Manual

06/21 MN048027EN

easy Remote Touch display

Powering Business Worldwide

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Original Operating Instructions

is the German-language edition of this document

Publication date

06/2021 Edition 1.1

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DANGER!

Dangerous Electrical Voltage!

Before starting with the installation

- Installation requires qualified electrician
- Disconnect the power supply of the device.
- Secure against retriggering
- Verify isolation from the supply
- Ground and short-circuit
- Cover or enclose any neighboring live parts.
- Follow the engineering instructions (IL) of the device concerned.
- Only suitably qualified personnel in accordance with EN 50110-1/-2 (VDE 0105 part 100) may work on this device/system.
- Before installation and before touching the device ensure that you are free of electrostatic charge.
- The functional earth (FE) must be connected to the protective earth (PE) or to the equipotential bonding. The system installer is responsible for implementing this connection.
- Connecting cables and signal lines should be installed so that inductive or capacitive interference does not impair the automation functions.
- Install automation devices and related operating elements in such a way that they are well protected against unintentional operation.
- Suitable safety hardware and software measures should be implemented for the I/O interface so that a line or wire breakage on the signal side does not result in undefined states in the automation devices.
- Deviations of the mains voltage from the nominal value must not exceed the tolerance limits given in the specifications, otherwise this may result in malfunction and hazardous states.
- Emergency-Stop devices complying with IEC/EN 60204-1 must be effective in all operating modes of the automation devices. Unlatching the emergency switching off devices must not result in an automatic restart.
- Built-in devices for enclosures or cabinets must only be run and operated in an installed state; desktop devices and portable devices only when the housing is closed.
- Measures should be taken to ensure the proper restarting of programs interrupted after a voltage dip or outage. This should not result in dangerous operating states even for a short time. If necessary, emergency switching off devices should be implemented.
- Wherever faults in the automation system may cause damage to persons or property, external measures must be implemented to ensure a safe operating state in the event of a fault or malfunction (for example, by means of separate limit switches, mechanical interlocks, etc.).

Table of Contents

0.1 About this documentation

This Manual contains all the information you will need in order to use the easy Remote Touch display safely and effectively.

The Manual easy Remote Touch display manual is considered an integral part of the devices and must always be readily available in the device's close proximity so that users have access to it.

This Manual describes how to handle and use the device in detail for: transportation, installation, commissioning, operation, maintenance, storage, and disposal.
It assumes you have electrical engineering knowledge and skills.

It does not, however, go over the corresponding operating system or application software.

Make sure to always use the latest documentation for your device.

Manual easy Remote Touch display MN048027EN

The latest version of this documentation, as well as additional references, is available for download on the Internet. → Section "Further usage information", page 87

Please send any comments, recommendations, or suggestions regarding this document to: DocumentationEGBonn@eaton.com

0.1.1 List of revisions

The following significant amendments have been introduced since previous issues:

Publication date	Page	Keyword	New	Modification	Deleted
05/2021		New edition	✓		
06/2021		Review		✓	

0.1 About this documentation

0.1.2 Target group

This Manual is intended for electricians and electrical engineers, as well as for the people who will be in charge of performing the electrical installation and people who will be using the easy Remote Touch display as an operating and monitoring device or as an integrated operating and control device in their own applications.

CAUTION

Installation requires qualified electrician

Follow the safety instructions for the easy-RTD!
The section on safety instructions must be read and understood by everyone who will be working with the easy-RTD before the actual work is performed easy-RTD.

WARNING

Incomplete operator manual copies

Working with individual pages taken out from the operator manual may lead to bodily injury and property damage due to failure to observe relevant safety information.

▶ Always work with the latest and full document.

0.1.3 Legal disclaimer

All the information in this manual has been prepared to the best of our knowledge and in accordance with the state of the art. However, this does not exclude the possibility of there being errors or inaccuracies. We assume no liability for the correctness and completeness of this information. In particular, this information does not guarantee any particular properties.

Do not use the easy Remote Touch display before reading and understanding this manual.

Hazards posed by the easy-RTD cannot be eliminated if the safety instructions are not observed – especially if the easy Remote Touch display is commissioned and maintained by unqualified personnel and/or the easy-RTD is used improperly. Eaton assumes no liability for any damages resulting from cases such as these.

0.1.4 Device designations and abbreviations

The following general terms are used throughout this manual:

Short designation	Explanation
RTD	Remote Touchdisplay
Human-machine interface	Human Machine Interface
easy-RTD	easy Remote Touch display

For the exact designation for your easy Remote Touch display, please refer to the → "Nameplate", page 21.

0.1 About this documentation

0.1.5 Writing conventions

Award	Description
Text	Used for the button labels
Menu/command	Used for menus and commands on the device

Warning labels

Risk of personal injury warning.

DANGER

Warns of hazardous situations that result in serious injury or death.

WARNING

Warns of the possibility of hazardous situations that could result in serious injury or even death.

DANGER!

Dangerous Electrical Voltage!

CAUTION

Warns of the possibility of hazardous situations that can cause injury.

Property damage warning

NOTICE

Warns about the possibility of material damage.

Prohibited uses, actions, etc.

Explains the prohibition

Bid

Explains the instruction

Notes

Indicates useful tips.

▶ Indicates instructions to be followed

Additional information, background information, information worth knowing, useful additional information

Additional user information

Documents (such as manuals) are listed after the  icon together with the corresponding name and Eaton number.

 Publication title For identifying the Eaton publication code

External Internet addresses. They will be shown after the  icon.

 Destination address

0.1 About this documentation

1. Description

The easy Remote Touch display is an external touch display that duplicates the display and controls on easyE4 base devices in color. A single easy-RTD can be connected to multiple easyE4 control relays, but only one connection can be established at a time. However, the connection can be switched between multiple easyE4 control relays. The corresponding data is transmitted through an Ethernet connection between the easy Remote Touch display and the easyE4 control relay. In addition, a series of password-protected permissions can be used to control access so that the easyE4 can only be used by authorized personnel to operate the easy Remote Touch display.

The easy Remote Touch display was designed as an intuitive control and monitoring device for the easyE4 control relay and can be used outside of a control cabinet as an HMI (human-machine interface). easy-RTD devices require little space and are intended for front flush mounting, meaning that they are inserted into the corresponding enclosure from the front.

easyE4 control relays are normally installed inside the corresponding control cabinet, meaning that easyE4 base device displays and buttons are not directly accessible to machine operators. Accordingly, the easy-RTD should be installed in the immediate vicinity in control panels, switchboards, or the control cabinet door itself.

The full-color display supports all the options offered by easySoft 7 for designing graphic user interfaces. Texts, values, bar charts, and parameters can all be visualized in color. Within this context, the display on the easyE4 base device will be duplicated.

1.1 Use as intended

easy Remote Touch display are primarily intended for use in machine and system building applications. More specifically, they are intended exclusively for monitoring and operating easyE4 control relays. Use cases with remote access are not part of the intended applications for the easy-RTD. However, the easyE4 control relay can be remotely accessed using the actual control relay's functions, such as the web server feature.

Any other use must be discussed and agreed upon with the manufacturer in advance.

The easy-RTD are approved for use in closed spaces.

Bid

The easy-RTD must be used only in locations for which the easyE4 is approved. Make sure to read and follow the information and labels on the nameplate for the easy-RTD, as well as section Approvals and declarations in the appendix.

Prohibited uses, actions, etc.

It is strictly prohibited to use the device in order to implement safety-relevant functions (in the sense of personal and machine protection).

1.2 Configuration easy-RTD

1. Industrial Resistive-Touch display
2. Color display, TFT, 65536 colors
3. Screen diagonal: 4.3", visible screen area 95 mm x 54 mm
4. Touch function for menu navigation and user interaction
5. Duplicates the display and controls on the easyE4 control relay
6. easy-RTD comes with the following integrated interfaces as standard:
   - One Ethernet port (10/100 Mbit/s) for use as a communication or field bus interface;
     the Ethernet protocol is supported between easyE4 and easy-RTD
   - One USB 2.0 host port for firmware updates and exporting log information

1.3 Operating and indication elements

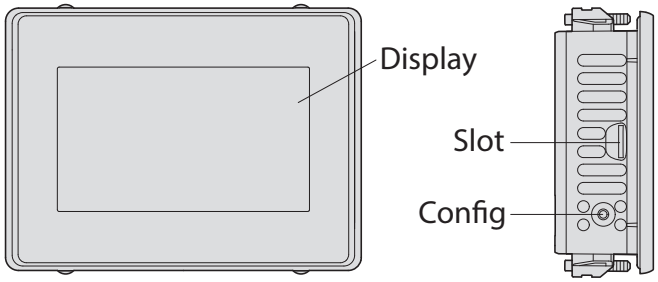


Fig. 1: easy-RTD

Display	Resistive-Touch display Color display, TFT Standard front with standard membrane (fully enclosed)
Slot	For microSD cards (for Eaton Service only). Not intended for use by customers.
Config	Button (for Eaton Service only). Not intended for use by customers.

Resistive-Single-Touch

In order for this functionality to work properly, you must press on the display with a finger or stylus. You can wear work gloves while doing so.

1.4 Connections and interfaces to peripheral devices

The nameplate will indicate which specific interfaces are included with the unit.

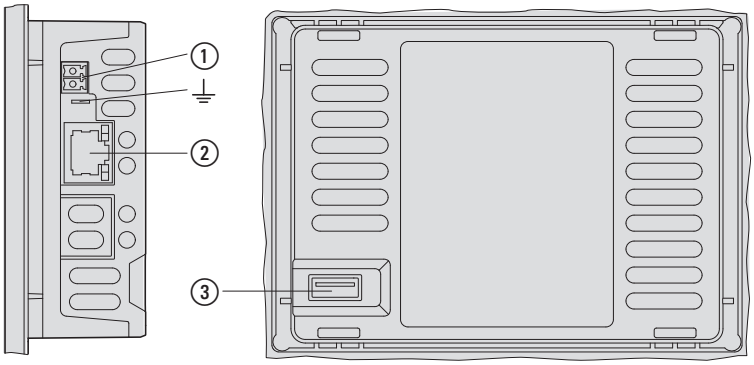


Fig. 2: Interfaces

Interfaces equipment

①	Power Supply	24 VDC power supply (-20%/+25%)
⏚		Grounding option Connection lug 4.8 x 0.8 mm
②	Ethernet	RJ-45 socket, 8-pole, 2 LEDs (CAT5e/6), LAN1, 10/100 Mbps
③	USB host	USB 2.0, not galvanically isolated, plug type A

1.5 What the different parts of the part number mean

The part number includes information that specifies the version and model of the specific Eaton device being used.

The Part number can be found at the type plate of the easy-RTD.

Tab. 1: Part number

easy-RTD	-	**DC**	- **43**	-	**03B1**	-	**00**
		Version	Display size		Interfaces		Version
		DC voltage	4.3" screen diagonal		1 x Ethernet, 1x USB host		

1.6 Accessory devices

A variety of accessories are available for easy-RTDs.

> *CAUTION*
> Only use original accessories.

Order accessories through your supplier or through the Eaton online catalog

Eaton.com/ecat

article no.	Catalog Number
139808	ACCESSORIES-Res-Touch-Pen-10 Ten styli for using a resistive operator panel

1.7 Nameplate

The device has a nameplate on rear.
This nameplate includes the following information:

- Manufacturer
- Part number
- Part-No.
- Version
- Power supply requirement
- Serial-No.
- MAC address
- Type approval and certification marks and information
- Layout of ports/interfaces and controls
- Installation orientation

Fig. 3: Example for a nameplate

1.8 Support

To get fast and effective support, make sure to provide Customer Service with the following information from the nameplate:

- Part-No.
- Serial-No

For service and support, please contact your local sales team.

Contact info.	Eaton.com/contact
Service page:	Eaton.com/aftersales

1.9 UL listing

An application for UL listing for the easy-RTD in conformity with UL 61010-2-201 has been submitted to Underwriters Laboratories Inc.

1.10 Marine approvals

An application for approval for the easy-RTD has been submitted to Det Norsk Veritas.

2. Safety regulations

2.1 Basics

The device has been designed according to the state of the art and all generally accepted safety rules and standards. However, this alone cannot eliminate all potential hazards, which is why it is necessary for you to be aware of all hazards and residual risks.

Do not run the device unless it is in perfect technical condition. Make sure to always operate it as specified in this document and for the intended purpose.

Follow the safety instructions for the easy-RTD!
The section on safety instructions must be read and understood by everyone who will be working with the easy-RTD before the actual work is performed easy-RTD.

CAUTION
Pay attention to the hazard severity levels used throughout this documentation whenever a hazard is indicated. The hazard symbol and signal word used and the corresponding text will provide information regarding the specific hazard and how to avoid or prevent it.

2.2 Mandatory requirements, personnel requirements

2.2.1 Occupational safety

All generally accepted occupational health and safety rules and standards (internal and national) must be complied with, as must be all applicable laws and regulations in the relevant country.

2.2.2 Personnel qualifications

The personnel responsible for installation, operation, maintenance, and repairs must have the necessary qualifications for the work they will be performing. They must be appropriately trained and/or briefed and be informed of all hazards and risks associated with the device.

2.2.3 Device documentation

This manual is considered an integral part of the easy-RTD and must always be readily available in the device's close proximity so that users have access to it.

Make sure that every person who will be working with the easy-RTD, regardless of the lifecycle stage involved, has read and understood the relevant parts of the documentation for the easy-RTD.

For more information on how to use the easy-RTD, including the corresponding installation instructions, please visit the Eaton Download Center and the relevant product pages.

WARNING

Incomplete operator manual copies

Working with individual pages taken out from the operator manual may lead to bodily injury and property damage due to failure to observe relevant safety information.

▶ Always work with the latest and full document.

2.2.4 Installation, maintenance, and disposal

Make sure that the easy-RTD is connected, installed, serviced, and disposed of professionally and in line with all relevant standards and safety rules.

CAUTION

Installation requires qualified electrician

Dispose of recyclables as required by your local recycling regulations.

Dispose of recyclables as required by your local recycling regulations.

easy-RTD no longer being used must be professionally disposed of as per local standards or returned to the manufacturer or relevant sales department.

2.2.5 Prerequisites for proper operation

In order to ensure proper operation, the following requirements must be met:

- Only qualified personnel should be allowed to work with the easy-RTD.
- The personnel working with the easy-RTD must have read the manual and must follow all the instructions in it.
- The required ambient conditions must be met.
- Maintenance work must be carried out correctly.

Make sure to read the → "Legal disclaimer", page 11.

We assume no liability for damages, consequential damages, and/or accidents caused by the following:

- Failure to follow any applicable occupational health and safety rules, standards, and/or regulations
- Device failures or function disturbances
- Improper use and/or handling
- Not following the instructions or observing the information in the documentation for the easy-RTD
- Alterations, changes, and repairs to the easy-RTD

2.3 Device-specific hazards

EXPLOSION HAZARD

Death, serious injury, and property damage may occur if the device is being used in a potentially explosive (classified) location and, during operation, an electrical plug-in connection is disconnected or the device is exposed to dangerous impacts or other types of dangerous mechanical shock.

▶ Do not use the easy-RTD in hazardous locations

CAUTION

Installation requires qualified electrician

CAUTION
DESTRUCTION

The easy-RTD should only be opened by the manufacturer or by an authorized center. Operate the Resistive-Touch display until only with the enclosure fully closed and sealed.

CAUTION
ELECTROSTATIC DISCHARGE

Do not touch components (e.g., connector pins) that are electrostatic-sensitive.

▶ Discharge any static electricity from your body before touching the easy-RTD (e.g., by touching an earthed metal object).

Electrostatic discharges may damage or ruin assembly parts. Because of this, it is necessary to take precautions whenever handling the cards.

Please refer to the guidelines for electrostatic-sensitive components for more information (ESD guidelines).

CAUTION
INTERFERENCES
The values specified in the technical data, as well as the device's electromagnetic compatibility (EMC), cannot be guaranteed if the following are used: unsuitable cables, improperly assembled and terminated cables, and/or wiring that does not conform to the applicable standards.
Only use cables assembled and terminated by professionals.
The cables being used must be assembled and terminated as required by the port/interface description in this document.
When wiring the easy-RTD, follow all instructions regarding how to wire the corresponding port/interface.
All general Directives and standards must be complied with.

CAUTION
INTERFERENCES
Screw all plug-in connections or lock them into place in order to improve screening.
Signal cables must not be routed in the same cable duct with power cables.
Before putting the system into operation, check all cable connections to make sure that everything has been wired properly.
Make sure that all voltages and signals have the required values as per the specification.

CAUTION
24 VDC power supply for integrated DC-to-DC converter.
The voltage being applied must meet the requirements for safety extra-low voltages (SELV) set forth in IEC 60950 and the requirements for protected extra-low voltages (PELV) set forth in ICE/UL 61010-2-201.
Pay attention to the polarity.

DANGER
STRAY CURRENTS
Large equalizing currents between the functional earthing system and the ground system of different devices may result in fire or in malfunctions due to signal interference.

- If necessary, route an equipotential bonding conductor, with a cross-sectional area that is several times larger than that of the cable shielding, parallel to the cable.

CAUTION
UV LIGHT
Plastics will become brittle when exposed to UV light. This artificial aging will reduce the easy-RTD unit's lifespan.
Protect the Resistive-Touch display unit from direct sunlight and other sources of UV radiation.

CAUTION
POINTY, SHARP OBJECTS AND CORROSIVE LIQUIDS
When cleaning the Resistive-Touch display:

- Do not use any pointy or sharp objects (e.g., knives).
- Do not use aggressive or abrasive cleaning products or solvents.

Make sure that no liquids get into the device (short-circuit hazard) and that the easy-RTD is not damaged in any way.

CAUTION
INSTALLATION CUT-OUT
The mounting cutout must be located in a position that will not defeat the purpose of stabilizing webs or other reinforcing elements in the control panel. If necessary, reinforcing elements must be installed/added.
An IP65 degree of protection will only be ensured if there is sufficient stiffness and the device is properly mounted.

- Minimum sheet thickness of control cabinet where the device will be flush mounted:
  2 mm (0.08") ≦ d ≦ 5 mm (0.2")

CAUTION
FORCES ON THE ETHERNET INTERFACE
Communications may be affected, and the connection's mechanical components may be damaged, if the Ethernet interface is subjected to strong vibrations or the RJ45 plug-in connection is subjected to pulling.

- Protect the RJ45 plug-in connection from strong vibrations.
- Protect the RJ45 plug-in connection from tensile forces at the socket.

3. Installation

CAUTION

Installation requires qualified electrician

EXPLOSION HAZARD

Death, serious injury, and property damage may occur if the device is being used in a potentially explosive (classified) location and, during operation, an electrical plug-in connection is disconnected or the device is exposed to dangerous impacts or other types of dangerous mechanical shock.

▶ Do not use the easy-RTD in hazardous locations

CAUTION

ELECTROSTATIC DISCHARGE

Do not touch components (e.g., connector pins) that are electrostatic-sensitive.

▶ Discharge any static electricity from your body before touching the easy-RTD (e.g., by touching an earthed metal object).

Electrostatic discharges may damage or ruin assembly parts. Because of this, it is necessary to take precautions whenever handling the cards.

Please refer to the guidelines for electrostatic-sensitive components for more information (ESD guidelines).

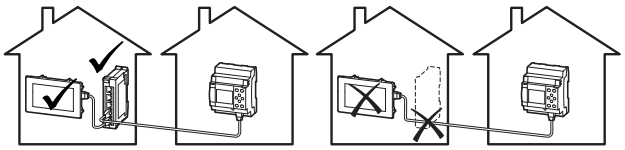
3.1 Prerequisites for the location of use

The easy-RTD must be used as intended and exclusively in locations for which the easy-RTD has been approved/certified.

A 24 VDC power supply (-20%/+25%) must be ensured as per the specifications.

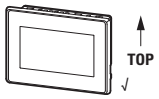
easy-RTD units are intended to be flush mounted in control cabinets, control panels, or control consoles.

- If the Ethernet connection is routed out of the building at one point, a network isolator (switch, for example) must be used without fail.



- The devices can only be installed in landscape mode. Please make sure that the TOP

top side is on top



- Do not use the easy-RTD in hazardous locations.

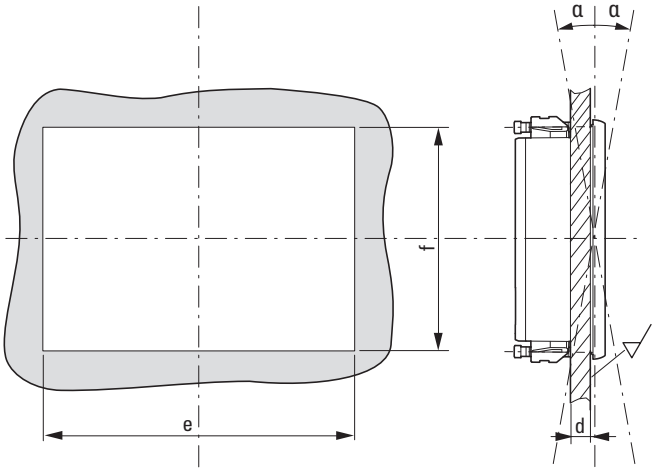
See also

→ " Use as intended", page 16
Label on the → "Nameplate", page 21
The specifications in → "The environmental ambient conditions for operation must not exceed the specified values:", page 34.

3.1.1 Installation position

The following must be taken into account when selecting the installation position:

- The size of the installation cutout depends on the device type:
  easy-RTD-DC-43-...: e = 123 mm (4.84") ± 1 mm (0.04"), f = 87 mm (3.43") ± 1 mm (0.04")



- Make sure that the material at the installation location is sufficiently thick
  Material thickness of 2 mm (0.08") ≦ d ≦ 5 mm (0.2")
  and flatness of ▱ ≦ 0.5 mm (0.02") at the installation cutout with a surface roughness ▽ Rz ≦ 120; IP 65 → DIN ISO 2768-2 (K)
- The controls and connectors must remain accessible even after the device has been installed.
- If no forced ventilation is being used, the device must not be mounted at an angle exceeding α max. ± 90°.
- No direct sunlight on the device.

CAUTION
UV LIGHT
Plastics will become brittle when exposed to UV light. This artificial aging will reduce the easy-RTD unit's lifespan.
Protect the Resistive-Touch display unit from direct sunlight and other sources of UV radiation.

- Make sure that the easy-RTD does not overheat.
- The minimum clearance to components that radiate heat, such as transformers under heavy loads, is 15 cm.

3. Installation
3.1 Prerequisites for the location of use

3.1.1.1 Temperatures

The environmental ambient conditions for operation must not exceed the specified values:

Air pressure (in operation)	795 - 1080 hPa
	Max. 2000 m above sea level
Temperature	
Operation	± 0 – +50 °C (+32 – +122 °F)
Storage / Transport	-20 – + 60 °C (-4 – +140 °F)
Humidity	Relative humidity 10 - 95 %
Condensation	non-condensing

3.1.1.2 Aeration and de-aeration

- Do not block the ventilation openings when mounting the easy-RTD:
  They are designed to allow air to circulate in order to cool the device.
- The easy-RTD uses natural convection-based passive cooling, i.e., it does not use fans.

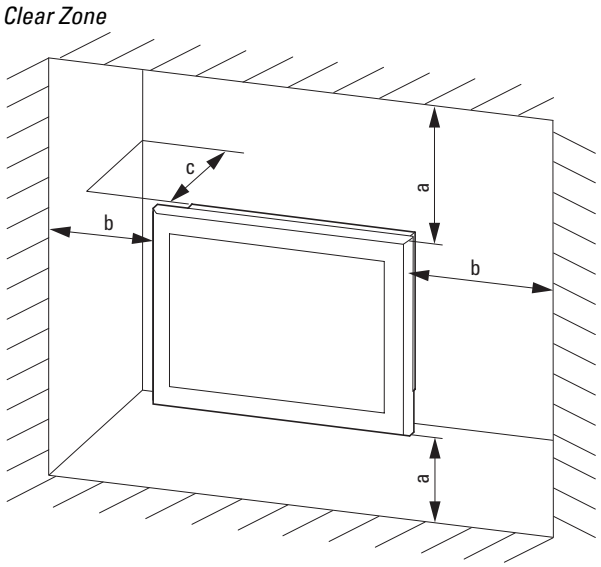


Fig. 4: Mounting distance

- Make sure that there will be enough volume for air changes inside the control cabinet, etc.
  The specified clearance around the easy-RTD is: a, b, c ≧ 30 mm (1.18")

- If you will be installing the easy-RTD in complex systems together with other assemblies, you must ensure that there will be enough air circulation in order to prevent overheating.
  Ambient temperature with natural convection: ϑ: 0°C (32°F) ≦ T ≦ 50°C (122°F)
  The panel builder is responsible for the temperature rise calculation.
  Eaton will provide heat dissipation data as necessary for design verification in conformity with IEC EN 61439 – please refer to the data sheet for the easy-RTD in the online catalog at Eaton.com/ecat.

3.2 Unpacking and checking the equipment supplied

- Check the easy-RTD's packaging for transit damage.
- Carefully remove the packaging in order to avoid damaging the device.
- Check the package contents for visible transit damage.
- Use the information in the → "Std. pack ", page 36 table to make sure that the contents are complete.

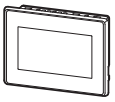
Keep the original packaging so that you will be able to use it in the future if you need to transport or ship the easy-RTD.
Make sure to also keep the documents enclosed with the device and/or to give them to the end customer.

Missing parts or damage

If you notice anything wrong, please contact your distributor or
Eaton Service +1 877-386-2273 (en) / 877-ETN-CARE (877-386-2273)

The package for the easy-RTD device comes with:

Tab. 2: Std. pack

Unit	Description
1 x 	easy-RTD
1 x	Installation instructions IL048015ZU
1 x	Plug connector MC 1.5/ 2-ST-3.5 BK Phoenix Contact (1916384)
4 x	Holding bracket with set screw with Internal hexagon M4x25, galvanized, S2

The Resistive-Touch display is sturdily built, but the components inside it are sensitive to excessively strong vibrations and/or mechanical shock.

Accordingly, make sure to protect the easy-RTD from mechanical loads that exceed the scope of the unit's intended use.

3.3 Mounting

CAUTION
Arrange for a professional technician to mount the device.

CAUTION
INSTALLATION CUT-OUT
The mounting cutout must be located in a position that will not defeat the purpose of stabilizing webs or other reinforcing elements in the control panel. If necessary, reinforcing elements must be installed/added.
An IP65 degree of protection will only be ensured if there is sufficient stiffness and the device is properly mounted.

- Minimum sheet thickness of control cabinet where the device will be flush mounted:
  2 mm (0.08") ≦ d ≦ 5 mm (0.2")

List of tools:

- M2 Allen key, hex width across flats: 2 mm
- PZ2 Pozidriv screwdriver
- Torque wrench with Newton meter scale

3.4 Preparations

1. Select the installation location you want for the device.
   Make sure that all the requirements for the installation location are met → page 32.
2. Make a cutout with the right size for the easy-RTD at the location you selected.
3. Make sure that the mounting cutout has the right size.

CAUTION
POOR SEALING
If the gasket cord is twisted when placed inside the groove or does not provide adequate sealing all around, the degree of protection will not be achieved.
The join of the sealing strip must be positioned on the bottom of the device.

4. Pre-assemble the holding brackets with the set screws.
   Screw the Internal hexagon M4x25, galvanized, S2 set screws into the holding brackets.

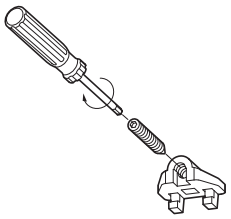


Fig. 5: Pre-installing the holding brackets

Four holding brackets are included as accessories with the easy-RTD.

→ All four holding brackets need to be installed in order to get an IP65 degree of protection.

→ Together with the gasket, the holding brackets are the main element required for achieving an IP65 (at front) degree of protection.

The purpose of the holding brackets is to secure the easy-RTD in the installation cutout, e.g., on the control panel door.
To this end, the brackets must be hooked into the enclosure and screwed against the control panel door, etc.

Positions of the holding brackets

- On the top and bottom sides of the device:
  One holding bracket each at the left and right outer fixing positions

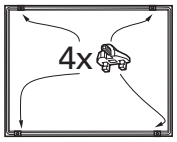


Fig. 6: Position of holding brackets on easy-RTD

IP rating

If the device is installed properly, the following IP degrees of protection will be ensured:

- Front: IP65 (at front)
- Back: IP20 (at rear)

3.5 easy-RTD mounting

- 1. Insert the easy-RTD into the mounting cutout from the front.

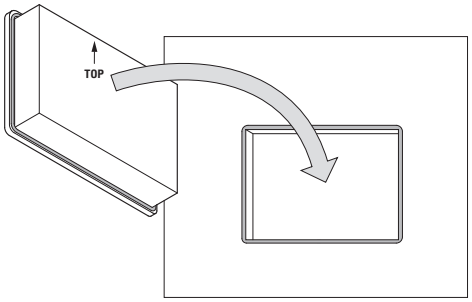


Fig. 7: Mounting in the installation cutout

- 2. As long as the device has not been secured with all holding brackets, make sure to secure it so that it will not fall down.
- 3. Insert the holding brackets into the first device cutout intended for this purpose.

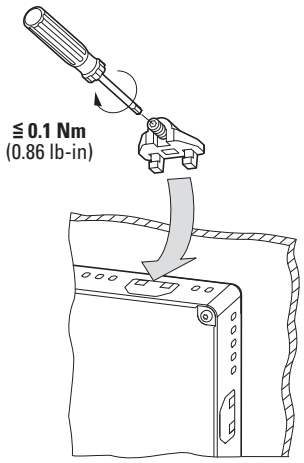


Fig. 8: Installing the holding brackets

- 4. Tighten the set screw until it comes into contact with the installation surface.
- 5. Follow steps 3 and 4 to insert the next holding bracket at a 90° angle to the last one you inserted.
- 6. Repeat steps 3 and 4 until all necessary holding brackets are installed.
- 7. Check that the device is in its correct, centered position and that the gasket is in contact all around; adjust if necessary
- 8. Tighten the set screws in a criss-cross sequence with a max. torque of ≦ 0.1Nm (0.86 lb-in).

3.6 Preparing the device for operation

CAUTION
INTERFERENCES
Screw all plug-in connections or lock them into place in order to improve screening.
Signal cables must not be routed in the same cable duct with power cables.
Before putting the system into operation, check all cable connections to make sure that everything has been wired properly.
Make sure that all voltages and signals have the required values as per the specification.

CAUTION
SHORT-CIRCUIT HAZARD
If the Resistive-Touch display is or has been exposed to environmental fluctuations (ambient temperature, air humidity), condensation may form on or inside easy-RTD. As long as this condensation is present, there will be a short-circuit hazard.
Do not switch on the device when it has condensation in or on it.
If the Resistive-Touch display has condensation in or on it, or if it has been exposed to environmental fluctuations, let the easy-RTD settle into the existing ambient temperature before switching it on. Do not expose the device to direct thermal radiation from heating appliances.

Before connecting the power supply

CAUTION
24 VDC power supply for integrated DC-to-DC converter.
The voltage being applied must meet the requirements for safety extra-low voltages (SELV) set forth in IEC 60950 and the requirements for protected extra-low voltages (PELV) set forth in ICE/UL 61010-2-201.
Pay attention to the polarity.

WARNING
The device should only be run with safety extra-low voltage (functional extra-low voltage with protective separation).
The power transformer must conform to the relevant standards.

WARNING

easy-RTD units are products designed for use in industrial environments as defined in ICE/EN 6100–6-4. These products can cause radio interference in domestic environments. In this case, the party operating the products must implement appropriate radio interference suppression measures.

CAUTION

Installation requires qualified electrician
Arrange for an electrician to install and connect the power supply.

3.6.1 Power supply – electrical connection

The easy-RTD features an internal fuse and protection against polarity reversal. The housing is made of plastic and serves as an insulator.

The power supply for the device is **not** galvanically isolated.

The easy-RTD requires a rated operating voltage of 24 V_{DC} from a DC-to-DC converter with safe isolation (SELV/PELV).

Rated operating voltage	24 V DC (-20%/+25%)
Permissible Voltage range	Effective: 19.2-30.0 V DC (rated operating voltage -20%/+25%)
	Absolute with ripple: 19.2-30.0 V DC
	Battery powered: 18.0-31.2 V DC (rated operating voltage -25%/+30%)
Power consumption	max. 7.2 W Current consumption at 24 V DC: 4.7 W for basic device + 2.5 W for USB module
Fuse	Yes (fuse not accessible)
Potential isolation	no
Electrical current	
Ie	≦ 0.3 A
I_{TH}	2.5 A^2s

The required MC 1.5/ 2-ST-3.5 BK connector is included as standard.

Tab. 3: Plug connection configuration MC 1.5/ 2-ST-3.5 BK

	signal	Configuration
	+ 24VDC	Power Supply + 24 VDC SELV (safety extra low voltage)/PELV (protective extra low voltage)
	0V	0 V power supply

Grounding option

⏚ If required due to the installation environment, this Connection lug 4.8 x 0.8 mmcan be used as a protective earth connection.
One compatible cable lug option would be the Phoenix Contact C-SCFFI 1.5/4.8X0.8 slip-on sleeve with part No. 3240537 (not included).

Specifications for connection to 24 VDC power supply (-20%/+25%):

Tightening torque	0.22 ... 0.25 Nm for the screws on the MC 1.5/ 2-ST-3.5 BK
Strip length	7 mm (0.28“)

▶ Connect the individual conductors.

Tab. 4: Terminal capacities

	Solid	0.14 to 1.5 mm²
	Flexible	0.14 to 1.5 mm²
	Insulated ferrule	0.25 to 0.5 mm²
	Non-insulated ferrule	0.25 to 1.5 mm²
	Conductor cross section AWG	min 28 - max 16

Power Supply

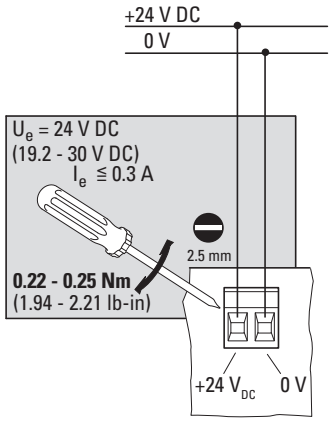


Fig. 9: Connecting the screw terminals on the plug connector

Electrical connection

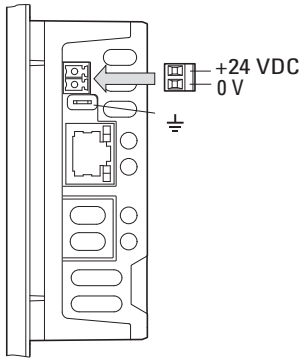


Fig. 10: Power supplied via plug connector

- Use the plug-in connection to terminate the connection cable for the power supply in advance.
- Plug the pre-assembled plug connector into the socket on the enclosure.
- Pay attention to the polarity "+24V" and "0V".
- Connect the power supply cable to a 24 VDC power supply (-20%/+25%) that meets the requirements for safety extra-low voltages (SELV) set forth in IEC 60950.

The easy Remote Touch display is now ready to run on 24 VDC.

4. External connections

With its ports, Eaton's easy-RTD makes it possible to connect a variety of peripheral devices and components.

DANGER
STRAY CURRENTS
Large equalizing currents between the functional earthing system and the ground system of different devices may result in fire or in malfunctions due to signal interference.

- If necessary, route an equipotential bonding conductor, with a cross-sectional area that is several times larger than that of the cable shielding, parallel to the cable.

CAUTION
INTERFERENCES
The values specified in the technical data, as well as the device's electromagnetic compatibility (EMC), cannot be guaranteed if the following are used: unsuitable cables, improperly assembled and terminated cables, and/or wiring that does not conform to the applicable standards.
Only use cables assembled and terminated by professionals.
The cables being used must be assembled and terminated as required by the port/interface description in this document.
When wiring the easy-RTD, follow all instructions regarding how to wire the corresponding port/interface.
All general Directives and standards must be complied with.

4.1 USB interface

This port can be used to run a easy-RTD firmware update→ "Operation", page 55.
In addition, it can be used to export log files → "Device information menu", page 59

CAUTION
When using commercially available peripheral devices (e.g., with the USB port), it is important to keep in mind that their EMC interference immunity parameters may render them unsuitable for use in industrial environments.
Do not use the USB port on the easy-RTD for any purposes other than those intended by the manufacturer.

CAUTION
NON-GALVANICALLY-ISOLATED INTERFACES
The easy-RTD may be damaged by potential differences.

▶ Do not connect the connector to the easy-RTD or disconnect it without first de-energizing the system.

Only use standard USB cables with a shield.
Max. cable length: 5 m.

USB host

Fig. 11: USB 2.0, not galvanically isolated, plug type A

4.2 Ethernet

Every easy-RTD features an Ethernet port. This Ethernet port is a Cat 5e/6 port. Make sure to use compatible standard RJ45 Ethernet cables only. The Ethernet port on the easy-RTD serves as a communication interface to the easyE4 control relay. The Ethernet controllers support transfer rates of 10 Mbit/s and 100 Mbit/s. The default IP setting is: Auto IP

When the green LED lights up, this means that an active network has been detected and a link to it has been established. When the yellow LED flashes, this means that data is being transferred.

CAUTION

If the Ethernet connection is routed out of the building at one point, a network isolator (switch, for example) must be used without fail.

Fig. 12: RJ-45 socket, 8-pole, 2 LEDs (CAT5e/6), LAN1, 10/100 Mbps

For the network, use shielded twisted-pair (STP) cables only.
For connecting the easy-RTD to a easyE4 control relay (directory) or easy-RTD to a switch:

- Use a patch cable (1:1).

Maximum cable length: 100 m without switch

CAUTION

FORCES ON THE ETHERNET INTERFACE

Communications may be affected, and the connection's mechanical components may be damaged, if the Ethernet interface is subjected to strong vibrations or the RJ45 plug-in connection is subjected to pulling.

- Protect the RJ45 plug-in connection from strong vibrations.
- Protect the RJ45 plug-in connection from tensile forces at the socket.

Eaton recommends implementing measures for protecting against cyberattacks.

Eaton cyber security
Eaton.com/us/en-us/company/news-insights/cybersecurity.html
Eaton.com/cybersecurity

5. Commissioning

When the easy-RTDs are used as intended, they will often be installed in a machine or system to function as controls and will be wired accordingly.
In this case, the easy-RTDs will need to be switched on and off using the corresponding machine controller.

DANGER!
Electric shock hazard!
When setting up and testing the visualization interface, make sure to use a test environment that is fused as per the state of the art and in accordance with all applicable standards in order to power the devices.

The easy-RTD will boot up as soon as it is energized.

If the easy-RTD will not start, or if an error message appears, consult the → Section "Faults", page 77 section.

The easy-RTD will be shut down as soon as it is not being powered.

CAUTION
SHORT-CIRCUIT HAZARD
If the Resistive-Touch display is or has been exposed to environmental fluctuations (ambient temperature, air humidity), condensation may form on or inside easy-RTD. As long as this condensation is present, there will be a short-circuit hazard.
Do not switch on the device when it has condensation in or on it.
If the Resistive-Touch display has condensation in or on it, or if it has been exposed to environmental fluctuations, let the easy-RTD settle into the existing ambient temperature before switching it on. Do not expose the device to direct thermal radiation from heating appliances.

▶ Power the easy-RTD with 24 VDC.

The unit will boot up. As soon as the easy-RTD operating system loads, the remote touch display application will start.

5.1 Initial commissioning

During initial commissioning, as well as after resetting the device to factory settings, you will need to define the passwords for three types of user:

- Watch,
- Operate

- Administrate

Please note that the easy-RTD cannot be used until these user group passwords have been defined.

→ Define the passwords for each user group in order to protect your device.

For more instructions, please refer to the "Operation" section → page 55

5.1.1 Setting passwords

The password must be made up of exactly six characters (uppercase letters and numbers only), and you will need to enter it again for confirmation.

- ▶ Tap the input field.
- ▶ The keyboard will appear.

- ▶ Enter the password for Watch password.
- ▶ Confirm by tapping the ↵ button.
- ▶ Enter the password again to confirm it
- ▶ Confirm by tapping the ↵ button.
- ▶ Repeat the steps above for the Operate password
- ▶ Repeat the steps above for the Administrate password

After you set up the passwords, the ⓘ Device information menu will appear. None of the user groups will be logged in at this point.

5.1.2 Setting a language

As soon as the easy-RTD is ready, you can select one of the available menu navigation languages.

▶ Press the button.

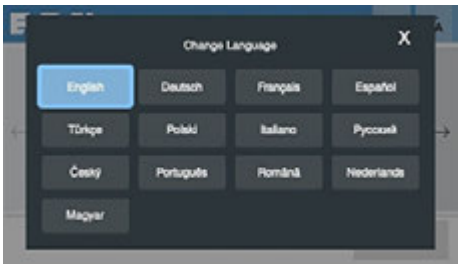


Fig. 13: Changing the language

▶ To select the language you want, tap the corresponding button.

▶ Close the menu by pressing X.

After logging in, you can use the main menu (≡) to configure the remaining easy-RTD system settings in the language you selected.

5.1.3 Access restrictions for the user groups

- Watcher

The device will only show the display content from the easyE4 display.
No permissions for changing parameters or accessing the easyE4 device menu.

Menu	Page 1	2	3
Inhibit			
Device information	Status display	Version display	Name display

- Operation

The same permissions that the operator would have when in front of the actual easyE4 device. Makes it possible to use the P device buttons and change parameters if this is allowed in the *.e70 program itself.

Menu	Page 1	2	3
Inhibit			
Device information	Status display	Version display	Name display
Remote easyE4			
Screen	Brightness	Display Timeout	

- Administer

This user group has no access restrictions.

5.2 Running the easy-RTD

Once the easy Remote Touch display has been initially commissioned, it will run whenever it is connected to the power supply.

In other words, it does not have to be separately switched on and off.

Reducing the level of brightness will increase the display back-light's lifespan.

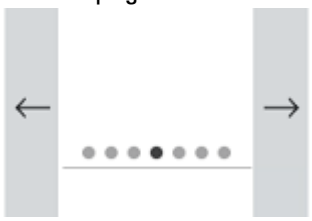
Follow the instructions in the following section if your easy-RTD until will not boot up and/or if an error message appears: → Section "Faults", page 77

6. Operation

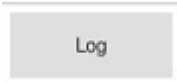
6.1 Handling easy Remote Touch display

To navigate on the easy Remote Touch display, operators can:

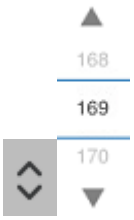
- Tap the button icons in order to open menus (e.g., ≡)
- Tap the arrows to move through pages within a menu.
  Dots above the status bar will be used to show the number of pages in the menu and the page that is currently active.



- Tap fields in order to carry out actions or open subpages.

  For example, 

- Tap fields to enable input.



- Tap and hold input fields in order to get input assistance.

- Tap and hold on the RTD display
  in order to switch between the display in an RTD window and full screen mode.
- ← Will take you back to the menu for a menu page opened with a button.

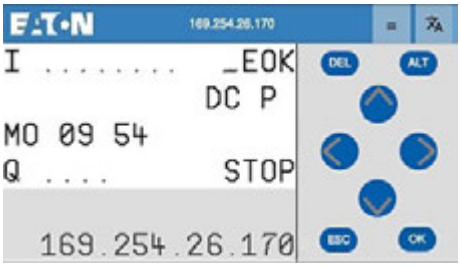


Fig. 14: Display in RTD window

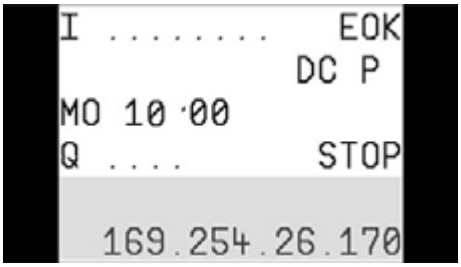


Fig. 15: Full screen mode

6.2 Device menus

The following menus can be accessed from the main menu after logging in, with the specific menus that are available depending on the user group:

Menu	Page 1	2	3
Lock (login)			
Device information	Status	Version	Names
Remote easyE4			
Network			
Screen	Brightness	Display Timeout	
Update	USB		
Security	Auto Logout	Autostart via USB	

To access menu options that are not available, move the visible menu

6.2.1 Lock/ Unlock menu

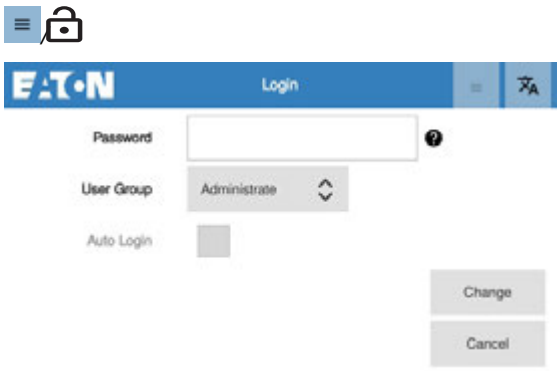
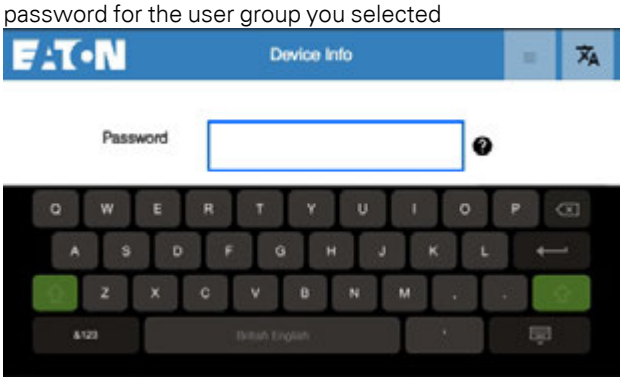


Fig. 16: Login

Used to log in / log out with a user group.

→ No other menus will be available unless a user group is logged in.

Password	Input Field	Enable the field by tapping on it and enter the six-character password for the user group you selected
User group	Selection: Watcher Operator Administrator	
Auto login	Only available for the Watcher and Operator user groups	Used to define the user group with which easy-RTD will start. If you enable the checkbox before logging in, the corresponding user group will be automatically logged in the next time the device starts, and the easy-RTD will attempt to connect to the easyE4 with the last default IP address.



Change button

You can change the password for the selected user group by tapping the Change button

6.2.2 Device information menu

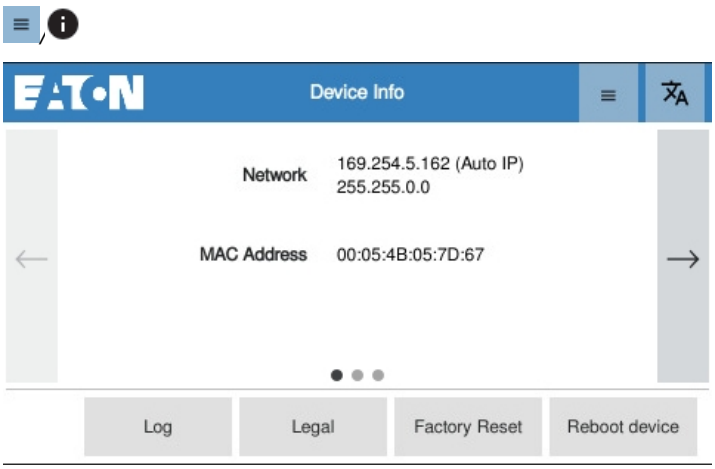


Fig. 17: Device information

Page 1	Address information	Network
		Mac address
Page 2	Version information	Bootloader
		Operating System
		easy RTD
Page 3	easy-RTD information	Hostname
		Serial number
		Panel name

Log button

This menu page can be used to see the various logins into the device and export them through the USB port.

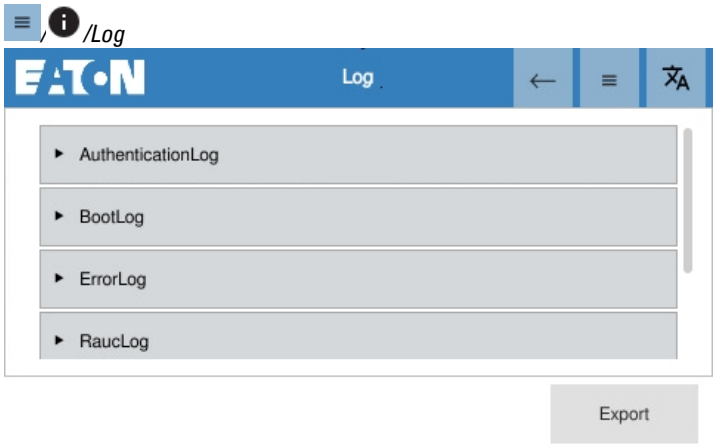


Fig. 18: Log

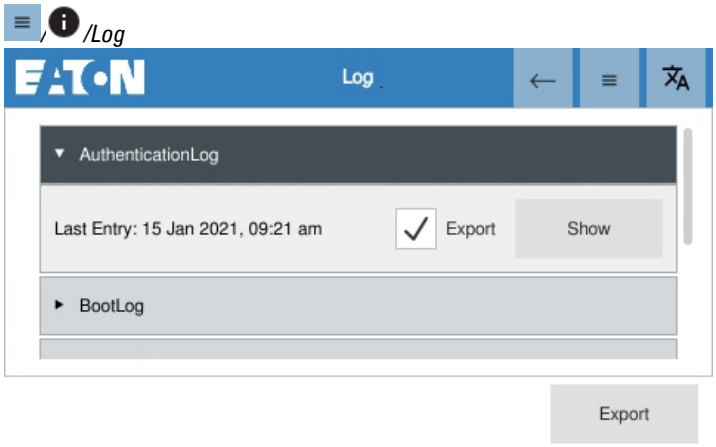


Fig. 19: Selecting a log for Export

It is recommended to export the information, as some logs are extremely long and it will take a long while for the information to be shown on the easy-RTD with the Show button.

The following are available:

Authentication Log:	Log for authentication at the operating system level
BootLog:	Log for the most recent boot operation
ErrorLog:	Log of error messages at the operating system level
RaucLog:	Log for boot partitions
SystemLog:	Comprehensive log for all other system messages, including mounting external USB drives, hardware driver messages, and network events.

To export the logs:

- Plug a USB drive into the easy-RTD's USB port.
- Select the logs you want by enabling the corresponding checkboxes: ☑.
- Tap Export to start exporting the logs you selected.
- Tap ← to exit the menu page.

Legal information button

This menu lists all the open-source licenses used.

≡ / ⓘ */Legal information*

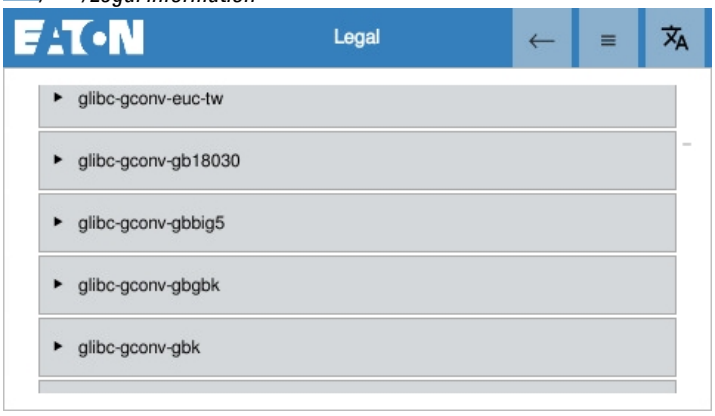


Fig. 20: Open-source licenses used

- To scroll, move through the page by sliding your finger along the right edge
- Tap ← to exit the menu page.

Factory reset button

After confirming the security prompt, the easy-RTD settings will be reset as follows:

1. All settings and passwords will be reset.
2. The firmware version will be restored to the next-to-last update.

→ You will need to update to the latest firmware version again.

Reboot device button

- Tapping this button will restart the easy-RTD.
  None of the user groups will be logged in.

6.2.3 Remote easyE4 [easy] menu

The connection to the easyE4 can be established in this menu.

The blocks for entering and showing IP addresses are available here.

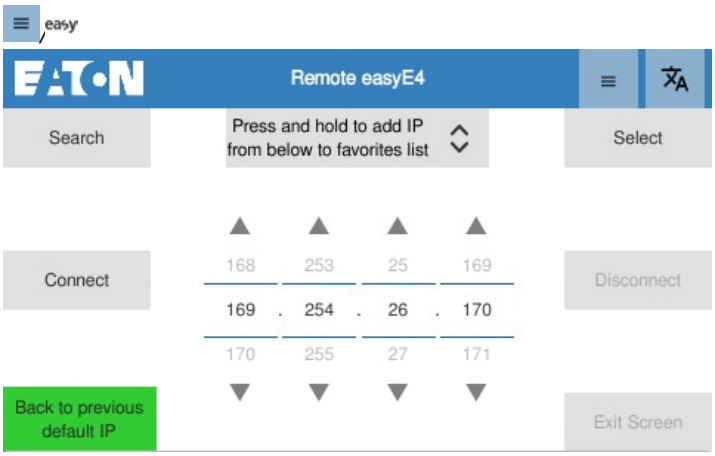


Fig. 21: Remote easyE4

You can enter the IP address in blocks using the arrow buttons.

If you tap and hold a field, an input field will appear.

Set the connection as the default so that a connection will be established directly to the easyE4 with the next access operation.

Search button

▶ Tapping this button will start the search for easyE4 devices.

Buttons in the Search window

Tapping the SEL button will select the IP address that is currently highlighted in the list and exit the page. The selected IP address will then be found in the address field.
Tapping and holding a list entry will have the same effect as the SEL button.

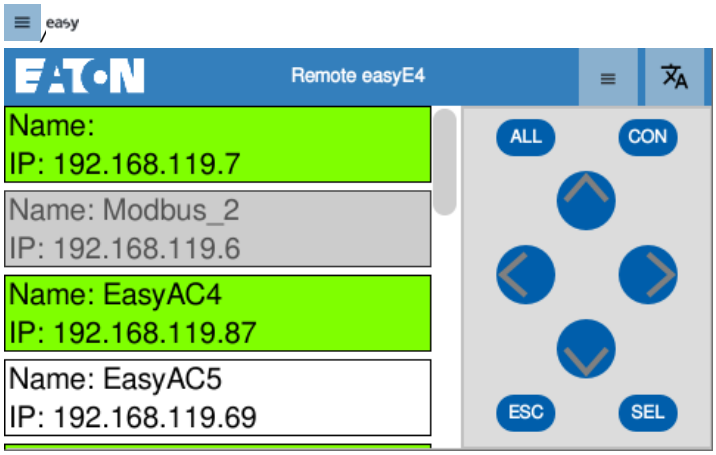


Fig. 22: Remote easyE4/Search

Tapping the ALL button will add all the entries in the list to the list of favorites.

Tapping and holding the ALL button will remove all the entries in the list from the list of favorites.

Tapping the CON button will directly establish a connection to the highlighted easyE4

Tapping the ESC button will exit the page.
If an easyE4 is connected, the corresponding screen will be shown.
If not, the Remote easyE4 menu with the connection options will be shown instead.

Tapping the left arrow will remove the highlighted entry from the list of favorites.

Tapping the right arrow will add the highlighted entry to the list of favorites.

All the entries in the list of search results that are currently in the list of favorites as well will be highlighted green.

Depending on the user group that is logged in, certain menus and input may not be available.

Select button

- Tapping this button will set the IP address selected in the list of favorites.

Connect button

- Tapping this button will start a connection to the selected IP address (easyE4 device).

Disconnect button

▶ Tapping this button will terminate the connection to the easyE4 device.

Back to previous default IP button

▶ Tapping the green button will enter the last IP address set as the default into the address field.

You can then establish a connection to the easyE4 device by tapping the Connect button.

Set as default button

▶ Tapping the yellow button will save the set IP address as the default address.

Tap and hold to add IP from below to favorites list button

▶ Tapping the button will save the configured IP address in the list of favorites.

This list of favorites can be shown by tapping and can be scrolled through

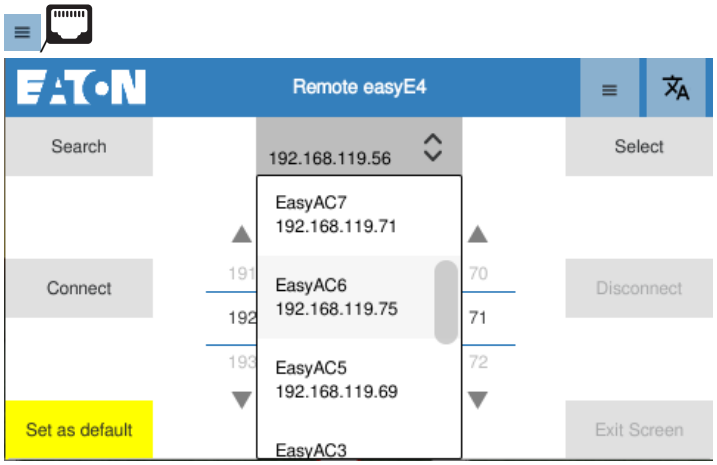


Fig. 23: Remote easyE4

Exit screen button

▶ Tapping this button will make the system exit the menu page, but only if there is a connection to the easyE4 device.

6.2.4 Network menu

This menu shows network settings and can be used to configure the easy-RTD for the network.

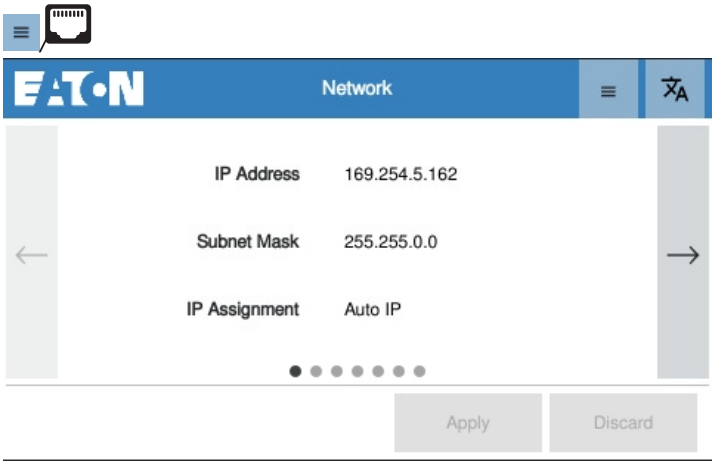


Fig. 24: Network

Page 1	Display of	IP Address Subnet mask IP assignment
Page 2	Display of	MAC Gateway DNS – not active, no web browser application
Page 3	Modus IP address	The following are available: • Static • Auto IP • DHCP
Page 4	IP address	To enter: Tap one of the number groups until the input assistance opens or use the arrow buttons above and below the number groups to change the value.
Page 5	Subnet mask	To enter: Tap one of the number groups until the input assistance opens or use the arrow buttons above and below the number groups to change the value.
Page 6	Gateway	To enter:

	Tap one of the number groups until the input assistance opens or use the arrow buttons above and below the number groups to change the value.
Page 7 Primary DNS	To enter: Tap one of the number groups until the input assistance opens or use the arrow buttons above and below the number groups to change the value.

6.2.5 Screen menu

This menu can be used to configure the display.

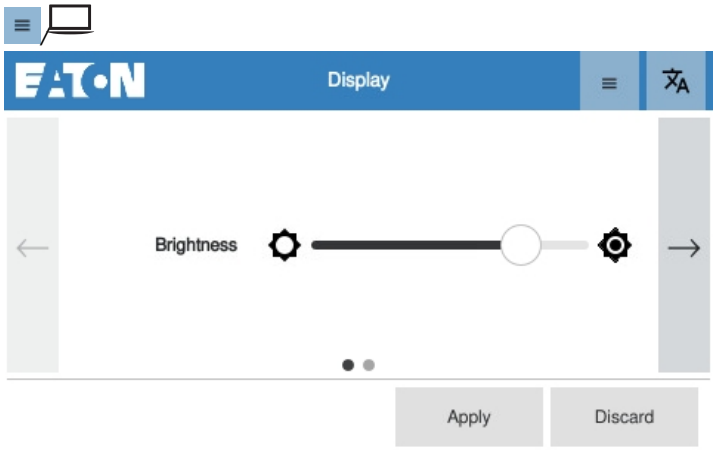


Fig. 25: Screen

Page 1 Brightness	Tap the slider to adjust
Page 2 Display Timeout	Used to set a time after which the display will be automatically turned off in order to save electricity if there is no user activity Enable – The timeout setting will be enabled Disable – The display will always be on

6.2.6 Update menu

This menu can be used to load a different firmware onto the easy-RTD.

Updates can only be carried out using the USB port.

Prerequisites

The easy-RTD settings in the Security menu must be configured in such a way that updates are allowed.

▶ Plug the USB drive with the update bundle into the easy-RTD device's USB port.

The latest update will be entered automatically.

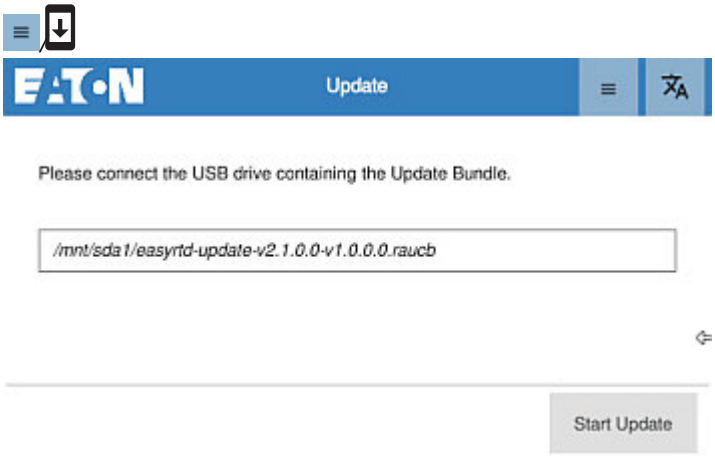


Fig. 26: Update

▶ Start update.

▶ A firmware update security prompt will appear. Confirm by tapping "Start update."

You will need to restart the easy-RTD after the update.

▶ Restart the device.

6.2.7 Security menu

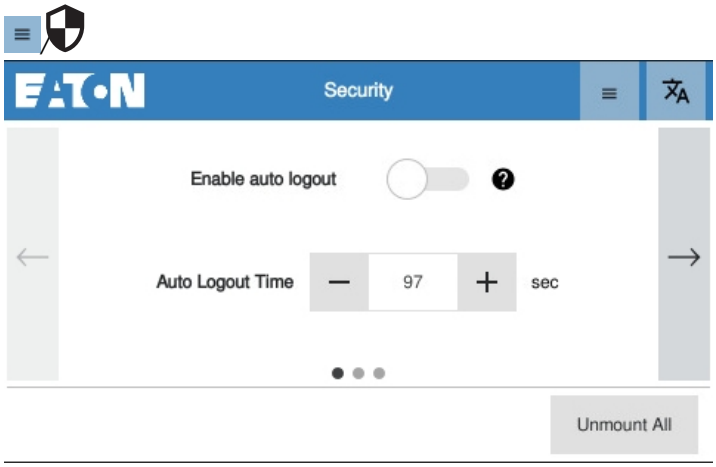


Fig. 27: Security

Page 1	Auto Logout	Enable/Disable
		CAUTION Disclaimer. If you disable the auto logout function, you do so at your own risk. Please read the instructions for setting up a secure configuration. Refer to the Secure Hardening Configuration Guidance
	Auto logout time	Time, in seconds, after which the user will be automatically logged out. Limit: 10-300
Page 2	Enable USB	Used to enable and disable USB access This security setting can be used to protect the device from cyberattacks via the USB port. Default factory setting: Disabled
Page 3	Enable USB Autostart	Enable/Disable If this setting is enabled and a USB drive is connected to the device, the easy-RTD will boot from the USB drive when turned on. Default factory setting: Disabled

Unmount button

▶ Tapping this button will make the operating system cut access to all the partitions on the USB drive that is plugged in.

7. Make Connection

7.1 easyE4 with the easy-RTD

Prerequisites

- A standard RJ45 Ethernet cable, not included.
- User permissions for the easy-RTD
- Remote control permissions set up on the easyE4.
- Existing separate power supply for:
  - easyE4
  - easy-RTD

Standard: Auto IP

1. Establish a physical connection between the easyE4 and the easy-RTD with an Ethernet cable with RJ45 connectors.

2. Open remote easyE4 easy menu

3. Search for and select the easyE4

4. Set as default configuration

→ easyE4 provides an auto IP functionality for the connection

The easyE4 and the easy-RTD control relay feature Auto IP functionality.

7.1.1 Steps for establishing a connection

1. Establish a physical connection between the easyE4 and the easy-RTD with an Ethernet cable with RJ45 connectors.

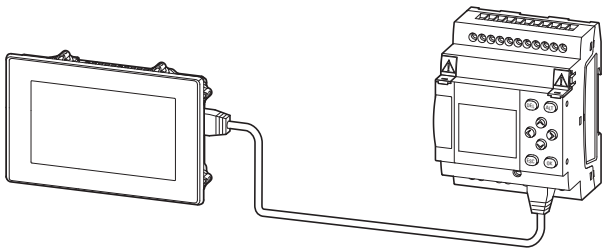


Fig. 28: Ethernet connection using the ports on the easy-RTD and easyE4

2. Power the devices
3. Log in to the easy-RTD
4. Open the easy Remote easyE4 menu

7. Make Connection

7.1 easyE4 with the easy-RTD

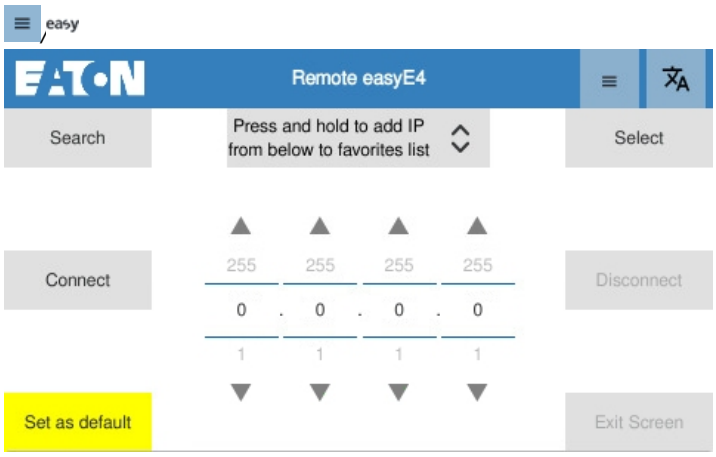


Fig. 29: Remote easy-RTD

5. Find easy-RTD
   The connected will be detected automatically if the easyE4 is using the auto IP functionality

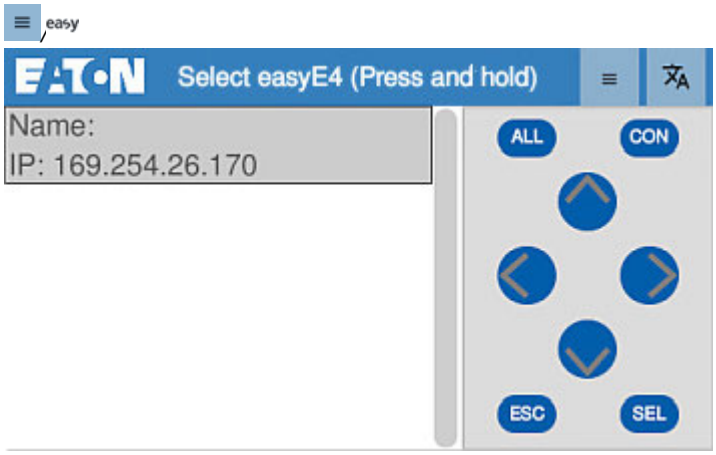


Fig. 30: Remote easy-RTD

6. Select easyE4

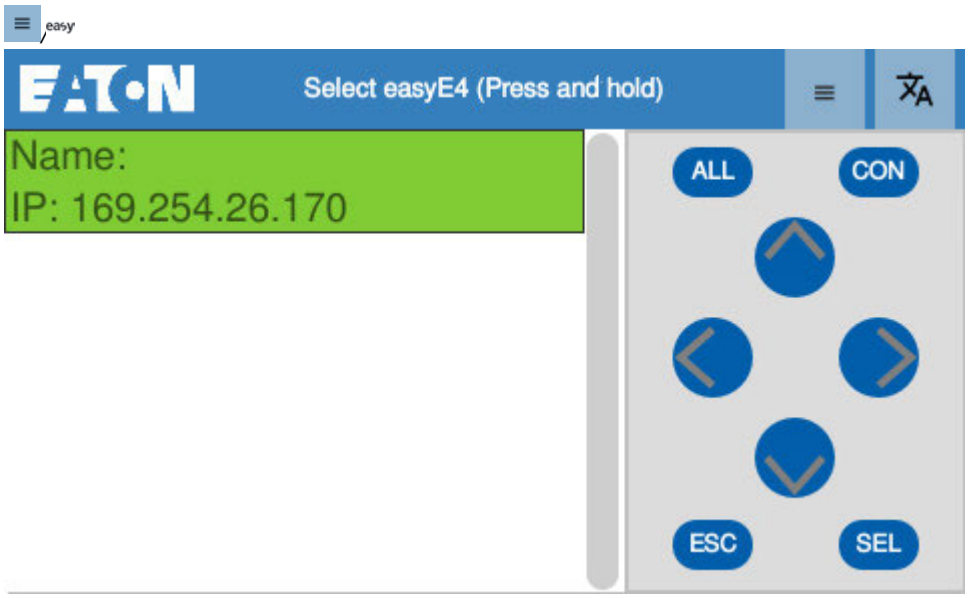


Fig. 31: Remoteeasy-RTD

Tapping the SEL button will select the IP address that is currently highlighted in the list and exit the page.
The selected IP address will now be in the address field.

7. Tap the Connect button to establish a connection to the selected easyE4

Fig. 32: Remote easy-RTD

The content of the easyE4 display and its controls will be automatically duplicated on the easy-RTD.
The easyE4 can be controlled from this view, provided that remote display access permissions are configured correctly in the easyE4. → "Remote Display -access inhibit", page 73
In addition, you can tap and hold the display to switch between the view with control buttons and full screen mode.

If you tap and hold 3 seconds on the gray background around the control buttons, a popup with the list of favorites will appear. You can use this to quickly switch between various easyE4 devices without having to go through the easy Remote easyE4 menu every time.

8. Set it as the default configuration or store it in the list of favorites so that you will not have to run a search again when establishing this connection.

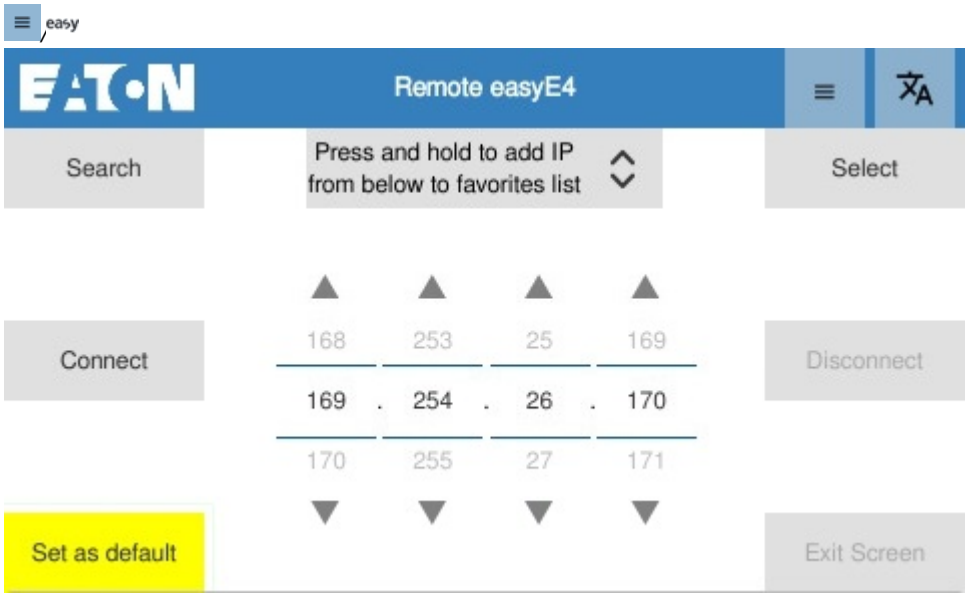


Fig. 33: Remote easy-RTD

You can also enter the IP address directly in the input fields with the arrow buttons or the input assistance. After doing this, tap the Connect button to establish the connection.

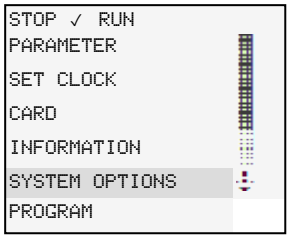
7.1.2 easyE4 settings

If you are using an easyE4 with a display, the remote control permissions can be configured directly on the easyE4 itself and in easySoft 7.
If you are using an easyE4 without a display, the remote control permissions can only be configured with easySoft 7.

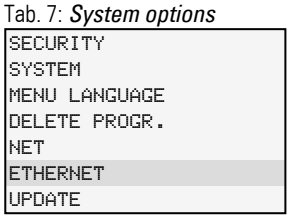
New easyE4 base devices will come with the Auto IP setting configured by default. In order to configure the settings differently on the EASY-E4-...-12...C1(P), use the menu structure and go to *System Options\Ethernet*

Tab. 5: Display EASY-E4-...-12...C1(P)

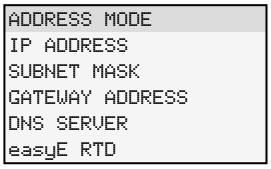
Tab. 6: *Main Menu*



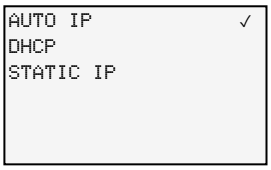
Tab. 7: *System options*



Tab. 8: *System options\Ethernet*

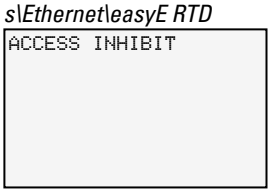


Tab. 9: *System Options\Ethernet\Address mode*



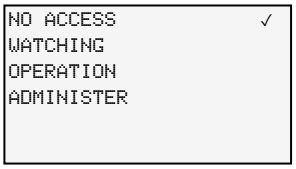
▶ Select the network setting you want.
Standard: Auto IP

Tab. 10: *System options\Ethernet\easyE RTD*



Remote Display -access inhibit
Used to manage remote control permissions for controlling the easyE4 with the easy-RTD.

Tab. 11: System options\Ethernet\easyE RTD\access inhibit



▶ Set up access permissions for each user group.

Access permissions for each user group that define which easyE4 functions can be used from the easy-RTD.

NO ACCESS	No access, i.e., no display either.
WATCHING	Display only (i.e., no control).
OPERATION	The P buttons programmed in the *.e70 program can be used.
ADMINISTER	All available functions, including the easyE4 device menu, can be transmitted by the easy-RTD to the easyE4.

→ For more information on how to establish an Ethernet connection with the easyE4 itself, please refer to manual MN050009, application note AP0050013, and the easySoft 7 programming software program.

7.2 easyE4 connection with the easy-RTD through an Ethernet switch

If the Ethernet connection is routed out of the building at one point, a network isolator (switch, for example) must be used without fail.

If you want to connect more than one easyE4 base device or more than one network station to the easy-RTD, a properly sized Ethernet switch must be placed in between.

Prerequisites

- Standard Ethernet switch with at least two ports (not included)
- Two standard RJ45 Ethernet cables (not included)
- Existing separate power supply for:
  - easyE4
  - easy-RTD
  - Ethernet switch

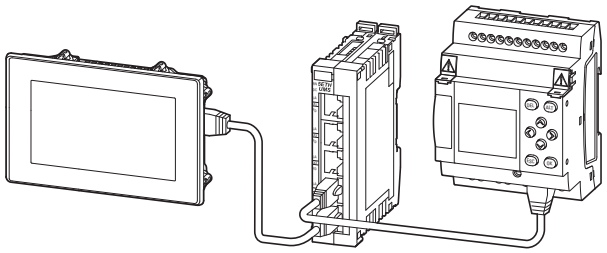
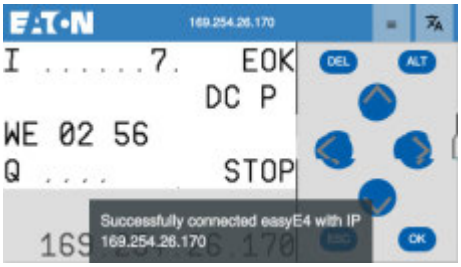


Fig. 34: Ethernet connection between the easy-RTD and easyE4 devices through an Ethernet switch

When using auto IP, the procedure is the same as for establishing a connection without an Ethernet switch.

As soon as the Ethernet switch is connected between the existing connection between easyE4 and easy-RTD, the Ethernet connection will be disconnected and will then be automatically re-established with auto IP.



7.3 easyE4, easySoft 7 connection with the easy-RTD

For project configuration applications, you can add a PC with the easySoft 7 programming software to the network as an additional network station.

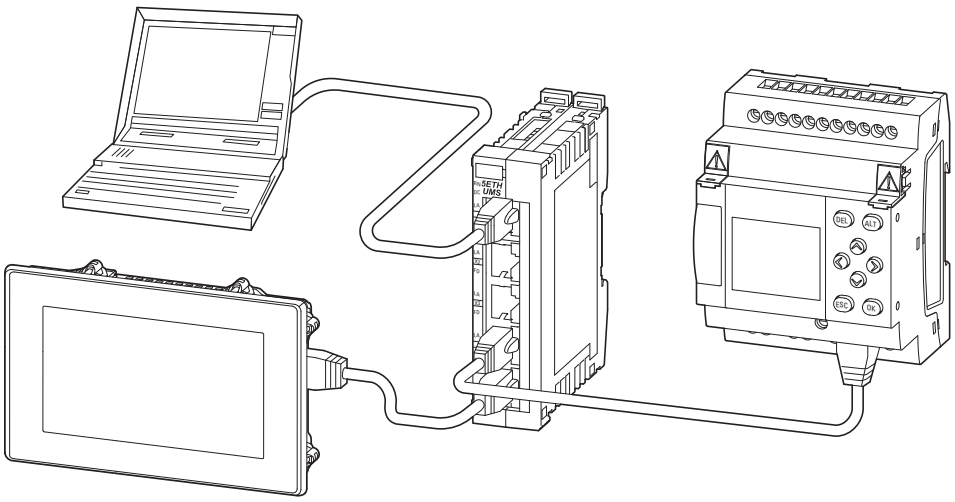


Fig. 35: Ethernet connection between the easy-RTD and easyE4 devices through a switch with access to easySoft 7 (PC)

Make sure to configure the required parameters in the *.e70 program:

- Under the Ethernet tab in the Project view
- The connection to the easyE4 device in the Communication view.

8. Faults

This section provides troubleshooting information for your easy Remote Touch display in case it does not behave as expected.

Fault	Cause	Remedy
easy-RTD will not boot up	No 24 VDC power supply (-20%/+25%)	Check the power cord and power supply
The display stays dark	Brightness is off	Adjust the brightness → "Screen menu", page 66
The Resistive-Single-Touch is not responding or is responding incorrectly when used.	The touchscreen display is soiled	Clean the display
	The set screws are too tight	Loosen the set screws → page 40

8. Faults

9. Maintenance

9.1 Cleaning and maintenance

9.1.1 Cleaning Resistive-Touch display

The display needs to be cleaned on a regular basis.

CAUTION

POINTY, SHARP OBJECTS AND CORROSIVE LIQUIDS

When cleaning the Resistive-Touch display:

- Do not use any pointy or sharp objects (e.g., knives).
- Do not use aggressive or abrasive cleaning products or solvents.

Make sure that no liquids get into the device (short-circuit hazard) and that the easy-RTD is not damaged in any way.

▶ Clean the frame and the display with a clean, soft, damp cloth.

9.2 Repairs

For repairs, please contact your vendor or Eaton's Technical Support.

CAUTION
DESTRUCTION
The easy-RTD should only be opened by the manufacturer or by an authorized center. Operate the Resistive-Touch display until only with the enclosure fully closed and sealed.

Use the original packaging to ship the device.
The device should only be transported in its original packaging after being packed properly.

9.3 Storage, transport and disposal

9.3.1 Storage and transport

CAUTION
UV LIGHT
Plastics will become brittle when exposed to UV light. This artificial aging will reduce the easy-RTD unit's lifespan.
Protect the Resistive-Touch display unit from direct sunlight and other sources of UV radiation.

CAUTION
SHORT-CIRCUIT HAZARD
If the Resistive-Touch display is or has been exposed to environmental fluctuations (ambient temperature, air humidity), condensation may form on or inside easy-RTD. As long as this condensation is present, there will be a short-circuit hazard.
Do not switch on the device when it has condensation in or on it.
If the Resistive-Touch display has condensation in or on it, or if it has been exposed to environmental fluctuations, let the easy-RTD settle into the existing ambient temperature before switching it on. Do not expose the device to direct thermal radiation from heating appliances.

The ambient conditions must be met when transporting and storing the easy-RTD.

The ambient air temperature for storage and transportation must not exceed the maximum specified limit of: -20 – + 60 °C (-4 – +140 °F).

CAUTION
SHORT-CIRCUIT HAZARD
If the Resistive-Touch display is or has been exposed to environmental fluctuations (ambient temperature, air humidity), condensation may form on or inside easy-RTD. As long as this condensation is present, there will be a short-circuit hazard.
Do not switch on the device when it has condensation in or on it.
If the Resistive-Touch display has condensation in or on it, or if it has been exposed to environmental fluctuations, let the easy-RTD settle into the existing ambient temperature before switching it on. Do not expose the device to direct thermal radiation from heating appliances.

Use the original packaging to ship the device.
The device should only be transported in its original packaging after being packed properly.

The Resistive-Touch display is sturdily built, but the components inside it are sensitive to excessively strong vibrations and/or mechanical shock.

Accordingly, make sure to protect the easy-RTD from mechanical loads that exceed the scope of the unit's intended use.

9.3.2 Disposal

Dispose of recyclables as required by your local recycling regulations.
Dispose of recyclables as required by your local recycling regulations.

easy-RTD devices no longer being used must be professionally disposed or returned to the manufacturer or relevant sales department.

▶ Dispose of the easy-RTD unit professionally.

Tab. 12: Materials used easy-RTD

Assembly part	Material
Display	Standard front with standard membrane (fully enclosed)
Back of the housing	Plastic
Display	Insulated material, black

Tab. 13: Materials used in the packaging

Packaging	Material
Outer packaging	Cardboard
Inner packaging	Closed cell polyethylene foam, free of CFCs / plastic bag: polyethylene (PE)
Inner packaging easy-RTD	Cardboard; plastic film and bag: Polyethylene (PE)

Appendix

A.1 Technical data

A.1.1 Data sheet

The current specifications for the device can be found in the data sheet for the device in the Eaton online catalog.

Article no. and type	Description
199740 - easy-RTD-DC-43-03B1-00	easy remote touch display, operating terminal, 24VDC, 4.3 inches, 480x272 px , TFTcolor, resistive, Ethernet

A.1.2 Dimension and weight specifications

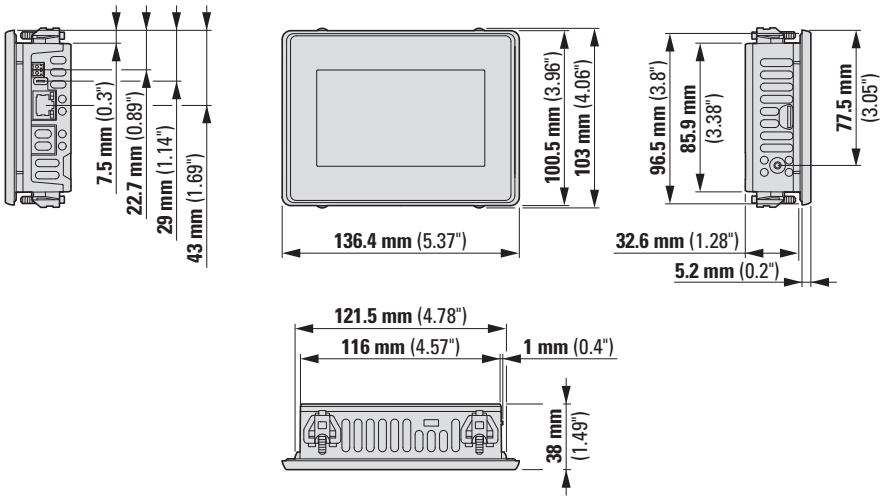
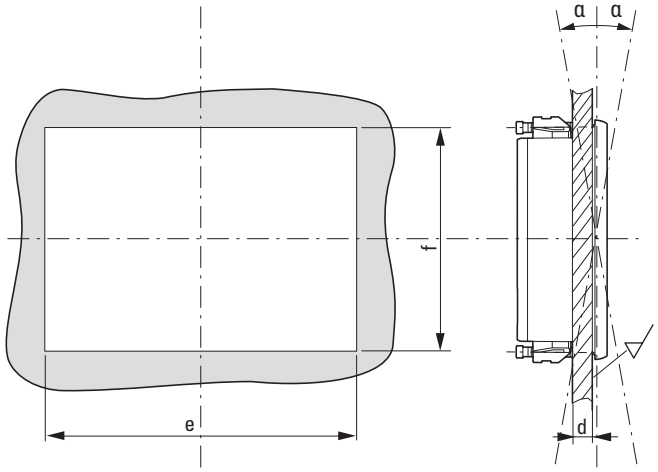


Fig. 36: Dimensions in mm (inches); tolerance: ±0.2 mm

Width x Height x Depth (without plug)	136.4 mm x 100.5 mm x 37.8 mm (5.37" x 3.957" x 2.486") +/- 0.2 mm
Built-in depth	33.1mm
Weight	0.3 kg (0.66 lbs)

Hole diameter built-in



- Material thickness of 2 mm (0.08") ≦ d ≦ 5 mm (0.2") at the installation cutout α max. ± 90°

  and a flatness ▱ ≦ 0.5 mm (0.02") with a surface roughness ▽ Rz ≦ 120; IP 65 → DIN ISO 2768-2 (K)
- Hole diameter built-in: e = 123 mm (4.84") ± 1 mm (0.04"), f = 87 mm (3.43") ± 1 mm (0.04")

Appendix
A.1 Technical data

A.1.3 Approvals and declarations

The following specifications apply to all easy Remote Touch display units.

Approvals anddeclarations		
CE	easy-RTD complies with all applicable European Union (EU) Directives and features the CE marking.	
UL	In progress; approval application submitted	
DNV	In progress; approval application submitted	
Applied standards and directives		
EMC (relevant for CE)		2014/30/EU
	IEC/EN 61000-6-2	Interference immunity for industrial environments
	IEC/EN 61000-6-4	Emitted interference for industrial environments
Security		
	IEC/EN 60950	Safety of Information Technology Equipment
	UL 61010-2-201	Industrial Control Equipment → Section "Installation", page 31
	DIN EN 60529	Degrees of protection provided by enclosures
Product standards		
	DIN EN 60898-1:2006-03	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations
	EN 50178_x	Electronic equipment for use in power installations
	IEC/EN 61131-2	Programmable controllers: Equipment requirements and tests
Mechanical shock resistance	IEC/EN 60068-2-27	15g /11ms
Vibration	IEC/EN 60068-2-6	Displacement amplitude: 5–9 Hz: 3.5 mm; 9–60 Hz: 0.15 mm Acceleration amplitude: 60–150 Hz: 2 g
Free fall, packaged	IEC/EN 60068-2-31	
RoHS	Directive 2011/65/EC	conform
Climatic proofing	Cold to IEC 60068-2-1	
	Damp heat as per EN 60068-2-3	
	Dry heat to IEC60068-2-2	

A.2 Further usage information

Documentations

For more information on additional devices and modules, please refer to the following documentation:

Installation instructions easy-RTD	IL048015ZU
Manual easyE4	MN050009EN

Communication

The easy-RTD can communicate with a variety of easyE4 PLCs. In order to integrate it into your system, you will need to configure additional settings. For more information on what you need to take into account and configure, please refer to the following document:

Application Note easyE4/easySoft 7 Establishing an Ethernet Connection Between easyE4 and easySoft 7	AP0050013

Download Center,Eaton Online Catalog

Enter "easyE4" into the search box and the catalog will take you directly to the corresponding product group in the Automation, Control and visualization section.

Eaton.com/documentation

Eaton.com/ecat

Product information

For up-to-date information, please consult the product page on the Internet.

Eaton.com/easy

Appendix
A.2 Further usage information

Alphabetical index

Eaton is dedicated to ensuring that reliable, efficient and safe power supply is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customer success a top priority. For more information, visit Eaton.com

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06/21 MN048027EN (ICPD MOC-DPS)

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