Assembly and Operating Manual PGN-plus-E

2-Finger Parallel Gripper

Translation of Original Operating Manual

Hand in hand for tomorrow

Imprint

Technical changes:
We reserve the right to make alterations for the purpose of technical improvement.

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Dear Customer,

Thank you for trusting our products and our family-owned company, the leading technology supplier of robots and production machines.

Our team is always available to answer any questions on this product and other solutions. Ask us questions and challenge us. We will find a solution!

Best regards,

Your SCHUNK team

Customer Management
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cmg@de.schunk.com

Please read the operating manual in full and keep it close to the product.

Table of Contents

1 General

1.1 About this manual

This manual contains important information for a safe and appropriate use of the product.

This manual is an integral part of the product and must be kept accessible for the personnel at all times.

Before starting work, the personnel must have read and understood this operating manual. Prerequisite for safe working is the observance of all safety instructions in this manual.

In addition to these instructions, the documents listed under ▸ 1.1.4 [🗋 7] are applicable.

NOTE: The illustrations in this manual are intended to provide a basic understanding and may deviate from the actual version.

1.1.1 Presentation of Warning Labels

To make risks clear, the following signal words and symbols are used for safety notes.

⚠ DANGER

Dangers for persons!

Non-observance will inevitably cause irreversible injury or death.

⚠ WARNING

Dangers for persons!

Non-observance can lead to irreversible injury and even death.

⚠ CAUTION

Dangers for persons!

Non-observance can cause minor injuries.

CAUTION

Material damage!

Information about avoiding material damage.

1.1.2 Definition of Terms

The term "product" replaces the product name on the title page in this manual.

1.1.3 Symbol definition

The following symbols are used in this manual:

■ Prerequisite for an action

1. Action 1
2. Action 2
   ⇨ Intermediate results

⇨ Final results

▸ 1.1.3 [🗋 7]: chapter number and [page number] in hyperlinks

1.1.4 Applicable documents

- General terms of business *
- Catalog data sheet of the purchased product *
- Assembly and operating manuals of the accessories *
- **IO-Link variant:** Software guide "SCHUNK gripper with IO-Link" *

The documents labeled with an asterisk (*) can be downloaded from **schunk.com/downloads**.

1.1.5 Sizes

This operating manual applies to the following sizes:

- PGN-plus-E 80
- PGN-plus-E 100

1.1.6 Variants

This operating manual applies to the following variations:

- PGN-plus-E Digital I/O
- PGN-plus-E IO-Link
- PGN-plus-E dust-tight (SD)

1.2 Warranty

The warranty is 24 months or a maximum of 10 million cycles * from the date of delivery from the production facility if used as intended under the following conditions:

- Observe the ambient conditions and operating conditions, ▸ 2.5 [🗋 10]
- Observe the specified maintenance and lubrication intervals, ▸ 7 [🗋 53]

Parts touching the workpiece and wear parts are not included in the warranty.

* A cycle consists of a complete gripping process: "Open gripper" and "Close gripper".

1.3 Scope of delivery

The scope of delivery includes

- 2-Finger Parallel Gripper PGN-plus-E in the version ordered
- Accessory pack
- Safety information (product-specific instructions available online)

Content of the accessory pack:

- 2x centering sleeves for gripper fastening
- 4x centering sleeves for finger fastening

ID.-No. of the accessory pack

Size	ID number
PGN-plus-E 80	5524224
PGN-plus-E 100	5524225

1.4 Accessories

A wide range of accessories are available for this product

For information regarding which accessory articles can be used with the corresponding product variants, see catalog data sheet.

2 Basic safety notes

2.1 Intended use

The product is designed exclusively for gripping and temporarily holding workpieces or objects.

If spring-like parts are to be gripped, this may only occur after first consulting with and receiving written approval from SCHUNK.

- The product may only be used within the scope of its technical data, ▶ 3 [🗋 20].
- The product is intended for installation in a machine/ automated system. The applicable guidelines for the machine/ automated system must be observed and complied with.
- The product is intended for industrial and industry-oriented use. Its use outside enclosed spaces is only permitted if suitable protective measures are taken against outdoor exposure. The product is not suitable for use in salty air.
- The product can be used within the permissible load limits and technical data for holding workpieces during simple machining operations, but is not a clamping device according to EN 1550:1997+A1:2008.
- Appropriate use of the product includes compliance with all instructions in this manual.
- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

2.2 Constructional changes

Implementation of structural changes

Modifications, changes or reworking, e.g. additional threads, holes, or safety devices, can damage the product or impair its functionality or safety.

- Structural changes should only be made with the written approval of SCHUNK.

2.3 Spare parts

Use of unauthorized spare parts

Using unauthorized spare parts can endanger personnel and damage the product or cause it to malfunction.

- Use only original spare parts or spares authorized by SCHUNK.

2.4 Gripper fingers

Requirements of the gripper finger

Stored energy can make the product unsafe and risk the danger of serious injuries and considerable material damage.

- Only replace gripper finger if no residual energy can be released.

2.5 Ambient conditions and operating conditions

Required ambient conditions and operating conditions

Incorrect ambient and operating conditions can make the product unsafe, leading to the risk of serious injuries, considerable material damage and/or a significant reduction to the product's life span.

- Make sure that the product is used only in the context of its defined application parameters, ▸ 3 [🗋 20].
- Make sure that the product is a sufficient size for the application.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Exceptions are products that are designed especially for contaminated environments.

2.5.1 Environmental conditions

Transport and storage requirements

If the product is transported and stored in its original packaging, the following data applies:

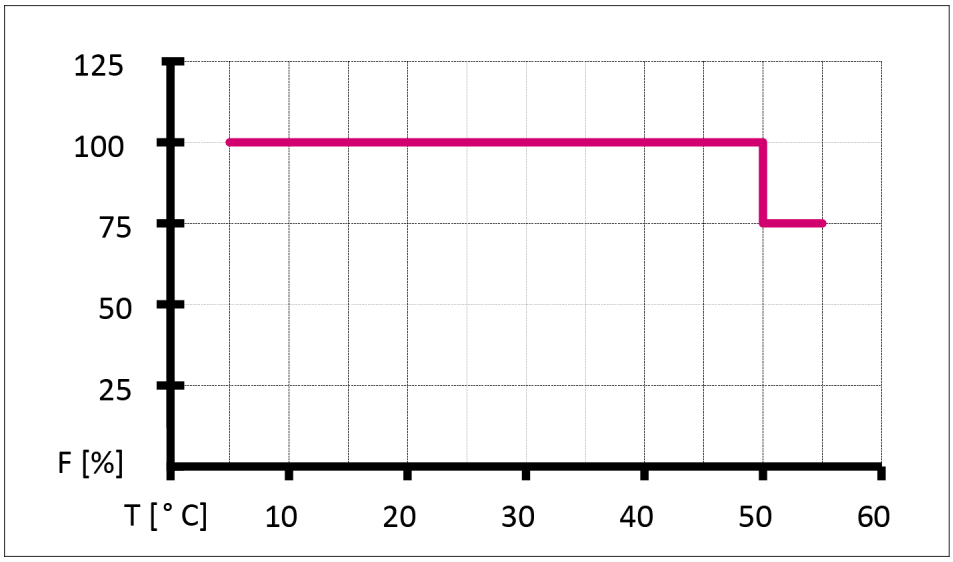
- Loading and unloading with mechanical aids
- Ambient temperature from -40°C to +70°C
- Air humidity up to max. 85%

Operational requirements

If the product is operated, the following data applies:

- Ambient temperature from +5°C to +55°C
- Air humidity up to max. 85%

In order to avoid overheating, it is recommended to reduce the gripping force to 75% for ambient temperatures above +50°C.



Derating diagram

According to DIN EN 60068-2-6 and DIN EN 60068-2-27, in accordance with EN 60721-3-2 and EN 60721-3-3, the product was subjected to a vibration and shock inspection during transport and in operation with respect to the ambient influences and withstands the required loads.

The product may only be used in the following locations if additional measures are taken:

- In locations with a high level of ionizing radiation
- In locations with difficult operating conditions, e.g. due to caustic fumes, gases, oils or chemicals
- In facilities requiring special monitoring, e.g. in particularly at-risk areas
- In applications during which the product is exposed to unacceptably severe knocking or vibrations Suitable measures must be taken to reduce the amplitude or acceleration of such disturbances. Vibration-damping or vibration-absorbing systems are to be used in such cases.

The product must also not be used in potentially explosive zones.

2.6 Personnel qualification

Inadequate qualifications of the personnel

If the personnel working with the product is not sufficiently qualified, the result may be serious injuries and significant property damage.

- All work may only be performed by qualified personnel.
- Before working with the product, the personnel must have read and understood the complete assembly and operating manual.
- Observe the national safety regulations and rules and general safety instructions.

The following personal qualifications are necessary for the various activities related to the product:

Trained electrician
Due to their technical training, knowledge and experience, trained electricians are able to work on electrical systems, recognize and avoid possible dangers and know the relevant standards and regulations.

Qualified personnel
Due to its technical training, knowledge and experience, qualified personnel is able to perform the delegated tasks, recognize and avoid possible dangers and knows the relevant standards and regulations.

Instructed person
Instructed persons were instructed by the operator about the delegated tasks and possible dangers due to improper behaviour.

Service personnel of the manufacturer
Due to its technical training, knowledge and experience, service personnel of the manufacturer is able to perform the delegated tasks and to recognize and avoid possible dangers.

2.7 Personal protective equipment

Use of personal protective equipment

Personal protective equipment serves to protect staff against danger which may interfere with their health or safety at work.

- When working on and with the product, observe the occupational health and safety regulations and wear the required personal protective equipment.
- Observe the valid safety and accident prevention regulations.
- Wear protective gloves to guard against sharp edges and corners or rough surfaces.
- Wear heat-resistant protective gloves when handling hot surfaces.

- Wear protective gloves and safety goggles when handling hazardous substances.
- Wear close-fitting protective clothing and also wear long hair in a hairnet when dealing with moving components.

2.8 Notes on safe operation

Incorrect handling of the personnel

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Avoid any manner of working that may interfere with the function and operational safety of the product.
- Use the product as intended.
- Observe the safety notes and assembly instructions.
- Do not expose the product to any corrosive media. This does not apply to products that are designed for special environments.
- Eliminate any malfunction immediately.
- Observe the care and maintenance instructions.
- Observe the current safety, accident prevention and environmental protection regulations regarding the product's application field.

2.9 Transport

Handling during transport

Incorrect handling during transport may impair the product's safety and cause serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- Secure the product against falling during transportation and handling.
- Stand clear of suspended loads.

2.10 Malfunctions

Behavior in case of malfunctions

- Immediately remove the product from operation and report the malfunction to the responsible departments/persons.
- Order appropriately trained personnel to rectify the malfunction.
- Do not recommission the product until the malfunction has been rectified.
- Test the product after a malfunction to establish whether it still functions properly and no increased risks have arisen.

2.11 Disposal

Handling of disposal

The incorrect handling of disposal may impair the product's safety and cause serious injuries as well as considerable material and environmental harm.

- Follow local regulations on dispatching product components for recycling or proper disposal.

2.12 Fundamental dangers

General

- Observe safety distances.
- Never deactivate safety devices.
- Before commissioning the product, take appropriate protective measures to secure the danger zone.
- Disconnect power sources before installation, modification, maintenance, or calibration. Ensure that no residual energy remains in the system.
- If the energy supply is connected, do not move any parts by hand.
- Do not reach into the open mechanism or movement area of the product during operation.

2.12.1 Protection during handling and assembly

Incorrect handling and assembly

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Have all work carried out by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention rules.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

Incorrect lifting of loads

Falling loads may cause serious injuries and even death.

- Stand clear of suspended loads and do not step into their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.

2.12.2 Protection during commissioning and operation

Falling or violently ejected components

Falling and violently ejected components can cause serious injuries and even death.

- Take appropriate protective measures to secure the danger zone.
- Never step into the danger zone during operation.

2.12.3 Protection against dangerous movements

Unexpected movements

Residual energy in the system may cause serious injuries while working with the product.

- Switch off the energy supply, ensure that no residual energy remains and secure against inadvertent reactivation.
- The faulty actuation of conected drives may cause dangerous movements.
- Operating mistakes, faulty parameterization during commissioning or software errors may trigger dangerous movements.
- Never rely solely on the response of the monitoring function to avert danger. Until the installed monitors become effective, it must be assumed that the drive movement is faulty, with its action being dependent on the control unit and the current operating condition of the drive. Perform maintenance work, modifications, and attachments outside the danger zone defined by the movement range.
- To avoid accidents and/or material damage, human access to the movement range of the machine must be restricted. Limit/prevent accidental access for people in this area due through technical safety measures. The protective cover and protective fence must be rigid enough to withstand the maximum possible movement energy. EMERGENCY STOP switches must be easily and quickly accessible. Before starting up the machine or automated system, check that the EMERGENCY STOP system is working. Prevent operation of the machine if this protective equipment does not function correctly.

2.12.4 Protection against electric shock

Work on electrical equipment

Touching live parts may result in death.

- Work on the electrical equipment may only be carried out by qualified electricians in accordance with the electrical engineering regulations.

- Lay electrical cables properly, e. g. in a cable duct or a cable bridge. Observe standards.
- Before connecting or disconnecting electrical cables, switch off the power supply and check that the cables are free of voltage. Secure the power supply against being switched on again.
- Before switching on the product, check that the protective earth conductor is correctly attached to all electrical components according to the wiring diagram.
- Check whether covers and protective devices are fitted to prevent contact with live components.
- Do not touch the product's terminals when the power supply is switched on.

Possible electrostatic energy

Components or assembly groups may become electrostatically charged. When the electrostatic charge is touched, the discharge may trigger a shock reaction leading to injuries.

- The operator must ensure that all components and assembly groups are included in the local potential equalisation in accordance with the applicable regulations.
- While paying attention to the actual conditions of the working environment, the potential equalisation must be implemented by a specialist electrician according to the applicable regulations.
- The effectiveness of the potential equalisation must be verified by executing regular safety measurements.

2.12.5 Protection against magnetic and electromagnetic fields

Work in areas with magnetic and electromagnetic fields

Magnetic and electromagnetic fields can lead to serious injuries.

- Persons with pace-makers, metal implants, metal shards, or hearing aids require the consent of a physician before entering areas in which components of the electric drive and control systems are mounted, started up, and operated.
- Persons with pace-makers, metal implants, metal shards, or hearing aids require the consent of a physician before entering areas in which magnetic grippers or motor parts with permanent magnets are stored, repaired, or assembled.
- Do not operate high-frequency or radio devices in the proximity of electric components of the drive system and their feed lines.

  If the use of such devices is necessary:

When starting up the electric drive and control system, check the machine or automated system for possible failures when such systems are used at different intervals and in different states of the control system. A special additional EMC test may be necessary if the system has a high risk potential.

2.13 Notes on particular risks

⚠ DANGER

Danger from electric voltage!

Touching live parts may result in death.

- Switch off the power supply before any assembly, adjustment or maintenance work and secure against being switched on again.
- Only qualified electricians may perform electrical installations.
- Check if de-energized, ground it and hot-wire.
- Cover live parts.

⚠ DANGER

Risk of fatal injury from suspended loads!

Falling loads can cause serious injuries and even death.

- Stand clear of suspended loads and do not step within their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.
- Wear suitable protective equipment.

⚠ WARNING

Risk of injury from objects falling and being ejected!

Falling and ejected objects during operation can lead to serious injury or death.

- Take appropriate protective measures to secure the danger zone.

⚠ WARNING

Risk of injury due to unexpected movements!

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

⚠ WARNING

Risk of injury from crushing and impacts!

Serious injury could occur during movement of the base jaw, due to breakage or loosening of the gripper fingers or if the workpiece is lost.

- Wear suitable protective equipment.
- Do not reach into the open mechanism or the movement area of the product.

⚠ WARNING

Risk of injury from sharp edges and corners!

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

⚠ WARNING

Risk of burns through contact with hot surfaces!

Surfaces of components can heat up severely during operation. Skin contact with hot surfaces causes severe burns to the skin.

- For all work in the vicinity of hot surfaces, wear safety gloves.
- Before carrying out any work, make sure that all surfaces have cooled down to the ambient temperature.

⚠ WARNING

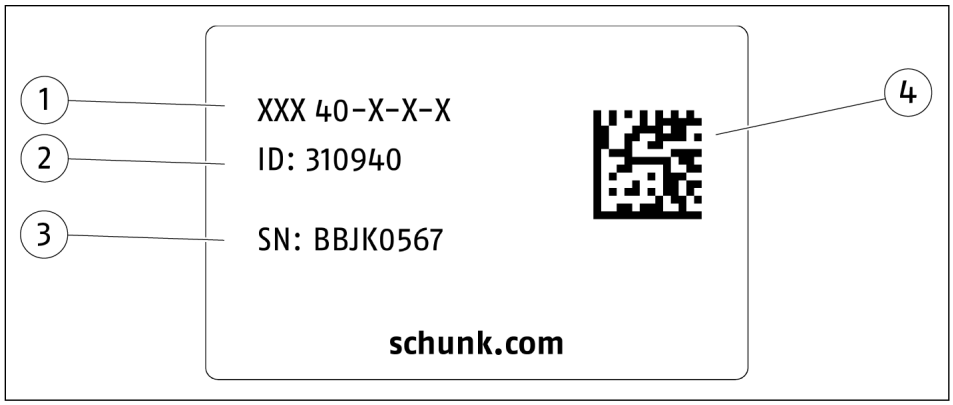
Risk of injury from objects falling in the event of an energy supply failure

In case of an energy supply failure, the gripping force decreases and a secure hold on the gripped workpiece cannot be guaranteed.

- Take suitable protective measures to secure the danger zone.

3 Technical data

3.1 Name plate



1	Product designation
2	ID
3	Serial number
4	Data matrix code

Scan code or enter serial number on the web and get all the product information: operating manuals, spare parts packages, software updates and much more.

For further information, visit **schunk.com/serialisierung**

A separate app may be required for scanning with a mobile phone.

3.2 "Digital I/O" variant

Designation	PGN-plus-E	
	80	100
Mechanical operating data		
Weight [kg]	1.01 / SD: 1.08	1.73 / SD: 1.85
Gripping force [N] min. max.	 110 530	 200 810
Electrical operating data		
Nominal voltage [VDC]	24 ±10%	
Nominal power current [A]	0.7	
Max. current [A]	1.5	
Integrated electronic control unit		
Communication interface	Digital I/O	
Number of digital inputs/outputs	2/2	

More technical data is included in the catalog data sheet. Whichever is the latest version.

3.3 "IO-Link" variant

Designation	PGN-plus-E	
	80 IO-Link	100 IO-Link
Mechanical operating data		
Weight [kg]	1.01 / SD: 1.08	1.73 / SD: 1.85
Gripping force [N] min. max.	 110 530	 200 810
Tolerance end position detection		
in delivery state [mm]	±0.5	±0.75
after referencing or stroke measurement [mm]	±0.05	±0.05
Electrical operating data		
Nominal voltage [VDC]	24 ±10%	
Nominal power current [A]	0.7	
Max. current [A]	1.5	
Integrated electronic control unit		
Communication interface	IO-Link	
Specification:	V1.1	
Transmission rate	COM2	
Port	Class B	

More technical data is included in the catalog data sheet. Whichever is the latest version.

3.4 Ambient conditions and operating conditions

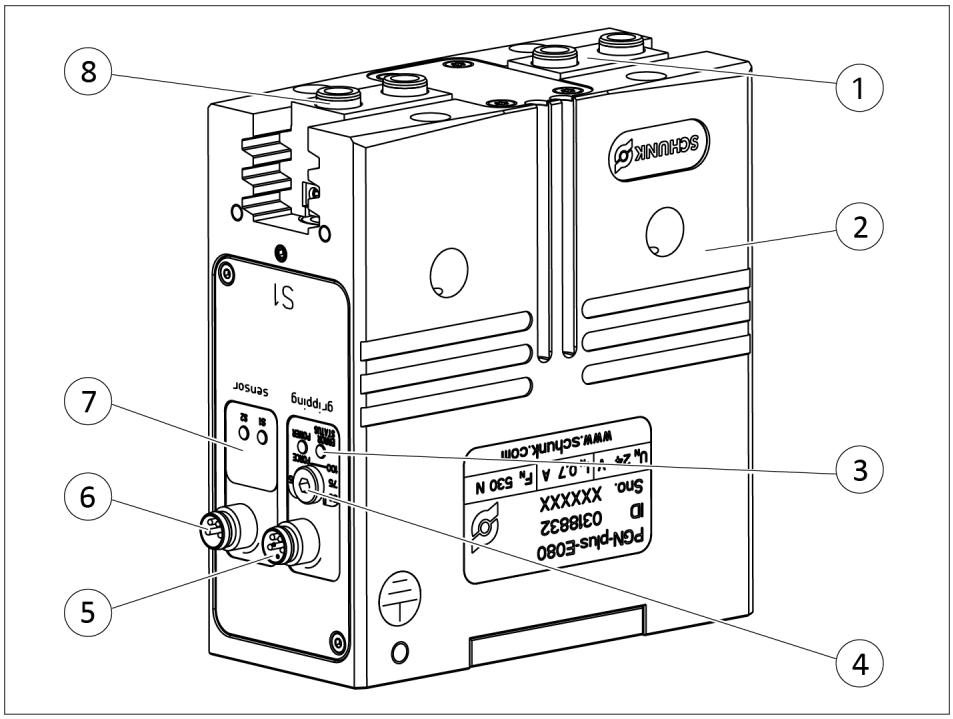
Designation	PGN-plus-E	
	80	100
Ambient temperature [°C] min. max.	 +5 +55	
IP rating	40 / SD: 64	
Air purity class according to DIN EN ISO 14644-1:2015	5 *	6 *
Noise emission [dB(A)]	≤ 70	

* When using the product in a cleanroom, please note that grease may leak from moving parts, especially the base jaws and their guides.

4 Design and description

4.1 Design

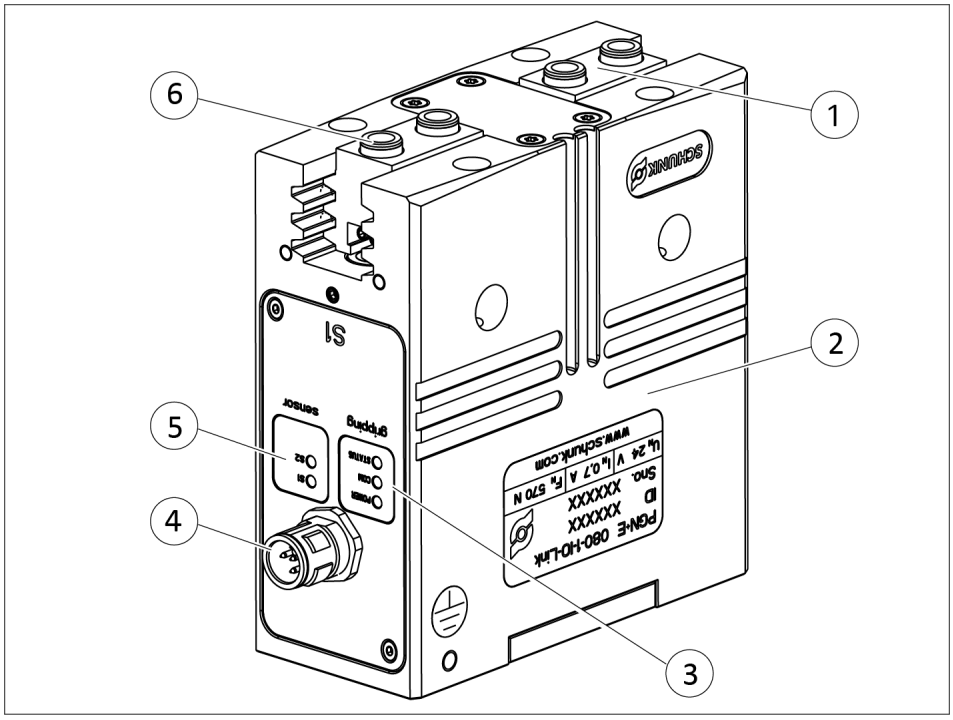
4.1.1 "Digital I/0" variant



2-Finger Parallel Gripper , variant "Digital I/0"

1	Gripper finger interface
2	Housing
3	LEDs "POWER" and "ERROR/STATUS"
4	"Gripping force" rotary switch
5	"Voltage supply and actuation" connection plug
6	"Sensors" connection plug
7	LEDs sensors "S1" and "S2"
8	Gripper finger centering sleeve

4.1.2 "IO-Link" variant



2-Finger Parallel Gripper , variant "IO-Link"

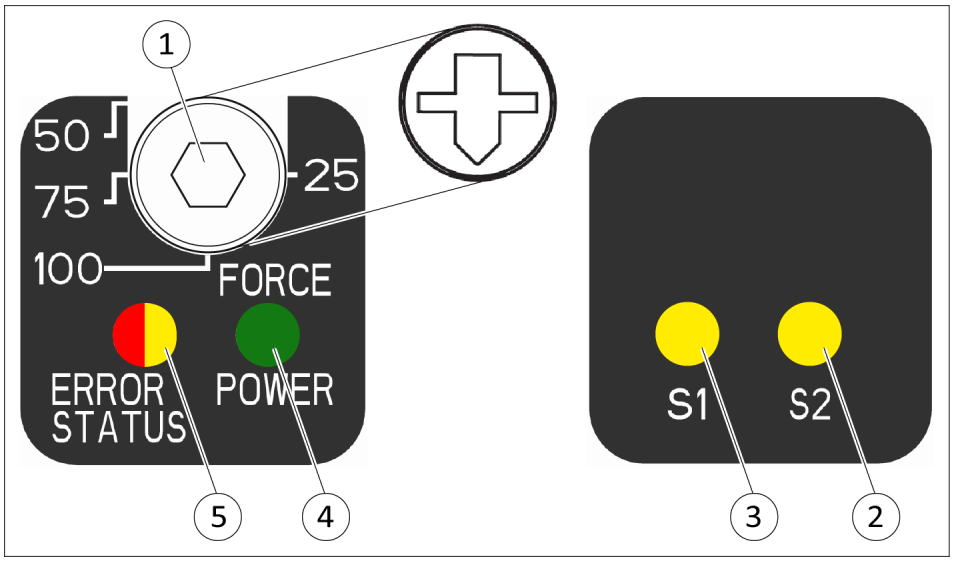
1	Gripper finger interface
2	Housing
3	LEDs "POWER", "COM" and "STATUS"
4	"IO-Link" connection plug
5	LEDs sensors "S1" and "S2"
6	Gripper finger centering sleeve

4.2 Description

The product is a servo-electric 2-finger parallel gripper featuring high power density and integrated electronics and two integrated inductive proximity switches.

4.3 Display

4.3.1 "Digital I/O" variant



Function label

1	"Gripping force" rotary switch	4	LED "POWER"
2	LED Sensor "S2"	5	LED LED "ERROR/STATUS"
3	LED Sensor "S1"		

LED Voltage supply and control

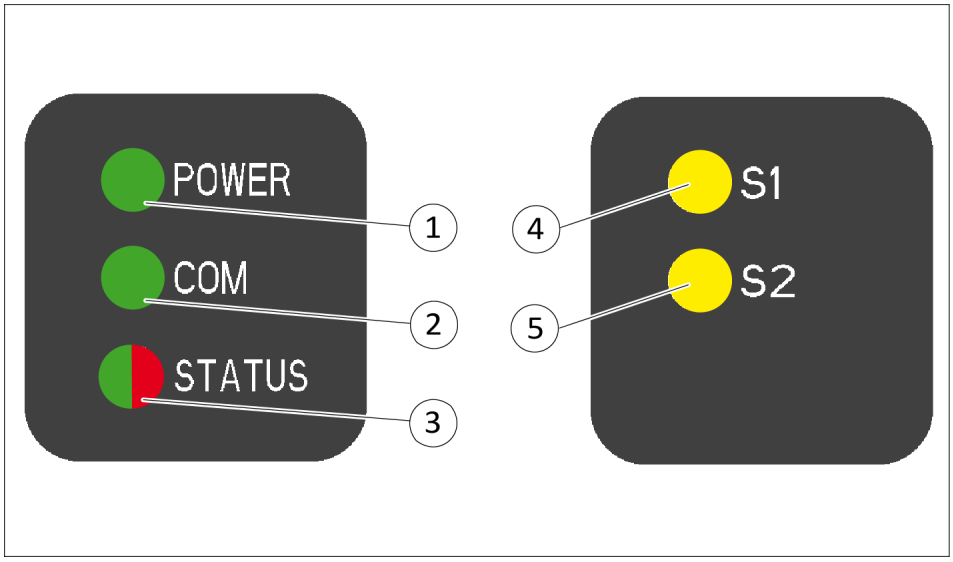
Designation	Color	Function
POWER	Green	Indicates whether the voltage is connected. • **Lights up** as long as voltage is present in the product. • **Does not light up** if there is no voltage present in the product or the product has been connected with incorrect polarity.
ERROR	Red	• **Does not light up** when there is no warning or error and the product is ready to operate. • **Lights up** if there is a low-voltage fault. – Is automatically acknowledged if the fault is no longer present. • **Lights up** if the continuous current load from the motor is too high (I^2T). – Is automatically acknowledged if the fault is no longer present. • **Blinks slowly** (approx. every 1.2 s) when there is an excessive temperature.

Designation	Color	Function
		– The product enters an idle phase until it has cooled down. The commands "open gripper" or "close gripper" are not processed – The error must be acknowledged. • **Blinks rapidly** (approx. every 0.6 s) when the "gripping force" rotary switch is between two switching positions. – Is automatically deleted when the "gripping force" rotary switch is on one switching position.
STATUS	Yellow	• **Lights up** if the product is ready for operation. • **Does not light up** (approx. 250 ms), when a new command is initiated. • **Does not light up** if there is an error.
Acknowledge error		1. Wait until the product has cooled down. 2. Actuate both digital inlets, PIN 2 and PIN 4, with high. 3. OR: Disconnect voltage supply and reconnect. ⇨ LED "error" is extinguished and the error is acknowledged.

LED "Sensors"

Designation	Color	Function
S1	Yellow	Shows when there is a sensor signal with the gripper closed.
		• **Lights up** if there is a sensor signal. • **Does not light up** if there is no sensor signal.
S2	Yellow	Shows when there is a sensor signal with the gripper opened.
		• **Lights up** if there is a sensor signal. • **Does not light up** if there is no sensor signal.

4.3.2 "IO-Link" variant



Function label

1	LED "POWER"	4	LED Sensor "S1"
2	LED "COM"	5	LED Sensor "S2"
3	LED "STATUS"		

LED "POWER", "COM" and "STATUS"

Designation	Color	Function
POWER	Green	• **Lights up** if ready for operation • **Does not light up** if logic or actuator voltage is reversed or not in the valid range.
COM	Green	• **Does not light up** if IO-Link communication is not active • **Flashes** if IO-Link communication is active
STATUS	Green / Red	• **Does not light up** if electronics are not active or defective • **Lights up green** if ready for operation • **Lights up red** in case of a fault. Error message is communicated via IO-Link

LED "Sensors"

Designation	Color	Function
S1	Yellow	Shows when there is a sensor signal with the gripper closed. • **Lights up** if there is a sensor signal. • **Does not light up** if there is no sensor signal.
S2	Yellow	Shows when there is a sensor signal with the gripper opened. • **Lights up** if there is a sensor signal. • **Does not light up** if there is no sensor signal.

5 Assembly and settings

5.1 Installing and connecting

⚠ WARNING

Risk of injury due to unexpected movements!

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

NOTE

Mount the product so that sufficient cooling is guaranteed. A temperature malfunction may occur if the product reaches excessively high temperatures.

"Digital I/O" version

1. Check the evenness of the mounting surface, ▸ 5.2.1 [🗋 28].
2. Screw the product to the machine/system, ▸ 5.2.1 [🗋 28].
   - ⇨ If necessary, use appropriate connection elements (adapter plates).
   - ⇨ Observe the permissible depth of engagement.
   - ⇨ Observe the tightening torque for the mounting screws.
3. Secure the gripper fingers to the base jaws, ▸ 5.2.1 [🗋 28].
4. Connect the functional ground cable between the product and the machine/system, ▸ 5.2.2 [🗋 30].
5. Place cable for sensors on the M8 connector and tighten the threaded ring by hand, ▸ 5.2.2 [🗋 30].
6. Adjust gripping force if necessary, ▸ 5.5 [🗋 38].
7. Mount the sensor, ▸ 5.6 [🗋 39].
8. Place the voltage supply and control cable on the M8 connector and screw the threaded ring tightly by hand, ▸ 4.1.1 [🗋 22].

"IO-Link" version

1. Check the evenness of the mounting surface, ▸ 5.2.1 [🗋 28].
2. Screw the product to the machine/system, ▸ 5.2.1 [🗋 28].
   - ⇨ If necessary, use appropriate connection elements (adapter plates).
   - ⇨ Observe the permissible depth of engagement.

⇨ Observe the tightening torque for the mounting screws.

3. Secure the gripper fingers to the base jaws, ▸ 5.2.1 [🗋 28].
4. Connect the functional ground cable between the product and the machine/system, ▸ 5.2.2 [🗋 30].
5. Place cable for IO-Link on the M12 connector and tighten the threaded ring by hand, ▸ 4.1.2 [🗋 23].

5.2 Connections

5.2.1 Mechanical connection

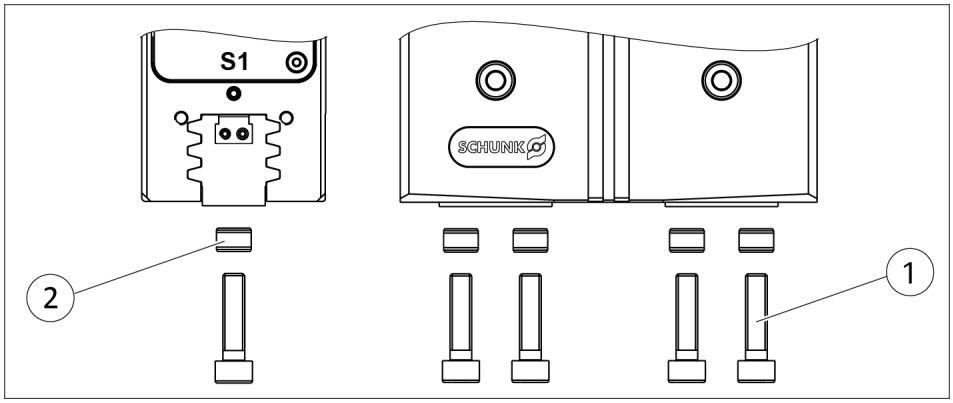
Evenness of the mounting surface

The values refer to the entire bolting surface on which the product is mounted.

Edge lengths	Permissible unevenness
< 100	< 0.01
> 100	< 0.02

Tab.: Requirements for the evenness of the bolting surface (dimensions in mm)

Connections at the base jaws



Connections at the base jaws

Item	Mounting	PGN-plus-E	
		80	100
1	Mounting screw	M5	M6
	Max. depth of engagement from locating surface [mm]	11.9	14.2
2	Centering sleeve	Ø8	Ø10

Dust-tight (SD)

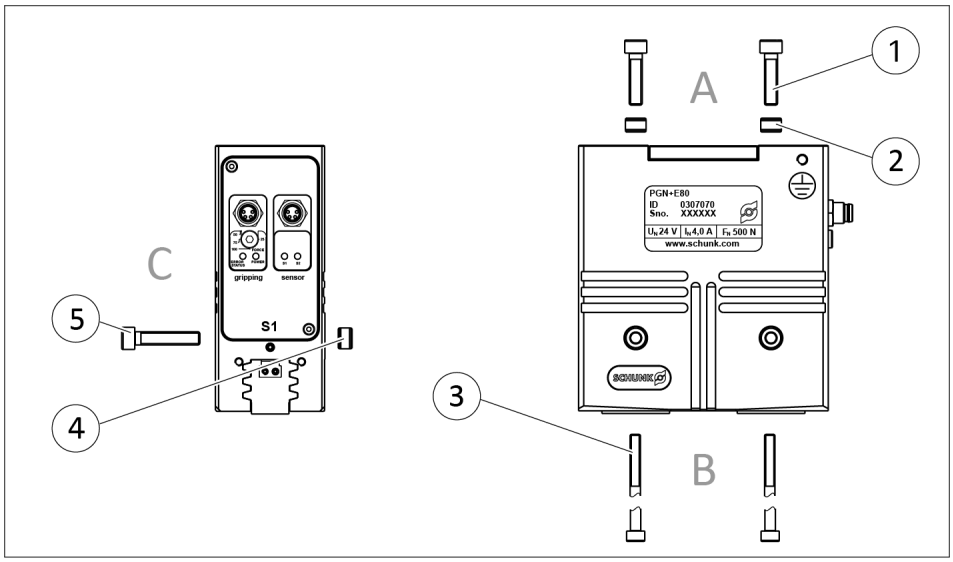
NOTE

On delivery of the dust-tight version (SD) the intermediate jaws are screwed onto the base jaws. The intermediate jaws can become off while removing the screws.

Observe during assembly, that the intermediate jaws are between the base jaws und the gripper finger.

Connections at the housing

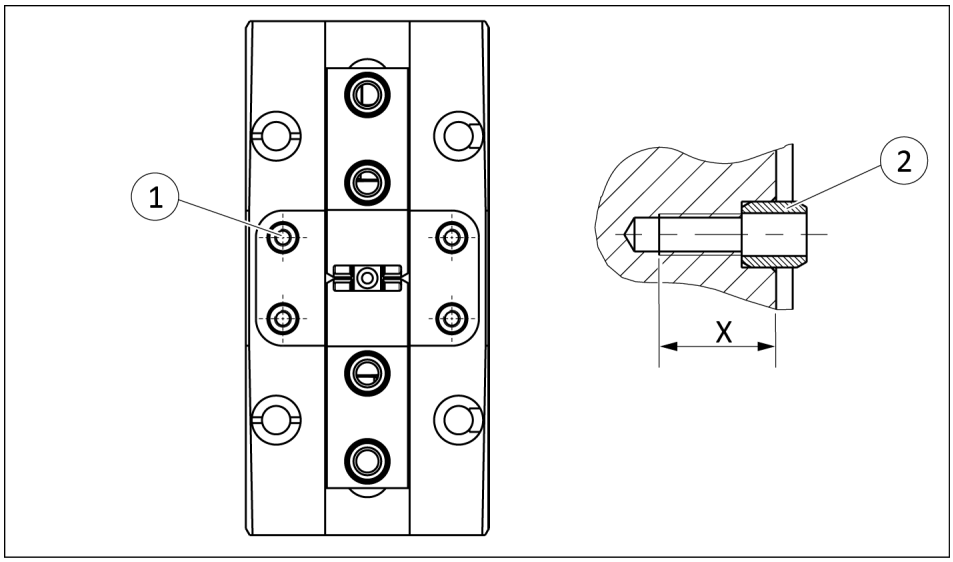
The product can be mounted from three sides.



Assembly options

Item	Mounting	PGN-plus-E	
		80	100
Side A			
1	Mounting screws	M5	M6
	Maximum depth of engagement from locating surface [mm]	11	14
	Mounting screws as per standard	DIN EN ISO 4762	
2	Centering sleeves	Ø8	Ø10
Side B			
3	Bore hole for mounting screws	M4	M5
	Mounting screws as per standard	DIN EN ISO 4762	
2	Centering sleeves	Ø8	Ø10
Side C			
5	Bore hole for mounting screws	M5	M6
	Mounting screws as per standard	DIN EN ISO 4762 Max. strength class 8.8	
4	Centering sleeves	Ø8	Ø10

Connections for additional structure



Connections for additional structure

Item	Mounting	PGN-plus-E	
		80	100
1	Thread in the case	M2.5	M3
X	Max. depth of engagement from locating surface [mm]	7.1	8.4
2	Centering sleeve	Ø4	Ø5

5.2.2 Electrical connection – "Digital I/O" variant

CAUTION

Material damage due to incorrect assembly!

- When connecting the cable, do not exceed the maximum tightening torque of 0.8 Nm for the cable.
- Make sure that the connections are not stressed due to pulling or pressure forces or due to vibrations. Apply the corresponding strain relief devices if required.

CAUTION

Risk of damage to the electronics!

A faulty connection can cause damage to the internal electronics.

- The supply network must be a network of type "PELV" for power and logic.
- Observe the PIN assignment of the connecting terminals.
- Make sure that all components are grounded correctly.

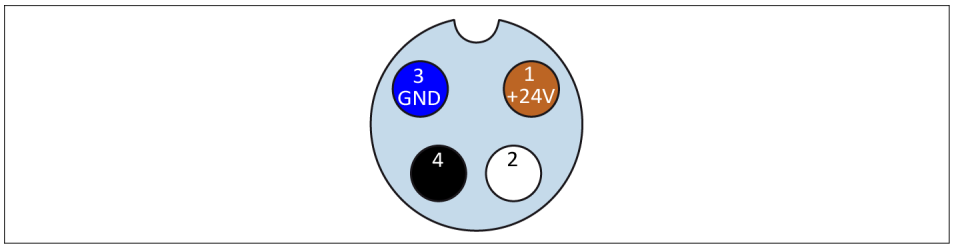
NOTE

Note on EMC conformity (in accordance with EN 61000-6-4:2007 + A1:2011):

- The product may only be used in DC distribution networks with an expansion of < 30 m.

NOTE

When using customer-specific cable: at least 4 x 0.34 mm²



PIN allocation for connector sensors and voltage supply and actuation

Pin	Wire strand	Signal
1	Brown	+ 24 V
2	White	Sensor 2
3	Blue	GND
4	Black	Sensor 1

Tab.: Connection assignment for sensors

Pin	Wire strand	Signal
1	Brown	+ 24 V
2	White	Open
3	Blue	GND
4	Black	Close

Tab.: Connection assignment for voltage supply and actuation

Connection	Plug connector PGN-plus-E	Plug connector provided by the customer
Sensors	Connection plug 4-pin, M8	Connection cable 4-pin, M8 socket
Voltage supply and control	Connection plug 4-pin, M8	Connection cable 4-pin, M8 socket

Tab.: Components of the electrical connection

Tightening torque of M8 plug connection: 50 cNm

5.2.2.1 Actuation of the digital inputs

Truth table

The truth table shows the actuation of the digital inputs during possible commands by the superordinated control unit.

Power consumption per digital inputs amounts to max. I=10 mA.

Function	Pin 2 (open)	Pin 4 (close)
De-energized drive (shutdown, motor is short-circuited)	0	0
Open the gripper	1	0
Close the gripper	0	1
Rectify error (shutdown, motor is short-circuited)	1	1

Tab.: Open/close digital inlets

Rest period between two commands

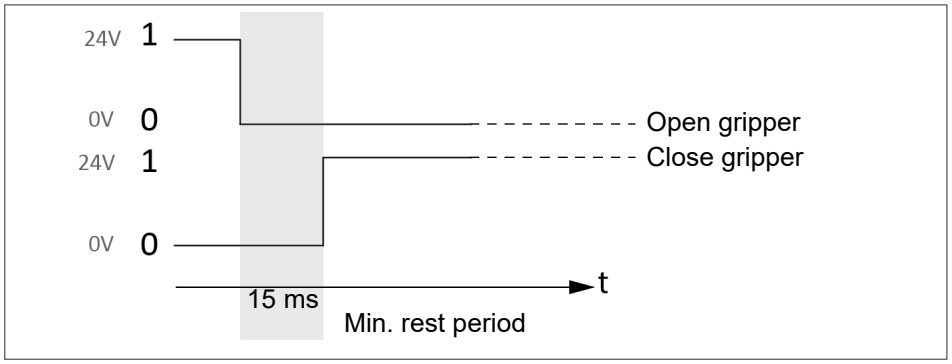
CAUTION

Material damage due to faulty control!

The internal electronics can be damaged by two commands following too quickly in succession.

- Maintain a rest period between commands.

The following graph shows the minimum rest period that must be kept between two commands.



Example Open Gripper/Close Gripper

Restart protection

NOTE

The product is equipped with restart protection.

After restarting clamping, make sure both digital inputs are set to 0.

If you fail to do this, new commands will not be accepted.

5.2.3 Electrical connection – "IO-Link" variant

CAUTION

Material damage due to incorrect assembly!

- When connecting the cable, do not exceed the maximum tightening torque of 0.8 Nm for the cable.
- Make sure that the connections are not stressed due to pulling or pressure forces or due to vibrations. Apply the corresponding strain relief devices if required.

CAUTION

Risk of damage to the electronics!

A faulty connection can cause damage to the internal electronics.

- The supply network must be a network of type "PELV" for power and logic.
- Observe the PIN assignment of the connecting terminals.
- Make sure that all components are grounded correctly.

NOTE

Note on EMC conformity (in accordance with EN 61000-6-4:2007 + A1:2011):

- The product may only be used in DC distribution networks with an expansion of < 30 m.

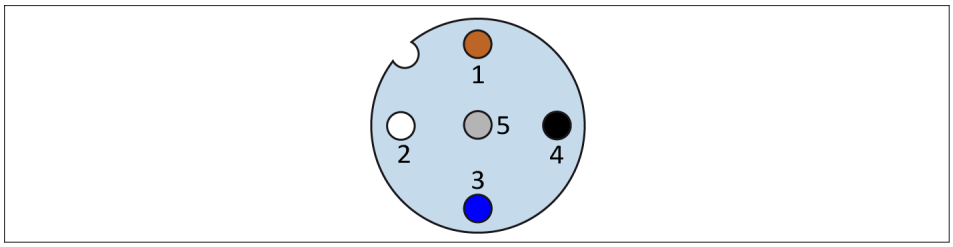
NOTE

When using customer-specific cable: at least 4 x 0.34 mm²

Plug connector gripper	Plug connector provided by the customer
Connector 5-pin, M12, A-coded	Connection cable 5-pin, M12 socket, A-coded

Tab.: Components of the electrical connection

Voltage supply and control



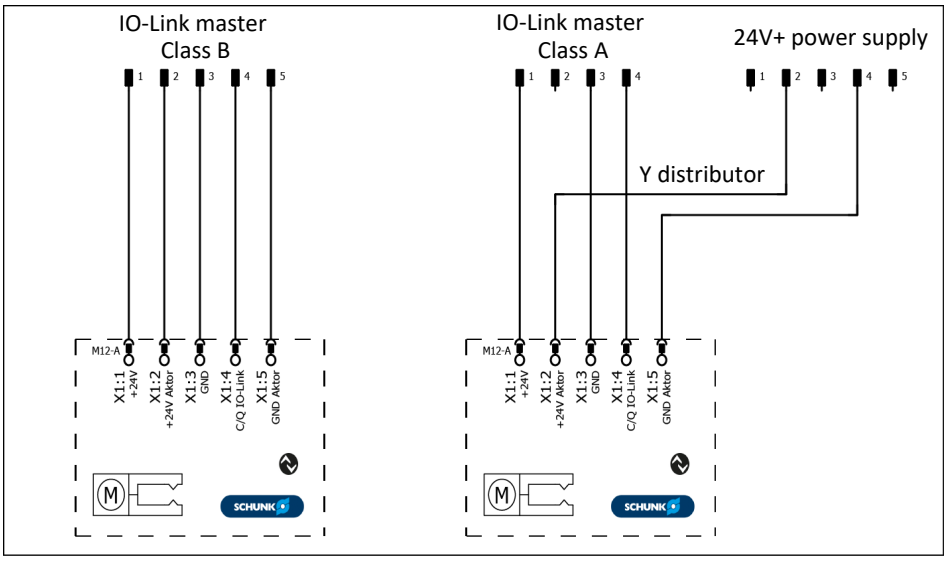
IO-Link cable assignment, 5-pin M12 port class B

Pin	Wire strand	Signal
1	Brown	+ 24 V
2	White	+ 24 V (actuator)
3	Blue	GND
4	Black	C/Q IO-Link
5	Grey	GND (actuator)

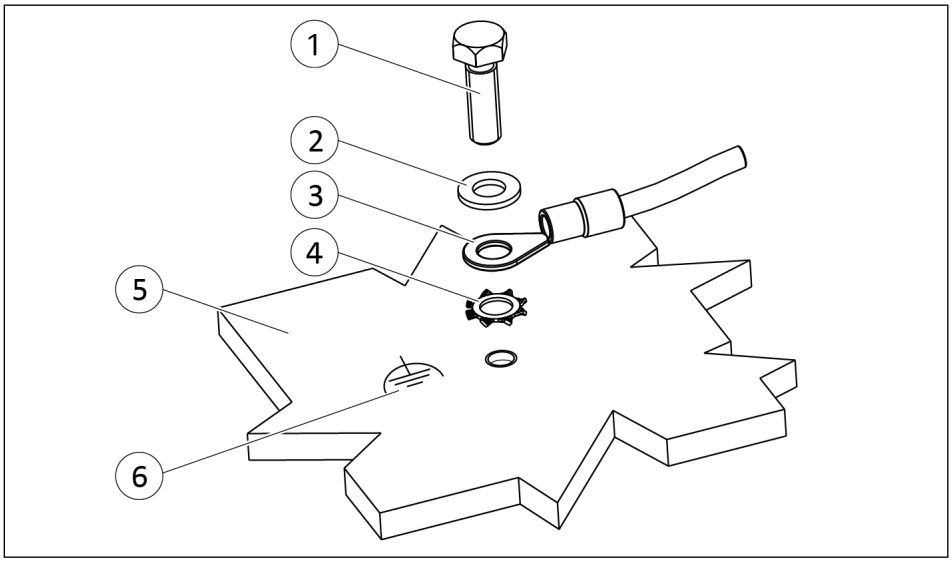
NOTE

For information on actuation, see Software guide "SCHUNK gripper with IO-Link".

5.2.3.1 IO-Link connection diagram



5.3 Connecting the ground cable (functional ground)



Ground connection

1	Screw *	4	Toothed lock washer
2	Washer	5	Product
3	Cable lug	6	Ground marking

*) Tightening torque: 5 Nm

A ground connection with a sufficient cross-section must be established between the product and the machine on the customer's premises.
Mount the ground cable (functional ground) on the threaded hole marked with the ground marking.

NOTE

Only connect the ground cable (functional ground) at the location intended for this purpose.

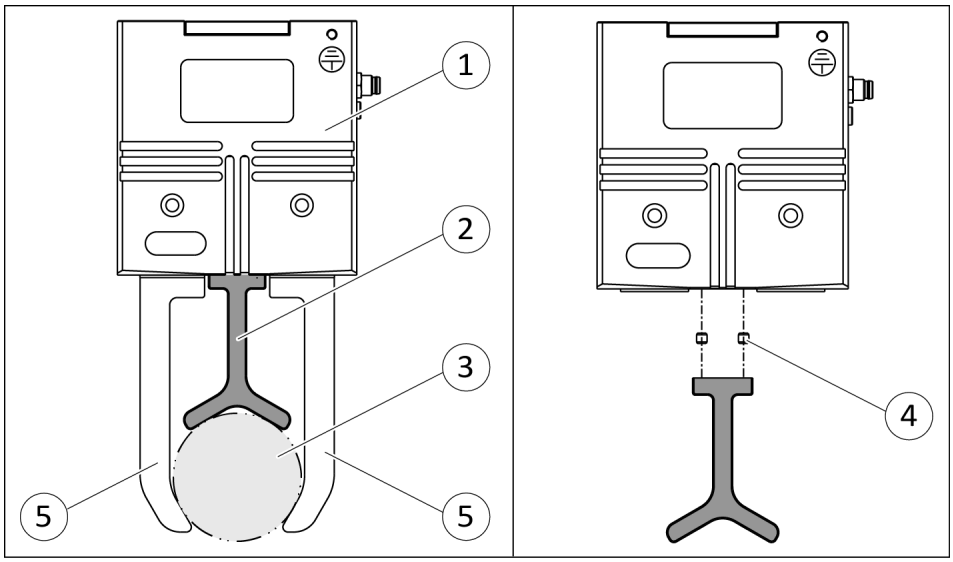
Always mount the ground cable individually. A green-yellow wire strand color is not permitted.

Always use all components to fasten the ground cable (functional ground) and install them in this order: toothed lock washer, cable lug, washer and screw. See "Ground connection" diagram. Observe the tightening torque.

5.4 Attaching additional structure

NOTE

With the dust-tight version (SD), no additional structure can be attached.

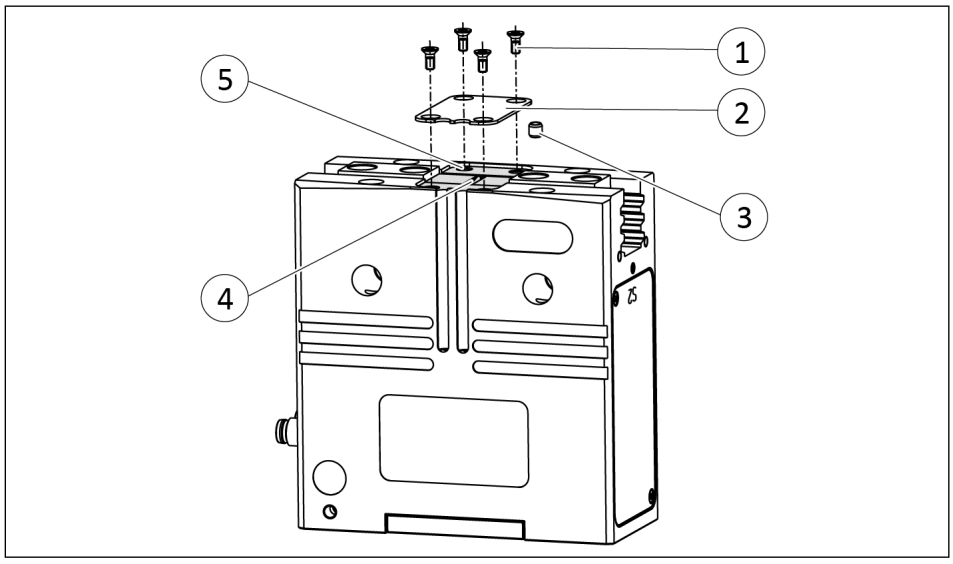


Gripper with additional structure

1	Gripper	4	Centering sleeve
2	Additional structure	5	Gripper fingers
3	Workpiece		

For supporting things like workpieces, an additional structure can be attached to the gripper.

The locating surface of the additional structure may not exceed the recess of the cover. The external dimensions of the additional structure can exceed the external dimensions of the gripper but not interfere with the operating cycle of the gripper fingers.



1. **IMPORTANT! The size of the additional structure may not exceed the recess of the cover.**
2. Remove the screws (1) from the cover (2).
3. Remove the cover (2).
4. **IMPORTANT! Ensure that no foreign objects can enter the gripper.**
   Attach additional structure within the recess (4), ▸ 5.2.1 [🗋 28].
   - ⇨ Use centering sleeves (3) between gripper and additional structure. Centering sleeves can be ordered from SCHUNK.
   - ⇨ The threaded holes (5) of the cover are used for securing the additional structure.

5.5 Adjust gripping force

NOTE

With the "Digital I/O" variant, the gripping force can be adjusted using the rotary switch.

With the "IO-Link" variant, there is no rotary switch for adjusting the gripping force. The gripping force is set via the "IO-Link" communication interface (see Software guide "SCHUNK gripper with IO-Link").

The gripping force is changed by altering the current limitation via the "Gripping force" rotary switch.

- Digital inputs "Opens gripper" and "Closes gripper" are not powered (low), ▸ 5.2.2.1 [🗋 32].

1. Remove seal plug.
2. Adjust gripping force with the "Gripping force" rotary switch. Do this using a suitable slit screwdriver with a blade at least 2 mm wide. **IMPORTANT! Do not exert axial pressure on the axis of the rotary switch.**
   Note: The "Gripping force" rotary switch has four set positions.
3. Insert seal plug.
   ⇨ The IP 67 protection class (electronics housing) is only ensured when the seal plug is mounted.

Item	Gripping force [%]
100 (default)	100
75	75
50	50
25	25

5.6 Installing the sensors

NOTE
Observe the assembly and operating manual of the sensor for mounting and connecting.

The product is prepared for the use of sensors.

- For the exact type designations of suitable sensors, please see catalog datasheet and ▸ 5.6.1 [🗋 39].
- For technical data for the suitable sensors, see assembly and operating manual and catalog datasheet.
  - The assembly and operating manual and catalog datasheet are included in the scope of delivery for the sensors and are available at schunk.com.
- Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

Sensors MMS-P 22, MMS 22-PI1 and MMS 22-PI2

During operation, the sensor may not exceed or drop below a temperature range of ± 15 °C from the control temperature of the switching points. If the temperature range is exceeded or dropped below, the sensor no longer works. If the temperature changes, switching points may have to be readjusted.

Example: Temperature when setting the switching points = 30 °C
30 °C ± 15 °C Temperature range: 15 °C to 45 °C

5.6.1 Overview of sensors

Designation	PGN-plus-E	
	80	100
Magnetic switch MMS 22	X	X
Programmable magnetic switch MMS 22-PI1	X	X
Programmable magnetic switch MMS 22-PI2	X	X
Analog magnetic switch MMS 22-A	X	X
Programmable magnetic switch MMS-P 22	X	X

5.6.2 Switch-off hysteresis for magnetic switches

Sensors MMS 22, MMS 22-PI1, MMS 22-PI2 and MMS-P 22

The smallest detectable difference in stroke is defined in the following table:

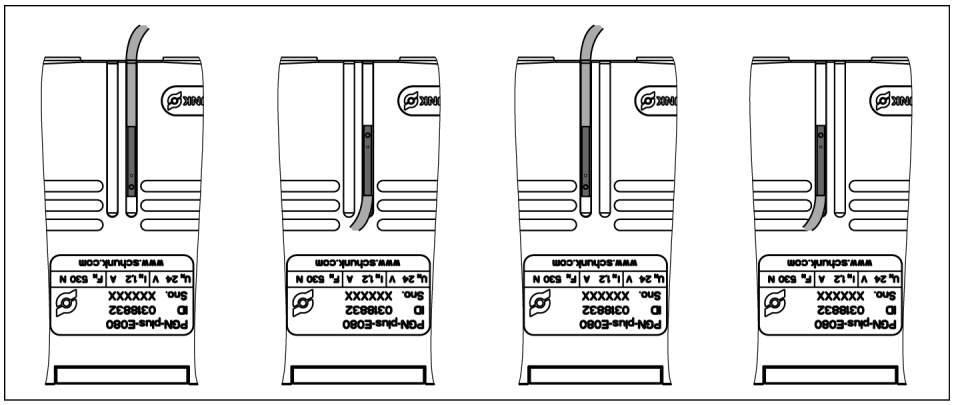
For products with X mm nominal stroke per jaw	Min. query range per jaw/ min. queried stroke difference per jaw
X ≤ 5 mm	30 % of the nominal stroke per jaw
X > 5 mm to X ≤ 10 mm	20 % of the nominal stroke per jaw
X > 10 mm	10 % of the nominal stroke per jaw

Tab.: The smallest detectable difference in stroke based on the nominal stroke

Example: Product with 7 mm nominal stroke per jaw

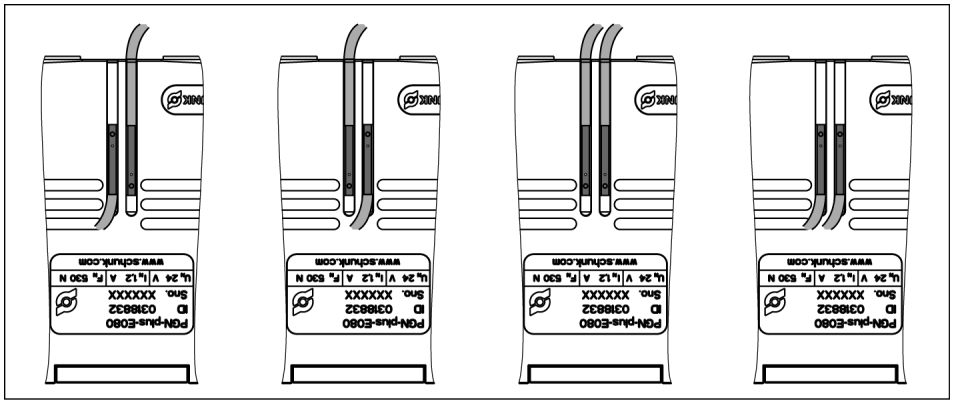
7 mm * 20% = 1.4 mm

5.6.3 Installation position of the magnetic switches



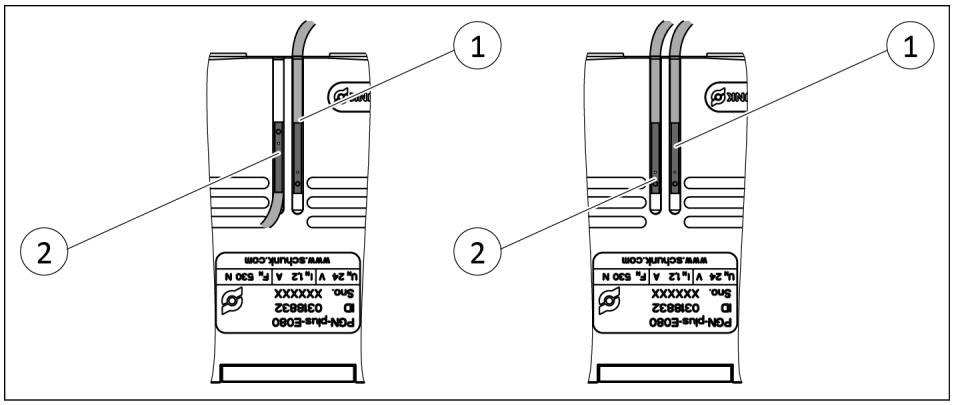
Installation position MMS 22-PI2, MMS-P 22, MMS 22-A

For the magnetic switches MMS 22-PI2, MMS-P 22 and MMS 22-A, the sensor can be mounted with a cable outlet above or below in one of the two grooves.



Installation position MMS 22-PI1

For the magnetic switch MMS 22-PI1, both sensors can be mounted with a cable outlet either above or below in the two grooves.



Installation position MMS 22

With the magnetic switch MMS 22, the sensor 1 (1) must be mounted with cable outlet pointing upwards. The sensor 2 (2) can be mounted with cable outlet above or below.

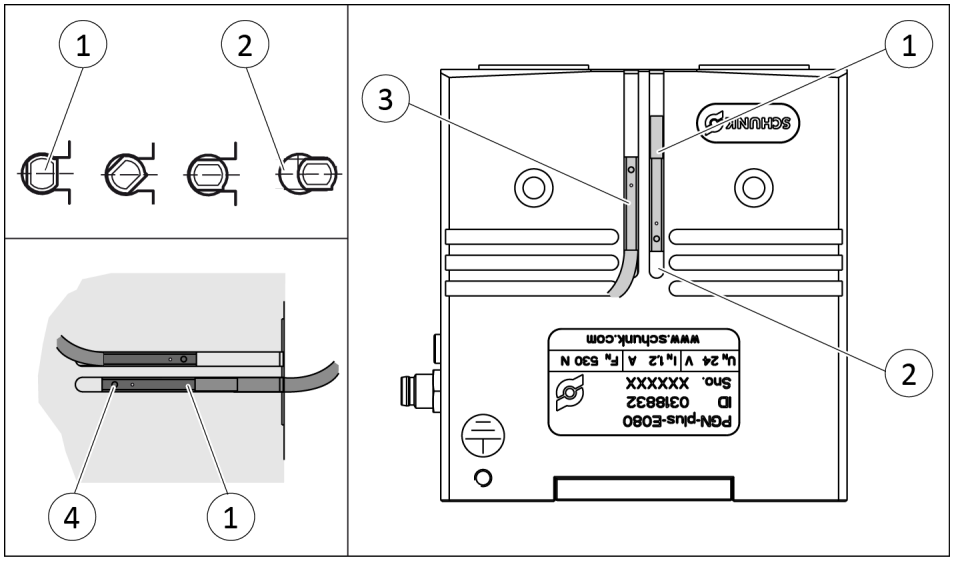
5.6.4 Mounting magnetic switch MMS 22

CAUTION

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.



Position Gripper closed

1. Put product in the position in which it is to be set.
2. Turn the sensor 1 (1) into the groove (2).
   OR: Push the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the housing (3).
   ⇨ The cable outlet is pointing upwards, ▸ 5.6.3 [🗋 40].
3. Pull the sensor 1 (1) back again slowly until it switches.
4. Secure the sensor 1 (1) using the set-screw (4).
   Tightening torque: 10 Ncm
5. Close the product and open it again in order to test its function.

Position Gripper open

1. Put product in the position in which it is to be set.
2. Turn the sensor 2 (3) into the groove (2).
   OR: Slide sensor 2 (3) into the groove (2) in the direction of the housing middle (3), until the sensor 2 (3) switches.
   ⇨ The cable outlet can either point down or up, ▸ 5.6.3 [🗋 40].
3. Secure the sensor 2 (3) using the set-screw (4).
   ⇨ Tightening torque: 10 Ncm
4. Open the product and close it again in order to test its function.

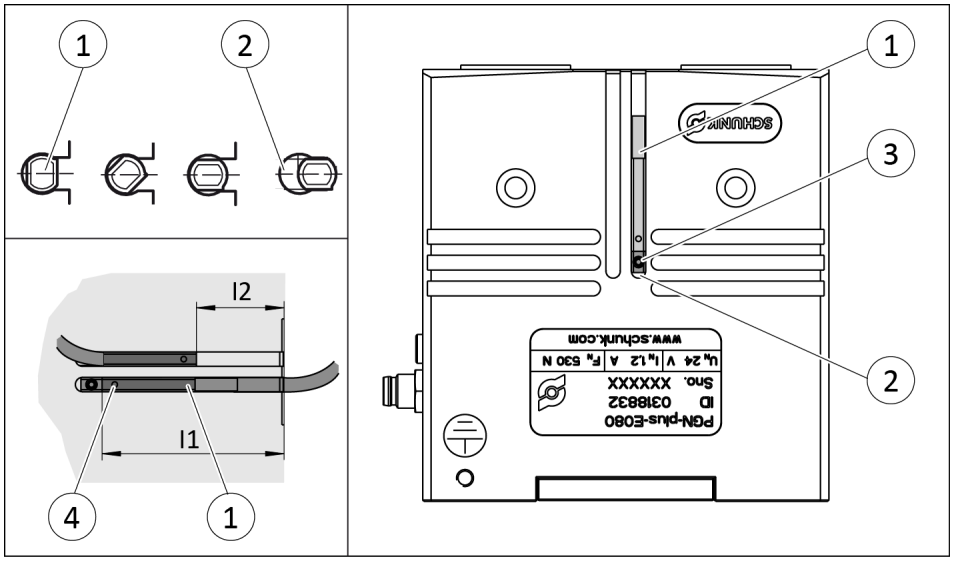
5.6.5 Mounting programmable MMS-P 22 magnetic switch

CAUTION

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.



NOTE

If there is no clamping stop available, slide the sensor according to dimension l2 or dimension l1 into the groove (2).

1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
   ⇨ The cable outlet can either point down or up, ▸ 5.6.3 [🗋 40].
2. Secure the sensor (1) using the set-screw (4).
   ⇨ Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

Size	l1*	l2*
80	43	20.7
100	50.5	30.5

* Dimension l1/l2 Outer edge of product up to front side sensor [mm]

5.6.6 Mounting programmable magnetic switch MMS 22-PI1

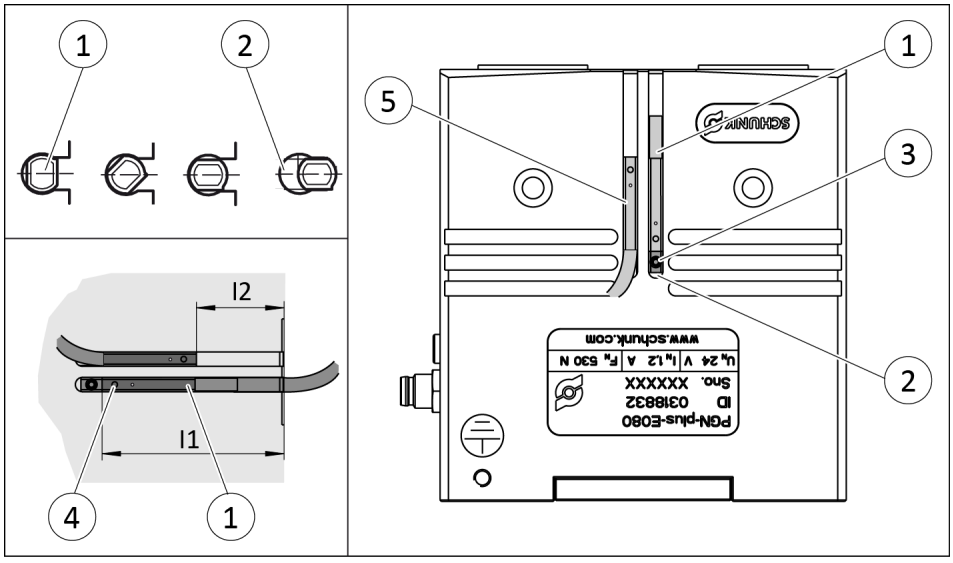
CAUTION

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.

With the sensor 1 the position gripper closed is set and with the sensor 2 the position gripper open is set.



NOTE

If there is no clamping stop available, slide the sensor according to dimension l2 or dimension l1 into the groove (2).

1. Turn the sensor 1 (1) into the groove (2).
   OR: Slide the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
   ⇨ The cable outlet can either point down or up, ▸ 5.6.3 [🗋 40].
2. Secure the sensor 1 (1) using the set-screw (4).
   ⇨ Tightening torque: 10 Ncm
3. Adjust sensor 1 (1), see sensor assembly and operating manual.
4. Repeat steps for sensor 2 (5).

Size	l1*	l2*
80	43	20.7
100	50.5	26.5

* Dimension l1/l2 Outer edge of product up to front side sensor [mm]

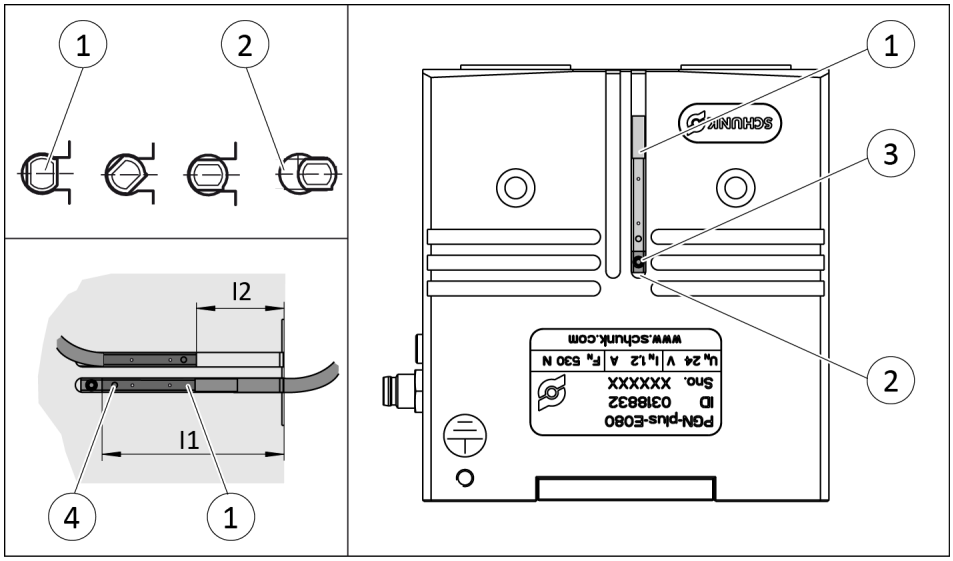
5.6.7 Mounting programmable MMS 22-PI2 magnetic switch

CAUTION

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.



NOTE

If there is no clamping stop available, slide the sensor according to dimension l2 or dimension l1 into the groove (2).

1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
   ⇨ The cable outlet can either point down or up, ▸ 5.6.3 [🗋 40].
2. Secure the sensor (1) using the set-screw (4).
   ⇨ Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

Size	l1*	l2*
80	43	20.7
100	50.5	26.5

* Dimension l1/l2 Outer edge of product up to front side sensor [mm]

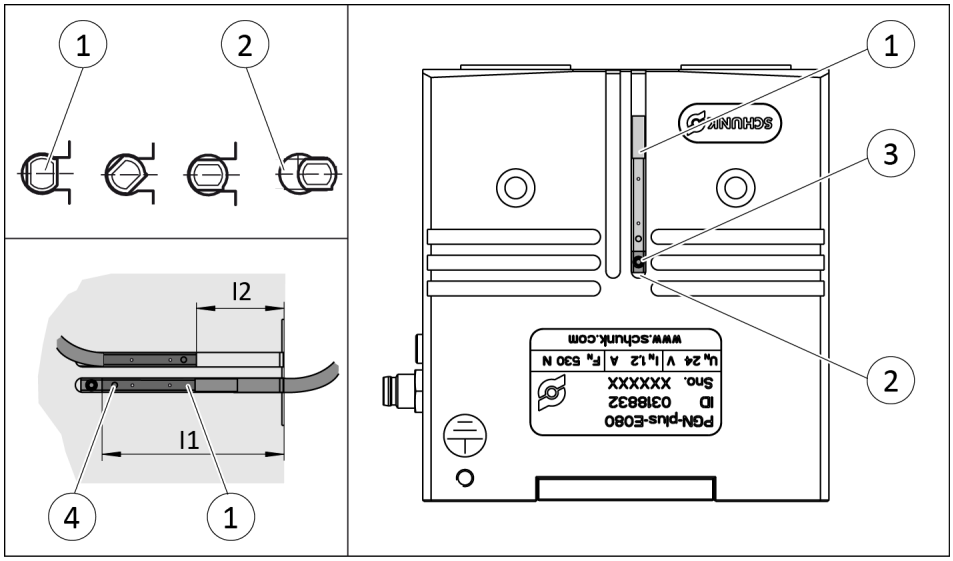
5.6.8 Mounting analog magnetic sensor MMS 22-A

CAUTION

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.



NOTE

If there is no clamping stop available, slide the sensor according to dimension l2 or dimension l1 into the groove (2).

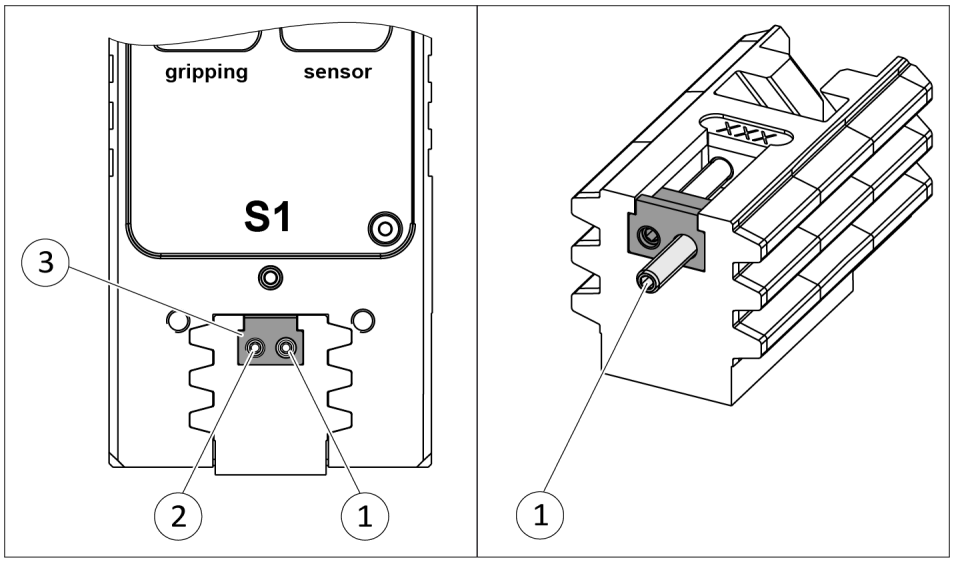
1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
   ⇨ The cable outlet can either point down or up, ▸ 5.6.3 [🗋 40].
2. Secure the sensor (1) using the set-screw (4).
   ⇨ Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

Size	l1*	l2*
80	43	20.7
100	50.5	28.5

* Dimension l1/l2 Outer edge of product up to front side sensor [mm]

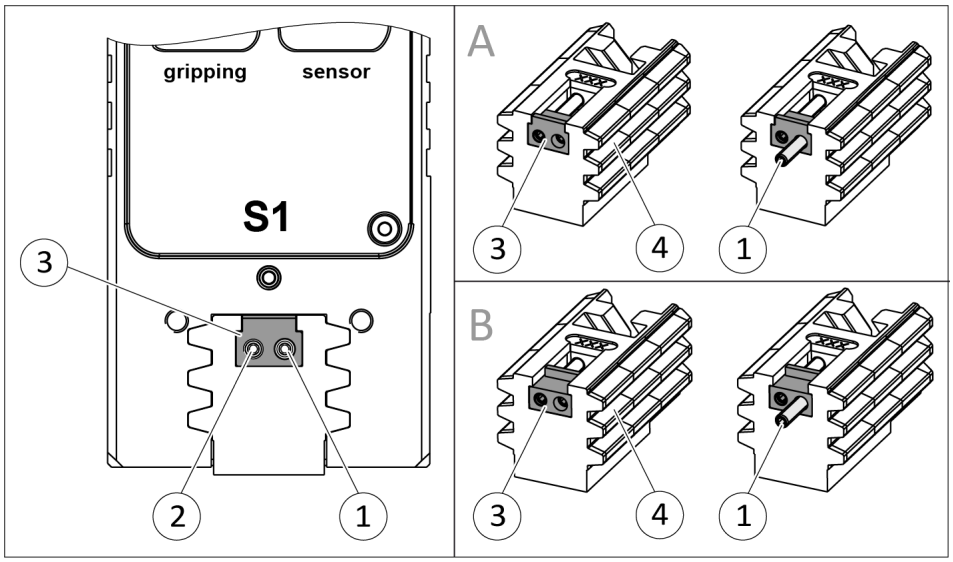
5.6.9 Adjusting integrated inductive proximity switch IN

In the delivery state, the control cam S1 is set to "gripper closed" and the control cam S2 to "gripper open".



1. Clamp the part to be gripped.
2. Loosen expander bolt (1) by unscrewing it from the control cam (3).
   Guide value: approx. 8.5 mm
3. Turn adjustable spindle (2) in order to adjust the position of the control cam (3).
   - ⇨ **Position "part gripped (O.D. gripping)/gripper closed":** Slide control cam (3) outwards until the sensor no longer responds.
   - ⇨ Move the control cam (3) back towards the inside until the sensor begins to switch.
   - ⇨ **Position "part gripped (I.D. gripping)/gripper open":** Slide control cam (3) inwards until the sensor no longer responds.
   - ⇨ Move the control cam (3) back towards the outside until the sensor begins to switch.
4. Re-tighten the expander bolt (1) to fix the switching point.
   For tightening torque see table
5. Open the product and close it again in order to test its function.

Turn control cam



A	Installation position of the control cam Position "part gripped (O.D. gripping)/gripper closed"
B	Installation position of the control cam Position "part gripped (I.D. gripping)/gripper open"

1. Completely unscrew expander bolt (1) from the control cam (3).
2. Turn adjustable spindle (2) in order to adjust the control cam (3).
   ⇨ The control cam (3) is slid outwards.
3. Remove control cam (3) from the base jaw (4) and re-insert it back-to-front into the base jaw.
4. Turn adjustable spindle (2) in order to adjust the control cam (3).
   ⇨ The control cam (3) is slid inwards.
5. Adjust switching points.
6. Screw expander bolt (1) into the control cam (3).
   For tightening torque see table

Item	Mounting	PGN-plus-E	
		80	100
1	Wrench size	1.3	1.5
	Max. tightening torque [Nm]	0.2	0.3
2	Wrench size	1.3	1.5
	Max. adjusting torque [Nm]	0.2	0.3

Tab.: Tightening torques

5.6.10 Use electronic processor FPS-F5/F5 T

NOTE

The electronic processor (FPS-F5/F5 T) can only be used with the analog magnetic sensor (MMS 22-A, 5 V). The assembly of a flexible position sensor (FPS-S M8 or FPS-S 13) on the gripper is not possible.

1. Mounting analog (MMS 22-A) magnetic sensor, ▶ 5.6.8 [🗋 46].
2. Connect electronic processor to the sensor.
3. Commission electronic processor, see assembly and operating manual FPS-F5 / FPS-F5 T.

6 Troubleshooting

6.1 Product does not move

Tab.:

Possible cause	Corrective action
Base jaws jam in housing, e.g. mounting surface is not sufficiently even.	Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 28]
	Loosen the mounting screws of the product and actuate the product again.
Power supply connected incorrectly.	Check the power supply. ▸ 5.2.2 [🗋 30]

6.2 Product does not execute a complete stroke

Possible cause	Corrective action
Dirt deposits between basic jaws and guidance.	Clean and lubricate product. ▸ 7 [🗋 53]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 28]
Breakage of components, e.g. by overloading.	Send the product to SCHUNK with a repair order.

6.3 Product opens or closes jerkily

Possible cause	Corrective action
Too little grease in the mechanical guiding areas.	Clean and lubricate product. ▸ 7 [🗋 53]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 28]
Loading too large.	Check permissible weight and length of the gripper fingers. ▸ 3 [🗋 20]

6.4 Gripping force too low

Possible cause	Corrective action
Too much grease in the mechanical movement space.	Clean and lubricate product. ▸ 7 [🗋 53]
Wrong gripping pre-selection.	Check adjustment of the gripping force. ▸ 5.5 [🗋 38]
	Check layout of the product. Meanwhile observe the maximum workpiece weight, see Catalog Data Sheet. ▸ 3 [🗋 20]

6.5 Opening and closing times are not achieved

Possible cause	Corrective action
Loading too large.	Check permissible weight and length of the gripper fingers.

6.6 Electrical signals are not transmitted

Possible cause	Corrective action
Cable connected incorrectly.	Check round connector for correct fit.
Strands swapped.	Check pin allocation.

6.7 Product switches off

Possible cause	Corrective action
Voltage error	Measure voltage and check cabling and power supply unit.

6.8 Faults indicated by LED Error (only with "Digital I/O" variant)

Possible cause	LED "Error"	Corrective action
Rotary switch is in an intermediate position	LED blinks at 0.6 s intervals	Turn rotary switch to a marked position.
Error overheating	LED flashes at 1.2 s intervals	• Wait until the product has cooled down. • Actuate both digital inlets, "Opens gripper" and "Closes gripper" to high. OR: Disconnect voltage supply and reconnect. • The "ERROR" LED goes out. The error is acknowledged.
Warning overheating	LED lights up continuously	The warning disappears automatically when the product has cooled down.

6.9 Faults indicated by LED STATUS (only with "I/O-Link" variant)

Possible cause	LED "STATUS"	Corrective action
Fault requiring acknowledgment	LED lights up red	• Check device status via IO-Link. • Take measures according to error message. • Acknowledge error. See Software guide "SCHUNK gripper with IO-Link"

6.10 Acknowledge error

1. Wait until the product has cooled down.
2. Actuate both digital inlets, "Opens gripper" and "Closes gripper", with high.
   OR:
   Disconnect voltage supply and reconnect.

⇨ The "ERROR" LED goes out. The error is acknowledged.

7 Maintenance

7.1 Maintenance intervals

If products are used at room temperature and the ambient and operating conditions are adhered to, these variants are maintenance-free, ▶ 3.4 [🗋 21].

Products for special ambient conditions are excluded, e.g. higher temperatures, dirty environment.

Interval at PGN-plus-E	Maintenance work
Every 1000 cycles or once per day	Travel an entire stroke.

Interval [Mio. cycles] for PGN-plus-E	Maintenance work
5	Clean the product dry without a degreasing agent, check for damage and wear.
5	Treat all grease areas with lubricant, ▶ 7.2 [🗋 54].

Interval [Mio. cycles] for PGN-plus-E	Maintenance work
10	Version SD: Replace all seals, ▶ 7.3 [🗋 54]

For extreme ambient and application conditions, shortened maintenance cycles can ensure the lifespan is maintained.

CAUTION

Material damage due to hardening lubricants!

Lubricants harden more quickly at temperatures above 60°C, leading to possible product damage.

- Reduce the lubricant intervals accordingly.

CAUTION

Damage to property caused by insufficient lubrication!

Continuously traveling short strokes when the product is inadequately lubricated risks damaging it by causing it to run dry.

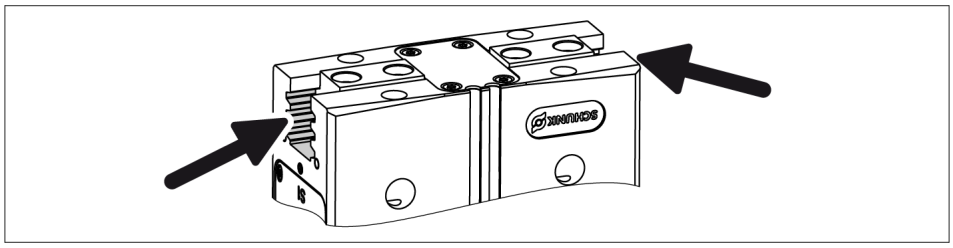
- Travel the full stroke every 1000 cycles or at least once daily.

7.2 Lubricants/Lubrications points

During maintenance, treat all greased areas with lubricant. Thinly apply lubricant with a lint-free cloth.

SCHUNK recommends the lubricants listed.

Lubricant point	Lubricant
Metallic sliding surfaces	SCHUNK grease 3
For dustproof version (SD): Seals and sealing surfaces	SCHUNK grease 1



Lubricant point: Metallic sliding surfaces

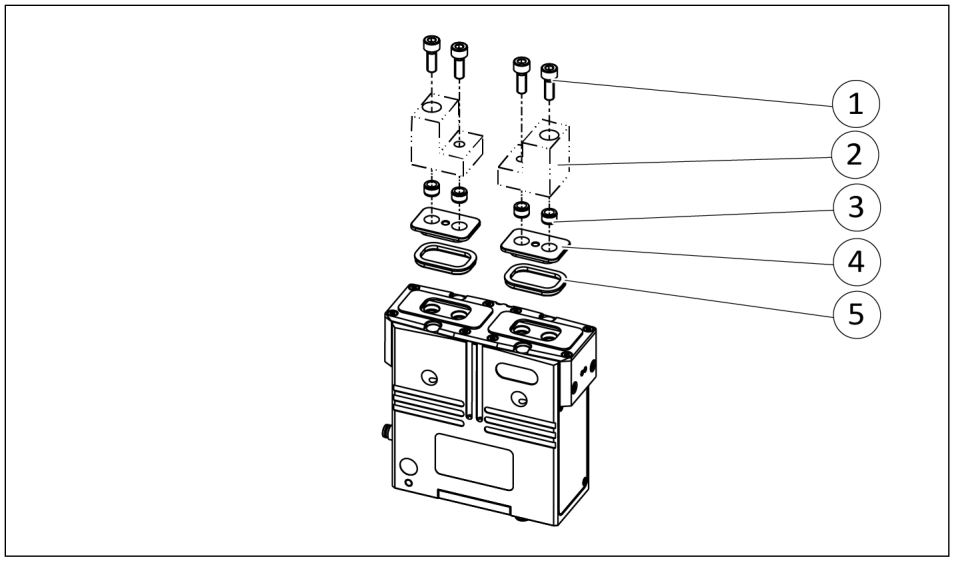
Details regarding SCHUNK lubricant designations are available at **schunk.com/lubricants**.

The product contains food-compliant lubricants as standard. **The requirements of standard EN 1672-2:2020 are not fully met.**

NOTE

- Change contaminated food-compliant lubricant.
- Observe information in the safety data sheet from the lubricant manufacturer.

7.3 Changing seals – dust-tight version (SD)



1. Unfasten and remove the screws (1).
2. Remove gripper finger (2) and centering sleeves (3).

3. Pull the intermediate jaws (4) upwards and remove the seals (5).
4. Grease and insert the new seals (5), ▸ 7.2 [🗋 54].
5. Assemble in reverse order. Observe tightening torques in doing so,▸ 7.4 [🗋 55].

7.4 Tightening torques

Item	Mounting	PGN-plus-E	
		80	100
1	Screw [Nm]	10	15

7.5 Disassembly and assembling

This product must not be disassembled for maintenance.

CAUTION

Material damage due to improper disassembly!

Incorrect works can cause damage to the mechanics and internal electronics.

- Disassembly or opening of the product is not permitted.
- Only allow SCHUNK to repair the product.

8 EU-Declaration of Conformity

Manufacturer/ Distributor	SCHUNK SE & Co. KG Spanntechnik | Greiftechnik | Automatisierungstechnik Bahnhofstr. 106 – 134 D-74348 Lauffen/Neckar
Product designation:	2-Finger Parallel Gripper / PGN-plus-E /electric
ID number	0318832; 0318856; 1327621; 1355485; 1358026; 1358027; 1358031; 1358033

We hereby declare on our sole authority that the product meets the requirements of the following directives at the time of the declaration.
The declaration is rendered invalid if modifications are made to the product.

- **EMC Directive 2014/30/EU**
  Directive of the European Parliament and the Council of February 26, 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility

Applied harmonized standards, especially:

EN IEC 61000-6-2:2019	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments
EN IEC 61000-6-4:2019	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments

Signed for and on behalf of: SCHUNK SE & Co. KG

Signature: see original declaration

Lauffen/Neckar, November 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

9 Translation of the original declaration of incorporation

in terms of the Directive 2006/42/EG, Annex II, Part 1 Section B.

Manufacturer/ Distributor	SCHUNK SE & Co. KG Spanntechnik | Greiftechnik | Automatisierungstechnik Bahnhofstr. 106 – 134 D-74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation:	2-Finger Parallel Gripper / PGN-plus-E /electric
ID number	0318832; 0318856; 1327621; 1355485; 1358026; 1358027; 1358031; 1358033

meets the following basic occupational health and safety of the Machinery Directive 2006/42/EC:

No. 1.1.1, No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.2, No. 1.5.1, No. 1.5.2; No. 1.5.4, No. 1.5.6, No. 1.5.8, No. 1.5.10, No. 1.5.11, No. 1.5.13

The partly completed machinery may not be put into operation until it has been confirmed that the machine into which the partly completed machinery is to be installed complies with the provisions of the Machinery Directive (2006/42/EC). The declaration shall be rendered invalid if modifications are made to the product.

Applied harmonized standards, especially:

EN ISO 12100:2010	Safety of machinery – General principles for design – Risk assessment and risk reduction

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Stefanie Walter, Address: see manufacturer's address

Signature: see original declaration

Lauffen/Neckar, November 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

10 UKCA declaration of Conformity

Manufacturer/ Distributor	SCHUNK Intec Limited Clamping and gripping technology 3 Drakes Mews, Crownhill MK8 0ER Milton Keynes

We hereby declare on our sole authority that the product meets the requirements of the following directives at the time of the declaration.
The declaration is rendered invalid if modifications are made to the product.

Product designation:	2-Finger Parallel Gripper PGN-plus-E
ID number	0318832; 0318856; 1327621; 1355485; 1358026; 1358027; 1358031; 1358033

- **Electromagnetic Compatibility Regulations 2016**

Applied harmonized standards, especially:

EN IEC 61000-6-2:2019	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
EN IEC 61000-6-4:2019	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

Person authorized to compile the technical documentation:
Marcel Machado, address: refer to manufacturer's address

Signed for and on behalf of: SCHUNK SE & Co. KG

Lauffen/Neckar, November 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

11 UKCA declaration of incorporation

in accordance with the Supply of Machinery (Safety) Regulations 2008.

Manufacturer/ Distributor	SCHUNK Intec Limited Clamping and gripping technology 3 Drakes Mews, Crownhill MK8 0ER Milton Keynes

We hereby declare that on the date of the declaration the following partly completed machine complied with all basic safety and health regulations found in the
"Supply of Machinery (Safety) Regulations 2008".
The declaration shall be rendered invalid if modifications are made to the product.

Product designation:	2-Finger Parallel Gripper / PGN-plus-E / electric
ID number	0318832; 0318856; 1327621; 1355485; 1358026; 1358027; 1358031; 1358033

The partly completed machine may not be put into operation until it has been confirmed that the machine into which the partly completed machine is to be installed complies with the provisions of the "Supply of Machinery (Safety) Regulations 2008".

Applied harmonized standards, especially:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Marcel Machado, address: refer to manufacturer's address

Lauffen/Neckar, November 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

12 Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)

RoHS Directive

SCHUNK products are classified as "large-scale stationary installations" or as "large-scale stationary industrial tools" within the meaning of Directive 2011/65/EU and its extension 2015/863/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)", or fulfill their intended function only as part of one. Therefore products from SCHUNK do not fall within the scope of the directive at this time.

REACH Regulation

Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and the environment wherever possible.

Only in rare exceptional cases do SCHUNK products contain SVHC substances on the candidate list with a mass content above 0.1%. In accordance with Article. 33 (1) of Regulation (EC) No. 1907/2006, SCHUNK complies with its duty to "communicate information on substances in articles" and lists the components concerned and the substances used in an overview that can be viewed at **schunk.com\SVHC**.

Signature: see original declaration

Lauffen/Neckar, November 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

SCHUNK SE & Co. KG
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