

3.3

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M-Bus

Fieldbus Configuration Manual



DELÉGO SERVER

Visualisation webserver

EK-DEL-SRV01 / EK-DEL-SRV01-M

Index

1 Introduction.....	3
1.1 Scope of this manual.....	3
1.2 Conventions.....	3
1.3 Safety information.....	3
1.4 Warnings.....	4
1.5 Copyright.....	4
1.6 Open Source Licenses.....	4
1.7 More information.....	5
2 M-Bus.....	6
2.1 Lines.....	6
2.2 Discovery.....	8
2.3 Configuration.....	8
2.4 Devices.....	10
2.5 Load control.....	11
2.6 Consumption monitor.....	12
3 Revision history.....	13

1 Introduction

1.1 Scope of this manual

This document contains all the information for configuring and visualising one or more M-BUS (Meter-Bus) devices inside DELÉGO SERVER, the multiprotocol webserver for the connected buildings by EKINEX.

The present user manual is part of the suite of application manuals dedicated to the DELÉGO SERVER, available on the section dedicated to this product in the EKINEX website. Before reading this document, it is recommended to consult the following application manuals:

REF	DOCUMENT	DESCRIPTION
[D1]	DOCUMENTATION PLAN	Overview of the application manuals of DELÉGO SERVER
[D2]	GENERAL FUNCTIONS - APPLICATION USER MANUAL	General installation manual of the webserver
[D3]	ENERGY MANAGEMENT AND DATA LOGGING - APPLICATION USER MANUAL	Detailed explanation of the energy management, load control and data logging functionalities

These documents are available for download in the area of the EKINEX website dedicated to the webserver.

1.2 Conventions

The following conventions are used in this manual:

[KEY]	The keyboard keys that the installer must press are shown in square brackets
<i>Courier</i>	Software messages generated by the DELÉGO SERVER configuration software are reported in the "courier" font
<i>Function name</i>	Names of buttons, table fields or other graphic elements of the user interface of the DELÉGO SERVER configuration software are shown in italics
	Information note
	Important note that requires particular attention

1.3 Safety information

DELÉGO SERVER is a product intended for trained and specialized personnel only; anyone who interacts with the device must first read this documentation, especially this safety information. This document supplements and does not replace any legislation or legal directives on safety.

The device has been developed following the safety regulations currently in force; however, it is not possible to exclude with certainty possible damage or interactions with other devices during its operation. The device complies with EMC guidelines and harmonized European standards; any modifications to the device may affect EMC compatibility.

The supply voltage must be strictly within the range indicated in the GENERAL FUNCTIONS application manual and on the device; risk of fire or explosion if powered outside this range. The CE declaration of conformity of the device can be requested from EKINEX®, at the references on the site www.ekinex-delego.com.



In compliance with Directive 2002/96/EC the DELÉGO SERVER electronic device must be disposed of in the appropriate facilities and not in the collection of solid urban waste.

1.4 Warnings

- This application manual is aimed at installers, system integrators and designers.
- The assembly, electrical connection, configuration and commissioning of the appliance can only be carried out by specialized personnel in compliance with the applicable technical standards and the laws in force in the respective countries
- Opening the appliance case causes the immediate interruption of the warranty period
- In the event of tampering, compliance with the essential requirements of the applicable directives for which the appliance has been certified is no longer guaranteed.
- EKINEX defective appliances must be returned to the manufacturer at the following address:
Ekinex S.p.A. Via Novara 37, 28010 Vaprio d'Agogna (NO)

1.5 Copyright

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This application manual, the DELÉGO SERVER software and the DELÉGO iOS and Android apps are subject to copyright; all rights are reserved. Copying, reproduction, translation and/or modification, even partial, are expressly prohibited unless approved in writing by EKINEX®.

1.6 Open Source Licenses

DELÉGO SERVER contains open source software, such as the Linux operating system and its kernel. These software components are subject to various open-source licenses, including:

- GNU General Public License (GPL), <https://www.gnu.org/licenses/gpl-2.0.html>
- GNU Lesser General Public License (LGPL), <https://www.gnu.org/licenses/lgpl-2.0.en.html>

If you own a product, for a period of 3 years from the last production date, you can request from EKINEX the source code of the software components licensed under the GNU General Public License (GPL) or the GNU Lesser General Public License (LGPL), and use, distribute and modify them in accordance with the respective licenses.

EKINEX cannot be considered responsible in any way for the source code thus distributed, which is provided without guarantees. EKINEX cannot also be held responsible for any damage or consequence resulting from modifications (additions / removals) made to this software by third parties, unless specifically authorized.

1.7 More information

- For further information on the product, you can contact EKINEX technical support® to the e-mail address: support@EKINEX.com or consult the website www.EKINEX.com
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2 M-Bus

DELÉGO allows you to manage one or more measurement devices operating on the M-BUS standard, both on an RS-485 connection and via a LAN network.

The M-Bus protocol is widely used in the field of energy metering within buildings. Communication with the meters can typically occur:

- Via RS485 serial connection
- Via LAN network

DELÉGO allows you to manage both communication modes, acting both as a device interrogation master and possibly as a "sniffer" of the traffic generated by another concentrator.

This chapter contains all the information necessary to configure and manage the following functions within the DELÉGO supervision:

- create an M-BUS communication line
- scan the devices on the line
- select the devices you want to manage in the project
- insert the devices into the energy flow management and consumption monitor of the supervision

2.1 Lines

A set of M-Bus devices connected together (on the same RS485 line or conveyed through the same IP interface) is managed in DELÉGO by a line.

To create an M-Bus line simply expand the section

FIELD TECHNOLOGIES > M-BUS

and press the [+] button in the bottom toolbar. Once the new line has been created, access your tab to set the properties, as in this example:

The screenshot shows the 'delégo' web interface. On the left is a dark sidebar menu with options like Setup, Field technologies (KNX, Modbus, Matter, MQTT, M-BUS), Line 1, User interface, Basic functions, Integrations, Energy Management, Trends, Notifications, Automations, Guest room management, Settings, and Change password. The main area is titled 'Generic settings' and contains sections for 'General information' (Name: Line 1), 'Appearance' (Execution state: IDLE), 'Permissions' (Enable communication: checked, Execute at startup: checked), and 'Communication' (Bus connection: ---). Below these are buttons for CLOSE, START, and STOP. Further down is a 'New devices' section with a discovery range from 0 to 250 and buttons for DISCOVERY and CONFIGURE. At the bottom is a 'Configured devices' table with columns for NAME, STATE, SECONDARY ADDRESS, FUNCTION, and CLOUD, and a REFRESH button.

The available properties are the following:

NAME	Identify the line within the project
ENABLE COMMUNICATION	Check this box to enable M-Bus communication. If not selected, the line remains inert.
RUN AT STARTUP	Check this box to start the line when the system is powered up, or after a restart of services
CONNECTION TO THE BUS	Select between “serial” and “IP”
SERIAL PORT BAUD RATE PARITY DATA BIT STOP BIT	In the case of serial communication, DELÉGO communication port and parameters for communication with slave devices.
IP ADDRESS PORT	IP address and port for communication with the IP gateway
ENABLE POLLING	Check this box to actively poll M-BUS devices. If there is another concentrator on the line, it is necessary not to select this option, as multiple masters cannot coexist on the same line. In this way, DELÉGO does not send any requests to the M-Bus devices, but reads and interprets the response telegrams directed to the master.
POLLING TIME	In case of active polling, time between one query and the next

2.2 Discovery

Once the line has been configured correctly, it is necessary to start communication using the START button.

At this point, to detect the devices on the RS485 line - or available via TCP - it is possible to start the DISCOVERY procedure using the button of the same name; this operation searches for all possible devices present, querying addresses from 1 to 254. This operation takes a few minutes; to narrow the search field and reduce waiting times, it is possible to enter the lower and upper limits in the appropriate fields before starting the procedure.

At the end of the scan, the list of detected devices is shown. If a device does not have a name that can be detected via the bus, it is indicated as a "device without a name" with the manufacturer's abbreviation (usually three letters) in brackets; this wording, and the secondary address (which represents the unique serial number of the device) allow the detected devices to be identified.

2 new devices were found. Press CONFIGURE to insert them into the project.

Execution state: Running

Permissions

Enable communication: ☒

Execute at startup: ☒

Communication

Bus connection: Network

Ip:

Port:

Enable polling: ☒

Polling timer [ms]: 500

CLOSESTARTSTOP

New devices

Discovery from 0 to 250

DISCOVERYCONFIGURE

NAME	SECONDARY ADDRESS	ENABLE
Device without name (CAL)	20460880	☒
Device without name (QVF)	31	☒

Line 1

2.3 Configuration

The devices discovered via DISCOVERY are not yet part of the project; in fact, it is necessary to select which ones you intend to insert into the project and carry out the CONFIGURE operation on them, using the button of the same name.

Not all detected devices must necessarily be managed in the project; in situations of shared metering systems for example, as in the case of condominiums, meters of different ownership typically coexist on the same line, and typically only those relating to one's own housing unit are of interest to the supervisor.

The configuration procedure carries out a second, more in-depth reading of the parameters that the devices involved make available, and creates the object structures within the project database. Depending on the number of enabled devices, this operation may also take a few minutes.

At the end, the CONFIGURED DEVICES list contains the objects created and usable in the supervision, as in the following example; the corresponding entries are removed from the NEW DEVICES list.

Name:
Line 1

Appearance

Execution state:
N.A.

Permissions

Enable communication:
☒
Execute at startup:
☒

Communication

Bus connection:
Network
Ip:
Port:
Enable polling:
☒
Polling timer [ms]:
500

CLOSE
START
STOP

New devices

Discovery from 0 to 250
DISCOVERY
CONFIGURE

NAME	SECONDARY ADDRESS	ENABLE	
Configured devices REFRESH			
NAME	SECONDARY ADDRESS	FUNCTION	CLOUD
... Device without name (CAL)	20460880	None	☐
... Device without name (QVF)	31	None	☐

Line 1

0
0
0
0

If the device configuration changes at a later time, it is possible to update their list of attributes (channels) using the UPDATE button.

2.4 Devices

By accessing a device tab, a page similar to the following figure is shown:

Generic settings

General information

ID

760

Name:

Device without name (CAL)

Address:

20460880

Room:

Permissions

Visible:

☒

CLOSE

Channels

REFRESH

NAME	IDENTIFIER	STATE	VISIBLE	TRACK
Bus Address	0	56	☒	☐
Fabrication number	1	12345700	☒	☐
Energy	2	188 kWh	☒	☐
Power	3	0 kW	☒	☐
Volume flow	4	0 m³/h	☒	☐
Flow temperature	5	76.7 deg C	☒	☐
Return temperature	6	41.9 deg C	☒	☐
Temperature Difference	7	34.78 deg C	☒	☐
Time Point	8	1618970000	☒	☐
Firmware version	9	0	☒	☐
Software version	10	20	☒	☐
Volume 1	11	4 m³	☒	☐

Line 1

Device without name (CAL)

0

0

0

0

The following information is made available in the general data section:

NAME	Identify the device within the project
ADDRESS	Unique serial number of the device (SECONDARY ADDRESS)
ROOM	Allows you to assign the device to a room in the supervision
VISIBLE	Allows you to establish whether or not the device should be displayed in the supervision

Each M-Bus device provides a series of information, which can represent its configuration, its version, and the measured quantities. The list of this information is not known a priori, and depends on each device; in the case of measured quantities, the unit of measurement is typically also made known.

This information is represented within DELÉGO in the form of objects, listed in the CHANNELS list; if you do not want to show some of this information in the display, you can hide it by unchecking the corresponding VISIBLE box.

By also accessing the detail sheet of each of these objects, it is also possible to associate them individually with an environment, through the appropriate drop-down menu in the general data:

Generic settings

General information

Name:

Energy

Room:

Room 1

Identifier:

2

State:

188 kWh

CLOSE

2.5 Load control

Some M-Bus devices are automatically enabled to be directly inserted into the load control; for this to happen, they must have at least one electrical power type quantity.

If an M-Bus device falls into this category, the sub-information necessary for use is also available in the load control section:

Channels						REFRESH	
	NAME	IDENTIFIER	STATE	VISIBLE	TRACK		
...	Bus Address	0	56	✓			
...	Fabrication number	1	12345700	✓			
...	Energy	2	188 kWh	✓			
...	Power	3	0 W	✓			
...	Volume flow	4	0 m³/h	✓			
...	Flow temperature	5	76.7 deg C	✓			
...	Return temperature	6	41.9 deg C	✓			
...	Temperature Difference	7	34.78 deg C	✓			
...	Time Point	8	1618970000	✓			
...	Firmware version	9	0	✓			
...	Software version	10	20	✓			
...	Volume 1	11	4 m³	✓			
...	Volume 2	12	0 m³	✓			
...	Volume 3	13	0 m³	✓			
...	Volume 4	14	0 m³	✓			
...	Volume 5	15	0 m³	✓			
...	Energy 1	16	0 kWh	✓			
Load control							
	NAME	STATE		VISIBLE	TRACK		
...	Power - min. limit	2000	+				
...	Power - max. limit	2500	+				
...	Priority	0	+				
...	Over limit	OK					
Line 1						Device without name (CAL)	

2.6 Consumption monitor

M-Bus devices can be inserted directly into the consumption monitor (please refer to the ENERGY MANAGEMENT AND DATA LOGGING application manual [D3] for further details).

In order for them to be correctly managed in this section of the supervision, however, it is necessary for them to have at least one energy type quantity (for the categories relating to energy) or volume type (for the categories relating to gas and water).

By dragging a device within a category of the consumption monitor, a check is carried out on the list of quantities; if a quantity suitable for that category is not found, an alarm message is shown, as in the following example:

Counters				ADD
	NAME	TYPE	VOLUME	CHECK
...	Gray Water Meter (Generic)	System	0 m³	OK
...	Device without name (CAL)	System		Measured volume missing
Drop here objects from search results or tree menu				

For further information, please refer to the section of the manual regarding the consumption monitor.

3 Revision history

The following table contains the most relevant changes in the software releases, concerning the topics of this application manual:

Release	Changes	Date
2.8.0	Minor changes	15/04/2026
2.7.0	Minor changes	01/09/2025
2.6.0	First revision of the document	02/04/2025



Before the software release 2.6 the application manuals of DELÉGO SERVER were organized differently. An exact correspondence with older versions of the manuals and the changelog could not be found for this reason.