

# 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 widely used for testing DLMS meters and for demonstrating interoperability. Meter Explorer is an ideal fit for small scale DLMS meter reading applications.

The screenshot displays the ASE DLMS ME software interface. The top window shows a tree view of objects under 'METER-1 (DLMS-TCP)'. The main pane shows a table of objects with columns: Object Name, Logical Name, IC, IC Version, Name, DataType, and Access Right. Below the table are options for 'Date time display format' and 'Register values'. The bottom window shows a 'Traffic View' with a table of network traffic including timestamps, meter IDs, and data hex strings.

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_lis...	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

### Object list

The screenshot shows an Excel spreadsheet titled 'LoadProfile.csv'. It contains a table with columns for Meter Name, Logical Name, Date Time, Buffer, and a grid of data points for L1 Current and L1 Voltage.

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

Load Profile

The screenshot shows a 'Global Watch Window' with a table of meter data.

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 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.

### Automation

One or more object attributes can be added to a group and polling rate can be configured for each group. Meter Explorer will automatically poll all the items in the group and save the polled data to \*.txt or \*.csv file which can be used by other application or person.

## 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 (security suite 0, 1 and 2)
- 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
  - Selective access by range and by entry
- 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
- Manual (on-demand) as well as automatic (schedule-based) reading from meter
- Traffic view and save as text file for communication analysis