ENERGY METERS

Lovato electric

ENERGY AND AUTOMATION

For efficient management of energy consumption |

In a global scenario in which energy must be monitored and managed efficiently, LOVATO Electric presents its updated series of energy meters for single and three-phase systems. Compatibility with the EXM... type expansion modules and the availability of a data concentrator allow LOVATO Electric energy meters to connect with the most common communication systems (USB, RS232, RS485, M-BUS and Ethernet).
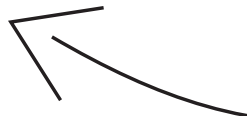
COMMUNICATION
Modbus via RS232 or RS485, Ethernet or M-BUS

EXPANDABILITY
Input/output and communication modules

DME Series

Street lighting

Retail

Industry

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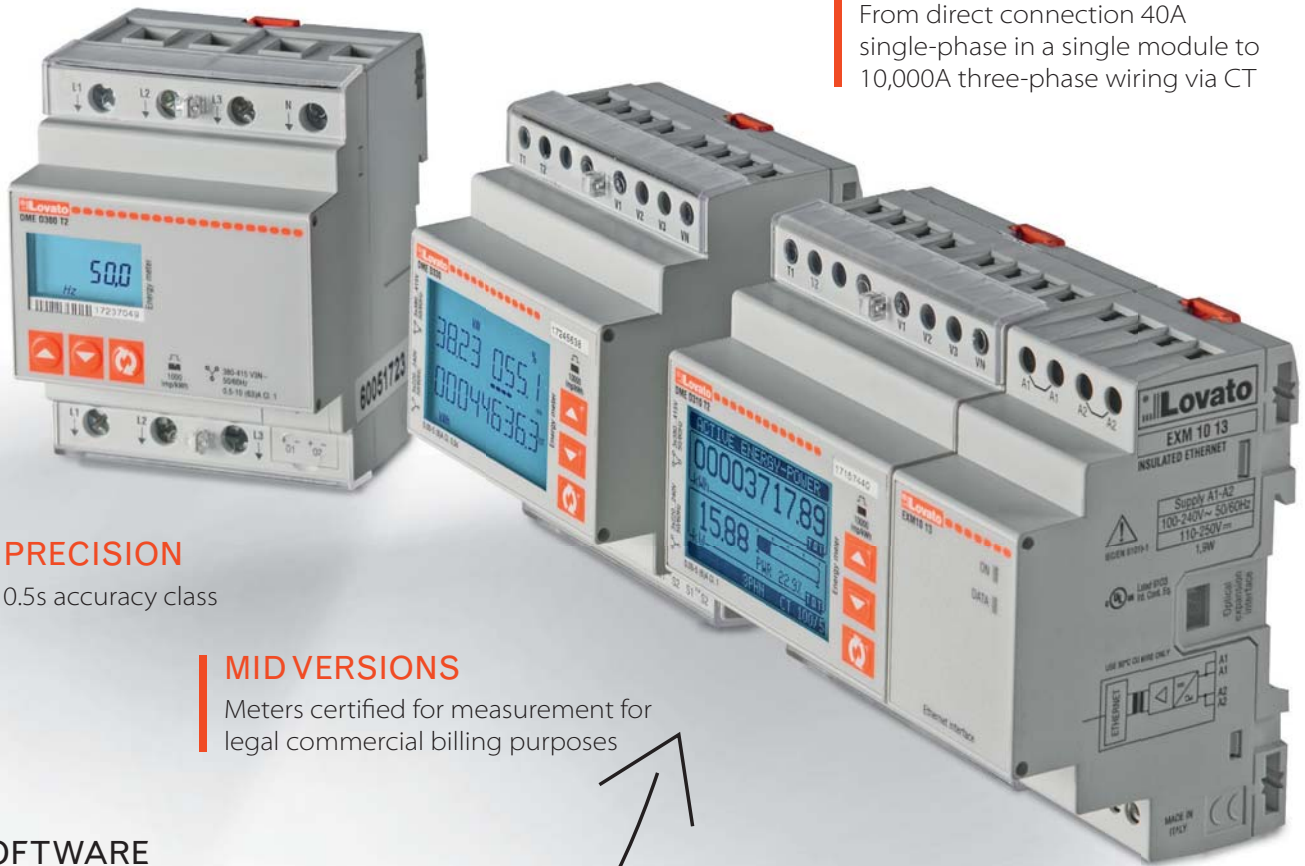
COMPLETE RANGE

From direct connection 40A single-phase in a single module to 10,000A three-phase wiring via CT

PRECISION

0.5s accuracy class

MID VERSIONS

Meters certified for measurement for legal commercial billing purposes

SOFTWARE

Monitoring, configuration and remote control for energy management

EASE OF USE

Backlight graphic display

Xpress
Synergy

- total and partial energy meters (resettable)
- expandable versions with memory device for data logger, Ethernet communication and relay outputs for load disconnection
- versions with programmable output for energy pulses or alarm thresholds
- tariff selection input
- 4-quadrant measurements
- MID, RCM and EAC certified versions.

Photovoltaic

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220... 240 VAC

> SINGLE-PHASE

- rated supply voltage: 220...240VAC
- operating limit: 187...264VAC
- active energy measurement and accuracy:
  - standard version: class 1 (IEC/EN 62053-21)
  - MID-certified version: class B (EN 50470-3)
- reactive energy measurement and accuracy: class 2 (IEC/EN 62053-23)
- flashing metrological LED for energy consumption indication
- terminal covers that can be sealed included
- protection rating: IP40 on front, IP20 on terminals
- multi-measurement.

SINGLE-PHASE WITH DIRECT WIRING		DME D100 T1	DME D110 T1	DME D115 T1	DME D120 T1	DME D121	DME D122	DME D130 LM
Maximum current		40A	40A	40A	63A	63A	63A	63A
Display	Vertical, not backlight	■	■					
	Horizontal, backlight			■	■	■	■	■
Measurement	kWh	■						
	kWh, kW with average and max. demand			■				
	kWh, kvarh, kW with average and max. demand, kvar, V, I, Hz, PF, total and partial hour counter		■		■	■	■	■
Interface	Pulse output	■						
	Programmable output (pulses/thresholds)		■	■	■			
	Built-in Modbus RTU (RS485)					■		
	Built-in M-BUS						■	
MID version availability		■	■		■	■	■	
Load management								■
Compatibility with Synergy, Synergy Cloud and Xpress software						■		

> THREE-PHASE

- rated supply voltage: 380...415VAC (L-L)
- operating limit: 323...456VAC (L-L)
- active energy measurement and accuracy:
  - standard version, direct connection: class 1 (IEC/EN 62053-21)
  - standard version, connection via CT: class 0.5s (IEC/EN 62053-22)
  - MID-certified version: class B (EN 50470-3)
- reactive energy measurement and accuracy: class 2 (IEC/EN 62053-23)
- flashing metrological LED for energy consumption indication
- terminal covers that can be sealed included
  protection rating: IP40 on front, IP20 on terminals
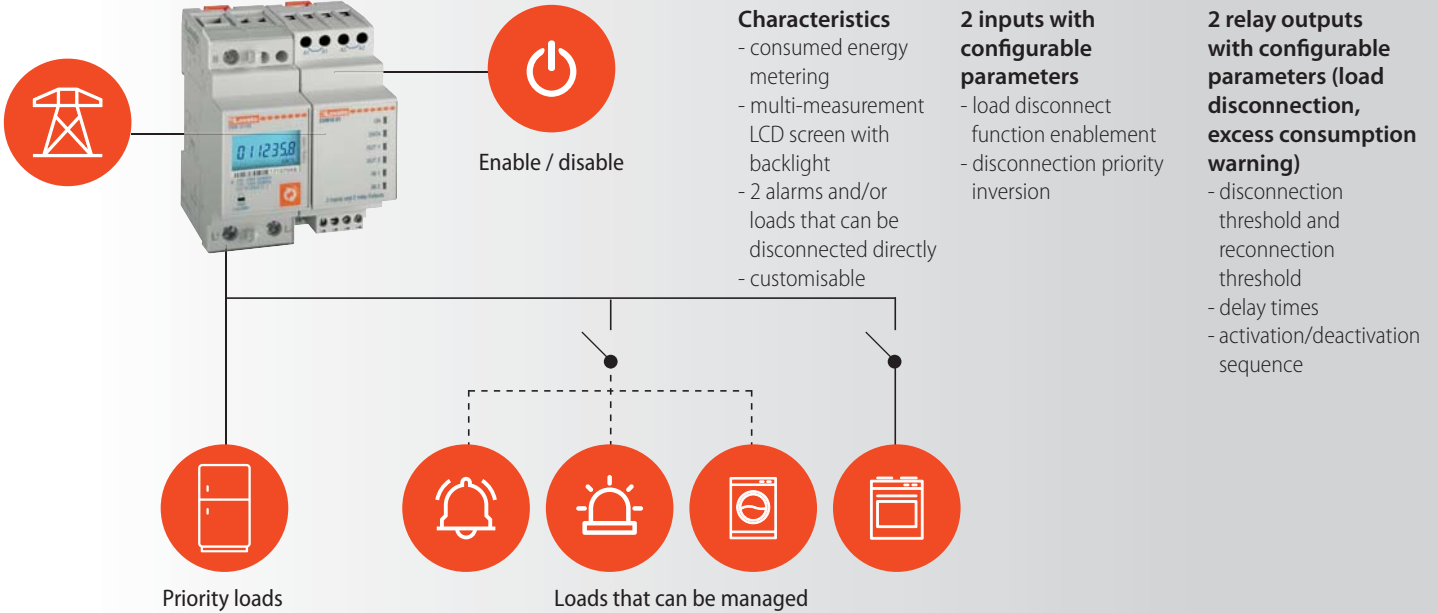- multi-measurement
- tariff selection input.

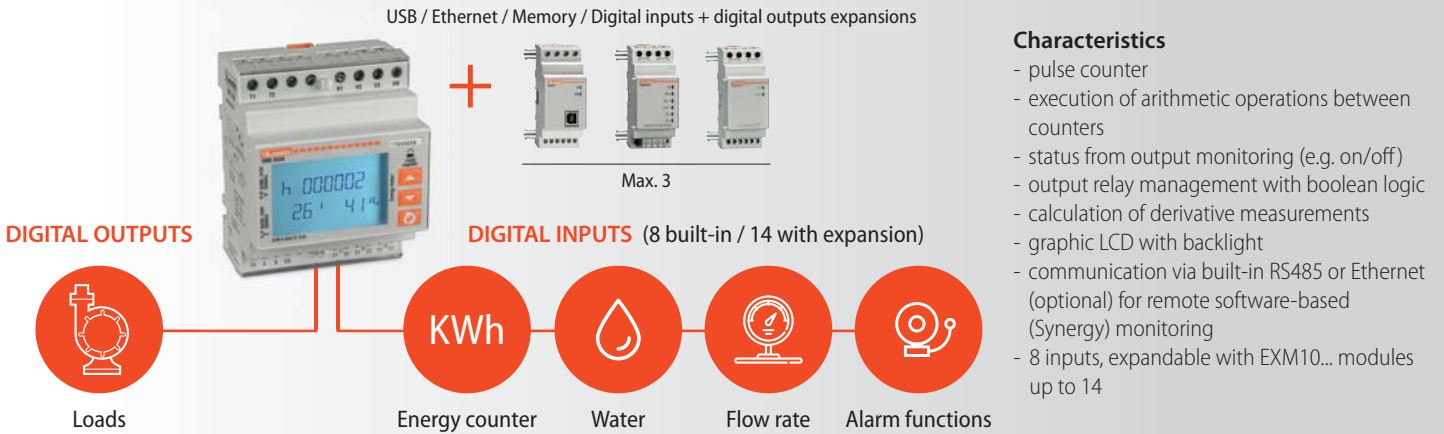| THREE-PHASE		DME D300 T2	DME D301	DME D302	DME D305 T2	DME D330	DME D332	DME D310 T2
Maximum current		80A	80A	80A	CT /5 or CT /1	CT /5 or CT /1	CT /5 or CT /1	CT /5
Connection type	Direct	■	■	■				
	Via CT				■	■	■	■
Interface	Programmable output (pulses/thresholds)	■			■			■
	Built-in Modbus RTU (RS485)		■			■		
	Built-in M-BUS			■			■	
Expandability	Communication (RS485, Ethernet, USB)							■
	Relay outputs for load disconnection							■
	Data memory (data logger)							■
MID version availability*			■	■	■	■	■	■
Compatibility with Synergy, Synergy Cloud and Xpress software			■			■		■

* UTF-certified versions are available on request

DME D130 LM multi-measurement for load management: avoid disconnection due to excess consumption

Enable / disable

Characteristics
- consumed energy metering
- multi-measurement LCD screen with backlight
- 2 alarms and/or loads that can be disconnected directly
- customisable

2 inputs with configurable parameters
- load disconnect function enablement
- disconnection priority inversion

2 relay outputs with configurable parameters (load disconnection, excess consumption warning)
- disconnection threshold and reconnection threshold
- delay times
- activation/deactivation sequence

Priority loads

Loads that can be managed

DME CD: smart expandable data concentrator with built-in RS485

USB / Ethernet / Memory / Digital inputs + digital outputs expansions

Max. 3

DIGITAL OUTPUTS

DIGITAL INPUTS (8 built-in / 14 with expansion)

Characteristics
- pulse counter
- execution of arithmetic operations between counters
- status from output monitoring (e.g. on/off)
- output relay management with boolean logic
- calculation of derivative measurements
- graphic LCD with backlight
- communication via built-in RS485 or Ethernet (optional) for remote software-based (Synergy) monitoring
- 8 inputs, expandable with EXM10... modules up to 14

Loads

KWh

Energy counter   Water   Flow rate   Alarm functions

THREE-PHASE VERSIONS: monitoring energies of each phase with dedicated hour counters

KWh   KWh   KWh

L1
L2
L3
N

CT1
CT2
CT3

V1 V2 V3 VN   S1 S2   S1 S2   S1 S2
voltage   I1   I2   I3
              current

DME series three-phase meters can be used for monitoring the consumption and hours of operation on each single phase.
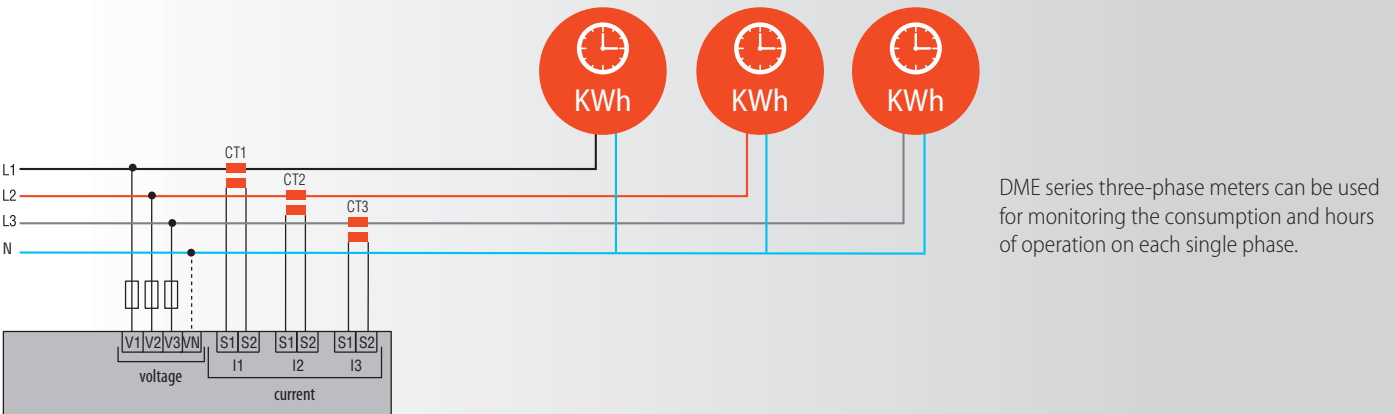
ORDER CODES

Single-phase

Order code	Maximum current	Size	Accuracy class	Interface
DME D100 T1	40A	1U	1	1 pulse output
DME D110 T1	40A	1U	1	1 programmable output
DME D115 T1	40A	2U	1	1 programmable output
DME D120 T1	63A	2U	1	1 programmable output
DME D121	63A	2U	1	RS485
DME D122	63A	2U	1	M-BUS
DME D130 LM	63A	4U	1	Relay outputs

MID versions				
DME D100 T1MID	40A	1U	B	1 pulse output
DME D110 T1MID	40A	1U	B	1 programmable output
DME D120 T1MID	63A	2U	B	1 programmable output
DME D121 MID◆	63A	2U	B	RS485
DME D122 MID◆	63A	2U	B	M-BUS

◆ Certification in progress

Three-phase

Order code	Maximum current	Size	Accuracy class	Interface
DME D300 T2	80A	4U	1*	2 programmable outputs
DME D301	80A	4U	1*	RS485
DME D302	80A	4U	1*	M-BUS
DME D305 T2	CT /5 or /1	4U	0.5s	2 programmable outputs
DME D330	CT /5 or /1	4U	0.5s	RS485
DME D332	CT /5 or /1	4U	0.5s	M-BUS
DME D310 T2	CT /5	4U	0.5s	2 programmable outputs

MID versions				
DME D300 T2MID	80A	4U	B	2 programmable outputs
DME D301 MID	80A	4U	B	RS485
DME D302 MID	80A	4U	B	M-BUS
DME D305 T2MID	CT /5 or /1	4U	B	2 programmable outputs
DME D330 MID	CT /5 or /1	4U	B	RS485
DME D332 MID	CT /5 or /1	4U	B	M-BUS
DME D310 T2MID	CT /5	4U	B	2 programmable outputs

* Class 1 according to IEC/EN 62053-21, accuracy measured in the 0.75A-80A range: **0.5%**

Certifications

UTF-certified versions are available on request

Data concentrator

Order code	Size	Interface	Input number	Expandability
DME CD	4U	RS485	8 built-in	max. 3 EXM expansions

Expansions for DME D310 T2 and DME CD

Order code	Description
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs 5A 250VAC
EXM10 02	4 opto-isolated digital inputs and 2 relay outputs 5A 250VAC
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Ethernet interface with Web server function
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs 5A 250VAC
EXM10 30	Data storage, RTC with backup battery for data logging

EXM10 00 | EXM10 01
EXM10 02
Digital inputs and outputs

EXM10 10 | EXM10 11
EXM10 12 | EXM10 20
USB, RS232, RS485
communication

EXM10 13
Ethernet communication

EXM1030
Data logger

Accessories

DM
Current transformers
50A to 4000A

EXC M3G 01
2G/3G modem

EXC CON 01
RS485-Ethernet converter

SOFTWARE

Synergy

Software for energy monitoring and efficiency.

Xpress

Configuration and remote control software.

Read the energy efficiency brochure to find out more! Scan this QR code with your smartphone.

Energy Management

DMG

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