Released

Remote Panel - RP-3000XT

Technical Manual | Remote Panel

Remote Panel - RP-3000XT

Release 2.0

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Manual (original)

This is no translation but the original Technical Manual in English.

Designed in Germany.

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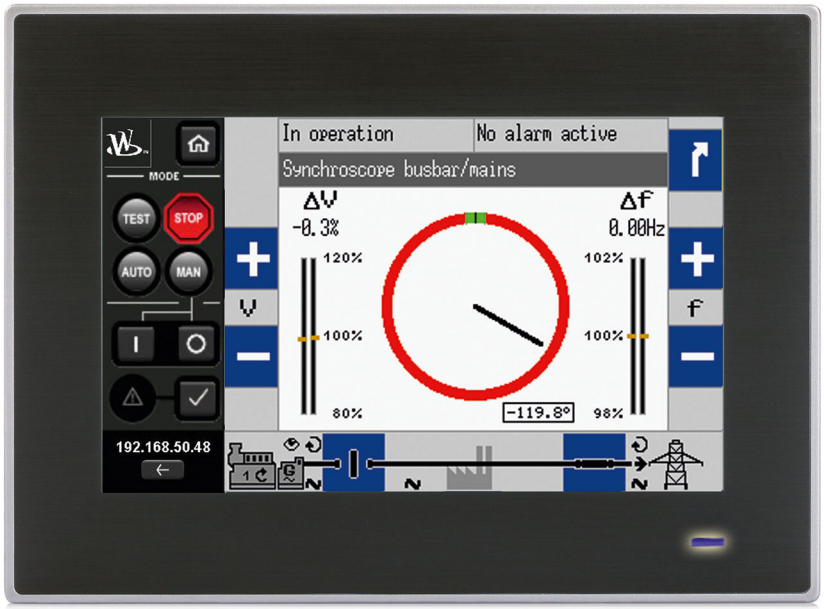
Brief Overview



Woodward's RP-3000XT is a touch screen remote control and annunciation panel for use with the easYgen-3000XT or LS-6XT series controls. It is particularly useful with the back panel mounted easYgen-3100XT/3400XT or LS-6XT, providing control from the front panel with greatly reduced wiring to the access door, while keeping high voltage connections located safely on the back panel.

The RP-3000XT allows remote control and visualization. It offers all the HMI resources that the display variants easYgen-3200XT/3500XT offer, but with the state of the art touch screen technology. Irrespective of the easYgen-3000XT variants, this compact HMI solution connects to multiple XT controls (select and access **one easYgen-3000XT or LS-6XT at a time**).

The RP-3000XT offers switchgear builders, genset packagers and system integrators an off-the-shelf HMI option for any application where a secure remote control, monitoring, and visualization is desired, such as hospitals, data centers, offshore rigs, landfill and wastewater gas-to-power applications to name a few.

A RP-3000XT remote panel communicates with easYgen-3000XT Series genset controls or LS-6XT via Ethernet communication.

Supported devices

All easYgen-3000XT genset controls and LS-6XT are supported by the RP-3000XT remote panel.

Scope of delivery

The following parts are included in the scope of delivery. Please check prior to the installation that all parts are present.

Fig. 1: Scope of delivery - schematic

A	RP-3000XT remote panel
B	Clamp fastener installation material - 6x
C	This manual is available on the web. For this there is a QR code printed on the backside of the device which gives access to this documentation.
Additional	Two additional stickers like described in C are placed inside the box that can be pasted anywhere at your convenience.

Table of Contents

1 General Information

1.1 Revision History

Rev.	Date	Editor	Changes
A	2021-02-09	VK	**Describes device implemented software release 2.0. This software and hardware is a rework of the remotepanel release 1.2.** **Hardware changes** • changed to new Hardware • set up on Linux base **Software changes** • reworked application for changed hardware/operating system • reworked settings screen ◦ IP address entering with a numeric keypad ◦ removed beeper settings ◦ expanded handling of startup delay • reworked multicast screen ◦ design changes ◦ handle large # of devices using a scrollbar instead of page buttons ◦ Info popup with release information **Technical Manual** • reworked manual according to HW and SW changes

1.2 Depiction Of Notes And Instructions

Safety instructions

Safety instructions are marked with symbols in these instructions. The safety instructions are always introduced by signal words that express the extent of the danger.

DANGER!

This combination of symbol and signal word indicates an immediately-dangerous situation that could cause death or severe injuries if not avoided.

WARNING!

This combination of symbol and signal word indicates a possibly-dangerous situation that could cause death or severe injuries if it is not avoided.

CAUTION!

This combination of symbol and signal word indicates a possibly-dangerous situation that could cause slight injuries if it is not avoided.

NOTICE!

This combination of symbol and signal word indicates a possibly-dangerous situation that could cause property and environmental damage if it is not avoided.

Tips and recommendations

This symbol indicates useful tips and recommendations as well as information for efficient and trouble-free operation.

Additional markings

To emphasize instructions, results, lists, references, and other elements, the following markings are used in these instructions:

Marking	Explanation
⚙	Start of a procedure list
>	Prerequisite for a procedure list
▷	Step-by-step instructions
▶	Results of action steps
⮡	References to sections of these instructions and to other relevant documents

Marking	Explanation
•	Listing without fixed sequence
☼	Example
»Buttons«	Operating elements (e.g. buttons, switches), display elements (e.g. signal lamps)
»Display«	Screen elements (e.g. buttons, programming of function keys)
[Screen xx / Screen xy / Screen xz] ...	Menu path. The following information and setting refer to a page on HMI screen or ToolKit located as described here.
	Some parameters/settings/screens are available only either in ToolKit **or** in HMI/display.

Dimensions in Figures

All dimensions shown with no units specified are in **mm**.

1.2.1 Copyright And Disclaimer

Disclaimer

All information and instructions in this manual have been provided under due consideration of applicable guidelines and regulations, the current and known state of the art, as well as our many years of in-house experience. Woodward assumes no liability for any damages due to:

- Failure to comply with the instructions in this manual
- Improper use / misuse
- Willful operation by non-authorized persons
- Unauthorized conversions or non-approved technical modifications
- Use of non-approved spare parts

The originator is solely liable for the full extent for damages caused by such conduct. The obligations agreed-upon in the delivery contract, the general terms and conditions, the manufacturer’s delivery conditions, and the statutory regulations valid at the time the contract was concluded, apply.

Copyright

1.2.2 Service And Warranty

Our Customer Service is available for technical information.

For regional support, please refer to: ⟹ http://www.woodward.com/Support_pgd.aspx.

In addition, our employees are constantly interested in new information and experiences that arise from usage and could be valuable for the improvement of our products.

Warranty terms

Please enquire about the terms of warranty from your nearest Woodward representative.

For our contact search webpage please go to: ⟹ http://www.woodward.com/Directory.aspx

1.3 Safety

NOTICE!

Damage due to improper use!

Improper use of the device may cause damage to the device as well as connected components.

Improper use includes, but is not limited to:

- Storage, transport, and operation outside the specified conditions.

1.3.1 Personnel

WARNING!

Hazards due to insufficiently qualified personnel!

If unqualified personnel perform work on or with the control unit hazards may arise which can cause serious injury and substantial damage to property.

- Therefore, all work must only be carried out by appropriately qualified personnel.

This manual specifies the personnel qualifications required for the different areas of work, listed below:

Personnel:

- **Qualified electrician**

  The qualified electrician is able to execute tasks on electrical equipment and independently detect and avoid any possible dangers due to his training, expertise and experience, as well as knowledge of all applicable regulations.

The qualified electrician has been specially trained for the work environment in which he is active and is familiar with all relevant standards and regulations.

- **User**

  The user operates the device within the limits of its intended use, without additional previous knowledge but according to the instructions and safety notes in this manual.

The workforce must only consist of persons who can be expected to carry out their work reliably. Persons with impaired reactions due to, for example, the consumption of drugs, alcohol, or medication are prohibited.

When selecting personnel, the age-related and occupation-related regulations governing the usage location must be observed.

1.3.2 General Safety Notes

Electrical hazards

DANGER!

Life-threatening hazard from electric shock!

There is an imminent life-threatening hazard from electric shocks from live parts. Damage to insulation or to specific components can pose a life-threatening hazard.

- Only a qualified electrician should perform work on the electrical equipment.
- Immediately switch off the power supply and have it repaired if there is damage to the insulation.
- Before beginning work at live parts of electrical systems and resources, cut the electricity and ensure it remains off for the duration of the work. Comply with the five safety rules in the process:
  - cut electricity;
  - safeguard against restart;
  - ensure electricity is not flowing;
  - earth and short-circuit; and
  - cover or shield neighboring live parts.
- Never bypass a fuse or render it inoperable. Always use the correct amperage when changing a fuse.
- Keep moisture away from live parts. Moisture can cause short circuits.

Prime mover safety

WARNING!

Hazards due to insufficient prime mover protection

The engine, turbine, or other type of prime mover should be equipped with an overspeed (over-temperature, or over-pressure, where applicable) shutdown device(s), that operates totally independently of the prime mover control device(s) to protect against runaway or damage to the engine, turbine, or other type of prime mover with possible personal injury or loss of life should the mechanical-hydraulic governor(s) or electric control(s), the actuator(s), fuel control(s), the driving mechanism(s), the linkage(s), or the controlled device(s) fail.

Modifications

WARNING!

Hazards due to unauthorized modifications

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment.

Any unauthorized modifications:

- constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage
- invalidate product certifications or listings.

Use of batteries/alternators

NOTICE!

Damage to the control system due to improper handling

Disconnecting a battery from a control system that uses an alternator or battery-charging device whilst the charging device is still connected causes damage to the control system.

- Make sure the charging device is turned off before disconnecting the battery from the system.

2 System Overview

This chapter provides an overview of the remote panel unit and its use in remote control applications.

Sample application setup

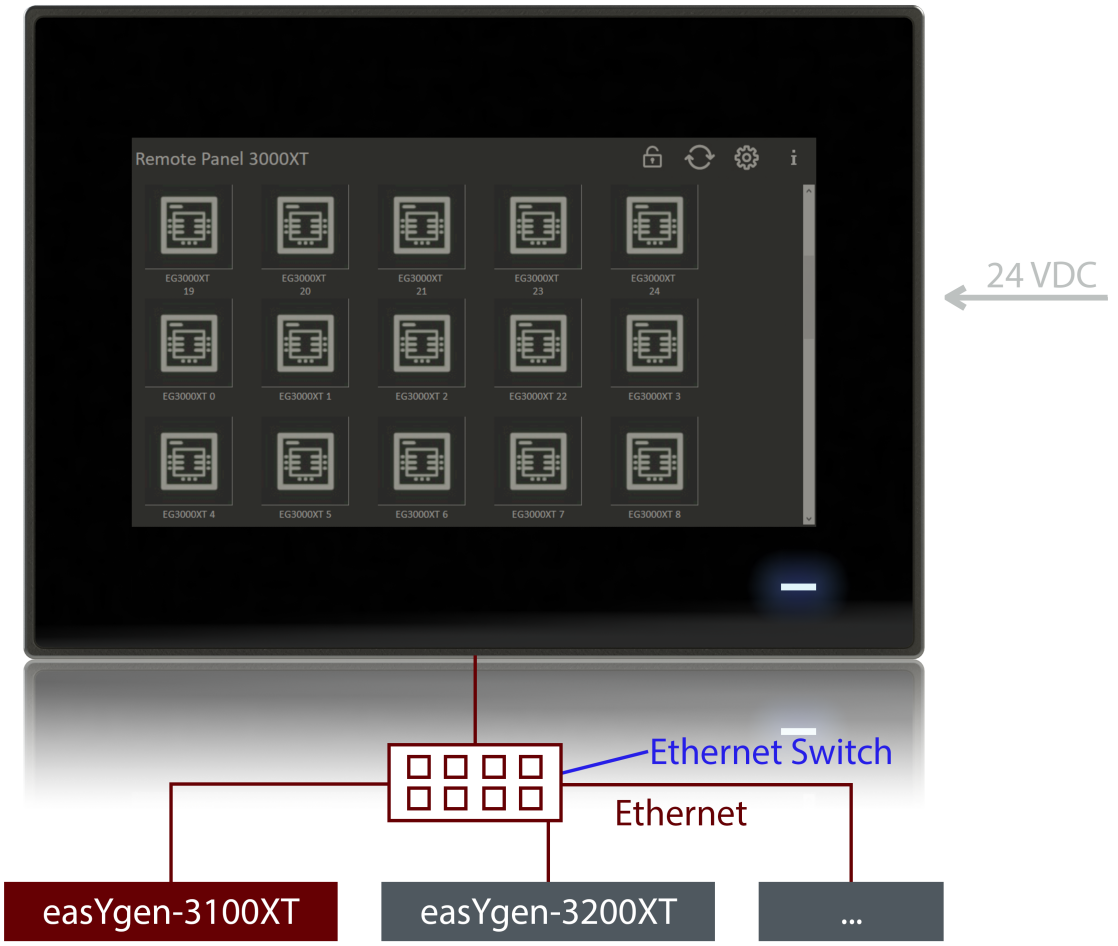


Fig. 2: Sample application setup

The RP-3000XT scans and shows multiple easYgen-3000XT or LS-6XT controls in the network, so a user can select the desired device, but it connects to only **one** device at a time.

A typical application for the remote panel is to control back-panel mounted easYgen-XT or LS-6XT devices.

- In this case, the RP-3000XT provides control from the front panel with considerably reduced wiring effort.
- The high-voltage connections are located safely on the back panel at the easYgen-3000XT or LS-6XT.

Supported devices

All easYgen-3000XT genset controls and all LS-6XT are supported by the RP-3000XT remote panel.

2.1 Display And Status Indicators

RP-3000XT display

Fig. 3: Display

The display (↳ Fig. 3) as part of the RP-3000XT is used for direct access to status information and configuration.

The touch screen of the Remote Panel XT allows to push the blue buttons directly at the display while easYgen-XT devices work with soft keys (display beside the button).

Status Indicator

At the lower right corner of the Remote Panel XT there is a LED bar with two states:

- Illuminated (blue): Power ON, device is working

- NOT illuminated: Power OFF or fatal device error

2.2 Hardware Interfaces (Terminals)

The RP-3000XT provides the following terminals -- only two of them, marked green, are used for remote panel. They are allocated as follows:

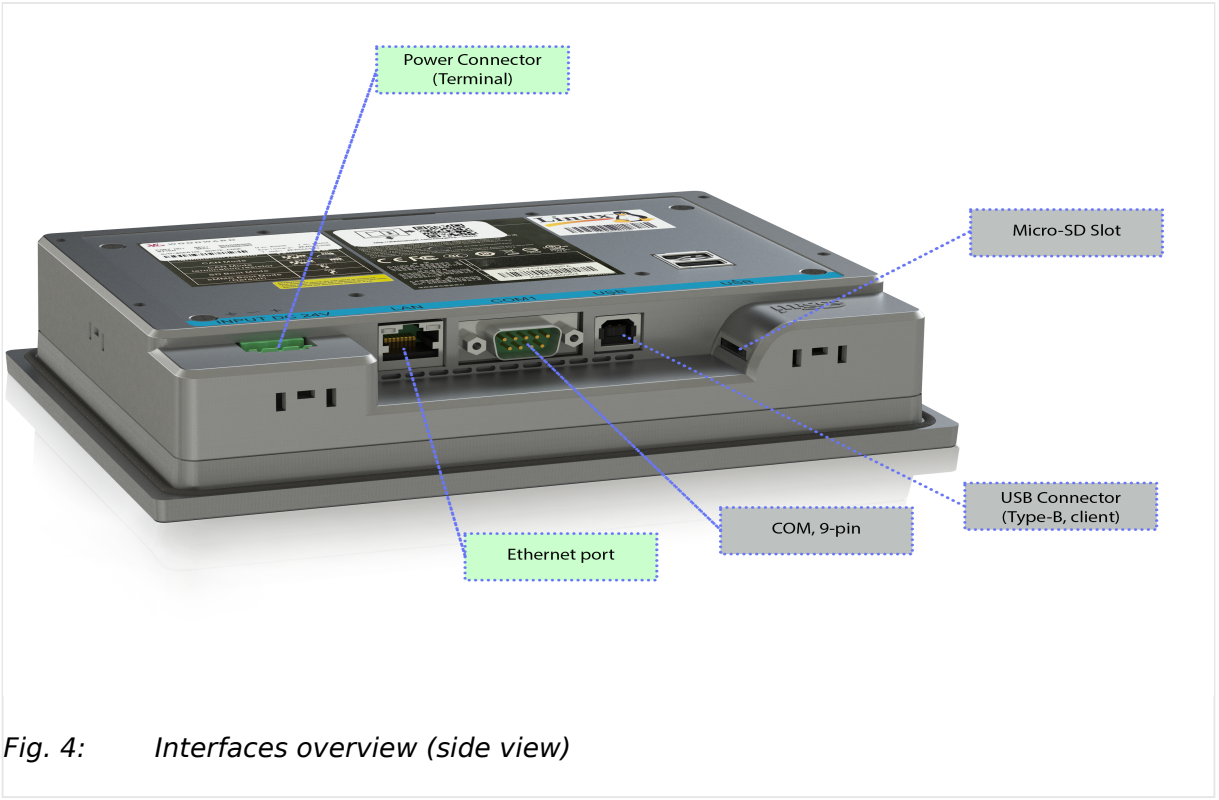


Fig. 4: Interfaces overview (side view)

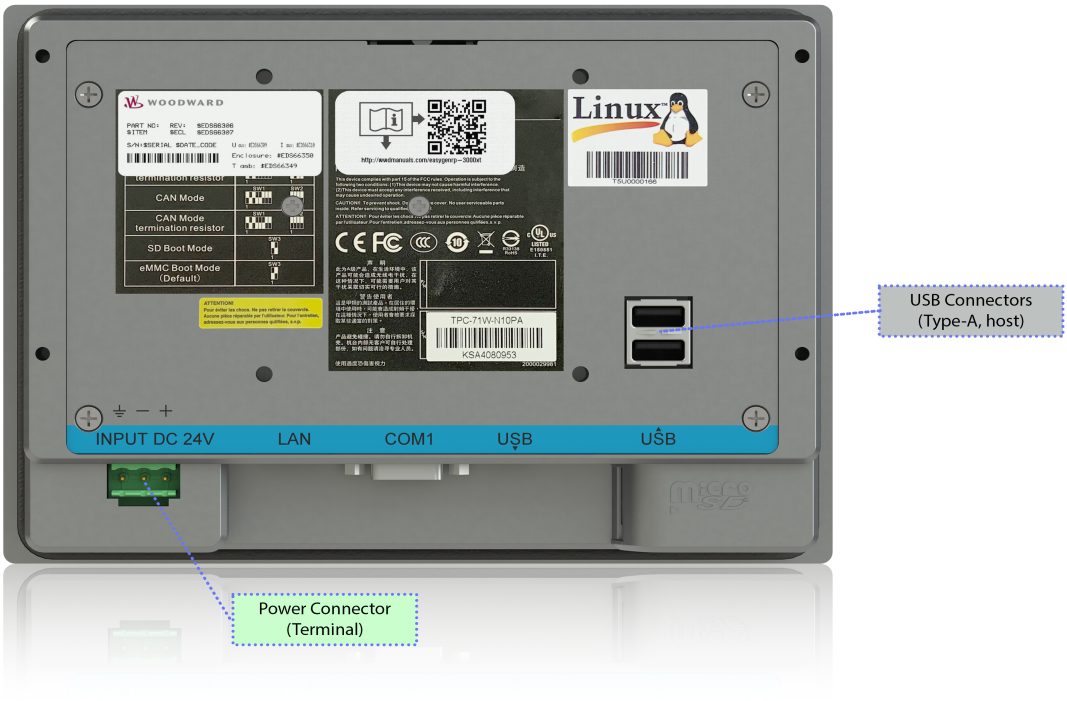


Fig. 5: Interface overview (rear view)

Restricted use of interfaces

For use with easYgen-3000XT or LS-6XT devices only two terminals are used:

- Power supply
- ETHERNET port

3 Installation

3.1 Mount Unit

Mount the unit using the clamp fasteners (“3.1.1 Clamp Fastener Installation”).

- Don't drill holes if you want to use the clamp fasteners. If the holes are drilled into the panel, the clamp fasteners cannot be used anymore.
- In order to ensure the protection of IP 66, fasten the unit with adequate care.

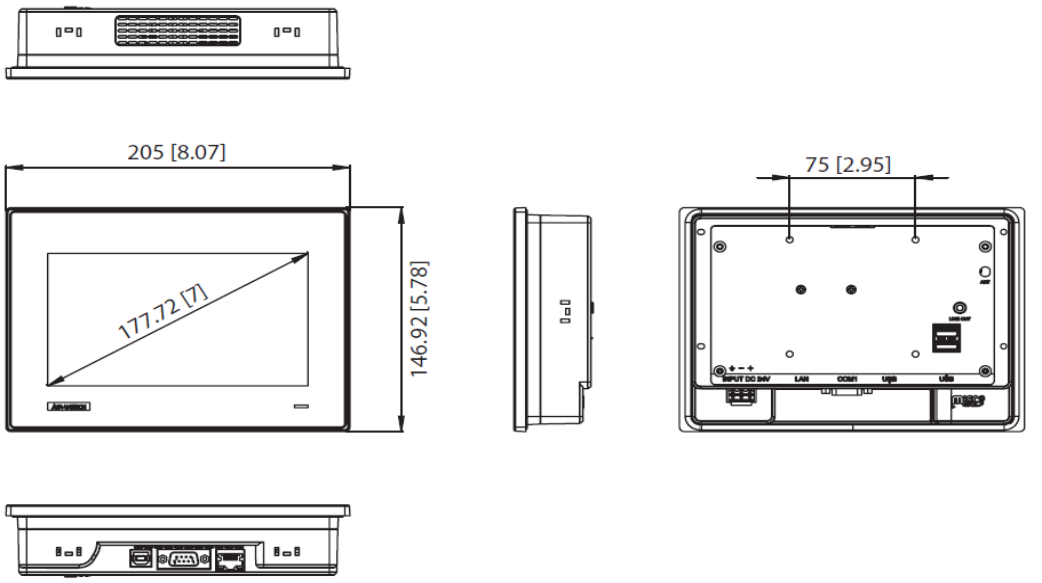


Fig. 6: Dimensions

Panel cutout

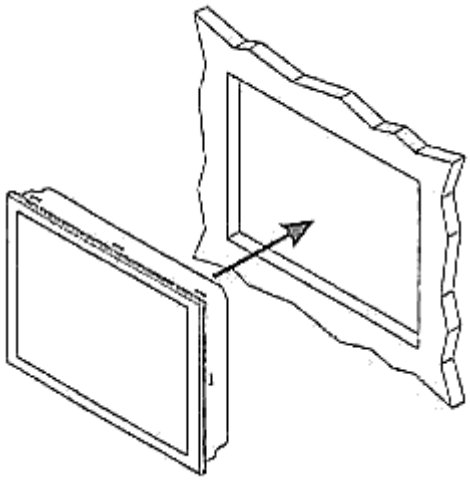


Fig. 7: Cutout schematic

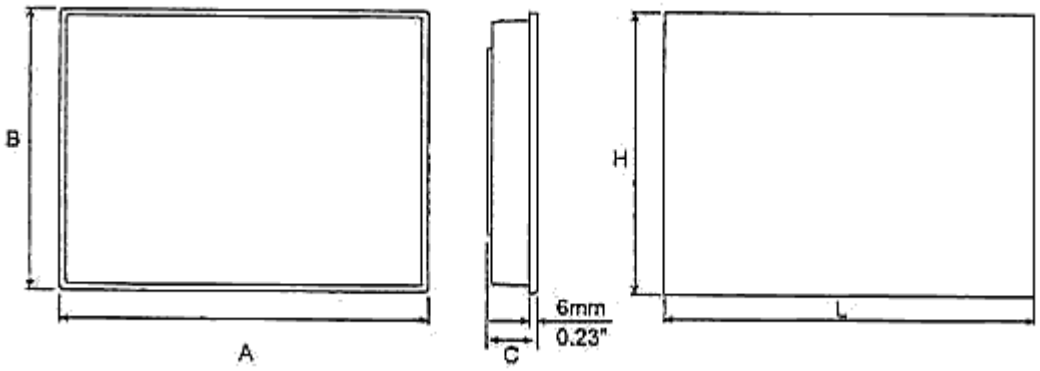


Fig. 8: Dimension and cut out

Measure	Description		
B	Height	Total height	146.9 mm
H		**Panel cutout height**	**138.5 mm**
A	Width	Total width	205 mm
L		**Panel cutout width**	**192 mm**
C	Depth	Total depth	46 mm

The maximum permissible corner radius is 5 mm.

3.1.1 Clamp Fastener Installation

⚙

> For installation into a door panel with the fastening clamps, proceed as follows:

1. ▷ Cut out the panel according to the dimensions in Fig. 7.

Don't drill holes if you want to use the clamp fasteners. If holes are drilled into the panel, the clamp fasteners cannot be used anymore!

2. ▷ Loosen the wire connection terminal screws on the back of the unit and remove the wire connection terminal strip if required.

3. ▷ Insert the six clamping screws into the clamp inserts until they are almost flush. Do not completely insert the screws into the clamp inserts.

4. ▷ Insert the unit into the panel cutout. Verify that the unit fits correctly in the cutout. If the panel cutout is not big enough, enlarge it accordingly.

5. ▷

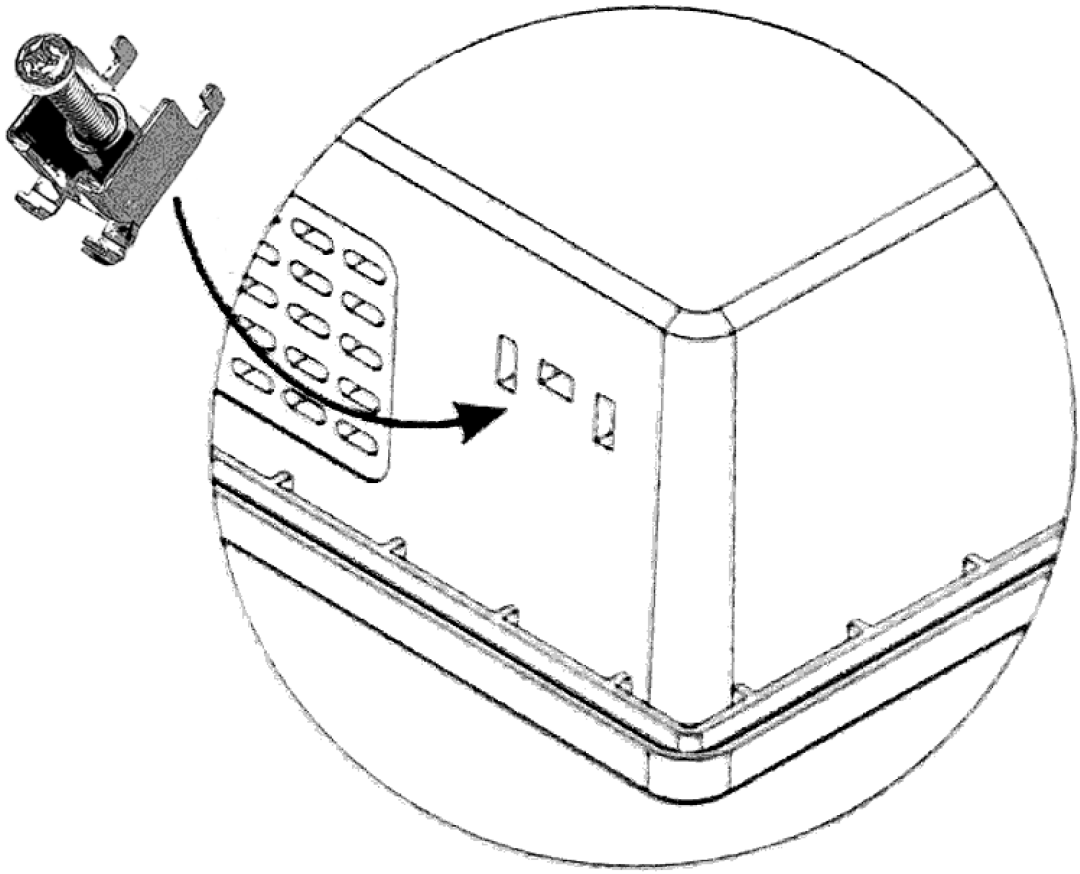


Fig. 9: mount

Insert the noses of the insert into the slots of the housing. Do it for all six clamp fasteners on all sides of the device.

6. ▷ Tighten the clamping screws until the control unit is secured to the control panel. Over tightening of these screws may result in the clamp inserts or the housing breaking.
7. ▷ Re-attach the wire connection terminal strip and secure them.

3.2 Setup Connections

3.2.1 Terminal Allocation

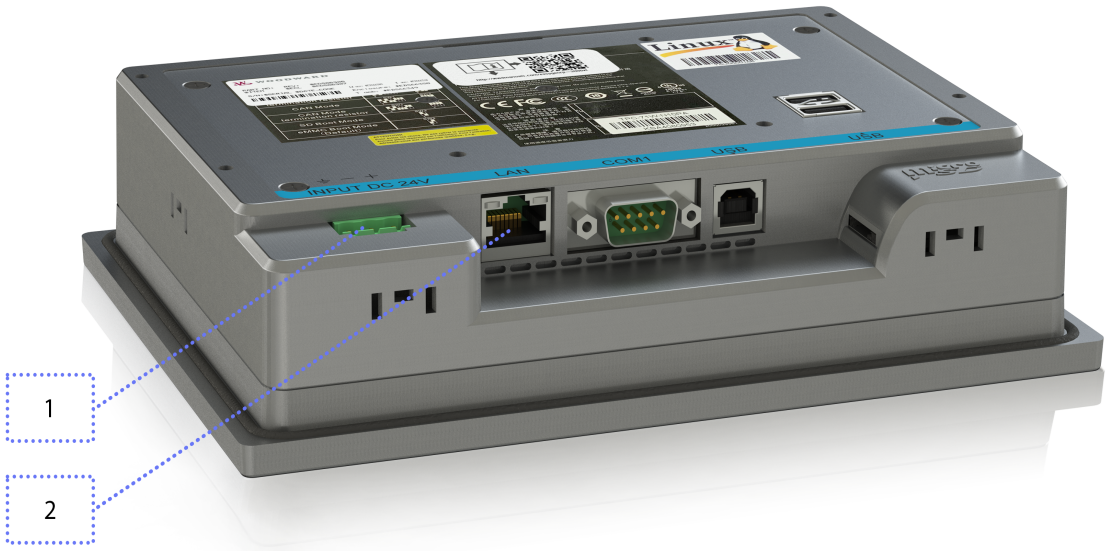


Fig. 10: Side View: Used Interfaces

Fig. 11: Rear View: Used Interfaces

1 Power supply

2 ETHERNET port

3.2.2 Power Supply

General notes

Terminal 1: Low voltage / Limited Energy power source. See drawing “3.2.1 Terminal Allocation”.

Schematic and terminals

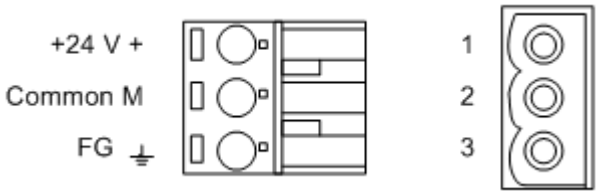


Fig. 12: Power supply - wiring

Terminal		Description	A_{max}
1	24 V	+24V_{DC} +/- 20%	2.5 mm²
2	0 V	0 V_{DC} (Common M)	2.5 mm²
3	ground	protective earth PE (FG)	2.5 mm²

Table 1: Power supply - terminal assignment

Wire sizes

Field wiring shall be made with use of cables which have temperature rating not less than 90 °C.

AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²
30	0.05	21	0.38	14	2.5	4	25	3/0	95	600MCM	300
28	0.08	20	0.5	12	4	2	35	4/0	120	750MCM	400
26	0.14	18	0.75	10	6	1	50	300MCM	150	1000MCM	500
24	0.25	17	1.0	8	10	1/0	55	350MCM	185		
22	0.34	16	1.5	6	16	2/0	70	500MCM	240		

Table 2: Conversion chart - wire sizes

3.2.3 ETHERNET Interface

General notes

The following chapter describes some ETHERNET network issues that are essential to ensure that the system works fine connecting the RP-3000XT and the easYgen-3000XT Series candidate.

The RP-3000XT displays the IP address and the device name of the available devices.

Woodward recommends to use IP addresses that allow to identify the devices easily e.g., ... .012 for the second easYgen-XT in segment one.

Avoid electrostatic discharge!

Avoid electrostatic discharge during Ethernet cable connection to the unit.

Visualization

Two LEDs (green and yellow) at the RJ45 connector indicate communication status as well known by the standard.

- The green LED indicates the link activity: blinking during data transmission.
- The yellow LED indicates the link (speed) status:
  - 10MB – LED switched-OFF
  - 100MB – LED switched-ON

General notes

Ethernet category 5 (CAT 5) cable is required with plug RJ45. The chosen switch shall support a transmission speed of 10/100 Mb/s with a network segment expansion capability of 100 m.

Cable length / distance

The maximum length from connection to connection is 100 m. Some third party suppliers offer technology to expand the connection.

Topology

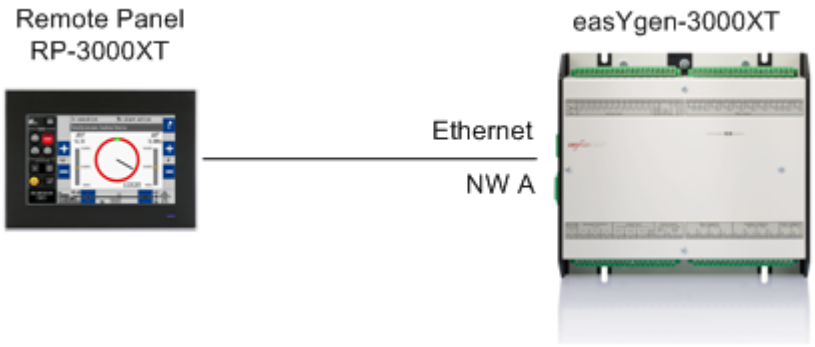


Fig. 13: Application Example: Simple constellation with one easYgen-3000XT and one RP-3000XT

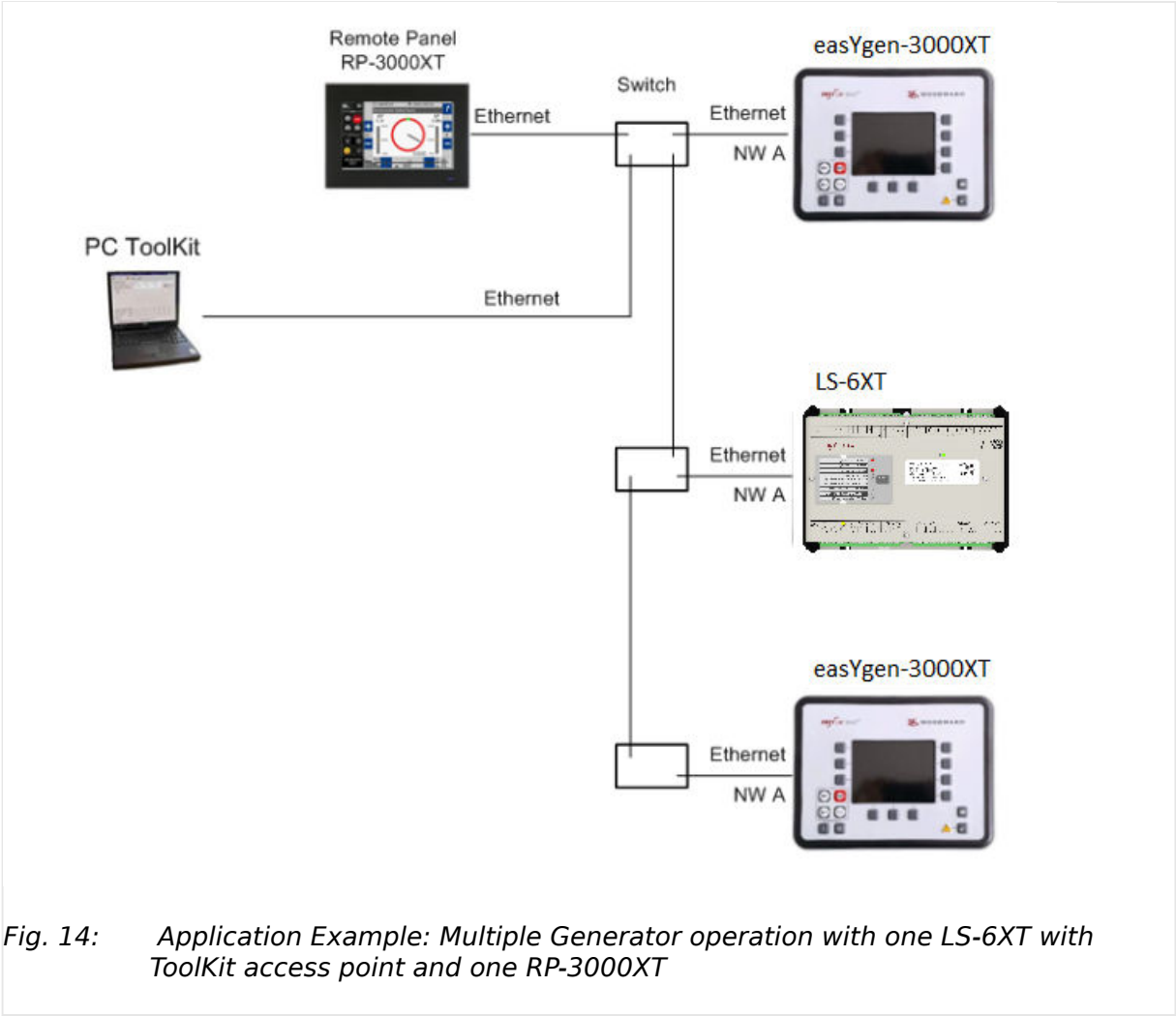


Fig. 14: Application Example: Multiple Generator operation with one LS-6XT with ToolKit access point and one RP-3000XT

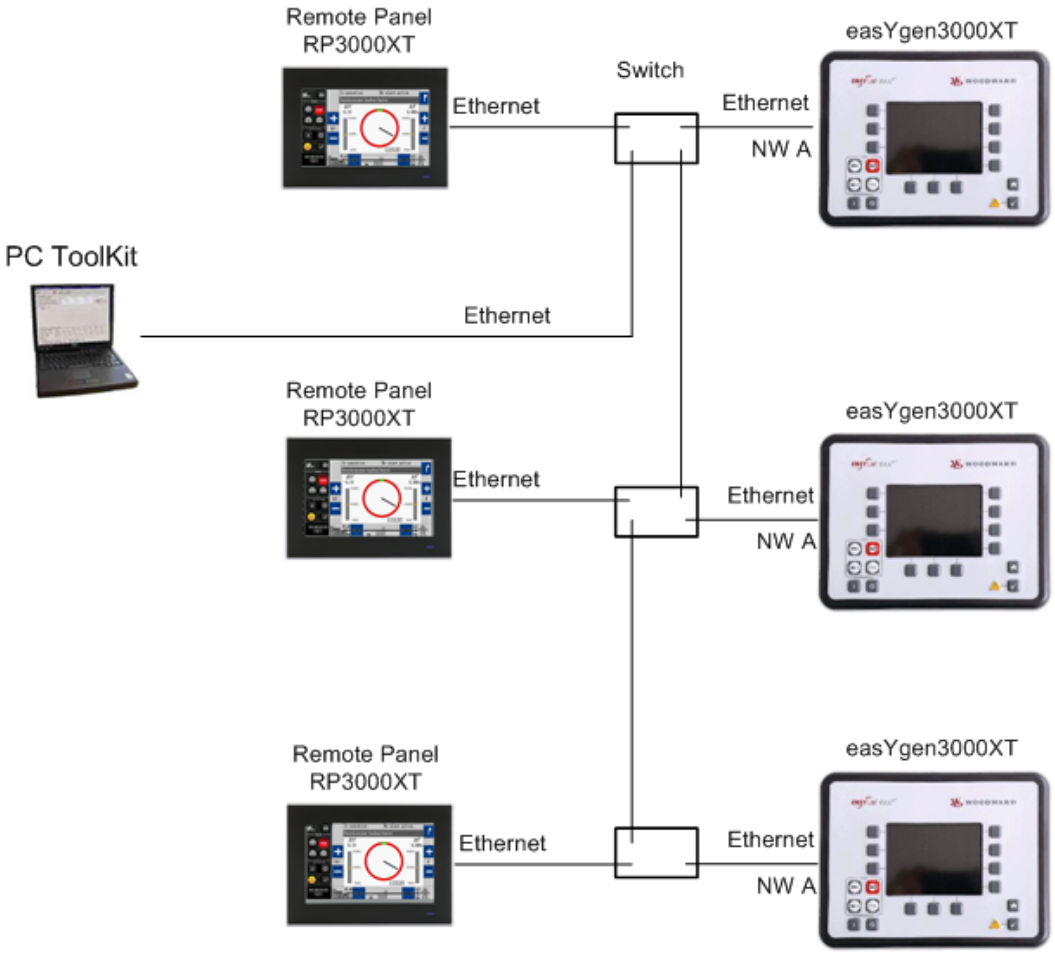


Fig. 15: Application Example: Multiple Generator operation with ToolKit access point and several RP-3000XT

Connection/Connectivity

The Ethernet Network A enables connectivity of several genset controls and several remote panels.

The remote control always is a 1:1 connection of one RP-3000XT with one (selected) easYgen-3000XT!

Troubleshooting

Check first the power supply of the switches.

Check the IP addresses of the single devices. See chapter “3.2.3 ETHERNET Interface”for details.

Bus shielding

This is usually covered by the cable assembly, like the CAT 5 cable.

Troubleshooting

Woodward recommends the use of shielded twisted-pair cables for the Ethernet bus.

4 Setup (1st Time Operation)

Remote Panel RP-3000XT Application comes with three main screens:

- MULTICAST
- SETTINGS
- BASE

There are just a few and close to self-explaining steps to connect and control remotely

- empower devices
- select easYgen to connect to
- use RP-3000XT touch screen like easYgen HMI

(One time) Network settings are easy and fully supported by the RP-3000XT application software.

Pre-Conditions

- The Remote Panel is connected over Ethernet with the easYgen-3000XT network A
- Both devices
  - are powered up

    and
  - have booted

4.1 Find IP Address To Connect To

Find easYgen-XT IP address

The IP address and range of the easYgen-XT device to be remotely controlled must be known or figured out.

Navigate on the easYgen-XT HMI or ToolKit to the visualization screen [Next Page / Diagnostic / Interfaces / Ethernet / Ethernet A]. Here you can see the current active IP address of the easYgen-XT device and the according subnet mask:

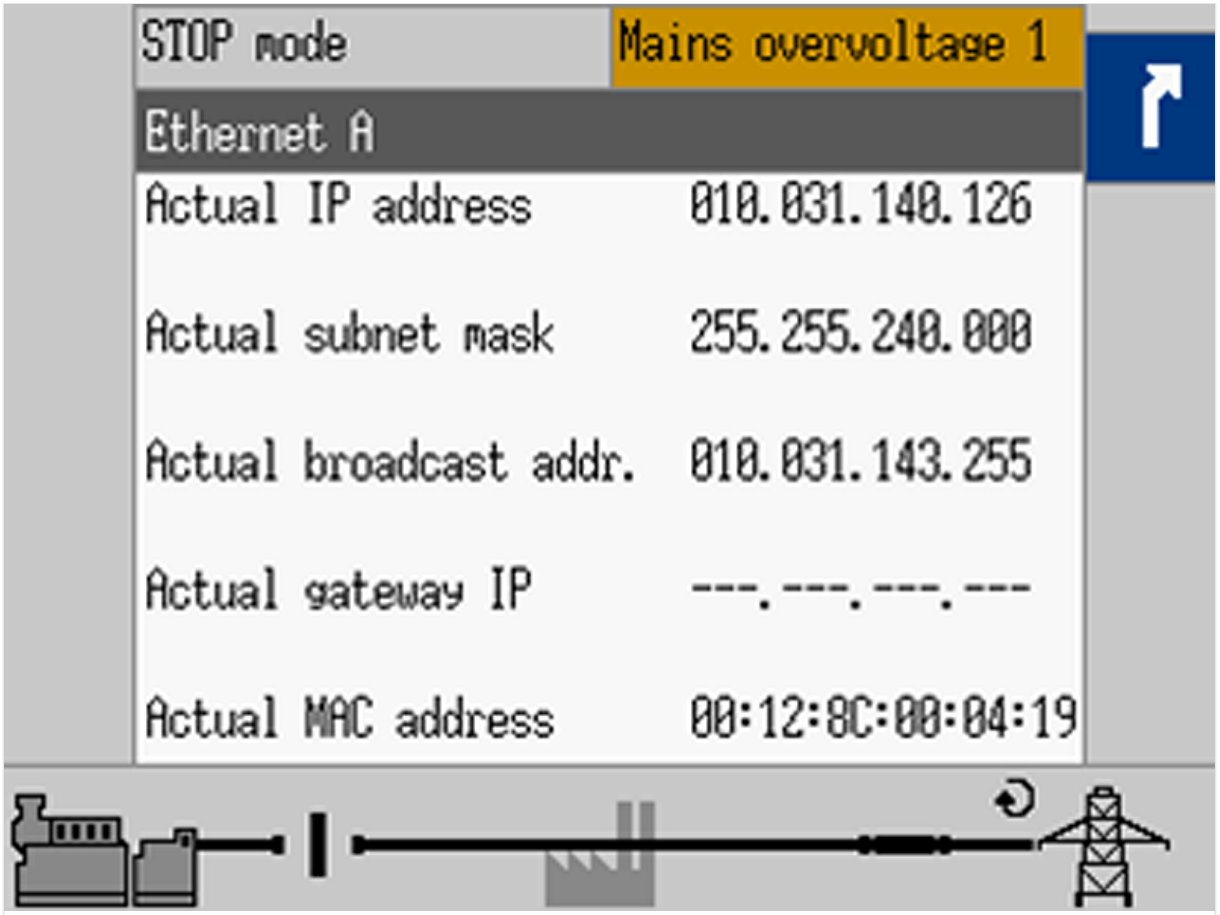


Fig. 16: easYgen-3000XT HMI: Ethernet A info

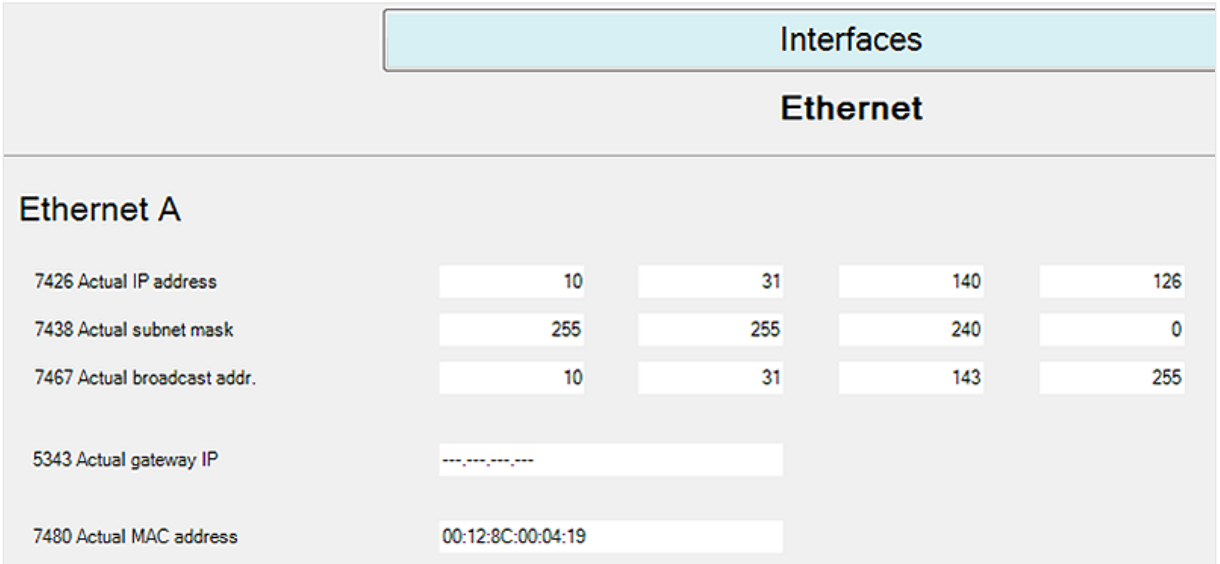


Fig. 17: ToolKit of easYgen-3000XT: Ethernet A settings

Both screens (HMI and ToolKit) show the same easYgen-3000XT's current IP address in Ethernet A network:

10.31.140.126 with subnet mask 255.255.240.000.

Please note the IP address of the easYgen-XT device that has to be remotely controlled. Use this info later on for subnet mask alignment and to avoid using the same IP address twice.

The **IP address of the Remote Panel RP-3000XT must be different** but in the same network (subnet)!

The description in this chapter applies in a similar way also to other RP3000XT capable devices, like LS-6XT.

4.2 Setup Ethernet Network Connection

Auto setup is running but doesn't connect

The RP-3000XT comes with auto setup procedure:

- With power ON the operating system starts and automatically runs the Woodward Remote Panel software
- The IP list of all connected devices in the Ethernet network will be collected
- The MULTICAST screen will be opened: see below

  If auto-connection is selected this count-down will start

4.2.1 The MULTICAST Screen

... to select a device to connect to

Fig. 18: Device MULTICAST screen

1 "Lock for cleaning" icon: Disables any input from touch panel for 15 seconds. A count down screen is displayed during lock time.

2 "Refresh" icon: Collecting the current network status. The device will remove all scanned devices from the screen and will start scanning again for the "available" devices.

3 "Settings" icon: Opens the SETTINGS screen.

4 "Information" icon: This will activate a popup with information about software revision and build number and LINUX operating system version.

5 Device icon and (alternating) name/IP address: Selected device is visualized by color.

6 As the screen can hold only 15 devices at a time, a scroll bar will appear when there are more, allowing to navigate to each device. **Tip**: Click under/over the scroll bar to jump screens.

This start/main screen is mainly used to **select** a device by pushing the according icon. This opens the BASE screen for remote control and additionally allows to open the SETTINGS screen e.g., for Ethernet configuration.

Each device in the network is represented by an icon with alternating name/IP Address below the icon (long names are displayed in a loop).

- GREEN icon: The latest used device (the device that was connected last time)
- WHITE icon: All other devices in the network

Connect RP-3000XT and easYgen-3000XT or LS-6XT

⚙

1. ▷ If the easYgen-3000XT to be controlled remotely is visualized in the MULTICAST screen: touch it's icon ("5", see ↳ "... to select a device to connect to") and wait for connection.

▶ Connection will be established via Ethernet and BASE screen will appear with the current status information of the connected easYgen-3000XT.
Continue with ↳ "5 Operation"

2. ▷ If the easYgen-3000XT you want to control remotely is NOT visualized in the Device MULTICAST screen:
touch settings icon (3, see ↳ "... to select a device to connect to")

▶ OPTIONS screen will appear to change network settings of the RP-3000XT to connect to the network of the easYgen-3000XT you look for

3. ▷ Continue with the next chapter ↳ "4.2.2 The SETTINGS Screen"

4.2.2 The SETTINGS Screen

The RP-3000XT must be in the same network as the devices for remote control. So it has to be configured for the same subnet mask and an IP address of this network. The IP address must be different from any other used in this address range.

⚙

1. ▷ Open the SETTINGS screen with a push of the settings icon 

▶ SETTINGS screen appears

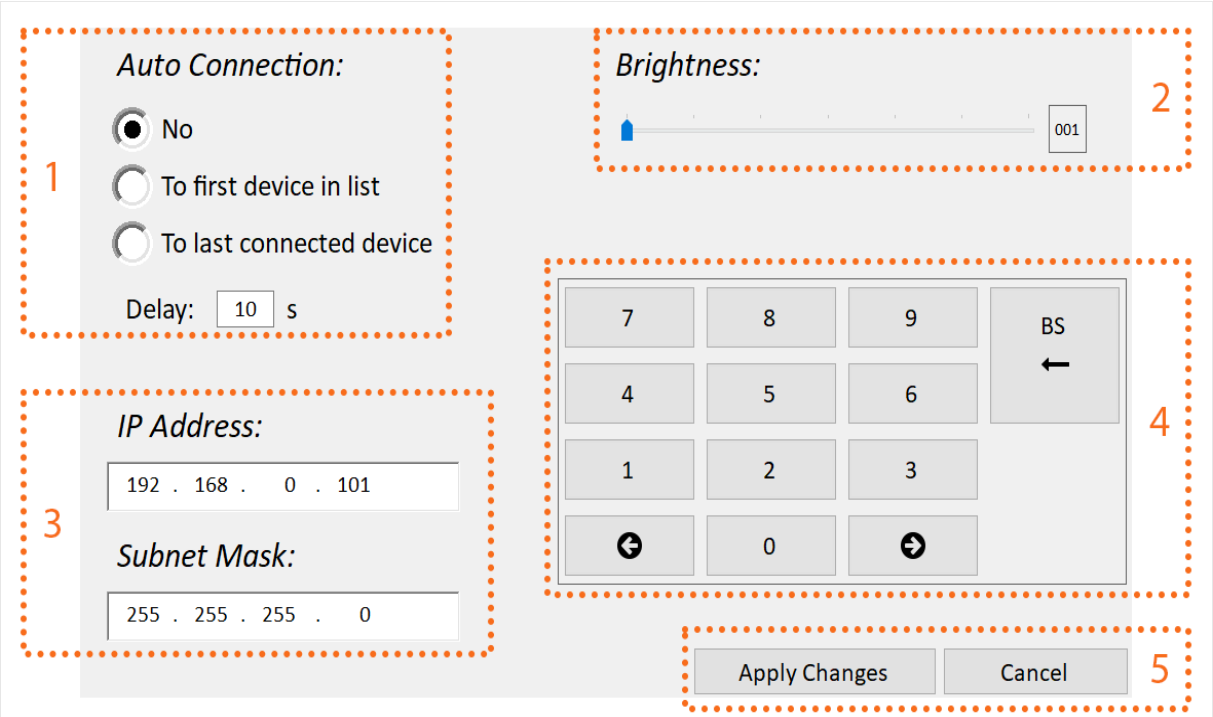


Fig. 19: RP-3000XT SETTINGS screen

1	Auto re-connect settings. Also, Delay(s) defines the time RP-3000XT is waiting before auto re-connecting to the selected device
2	Brightness status and settings icons to reduce / increase brightness
3	IP address and subnet mask of the RP3000. By selecting these and using the key pad in group 4, these values can be changed.
4	keypad to enter/navigate when inputting IP addresses or delay time. The arrows allow to jump between IP and subnet fields, the BS-arrow is a backspace function to delete an entered digit. If the IP Adress or subnetmask is invalid you will see a "!" after the line which is wrong and the button "Apply Changes" will be ignored.
5	"these two buttons allow to accept or cancel made settings. If accepted, the settings are applied immediately. After pressing one of these buttons, and the system will jump into the multicast screen.

In this example the RP-3000XT is configured to IP address 192.168.000.101 within the same subnet 255.255.255.000.

Auto-Connection pre-settings

The »CONNECTION« area 1 of the drawing Chapter 4.2.2 give access to the auto-connection pre-settings:

The three check boxes on the left allow to select one of three processes for auto-start.

- »No«: Do not automatically reconnect to a device after a connection was interrupted.
- »to first device in list«: Connect automatically to the device that is at the first position in the device overview of the MULTICAST screen. The list is sorted by the name of the devices.

- »to last connected device«: Connect automatically to the device that has been used before (before connection was interrupted)

»Delay«: This defines the time before the auto-connection is established. It is set to 10 s per default, but adjustable from 1 to 120 seconds.

A minimum delay time is needed (before BASE windows opens automatically) to select another device or to open the settings screen.

The remaining time before auto-connecting is displayed at the bottom line.

IP address of the RP-3000XT

CAUTION!

Avoid using the same IP address twice!

By mistake it is possible to assign the same IP address for Remote Panel RP-3000XT same as configured for the easYgen-3000XT or LS-6.

In this case the last configured device (RP-3000XT) will work properly but the so far configured device (easYgen-XT) will be invisible on the Ethernet: **Load Share and ToolKit do not work on this device!** ... and cannot be found for remote connection.

Solution:

- Apply again properly IP addresses for devices A and B

  or

- reset easYgen-XT (power cycle)

Network mismatch using the same IP address twice with other devices can be handled similarly.

CAUTION!

RP3000-XT have to be connected to network when setting IP address

Changing IP address and network mask is only accepted when the device is connected to a network alraedy.

Device found in network overview now

Check, if the RP-3000XT has recognized the easYgen-3000XT or LS-6XT:

The RP-3000XT should indicate the easYgen-3000XT or LS-6XT with an icon and the respectively IP-Address alternating with the device name on the MULTICAST Screen. Auto-connect count down will start if selected.

Waiting or pushing the icon, the easYgen-3000XT or LS-6 HMI will appear.

Multiple Genset applications

all devices, the RP-3000XT recognizes, are visible in the MULTICAST screen. If there are more than 15, a scroll bar appears to navigate to them.

Recommendation for multiple genset applications: Adjust the IP-Address following one relevant numbering scheme of your application e.g., the generator numbers. That makes the navigation and choosing of a genset control afterwards easier.

With pushing the icon, the easYgen-3000XT HMI should appear as part of the BASE screen.

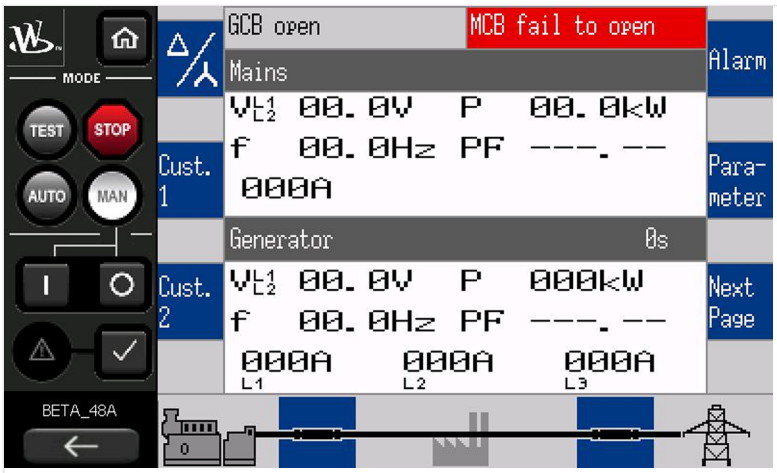


Fig. 20: BASE screen of easYgen-XT with name "BETA_48A"

5 Operation

General notes

DANGER!

Please be aware that the remote settings and requests are transferred immediately to the genset - there is no prepare-before-send step in between!

The operation of the RP-3000XT remote panel is similar to the operation of the easYgen-3000XT Series genset controllers.

- For detailed information about the operation with the RP-3000XT please refer to the chapter "Operation" of the easYgen-3000XT or LS-6XT Series manual.
- easYgen-3000XT front panel buttons are re-arranged and at the left hand side of the RP-3000XT BASE screen. Similarly, LS-6XT shows additional front panel buttons at the left hand side
- The easYgen-3000XT or LS-6XT soft keys "moved directly into" the blue backgrounded softkey area of the HMI/screen (RP-3000XT BASE screen)

5.1 Access and Level of Control

General notes

The display of the RP-3000XT shows the same content like the easYgen-3000XT Series genset controllers HMI. The difference between these two devices is, that the RP-3000XT remotely controls the operation of the easYgen-3000XT Series.

The level of control is not depending on the RP-3000XT device but on the password level. RP-3000XT can access all password levels of the easYgen-3000XT. This is also correct for the LS-6XT. The LS-6XT provides a similar HMI like the easYgen-3000XT series.

5.2 The BASE Screen - The Remote Control Panel

This screen is shown after successful connection to an easYgen-3000XT device.

It offers three areas of information and communication/control:

- The right part of the screen emulates the easYgen-3000XT HMI screen. It is cyclically updated.
  - Push buttons now work by a touch on the blue area instead of the soft key buttons.
- The left part of the screen emulates all control buttons at the front panel of an easYgen-3000XT (plastic housing) with HMI.
  - The buttons are re-arranged to fit the available space.
  - The function of the buttons is the same as on a display variant easYgen-3000XT.

- At the lower left corner of the BASE screen the Ethernet device name of the currently connected easYgen-3000XT. Pushing the arrow button switches back to the “4.2.1 The MULTICAST Screen”.

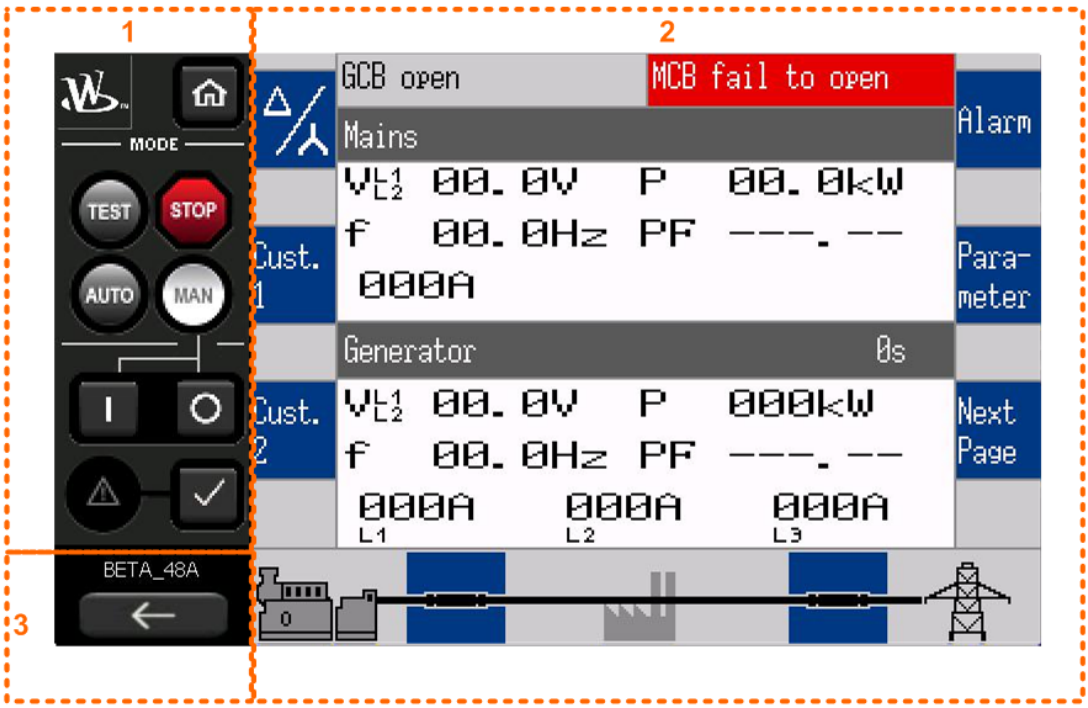


Fig. 21: BASE screen EG-3000XT - active areas

1	Buttons of the easYgen-XT front panel
2	easYgen-XT screen with soft button functionality included
3	Ethernet device name of the remotely controlled easYgen-XT and "back arrow" to open MULTICAST screen for SETTINGS changes or to select another easYgen-XT (the IP address of the device is available at MULTICAST and SETTINGS screens)

The area "2" at the right side is the HMI screen mirror of the connected easYgen-XT with "3" Ethernet device name "BETA_48A". The buttons "1" offer the same functionality as the front buttons of the connected easYgen-XT HMI/display version.

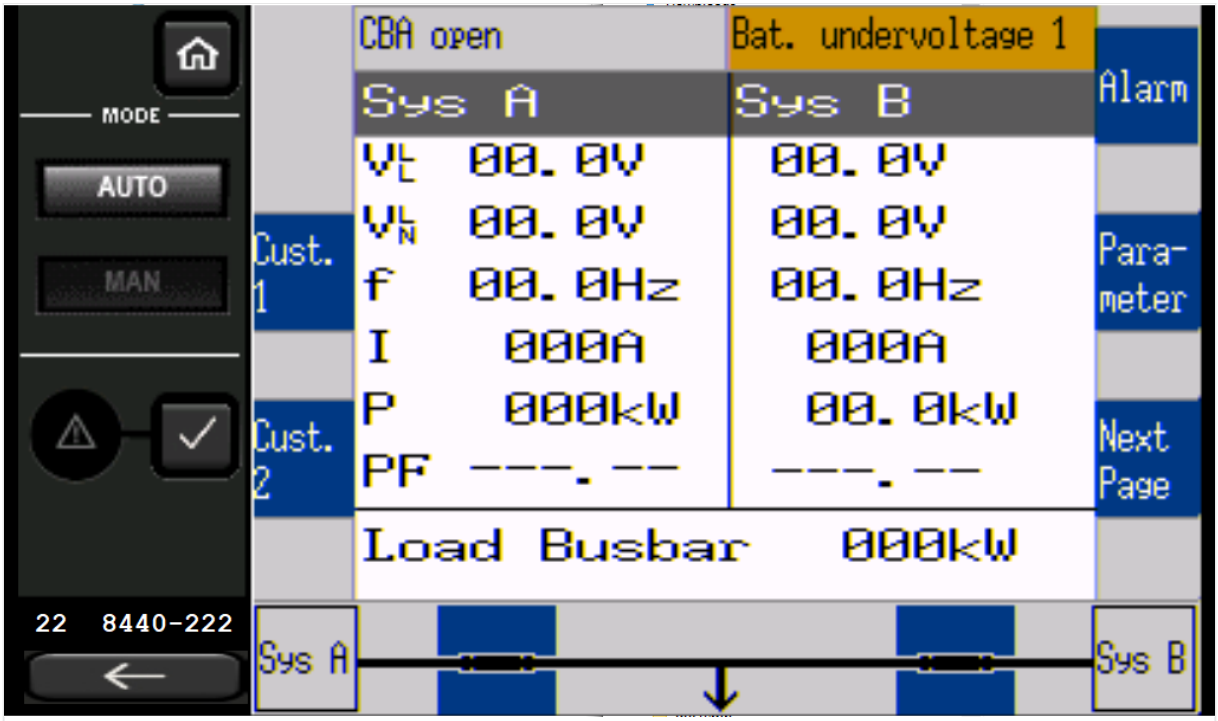


Fig. 22: BASE screen - LS-6XT

An LS-6XT shows a similar picture. The area "1" there has less buttons than the easYgen. The area "2" at the right side is the HMI screen mirror of the connected LS-6XT.

5.3 Use Cases

DANGER!

Please be aware that the remote settings and requests are transferred immediately to the genset - there is no prepare-before-send step in between!

The following list shows the use cases that are described later on in detail:

- Behaviour when connection fails
- Change to another easYgen-XT device to be remotely controlled
- Hand-over remote control (back) to the device with own HMI
- Monitor an easYgen-XT but disable changes by remote control

Behaviour when connection fails

- When the Remote panel is already connected to a EG3000XT or similar and the connection fails or the EG3000XT powers down
    - The panel will show an error. After the connection is restored, it will automatically reconnect..

- When the Remote panel is not connected to a EG3000XT or similar and the connection fails or the EG3000XT powers down
    - The panel will be in the MULTICAST screen. The multicast screen will be emtied and the device will indicate that it is scanning for devices. After the network is restored, it will start repopulating the MULTICAST screen

Change to another easYgen-XT or LS-6XT device to be remotely controlled

⚙	
>	RP-3000XT is connected to an easYgen-3000XT or LS-6XT. BASE screen enables remote control.
1. ▷	Press the arrow below device's name to open the MULTICAST screen
▶	MULTICAST screen appears and shows all connected devices - the previously connected one in green
2. ▷	**If your preferred device is listed ... :** Push the icon of the easYgen-3000XT or LS-6XT you want to connect to
▶	BASE screen appears ready for remote control. You are connected to the device you want to control remotely. END
3. ▷	**... otherwise - if your preferred device is NOT listed even after refreshing:** Check the Ethernet settings of the remote panel XT and the easYgen-XT or LS-6XT (IP address and subnet mask)
▶	The list of the devices of the current network is collected and listed.
4. ▷	**... if your preferred device is still NOT listed:** Open SETTINGS screen and check the Ethernet settings of the RP-3000XT and the easYgen-XT (IP address and subnet mask)
▶	You detect how to update network settings or - with correct network settings - need help by a network specialist
5. ▷	Change Ethernet network settings of the RP-3000XT (IP address and/or subnet mask) and accept changes.
▶	The list of the devices is collected and listed according to the changed network settings
6. ▷	**If your preferred device is listed now ... :** Push the icon of the easYgen-3000XT you want to connect to
▶	BASE screen appears ready for remote control. You are connected to the device you want to control remotely. END
7. ▷	**... otherwise:** Repeat "step 3" until you are successful or ask your network expert for support.

Hand-over remote control (back) to the easYgen-3000XT or LS-6XT with own HMI

⚙	
>	RP-3000XT is connected to an easYgen-3000XT or LS-6XT. BASE screen enables remote control.
1. ▷	Press the arrow below device's name to open the MULTICAST screen
▶	MULTICAST screen appears and shows all connected devices - the latest one in green but no one connected

2. ▷ Ensure that no »CONNECTION« check box ("...first/last device...")is selected - otherwise RP-3000XT will auto re-connect accordingly!

easYgen-3000XT or LS-6XT device control

The easYgen-3000XT or LS-6XT that has been remotely controlled runs with its settings 'til they are changed via HMI or other remote access. The RP-3000XT is ready to be connected to an easYgen-3000XT device.

Monitor an easYgen-XT but disable changes by remote control

⚙

> RP-3000XT is connected to an easYgen-3000XT or LS-6XT. BASE screen enables remote control.

1. ▷

Access level

The easYgen-3000XT comes with an password (level) management that enables monitoring and furthermore several grades of access/change rights. RP-3000XT works as remote control with one and the same functions.

Select password (level) for monitoring as described in the Technical Manual for easYgen-3000XT.

▶ Access rights are restricted for monitoring only. Password system access is still enabled as known from easYgen-3000XT.

2. ▷

Lock keypad functionality is available by a LogicsManager in the easYgen-3000XT control. For a safe and secure remote connection, this functionality can be activated post commissioning so that activation of another operating mode, changing of a parameter accidentally can be avoided.

Lock keypad of the remotely controlled device as described in the Technical Manual for easYgen-3000XT.

3. ▷

It is possible to configure the remote panel VNC connection (from the Easygen-3000XT or LS-6XT) to

- OFF (the VNC connection is fully blocked)
- Annunciator (remote panel displays the HMI but no parameter tuning possible)
- FULL (full capability as if operating the from the display)

refer to according Easygen-3000XT or LS-6XT manuals, chapter-4, "Configure Remote Panel Mode".

5.4 Personalization

It is possible to replace the power-up screen image and base screen logo by yours. Refer to application note 37929 available at woodward.com or at the QR server http://wwdmanuals.com/easygenrp-3000xt.

6 Trouble Shooting

CAUTION!

Access Hierarchy

Please be aware that an easYgen or LS-6XT can be controlled and remotely controlled via HMI and several interfaces.

To avoid (remote) access conflicts take care for undisturbed access management **on your - customers - side!**

Description	Information	Corrective Action
display "dark" but blue LED "ON"	*fatal display error*	send to Woodward service partner
blue LED "OFF"	*no power*	check power connection
	fatal device error	send to Woodward service partner
no easYgen or LS-6XT found in network	*wrong device IP address or subnet mask*	go to chapter “Connect RP-3000XT and easYgen-3000XT or LS-6XT”
	network connection failed	check connections, routers, ...
	no easYgen or LS-6XT in the same network	check easYgen's or LS-6XT network connectivity
	easYgen or LS-6XT failed to connect via Ethernet A	check easYgen's or LS-6XT's network connectivity
	IP address used twice	change one of the IP addresses
no devices displayed on MULTICAST screen, but there are devices in the network	*Ethernet network conflict*	check your network for any possible IP address conflicts or contact your network administrator
settings in remote device cannot be found or even changed	*wrong password level*	change password level. See password chapter in the easYgen or LS-6XT Technical Manual.
abnormal behavior of the remote panel software e.g., you notice an easYgen-XT or LS-6XT in the MULTICAST screen but get a message "no device found"	*some tunable changes did not take place*	power cycle the RP-3000XT

7 Technical Specifications

7.1 Technical Data

Product label

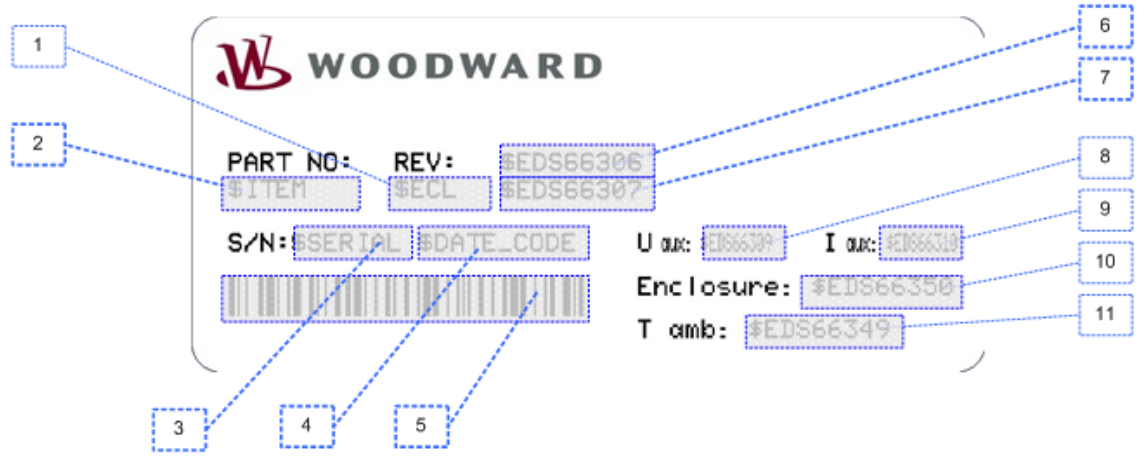


Fig. 23: Product label

1	P/N	Item number
2	REV	Item revision number
3	S/N	Serial number (numerical)
4	S/N	Date of production (year-month)
5	S/N	Serial number (barcode)
6	Type	Description (name)
7	Type	Description (type)
8 .. 11	Details	Technical data

7.1.1 Ambient Variables

Power supply	24 Vdc ±20%
Intrinsic consumption	typical 9W
Operating temperature	-20 to 60 °C (-4 to 140 °F)
Storage temperature	-30 to 70 °C (-22 to 158 °F)
Humidity	10 to 90% RH@40 °C, non-condensing

7.1.2 System Hardware

CPU	NXP™ ARM Cortex™-A9 i.MX6 Dual Core Processor
Backup Memory	FRAM 1 MB
Memory	DDR3L 1 GB on board
Storage	8GB MB eMMC on board
Power-On LED bar	blue

7.1.3 Display

Display Type	WSVGA TFT LCD
Display Size	177.8 mm (7')
Max. Resolution	1024 x 600
Max. Colors	16.7M
Luminance (cd/m^2)	400
Viewing Angle (H/V)	170/170
Backlight Life	LED; 50,000 h
Dimming	adjustable
Contrast Ratio	800:1

7.1.4 Touch Screen

Touch points	10 points
Light	Transmission Above 85%
Pencil Hardness	7H
Type	Projected capacitive (P-CAP) touch

7.1.5 Interface

Ethernet only

The other available interfaces are NOT to be USED for this application!

Ethernet interface

Ethernet bus interface (RJ45)	10/100/1000 Mbps LAN

7.1.6 Software

Operating System	Linux
Woodward Remote Panel RP-3000XT software	Auto-start software to connect to an easYgen-3000XT or LS-6XT for remote control via Ethernet ©Woodward

7.1.7 Housing

Housing type

Dimensions (W × H × D)	205 × 146.9 × 46 mm
Front cutout (W × H)	192 × 138.5 mm
Recommended locked torque (provided mounting kit)	4 inch pounds / 0.5 Nm
Weight	approx. 1.2 kg

Protection

Ingress protection	IP66 in the front with clamp fasteners
Vibration protection	Operating, random vibration 2 Grms (5 to 500 Hz)

7.1.8 Approvals

Industrial Control Equipment	UL certification
EMC test	CE, FCC Class B, BSMI
Listings	CE; BSML, CCC, UL, FCC Class A:

7.1.9 Generic Note

Accuracy	Referred to remotely controlled device

8 Glossary And List Of Abbreviations

CL	Code Level
DI	Discrete Input
DO	Discrete (Relay) Output
S/N	Serial Number
P/N	Part Number
PLC	Programmable Logic Control
N.O.	Normally Open (make) contact
N.C.	Normally Closed (break) contact
V	Voltage
I	Current
P	Real power
Q	Reactive power
S	Apparent power

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