aartesys



EasyGateway®
Operating Instructions

Introduction

About this document
These operating instructions provide a general overview of the installation and start-up of the Aartesys EasyGateway V50 for use with the connect2control (C2C) service or as a router for internet access.

Aartesys EasyGateway® and C2C – uncomplicated, worldwide, secure
With services from Aartesys, any Internet connection becomes an end-to-end connection, which is secure and cost-effective at the same time. This service allows you unproblematic access to your systems, be it machines, equipment, controls, locking systems, and many more – at any time and anywhere. Operation, maintenance or support of these targets become as easy as surfing the Web.

The Aartesys EasyGateway® and services is the ideal solution for remote control and remote maintenance in the machine-2-machine (m2m) environment. Communication is exclusively implemented via IP networks. This can either be mobile via GPRS or 3G network or alternatively via Fast Ethernet connection using wired IP networks, such as ADSL connections, fibre-optic or cable networks, or even via satellite transmission systems.

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Safety notes and technical specifications

Safety notes

⚠ This device must be operated as described in these operating instructions as otherwise the provided protection will no longer be ensured and the device may produce risks.

⚠ Disconnect the system and the device from the power supply before you start working on it.

⚠ Voltages exceeding 300 VAC to ground must be connected via voltage transformers.

⚠ Conductors made up of individual wires must be provided with cable end sleeves.

⚠ Consult the network administrator before connecting the EasyGateway to the Ethernet.

⚠ The building installation must have a disconnect switch or circuit breaker for the supply voltage. The disconnect switch must be mounted near the unit and must be easy to reach by the operator. The switch must be marked as disconnector for this device. Voltages exceeding the permissible range may destroy the device.

Technical specifications

Display elements	3 LEDs, bicolor red/green, for start-up and operation indicator 1 LED orange GSM status
Communication	Full Internet capability with certificate-based authentication and encryption
LAN/WAN connection	Fast Ethernet 10/100 Mbps, auto-MDIX, RJ45 shielded, 2 status LEDs
Mobile communication	GPRS (Quad Band GPRS class 10) or HSPA+ (Dual band GSM/GPRS/EDGE, dual Band UMTS/HSPA) or LTE
SIM	Plug-in and/or soldering SIM (SIM Multiplexer)
Local IP interface	Fast Ethernet 10/100 Mbps, auto-MDIX, RJ45 shielded, 2 status LEDs
Local serial interfaces	RS485, RS422, RS232 (option)
Power supply	85 to 264 V AC, optionally 18 to 75 V DC or 9 to 27 V DC
Housing	DIN rail mount housing 6 units wide (l=107.5 mm, w=90 mm, h=62 mm)
Environment	Temperature range -20 to +70 °C, relative humidity up to 95% max.

Declaration of Conformity, considered standards:

EMC	EN 301 489-1:2008; EN 301 489-1:2008; EN 61000-3-2:2006; EN 61000-3-3/A2:2005; EN 61000-6-2:2005 and Customer Requirements
Radio	EN 301 511:2003 (GSM)
Safety	IEC 60950-1:2005 + A1:2009 EN 60950-1 + A11:2009 + A1:2010

Delivery Scope



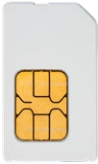
1 **EasyGateway®**



2 **Terminal cover**



3 **EG-I/O bus cable (optional)**



4 **SIM card (optional)**



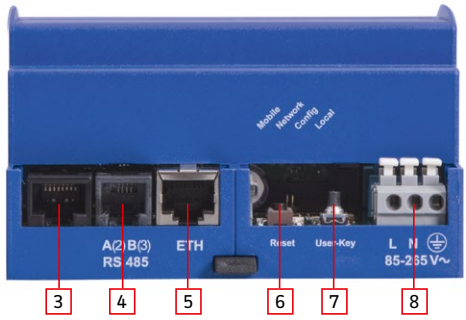
5 **SMA antenna**



6 **Network cable RJ45**

Device connections





1 **SMA antenna socket**

2 **LED status display**

3 **I/O Interface (option)**

4 **RS485**

5 **Ethernet RJ45**

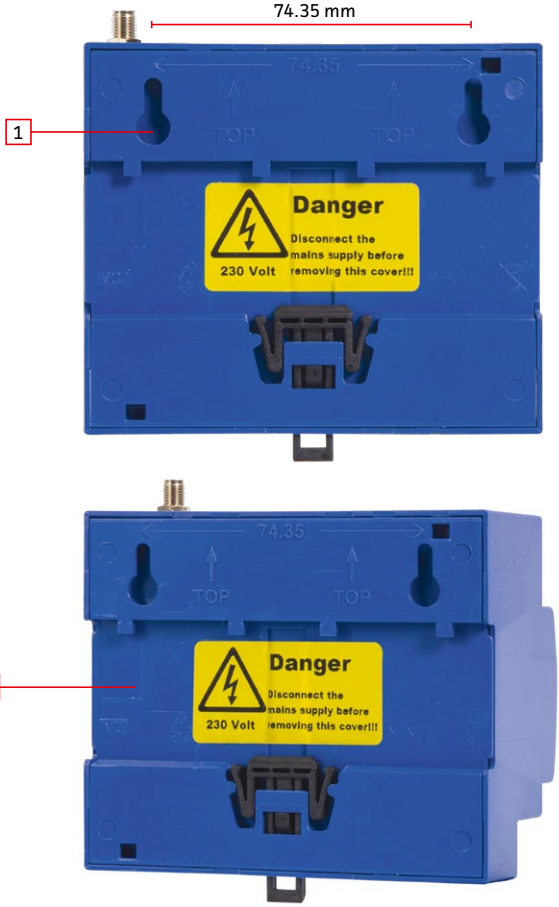
6 **Reset**

7 **User Key**

8 **Power**

SIM Slot inside

Step 1


74.35 mm
1
74.35
TOP
TOP
Danger
Disconnect the mains supply before removing this cover!!!
230 Volt
2
74.35
TOP
TOP
Danger
Disconnect the mains supply before removing this cover!!!
230 Volt

Installation

The EasyGateway® is either snapped on a 35 mm DIN rail or mounted using screws.

1 **Wall mounting**
The EasyGateway® is mounted directly to the wall using the holes provided in the housing bottom and 2 x 3.5 mm screws. Use the distance of the holes in the housing bottom as reference.

2 **DIN snap rail**
The EasyGateway® is snapped on a 35 mm DIN rail.

⚠ When installing the unit on the DIN rail, verify that the locking hook is securely attached and adjust its position by gently pressing against it, if necessary.

Step 2


1
50/2017
02901011
3546780561059987
00:14:2d:2c:44:13
EasyGateway© V50
aartesys

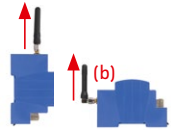

Module
Network
Config
Local
A B
RS 485
ETH
Reset
User-Key
L N
85-265 V

Antenna & SIM card

This step describes the mobile connection via GPRS/UMTS.

1 **Antennenanschluss**
If the EasyGateway® is operated via the air interface, an antenna must be connected to the SMA antenna socket at the back of the unit.

⚠ Use a spanner to fasten the antenna (approx. 0.5 Nm). Ensure that the supplied antenna is aligned vertically at all times.



Attach a straight or elbowed (90°) antenna (b) depending on whether the EasyGateway® is mounted vertically or horizontally. If the unit is installed in a control cabinet, the antenna must generally be mounted outside the cabinet as the reception conditions in closed cabinets will not fulfil the requirements. Directly attachable antennas and antennas connected via a cable are available.

⚠ The device must be disconnected from the mains before the SIM is plugged-in. Electric shock hazard.

Insert SIM card
The SIM card has to be inserted under the bottom case cover

To remove the case cover

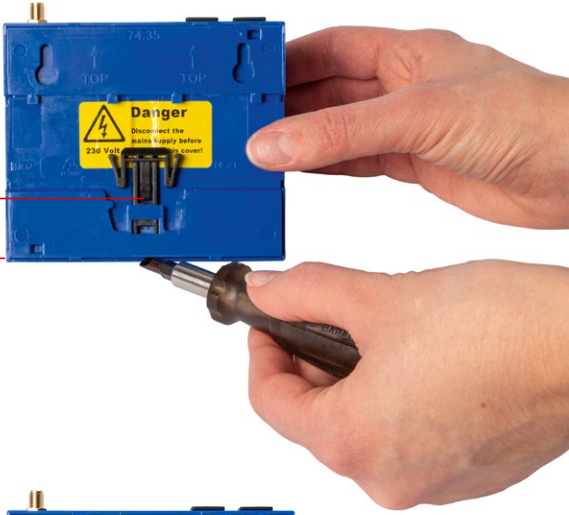
a) Remove the security-clip

b) The case bottom can be removed using a small screw driver

c) Open the SIM clip, shift in the direction of the red arrow

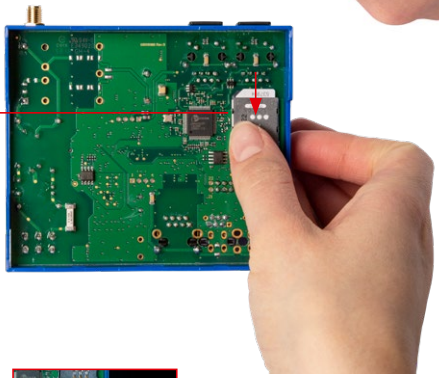
d) add the SIM card and close the SIM clip

⚠ Remark: The APN configuration must be changed according the information from the mobile network provider. See also “APN configuration”


Danger
Disconnect the
mains supply before
230 Volt
this cover!

a)

b)

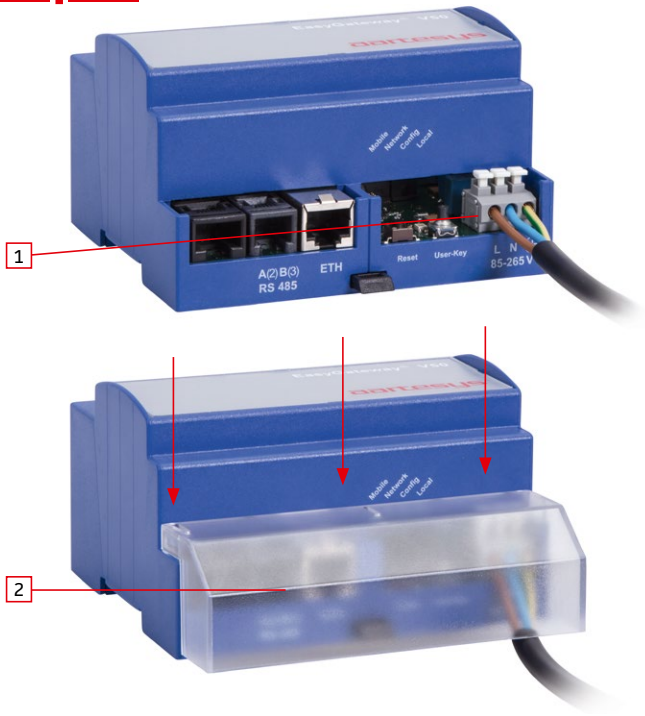


c)

d)



Step 3



⚠ The supply voltage for the EasyGateway is specified on the type plate. Supply voltages that do not conform to the specifications indicated on the type plate may result in malfunction and destruction of the device.

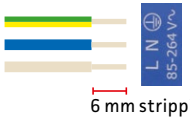
⚠ The connecting lines for the supply voltage must be secured via a UL listed fuse (6A type C) and must be provided with a disconnecting switch.

Power connection & terminal covers

The EasyGateway® is connected directly to 85 to 264 V / 47 – 440 Hz AC voltage.

1 **Power connection**
3 fully insulated spring-loaded terminals, wire or stranded wire up to 1.5 mm². Preferably use a size #0 screwdriver for operating the terminals.

The connection is 3 wired.



The installation wire up to 1.5 mm² can be inserted directly into the spring-loaded terminal. If a stranded wire is used for the installation, push the terminal fully down to insert the stranded wire and only release it once the latter has been positioned correctly.

2 **Terminal covers**
Attach the transparent terminal cover to carry out the start-up operation. The terminal cover can easily be attached (and removed using a size #0 screw driver). Be careful not to use too much force.

The terminal cover can be secured with a conventional lead wire seal.

⚠ Connection to the power grid must be carried out by a qualified electrician in observance of the applicable regulations.

Step 4


1
Mobile
Network
Config
Local
A(2)B(3)
RS 485
Reset
User-Key
L N
85-265 V


2
Mobile
Network
Config
Local
A(2)B(3)
RS 485
ETH
Reset
User-Key
L N
85-265 V~

Network RJ45

The EasyGateway® is provided with a Fast Ethernet interface for communication via wire-bound IP networks.

1 **Network**
The connection is via RJ45 jack with standard connector pin assignment and integrated LED display. The interface is designed as a so-called auto-MDIX interface, which means that straight and crossover Ethernet cables, shielded or unshielded, can be used.

Green LED
Display “Carrier”

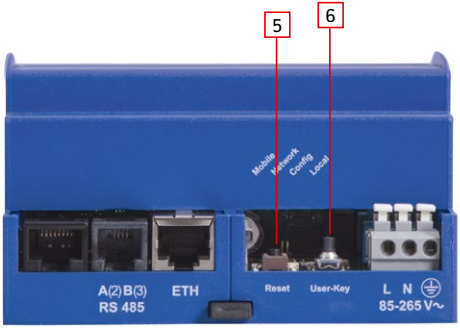


Yellow LED
Display data activity “Data”

2 **Additional interfaces**
Please refer to page 26 for information on other interfaces.

Step 5


50/2017
02801011
3546705610555?
00:14:2d:2c:44:13
EasyGateway© V50
aartesys
1
2
3
4


5
6
Mobile
Network
Config
Local
A(2) B(3)
RS 485
ETH
Reset
User-Key
L N
85-265 V~

Operation & status display

Once the voltage has been connected, the LEDs should have the following status:

1 **GSM**
LED “GSM” (yellow) must be flashing when communication is realized via the mobile network. This LED is not lit if communication is realized via Ethernet interface.

2 **Local**
LED “Local” (off) In normal operation, the LED is off for C2C service

3 **Config**
LED “Config” (green) The configuration has been loaded and functions correctly

4 **Network**
LED “Network” (green) The Ethernet interface functions correctly

5 **Start,** 6 **Reset**
Upon delivery, the initial start-up for the EasyGateway has already been completed. These buttons are used for changing the configuration:

a) Setting the IP address, DHCP and Proxy Server
b) Test of reception level at the mobile reception antenna

Step 6

Setting the configuration on the Easy Gateway® and start-up process

For this step, use a 1 mm Allen wrench or a paper clip to push the reset and the start-up buttons.

Setting the IP address of the Ethernet interface Mode: Configuration
For setting the IP address of the Ethernet interface, first press the Reset button briefly, and then press and hold the User-Key button for approx. 30 s, until “Local”, “Config” and “Network” are flashing green. This puts the Gateway into configuration mode. The configuration page can now be reached with your Browser via http://10.10.10.10/. Save once the settings have been completed. The EasyGateway will always remember the Ethernet settings saved last.

After setting the IP address, press the Reset button.
The EasyGateway will start in start-up mode.

⚠ The configuration page of the EasyGateway is always set to 10.10.10.10. The default IP address for the operation-mode is also set to 10.10.10.10

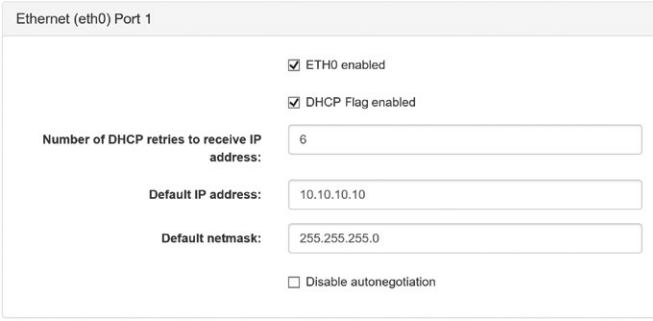
⚠ Time-out: After 5 min., the EasyGateway automatically performs a reset and will then return to start-up mode

The configuration page

Connect a PC with a normal LAN able to the EasyGateway (Ethernet interface Eth0, Nr. 6 page 8).

- Open the configuration page with a browser on the address 10.10.10.10. Use the “Configuration” tab and login to the configuration as user: “user” and password “aag@biel-bienne”.
- Enter the IP address and mask of Eth0 and / or Eth1.

DHCP: enabled (standard)
DHCP configuration: If DHCP is enabled, there are 3 configuration possibilities for “Enable keep DHCP up”.



These settings may be done for Eth0 and the Eth1 interface (Eth1 optional).
Scroll further down for **Default Gateway** or **Proxy Server** settings.

DHCP: If DHCP is “enabled”, the EasyGateway requests an IP address from a DHCP server. In case the EasyGateway is connected directly with a measurement device or a machine control, the DHCP option cannot be used. A fixed IP address has to be used.

APN Settings

Manual APN configuration

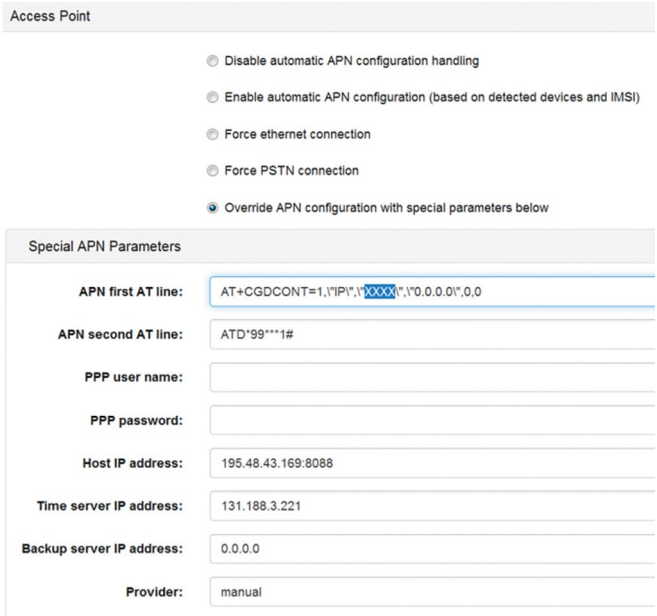
SIM cards of Aartesys as well as cards of most of the well known providers the EasyGateway configures the APN itself. Connection problems (Network LED: red) could be caused by wrong APN settings.

In this case, the APN settings have to be checked or to be configured manually. The correct settings have to be delivered by the SIM provider

1. Open the configuration page of the EasyGateway, according Step 6
2. Scroll down to „Access Point“ configure the APN acc. the information of the SIM provider:
   a) Select „Override APN configuration with special parameters below“
   b) APN first AT line: type the APN in place of „XXXX“. Examples: gprs.swisscom.ch, internet.t-mobile, m2m.tele2.com
   c) APN second AT line: ATD*99***1#, alternatively also used is ATD*99*1#.
   d) PPP user name (acc. SIM provider)
   e) PPP password (gem. SIM provider)
3. Save the settings using „Save Configuration“, located at the bottom of the page.
4. Push „Reset“. Proceed acc. page 22.
5. Wait 1–2min, until the unit is up again. Push the start-up button (item 8 on page 8).

If correctly configured, the GSM LED is blinking orange, Config and Network show green light.

APN configuration:



⚠ Do not press „Revert to default“ on the configuration page

Testing the mobile communication reception level
Mode: Start-up
After configuration mode, the EasyGateway will start in start-up mode. The reception level is indicated by the 3 LEDs Local, Config and Network.

1 **GSM**
LED “GSM” (yellow) must flash

2 **Local**
LED “Local” (red) reception level adequate / -80…-100 db

3 **Config**
LED “Config” (red) reception level good / -60…-80 db

4 **Network**
LED “Network” (red) reception level very good / better than -60 db

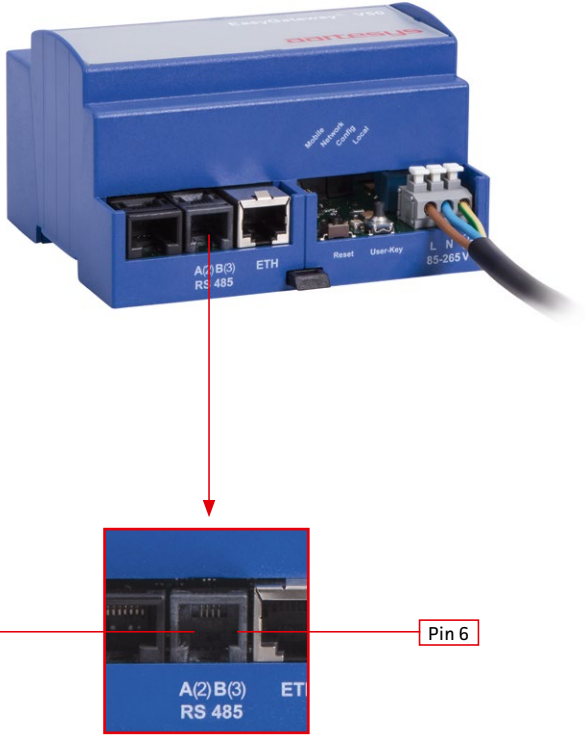
5 **Reset**
Press the Reset button to boot the EasyGateway. The EasyGateway will remain in start-up mode.

6 **Start-up**
Briefly press the start-up button again to go into operation mode.

⚠ At least the red LED 2 (local) must be lit solidly to ensure secure start-up via mobile communication networks (GPRS, UMTS, etc.).

⚠ Time-out: After 2 min., the EasyGateway performs an automatic start-up and starts in operation mode.

Other interfaces



Other interfaces

RS485
The RS485 interface allows for connection to

a) serial terminal devices

b) 1 to 32 energy meters for metering applications.
The interface operates exclusively in bus configuration.

⚠ The software applications for the operation of the serial interfaces must be loaded on the EasyGateway. Availability on request.

Connector and pin assignment
The connection is 2-wired via an RJ12 jack:
Pin assignment: Conductor A Pin 2 / conductor B Pin 3

Since a bus configuration is used, **conductor A is always connected to conductor A and conductor B is always connected to conductor B.**

Connection to most meters (e. g. L&G) is via a straight, non-crossed cable with RJ12 connectors. Use a special cable in case the pin assignment for other meters does not fit. The EasyGateway V50 may optionally be fitted with a 2-wire clamp .

Notes



Support

E-Mail helpdesk@aartesys.ch
Hotline +41 32 327 35 34

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aartesys

www.aartesys.com

Aartesys AG
Silbergasse 32
CH-2502 Biel-Bienne

Tel +41 32 327 35 35
E-Mail info@aartesys.ch