EC150 User Guide

General

The Netbiter® EasyConnect EC150 is a small remote gateway that connects any Modbus device with the Netbiter Argos server over Ethernet. This makes it possible to remotely monitor and control Modbus devices and networks.
The Netbiter® EasyConnect series is always used together with the Netbiter Argos server (www.netbiter.net) to make the remote monitoring and control solutions easy to install, configure and maintain. This unique combination provides;

Access and security features
• No need for public or static IP number in the installation.
• Easy passing through firewalls in a secure way without the need of complex VPN solutions.

Data management features
The Netbiter Argos offers through a web interface a wide range of features.
• Monitor and control of data
• Alarm management (email, SMS etc)
• Historical data logging and graphical trend graphs
• Reports (weekly / monthly etc)
• Map overview and tracking
• Web services interface to exchange data to
other web sites

Service management features
The Netbiter Argos offers many management features, especially suitable for large sites.
• Management of authorized users, projects, devices etc
• Documentation of remote sites
• Automatic backup / restore or remote configurations and software
• Traffic analyser and reports

Additional functionality
• Transparent Modbus RTU/TCP Gateway

The Netbiter® EasyConnect product family is designed to be plug-n-play and easy to install, configure and maintain. It's plug-n-play structure makes it possible to do large scale installations quickly without being an
IT/mobile network expert. Simplicity is key and this is what the Netbiter® EasyConnect series is about.

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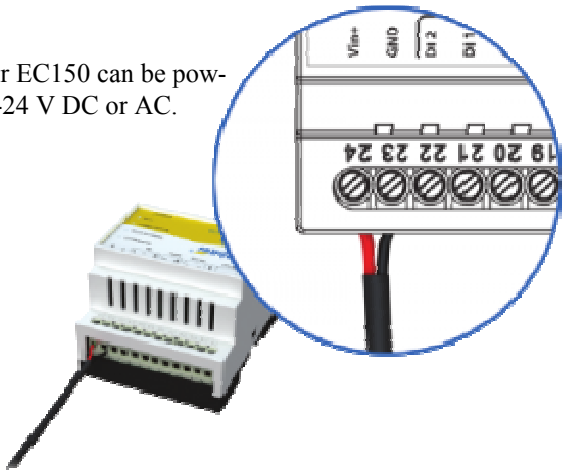
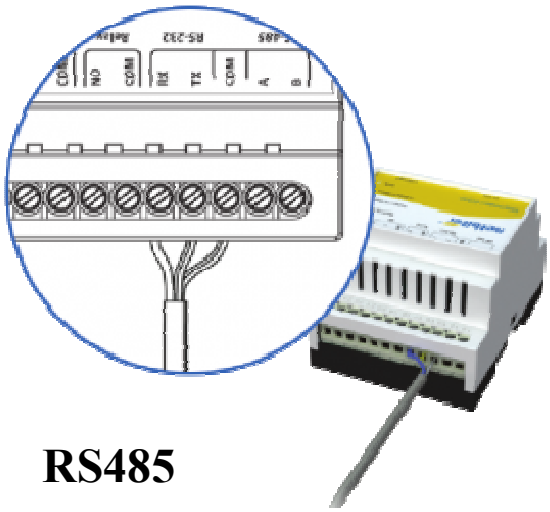
Connectors

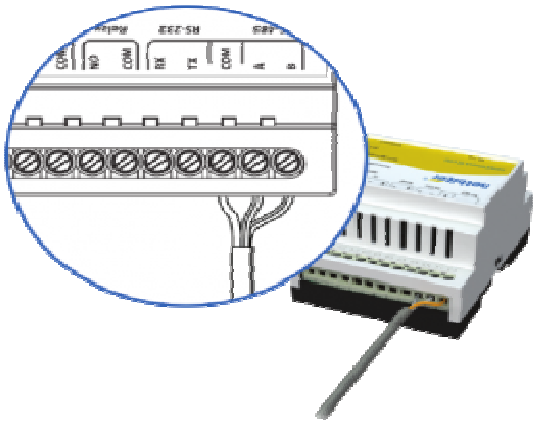
Power

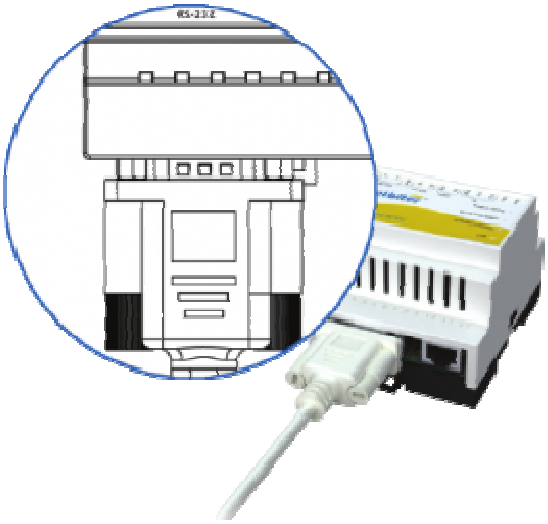
The Netbiter EC150 can be powered with 9-24 V DC or AC.





RS485



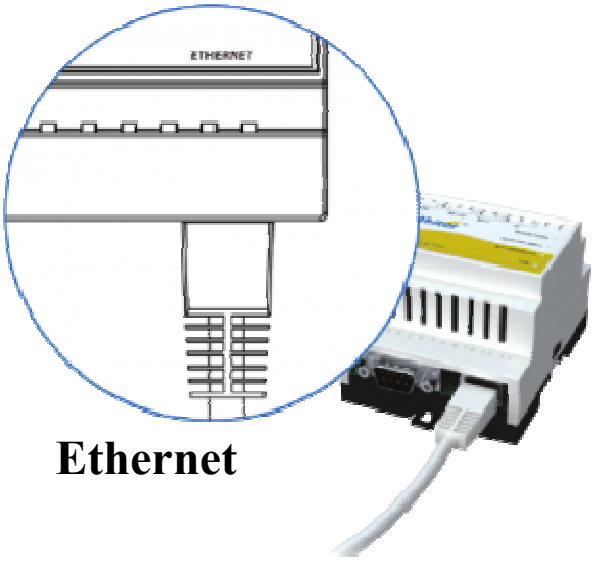


RS232 using a d-sub connector

RS232 by wire or d-sub connector

Can be used to connect ModbusRTU slave devices, called sub device at Netbiter Argos. There are two ways to connect RS232 to EC150, directly by wire or through a standard 9-pin d-sub connector.

Connect directly by wire



Ethernet

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Activate the EC150

LED indicators

Name	Color	Function
Module Status	OFF	**No power**
	Red/Green	See Module status below
Serial Status	Green	**Flashing** – Serial packet receive
	Red	**Flashing** – Serial packet transmit
Activity/Collision	Green	**Flashing** – Ethernet Packet, receive
	Red	**Flashing** – Ethernet Collision de-tected
Ethernet link	Green	**Turned on** – Ethernet networkde-tected, 10 Mbps
	Orange	**Turned on** – Ethernet networkde-tected, 100 Mbps

Module status LED

	Module Status LED indicat on	Descript on and act ons
System messages	No power	Check that the power supply is correct.
	Problem with Network set ngs	**Ethernet** Make sure that the network set ngs are correct: • If set to DCHP make sure there is a DHCP server on the network. • If set to stat c IP address make sure that the IP-address, gateway and DNS is correct. See sect on B for further instruct ons.
	No connect on to netbiter.net	**Ethernet** Make sure that port 5222 is open in the f rewall.
	Boot-up	During boot-up the module status LED is constantly lit.
	Running	This indicates an opt mal setup.

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Configure EC150

The configuration of the EasyConnect is done under the Menu **Configure Devices** at NetBiter Argos. All the available devices will be lis
Click **Configure** to get access to all settings.

Sub device

Every EasyConnect must have a sub device. The built in I/O will automatically show as a virtual sub device, and will be ready to use imm

Every parameter in a sub device can be viewed as live values at the Overview page for the remote gateway.

Device templates

To communicate with a Modbus sub device connected to the EasyConnect, you need a **Device template** which is a interface between the
and the EasyConnect. The Device template contains information about the parameters in your sub device and how they should be handle
upload, edit and create new device templates under the menu **Device templates**. To create a new device template you will need the Modb
mentation from the manufacturer of your sub device.

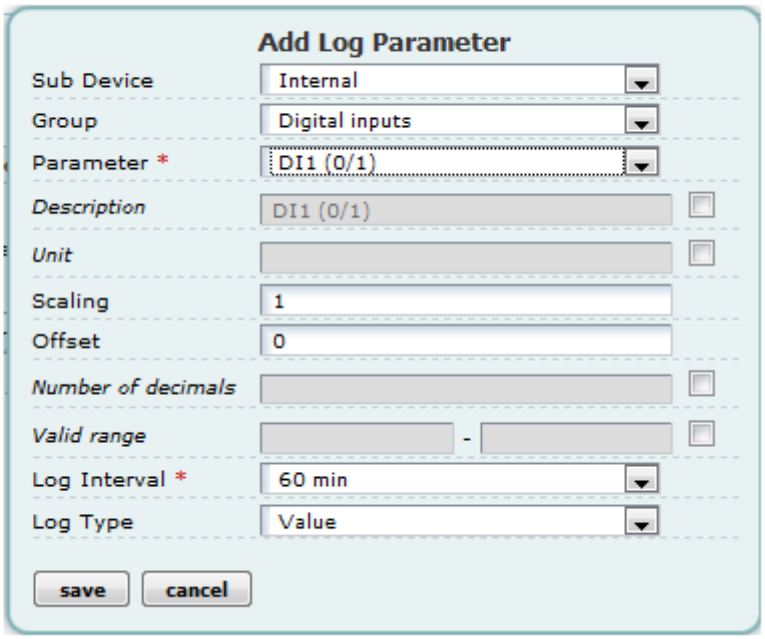
Adding a new Sub device

Press “add sub device” and fill in it´s settings.

Add visualization and log parameters

To add a visualization or log parameter, click the **add log parameter** button.

Log parameter settings



- **Sub device**: The sub device that has the parameter that shall be logged.
- **Group**: The group in where the parameter resides.
- **Parameter**: The parameter that shall be logged.
- **Description**: A name and description for the parameter. If the box isn´t checked, the default description from the template will be used.
- **Unit**: The unit of the parameter. If the box isn´t checked, the default description from the template will be used.
- **Scaling**: The logged parameter can be scaled with this value (Actual value at terminal/Scale).
- **Offset**: An offset that is added to the parameter value.
- **Number of decimals**: Defines the number of decimals to use for this parameter. If the box isn´t checked, the default description from the template will be used.
- **Valid range**: Defines the maximum and minimum for a write parameter. If a user tries to enter a value outside the range a warning message will appear. If used in combination with scaling, it is the scaled value that should be used. If the box isn´t checked, the default description from the template will be used.
- **Log interval**: The interval for every sample (5 minutes to 60 minutes). This could be set to *Live value* if the parameter only should be read/(writeable) and not logged. If it is set to *Live value* this parameter will be accessible on the *Live value* page under the device overview.
- **Log type**: Set the log type. Here you can choose between *Value* and *Delta*. *Value* logs the parameters actual value and Delta logs the difference since last log sample.

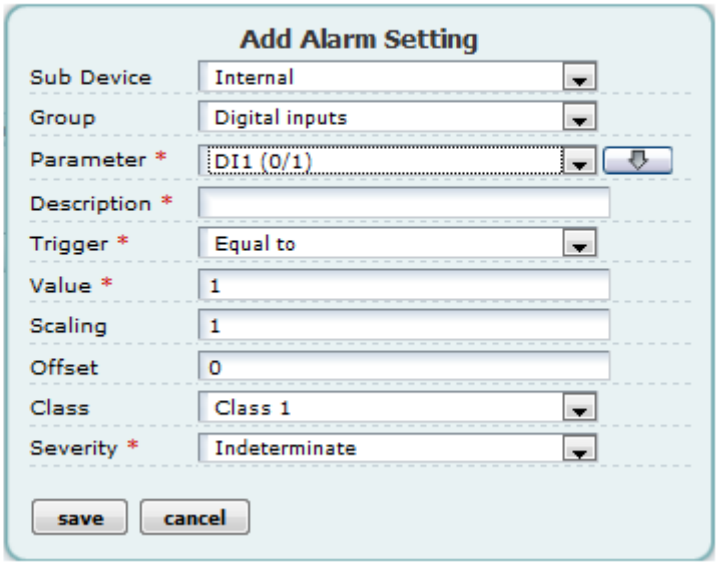
Example of use of scaling and offset:

$$\text{Value used for log or alarm} = \frac{\text{Actual value at terminal}}{\text{Scale}} + \text{Offset}$$

Add alarm parameter

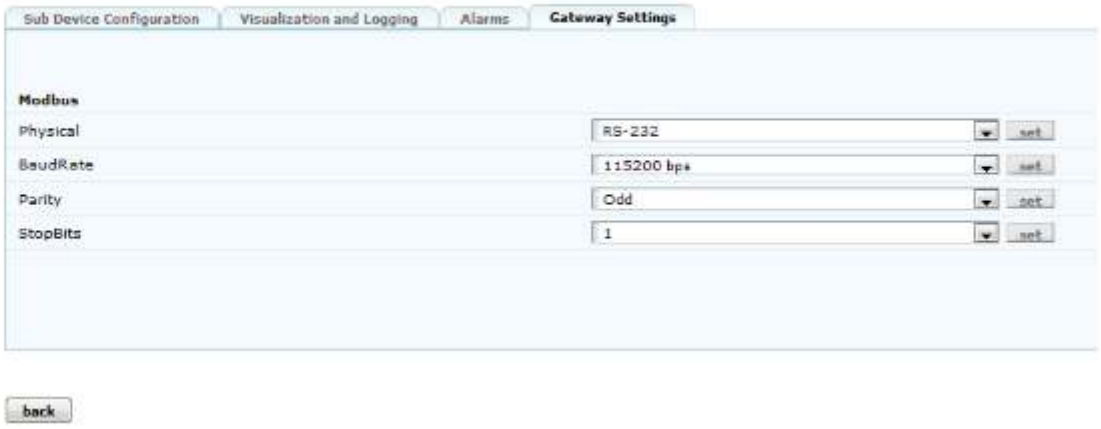
To add an alarm parameter, click the **add alarm parameter** button.

Alarm parameter settings



- **Sub device**: The sub device that has the parameter that shall be logged.
- **Group**: The group in where the parameter resides.
- **Parameter**: The parameter that shall be logged.
- **Description**: A name and description for the parameter. If you click the down arrow on the right hand side of the parameter list, the parameter name will be copied.
- **Trigger**: Equal to, Not equal to, Greater than or Less than value.
- **Value**: Triggvalue.
- **Scaling**: The logged parameter can be scaled with this value (Parameter/Scale).
- **Offset**: An offset that is added to the parameter value.
- **Alarm Class**: Sets the class for the Alarm. You can choose between Class 1 to Class 10.
- **Severity**: Can be set to Indeterminate, Warning, Minor, Major and Critical.

Gateway settings



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Modbus

- **Physical**:Choose what physical Modbus interface your sub device is connected to.
- **Baudrate**:Set the speed which your sub device is communicating with. Refer to the sub device's manual.
- **Parity**:Set the parity that your sub device uses for error detection. Refer to it's manual.
- **Stopbits**:Set the the amount of stopbits your sub device uses. 1 or 2 stopbits can be used. Refer to the sub device's manual.

Advanced configuration

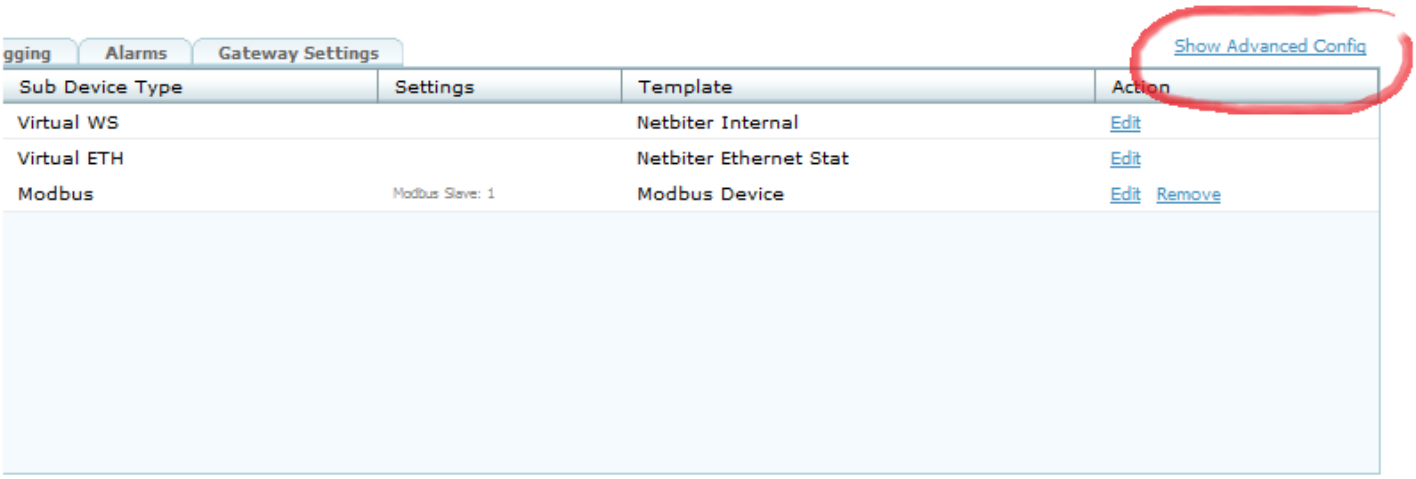
The EasyConnect has the capability to handle Device profiles, which are a shared configurations between several Remote gateways. When changing a device profile it will apply to all devices that are connected to the Device profile. Every device that is sharing the Device profile has to be synchronized.

Using Device profiles decrease the workload for administrators and make it easy to manage installations that are similar. Alarms and/or logs can be configured in a Device profile, and several Device profiles can be connected to one Remote gateway.

A Remote gateway that have Device profiles connected can also have individual alarm and log parameters, which makes it quick and flexible to make powerful configurations and also easy to maintain.

In the example above there are log and alarm parameters configured in the device profiles. Device profile A is shared for all the three slaves. Device Profile B, and the configured parameters, are shared by the sub device in the middle and to the right. The device profile C are shared by the sub devices to the right and to the left.

The devices also has individual set of parameters, named configuration in the image above.



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Click **connect device profile** to add a profile to a sub device.

To edit or create a device profile go to **Device Profiles** in the menu. Parameters are configured in the same way as for a remote gateway.

Synchronize configuration

When a configuration has been made it has to be synchronized to make the EasyConnect run with the new settings. If the remote gateway configuration has been changed but not synchronized, the text for last synchronization will be printed in red. To start the synchronization click **Start config sync**.

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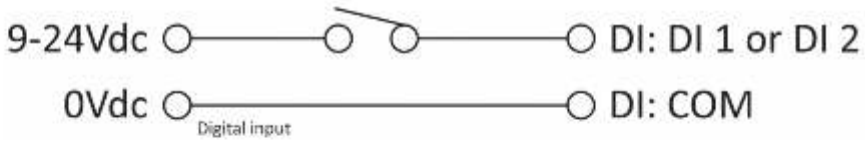
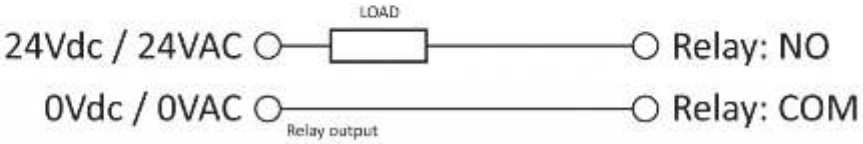
Example of input/output wiring diagrams

Digital input



Relay output



Help & Support

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