



User Manual Energy

V 0.1



**Last update: August 2012**

All software-related descriptions refer to the software V1279. We recommend to update older versions of the system. Small deviations in the description because of software changes are possible.

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CE The devices comply with the relevant guidelines and standards of the EU.

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MyGEKKO allows to connect several energy counters and control different consumptions.

Log in as configurator.

1. Change to menu Energy / Costs  and select the first free energy counter.
2. Change to IO configuration and select the desired type of counter under "Type of measurement".

1. Pulse input

For pulse input, configure as DI the input of pulse counter connected to an IO station. Enter the pulse value of the counter as well. Type the unit of measurement in order to view a correct presentation.

2. Pulse input of the heat meter

For pulse input of the heat meter, configure as DI the input of pulse counter and as AI the supply and the return temperature connected to an IO station. Enter the pulse value of the counter as well.

3. Status input

For status input, configure as DI the input previously connected to an IO station. Enter an efficiency and a unit of measurement as well. Once the status input has been switched on, the entered output is set up.

4. Status output

For status output, configure as DI the output connected to an IO station. Enter an efficiency and a unit of measurement as well. Once the status output has been switched on, the entered output is set up.

5. Measuring transducer

For measuring transducer, configure as AI the input connected to an IO station. Enter a measurement range (min and max) and a measurement unit as well.

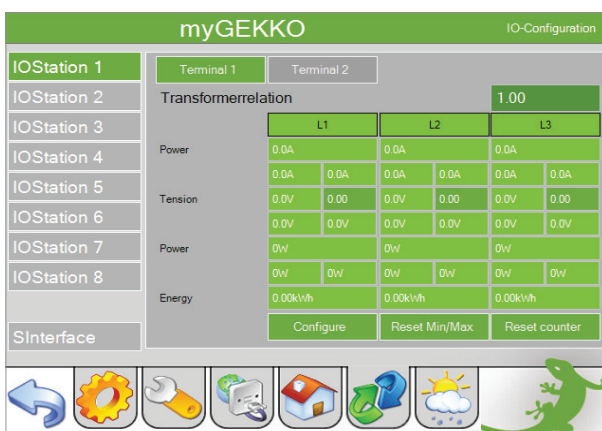
6. Virtual sum

By adding together the efficiencies of different utilities, you obtain the virtual sum. For this purpose, select the desired utilities (lights, ventilation system, outputs or all of them). It's possible to define the efficiencies of single utilities in the IO configuration of the respective utility. Once the utility is on, its efficiency is added to the sum.

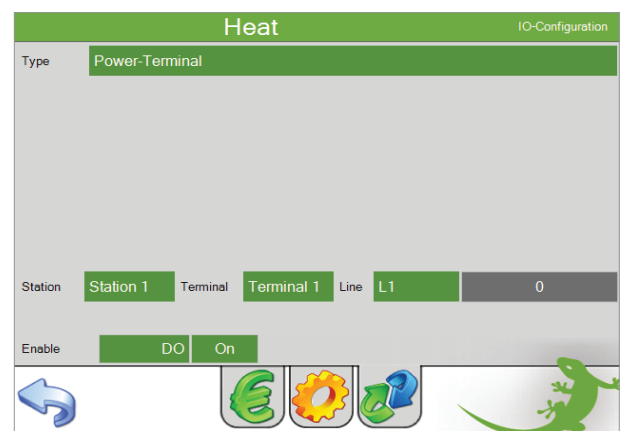
7. Power measurement terminal

You need to be logged in as configurator and have to have completed the main configuration explained in the previous section. Change again to main settings -> I/O configuration

1. Tap '>>' next to number of PWR terminals and you get to the configuration level of the power measurement terminals.
2. Select 'Terminal 1' and tap 'Configure'. This step needs only be done once for each terminal 1-4.
3. Define the current transformer ratio of the current transformers connected to the terminal. E.g. for a 100/5A current transformer enter 20 as value.
4. Now all current, voltage, consumption and output values should be visible. If they are wrong or some show negative currents or consumption, check the electrical connection of the current transformers etc.
5. Done! Now you can use the individual outputs in the load shedding control or in the energy meters.



Configuration level of the power measurement terminals



Example Utilisation Sum of outputs in energy meter

8. M-Bus-Meter

8.1 General information

M-Bus (Meter-Bus) is a field bus for consumption data acquisition. The transmission is made serially on a revers polarity protected two-wire line from the connected slaves (meters) to a master.

As master we use the myGEKKO Touch with attached M-Bus level converter, which is connected to the Touch or Rio 29 via RS232. All counter values are securely saved in the M-Bus slaves, i.e. in the energy meters. Hence, no data is lost if there is a power failure. myGEKKO reads the data continually, saves it and makes it graphically formatted available.

M-Bus characteristics:

- Standardised field bus system (EN1434)
- Two-wire bus with power supply of the bus devices
- No special requirements on the bus cable (electrical installation cable or telephone cable sufficient)
- Optional wiring topology (skein, skein with branches, star)
- Vast reach (up to several kilometres)
- Remote reading of consumption data (heat, water, gas and electricity)
- Communication with sensors and actuators of any type
- Energy monitoring and optimisation
- Leak monitoring
- Usable in industry and private households
- Good availability of system components
- Excellent cost / performance ratio
- Remote access with myGEKKO from anywhere via LAN

myGEKKO & M-BUS:

- 15 min trend/day/month lists with graphical presentation available
- Direct conversion of consumption in Euro and CHF
- Storage on USB flash drives, external NAS drive with enabled NFS or system card

8.2 Electrical outlet

M-Bus direct energy meter 3 phases 65A



Technical data

Voltage	4 phase meter 3x230 / 400V
Stromaufnahme	20mA
Rated current	65A
Frequency	50 / 60 Hz
Outputs	1 50-Pulse output
Protection class	II
Protection type	IP 20
Dimensions	107 x 89,5 x 64,2 mm

M-Bus energy meter 1 phase 32A



Technical data

Voltage	2 phase meter 1x230V
Stromaufnahme	20mA
Rated current	32A
Frequency	50 / 60 Hz
Outputs	1 50-Pulse output
Protection class	II
Protection class	IP 20
Dimensionioin	17,5 x 95,6 x 68,2 mm

M-Bus interface for 20/60 terminals



Technical daa

Standard loads per 1.5 mA	max 20/60 Terminals
power supply	external 12-24VDC or AC Versorgung
Protection	Overcurrent and short-circuit protection on the M-Bus
Display for	data transmission and system status
Mounting	Rail or wall

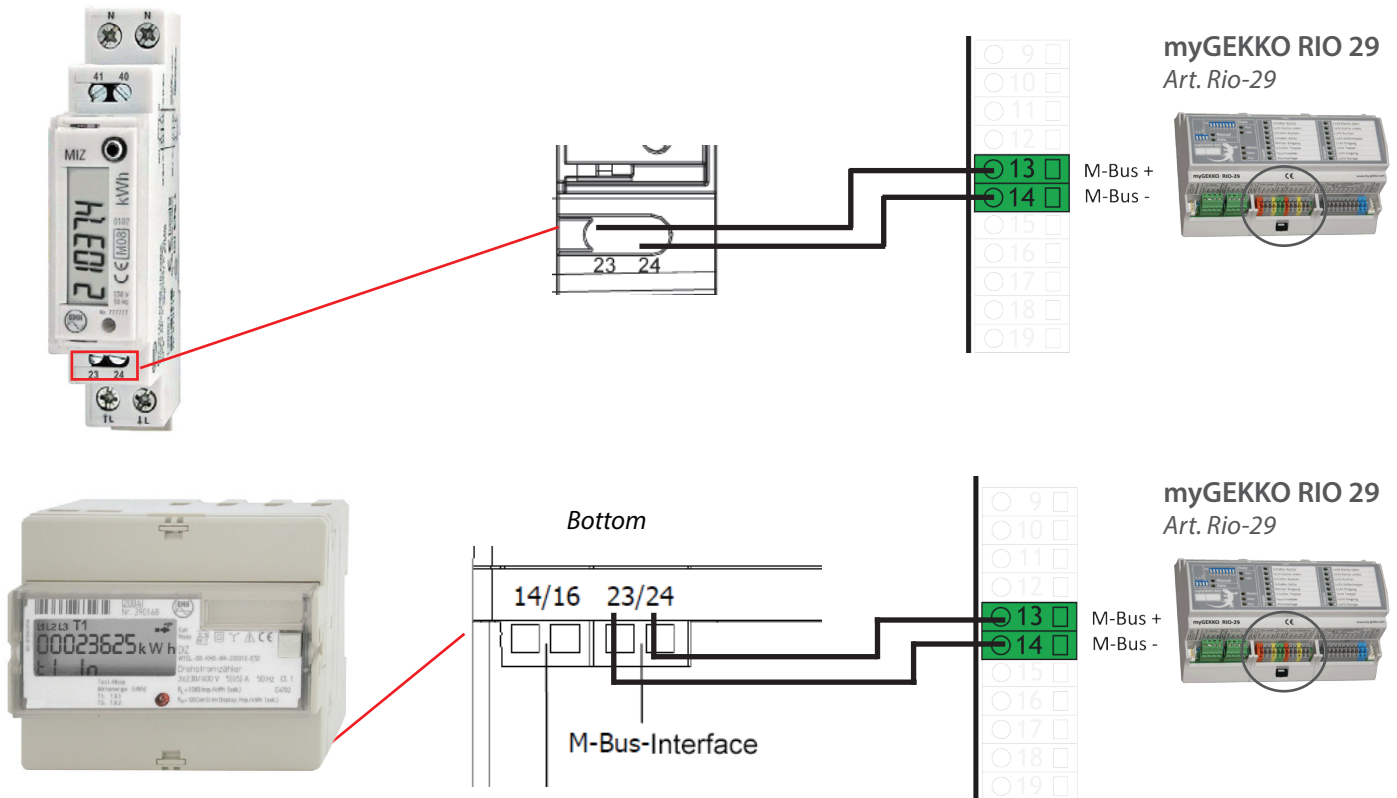
Connection details

Interface	Connection via	Energy meters
RIO-29	M-Bus	max. 3 per RIO-29
RIO-29	RS232 with M-Bus interface	max. 20/60 (depending on the M-Bus interface)
COM 1		
USB-COM 1-4	RS232 with M-Bus interface and USB 4-fold RS232 interface distributor	

Energy meter connection directly to the RIO29

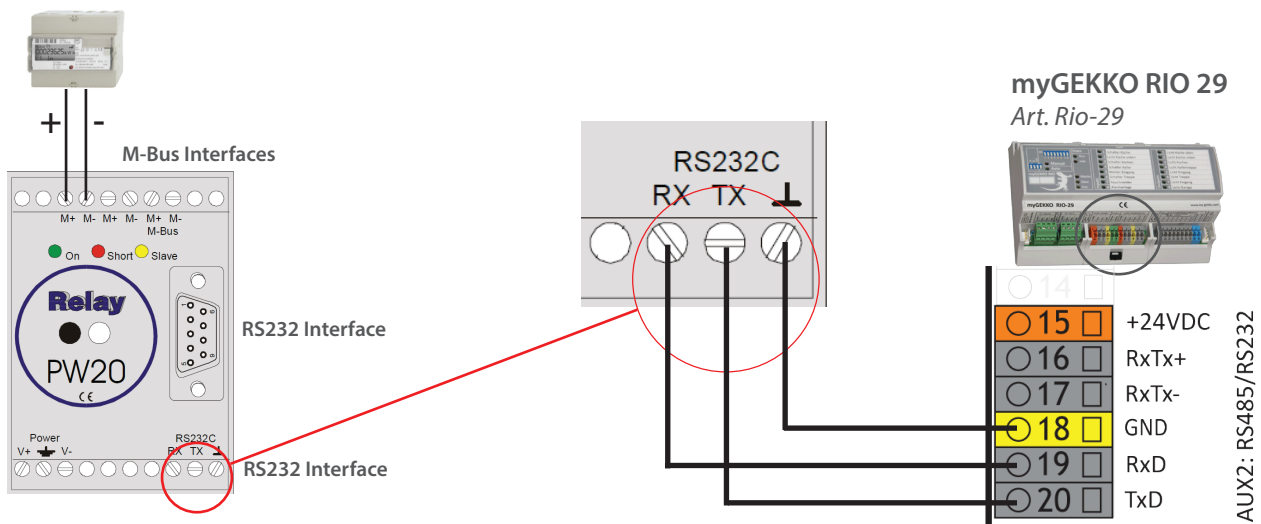
The RIO-29 modules have an M-Bus interface, to which the M-Bus meters can be connected directly without level converter. A maximum of 3 M-Bus meters can be connected to the RIO-29 module.

M-Bus meters can be connected in series and/or parallel to the interface. Caution, plus and minus are to be distinguished despite polarity protection.



Connection of the M-Bus interface to the myGEKKO

The M-Bus interface (ACC-MBU20 / ACC-MBU60) is connected to an RS232C interface. It can be connected either to the RIO-29, directly to the RS232C interface on the myGEKKO Touch or to the interface distributor USB/quadruple RS232 (Art. nr. ACC-RS201).

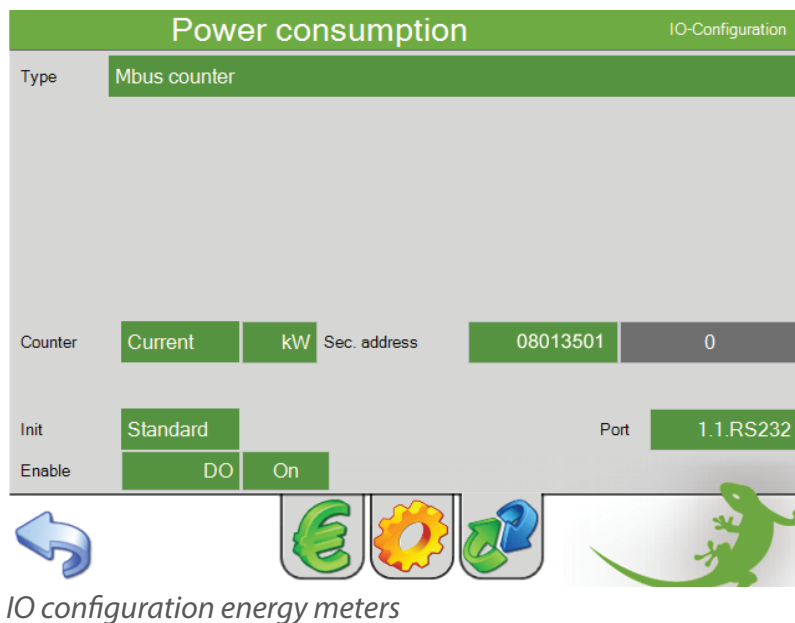


8.3 M-Bus meter software activation

Log in as configurator

1. Change to the system menu  -> Energy/Costs
2. Tap the first free green bar and select IO configuration 
3. Tap the title bar and give the counter a name, eg power consumption
4. Select an M-Bus meter as measurement type
5. Select a counter from the counter type, eg current
6. Now enter the secondary address of the counter. This 8-digit number must be noted on the meter right, or read on meters with a digital display in the menu.
7. In the end you choose from the port interface to which the counter or level transformers are connected.

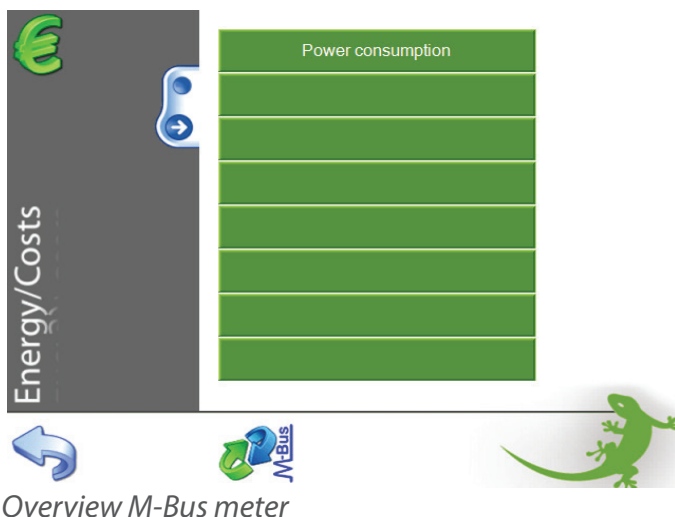
After the meter is configured a new icon 'M-Bus' appears in the Energy/Costs menu.



Tap the 'M-Bus' icon and check the status of the meter.

If the field of the meter is green the meter works correctly.

If the field of the meter is red, the meter is not connected or not configured properly. (TIMEOUT= meter is not found. WRONGMETERTYPE= improperly configured meter type)



9. Energy counters parameterisation

In menu field “Nominal efficiency” set out the units of measurement for the scale of trends.

Save the updated power/water price under the menu item “Costs per unit”. This way, it’s possible to monitor the concerning costs as well as the consumption.

If you are using a counter already in use, it’s possible to recover the current status of the counter. Save units to the left field and decimal fractions to the right field (e.g. counter status = 3,52 right field 3, left field 0.52). The counter status will get automatically updated.

If you like, you can view the first two counters on the main page.

Furthermore, buttons “Reset counter status” and “Delete daily and monthly lists” are also available.

Power consumption		Parameters
Nominal power	10.00	
Costs per unit * h	0.2450	
Actual count	0	0.00000
Actual total costs	0.000	
Show on startscreen	On	
Reset meter-count!		
Delete day/monthlists!		

Energy counters parameterisation

Notice:

In order to save daily and monthly lists, go to System menu -> Recording / Log and define the desired storage location as well as one folder for the lists file and the trends file respectively.

For further details, see data storage configurations manual

Notes

[illegible]



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