

Operating instructions

Power Supply Unit for GCPI, Part No. 21.07.01.00205

Note

The Operating instructions were originally written in German. Store in a safe place for future reference. Subject to technical changes without notice. No responsibility is taken for printing or other types of errors.

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1 Important Information

1.1 Note on Using this Document

J. Schmalz GmbH is generally referred to as Schmalz in this document.

The document contains important notes and information about the different operating phases of the product:

- Transport, storage, start of operations and decommissioning
- Safe operation, required maintenance, rectification of any faults

The document describes the product at the time of delivery by Schmalz and is aimed at:

- Installers who are trained in handling the product and can operate and install it
- Technically trained service personnel performing the maintenance work
- Technically trained persons who work on electrical equipment

1.2 The technical documentation is part of the product

1. For problem-free and safe operation, follow the instructions in the documents.
2. Keep the technical documentation in close proximity to the product. The documentation must be accessible to personnel at all times.
3. Pass on the technical documentation to subsequent users.
 - ⇒ Failure to follow the instructions in these Operating instructions may result in life-threatening injuries!
 - ⇒ Schmalz is not liable for damage or malfunctions that result from failure to heed these instructions.

If you still have questions after reading the technical documentation, contact Schmalz Service at:

www.schmalz.com/services

1.3 Type Plate

The type plate is permanently attached to the product and must always be clearly legible. It contains product identification data and important technical information.

The QR code on the nameplate enables access to the digital technical documentation for the product.

- ▶ For spare parts orders, warranty claims or other inquiries, have the information on the type plate to hand.

1.4 Symbols



This symbol indicates useful and important information.

- ✓ This symbol represents a prerequisite that must be met before an action is performed.
- ▶ This symbol represents an action to be performed.
- ⇒ This symbol represents the result of an action.

Actions that consist of more than one step are numbered:

1. First action to be performed.
2. Second action to be performed.

2 Fundamental Safety Instructions

2.1 Intended Use

The power supply unit is suitable only as an accessory for the GCPI. It provides the supply voltage and serves as a communication device between the GCPI and external devices.




The product is built in accordance with the latest standards of technology and is delivered in a safe operating condition; however, hazards may arise during use.

The product is intended for industrial use.

Intended use includes observing the technical data and the installation and operating instructions in this manual.

2.2 Warnings in This Document

Warnings warn against hazards that may occur when handling the product. The signal word indicates the level of danger.

Signal word	Meaning
 DANGER	Indicates a high-risk hazard that will result in death or serious injury if not avoided.
 WARNING	Indicates a medium-risk hazard that could result in death or serious injury if not avoided.
 CAUTION	Indicates a low-risk hazard that could result in minor or moderate injury if not avoided.

2.3 Residual Risks

The system integrator must carry out a risk assessment of the entire system for all operating modes and define the danger zone precisely. In doing so, country-specific provisions and regulations must be observed.



WARNING

Electric shock

Risk of injury

- ▶ Operate the product using a power supply unit with protected extra-low voltage (PELV).



WARNING

Serious injuries due to improper mounting!

- ▶ Carry out mounting and removal only when the device is in an idle, depressurized state.
- ▶ Use only the connectors, mounting holes and attachment materials that have been provided.



CAUTION

Falling product

Risk of injury

- ▶ Securely attach the product at the site of operation.
- ▶ Wear safety shoes (S1) and safety glasses when handling and mounting/dismounting the product.

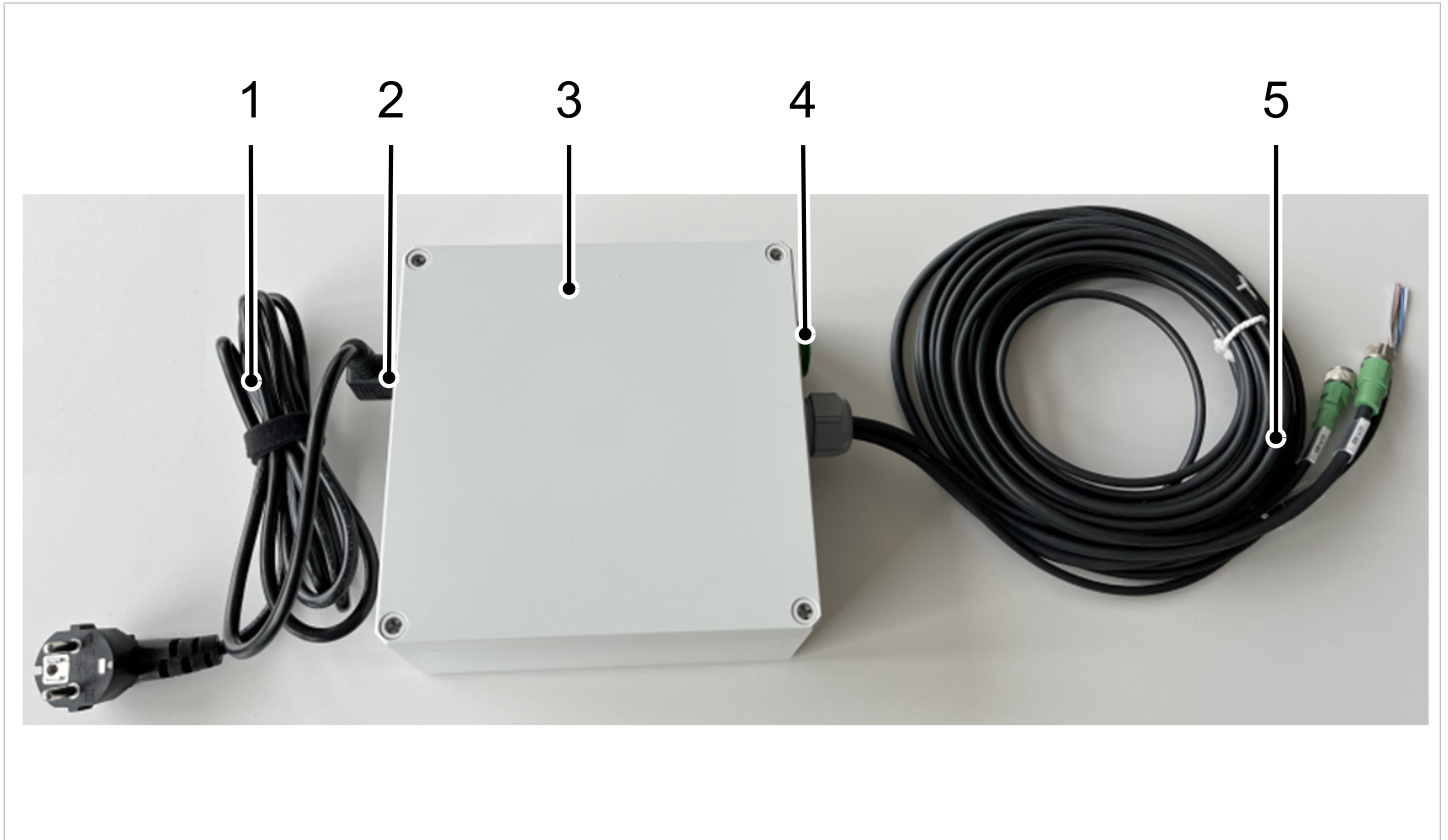
2.4 Modifications to the Product

Schmalz assumes no liability for consequences of modifications over which it has no control:

1. The product must be operated only in its original condition as delivered.
2. Use only original spare parts from Schmalz.
3. The product must be operated only in perfect condition.

3 Product Description

3.1 Product Design



1	Connection cable 230 V
2	Feed combination incl. fuse
3	Housing

4	Signal lamp
5	Connection cable 3 pcs.

4 Technical Data

4.1 General Parameters

Parameter	Symbol	Limit values		Comment
		min.	max.	
Working temperature of medium and environment under continuous load	T_{amb}	0° C	45 °C	Continuous suction; GCPi not under regulation (vacuum permanently < SP1)
Storage temperature	T_{sto}	-10 °C	40 °C	—
Humidity	H_{rel}	10% r.h.	80% r.h.	Max. 80% (at 40° C), free from condensation
			50% r.h.	Max. 50% (at 50° C), free from condensation
Degree of protection		IP54		—

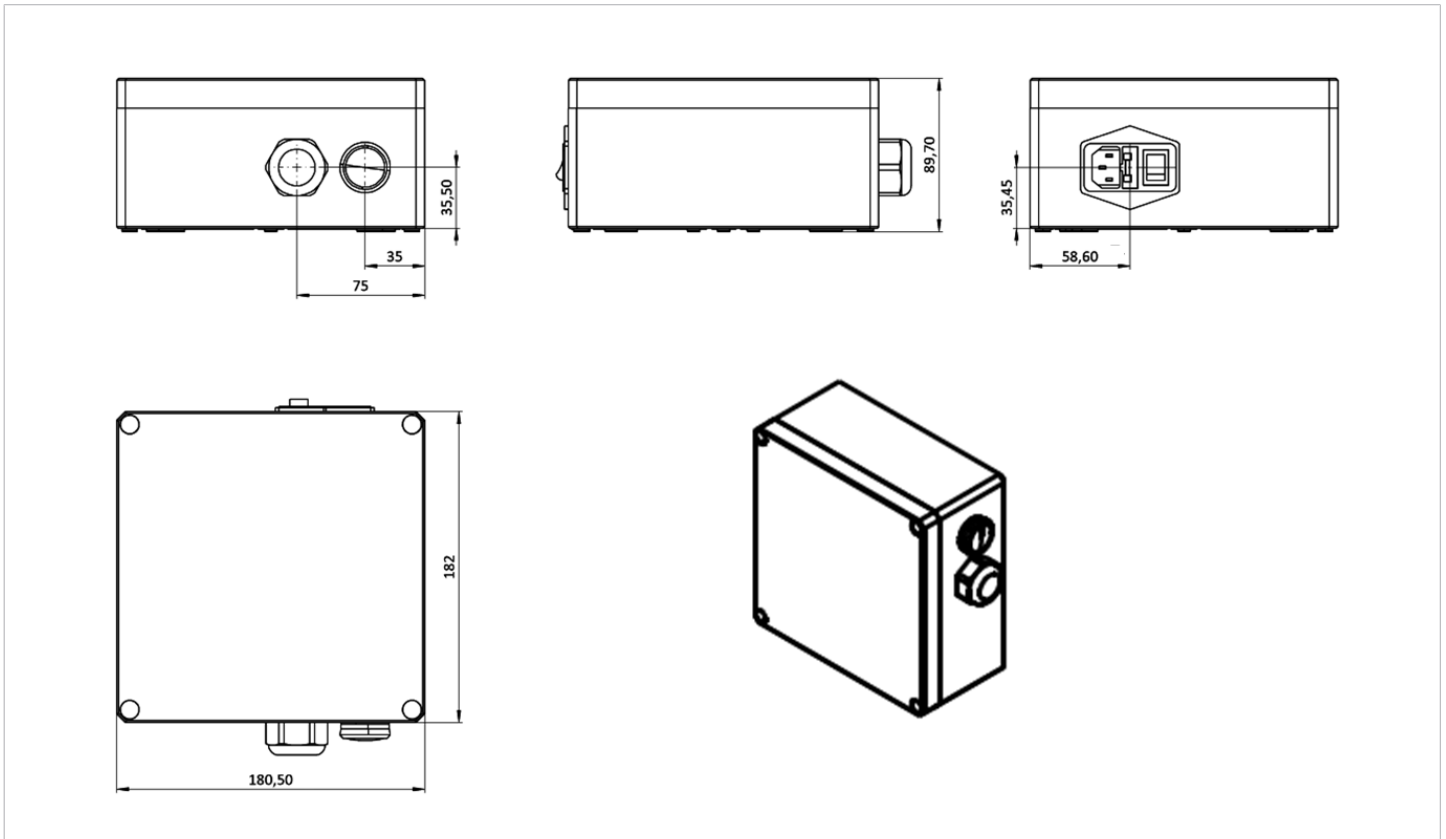
4.2 Electrical Parameters

The outputs are protected against overload and short circuit.

Parameter	Symbol	Limit values		
		min.	typ.	max.
Input				
Input voltage	U	110 V _{DC}	230 V _{DC}	300 V _{DC}
Supply voltage for AC	U_A	100 V _{AC}	V _{AC}	240 V _{AC}
Supply voltage, initial value	U		85 V	
Supply voltage, final value	U		264 V	
Rated frequency; 1 rated value	Hz	50 Hz		
Rated frequency; 2 rated value	Hz	60 Hz		
Form of power network		1-phase AC or DC		
Microfuse in connector for non-heating apparatus		5 mm x 20 mm (Ø x L) 4 A 250 V type T		
Output				
Output voltage curve		Regulated, potential-free DC voltage		
Output voltage at DC rated value	U		24 V	
Output voltage at output 1 at DC rated value	U		24 V	
Total relative voltage tolerance			3%	
Output current, rated value	I		4 A	
Property of the output, protected against short circuits		Yes		
Overload capability in normal operation		Overload 150% typ. rated load 200 ms		

4.3 Dimensions

Attention, illustration does not include connection cable



All dimensions given in millimeters [mm].

5 Checking the Delivery

The scope of delivery can be found in the order confirmation. The weights and dimensions are listed in the delivery notes.

1. Compare the entire delivery with the supplied delivery notes to make sure nothing is missing.
2. Damage caused by defective packaging or occurring in transit must be reported immediately to the carrier and J. Schmalz GmbH.

6 Installation and Start of Operations

6.1 Installation Instructions



CAUTION

Improper installation or maintenance

Personal injury or damage to property

- ▶ Prior to installation and before maintenance work, the product must be disconnected from the power supply and secured against unauthorized restart.

To ensure safe installation, observe the following instructions:

1. Use only the connectors, mounting holes and attachment materials that have been provided.
2. Firmly connect and secure electrical cable connections to the device.

6.2 Installation Site



DANGER

Risk of fire and explosion due to components that are not explosion-proof

Serious injury or death!

- ▶ Do not use the product in environments where there is a risk of explosion!

Product Must Not Be Operated in Potentially Explosive Atmospheres.

The ambient temperature must be between +5 °C and +45 °C. (Contact the manufacturer prior to operation if this range is to be exceeded).

Provide internal instructions and conduct checks to ensure that the area of the workplace is always clean and tidy.

6.3 Mounting

The device can be installed in any position.

The cover screws are made of plastic and are thus completely corrosion-free.

- ✓ The device is switched off and disconnected from the supply voltage.
- 1. Remove the lid from the housing.
- 2. Secure the device using the wall-mounting ducts outside the sealing chamber Ø 4.5 mm with at least two screws (L > 15 mm). Max. tightening torque = 2 Nm.
- 3. Fit the lid on the housing in the correct position. Tightening torque of the cover screws ranges from 1 to 1.4 Nm.

Alternatively, there are knockouts in the bottom of the housing. When the lid is closed, the housing can be fastened with external wall brackets.

As a further option, mount with M4 screws from the rear into pressed brass threaded bushes in the bottom of the housing.

6.4 Electrical connection



DANGER

Electrocution by live components or wires

Serious injury or death!

- ▶ Electrical installation work may only be carried out by qualified personnel.
- ▶ Make sure that the electrical components are not live before installation, maintenance and troubleshooting.
- ▶ Switch off the mains switch and secure against unauthorized restart.

Do not connect or disconnect the connector under tension and/or when electrical voltage is applied.

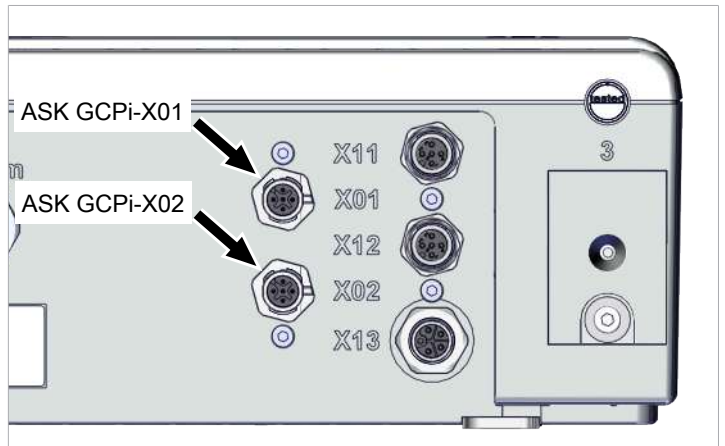
The device is connected to the power supply via the feed combination. In addition to the plug connection (1) for the mains connection, the feed combination also comprises the main switch (3) and a 4 A microfuse (2).



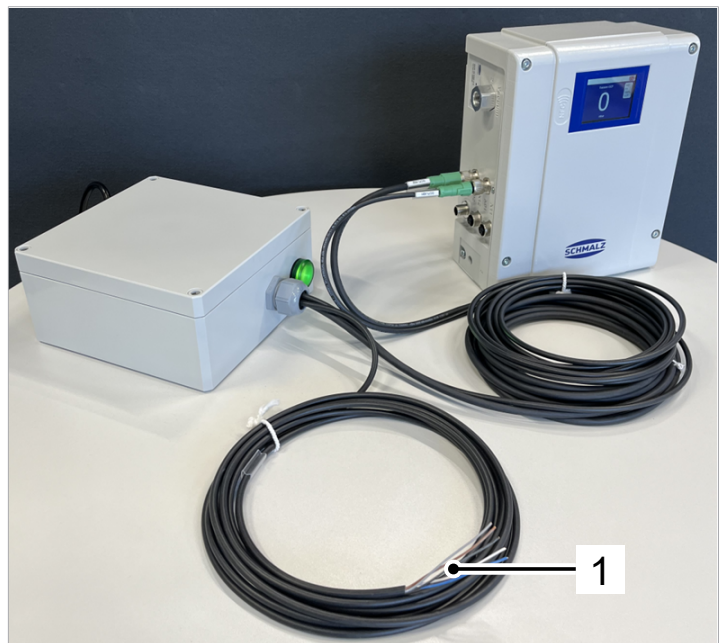
1. Plug the connection cable into the plug connection (1) in the feed combination.
2. Plug the Shuko plug into the socket.

Connect the two cables with plug connectors to the GCPi as shown

1. Attach the connection cable GCPi-X01 to the GCPi connector X01. Tightening torque = hand-tight.
2. Attach the connection cable GCPi-X02 to the GCPi connector X02. Tightening torque = hand-tight.




If necessary, connect the connection cable with open cable end (1) to the robot in accordance with the pin assignment.

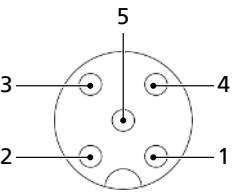


6.5 PIN Assignment

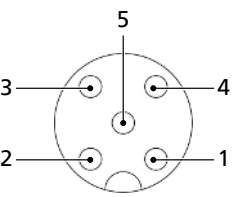
Connection cable with open cable end

Open cable end	Line no.	Cable color	Connected to ...
	1	Gray	GCPI X02 pin 4 (input GCPI.: pick up)
	2	Black	GCPI X02 pin 2 (input GCPI.: set down)
	3	White	GCPI X01 pin 4 (output GCPI.: "Parts present" check)
	4	Brown	GCPI X01 pin 2 (output GCPI.: error)
	5	Blue	GCPI X01 pin 3 and X02 pin 3 (GND)

Connection cable GCPI-X01

M12 plug	PIN	Wire color ¹⁾	Symbol	Function
	1	Brown	U_S	Power supply
	2	White	OUT3 (CM/Error)	CM or error (signal must be related to GND_S)
	3	Blue	GND_S	Ground
	4	Black	IO-Link / OUT2 (SP2)	IO-Link communication / part present. (Signal must be related to GND_S)
	5	Gray	NC	Not connected

Connection cable GCPI-X02

M12 plug	PIN	Wire color ¹⁾	Symbol	Function
	1	Brown	U_A	Actuator voltage
	2	White	IN2 / DROP-OFF	Activate drop-off. Signal must be related to GND_A
	3	Blue	GND_A	Ground for actuator supply
	4	Black	IN1 / SUCTION	Activate suction. Signal must be related to GND_A
	5	Gray	NC	Not connected

However, we have connected GNDs and GNDa. The term GND is sufficient here.

6.6 Switching On the Device

- ✓ All required electrical cables are connected.
- ▶ Switch on the device using the toggle switch (1).
- ⇒ The toggle switch is in position 1.
- ⇒ The green light (2) lights up.

7 Taking the Product Out of Operation and Disposal

If the product reaches the end of the utilization phase, it may be fully disassembled and disposed of. Only qualified specialist staff may prepare the product for disposal.

1. Fully disconnect the product from the power supply.
2. Dispose of the components properly based on their material groups.

For proper disposal, contact a company specializing in the disposal of technical goods and instruct the company to observe the applicable disposal and environmental regulations.

8 Declarations of Conformity

8.1 EU Declaration of Conformity

The manufacturer Schmalz confirms that the product described in these instructions fulfills the following applicable EU directives:

2014/30/EU	Electromagnetic Compatibility
2014/35/EU	Low Voltage Directive
2011/65/EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment

The following harmonized standards were applied:

EN ISO 12100	Safety of machinery — General principles for design — Risk assessment and risk reduction
EN 60204-1, 32	Safety of machinery – Electrical equipment of machines



The EU Declaration of Conformity valid at the time of product delivery is delivered with product or made available online. The standards and directives cited here reflect the status at the time of publication of the operating and assembly instructions.

8.2 UKCA Conformity

The manufacturer Schmalz confirms that the product described in these operating instructions fulfills the following applicable UK regulations:

2016	Electromagnetic Compatibility Regulations
2016	Electrical Equipment (Safety) Regulations
2012	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations

The following designated standards were applied:

EN ISO 12100	Safety of machinery — General principles for design — Risk assessment and risk reduction
EN 60204-1, 32	Safety of machinery – Electrical equipment of machines



The Declaration of Conformity (UKCA) valid at the time of product delivery is delivered with the product or made available online. The standards and directives cited here reflect the status at the time of publication of the operating and assembly instructions.