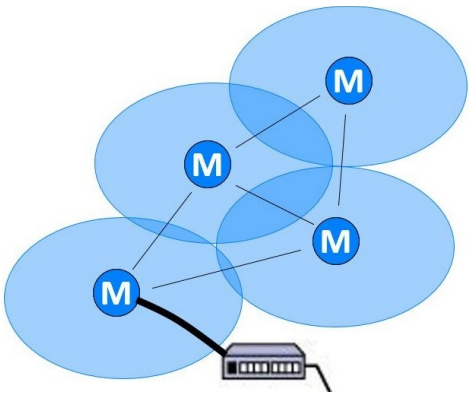
MRX – Mesh.Router

Quick installation for the "MRX.mini" device family

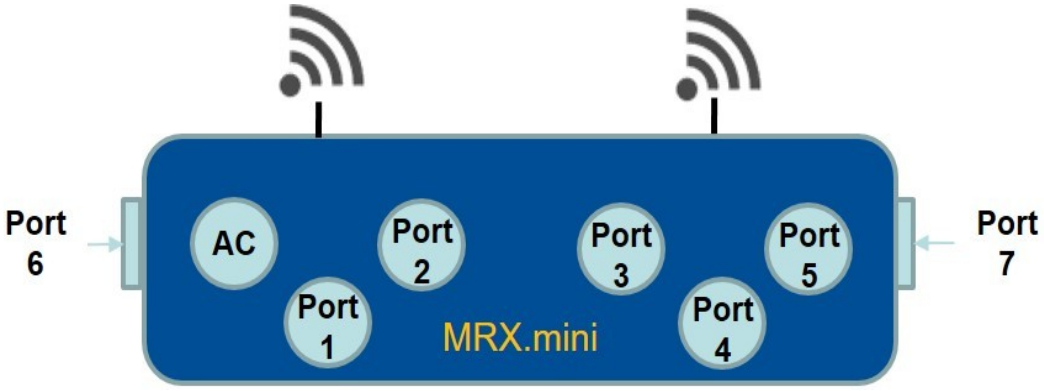
General



The product family AZG.mesh router aims to build wireless infrastructures using mesh.technology. AZG.mesh is a wireless backbone for connecting and interconnecting CCTVs, access points, sensors, etc.. AZG.mesh is a self-discovering, self-configuring and self-healing system that makes installation and use very easy. AZG.mesh is suitable in applications where cable laying is very expensive, permanent installation is not necessary or mobile communication is required.
The AZG.mesh router is delivered pre-configured. When the device enters the range of other AZG.mesh routers, a fully automatic detection and setup procedure is started to integrate the new member into the existing AZG.mesh. Once the new device is accepted as a member, it participates in the AZG.mesh routing and can be used as an entry point and relay point: self-discovering.
When an AZG.mesh router leaves the area of the network, the new situation is automatically taken into account by AZG.mesh routing and routes throughout the network are modified: self-healing.
AZG.mesh routers can move within the network and thus new connection possibilities may arise. New routes within the network are searched for and found independently. AZG.mesh routing discovers the new routes: self-configuring.
With each additional AZG.mesh router in the network, the area covered is increased and the redundancy within the network is increased.

Device family "MRX.mini"

In addition to the AZG.mesh interface, MRX.mini units offer up to seven Ethernet interfaces for connecting clients as well as uplink routers. All Ethernet interfaces can be supplied with PoE support (active or passive).
MRX.mini are the cost-optimised all-rounders for setting up an AZG.mesh, expanding it easily and implementing many interfaces on the AZG.mesh.



AZG-Tech GmbH • Garbsener Landstr. 10 • D-30419 Hannover • Germany
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Shipment

1x MRX.mini
1x Mesh.modul installed (802.11a/b/g/n, 2x2MIMO)

2x Mesh.antenna, outdoor, 9dBi (@5GHz)

1x M12 (S-Code) plug to connect AC power (only for variants with AC power supply)

1x This quick installation guide

Interfaces / Usage

MESH1-2: 2x2 Mesh.antennas; female N-type connector.

connect the 2 x mesh.antennas, which are part of delivery, or any other antennas which fit for the selected frequency range.

Ethernet Port1-N: 10/100Base T or 10/100/1000BaseT; M12 (X-type); auto-X-over

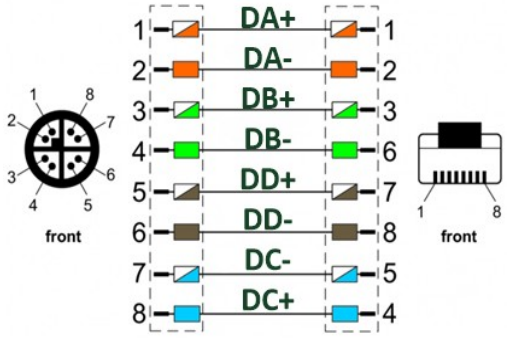
The number of LAN ports depends on the present variant. All LAN ports are connected together on the Ethernet level (Ethernet switch).
If the present variant is supplied with power via PoE, port 1 is the connection for the PoE injector.
If the present variant supports PoE (active or passive), all Ethernet ports are equipped with the respective power supply option.
The port assignments are shown below.
ATTENTION: Please use only shielded CAT6e cable to ensure correct operation and good lightning protection!

AC: Power supply (110-240V)

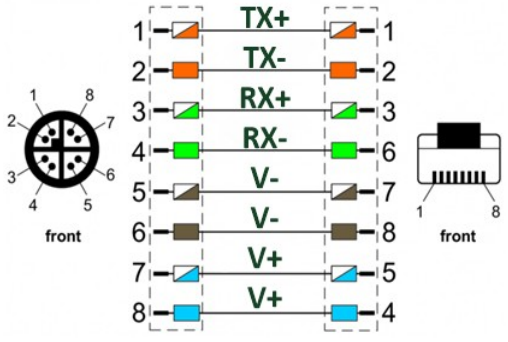
If the present variant is supplied with power via PoE, there is no AC port.
The pin assignment for the AC supply is shown below.

Pin assignment: Port1-N [M12 (X-Code)]; with possibly existing PoE assignment

1Gbit, PoE+ acc. IEEE

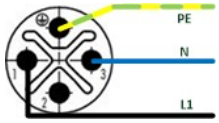


100 Mbit, „passives" PoE

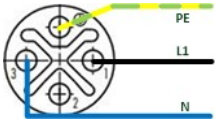


AC [M12 (S-Code)]

Plug at MRX



Socket at cable



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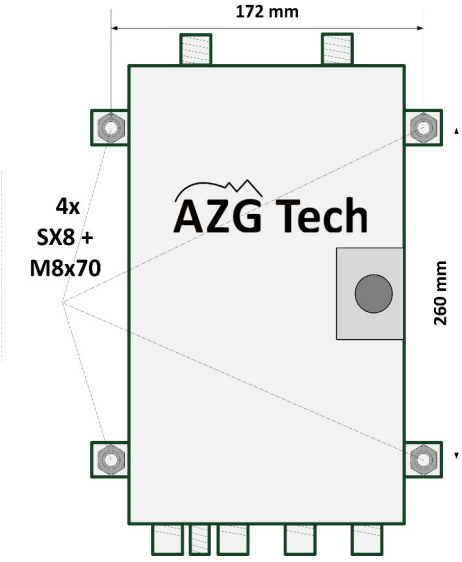
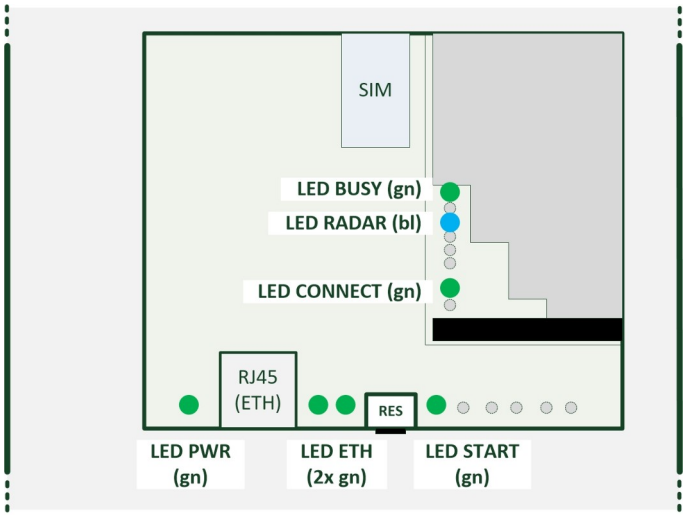
Installation



To add a new node to the network, please follow the steps below:

1. Unpack everything and check that all parts of the delivery are complete.
2. Install the device on wall, pole or other possible locations. Try to install it as high as possible, with good sight to other nodes of the mesh. In case extra antennas are used, try to install the device as close as possible to the antennas and place the antennas as high as possible.
3. Connect power and antennas to the device. Make sure, the antenna connections (N-type) are well tightened! This is mandatory for proper operation. In case you use different antennas than the 2 included, adopt the settings for them.
4. As soon as power is provided to the device, it will start to search and find mesh.nodes nearby and establish connections to them. Depending on the selected configuration, this can last several minutes. Check the LEDs inside the box to follow the startup, scanning for mesh and setup of mesh connection(s):

LED PWR	an = Stromversorgung ok aus = Stromversorgung def.	LED BUSY	blinkend = mesh.traffic aktiv an = Leerlauf Mode aus = Modul abgeschaltet
LEDs ETH	an = Datenübertragung aktiv aus = Keine Datenübertragung	LED RADAR	blinkend = Radarscan an = Radar erkannt aus = Modul arbeitet
LED START	an = Boot Process aus = Boot Process beendet	LED CONNECT	blinkend = mesh.scan aktiv an = mesh.link aufgebaut aus = Modul abgeschaltet



5. Connect the LAN cables to clients or other devices. (Note: It is not always required to attach devices via LAN, this depends on the given application.).

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Pre-Settings (Factory-Defaults)

Access to the Device

IPv4:	<see label on device>	login:	`admin`
IPv6:	*keine*	`password:`	`private`

Note: We recommend to change the security relevant settings before first use! Please note the new settings separately.

IMPORTANT: The mesh.ID, mesh.key and mesh.band/ch must be identical on ALL Mesh.Routers to allow proper operation!

Reset of Device-Configuration to Defaults

The device can be reset to the default configuration (factory default). In case the access to the device is still possible via Ethernet/Web-Browser, this can be done in the menu.

In case the web-IF is not longer reachable, a HW-reset can be executed by pressing the RES-button for at least 5 secs. The RES-button is located between the LED ETH and LED START (see picture on page 3).

Note: The HW-reset can only be executed, AFTER the device has started and boot-process has completed**.**

ATTENTION: To open the housing when AC-power is attached is only allowed for specialist staff! Legal requirements must be observed.

Trouble-Shooting

LED PWR keeps off:	Check power supply & M12 power connector. Check the fuse in the base of the appliance. To do this, it is **essential(!)** to disconnect the power supply.
LED RADAR keeps on:	Try a different mesh.channel for your network. Contact planing group.
LED CONNECT keeps blinking:	Check connection to antennas. Verify proper mounting and orientation. Check settings of your device. Contact planing group.
LED CONNECT is off:	Check settings of your device.
LEDs ETH keep off:	Check ETH cable & M12 connector(s).
Attached devices have no PoE power:	Check ETH cable & M12 connector(s).
Bad throughput on mesh.interface:	Check connection to antennas. Verify proper mounting and orientation.

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