

# VEA 3CGi

## Ethernet adapter

Publication version: VVEA3CGi/EN M/A001

## User manual





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# 1. General

- Installed to 35mm DIN- RAIL
- Steel plate case
- Powered from the VAMP relay via serial cable (from the LOCAL port of the relay) or from an external power supply interface. There is a screw terminal 6 (see figure 1) for connecting an external power supply.

## 1.1. Front panel

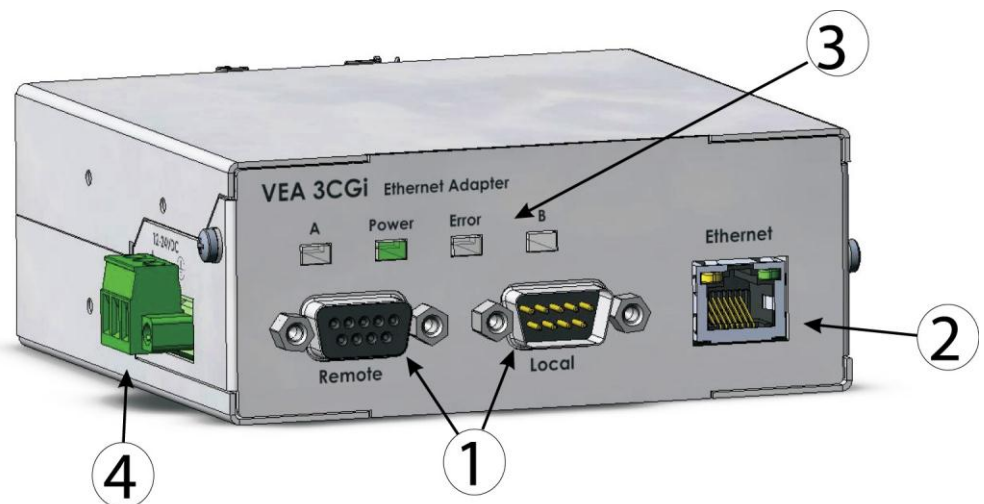


Figure 1.1-1 VEA 3CGi front panel

1. 2 serial ports : connection to VAMP relay (Local + Remote)
2. Ethernet port : 10 Mb/s, RJ-45 connector
3. 4 LED indicators:
  - Power: Powered by VAMP relay
  - Error: Internal error
  - A/B Future feature
4. Act: Communication active
5. Link: Ethernet link is active
6. External power supply and grounding interface:
  - Range: +12..24Vdc
  - Power: 1W
  - Connection: Removable terminal block
  - Grounding help limit the effects of noise due to electromagnetic interference (EMI) Run the ground connection from the right most connector of the 3-contact terminal block to the grounding surface prior to connecting devices.

## 1.2. Application

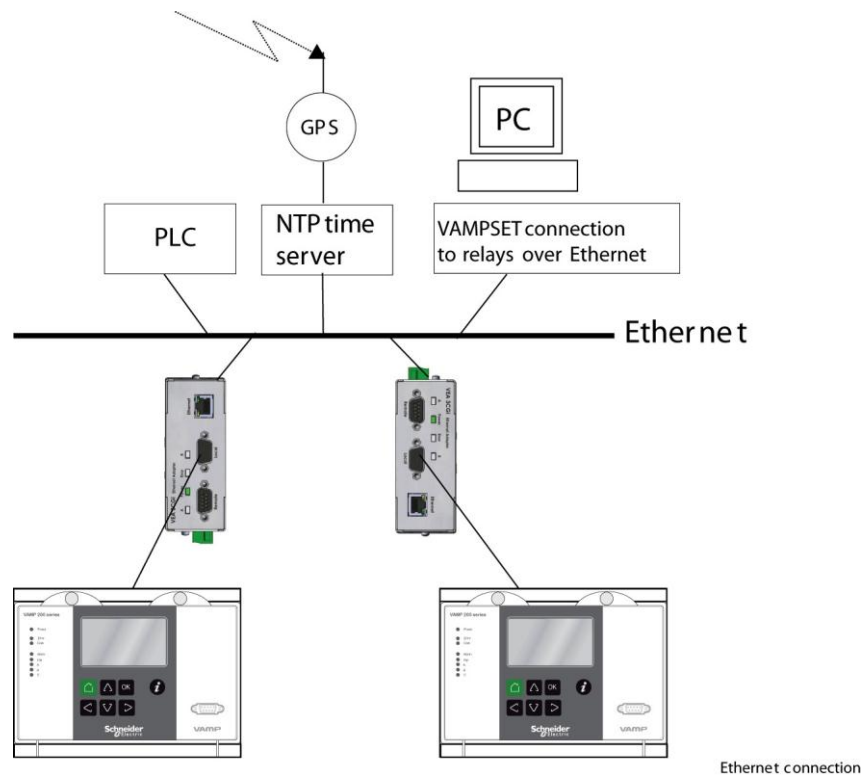


Figure 1.2-1 Application

### VAMPSET data over Ethernet

- Read / write of relay settings
- Upload of disturbance recordings

### Time synchronization of relays with NTP-server

- NTP time server connects to Ethernet
- NTP server gets its time from GPS or Internet
- VEA 3CGi gets synchronized via the server, using SNTP
- The relay is synchronized to VEA 3CGi via the Local interface

### Modbus TCP over Ethernet

- Read / write of relay data in Modbus registers
- The applicable Modbus register numbers for each VAMP relay type can be found from documents called "Modbus parameters".
- The same data which is available via serial Modbus RTU protocol is also available via Modbus TCP.

## 1.3. Operation

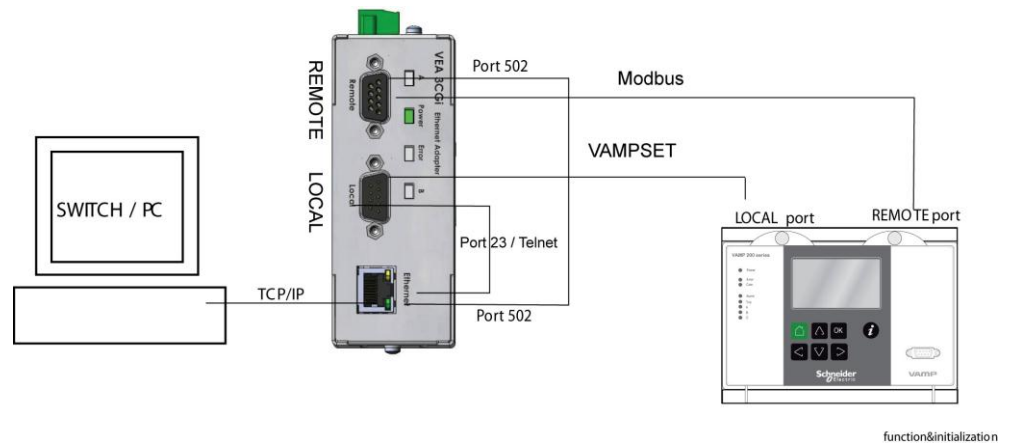


Figure 1.3-1 VEA 3CGi operation principle

### Function

- Open the communication tunnel between Port 23 / Telnet and Local port, which enables the VAMPSET connection to VAMP relay.
- Open the communication tunnel between Port 502 and Remote port, which enables the use of Remote port protocols, e.g. Modbus TCP.

### Initialization

After resetting, the VEA 3CGi performs the following the initialization sequence:

- 1 Opening the Local port and configuration to speed 38400 b/s.
- 2 Obtaining the necessary setting from the relay through the Local port.
- 3 IP setting in accordance with the information obtained from the relay.
- 4 Opening and configuring of the Remote port according to the information obtained from the relay.
- 5 Initialization of communication through Port 23 and 502.
- 6 Initialization of NTP query if IP address of the NTP server has been obtained from the relay.

# 2. Connection

## 2.1. Ethernet adapter

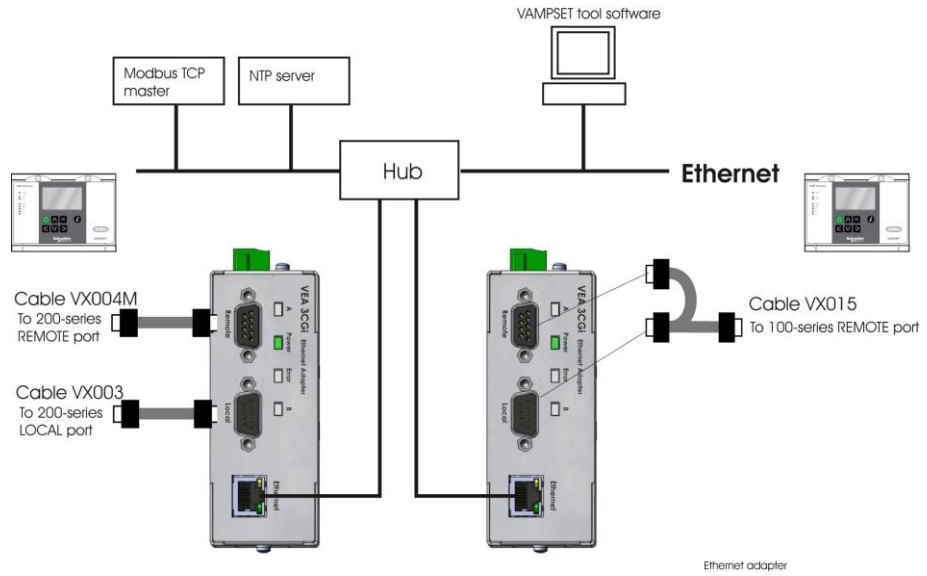
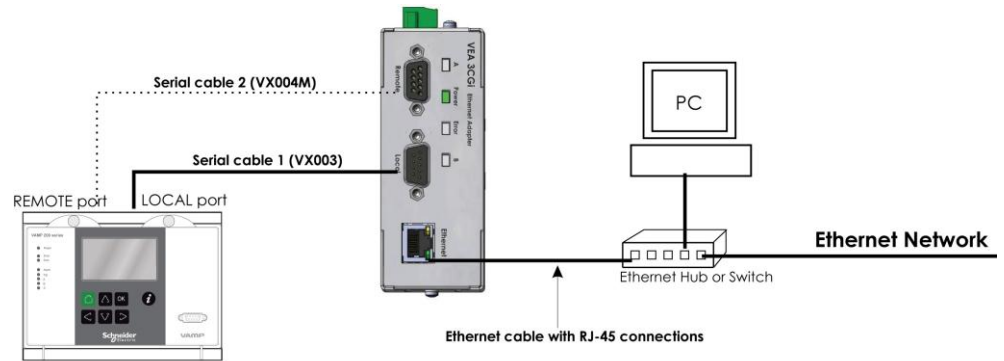


Figure 2.1-1 VEA 3CGi connection cables

	100-series	200-series	Other VAMP products
VAMPSET communication	VX015	VX003	VX030
Modbus TCP and VAMPSET communication	—	VX004M and VX003	—

## 2.1.1. Connection to 200-series relays



200 connection

Figure 2.1.1-1 Connection to 200-series relay

- Galvanically isolated
- Modbus and VAMPSET communication over TCP/IP.
- Powered by VAMP relay via VX003 cable.
- Serial cable 1 : RS-232 interface to LOCAL port
  - VAMPSET communication
  - Clock synchronization
- Serial cable 2 : RS-232 interface to REMOTE port
  - Modbus TCP communication



VX004 connect to VAMP

Figure 2.1.1-2 VX004 connection to 200-series relay

## 2.1.2. Connection to other VAMP products

- VAMP40: use cable VX030
- VAMP96: use cable VX030



## 3. Configuration

### 3.1. The Ethernet settings of the relay

Connect cable VX003 to relay's front panel (see Figure 3.1-1). Find the Ethernet-menu of the relay with VAMPSET and give proper values to parameters " IP Address " and " NetMask". The other parameters can be left to their default values when testing the communication.

To learn about possible IP addresses you may have to talk with the system administrator responsible of the Ethernet network you are going to use for communications. A fixed IP address must be used because DHCP is not supported in VEA 3CGi.

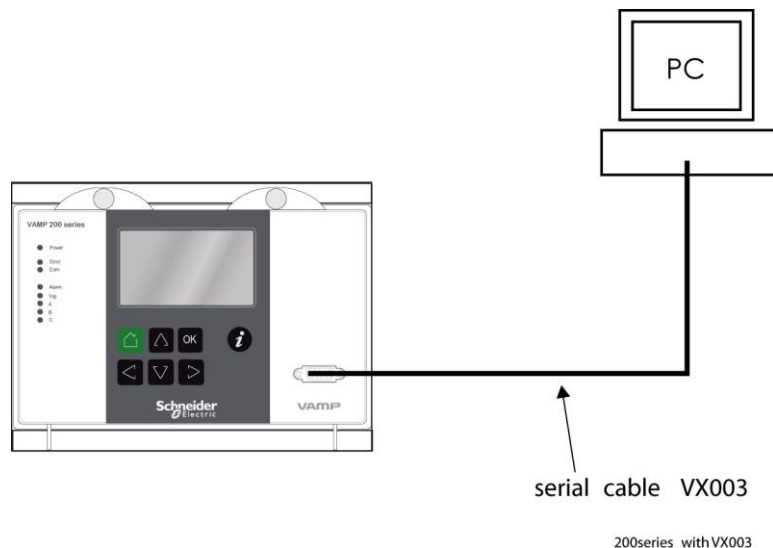


Figure 3.1-1 Connecting cable VX003 to the relay's front port for the Ethernet settings of the relay.

MODEBUS MAIN CONFIGURATION	
MODEBUS MASTER: MEASUREMENT	
MODEBUS MASTER: DI AND OBJ	
MODEBUS MASTER: OBJECT CON	
MODEBUS MASTER: EVENTS	
MODEBUS SLAVE: 402001->	
MODEBUS SLAVE: 403001->	
MODEBUS SLAVE: 403301->	
PROFIBUS MAIN CONFIGURATIO	
PROFIBUS: CONTINUOUS MODE	
PROFIBUS: REQUEST MODE 1/6	
PROFIBUS: REQUEST MODE 2/6	
PROFIBUS: REQUEST MODE 3/6	
PROFIBUS: REQUEST MODE 4/6	
MODEBUS & PROFIBUS: SCALING	
IEC 60870-5-103 MAIN CONF	
IEC 60870-5-103: Data con	
DNP3 CONFIGURATION	
DNP3: DATA POINTS - BI	
DNP3: DATA POINTS - AI	
DNP3: DATA POINTS - CNTRS	
DNP3: DATA POINTS - BO	
<b>ETHERNET</b>	
ETHERNET	

<b>IP Address</b>	<b>10.4.1.177</b>
<b>NetMask</b>	<b>255.255.255.0</b>
<b>Gateway</b>	<b>0.0.0.0</b>
<b>NameServer</b>	<b>0.0.0.0</b>
<b>NTP server</b>	<b>0.0.0.0</b>
<b>Protocol port for IP</b>	<b>502</b>

Figure 3.1-2 Ethernet settings of the relay

## 3.2. VEA 3CGi to the relay and Ethernet network

Connect VEA 3CGi to a 200-series relay's LOCAL serial port with cable VX003 . Connect the VEA 3CGi and the PC to an Ethernet Switch (see Figure 3.2-1 ). Connection to 100-series relays is done with VX015 cable and connection to VAMP 40 is done with VX030 cable.

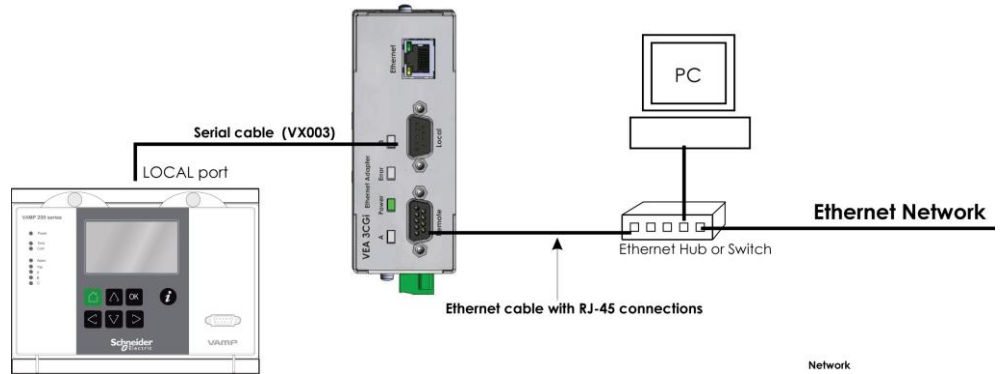


Figure 3.2-1 Connecting VEA 3CGi to the VAMP relay and PC

### 3.3. VAMPSET communication over the Ethernet Network

Change the Communication settings of the VAMPSET software as shown in Figure 3.3-1. Set parameter Port = Network and set the Network Address = IP Address selected in the relay settings. Press “Apply” button and then activate Connection to the relay (see Figure 3.3-2).

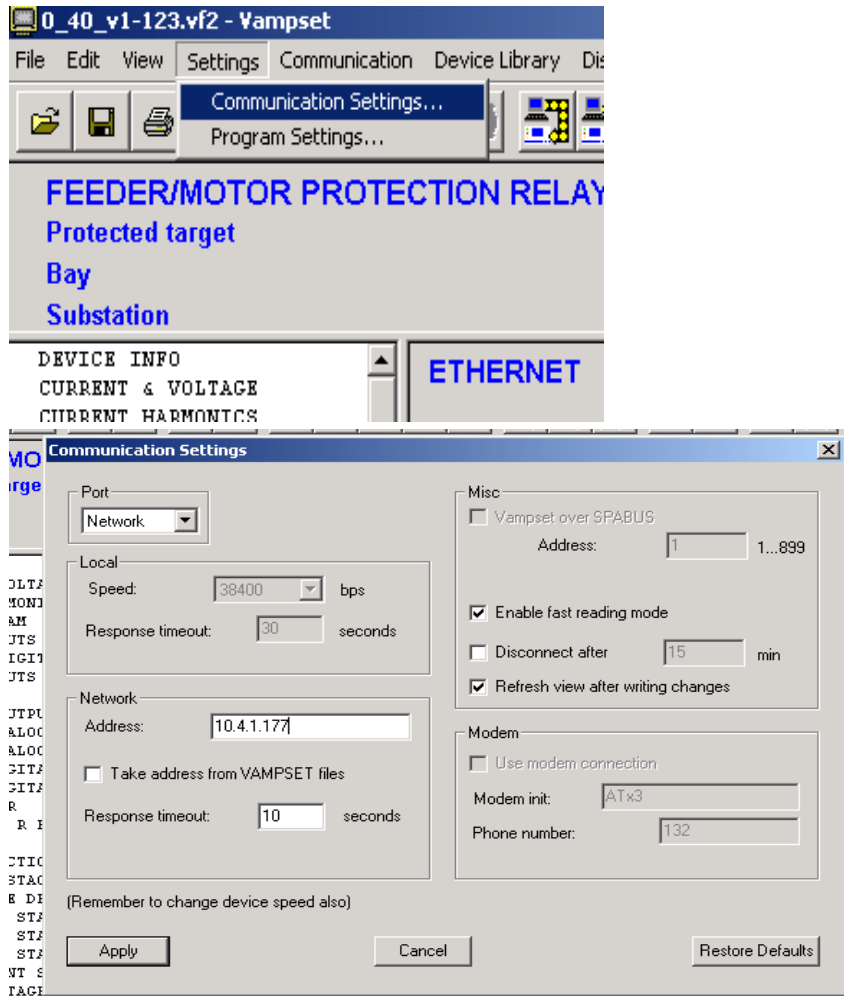


Figure 3.3-1 Changing the communication settings of the VAMPSET software

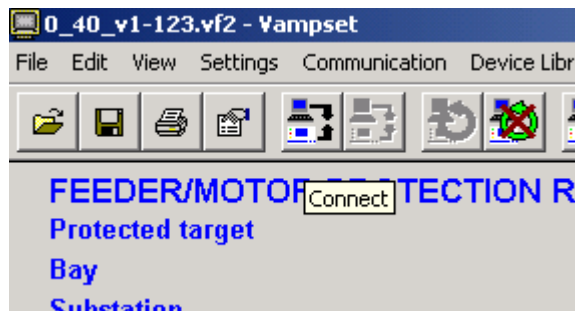


Figure 3.3-2 Button for activating connection to the relay

After activating the connection to the relay the normal connection opening window as shown in Figure 3.3-3 should pop up.

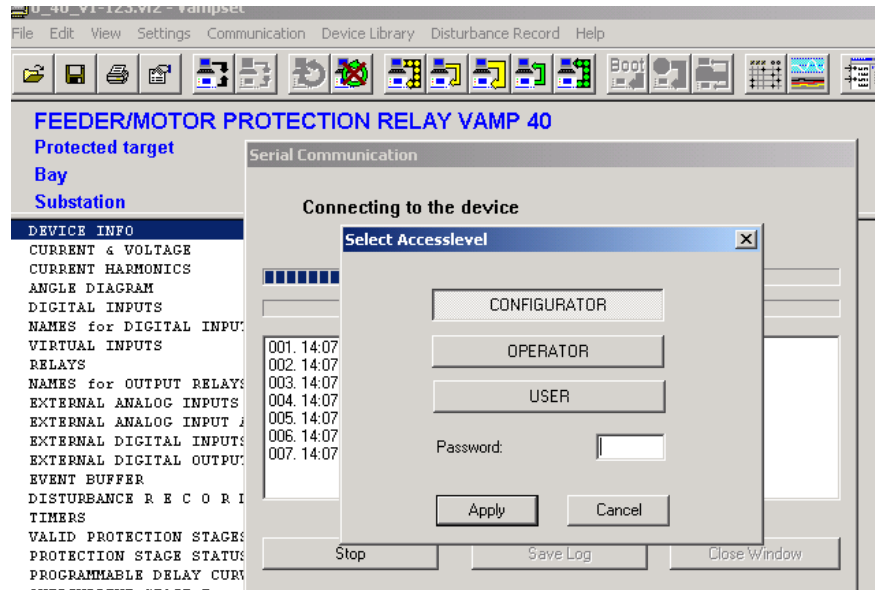


Figure 3.3-3 VAMPSET connection opening window

The communication with the VEA 3CGi can also be tested using “ping” command via the DOS-window of the Windows operating system (see Figure 3.3-4 ).

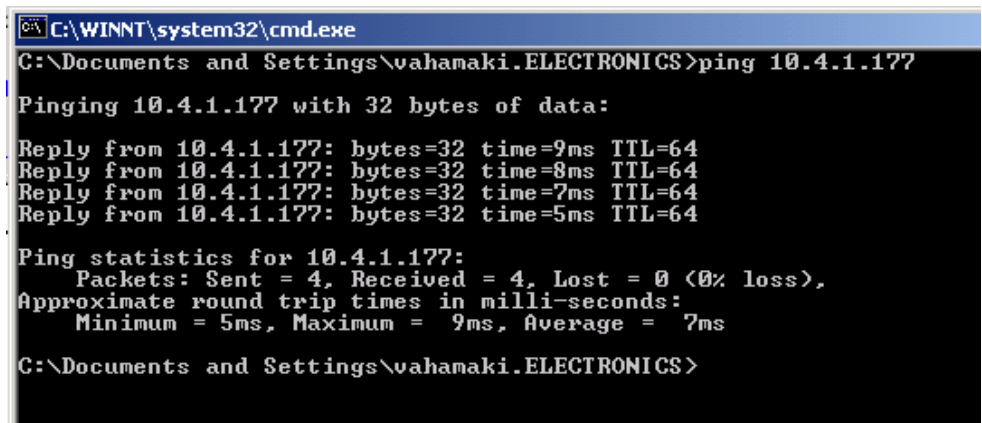


Figure 3.3-4 Testing connection to the VEA 3CGi with the "ping" command.

## 4. Dimensional drawing

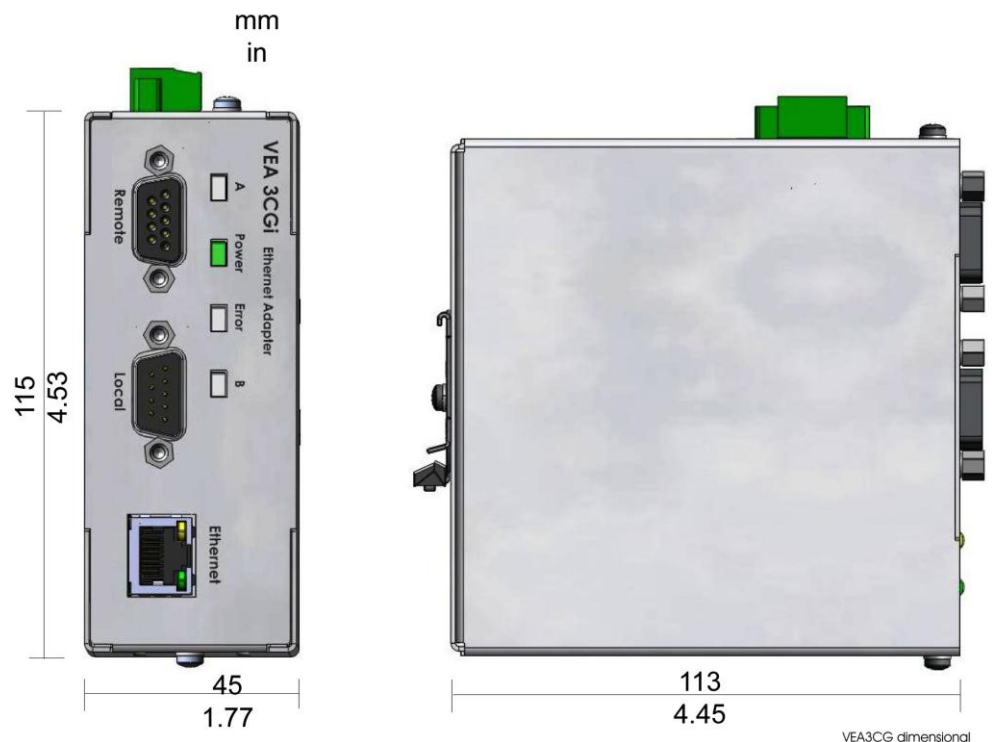


Figure. 4-1 Ethernet adapter VEA 3CGi dimensions

## 5. Firmware update of VEA 3CGi

The firmware of the VEA 3CGi module can be updated using Vampset PC software. For the update procedure a PC with Vampset software and a firmware file for the adapter is needed. The file can be obtained by contacting your nearest Schneider Electric Customer Care Centre. The adapter to be updated must be disconnected from the network and from the relay. An external power supply of DC 12-24V must be connected and a null-modem cable should be connected between the serial port of the PC and the remote port of the adapter.

From Vampset menu communication select Update Firmware and follow the instructions given by Vampset. The adapter is expecting the communication speed of the serial link to be 38400 bps.

After the update procedure has finished, remove the external power supply and reconnect the adapter to the relay.





## Customers Care Center

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