

Online/Offline Handling of Air Devices

MINISERVER

In the Miniserver, the online status of devices is visible as the "Online Status" input in the object tree and in the device status dialog.

Connection Loss

There are two reasons for an Air device to go offline in the Miniserver:

1. Device does not acknowledge data sent by the Miniserver
2. Device does not send any data for too long

Device does not acknowledge data sent by the Miniserver

Air devices have to acknowledge the data sent by the Miniserver, e.g, when the Miniserver changes the value of a digital output belonging to an Air device. The Air Base will retry the transmission three times. If no acknowledgement was received after four attempts, the device will be set to offline.

Device does not send any data for too long

Most Air devices send a regular alive signal to the Miniserver to indicate their presence. The Miniserver will set a device to offline when it does not receive any data (including the alive signals) for a certain time.

This time depends on the device type:

- For DC-powered devices: 24h
- For battery-powered devices: 52 hours
 - For some battery-powered devices that transmit sensor data regularly, the offline timeout is somewhere between 0 and 52 hours. The time is calculated as follows:
$$\text{Time} = \text{SendInterval} * 10 + 1 \text{ hour}$$
 - The Remote Air can never go offline.

Reconnection

The devices will immediately switch to online again when the Miniserver receives data from them. That includes answers to requests sent by the Miniserver. Thus, an offline device may immediately go online if you try to switch an output on the device. Note that the Miniserver by itself does not try to periodically establish a connection with an offline device. This must always be initiated by the device.

DEVICE

All of our Air devices have status LEDs indicating the current online/offline status. Please be advised that the LED status indication on the device itself may differ from the Miniserver. The devices determine for themselves whether the Miniserver is reachable depending on whether the sent packets are acknowledged by the Miniserver.

Connection Loss

There are two reasons for an Air device to go offline:

1. Miniserver does not acknowledge alive packets
2. Miniserver does not acknowledge other packets

Miniserver does not acknowledge alive packets

Devices periodically send alive packets. If the Miniserver fails to acknowledge three alive packets in a row, the device goes offline, i.e. the status LED blinks orange. The time interval between alive packets is not constant but is different for DC and battery powered devices. When a device is started, the alive interval tends to be relatively short (e.g. 10 seconds for a battery powered device). When the alive packet is acknowledged however, the time interval increases up to multiple hours to reduce Air traffic and save power.

Miniserver does not acknowledge other packets

When a device tries to send data (e.g. when a presence sensor detects presence) but the data is not acknowledged, the device goes offline immediately.

Reconnection

Devices that are offline keep trying to send alive packets. They immediately go online when they receive an acknowledgement for any of their packets (alive packets or other data).

To avoid channel congestion and to conserve battery, the delay between retries increases from some seconds up to 24 hours. Thus, it may take up to 24 hours for a device to go online again although a working Miniserver and Air Base would be up sooner.