MICROSENS

Quick Start Guide
Commissioning the
Ruggedized 19'' Gigabit Ethernet Switch with 10G Uplink Ports

v0.0.6

0   Aim of this Quick Start Guide

This quick start guide describes the commissioning of the switch (mechanical handling) incl. connecting power supply and network link, resetting to factory settings and activating the network management access.

For further documentation see the reference manual and the MICROSENS homepage under www.microsens.com.

This guide will help you with

- connecting the power supply and commissioning the device,
- understanding the status LEDs and
- setting up the network management access.

Note:
For comprehensive information about configuring the device please refer to the reference manual.

WARNING:
This equipment is compliant with Class A of EN55032. In a residential environment this equipment may cause radio interference!
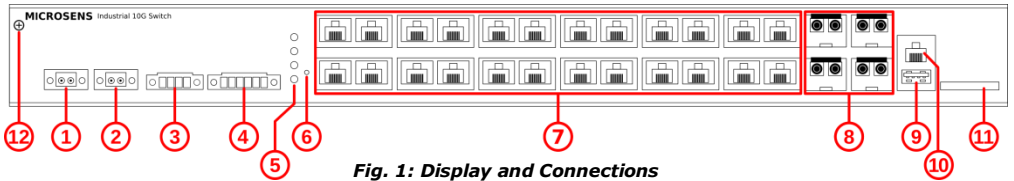
1   Display and Connections

Fig. 1: Display and Connections

No.	Description	No.	Description
1, 2	Power supply (2x 24…57 VDC)	3	Relay contacts in 1/2 (disabled)
4	Relay contacts out 1/2 (disabled)	5	Status LEDs
6	Button "Reset"	7	24x 10/100/1000Base-T Ethernet PoE+ Ports
8	4x 1000/10GBase-X SFP/SFP+ Ports (for 1G or 10G operation)	9	USB port (e.g., for saving or loading configuration files, refer to the reference manual)
10	Serial port	11	SD card slot (disabled)
12	Grounding screw		

2   Connecting the Power Supply

Note:
Ground the switch housing with the grounding screw on the front of the housing (s. Fig. 1, ⑫)!

The switch is powered by a 24…57 VDC power connection (s. Fig. 1, ①). For redundancy or load sharing reasons it is possible to connect a second power source using the same voltage (s. Fig. 1, ②). If one source fails, the alternative source takes over the power supply without interruption.

If the switch is used to power further equipment (role "Power Sourcing Equipment – PSE"), it requires a minimum input voltage:

1. Input voltage   < 44 VDC: PSE feature disabled (neither PoE nor PoE+)
2. Input voltage   44 – 54 VDC: PoE possible
3. Input voltage   ≥ 50 VDC: PoE and PoE+ possible

2.1   24…57 VDC Supply

The connectors are labelled "Power 1" and "Power 2" (s. Fig. 1, ① and ②) and are equipped with 2-pin plug connectors. Please observe the polarity (terminal labelling +/-).

2.2 Starting Up

After connection to the power supply, the switch starts automatically and is ready for operation after approx. 90 s. Connect the switch to your local network segment using a suitable connector cable.

3 Factory Settings

Note:
Please note that the factory settings may change with future firmware versions (s. section 8). For this reason we recommend that you check the release notes for information about any changes to the factory settings before carrying out a firmware update.

The switch starts with its factory settings:

- Interfaces:
  - ○ RS232: Enabled
  - ○ SSH: Disabled
  - ○ Telnet: Disabled
  - ○ SNMP: Disabled
  - ○ Web Manager: Enabled
- User level: as per "Preset User Level for Management Access" (s. section 4)
- IP configuration: DHCP for VLAN 1, no preset IP address.
- Ethernet RJ-45 ports: Ports 1…24: 10/100/1000Base-T operation enabled in VLAN 1
- PoE+ function: Ports 1…24: enabled
- SFP ports: Ports 1…4: SFP inserted: 1000Base-X operation
  SFP+ inserted: 10GBase-X operation

4 Preset User Level for Management Access

The following user level (role with specific access rights) is preset:

User	Password	Access	Comments
admin	admin	Full access rights	This user can adjust all settings of the switch.

5 Notifications

5.1 Status LEDs (s. Fig. 1, ⑤)

- "Power 1/2"
  - ○ Off – Switch unpowered.
  - ○ Green – Power supply 1/2 functional.
  - ○ Red *blinking* – Power supply 1/2 missing or failed.

  Note:
  "Power 1/2" is signalled "Red" only, if at least one power supply is connected to either "Power 1" or "Power 2" and functional.
- "Status"
  - ○ Off – Direct after power on (i.e. the operation system is not loaded yet)
  - ○ Green – As soon as the operation system is initialised and running.
- "Alarm"
  - ○ Off – Ring domain 0 not enabled.
  - ○ Green – Ring domain 0 enabled, role "Transit (Slave)" detected, no error.
  - ○ Red – Ring domain 0 enabled, role "Transit (Slave)" detected, error occurred.
  - ○ Green *blinking* – Ring domain 0 enabled, role "Master" detected, no error.
  - ○ Red *blinking* – Ring domain 0 enabled, role "Master" detected, error occurred.

5.2 Port Status LEDs

5.2.1 Ethernet (10/100Base-TX, s. Fig. 1, ⑦)

- lnk (Link)
  - ○ Off — Link down, no connection.
  - ○ Green — Link up
  - ○ Green *blinking* — Port sending or receiving data.
- PoE (Power-over-Ethernet, PSE)
  - ○ Off — PoE (role "PSE") disabled.
  - ○ Orange — PoE or PoE+ enabled, port supplying power (role "PSE" active)

5.2.2 SFP/SFP+ (1000/10GBase-X, s. Fig. 1, ⑧)

- lnk (Link)
  - ○ Off — Link down, no connection.
  - ○ Green — Link up
  - ○ Green *blinking* — Port sending or receiving data.

6 Reset Button

On the front of the housing there is a reset button (s. Fig. 1, ⑥), which is accessible with a thin object. Depending on the duration, pressing this button leads to one of the following actions when released:

- approx. 1 s — Restarts the switch.
  The running configuration (switch and management) remains unchanged.
  The reboot takes approx. 90 s.
- longer than 10 s — Switch is resetting on factory defaults and renews the SSH default keys
  as well as self-signed certificates.
  The reboot is extended by approx. 2 minutes.

Note:
Additionally, status messages are issued via the serial port.

7 Access for Network Management

7.1 IP Address Assignment

In order for management over the network to function, the switch requires valid IP parameters (IP address, subnet mask, and default gateway). These are obtained automatically via DHCP (factory-setting, s. section 3). If you do not use DHCP in your network, you can setup the IP parameters via serial port access.

Note:
Via serial port access it is possible to setup additional management interfaces (Telnet, SSH, SNMP etc.). For further information please refer to section 7.3 or the reference manual.

7.2 Serial Interface

1. Connect your computer via console cable to the serial port of the switch (s. Fig. 1, ⑩).
2. Open a console program and setup the following connection parameters:
   - Speed: 115200 bit/s
   - Data bits: 8
   - Stop bits: 1
   - Parity bit: none
   - Flow control: none
3. Enter the credentials of the preset user (username: `admin`, password: `admin`, s. section 4) and click the button "Enter".

4. Using the following console commands will setup the IP parameters for interface "VLAN 1":

```
console#configure terminal
console(config)#interface vlan 1
console(config-if)#ip default-gateway <IPv4-Adresse>
console(config-if)#ip address <IPv4-Adresse> <Subnetz-Maske>
console(config-if)#exit
console(config)#exit
console#
```

Note:
The assignment of a static IP address disables the DHCP client for the respective interface
(here: VLAN 1).

5. To ensure the static IP address remains valid after reboot, you have to save it with the console command **write memory**.

6. Leave the console session with the command **exit**.

7.3 Activation of Additional Management Interfaces

7.3.1 Telnet

To enable the Telnet interface, open a console session and enter the following commands:

```
console#configure terminal
console(config)#ip telnet server
console(config)#exit
```

Afterwards the Telnet login with the preset user credentials (s. section 4) is possible.

7.3.2 SSH

To enable the SSH interface, open a console session and enter the following commands:

```
console#configure terminal
console(config)#ip ssh server
console(config)#ip ssh password-auth
console(config)#exit
```

Afterwards the SSH login with the preset user credentials (s. section 4) is possible.

7.3.3 SNMP

To enable the **SNMPv1/v2c** Interface with standard community strings "public" (read only) and "private" (read/write), open a console session and enter the following commands:

```
console#configure terminal
console(config)#snmp-server server
console(config)#snmp-server community public ro
console(config)#snmp-server community private rw
console(config)#exit
```

Note:
For information about enabling **SNMPv3** please refer to the reference manual.

7.4   Web Manager

As soon as the switch obtains an IP address via DHCP, the access via Web Manager is possible. Enter the URL (incl. the assigned IP address) into your internet browser's address bar:

For access via HTTPS: `https://<IPv4 address>`

Before accessing the Web Manager your internet browser possibly may ask you to confirm security warnings due to a self-signed security certificate. Please confirm the respective security exception rule.

For access via HTTP: `http://<IPv4 address>`

Note:
The Web Manager only allows restricted access to system parameters. Use the management access via Telnet, SSH or serial port for full management access.

8   Firmware Updates and Further Information

You have access to current firmware versions and further information once you have registered on our website.

8.1   Registration

1. In your internet browser open the address "www.microsens.com" and navigate to the page "Partner Login".
2. Follow the link "Please register here".
3. Fill out and submit the online user registration form.
4. You will receive an e-mail containing a user name and password for the partner login.

8.2   Login

1. In your internet browser open the address "www.microsens.com" and navigate to the page "Partner Login".
2. Enter your username and your password.
3. Click the button "Login".
4. To find your switch quickly, enter the item number of your switch into the search box on the website.

8.3   Firmware Image File

Please navigate to your switch and select the tab "Services". This tab contains recent download files for your device.

Further information is available by selecting the other tabs.

8.4   MICROSENS Support

For further questions please contact our support:

- E-mail: support@microsens.com
- Phone: +49 (0)2381 9452-345 (Mo. – Fr., 7:30 AM – 04:00 PM CET)

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