

# ASE DLMS METER EXPLORER

## OVERVIEW

ASE DLMS Meter Explorer is meter communication software compliant with the IEC 62056 standard of the DLMS/COSEM specification and DLMS UA Colored books (Blue book and Green book). Meter Explorer is an ideal fit for meter reading applications, providing out of the box connectivity to SCADA / OPC client applications for DLMS meters and devices. Meter Explorer is also widely used for testing DLMS meters as well as for demonstrating interoperability.

The screenshot displays the ASE DLMS Meter Explorer software interface. The main window is titled "ASE DLMS ME: demo.mec" and features a menu bar with "File", "Options", "OPC", "Settings", "User Accounts", and "Help".

The interface is divided into several sections:

- Object List:** A table listing various objects with columns for Object Name, Logical Name, IC, IC Version, Name, DataType, and Access Right.
 

Object Name	Logical Name	IC	IC Version	Name	DataType	Access Right
Cumulative Po...	0-0-94-91-14-2...	3	0	logical_name [A]	OCTET_STRING	Read Write
				value [A]	UNKNOWNNTYPE	Read Write
				scaler_unit [A]	UNKNOWNNTYPE	Read Write
				reset(data) [M]	INTEGER	Execute
Push setup(0-0...	0-0-25-9-0-255	40	0	logical_name [A]	OCTET_STRING	Read Write
				push_object_jis...	UNKNOWNNTYPE	Read Write
				send_destinatio...	UNKNOWNNTYPE	Read Write
				communicatio...	UNKNOWNNTYPE	Read Write
				randomisation...	UNKNOWNNTYPE	Read Write
				number_of_retr...	UNKNOWNNTYPE	Read Write
				repeat_delay [A]	UNKNOWNNTYPE	Read Write
Association(0-...	0-0-40-0-1-255	15	1	logical_name [A]	OCTET_STRING	Read Write
				associated_part...	UNKNOWNNTYPE	Read Write
				application_co...	UNKNOWNNTYPE	Read Write
- Traffic View:** A section for monitoring network traffic, including checkboxes for "Physical Layer", "Link Layer", "Transport Layer", "Application Layer", and "Enable Comments". It includes buttons for "Log To File", "Clear", and "Pause". Below this is a table of traffic events:
 

TimeStam	Meter	Data
11 : 54 : 24	METER-1	COSEM OUT DATA
11 : 54 : 24	METER-1	====>Tx 60 1D A1 09 06 07 60 85 74 05 08 01 01 BE 10 04 0E 01 00 00 00 06 5F 1F 04 00 00 18 1D FF FF
11 : 54 : 24	METER-1	SERVICE = RARQ
11 : 54 : 24	METER-1	SENDING WRAPPER FRAME
11 : 54 : 24	METER-1	====>Tx 00 01 00 10 00 01 00 1F 60 1D A1 09 06 07 60 85 74 05 08 01 01 BE 10 04 0E 01 00 00 00 06 5F 1F 04 00 00 18 1D FF FF
11 : 54 : 24	METER-1	RECEIVED WRAPPER FRAME
11 : 54 : 24	METER-1	<====Rx 00 01 00 01 00 10 00 2B 61 29 A1 09 06 07 60 85 74 05 08 01 01 A2 03 02 01 00 A3 05 A1 03 02 01 00 BE 10 04 0E 08 00 06

## Object list

The screenshot shows an Excel spreadsheet titled "LoadProfile.csv - Excel". The spreadsheet contains the following data:

	A	B	C	D	E	F
1	Meter Name	XYZ123400123				
2	Logical Name	(1-0-99-1-0-255_Buffer)				
3	Date Time	Monday	August 13	2018 7:38:59 PM		
4	Buffer					
5		Entry	Real Time Clock	Supply	L1 Current	L1 Voltage
6		Entry[0]	8/13/2018 19:29	4.989 Hz	1.123 A	230.981 V
7		Entry[1]	8/13/2018 19:30	4.989 Hz	1.123 A	230.981 V
8		Entry[2]	8/13/2018 19:31	4.989 Hz	1.123 A	230.981 V
9		Entry[3]	8/13/2018 19:32	4.989 Hz	1.123 A	230.981 V
10		Entry[4]	8/13/2018 19:33	4.989 Hz	1.123 A	230.981 V

Load Profile

The screenshot shows the "Global Watch Window" displaying real-time data for five DLMS meters. The data is as follows:

Meter	Name	Value	Time Stamp
DLMS Meter-1	Voltage Phase1 Instan..	230.03 V	18:24:18
DLMS Meter-2	Voltage Phase1 Instan..	230.01 V	18:24:18
DLMS Meter-3	Voltage Phase1 Instan..	230.01 V	18:24:18
DLMS Meter-4	Voltage Phase1 Instan..	230.13 V	18:24:19
DLMS Meter-5	Voltage Phase1 Instan..	230.13 V	18:24:19

Global Watch Window

Supply frequency Instantaneous value T0(1-0-14-7-0-2)
L1 Current Instantaneous value H[0](1-0-31-7-0-255)
L1 Voltage Instantaneous value H[0](1-0-32-7-0-255)
L2 Current Instantaneous value H[0](1-0-51-7-0-255)
L2 Voltage Instantaneous value H[0](1-0-52-7-0-255)
L3 Current Instantaneous value H[0](1-0-71-7-0-255)
L3 Voltage Instantaneous value H[0](1-0-72-7-0-255)

Name	Value	Time Stamp	Data Type	Access Right
1-0-14-7-0-255_value [A]	49.89 Hz	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-31-7-0-255_value [A]	1.123 A	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-32-7-0-255_value [A]	230.981 V	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-51-7-0-255_value [A]	0 A	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-52-7-0-255_value [A]	231.012 V	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-71-7-0-255_value [A]	1.986 A	19 : 08 : 12	DOUBLE_LONG	Read Only
1-0-72-7-0-255_value [A]	230.782 V	19 : 08 : 12	DOUBLE_LONG	Read Only

*Group of Instantaneous Data*

## APPLICATIONS

### DLMS meter testing

Meter Explorer allows reading and writing meter data and configuration objects thereby validating meter's accuracy and functional conformance to companion or utility specifications. Detailed communication analysis can be performed using the traffic window of Meter Explorer. Protocol traffic can be saved to TXT file which can be used by testers or meter manufacturers for troubleshooting.

### Automated meter reading

Periodic scanning groups and auto export of data to TXT or CSV file makes Meter Explorer an ideal fit for small scale utility meter reading applications. SQL Database insertion feature can be provided upon request.

### Integration tool

Ideal for requirements of meter reading, providing out of the box connectivity to DLMS meters and devices. Universally accepted OPC Data Access V3.0 interface to meter data with backwards compatibility to earlier OPC DA versions.

## KEY FEATURES

- Communication types
  - RS232/RS485 (Direct HDLC)
  - Optical (Direct HDLC / Mode E)
  - Ethernet (IPv4 / IPv6)
  - Cellular modem (IPv4 / IPv6)
  - PLC/RF modems supporting IPv4 / IPv6
  - HDLC serial over IP
- Application Context
  - LN without ciphering
  - SN without ciphering
  - LN with ciphering
  - SN with ciphering

- Authentication
  - Lowest
  - Low (LLS)
  - High (HLS)
- Conformance block
  - Get, Get with block transfer
  - Set, Set with block transfer
  - Action
  - General Protection
  - General Block Transfer
  - Data Notification
  - Read
  - Write
- OBIS codes
  - Support all range of OBIS codes (Standard, Manufacturer, Country, Utility)
  - Automatically resolve OBIS code to more understandable names
- Supports data notification (push) and automatic save push data to CSV file
- Ciphering, key transfer with/without key wrap
- Firmware update using image transfer
- Supports object list download from meter and save as CSV file
- Profile buffer automatic save as CSV file
- OPC data access server support for integration with OPC client applications
- Insert data to database feature available on support
- Manual (on-demand) as well as automatic (schedule-based) reading from meter
- Traffic view and save as text file for communication analysis