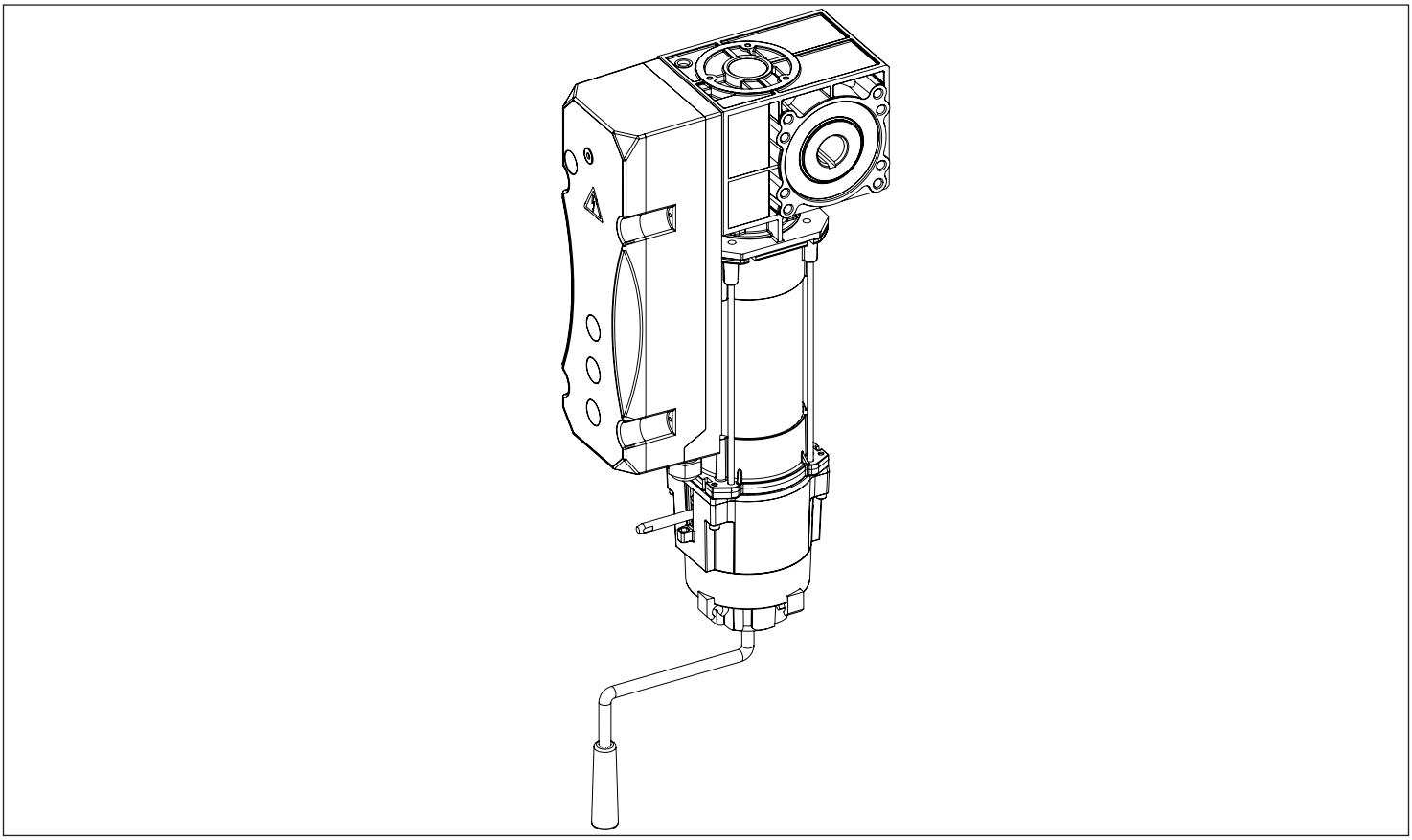

GIGAspeed

EN Translation of the Original Installation and Operating Manual 1 - 20

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General information

Symbols

CAUTION SYMBOL:
Indicates imminent danger.
If it is not observed, serious or life-threatening injuries and property damage may occur!

IMPORTANT INFORMATION SYMBOL:
Information, useful advice!

1 **(1** **Refers to a relevant picture in the introduction or main text.**

This operator is manufactured in accordance with

- EN 12453 Safety in use of power-operated gates, requirements
- EN 12978 Safety devices for power-operated doors and gates, requirements and test methods
- EN 12604 Doors and gates - Mechanical aspects - Requirements
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU

and has left the factory in good technical condition.

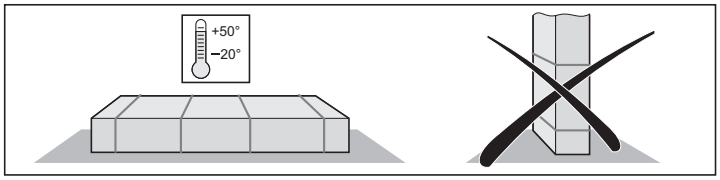
Safety instructions

General

- This installation and operating manual must be read, understood and complied with by persons who install, use or perform maintenance on the operator.
- Keep the installation instructions within reach.
- Installation, connection and initial commissioning of the operator may only be carried out by an electrician.
- The system manufacturer is responsible for the complete system. The system manufacturer must ensure that all applicable standards, directives and regulations applicable at the installation site are observed.
  The system manufacturer must test and maintain the maximum approved closing forces in accordance with EN 12445 (Safety in use of power operated gates, test methods) and EN 12453 (Safety in use of power operated gates, requirements).
  The system manufacturer is responsible for preparation of technical documentation for the complete system, and the documentation must accompany the system.
- All electrical wiring must be firmly secured to prevent displacement.
- The manufacturer does not accept liability for damage or interruptions to business resulting from non-observance of the installation and operating manual.
- Before commissioning, ensure that the mains connection matches the specifications on the type plate. If this is not the case, the operator must not be operated.
- With a three-phase connection make sure that the direction of rotation is clockwise.
- Installations with a fixed mains connection require an all-phase mains circuit breaker with appropriate fuse protection.
- Read and comply with the "ASR A1.7 Technical Regulations for Workplaces" of the committee for workplaces (ASTA).
  (Applicable for the operator in Germany, observe and comply with the applicable regulations in other countries).
- Regularly check power cables and wires for insulation defects or cracks. If a wiring fault is found, switch off the power immediately and repair the faulty cable or wire.
- Observe the requirements of the local power supplier.
- Before working on the door or the operator, always disconnect the control unit and operator from the power supply and lock to prevent reactivation.
- Never operate a damaged operator.
- Only use OEM (Original Equipment Manufacturer) spare parts and accessories.

Storage

- The operator must be stored in an enclosed, dry area at a room temperature of -20...+50°C and relative humidity of 20-90% (non-condensing).
- The operator should be stored horizontally.



Operation

- When using the automatic close function, ensure compliance with standard EN 12453; install safety device (e.g. photocell).
- After installation and commissioning, all users must be instructed in the function and operation of the system. All users must be informed on the hazards and risks inherent in the system.
- Open and close the door only if there are no persons, animals or objects within its area of movement.
- Continuously monitor the door while it is in motion and keep all persons away from it until the door is completely opened or closed.
- Do not drive through the door until it is fully open.
- Never put your hand near the door when it is moving or near moving parts.
- Regularly check the safety and protection functions and repair faults when they are detected (see Maintenance and care).

Type plate

- The type plate is on the side of the gearing.
- The type plate shows the exact type designation and the date of manufacture (month/year) of the operator.

Intended use

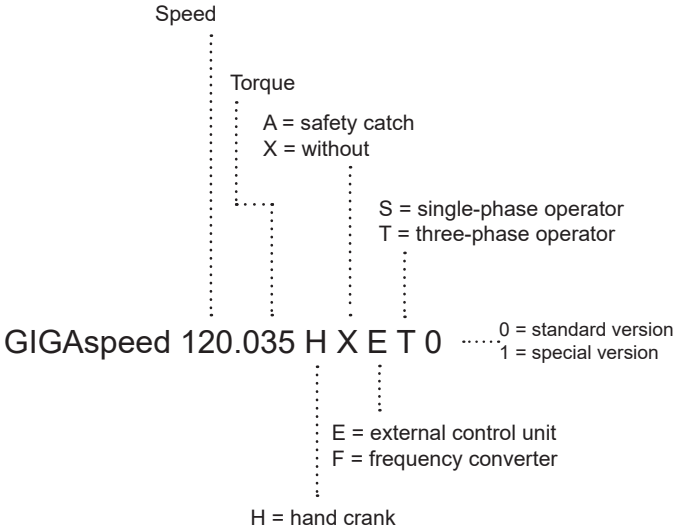
NOTE!
After installation of the operator, the person responsible for the installation must complete an EC Declaration of Conformity for the door system in accordance with Machinery Directive 2006/42/EC and apply the CE mark and a type plate. This documentation and the installation and operating manual are retained by the operator.

- The operator is designed exclusively for opening and closing fully installed industrial doors (e.g. sectional, roller, folding, high-speed foil and roll-up grille doors).
- Any other use does not constitute intended use. The manufacturer accepts no liability for damage resulting from use other than the intended use. The user bears the sole responsibility for any risk involved. It also voids the warranty.
- The operator is designed exclusively for operation in dry, non-explosive indoor areas.
- Doors automated with an operator must comply with all valid standards and directives: e.g. EN 12453, EN 12604, EN 126055.
- The operator must be in good technical condition, and it must be used for its intended purpose with awareness of the hazards as described by the installation and operating manual. Do not exceed the limit values specified in the technical specifications.
- Faults that may affect safety must be repaired without delay.
- The door must be stable and rigid and correctly aligned, i.e. it must not bend or twist when being opened or closed
- The operator is equipped with an integrated speed-dependent and position-dependent anti-drop device.

General information

- The GIGAcontrol control unit and the operator must only be used together. Only SOMMER industrial gate control units may be used.
- The GIGAcontrol control unit and the operator are designed for commercial use.
- The operator meets the requirements of protection class IP-54. The operator must not be installed in areas with a corrosive atmosphere (e.g. salty air).

Type designations



General information

Technical data

3-phase operators	"045.115 HXET.."	"070.095 HXET.."	"080.045 HXET.. / HAET.."	"080.080 HXET.. / HAET.."	"080.100 HXET.. / HAET.."	"090.045 HXET.. / HAET.."	Unit of measure
Identification, cf. "Dimension drawings"	E	E	C	E	E	A	
Output torque	115	95	45	80	100	45	Nm
Safety catch	-	-	- / ●	- / ●	- / ●	- / ● ●	
Output speed	45	70	80	80	80	90	rpm
Motor output	1.00	1.00	0.55	1.00	1.00	0.55	kW
Operating voltage	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	V
Frequency	50	50	50	50	50	50	Hz
Rated current	5.9/3.4	5.9/3.4	3.45 / 2.0	5.9 / 3.4	5.6 / 3.2	3.45 / 2.0	A
Motor duty cycle	60	60	60	60	60	60	DC %
Limit stop range	14	14/29	14	14 / 29	14 / 29	14	Hollow shaft revs.
IP code	54	54	54	54	54	54	IP
Insulation class	F	F	F	F	F	F	
Approved temperature range**	-5…+60	-5…+60	-5…+60	-5…+60	-5…+60	-5…+60	°C
Continuous sound pressure level	< 70	< 70	< 70	< 70	< 70	< 70	dB(A)
Hollow shaft	25.4	25.4 / 30.0	25.0 / 25.4 / 30.0	25.0 / 25.4	25.0 / 25.4 / 30.0	25.4 / 30.0	mm
Building fuse	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	A
Building feed	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	mm²
Weight (approx.)	17	17	15	17	17	15	kg

3-phase operators	"090.075 HAET.."	"115.040 HXET.. / HAET.."	"115.080 HXET.. / HAET.."	"120.035 HXET.. / HAET.."	"130.035 HXET.."	"130.075 HXET.."	Unit of measure
Identification, cf. "Dimension drawings"	A	C	E	A	C	E	
Output torque	75	40	80	35	35	75	Nm
Safety catch	● ●	- / ●	- / ●	- / ● ●	-	-	
Output speed	90	115	115	120	130	130	rpm
Motor output	1.00	0.55	1.00	0.55	0.55	1.00	kW
Operating voltage	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	3~ 230/400	V
Frequency	50	50	50	50	50	50	Hz
Rated current	5.9/3.4	3.45 / 2.0	5.9 / 3.4	3.45 / 2.0	3.45 / 2.0	5.9/3.4	A
Motor duty cycle	60	60	60	60	60	60	DC %
Limit stop range	14	14	14	14	14	14	Hollow shaft revolutions
IP code	54	54	54	54	54	54	IP
Insulation class	F	F	F	F	F	F	
Approved temperature range**	-5…+60	-5…+60	-5…+60	-5…+60	-5…+60	-5…+60	°C
Continuous sound pressure level	< 70	< 70	< 70	< 70	< 70	< 70	dB(A)
Hollow shaft	25.4 / 30.0	25.4	25.4 / 30.0	30	25.4 / 30.0	25.4 / 30.0	mm
Building fuse	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	A
Building feed	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	mm²
Weight (approx.)	17	15	17	15	15	17	kg

General information

3-phase operators	"140.035 HXET.. / HAET.."	"140.055 HXET.. / HAET.."	"180.025 HXET.. / HAET.."	"180.040 HXET.. / HAET.."	Unit of measure
Identification, cf. "Dimension drawings"	C	E	C	E	
Output torque	35	55	25	40	Nm
Safety catch	-	- / ●	-	- / ●	
Output speed	140	140	180	180	rpm
Motor output	0.55	1.00	0.55	1.00	kW
Operating voltage	3~ 230/400	3~ 230/400	3~ 230 / 400	3~ 400	V
Frequency	50	50	50	50	Hz
Rated current	3.45 / 2.0	5.9/3.4	3.45 / 2.0	4.7	A
Motor duty cycle	60	60	60	60	DC %
Limit stop range	14	14/29	14	14	Hollow shaft revolutions
IP code	54	54	54	54	IP
Insulation class	F	F	F	F	
Approved temperature range**	-5…+60	-5…+60	-5…+60	-5…+60	°C
Continuous sound pressure level	< 70	< 70	< 70	< 70	dB(A)
Hollow shaft	25.0 / 25.4 / 30.0	25.4 / 30.0	25.0 / 25.4	25.0 / 25.4	mm
Building fuse	10 (T)	10 (T)	10 (T)	10 (T)	A
Building feed	5 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5	mm²
Weight (approx.)	15	17	15	17	kg

Frequency converter operators	"045.080 HXFS.. / HAFS.."	"070.055 HXFS.. / HAFS.."	"080.040 HXFS.. / HAFS.."	"080.065 HXFS.. / HAFS.."	"115.035 HXFS.."	"115.060 HXFS.."	Unit of measure
Identification, cf. "Dimension drawings"	E	E	E	E	C	E	
Output torque	80	55	40	65	35	60	Nm
Safety catch	-/●	-/●	-/●	-/●	-	-	
Output speed	20 - 60	20 - 100	20 - 120	70 - 130	100 - 140	45 - 160	rpm
Motor output	1.00	1.00	1.00	1.00	0.55	1.00	kW
Operating voltage	1~230	1~230	1~230	1~230	1~230	1~230	V
Frequency	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	Hz
Rated current	7.5	7.5	7.5	7.5	4.2	7.5	A
Motor duty cycle	60	60	60	60	60	60	DC %
Limit stop range	14	14/29	14/29	14/29 /(59)	14	14	
IP code	54	54	54	54	54	54	IP
Insulation class	F	F	F	F	F	F	
Approved temperature range**	-5…+60	-5…+60	-5+60	-5+60	-5+60	-5…+60	°C
Continuous sound pressure level	< 70	< 70	< 70	< 70	< 70	< 70	dB(A)
Hollow shaft	25.4 / 30.0	25.4 / 30.0	25.0 / 25.4 / 30.0	25.0 /25.4 / 30.0	25.0 / 25.4	25.4 / 30.0	mm
Building fuse	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	10 (T)	A
Building feed	3 x 1.5	3 x 1.5	3 x 1.5	3 x 1.5	3 x 1.5	3 x 1.5	mm²
Weight (approx.)	18	18	18	18	16	18	kg

General information

Frequency converter operators	"140.040 HXFS.."	Unit of mea-sure
Identification, cf. "Dimension drawings"	E	
Output torque	40	Nm
Safety catch	-	
Output speed	50 - 190	rpm
Motor output	1.00	kW
Operating voltage	1~230	V
Frequency	50 - 60	Hz
Rated current	7.5	A
Motor duty cycle	60	DC %
Limit stop range	14/29	
IP code	54	IP
Insulation class	F	
Approved temperature range**	-5…+60	°C
Continuous sound pressure level	< 70	dB(A)
Hollow shaft	25.4 / 30.0	mm
Building fuse	10 (T)	A
Building feed	3 x 1.5	mm²
Weight (approx.)	18	kg

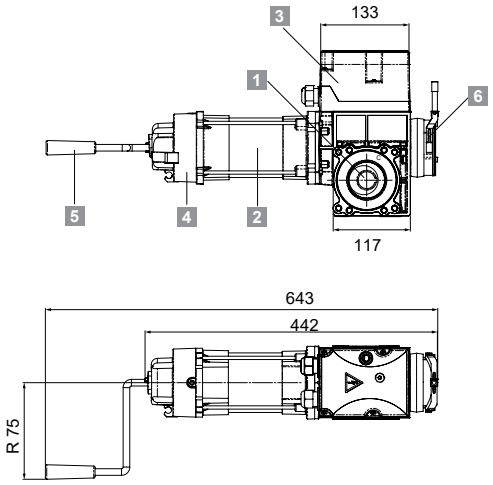
**< -5°C with electrical heating (optional)

● Inspection number: 14-003845-PR01

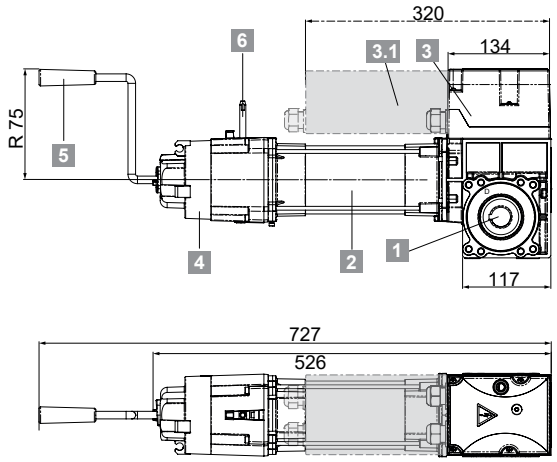
● ● Inspection number: 776504-5/083/1

Dimension drawings

A

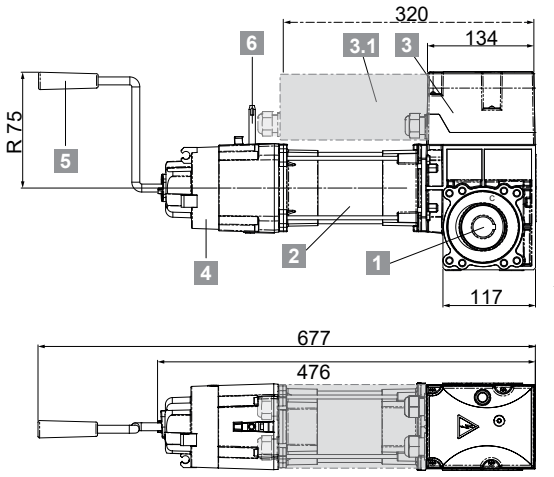


E

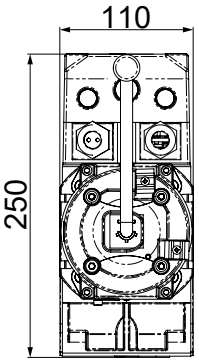


Dimension drawings

C



A C E



1	Worm gearing
2	Motor
3	Limit stop housing
3.1	Limit stop housing with frequency converter
4	Emergency hand crank housing
5	Emergency hand crank
6	Brake housing / brake

Declaration of incorporation

Declaration of Installation

for installation of an incomplete machine in accordance
with the Machinery Directive 2006/42/EC, Annex II, Part 1 B

SOMMER Antriebs- und Funktechnik GmbH
Hans-Böckler-Straße 21 - 27
73230 Kirchheim/Teck
Germany

hereby declares that the industrial door operators

GIGAspeed

have been developed, designed and manufactured in conformity with the

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- RoHS Directive 2011/65/EU.

The following standards were applied:

• EN 60335-1, where applicable	Safety of electrical appliances / operators for doors
• EN 61000-6-3	Electromagnetic compatibility (EMC) - interference
• EN 61000-6-2	Electromagnetic compatibility (EMC) - interference resistance

The following requirements of Annex 1 of the Machinery Directive 2006/42/EC are met:
1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.14, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.3, 1.7.4
The special technical documents have been prepared in accordance with Annex VII Part B and will be submitted electronically to the regulators on request.

The incomplete machine is intended for installation in a door system only to form a complete machine as defined by the Machinery Directive 2006/42/EC. The door system may only be put into operation after it has been established that the complete system complies with the EC Directives listed above.

The undersigned is responsible for compilation of the technical documents.

Kirchheim, 20-04-2016

CE

i.V.

Jochen Lude
Responsible for documents

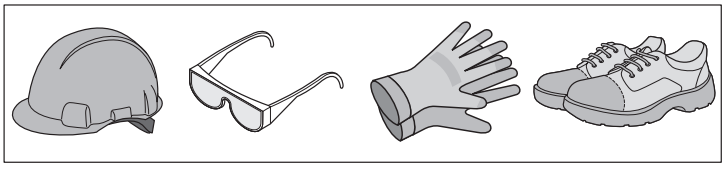
Installation preparations

Safety instructions

CAUTION!
Observe all installation instructions – improper installation can lead to serious injuries!

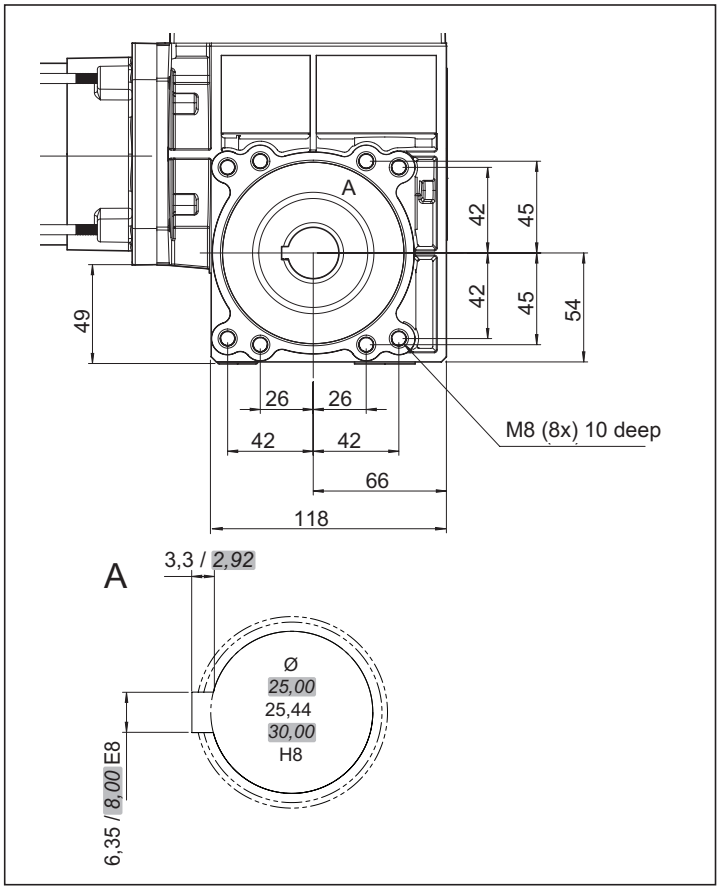
- Do not shorten or extend the mains cable.
- The voltage of the power source must correspond with the voltage listed on the operator type plate.
- The contacts of all devices to be connected externally must be safely isolated from the mains voltage supply in accordance with IEC 60364-4-41.
- Live parts of the operator must not be connected to the earth or with live parts or protective conductors of other electrical circuits.
- Install all required covers and protective devices of the operator. Ensure that all parts and seals are correctly installed and all threaded connections are tight.
- Operators with a fixed connection must have an all-phase main switch with appropriate fuse protection.
- The operator must be connected to the power supply by an electrician only.
- EMERGENCY STOP devices in accordance with EN 60204 must remain operational in all types of control unit. When the EMERGENCY STOP device is unlocked, the system must not restart in an uncontrolled or undefined state.
- Ensure that the drive is securely fastened to gate and walls to withstand forces generated when opening and closing the gate.
- Use only approved mounting material (e.g. anchor fittings).
- Use lifting equipment and attachments designed for the weight of the operators.
- When installing the operator, do not hold it or lift it by the cable.

Personal protective equipment



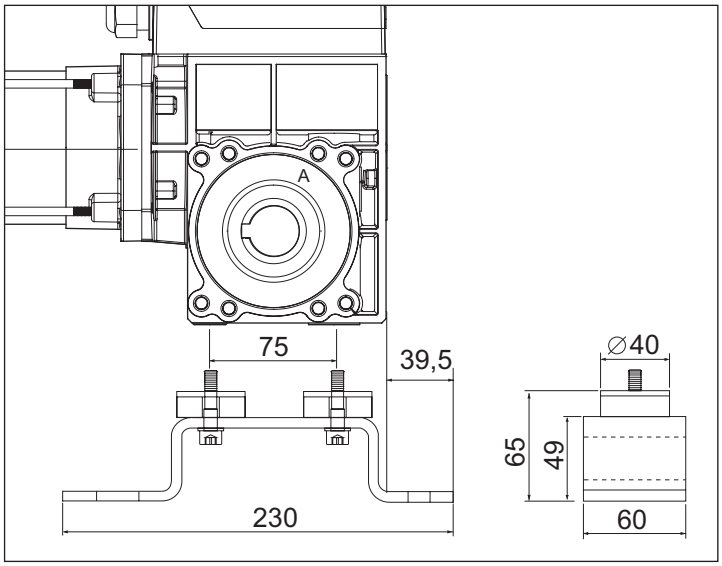
- Safety helmet
- Safety glasses (for drilling)
- Work gloves
- Safety shoes

Installation dimensions



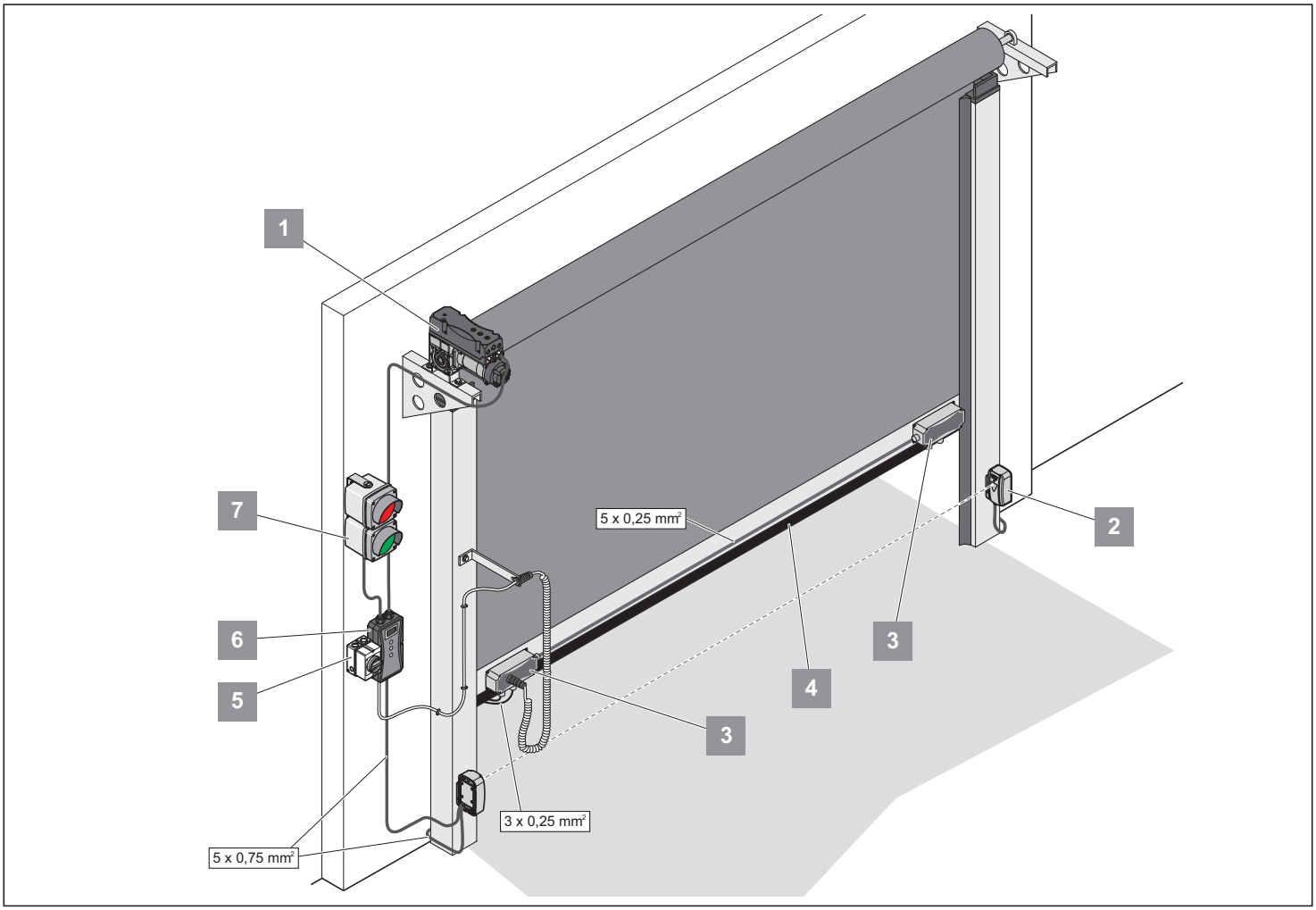
Fastening dimensions of pendulum base

(Optional accessories)



NOTE!
Screws must be secured.

Installation



1	Operator with electronic limit stops
2	Photocell
3	GIGAbox (door socket)
4	Closing edge
5	Main switch (lockable)
6	Control unit
7	Traffic light

Safety instructions

CAUTION!
Observe all installation instructions – improper installation can lead to serious injuries!

CAUTION!
Control or regulating units (buttons) in a fixed position must be mounted within sight of the door. They must not be installed near moving parts. They must be installed at a height of at least 1.5 m.

CAUTION!
Always unplug the mains plug before opening the operator.

CAUTION!
After installation, check the operator to ensure that it has been correctly adjusted and that it reverses upon contacting a 50 mm high object on the floor.

- The operator may only be installed, connected and taken into operation by technical specialists.
- Only move the door if there are no people, animals or objects within its range of movement.
- Keep disabled persons and animals away from the door.
- Wear safety glasses when drilling the fastening holes.
- Cover the operator during drilling to prevent dirt from entering the operator unit.
- Before opening the housing, make sure that drilling chips or other material cannot fall into the housing.
- All electrical wiring must be firmly secured to prevent displacement.
- Before installing the operator, inspect it for damage caused by shipping or other causes.

  ⇒ Never install a damaged operator. Severe injuries may result!
- Keep the system disconnected from the power supply when installing the operator.
- Close unused cable inlets with suitable material to maintain the desired protection class!

CAUTION!
Walls and ceiling must be solid and stable. Only install the operator on a correctly aligned door. An improperly aligned door can cause serious injury.

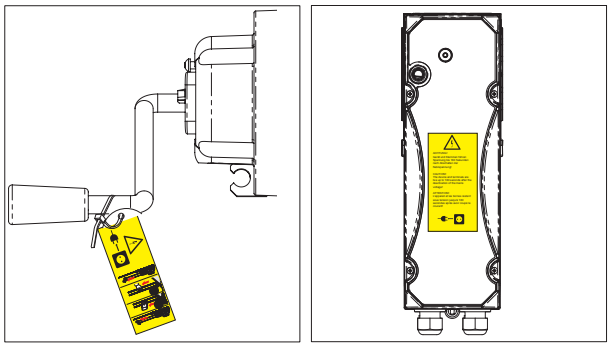
- Remove or disable door locks.
- Use only approved mounting material (e.g. anchor fittings, screws). The fasteners must be suitable to the material of the ceilings and walls.
- Check that the door runs smoothly.

Information on installation

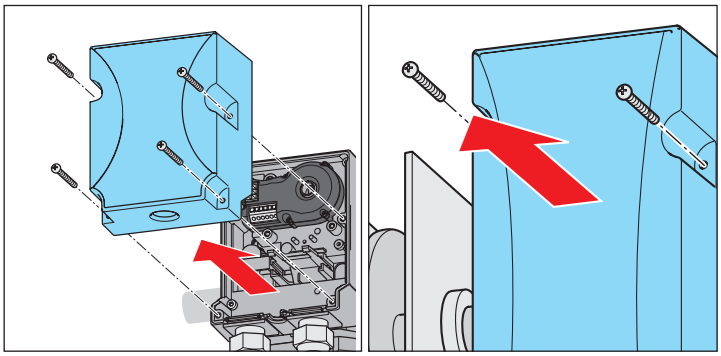
- Define the installation location of the control unit together with the operator.
- Use indoors (see "Technical data" in regard to the temperature and IP class).
- Mount the operator vertically on a flat and low-vibration support.

Attaching information signs to the operator

NOTE!
Attach the supplied information sign appropriate to the type of release.
Stick the warning sign in the centre of the housing for operators with frequency converters.



Connecting operator



1. Loosen the screws on the cover.
2. Remove cover.

Connection to the mains power supply

CAUTION!
The mains connection must be in accordance with EN 12453 (omnipolar mains circuit breaker). Install a lockable main switch (omnipolar shut-off) to prevent the power from being accidentally switched on during maintenance work. See accessories, main switch.
Use a suitable power cable with a fuse (10 A, slow-blowing).

NOTE!
Move the door to the centre position before connection to the mains power.

NOTE!
Disconnect the power to the operator before working on it. The operator must be connected to mains power by an electrician.

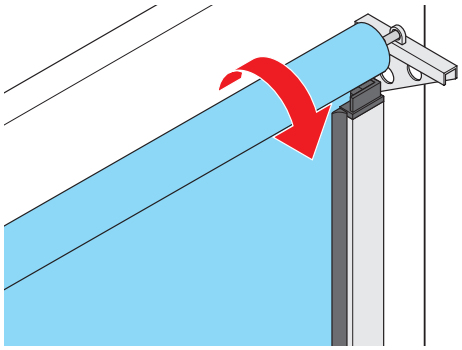
NOTE!
Cables should always be permanently installed.

Use only control lines approved by the manufacturer for connection. The control line is pluggable. The screws must not be loosened to ensure that the strain relief and IP code are maintained.

The standard version is designed for 1~230 V frequency converter operation or for 3~400 V operation. The factory wiring for 3~400 V operation can be rewired for operation in a 3~230 V network.

If the motor is rewired for operation in a 3~230 V network, make sure that the control unit is also designed for this voltage range.

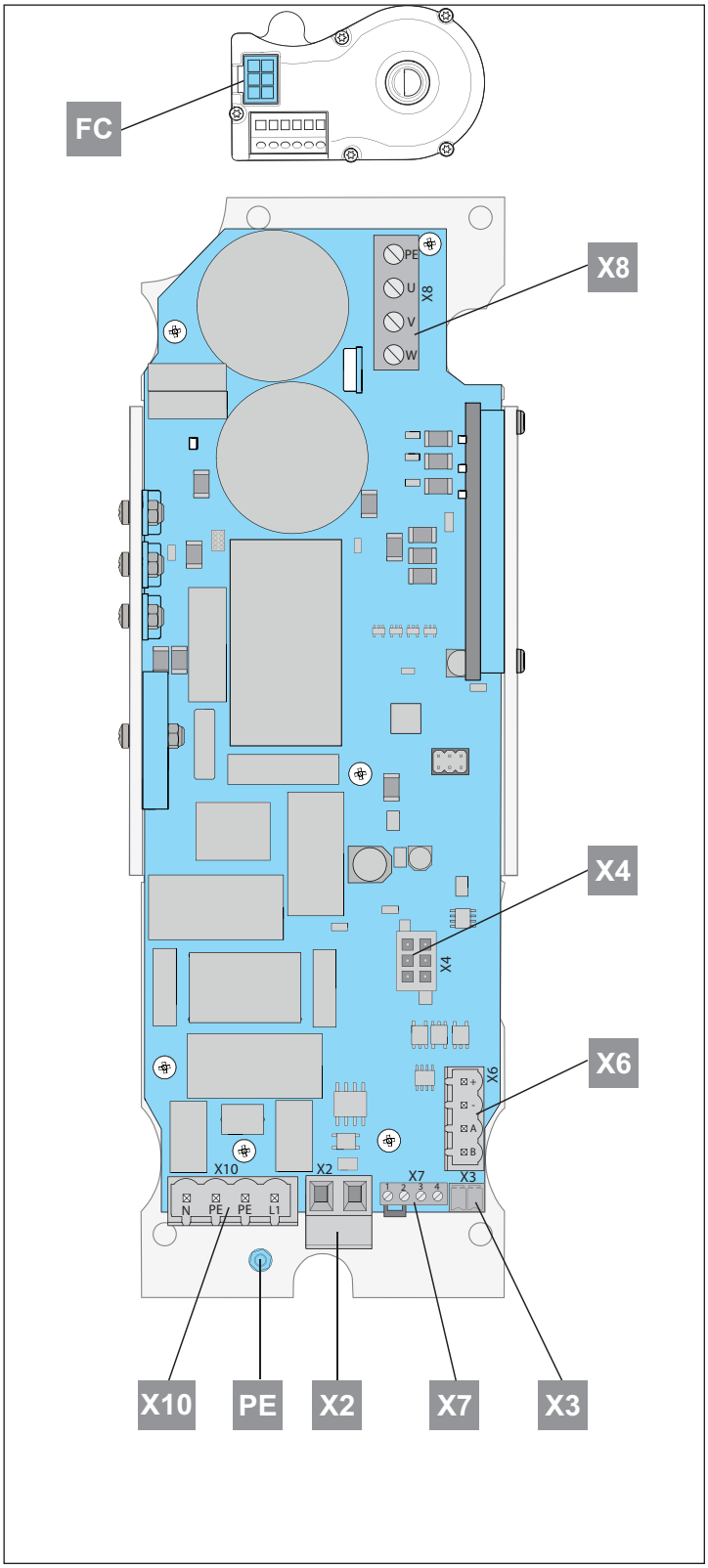
The direction of rotation is defined as follows for the clockwise rotation of the connected phases:



Frequency converter (FC)

Technical data

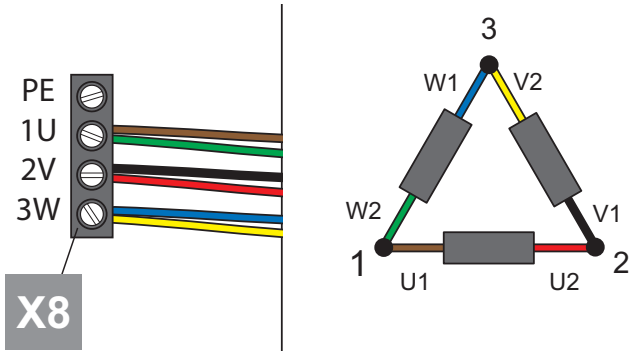
Output	0.5 - 1.1	kW
Voltage supply	1~230	V
Frequency	50/60	Hz
Approved temperature range	-5°C to +60°C	°C
Overheating protection	+80°C	
Frequency range	20...120	Hz



Overview of the terminals

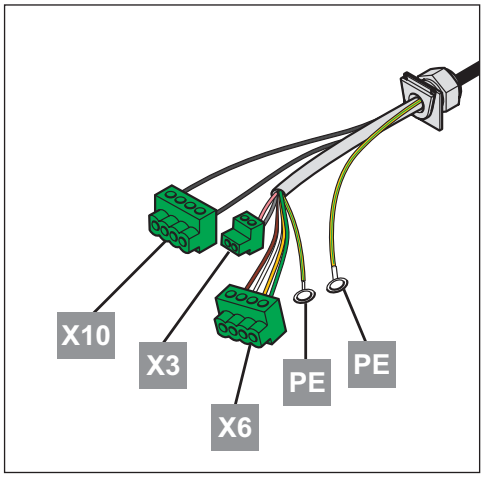
X10	Mains feed
X2	Brake (blue + black)
X7	1 - 2 = microswitch emergency release
	3 - 4 = motor thermal contact
X3	Safety circuit (control unit)
X6	RS485 interface
X4	Absolute value encoder
X8	Motor connection
FC	Frequency converter

Motor connection



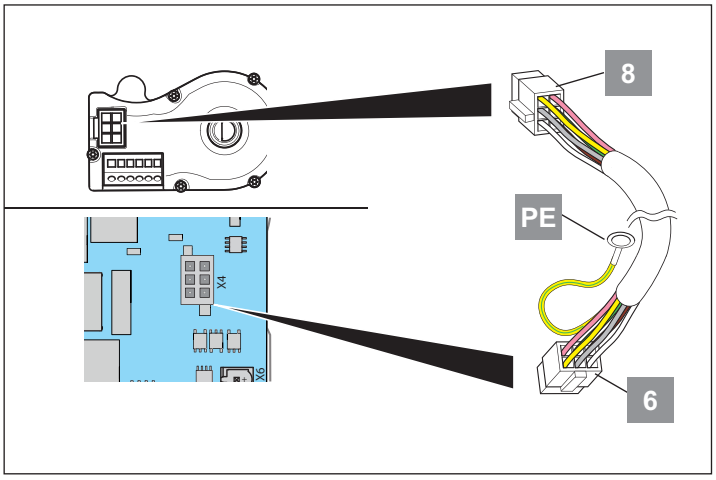
Terminals (FC)	Ref.	Colour
1 (U)	U1 / W2	Brown + green
2 (V)	V1 / U2	Black + red
3 (W)	W1 / V2	Blue + yellow

GIGAcontrol A connections

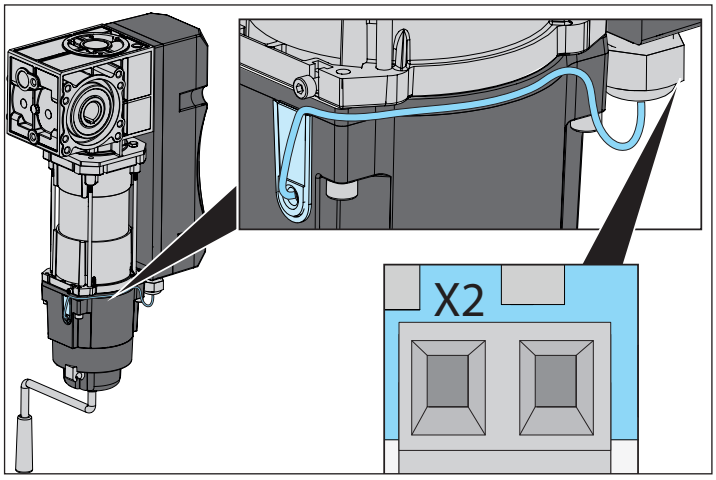


Installation

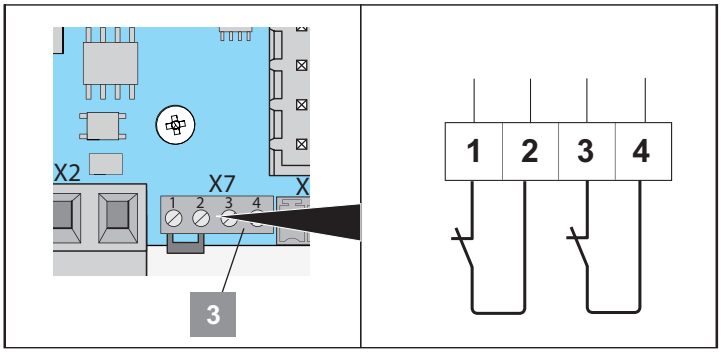
Absolute value encoder connection



Brake connection (X2)

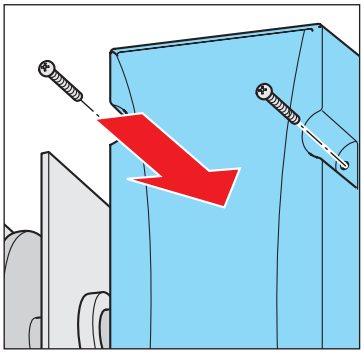


Safety circuit connection (X7)



Terminals	Connection
1	Microswitch Emergency release
2	
3	Motor thermal contact
4	

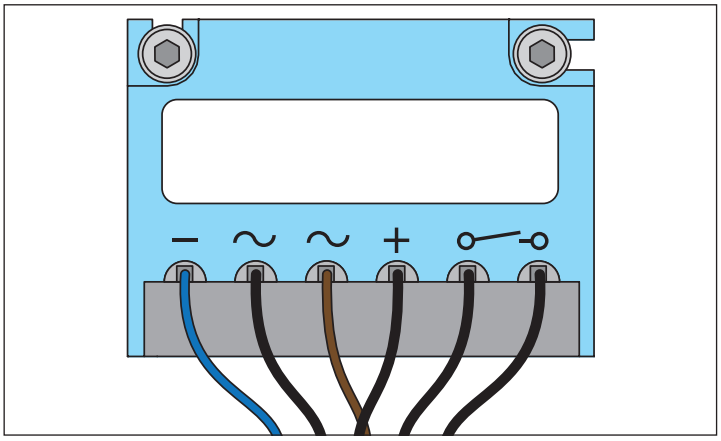
Completing FC mounting



1. Attach the hood.
2. Fasten the hood with 4 screws.

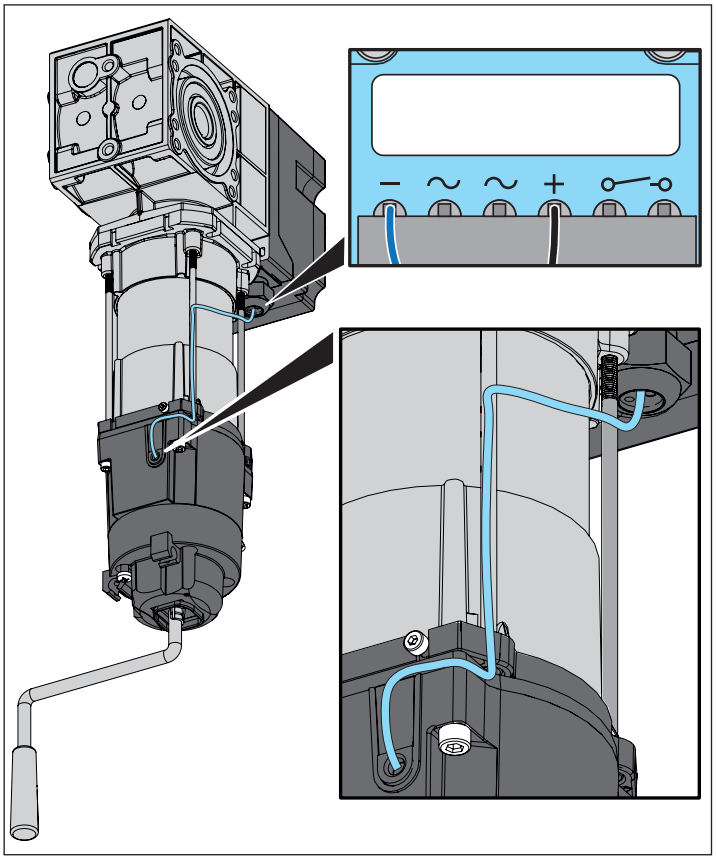
Brake rectifier

NOTE!
Approved wire cross sections for all terminals: max. 2.5 mm².



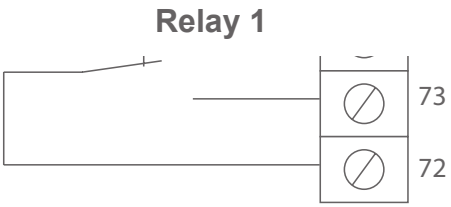
Terminals	Ref.	Colour	GIGAcontrol A
-	Brake	Blue	-
~	Neutral point	Black	-
~	U1	Brown	-
+	Brake	Black	-
⊶⊸	Rel 1	Black	Terminal 73
	Rel 1	Black	Terminal 72

Brake connection



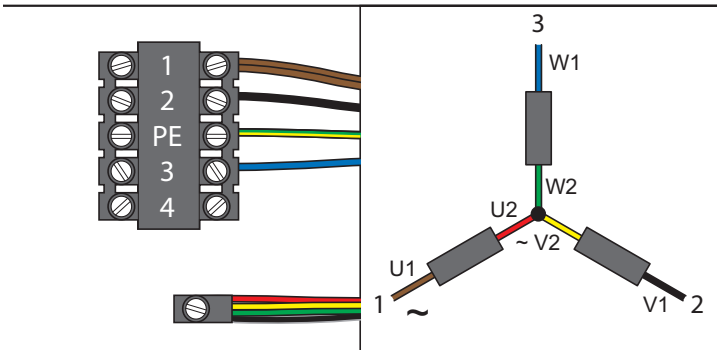
Brake connection to GIGAcontrol A

NOTE:
Relay 1 is available only if it is not being used to control the brake (factory setting: brake active).



3~400 V wiring

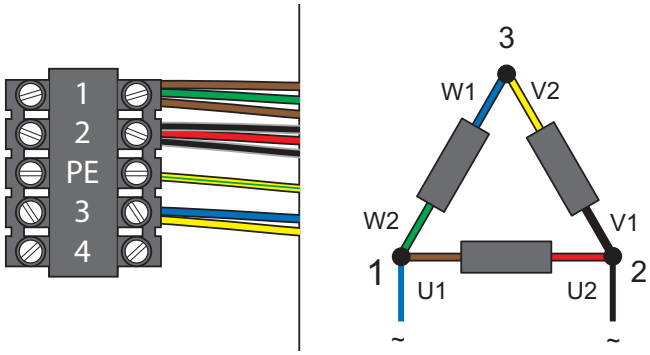
NOTE!
Approved wire cross sections for all terminals: max. 2.5 mm².



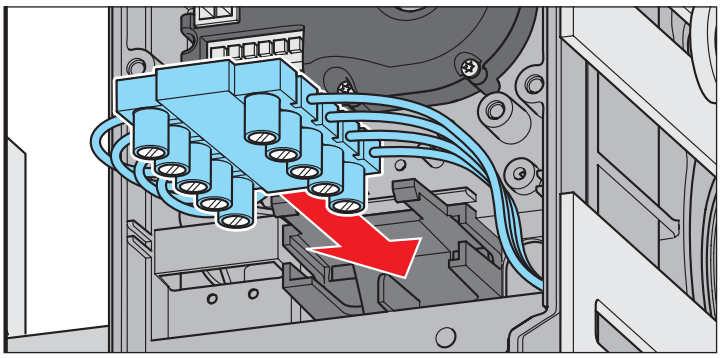
Terminals		Ref.	Colour
GIGAspeed	GIGAcontrol A		
1	38	U1 / ~	2 x brown
2	40	V1	Black
PE	PE	PE	Green-yellow
3	42	W1	Blue
Neutral point		U2 / V2 / W2 / ~	Red + yellow + green + black

3~230 V mains wiring

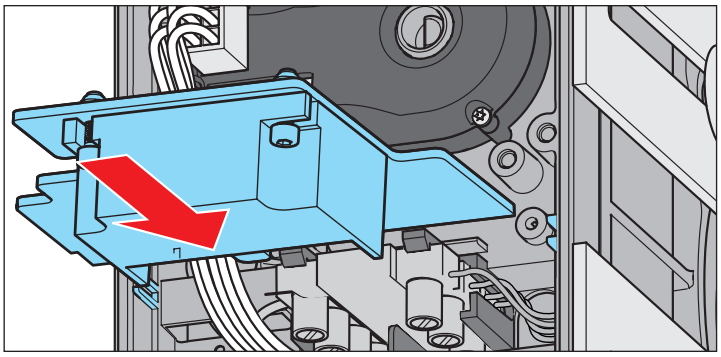
NOTE!
Approved wire cross sections for all terminals: max. 2.5 mm²



Terminals		Ref.	Colour
GIGAspeed	GIGAcontrol A		
1	38	U1 / W2 / ~	2 x brown + green
2	40	V1 / U2 / ~	2 x black + red
PE	PE	PE	Green-yellow
3	42	W1 / V2	Blue + yellow
~	-	Brake rectifier	Blue + black



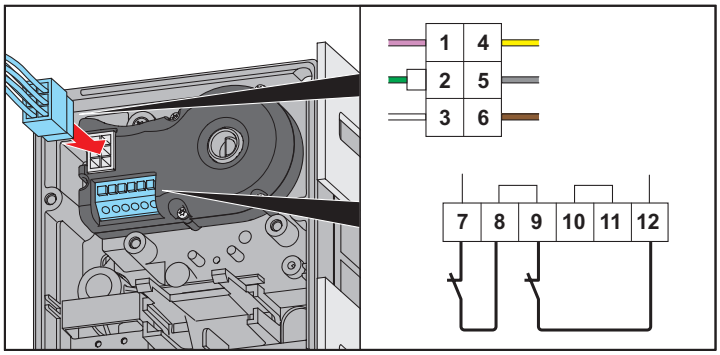
1. Check the connection by pulling lightly on the wire.
2. Insert plug-in terminal into holder.
3. Fix cable, make sure that plug-in terminal and cable sleeves are correctly seated.



4. Insert brake rectifier into the tracks provided in the limit stop housing.

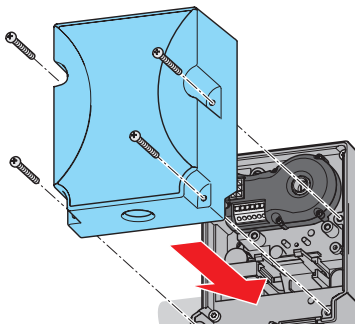
Connecting digital limit stops (encoders)

The digital limit stop is an absolute value encoder that is connected to the control unit by a RS485 interface. It is adjusted and end positions are analysed by the control unit, which also sets safety positions and additional switching points.



Terminal	Function
7 + 8	Motor thermal contact
Standard	
9 + 12	Emergency manual actuation of microswitch
With additional safety device (optional)	
9 + 10	Emergency actuation of microswitch
11 + 12	Additional safety device

1. Connect the serial port and the safety circuit to the control unit with the 6-pin encoder plug.
2. Connect the NC contacts of the safety devices, such as thermal contact and emergency actuation, to the side terminal strip.
3. Place jumpers on unused terminals or remove the jumpers when connecting additional safety devices to the spring terminals.
4. Open spring terminals by pressing the overlying button to insert or remove wires.
5. Fix cable, make sure that plug-in terminal and cable sleeves are correctly seated.



6. Attach the hood.
7. Fasten the hood with 4 screws.

In the case of operators with a long housing, control units, for example, can be installed (see the device operating instructions).

Initial operation

Mounting and connecting the control unit

- Mount and connect the control unit before commissioning as directed by the control unit operating instructions.

Connecting safety and accessory parts

- If additional safety and accessory parts are connected later, set them in the control unit (see the control unit operating instructions).

Safety instructions

CAUTION!
Remove all transport locks and all cords or straps necessary to operate the door by hand.

CAUTION!
Always perform the programming run with a view of the door. Always ensure that there are no persons, animals, or objects in the area of movement of the door.

CAUTION!
For operators with frequency converter, the programming process for the end positions is performed at the set maximum speed.

Checking the direction of travel

NOTE!
See the instructions for the control unit to control the direction of running. This procedure is very important and must be performed carefully.

Setting the end positions and limit stops

See the control unit operating instructions.

Emergency release

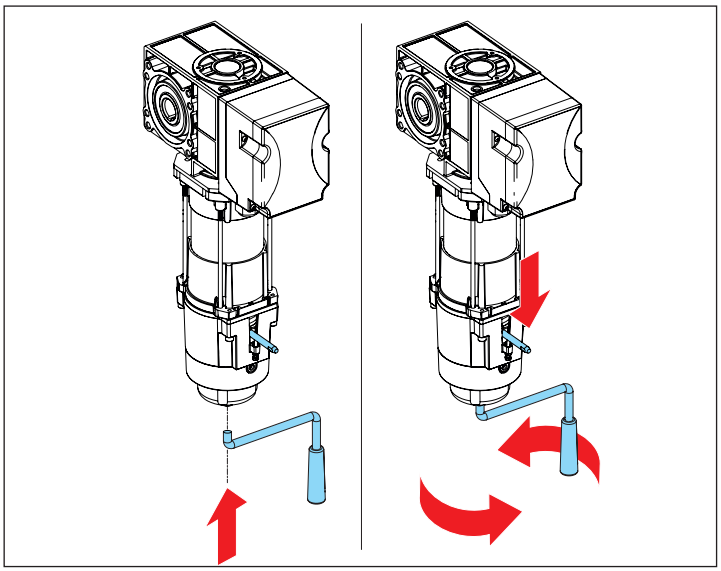
CAUTION!
Disconnect the door system from the mains before using the emergency manual actuation. The emergency release must be used only with the motor stopped and only by service technicians or trained persons. The emergency release must be operated from a safe position only.

NOTE!
A switchover between manual and motorised operation can take place in any position of the door.

NOTE!
The door must not be moved past the end positions, otherwise a safety switch will be approached.
The door system can only be electrically operated again when the safety switch has been "released" by emergency actuation.

Opening and closing door with emergency hand crank

CAUTION!
The crank must be held stable when releasing / bleeding the brake since the door can move independently and unintentionally.



1. Take crank from holder.
2. Insert crank into crank housing to the stop with light pressure and slight rotation.
3. Release the brake by actuating the level and hold during cranking.
   ⇒ This interrupts the safety circuit of the operator.
4. Rotate crank and open or close the door.
5. Remove crank from crank housing and replace in holder.
   ⇒ The operator is ready for motorised operation again.

Maintenance and care

Safety instructions

DANGER!
Never use a water hose or high-pressure cleaner to spray down the operator or the control unit.

- Do not use acid or alkaline cleaning products.

Regular testing

- Keep the operator clean and wipe it occasionally with a dry cloth.
- Check the operator regularly for insect infestation and moisture; if necessary clean and dry.
- Check all fastening screws and bolts for tight seating and re-tighten them where necessary.
- The gearing is lubricated for life and maintenance-free. Keep the output shaft rust-free.
- Check that the operator is correctly seated.
- Check that safety devices are fully functional regularly, at least once a year (e.g. BGR 232, 2003; applicable in Germany only).
- Regularly check power cables and wires for breakage or insulation defects.

DANGER!
If a fault is found, do not operate the system, lock to prevent operation and repair the fault (or have it repaired).

Maintenance and addition testing

Testing	Behaviour	Yes/No	Possible cause	Remedy
Safety contact strip, **if installed** Open and close the door, actuating the safety contact strip at the same time.	Behaviour of the door as set at the control unit.	Yes	• All OK!	
		No	• Cable breakage, terminal loose.	• Check the wiring and tighten the terminals.
			• Control unit incorrectly adjusted.	• Adjust control unit.
			• Safety contact strip defective.	• Decommission the system and lock it to prevent reactivation. Then, contact customer service.
Photo eye, if present **See instructions for control unit** Open and close the gate while interrupting the photocell.	Behaviour of the door as set at the control unit.	Yes	• All OK!	
		No	• Cable breakage, terminal loose.	• Check the wiring and tighten the terminals.
			• Control unit incorrectly adjusted.	• Adjust control unit.
			• Photocell dirty.	• Clean the photocell.
			• Photocell defective.	• Decommission the system and lock it to prevent reactivation. Then, contact customer service.
Safety limit switch **See instructions for control unit** Move door to the set top or bottom end position. Move door past the end position with the emergency manual actuation.	The control unit must display an error message. The door must no longer be powered by the motor. Then move the door back manually via emergency manual actuation. When the door reaches the set end position again, it can be operated with the motor again.			• Adjust the safety limit switches so there is no damage when end positions are reached or the ropes jump off the tracks.

Disassembly

IMPORTANT!
Observe the safety instructions!

The sequence is identical to that described in the "Installation" section, but in reverse order. Ignore the adjustment instructions.

Disposal

Follow the relevant national regulations.

IMPORTANT!
The gearing system contains oil which must be disposed of properly.

Warranty and customer service

The warranty complies with statutory requirements.
Please contact your specialist retailer/supplier if you have any queries regarding the warranty. The warranty is only valid in the country in which the product was purchased.

Ownership of replaced parts passes to us.

If you require after-sales service, spare parts or accessories, please contact your specialist retailer/supplier.

We have tried to make the Installation and Operating Manual as easy as possible to follow. Do you have any suggestions as to how we could improve it or do you think more information is needed? Please send your suggestions to us:

Fax: 0049 / 7021 / 8001-403

E-mail: doku@sommer.eu