

RUT955 DLMS

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Summary

The **DLMS / COSEM** standard suite (IEC 62056 / EN 13757- 1) is the most widely accepted international utility meter data exchange standard. DLMS is the application layer protocol that transforms the data into messages and COSEM describes the general object model and can be used for all kinds of presentations.

This manual page provides an overview of the DLMS functionality in RUT955 devices.

Note: DLMS is additional software that can be installed from the **System** → [Package Manager](#) page.

Main

The **Main** page is used to configure DLMS physical devices and Cosem Groups.

DLMS Physical devices

Interoperable devices in DLMS categorize as server (physical device) and client. Data collection device act as a client that supports system dependent features, parameters, functions and classes requesting data from the server (physical device). In this structure, communication protocol stack is

independent of application layer so both devices may communicate different media. To add a new physical device, enter an new configuration name and click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added physical device's configuration page.

DLMS Physical device configuration

The **DLMS Physical device configuration** section is used to configure the parameters of server (physical device).



Field	Value	Description
Enable	off on; default: off	Enables specific physical device configuration.
Connection	empty ; default: none	DLMS connection.
Name	string; default: previously added device name	Physical device name.
Server address	integer [0..255]; default: 1	DLMS device server address.
Logic server address	integer [0..255]; default: 0	DLMS device logical server address.
Client address	integer [0..255]; default: 16	DLMS device client address.
Access security	none Low High High MD5 High SHA1 High GMAC ; default: none	DLMS device authentication type.
Password	string; default: none	DLMS device password if authentication is used.
Interface type	HDLC WRAPPER; default: HDLC	DLMS device interface type.
Transport security	none Authentication Encryption Authentication encryption ; default: none	DLMS device message encryption.
Invocation counter OBIS code	string; default: none	DLMS device invocation counter OBIS code.
Authentication key	string (Length of the value must be 32); default: none	DLMS device authentication key.
Block cipher key	string (Length of the value must be 32); default: none	DLMS device block cipher key.
Dedicated key	string (Length of the value must be 32); default: none	DLMS device dedicated key.
Logical name referencing	on off; default: on	DLMS devices use Logical Names to reference and access specific data objects or attributes during communication. For example, when requesting data from a device, you might reference a specific Logical Name to retrieve the information.
Test	-(interactive button)	Test device configuration.

DLMS Cosem groups

To add a new cosem group, enter an new configuration name and click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added cosem group's configuration page.

DLMS Cosem group configuration

The **DLMS Cosem group configuration** section is used to configure the parameters of cosem groups.



Field	Value	Description
Enable	off on; default: off	Enables Cosem group.
Name	string; default: previously added cosem group name	OBIS code group name.
Interval	integer [1..4294967295]; default: 1	Interval for OBIS code reading (in seconds).
Test	-(interactive button)	Test cosem group.

DLMS Cosem value

Cosem value is a specific value retrieved from a defined server (physical device). To add a new cosem value, enter an new configuration name and click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added cosem value's configuration page.



Field	Value	Description
Enable	off on; default: off	Enables Cosem state.
Name	string; default: previously added cosem value name	COSEM option name.
Physical device	selection; default: none	Physical device to read from.
OBIS code	string; default: none	OBIS code value, actions are not executed, only properties are read.

COSEM class id	DATA (ID: 1) REGISTER (ID: 3) REGISTER (ID: 3) DEMAND REGISTER (ID: 5) REGISTER ACTIVATION (ID: 6) PROFILE GENERIC (ID: 7) REGISTER (ID: 7) CLOCK (ID: 8) SCRIPT TABLE (ID: 9); default: DATA (ID: 1)	Object type for OBIS code.
Entries	integer [1..32767]; default: none	How many data objects to read.

Connections

The **Connections** page is used to configure DLMS connections. You can use either TCP or serial (depending on the router) connection to establish a connection between the physical device and the router.

DLMS Connections

To add a new connection, enter an new connection name and click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added connection's configuration page.

DLMS Connection configuration

The **DLMS Connection configuration** section is used to configure the parameters of connections.



Field	Value	Description
Enable	off on; default: off	Enables Cosem state.
Name	string; default: previously added connection name	Name of DLMS connection configuration.
Connection type	TCP Serial ; default: TCP	DLMS connection type.
Serial device	RS232 RS485 USB RS232 interface; default: RS232	DLMS serial device.
Baud rate	300 1200 2400 4800 9600 19200 38400 57600 115200 230400 460800 921600 1000000 3000000; default: 9600	Serial data transmission rate (in bits per second).
Data bits	5 6 7 8; default: 8	Number of data bits for each character.

Stop bits	1 2; default: 1	<p>Stop bits sent at the end of every character allow the receiving signal hardware to detect the end of a character and to resynchronise with the character stream. Electronic devices usually use one stop bit. Two stop bits are required if slow electromechanical devices are used.</p>
Parity	<p>Even Odd Mark Space None; default: None</p>	<p>In serial transmission, parity is a method of detecting errors. An extra data bit is sent with each data character, arranged so that the number of 1 bits in each character, including the parity bit, is always odd or always even. If a byte is received with the wrong number of 1s, then it must have been corrupted. However, an even number of errors can pass the parity check.</p> <ul style="list-style-type: none"> • None (N) - no parity method is used. • Odd (O) - the parity bit is set so that the number of "logical ones (1s)" has to be odd. • Even (E) - the parity bit is set so that the number of "logical ones (1s)" has to be even. • Space (s) - the parity bit will always be a binary 0. • Mark (M) - the parity bit will always be a binary 1.
Flow control	<p>None RTS/CTS Xon/Xoff; default: None</p>	<p>In many circumstances a transmitter might be able to send data faster than the receiver is able to process it. To cope with this, serial lines often incorporate a "handshaking" method, usually distinguished between hardware and software handshaking.</p> <ul style="list-style-type: none"> • RTS/CTS - hardware handshaking. RTS and CTS are turned OFF and ON from alternate ends to control data flow, for instance when a buffer is almost full. • Xon/Xoff - software handshaking. The Xon and Xoff characters are sent by the receiver to the sender to control when the sender will send data, i.e., these characters go in the opposite direction to the data being sent. The circuit starts in the "sending allowed" state. When the receiver's buffers approach capacity, the receiver sends the Xoff character to tell the sender to stop sending data. Later, after the receiver has emptied its buffers, it sends an Xon character to tell the sender to resume transmission.
RS485 : Full Duplex	off on; default: off	Enables RS485 full duplex.
IP address	ip; default: none	DLMS device IP address for TCP connection.
Port	integer [1..65535]; default: none	DLMS device IP port for TCP connection.