

IQ box Safety DR	EN Wiring diagram
193670-01	

Translation of the original operating instructions for device version 1.0 / A0



IQ box Safety DR

Brief description

The IQ box Safety is a module for protecting the closing edges of power-operated windows by means of safety edges and/or non-contact sensors (pinch protection). The IQ box Safety is an accessory and can only be used together with GEZE IQ windowdrive window drives. One IQ box Safety is required per window.

Safety instructions

To ensure personal safety, it is important to follow these safety instructions. These instructions must be kept.

- Before installation, read and observe the enclosed safety notes and notes on the protection of power-operated windows. Warranty claims require proper mounting, installation and maintenance in accordance with the manufacturer's specifications.
- Only appropriately qualified people may carry out installation, commissioning and maintenance. If unauthorised changes are made to the system, GEZE cannot be made liable in any way whatsoever for any resulting damages.
- Only use GEZE original parts for repair and service work.
- Ensure that only a trained electrician completes the connection of the power supply to the mains voltage. The power connection and protective earth conductor test must be carried out in accordance DIN VDE 0100-600
- Observe the latest versions of guidelines, standards and country-specific regulations.
- Protect the IQ box Safety from building dirt and water.
- The IQ box Safety is a safety-related component and detailed specialist knowledge through product training is required to understand it.

Notes on the protection of power-operated windows

In accordance with Machinery Directive 2006/42/EC a risk analysis must be prepared for power-operated windows. The GEZE safety analysis for

power-operated windows can serve as a guide for the risk analysis. It is available in the download area for the IQ box Safety under www.geze.de.

Area of application

With the IQ box Safety and suitable sensors the maximum protection rating from the GEZE safety analysis for power-operated windows can be fulfilled.

The IQ box Safety may only be used with GEZE IQ windowdrive window drives and non-contact sensors and safety edges approved by GEZE.



Note

- The OPEN direction may not be protected in SHEV mode. If windows have to close in the event of an SHEV alarm (SHEV CLOSE), the CLOSE direction may not be protected.
- For safety reasons, the safety mode must be activated by pressing the CLOSE window button (8) before the sensor inputs are deactivated or activated via the DIP switches or the drives are closed manually.

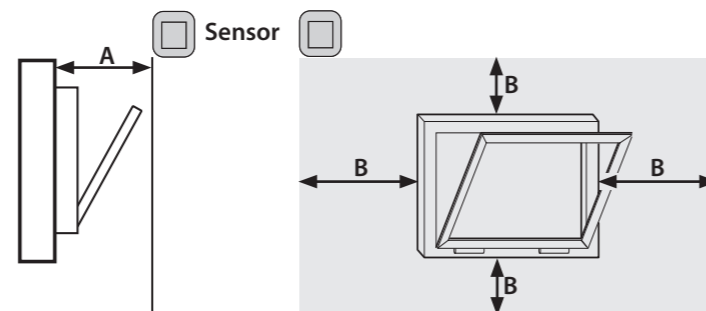
Connection and commissioning

- Install IQ box Safety on a 35 mm top hat rail in a control cabinet or suitable surface-mounted casing.
- Connect IQ box Safety and suitable sensors, window drives, activation/power supply as described.
- Connect supply voltage -> Power LED lights up green.
- Activate the sensor inputs required using DIP switches. (First, press the CLOSE window button (8) to activate the safety mode).
- If necessary, adapt the parameter settings using the service case and ST220.
- Teach-in the non-contact sensors according to the sensor operating instructions.
- Check the function of the non-contact sensors/safety edges. All closing edges must be tested for safe operation under real conditions using a suitable testing element in accordance with EN 60335-2-103 (dimensions 25x100x300mm or smaller). Non-recorded areas or possible reaching behind the sensor field must be corrected using the setting possibilities or the position of the sensor.
- Check the protection behaviour following activation in OPEN/CLOSE direction and following SHEV alarm.
- Instruct customers, document protection (see note) in the risk analysis or GEZE safety analysis and hand over to the customer.



Note:

With non-contact sensors, the remaining residual risk depends on the distance of the sensor to the on-site limits (A) (e.g. frame, façade elements, ...) and the overlap of the risk area (B) GEZE recommends the following values: A < 300 mm, B > 500 mm.



Measures for minimising residual risk:

- Minimise distance (A).
- Install a further sensor so that it is not possible to reach in.
- IQ box Safety may only be used where the on-site conditions permit safe monitoring of the closing edges.

The IQ box Safety does not provide protection against dangers caused by falling objects or components. No objects may be placed in the area of movement of the window leaves.

Maintenance

GEZE recommends annual maintenance of the window system to guarantee safety and permanent clamping protection.

Disposal



Damage to the environment can occur if disposal is not carried out properly. For this reason, heed the following notes:



- Always follow the applicable country-specific disposal and environmental protection regulations.
- Do not dispose of these with household waste.

Technical data

General information	ID	187677
	Note	One IQ box Safety is required per window. Up to 4 window drives and 2 locking drives can be used per window.
	Modes of operation	SHEV and ventilation mode via SHEV control panel (polarity reversal mode) Ventilation mode with power supply (polarity reversal mode) Ventilation mode with IQ gear Ventilation mode with IQ box KNX Ventilation mode via control panel (F1200+)
	Type of installation	Installation on 35 mm top hat rail
	Dimensions	90 mm x 60 mm x 35 mm
	IP rating	IP 20
	Protection rating	III
	Ambient temperature	-5°C...+70°C

Electrical data	Supply voltage IQ box Safety and drives	18-30 V DC
	Max. residual ripple	20 U _{ss} [%]
	Max. current consumption drives	10 A
	Induced current intake	100 mA
	Supply voltage of the sensors (24V)	Supply voltage IQ box Safety -6%
	Max. total current load at 24V outputs for sensors	1.5 A
	Connection cross-section terminals	max. 2.5 mm ²
	Max. overall cable length for drives (LIN-BUS)	50 m
	Max. cable length sensors	Non-contact sensors: max. 10 m - heed technical data for sensors. Safety edges: max. 200 m - heed technical data for safety edge.

Sensors	Sensor inputs	4 inputs, can be used for safety edges or non-contact sensors.
	Approved sensors	GC 339+ (max. 2 pcs.) GC 342 (max. 2 pcs.) Combination with safety edges possible. Further sensors only after approval by GEZE
	Approved safety edges	Safety edges with terminating resistance of 4k5 to 22k Ohm max. 4 pcs. or combination with sensors.

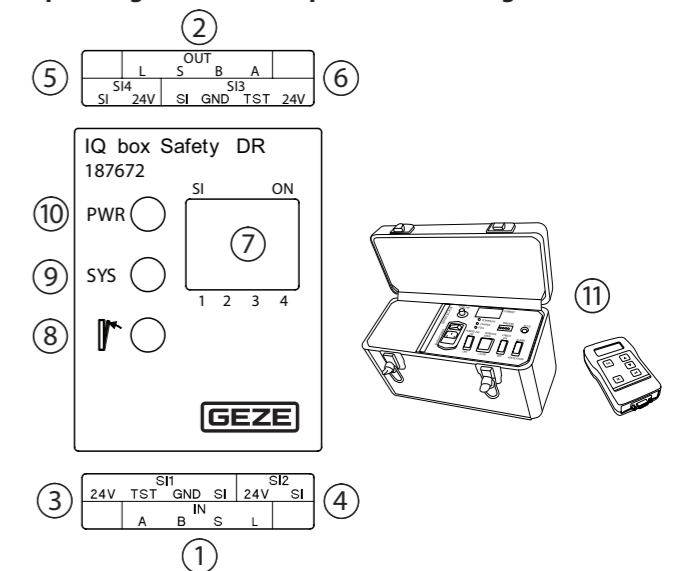
Drives	Compatible drives	GEZE IQ windowdrives Slimchain 24 V Powerchain E 250 NT F1200 + Power lock
	Software drives	The software status of the drives must be V3.2 or higher or V1.0 for F1200+.

Function (factory setting)	Monitored direction of drive movement	Close
	Behaviour when sensor triggered SI1 / SI3	Drive stops
	Behaviour when sensor triggered SI2 / SI4	Drive stops and reverses
	Behaviour when sensor released SI1 / SI3	Drive carries out last movement command
	Behaviour when sensor released SI2 / SI4	Drive waits for new movement command

Accessories

Designation	ID
Power supply NT 1.5 A-24 V HS	151425
NT 2.5 A-24 V HS power supply	151424
GEZE surface-mounted housing	152010
GEZE GC 339+	203858
GC 342 (right module)	167435
GC 342 (left module)	167432
Connection cable IQ box Safety	193394

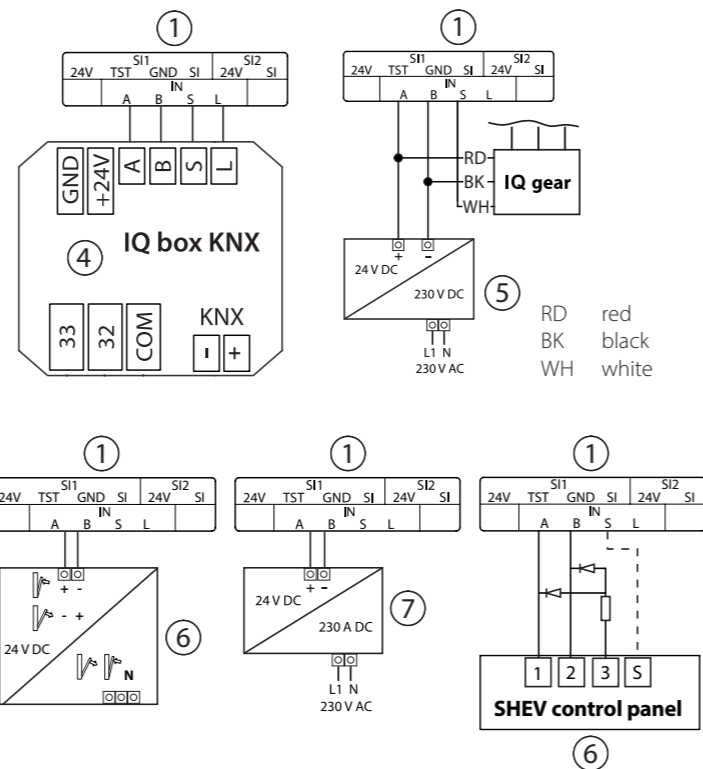
Operating elements and parameter setting



Pos.	Component	State	Explanation
1	Connection activation		See wiring diagrams
2	Connection drives		See wiring diagrams
3, 6	Connection sensor SI1 / SI3		See wiring diagrams Sensor input pre-parameter set for non-contact sensors => deactivate sensor inputs not used by means of DIP switches. Before deactivation or activation of the sensor inputs, press the CLOSE window (8) button briefly to activate safety mode.
4, 5	Connection sensor SI2 / SI4		See wiring diagrams Sensor input pre-parameter set for safety edges => deactivate sensor inputs not used by means of DIP switches. Before deactivation or activation of the sensor inputs, press the CLOSE window (8) button briefly to activate safety mode.
7	DIP switches 1-4	ON	Sensor input active
7	DIP switches 1-4	OFF	Sensor input inactive

8	Window CLOSE push button		Button pressure activates safety mode for 5 seconds. Sensors can only be deactivated or activated via DIP switch in safety mode and the window drives can be closed e.g. in the event of sensor fault by pressing the CLOSE window push button again in dead man's operation.
9	System LED	on (green)	Sensor OK No sensor triggered
9	System LED	flashes slowly (green) 1s on/ 1s off	Push button for overriding sensor signals is pressed, window closes.
9	System LED	flashes quickly (green) 100 ms on/ 100 ms off	IQ box Safety is in safety mode.
9	System LED	flashes slowly (red) 1s on/ 1s off	Sensor fault => Check sensor and sensor connection
9	System LED	flashes quickly (red) 100 ms on/ 100 ms off	Internal error => Restart system (supply voltage OFF/ON), replace box.
9	System LED	flashes (yellow)	Relay test has failed, failed initialisation process => Restart system (supply voltage OFF/ON), replace box.
9	System LED	on (red)	Sensor OK and sensor triggered; all sensor inputs deactivated.
10	Power LED	on (green)	Ready for operation, power supply OK Communication to the drive OK
10	Power LED	off	Power supply not OK => Check power supply and connection to IQ box Safety.
10	Power LED	flashes (green)	Power supply OK Communication to the drive not OK => Check connection of the drives to IQ box Safety. => Check software version of the drives on the type plate. SW version 3.2 or higher is required.
11	Service case and ST220		Connection of the service case (e.g. using IQ box Safety connection cable) Connect output A,B,S,L of the service case to (1). For parameter setting see user manual ID 153523 - Parameter setting with service terminal ST220 and service case.

- 1 IQ box Safety DR
- 2 IQ windowdrive window drive
- 3 Optional branching box and further slave drives (with Syncro) orlocking drives
- 4 IQ box KNX in flush-mounting or top hat rail casing
- 5 IQ gear and power supply
- 6 Power supply with polarity reversal
- 7 F1200+ activation via control panel
- 8 SHEV control panel; install line monitoring at the last window; S line for distinction alarm/ventilation

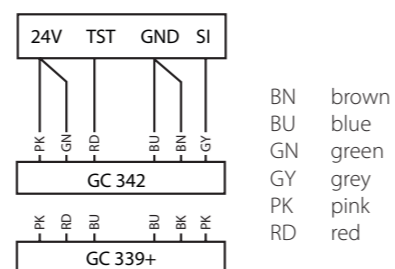


Connection safety edges

- Note:**
- ▶ Connect safety edges to sensor inputs SI2 / SI4.
 - ▶ Note the permissible terminating resistors of the safety edges (see technical data).
 - ▶ Heed the instructions for the safety edge.
 - ▶ The safety edges to be connected must be sized, mounted and put into operation independently, in accordance with the local circumstances and requirements of the Machinery Directive.

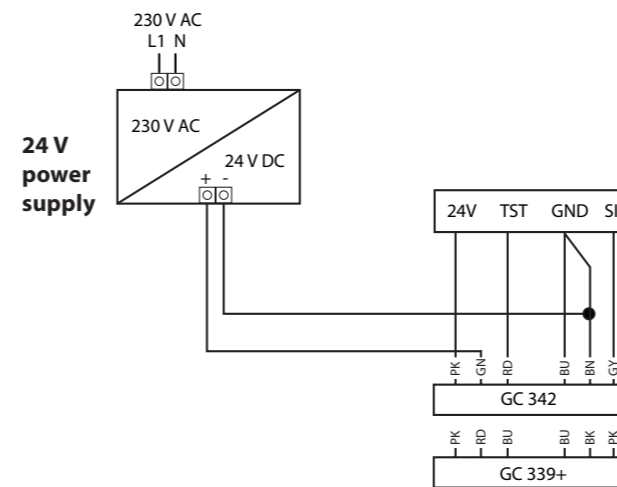


Connection of sensors GC 342 or GC 339+ With mode of operation IQ box KNX, IQ gear, F1200+



- Note:**
- ▶ Connect sensor to sensor inputs SI1 / SI3.
 - ▶ Heed the instructions for the sensors.

Connection of sensors GC 342 or GC 339+ With operating mode polarity reversal mode (SHEV control panel / power supply)



- Note:**
- ▶ Sensors GC 342 and GC 339+ require a permanent 24 V supply.
 - ▶ Therefore an additional 24 V power supply (e.g. power supply NT 1.5 A-24 V HS) is required in polarity reversal mode (SHEV control panel / power supply).
 - ▶ Connect sensors and 24 V power supply to sensor inputs SI1 / SI3.
 - ▶ Heed the instructions for the sensors.

Connection window drives and activation

