RP-3000XT

Manual | Remote Panel

RP-3000XT

37593B

This is no translation but the original Technical Manual in English.
Designed in Germany and Poland; manufactured by OEM

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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 series controls. It is particularly useful with the back panel mounted easYgen-3100XT/3400XT, 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 up to 32 XT controls (select and access **one easYgen-3000XT 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 via Ethernet communication.

Supported devices

All easYgen-3000XT genset controls 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.

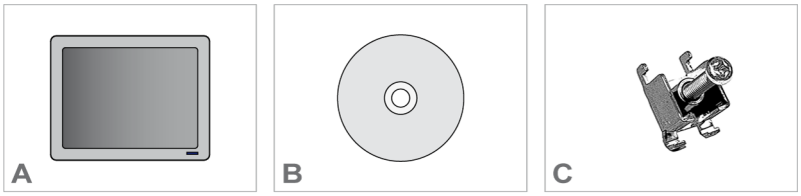

Fig. 1: Scope of delivery - schematic

A RP-3000XT remote panel
B Product CD (Manual)
C Clamp fastener installation material - 6x

Table of contents

1 General Information

1.1 About This Manual

1.1.1 Revision History

Rev.	Date	Editor	Changes
B	2017-02	GG	**Describes device implemented software version 1.2 working together with easYgen-3000XT revision 1.13 or higher.** **Software changes** ■ Screen displays more information coming from devices. – MULTICAST screen: Alternating name*/IP address. – MULTICAST screen: Displayed sequence of devices sorted by device name. – BASE screen/display mode: Device name shown instead of IP address. – BASE screen: Longer device names are moving in a loop. ■ SETTINGS screen: Selectable delay time *"Delay(s)"* 1 to 120 s. ■ **NOTE*** easYgen device name (ID 1890) is configurable with ToolKit (IDs 1989 and 1893) and used/displayed as Ethernet device name by the remote panel. **Corrections** ■ Dynamic devices list stays open in the background. ■ Faster connecting/disconnecting. ■ SETTINGS screen: Appearing faster. ■ Lock screen timer starts with "15". **Technical Manual** ■ Description of the above listed changes if relevant for the Technical Manual and screen shots updated accordingly. ■ Typo corrections and layout optimizations
A	2016-04-13	GG	**Describes device implemented software version 1.0** **Software changes** ■ Screen display is more detailed/sharper now ■ SETTINGS screen comes with – larger buttons – a check box for BEEP ON/OFF (refer to Fig. 19 for details) **Technical Manual** ■ Description of Manual relevant changes as described above e.g., screen shots updated ■ Typo corrections and layout optimizations
NEW	2016-03-22	GG	**Describes device implemented software version 1.0** **Technical Manual** ■ Release = 1st issue

1.1.2 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
	Step-by-step instructions
⇨	Results of action steps
	References to sections of these instructions and to other relevant documents
■	Listing without fixed sequence
[Buttons]	Operating elements (e.g. buttons, switches), display elements (e.g. signal lamps)
“Display”	Screen elements (e.g. buttons, programming of function keys)

Marking	Explanation
"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 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 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 to the full extent for damages caused by such conduct. The agreed upon obligations 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

1.3 Service And Warranty

By opening the device you will lose any warranty!

CAUTION!

Any unauthorized modifications or using 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 such unauthorized modifications

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

Our Customer Service is available for technical information. Please see page 2 for the contact data.

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

1.4 Safety

Remote but ...

Be aware that the remote control of genset(s) comes with all the danger, risks, and needs of the controlled devices!

The following Safety Notes are just the most important "reminders" copied from genset control manual.

1.4.1 Intended Use

The remote panel unit has been designed and constructed solely for the intended use described in this manual.

The RP-3000XT device must be used exclusively as a remote operator control panel. It must be used exclusively for engine-generator system management applications and connected to Woodward genset control unit.

- Intended use requires operation of the control unit within the specifications listed in *Chapter 7.1 "Technical Data" on page 37*.
- All permissible applications are outlined in *"Sample application setup" on page 13*.
- Intended use also includes compliance with all instructions and safety notes presented in this manual.
- Any use which exceeds or differs from the intended use shall be considered improper use.
- No claims of any kind for damage will be entertained if such claims result from improper use.

NOTICE!

Damage due to improper use!

Improper use of the remote panel unit may cause damage to the control unit as well as connected components.

Improper use includes, but is not limited to:

– Operation outside the specified operation conditions.

1.4.2 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:

- Well trained for electrical installations.
- Skilled and competent to be aware especially of the local safety regulations.
- Experienced in working on electronic measuring and control devices.
- Allowed to manage the controlled (engine/generator) system.

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.

1.4.3 General Safety Notes

Hazards by system controlled

DANGER!

Moving parts and dangerous electricity!

Be aware that the remote control of a system that is managing life dangerous engine-generator-electricity parts needs attention for the local situation!

The following safety notes cover both the device itself and basics of the overall genset system. The dedicated genset-system related safety instruction must be taken into account, too!

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.

2 System Overview

This chapter provides an overview of the remote panel unit and(!) it's use in remote control applications.

Sample application setup

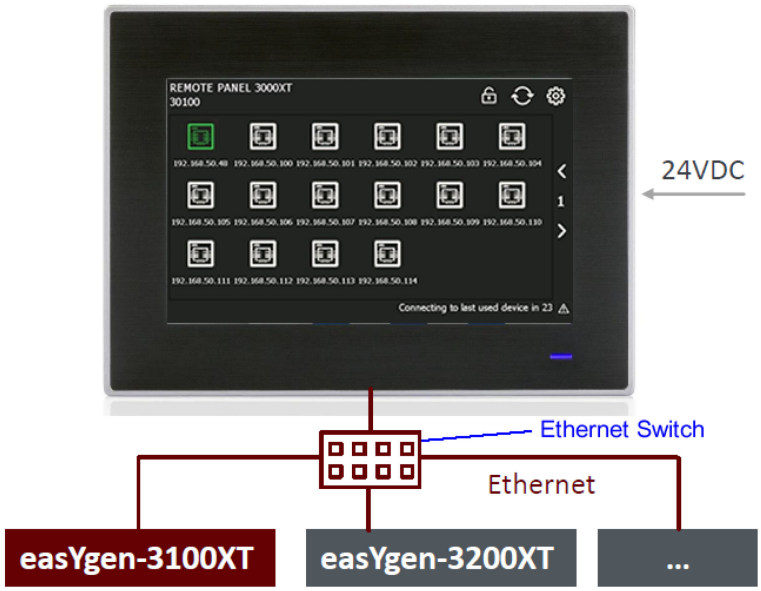

Fig. 2: Sample application setup

*The RP-3000XT scans and shows up to 32 easYgen-3000XT controls in the network, so a user can select the desired easYgen-3000XT but it connects to only **one** easYgen-3000XT at a time.*

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

Supported devices

All easYgen-3000XT genset controls 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 are used for easYgen-3000XT remote control.

General notes

The device terminals are allocated as follows:

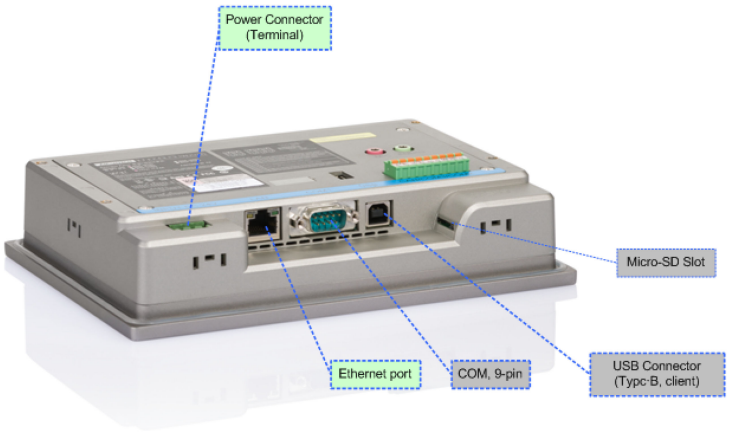

Fig. 4: Interfaces overview (desk view)

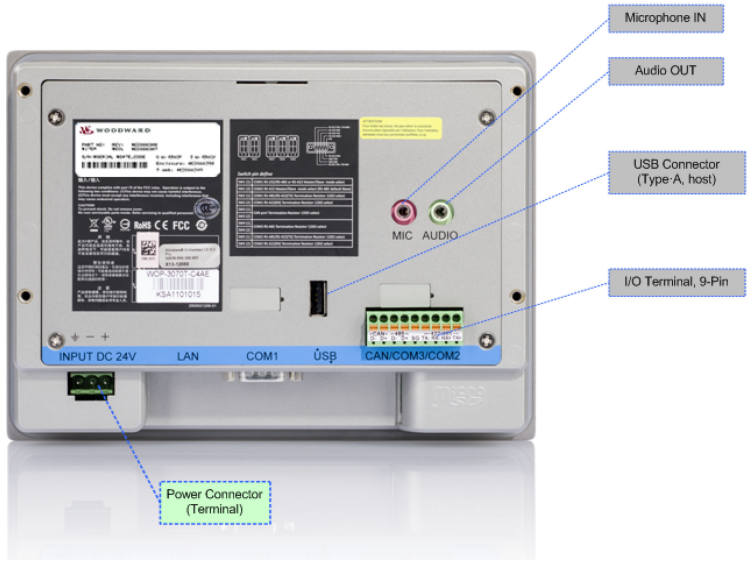

Fig. 5: Interface overview (rear view)

Restricted use of interfaces

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

- *Power supply*
- *ETHERNET port*

3 Installation

3.1 Mount Unit

Mount the unit using the clamp fasteners (*Chapter 3.1.1 "Clamp Fastener Installation" on page 18*).

- *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.*

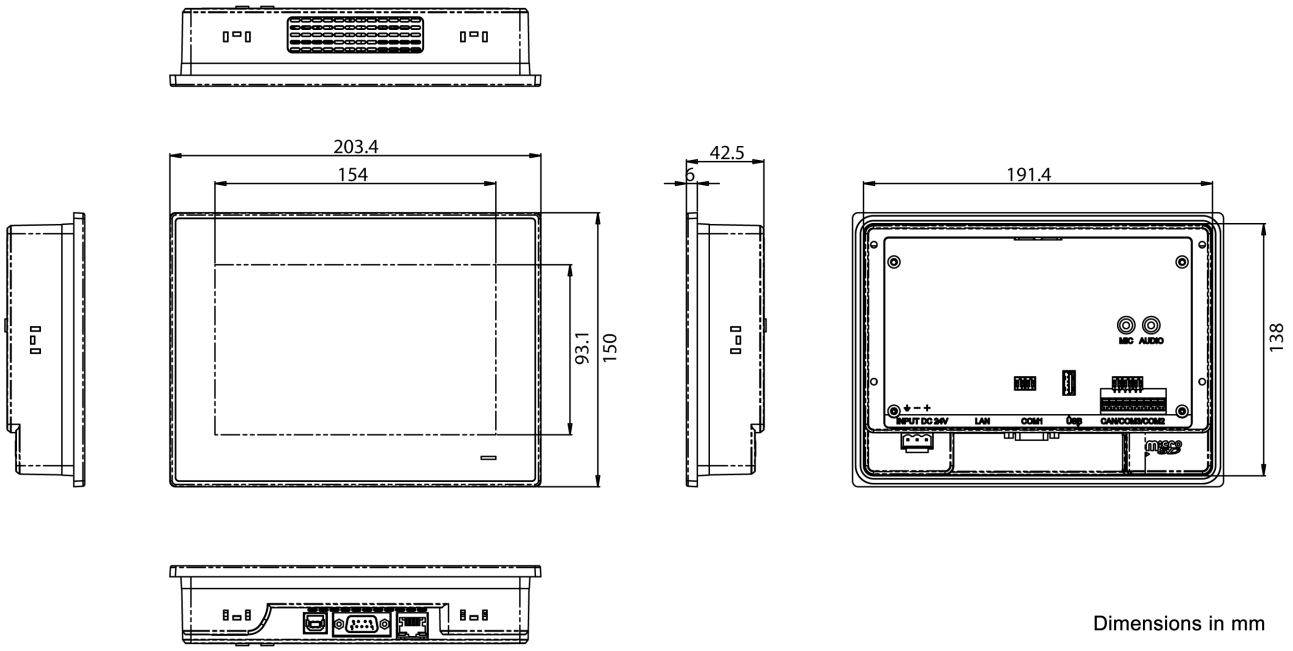

Fig. 6: Dimensions

Panel cutout

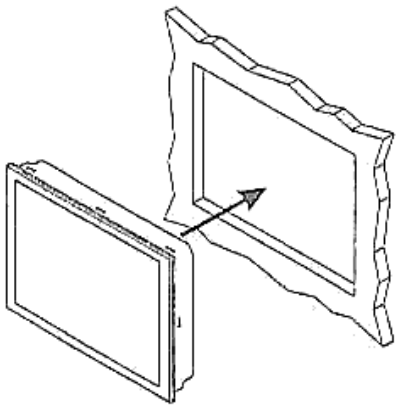

Fig. 7: Cutout schematic

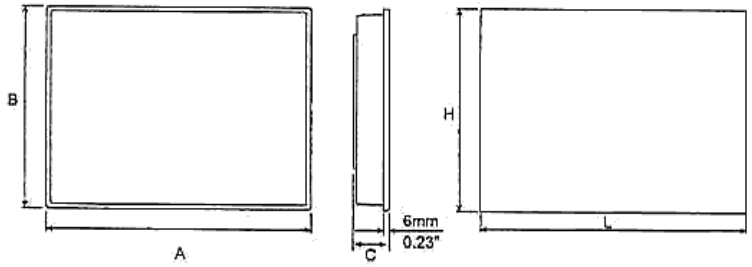

Fig. 8: Dimension and cut out

Measure	Description		
B	Height	Total height	150 mm
H		**Panel cutout height**	**138.5 mm**
A	Width	Total width	203.4 mm

Measure	Description		
L		**Panel cutout width**	**192 mm**
C	Depth	Total depth	42.5 mm

The maximum permissible corner radius is 4 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. 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.

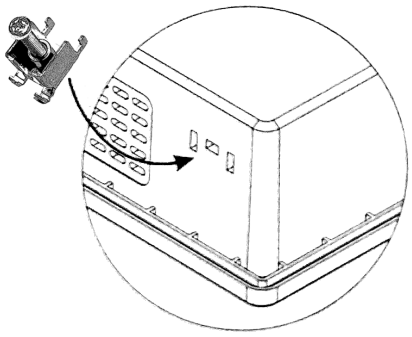

Fig. 9: mount

3.2 Setup Connections

3.2.1 Terminal Allocation

Fig. 10: Desk 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 ↳ *Chapter 3.2.1 “Terminal Allocation” on page 19*.

Schematic and terminals

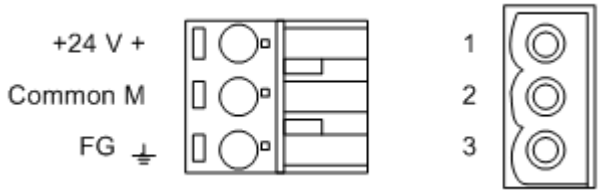

Fig. 12: Power supply - wiring

Terminal		Description	A_{max}
1	24 V	+24V_{DC} +/- 10%	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 Configure 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.

3.2.3.1 Ethernet Interface

Avoid electrostatic discharge!

Avoid electrostatic discharge during Ethernet cable connection to the unit.

Visualization

Two LEDs (green and yellow) 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

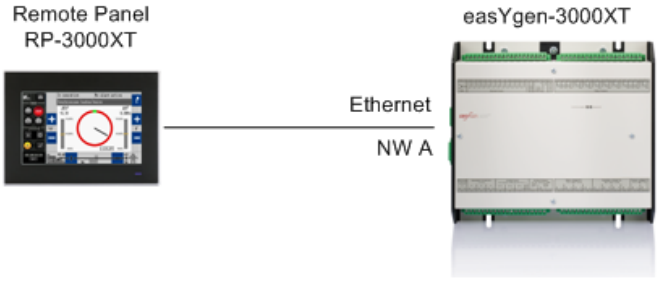

Fig. 13: Application Example: Simple constellation with one easYgen-3000XT and one RP-3000XT

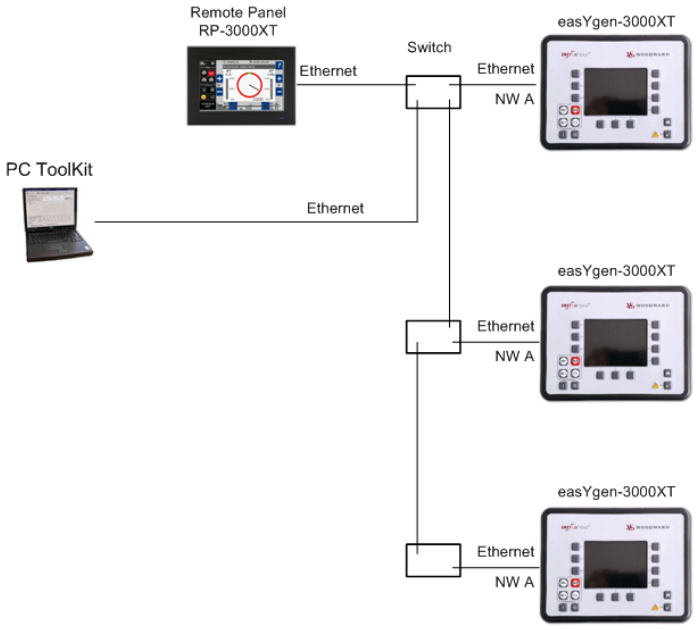

Fig. 14: Application Example: Multiple Generator operation with ToolKit access point and one RP-3000XT

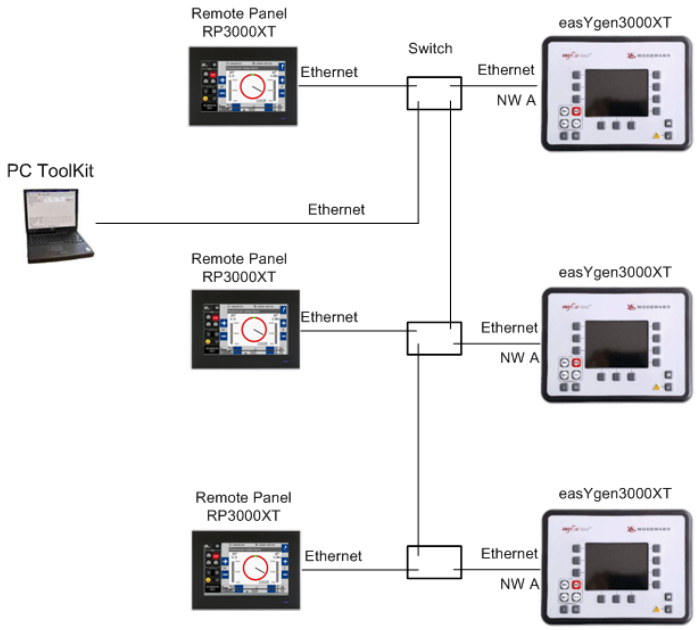

Fig. 15: Application Example: Multiple Generator operation with ToolKit access point and several RP-3000XT

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 *Chapter 3.2.3.1 "Ethernet Interface" on page 20* 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.

↳ *Chapter 4.2 "Setup Ethernet Network Connection" on page 24* describes the steps when Ethernet network adjustment is necessary. After this is done one time, auto-setup will end with the BASE screen of the preferred easYgen-XT device to be remotely controlled. ↳ *Chapter 5 "Operation" on page 31* starts with the assumption of this successful remote connection via the Ethernet network.

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:

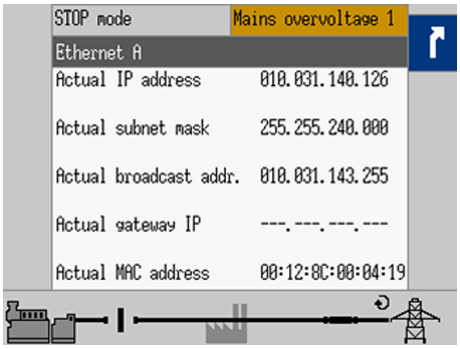

Fig. 16: easYgen-3000XT HMI: Ethernet A info

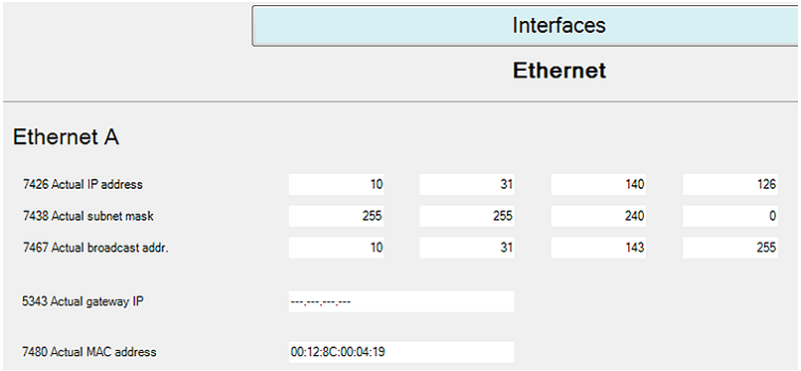

Fig. 17: ToolKit of easYgen-3000XT: Ethernet A settings

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)!*

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

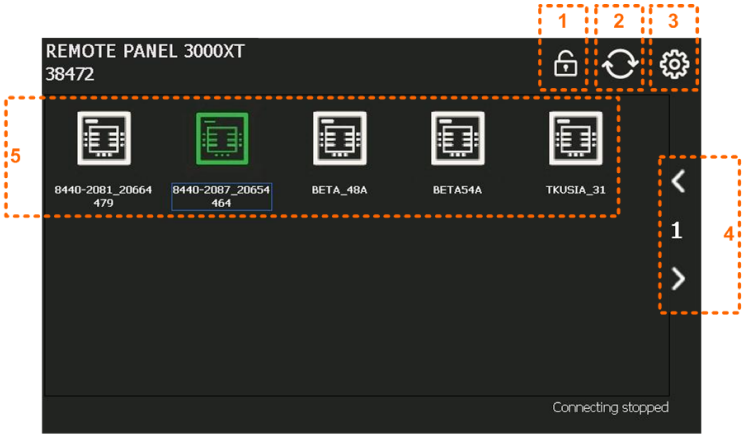

Fig. 18: Device MULTICAST screen

1 "Lock for cleaning" icon: Disables any input from touch panel for a specified duration. A count down screen is displayed during lock time.
2 "Refresh" icon: Collecting the current network status. Network scan updates the "available" devices.
3 "Settings" icon: Opens the SETTINGS screen
4 "Turn page/screen" icons: Available only if there are more devices to be visualized than "page" allows. Move to next/ previous page with devices 16 to 32
5 Device icon and (alternating) name/IP address: Selected device is visualized by color!

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

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" on page 25*) 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 *Chapter 5 "Operation" on page 31*

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" on page 25*)

   ⇨ 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 *Chapter 4.2.2 "The SETTINGS Screen" on page 26*

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 but not already used in this address range.

Open the SETTINGS screen with a push the settings icon ⚙ (pos. 3, Fig. 18)

⇨ SETTINGS screen appears

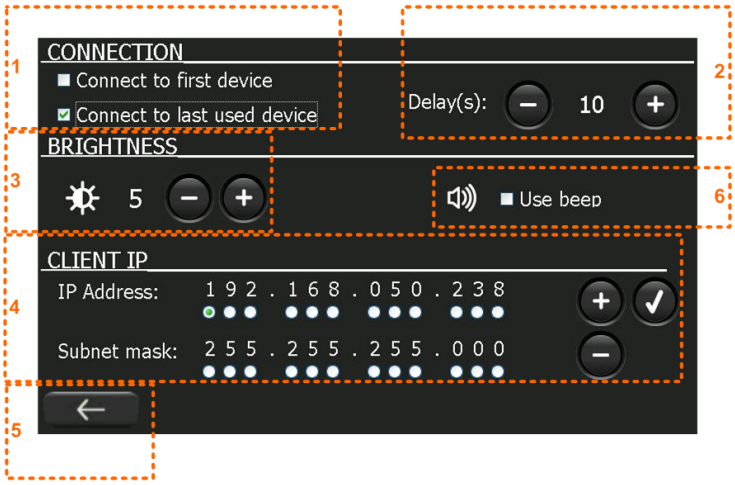

Fig. 19: RP-3000XT SETTINGS screen

1 Auto re-connect settings
2 Delay(s): The time RP-3000XT is waiting before auto re-connecting to the selected device
3 Brightness status and settings icons to reduce / increase brightness
4 Current IP address and subnet mask display and change buttons
5 "Back arrow" to switch to MULTICAST screen
6 ON/OFF of acoustic feedback of a screen touch

In this example the RP-3000XT is configured on 192.168.050.238 within the same subnet mask like the easYgen-3000XT.

Auto-Connect pre-settings

The *"CONNECTION"* areas 1 and 2 of the drawing *Further information on page 26* give access to the auto-connection pre-settings:

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

- *"Connect to first device"*: Connect automatically to the device that is at the first position in the device overview of the MULTICAST screen. The list is assorted by the numerical order of the IP address
- *"Connect to last used device"*: Connect automatically to the device that has been used before (connection was interrupted)
- No one of the check boxes: No auto-connection, select device manually from the MULTICAST screen

"The Delay (s)" on the upper right of the SETTINGS screen 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.

How to change 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 as in the system is configured for the easYgen-3000XT so far.

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.

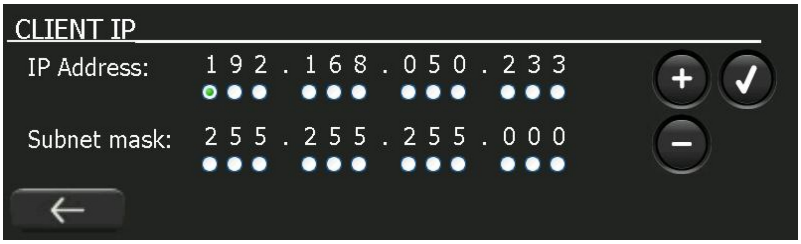

Fig. 20: Example IP-Address setting on the RP-3000XT (area marked above as "4" and "5")

1. Activate the radio button below the number to be changed
   ⇨ Radio button becomes green inside. This number is selected to be changed
2. Push the '-' and '+' buttons beside to reduce / increase the selected number
3. Repeat the steps above for each number to be changed
   ⇨ Preferred IP address is visible
4. Follow the steps described above to change subnet mask, too
   ⇨ Preferred subnet mask is visible
5. *Do not forget to save the new address and subnet mask by pushing the tick mark and accepting device reset, otherwise it would not be applied!*

   Push the tick mark icon beside
   ⇨ IP address and subnet mask of the RP-3000XT are changed and a sub screen asks to save (accept reset) or quit without saving.
6. Accept to save changes by device reset
   ⇨ RP-3000XT is reset (power cycle), automatically goes to the MULTICAST screen, and follows it's setting for auto-connect.

   Now the RP-3000XT should be part of the preferred network and so the preferred easYgen-3000XT for remote control should be visualized for connection

   If you didn't accept reset:.
7. Push the back arrow (5) at the lower left side
   ⇨ SETTINGS screen is closed and MULTICAST screen appears.

   No changes are done regarding the device's network settings.

Device found in network overview now

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

The RP-3000XT should indicate the easYgen-3000XT 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 HMI will appear.

Multiple Genset applications

The example below shows the icon of the easYgen-3000XT with the IP-Address 192.168.50.118 (name alternating).

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.

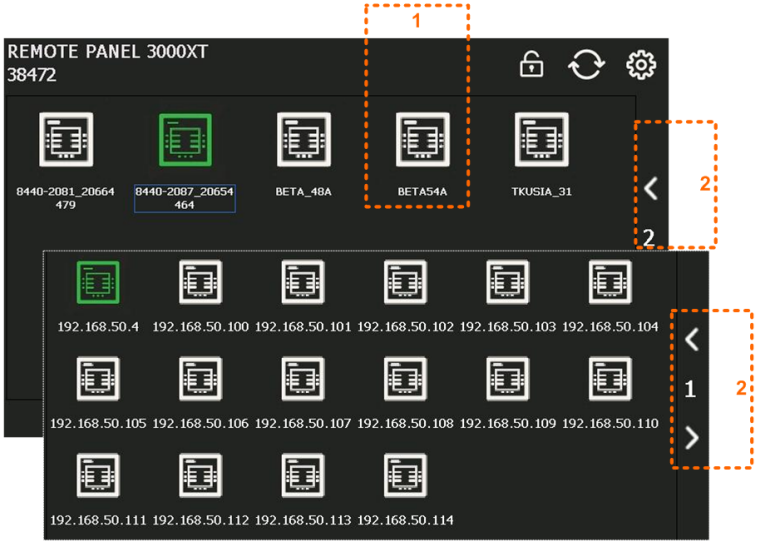

Fig. 21: MULTICAST screen with more than 16 found devices offers to switch between pages

1 IP address of the sample easYgen-XT to connect to for remote control
2 Turn between pages

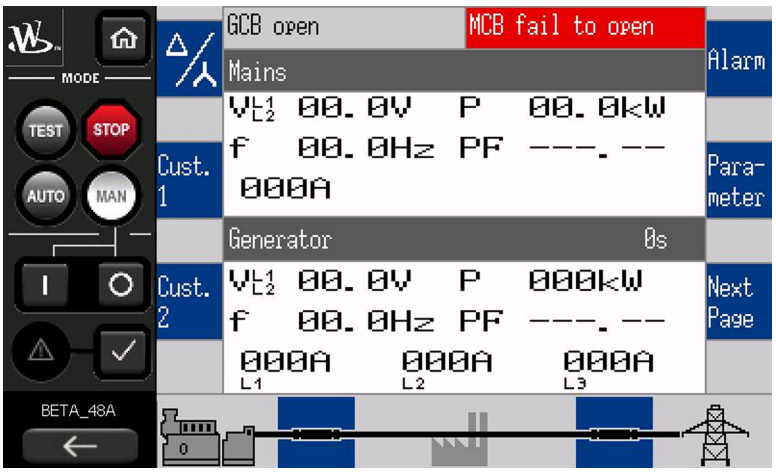

Fig. 22: BASE screen of easYgen-XT with name "BETA_48A"

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 Series manual.
- easYgen-3000XT front panel buttons are re-arranged and at the left hand side of the RP-3000XT BASE screen
- The easYgen-3000XT 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.

Password Security
Due to the concept of remote control both screens of the RP-3000XT and the controlled easYgen-XT (if it has a display) show the same data. Therefore during password entry the password characters are visible on "the other" screen, too.

Please take care for password protection during (remote) entry!

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 ↳ *Chapter 4.2.1 "The MULTICAST Screen" on page 25*.

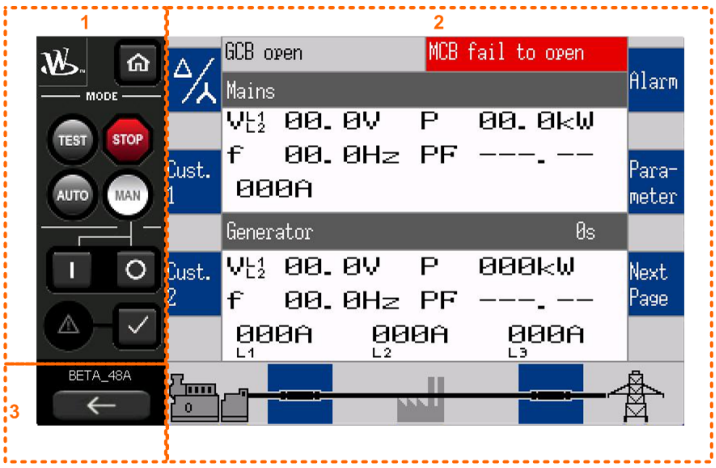

Fig. 23: BASE screen - active areas

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.

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:

- 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

Change to another easYgen-XT device to be remotely controlled

RP-3000XT is connected to an easYgen-3000XT. 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 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 (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). Check to accept changes and go through device reset to save it.

   ⇨ 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 with own HMI

RP-3000XT is connected to an easYgen-3000XT. 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 device control

The easYgen-3000XT 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. BASE screen enables remote control.

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.

1. 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.

Lock keypad functionality is available by a Logics-Manager 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.

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

6 Trouble Shooting

CAUTION!

Access Hierarchy

Please be aware that an easYgen 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!**

Fault description	Cause	Remedy
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 found in network	wrong device IP address or subnet mask	go to chapter *"Connect RP-3000XT and easYgen-3000XT" on page 25*
	network connection failed	check connections, routers, ...
	no easYgen in the same network	check easYgen's network connectivity
	easYgen failed to connect via Ethernet A	check easYgen'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 cannot be found or even changed	wrong password level	change password level. See password chapter in the easYgen Technical Manual.
abnormal behavior of the remote panel software e.g., you notice an easYgen-XT 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

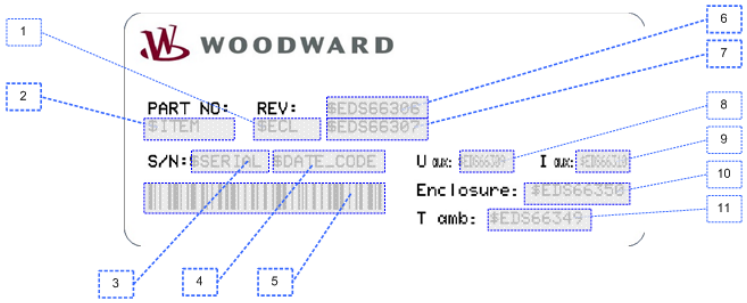

Fig. 24: Product label

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 ±10%
Intrinsic consumption	typical 7 W
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	RISC processor with 32 bits 600 MHz (ARM® Cortex™-AB)
Backup Memory	FRAM 128 KB
Memory	DDR2 256 MB on board
Storage	512 MB on board, SLC type
Power-On LED bar	blue

7.1.3 Display

Display Type	WVGA TFT LCD
Display Size	177.8 mm (7')
Max. Resolution	800 x 480
Max. Colors	64k
Luminance (cd/m^2)	500
Viewing Angle (H/V)	140/120
Backlight Life	LED; 50,000 h
Dimming	adjustable
Contrast Ratio	700:1

7.1.4 Touch Screen

Life span	36 million touches at 8 mm diameter finger point through silicone rubber bearing al least 250 g two times per second
Light	Transmission Above 80%
Resolution	52 px/cm (132 ppi)
Type	5-wire, analog resistive

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-Base T

7.1.6 Software

Operating System	Microsoft® Windows CE 6.0
Woodward Remote Panel RP-3000XT software	Auto-start software to connect to an easYgen-3000XT for remote control via Ethernet ©Woodward

7.1.7 Housing

Housing type

Type	PC plus ABS (with die-cast aluminum alloy front bezel)
Dimensions (W × H × D)	203.4 × 150 × 43.7 mm

Front cutout (W × H)	192 × 138.5 mm
Recommended locked torque (provided mounting kit)	4 inch pounds / 0.5 Nm
Weight	approx. 1 kg

Protection

Ingress protection	IP66 in the front with clamp fasteners
Vibration protection	Operating, random vibration 1 Grms (5 to 500 Hz)

7.1.8 Approvals

Industrial Control Equipment	UL 508 certification
EMC test (CE)	Tested according to applicable EN guidelines
Listings	CE; BSML, CCC, UL, FCC Class A:

7.1.9 Generic Note

Accuracy	Referred to remotely controlled genset device

8 Glossary And List Of Abbreviations

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

9 Index

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