

Documentation for Modbus data integration (Modbus Extention) or MDI for short

All MDI settings can only be configured via the internal web interface of the MasterII+ CNII+ and Airleader Easy controls.

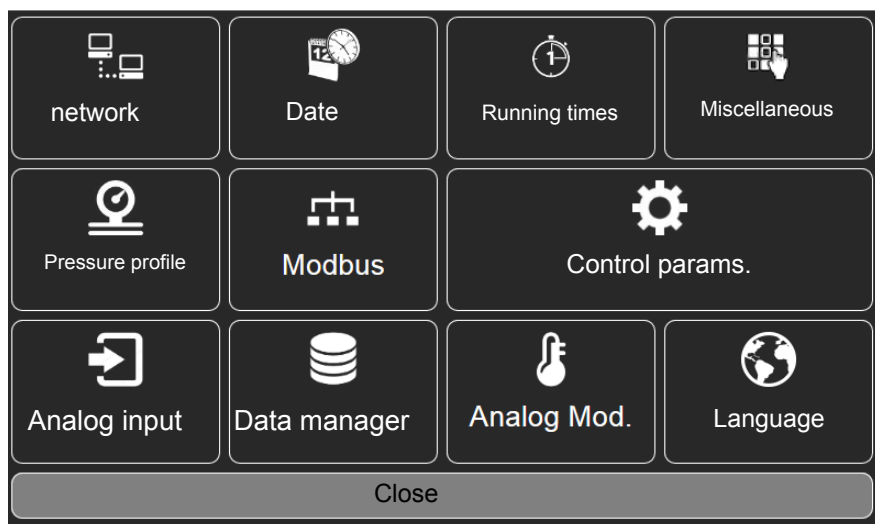
MDI allows data to be obtained from Modbus sources via Modbus TCP or Modbus RTU. The following COM ports are intended for Modbus RTU:

1. Master II+ = COM4
2. CN II+ = COM4
3. Easy = COM2

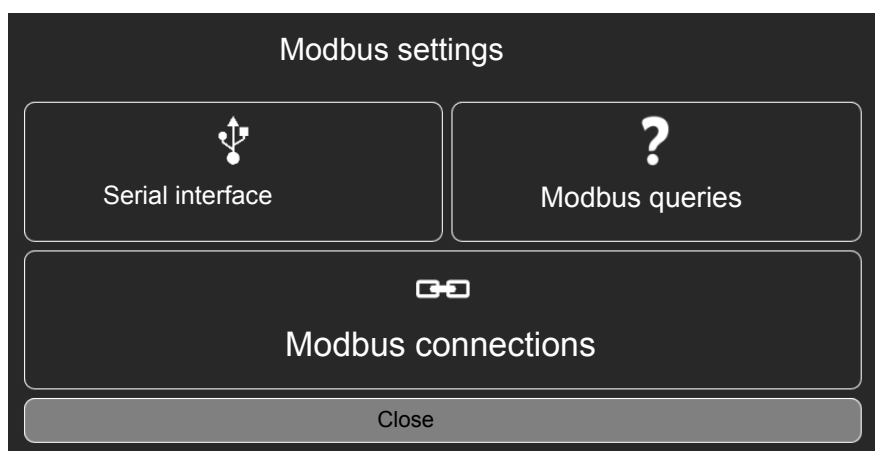
Modbus TCP requests are made via the integrated Ethernet interface.

The settings:

As soon as the addon is activated, another option “Modbus” will appear in the main menu.



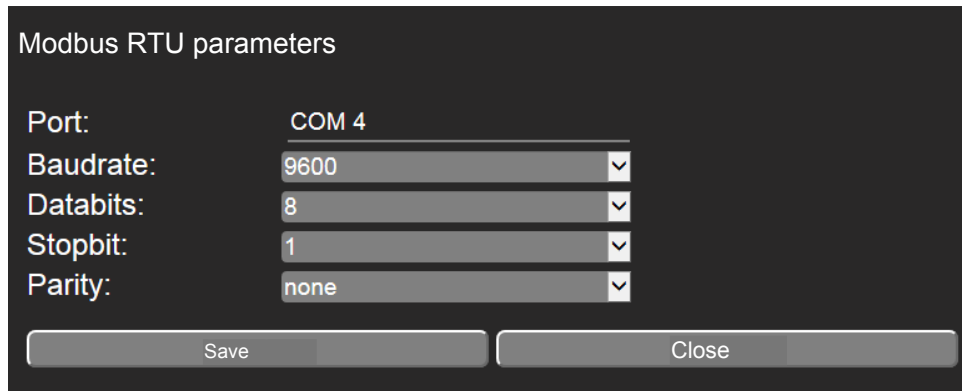
Clicking on Modbus takes you to the settings area.



There are 3 areas available:

1. Serial interface
2. Modbus queries
3. Modbus links

Serial interface:



Modbus RTU parameters

Port: COM 4

Baudrate: 9600

Databits: 8

Stopbit: 1

Parity: none

Save Close

The connection parameters for the serial interface can be defined here. Please note that all bus participants receive the same setting parameters.

Modbus queries:



Modbus queries

12.73 m3/min

FA500

- INT
- DTP
- Temp

SIMU

- [x] Simu consumption

New query Close

All already defined Modbus requests are listed here in a tree structure, with the higher-level entry representing the actual Modbus request and the lower-level entries corresponding to the variables read from it. If you move the mouse over one of the entries, the current values are displayed at the top right.

By clicking on an entry, you will be taken to the corresponding configuration mask, depending on whether it is a query or a variable. Variables are always associated with a query. Deleting a query also deletes all associated variables.

From here a new query can be created.

Input Modbus query:

Modbus queries

41D5-8C9E-42A0-18E1-41DC-4FEC-40CD-97EB-422E-422E-

TCP ☒ RTU ☐

Name: FA500

IP: 0.0.0.0

Port: 502

Function code: Read Holding Registers (0x0)

Unit ID: 5

Start address: 1000

Number of registers: 10

Save

Delete

New variable

Close

Configure your Modbus query here:

1. Selection of TCP or RTU
2. Freely selectable name (name of the end device)
3. IP address if TCP is selected
4. Port if TCP is selected (standard Modbus TCP = 502)
5. Function code (Modbus function)
6. Unit ID contains the unique device address (not required for TCP)
7. Start address = address of the start register
8. Number of registers to be read.

After saving the query, if all settings are correct, the values of the registers to be read can be viewed in the top right corner within a few seconds. Attention: When specifying the start addresses, it may happen that you have to increase or decrease the value specified in the device tables by 1, depending on whether the address space is 0-based or 1-based. So in our example: 999 or 1001. The addon assumes a 0-based address space.

Once the query has been created, variables can be created. These then contain the readable values, which are also logged and recorded, and appear in the online visualization as sensor values, and also provide you with a diagram.

Input Modbus variable:

Modbus Variable

2.25 m3/min

Name:	Simu consumption	Sensor Type: Flow	☐
query	SIMU	Sensor min:	0.00
Start address	1	Sensor max:	200.00
Number of registers	2	Alarm min:	0.00
Type:	Float	Alarm max:	0.00
Source min	0.00	Bit No:	0
Source max	0.00	Unit	m3/min
factor	1.0000		

Save

Delete

Close

Configuration of a Modbus variable. With the Modbus variable we determine which registers are further processed and in what form. The following parameters can be set:

1. Name = descriptive name for the value 2. Start address = start address from the result of the query In our example, we have selected 10 registers in the query from the device starting at address 1000. These 10 registers contain 5 values with 2 registers length that are to be converted to a 32bit float number. In the query, from address 1000, the consumption value is coded as a float with a register length of 2, which means in our result the start address is 1. 3. Number of registers to be read from the query result 4. Type = value type 5. Source min = is not used 6. Source max = is not used 7. Conversion factor = values are multiplied by this factor 8. Right side = Scaling and property settings for visualization Bit No = for later use

Input Modbus connections:

All Modbus variables are recorded by the control, but have no direct connection to a compressor. For example, in order to assign measured values that are read from an energy measuring device via Modbus to a compressor, Modbus links are available for this purpose.

With the links it is possible to map Modbus variables directly to the inputs of a compressor module. The sensor configuration of the variables is then also adopted for the input of the compressor module. Instead of the 4-20mA signal, the input then receives its values via this variable.

