

Ekrano GX front and back





Accessories included with the Ekrano GX



Ekrano GX: communication-centre

The Ekrano GX represents the next generation in the GX product family. With its complete range of connections and interfaces as well as a built-in 7-inch touchscreen display, it is the most powerful GX device to date and allows you to always have perfect control over your system from wherever you are and to maximise its performance. Simply access your system via our Victron Remote Management (VRM) portal, or access it directly, using the built-in touchscreen, a Multi-Functional Display (MFD) or our VictronConnect app thanks to its built-in WiFi Access Point. The Ekrano GX is also the successor to the Color Control GX.

Built-in 7-inch touchscreen display

The seven-inch touchscreen display gives an instant overview of your system and allows you to adjust settings. The touch function can be disabled (or enabled) via a recessed button on the back to prevent unauthorised use. When mounted using the supplied steel bracket, the display is watertight from the outside.

Remote Console on VRM

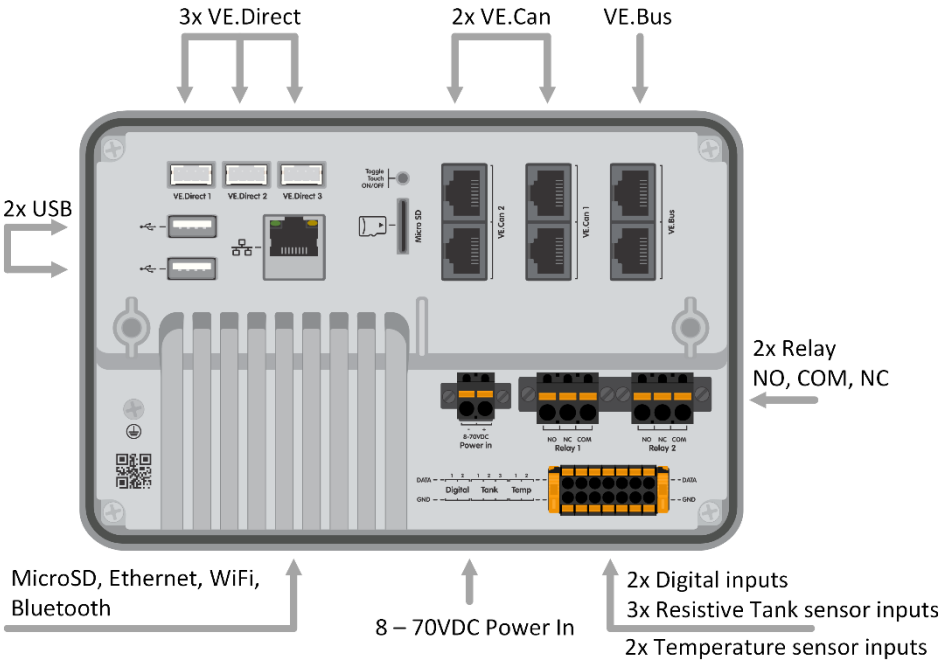
Monitor, control and configure the Ekrano GX remotely, over the internet, just like if you were standing in front of the device, using the Remote Console. The same functionality is also available via local LAN network or via the built-in WiFi access point of the Ekrano GX.

Perfect monitoring & control

Instantly monitor the battery state of charge, power consumption, power harvest from PV, generator, and mains, or check tank levels and temperature measurements. Easily control the shore power input current limit, (auto) start/stop generator(s) or change any setting to optimise the system. Follow up on alerts, perform diagnostic checks and resolve complications remotely.

Simple mounting and configuration

The Ekrano GX installs easily via a cut-out for flush panel mounting and includes both a steel bracket and springs for blind hole mounting. All ports are easily accessible from the back. The power and relay terminal blocks can be screwed in place and the IO terminal block has a quick release clamp for easy access. The Bluetooth feature allows for quick connection and configuration via our VictronConnect app.



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Temperature sensor for Quattro, MultiPlus and GX device (e.g. Ekrano GX) as an additional accessory.

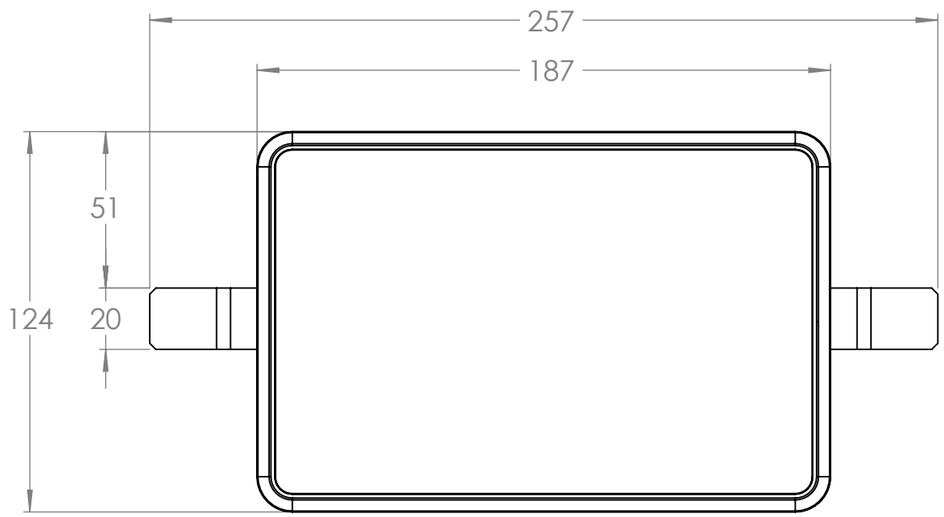
Ekrano GX [1]	
Supply voltage	8 – 70 VDC
Power draw display on (100 % brightness)	6.2 W @ 12 V | 6.6 W @ 24 V | 7.4 W @ 48 V
Power draw display off	2.6 W 12 V | 3.0 W @ 24 V | 3.7 W @ 48 V
Relay	2 x NO/NC [2] DC up to 30 VDC: 3 A AC: 1 A, 125 VAC
Communication ports	
VE.Direct ports (always isolated)	3 (max. possible VE.Direct devices: 25) [7]
VE.Bus (always isolated)	1 bus with 2 paralleled RJ45 sockets
VE.Can 1	Yes - isolated
VE.Can 2	Yes – non-isolated
Ethernet	Yes
WiFi	Yes
Bluetooth Smart	Yes [3]
USB Host ports	Yes – 2 x USB-A (max. 1.5 A@5 V combined)
MicroSD Card Slot	Yes – SDHC cards up to max. 32 GB
IO	
Resistive tank level inputs	3 [4]
Temperature sense inputs	2 [5]
Digital Inputs	2 [6]
Display	
Display resolution	1024 x 600 pixels
Display max. backlight brightness	1000 cd/m^2
Backlight dimming	Yes – dynamic via built-in ambient light sensor or manually via Remote Console With timer for auto on/off
Touch toggle on/off button	Yes – recessed button on the back (prevents unauthorised use)
Dimensions	
Outer dimensions (h x w x d)	124 x 187 x 29.8 mm | 4.88 x 7.36 x 1.17 in (without connectors and mounting accessories)
Operating temperature range	-20 to +50 °C
Other	
Mounting	Panel integrated flush mount or blind hole mount with included mounting accessories
Buzzer	Yes
Protection category	Front: IP54 (when installed with steel bracket) IP31 (when installed with springs) Back: IP21
Standards	
Safety	IEC 62368-1
EMC	EN 301489-1, EN 301489-17
Automotive	ECE R10-6

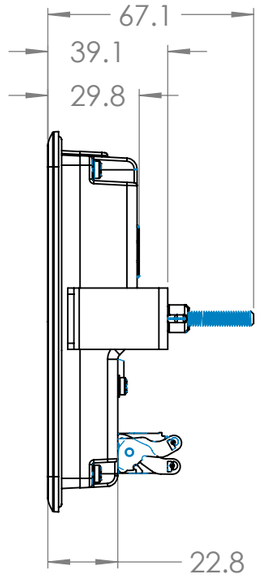
Notes

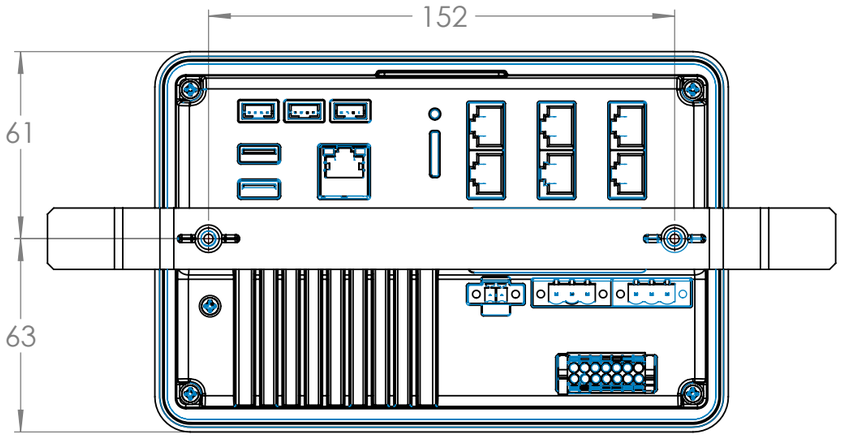
1. For more detailed information about the Ekrano GX, please visit the Victron GX product range page.
2. Currently, Relay 1 can be used for programming as an alarm relay, generator start/stop, tank pump, temperature controlled relay or manual operation. Relay 2 is available for programming as a temperature controlled relay or manual operation in the Relay menu of the GX (requires firmware 2.80 or higher).
3. Bluetooth functionality is intended to be used to assist with initial connection and networking configuration. You cannot use Bluetooth to connect to other Victron products (e.g. SmartSolar charge controllers).
4. The tank level inputs are resistive and should be connected to a resistive tank sender. Victron does not supply tank senders. The tank level ports can each be configured to work with either European (0 - 180 Ohm); or US tank senders (240 - 30 Ohm).
5. The Ekrano GX has 2 temperature inputs. They can be used to measure & monitor all kinds of temperatures. Temperature senders are not included. The required sensor is ASS000001000 - Temperature Sensor QUA/PMP/Venus GX. (Note that this is not the same as the BMV temperature accessory.). Temperature range is -20 °C to +70 °C. Actually, it can measure up to 100 °C, but the sensor is not made to withstand temperatures above 70 °C long term. Note that this is intended as a crude temperature sensor, and not calibrated. A deviation of +/- 2 °C is to be expected.
6. The digital inputs can be used for open/closed monitoring of alarms, for example doors, or fire- or bilge alarms and can also be used for pulse counting. See the product manual for electrical specifications of the digital inputs.
7. The listed maximum in above table is the total connected VE.Direct devices such as MPPT Solar Charge controllers. Total means all directly connected devices plus the devices connected over USB. The limit is mostly bound by CPU processing power. Note that there is also a limit to the other type of devices of which often multiple are connected: PV Inverters. Up to three or four three phase inverters can typically be monitored on a CCGX. Higher power CPU devices can monitor more.

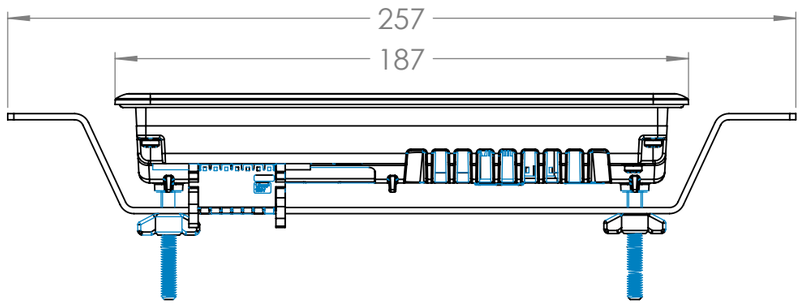
Dimension Drawing - Ekrano GX

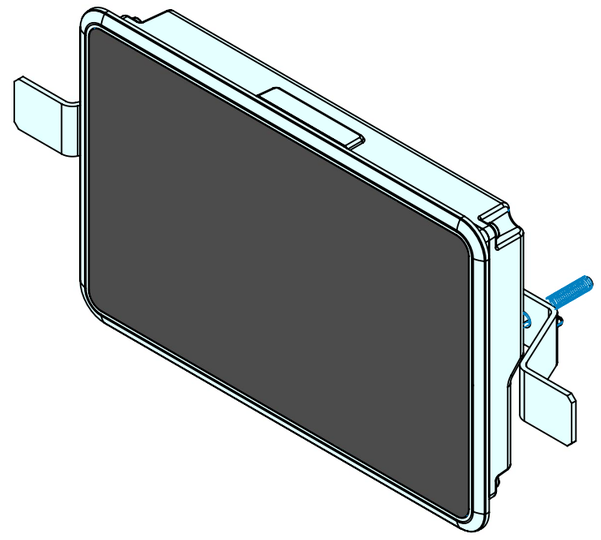
BPP900480100	Ekrano GX









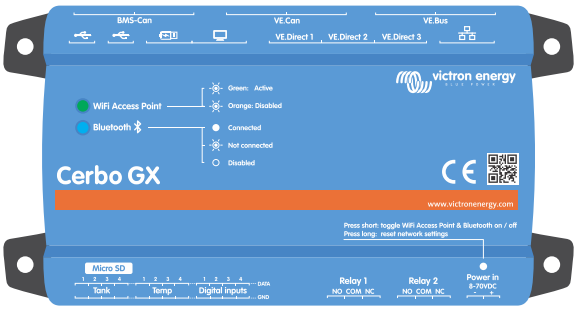
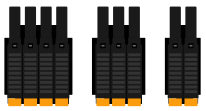


Dimensions in mm

victron energy
BLUE POWER

Rev00

2.3. What's in the box?

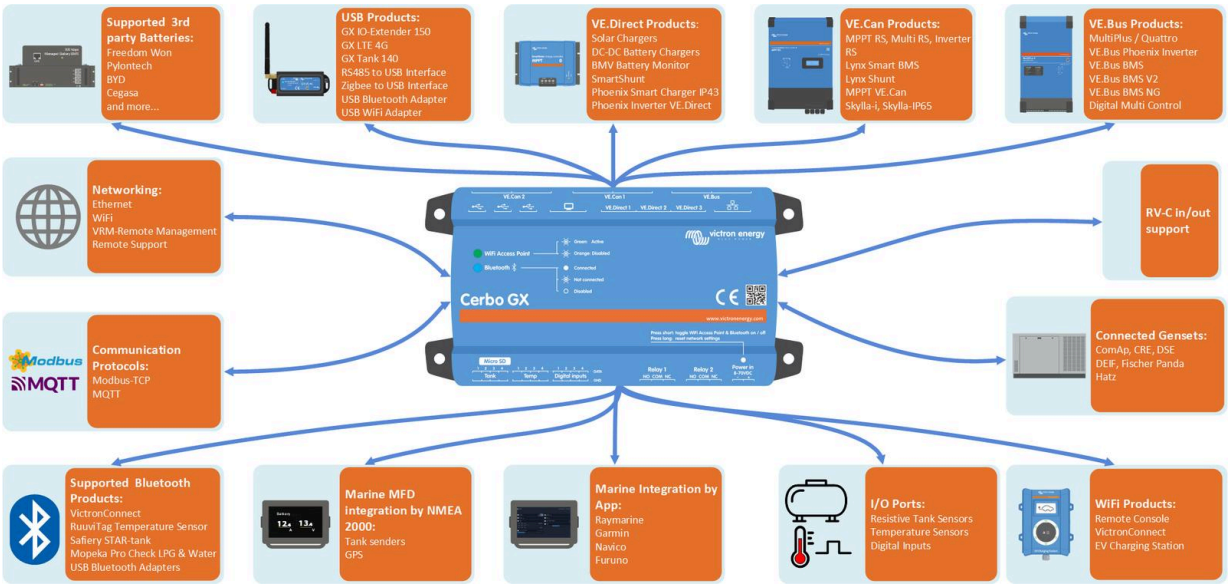
Cerbo GX	
Power cable with inline fuse and M8 terminal eyes for battery or DC busbar-attachment.	
VE.Can terminators (2 pcs)	
Terminal blocks for all the connectors on each side: 3x 4-pin, 2x 3-pin, 1x 2-pin	

Please also watch this video for an unboxing and overview of the interfaces:



3. Installation

3.1. Cerbo GX MK2 BPP900450110 BPP900451100 & MK3 BPP900451130 Overview of connections



Communication ports	IO	Other
3x VE.Direct	4x Digital Inputs (with pulse counting)	MicroSD Card Slot (max. 32GB)
2x VE.Can (VE.Can 1 isolated)	4x Resistive Tank Level Inputs	Power in port (8 - 70VDC)
1x VE.Bus	4x Temperature Sense Inputs	HDMI port
The RJ45 sockets have been rotated 180 degrees, so its easier to take the cables out	2x Programmable Relay (NO, COM, NC - current limit: DC up to 30VDC: 6A / DC up to 70VDC: 1A / AC: 6A, 125VAC	
WiFi 2.4GHz (802.11 b/g/n) incl. WiFi Access Point		
Bluetooth Smart		
3x USB Host ports (fully functional)		

3.2. Mounting options and accessories

The following mounting options and accessories are available for purchase:

- GX Touch 50 & GX Touch 70 displays
- GX Touch wall mount available in 5" and 7"
- GX Touch 50 adapter for CCGX cut-out
- GX Touch 50 Flush & GX Touch 70 Flush displays
- DIN35 rail mount adapter
- Temperature sensor Quattro, MultiPlus and GX Device

Please watch this video for all mounting options:



3.3. Powering the Cerbo GX

The device is powered via the *Power in V+* connector and accepts 8 to 70V DC. It cannot be powered through any other connection (e.g. Ethernet or USB). The supplied DC power cable includes an inline 3.15 A slow-blow fuse.

If the DC voltage exceeds 60V, the Cerbo GX is classified as a “built-in product”. Installation must prevent user access to the terminals to comply with safety standards.

Powering with a VE.Bus BMS

When using the Cerbo GX in an installation with a VE.Bus BMS, connect the *Power in V+* terminal on the Cerbo GX to the '*Load disconnect*' terminal on the VE.Bus BMS. Connect both negative leads to the negative busbar or common battery negative. This is not necessary for the VE.Bus BMS V2 and VE.Bus BMS NG, as both feature a GX-Power output.

Important: Powering from the AC-out terminal of a VE.Bus Inverter, Multi or Quattro

Powering the GX device with an AC adapter connected to the AC-out of a VE.Bus device (e.g. Inverter, Multi, or Quattro) can cause a deadlock:

- After a fault or black start, the VE.Bus devices will not boot because the Cerbo GX is unpowered.
- The Cerbo GX cannot boot because the inverter/charger is off, causing a cycle.

Temporary workaround:

Briefly unplug the VE.Bus cable from the GX device to allow the VE.Bus products to restart.

Permanent solution:

Modify the RJ45 cabling. See FAQ Q20 for more information about this.

Recommendation:

Avoid powering the GX device from the AC-out of an inverter/charger. In the event of a shutdown due to inverter overload, high temperature, or low battery voltage, the GX device will also shut down, losing all monitoring and remote access. It is strongly recommended to power the GX device directly from the battery.

Isolation considerations

The GX device connects to various system components. To prevent ground loops, ensure appropriate isolation practices are followed. In most cases, this is not an issue, but proper system design remains essential.

Port type	Cerbo GX MK2 & MK3	Ekrano GX	Nucleo GX
VE.Bus	Isolated	Isolated	N/A
VE.Direct	Isolated	Isolated	Isolated
VE.Can	1)	1)	1)
USB 3)	Not isolated	Not isolated	Not isolated
Ethernet 2)	Isolated	Isolated	Isolated

1) VE.Can port 1 is galvanically isolated, VE.Can port 2 is non-isolated

2) The Ethernet port is isolated, except for the shield: use unshielded UTP cables for the Ethernet network.

3) USB ports are not isolated. Connecting a WiFi dongle or GPS dongle does not create any problems, as these devices are not powered by an external supply. Even when using a separately powered USB hub, a ground loop may occur. However, extensive testing has shown that this does not cause operational issues.

Extending USB Ports

The number of USB ports can be expanded using a USB hub. However, the onboard USB ports have limited power availability.

Recommendation:

Always use powered USB hubs and select high-quality products to minimise issues.

To increase the number of VE.Direct devices, you can use a VE.Direct to USB adapter. Please see this document for the limit of how many devices can be attached to various different GX devices.

3.4. GX Touch 50 series & GX Touch 70 series

The GX Touch 50 & GX Touch 70 series are display accessories for the Cerbo GX.

Available in five-inch and seven-inch versions, they offer two installation options:

- Top mount or wall mount
- Flush mount

These super-slim, waterproof displays provide an instant overview of the system and allow quick adjustment of settings. Their simple installation offers great flexibility when designing a clean and professional dashboard.

No configuration is required. Once connected, the GX device automatically displays the system overview and menu controls.



Display options

Display settings are available via: Settings → General → Display & Appearance

You can:

- Set a timeout for automatic display turn-off
- Enable adaptive brightness for improved visibility

Touchscreen operation

- Operated by fingertip gestures.
- Swipe to scroll through menus.
- Tap to make selections.
- Text and numerical input is performed using the onscreen keyboard.

Mounting options

Depending on the model, the GX Touch can be mounted in different ways:

GX Touch 50 & GX Touch 70

- **Front mounting:** Using the included bracket frames
- **Wall mounting:** Using the optional GX Touch Wall Mount
- **CCGX cut-out adaptation (GX Touch 50 only):** Using the optional GX Touch 50 adapter for CCGX cut-out.

Protection cover

A protection cover is available (included from serial number HQ2242 onwards, and also available separately, see datasheet for details). It protects the GX Touch from UV damage during prolonged sun exposure.

Note: The protection cover does not fit the GX Touch 50 Flush and GX Touch 70 Flush versions.



GX Touch 50 Flush & GX Touch 70 Flush

The GX Touch Flush models offer multiple flush-mount installation methods:

- Flush mounting with rubber seal and brackets

  Use the included rubber seal, brackets, threaded ends and wing nuts. This method provides the best dust and water resistance.

> Only hand-tighten the threaded ends and wing nuts

- Flush mounting with adhesive

  Mount directly to the underlying surface using the pre-applied adhesive. Brackets, threaded ends and wing nuts are not required. The level of ingress protection depends on the quality and flatness of the underlying surface.

- Embossed (fully flush) mounting
  - For a fully flush finish, install according to the drilling jig dimensions. Use either the rubber seal or the pre-applied adhesive. Ingress protection depends on the characteristics of the underlying surface.



GX Touch 50 / 70 Flush



Accessories includedwith the GX Touch 50 / 70 Flush

Connecting the GX Touch 50 or GX Touch 70

Important: Connect the GX Touch to the Cerbo GX before powering it on. The recommended procedure is to unplug the power connector from the Cerbo GX prior to installation.

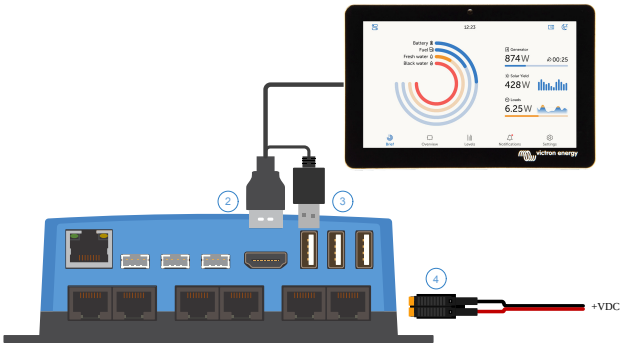
Connection overview

The GX Touch is connected using a single combined cable with:

- An HDMI connector (for video)
- A USB connector (for power)

Installation steps

1. Mount the touchscreen in a convenient location.
2. Connect the HDMI connector into the HDMI port of the Cerbo GX.
3. Connect the USB plug.
4. Reconnect power to the Cerbo GX via the 2-pin Power In connector block.
5. After boot-up, the Remote Console will appear on the GX Touch.
6. Familiarise yourself with the touch display, and configure display options via: Settings → General → Display & Appearance.



3.5. Deactivating touch input control

To restrict access to the GX system, it is possible to disable touch input control for the connected GX Touch 50 or 70 touchscreen. This allows the GX Touch to be mounted visibly for the operator, while preventing unauthorised use to elevate access levels.

Note that this feature only disables touch/mouse control. On the Remote Console, you are still able to control the device with keyboard input.

There are two ways to disable the touch function of the display:

1. Using a momentary push button wired to one of the digital inputs
2. By using an external USB keyboard connected to the Cerbo GX; The touch function can then be toggled on and off by pressing the Pause/Break key.

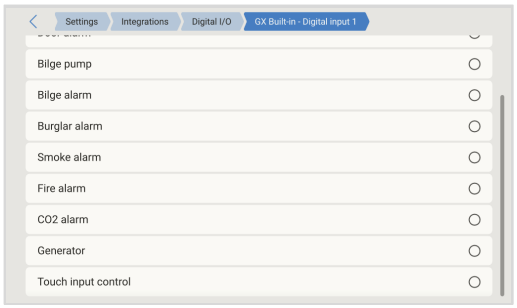
   If you wish to use this function, ensure that the USB ports and any connected USB keyboard are not physically accessible, to prevent unauthorised activation of the touch feature.

Deactivating touch input control using a momentary push button

On GX devices with digital inputs, you can configure one of the inputs to control touch functionality using an external momentary push-button.

Configuration steps

1. Navigate to Settings → Integrations → Digital I/O → GX Built-in - Digital input [number of the digital input]
2. Enable Touch Input Control



Operation

- First press: Touch input is disabled.
  - No touch interactions are possible.
  - The display turns off after the configured timeout under Settings → General → Display & Appearance → Display Off Time.
  - Touching the screen will wake the display, but touch input remains disabled.
- Second press: Touch input is enabled again.

Important: Pressing the button pulls the GPIO pin to ground. Do not apply voltage to any GPIO pins.

Deactivating touch input control using an external USB keyboard

To control touch input via an external keyboard:

1. Connect a USB keyboard to one of the USB ports on the GX device.
2. Press the Pause/Break key to toggle touch input on or off.

   For keyboards without Pause/Break key use one of the substitute key combinations mentioned in this Wikipedia article.

5. Connecting Victron products

5.1. VE.Bus Multis/Quattros/Inverters

For brevity, all Multis, Quattros, and Inverters are referred to as *VE.Bus* products.

Compatibility with GX devices

The earliest VE.Bus firmware supported by the Cerbo GX is 111.

The table below outlines compatibility based on the VE.Bus device's microprocessor version:

VE.Bus device microprocessor	GX device support
18xxxxxx	No
19xx111	Yes
20xx111	Yes
26xxxxx	Yes
27xxxxx	Yes

Notes:

- The first two digits indicate the microprocessor version.
- The last three digits indicate the VE.Bus firmware version.

Remote on/off terminal use

For Multis, Quattros and EasySolars:

- It is not possible to use the Remote On/Off header with a GX device.
- Keep the factory connection: wire between left and middle terminal.
- If system disable is required, use the Safety Switch Assistant.

Note: The above limitation does not apply to: MultiPlus-II, Quattro-II, and EasySolar-II. They support Remote On/Off together with GX devices.

System connections



Do not confuse the VE.Bus ports on a GX device with the Ethernet or VE.Can/BMS-Can ports.

Single VE.Bus products

- Connect to either VE.Bus port on the GX device.
- Use standard RJ45 UTP cable (see pricelist).



Leave any unused VE.Bus ports open. Do not insert the blue RJ45 VE.Can terminators into these ports.

Parallel, split- and three-phase VE.Bus systems

- To connect multiple VE.Bus products, configured as a parallel, split-phase or three-phase VE.Bus system, connect the first or last VE.Bus product in the chain to a GX device VE.Bus port.
- Use standard RJ45 UTP cable (see pricelist).



Leave any unused VE.Bus ports open. Do not insert the blue RJ45 VE.Can terminators into these ports.

VE.Bus systems with Lithium batteries and VE.Bus BMS (v1 only)

The following applies only to the VE.Bus BMS V1, not to be confused with its successors, the VE.Bus BMS V2 or VE.Bus BMS NG.

GX device connection

7. Internet connectivity

Connect the Cerbo GX to the internet to access the full functionality of the VRM Portal. The Cerbo GX collects data from all connected products and sends it to the VRM Portal, where you can view the current status of connected products, configure email alarms and download data in CSV and Excel formats.

To monitor your system from a smartphone or tablet, download the VRM App for iOS or Android.

In addition to remote monitoring, an active internet connection allows the Cerbo GX to regularly check for firmware updates. Depending on your settings, updates can be downloaded and installed automatically.

Note: IPv6 is supported via automatic configuration. Manual IPv6 configuration is not available.

Internet connection options

You can connect the Cerbo GX to the internet using any of the following methods:

- **Ethernet:** Connect a network cable between your router and the Cerbo GX Ethernet LAN port.
- **Built-in WiFi:** Connect wirelessly to a router using the internal WiFi module.
- **Mobile network:** Use a GX LTE 4G - a cellular USB modem, or connect through a mobile router.
- **USB tethering:** Share a mobile phone's internet connection via USB.

Watch this video for guidance on connecting via LAN, WiFi, or GX GSM (also applies to GX LTE 4G):



7.1. Ethernet LAN port

When you connect an ethernet cable between a router and Cerbo GX, the Settings → Connectivity → Ethernet page of your Cerbo GX will confirm connection.

Before connecting the ethernet cable, be very careful not to confuse the GX device Ethernet port with the VE.Bus or VE.Can/ BMS-Can ports!

