

Wireless M-Bus with PiiGAB M-Bus 900S



Wireless Ethernet/M-Bus Gateway

Advantages:

- Each wireless meter acts as a virtual wired M-Bus meter.
- The wireless telegrams are time stamped directly as they enter the gateway.
- Supports both primary and secondary addressing via wired M-Bus.
- Mix and match wired and wireless M-Bus meters.
- Works together with most M-Bus clients.
- Supports posting of both wired and wireless M-Bus data via QuickPost.
- Is able to read wireless M-Bus meters via Modbus.
- Handles fabrication numbers or so called enhanced secondary addressing.
- The M-Bus client can read via TCP, UDP, RS232 and RS485 or via M-Bus slave ports.
- Lists the received wireless meters via the web interface.
- Wireless meters can be included or excluded.
- Shows the wireless meters signal strength.
- Supports S1, S2, T1, T2, T1+C, T2+C
- Up to 500 wireless meters.
- Telegram that isn't possible to decode are stored in a so called LVAR container.

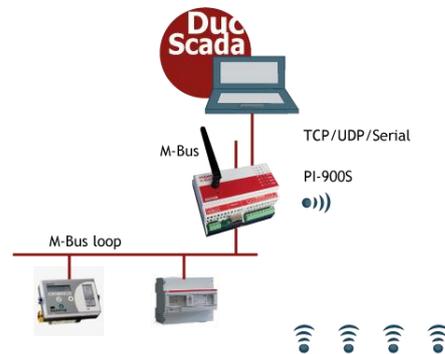
The wireless M-Bus application is developed to be able to communicate with all wireless M-Bus meters. Wireless M-Bus is an extremely efficient option when renovating old properties, as laying cables often is expensive and complicated. A simple installation is the key for a successful project. It is possible to read up to 500 wireless meters in every PI-900S, and you can keep a great overview over signal strength as well as the age of the values via the built-in web interface. This way it is possible to secure that the antennas and repeaters are optimally placed.

Description of Wireless M-Bus for the PI-900S

PiiGAB M-Bus 900S with wireless communication consists of a plug-in card and a software application. PI-900S is designed to work well with remote administration.

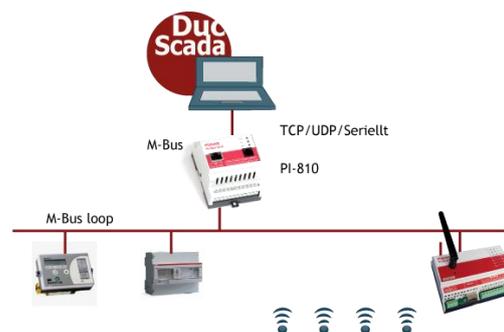
Read wireless and wired M-Bus meters simultaneously

The wireless meters are read the same way as the wired M-Bus meters.



Extending the M-Bus network with wireless M-Bus

If there are many PI-900S on the same network the ID number for PI-900S is used as a compliment to the normal secondary address to set them apart.



Configuring of wireless M-Bus

The configuration of the wireless M-Bus is made from the web interface. This is where parameters such as wireless mode is set as well as how you want to communicate with the wireless meters.

Wireless Configuration

Version: 1.00.01

Fabrication Number: 25133187. Secondary Address: 25133187.4129.01.36

Configure
Log
Meter List

Wireless Configuration

Internal Primary Address:

Wireless Mode:

Enable leds:

Remove Cache Files:

Wired M-Bus SlavePort Configuration

Type:

Local Port:

M-Bus Timeout [ms]:

Show Configuration Files

Show Configuration Files:

The system clock is used for the timestamps. Please go to the Administration page to adjust it.

Meter list

All the meters that have strong enough signals are shown in the meter list. The list can be filtered using include and exclude meters.

Configure
Log
Meter List

Secondary Address	Prim Addr	MFCT	Meter Type	RSSI	Time Stamp
00010946.3033.01.1A	1	LAS	Smoke detector	-62	2017-02-15 12:46:07
00041908.4CAE.68.07	2	SEN	Water	-62	2017-02-15 12:18:38
01137524.30E2.00.03	3	LGB	Gas	-72	2017-02-15 12:39:33
14111304.09B4.05.07	4	BMT	Water	-88	2017-02-15 12:52:27
15170191.198F.08.03	5	FLO	Gas	-76	2017-02-15 12:28:18
15700062.09B4.10.1B	6	BMT	Room sensor	-52	2017-02-15 12:51:22
15700063.09B4.10.1B	7	BMT	Room sensor	-60	2017-02-15 12:52:23
63244902.2C2D.1B.16	8	KAM	Cold water	-76	2017-02-15 12:52:43
68002478.32A7.07.04	9	LUG	Heat	-64	2017-02-15 12:51:41

Wired M-Bus telegram

There are many different types of wired telegrams to be read from the gateway. The most common is when the wireless telegram has been converted to a wired telegram from the current meter. In this instance there is four new objects added to the beginning of the wired telegram with complementary information. See the table below.

Object	Name	Description
1	Fabrication-number	Identification number on PI-900S
2	Age	Time in seconds from the previous reading
3	RSSI	Signal strength
4	Time (UTC)	Time stamp when the message is received in the PI-900S
5 - n		Object from the wireless meter

Time stamping

The wireless telegrams are time stamped directly, in the PI-900 when they arrive and been approved. This standardized time stamp can replace the meter's own time stamp if so wished.

Time adjustment

In order to secure that all your time stamps in your wireless telegrams are synchronized all your clocks in the PiiGAB M-Bus 900S out on site should be set on the same time. This is important regardless of where in the world your PiiGAB M-Bus 900S is placed. The clock can be set manually or from the "Network Time Protocol" (NTP) server.

Time and Date

Local Time: 2017-02-10 13:23:56

Set Clock, YYYY-MM-DD hh:mm:ss:

Time Zone: CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:

Network Time Protocol (NTP): 0.pool.ntp.org

Hardware Clock (UTC): Fri Feb 10 12:23:57 2017 0.000000 seconds

Include and exclude meters

In order to optimize what meters that should and should not be read we have created a filter function where it is possible to include or exclude meters. By using the filter function, you can choose which manufacturer brand, address area etc. that should be included. This information together with for example the primary address is saved in a file uploaded to PI-900S.

Debug

By using the log function, it is possible to log the startup of the unit. This shows the ports that have been opened as well as which wireless mode that has been configured. Both the wireless and wired telegrams can be logged and presented in the web interface. By looking at the led in the front it is easy to see when the wireless meter sends its telegram or when an external client asks for data.

Addressing

PiiGAB M-Bus 900 wireless also supports primary addressing for your wireless meters. Since primary addressing is not supported in the wireless standard there is no information about the meter's primary address in the telegram itself. The primary address is virtual and is connected to the secondary address internally in the PI-900. PI-900 also supports fabrication number or enhanced secondary addressing so that the M-Bus client can control from which PI-900 it should read, for example depending of the signal strength.

Technical specifications

- **Addressing:** Primary and secondary, as well as enhanced secondary addressing (fabrication number).
- **Modes:** S1, S2, T1, T2, T1+C, T2+C
- **Amount of meters:** 500 (before filtering)
- **Read out:** TCP, UDP, RS232, RS485, M-Bus slave ports

Order information:

Order number	Description
PI-900S/WL/500	Wireless M-Bus. Up to 500 meters
	Contact PiiGAB for appropriate antennas

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