Metering instruments and current transformers

- Single and three-phase energy meters
- MID certified versions with UTF certificates
- cULus certified versions
- Power analyzer and multifunction digital metering instruments, expandable, with icon display, monochrome or colour
- Digital voltmeters, ammeters, wattmeters, frequency meters and cosφ meters
- Connection to single, two and three-phase and for power monitoring systems
- Ideal for distribution systems, electricity cogeneration and within machinery installations
- High measurement accuracy
- Totally programmable digital and analog inputs and outputs
- RS485, RS232, USB, Ethernet, Profibus DP and M-Bus communication ports.

Page 25-12

ENERGY METERS

- Single-phase, three-phase with neutral, three-phase with or without neutral
- Direct connection or by current transformers
- MID or cULus certified versions
- Versions expandable with EXM... expansion modules
- Versions with built-in RS485 or M-Bus communication ports.

Page 25-18

DATA CONCENTRATORS

- Energy consumption data storage for network usage
- Connection up to 14 energy meters equipped with static output
- Expandable with EXM... expansion modules
- Built-in RS485 communication port.

NFC

Page 25-19

POWER ANALYZERS WITH WIDESCREEN COLOUR LCD

- Widescreen colour LCD display
- Flush-mount 92x92mm
- Versions with built-in RS485 communication port
- Versions with built-in Ethernet and data memory
- Versions expandable with EXP... expansion modules
- NFC and optical port
- Compatibility with EASY BRANCH power monitoring system.

Page 25-21

DIGITAL LCD MULTIMETERS AND POWER ANALYZERS

- Graphic or icon LCD
- Modular and flush-mount 92x92mm
- Versions expandable with EXM... and EXP... expansion modules
- Version with built-in RS485 communication port.
- Flush-mount version with current reading through Rogowski coils.

Page 25-24

LED MEASURING INSTRUMENTS

- Voltmeters, ammeters and wattmeters
- Modular and flush-mount 96x48mm versions.

Page 25-31

CURRENT TRANSFORMERS

- Primary current: 5...4000A
- Secondary current: 5A
- Solid and split-core types
- Instrument and accuracy versions.
- Wound primary CT for low currents
- Busbar versions.

SINGLE-PHASE DIRECT CONNECTION

									
Type	**DMED100T1**	**DMED110T1**	**DMED111**	**DMED112**	**DMED115T1**	**DMED120T1**	**DMED121**	**DMED122**	**DMED130LM**
Maximum current	40A	40A	40A	40A	40A	63A	63A	63A	63A
Display									
Vertical, no backlight	●	●	●	●					
Horizontal, backlight					●	●	●	●	●
Measurements									
kWh	●	●	●	●	●	●	●	●	●
kWh, kW with average and max demand		●	●	●	●	●	●	●	●
kvarh, 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 -25...55°C❶	●	●	●	●		●	●	●	
MID version -25...70°C❷			●						
Load management									●
Compatibility with Synergy, Synergy Cloud and Xpress software			●				●		

THREE-PHASE

							
Type	**DMED300T2**	**DMED301**	**DMED302**	**DMED305T2**	**DMED330**	**DMED332**	**DMED310T2**
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 -25...55°C❶❹	●	●	●	●	●	●	●
MID version -25...70°C❷		●					
cULus version (ANSI C12.20)❸	●	●					
Compatibility with Synergy, Synergy Cloud and Xpress software		●			●		●

❶ For MID versions add "MID"
❷ For MID7 versions add "MID7"
❸ For UL versions add "UL"
❹ UTF certified versions available on request.

DIN RAIL MOUNTING (MODULAR)

					
Type	**DMG100**	**DMG110**	**DMG200**	**DMG210**	**DMG300**
Maximum rated voltage	600VAC	600VAC	690VAC	690VAC	690VAC
Voltage and current measure accuracy	0.5%	0.5%	0.5%	0.5%	0.2%
Active energy measure accuracy	Class 1	Class 1	Class 1	Class 1	Class 0.5s
Single-phase energy meter	●	●			
Harmonic analysis	15th order	15th order	THD only	THD only	31st order
Boolean logic					●
Expandable with EXM... modules					3 modules
Display type	Icons	Icons	Graphic	Graphic	Graphic
Built-in communication port		RS485		RS485	
Communication port with EXM... modules					RS232 USB RS485 Ethernet
Ethernet-RS485 gateway function					●

FLUSH MOUNTING

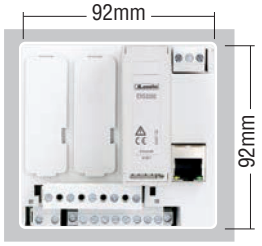
									
Type	**DMG600**	**DMG610**	**DMG611**	**DMG615**	**DMG620**	**DMG7000**	**DMG7500**	**DMG8000**	**DMG9000**
Maximum rated voltage	600VAC	600VAC	600VAC	600VAC	600VAC	600VAC	600VAC	600VAC	600VAC
Current reading	CT /5A or CT /1A	CT /5A or CT /1A	Rogowski coils❶	CT /5A or CT /1A	CT /5A or CT /1A	CT /5A or CT /1A	CT /5A or CT /1A	CT /5A or CT /1A	CT /5A or CT /1A
Voltage and current measure accuracy	0.5%	0.5%	0.5%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Active energy measure accuracy	Class 1	Class 1	Class 1	Class 0.5s	Class 0.5s	Class 0.5s	Class 0.5s	Class 0.5s	Class 0.5s
Single-phase energy meter	●	●	●	●	●	●	●	●	●
Harmonic analysis	15th order	15th order	15th order	15th order	15th order	63rd order	63rd order	63rd order	63rd order
Neutral-earth voltage									●
Neutral current	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	Measured
PLC logic						●	●	●	●
Display type	Icons	Icons	Icons	Icons	Icons	Colour graphic	Colour graphic	Colour graphic	Colour graphic
Built-in communication port		RS485	RS485	RS485	Ethernet		RS485	Ethernet	RS485 Ethernet
Expandable with EXP... modules	1 module	1 module	1 module	1 module	1 module	3 modules	3 modules	3 modules	3 modules
Communication port with EXP... modules	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet Profibus DP	RS232 USB RS485 Ethernet Profibus DP	RS232 USB RS485 Ethernet Profibus DP	RS232 USB RS485 Ethernet Profibus DP
Data memory								●	●
Ethernet-RS485 gateway function						●	●	●	●
Energy quality according to EN 50160									●
Compatibility with EASY BRANCH power monitoring system							●	●	●
Degree of protection	IP54	IP54	IP54	IP54	IP54	IP65	IP65	IP65	IP65

❶ Coils and calibration report included.

POWER ANALYZERS WITH WIDESCREEN COLOUR LCD
DMG SERIES

WIDESCREEN COLOR LCD

The large size of the colour LCD (4.3") allows for the optimal view of measures and parameters in a clear, simple and intuitive way.
The standard cutout dimensions (92x92mm) ensures a perfect compatibility with the usual front panel solutions.



10 LANGUAGES

The language shown can be selected from a large number of choices: English, French, German, Italian, Spanish, Portuguese, Polish, Russian, Czech, Chinese.

PROGRAMMABLE LEDs

3 front LEDs are programmable and let the user know the status of the device at any time: alarms programmed by the user, status of digital inputs or outputs, emission of pulses indicating energy consumption, communication in progress.

HIGH ACCURACY LEVEL FOR MEASUREMENTS

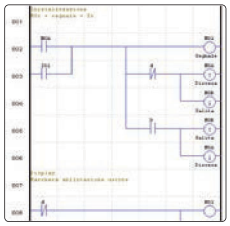
The measurements are verified according to the recognized international standards for measuring instruments: IEC 62053-22 (**class 0.5s**), IEC 62053-24 (class 1) and IEC 61557-12 (**class 0.5**).

NFC CONFIGURATION

Thanks to NFC technology, it is possible to configure and modify parameters (even when the device is not powered) through NFC LOVATO App, which can be downloaded for free from the Google Play Store and App Store for Android and iOS smart devices.

PLC LOGIC

Thanks to the built-in PLC logic, the power analyzers can perform simple automations related to timers and alarm states and digital inputs. Programming with "contacts" (**Ladder**) is simple and intuitive thanks to the use of Xpress configuration software.



	DMG7000	DMG7500	DMG8000	DMG9000
Built-in RS485 port	–	●	–	●
Built-in Ethernet port (with web-server)	–	–	●	●
Ethernet-RS485 gateway function	+ EXP1012 + EXP1013	+ EXP1013	+ EXP1012	●
Memory for data collection	–	–	●	●
Statistics of network quality according to EN50160	–	–	–	●
Neutral current measurement through dedicated CT	–	–	–	●
Neutral-Earth voltage measurement	–	–	–	●
Compatibility with EASY BRANCH power monitoring system	–	●	●	●

EVERYTHING UNDER CONTROL!

MEASUREMENTS

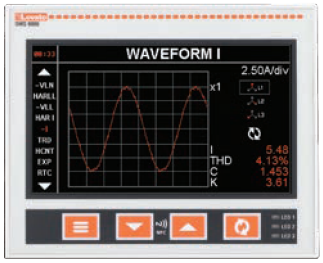
DMG power analyzers display all the measurements useful for a complete check of the electrical network. The voltage measurement input does not require external transformers **up to 600VAC**.

CHARTS AND HARMONICS

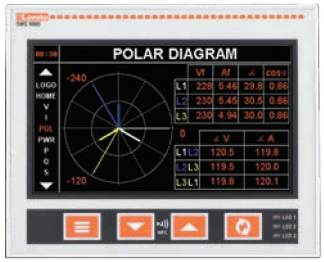
The electrical measurements are shown with waveform charts, polar diagrams and representations of the **harmonic spectrum up to the 63rd order** which is a useful tool to better understand the state of the system.

STATISTICS

The DMG9000 model also provides statistics on the quality of the network according to the **EN50160** standard - class C - (voltage dips, overvoltages, interruptions, low frequency noises and much more).

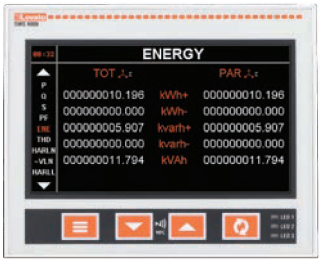


Waveforms



Polar diagram

Currents



Energy consumption control

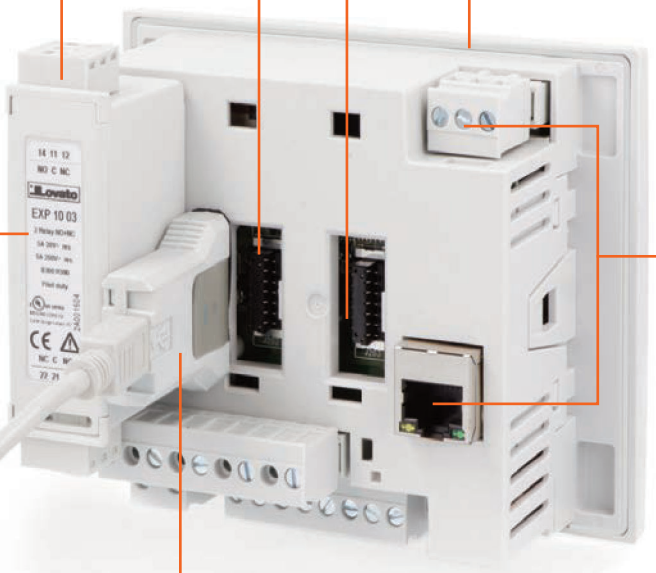
EXPANDABILITY AND COMMUNICATION

EXPANDABILITY

Possibility to add **up to 3** EXP... series expansion modules (additional inputs, outputs and communication ports).

DEGREE OF PROTECTION: IP65

Possibility of use in harsh environments thanks to the gasket on the back which guarantees the **IP65** degree of protection.



INTEGRATION WITH SIGNALS FROM THE FIELD

Thanks to the EXP... expansion modules it is possible to add **digital and analog inputs** by which field measurements such as gas or water consumption, tank levels, temperatures, pressures and much more are integrated into the data collection in order to obtain a complete energy management.

COMMUNICATION

Availability of models with built-in **RS485** and **Ethernet** communication ports.

OPTICAL PORT

The optical port compatible with the communication devices CX01 and CX02 is available and allows, thanks to Xpress software, the parameter configuration, the electrical network diagnostics and the firmware update of the power analyzer.

EASY BRANCH POWER MONITORING SYSTEM

Thanks to the EXS... modules, a simplified and very fast wiring can be achieved in panels where it is necessary to read the electrical parameters of different loads, drastically reducing the costs and the installation times.

WEB-SERVER FUNCTION IN DMG8000 AND DMG9000

SETTING OF ALL PARAMETERS

The programming of the parameters, as well as from the front panel, can also be done through the browser on a PC. The built-in web-server also allows the setting of the parameters of the EASY BRANCH power monitoring system, such as the descriptions of the individual measurement points.

WEBSERVER AND BUILT-IN DATA MEMORY

A flash data memory allows archiving of historical data. Through the built-in webserver the user can:
- select the measures (up to 128);
- set the sampling frequency;
- download the .CSV file with the acquired informations.

For example, by sampling 20 measurements with 1 minute of sampling time, 10 days of data can be stored.

MEASUREMENT VIEW

Representation of the measured values by means of tables and charts.

EASY BRANCH POWER MONITORING SYSTEM

When inside an electrical panel the parameters of several loads have to be monitored, **EASY BRANCH** power monitoring system is a more efficient and simple alternative solution to install than the traditional one which requires an independent instrument for each measuring point. The electrical distribution panels in shopping centres or in the departments of a production facility represent ideal applications for **EASY BRANCH** system by LOVATO Electric.

SYSTEM COMPONENTS

DMG7500 - 8000 - 9000
Power analyzer

DMG7500, DMG8000, DMG9000 power analyzers.

The power analyzers represent the heart of the system: they measure the electrical voltage in the switchboard and the input current, record the total measurements upstream of the distribution and the measurements of each individual monitored load available on their display. The electrical quantities can also be viewed via the built-in communication ports (RS485 or Ethernet).

On the DMG8000 and DMG9000 models, the system measurements can be viewed within a web page and can be recorded in the data memory to get historical trends.

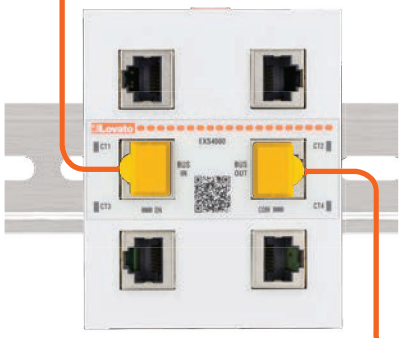
EXS0000
Bus module

EXS0000 bus module

Installed in one of the expansion slots of the power analyzer, by using a standard Ethernet cable (cat.6) it connects and supplies **up to 8 current measuring modules EXS4...** which are automatically recognized without the need for settings by the installer.
When connecting 5 or more EXS4 current modules ... the EXS0000 bus module requires a 24VDC - 0.2A power supply.

MAX 8 EXS4... current measuring modules can be connected to the EXS0000 bus module, to monitor up to:
- 33 three-phase loads;
- 99 single phase loads.

Including the loads connected to the power analyzer.

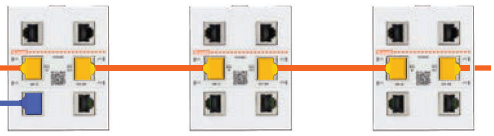


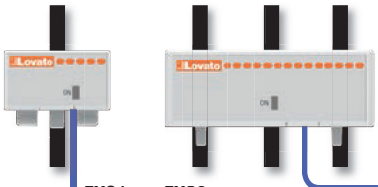
EXS4000
Current measuring module with 4 inputs for electronic RJ45 CTs

Current measuring module EXS4000

The module collects the measurements of the loads monitored by the electronic current transformers EXS3... (three-phase or single-phase) or EXS1... (single-phase). Each module measures **up to 4 three-phase loads or 12 single-phase loads** or a mixed single-phase and three-phase configuration. The module automatically recognizes the connected electronic current transformer and highlights, through diagnostic LEDs, the correct self-configuration of the measurement points and the correct coupling with the power analyzer.

Correct self-configuration LED





EXS1... - EXS3...
Electronic current transformer

Electronic current transformers EXS1... and EXS3...

They are current transducers suitable to be installed immediately downstream of the magnetic circuit breakers thanks to their compact size. Available **for single-phase or three-phase loads,** the diameter and pitch of the pass-through holes have been designed to be in line with the ones of the MCBs:
- for sizes up to 63A: Ø = 7mm and 18mm pitch;
- for sizes up to 125A: Ø = 12mm and 27mm pitch.

They connect to the EXS4000 current monitoring module via pre-wired **2 meter RJ45 cable,** thus making the connection fast and fail-safe.
EXS3 ... can be programmed to manage even single-phase loads.

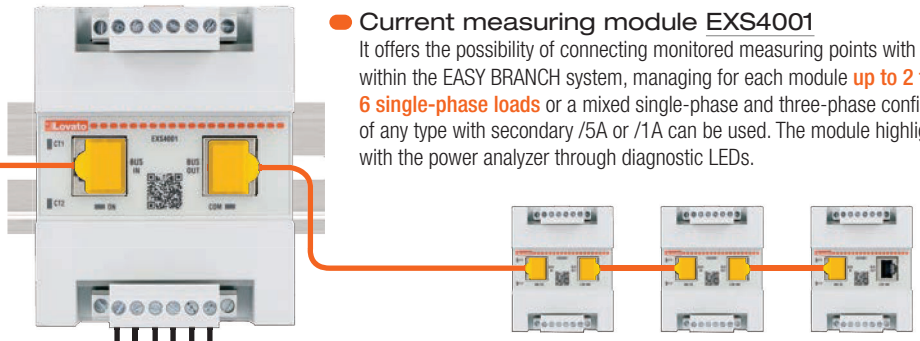
2m pre-wired cable

Correct coupling signalling LED

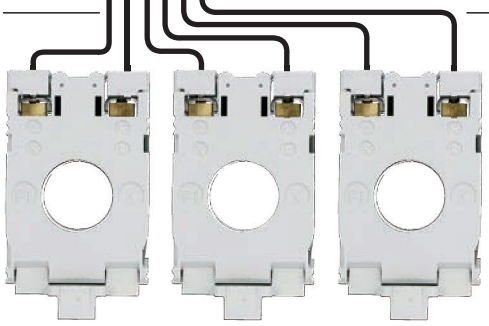
Current measuring module EXS4001

It offers the possibility of connecting monitored measuring points with traditional current transformers within the EASY BRANCH system, managing for each module **up to 2 three-phase loads or 6 single-phase loads** or a mixed single-phase and three-phase configuration. Current transformers of any type with secondary /5A or /1A can be used. The module highlights the successful coupling with the power analyzer through diagnostic LEDs.

Correct coupling signalling LED



EXS4001
Current measuring module with 2 inputs for three-phase traditional CTs or 6 inputs for single-phase traditional CTs



DM...
Current transformers

Traditional current transformer DM...

Current transformers (CTs) type DM... are mounted in an electrical system to reduce the line current to a secondary value of 5A and compatible with EXS4001 current measuring modules.
They are available in many versions:
- with wire-wound primary for reduced currents;
- solid core type;
- high precision for very accurate measurements;
- split-core and pre-wired types which are suitable for updating the panels;
- **primary current from 5 to 4000A.**

Gateway data logger

A gateway data logger is the key device for the implementation of a modern and well-designed energy monitoring system.
It collects data from LOVATO Electric devices or from environmental sensors relating to any type of energy carrier (water, air, gas, electricity and steam) equipped with a compatible protocol.
The data collected, as well as being represented by the integrated web-server, can be transmitted to Synergy supervision software of LOVATO Electric or forwarded to remote servers in formats suitable for appropriate processing.

EXCGLA01
Gateway data logger

Supervision software

All the data of the EASY BRANCH system are available on the central power analyzer and, through its communication ports, it is possible to collect them remotely by connecting directly with a browser if the model chosen is DMG8000 or DMG9000, or through Synergy software installed on a local server, or using Synergy Cloud if the gateway data logger EXCGLA01 is added to the system.

SYNERGY
Supervision software

EASY BRANCH PLUG & PLAY SYSTEM ADVANTAGES

4 COMPONENTS NEEDED

The EASY BRANCH system consists of a few elements to add to the power analyzer: EXS0000 module to get the communication bus, the EXS4... module to measure currents and the EXS1..., EXS3 electronic current transformers... or traditional /5A or /1A CTs.
Up to 33 three-phase or 99 single-phase measuring points can be obtained!

DRAMATIC REDUCTION OF WIRING TIMES

In a monitoring system with traditional measuring instruments, 4 voltage and 6 current cables are required for each three-phase measuring point and two additional cables for the auxiliary power supply are added: a total of 12 cables to be connected for each measuring point.
With the EASY BRANCH system, for each additional current measuring module (EXS4000) only one cable with RJ45 terminal must be connected, getting 4 three-phase or 12 single-phase measurement points, each of which is connected with a cable with RJ45 terminal, drastically reducing the wiring time.

STOP TO WIRING MISTAKES!

In a monitoring system with traditional measuring instruments, 12 cables to be connected for each three-phase measuring point can cause various wiring errors (phase sequence, phase correspondence between voltages and currents, current transformers sense) which cause errors in reading the electrical quantities and delay the commissioning of the switchboard.
The EASY BRANCH system, thanks to the RJ45 connections of the electronic CTs, is foolproof!

Plug & Play

SETTING TIME REDUCTION

EXS1... and EXS3... electronic transformers have a **self-recognition** system with the current module to which they are connected, avoiding the installer the need to set the CT primary and the type of connection (single-phase, three-phase). A LED on the electronic transformers indicates the correct power supply, while a LED on EXS4000 current measuring module indicates the correct coupling.

NO SPECIAL CABLES NEEDED

No special cable is needed to connect the current measuring modules to EASY BRANCH bus: **a standard Cat.6 Ethernet cable is enough.**

COMPARISON BETWEEN EASY BRANCH AND TRADITIONAL MEASURING SYSTEMS

If 5 three-phase loads are to be monitored in an electrical panel:
- **EASY BRANCH SYSTEM**: 1 power analyzer, 1 display where to search for measurements, 1 EXS0000 bus module, 1 EXS4000 current measuring module, 4 three-phase electronic transformers and only 12 cables to be wired
- **TRADITIONAL SYSTEM**: 5 multimeters, 5 displays where to search for measurements, 15 current transformers and 60 cables to be wired.

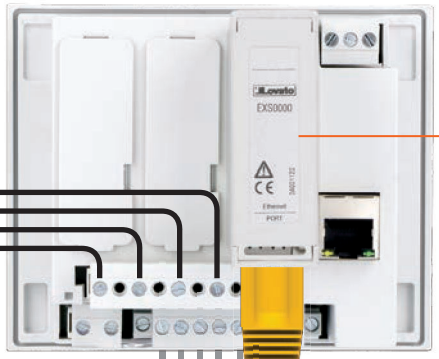
The more the measuring points increase, the more the advantages in favour of the EASY BRANCH system are evident.

MEASUREMENT ACCURACY

The EASY BRANCH system guarantees high measurement accuracy according to IEC61557-12 and IEC62053-22/23 standards.

PLANT MANAGEMENT WITH EASY BRANCH

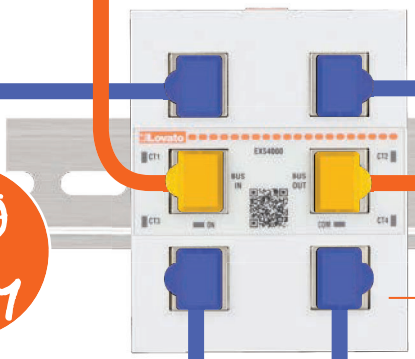
DMG7500 - 8000 - 9000
Power analyzer



EXS0000
Bus module for EASY BRANCH system

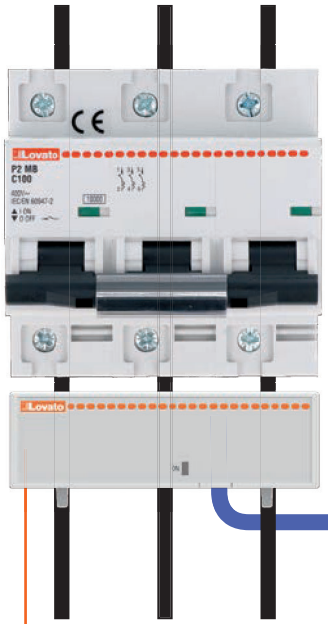
EXS1080
80A single-phase electronic current transformer with RJ45 cable, 2m long

L1
L2
L3
N
T1
T2
T3

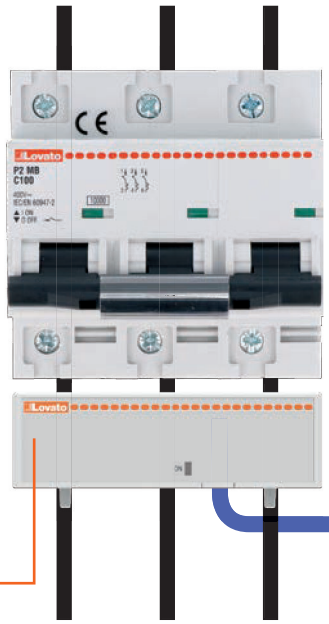


Plug & Play

EXS4000
Current measuring module with 4 inputs for electronic RJ45 CTs

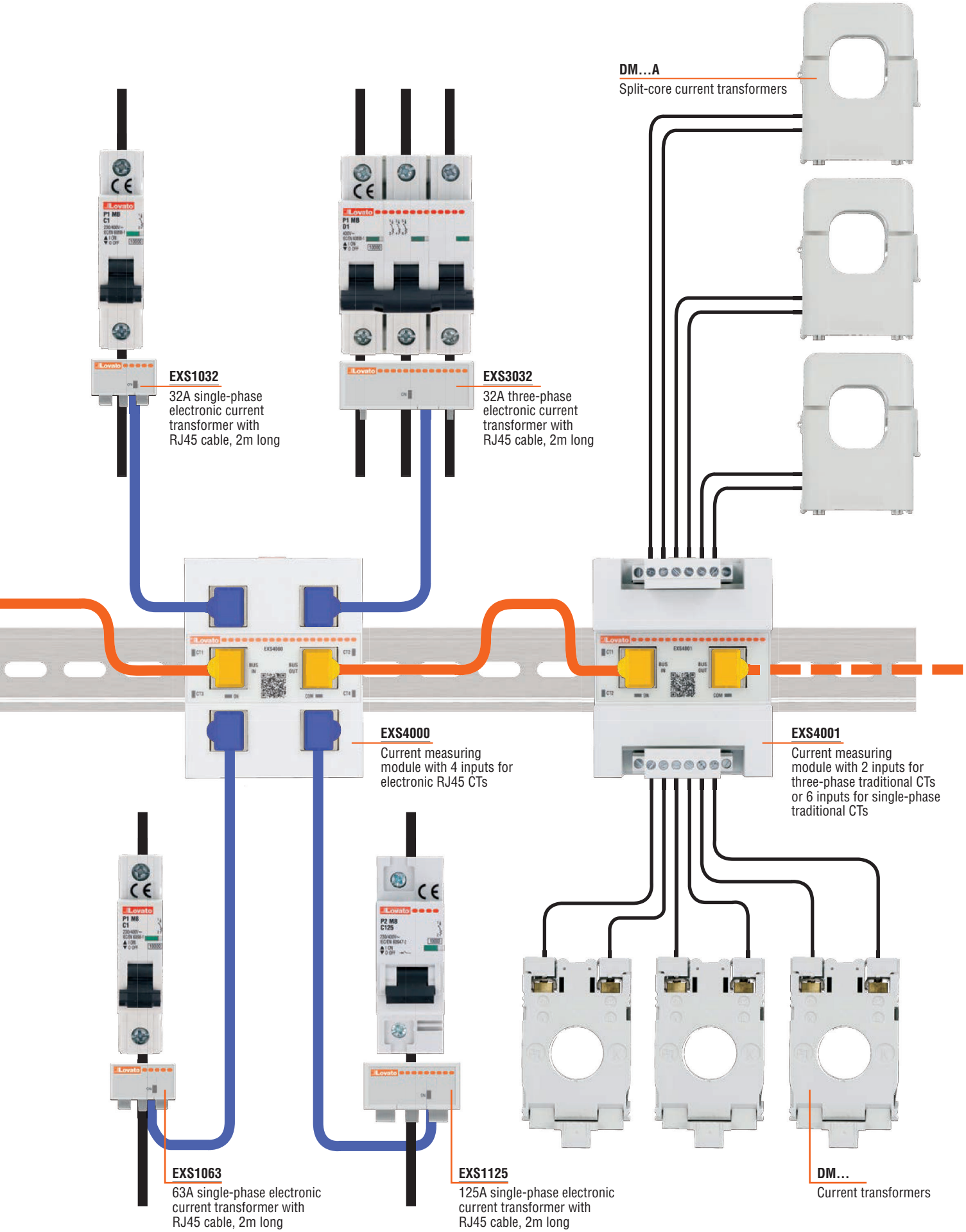


EXS3125
125A three-phase electronic current transformer with RJ45 cable, 2m long



EXS3080
125A three-phase electronic current transformer with RJ45 cable, 2m long

EXS3063
63A three-phase electronic current transformer with RJ45 cable, 2m long



DM…A
Split-core current transformers

EXS1032
32A single-phase electronic current transformer with RJ45 cable, 2m long

EXS3032
32A three-phase electronic current transformer with RJ45 cable, 2m long

EXS4000
Current measuring module with 4 inputs for electronic RJ45 CTs

EXS4001
Current measuring module with 2 inputs for three-phase traditional CTs or 6 inputs for single-phase traditional CTs

EXS1063
63A single-phase electronic current transformer with RJ45 cable, 2m long

EXS1125
125A single-phase electronic current transformer with RJ45 cable, 2m long

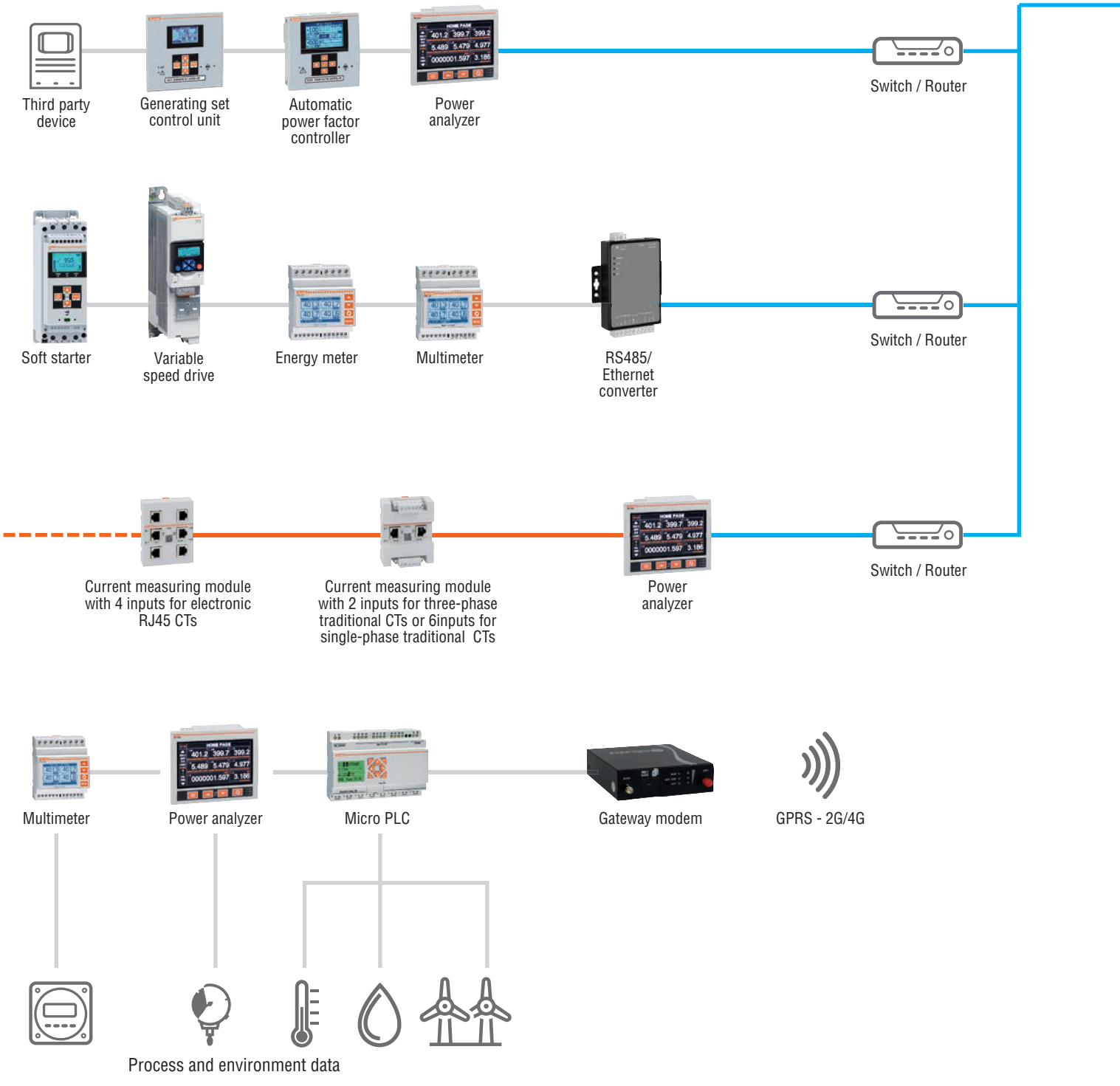
DM…
Current transformers

ENERGY MANAGEMENT SOLUTION BY LOVATO ELECTRIC

For the purpose of monitoring and energy saving, LOVATO Electric provides a complete and integrated solution consisting of:

- **hardware devices** for energy measurement and control (power analyzers, multimeters, energy meters, variable speed drives, soft starters, automatic power factor controllers, gateway data loggers, etc.);
- webserver **software** to continuously monitor energy vectors via the Web.

Synergy by LOVATO Electric is an energy monitoring and analysis system with a professional, flexible and integrated approach from an Industry 4.0 perspective. Thanks to the LOVATO Electric **measurement devices** equipped with a communication port and through the web-based supervision platform, it is possible to monitor real time measurements, consult graphics, receive alarms, export customized reports and carry out commands and settings.



GATEWAY DATA LOGGER LOCAL WEBSERVER

LOVATO Electric **EXCGLA01** gateway data logger provides access to an integrated webserver which allows local consultation of the monitored data and acts as a gateway to Synergy supervision software.

Gateway data logger

Built-in webserver information view

Pre-defined live pages, charts and data logs

MONITORING AND SUPERVISION SOFTWARE

Synergy is a software which can be completely customized by the user who can thus have the key indicators of the monitored systems, be notified in the event of alarms for anomalies in consumption and monitor performance over time. It is open to the integration of third-party instrumentation thanks to the use of the MODBUS communication protocol and the ability to integrate any device equipped with analog or digital output.

Multi-device

Laptop

Tablet

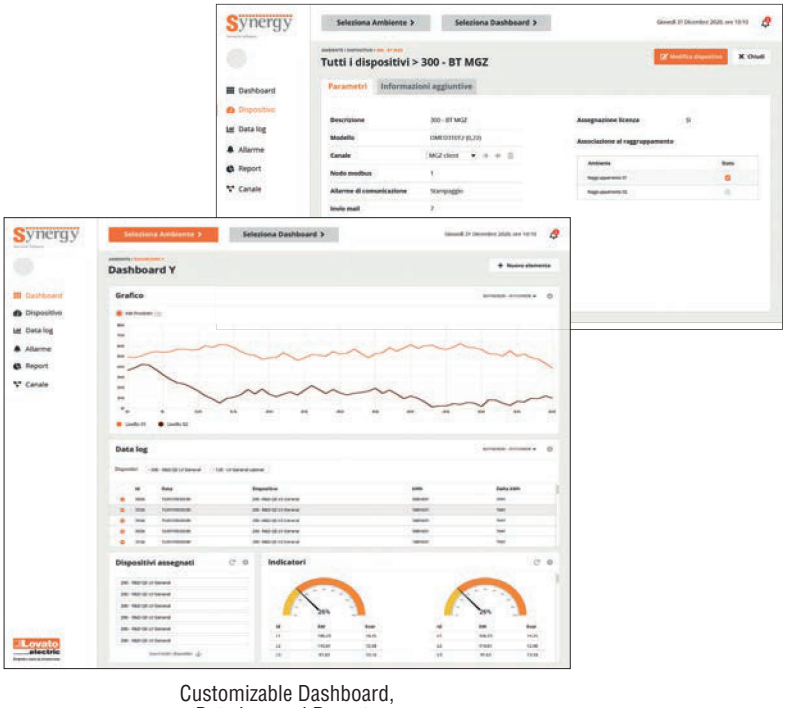
Smartphone

Multi-users

Administrators

Powerusers

Users



Customizable Dashboard, Data Log and Reports

Single-phase

DMED110T1...
DMED110T1A120
DMED111
DMED112

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter, with LCD screen.			
DMED100T1	40A direct connection, 1U 1 pulse output, 220...240VAC	1	0.086
DMED100T1A120	40A direct connection, 1U 1 pulse output, 110...120VAC	1	0.086
DMED110T1	40A direct connection, 1U 1 program. static output, multi-measurements❶, 220...240VAC	1	0.090
DMED110T1A120	40A direct connection, 1U 1 program. static output, multi-measurements❶,110...120VAC	1	0.090
DMED111	40A direct connection, 1U, RS485 interface multi-measurements❶, 110...240VAC	1	0.090
DMED112	40A direct connection, 1U, M-Bus interface multi-measurements❶, 110...240VAC	1	0.090
Digital meter with backlight LCD display.			
DMED115T1	40A direct connection, 2U, 1 program. static output, multi-measurements ❷, 220-240VAC	1	0.090
DMED120T1	63A direct connection, 2U 1 program. static output, multi-measurements ❶, 220-240VAC	1	0.148
DMED120T1A120	63A direct connection, 2U 1 program. static output, multi-measurements❶, 110...120VAC	1	0.148
DMED121	63A direct connection, 2U, RS485 interface multi-measurements❶, 110...240VAC	1	0.148
DMED122	63A direct connection, 2U, M-Bus interface multi-measurements❶, 110...240VAC	1	0.148

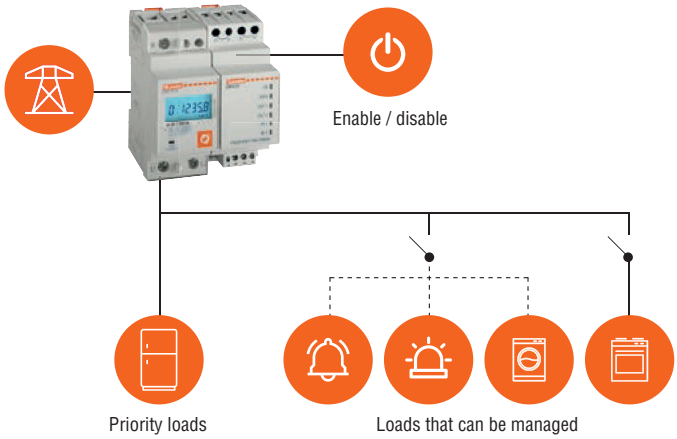
new

DMED115T1...
DMED120T1...
DMED121 - DMED122

Single-phase Load management

DMED130LM

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter with backlight LCD display per load management.			
DMED130LM	63A direct connection, 4U, multi-measurement❶, 2 inputs and 2 relay outputs for load management, 220...240VAC	1	0.300



General characteristics
The energy meters are instruments for energy consumption measurement in single-phase installations with direct connection.

Operational characteristics
- LCD meter: with 5+1 digit count for DMED100T1..., DMED110T1..., DMED111, DMED112; backlight with 6+1 digit count for DMED115T1, DMED120T1..., DMED121, DMED122, DMED130LM
- Direct connection
- Active energy measurement and accuracy: Class 1 (IEC/EN/BS 62053-21)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN/BS 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurement
- Built-in RS485 or M-Bus ports for pulse output models (except DMED130LM) compatible with Synergy and Xpress
- Modular housing: 1 module for DMED100T1, DMED110T1, DMED111 and DMED112; 2 module for all other types
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: cULus (DMED100..., DMED110..., DMED120..., DMED121), EAC (for all DMED... type), RCM (for all DMED...type, DMED122 except).
Compliant with standards: IEC/EN/BS 50470-1, IEC/EN/BS 61010-1 per tipi DMED....; UL 61010-1, CSA C22-2 n° 61010-1 for DMED100..., DMED110..., DMED120..., DMED121.

❶ Multi-measurements:
- Total and partial active energy
- Total and partial reactive energy
- Voltage
- Current
- Active and reactive power
- Power factor
- Frequency
- Total and partial hour counter
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

❷ Multi-measurements:
- Total and partial active energy
- Active power
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

Single-phase, MID certified

MID

DMED110T1MID
DMED111MID
DMED112MID

DMED111MID7

DMED120T1MID
DMED121MID
DMED122MID

-25...+70°C

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter with LCD display.			
DMED100T1MID	40A direct connection, 1U 1 pulse output, 230VAC	1	0.090
DMED110T1MID	40A direct connection, 1U 1 programmable static output, multi-measurements ❶, 230VAC	1	0.090
DMED111MID	40A direct connection, 1U, RS485 interface, measurements❶, 230VAC	1	0.090
DMED111MID7 new	40A direct connection, 1U, RS485 interface, measurements❶, 230VAC, -25...+70°C	1	0.090
DMED112MID	40A direct connection, 1U, M-Bus interface, measurements❶, 230VAC	1	0.090
DMED120T1MID	63A direct connection, 2U 1 programmable static output, multi-measurements ❶, 230VAC	1	0.152
DMED121MID	63A direct connection, 2U, RS485 interface multi-measurements ❶, 230VAC	1	0.148
DMED122MID	63A direct connection, 2U, M-Bus interface multi-measurements ❶, 230VAC	1	0.148

General characteristics
The DME... series energy meters, MID certified, are needed for billing purposes between electricity suppliers and consumers and for energy consumption measurement in directly connected single-phase installations.
MID is the Measuring Instruments Directive of the European Union; instruments must be certified accordingly whenever used for monetary transactions in this territory.

Operational characteristics
- LCD meter: DMED100/110/111/112T1MID; backlight with 6+1 digit count for DMED120/121/122MID
- Direct connection
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN/BS 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- One output: pulse for DMED100T1MID; programmable static for other types
- Built-in RS485 or M-Bus ports for pulse output models compatible with Synergy and Xpress
- 70°C model ideal for electric vehicle charging stations
- Modular housing
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: MID Class B (EN 50470-1, EN 50470-3), certifications per module B (type tests) + module D (production conformity).
Compliant with standards: EN 50470-1, EN 50470-3, TR50579.

❶ Multi-measurements:
- Total and partial active energy
- Total and partial reactive energy
- Voltage
- Current
- Active and reactive power
- Power factor
- Frequency
- Total and partial hour counter
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

Three-phase with or without neutral, non expandable

DMED300T2
DMED301
DMED302

DMED305T2
DMED330
DMED332

	Order code	Description	Qty per pkg	Wt
			n°	[kg]
	Digital meter for three-phase with neutral. 80A direct connection.			
	DMED300T2	2 programmable static outputs, multi-measurements❶, 4U	1	0.360
new	DMED300T2UL	2 programmable static outputs, multi-measurements❶, cULus certified, 4U	1	0.360
	DMED301	4U, RS485 interface, multi-measurements❶, 4U	1	0.360
new	DMED301UL	RS485 interface, multi-measurements❶, cULus certified, 4U	1	0.360
	DMED302	4M-Bus interface, multi-measurements❶, 4U	1	0.360
	Digital meter for three-phase with or without neutral. Connection by CT /5A.			
	DMED305T2	2 programmable static outputs, multi-measurements❶, 4U	1	0.332
	DMED330	RS485 interface, multi-measurements❶, 4U	1	0.332
	DMED332	M-Bus interface, multi-measurements❶, 4U	1	0.332

Three-phase with or without neutral, expandable

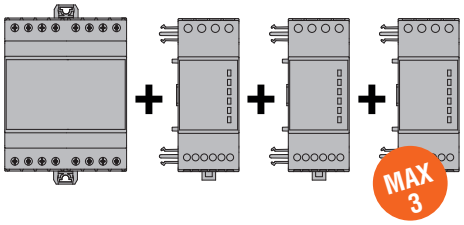
DMED310T2

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with or without neutral. Connection by CT /5A.			
DMED310T2	4U, 2 programmable static outputs, multi-measurements ❶, expandable with EXM... modules series, 4U	1	0.332

Order code	Description
DMED310T2 EXPANSION MODULES. Inputs and outputs.	
EXM1000	2 digital inputs and 2 static outputs, opto-isolated
EXM1001	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Opto-isolated Ethernet interface
EXM1020	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC
EXM1030	Data storage, clock-calendar (RTC) with backup reserve energy for data logging

EXM1010

Maximum combination for DMED310T2



General characteristics
The energy meters are digital meters/analyzers of electric energy for systems with direct three-phase connection or by CT.

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 380...415VAC (L-L); UL nominal supply voltage: 120VAC (L-N), 240VAC (L-L), 60Hz, direct two-phase + N
- Active energy measurement and accuracy: Class 0.5s (IEC/EN/BS 62053-22) for DMED305T2, DMED330 and DMED332; Class 1❷ (IEC/EN/BS 62053-21) for DMED300T2, DMED301 and DMED302; Class 0.5 (ANSI C12.20) for DME3...UL
- Active energy measurement and accuracy: Class 2 (IEC/EN/BS 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial active energy measurements
- 1 programmable digital input
- 2 programmable static outputs for DMED300T2, DMED305T2 and DMED310T2
- Built-in RS485 or M-Bus ports for pulse output models compatible with Synergy and Xpress
- Optical interface for EXM... expansion modules with DMED310T2
- Modular housing, 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: EAC, RCM for all types, cULus for DMED...UL.
Compliant with standards: IEC/EN/BS 50470-1, IEC/EN/BS 61010-1, IEC 61010-2-030.

❶ Multi-measurements:
- Total and partial active energy
- Total and partial reactive energy
- Voltage
- Current
- Active and reactive power
- Power factor
- Frequency
- Total and partial hour counter
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

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

Three-phase with neutral, non expandable, MID certified

MID

DMED300T2MID
DMED301MID
DMED301MID7
DMED302MID

new

-25...+70°C

DMED305T2MID
DMED330MID
DMED332MID

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral. 80A direct connection.			
DMED300T2MID	2 programmable static outputs, multi-measurements❶, 4U	1	0.360
DMED301MID	RS485 interface, multi-measurements❶, 4U	1	0.360
DMED301MID7	RS485 interface, multi-measurements❶, -25...+70°C, 4U	1	0.360
DMED302MID	M-Bus interface, multi-measurements❶, 4U	1	0.360
Digital meter for three-phase with neutral. Connection by CT /5A.			
DMED305T2MID	2 programmable static outputs, multi-measurements❶, 4U	1	0.332
DMED330MID	RS485 interface, multi-measurements❶, 4U	1	0.332
DMED332MID	M-Bus interface, multi-measurements❶, 4U	1	0.332

Three-phase with neutral, expandable, MID certified

MID

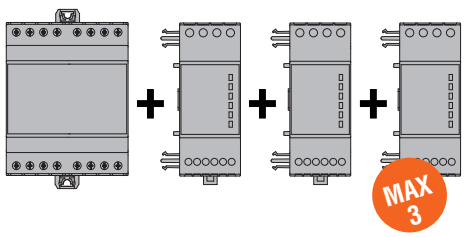
DMED310T2MID

EXM1010

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral. Connection by CT /5A.			
DMED310T2MID	2 programm. static outputs, multi-measurements❶, expandable, with EXM... modules series, 4U graphic LCD display	1	0.332

Order code	Description
DMED310T2 MID EXPANSION MODULES. Inputs and outputs.	
EXM1000	2 digital inputs and 2 static outputs, opto-isolated
EXM1001	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Opto-isolated Ethernet interface
EXM1020	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC

Maximum combination for DMED310T2MID



General characteristics
The DME... series energy meters, MID certified, are compulsory in Europe, are needed for billing purposes between electricity suppliers and consumers and for energy consumption measurement in directly or CT connected three-phase installations.

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187...264VAC (L-N); 323...456VAC (L-L)
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN/BS 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- Built-in RS485 or M-Bus ports for pulse output models compatible with Synergy and Xpress
- 70°C model ideal for electric vehicle charging stations
- Optical interface for EXM... expansion modules with DMED310T2MID
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: MID Class B (EN 50470-1, EN 50470-3), certifications per module B (type tests) + per module D (production conformity).
Compliant with standards: EN/BS 50470-1, EN/BS 50470-3, TR50579.

❶ Multi-measurements:
- Total and partial active energy
- Total and partial reactive energy
- Voltage
- Current
- Active and reactive power
- Power factor
- Frequency
- Total and partial hour counter
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

Three-phase with neutral, MID certified

MID

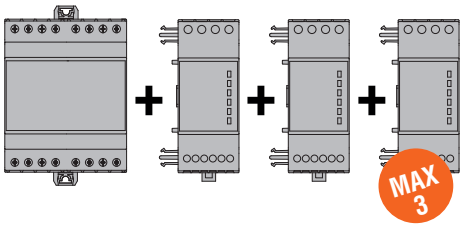
DMED300F

EXM1010

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral, non expandable, complete with UTF certificates for installations in Italy.			
DMED300F	DMED300T2MID, complete with UTF certificate	1	0.360
DMED301F	DMED301MID, complete with UTF certificate	1	0.381
DMED305F	DMED305T2MID, complete with UTF certificate	1	0.381
DMED330F	DMED330MID, complete with UTF certificate	1	0.381
Digital meter for three-phase with neutral, expandable, complete with UTF certificates for installations in Italy.			
DMED310F	DMED310T2MID, complete with UTF certificate	1	0.381

Order code	Description
DMED310F EXPANSION MODULES. Inputs and outputs.	
EXM1000	2 digital inputs and 2 static outputs, opto-isolated
EXM1001	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
EXM1002	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Ethernet interface with Web server function
EXM1020	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC

Maximum combination for DMED310F



General characteristics
The UTF (Finance Technical Office) certification is required in Italy in case of applications where taxes have to be paid due to energy production (Italian regulations for plants >20kW). The certificates must be associated to the energy meter (MID version) and to each single current transformer is needed (see page 25-17 for selection).
DME... energy meters, MID version, for three-phase systems with or without current transformers can be supplied with the certificates included (DME...F). DMED310F... can be expanded up to 3 EXM... modules.
If required, the fifth certificate relevant to the meter and current transformer combination can be supplied as well (see page 25-17).

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187...264VAC (L-N); 323...456VAC (L-L)
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN/BS 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- Models with 2 programmable static outputs and built-in RS485 compatible with Synergy and Xpress
- Optical interface for EXM... expansion modules with DMED310F
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Multi-measurements
- Total and partial active energy
- Total and partial reactive energy
- Voltage
- Current
- Active and reactive power
- Power Factor
- Frequency
- Total and partial hour counter
- Average active power (calculation made using the last 15 minutes of data)
- Maximum demand.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: MID Class B (EN 50470-1, EN 50470-3), certifications per module B (type tests) + per module D (production conformity) for DMED300F and DMED310F energy meters.
UTF certificates are standard supplied.
Compliant with standards: EN 50470-1, EN 50470-3, TR 50579.

Current transformer kit with UTF certificates

DM...

	Order code	Description of CTs included	Qty per pkg	Wt
			n°	[kg]
	Kit comprising of three /5A and class 0.5s current transformers			
	DM1TP0060FKIT	3 DM1TP0060, complete with UTF certificate	1	1.440
	DM1TP0080FKIT	3 DM1TP0080, complete with UTF certificate	1	1.440
	DM1TP0100FKIT	3 DM1TP0100, complete with UTF certificate	1	1.560
	DM1TP0150FKIT	3 DM1TP0150, complete with UTF certificate	1	1.680
	DM1TP0200FKIT	3 DM1TP0200, complete with UTF certificate	1	1.620
	DM1TP0250FKIT	3 DM1TP0250, complete with UTF certificate	1	1.620
	DM1TP0300FKIT	3 DM1TP0300, complete with UTF certificate	1	1.680
	DM1TP0400FKIT	3 DM1TP0400, complete with UTF certificate	1	1.680
new	**DM1TP0600FKIT**	3 DM1TP0600, complete with UTF certificate	1	1.680
	DM3TP0500FKIT	3 DM3TP0500, complete with UTF certificate	1	2.160
	DM3TP0600FKIT	3 DM3TP0600, complete with UTF certificate	1	2.160
	DM3TP0800FKIT	3 DM3TP0800, complete with UTF certificate	1	2.280
new	**DM4TP1200FKIT**	3 DM4TP1200, complete with UTF certificate	1	2.280
	DM5TP1000FKIT	3 DM5TP1000, complete with UTF certificate	1	2.820
	DM5TP1250FKIT	3 DM5TP1250, complete with UTF certificate	1	2.760
	DM5TP1600FKIT	3 DM5TP1600, complete with UTF certificate	1	2.880
	DM5TP2000FKIT	3 DM5TP2000, complete with UTF certificate	1	2.940
	DM5TP2500FKIT	3 DM5TP2500, complete with UTF certificate	1	3.120
	DM5TP3000FKIT	3 DM5TP3000, complete with UTF certificate	1	2.940

System certificate

Order code	Description
DMCERTUTF	UTF system certificate

General characteristics

The UTF (Finance Technical Office) certification is required in Italy in case of applications where taxes have to be paid due to energy production (Italian regulations for plants >20kW). The certificates must be associated to the energy meter (MID version, see page 25-12 for selection) and to each single current transformer is needed.
The DM...TP type accuracy current transformers (CTs) can be provided in a kit version made by three CTs and relative UTF certificates.
If required, the fifth certificate relevant to the meter and current transformer combination can be supplied as well.
The DM...TP type accuracy current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TP are accuracy current transformers in class 0.5s without a primary winding and are normally used for high primary current values starting from 60A.
The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current (see page 25-33).

Operational characteristics

- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- Rated insulation voltage Ui: 720V
- Rated short time thermal current Ith: 40-60Ipn for 1 second
- Rated dynamic current Idyn: 2.5Ith for 1 second
- Insulation (dry type): class E
- Screw fixing terminals
- Sealable terminal covers
- Fixing on 35mm DIN rail (IEC/EN/BS 60715) or by screws (fixing elements standard supplied with the product)
- EN degree of protection: IP30.
- Ambient conditions
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C.
  - Relative humidity, non condensing: 90%.

Compliance

Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

Expandable

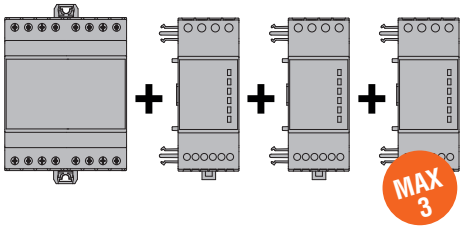
DMECD

EXM1010

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Data concentrator for general use.			
DMECD	With 8 programmable digital inputs, expandable, for data collection + pulse count from DMED..., RS485 port	1	0.337

Order code	Description
DME CD EXPANSION MODULES. Inputs and outputs.	
EXM1000	2 digital inputs and 2 static outputs, opto-isolated
EXM1001	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
EXM1002	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Opto-isolated Ethernet interface
EXM1020	Opto-isolated RS485 interface and 2 relay outputs, rated 5A 250VAC
EXM1030	Data storage, clock-calendar (RTC) with backup reserve energy for data logging

Maximum combination for DMECD



General characteristics
DMECD is equipped with 8 inputs, which can be increased up to a maximum of 14 with expansion modules EXM1000/1001/1002, that allow to indirectly interface devices without communication as long as they have at least one pulse output.
It is capable of pulse counting that comes in from the outputs of meters for energy, water, gas and other types of consumption: All data is viewed on its display or can also be available for PCs through its built-in RS485 interface using Synergy or Xpress software.
It can be expanded with up to 3 EXM... series modules by optical interface.
With the programmable functions, average values can be determined for instantaneous quantities, such as power, speed, production rate, gas and water consumption, etc.

Operational characteristics
- Backlight graphic LCD meter, multifuction
- Nominal supply voltage: 100...240VAC/110...250VDC
- Voltage range: 85...264VAC/93.5...300VDC
- 8 inputs, expandable with EXM... modules up to 14
- Built-in RS485 communication port
- Modbus-RTU, ASCII and TCP communication protocol
- Clearable total and partial counters for each channel
- Programmable general counters
- Calculation of derivative average values
- Mathematical operations among counters
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance
Certifications obtained: cULus, EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3.

Power analyzers with widescreen colour LCD

DMG...

NFC

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Auxiliary supply 100...240VAC.			
DMG7000	Expandable with 3 EXP... modules	1	0.375
DMG7500	Expandable with 3 EXP... modules, built-in RS485 port, compatible with EASY BRANCH power monitoring system	1	0.375
DMG8000	Expandable with 3 EXP... modules, built-in Ethernet port, data memory for logging, compatible with EASY BRANCH power monitoring system	1	0.375
DMG9000	Expandable with 3 EXP... modules, built-in RS485 and Ethernet port, data memory for logging, compatible with EASY BRANCH power monitoring system	1	0.375

Expansion modules

EXP10...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Inputs and outputs.			
EXP1000	4 opto-isolated digital inputs	1	0.060
EXP1001	4 opto-isolated static outputs	1	0.054
EXP1002	2 digital inputs and 2 static outputs, opto-isolated	1	0.058
EXP1003	2 relay outputs rated 5A 250VAC	1	0.050
EXP1004	2 analog inputs, opto-isolated 0/4...20mA or PT100 or 0...10V or 0...±5V	1	0.056
EXP1005	2 analog outputs, opto-isolated 0/4...20mA, 0-10V or 0...±5V	1	0.064
EXP1008	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC	1	0.058
Communication ports.			
EXP1010	Opto-isolated USB interface	1	0.060
EXP1011	Opto-isolated RS232 interface	1	0.040
EXP1012	Opto-isolated RS485 interface	1	0.050
EXP1013	Opto-isolated Ethernet interface	1	0.060
EXP1014	Opto-isolated Profibus-DP interface	1	0.080

Communication devices

CX01

CX02

Order code	Description	Qty per pkg	Wt
		n°	[kg]
CX01	USB/optical device with PC ↔ LOVATO Electric product connecting cable, for programming, data download, diagnostics and firmware upgrade	1	0.090
CX02	Wi-Fi device for PC ↔ LOVATO Electric product programming, data download, diagnostics and cloning	1	0.090

General characteristics
DMG... power analysers display electrical values on their large colour LCD display with exceptional accuracy to enable precise monitoring of power grids. They are designe in flush-mount housing (cutout 92x92mm/3.62x3.62") with 3 slots for EXP series plug-in expansion modules to adapt them to a variety of applications.
The use of NFC technology allows the user to configure the unit and make settings with a smart device. The optical port on the back of the unit enables the user to make settings, run power grid diagnostics and update the unit's firmware. The graphic interface, available in 10 languages (English, French, German, Italian, Spanish, Portuguese, Polish, Russian, Czech and Chinese), has been designed to facilitate the display of data, including:
- Voltage (phase, phase-to-phase and system)
- Phase current (calculated neutral current, and measured neutral current on the DMG9000)
- Measurements on 4 quadrants
- Power (active, reactive and apparent phase and total power)
- Power factor (phase and total)
- Frequency
- Maximum (HIGH), minimum (LOW) and average (AVERAGE) of all measured values
- Peak power/current (max demand)
- Voltage and current asymmetry and active power unbalance
- Total harmonic distortion (voltage and current)
- Voltage and current harmonic analysis up to the 63rd order
- Active, reactive and apparent energy metering (partial and total)
- Hour meter (total and partial, programmable).

The EASY BRANCH multi-circuit measurement system
The DMG7500, DMG8000 and DMG9000 can also be used in multi-circuit applications when more than one load is to be monitored in the electrical switch board. All values are shown on the display or via the integrated communications interface.
Refer to page 25-20 for the components of the EASY BRANCH measurement system.

Operational characteristics
- Auxiliary power: 100...240VAC/110...250VDC❶
- Voltage measurement range: 50...720VAC L-L
- can be used in medium and high voltage systems using TV
- Nominal input current: 5A or 1A with an external current transformer
- Frequency measurement range: 45...66Hz
- Accuracy (IEC/BS 61557-12):
  - voltage: Class 0.5 (Vref = 400VAC L-L)
  - current: Class 0.5 (Iref = 5AAC)
  - power: Class 0.5 (active), Class 1 (reactive)
  - power factor: Class 0.5
  - frequency: Class 0.05
  - THD and harmonics V and I: Class 5
  - active energy: Class 0.5
  - active energy: Class 0.5s (IEC/EN/BS 62053-22)
  - reactive energy: Class 1 (IEC/EN/BS 62053-24)
- Integrated data memory (DMG8000, DMG9000)
- Integrated communications ports (RS485 or Ethernet)
- Communications protocols: Modbus-RTU, ASCII and TCP
- Compatible with Synergy, Xpress and App NFC
- Protection rating: IP65 for front panel.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

Lovato App NFC
See Section 30.

EXP series expansion modules
See page 31-2.

Certifications and compliance
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2 and IEC/EN/BS 61000-6-4.

❶ For versions with 12...48VDC power, contact our Technical Service office; see contact details on inside front cover.

EASY BRANCH power monitoring system

EXS0000

EXS4000

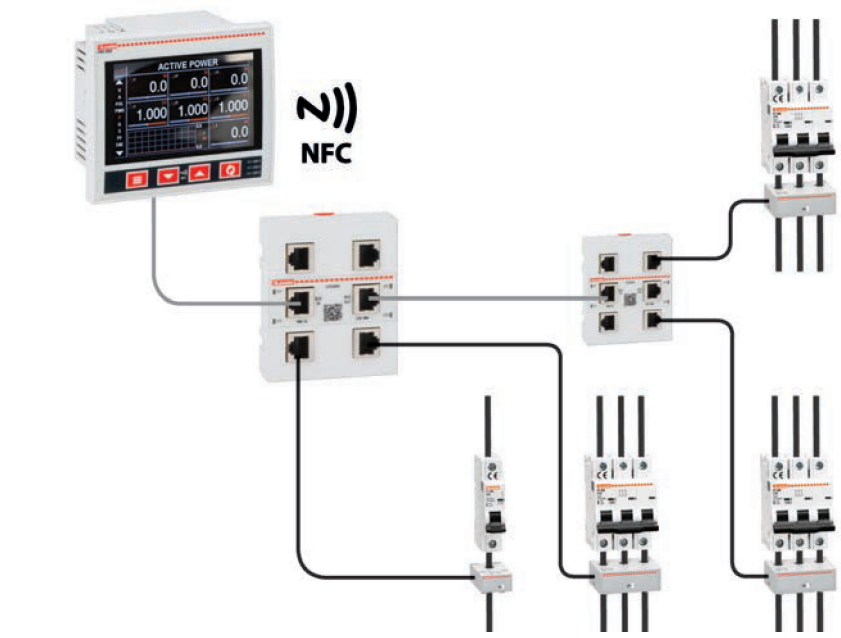
new

EXS4001

EXS1063 EXS3063

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Modules for EASY BRANCH system.			
EXS0000	Bus module for EASY BRANCH power monitoring system	1	0.090
EXS4000	Current measuring module with 4 inputs for electronic RJ45 CTs	1	0.140
EXS4001	Current measuring module with 2 inputs for three-phase traditional CTs or 6 inputs for single-phase traditional CTs	1	0.210
Electronic current transformers for EASY BRANCH system. Single-phase.			
EXS1032	32A single-phase electronic current transformer with RJ45 cable, 2m long	1	0.060
EXS1063	63A single-phase electronic current transformer with RJ45 cable, 2m long	1	0.060
EXS1080	80A single-phase electronic current transformer with RJ45 cable, 2m long	1	0.105
EXS1125	125A single-phase electronic current transformer with RJ45 cable, 2m long	1	0.105
Three-phase.❶.			
EXS3032	32A three-phase electronic current transformer ❶ with RJ45 cable, 2m long	1	0.080
EXS3063	63A three-phase electronic current transformer ❶ with RJ45 cable, 2m long	1	0.080
EXS3080	80A three-phase electronic current transformer ❶ with RJ45 cable, 2m long	1	0.135
EXS3125	125A three-phase electronic current transformer ❶ with RJ45 cable, 2m long	1	0.135
Traditional current transformers. See page 25-31 to 25-35.			

❶ Configurable as single-phase current transformer (3 single-phase measure per each EXS3...).



General characteristics

The EASY BRANCH multi-circuit metering system is a modern solution to the need for electrical parameter metering when more than one load is to be monitored inside a single electrical enclosure. Each DIN rail mounting current metering unit can monitor 2 or 4 measurement points and display the values on the DMG7500, DMG8000 or DMG9000 power analysers to which it is connected, thus centralising the display of data, which includes:

- Phase current
- Measurements on 4 quadrants
- Power (active, reactive and apparent phase and total power)
- Power factor (phase and total)
- Maximum (HIGH), minimum (LOW) and average (AVERAGE) of all measured values
- Peak power/current (max demand)
- Current asymmetry and active power unbalance
- Total harmonic distortion (current)
- Current harmonic analysis up to the 63rd order
- Active, reactive and apparent energy metering (partial and total).

The RJ45 port on the EXS4000 metering module provides foolproof connection of EXS1... and EXS3... electronic current transformers.

The values can also be monitored using the communications ports of DMG... power analysers, to which up to 8 current metering modules can be connected in cascade thanks to the integrated communications bus with standard Ethernet cable (cat. 6), which also provides power.

Connecting 5 or more EXS4... current metering modules requires a 24VDC-0.2A power supply. Each measurement point can be configured as single- or three-phase, up to a total of 33 three-phase or 99 single-phase points.

Operational characteristics of EXS4… current measuring modules

- Power supplied by the bus cable (connecting 5 or more EXS4... current metering modules requires a 24VDC-0.2A power supply)
- nominal input current:
  EXS4000: 32A, 63A, 80A or 125A, depending on the connected EXS1... or EXS3... electronic transformer.
  EXS4001: 5A or 1A via external current transformer
- Accuracy (IEC/BS 61557-12):
  - current: Class 0.5 (Iref = 5AAC)
  - power: Class 1 (active), Class 2 (reactive)
  - power factor: Class 1
  - THD and current harmonics: Class 5
  - active energy: Class 1
  - active energy: Class 1 (IEC/EN/BS 62053-21)
  - reactive energy: Class 2 (IEC/EN/BS 62053-23)
- Diagnostics LED indicates correct power supply and electronic current transformer recognition
- Mounts to 35mm omega rail (IEC/EN/BS 60715).

Operational characteristics of EXS1… - EXS3… electronic current transformers

- Diagnostics LED to confirm connection
- Pre-wired cable: 2m
- RJ45 connector.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

Lovato App NFC
See Section 30.

Certifications and compliance

Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2 and IEC/EN/BS 61000-6-4.

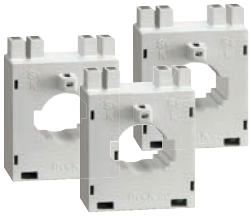
Modular LCD multimeters, non expandable

DMG1...

DMG200 - DMG210

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
DMG100	Icon LCD, auxiliary supply 100...240VAC/120...250VDC. Multilanguage: Italian, English, French, Spanish, Portuguese and German	1	0.294
DMG110	Icon LCD, built-in RS485 port, auxiliary supply 100...240VAC/120...250VDC. Multilanguage: Italian, English, French, Spanish, Portuguese and German	1	0.294
DMG200	Graphic 128x80 pixel LCD, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.294
DMG200L01	Graphic 128x80 pixel LCD, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.294
DMG210	Graphic 128x80 pixel LCD, built-in RS485 port, auxiliary supply 100-240VAC/ 110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.300
DMG210L01	Graphic 128x80 pixel LCD, built-in RS485 port, auxiliary supply 100-240VAC/ 110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.300

Kits with CT



DMGKIT100150

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMGKIT100060	Composed of one DMG100 multimeter and n°3 CTs 60/5A for Ø22mm cable	1	1.035
DMGKIT100100	Composed of one DMG100 multimeter and n°3 CTs 100/5A for Ø22mm cable	1	1.035
DMGKIT100150	Composed of one DMG 100 multimeter and n°3 CTs 150/5A for Ø23mm cable	1	0.856
DMGKIT100250	Composed of one DMG100 multimeter and n°3 CTs 200/5A for Ø23mm cable	1	0.856

General characteristics
DMG... digital multimeters are available with a modular housing, 4 module size, and are equipped with a graphic backlight LCD (except DMG100/110 with icon display) capable of providing extremely clear, intuitive and flexible viewing of all electrical parameters of an installation.
For DMG110 and DMG210 versions, there is a built-in isolated RS485 interface.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions of all measurements
- Maximum demand of power and current values
- Asymmetric voltage and current
- Total harmonic distortion (THD) of voltage and current values
- Energy meters for active, reactive and apparent values
- Hour counter (total and partial, 1 on DMG200/210, 4 programmable on DMG100/110)
- Phase energy (DMG100/110)
- Harmonic analysis up to the 15th order (DMG100/110).

Operational characteristic
- Auxiliary supply voltage range: 100...240VAC / 110...250VDC
- Maximum rated measurement voltage
  - 600VAC (DMG100/110)
  - 690VAC (DMG200/210)
- Voltage measurement range:
  - 50...720VAC phase-to-phase (DMG100/110)
  - 20...830VAC phase-to-phase (DMG200/210)
- Usage in medium and high-voltage systems with voltage transformers
- Rated input current: With external CT /5A (also 1A for DMG100/110)
- Current measurement range with CT up to 10,000A
- Frequency measurement range: 45...66Hz
- True RMS measurements for voltage and current values
- Accuracy:
  - Voltage: ±0.5% (50...720VAC for DMG1...) (50...830VAC) for DMG2...
  - Current: ±0.5% (0.1...1.1In)
  - Power: ±1% f.s.
  - Frequency: ±0.05%
  - Active energy: Class 1 (IEC/EN/BS 62053-21)
  - Reactive energy: Class 2 (IEC/EN/BS 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU and ASCII (only for DMG110 and DMG210)
- Programming and remote control by software (only for DMG110 and DMG210; compatible with Synergy and Xpress software)
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

CURRENT TRANSFORMERS OF DMG... KITS
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- Rated insulation voltage Ui: 720V
- Rated short time thermal current Ith: 40...60Ipn for 1 second
- Rated dynamic current Idyn: 2.5Ith for 1 second
- Insulation (dry type): class E
- Faston terminals
- EN degree of protection: IP30.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

Certifications and compliance
Certifications obtained: cULus, EAC and RCM.
Compliant with standards: DMG100/110: IEC/EN/BS 61010-1, IEC/EN/BS 61010-2-030, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL 61010-1, CSA C22.2 n° 61010-1, UL 61010-2-030, CSA 22.2 n° 61010-2-030.
DMG200/210: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-4, UL 61010-1, UL508, CSA C22.2 n°14.

Modular LCD multimeters, expandable

DMG300

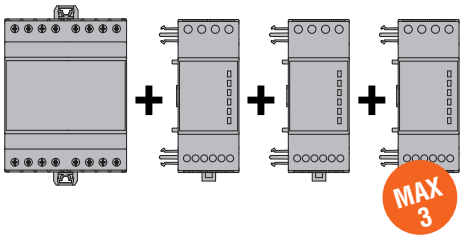
Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG300	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100...240VAC/110...250VDC, expandable with modules series EXM... Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.320
DMG300L01	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100...240VAC/110...250VDC, expandable with modules series EXM... Multilanguage: English, Czech, Polish, German and Russian	1	0.320

Expansion modules

EXM1010

Order code	Description
DMG300 AND DMG300L01 EXPANSION MODULES. Inputs and outputs.	
EXM1000	2 digital inputs and 2 static outputs, opto-isolated
EXM1001	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
EXM1002	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM1010	Opto-isolated USB interface
EXM1011	Opto-isolated RS232 interface
EXM1012	Opto-isolated RS485 interface
EXM1013	Opto-isolated Ethernet interface
EXM1020	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC
EXM1030	Data storage, clock-calendar (RTC) with backup battery for data logging

Maximum combination for DMG300 and DMG300L01



General characteristics

DMG300... digital multimeters are available with a modular housing, 4 module size, and are equipped with a graphic backlight LCD capable of providing extremely clear, intuitive and flexible viewing of all electrical parameters of a system.
The very accurate measurements combined with their extreme compactness provide an ideal solution for every type of application.
Expandable with up to 3 module EXM... series by optical interface.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Voltage and current asymmetry
- Total harmonic distortion (THD) of voltage and current values
- Harmonic analysis of voltage and current up to 31° order
- Energy meters for active, reactive, apparent partial and total values, programmable tariff functions
- Hour counter for programmable total and partial hours
- Pulse counter for general use: consumption pulse counting for water, gas, etc. with expansion module only.

Operational characteristics

- Auxiliary supply voltage range: 85...264VAC / 93.5...300VDC
- Voltage measurement range: 20...830VAC phase-to-phase, 10...480VAC phase-neutral
- Usage in medium and high-voltage systems with voltage transformers
- Rated input current: With external CT, 5A or 1A
- Current measurement range with CT up to 10,000A
- Frequency measurement range: 45...66Hz
- True RMS measurements for voltage and current values
- Measurements accuracy:
  - Voltage: ±0.2% (50...830VAC)
  - Current: ±0.2% (0.1...1.1In)
  - Power: ±0.5% f.s.
  - Power factor: ±0.5%
  - Frequency: ±0.05%
  - Active energy: Class 0.5s (IEC/EN/BS 62053-22)
  - Reactive energy: Class 2 (IEC/EN/BS 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU, ASCII and TCP (only with communication expansion modules)
- Programming and remote control by software (only with communication expansion modules); compatible with Synergy and Xpress software
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXM series expansion modules
See page 31-3.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices - Multimeters; EAC and RCM for all.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-4, UL508, CSA C22.2 n° 14.

Flush-mount LCD multimeters, expandable

DMG600 - DMG610
DMG615 - DMG620

DMG611R...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Icon LCD 72X46mm/2.83x1.81", backlight, harmonic analysis, auxiliary supply 100...440/110...250VDC, expandable with modules series EXP...			
DMG600	Front optical port, multilanguage❶	1	0.300
DMG610	Front optical port, built-in RS485 serial port, multilanguage❶	1	0.350
DMG611R0100	Front optical port, built-in RS485 serial port, multilanguage❶. Current reading through 3 Rogowski coils included, max current 100A	1	0.350
DMG611R0500	Front optical port, built-in RS485 serial port, multilanguage❶. Current reading through 3 Rogowski coils included, max current 500A	1	0.350
DMG611R3000	Front optical port, built-in RS485 serial port, multilanguage❶. Current reading through 3 Rogowski coils included, max current 3000A	1	0.350
DMG611R6300	Front optical port, built-in RS485 serial port, multilanguage❶. Current reading through 3 Rogowski coils included, max current 6300A	1	0.350
DMG615	Front optical port, built-in RS485 serial port, multilanguage❶. class 0.5s	1	0.350
DMG620	Front optical port, built-in Ethernet port, multilanguage❶. class 0.5s	1	0.350

❶ Italian, English, French, Spanish and Portuguese.

new

Expansion modules

EXP10...

Order code	Description
EXPANSION MODULES Inputs and outputs.	
EXP1000	4 opto-isolated digital inputs
EXP1001	4 opto-isolated static outputs
EXP1002	2 digital inputs and 2 static outputs, opto-isolated
EXP1003	2 relay outputs rated 5A 250VAC
EXP1008	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXP1010	Opto-isolated USB interface
EXP1011	Opto-isolated RS232 interface
EXP1012	Opto-isolated RS485 interface
EXP1013	Opto-isolated Ethernet interface

Communication devices

CX01

CX02

Order code	Description	Qty per pkg	Wt
		n°	[kg]
CX01	USB/optical device with PC ↔ LOVATO Electric product connecting cable, for programming, data download, diagnostics and firmware upgrade	1	0.090
CX02	Wi-Fi device for PC ↔ LOVATO Electric product programming, data download, diagnostics and cloning	1	0.090

General characteristics
DMG6... digital multimeters are capable of viewing the measurements with high accuracy on the wide icon LCD, which allow to control energy distribution networks.
They are available with a flush-mount housing, (96x96mm/3.78"x3.78") and 1 expansion slot to fit plug-in expansion modules, suitable for numerous applications.
The main features include an extended power supply voltage range, high measurement accuracy, expandability and icon interactive interface for simple use.
They are equipped with a front optical port for programming via USB (CX01) or WI-Fi (CX02) communication devices to allow:
- Configuration of parameters
- Parameters copy
- Cloning of stored data.

Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Voltage and current asymmetry
- Total harmonic distortion (THD): voltage and current
- Harmonic analysis of voltage and current up to the 15° order
- Energy meters for active, reactive, apparent partial and total values
- Hour counter for programmable total and partial hours.

Operational characteristics
- Auxiliary supply voltage range:
  - 100...440VAC / 110...250VDC❷
- Voltage measurement range:
  50...720VAC L-L
- Usage in medium and high voltage systems with voltage transformers
- Rated input current: By external CT 5A or 1A
- Current reading through Rogowski coils for DMG611...
- Frequency measurement range 45...66Hz
- True RMS measurements: for voltage and current
- Measurement accuracy:
  - Voltage: ±0.5% (50...720VAC)
  - Current: ±0.5% (0.1...1.1In)
  - Power: ±1% f.s.
  - Frequency: ±0.05%
  - Active energy: Class 1 (IEC/EN/BS 62053-21)
  - Reactive energy: Class 2 (IEC/EN/BS 62053-23)
- Measurement accuracy DMG615/620::
  - Voltage: ±0.2% (50...720VAC)
  - Current: ±0.2% (0.1...1.1In)
  - Power: ±0.5% f.s.
  - Frequency: ±0.05%
  - Active energy: Class 0.5 (IEC/EN/BS 62053-22)
  - Reactive energy: Class 2 (IEC/EN/BS 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU, ASCII and TCP
- Compatible Synergy and Xpress software
- Flush-mount housing 96x96mm/3.78"x3.78"
- EN degree of protection: IP54 on front.

Synergy supervision and energy management software
See Section 30.

Xpress configuration and remote control software
See Section 30.

EXP series expansion modules
See page 31-2.

Certifications and compliance
Certifications obtained: cULus (except DMG611... and DMG620), EAC, RCM; UL listed for USA and Canada (cULus – File E93601), as Auxiliary Devices – Multimeters.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61010-2-030, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL 61010-1, CSA C22.2 n° 61010-1, UL 61010-2-030, CSA 22.2 n° 61010-2-030.

❷ Consult Technical support about versions with supply 12...48VDC

Modular LED instruments single-phase, non expandable

DMK80R1

DMK81R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK80R1❶	1 voltage value 1 max voltage value 1 min voltage value	1	1	0.268
Ammeter.				
DMK81R1❶	1 current value 1 max current value 1 min current value	1	1	0.268

❶ Relay output with control and protection functions.

General characteristics
The DMK8... instruments are available with modular housing, 3 module size.
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
– Auxiliary supply voltage: 220...240VAC
– Operating frequency: 50...60Hz
– True RMS measurements
– Max and min measurement storage
– 1 relay output with 1 changeover contact (SPDT)
– Modular DIN 43880 housing, 3 modules
– Terminals: 4mm^2
– EN degree of protection: IP40 on front; IP20 on terminals.

DMK80R1
– Voltage measurement range: 15...660VAC
– Operating frequency range: 45...65Hz
– Programmable VT ratio: 1.00...500.00
– Accuracy: ±0.25% f.s. ±1 digit

DMK81R1
– Current measurement range: 0.05...5.75A
– Operating frequency range: 45...65Hz
– Programmable CT ratio: 5...10,000
– Accuracy: ±0.5% f.s. ±1 digit

Control and protection functions
DMK80R1
– Voltage loss or failure: OFF/5...85%
– Maximum voltage: OFF/102...120%
– Minimum voltage: OFF/70...98%
– Time delay for max-min voltage or voltage loss ❷: 0.0...900.0 seconds.

DMK81R1
– Current loss: OFF/2...100%
– Maximum current: OFF/102...200%
– Maximum current instantaneous tripping: OFF/110...600%
– Minimum current: OFF/5...98%
– Time delay for max-min current or current loss ❷: 0.0...900.0 seconds.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3.

❷ Independent adjustable delays.

Modular LED instruments three-phase, non expandable

DMK70R1

DMK71R1

DMK75R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK70R1❷	3 phase voltage values 3 phase to phase voltage values 3 max phase voltage values 3 max phase to phase voltage values 3 min phase voltage values 3 min phase to phase voltage values	1	1	0.264
Ammeter.				
DMK71R1❷	3 phase current values 3 max phase current values 3 min phase current values	1	1	0.272
Combined voltmeter, ammeter and wattmeter.				
DMK75R1❶❷	3 phase voltage values 3 phase to phase voltage values 3 phase current values 4 active power values, phase and total 3 maximum phase voltage values 3 maximum phase to phase voltage values 3 maximum phase current values 4 max active power, phase and total 3 minimum phase voltage values 3 minimum phase to phase voltage values 3 minimum phase current values 4 min active power, phase and total	1	1	0.280

❶ Connection also to single-phase.
❷ Relay output with control and protection functions.

General characteristics
The DMK7... instruments are available with modular housing, 3 module size.
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220...240VAC
- Operating frequency: 50...60Hz
- True RMS measurements
- Max and min measurement storage
- 1 relay output with 1 changeover contact (SPDT)
- Modular DIN 43880 housing, 3 module
- Terminals: 4mm²
- EN degree of protection: IP40 on front; IP20 on terminals.

DMK70R1
- Voltage measurement range: 15...660VAC
- Operating frequency range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Accuracy: ±0.25% f.s. ±1 digit

DMK71R1
- Current measurement range: 0.05...5.75A
- Operating frequency range: 45...65Hz
- Programmable CT ratio: 5...10,000
- Accuracy: ±0.5% f.s. ±1 digit

DMK75R1
- Voltage measurement range: 35...660VAC
- Current measurement range: 0.05...5.75A
- Frequency measure range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Programmable CT ratio: 5...10,000
- Accuracy: Voltage ±0.25% f.s. ±1 digit
- Accuracy: Current ±0.5% f.s. ±1 digit

Control and protection functions
DMK70R1
- Phase loss or failure: OFF/5...85%
- Maximum voltage: OFF/102...120%
- Minimum voltage: OFF/70...98%
- Asymmetry: OFF/2...20%
- Phase sequence: OFF/L1-L2-L3/L3-L2-L1
- Maximum frequency: OFF/101...110%
- Minimum frequency: OFF/90...99%
- Time delay for max-min voltage, phase loss, asymmetry and min-max frequency ❸: 0.0...900.0 seconds.

DMK71R1
- Current loss: OFF/2...100%
- Maximum current: OFF/102...200%
- Maximum current instantaneous tripping: OFF/110...600%
- Minimum current: OFF/5...98%
- Asymmetry: OFF/2...20%
- Time delay for max-min current or current loss and asymmetry ❸: 0.0...900.0 seconds.

DMK75R1
Voltage
- Phase loss or failure: OFF/5...85%
- Maximum voltage: OFF/102...120%
- Minimum voltage: OFF/70...98%
- Asymmetry: OFF/2...20%
- Phase sequence: OFF/L1-L2-L3/L3-L2-L1

Current
- Current loss: OFF/2...100%
- Maximum current: OFF/102...200%
- Maximum current instantaneous tripping: OFF/110...600%
- Minimum current: OFF/5...98%
- Asymmetry: OFF/2...20%

Power
- Rated power: 1...10,000
- Maximum power: OFF/101...200%
- Maximum power instantaneous tripping: OFF/110...600%
- Minimum power: OFF/10...99%

Frequency
- Maximum frequency: OFF/101...110%
- Minimum frequency: OFF/90...99%
- Time delay for max-min voltage, max-min current or current loss, phase loss, asymmetry and min-max power ❸: 0.0...900.0 seconds.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3.

❸ Independent adjustable delays.

Flush-mount LED instruments single-phase, non expandable

DMK0...

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK00R1❷	1 voltage value 1 max voltage value 1 min voltage value	1	1	0.323
Ammeter.				
DMK01R1❷	1 current value 1 max current value 1 min current value	1	1	0.323
Voltmeter or ammeter.				
DMK02❶	1 voltage or current value 1 maximum voltage or current value 1 minimum voltage or current value	–	1	0.290

❶ The DMK02 can operate as a voltmeter or ammeter. It is duly equipped with two front plates (V and A) which must be fitted by the user depending on which instrument is required and on the wiring scheme used.

❷ Relay output for control and protection functions.

General characteristics
The DMK0... instruments are available with flush-mount housing, 96x48mm/3.78x1.89".
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220...240VAC;
- Operating frequency: 50...60Hz
- True RMS measurements
- Max. and min. measurement storage
- 1 relay output with 1 changeover contact (for DMK...R1 only)
- Housing: flush-mount 96x48mm/3.78x1.89"
- Terminals: 4mm^2
- Degree of protection: IP54 on front; IP20 at terminals.

DMK00R1
- Voltage measurement range: 15...660VAC
- Operating frequency range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Accuracy: ±0.25% f.s. ±1 digit

DMK01R1
- Current measurement range: 0.05...5.75A
- Operating frequency range: 45...65Hz
- Programmable CT ratio: 5...10,000
- Accuracy: ±0.5% f.s. ±1 digit

DMK02
- Voltage measurement range: 1...660VAC
- Current measurement range: 0.05...5.75A
- Operating frequency range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Programmable CT ratio: OFF/5...10,000
- Accuracy: Voltage ±0.25% f.s. ±1 digit
  Current ±0.5% f.s. ±1 digit

Control and protection functions
DMK00R1
- Voltage loss or failure: OFF/5...85%
- Maximum voltage: OFF/102...120%
- Minimum voltage: OFF/70...98%
- Time delay for max-min voltage or voltage loss❸: 0.0...900.0 seconds.

DMK01R1
- Current loss: OFF/2...100%
- Maximum current: OFF/102...200%
- Maximum current instantaneous tripping: OFF/110...600%
- Minimum current: OFF/5...98%
- Time delay for max-min current or current loss❸: 0.0...900.0 seconds.

Certifications and compliance
Certifications obtained: UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters; EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508, CSA C22.2 n° 14.

❸ Independent adjustable delays.

Flush-mount LED instruments three-phase, non expandable

DMK1...

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK10R1❷	3 phase voltage values 3 phase to phase voltage values 3 maximum phase voltage values 3 maximum phase to phase voltage values 3 minimum phase voltage values 3 minimum phase to phase voltage values	1	1	0.330
Ammeter.				
DMK11R1❷	3 phase current values 3 maximum phase current values 3 minimum phase current values	1	1	0.336
Voltmeter, ammeter and wattmeter.				
DMK15R1❶❷	3 phase voltage values 3 phase to phase voltage values 3 phase current values 4 active power values, phase and total 3 maximum phase voltage values 3 maximum phase to phase voltage values 3 maximum phase current values 4 maximum active power values, phase and total 3 minimum phase voltage values 3 minimum phase to phase voltage values 3 minimum phase current values 4 minimum active power values, phase and total	1	1	0.350

❶ Connection also to single-phase.
❷ Relay output for control and protection functions.

General characteristics
The DMK1... instruments are available with flush-mount housing, 96x48mm/3.78x1.89".
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220...240VAC;
- Operating frequency: 50...60Hz
- True RMS measurements
- Max and min measurement storage
- 1 relay output with 1 changeover contact
- Housing: flush-mount 96x48mm/3.78x1.89"
- Terminals: 4mm^2
- Degree of protection: IP54 on front; IP20 at terminals.

DMK10R1
- Voltage measurement range: 15...660VAC
- Operating frequency range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Accuracy: ±0.25% f.s. ±1 digit.

DMK11R1
- Current measurement range: 0.05...5.75A
- Operating frequency range: 45...65Hz
- Programmable CT ratio: 5...10,000
- Accuracy: ±0.5% f.s. ±1 digit.

DMK15R1
- Voltage measurement range: 35...660VAC
- Current measurement range: 0.05...5.75A
- Frequency measure range: 45...65Hz
- Programmable VT ratio: 1.00...500.00
- Programmable CT ratio: 5...10,000
- Accuracy: Voltage ±0.25% f.s. ±1 digit
  Current ±0.5% f.s. ±1 digit
  Power ±1% f.s. ±1 digit.

Control and protection functions
DMK10R1
- Phase loss or failure: OFF/5...85%
- Maximum voltage: OFF/102...120%
- Minimum voltage: OFF/70...98%
- Asymmetry: OFF/2...-20%
- Phase sequence: OFF/L1-L2-L3/L3-L2-L1
- Frequency
  - Maximum frequency: OFF/101...110%
  - Minimum frequency: OFF/90...99%
  - Time delay for max-min voltage, phase loss, asymmetry and min-max frequency ❸: 0.5...900.0 seconds.

DMK11R1
- Current loss: OFF/2...100%
- Maximum current: OFF/102...200%
- Maximum current instantaneous tripping: OFF/110...600%
- Minimum current: OFF/5...98%
- Asymmetry: OFF/2...20%
- Time delay for max-min current or current loss and asymmetry ❸: 0.5...900.0 seconds.

DMK15R1
- Voltage
  - Phase loss or failure: OFF/5...85%
  - Maximum voltage: OFF/102...120%
  - Minimum voltage: OFF/70...98%
  - Asymmetry: OFF/2...20%
  - Phase sequence: OFF/L1-L2-L3/L3-L2-L1
- Current
  - Current loss: OFF/5...85%
  - Maximum current: OFF/102...200%
  - Maximum current instantaneous tripping: OFF/110...600%
  - Minimum current: OFF/5...98%
  - Asymmetry: OFF/2...20%
- Power
  - Rated power: 1...10,000
  - Maximum power: OFF/101...200%
  - Max. power instantaneous tripping: OFF/110...600%
  - Minimum power: OFF/10...99%
- Frequency
  - Maximum frequency: OFF/101...110%
  - Minimum frequency: OFF/90...99%
  - Time delay for max-min voltage, max-min current or current loss, phase loss, asymmetry and min-max power ❸: 0.0...900.0 seconds.

Certifications and compliance
Certifications obtained: UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters; EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL 508, CSA C22.2 n° 14.

❸ Independent adjustable delays.

Flush-mount LED multimeter three-phase, non expandable

DMK16R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
DMK16R1 ❶	3 phase voltage values 3 phase to phase voltage values 3 phase current values 4 active power values, phase and total 4 reactive power values, phase and total 4 apparent power values, phase and total 3 phase power factor values 1 frequency value 1 active energy value in kWh 1 reactive energy value in kvarh 1 hour counter 3 maximum phase voltage values 3 maximum phase to phase voltage values 3 maximum phase current values 4 maximum active power values, phase and total 4 maximum reactive power values, phase and total 4 maximum apparent power values, phase and total 3 minimum phase voltage values 3 minimum phase to phase voltage values 3 minimum phase current values 4 minimum active power values, phase and total 4 minimum reactive power values, phase and total 4 minimum apparent power values, phase and total 2 minimum and maximum power factor values	1	1	0.353

❶ Connection also to single-phase.

General characteristics
The DMK16R1 multimeter is available with flush-mount housing, 96x48mm/3.78x1.89”
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220...240VAC
- Operating frequency: 50...60Hz
- True RMS measurements
- Accuracy: Voltage ±0.25% f.s. ±1 digit
  Current ±0.5% f.s. ±1 digit
- Active energy accuracy: Class 2 (IEC/EN/BS 62053-21 and IEC/EN/BS 62053-23)
- Max and min measurement storage
- Voltage measurement range: 35...660VAC
- Current measurement range: 0.05...5.75A
- Frequency measurement range: 45...65Hz
- Programmable VT ratio: 1.00...500.0
- Programmable CT ratio: 5...10,000
- 1 relay output with 1 changeover (SPDT) contact
- Housing: flush-mount 96x48mm/3.78x1.89”
- Terminals: 4mm^2
- EN degree of protection: IP54 on front; IP20 at terminals.

PROGRAMMABLE RELAY OUTPUT
- Voltage
  - Phase loss or failure: OFF/5...85%
  - Maximum voltage: OFF/102...120%
  - Minimum voltage: OFF/70...98%
  - Asymmetry: OFF/2...20%
  - Phase sequence: OFF/L1-L2-L3/L3-L2-L1
- Current
  - Protection inhibition max current: OFF/2...100%
  - Maximum current: OFF/102...200%
  - Maximum current instantaneous tripping: OFF/110...600%
  - Minimum current: OFF/5...98%
  - Asymmetry: OFF/2...20%
- Power factor
  - Maximum power factor: 0.10...1.00
  - Minimum power factor: 0.10...1.00
- Time delay for max-min voltage, max-min current or current loss, phase loss, asymmetry and min-max power factor ❷: 0.0...900.0 seconds.

Certifications and compliance
Certifications obtained: UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters; EAC.
Compliant with standards: IEC/EN/BS 61010-1, IEC/EN/BS 61000-6-2, IEC/EN/BS 61000-6-3, UL508, CSA C22.2 n° 14.

❷ Independent adjustable delays.

Communication devices

CX01

CX02

CX03

Order code	Description	Qty per pkg	Wt
		n°	[kg]
CX01	USB/optical device with PC ↔ LOVATO Electric product connecting cable, for programming, data download, diagnostics and firmware upgrade	1	0.090
CX02	Wi-Fi device for PC ↔ LOVATO Electric product programming, data download, diagnostics and cloning	1	0.090
CX03	GSM/GPRS penta-band antenna (850/900/1800/1900/2100Mhz)	1	0.090

General characteristics
Communication devices for connection of LOVATO Electric products to personal computers, smartphones and tablets.

CX01
The USB/optical device, complete with cable, allows the connection of products compatible with PCs without having to disconnect the power supply from the electric panel.
The PC identifies the connection as a standard USB.

CX02
By Wi-Fi connection, compatible LOVATO Electric products can be viewed on PCs, smartphones and tablets with no need for cabling.

CX03
Antenna compatible with the major part of worldwide mobile networks thanks to the available frequencies at 850/900/1800/1900/2100MHz.
Degree of protection: IP67. Fixing by Ø10mm drilling.
Cable length: 2.5mm

Protection covers

PA96X48

Order code	Description	Qty per pkg	Wt
		n°	[kg]
PA96X48	Front protection cover, IEC IP65 for DMK0/1...	1	0.048

General characteristics
When a higher front IP protection degree is needed, the covers can be installed on the corresponding devices and also provide a sealing feature.

Accessories

EXP8000

EXM8004

DMXP03

DMXP04

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXP8000	Plastic insert for customising label fixing for DMG6...	10	0.005
EXM8004	Set of sealable terminal covers for DMG100/110/200/210/300	1	0.020
DMXP03	Panel mounting plate adapter for 3 modules products	1	0.052
DMXP04	Panel mounting plate adapter for 4 modules products	1	0.054

Converter

EXCCON01

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXCCON01	RS485/Ethernet 12...48VDC converter, including DIN rail fixing kit	1	0.400

General characteristics EXCCON01
The EXCCON01 converter allows "Slave" devices connected on an RS485 network to interface with a "Master" featuring Ethernet port:
– kit comprising converter and DIN rail mounting accessory;
– programming via web interface;
– power supply not included.

Certifications
Certifications obtained: cULus (UL 60950-1) Listed FCC CLASS A.

Gateway

EXCGLA01

EXCGLAX1

EXCM4G01

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXCGLA01	Gateway data logger for the data collecting via Modbus from the device in the field. Publishing of the data to supervision software, also in Cloud	1	0.600
EXCGLAX1	2G/4G modem communication module for EXCGLA01	1	0.160
EXCM4G01	4G Gateway with RS485 and Ethernet port, Modbus RTU/TCP protocol	1	0.300

new

EXCGLA01 and EXCGLAX1 general characteristics
EXCGLA01 gateway is able to collect data from devices which are connected through Ethernet or RS485 port. Modbus-RTU, ASCII and TCP protocols are supported.
The data can be reviewed by a connection to Synergy Cloud service or to Ethernet local webserver and a browser.
The access to internet for data sending can be achieved with Ethernet port or by adding EXCGLAX1 2G/4G modem.
– CPU ARM 1 GHz
– 2 Ethernet ports
– 1 RS232/RS422/RS485 serial port
– 24VDC (10...32VDC) power supply
– Operating temperature -20...+60°C
– Simplified connection to LOVATO Electric devices
– Compatible with Synergy and Synergy cloud software.
– LTE cat. 4 Global support, UMTS/DC HS DPA/HSUPA/WCDMA, GSM/GPRS/EDGE
– SIM slot for microSIM.

Reference standards
Compliant with standards: EN 60950-1.

EXCM4G01 general characteristics
The EXCM4G01 gateway allows "Slave" devices connected on an RS485 network to interface with a "Master" via 4G network:
– TCP server connection via 4G or 2G network;
– Transparent operating mode: the data is transferred from 4G side to serial side and vice versa with Modbus-RTU/TCP protocol conversion;
– Settable parameters: TCP server IP and remote port, network operator apn (with username and password), SIM card pin (with enabling), connection time-out, serial parameters (baud rate from 1,200 bps to 115,200 bps, stop bit, character length, parity)
– Programming via integrated webserver.

Reference standards
Compliant with standards for EXCGLA01: emissions EN/BS 61000-6-4, immunity EN/BS 61000-6-2, for installation in industrial environment.
Compliant with standards for EXCGLAX1: EN/BS 61000-6-4, EN/BS 61000-6-2, EN/BS 61000-6-3, EN/BS 61000-6-1, EN/BS 60945, ETSI EN/BS 301 489-1, ETSI EN/BS 301 489-52, EN/BS 301 511, ETSI EN/BS 301 908-1, ETSI EN/BS 301 908-2, EN/BS 62311, EN/BS 60950-1.
Compliant with standards for EXCM4G01: EN 60950-1.

For dimensions, wiring schemes and technical characteristics, refer to technical instructions in Downloads at **www.LovatoElectric.com**.

Connecting cable

51C2

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
51C2	For PC-multimeter RS232 port, 1.8m long	1	0.090

Wound primary type

DM0TW...

	Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Burden cl. 3	Qty per pkg	Wt
		/5 [A]	[VA]	[VA]	[VA]	n°	[kg]
	Screw primary terminals.						
new	**DM0TW0005**	5	1.5	2.5	–	1	0.525
new	**DM0TW0010**	10	1.5	2.5	–	1	0.525
new	**DM0TW0020**	20	1.5	2.5	–	1	0.525
new	**DM0TW0030**	30	1.5	2.5	–	1	0.525

Solid-core

DM0T...

	Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Burden cl. 3	Qty per pkg	Wt
		/5 [A]	[VA]	[VA]	[VA]	n°	[kg]
	For Ø22mm/0.87" cable.						
new	**DM0T0040**	40	—	—	1.25	1	0.200
	DM0T0050	50	—	1.25	—	1	0.200
	DM0T0060	60	—	1.5	—	1	0.200
	DM0T0080	80	—	1.5	—	1	0.200
	DM0T0100	100	—	1.5	—	1	0.200
	DM0T0150	150	—	2	—	1	0.200

DM2T...

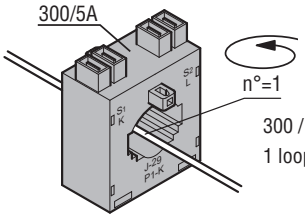
	Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Wt
		/5 [A]	[VA]	[VA]	n°	[kg]
	For Ø23mm/0.90" cable. For 30x10mm/1.18x0.39", 25x12.5mm/0.98x0.49", 20x15mm/0.79x0.59" busbars, width 52mm/2.05".					
	DM2T0100	100	—	1	1	0.130
	DM2T0150	150	—	1.5	1	0.130
	DM2T0200	200	—	2	1	0.130
	DM2T0250	250	—	2.5	1	0.130
	DM2T0300	300	1.5	3	1	0.130
	DM2T0400	400	2	3	1	0.130

DM3T...

	Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Wt
		/5 [A]	[VA]	[VA]	n°	[kg]
	For Ø30mm/1.18" cable. For 40x10mm/1.57x0.39", 30x20mm/1.18x0.79", 25x25mm/0.98x0.98" busbars, width 71mm/2.79".					
	DM3T0200	200	—	5	1	0.260
	DM3T0250	250	—	5	1	0.260
	DM3T0300	300	2.5	5	1	0.260
	DM3T0400	400	2.5	5	1	0.260
	DM3T0500	500	2.5	5	1	0.260
	DM3T0600	600	5	10	1	0.260
	DM3T0800	800	5	10	1	0.260
	For Ø44mm/1.73" cable. For 51x41mm/2.01x1.61", 61x31mm/2.40x1.22" busbars, width 95mm/3.74".					
new	**DM33T0800**	800	5	10	1	0.476
new	**DM33T1000**	1000	5	15	1	0.476
new	**DM33T1200**	1200	5	15	1	0.476
	For Ø44mm/1.73" cable. For 69x10mm/2.72x0.39", 50x30mm/1.97x1.18" busbars, width 95mm/3.74".					
new	**DM34T1500**	1500	5	15	1	0.476
new	**DM34T1600**	1600	5	15	1	0.476

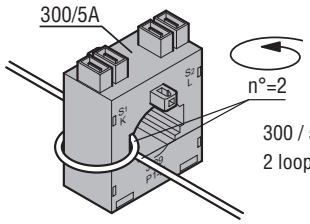
General characteristics

The current transformers (CTs) in the DM series are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM0TW... are instrument transformers in class 1/0.5 wound primary type and are normally used for low primary current values starting from 5A.
DM... are instrument transformers in class 1/0.5 without a primary winding and are normally used for high primary current values starting from 40A.
The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current.



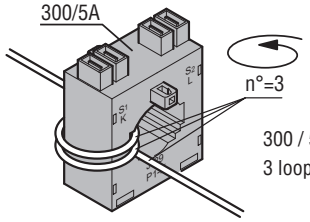
300 / 5A standard
1 loop = 300 / 5A

300:n/5A
300:1/5A=300/5A



300 / 5A
2 loops = 150 / 5A

300:n/5A
300:2/5A=150/5A



300 / 5A
3 loops = 100 / 5A

300:n/5A
300:3/5A=100/5A

Operational characteristics

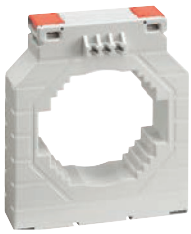
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40...60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Insulation (dry type): Class E
- Terminals:
  - Faston for DM2T... and DM3T... types
  - Screw for DM0T... types
- Sealable terminal covers for DM4T..., DM33T, DM34T and DM35T... types
- Fixing on 35mm DIN rail (IEC/EN/BS 60715) or by screws (fixing elements standard supplied with the product)
- EN degree of protection: IP30
- Ambient conditions:
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C
  - Relative humidity, non condensing: 90%.

Certifications and compliance

Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

Solid-core

DM35T...

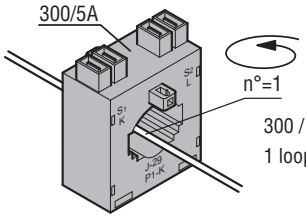


DM4T...

Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Wt
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø66mm/2.60" cable. For 80x12,5mm/3.15"x0.49", 60x30mm/2.36x1.18", 50x50mm/1.97x1.97" busbars, width 105mm/4.13".					
new **DM35T0400**	400	—	5	1	0.460
new **DM35T0500**	500	5	5	1	0.460
new **DM35T0600**	600	5	10	1	0.460
DM35T0800	800	10	15	1	0.460
DM35T1000	1000	15	20	1	0.460
DM35T1250	1250	15	20	1	0.460
For 101x56mm/3.98x2.20" busbars, width 128mm/5.04".					
new **DM37T2000**	2000	10	15	1	1.000
new **DM37T2250**	2250	10	15	1	1.000
new **DM37T2500**	2500	10	15	1	1.000
new **DM37T3000**	3000	10	15	1	1.000
For Ø86mm/3.38" cable. For 100x30mm/3.94x1.18", 80x50mm/3.15x1,97", 70x60mm/2.75x2.36" busbars, width 140mm/5.51".					
DM4T1000	1000	10	20	1	0.700
DM4T1250	1250	15	30	1	0.760
DM4T1500	1500	20	30	1	0.760
DM4T1600	1600	20	30	1	0.800
DM4T2000	2000	30	45	1	0.840
DM4T2500	2500	35	45	1	0.900
DM4T3000	3000	45	45	1	0.900
DM4T3500	3500	50	50	1	0.900
DM4T4000	4000	50	50	1	0.900

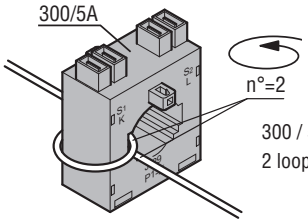
General characteristics

The current transformers (CTs) in the DM series are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM... are instrument transformers in class 1/0.5 without a primary winding and are normally used for high primary current values starting from 50A.
The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current.



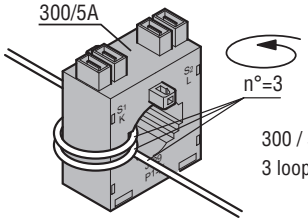
300 / 5A standard
1 loop = 300 / 5A

300:n/5A
300:1/5A=300/5A



300 / 5A
2 loops = 150 / 5A

300:n/5A
300:2/5A=150/5A



300 / 5A
3 loops = 100 / 5A

300:n/5A
300:3/5A=100/5A

Operational characteristics

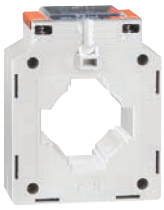
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40...60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Insulation (dry type): Class E
- Terminals:
  - Screw for DM4T... and DM35T... types
- Sealable terminal covers for DM4T..., DM35T... and DM37T... types
- Fixing on 35mm DIN rail (IEC/EN/BS 60715) or by screws (fixing elements standard supplied with the product)
- EN degree of protection: IP30
- Ambient conditions:
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C
  - Relative humidity, non condensing: 90%.

Certifications and compliance

Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

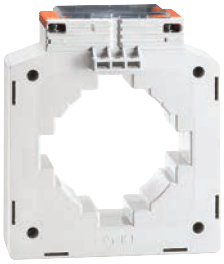
Accuracy solid-core

DM1TP...



DM3TP...

DM4TP...



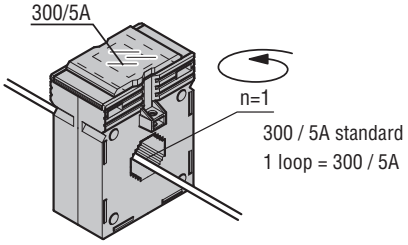
DM5TP...

Version with UTF certificates.
See page 25-17.

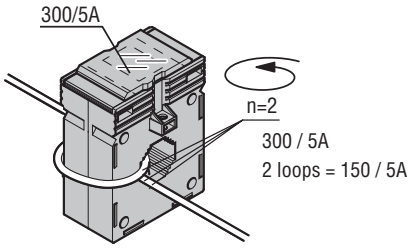
Order code	Primary current Ipn	Burden cl. 0.5s	Burden cl. 0.5	Qty per pkg	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø28mm/1.10"❶ cable. For 30x10mm/1.18x0.39", 25x12.5mm/0.98x0.49", 20x20mm/0.79x0.79" busbar, width: 75mm/2.95".					
DM1TP0060	60	1.5	1.5	1	0.560
DM1TP0080	80	2.5	2.5	1	0.580
DM1TP0100	100	2.5	3.75	1	0.480
DM1TP0150	150	2.5	3.75	1	0.480
DM1TP0200	200	2.5	3.75	1	0.480
DM1TP0250	250	2.5	5	1	0.480
DM1TP0300	300	2.5	5	1	0.480
DM1TP0400	400	5	5	1	0.480
DM1TP0500	500	5	5	1	0.480
For Ø28mm/1.10"❶ cable. For 30x10mm/1.18x0.39", 25x20mm/0.98x0.79", 20x20mm/0.79x0.79" busbar, width: 75mm/2.95".					
new **DM1TP0600**	600	2.5	5	1	0.480
For Ø52mm/2.04"❶ cable. For 60x20mm/2.36x0.79", 50x25mm/1.97x0.98" busbar, width: 101mm/3.98".					
DM3TP0500	500	3.75	5	1	0.700
DM3TP0600	600	5	10	1	0.700
DM3TP0800	800	5	10	1	0.700
DM3TP1000	1000	5	10	1	0.700
For Ø80mm/3.15"❶ cable. For 82x30mm/3.23x1.18" busbar, width: 128mm/5.04".					
new **DM4TP1200**	1200	–	10	1	0.800
For Ø85.5mm/3.37"❶ cable. For 100x20mm/3.94x0.79", 80x45mm/3.15x1.77" busbar, width: 144mm/5.67".					
DM5TP1000	1000	5	10	1	0.900
DM5TP1250	1250	7.5	10	1	0.900
DM5TP1600	1600	7.5	10	1	0.900
DM5TP2000	2000	10	15	1	0.900
DM5TP2500	2500	10	15	1	0.900
DM5TP3000	3000	10	15	1	0.900

❶ Consult Technical support to inquiry about versions with Italian UTF certificates.

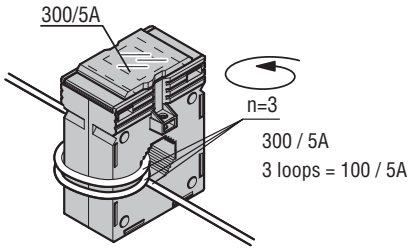
General characteristics
The DM...TP type accuracy current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TP are accuracy current transformers in class 0.5s without a primary winding and are normally used for high primary current values starting from 60A.
The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current.



300:n/5A
300:1/5A=300/5A



300:n/5A
300:3/5A=100/5A



300:n/5A
300:3/5A=100/5A

Operational characteristics
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40...60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Insulation (dry type): Class E
- Screw terminals
- Sealable terminal covers
- Fixing on 35mm DIN rail (IEC/EN/BS 60715) or by screws (fixing elements standard supplied with the product)
- EN degree of protection: IP30
- Ambient conditions:
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C.
  - Relative humidity, non condensing: 90%.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

Compact prewired split-core

DM1TMA...

DM2TMA...

new

Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
24x24mm/0.94x0.94" hole. Cable supplied as standard, length 2m.					
DM1TMA0100	100	—	1.0	1	0.200
DM1TMA0150	150	—	1.0	1	0.200
DM1TMA0200	200	—	1.0	1	0.200
DM1TMA0250	250	—	1.0	1	0.200
36x38mm/1.42x1.50" hole. Cable supplied as standard, length 2m.					
DM2TMA0250	250	0.5	1.5	1	0.380
DM2TMA0300	300	0.5	1.5	1	0.380
DM2TMA0400	400	0.5	1.5	1	0.380
DM2TMA0500	500	0.5	1.5	1	0.380
DM2TMA0600	600	0.5	1.5	1	0.380

General characteristics
The DM...TMA type current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TMA are instrument transformers in class 1 without a primary winding and are normally used for high primary current values starting from 100A.

Operational characteristics
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40...60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Cable supplied as standard, length 2m.
- Insulation (dry type): Class E
- Ambient conditions:
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C
  - Relative humidity, non condensing: 90%.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

Split-core

DM1TA...

DM2TA...

DM3TA...

DM4TA...

	Order code	Primary current Ipn	Burden cl. 0,5	Burden cl. 1	Burden cl. 3	Qty per pkg	Wt
		/5 [A]	[VA]	[VA]	[VA]	n°	[kg]
	32x21mm/1.26x0.83" hole. Width: 89mm/3.50".						
new	**DM0TA0100**	100	—	—	1	1	0.900
new	**DM0TA0150**	150	—	1	2.5	1	0.900
new	**DM0TA0200**	200	—	2.5	—	1	0.900
	50x80mm/1.97x3.15" hole. Width: 114mm/4.89".						
	DM1TA0250	250	1	2		1	0.900
	DM1TA0300	300	1.5	3		1	0.900
	DM1TA0400	400	1.5	3		1	0.900
	DM1TA0500	500	2.5	5		1	0.900
	DM1TA0600	600	2.5	5		1	0.900
	DM1TA0800	800	3	7.5		1	0.900
	DM1TA1000	1000	5	10		1	0.900

	Order code	Primary current Ipn	Burden cl. 0.5s	Burden cl. 0.5	Qty per pkg	Wt
		/5 [A]	[VA]	[VA]	n°	[kg]
	80x80mm/3.15x3.15" hole. Width: 142mm/5.59".					
	DM2TA0250	250	1	2	1	1.050
	DM2TA0300	300	1.5	3	1	1.050
	DM2TA0400	400	1.5	3	1	1.050
	DM2TA0500	500	2.5	5	1	1.050
	DM2TA0600	600	2.5	5	1	1.050
	DM2TA0800	800	3	7.5	1	1.050
	DM2TA1000	1000	5	10	1	1.050
new	**DM2TA1250**	1250	—	15	1	1.050
	80x120mm/3.15x4.72" hole. Width: 142mm/5.59".					
	DM3TA0500	500	—	4	1	1.250
	DM3TA0600	600	—	5	1	1.250
	DM3TA0800	800	3	7.5	1	1.250
	DM3TA1000	1000	5	10	1	1.250
	DM3TA1250	1250	7.5	15	1	1.250
	DM3TA1500	1500	8	17	1	1.250
new	**DM3TA2000**	2000	—	17	1	1.250
	80x160mm/3.15x6.30" hole. Width: 184mm/7.24".					
	DM4TA2000	2000	15	20	1	3.160
	DM4TA2500	2500	15	20	1	3.340
	DM4TA3000	3000	20	25	1	3.500
	DM4TA4000	4000	20	25	1	3.760

General characteristics
The DM...TA type current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TA are instrument transformers in class 0.5/1 without a primary winding and are normally used for high primary current values starting from 250A.

Operational characteristics
- Operating frequency: 50...60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40...60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Insulation (dry type): Class E
- Screw terminals
- Sealable terminal covers
- Screw fixing (fixing elements standard supplied with the product)
- IEC degree of protection: IP30
- Ambient conditions:
  - Operating temperature: -25...+50°C
  - Storage temperature: -40...+80°C.
  - Relative humidity, non condensing: 90%.

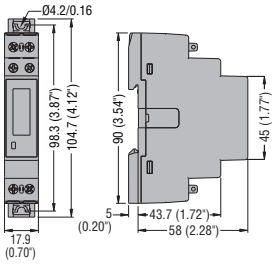
Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1.

Metering instruments and current transformers

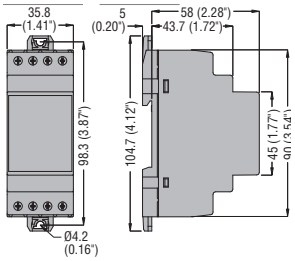
Dimensions [mm(in)]

ENERGY METERS

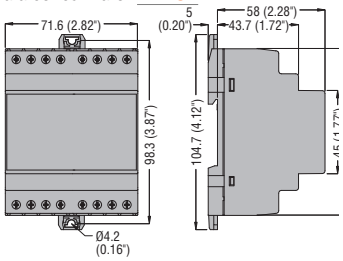
Digital meter **DMED100... - DMED110... - DMED111... - DMED112...**



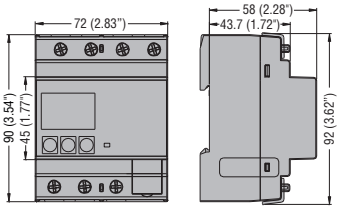
Digital meter **DMED115T1 - DMED120T1... DMED121 - DMED122**



Digital meter **DMED305T2... - DMED330... - DMED332... - DMED310T2...**
Data concentrator **DMECD**

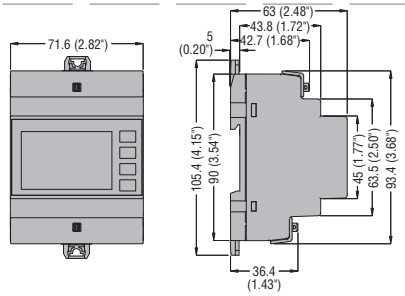


DMED300T2... - DMED301... - DMED302...

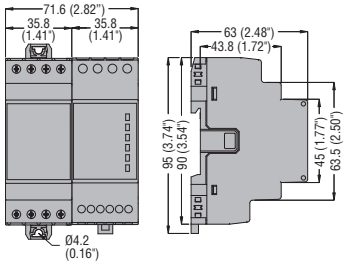


MULTIMETERS

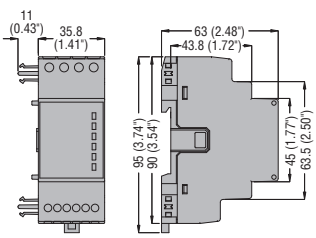
DMG100 - DMG110 - DMG200 - DMG210 - DMG300



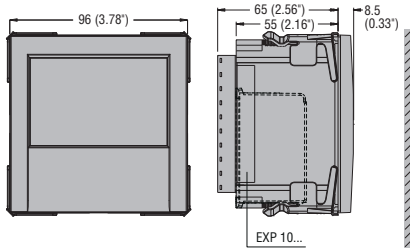
Digital meter **DMED130LM**



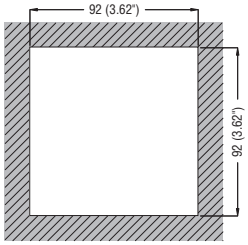
Expansion modules **EXM...**



DMG6...

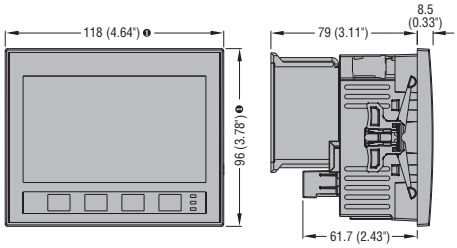


Cutout



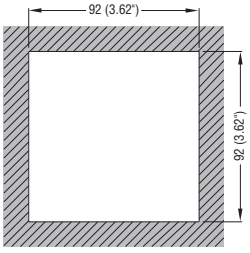
POWER ANALYZERS

DMG7000 - DMG7500 - DMG8000 - DMG9000



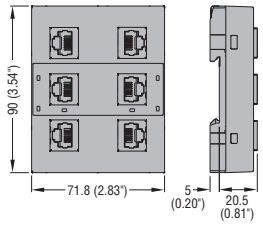
❶ Dimensions with gasket: 122x100mm/4.80x3.94".

Cutout

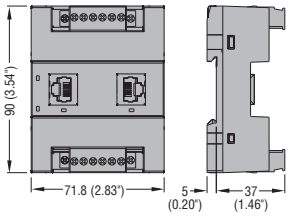


CURRENT MEASURING MODULES

EXS4000

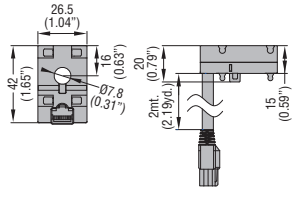


EXS4001

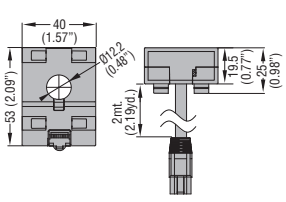


ELECTRONIC CURRENT TRANSFORMERS

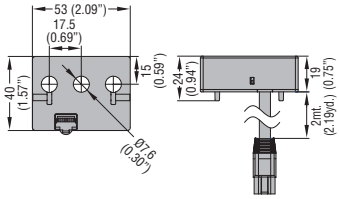
EXS1032 - EXS1063



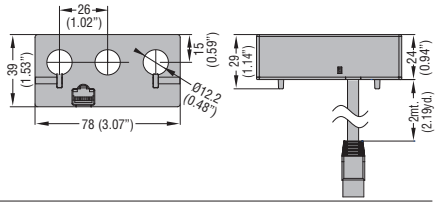
EXS1080 - EXS1125



EXS3032 - EXS3063

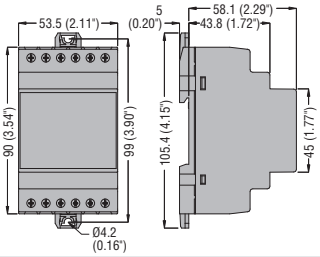


EXS3080 - EXS3125



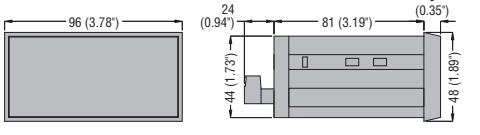
MODULAR DIGITAL METERING INSTRUMENTS

DMK7... - DMK8...

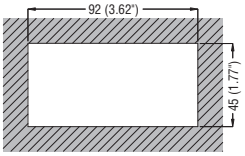


DIGITAL FLUSH-MOUNT METERING INSTRUMENTS

Instruments **DMK0... - DMK1...**

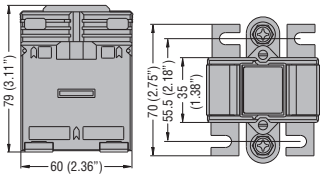


Cutout

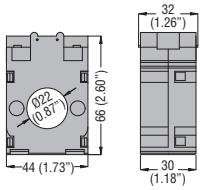


CURRENT TRANSFORMERS

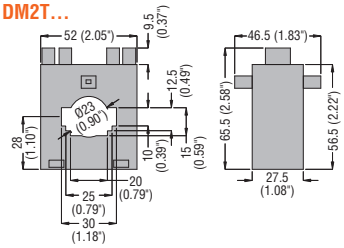
Wound primary **DM0TW...**



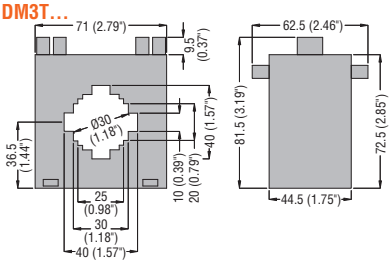
Solid core **DM0T...**



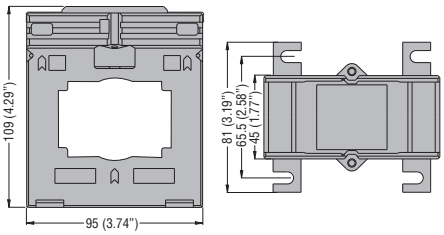
DM2T...



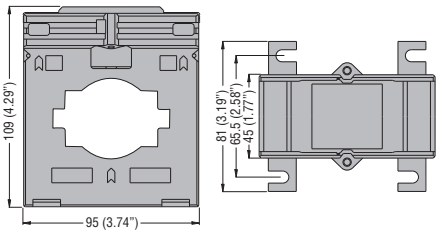
DM3T...



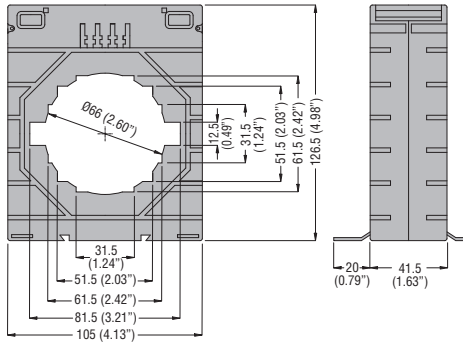
DM33T...



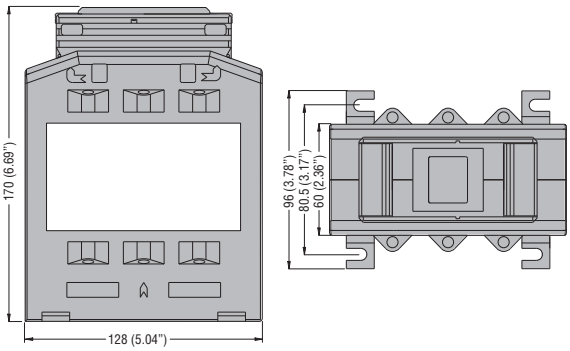
DM34T...



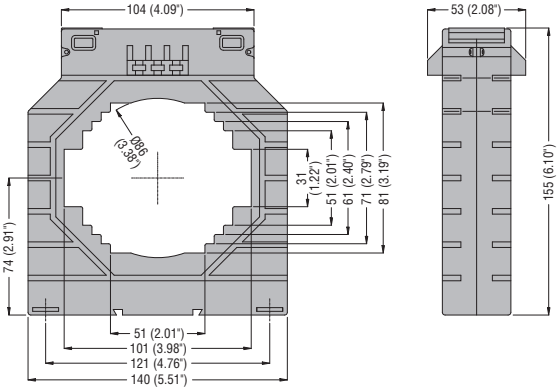
DM35T...



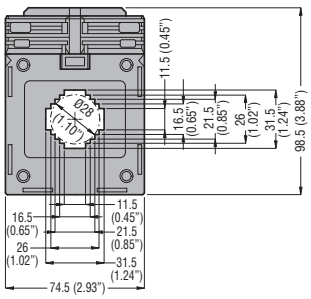
DM37T...



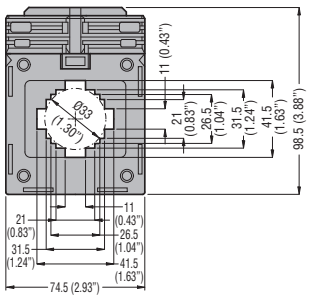
DM4T...

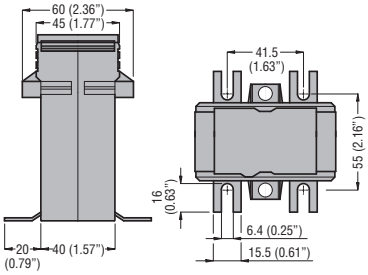


DM1TP0060... - DM1TP0300

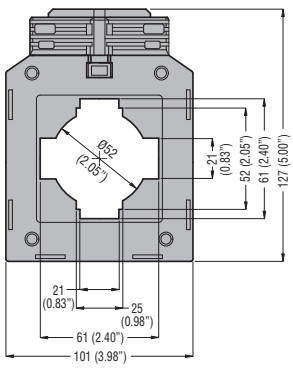


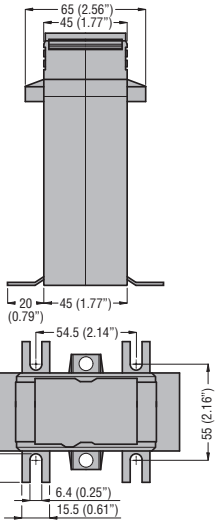
DM1TP0400... - DM1TP0600



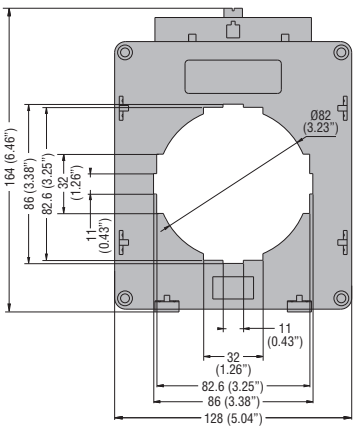


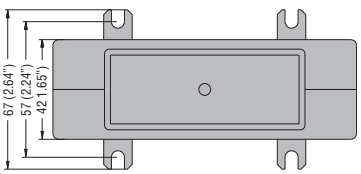
DM3TP...



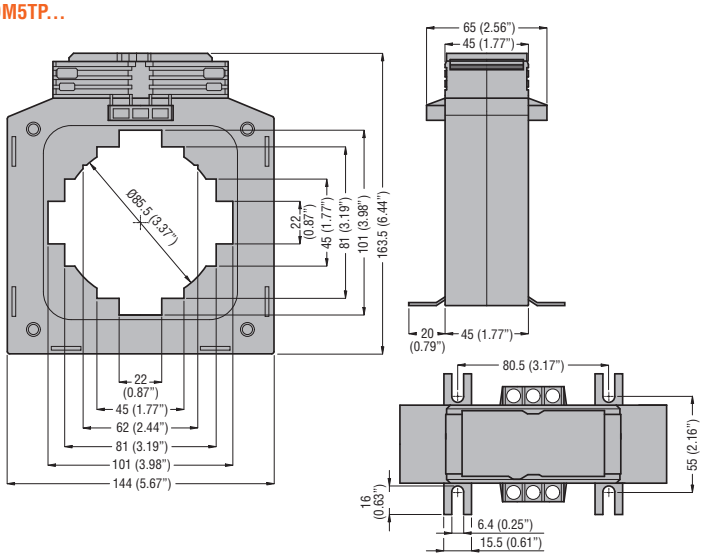


DM4TP1200



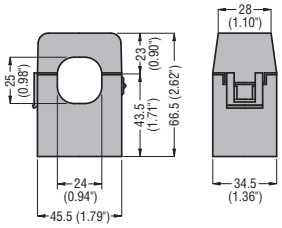


DM5TP...

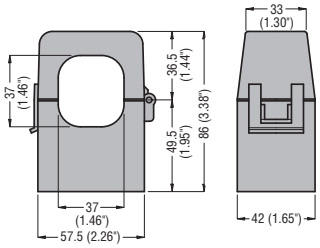


Compact prewired split-core

DM1TMA...

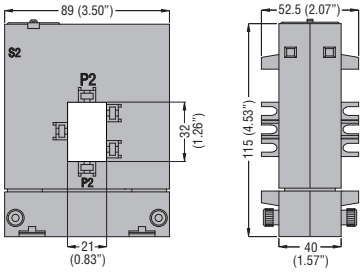


DM2TMA...

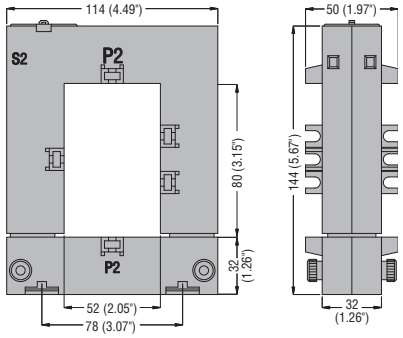


Split-core

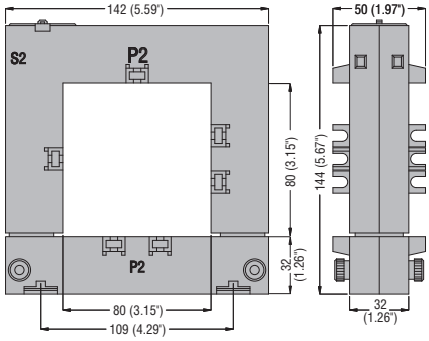
DM0TA...



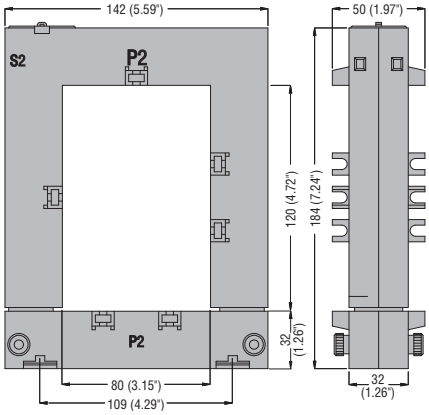
DM1TA...



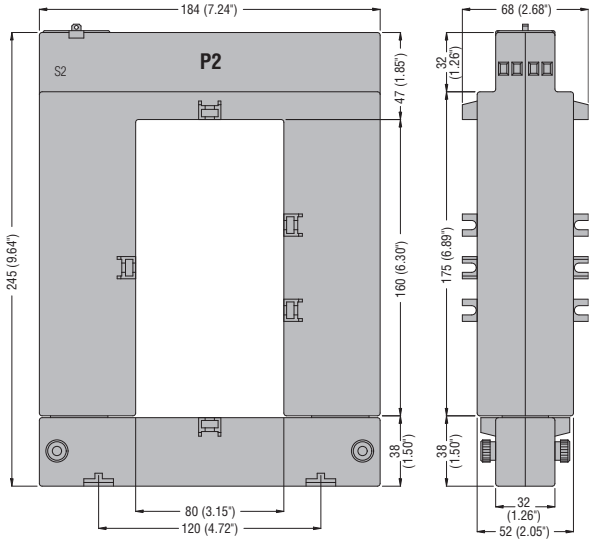
DM2TA...



DM3TA...

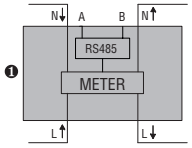


DM4TA...

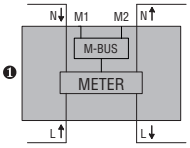


ENERGY METERS

DMED111...

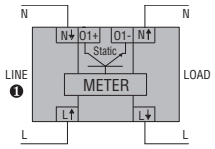


DMED112...

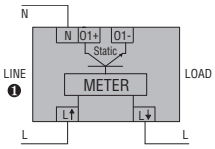


❶ 110-240VAC DMED111, DMED112...

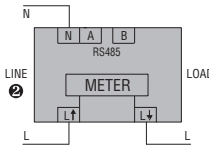
Digital meters DMED100T1... - DMED110T1...



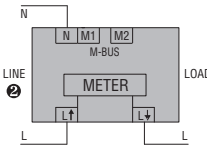
DMED115T1 - DMED120T1...



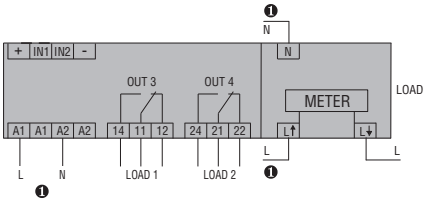
DMED121...



DMED122...

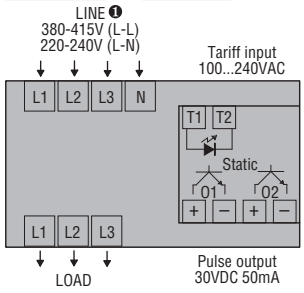


DMED130LM

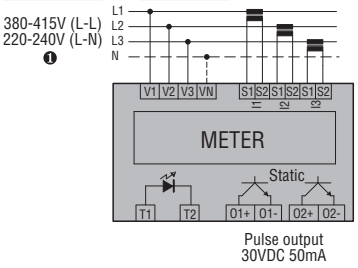


❶ 110-120VAC DMED...A120; 220-240VAC DMED...; 230V 50Hz DMED... T1 MID.
❷ 110-240VAC DMED121, DMED122...

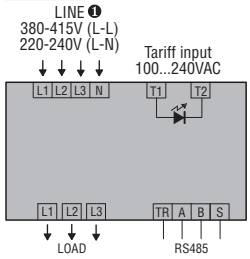
DMED300T2... - DMED300F



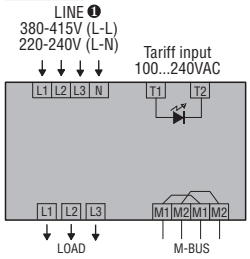
DMED310T2... - DMED310F...



DMED301



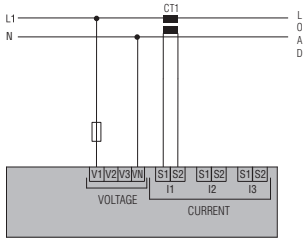
DMED302



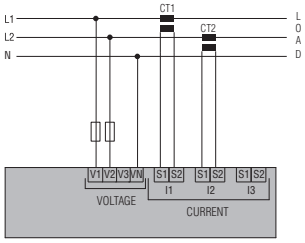
❶ 230V 50Hz (L-N), 400V 50Hz (L-L) DMED... T2 MID / DMED... F.

DMED305T2 - DMED330 - DMED332

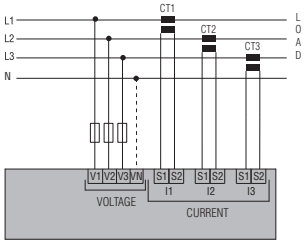
Single-phase



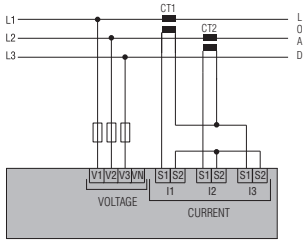
Two-phase

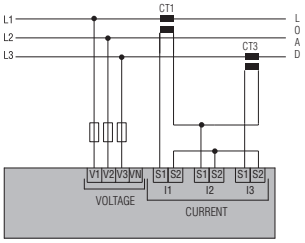


Three-phase with or without neutral



Three-phase without neutral in ARON connection

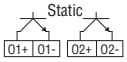




Tariff input

100...240VAC

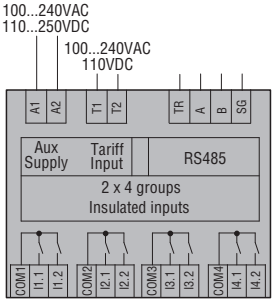
Pulse output 30VDC 50mA for DMED305T2



RS485 for DMED330

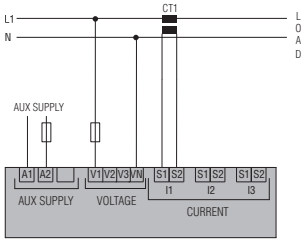
M-BUS for DMED332

Data concentrator DMECD

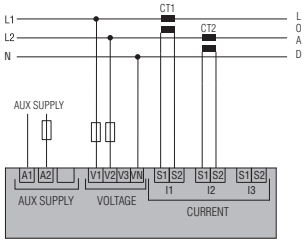


MULTIMETERS DMG...

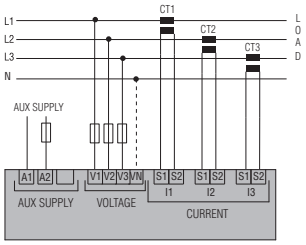
Single-phase



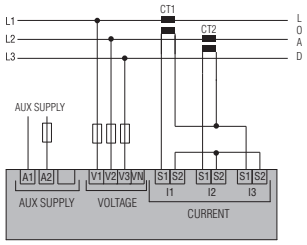
Two-phase

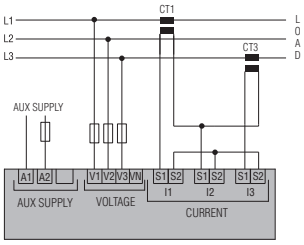


Three-phase with or without neutral

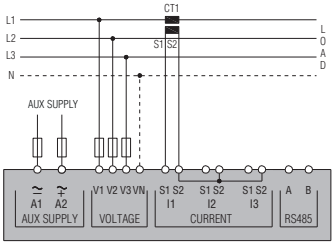


Three-phase without neutral in ARON connection





Balanced 3-phase connection with or without neutral



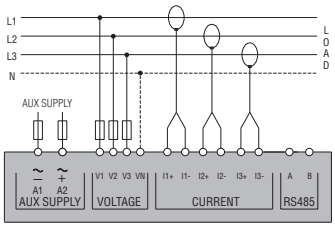
CODE	AUX SUPPLY
DMG100-110-200-210-300	100...240VAC 110...250VDC
DMG6...	100...440VAC 110...250VDC
DMG7000-7500-8000-9000	100...240VAC 110...250VDC

RS485 for DMG110 and DMG210

RS485 for DMG610

RS485 for DMG7500 and DMG9000

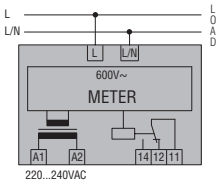
MULTIMETERS DMG611...



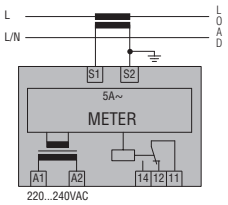
RS485 for DMG611

METERING INSTRUMENTS

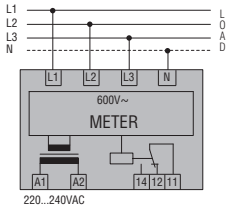
DMK80R1



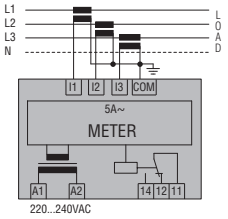
DMK81R1



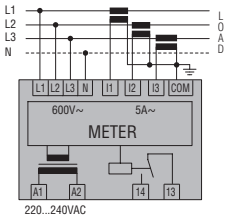
DMK70R1



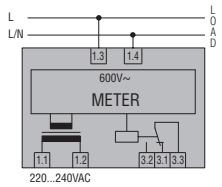
DMK71R1



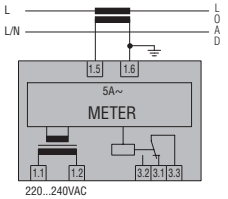
DMK75R1



DMK00R1

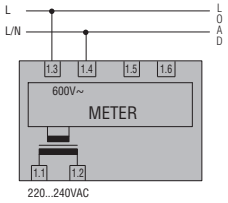


DMK01R1

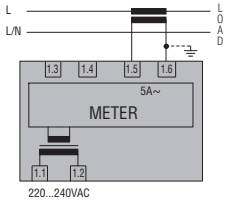


DMK02

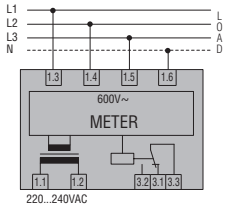
Voltmeter



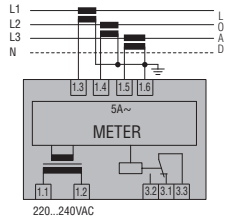
Ammeter



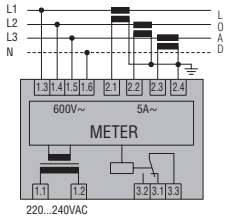
DMK10R1



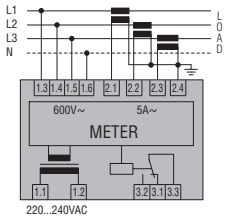
DMK11R1



DMK15R1



DMK16R1



TYPE	DMED100T1	DMED100T1A120	DMED100T1MID	DMED110T1	DMED110T1A120	
	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	
AUXILIARY SUPPLY						
Rated voltage(Ue)	220...240VAC	110...120VAC	230VAC	220...240VAC	110...120VAC	
Operating voltage range	187...264VAC	93...132VAC	187...264VAC	187...264VAC	93...132VAC	
Rated frequency	50/60Hz	60Hz	50Hz	50/60Hz	60Hz	
Maximum power consumption	7VA					
Maximum power dissipation	0.45W					
CURRENT						
IEC maximum current (Imax)	40A					
IEC minimum current (Imin)	0,25A					
IEC rated current (Iref-Ib)	5A					
IEC start current (Ist)	20mA					
Transition current (Itr)	0,5A					
ACCURACY						
Active energy (per IEC/EN/BS 62053-21)	Class 1		Class B (EN 50470-3)	Class 1		
OUTPUTS						
LED rate	1000 flash/kWh					
Pulse rate	1000 pulses/kWh					
Pulse duration	30ms					
STATIC OUTPUTS						
Pulse rate	10 pulses/kWh			1-10-100-1000 pulses/kWh programmable		
Pulse duration	100ms					
External voltage	10...30VDC					
Maximum current	50mA					
INSULATION						
IEC rated insulation voltage Ui	250VAC					
IEC rated impulse withstand voltage Uimp	6kV					
IEC power frequency withstand voltage	4kV					
SUPPLY/MEASUREMENT CONNECTION CIRCUIT						
Type of terminals	Fixed					
Conductor section (min...max)	1.5...10mm^2 (16...6AWG)					
Maximum tightening torque	1.5Nm (14lb.in)					
CONNECTION (PULSE OUTPUT/RS485/MBUS)						
Type of terminals	Fixed					
Conductor section (min...max)	0.2...4mm^2 (24...12AWG)					
Maximum tightening torque	0.8Nm (7lb.in)					
AMBIENT CONDITIONS						
Operating temperature	-25...+55°C					
Storage temperature	-25...+70°C					
Relative humidity	<80%					
Maximum pollution degree	2					
Mechanical environment	–	–	Class M1	–	–	
Magnetic environment	–	–	Class E1	–	–	
HOUSING						
Material	Polyamide					

	DMED111/112	DMED110T1MID DMED111MID/MID7 DMED112MID	DMED115T1	DMED120T1	DMED120T1A120	DMED120T1MID DMED121MID DMED122MID	DMED121	DMED130LM DMED122
	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
	110...240VAC	230VAC	220...240VAC	220...240VAC	110...120VAC	230VAC	110...240VAC	220...240VAC
	93...264VAC	187...264VAC	187...264VAC	187...264VAC	93...132VAC	187...264VAC	88...264VAC	187...264VAC
	50/60Hz	50Hz	50/60Hz	50/60Hz	60Hz	50Hz	50/60Hz	
	1VA	7VA	7VA				4.8VA	
	0.4W	0.45W	0.45W				1.4W	
	40A		40A	63A			63A	
	0.25A		0.5A				0.5A	
	5A		10A				10A	
	20mA		40mA				40mA	
	0.5A		1A				1A	
	Class 1/B	Class B (EN 50470-3)	Class 1			Class B (EN 50470-3)	Class 1	
	1000 flash/kWh		1000 flash/kWh				1000 flash/kWh	
	1000 pulses/kWh		1000 pulses/kWh				1000 pulses/kWh	
	30ms		30ms				30ms	
	1-10-100-1000 pulses/kWh programmable (only for DMED...T1...)		1-10-100-1000 pulses/kWh programmable (only for DMED...T1...)				–	
	100ms		100ms				–	
	10...30VDC		10...30VDC				–	
	50mA		50mA				–	
	250VAC		250VAC				250VAC	
	6kV		6kV				6kV	
	4kV		4kV				4kV	
	Fixed		Fixed				Fixed	
	1.5...10mm² (16...6AWG)		2.5...16mm² (14...6AWG; 14...10AWG)				2.5...16mm² (14...6AWG; 14...10AWG)	
	1.5Nm (14lb.in)		2Nm (26.5lb.in)				2Nm (26.5lb.in)	
	Fixed		Fixed				Fixed	
	0.2...4mm² (24...12AWG)		0.5...4mm² (20...11AWG)				0.5...4mm² (20...11AWG)	
	0.8Nm (7lb.in)		1.3Nm (12.1lb.in)				1.3Nm (12.1lb.in)	
	-25...+55°C (MID7: -25...+70°C)							
	-25...+70°C		-25...+70°C				-25...+70°C	
	<80%		<80%				<80%	
	2		2				2	
	Class M1	–	–	–		Class M1	–	–
	Class E1	–	–	–		Class E1	–	–
	Polyamide		Polyamide				Polyamide	

TYPE	DMED300T2… DMED301… DMED302	DMED300T2MID DMED301MID/MID7 DMED300MID	DMED310T2 DMED305T2	DMED310T2MID DMED305T2MID	DMED330 DMED332	DMED330MID DMED332MID
	3 phase with neutral	3 phase with neutral	3 phase with and without neutral	3 phase with neutral	3 phase with and without neutral	3 phase with neutral
AUXILIARY SUPPLY						
Rated voltage (Ue)	380...415VAC (3ph-N) DMED...UL: 120VAC (LN) - 240VAC (L-L)	400VAC (3ph-N)	380...415VAC (3ph-N)	400VAC (3ph-N)	380...415VAC (3ph-N)	400VAC (3ph-N)
Voltage range	187...264VAC phase-neutral / 323...456VAC phase-phase					
Rated frequency	50/60Hz (UL: 60Hz)	50Hz	50/60Hz	50Hz	50/60Hz	50Hz
Maximum power consumption	20VA		3.5VA			3.5VA
Maximum power dissipation	1.35W		2.7W			2.7W
CURRENT						
IEC maximum current (Imax)	80A		5A		5A	5A
IEC minimum current (Imin)	0.75A		0.05A		0.05A	0.05A
IEC rated current (Iref-Ib)	15A		5A		5A	5A
IEC start current (Ist)	60mA		0.005A		0.005A	0.005A
IEC transition current (Itr)	1.5A		0.25A		0.25A	0.25A
ACCURACY						
Active energy (per IEC/EN/BS 62053-21)	Class 1	Class B (EN50470-3)	Class 0.5s DMED305T2 Class 1 DMED310T2	Class B (EN50470-3)	Class 0.5s	Class B (EN50470-3)
TARIFF CIRCUIT INPUT						
Rated voltage (Uc)	100...240VAC					
Voltage range	85...264VAC					
Frequency	50/60Hz					
Maximum power consumption	0.25VA					
Maximum power dissipation	0.18W					
LED						
Pulse rate	1000 pulses/kWh					
Pulse duration	30ms					
STATIC OUTPUTS						
Pulse rate	1-10-100-1000 pulses/kWh programmable (except DMED301/302)		0.1-1-10-100 pulses/kWh programmable		—	—
Pulse duration	100ms for 1-10-100 pulses (except DMED301/302) 60ms for 1000 pulses (except DMED301/302)		100ms		—	—
External voltage	10...30VDC (except DMED301/302)		10...30VDC		—	—
Maximum current	50mA (except DMED301/302)				—	—
INSULATION						
IEC rated insulation voltage Ui	250VAC					
IEC rated impulse withstand voltage Uimp	6kV					
IEC power frequency withstand voltage	4kV					
SUPPLY/MEASURMENT CIRCUIT CONNECTIONS						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	2.5...16mm² (16...6AWG)		0.2...4mm² (24...12AWG) for supply/voltage measurement; 0.2...2.5mm² (24...12AWG) for current measurement			
Maximum tightening torque	2Nm (14lb.in)		0.8Nm (7lb.in)			
TARIFF CONTROL CIRCUIT CONNECTIONS						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	0.2...2.5mm² (24...12AWG)		0.2...4mm² (24...12AWG)			
Maximum tightening torque	0.49Nm (4.4lb.in)		0.8Nm (7lb.in) (0.44Nm / 4lb.in for current measurement DMED320)			
CONNECTIONS (PULSE OUTPUT/RS485)						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	0.2...1.3mm² (24...16AWG)		0.2...2.5mm² (24...12AWG)			
Maximum tightening torque	0.15Nm (1.7lb.in)		0.44Nm (4lb.in)			
AMBIENT CONDITIONS						
Operating temperature	-25...+55°C					
Storage temperature	-25...+70°C					
Relative humidity	<80% non condensing					
Maximum pollution degree	2		2		2	
Mechanical environment	—	Class M1	—	Class M1	—	Class M1
Magnetic environment	—	Class E1	—	Class E1	—	Class E1
HOUSING						
Material	Polyamide		Polyamide			

TYPE	**DMECD**
AUXILIARY SUPPLY	
Rated voltage (Us)	100...240VAC/110...250VDC
Voltage range	85...264VAC/93.5...300VDC
Rated frequency	50/60Hz
Maximum power consumption	8.8VA
Maximum power dissipation	3.6W
ENERGY METER INPUTS	
Number of inputs	8
Input separations	1 common for every 2 inputs (insulated between each pair 500VRMS)
Type of input	Negative (NPN)
Maximum voltage at inputs	15VDC
Maximum input current	18mA (15mA typical)
High input signal	≥7.6V
Low input signal	≤2V
Maximum frequency	2000Hz
TARIFF CONTROL CIRCUIT	
Rated voltage (Uc)	100...240VAC/110VDC
Voltage range	85...264VAC/93.5...140VDC
Frequency	50/60Hz
Maximum power consumption	0.25VA
Maximum power dissipation	0.18W
RS485 SERIAL INTERFACE	
Baud-rate	Programmable 1200...38400bps
Insulation	1500VAC towards energy meter inputs. Double insulation towards supply and tariff inputs
INSULATION	
IEC rated insulation voltage Ui	250VAC
IEC rated impulse withstand voltage Uimp	6.5kV
IEC power frequency withstand voltage	3.6kV
SUPPLY CIRCUIT CONNECTIONS	
Type of terminals	Fixed
Conductor section (min...max)	0.2...4mm^2 (24...12AWG)
Maximum tightening torque	0.8Nm (7lb.in)
TARIFF INPUT CIRCUIT CONNECTIONS	
Type of terminals	Fixed
Conductor section (min...max)	0.2...4mm^2 (24...12AWG)
Maximum tightening torque	0.8Nm (7lb.in)
RS485 CONNECTION	
Type of terminals	Fixed
Conductor section (min...max)	0.2...4mm^2 (24...12AWG)
Maximum tightening torque	0.8Nm (7lb.in)
ENERGY METER INPUT CONNECTIONS	
Type of terminals	Fixed
Conductor section (min...max)	0.2...2.5mm^2 (24...12AWG)
Maximum tightening torque	0.44Nm (4lb.in)
AMBIENT CONDITIONS	
Operating temperature	-20...+60°C
Storage temperature	-30...+80°C
Relative humidity	<90%
Maximum pollution degree	2
HOUSING	
Material	Polyamide

TYPE	DMG100 - DMG110❶	DMG200	DMG210	DMG300	
AUXILIARY SUPPLY					
Rated voltage Us	100...240VAC/ 110...250VDC				
Voltage range	85...264VAC/ 93.5...300VDC				
Frequency range	45...66Hz				
Maximum power consumption	3.5VA	3.5VA	4.5VA	3.2VA	
Maximum power dissipation	1.2W	1.2W	1.7W	1.3W	
Microbreaking immunity	≥50ms	≥50ms	≥50ms	≥50ms	
VOLTAGE INPUTS					
Type of input	Three-phase + neutral				
Maximum rated voltage Ue	690VAC phase-phase (400VAC phase-neutral)				
Measurement range	20...830VAC phase-phase (10...480VAC phase-neutral)				
Frequency range	45...66Hz				
Method of measurement	True RMS				
Method of connection	Single, two, three-phase with or without neutral, balanced three-phase systems				
CURRENT INPUTS					
Rated current Ie	5A	5A	5A	1A/5A	
Current reading through Rogowski coils	–	–	–	–	
Measurement range	0.01...6A	0.01...6A	0.01...6A	0.01...1.2A / 0.01...6A	
Method of measurement	True RMS				
Overload capacity	+20% Ie through external CT with 5A secondary				
Overload peak	50A for 1s				
INSULATION					
IEC rated insulation voltage Ui	690VAC				
IEC rated impulse withstand voltage Uimp	9.5kV				
IEC power frequency withstand voltage	5.2kV				
SUPPLY CIRCUIT/VOLTAGE MEASUREMENT CONNECTIONS					
Type of terminal	Fixed				
Conductor section (min...max)	0.2...4.0mm² (24...12 AWG)				
Maximum tightening torque	0.8Nm (7lb.in)				
CURRENT MEASUREMENT CIRCUIT AND RS485❶					
Type of terminal	Fixed				
Conductor section (min...max)	0.2...2.5mm² (24...12AWG)				
Maximum tightening torque	0.44Nm (4lb.in)				
AMBIENT CONDITIONS					
Operating temperature	-20...+60°C				
Storage temperature	-30...+80°C				
Relative humidity	<90%				
Maximum pollution degree	2				
Measurement class	III				
HOUSING					
Material	Polyamide				

❶ RS485 communication port for DMG110, DMG210, DMG610 and DMG611 only.
❷ Consult Technical support about versions with supply 12...48VDC; see contact details on inside front cover.

	DMG6...	DMG7000	DMG7500	DMG8000	DMG9000
	100...440VAC 120...250VDC❷	100...240VAC 120...250VDC❷			
	90...484VAC 93.5...300VDC	90...264VAC 93.5...300VDC			
	45...66Hz	45...66Hz			
	9.5VA	15VA			
	3.5W	6W			
	≥50ms	≥50ms			
	Three-phase + neutral	Three-phase + neutral			
	600VAC phase-phase (300VAC phase-neutral)	600VAC phase-phase (300VAC phase-neutral)			
	50...720VAC phase-phase (30...360VAC phase-neutral)	50...720VAC phase-phase (30...360VAC phase-neutral)			
	45...66Hz	45...66Hz			
	True RMS	True RMS			
	Single, two, three-phase with or without neutral, balanced three-phase systems				
	1A/5A	1A/5A			
	20...6300A (for DMG611...)	–			
	0.01...1.2A / 0.01...6A	0.005...1.2A / 0.005...6A			
	True RMS	True RMS			
	+20% Ie by external CT with 5A secondary				
	50A for 1s				
	600VAC	600VAC			
	9.5kV	9.5kV			
	5.2kV	5.2kV			
	Removable				
	0.2...2.5mm² (24...12AWG)				
	0.5Nm (4.5lb.in)				
	Fixed	Removable			
	0.2...1.5mm² (24...12AWG)	0.2...2.5mm² (24...12AWG)			
	0.8Nm (7lb.in)	0.5Nm (4.5lb.in)			
	-20...+60°C				
	-30...+80°C				
	<90%				
	2				
	III				
	Polyamide				

TYPE		DMK10R1 DMK70R1	DMK11R1 DMK71R1	DMK15R1 DMK75R1	DMK16R1
AUXILIARY SUPPLY					
Rated voltage Us		220...240VAC			
Operating voltage range		0.85...1.1 Us			
Rated frequency		50...60Hz ±10%			
Maximum power consumption		3.6VA	3.6VA	3.6VA	3.9VA
Maximum power dissipation		1.8W	1.8W	1.8W	2.1W
VOLTAGE INPUTS					
Rated voltage Ue	phase-phase	600VAC	—	600VAC	600VAC
	phase-neutral	347VAC	—	347VAC	347VAC
Operating voltage range	phase-phase	15...660VAC	—	35...660VAC	35...660VAC
	phase-neutral	10...382VAC	—	20...382VAC	20...382VAC
Rated frequency		50...60Hz ±10%	—	50...60Hz ±10%	50...60Hz ±10%
Method of measuring		True RMS	—	True RMS	True RMS
CURRENT INPUTS					
Rated current Ie		—	5A	5A	5A
Measuring range		—	0.05...6A	0.05...5.75A	0.05...5.75A
Rated frequency		—	50...60Hz ±10%	50...60Hz ±10%	50...60Hz ±10%
Type of input		—	Shunts connected by external low voltage CT 5A max		
Type of measuring		—	True RMS	True RMS	True RMS
Overload capacity		—	+20% Ie	+20% Ie	+20% Ie
MEASURING ACCURACY					
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.)	voltage	±0.25% f.s. ±1 digit	—	±0.25% f.s. ±1 digit	±0.25% f.s. ±1 digit
	current	—	±0.5% f.s. ±1 digit	±0.5% f.s. ±1 digit	±0.5% f.s. ±1 digit
	power	—	—	1% f.s. ±1 digit	1% f.s. ±1 digit
	energy	—	—	—	Class 2
	frequency	—	—	±1 digit	±1 digit
RELAY OUTPUT					
Number and type of contact		1 changeover	1 changeover	1 changeover❶	1 changeover
Rated voltage		250VAC	250VAC	250VAC	250VAC
IEC/EN/BS 60947-5-1 designation		AC1 8A 250VAC / B300	AC1 8A 250VAC / B300	AC1 8A 250VAC / B300	AC1 8A 250VAC / B300
Electrical life (ops.)		10^5	10^5	10^5	10^5
Mechanical life (ops.)		$30x10^6$	$30x10^6$	$30x10^6$	$30x10^6$
INSULATION					
Rated insulation voltage Ui		600VAC	415VAC	600VAC	600VAC
CONNECTIONS					
Type of terminals		Removable (DMK1...); fixed (DMK7...)			
Maximum tightening torque		0.5Nm (4.5lb.in) for DMK1...; 0.8Nm (7lb.in) for DMK7...			
Conductor section (min...max)		0.2...2.5mm² (24...12AWG) for DMK0... 0.2...4.0mm² (24...12AWG) for DMK7...			
AMBIENT CONDITIONS					
Operating temperature		-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Storage temperature		-30...+80°C	-30...+80°C	-30...+80°C	-30...+80°C
HOUSING					
Material		Thermoplastic (DMK1...) / Polyamide (DMK7...)			

❶ One contact NO for DMK75R1.

TYPE		DMK00R1 DMK80R1	DMK01R1 DMK81R1	DMK02
AUXILIARY SUPPLY				
Rated voltage Us		220...240VAC		
Operating voltage range		0.85...1.1 Us		
Rated frequency		50...60Hz ±10%		
Maximum power consumption		3.6VA		
Maximum power dissipation		1.8W		
VOLTAGE INPUTS				
Rated voltage Ue		600VAC	—	600VAC
Operating voltage range		15...660VAC	—	15...660VAC
Operating voltage range, phase-phase		—	—	—
Rated frequency		50...60Hz ±10%	—	50...60Hz ±10%
Method of measuring		True RMS	—	True RMS
CURRENT INPUTS				
Rated current Ie		—	5A	5A
Measuring range		—	0.05...5.75A	0.05...5.75A
Rated frequency		—	50...60Hz ±10%	50...60Hz ±10%
Type of input		—	Shunts connected by external low voltage CT 5A max	
Type of measuring		—	True RMS	True RMS
Overload capacity		—	+20% Ie	+20% Ie
MEASURING ACCURACY				
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.)	cosφ	—	—	—
	voltage	±0.25% f.s. ±1 digit	—	±0.25% f.s. ±1 digit
	current	—	±0.5% f.s. ±1 digit	±0.5% f.s. ±1 digit
	frequency	—	—	—
ADDITIONAL ERRORS				
Relative humidity		±1 digit 60%...90% R.H.		
Temperature		±1 digit -20...+60°C		
RELAY OUTPUT FOR DMK... R1 TYPES ONLY				
Number and type of contact		1 changeover		
Rated voltage		250VAC		
IEC/EN/BS 60947-5-1 designation		AC1 8A 250VAC / B300		
Electrical life (ops.)		10^5		
Mechanical life (ops.)		$30x10^6$		
INSULATION				
Rated insulation voltage Ui		600VAC	415VAC	600VAC
CONNECTIONS				
Type of terminals		Fixed (DMK8...); Removable (DMK0...)		
Maximum tightening torque		0.8Nm (7lb.in) for DMK0... / 0.5Nm (4.5lb.in) for DMK8...		
Conductor section (min...max)		0.2...2.5mm² (24...12AWG) for DMK0... 0.2...4.0mm² (24...12AWG) for DMK8...		
AMBIENT CONDITIONS				
Operating temperature		-20...+60°C		
Storage temperature		-30...+80°C		
HOUSING				
Material		Thermoplastic (DMK0...) / Polyamide (DMK8...)		