Operating instructions

G.L.E.N.®

(Gigabit LAN Extension Node)

CGF
CounselGroupFrankfurt

1.1

Table of contents

1 General information

1.1 Information on these operating instructions

Purpose of the operating instructions

These operating instructions enable safe handling of the device as well as its installation and commissioning. The basic prerequisite is compliance with the safety information and handling instructions.

Read the operating instructions completely before installing and operating a G.L.E.N.® switch.

Storage and transfer

Keep these operating instructions in case the device is to be removed again or passed on to third parties.

1.2 Explanation of symbols

Safety information is identified in these operating instructions by signal words. The signal words used indicate the extent of the hazard.

Danger!
Immediate hazard with a high level of risk.
Death or serious physical injury will result if the risk is not avoided.

- Measures for avoidance

Warning!
Possible hazard with a medium level of risk.
Death or serious physical injury may result if the risk is not avoided.

- Measures for avoidance

Caution!
Hazard with a low level of risk.
Minor or moderate physical injury or material damage may result if the risk is not avoided.

- Measures for avoidance

Notice
Notes which must be observed without fail.
User tips and other particularly useful information.

2 Safety

2.1 Target group

The target group for these operating instructions is the installer or operator of the device. This individual must have appropriate qualifications for installation and commissioning.

2.2 General safety information

Danger!
Danger to life due to electric shock.
Direct contact with live parts may lead to serious injuries or even death.

- Switch off the power.
- All work in connection with power may only be carried out by qualified personnel.

Caution!
Material damage during installation.
Improper installation may cause damage to cables or connections.

- Do not stretch or pinch cables.
- Do not damage cables with sharp edges or corners.

Warning!
Risk of injury from falling device.
Improper attachment may result in injury.

- Only attach the device as prescribed.
- Secure the device against falling when working on it.

Warning!
Risk of injury from sharp edges or pointed corners.
Sharp edges and pointed corners in the area of the installation opening or in the installation area can cause abrasions and cuts on the skin.

- Wear protective gloves.
- Handle with care in relevant areas.

Caution!
Risk of injury from laser radiation.
Looking directly into the laser beam may cause injuries.

- Do not look directly into the laser beam.
- Wear protective goggles.

Caution!
Risk of burns from hot device.
Touching the operated device may cause burns.

- Allow the device to cool down.
- Wear protective gloves.

Caution!
Risk of injury when closing the cover at the attachment point.
Careless working may result in bruising.

- When closing the cover, make sure that no body parts can be crushed.

3 Technical data

3.1 General information

Product designation	G.L.E.N.®
Certifications	• CE ° Interference emission according to EN 55032:2015 Class B ° Noise immunity according to EN 61000-6-2:2019 (EN 61000-4-2/-3/-4/-5/-6/-8/-11) ° Product safety according to EN 62368-1:2014 + AC:2015 • Environmental ° TR 2130 Issue E, August 2014 (DIN EN 60068-2-27/-64)
Uplink interfaces	• 2x 1/10 Gbit • SFP+ • M32x1 connection flange • LC connector
Downlink interfaces	• 4x 10/100/1000Base-T + PoE+ • 4x PoE+ 802.3at on all four ports • M12-X-Coded; screw connection (push-pull on request)
Weight	Max. 2.3 kg without bracket and external connections

Protection class/ protection type	Electric: Protection class I Ambient conditions: IP66 To achieve IP66, unused connections must be sealed with suitable blind caps.
Energy supply	• 230 VAC (220-240 VAC) / 50-60 Hz highly efficient power supply for low waste heat (up to 94% efficiency) • Neutrik powerCON® TRUE1 TOP connection system for easy field assembly • Power consumption 165 W max.
Dimensions*	• Height: 240 mm • Height (without connections): 216 mm • Depth: 111 mm • Width: 74 mm

* The dimensions are specified without the bracket.

3.2 Ambient conditions

Operating temperature	-30/+60°C ambient, natural convection (DIN EN 60068-2-14:2021 04)
Humidity	93% at 40°C, non-condensing (DIN EN 60068-2-78:2014 02)

4 Device description

4.1 Scope of delivery

After unpacking, make sure that all components are present and check them for transport damage.

The package consists of the following components:

Quantity	Component	
1	G.L.E.N.® switch	
1	External power supply connection – Neutrik mating connector	

4.2 Device overview

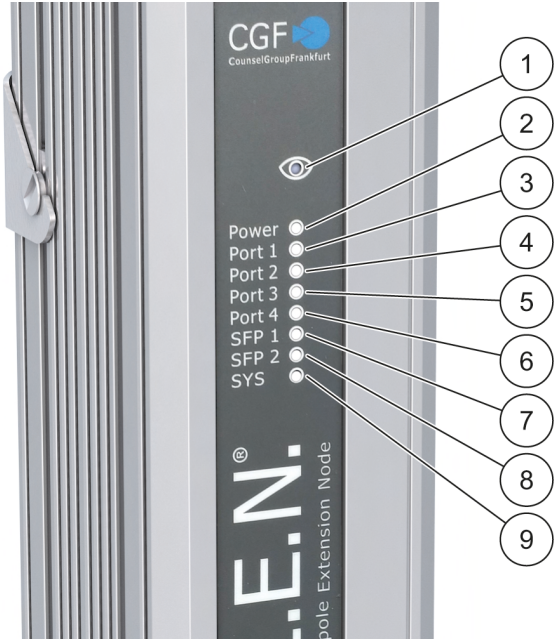

Fig. 1: Detailed view G.L.E.N.®

Detailed front view

1	Optical intrusion detection
2	Power
3	Port 1
4	Port 2
5	Port 3
6	Port 4
7	SFP 1
8	SFP 2
9	SYS

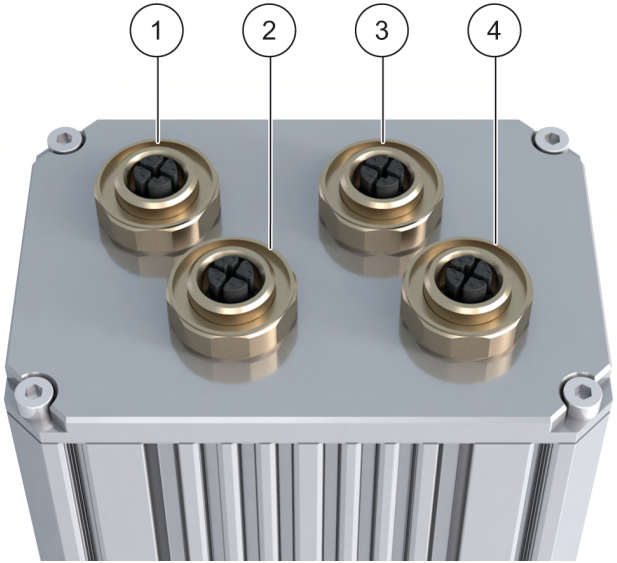

Fig. 2: View of top connections

Top connections

1	10/100/1000Base-T + PoE+
2	10/100/1000Base-T + PoE+
3	10/100/1000Base-T + PoE+
4	10/100/1000Base-T + PoE+

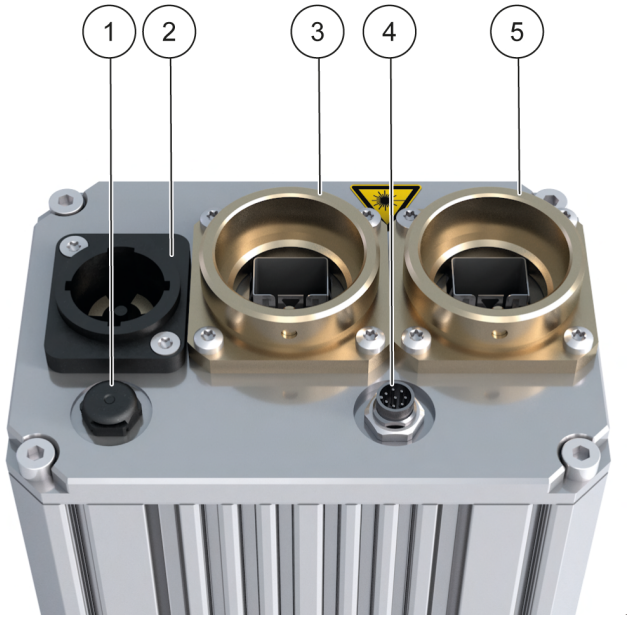

Fig. 3: View of bottom connections

Bottom connections

1 Pressure relief valve

2 Power supply

3 1/10 Gbit M32x1 flange with externally accessible SFP+ slot*

4 Console port*

5 1/10 Gbit M32x1 flange with externally accessible SFP+ slot

*optional

5 Transport, packaging and storage

5.1 Transport information

Observe the transport information on the packaging.

5.2 Unpacking

1. Open the packaging and remove the device.
2. Remove the protective cover from the device.
3. Check the device for visible damage.

5.3 Storage

Observe the following ambient conditions during storage:

- Maximum storage temperature: 80°C
- Maximum humidity: 40-50%, non-condensing

6 Configuration of new devices

Caution!
Material damage due to heat development.
The built-in SFP+ transceivers may be damaged.

- SFP+ transceivers used must support the extended industrial temperature range up to +85°C.

Notice
All LEDs must light up once briefly after connection to the power supply. The different states of the LEDs can be found in Chapter 9, "LED status".

Notice
The laptop and the device must be in the same network during setup.

Notice
When testing the ports, they must show "UP/UP" in the GUI and the terminal.

Before installation and commissioning, new G.L.E.N.® switches must be configured and prepared as follows:

1. Prepare suitable SFP+ transceiver(s).
2. Insert the SFP+ transceiver in position 3 and/or 5 and lock it in place.
   Please refer to the overview in Chapter 4.2, "Device overview".
3. Connect the device to the power supply.
4. Connect the device via Telnet and a web interface using the specified IP address.
5. Check the status of the ports.
6. Configure NTP.
7. Change the IP address of the VLAN to match the network's address scheme.
8. Add users with administration rights (privilege 15).
9. Delete "CGF administrator account".
10. Change host names and generate new keys.
11. Configure SSH and activate terminal monitoring.
12. Connect the device via SSH and delete Telnet usability.
13. Check PoE setting 120 W.

14. Test PoE:
    - Connect device(s).
    - Observe the switching on of the devices.
    - Provide the required configuration for the devices.
15. Check GUI for PoE use.
16. Note down the serial number, MAC address, software and licence.
17. Configure and connect SNMP software.
18. Set alarm relay to "all open".
19. Save and back up the configuration.
20. Reload the device.
21. Log in with new data via SSH.
22. Check G.L.E.N.® in SNMP.

✓ Once the configuration is available and saved, you can proceed with installation. Please note the information in Chapter 7, "Installation".

7 Installation

Notice
This work must be carried out by a qualified electrician.

Notice
Installation may vary depending on the mounting location. The following instructions refer to installation in a lamppost. Observe the respective requirements of the mounting location.

Environmental requirements

The following minimum dimensions must be available for installation in a lamppost or comparable object:

Dimensions	Value
Diameter Ø of the lamppost	136 mm
Cover height	400 mm
Cover width	85 mm

Dimensions	Value
Available space above the cover	150 mm

Requirements for installing the G.L.E.N.® in the power supply network

The G.L.E.N.® is a protection class I device. Before connecting it to the power supply network, check whether the electrics in the connection room provide a separate protective earth conductor. If there is no separate protective earth conductor, the electrical system must be upgraded accordingly, as otherwise (in the event of a fault) a dangerous voltage may be present at the housing and thus, under certain circumstances, also at the installation location.

Preparatory measures

1. Depending on the environment, allow access for mounting (e.g. open the cover of the lamppost or the switch box).
2. Disconnect the environment from the power supply in accordance with safety regulations and secure against reconnection.
3. Check that the environment is free of voltage.

Installation procedure

1. Unpack the G.L.E.N.® and make sure the surface is dry and clean.
2. Attach the bracket for the G.L.E.N.®.

3. Prepare the power supply. The instructions for configuring the power supply connection are available at www.neutrik.de.

   Make sure that the protective earth conductor of the mains supply line is connected to the earth contact of the socket or terminal block.
4. Prepare the fibre optic cable (FOC).
5. Prepare the copper cabling.
6. Connect the power supply. Please refer to the overview in Chapter 4.2, "Device overview".
7. Connect the data cable. Please refer to the overview in Chapter 4.2, "Device overview".
8. Seal unused connections with blind caps.
9. Position the device in the bracket and secure it if necessary.

Final measures

1. Check the wiring.
2. Switch on the fuse.
3. If necessary, close the cover.

✓ The G.L.E.N.® has been installed successfully.

8 Commissioning

Notice
The device must be prepared before commissioning. Please note the information in Chapter 6, "Configuration of new devices".

Notice
An operational notebook is required for commissioning.

After successful installation, the following steps must be carried out for commissioning:

1. Connect the device to the power supply.
2. Check the following points from a central location, such as the head office:
   - Ping
   - Accessibility via web interface
   - SSH
3. When connecting, check that the LEDs first light up orange and then flash green.
4. Check the connection to connected devices, such as camera, AP or LoRaWAN gateway.

✓ The G.L.E.N.® switch has been put into operation successfully.

9 LED status

The different states can be seen in the following table.

LED	Colour	Description
Power	Off	The system is de-energised.
	Green	The system is operating normally.
Port 1-4 SFP 1/2	Off	There is no link or the port is not connected.
	Green	Link available, no activity.
	Green (flashing)	Activity, port sending and/or receiving data.
	Green/orange (alternating)	Link error. Error frames can affect the connection. Errors such as massive collisions, CRC, alignment and jabber errors are evaluated for link error indication.
	Orange	Port is disabled.
SYS	Off	No PoE device is connected.
	Green	At least one PoE device is connected. All devices are operating normally.
	Orange (flashing)	At least one PoE device is overloading the connection.

10 Malfunctions

10.1 Malfunction table

Malfunction	Cause	Measure
If there is more than one PoE device and more than 30 W of retrieved power, only one device is activated.	The default value is set to 30 W.	Change the default value to 120 W.
No connection is established with a simplex connection.	The remote station must have the corresponding wavelength in reversed form.	Install a suitable remote station.

10.2 Customer service

If you cannot solve a malfunction with the help of the malfunction table, contact your sales partner or customer service:

CGF AG Customer Service

Frankfurter Ring 17

DE-80807 München

Service e-mail: glen.service@cgf-ag.com

10.3 FAQ

Frequently asked questions for the G.L.E.N.® switch

Question: How can I tell if the device is switched on?
Answer: The power LED lights up green continuously. Please note the information in Chapter 9, "LED status".

Question: How can I tell if my copper/fibre connections are uploading data?
Answer: The LED of the connection number flashes green at short intervals. Please note the information in Chapter 9, "LED status".

Question: The device gets very hot. Can it stand the heat?
Answer: Yes, the G.L.E.N.® has been developed to withstand high operating temperatures.

Question: What is the maximum power that the G.L.E.N.® can deliver via PoE?
Answer: The G.L.E.N.® can supply four times PoE+ (802.3at) with 30 W per connection; max. 25 W at the PD device.

Question: Which switch core is installed in the G.L.E.N.®?
Answer: A "Cisco ESS-3300" is installed.

Question: Can I run Zigbee, LoraWAN, Bluetooth, etc. on the G.L.E.N.®?
Answer: You can connect specific protocol gateways of your choice to the G.L.E.N.® and supply them with power via PoE+ (802.3at). This approach enables a wide range of applications for a single device.

Question: Does the G.L.E.N.® support multi-client capability?
Answer: Yes, VLAN and VRF technology offer this possibility.

Question: What licences are available for the G.L.E.N.®?
Answer: Licences are available for the Cisco ESS-3300 board layer 2 and 3.

Question: How do I check if my PoE device is being supplied with power?
Answer: If no status is available for a PoE device, observe the SYS LED to check whether the PoE device is connected. Please note the information in Chapter 9, "LED status".

11 Disassembly and disposal

11.1 Disassembly procedure

Disassembly is carried out in reverse order to installation. Please note the information in Chapter 7, "Installation".

11.2 Packing and storage

- If possible, pack the device in the original box after disassembly.
- If the original box is no longer available, choose a suitable box so that the device is protected from all sides.
- Only pack one device per package.
- For storage, observe the information in Chapter 5.3, "Storage".

11.3 Disposal information

Disposal of packaging

The packaging materials are environmentally friendly and recyclable. Dispose of them separately according to plastic and paper or cardboard.

Disposal of the G.L.E.N.®

Legal guidelines oblige CGF AG to take back defective devices or devices that are no longer needed. Please return old devices to the following address:

CGF AG

Frankfurter Ring 17

DE-80807 Munich

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Service e-mail glen.service@cgf-ag.com

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