

AMBILL® Smart Link II

Wireless M-Bus Converter to M-Bus



User Manual

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1. Security

1.1. Intended use

AMBILL® Smart Link II device is designed and intended exclusively for use as converter device Wireless M-Bus to wired M-Bus for collecting meters or communication devices from INTEGRA METERING. Inappropriate or improper use may result in the operational safety of the device no longer being guaranteed. The manufacturer waives any liability for resulting damages of persons and materials.

1.2. Notes on safety instructions and symbols

The devices have been designed to fulfil modern safety requirements. They have been tested and delivered in a condition that ensures safe operation. However, improper or non-intended use of the device may result in it becoming dangerous. Please always pay attention to the safety instructions in this manual which are accompanied by the following symbols:

WARNING



WARNING indicates an action or measure which, if performed incorrectly, can potentially cause life-threatening injuries and lead to a high safety risk.

CAUTION



CAUTION indicates an action or measure which, if performed incorrectly, can cause minor to medium severe injuries.

NOTE



NOTE indicates an action or measure which, if performed incorrectly, may have an indirect effect on the operation of the device, or trigger an unexpected response.

COMMENT



COMMENT provides information and recommendations for efficient and trouble free operation.

REFERENCE



REFERENCE refers to other documents. If available, code QR.

1.3. Safety instructions and precautionary measures

The manufacturer takes over no responsibility if the following safety instructions and precautionary measures are disregarded:

- › Changes to the device, which are implemented without prior written approval of the manufacturer, lead to the immediate termination of product liability and warranty.
- › Installation, operation, maintenance, repair and decommissioning of this device must only be performed by specialists authorised by the manufacturer, operator or owner of the device. The specialist needs to read and understand the entire installation and operation manual and is obliged to follow these instructions.
- › Control the supply voltage and information given on the type plate, before the device is installed.
- › Check all connections, settings and technical specifications of any available peripheral devices.

- › Open the housing or parts of the housing, which contain electrical or electronic components, only if the electric energy is turned off.
- › Touch no electronic components (ESD sensitivity).
- › Expose the system concerning the mechanical load (pressure, temperature, IP protection etc.) maximally to the specified classification.
- › For works concerning mechanical components of the system, the pressure in the pipe system has to be released or the temperature of the medium needs to be brought to values harmless for humans.
- › No information stated here or anywhere else releases planners, engineers, fitters and operators from their personal careful and comprehensive evaluation of the respective system configuration in terms of functionality and operational safety.
- › The local working and safety standards and statutes need to be met.

1.4. About the operation manual

The manufacturer reserves the right to make changes to the technical specifications without prior notice. You can obtain the latest information and versions of these operating instructions from your local branch office as well as from the website.

WARNING



The manufacturer declines all responsibility in the event of failure to comply with the instructions and procedures described in this manual!

NOTE



These operating instructions are intended for qualified personnel and therefore do not contain any basic working steps. Before installing or commissioning the device, read and fully understand the installation instructions and these operating instructions. Please keep this manual for future reference!

1.5. Handling, transport and storage

Thank you for choosing this high quality-measuring instrument. Please check all components and parts delivered immediately after receipt of the goods.

The scope of delivery is described on the delivery note and the contents are indicated on the packaging. Please check all components and parts delivered immediately after receipt of the delivery. Transport damage must be reported to the carrier immediately upon receipt of the goods!

Please note that the device must be protected against shock and vibration!

2. Product description

AMBILL® Smart Link II is the new generation of device designed for converting Wireless M-Bus (OMS) meters/modules into wired M-Bus information.



3. Utilisation

NOTE



Pre-requisite.

One level converter (such as the M-Bus Minimaster) is mandatory to parametrize the devices.

3.1. Connecting using M-Bus Mini-Master

Connect the M-Bus Mini-Master with the computer

Connect the M-Bus Mini-Master with AMBILL smart link

Check COM port for M-Bus Mini-Master in the Windows device manager

Start M-BUS converter setup tool (MCST.exe)

Select "Wired connection"

Select wired or wireless operation.

Connect using
 Wireless connection
 Wired connection

OK

Select COM port of M-Bus Mini-Master as shown in the picture.

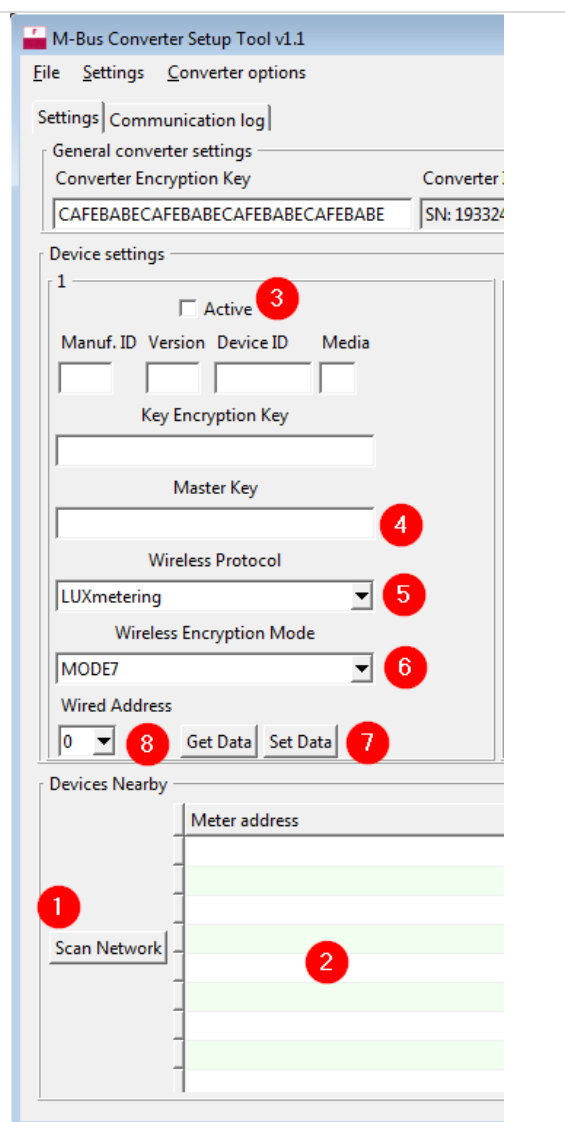
Select wired parameters.

COM Port COM4

Connect

3.2. Using Scan feature to find meters

- In the group “Devices Nearby” click the button “Scan Network” (1)
The list will be filled with the last telegrams received by AMBILL smart link.
- Double click a listed entry and select one of the 4 slots to transfer the appropriate meter information (2)
- Check “Activate” (3)
- In “Master Key” (4) enter the correct radio key of the meter
- Set Wireless Protocol (5)
(see sample configurations below in chapter 4)
- Set Wireless Encryption Mode (6)
(see sample configurations below in chapter 4)
- Click “Set Data” (7) to store the configuration
- Click “Get Data” (8) to read the configuration and verify if everything has been saved correctly



3.3. Entering configuration manually

The values can also be entered manually but it must be made sure that all values are correct in order to get values on Mbus.

Active	Enables or disables the slot. If checked the meter data can be queried over Mbus using the configured primary address.
Manuf. ID	M-Bus Manufacturer; 3-letter identification. Examples: IMT → Integra Metering AMT → Aquametro HYD → Diehl/Hydrometer DME → Diehl/Hydrometer
Version	The version of the device (hex value)
Device ID	Typically the meter number or meter serial number
Media	Mbus Media type (hex) 03 → Gas 04 → Heat 07 → Water

4. Samples Meters/devices Configurations

4.1. Module aquastream®

<p style="text-align: center;">Module-Link</p> <p>1</p> <p><input checked="" type="checkbox"/> Active</p> <table border="1"> <thead> <tr> <th>Manuf. ID</th> <th>Version</th> <th>Device ID</th> <th>Media</th> </tr> </thead> <tbody> <tr> <td>IMT</td> <td>05</td> <td>[blurred]</td> <td>0E</td> </tr> </tbody> </table> <p>Key Encryption Key</p> <p>00000000000000000000000000000000</p> <p>Master Key</p> <p>[blurred]</p> <p>Wireless Protocol</p> <p>OMS</p> <p>Wireless Encryption Mode</p> <p>MODE5</p> <p>Wired Address</p> <p>1</p> <p>Get Data Set Data</p>	Manuf. ID	Version	Device ID	Media	IMT	05	[blurred]	0E	<p><u>Device ID:</u> aquastream serial number (not the meter number)</p> <p><u>Master Key:</u> Integra-Metering OMS Key</p> <p><u>Note:</u> This configuration is bound to the aquastream module. If the meter underneath the aquastream module changes, the device will report the new meter data.</p>
Manuf. ID	Version	Device ID	Media						
IMT	05	[blurred]	0E						
<p style="text-align: center;">Meter-Link</p> <p>1</p> <p><input checked="" type="checkbox"/> Active</p> <table border="1"> <thead> <tr> <th>Manuf. ID</th> <th>Version</th> <th>Device ID</th> <th>Media</th> </tr> </thead> <tbody> <tr> <td>IMT</td> <td>01</td> <td>[blurred]</td> <td>07</td> </tr> </tbody> </table> <p>Key Encryption Key</p> <p>00000000000000000000000000000000</p> <p>Master Key</p> <p>[blurred]</p> <p>Wireless Protocol</p> <p>OMS</p> <p>Wireless Encryption Mode</p> <p>MODE5</p> <p>Wired Address</p> <p>1</p> <p>Get Data Set Data</p>	Manuf. ID	Version	Device ID	Media	IMT	01	[blurred]	07	<p><u>Device ID:</u> Parametrized meter number (not the aquastream serial number)</p> <p><u>Master Key:</u> Integra-Metering OMS Key</p> <p><u>Note:</u> This configuration is bound to the meter. If the meter underneath the aquastream module changes, the device won't report any new meter data.</p>
Manuf. ID	Version	Device ID	Media						
IMT	01	[blurred]	07						

4.2. TOPAS ESKR (V1.1)

2

Active

Manuf. ID	Version	Device ID	Media
AMT	F1	[REDACTED]	07

Key Encryption Key

00000000000000000000000000000000

Master Key

[REDACTED]

Wireless Protocol

OMS

Wireless Encryption Mode

MODE5

Wired Address

2

Get Data Set Data

Device ID:
Meter number

Master Key:
Aquametro Standard Key

4.3. TOPAS ESKR (V2)

4

Active

Manuf. ID	Version	Device ID	Media
IMT	F2	[REDACTED]	07

Key Encryption Key

00000000000000000000000000000000

Master Key

[REDACTED]

Wireless Protocol

OMS

Wireless Encryption Mode

MODE5

Wired Address

4

Get Data Set Data

Device ID:
Meter number

Master Key:
Integra-Metering OMS Key



4.4. aquaradio® Smart Puls

<div style="border: 1px solid #ccc; padding: 5px;"> <p>3</p> <p><input checked="" type="checkbox"/> Active</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Manuf. ID</td> <td style="width: 25%;">Version</td> <td style="width: 25%;">Device ID</td> <td style="width: 25%;">Media</td> </tr> <tr> <td>HYD</td> <td>86</td> <td></td> <td>07</td> </tr> </table> <p>Key Encryption Key</p> <p>00000000000000000000000000000000</p> <p>Master Key</p> <p></p> <p>Wireless Protocol</p> <p>Legacy HYDROMETER</p> <p>Wireless Encryption Mode</p> <p>Legacy HYDROMETER</p> <p>Wired Address</p> <p>3</p> <p><input type="button" value="Get Data"/> <input type="button" value="Set Data"/></p> </div>	Manuf. ID	Version	Device ID	Media	HYD	86		07	<p><u>Device ID:</u> Parametrized meter number</p> <p><u>Master Key:</u> Aquametro Standard Key</p>
Manuf. ID	Version	Device ID	Media						
HYD	86		07						

4.5. aquaradio® smart M-Bus

<div style="border: 1px solid #ccc; padding: 5px;"> <p>4</p> <p><input checked="" type="checkbox"/> Active</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Manuf. ID</td> <td style="width: 25%;">Version</td> <td style="width: 25%;">Device ID</td> <td style="width: 25%;">Media</td> </tr> <tr> <td>HYD</td> <td>64</td> <td></td> <td>0E</td> </tr> </table> <p>Key Encryption Key</p> <p>00000000000000000000000000000000</p> <p>Master Key</p> <p></p> <p>Wireless Protocol</p> <p>OMS</p> <p>Wireless Encryption Mode</p> <p>MODE5</p> <p>Wired Address</p> <p>4</p> <p><input type="button" value="Get Data"/> <input type="button" value="Set Data"/></p> </div>	Manuf. ID	Version	Device ID	Media	HYD	64		0E	<p><u>Device ID:</u> Parametrized meter number</p> <p><u>Master Key:</u> Aquametro Standard Key</p>
Manuf. ID	Version	Device ID	Media						
HYD	64		0E						

5. Technical data

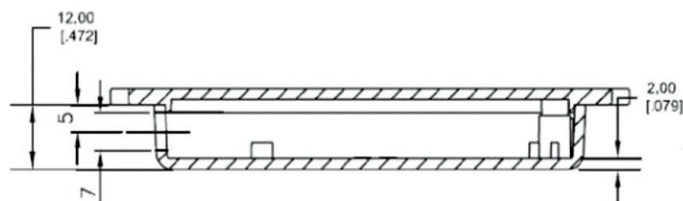
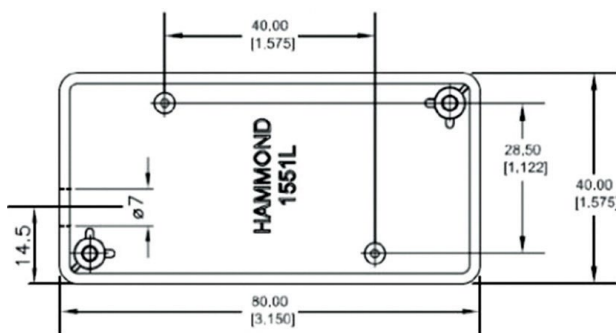
Features
<ul style="list-style-type: none"> Bidirectional wireless communication link Fully supports wired M-Bus (EN 13757-3) Fully supports wireless M-Bus (EN13757-4) Compact design allowing easy installation and flexible placement in the tight spaces 0.5 m wire for wired M-Bus One M-Bus converter handles up to 4 individual meters

Configuration

Up to 4 meters can be configured individually
 Settings for wireless M-Bus devices of type gas, water, heat or electricity are supported
 Setting of unique device ID supported
 Individual and configurable encryption AES keys for virtual meters and configuration interface
 Firmware upgrade capability / SW-upgrade over wired M-Bus
 Quick and simple installation procedure of wireless connections

Dimensions

L x l x H : 50mm x 40mm x 12mm

Side view

Top view

Protocols

OMS v.3/OMS v.4
 DSMR 2.2/DSMR 4.x
 RAW reporting
 Unencrypted

Radio

ISM 868 MHz
 Mode T1/T2 and C1
 Range: up to 300 meters LOS (Line of sight)
 Power: 7 M-Bus loads
 Output power +10 dBm
 Sensitivity -95 dBm

Operation conditions

Ambient temperature range -25°C - +55°C
 IP 54

Approvals

EMC DIRECTIVE 2014/30/EU
 RED DIRECTIVE 2014-53-EU
 RoHS2 DIRECTIVE 2011/65/EU
 REACH EC 1907/2006
 WEEE DIRECTIVE 2012/19/EU

8 Maintenance

The device requires no special maintenance.

WARNING



Do not clean the product with solvents or abrasives as they may damage the plastic cover.
If necessary, use a damp cloth or sponge.

9 Waste disposal

At the end of its life cycle, this product must be disposed of in accordance with local recycling or waste disposal regulations.

WARNING



The unit must not be opened.

The separate collection and recycling of used products contributes to the conservation of natural resources and ensures that they are disposed of in a way that does not harm the environment and nature.



10 Certification, regulation



Certificates and declarations of conformity are available at the following address:
www.integra-metering.com.