



myGEKKO BASE R22



Technical manual



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1 Safety and warranty

These reliable devices are built according to the current rules of technology. They were tested and left the factory in perfect condition.

However, there are residual risks. Read and follow the safety instructions to avoid hazards.

Ekon GmbH assumes no liability for damages caused by non-observance of safety instructions.

Used safety instructions

The following notes indicate special hazards when handling devices or provide useful hints:

Hints in these boxes are general tips on text that will be highlighted.



NOTE

The signal word Note indicates useful tips and recommendations for the efficient handling of the product.



CAUTION

Health damage/Property damage

The respective warning symbol in conjunction with the signal word Caution indicates a danger that can lead to slight (reversible) injury or material damage.



WARNING

Serious damage to health

The respective warning symbol in conjunction with the signal word Warning indicates an imminent danger, that can lead to death or serious (irreversible) injuries.



DANGER

Danger to life/Serious damage to health

The respective warning symbol in conjunction with the signal word Danger identifies an imminent danger that leads to death or serious (irreversible) injuries.

Safety information

Safety instructions for the product described in this document are listed below. Please note these when using the product.



DANGER

Electrical Voltage!

Danger to life and fire due to electrical voltage

Inside the device are unprotected live components. Observe the VDE regulations. Disconnect all cables to be installed and take precautions against unintentional switching on. Do not operate the device if damaged. Decommission the device or system and secure it against unintentional operation if it can be assumed that safe operation is no longer guaranteed.



CAUTION

Device damage due to external influences!

Moisture and contamination of the equipment can destroy the equipment.

Protect devices from moisture, dirt and damage during transport, storage and operation.

Warranty

The device is intended solely for proper use. Any improper modification or non-observance of the operating instructions invalidates any warranty or guarantee claim. After unpacking, the device must be inspected immediately for mechanical damage. If there is damage in transit, the supplier must be informed immediately. The device may only be operated as a fixed installation, ie only when installed and after completion of all installation and commissioning work, and exclusively in the environment provided for this purpose. Ekon GmbH shall not be liable for changes to standards after publication of the operating instructions.

2 General information

myGEKKO B.Series BASE R22 is a REG controller for the implementation of all areas of modern building control.

The combination of numerous complex control algorithms with a user-friendly and easy-to-understand interface enables the visualisation and operation of various building functions via smart devices such as smartphones, tablets, laptops or PCs. The configuration and commissioning is carried out directly via myGEKKO B.Series BASE R22 and via the already installed software. Commissioning takes place via the IO configuration or the parameterisation level. Programming skills are not necessary for this.



Features

- 4x digital inputs 24VDC (DI)
- 4x analogue inputs (AI)
- 2x digital outputs 24VDC (DO)
- 4x digital outputs 230VAC (DO)
- 2x Analogue outputs (AO)
- 2x RS485
- 1x microUSB
- 2x Ethernet ports
- 1x WLAN modem
- 1x microSD card slot

3 Technical specifications

Parameters	Value
Housing	Plastic
Color	White similar to RAL9003
Installation	REG installation
Dimensions	98.7 x 105 x 64mm
Weight	280 g
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +70°C
Ambient humidity	Max. 85% RH not condensing
Supply voltage	24 VDC
Power consumption (internal)	Max. 200mA
Protection class	IP20
Degree of soiling	2
Protection class	III
Certifications:	<p>Directive 2014/53 / EU (RED) Directive 2014/30 / EU (EMCD) Directive 2014/35 / EU (LVD) Directive 2011/65 / EU (ROHS)</p> <p>Health and Safety of the User: EN 60950-1:2006 +A1+A2+A11+A12+CORR1 EN 60730-1:2016</p> <p>Electromagnetic compatibility: EN 61000-6-2:2005+CORR EN 61000-6-3:2007+A1</p> <p>Restriction of Hazardous Substances: EN 50581:2012 EN60947-4-1 EN60721-3-3</p>

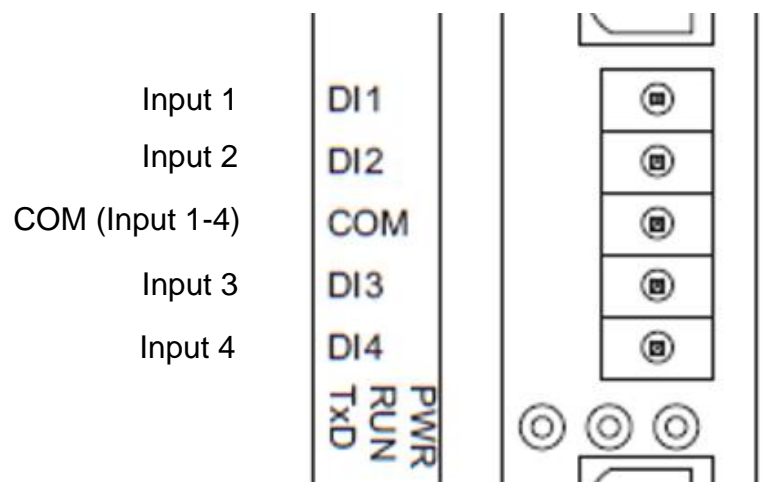
Connection data

Parameters	Value	Note
Insulation stripping length	7 mm	
DI	0.1 -1.5 mm ²	Plug-in screw terminal
AI	0.1 -1.5 mm ²	Plug-in screw terminal
DO (RO)	0.1 -2.5 mm ²	Plug-in screw terminal
DO (SSR)	0.1 - 2.5 mm ²	Plug-in screw terminal
AO	0.1 -1.5 mm ²	Plug-in screw terminal
Care	0.1 - 2.5 mm ²	Plug-in screw terminal

3.1 Digital Inputs

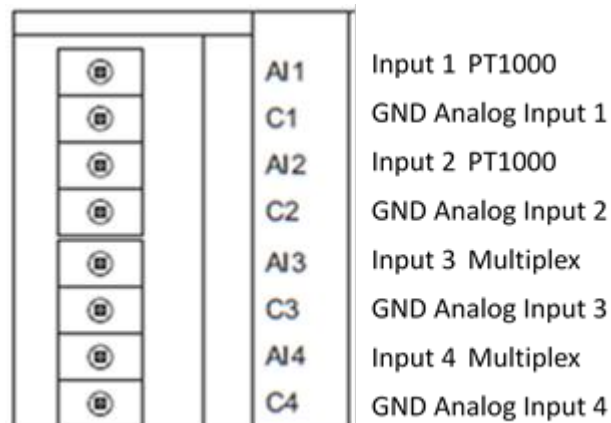
The inputs are galvanically isolated from the module via optocouplers.

Parameters	Value
Input	Optically isolated/optocoupler
Circuit insulation voltage	1 kV
Input voltage	18-30V DC / 18-26VAC
Switching point	<5V DC / AC max.



3.2 Analogue Inputs

Parameters	Value/Resolution
PT 1000 input	-50 to 150°C Resolution: 0.01°C Deviation: 0.25%
Voltage input	Voltage: 0-10V Deviation: 0.25%
Power input	Electricity: 0-25mA Deviation 1%



Input AI1, AI2 fixed:

1. PT1000 -50 ... 150°C

Input AI3, AI4 switchable via DIP switch:

- PT1000 -50 ... 150°C
AI3: J1=OFF, J2=ON
AI4: J3=OFF, J4=ON
- Voltage 0V – 10 V
AI3: J1=ON, J2=OFF
AI4: J3=ON, J4=OFF
- Current 0 – 20 mA
AI3: J1=OFF, J2 OFF
AI4: J3=OFF, J4=OFF

In addition, an external resistor 125 ohms is required.



3.3 Digital outputs

Parameters	Value
RO output (digital relay output)	Single-pole switch with working contact Continuous load current: 5A Switching voltage: 250VAC / 30VDC Isolation (EN 60947-4-1 ed. 3 general use, AC1, no inductive loads) (EN60730-1: 2017: Chapter 13, Table 12)
DO output: (Solid State Relays (SSR))	Continuous load current: 0.4 A Switching voltage: 24V AC / DC Isolation 1kV EN 60947-4-1 ed. 3 general use, AC1, no inductive loads

Digital relay output 1

Digital relay output 2

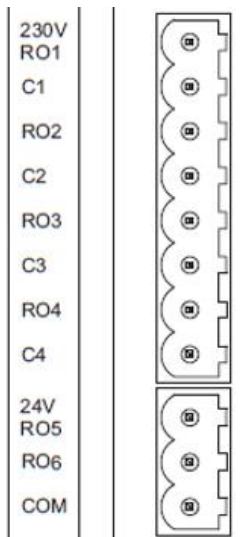
Digital relay output 3

Digital relay output 4

SSRO

SSRO

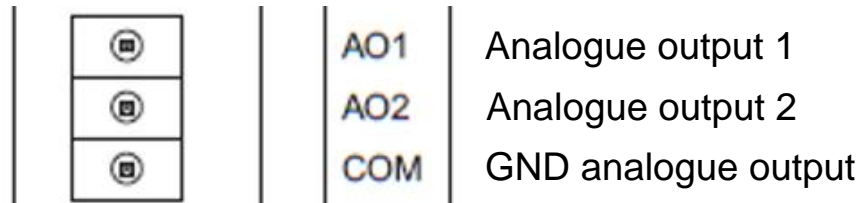
COM for DO5 and DO6



3.4 Analogue outputs

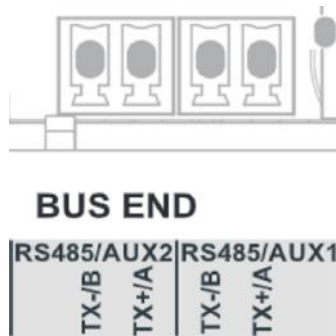
Parameters	Value
Output	0-10V Max. 10 mA
Isolation voltage	1 kV

Parameters	Value
Typical load	10kOhm



3.5 AUX1/RS-485

Parameters	Value
Interface	RS-485
Baud rates	9.600, 19.200, 38.400, 57.600 and 115.200
Parity	adjustable



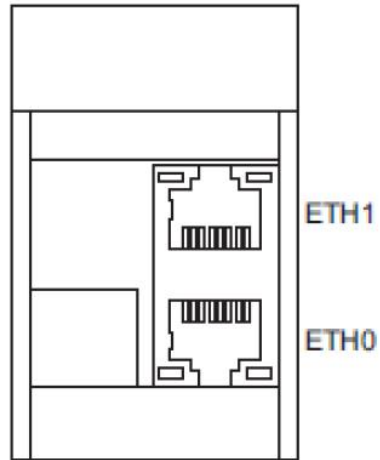
TS (Termination Switch) 180 ohm terminal resistance

3.6 Ethernet connection

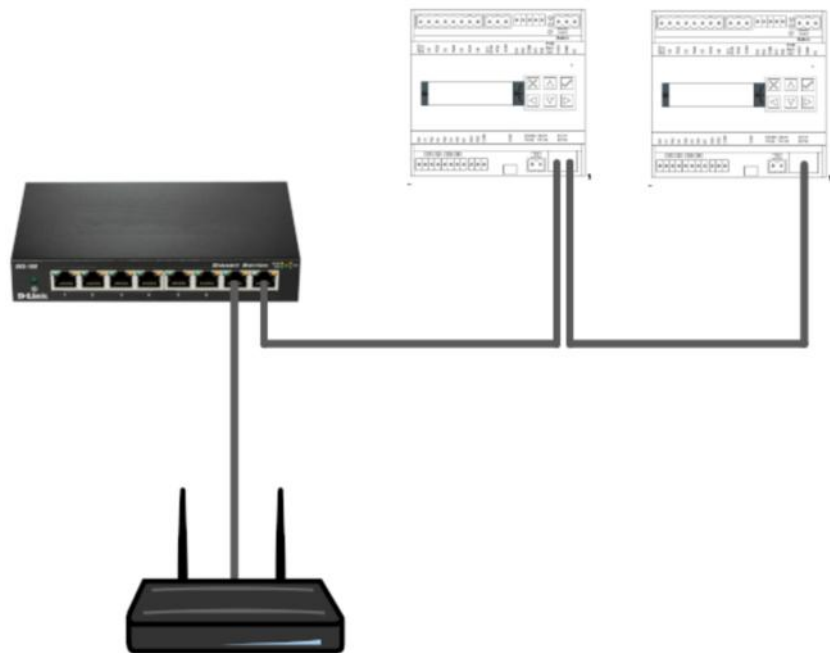
Parameters	Value
Ethernet type	10/100 base T
Circuit insulation voltage	1kV electrically isolated

The two Ethernet ports are separated by default, thus a technology network (ETH1) and an Internet network (ETH0) can be realised. Ports can also be

bridged via software to create a unified network. There are several ways to do this:



Bridged (default) In this network mode, the two Ethernet ports are bridged, i.e. there is only one network. This mode is suitable for connecting e.g. two controllers B.Series BASE R22

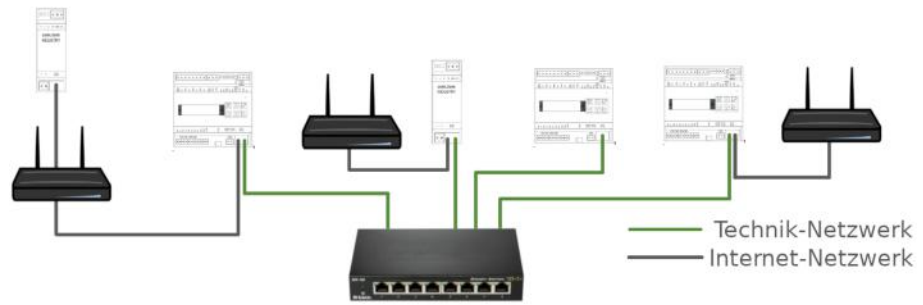


CAUTION

Devices with a high data throughput rate must not be "bridged" via myGEKKO B.Series BASE R22.

This leads to high CPU load and possible damage to the device.

Switch In this network mode, both Ethernet ports are disconnected, i.e. two networks are created. Example multi-family house, with common technology (heating, ventilation).



3.7 WLAN Network

Parameters	Value
Standards	IEEE 802.11 a/b/g/n Dual Band
Bandwidth	20 MHz

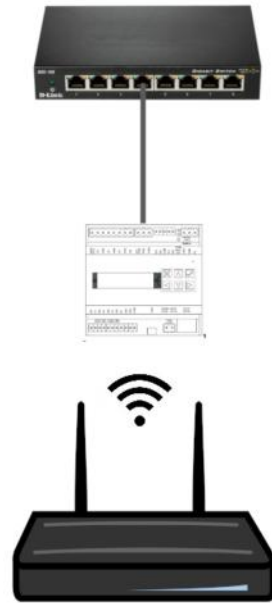
The integrated WLAN module can be operated as a client (subscriber) or as an access point (access point).

WLAN access point mode: The WLAN access point mode is only intended for commissioning and provides a non-encrypted network. For more information, see chapter 4.2 Web access.

WLAN client mode: In client mode, myGEKKO B.Series BASE R22 can connect to a WLAN network with encryption type WPA2. To configure this mode with SSID and password, you must connect to myGEKKO via the web interface, log in as a Configurator and access the network settings. For more information on accessing your myGEKKO, see chapter 4.2 Web access.

In the client mode, the WLAN network is the main network and the LAN network is automatically set to Bridged mode. Thus, only the additional IP address

can be set in the LAN network, whereby myGEKKO B.Series Base 22 can also address devices in the LAN network or can be controlled over the same.



4 REG Installation instructions

4.1 User group

The installation and assembly of electrical equipment may only be performed by a qualified electrician. Failure to follow the instructions may result in damage to the unit, fire, or other hazards.



NOTE

These instructions are part of the product and must remain with the end customer.

In principle, the valid electrical installation regulations for domestic installations must be observed and adhered to.

4.2 General safety information

Inside the housing there are voltage carrying elements. Touching terminals is life threatening if the system is not disconnected from the mains. There are no serviceable parts inside the device. The opening of the housing is therefore only permitted by employees of the manufacturer.



CAUTION

Beware of external voltage on the product!

When servicing the product or the connected peripherals, all connections to the mains must always be disconnected. Take into account all circuit breakers which supply dangerous voltages to the device. Mains voltage must not be applied to the terminals as long as the ground connection point is not properly grounded.

4.3 Installation instructions

The units are designed for stationary operation and must be mounted in such a way that contact with voltage carrying terminals is excluded during normal operation.

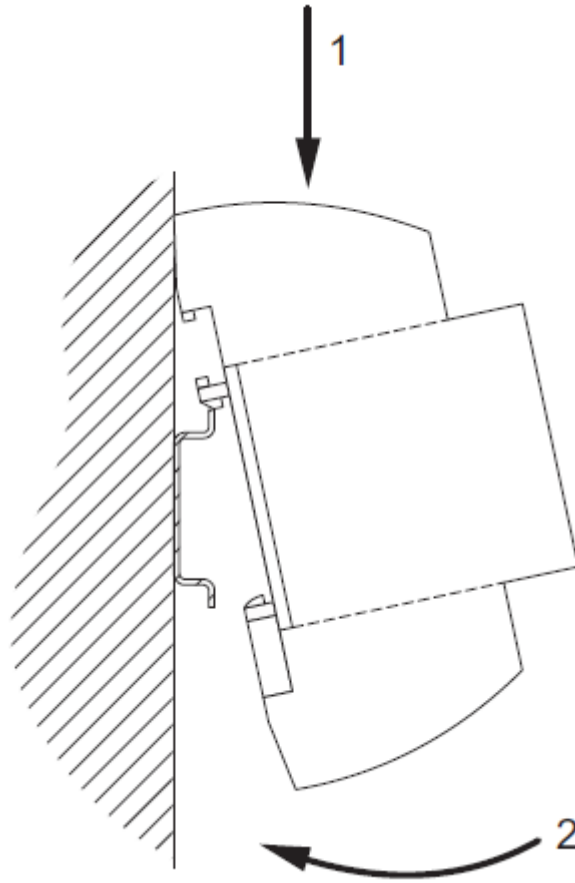


NOTE

As a rule, the product is mounted under covers. During installation, particular care must be taken to ensure that the equipment is protected against environmental influences for example, water, moisture and dirt.

The devices may only be connected when the power supply is de-energized.

Depending on the installation, either snapping onto DIN rails (C-35) or screw fixing (surface mounting) can be selected by a mounting plate.



The strain relief of the connecting cables must be made during the installation.
The modules have no strain relief.

5 External fuse protection

The 24VDC supply voltage must be externally fused according to the cross-section of the connection wires and the maximum current consumption of the device.



WARNING

For the B.Series BASE R22, it must be ensured that the maximum current of the digital outputs is limited by an external fuse:

- DO 1-4: 5 A @ 230 V
- DO 5-6: 0,4 A @ 24 V

All connection wire cross-sections must be designed according to the maximum permissible current.

6 Commissioning controller

6.1 Text display

The text display is used to read current information about the network status and to change various settings. The menu is structured as follows:

Navigation The navigation of the controller is done exclusively via the arrow keys. To change a setting, first press the confirmation button. Now the setting is changed with the arrow keys and confirmed with the confirmation key.

Info

LAN

- ETH0 IP: IP Address Main Network (Bridge / Switch)
- ETH0 MASK: Subnet mask main network (Bridge / Switch)
- ETH0 GW: Gateway of the main network (Bridge / Switch)
- ETH0 IP2: IP address of the subnetwork (bridge / switch / WLAN)

- ETH1 IP: IP address of the second network interface (only available in switch mode)
- ETH1 MASK: Subnet Mask Main Network 2 (Bridge / Switch)

WLAN

- WLAN IP: IP address WLAN network
- WLAN MASK: Subnet mask WLAN network
- WLAN GW: Gateway of the WLAN network

DNS

- Address of the DNS server

Settings To access the settings, please enter the password "1000".

Network mode

- LAN-STATIC: Switch mode with static IP address
- LAN-DHCP: Switch mode with DHCP
- LAN-STATIC-BRIDGED: Bridge mode with static IP address
- LAN-DHCP-BRIDGED: Bridge mode with DHCP
- WLAN-DHCP: WLAN client mode with DHCP

Apply Network Changes

- After changing the network settings, tap the right button to activate the settings immediately. Otherwise, they will only take effect after a restart.

WLAN-AP

- Use this function to activate the WLAN access point during commissioning. For more information, see chapter 4.2 Web access.

Service **Factory reset**

- This function is used to reset the network and security settings including access passwords. The I/O settings, however, remain untouched. This feature reboots the system

Reboot

- This function is used to restart the system.

Viewer

- This function is used to activate the viewer.

6.2 Web access

myGEKKO B.Series BASE R22 can be accessed via the web browser in two different ways:

Access over the LAN network (eth0 or eth1)

myGEKKO B.Series BASE R22 has a fixed IP address in the delivery state; the network is bridged and access to myGEKKO user interface can be made via a browser of the latest generation via the address <http://192.168.2.252:8080>.

Access via a service access point

Activate the WLAN AP via the text display of myGEKKO B.Series BASE R22. Connect your WLAN e.g. on the smartphone with "myGEKKO_BNIO".

Then open your web browser and connect to the address <http://192.168.149.1:8080>

This WLAN AP is unencrypted and is only used to set up your myGEKKO. Please disable this wireless AP again after setup. The WLAN AP is automatically deactivated after a restart.



NOTE

Parallel access to myGEKKO B.Series BASE R22 across multiple browsers and devices is not possible; only direct access is allowed.

Factory settings

When resetting to factory settings, the I/O configuration will not be changed.

- Network: LAN DHCP
- Username: admin
- Password: mygekko
- Local web access http / HTTPS: Enabled
- VNC: Locked
- myGEKKO Viewer: Locked
- myGEKKO Net: Locked

LAN Static

If the network type is set to LAN Static, the following IP addresses are adopted by default.

- Default IP Address: 192.168.2.252

7 Configuration

Default passwords

- User: w
- Administrator: ww
- Configurator: mygekko

Access configuration

There are the following options for accessing myGEKKO B.Series BASE R22:

- Enable the B.NIO WLAN access point (only recommended for first access)
- LAN network with input via browser from <http://192.168.2.252:8080>
- myGEKKO Viewer (the first access after activating the viewer may take about 2 minutes)
- Live Viewer via myGEKKO Plus services



NOTE

As the Viewer or the Live Viewer are much faster than accessing directly via the Access Point, it is recommended to activate the Viewer via the WLAN Access Point of the B.Series BASE R22 or to activate the Plus Services for the Live Viewer

Network

Network settings must be applied by tapping on "Apply settings", as otherwise, you will not have access to the B.Series BASE R22 directly after changing the network settings.



IO configuration

In the IO configuration, you will find all inputs and outputs that are directly on myGEKKO B.Series BASE R22, under the menu item "ONBOARD".

AI assignment AI 1 and AI 2 are only designed for PT1000 sensors. In the case of the IO configuration, however, AI 1 and AI 2 can still be selected for AI Voltage and AI Current, these are without function.

The screenshot shows a configuration menu titled "Button On". It is organized into three columns:

- STATION:** 1:DMX, 2:RIO, ONBOARD, MEMORY
- SYSTEMBOARD:** BUTTON 1, BUTTON 2, BUTTON 3, BUTTON 4, BUTTON 5, BUTTON 6, BUTTON 7, BUTTON 8, BUTTON 9, SENSORS, DI/DO, UTILS
- TYPE:** DI, ON/OFF, LN_OUT

At the bottom, there are four buttons: NC, C, Esc, and Ok.



NOTE

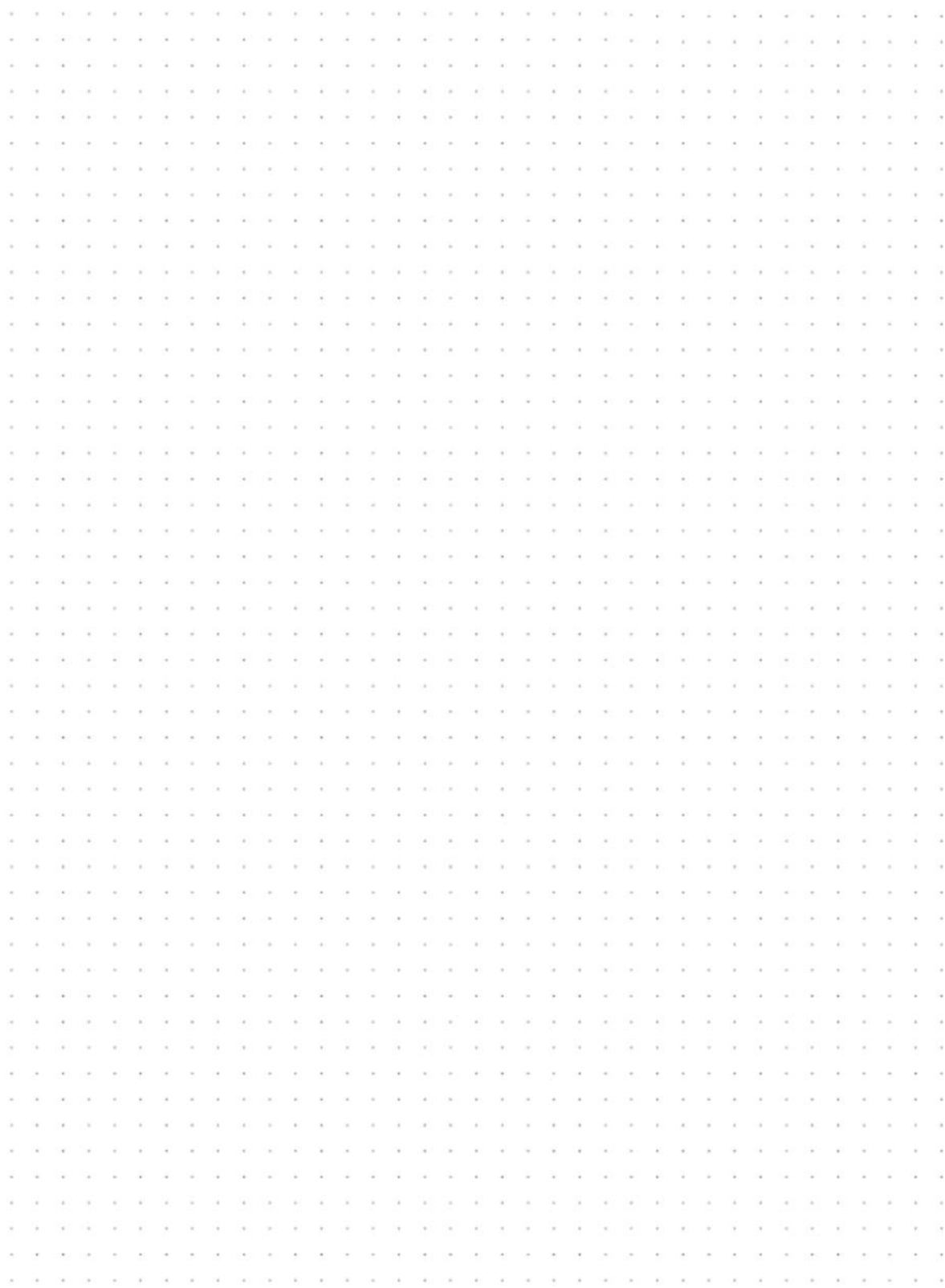
If an AI sensor type has been defined and subsequently changed, a restart is required for the values to be displayed correctly. Example: Change in AI3 of PT1000 to 0 - 10 V voltage

8 List of connections

Connecting terminal	Description	Note
AUX1 RS485		
AUX2 RS485		
ETH0		IP:
ETH1		IP:
Digital input 1 DI 1		
Digital input 2 DI 2		
Digital input 3 DI 3		
Digital input 4 DI 4		
Relay output 1 RO1 230V		
Relay output 2 RO2 230V		
Relay output 3 RO3 230V		
Relay output 4 RO4 230V		
Relay output 5 RO5 24V		
Relay output 6 RO6 24V		
Analog input 1 AI 1		
Analog input 2 AI2		
Analog input 3 AI3		
Analog input 4 AI4		

Connecting terminal	Description	Note
Analog output 1 AO1		
Analog output 2 AO2		

9 Notes



Technical manual
myGEKKO BASE R22

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