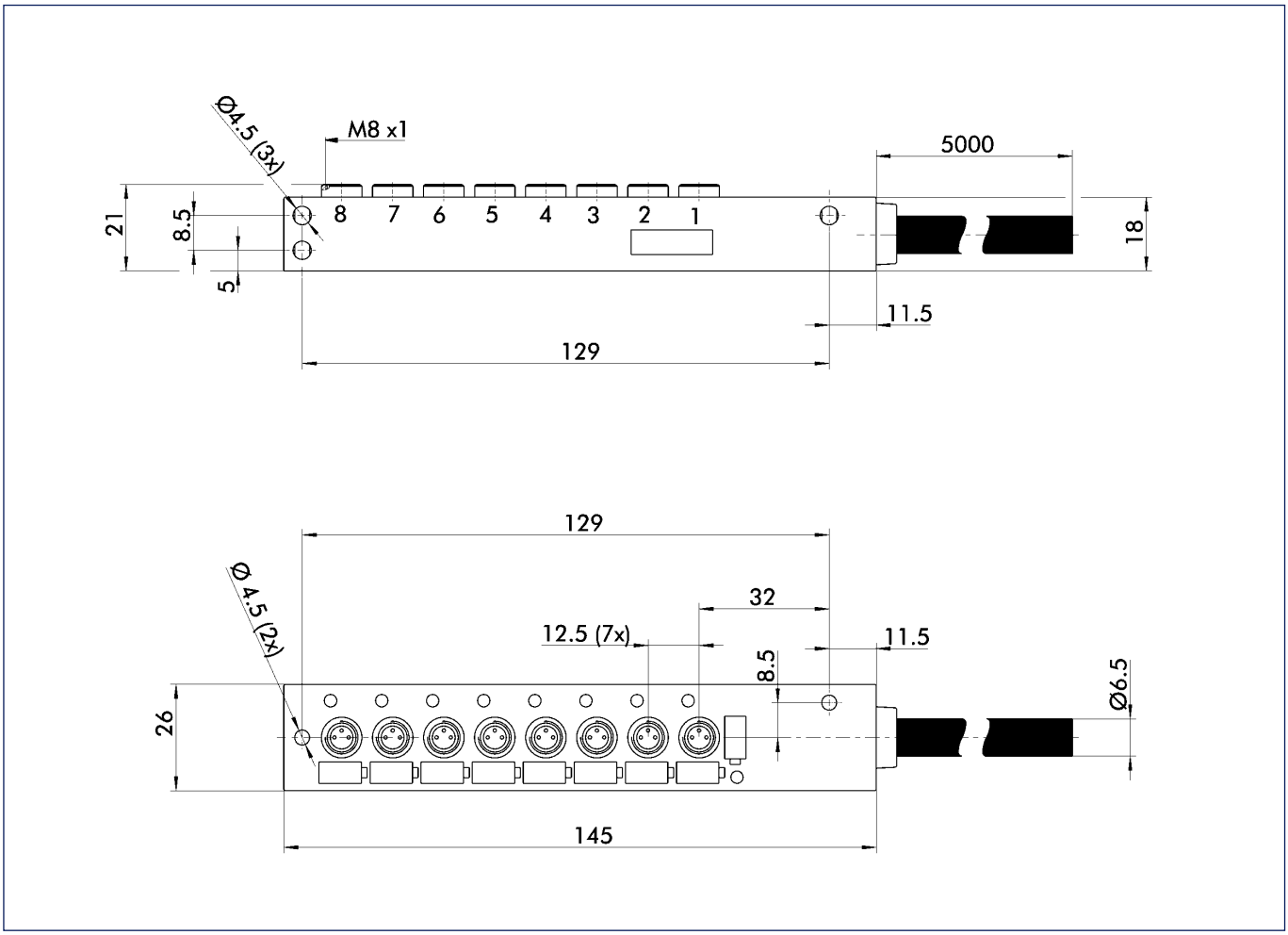
M5 contact assignment



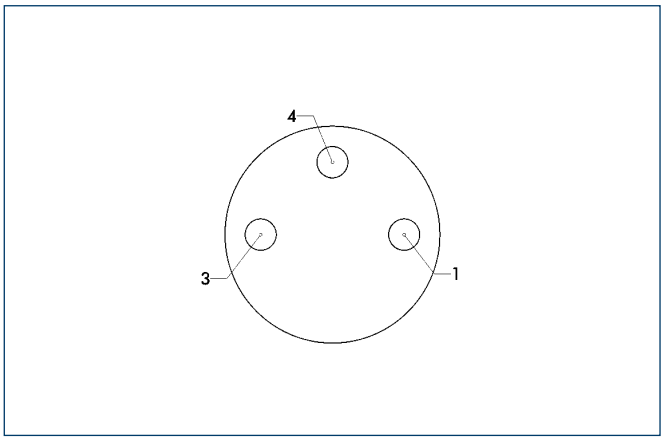
Wiring diagram



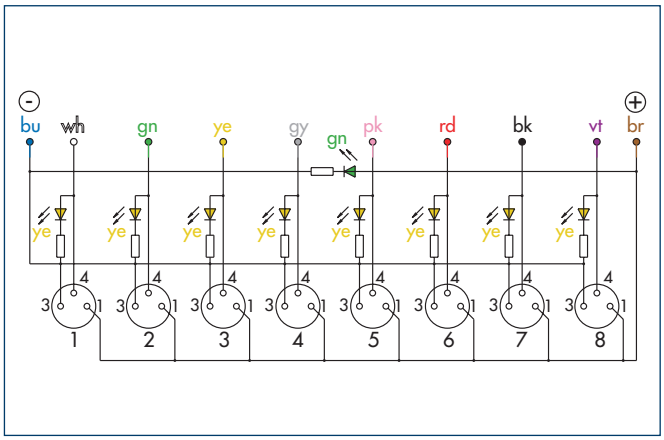
Main views of the V 8-M8



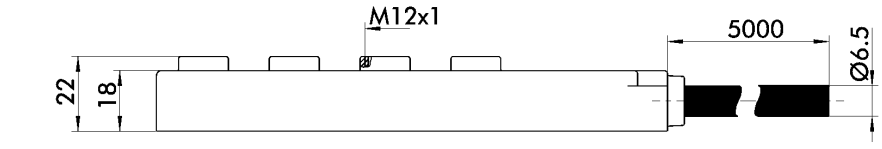
M8 contact assignment

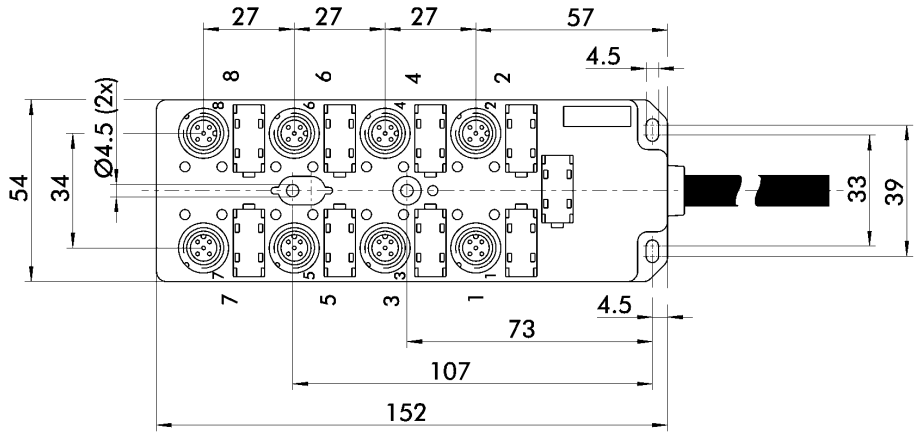


Wiring diagram

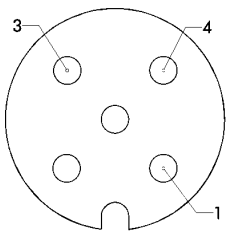


Main views of the V 8-M12

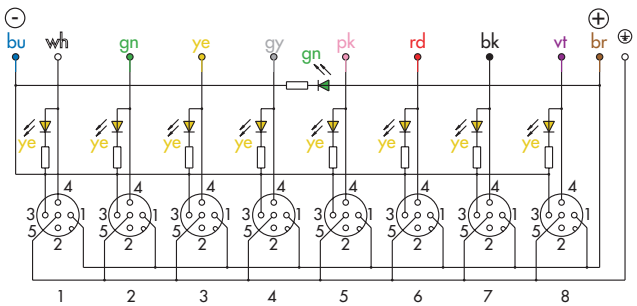




M12 contact assignment



Wiring diagram



Cable and connector

Extension cable, and customer cable connectors and sockets allowing convection, for flexible connection of SCHUNK sensor products.

Your advantages and benefits

Extensive accessories
for special installation environments

Application example

1 Cable extension KV
2 Inductive proximity switches IN
3 V 2 Sensor Distributor
4 V 4 Sensor Distributor

Area of application

variable cable installations

General information

Warranty
24 months

Cable Extensions

equipped with a cable connector and cable socket for easy extension.
The switching state of the connected sensor is indicated on the LEDs integrated in the cable socket.

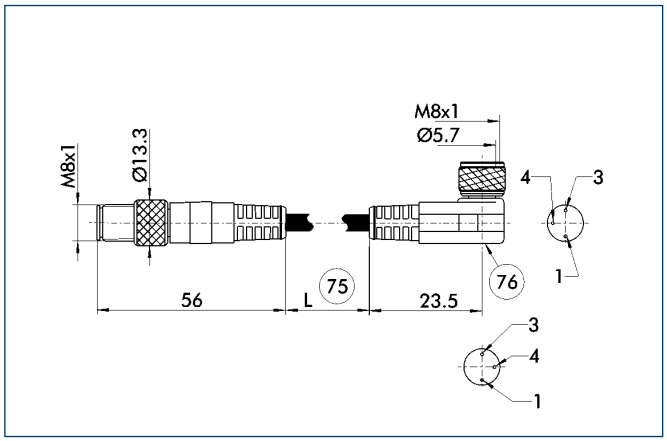
KV	= Cable extensions
KA	= Cable connection
G	= Straight line plug
W	= Angle plug
L	= Litz wires
S	= Connector
B	= Bush
4P	= 4 Pins

Technical data

Description		KV BW08-SG08 3P-0030-PNP	KV BW08-SG08 3P-0100-PNP	KV BW08-SG08 3P-0200-PNP
	ID	0301495	0301496	0301497
Connection, sensor side		bush	bush	bush
Threads, sensor side		M8	M8	M8
Output angle, sensor side	[°]	90.0	90.0	90.0
Connection, control cabinet side		plug	plug	plug
Threads, control cabinet side		M8	M8	M8
Output angle, control cabinet side	[°]	0.0	0.0	0.0
Cable length	[m]	0.3	1.0	2.0
Number of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14
Cable jacket		PUR	PUR	PUR
Weight	[kg]	0.02	0.04	0.06
Max. current per wire	[A]	0.5	0.5	0.5
Max. overall current	[A]	0.5	0.5	0.5

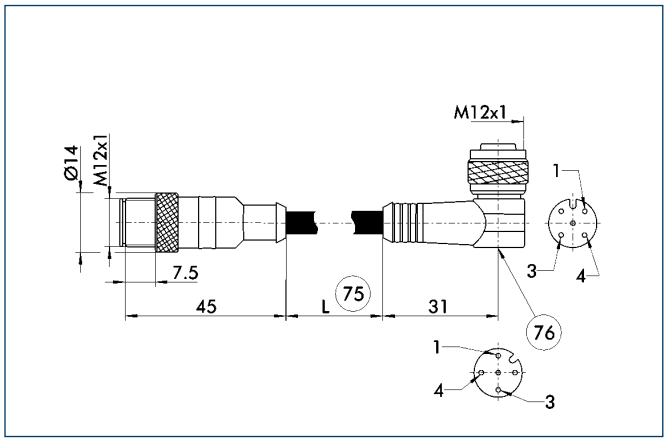
Description		KV BW12-SG12 3P-0030-PNP	KV BW12-SG12 3P-0100-PNP	KV BW12-SG12 3P-0200-PNP	KV BG12-SG12 3P-0060-PNP	KV BG12-SG12 3P-0030-PNP
	ID	0301595	0301596	0301597	0301998	0301999
Connection, sensor side		bush	bush	bush	bush	bush
Threads, sensor side		M12	M12	M12	M12	M12
Output angle, sensor side	[°]	90.0	90.0	90.0	0.0	0.0
Connection, control cabinet side		plug	plug	plug	plug	plug
Threads, control cabinet side		M12	M12	M12	M12	M12
Output angle, control cabinet side	[°]	0.0	0.0	0.0	0.0	0.0
Cable length	[m]	0.3	1.0	2.0	0.5	0.3
Number of wires		3	3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14	0.14
Cable jacket		PUR	PUR	PUR	PUR	PUR
Weight	[kg]	0.052	0.078	0.126	0.048	0.039
Max. current per wire	[A]	0.5	0.5	0.5	0.5	0.5
Max. overall current	[A]	0.5	0.5	0.5	0.5	0.5

KV BW08-SG08



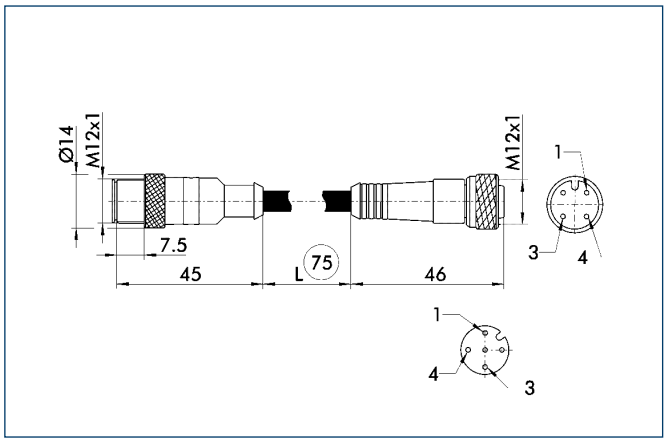
(75) Cable length
(76) LED

KV BW12-SG12



(75) Cable length
(76) LED

KV BG12-SG12



(75) Cable length

Connection Cables

equipped with a cable socket (sensor side) and a stranded wire on the other end.
The switching state of the connected sensor is indicated on the LEDs integrated in the cable socket.

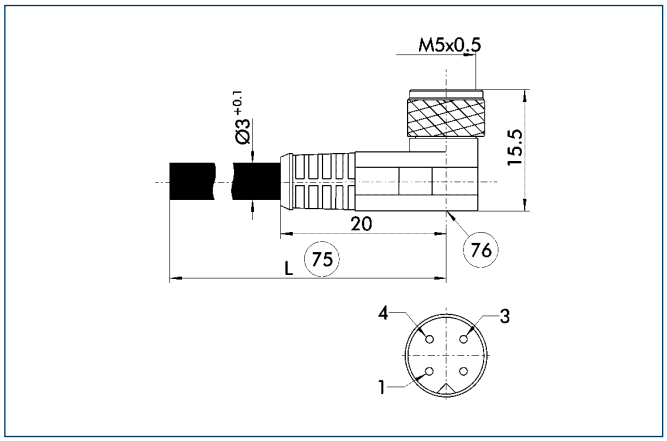
KV	= Cable extensions
KA	= Cable connection
G	= Straight line plug
W	= Angle plug
L	= Litz wires
S	= Connector
B	= Bush
4P	= 4 Pins

Technical data

Description		KA BW08-L 3P-0300-PNP	KA BW08-L 3P-0500-PNP	KA BW08-L 3P-0300-NPN	KA BW08-L 3P-0500-NPN
	ID	0301594	0301502	0301602	9641116
Connection, sensor side		bush	bush	bush	bush
Threads, sensor side		M8	M8	M8	M8
Output angle, sensor side	[°]	90.0	90.0	90.0	90.0
Connection, control cabinet side		Open wire	Open wire	Open wire	Open wire
Threads, control cabinet side					
Output angle, control cabinet side	[°]	0.0	0.0	0.0	0.0
Cable length	[m]	3.0	5.0	3.0	5.0
Number of wires		3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14
Cable jacket		PUR	PUR	PUR	PUR
Weight	[kg]	0.12	0.2	0.12	0.2
Max. current per wire	[A]	0.5	0.5	0.5	0.5
Max. overall current	[A]	0.5	0.5	0.5	0.5

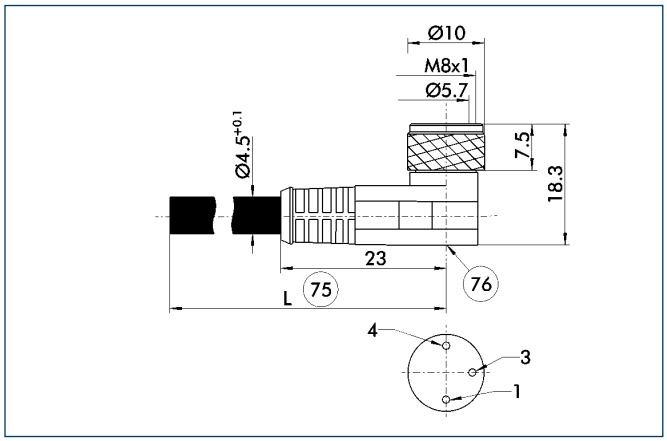
Description		KA BW05-L 3P-0300	KA BW12-L 3P-0300-PNP	KA BW12-L 3P-0500-PNP
	ID	0301650	0301503	0301507
Connection, sensor side		bush	bush	bush
Threads, sensor side		M5	M12	M12
Output angle, sensor side	[°]	90.0	90.0	90.0
Connection, control cabinet side		Open wire	Open wire	Open wire
Threads, control cabinet side				
Output angle, control cabinet side	[°]	0.0	0.0	0.0
Cable length	[m]	3.0	3.0	5.0
Number of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14
Cable jacket		PUR	PUR	PUR
Weight	[kg]	0.1	0.136	0.2
Max. current per wire	[A]	0.5	0.5	0.5
Max. overall current	[A]	0.5	0.5	0.5

BW05



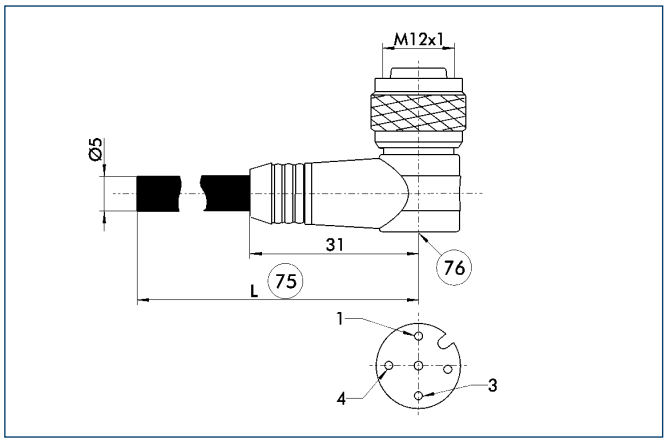
(75) Cable length
(76) LED

BW08



(75) Cable length
(76) LED

BW12



(75) Cable length
(76) LED

Connection Cables

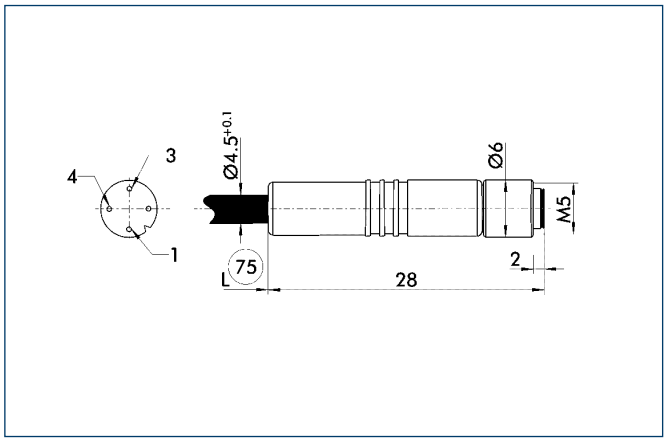
equipped with a cable socket (sensor side) and a stranded wire on the other end.
The switching state of the connected sensor is indicated on the LEDs integrated in the cable socket.

KV	= Cable extensions
KA	= Cable connection
G	= Straight line plug
W	= Angle plug
L	= Litz wires
S	= Connector
B	= Bush
4P	= 4 Pins

Technical data

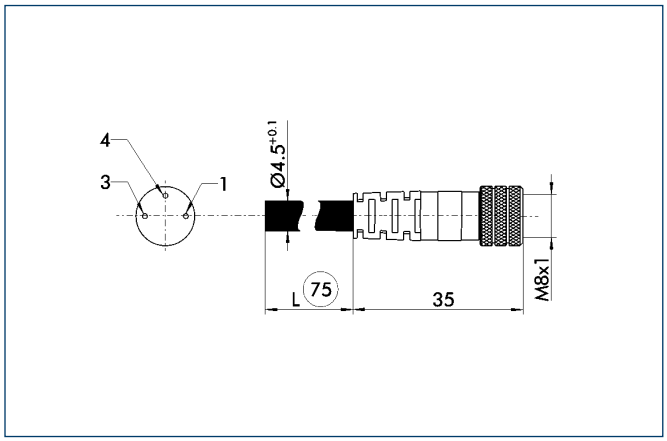
Description		KA BG05-L 3P-0300	KA BG08-L 3P-0300-PNP	KA BG08-L 3P-0500-PNP	KA BG12-L 3P-0500-PNP
	ID	0301652	0301622	0301623	30016369
Connection, sensor side		bush	bush	bush	bush
Threads, sensor side		M5	M8	M8	M12
Output angle, sensor side	[°]	0.0	0.0	0.0	0.0
Connection, control cabinet side		Open wire	Open wire	Open wire	Open wire
Threads, control cabinet side					
Output angle, control cabinet side	[°]	0.0	0.0	0.0	0.0
Cable length	[m]	3.0	3.0	5.0	5.0
Number of wires		3	3	3	3
Wire cross section	[mm^2]	0.14	0.14	2.14	0.14
Cable jacket		PUR	PUR	PUR	PUR
Weight	[kg]	0.085	0.085	0.18	0.18
Max. current per wire	[A]	0.5	0.5	0.5	0.5
Max. overall current	[A]	0.5	0.5	0.5	0.5

BG05



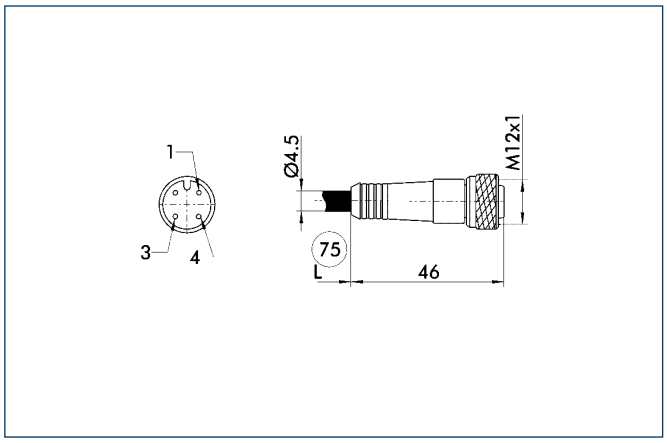
(75) Cable length

BG08



(75) Cable length

BG12



(75) Cable length

Connection Cables

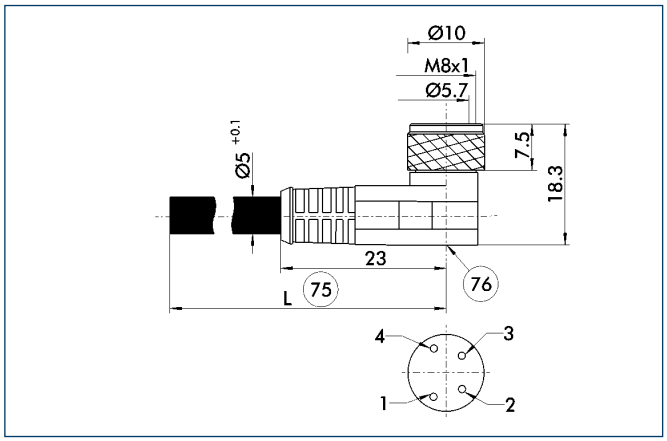
connected with a cable socket (sensor side) and a stranded wire on the other end.

KV	= Cable extensions
KA	= Cable connection
G	= Straight line plug
W	= Angle plug
L	= Litz wires
S	= Connector
B	= Bush
4P	= 4 Pins

Technical data

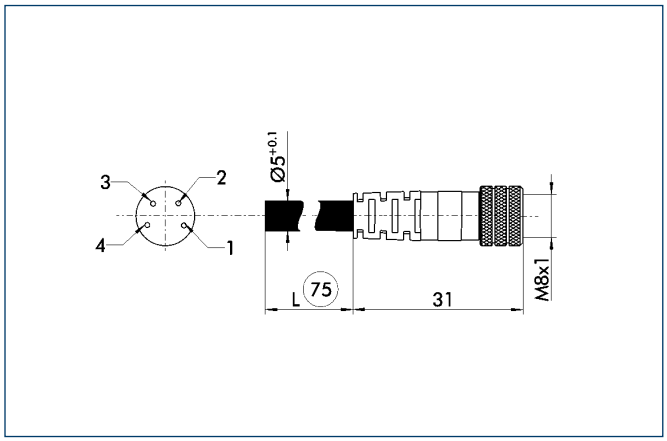
Description		KA BW08-L 4P-0500	KA BW08-L 4P-1000	KA BG08-L 4P-0500	KA BG08-L 4P-1000	KA BW08-L 5P-0500	KA BW08-L 5P-1000
	ID	307765	307766	307767	307768	307760	307761
Design of connector		angel	angel	straight	straight	angel	angel
Basic length	[m]	5.0	10.0	5.0	10.0	5.0	10.0
Max. operating voltage	[V]	300	300	300	300	300	300
Cable diameter	[mm]	4.8	4.8	4.8	4.8	4.8	4.8
Number of conductors		14	14	14	14	14	14
Wire cross section	[mm^2]	0.25	0.25	0.25	0.25	0.25	0.25

KA BW08-L 4P



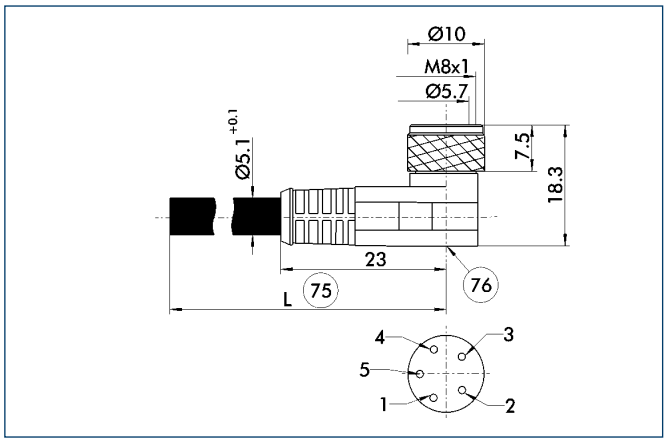
(75) Cable length
(76) LED

KA BG08-L 4P



(75) Cable length

KA BW08-L 5P



(75) Cable length
(76) LED

KST-M8 / KBU-M8

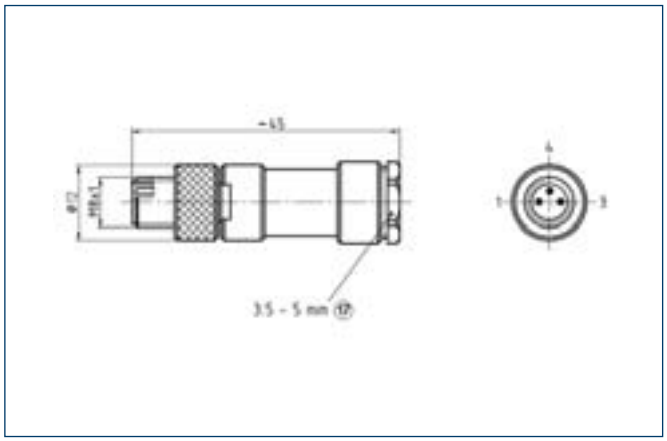
Cable Connector and Socket

can be connected directly to cables. Cable connectors/sockets with M8 connection are soldered to the cable; cable connectors/sockets with M12 connection are connected via clamping.

Technical data

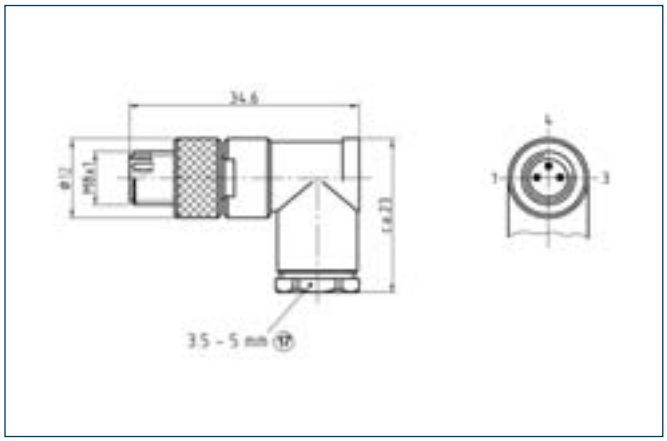
Description		KST-M8-G	KST-M8-W	KBU-M8-G	KBU-M8-W
ID		300050	300051	300052	300053
Connection		3-pin	3-pin	3-pin	3-pin
Maximum voltage	[V]	60 AC / 75 DC	60 AC / 75 DC	60 AC / 75 DC	60 AC / 75 DC
Maximum current	[A]	4	4	4	4
Max. connection diameter	[mm^2]	0.25	0.25	0.25	0.25
Protection class		IP 67	IP 67	IP 67	IP 67
Housing material		PA	PA	PA	PA

Connector straight M8



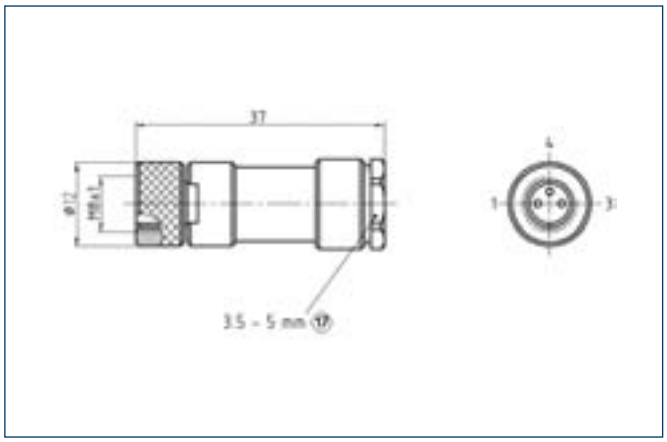
17 Cable outlet

Connector angled M8



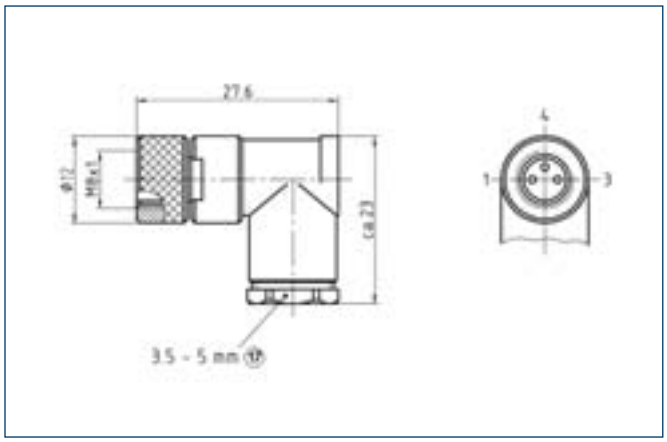
17 Cable outlet

Socket straight M8



17 Cable outlet

Socket angled M8



17 Cable outlet

KST-M12 / KBU-M12

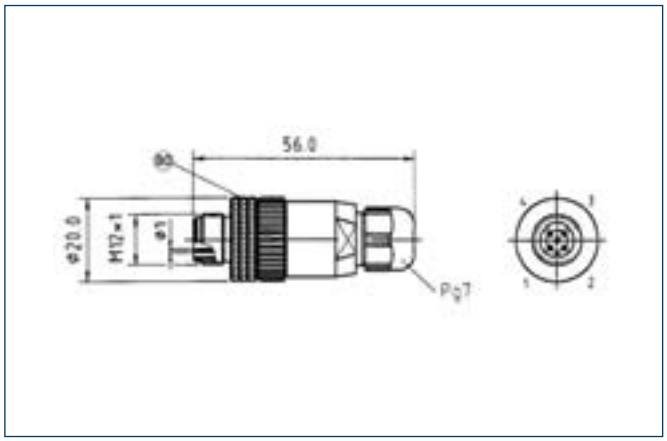
Cable Connector and Socket

can be connected directly to cables. Cable connectors/ sockets with M8 connection are soldered to the cable; cable connectors/sockets with M12 connection are connected via clamping.

Technical data

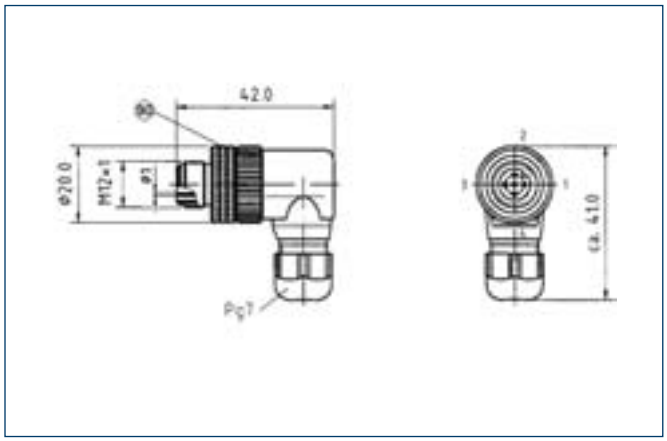
Description		KST-M12-G	KST-M12-W	KBU-M12-G	KBU-M12-W
ID		300060	300061	300062	300063
Connection		4-pin	4-pin	4-pin	4-pin
Maximum voltage	[V]	250 AC / 300 DC	250 AC / 300 DC	250 AC / 300 DC	250 AC / 300 DC
Maximum current	[A]	4	4	4	4
Max. connection diameter	[mm^2]	0.75	0.75	0.75	0.75
Protection class		IP 68	IP 68	IP 68	IP 68
Housing material		PA	PA	PA	PA
Cable clamping range	[mm]	Ø 2.5 - 6.5	Ø 2.5 - 6.5	Ø 2.5 - 6.5	Ø 2.5 - 6.5

Connector straight M12



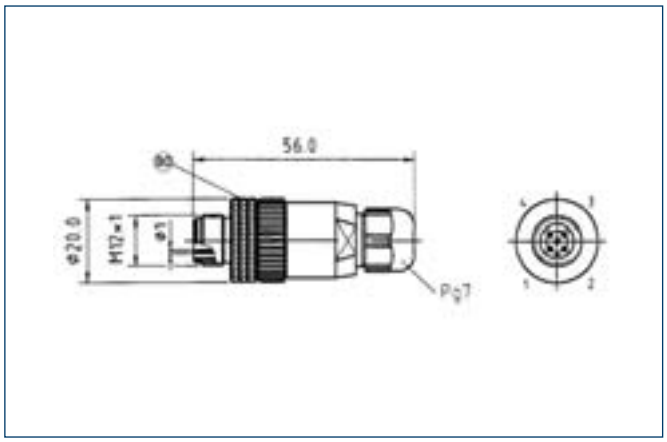
(90) Locking ring

Connector angled M12



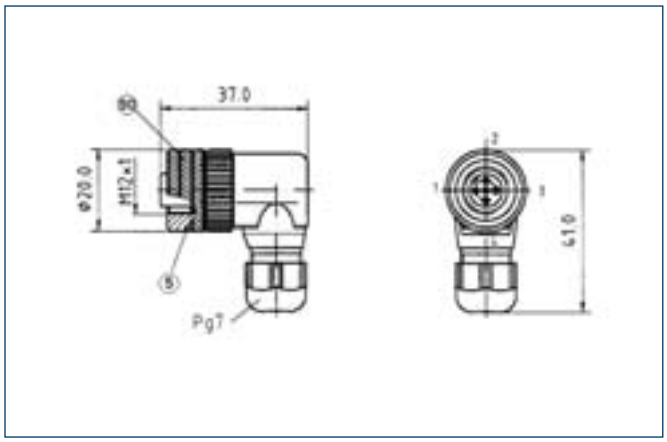
(90) Locking ring

Socket straight M12



(90) Locking ring

Socket angled M12



(5) O-ring
(90) Locking ring

APS-M1

Analog Position Sensor System

Mechanical, analog system comprising sensor and processor for accurately recording the position of gripper jaws.

Function description

The high-resolution APS-M1S sensor is actuated by an inclined surface (mounting kit), which is attached to the gripper base jaw. The changes in position of the sensor are recorded, amplified, prepared and made available to an analog output by the APS-M1E processor.

Your advantages and benefits

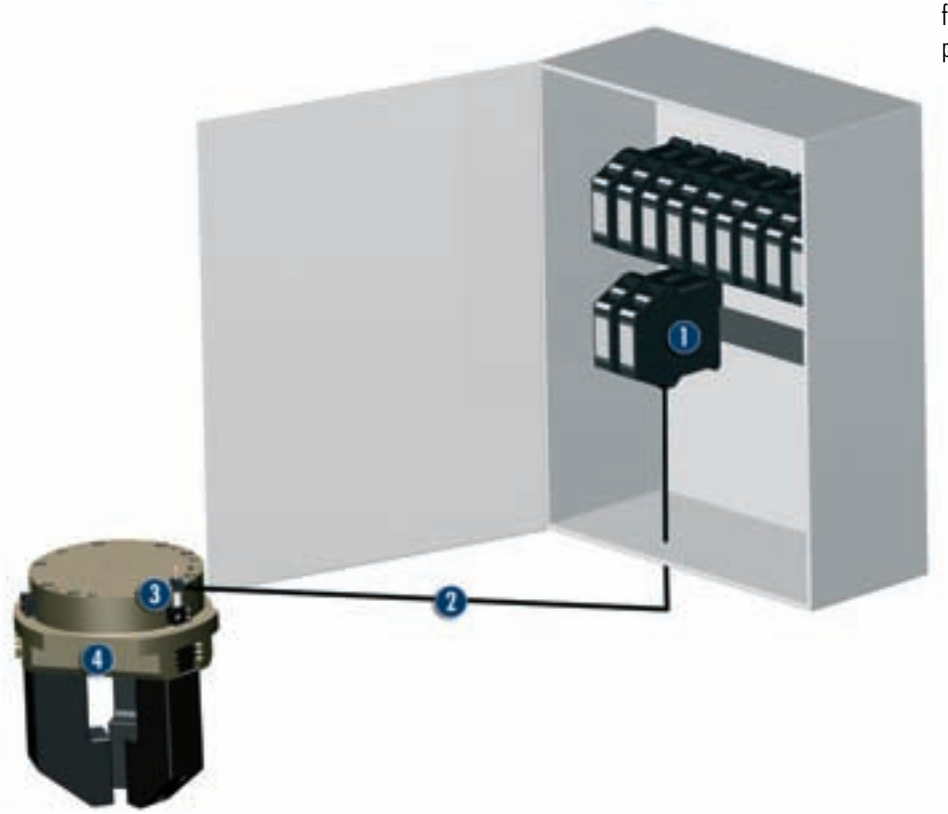
Position output
as voltage (V) or current (mA)

Precise measuring system
also for long strokes

Compact design
for space-saving installation in any control cabinet

Conforms to CE
for absolute safety and long life during permanent operation

Application example



Area of application

for the precise measurement of the gripper jaw position in clean environments

1. APS-M1E Processor
2. APS-K7 Extension Cable
3. APS-M1S Sensor
4. PZN-plus 100 3-Finger Centric Gripper

General information

Warranty
24 months

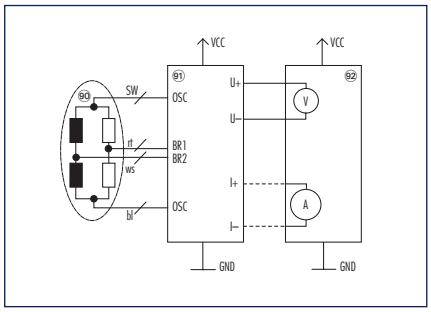
Ordering
The sensor and processor must be ordered as individual items.

Notes

The accuracy of the complete system as stated here is available from a stroke per jaw of 7 mm. The entire range of the sensor cannot be exploited with smaller strokes. The relative accuracy (ratio of repeat accuracy to jaw stroke) decreases, the absolute repeat accuracy (in mm) is the same as for a gripper with a 7 mm stroke, i.e. 0.021 mm.

APS-M1

Wiring diagram



(90) APS-M1S Sensor
(91) APS-M1E Electronic Processor
(92) Automation device, e.g. S7-300

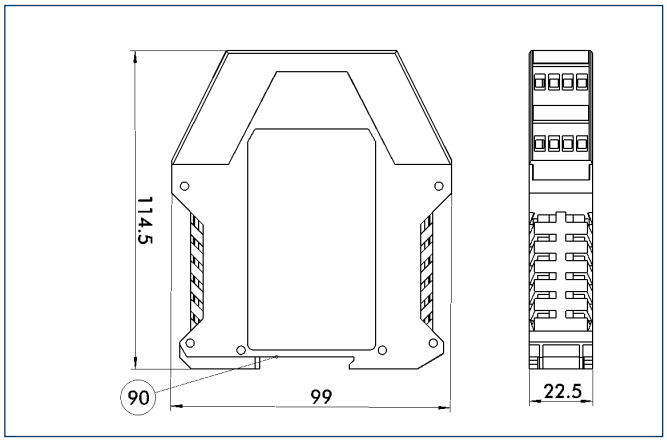
ⓘ When using an APS system, a mounting kit, APS sensor (APS-M1S) and processor (APS-M1E) are required for each gripper. The mounting kits can be found with the grippers. Mounting kits for other components/grippers are available on request. The sensor has a 3 m molded cable.

Technical data

Description		APS-M1S
	ID	0302062
Measuring stroke	[mm]	2.0
Measuring accuracy	[mm]	0.004
Nominal current input	[A]	0.023
Tightness		67
Thermal drift of zero signal	[%/10K]	0.1
Thermal drift of amplification factor	[%/10K]	0.2
Min. ambient temperature	[°C]	10.0
Max. ambient temperature	[°C]	60.0
Weight	[kg]	0.16
Sensor material		Steel
Cable sheath		PUR

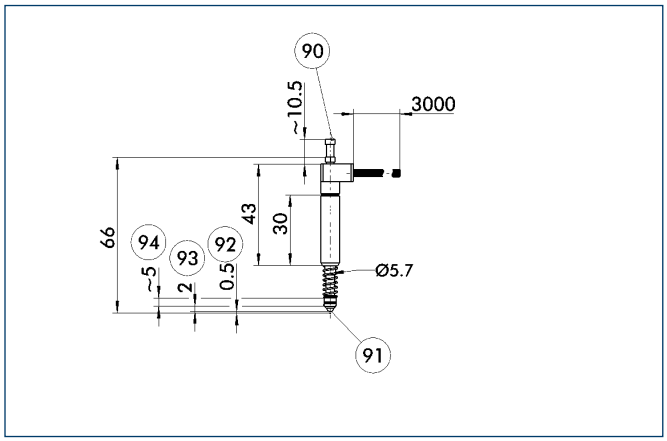
Description		APS-M1E
	ID	0302064
Supply voltage		DC
Nominal voltage	[V]	24.0
Min. voltage	[V]	22.0
Max. voltage	[V]	26.0
Nominal power current	[A]	0.1
IP class		20
Min. ambient temperature	[°C]	0.0
Max. ambient temperature	[°C]	60.0
Repeat accuracy (sensor and processor)	[%]	0.3
Weight	[kg]	0.16
Housing material		PA
Output signal		0..10 V DC | 4..20 mA
Fastening		top hat rail

APS processor



(90) Groove for mounting rail

APS sensor



(90) Position with retracted feeler rod
(91) Carbide ball 1/8"
(92) Initial stroke
(93) Range of measurement
(94) Free stroke

APS-K extension cable

As an option, an extension cable can be connected between the sensor and the processor. (The max. cable length between the sensor and the processor is 10 m, between the processor and its controller (SPC) max. 1 m.)

Description	ID	Length
APS-K0200	**0302066**	2.0 m
APS-K0700	**0302068**	7.0 m

Mounting kits

The suitable mounting kit is specified with the gripper.

ID	Description
0302075	AS-APS-M1-64/1
0302076	AS-APS-M1-64/2
0302077	AS-APS-M1-80/1
0302078	AS-APS-M1-80/2
0302079	AS-APS-M1-100/1
0302080	AS-APS-M1-100/2
0302081	AS-APS-M1-125/1
0302082	AS-APS-M1-125/2
0302083	AS-APS-M1-160/1 and 240/2
0302084	AS-APS-M1-160/2
0302085	AS-APS-M1-200/1 and 380/2
0302086	AS-APS-M1-200/2
0302087	AS-APS-M1-240/1
0302088	AS-APS-M1-300/1
0302089	AS-APS-M1-300/2
0302090	AS-APS-M1-380/1

FPS Flexible Position Sensor

The FPS sensor system measures the position of gripper jaws. It then indicates in which of the five freely teachable zones the jaws currently are. Additionaly the jaw position can be read out via the „FPS Controller“ software.

Function description

A permanent magnet that moves with the base jaw permeates the FPS sensor with its magnetic field. The strength of this permeation changes depends on the distance of the magnet from the sensor. This variable is recorded, evaluated and output by the FPS electronic processor.

Your advantages and benefits

Simplest operation
with just two buttons, or with the machine control system using free control lines

Simple start-up
as the customer can set all positions during the teaching operation

Five digital outputs
for greater economy as compared to individual sensors

Small distance between two switching points, adjustable

Resistant to contamination
through non-ferromagnetic materials

Function and switching status display
via LEDs on the electronic processor

Conforms to CE
for safety and long life during permanent operation

Digital technology
for resistance to interference

Additional advantages of the FPS-F5 and F5 T
- Measuring functionality
- Communication and remote maintenance via RS-232 protocol
- Position programming and readout of switching points
- Monitoring of temperature and input voltage
- Visualization via PC possible
- Data logging
- Calibration of system to gripper stroke
- Intelligent access authorization
- Adaptation to new product during the process

Application example

Area of application

Position sensing of gripper jaws up to a stroke of approx. 30 mm in environments that may be clean or dirty, but are free from steel chips.

General information

Resolution

The resolution is the minimum stroke difference that is required in order to reliably distinguish between two signals. Used in conjunction with most SCHUNK grippers, the FPS system achieves a resolution of 1 – 3 % of a jaw stroke. However, in some grippers a resolution of only 10 % is achieved due to the nature of the design. More precise resolutions may be reached, however, with the use of special solutions. Please contact us regarding the resolution/accuracy of the FPS system.

Connector for the electronic processor (enclosed)

12-pin circular connector (Binder type series 723, waterproof) suitable for connection cables with a diameter of 6 to 8 mm, recommended conductor cross-section 0.14 mm^2 (max. 0.25 mm^2)

Ambient conditions

Use within the range of strong magnetic fields is not recommended. Neither the FPS sensor nor the FPS magnet may come into contact with ferromagnetic dust, chips or other substances.

Display

Five colored LEDs

Range of measurement

5 to 30 mm with SCHUNK magnet (NdFeB magnet cut to size, dimensions (6 x 25 mm x L) with various lengths L depending on the part of the range of measurement

Material

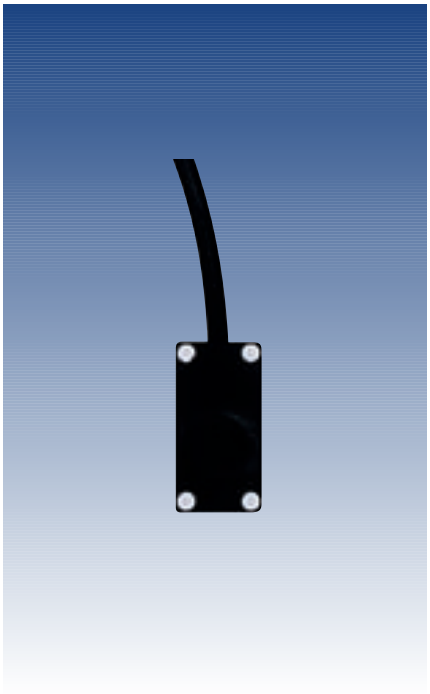
Processor: Plastic PA 6
Cable: PU, resistant to coolants/lubricants

Warranty

24 months

Notes

All data were determined on the basis of SCHUNK attachments and specifications. Please consult us regarding use of the sensor with modules from other manufacturers.



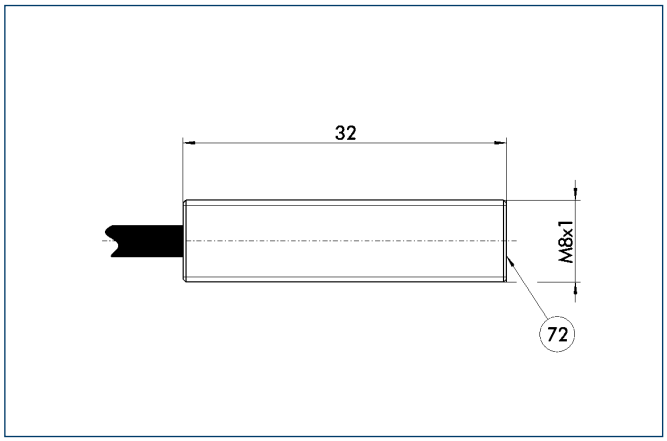
FPS sensors

Either the FPS-S13 or the FPS-SM8 sensor is required, depending on the type of gripper. Each sensor is connected to its own FPS-F5/F5T processor.

Technical data

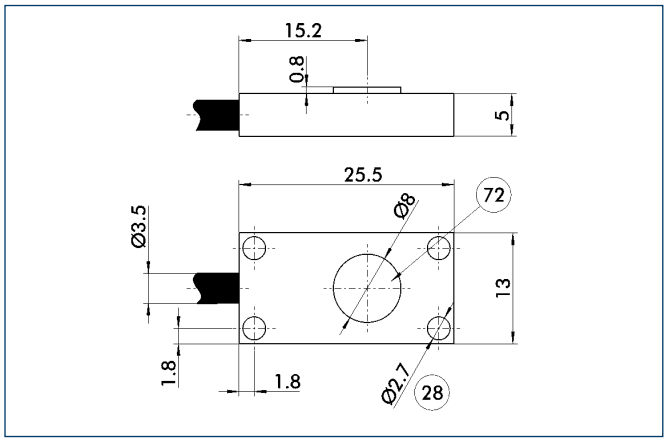
Description		FPS-S 13	FPS-S M8
	ID	0301705	0301704
Cable diameter	[mm]	3.5	3.5
Cable length	[cm]	30.0	30.0
Connection of FPS on processor side		M8	M8
Weight	[kg]	0,01	0,015
Min. ambient temperature	[°C]	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0
IP class (sensor)		65	65
IP class (connector, plugged in)		65	65
Min. bending radius (dynamic)	[mm]	17.5	17.5
Min. bending radius (static)	[mm]	35.0	35.0

S-M8 sensor



72 Active sensor surface

S13 sensor



28 Through-bore
72 Active sensor surface

Cable extensions

Max. extension between FPS sensor and electronic processor for trouble-free operation: 1 m

Description	ID	Length
KV BG08-SG08 3P-0050	**0301598**	0.5 m
KV BG08-SG08 3P-0100	**0301599**	1.0 m

FPS-F5 Processor

Measurement of the gripper stroke using sensors, assignment to the positions/zones „Open“, „Intermediate position 1,2,3“ or „Closed“, and output of a position signal. A maximum of four switching points/five zones are freely programmable, RS-232 interface, remote maintenance, measuring functionality, system calibration to the millimeter, temperature and voltage monitoring.

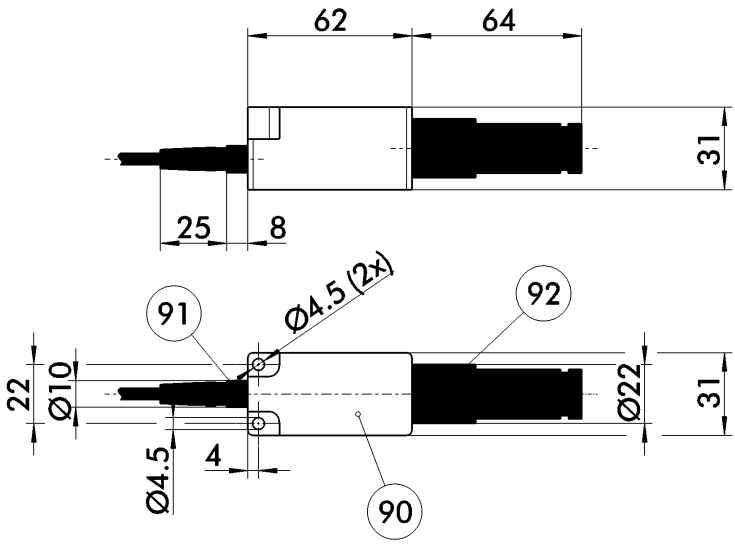
FPS-F5T Processor

Measurement of the gripper stroke using sensors, comparison with target value, output of tolerance information „Within tolerance“, „Above tolerance“ or „Below tolerance“, plus „Open“ and „Closed“. Otherwise, like the FPS-F5.

Technical data

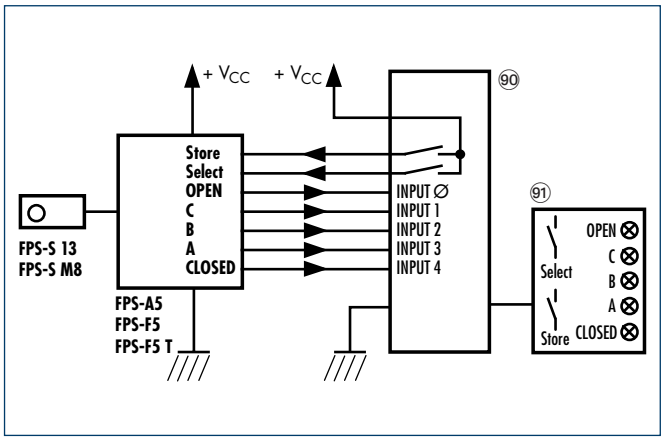
Description		FPS-F5	FPS-F5 T
	ID	0301805	0301807
Nominal voltage	[V]	24.0	24.0
Min. voltage (DC)	[V]	10.0	10.0
Max. voltage (DC)	[V]	30.0	30.0
Nominal current (DC)	[A]	0.01	0.01
Weight	[kg]	0.06	0.06
Min. ambient temperature	[°C]	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0
IP class		65	65

Main views



90 Transparent plastic cover, over control and display panel
91 Connector on sensor side
92 Connector on control cabinet side

Wiring diagram



90 SPC/PLC
91 Machine panel (provided by customer)

For the contact assignment of the connections on the SPC side, please refer to the user's manual.

Cable extension (open wires)

from the electronic processor to the control cabinet

Description	ID	Length
KA SG16-L 12P-1000	0301801	10.0 m

FPS Software

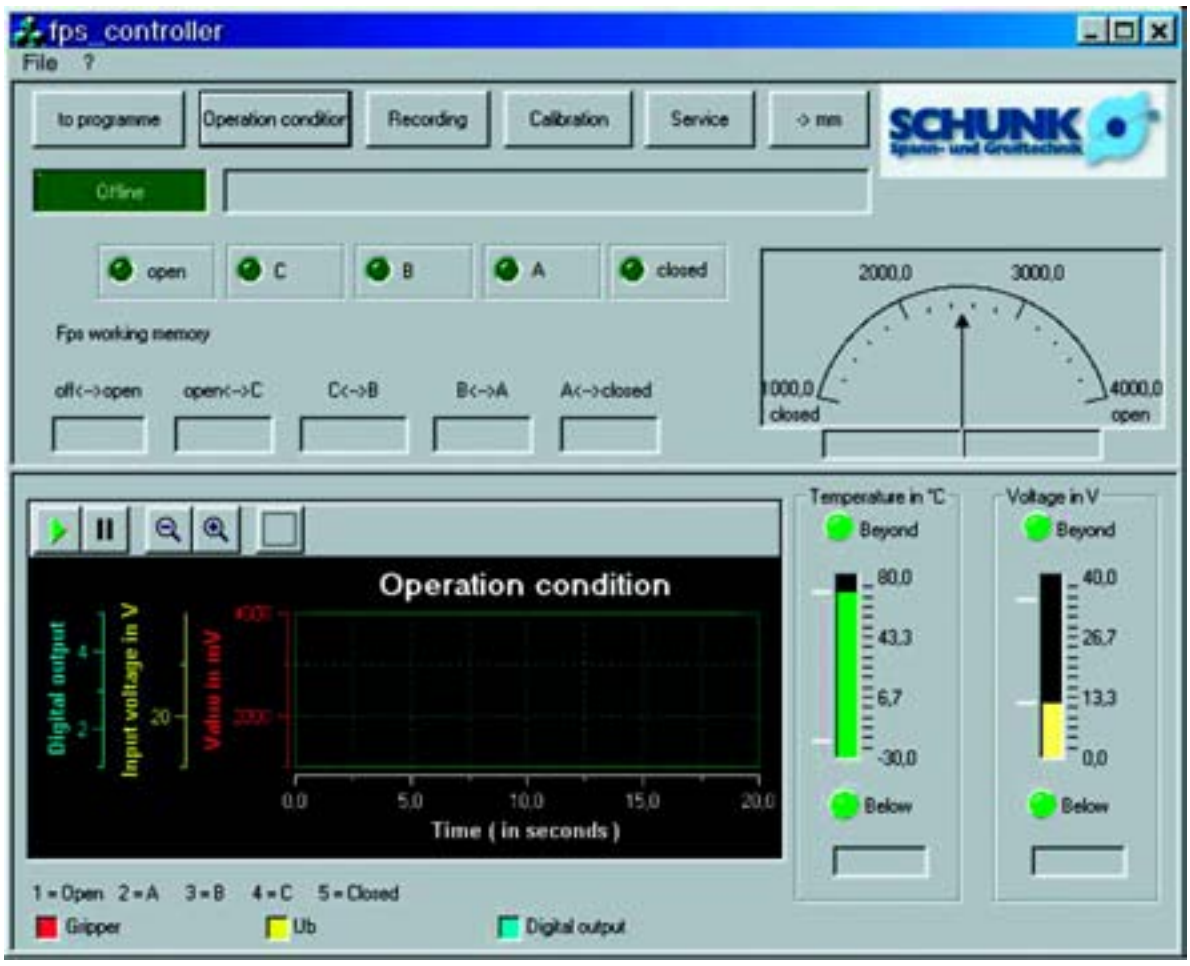
Software for FPS-F5/F5 T

The free FPS Controller software allows the user to monitor the FPS processor via an RS-232 interface.
As a result, the FPS system can be calibrated to stroke measurement, the position can be read out and the FPS processor can be programmed.
The FPS software also provides access to all auxiliary functions.

Technical data

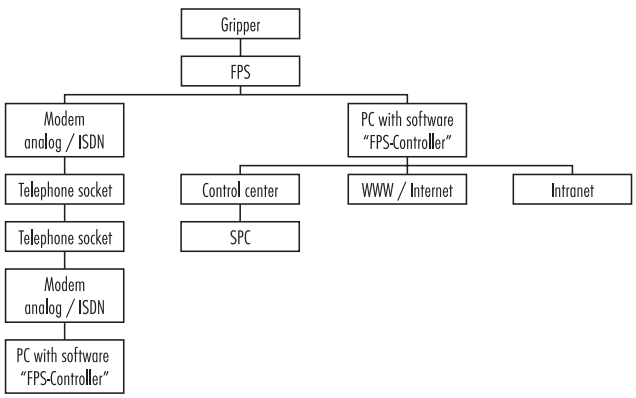
Description	Software
ID (CD)	0301806
Download	www.schunk.com
Operating system	MS Windows

Screenshot software



Set-up with laptop

Possible connection methods



Force Measuring System

The FMS force measuring system is used for measuring the gripping forces during the gripping process. This opens up numerous new possibilities both during start-up and in the production process.

Function description

The FMS intermediate jaws are screwed on between the gripper base jaw and the top jaw, which comes in contact with the workpiece. Gripping forces on the top jaw result in a flow of force through the FMS intermediate jaw. Intelligently arranged strain gauges inside the intermediate jaw react to the resulting deformation.
The FMS processor detects the change in the strain gauges and emits an analog signal indicating the force.

Your advantages and benefits

Simplest handling
via a control line that is directly connected to an SPC

Easy-to-perform measurement
of the actual, active gripping force

Result output via analog voltage value

Simple, linear relationship
between output voltage and gripping force

Simple zero balancing
with button or via control line

Integrated LCD
for visual monitoring

Easy assembly

Dirt-proof and waterproof
also for use in extreme ambient conditions.

Application example

1 **PGN-plus 100 AS**
2-Finger Parallel Gripper

2 **FMS-ZBA Intermediate Jaw with Sensor (active)**

3 **FMS-ZBP Intermediate Jaw without Sensor (passive)**

4 **Workpiece-specific Gripper Finger**

5 **Electronic Processor**

Area of application

Gripping force control
By sending control signals to the proportional valve that supplies the gripper, the SPC can influence the automatically measured gripping force.

Teaching robots
When gripping firmly fixed workpieces, the teaching of robots is simple and precise. Symmetrical gripping only takes place if the left- and right-hand gripper jaws apply the same force – thereby protecting the gripper and the robot.

Static grip force monitoring
Monitoring the grip force as the jaws close prevents the workpiece from being dropped when movement initiates. Overload protection by monitoring the max. permitted force, which can be triggered e.g. by an inadvertent increase in pressure, by off-center gripping or the incorrect positioning of the workpiece.
Preventive maintenance by replacing grippers in good time when there is a decline in the gripping force. This avoids unexpected manufacturing down-times.

Dynamic grip force monitoring
The effect of acceleration forces on the gripper jaws can be recorded and the motion sequence modified if necessary. Component monitoring during highly dynamic movements.

Measuring and teaching processes
Dimensional checking of the gripped component on the basis of an inserted reference component. If the component to be measured differs by more than ±0.05 mm from the reference component, teaching can take place.
If the difference is smaller, the precise dimensions can be measured accurately even to within ±0.002 mm.
Gauging the weight of the component by measuring the force due to weight of the component on the gripper fingers.

General information

For all PGN-plus and PZN-plus grippers
and gripper with identical finger connection diagram available as a standard product, and for other grippers on request (remember to ask about the delivery time!)

Conforms to CE
for absolute safety and long life during permanent operation

Warranty
24 months

Notes
The FMS force measuring system allows you to measure forces that act on the base jaw in the direction of the jaw movement. Up to three active (equipped with sensors) FMS-ZBA intermediate jaws are required for this purpose, depending on the application. The remaining base jaws are equipped with FMS-ZBP passive intermediate jaws (without sensors). Each FMS-ZBA active intermediate jaw requires an FMS-A1 electronic processor for evaluation, and an FMS-AK connection cable for connecting the electronic processor to an SPC or a control cabinet.

FMS Processor

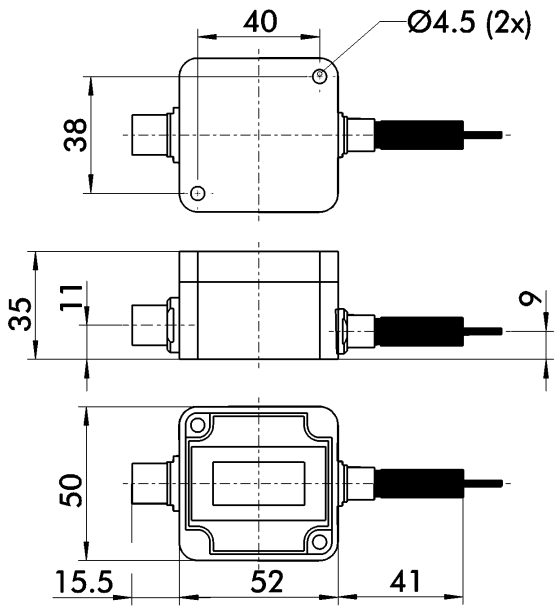
Each FMS-ZBA active intermediate jaw requires an electronic processor.
The FMS-A1 processor is required for intermediate jaw sizes up to 125, the FMS-A2 processor from size 160. The electronic processor is used to prepare, display and forward the measurement results. It is equipped with a housing connector and socket for connecting the force measuring jaw and the connection cable.

Technical data

Description		FMS-A1	FMS-A2
	ID	0301810	0301811
Measuring accuracy	[%]	3.0	5.0
Output signal		- 5VDC.. +5VDC	- 5VDC.. +5VDC
Type of voltage		DC	DC
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	18.0	18.0
Max. voltage	[V]	30.0	30.0
Nominal power current	[A]	0.0045	0.0045
IP class		67	67
Weight	[kg]	0.38	0.38

ⓘ The output voltage is linear to the forces occurring at the gripper fingers. The bandwidth of the output signal is not fully exploited by every active intermediate jaw. Zero balancing must be performed prior to measurement. The limit class A according to EN 61326 is complied with. The test to EN 61000-4-2, EN 61000-4-3, EN 61000-4-4 and EN 61000-4-6 was passed in conformity with EN 61326.

Main views



FMS-AK connection cable

The FMS-AK connection cable is used for connecting the electronic processor to a control cabinet or an SPS. A cable bushing is fitted on the side of the electronic processor, the other side is open.

Description	ID	Length
FMS-AK0500	**0301821**	5.0 m
FMS-AK1000	**0301822**	10.0 m
FMS-AK2000	**0301823**	20.0 m

FMS-ZBA/-ZBP

Force measuring jaws

The force measuring jaw is situated between the gripper base jaw and the top jaw. The gripping force is conducted through it. Active intermediate jaws measure these forces and transfer the measured value to the electronic processor. Active intermediate jaws are equipped with a 30 cm cable and a cable connector. Passive intermediate jaws act solely as a bridge for the forces.

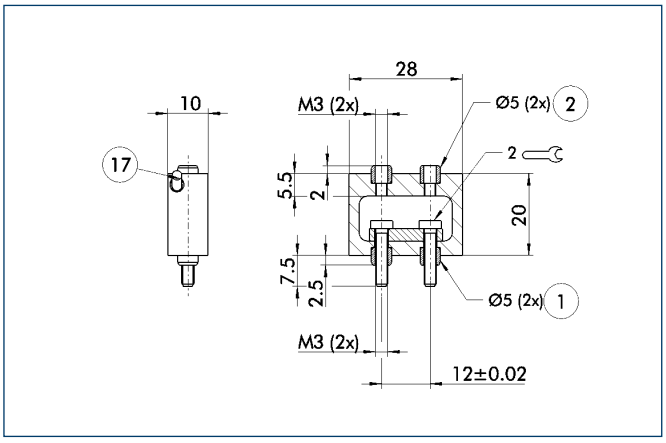
Definitions

ⓘ The range of measurement is the range in which the overall system has an accuracy of < 3 %. The overload range is the range in which the overall system has an accuracy of > 3 %. At the end of the overload range there is a risk of mechanical destruction of the intermediate jaw.

Technical data

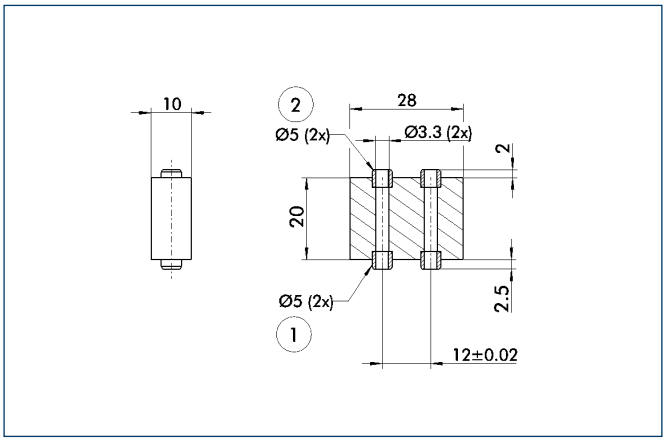
Description	ID	Start of range of measurement [N]	End of range of measurement [N]	End of overload range [N]	Weight [kg]	Min. ambient temperature [°C]	Max. ambient temperature [°C]
FMS-ZBA 50	0301830	0.0	145.0	290.0	0.03	-10.0	70.0
FMS-ZBP 50	0301831				0.02		
FMS-ZBA 64	0301832	0.0	260.0	520.0	0.04	-10.0	70.0
FMS-ZBP 64	0301833				0.025		
FMS-ZBA 80	0301834	0.0	430.0	860.0	0.056	-10.0	70.0
FMS-ZBP 80	0301835				0.035		
FMS-ZBA 100	0301836	0.0	685.0	1370.0	0.082	-10.0	70.0
FMS-ZBP 100	0301837				0.055		
FMS-ZBA 125	0301838	0.0	1120.0	2240.0	0.128	-10.0	70.0
FMS-ZBP 125	0301839				0.105		
FMS-ZBA 160	0301840	0.0	1600.0	3200.0	0.24	-10.0	70.0
FMS-ZBP 160	0301841				0.185		
FMS-ZBA 200	0301842	0.0	2325.0	4650.0	0.403	-10.0	70.0
FMS-ZBP 200	0301843				0.34		
FMS-ZBA 240	0301844	0.0	3700.0	7400.0	0.69	-10.0	70.0
FMS-ZBP 240	0301845				0.59		
FMS-ZBA 300	0301846	0.0	5150.0	10300.0	0.907	-10.0	70.0
FMS-ZBP 300	0301847				0.78		
FMS-ZBA 380	0301848	0.0	7100.0	14200.0	1.84	-10.0	70.0
FMS-ZBP 380	0301849				1.6		

FMS-ZBA 50



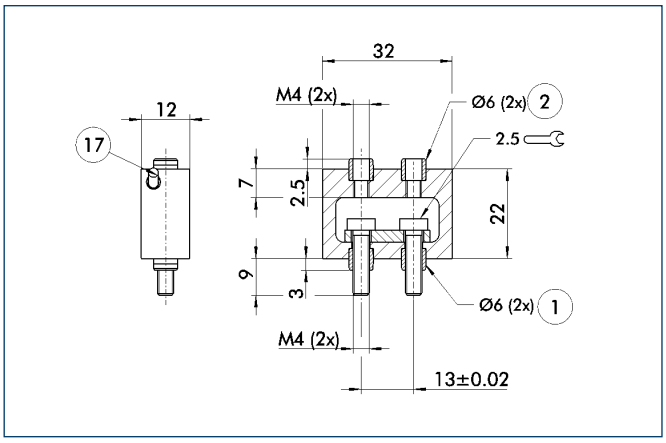
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 50



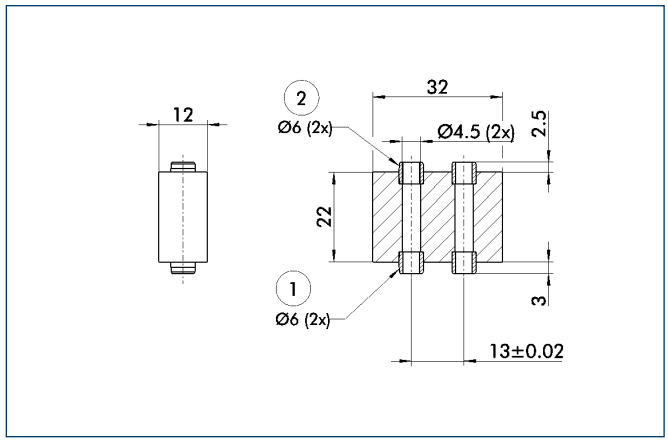
① Gripper connection
② Finger connection

FMS-ZBA 64



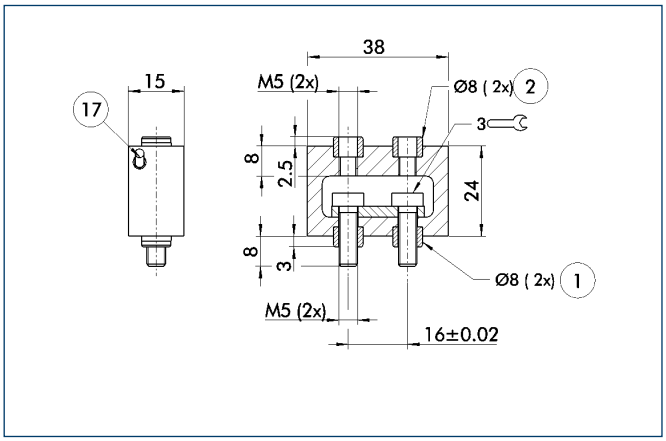
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 64



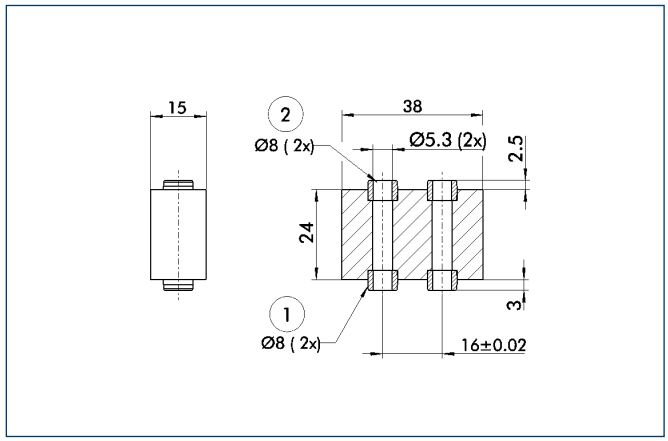
① Gripper connection
② Finger connection

FMS-ZBA 80



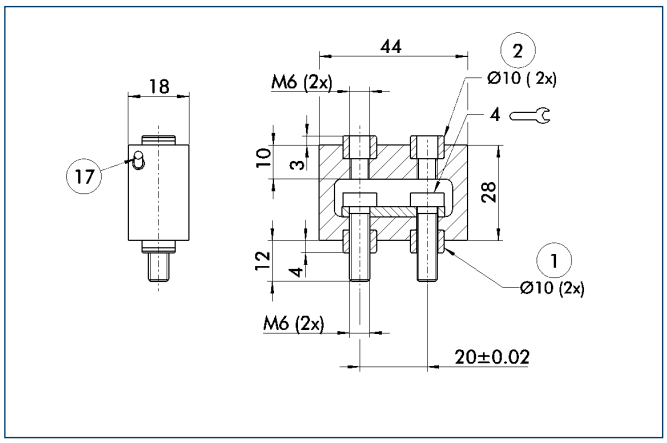
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 80



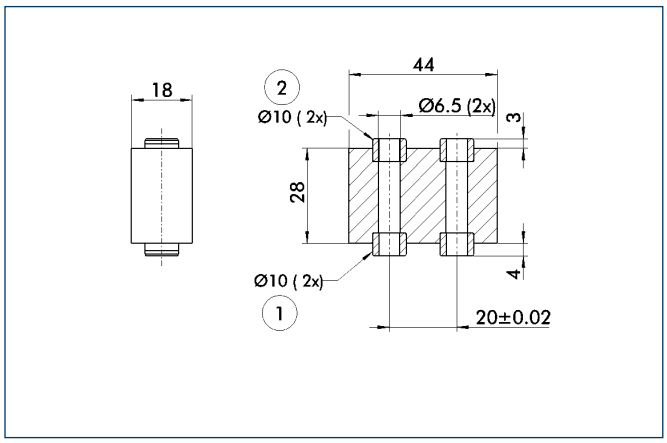
① Gripper connection
② Attachment connection

FMS-ZBA 100



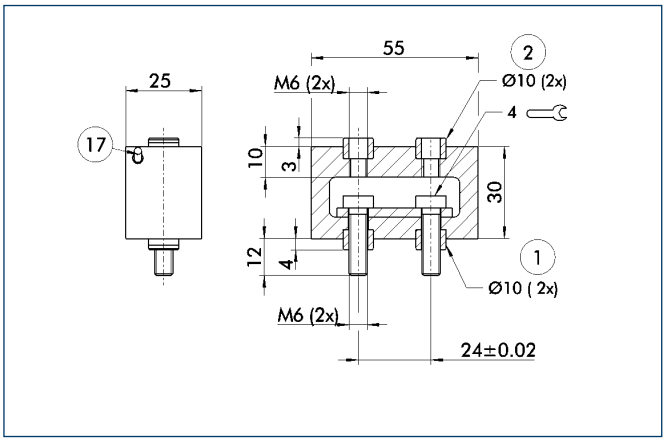
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 100



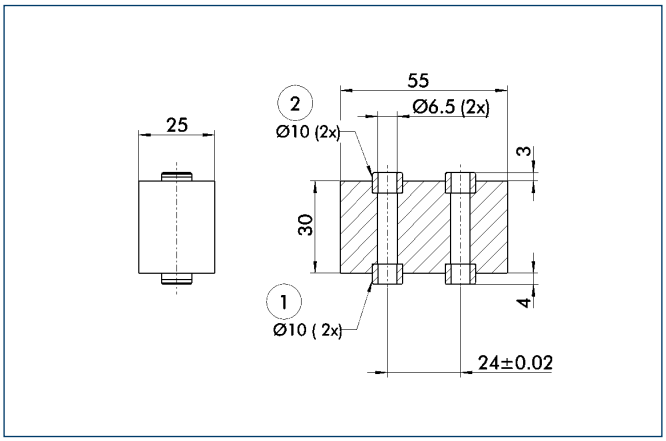
① Gripper connection
② Finger connection

FMS-ZBA 125



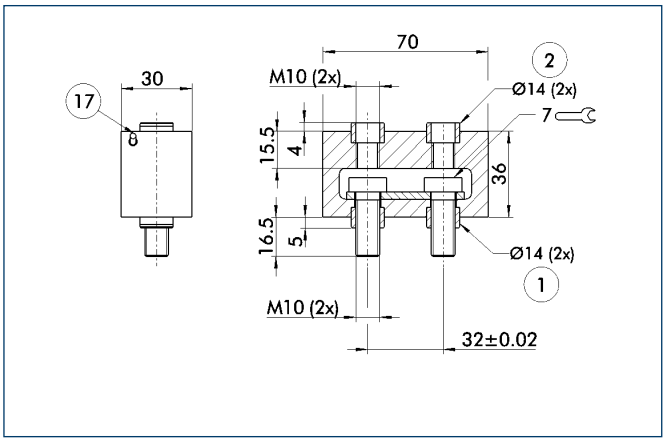
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 125



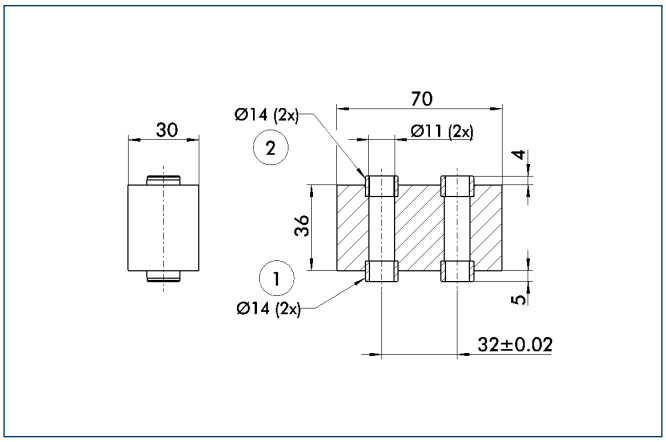
① Gripper connection
② Finger connection

FMS-ZBA 160



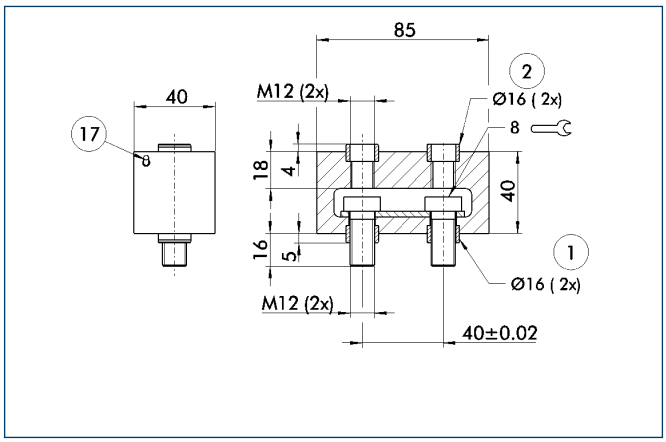
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 160



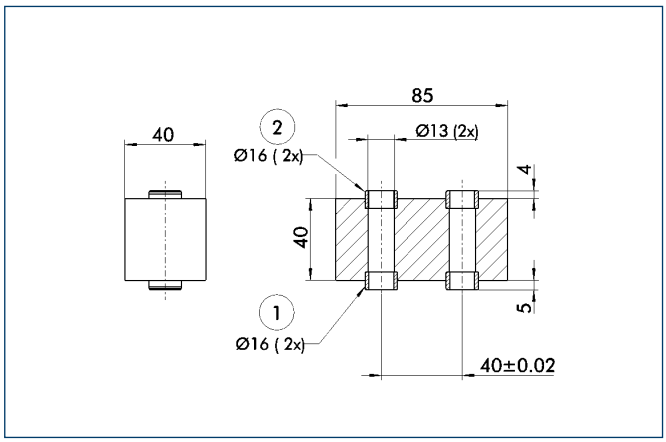
① Gripper connection
② Finger connection

FMS-ZBA 200



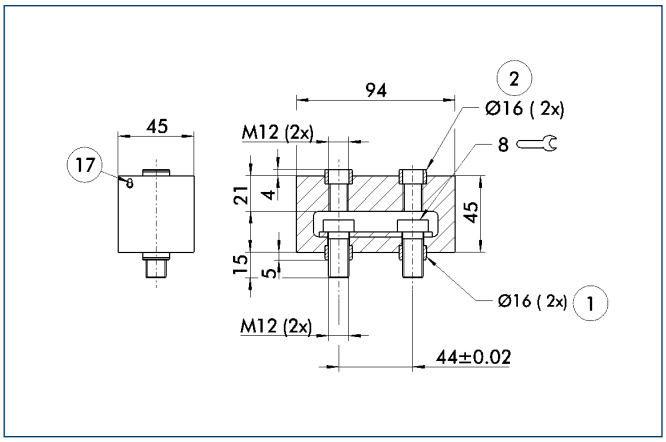
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 200



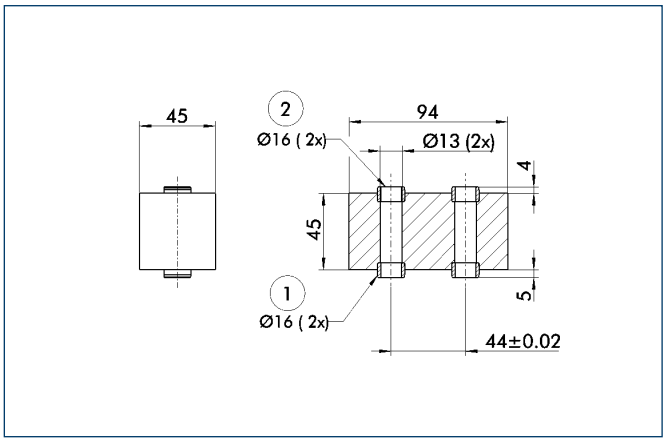
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBA 240



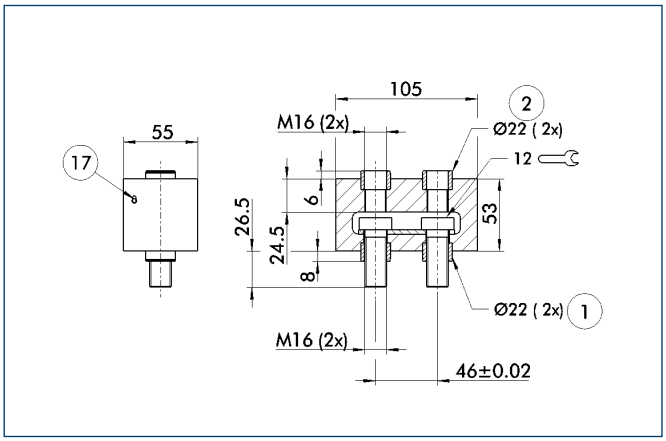
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 240



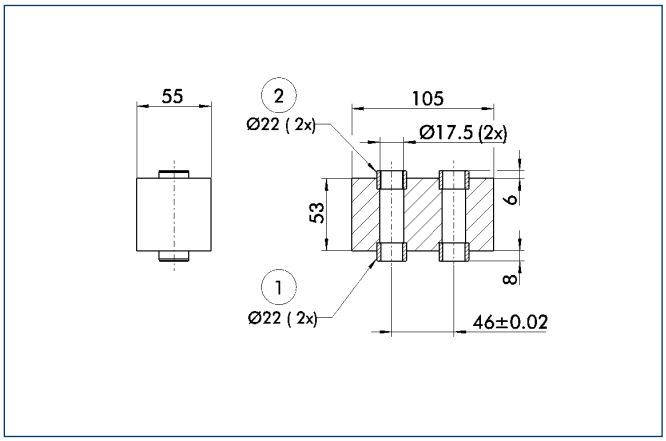
① Gripper connection
② Finger connection

FMS-ZBA 300



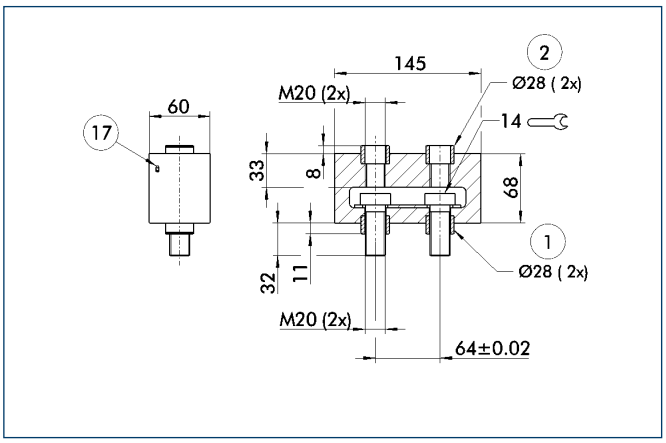
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 300



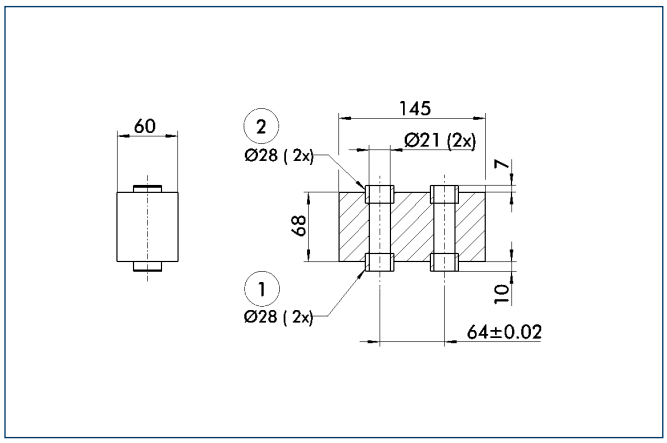
① Gripper connection
② Finger connection

FMS-ZBA 380



① Gripper connection
② Finger connection
⑰ Cable outlet

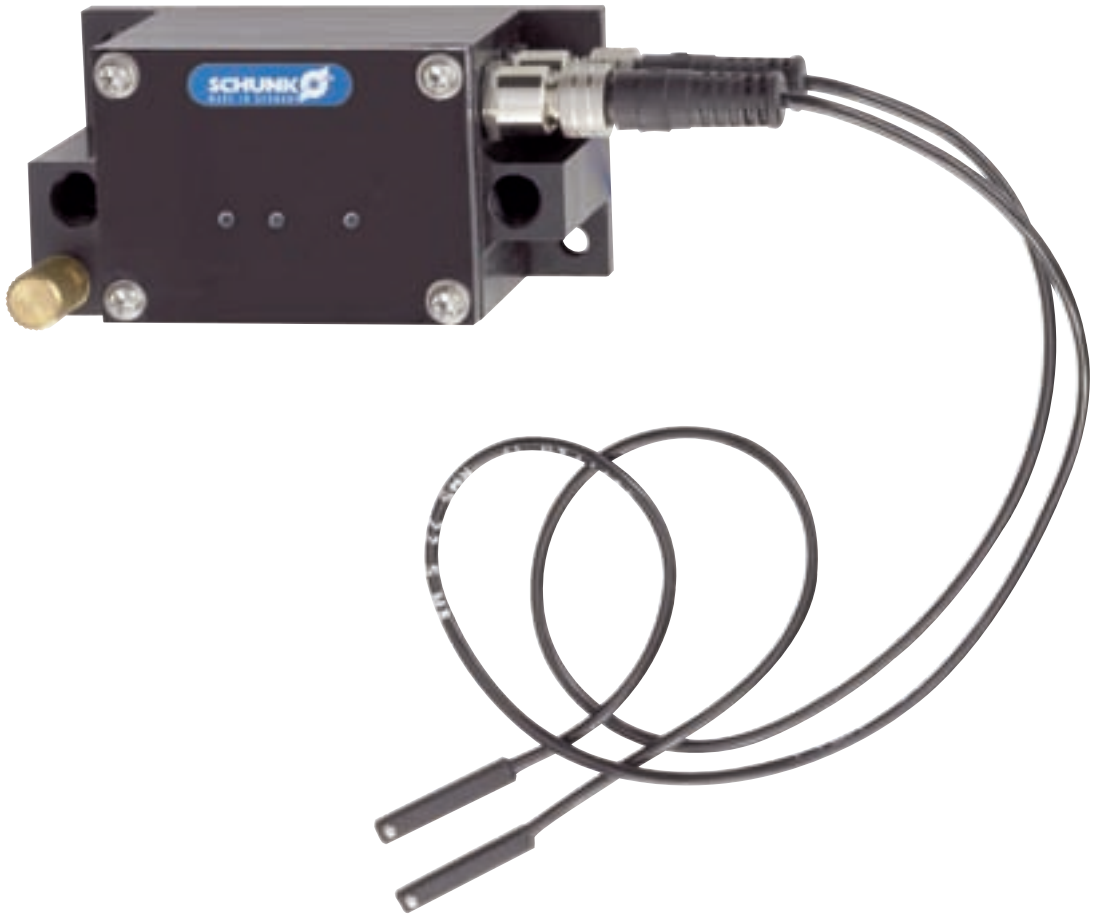
FMS-ZBP 380



① Gripper connection
② Finger connection

Wireless Sensors

Modular and expandable sensor system with no cable breakage, for end position monitoring of gripper modules.



Function description

The wireless sensor system consists of a transmitter (RSS-T2) with two mechanical switches and one receiver (RSS-R1) with an external antenna. The sensors monitor the stroke of the gripper jaw and report this to the transmitter. The latter transmits the information to the receiver, which is connected to the controller.

Your advantages and benefits

Wireless signal transmission
for monitoring with no cable breakage and for use in applications where no cables can be installed

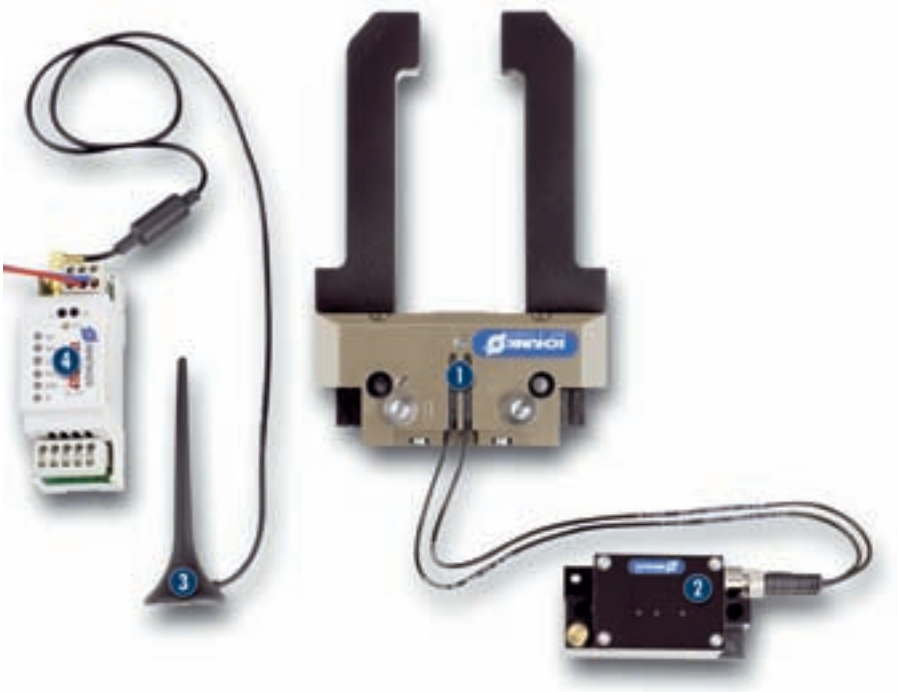
Connection monitoring (watchdog), connection quality monitoring and battery monitoring
for maximum controlled production and optimum system monitoring

Space-saving installation of the Reed switches in sensor groove
for fast and easy mounting, also as a replacement for inductive proximity switches on request

Life of battery in transmitter module
enables maintenance-free operation for typically more than six years

Simple teach function
for fast and easy functional commissioning

Application example



1 Reed switch RMS 22 in sensor groove of the 2-Finger Parallel Gripper PGN-plus

2 Transmitter module RSS-T2

3 Magnetic base antenna RSS-R-A

4 Receiver RSS-R1

Area of application

The new wireless RSS sensor system can be used anywhere where no cable feed is possible.
For example in milling or grinding machines, machining centers, or in rotating or close applications which are unsuitable for cable ducts. However, the RSS is also ideal for use in adverse ambient conditions and explosive areas.

General information

Typical transmission ranges:
approx. 10 meters in workshops
approx. 30 meters in the open

Protection class according to DIN 40050
IP 67 in connected condition for use in clean or dusty environments or in the event of contact with water. Contact with other media (cooling lubricants, acidic or caustic substances, etc.) frequently does not impair the function, but this cannot be guaranteed by SCHUNK.

Service life of transmitter battery:
Min. 6 years at 2 transmissions/second
Min. 8 years at 1 transmission/second
Up to 10 years at lower cycles

Power supply, receiver
24 V DC, 500 mA output

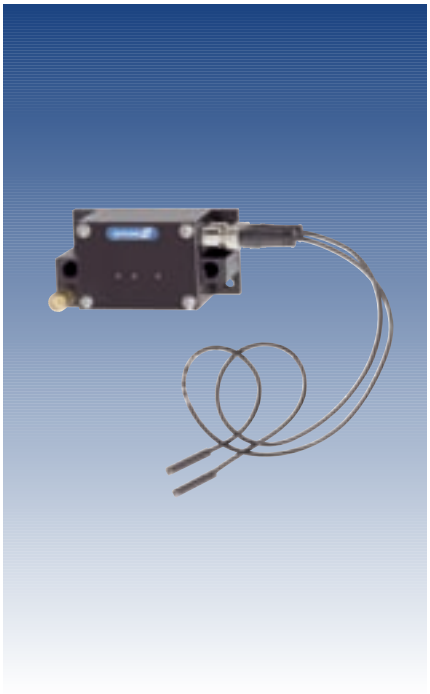
Life of transmitter battery
Min. 6 years at 2 transmissions / second
Min. 8 years at 1 transmission / second

Warranty
24 months

Notes

Sheet steel prevents propagation of radio waves.
The radio energy transmitted by the RSS is a factor of 70,000 below that of DECT telephones and a factor of 30,000 below that of GSM mobile phones.

RSS-T2



RSS-T2 Transmitter

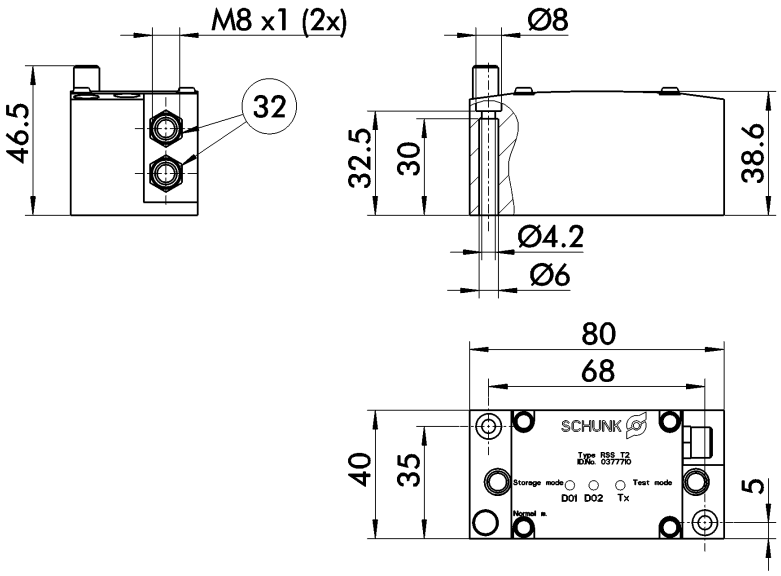
The RSS-T2 transmitter can transmit the signals from 2 switches. We recommend the use of RMS 22 or RMS 80.
Alternative switches can also be used. However, they must not require energy supply.

Technical data

Transmitter module

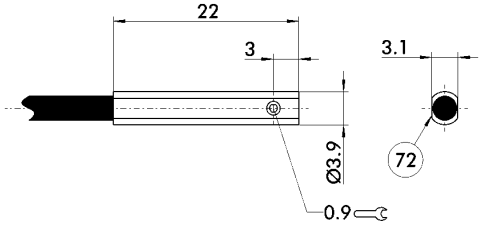
Description		RSS-T2
	ID	0377710
Transmitting frequency	[MHz]	868.3
Transmitter connection		2x M8
Integrated power supply		Lithium battery
Typical life of the battery	[Years]	8
Housing material		PUR
Log		Enocean standard
Tightness		IP 67
Min. ambient temperature	[°C]	0
Max. ambient temperature	[°C]	50
Weight	[kg]	0.16

Main views



(32) flange socket for sensor feed-through

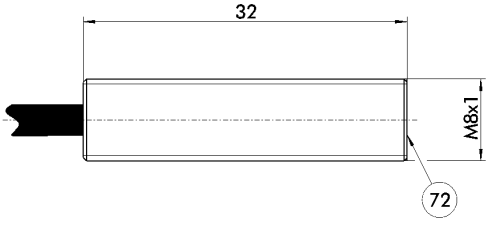
RMS 22 sensor



(72) Active sensor surface

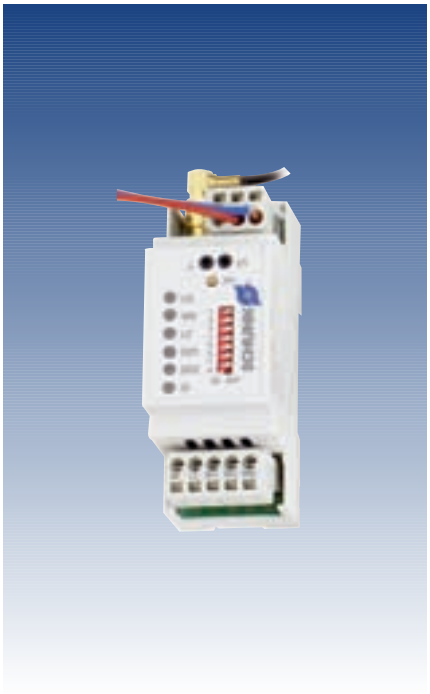
Further information on the RMS sensor can be found in the chapter on „Reed Switches“

RMS 80 sensor



(72) Active sensor surface

Further information on the RMS sensor can be found in the chapter on „Reed Switches“



RSS-R1 Receiver

The RSS-R1 receiver can receive the signals of the RSS-T2 transmitter.
One receiver and one antenna are needed for each transmitter.

Technical data

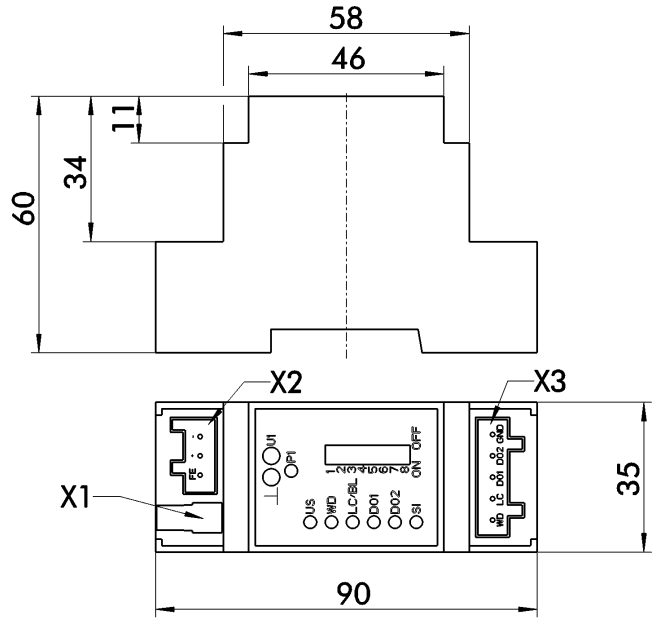
Receiver

Description		RSS-R1
	ID	0377700
Receiving frequency	[MHz]	868.3
Power supply		DC
Nominal voltage	[V]	24
Min. voltage	[V]	10
Max. voltage	[V]	30
Max. current on contact per channel	[mA]	500
Housing material		PUR
Log		Enocean standard
Short-circuit-proof		Yes
Tightness		IP 20
Fastening		Top hat rail
Min. ambient temperature	[°C]	0
Max. ambient temperature	[°C]	50

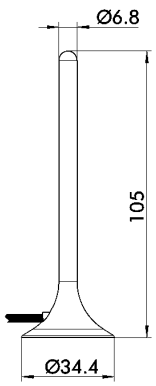
Antenna

Description		RSS-R-A
	ID	0377730
Assembly		Magnetic base
Cable length	[m]	2
Connection to cable end		SMA Mini
Utilization		Connection to receiver RSS-R1

Main views



RSS-R-A antenna



Fluidic Monitoring System

Pneumatic monitoring for three positions. For systems that can be monitored by means of conventional sensors.

Function description

The PA3 returns the information „open“, „gripped“ or „closed“ to the controller via a single, additional pneumatic line. The pneumatic actuator only has to be modified with two pneumatic connections for this purpose. The PA3 is started up via a push button switch and a potentiometer. The unit is automatically taught during a set-up cycle.

Your advantages and benefits

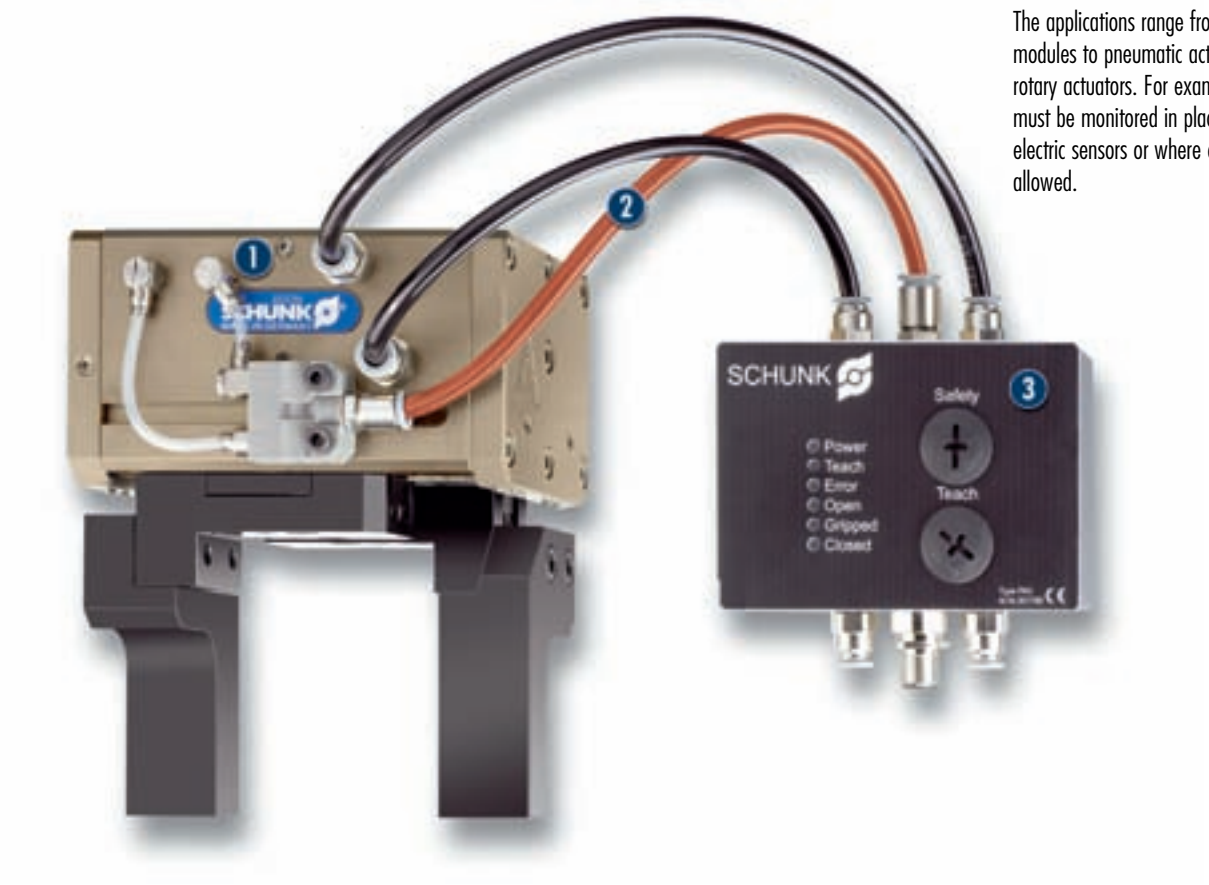
Position scan without electric sensors
for diverse applications in new environments

An additional pneumatic line as an information hose
therefore only slight modification of the gripper necessary, also possible as retrofitting of existing components

Simple start-up
via button and potentiometer

Self teach-in function
for automatic teaching of the monitoring system during the set-up cycle

Application example



Area of application

The applications range from pneumatic gripper modules to pneumatic actuators, such as cylinders or rotary actuators. For example, when gripper modules must be monitored in places that are not accessible by electric sensors or where electric sensors are not allowed.

1 **2-Finger Long-stroke Gripper PFH 30**
with special bores for the PA 3

2 **Additional information source**

3 **PA 3-Electronic system**

General information

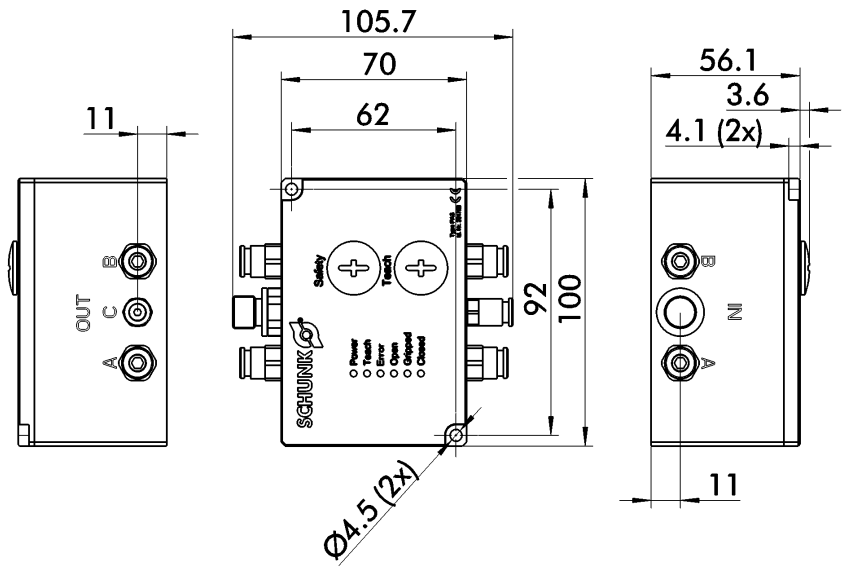
Power supply for electronics
24 V DC

Warranty
24 months

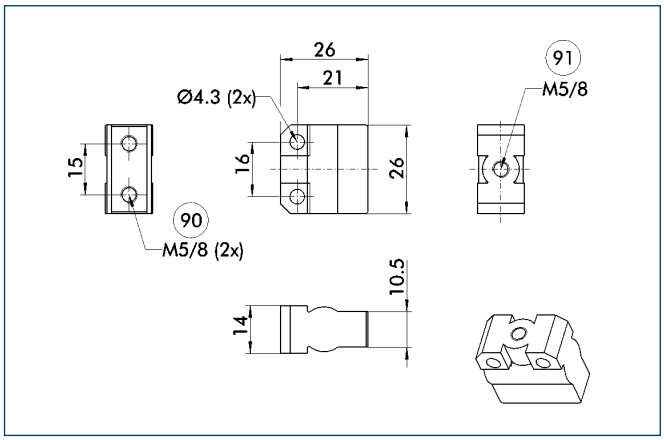
Technical data

Description		PA3
	ID	0301780
IP class		67
Type of voltage		DC
Nominal voltage	[V]	24
Min. voltage	[V]	21.6
Max. voltage	[V]	26.4
Nominal power current	[mA]	30
Maximum current	[mA]	130
Weight	[kg]	1.13
Hose connection	[mm]	6
Min. nominal pressure	[bar]	3
Max. pressure	[bar]	10
Permissible media		compressed air
Typical switching time	[s]	1

Main views



AND valve



(90) input
(91) Output

Two additional bore holes in the piston chamber of the monitored components are connected with the AND valve. The resulting pressure signal is sent to the PA3.

Finger Blanks and Intermediate Jaws

Gripper Jaws

of aluminum or steel for customized subsequent machining

Function description

Finger and jaw blanks already feature the mechanical interface to the gripper.
he customer only needs to machine the blank to the specific workpiece geometry.

Your advantages and benefits

Matching finger blanks
for common gripper types

Easy mounting
thanks to standardized drilling pattern

High replacement accuracy
thanks to centering

Clamping contour
can be machined rapidly and easily

Rapid availability

Aluminum finger blanks
of high-strength aluminum alloy

Steel finger blanks
of hardenable steel

Application example

Area of application

variable clamping tasks, for sensitive workpieces

1 KTG 2-Finger Parallel Gripper

2 RB Finger Blanks for KTG

General information

Scope of delivery

including screws

Notes

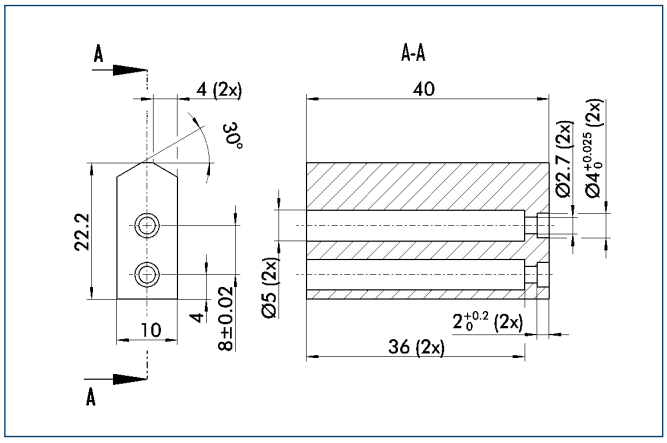
To suit your special requirements, we will be glad to supply low-cost special solutions, workpiece-specific gripper fingers, attachment plates and complete units. Please ask for details.

ABR-plus/SBR-plus

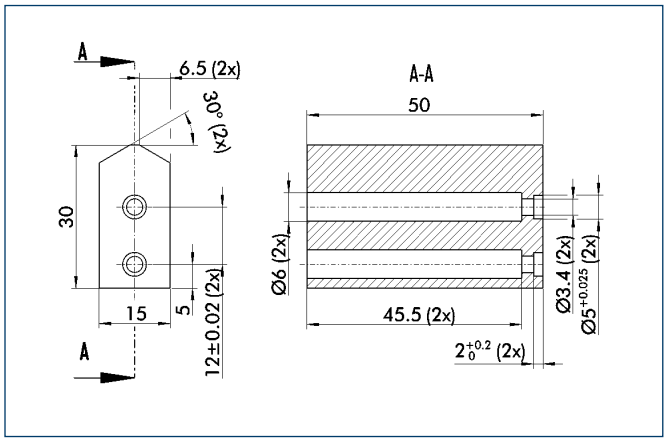
Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR-plus 40	0300008	1	0.02	Aluminum
SBR-plus 40	0300018	1	0.055	16 MnCr 5
ABR-plus 50	0300009	1	0.045	Aluminum
SBR-plus 50	0300019	1	0.125	16 MnCr 5
ABR-plus 64	0300010	1	0.093	Aluminum
SBR-plus 64	0300020	1	0.26	16 MnCr 5
ABR-plus 80	0300011	1	0.162	Aluminum
SBR-plus 80	0300021	1	0.455	16 MnCr 5
ABR-plus 100	0300012	1	0.358	Aluminum
SBR-plus 100	0300022	1	1.004	16 MnCr 5
ABR-plus 125	0300013	1	0.638	Aluminum
SBR-plus 125	0300023	1	1.788	16 MnCr 5
ABR-plus 160	0300014	1	1.291	Aluminum
SBR-plus 160	0300024	1	3.45	16 MnCr 5
ABR-plus 200	0300015	1	2.191	Aluminum
SBR-plus 200	0300025	1	6.144	16 MnCr 5
SBR-plus 240	0300027	1	7.98	16 MnCr 5
ABR-plus 240	0300017	1	2.84	Aluminum
ABR-plus 300	0300016	1	3.236	Aluminum
SBR-plus 300	0300026	1	9.072	16 MnCr 5

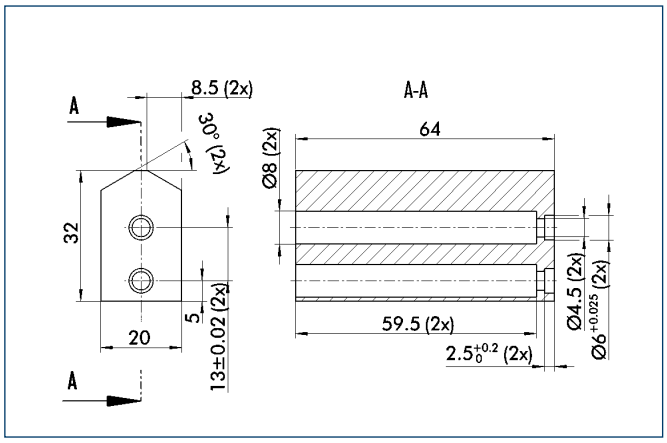
ABR-plus/SBR-plus 40



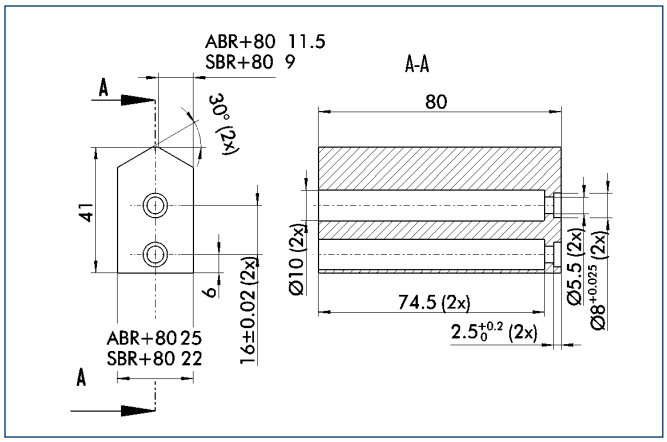
ABR-plus/SBR-plus 50



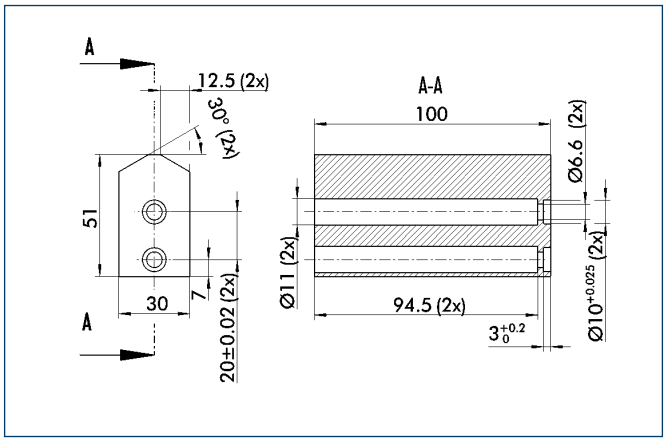
ABR-plus/SBR-plus 64



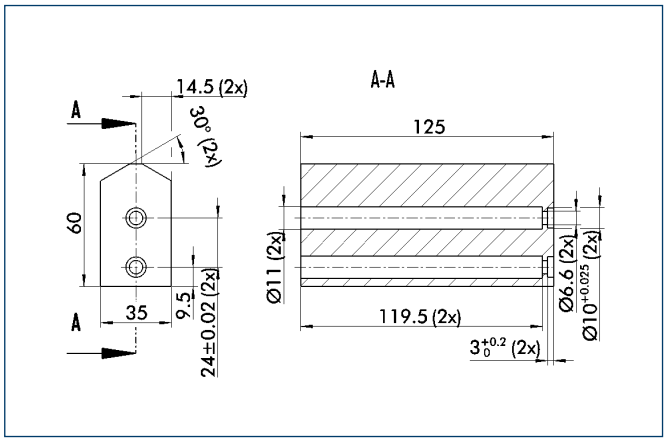
ABR-plus/SBR-plus 80



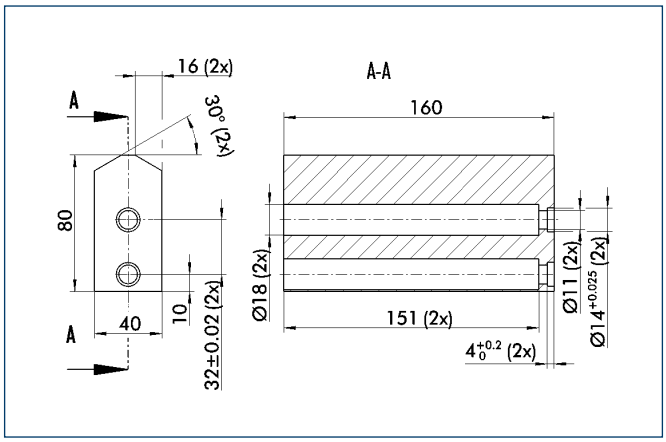
ABR-plus/SBR-plus 100



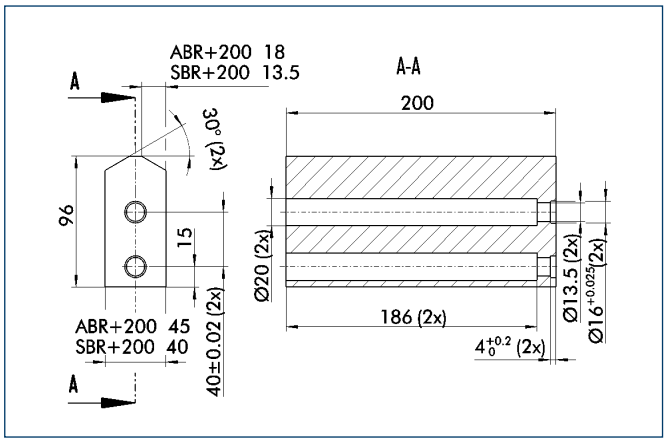
ABR-plus/SBR-plus 125



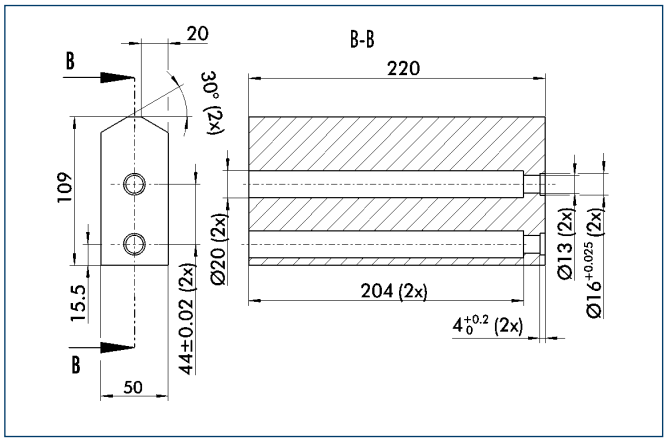
ABR-plus/SBR-plus 160



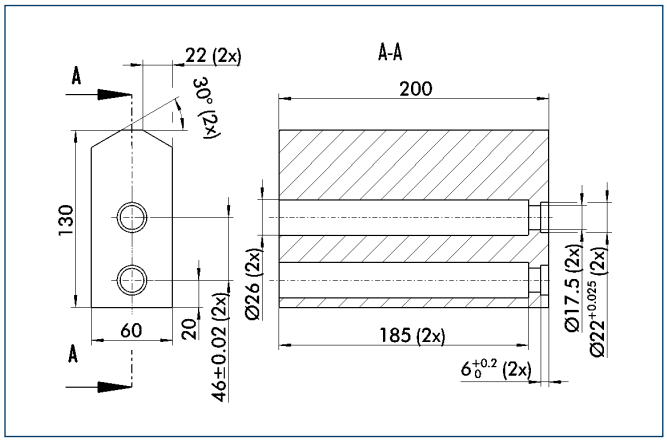
ABR-plus/SBR-plus 200



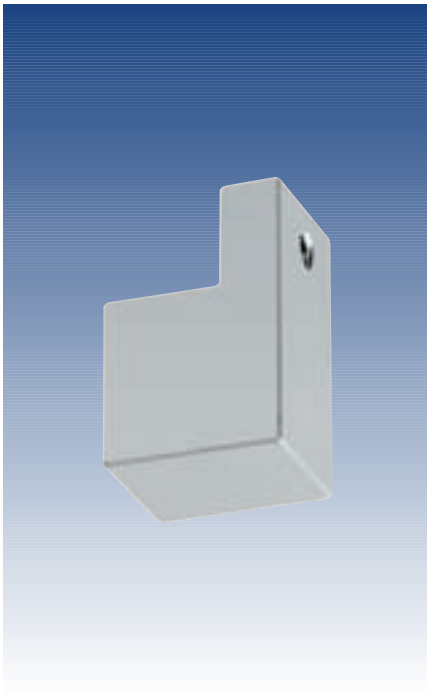
ABR-plus/SBR-plus 240



ABR-plus/SBR-plus 300



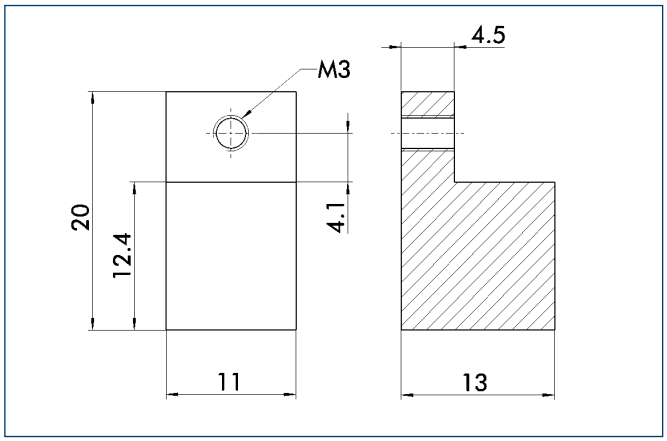
ABR for MPG



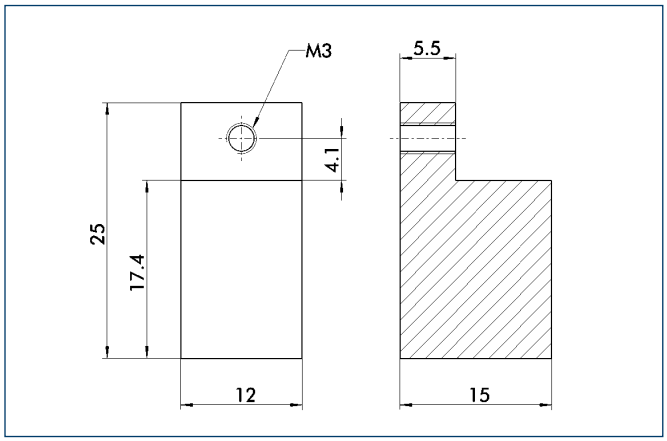
Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 20	0340210	2	0.006	Aluminum
ABR 25	0340211	2	0.008	Aluminum
ABR 32	0340212	2	0.016	Aluminum
ABR 40	0340213	2	0.031	Aluminum
ABR 50	0340214	2	0.068	Aluminum
ABR 64	0340215	2	0.12	Aluminum

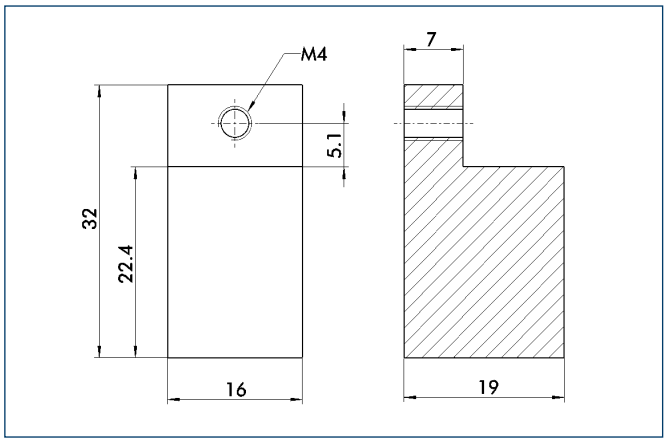
ABR 20



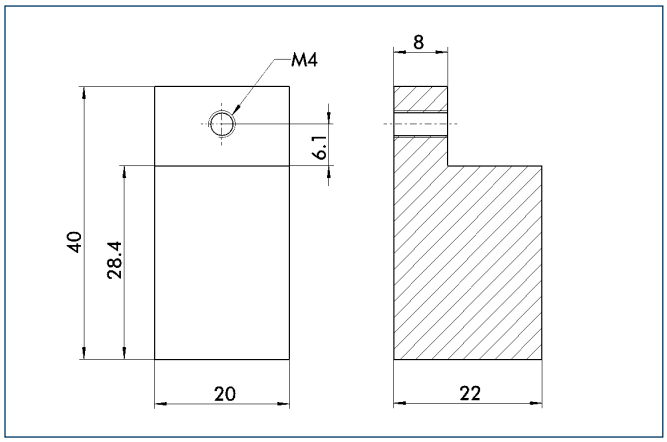
ABR 25



ABR 32

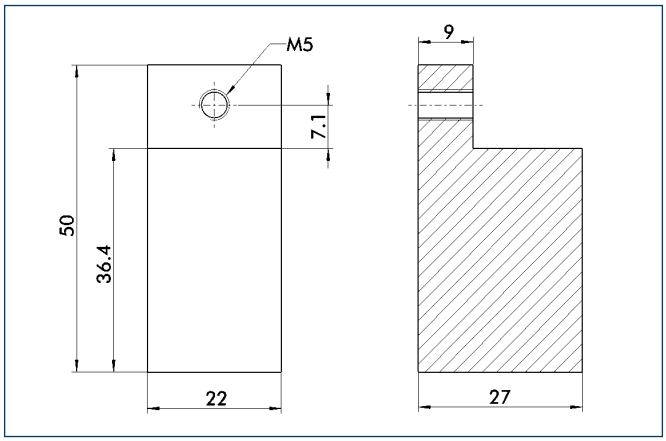


ABR 40

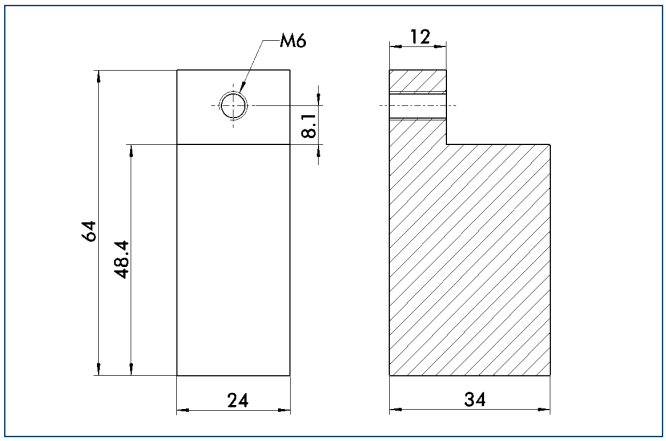


ABR for MPG

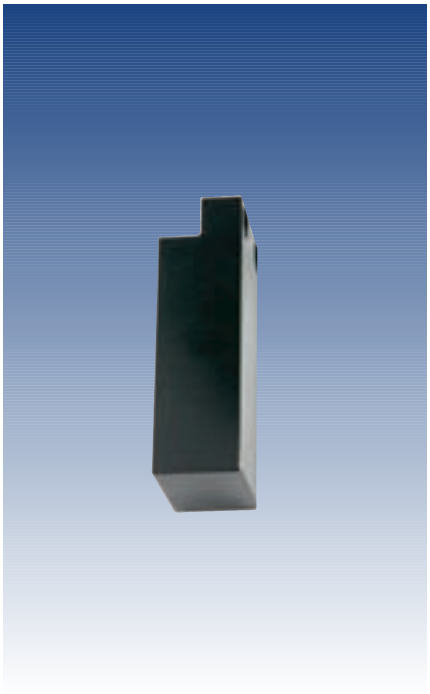
ABR 50



ABR 64



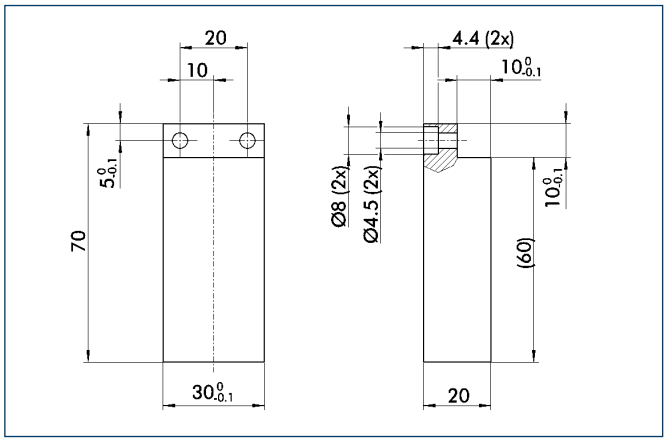
ABR for PG



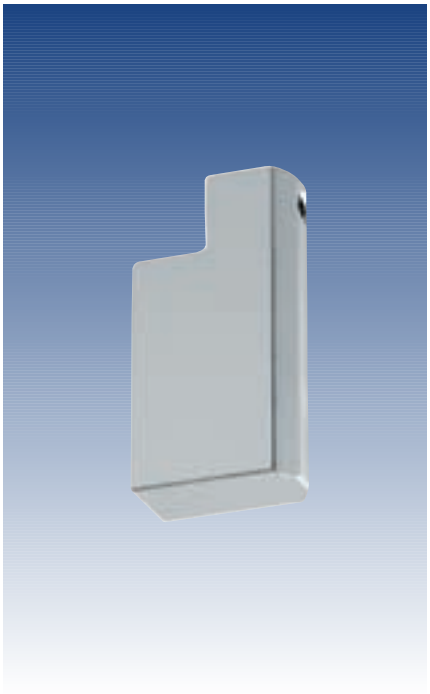
Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR-PG 70	0307850	1	0.12	Aluminum

ABR 70 for PG 70



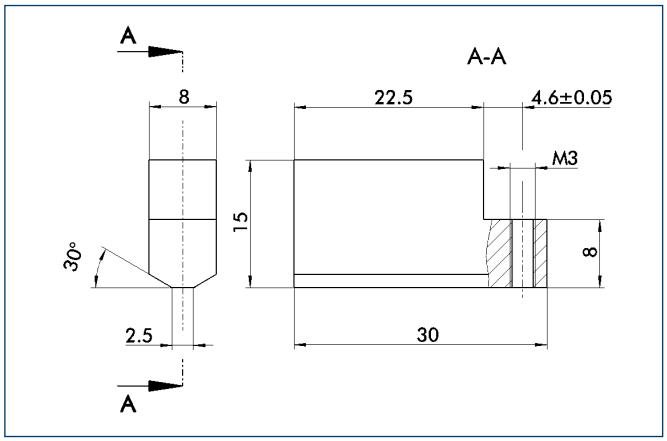
ABR for MPZ



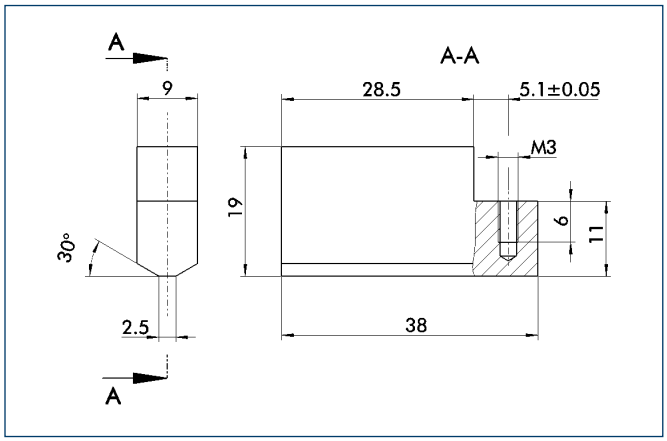
Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 30	**0340519**	3	0.08	Aluminum
ABR 38	**0340529**	3	0.015	Aluminum
ABR 45	**0340539**	3	0.024	Aluminum

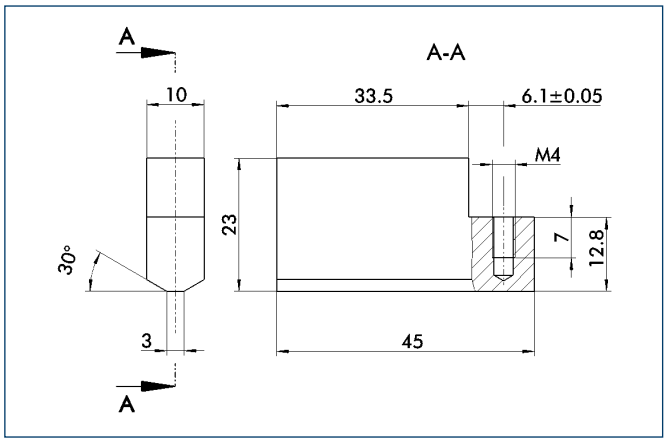
ABR 30



ABR 38



ABR 45

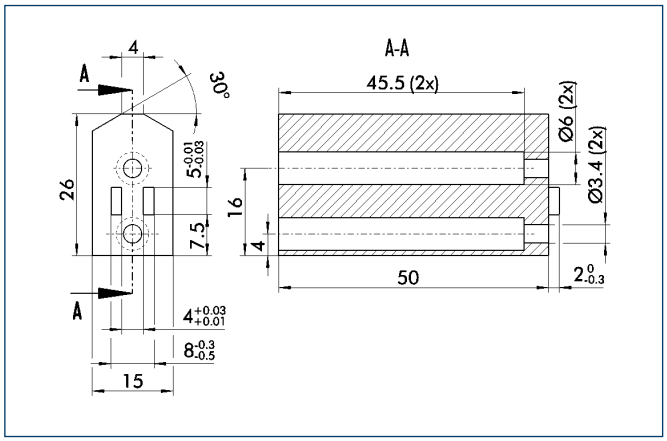


ABR for PGN/PZN

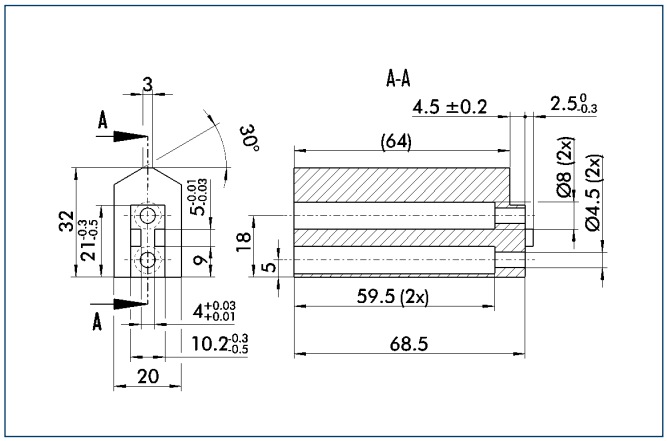
Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 50	0300714	1	0.045	Aluminum
SBR 50	0300715	1	0.15	16 MnCr 5
ABR 64	0300725	1	0.093	Aluminum
SBR 64	0300734	1	0.26	16 MnCr 5
ABR 80	0300726	1	0.162	Aluminum
SBR 80	0300735	1	0.455	16 MnCr 5
ABR 100	0300727	1	0.358	Aluminum
SBR 100	0300736	1	1.004	16 MnCr 5
ABR 125	0300728	1	0.638	Aluminum
SBR 125	0300737	1	1.788	16 MnCr 5
ABR 160	0300729	1	1.291	Aluminum
SBR 160	0300738	1	3.45	16 MnCr 5
ABR 200	0300751	1	2.191	Aluminum
SBR 200	0300739	1	6.144	16 MnCr 5
ABR 300	0300752	1	3.236	Aluminum
SBR 300	0300753	1	9.072	16 MnCr 5

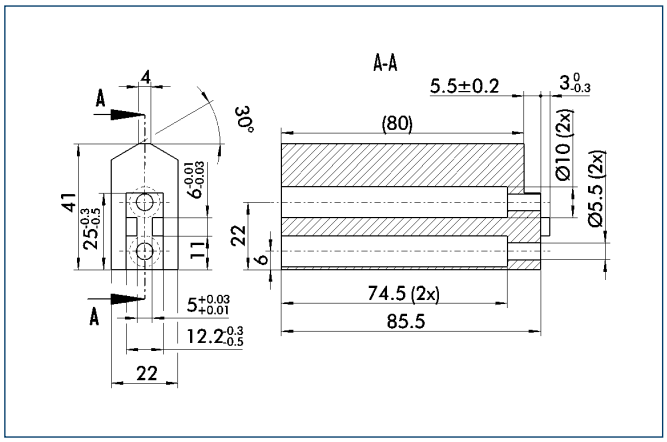
ABR 50/SBR 50



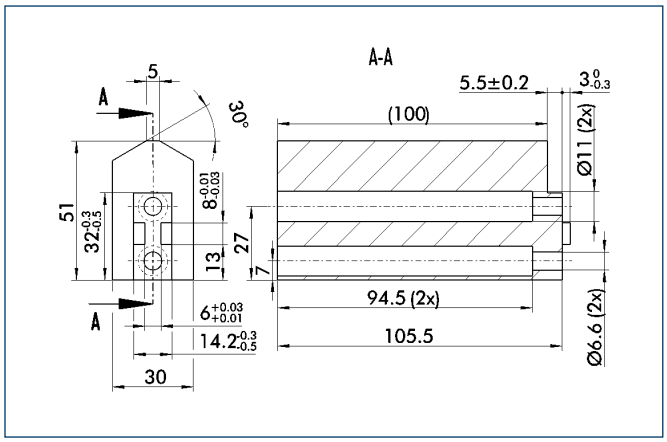
ABR 64/SBR 64



ABR 80/SBR 80

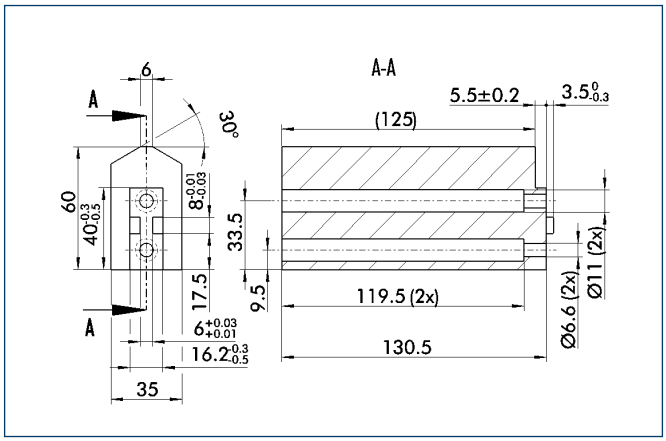


ABR 100/SBR 100

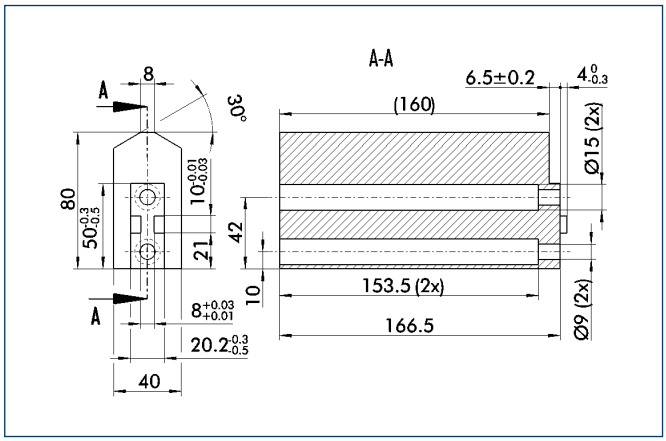


ABR for PGN/PZN

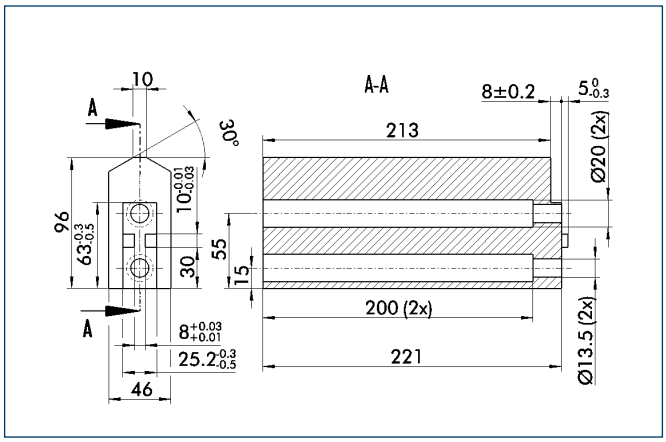
ABR 125/SBR 125



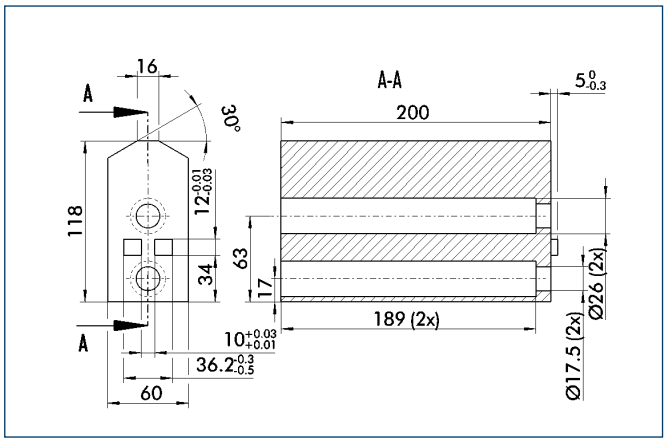
ABR 160/SBR 160



ABR 200/SBR 200



ABR 300/SBR 300

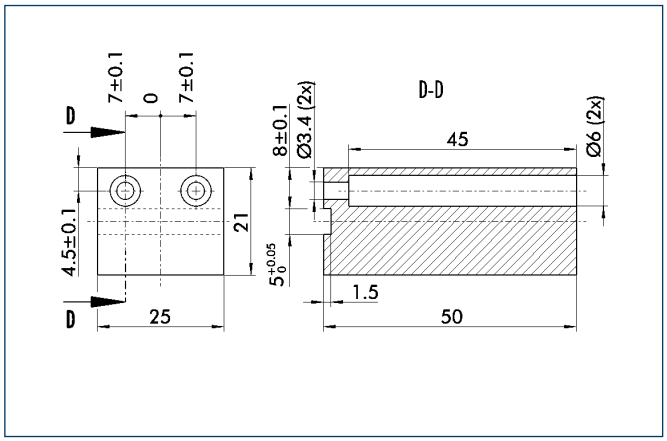


RB for KTG

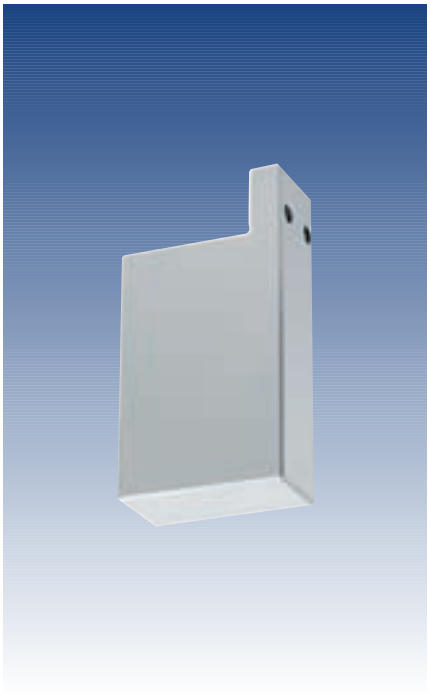
Technical data

Description	ID	Items per ID	Weight [kg]	Material
RB 50	0300280	2	0.065	Aluminum

RB 50



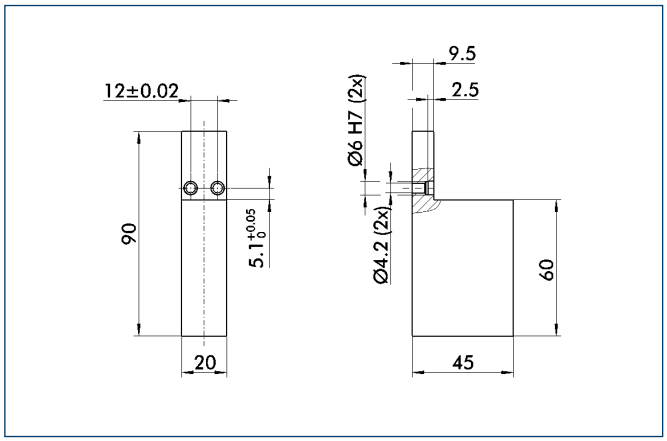
RB for KGG



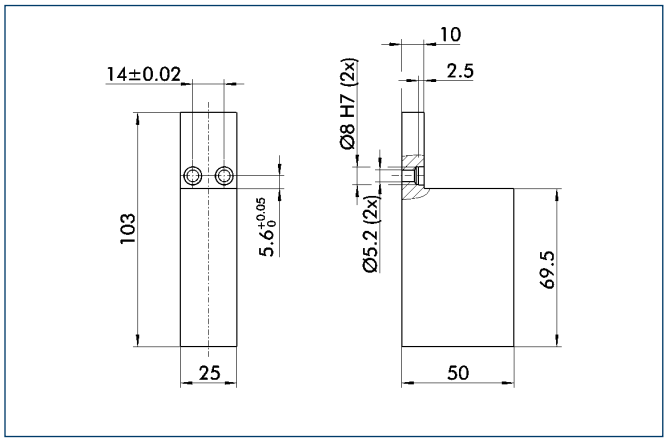
Technical data

Description	ID	Items per ID	Weight [kg]	Material
RB 80	**0303089**	2	0.16	Aluminum
RB 100	**0303090**	2	0.26	Aluminum
RB 140	**0303091**	2	0.467	Aluminum
RB 220	**0300286**	2	1.354	Aluminum
RB 280	**0300287**	2	3.102	Aluminum

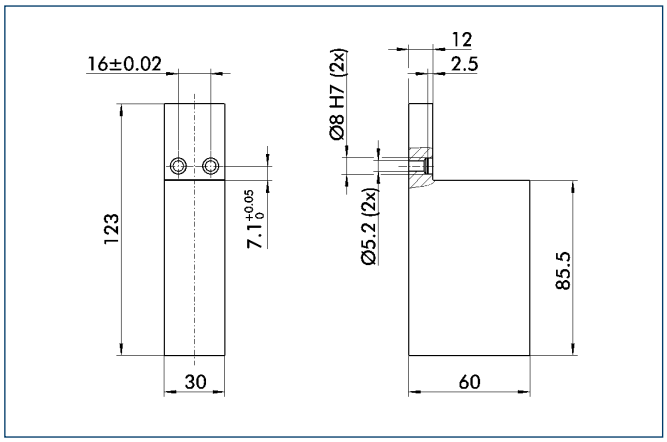
RB 80



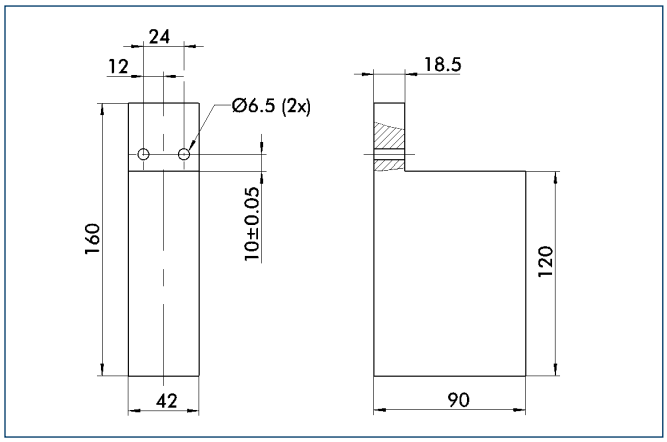
RB 100



RB 140

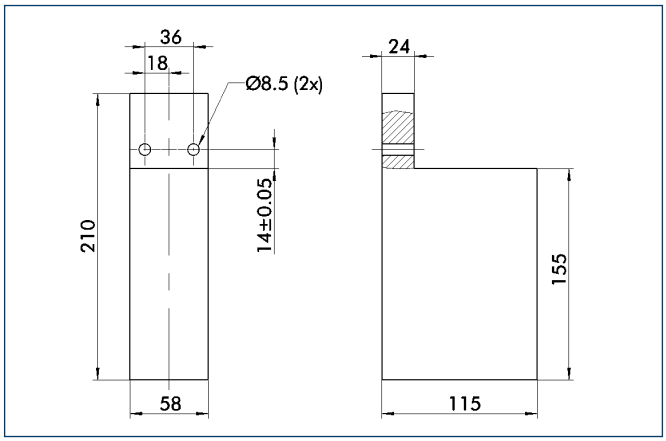


RB 220

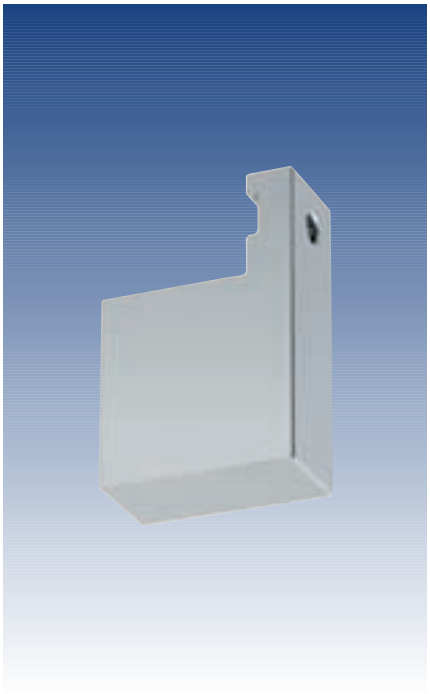


RB for KGG

RB 280



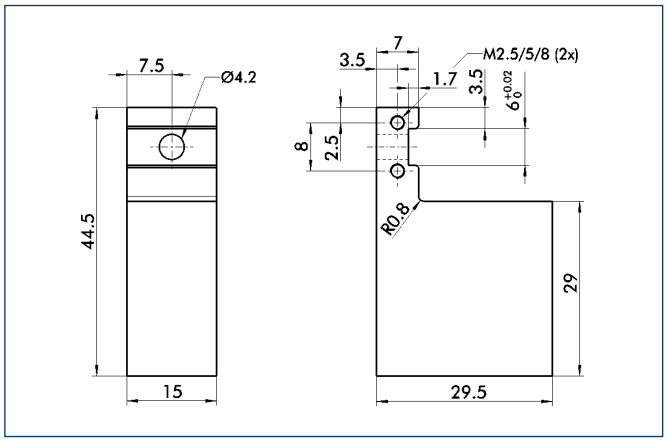
RB for DKG-RR



Technical data

Description	ID	Items per ID	Weight [kg]	Material
RB 44	0300281	2	0.038	Aluminum

RB 44

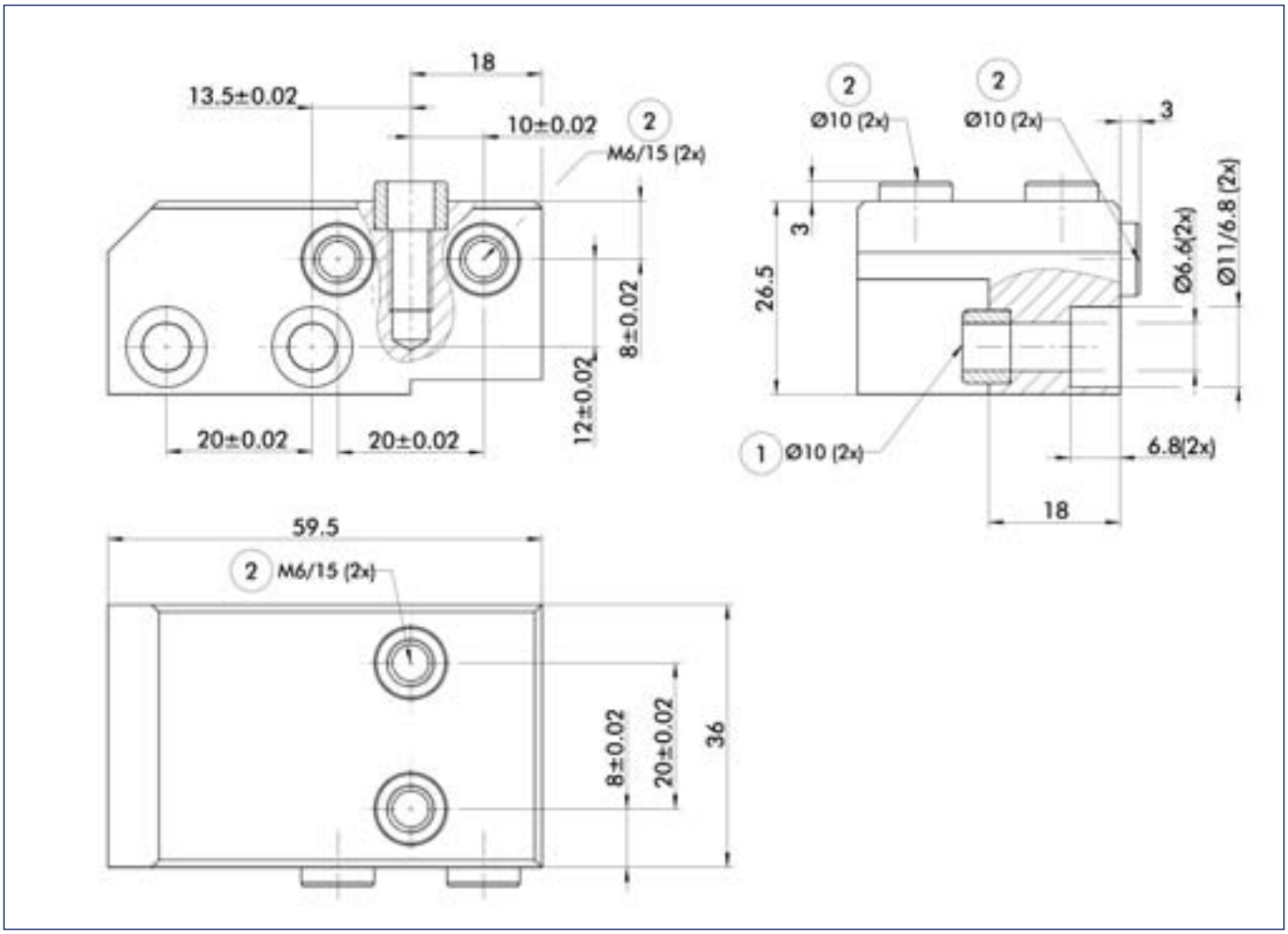


ZBH for PFH

Technical data

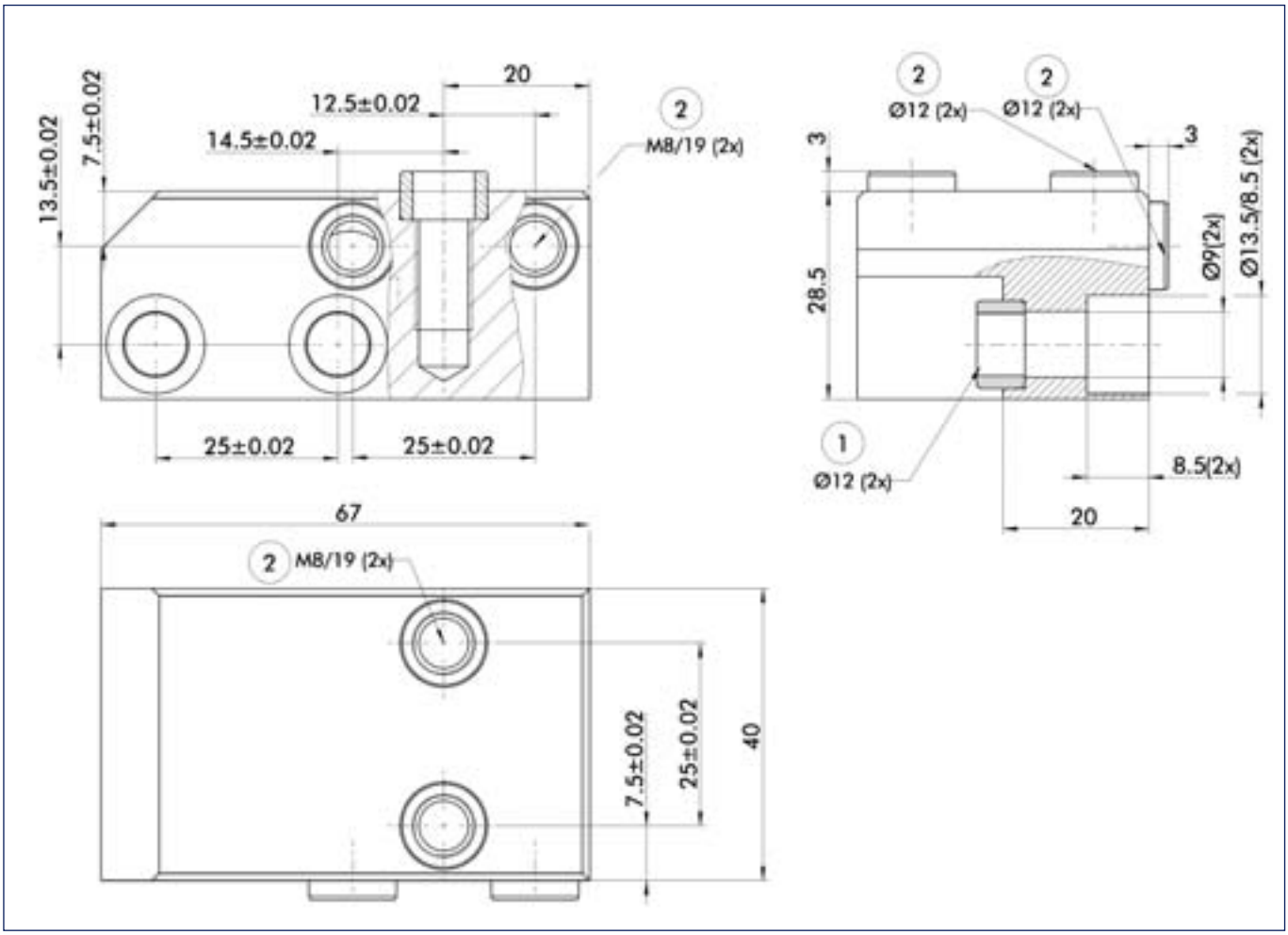
Description	ID	Items per ID	Weight [kg]	Material
ZBH 30	0300220	2	0.66	16 MnCr 5
ZBH 40	0300221	2	0.89	16 MnCr 5
ZBH 50	0300222	2	1.64	16 MnCr 5

ZBH 30 for PFH 30



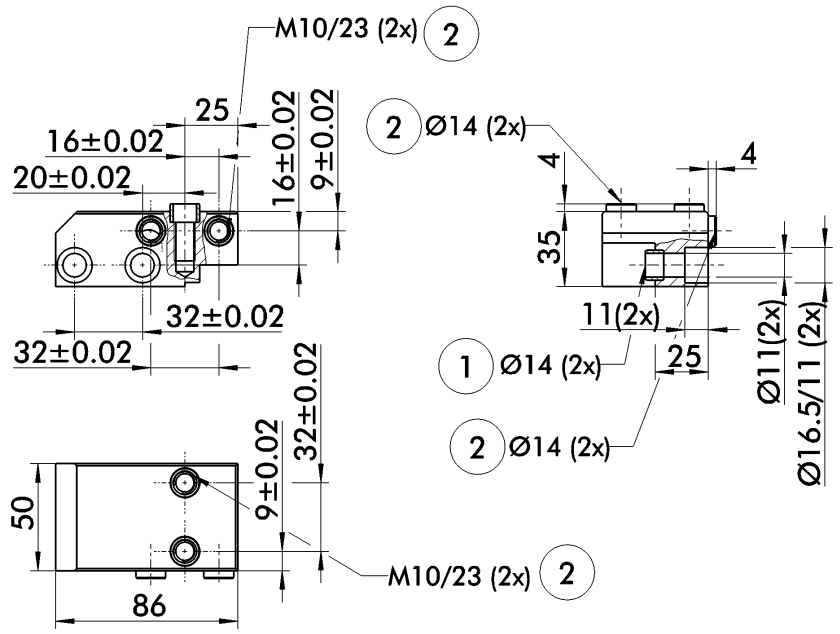
① Gripper connection
② Finger connection

ZBH 40 for PFH 40



① Gripper connection
② Finger connection

ZBH 50 for PFH 50



① Gripper connection
② Finger connection

Plastic Inserts

for gentle clamping of sensitive workpieces and for increasing the static friction.

Function description

The plastic inserts are used in gripper top jaws at the point contacting the workpiece. The surface helps to grip the workpiece securely and with low distortion.

Your advantages and benefits

High friction coefficient of approx. 0.3 - 0.4
thanks to the use of glass-fiber-reinforced plastic

Gentle clamping
of the most delicate surfaces, no clamping marks, excellent for ground or surface-treated parts

Low-cost system
through replaceable clamping inserts

High stability
through the aluminum support structure of the supporting jaw

Extensive workpiece locating surface
for low-deformation clamping of machined parts

Application example

Area of application

variable clamping tasks, for sensitive workpieces

1 Gripper Finger

2 Clamping Insert Quentes

General information

Material
glass-fiber-reinforced plastic

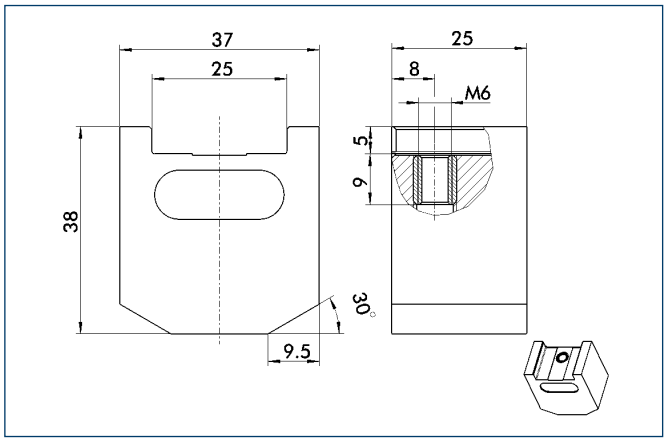
Warranty
24 months

Quentes

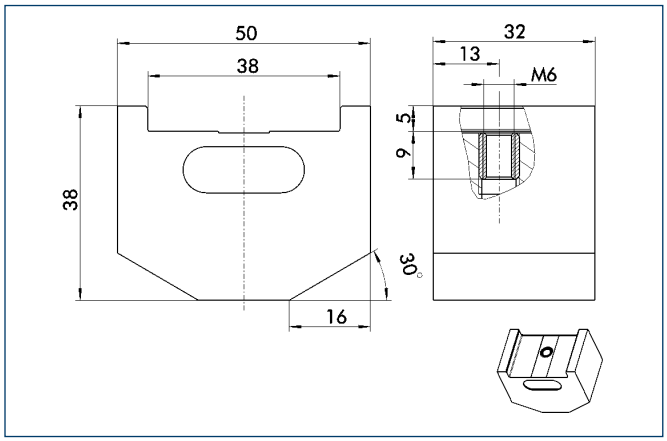
Technical data

Description	ID	Weight	Material
Quentes 5	**0300760**	0.13 kg	glass-fiber-reinforced plastic
Quentes 10	**0300761**	0.28 kg	glass-fiber-reinforced plastic

Quentes 5



Quentes 10



Hard Metal Clamping Inserts

Inserts for increasing the friction on the contact surface between the gripper fingers and the workpiece.

Function description

The HM clamping inserts are used in gripper top jaws at the point contacting the workpiece. The angular, rough surface helps to grip the workpiece securely.

Your advantages and benefits

Increase of the friction factor
therefore requiring less gripping force

Various sizes available

Fast change possible

High load bearing capacity

Application example

1 **DPG-plus 125 2-Finger Parallel Gripper, with top fingers equipped with carbide clamping inserts**

2 **SRU 35.1-180-3-4 Rotary Actuator in sealed IP67 version**

Area of application

variable clamping tasks, for sensitive workpieces

General information

Material
Steel, hardened

Warranty
24 months

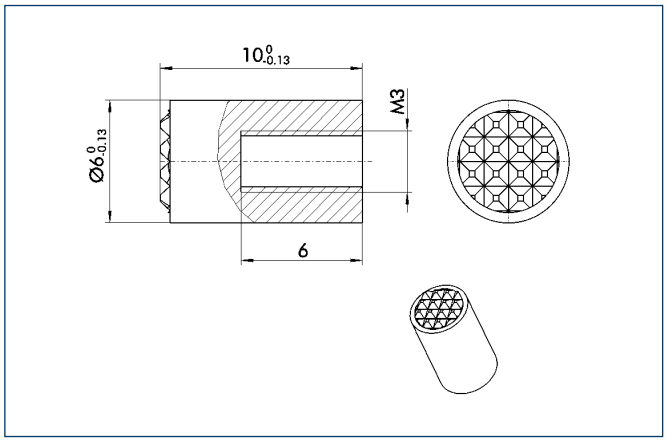
Notes

The HM clamping inserts should not be used if scratch marks are not desired on the workpiece.

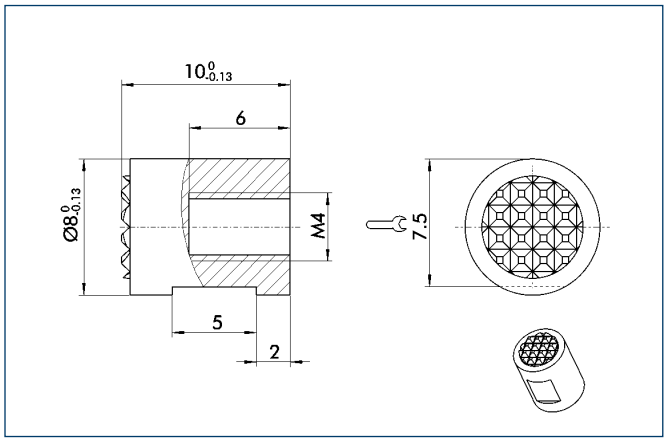
Technical data

Description	ID	Weight	Form	Material
HM 6	**0300780**	0.002 kg	Cylinder	Carbide
HM 8	**0300781**	0.004 kg	Cylinder	Carbide
HM 10	**0300782**	0.006 kg	Cylinder	Carbide
HM 11	**0300783**	0.01 kg	Cylinder	Carbide
HM 12	**0300784**	0.012 kg	Cylinder	Carbide
HM 13	**0300785**	0.016 kg	Cylinder	Carbide
HM 14	**0300786**	0.022 kg	Cylinder	Carbide
HM 15	**0300787**	0.012 kg	Cylinder	Carbide

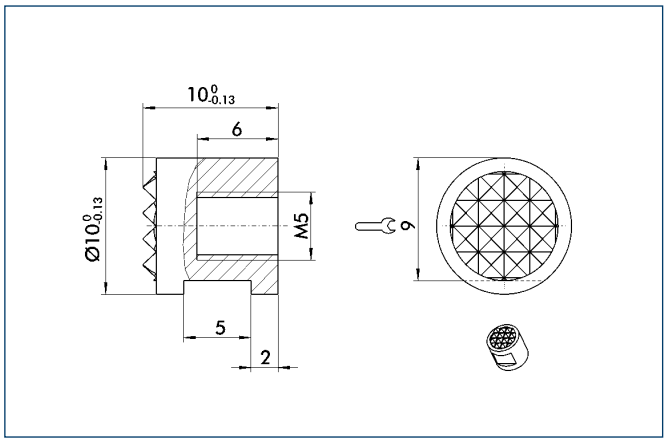
HM 6



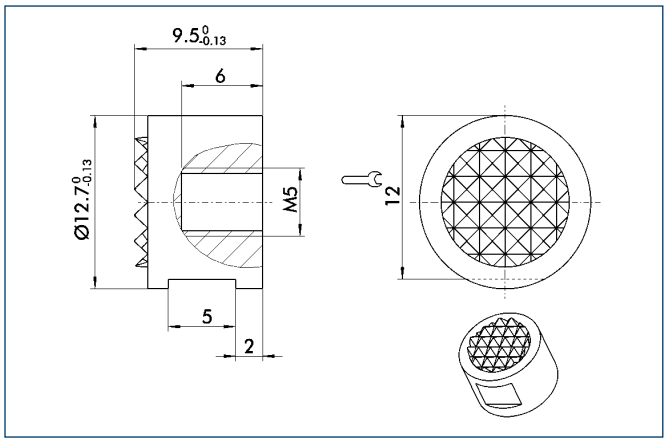
HM 8



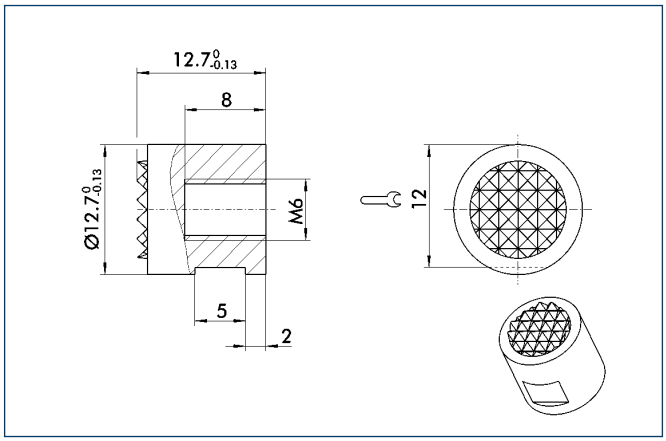
HM 10



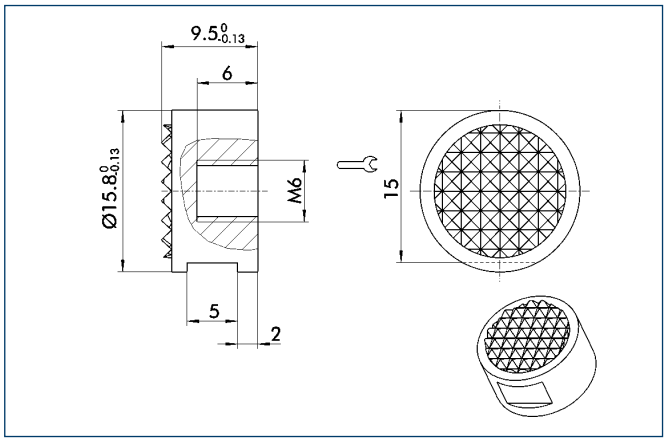
HM 11



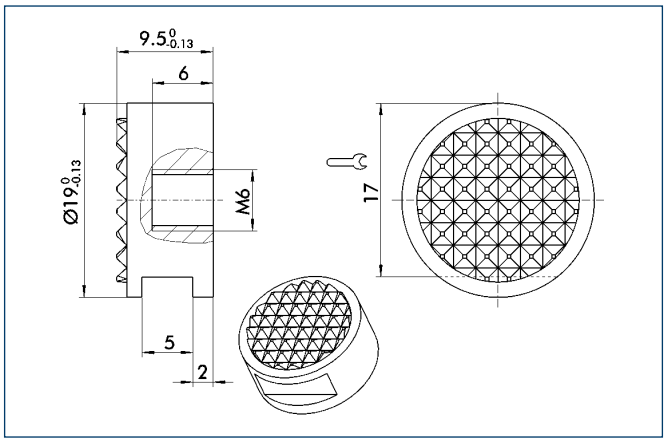
HM 12



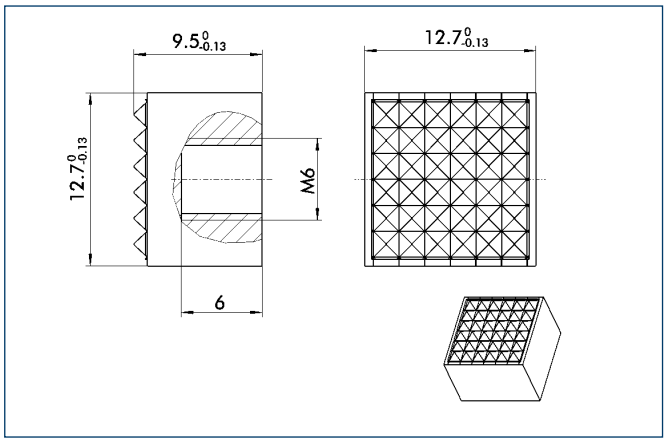
HM 13



HM 14

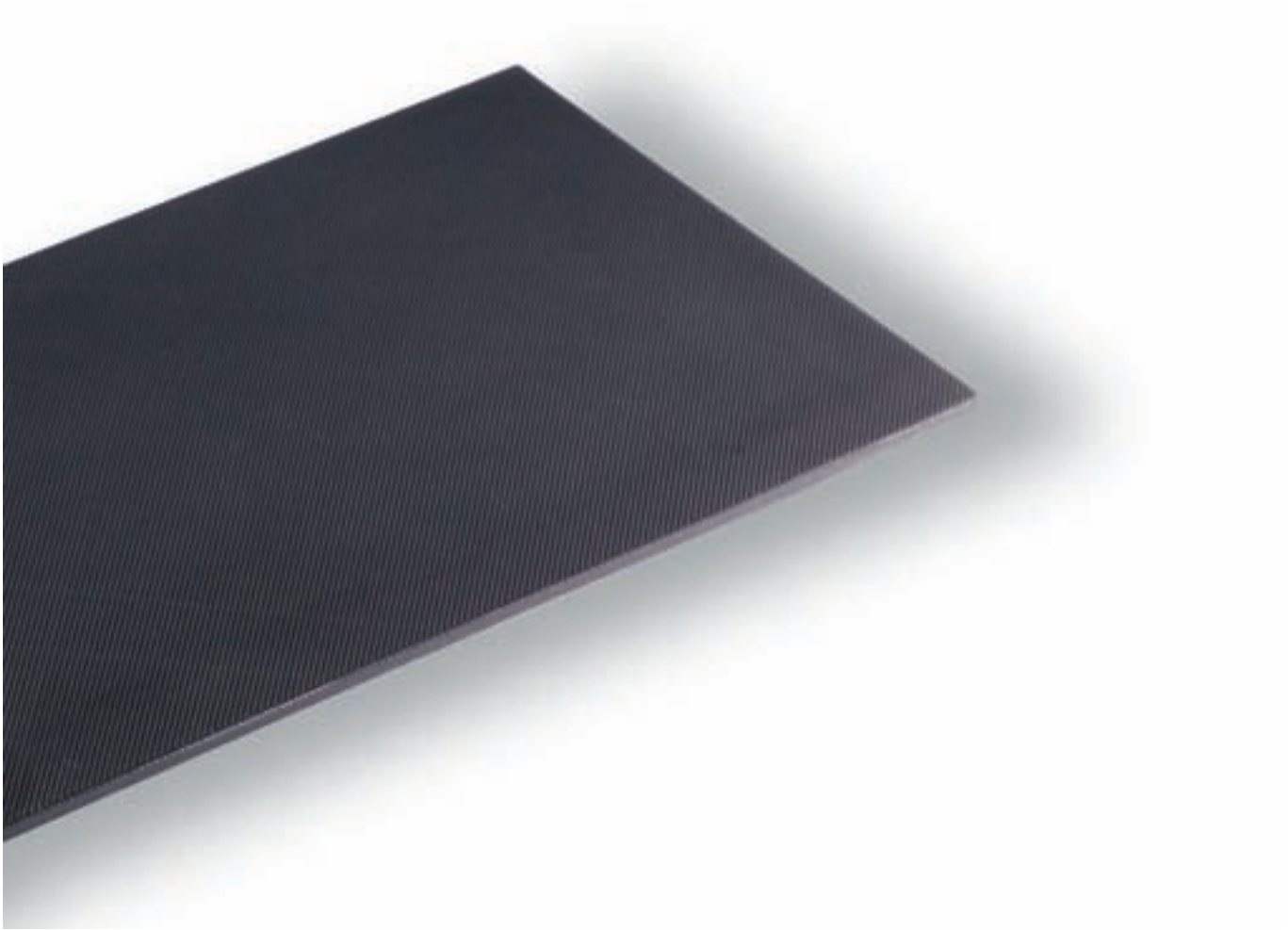


HM 15



HKI Gripper Pads

Gripper Pads made of soft plastic for surface-friendly gripping of workpieces with simultaneous increase of friction forces.



Function description

The gripper pads are attached to the surface of the gripper fingers that contact the workpiece.

Your advantages and benefits

High friction coefficient of approx. 0.3 - 0.4
for higher workpiece weights with the same gripping force

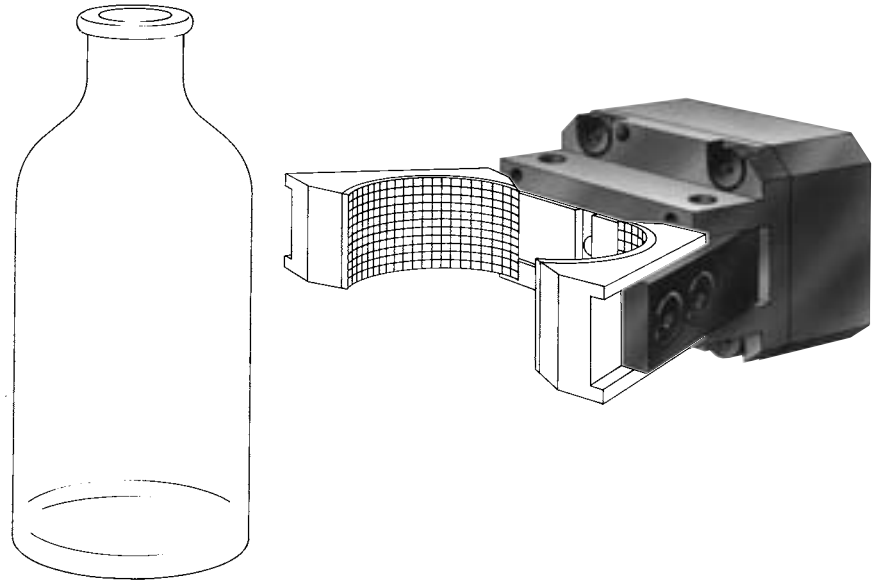
Easy assembly
through gluing or screws

Pliable surface
for surface-friendly gripping

Resistant against oil
for use in difficult environments

Area of application

variable clamping tasks, for sensitive workpieces

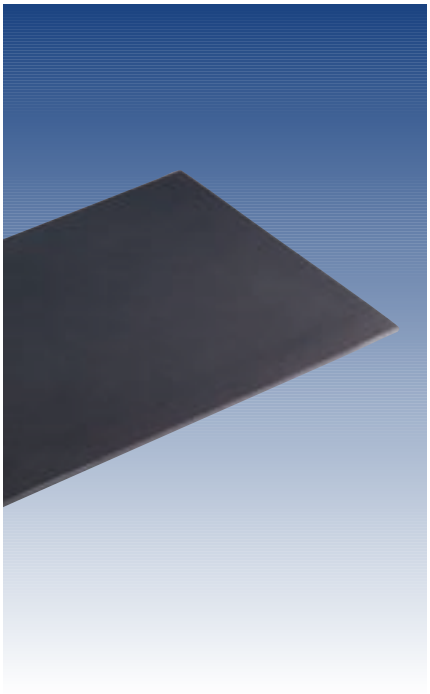


General information

Warranty
24 months

Notes

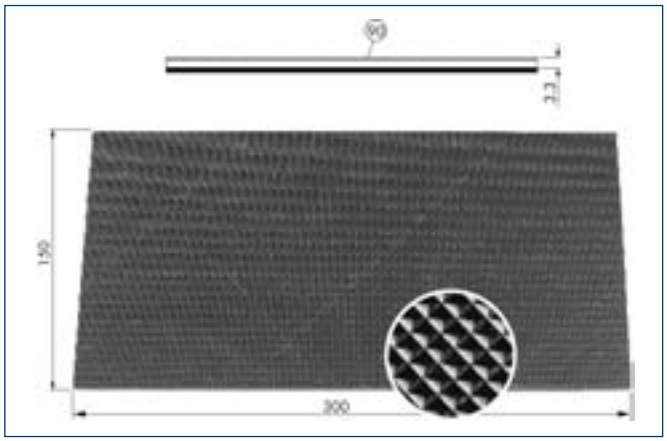
The HKI gripper pads are delivered as plates.
Blanks can be ordered as special products.



Technical data

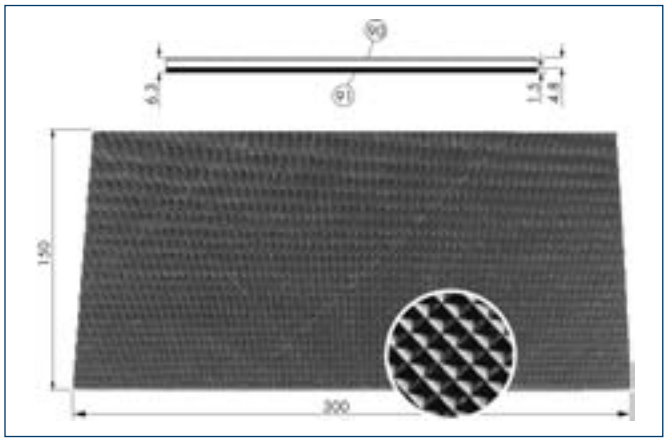
Description		HKI 1E	HKI 1A	HKI 1S
	ID	0324160	0324161	0324162
Length	[mm]	300.0	300.0	300.0
Width	[mm]	150.0	150.0	150.0
Thickness	[mm]		6.3	13.5
Elastomer		NBR Perbunan	NBR Perbunan	NBR Perbunan
Hard elastomer	[Shore]	60.0	60.0	60.0
Hardness tolerance +/-	[Shore]	5.0	5.0	5.0
Base plate present		No	Yes	Yes
Material of base plate		Elastomer	Aluminum	stainless steel
Min. ambient temperature	[°C]	-30.0	-30.0	-30.0
Max. ambient temperature	[°C]	100.0	100.0	100.0

HKI 1E



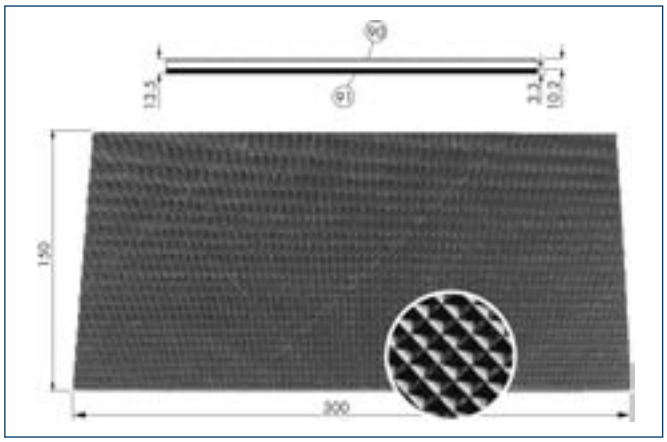
90 Elastomer pads

HKI 1A



90 Elastomer pads
91 Aluminum base plate

HKI 1S



90 Elastomer pads
91 Stainless steel base plate

BSWS Quick-change Jaw System

With the BSWS, production lines can quickly be changed for handling of other workpieces by changing the top jaws. The result: optimized set-up times in the overall process.

Function description

The BSWS consists of a base, which is screwed tightly to the gripper, and two adapter pins, which are mounted on the top jaws to be changed. The form-fit locking mechanism ensures fast changing of the gripper fingers.

Your advantages and benefits

Universal applications
through the BSWS, a single gripper can be used universally in different applications.

Manual jaw changing via the locking mechanism
easy and fast for high flexibility of the gripper

Stable up to the maximum load bearing capacity of the base jaws
through secure adaptation and screw connection

Alternative installation of locking bolt in the base jaws
for changing without set-up

Application example

1 BSWS Quick-change Jaw System

2 ABR-plus Gripper Jaws

3 PGN-plus 2-Finger Parallel Gripper

Area of application

For handling various parts or for frequent changeover of automation lines in clean or contaminated environments.

General information

Housing material
Aluminum alloy, hard-anodized

Material of locking mechanism
steel

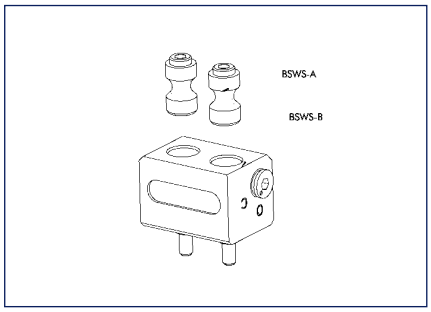
Warranty
24 months

Sizes
suitable for sizes 50 to 160 of the PZN-plus series and lots of grippers more

Scope of delivery
Base and adapter separately in differing quantities

Notes

Reverse assembly without additional height.
If the additional assembly height from the BSWS system is undesirable, it is possible to screw the BSWS adapter into the base jaw of the gripper. This reduces the height of the changeover system. The locking mechanism is then integrated in the top jaw. The required locking cam can be purchased separately from SCHUNK. Please contact us in this case.



Sectional diagram

① **Locking mechanism**
powerful and unyielding due to form-fit clamping

② **Fittings**
toward the gripper base jaw

③ **Base BSWS-B**
of the quick jaw change system

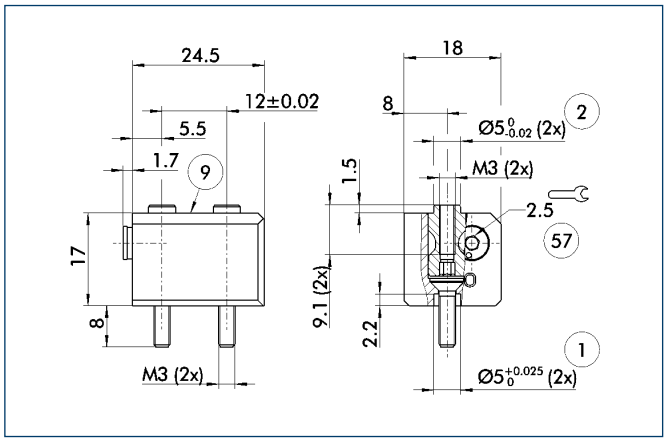
④ **Adapter pin BSWS-A**
is mounted on the top jaws to be changed

Technical data

Description	ID	Weight
BSWS-B 50	**0303021**	0.02 kg
BSWS-B 64	**0303023**	0.038 kg
BSWS-B 80	**0303025**	0.075 kg
BSWS-B 100	**0303027**	0.1 kg
BSWS-B 125	**0303029**	0.27 kg
BSWS-B 160	**0303031**	0.475 kg

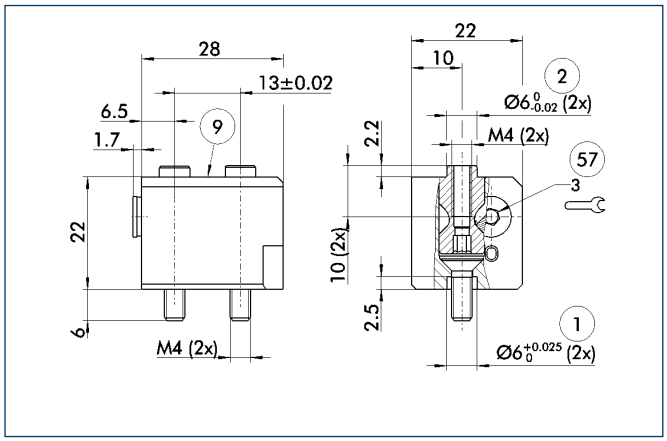
Description	ID	Number of bolts for each ID no.	Dead weight of each bolt	Material
BSWS-A 50	**0303020**	2	0.00253 kg	42CrMo4V
BSWS-A 64	**0303022**	2	0.0055 kg	42CrMo4V
BSWS-A 80	**0303024**	2	0.0114 kg	42CrMo4V
BSWS-A 100	**0303026**	2	0.024 kg	42CrMo4V
BSWS-A 125	**0303028**	2	0.0465 kg	42CrMo4V
BSWS-A 160	**0303030**	2	0.0777 kg	42CrMo4V

BSWS 50



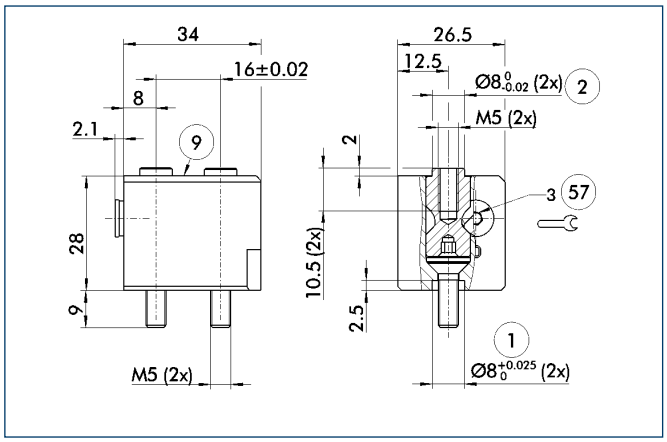
① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

BSWS 64



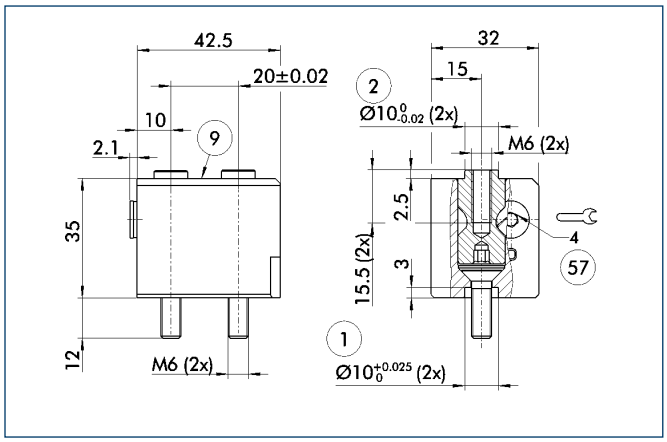
① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

BSWS 80



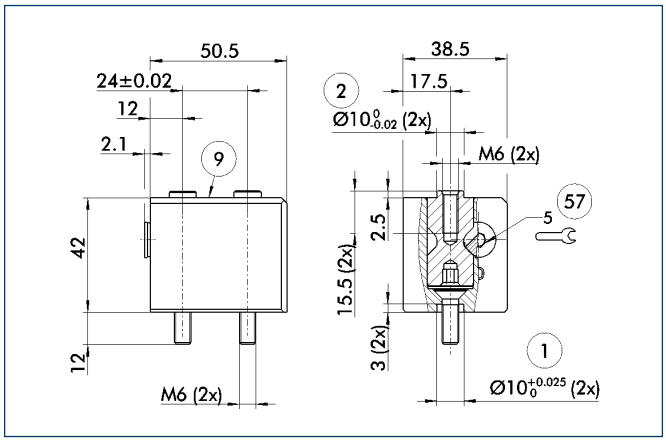
① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

BSWS 100



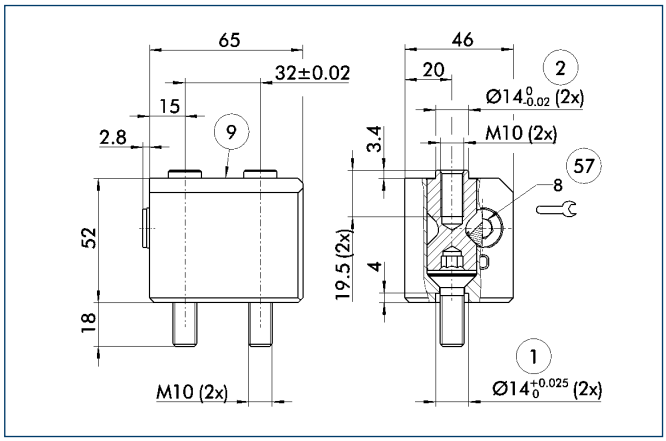
① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

BSWS 125



① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

BSWS 160



① Gripper connection
② Finger connection
⑨ For screw connection diagram, see basic version
57 Locking mechanism

HUE for PGN-plus

Dust Cover HUE for PGN-plus

Soft plastic covering to protect gripper for numerous liquids.

Function description

The gripper receives intermediate jaws and filler pieces, so that the protective sleeve can be mounted. In combination with the additionally required customer's sealing of the lower sleeve connection, this results in a rating of IP 65.

Your advantages and benefits

Economical
for economical use

Flexible
through retrofitting

Space-saving
through minimum enlargement of the interfering contour

Application example

Area of application

Use in numerous environments which are contaminated by fluids.

Notes

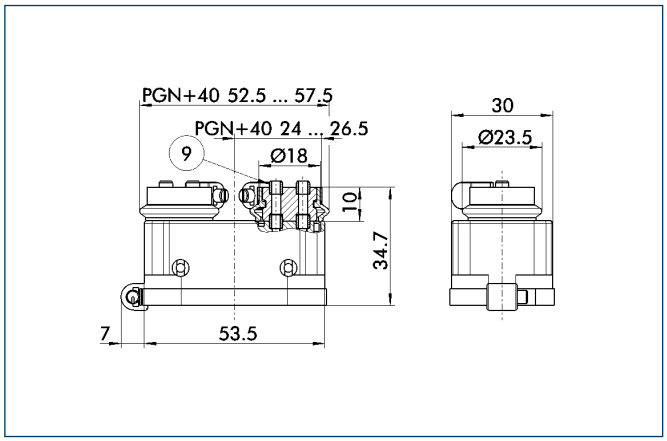
Please note that the bottom connection of the protective sleeve must be sealed by the customer. We recommend applying a seal weld. For materials and instructions on applying seal welds, see operating manual.

HUE for PGN-plus

Technical data

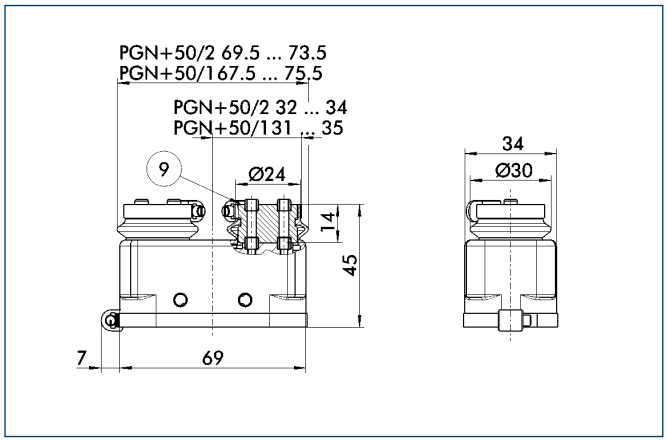
Description	ID	Material	ISO-Classification 14644-1	min. permanent temperature [°C]	max. permanent temperature [°C]	Weight [kg]
HUE PGN-plus 40	**0371490**	plastic	2	-30.0	80.0	0.05
HUE PGN-plus 50	**0371479**	plastic	2	-30.0	80.0	0.06
HUE PGN-plus 64	**0371480**	plastic	2	-30.0	80.0	0.08
HUE PGN-plus 80	**0371481**	plastic	2	-30.0	80.0	0.16
HUE PGN-plus 100	**0371482**	plastic	2	-30.0	80.0	0.24
HUE PGN-plus 125	**0371483**	plastic	2	-30.0	80.0	0.5
HUE PGN-plus 160	**0371484**	plastic	2	-30.0	80.0	0.6

HUE for PGN-plus 40



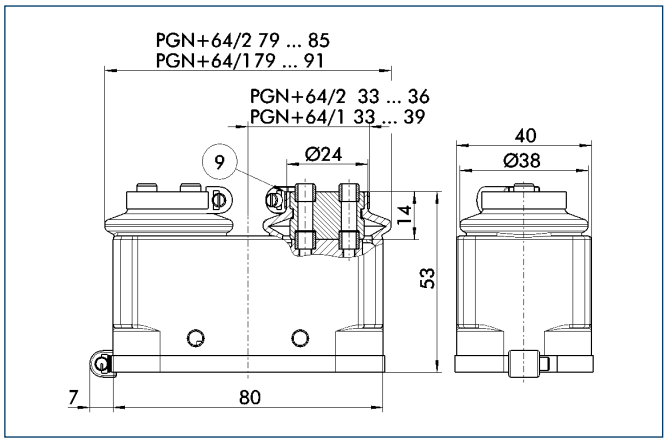
⑨ For screw connection diagram, see basic version

HUE for PGN-plus 50



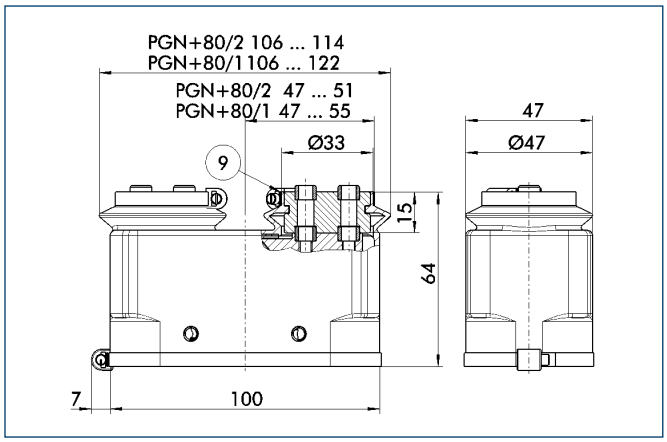
⑨ For screw connection diagram, see basic version

HUE for PGN-plus 64



⑨ For screw connection diagram, see basic version

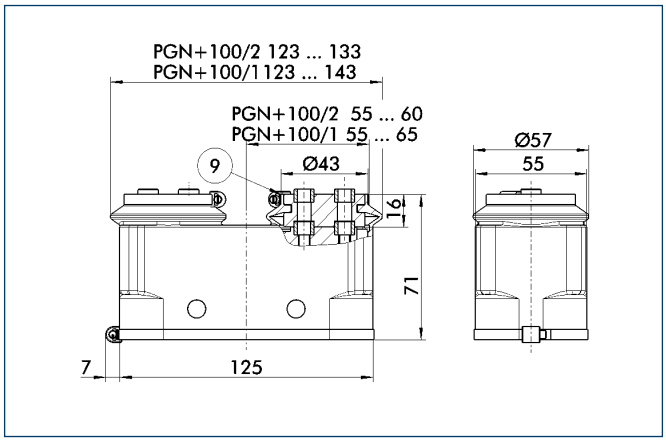
HUE for PGN-plus 80



⑨ For screw connection diagram, see basic version

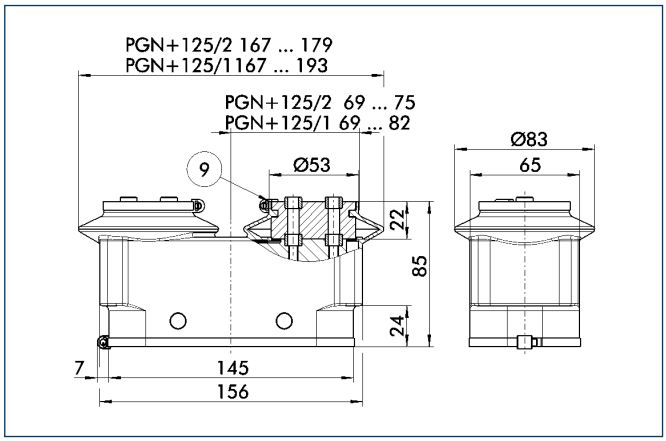
HUE for PGN-plus

HUE for PGN-plus 100



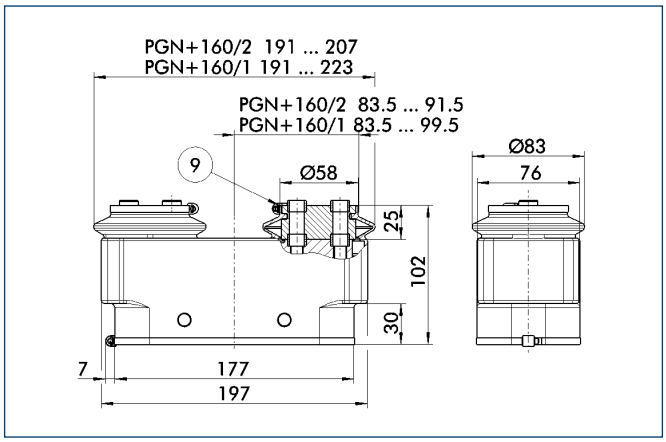
⑨ For screw connection diagram, see basic version

HUE for PGN-plus 125

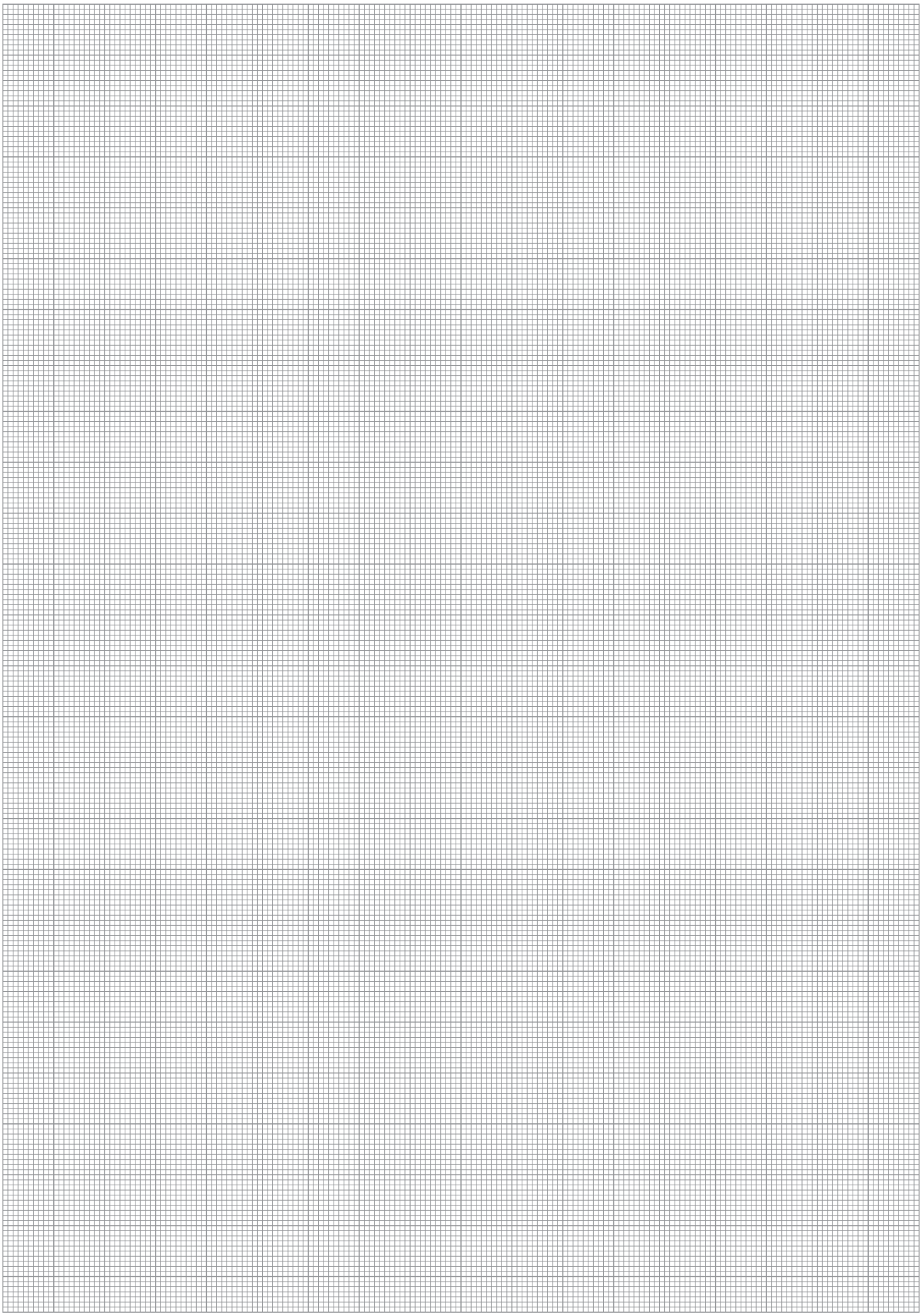


⑨ For screw connection diagram, see basic version

HUE for PGN-plus 160



⑨ For screw connection diagram, see basic version



HUE for PZN-plus

Dust Cover HUE for PZN-plus

Soft plastic covering to protect gripper from numerous liquids.

Function description

The gripper receives intermediate jaws and filler pieces, so that the protective sleeve can be mounted. In combination with the additionally required customer's sealing of the lower sleeve connection, this results in a rating of IP 65.

Your advantages and benefits

Economical
for economical use

flexible
through retrofitting

Space-saving
through minimum enlargement of the interfering contour

Application diagram

Area of application

Use in numerous environments which are contaminated by fluids.

General information

Warranty
24 months

Notes

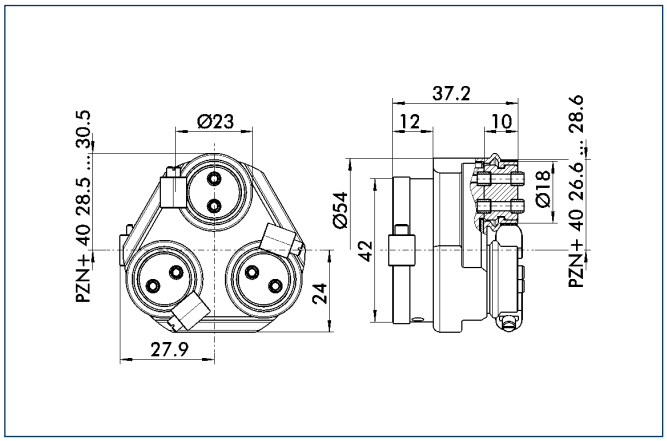
Please note that the bottom connection of the protective sleeve must be sealed by the customer. We recommend applying a seal weld. For materials and instructions on applying seal welds, see operating manual.

HUE for PZN-plus

Technical data

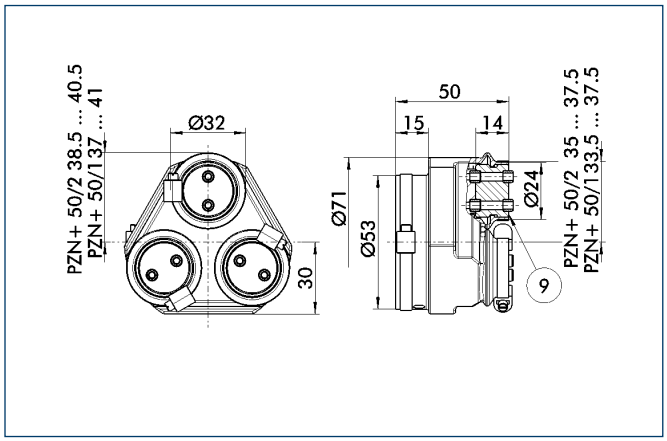
Description	ID	Material	ISO-Classification 14644-1	min. permanent temperature [°C]	max. permanent temperature [°C]	Weight [kg]
HUE PZN-plus 40	**0303478**	plastic	2	-30.0	80.0	0.09
HUE PZN-plus 50	**0303479**	plastic	2	-30.0	80.0	0.11
HUE PZN-plus 64	**0303480**	plastic	2	-30.0	80.0	0.14
HUE PZN-plus 80	**0303481**	plastic	2	-30.0	80.0	0.28
HUE PZN-plus 100	**0303482**	plastic	2	-30.0	80.0	0.42
HUE PZN-plus 125	**0303483**	plastic	2	-30.0	80.0	0.87
HUE PZN-plus 160	**0303484**	plastic	2	-30.0	80.0	1.05

HUE for PZN-plus 40



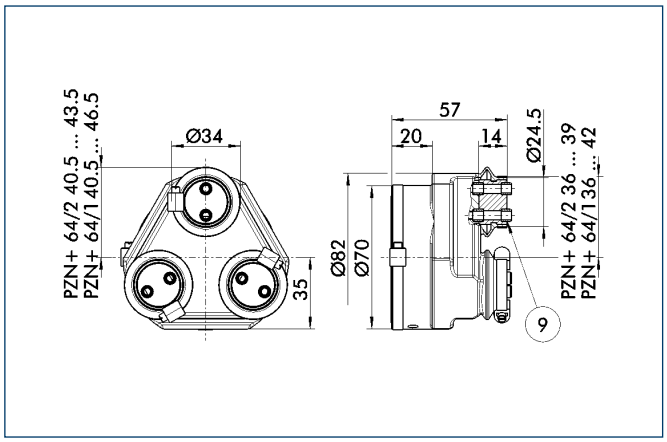
⑨ For screw connection diagram, see basic version

HUE for PZN-plus 50



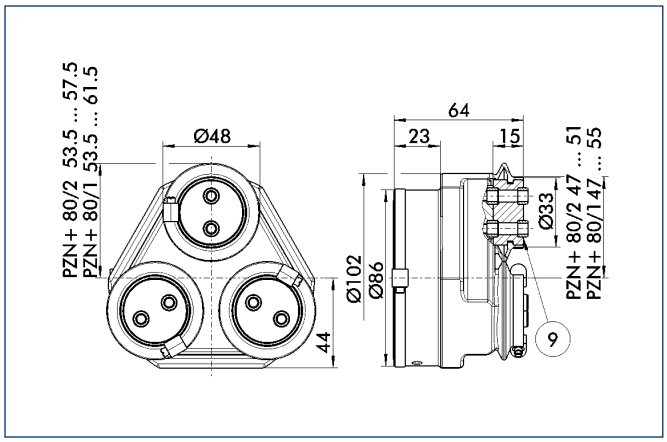
⑨ For screw connection diagram, see basic version

HUE for PZN-plus 64



⑨ For screw connection diagram, see basic version

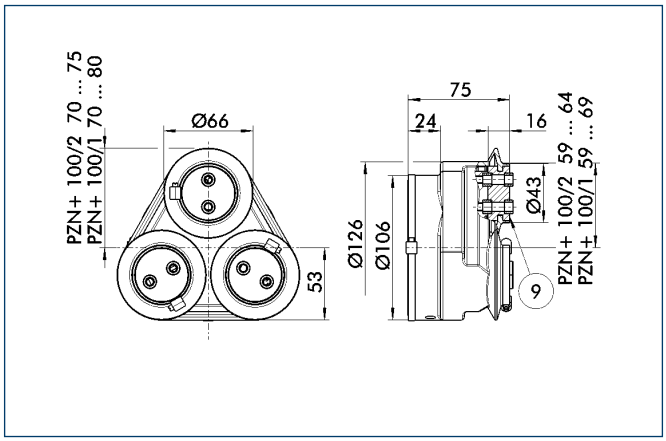
HUE for PZN-plus 80



⑨ For screw connection diagram, see basic version

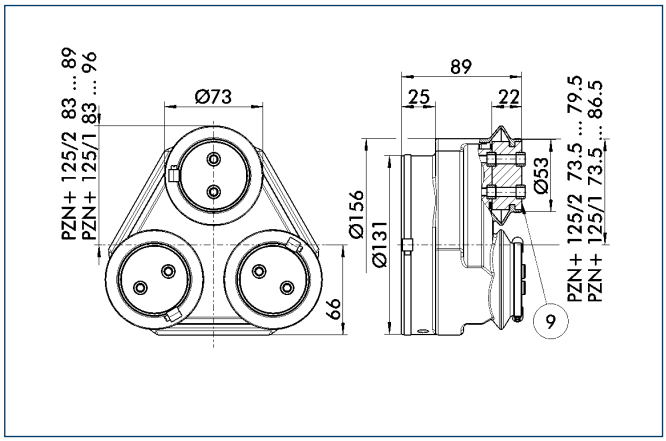
HUE for PZN-plus

HUE for PZN-plus 100



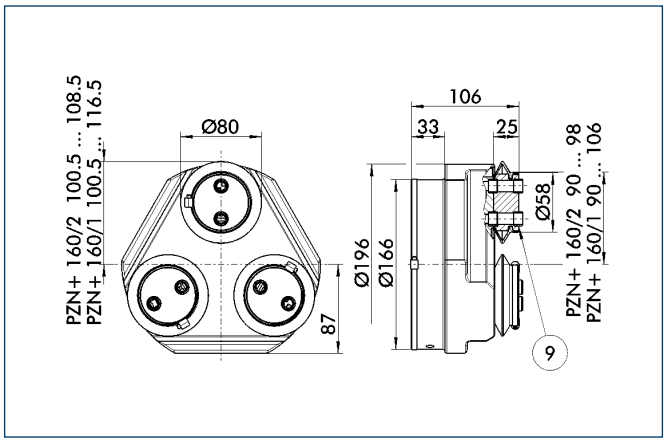
⑨ For screw connection diagram, see basic version

HUE for PZN-plus 125



⑨ For screw connection diagram, see basic version

HUE for PZN-plus 160



⑨ For screw connection diagram, see basic version

Centering Sleeves

Centering sleeves are used for centering between two elements. With SCHUNK grippers, this frequently occurs between the mounting plate and gripper and between the gripper and gripper fingers.

Function description

The centering sleeves are inserted coaxially to the screws.

Your advantages and benefits

Space-saving
for small, compact grippers

Precise
for high repeat accuracy

Economical
for low costs

Easy to install
for fast assembly

Area of application

variable centering tasks for gripper and rotary modules, as well as linear modules.

General information

Material
steel

Warranty
24 months

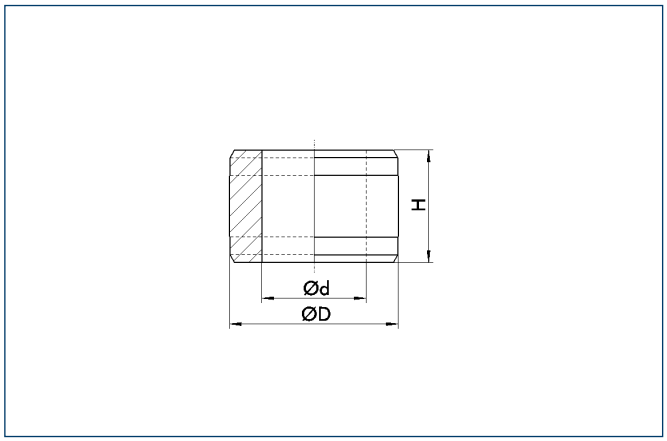
Notes

SCHUNK grippers include all necessary centering sleeves.

Technical data

Description	ID	Material	∅ D [mm]	∅ d [mm]	H [mm]
ZHU	**9941547**	Steel	2.0h6	1.3	1.95-0.05
ZHU	**9941628**	Steel	2.5h6	1.7	1.95-0.05
ZHU	**9941629**	Steel	3.0h6	2.1	1.95-0.05
ZHU	**9939947**	Steel	3.5h6	2.1	2.95-0.05
ZHU	**9939376**	Steel	4.0h6	2.6	3.95-0.05
ZHU	**9939377**	Steel	5.0h6	3.1	4.35-0.05
ZHU	**9939384**	Steel	6.0h6	4.1	5.35-0.05
ZHU	**9939378**	Steel	8.0h6	5.1	5.35-0.05
ZHU	**9939379**	Steel	10.0h6	6.2	6.65-0.05
ZHU	**9939380**	Steel	12.0h6	8.2	6.65-0.05
ZHU	**9939381**	Steel	14.0h6	10.2	8.6-0.1
ZHU	**9939382**	Steel	16.0h6	12.2	8.6-0.1
ZHU	**9939383**	Steel	22.0h6	16.2	13.6-0.1
ZHU	**9941220**	Steel	28.0h6	21.0	17.6-0.1

Main views



Connecting Elements for PowerCube

Standard elements and adapters for the accurately repeatable connections of PowerCube modules

Function description

The dimensions of the connecting elements are matched to the cube shape of the PowerCube modules. The accurately repeatable connection is made easily and quickly by means of four hexagon socket screws.

Your advantages and benefits

Standard elements
for high availability

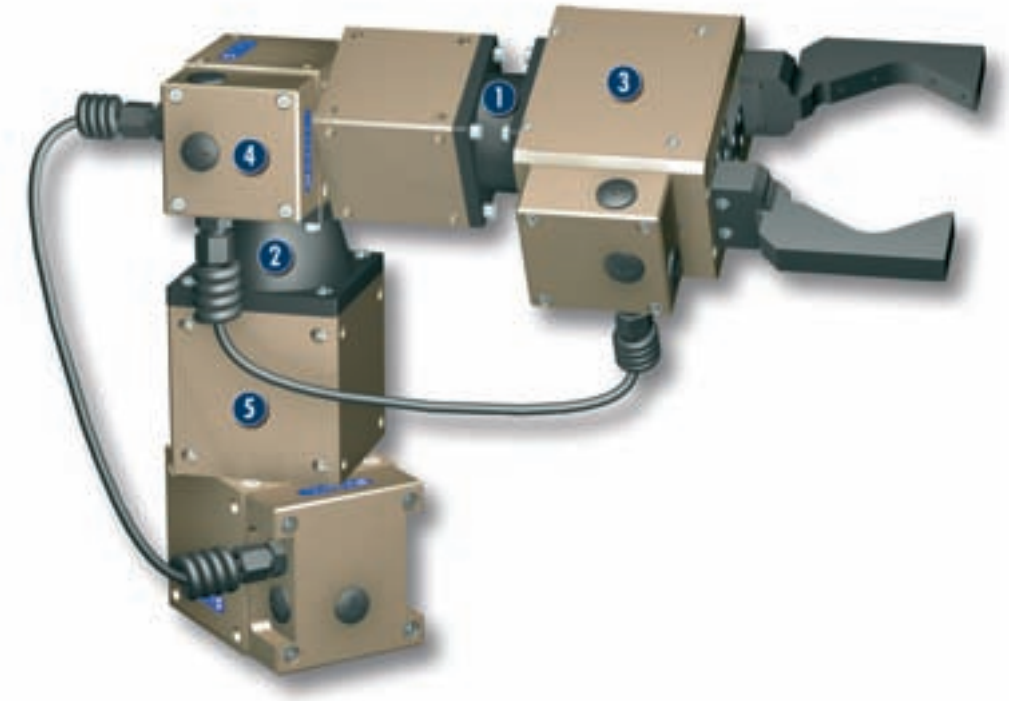
Geometry designs „straight“, „conical“ and „angular“
for maximum combinations

Suitable for all grippers, rotary units, drives and linear modules of the PowerCube series

Application example

Area of application

For easy and accurately repeatable connection of all PowerCube modules



1. **Connecting element - straight PAM 100**
2. **Connecting element - conical PAM 110**
3. **Servo-electric 2-Finger Parallel Gripper PG 70**
4. **Servo-electric Rotary Actuator PR 70**
5. **Servo-electric Rotary Actuator PR 90**

General information

Warranty
24 months

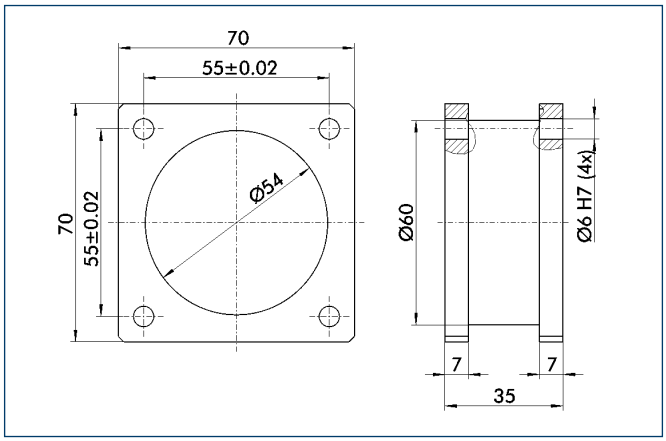
Material
Aluminum alloy, hard-anodized

Notes

Special lengths are available on request.

PAM - Straight

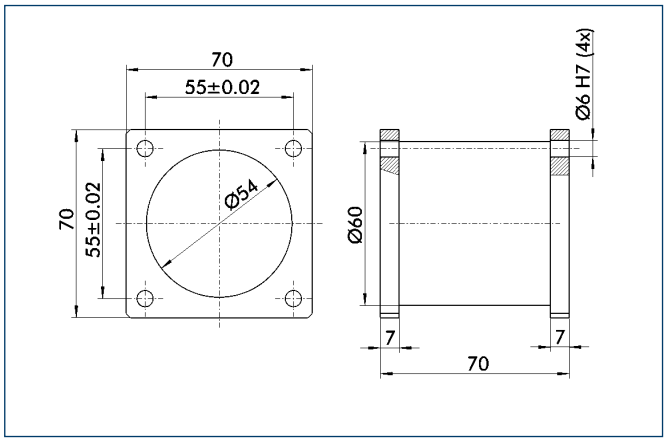
PAM 100 – Straight



suitable for PowerCube-Modules of size 70

Description	ID
PAM 100	0307800

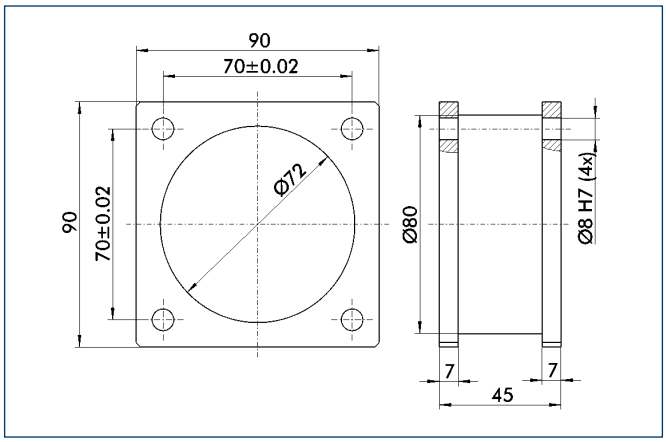
PAM 101 – Straight



suitable for PowerCube-Modules of size 70

Description	ID
PAM 101	0307801

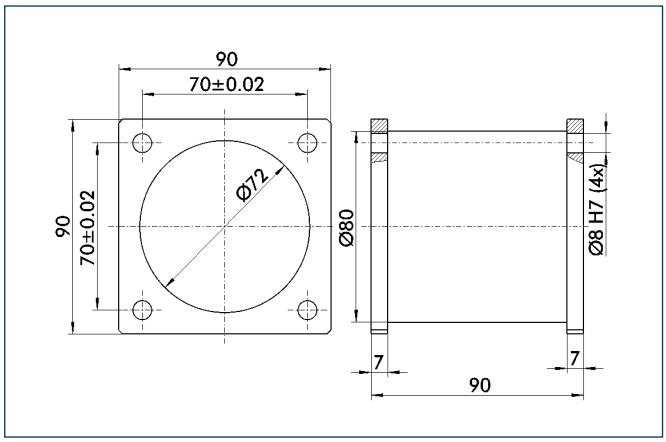
PAM 102 – Straight



suitable for PowerCube-Modules of size 90

Description	ID
PAM 102	0307802

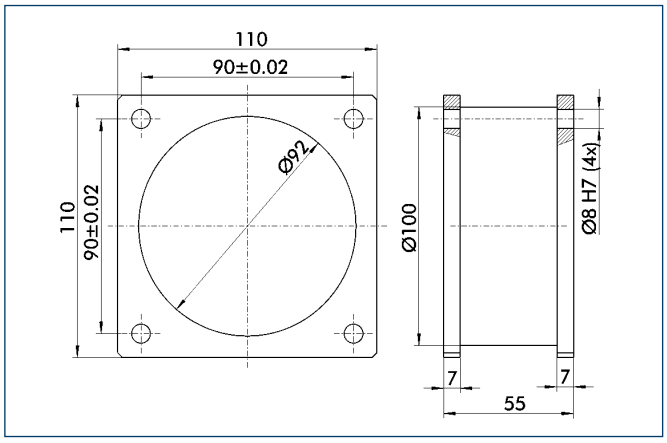
PAM 103 – Straight



suitable for PowerCube-Modules of size 90

Description	ID
PAM 103	0307803

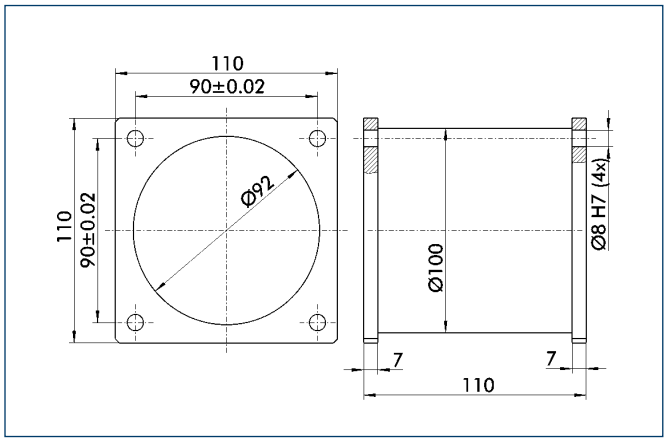
PAM 104 – Straight



suitable for PowerCube-Modules of size 110

Description	ID
PAM 104	0307804

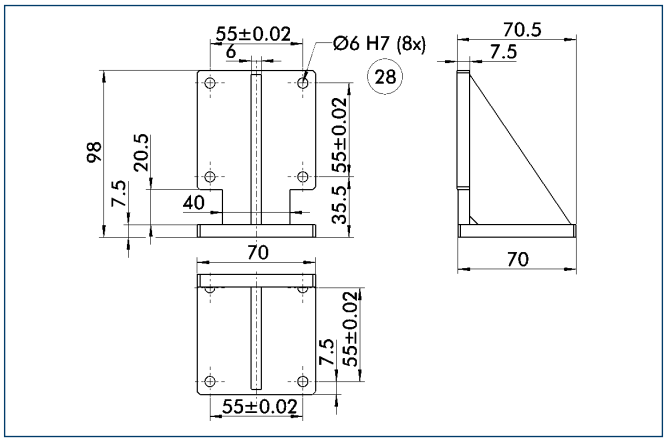
PAM 105 – Straight



suitable for PowerCube-Modules of size 110

Description	ID
PAM 105	0307805

PAM 120 – Angled

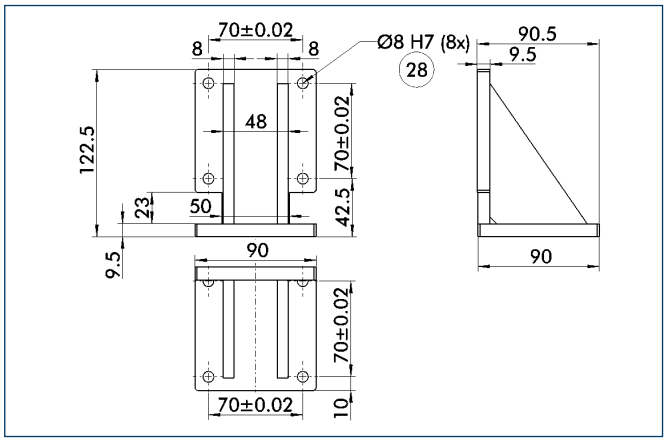


28 Through-bore

suitable for PowerCube-Modules of size 70

Description	ID
PAM 120	0307820

PAM 121 – Angled

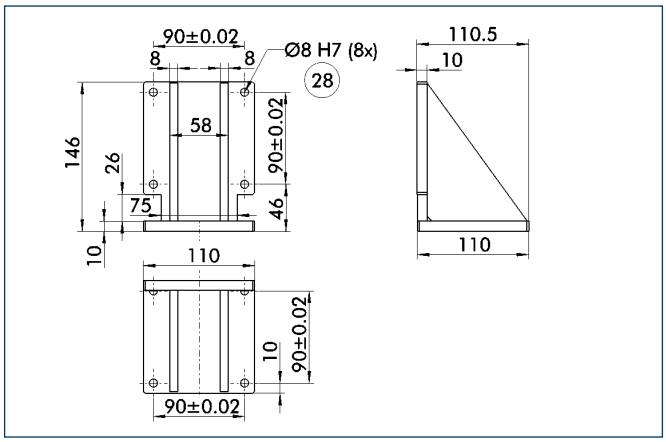


28 Through-bore

suitable for PowerCube-Modules of size 90

Description	ID
PAM 121	0307821

PAM 122 – Angled

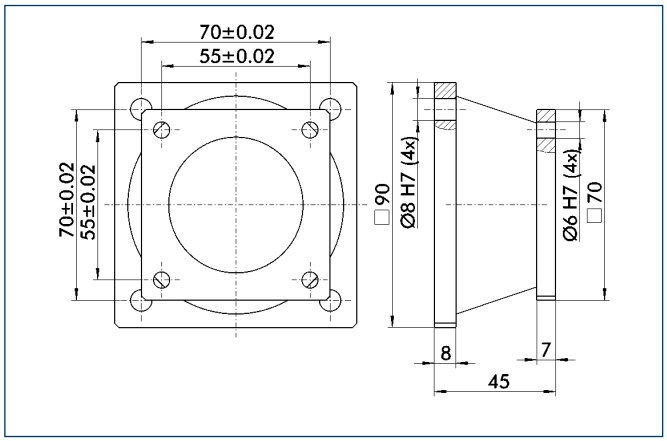


28 Through-bore

suitable for PowerCube-Modules of size 110

Description	ID
PAM 122	0307822

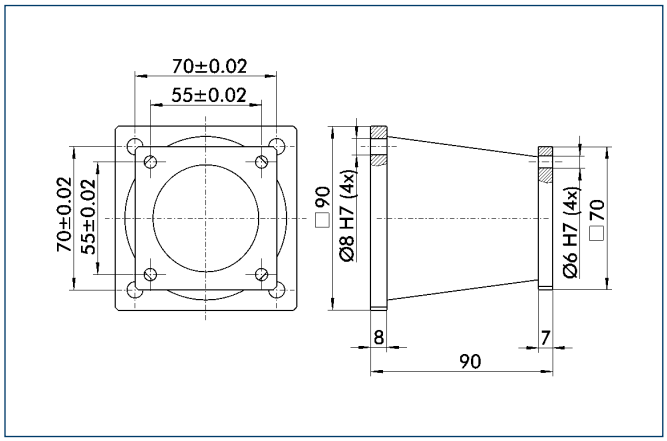
PAM 110 – Conical



suitable for PowerCube-Modules of size 70/90

Description	ID
PAM 110	0307810

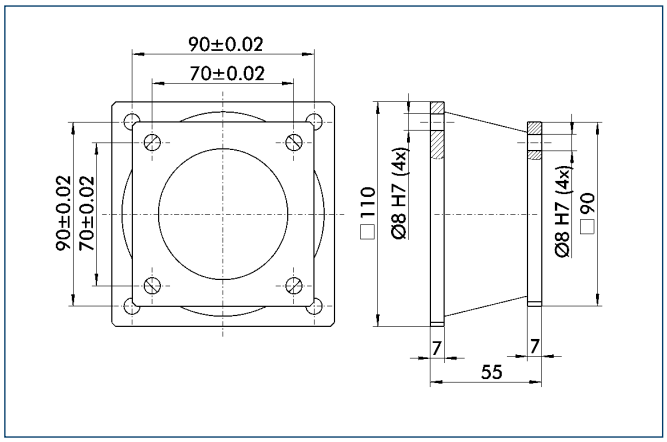
PAM 111 – Conical



suitable for PowerCube-Modules of size 70/90

Description	ID
PAM 111	0307811

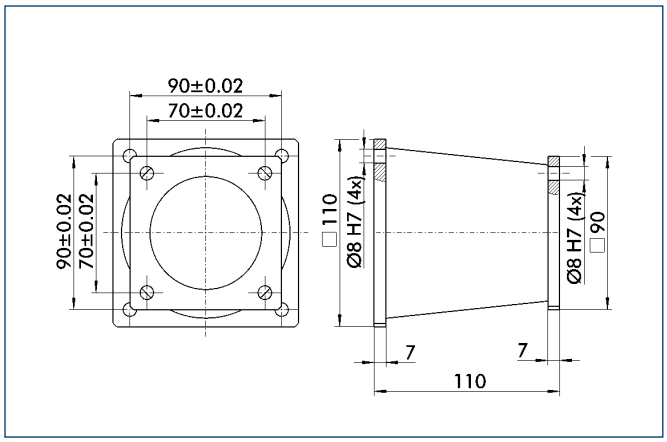
PAM 112 – Conical



suitable for PowerCube-Modules of size 90/10

Description	ID
PAM 112	0307812

PAM 113 – Conical

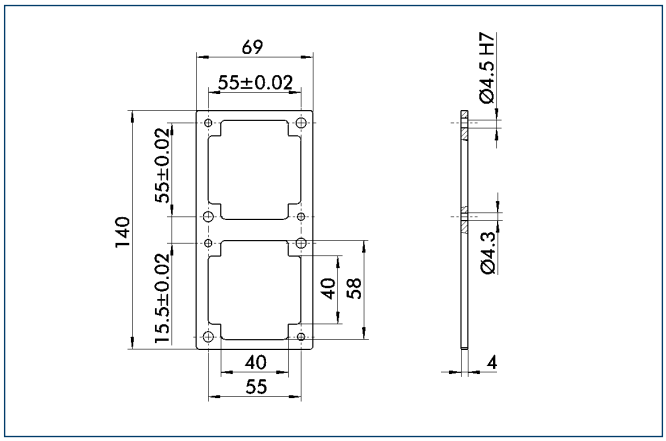


suitable for PowerCube-Modules of size 90/10

Description	ID
PAM 113	0307813

PAM - Adapter plates

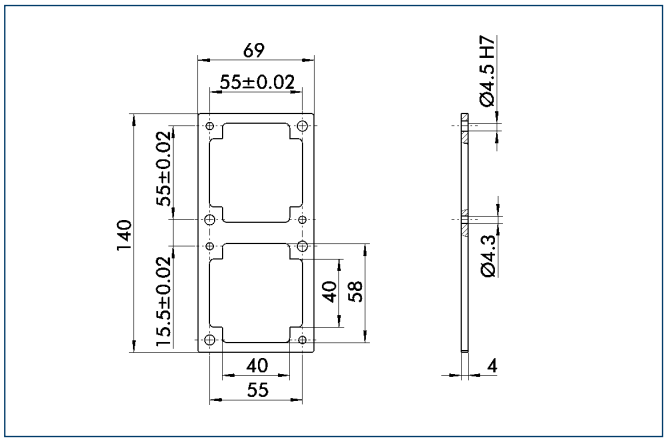
PAM 164



suitable for PowerCube-Modules of size 70

Description	ID
PAM 164	0307864

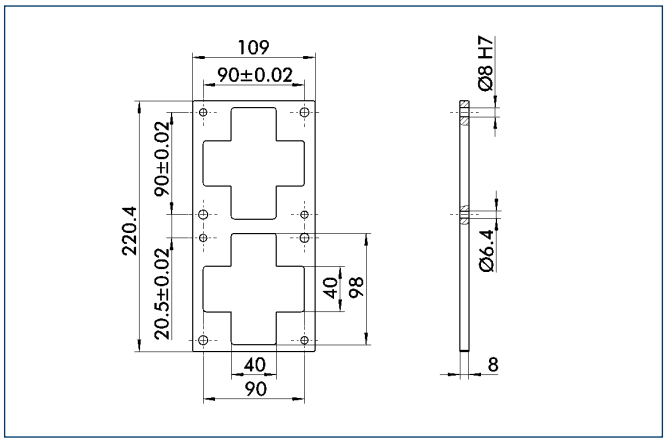
PAM 165



suitable for PowerCube-Modules of size 90

Description	ID
PAM 165	0307865

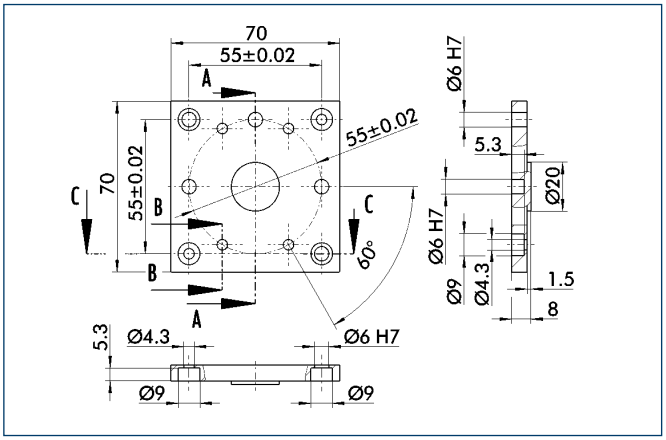
PAM 166



suitable for PowerCube-Modules of size 110

Description	ID
PAM 166	0307866

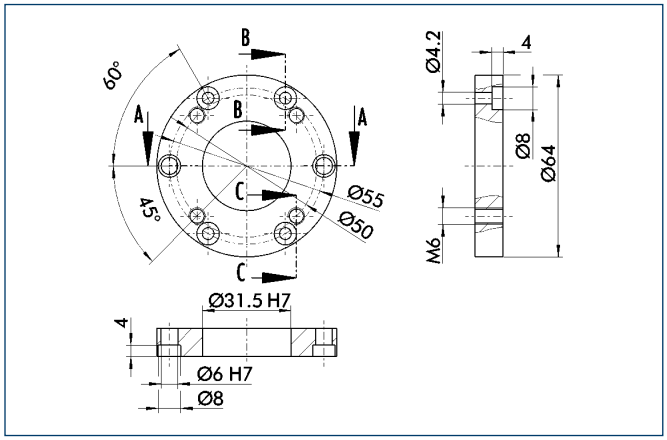
PAM 147 – PG to PW



suitable for accurately repeatable connection of the 2-finger parallel gripper PG 70 with the rotary pan-tilt actuator PW 70

Description	ID
PAM 147	0307847

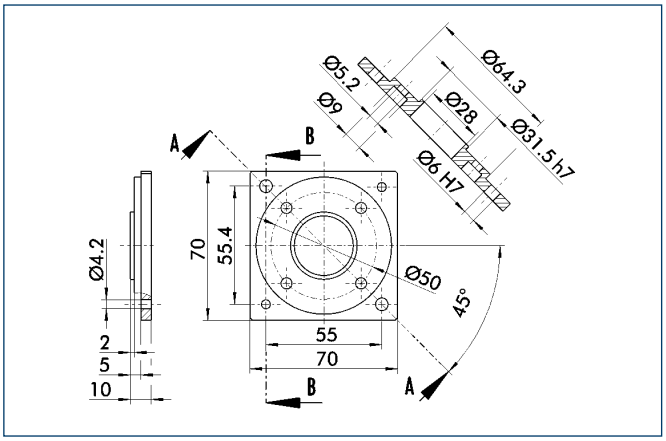
PAM 160 – PW to FTCL



suitable for accurately repeatable connection of the rotary pan-tilt actuator PW 70 with the force sensor FTCL-050

Description	ID
PAM 160	0307860

PAM 161 – FTCL to PG



suitable for accurately repeatable connection of the force sensor FTCL-050 with the 2-finger parallel gripper PG 70

Description	ID
PAM 161	0307861

Pressure maintenance Valves and Fittings

For connection and mounting of pneumatic hoses.

Your advantages and benefits

Suitable
for all SCHUNK gripper, rotary and linear modules, in addition to robot accessories

Flexible utilization
For use on pneumatic hoses from various manufacturers

Fittings as plug-in connections
for fast hose attachment

SDV-P pressure maintenance valve
prevents loss of pressure

Application example

Area of application

For secure hose connections in automation solutions.

1. SDV-P pressure maintenance valve
2. SWV banjo fitting
3. PGN-plus 2-Finger Parallel Gripper with workpiece-specific gripper fingers

General information

Warranty
24 months

Pressure Maintenance Valve

In case of pressure loss, the pressure maintenance valve prevents air from escaping from the gripper. This prevents loss of clamping force, and the workpieces remain securely clamped in the gripper jaws. Especially suitable for grippers that cannot be equipped with a mechanical safety device.

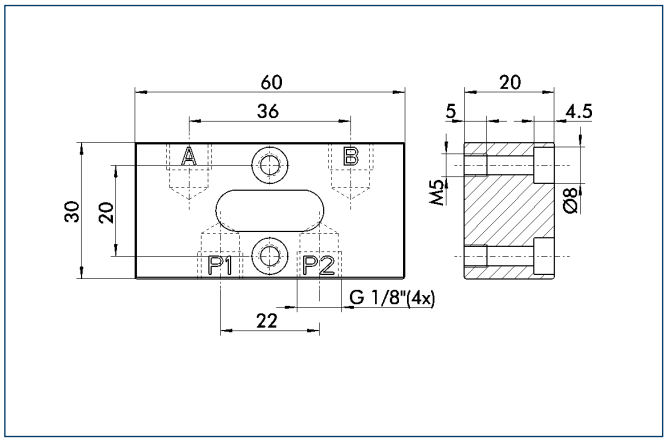
Function

Two parallel switched check valves, which when pressurized, automatically open the return flow direction and close the pressure line.

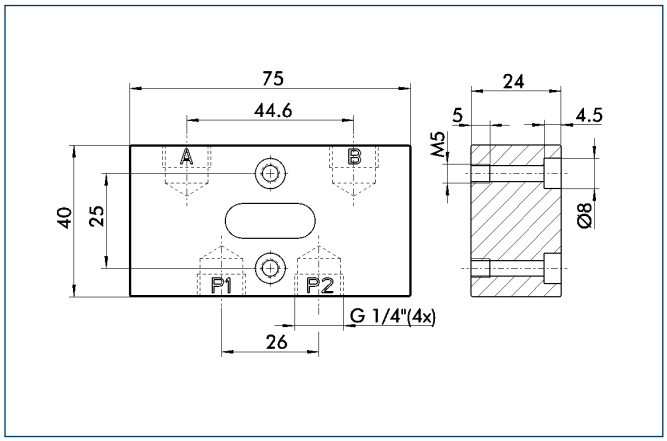
Technical data

Description		SDV-P 04	SDV-P 07
	ID	0403130	0403131
Connection	[“]	G1/8	G1/4
Max. throughput	[l/min]		
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	80.0	80.0
Weight	[kg]	0.1	0.18

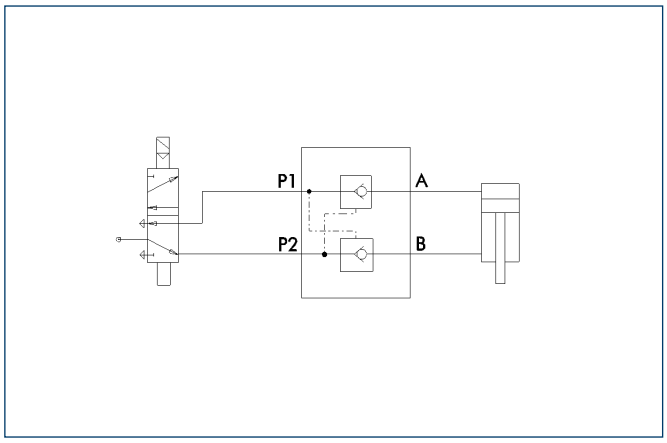
SDV-P 04



SDV-P 07



Circuit diagram



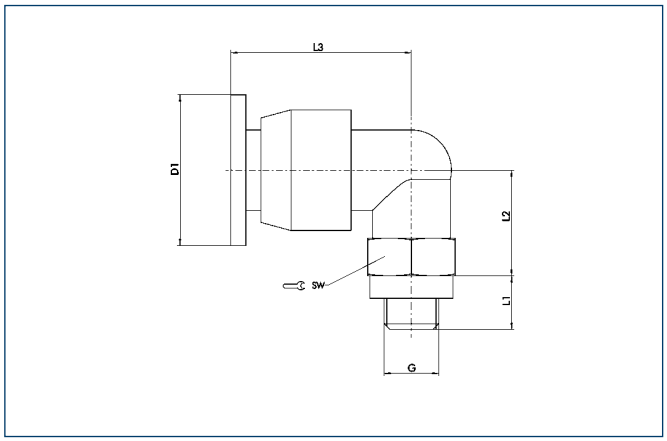
WV Elbow Fitting

Version as plug-in connection for fast and easy connection to the pneumatic energy supplies

Technical data

Description		WV-G1/8-6	WV-G1/8-8	WV-G1/4-6
	ID	9937129	9936730	9937170
For hose diameter	[mm]	6.0	8.0	6.0
Threaded connection	[″]	G1/8	G1/8	G1/4
Max. pressure	[bar]	20.0	20.0	20.0
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	60.0	60.0	60.0

Main view WV



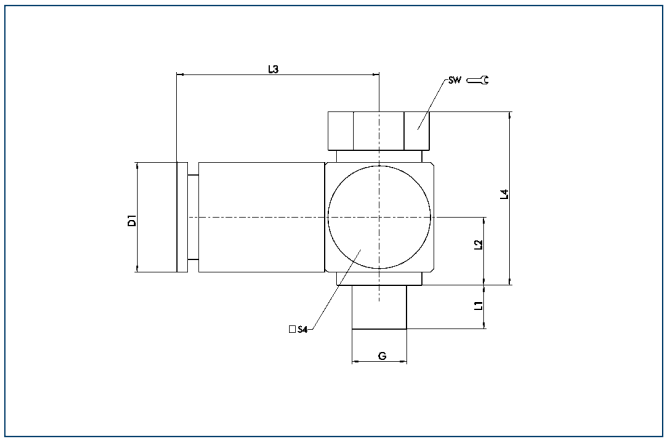
variable	WV-G 1-8-6	WV-G 1-8-8	WV-G 1-4-6
G	1/8"	1/8"	1/4"
L_1	5	5	7
L_2	13.05.07	16	15.05.07
L_3	22	25.05.07	23.05.07
D_1	12	14	12
SW	13	13	17
S4	10	12	10

SWV Banjo Fitting

Version as plug-in connection for fast and
easy connection to the pneumatic energy supplies

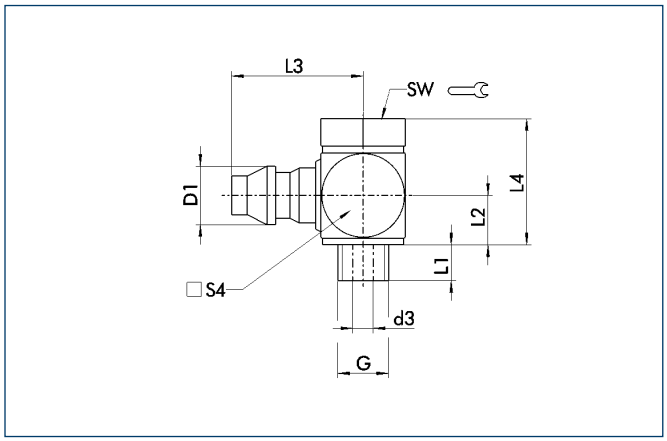
Description		SWV-M3-4	SWV-M5-6	SWV-G4-6	SWV-G8-6	SWV-G4-8
	ID	9210505	9936171	9937128	9937152	9936728
For hose diameter	[mm]	4.0	6.0	6.0	6.0	8.0
Threaded connection	[″]	M 3	M 5	G1/4	G1/8	G1/4
Max. pressure	[bar]	20.0	20.0	20.0	20.0	20.0
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	60.0	60.0	60.0	60.0	60.0

Main view SWV



variable	SWV-M5-6	SWV-G8-6	SWV-G4-6	SWV-G4-8
G	M5	G1/8"	G1/4"	G1/4"
d_3	2	5	7	7
L_1	4	06.05.07	8	8
L_2	06.02.07	01.08.25	08.04.07	15.03.07
L_3	18.05.07	22.05.07	24.05.07	25
L_4	15.08.07	20.05.07	21.06.07	21.06.07
D_1	10	12	12	13.05.07
SW	8	14	17	17
S4	10	15	19	19

Main view SWV-M3



variable	SWV-M3-4
G	M3
d_3	01.01.07
L_1	2
L_2	02.05.07
L_3	07.03.07
L_4	07.03.07
D_1	03.04.07
SW	5
S4	5

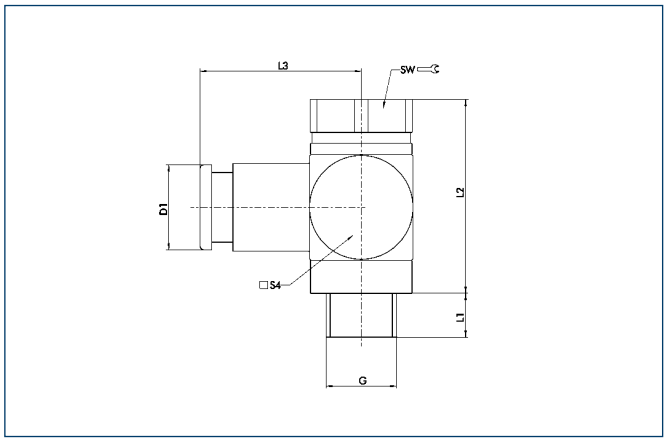
DSV Banjo Fitting

with one-way flow control valve Version as plug-in connection for fast and easy connection to the pneumatic energy supplies

Technical data

Description		DSV-M3-3	DSV-M5-6	DSV-G8-6	DSV-G4-6	DSV-G4-8
ID	ID	9720005	9936160	9936159	9936161	9936162
Hose	[mm]	3.0	6.0	6.0	6.0	8.0
Min. operating temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0
Max. operating temperature	[°C]	60.0	60.0	60.0	60.0	60.0
Max. Operating Pressure	[bar]	20.0	20.0	20.0	20.0	20.0

Main view DSV



Variable	DSV-M3-3	DSV-M5-6	DSV-G8-6	DSV-G4-6	DSV-G8-8
G	M3	M5	G1/8"	G1/4"	G1/8"
L_1	02.05.07	4	5	06.05.07	5
$L_{2\ max.}$	29	21.05.07	30	32	30
L_3	11	21	22.05.07	24.05.07	23
D_1	04.08.07	10.04.07	12	12	14
SW	knurl	8	14	17	14

Grease

Grease

for re-lubrication of SCHUNK products in small containers.

Technical data

Description	ID	9948131	9948301	0184210
Area of application		Seals	Internal sliding surface between metal friction pairs	External sliding surface between metal friction pairs
Package form		Cartridge	Can	Cartridge
Quantity	[kg]	0.4	1.0	0.5

ⓘ Exact information on which grease is to be used where can be found in the operating manual for your SCHUNK module.

Cable and connector

Connecting cable for the flexible connection of electric gripper modules and modules of the PowerCube series.

Your advantages and benefits

High flexibility and tensile strength
for a long service life

Excellent EMC properties
through various shielding methods and the use of special materials.

Special shell and insulation materials
for high safety in the application

Application example

1. Hybrid cable PAE 003 coiled
2. Hybrid cable PAE 001 straight
3. Servo-electric Rotary Actuator PR 70
4. Servo-electric Linear Axis with ball-screw spindle drive PLS
5. PG 70 2-Finger Parallel Gripper

Area of application

For cabling of automation modules with each other and to external controllers.

General information

Warranty
24 months

Hybrid cable PAE

Hybrid cable for PowerCube modules

POWERCUBE

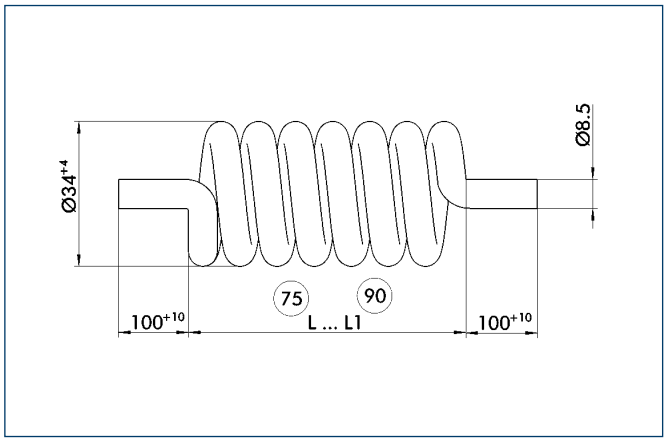
for combined information and energy transmission.
Coiled version with high restoring forces and extension length to a multiple of the closed block length.

Technical data

Description		PAE 001	PAE 002	PAE 003
	ID	9941120	307753	307754
Version		straight	coiled	coiled
Basic length	[m]		0.3	0.46
Extended length	[m]		0.8	1.5
Operating voltage, drive	[V]	600	600	600
Operating voltage, communication/logic	[V]	450	450	450
Cable diameter	[mm]	8.5	8.5	8.5
Minimum bending radius	[mm]	42.5	42.5	42.5
Optimum bending radius	[mm]	85	85	85
Number of conductors, drive		2	2	2
Wire size, drive	[mm^2]	2.5	2.5	2.5
Number of conductors, communication/logic		4	4	4
Wire size, communication/logic	[mm^2]	0.15	0.15	0.15

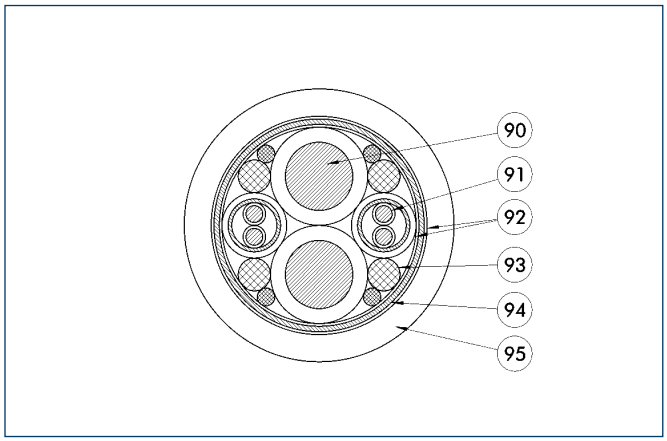
ⓘ The basic dimensions and wire size of the PAE 001 cable correspond to the cable versions PAE 002 and PAE 003.
The 'Hybrid cable' is recommended for the use in CAN-Bus- or RS232-systems.
For Profibus applications we recommend to use a separate standardized Profibus cable for the communication.

PAE 002/PAE 003



(75) Cable length
(90) extended cable lengths

Wire size, PAE



(90) 2 wires with 2.5 mm²
(91) 2 wires with 0.15 mm²
(92) Wrapping
(93) Filler
(94) Shielding
(95) Insulating

The drawing shows the hybrid cable PAE in cross section.

Hose Release Pliers

Function description

The hose release pliers SLZ are used for fast, easy and finger-friendly removal of pneumatic hoses from connectors. With the pliers, you can simultaneously press the release ring and pull the hose from the connector - all with only one hand.

Your advantages and benefits

Finger-friendly
for long, pleasant work periods

Flexible utilization
For use on plug-in connections from various manufacturers

Color marking of the SLZ size
for quickly finding the SLZ sizes in the toolbox for the correct hose diameter

Application example

Area of application

Tool for the fitter, for connecting and removing pneumatic hoses at plug-in connections.

General information

Material
Plastic

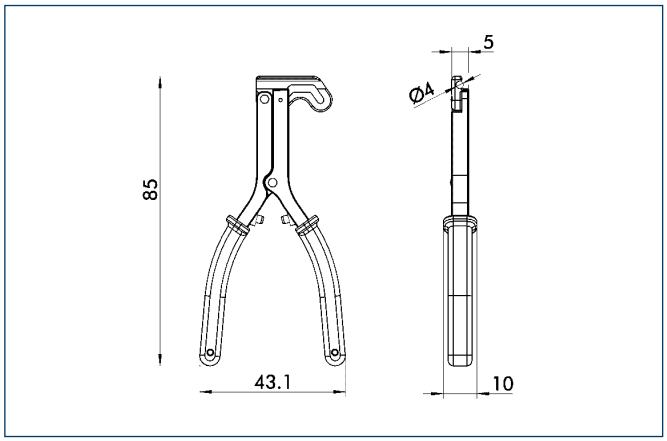
Sizes
Versions for standard hose sizes 4 mm, 6 mm and 8 mm.

Warranty
24 months

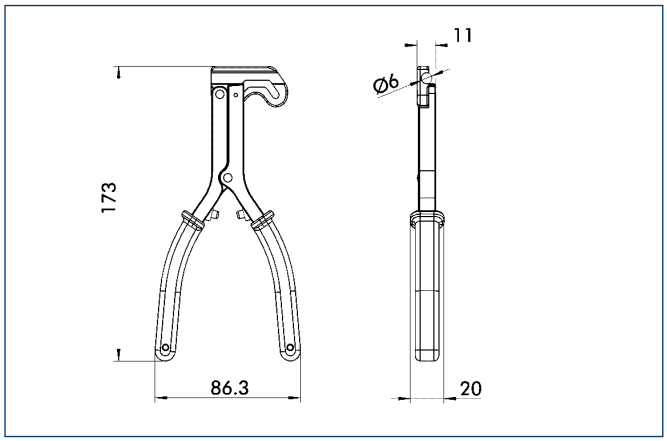
Technical data

Description		SLZ 4	SLZ 6	SLZ 8
	ID	0301020	0301021	0301022
For hose outer diameter	[mm]	4.0	6.0	8.0
Material		plastic	plastic	plastic

SLZ 4



SLZ 6



SLZ 8