

Safety Notes

General information:

The ZDUE-GSM-PLUS-V is compliant with the European EN60950: 2006 standard, Safety of information technology equipment. Only professionally trained electricians are authorized to perform the installation of the ZDUE-GSM-PLUS-V, The generally accepted technical rules and regulations governing the setting up of telecommunications equipment and end devices shall be observed. The ZDUE-GSM-PLUS-V is not designed to be connected to IT systems for electrical energy supply. Please read through these installation instructions carefully before using the device.

Disconnection from the power supply circuit:

An easily accessible, all-pole circuit breaker in the power supply circuit is required for the house installation. Alternatively, a single-pole circuit breaker can be used in the outer conductor as long as a distinct neutral conductor has been integrated into the supply line. In Germany, the circuit breaker must at least meet the requirements of the DIN VDE series 0100 standard.

Installation fuse:

For the house installation, there must be an installation fuse that complies with the DIN VDE series 0100 standard and is properly adapted to the cable cross-section of the power supply line. The additional short-circuit protection must have a selectivity of $I \geq 1500A$.

Transient Over voltages:

The ZDUE-GSM-PLUS-V are devices in Over voltage Category III. If the ZDUE-GSM-PLUS-V are likely to be exposed to higher transient over voltages than those in Over voltage Category III when connected, it will be necessary to take further safety precautions for the installation.

Cable Routing:

The space between antenna/data lines and lines carrying dangerous voltages must be at least 10 mm.

Mounting the antenna:

When installing an antenna outdoors, it is absolutely necessary that the antenna is installed properly by qualified technicians.

The outdoor antenna must be grounded to protect it against lightning strikes. The outdoor antenna shield must be reliably connected with the protective ground. The corresponding national installation guidelines must be followed for the installation process.

In Germany, this is the VDE 0185 (DIN EN 62305) Parts 1 to 4 series of standards for buildings equipped with lightning protection systems and the VDE 0855 (DIN EN 60728-11) series of standards if there is no lightning protection system installed.

The recommended radiation limits of the German Commission on Radiological Protection (www.ssk.de) from 13/14 September 2001 must be observed.

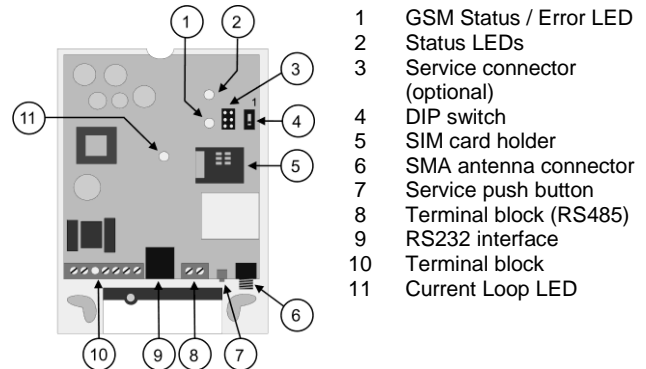
Uses:

The ZDUE-GSM-PLUS-V is a device designed for the remote inquiry and the remote monitoring of electricity, heat, gas and water meters. It is design to be used in GSM networks.

Opening the device

In order to insert the SIM card or to access the DIP switch, you first have to open the device:

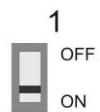
1. First disconnect all the poles of the device from the electricity supply if it is plugged in there.
2. Now unscrew the screw in the terminal cover and remove the cover.
3. Now remove the device lid.



Altering the device settings

Using the DIP switch (4) you toggle between the both operating modes, meter mode and AT command mode.

In meter mode (OFF), the device can be adjusted locally via one of the meter interfaces or remotely via communication commands according to EN 62056-21. In this case, the device will then operate using the parameters that have been set.



Setting the PIN of the SIM card

In order to operate the ZDUE-GSM-PLUS-V, you will require a 3V plug-in SIM card from a GSM network operator.

A ZDUE-GSM-PLUS-V having factory default settings expects a SIM card with a PIN 0000. The PIN setting of the ZDUE-GSM-PLUS-V can be changed in the device settings.

Inserting the SIM card

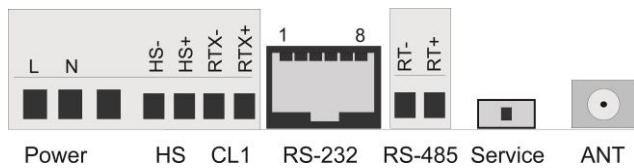
Insert the SIM card as follows:

1. Open the SIM card holder by gently pressing the lid towards the edge of the device, flip it up and insert the SIM card into the slot in the holder. The gold-plated contacts on the SIM card have to lie on the gold-plated contacts of the holder when the holder is closed. Close the lid of the SIM card holder and lock it by pressing it gently back towards the center of the device. You will feel it click into place.
2. Now replace the device lid and the terminal cover.

ZDUE-GSM-PLUS-V Installation Instructions

Connecting the device

First connect the meter to the device and then connect the power supply.



The device is equipped with 3 different meter interfaces, which are wired in parallel.

RS232 interface (RJ45 jack):

Pin	Signal	Description
2	DSR	Output; Always active
4	GND	Signal ground
5	TXD	Output; Data to meter
6	RXD	Input; Data from meter

Signals and levels according to V.24 / V.28.
All other pins are reserved.

RS485 interface (terminal block):

Signal	Description
RT-	Negative RS-485 interface signal
RT+	Positive RS-485 interface signal

Dual-wire RS485 interface to connect up to 32 transceivers. The bus connection is terminated to $Z=120\ \Omega$ (nominal) (RT+ to RT-) and the cable length is limited to 1000m.

CL1 interface (terminal block):

Signal	Description
RTX-	Negative CL1 interface signal
RTX+	Positive CL1 interface signal

20mA power interface (current loop) to connect meters with the power supply interface according to DIN EN 62056-21. Approx. 4 meters can be connected to this interface.

The CL1 interface is optional. Devices without CL1 interface do not contain RTX- / RTX+ terminals. Please refer to the label of the terminal block.

Important:

If no meter is connected to the CL1 interface, the RTX- and RTX+ contacts need to be short-circuited. Otherwise, the other interfaces will not operate.

Auxiliary power source (HS; terminal block):

Signal	Description
HS-	Negative pole of the auxiliary power supply
HS+	Positive pole of the auxiliary power supply

Auxiliary power supply of 9V / max. 100mA
The auxiliary power supply is not available for all the ZDUE-GSM-PLUS-V models.

Power supply (terminal block):

Signal	Description
L	AC: $U_{nom} = 100VAC \dots 230VAC$
N	DC: $U_{nom} = 60VDC \dots 100VDC$
$I_{nom} = 84mA \dots 42mA$	

Connecting the antenna

The antenna is connected to the Type SMA antenna jack (ANT). The antenna should be installed to ensure adequate signal quality. Make sure that there are no large metal objects (e.g. reinforced concrete) near the antenna, since they will have an adverse affect on signal quality. Please observe the safety instructions at the beginning of this manual when installing the antenna. Have this installation done by a qualified professional! Be sure to observe the instructions included with your antenna.

Light-emitting diodes (LEDs)

Status LED (2) / Green & Yellow with light pipe

Permanently green	Supply voltage available
Permanently yellow	GSM module on

Depending on the firmware version, both LEDs may be off in case of a missing or defect SIM card.

Current Loop LED (11)

Permanently green	Meter connected to the CL1 interface or CL 1 interface short-circuited.
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GSM-Status-/Error LED (1) / Orange

$\approx 3s$ on / 3 x flashing	Network search
$\approx 3s$ on / 2 x flashing	Error status
$\approx 3s$ on / 1 x flashing	SIM/PIN error
Permanently off	Signal strength unknown
$\approx 3s$ off / 1-4 x flashing	Signal strength (1=low; 4=high)
Permanently on	GSM connection active

This LED operates in meter mode only.

Service push button (7)

Push the button 1x for more than 5 seconds.	The parameters being set by EN 62056-21 commands will be deleted and the factory settings are reloaded.
Push the button when switching the power on.	The actual firmware version will be output at the local interface (19200bps; 8N1).

The service push button operates in meter mode only.

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