Page 23-10

ENERGY METERS
- Single phase, three phase with neutral, three phase with or without neutral
- Direct connection or by current transformers
- MID certified versions
- Expandable versions.

Page 23-15

DATA CONCENTRATORS
- Energy consumption data storage for network usage
- Connection up to 14 energy meters equipped with static output
- Photovoltaic monitoring type
- Expandable versions.

Page 23-16

DIGITAL LCD MULTIMETERS AND POWER ANALYZERS
- Graphic or icon LCD
- Version with touch screen
- Modular and panel mount types
- Remote display
- Expandable versions.

Pages 23-16 and 17

PORTABLE POWER ANALYZERS
- IP65 casing
- With built-in USB interface
- GPRS/GSM communications
- Available kits of current clamps and cables.

Page 23-18 to 24

LED MEASURING INSTRUMENTS
- Voltmeters, ammeters, frequency meters, cosphi meters and wattmeters.

DIGITAL LED MULTIMETERS
- Basic version, with energy meters, with 2 programmable outputs, for use with generating sets and with data-logger.

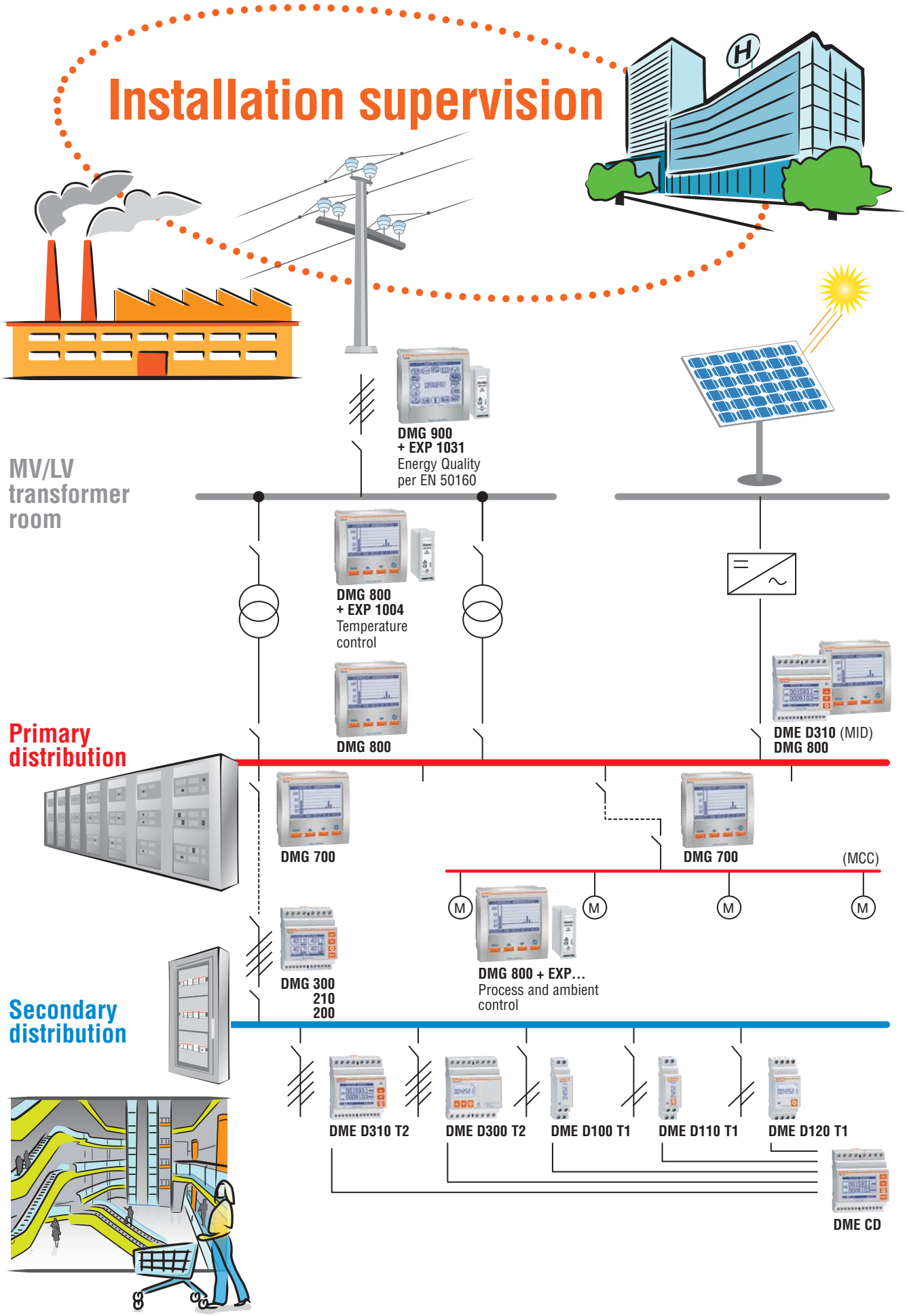
Page 23-32

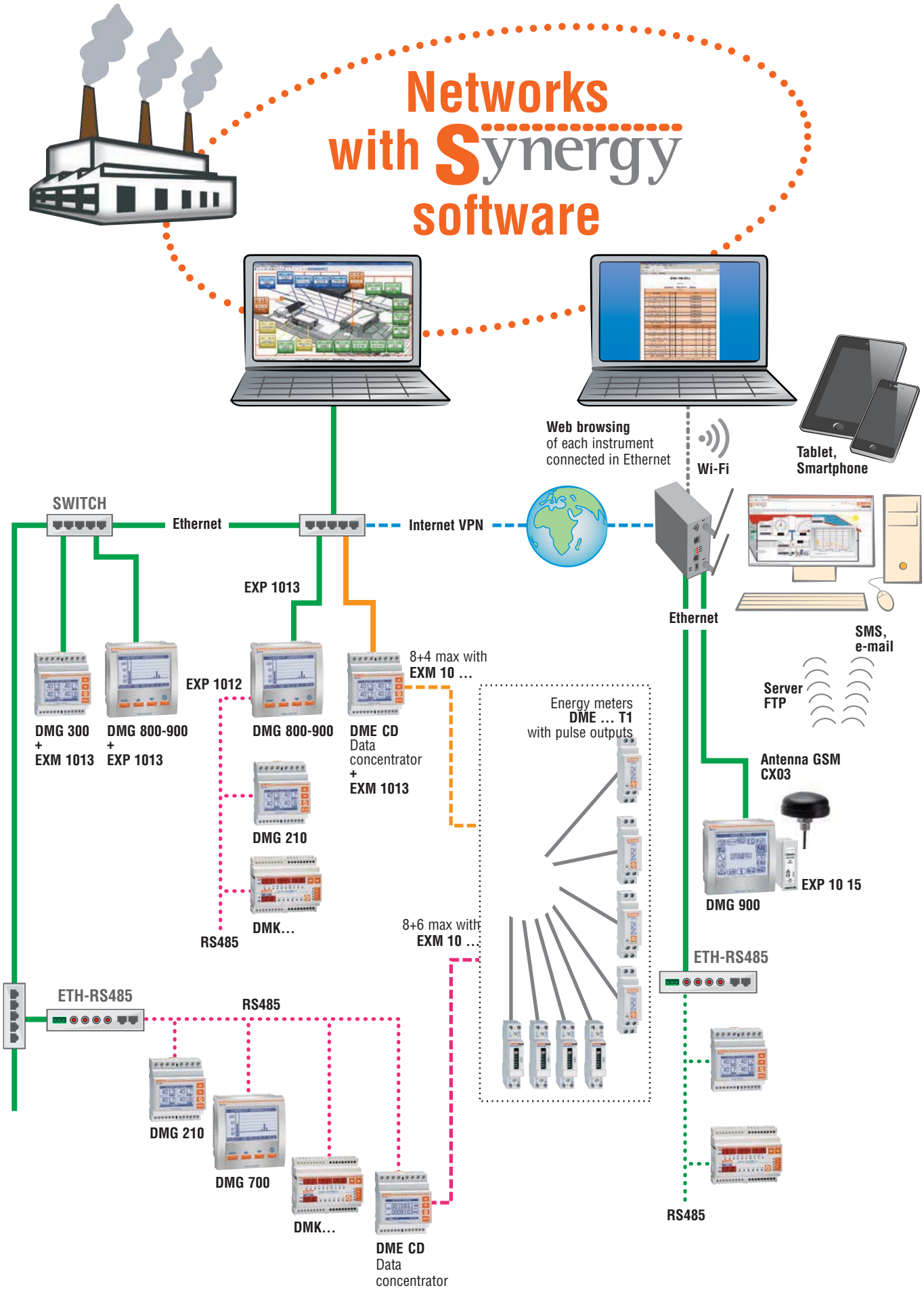
CURRENT TRANSFORMERS
- Primary current: 50-4,000A
- Secondary current: 5A
- Solid and split-core types.

Metering instruments and current transformers

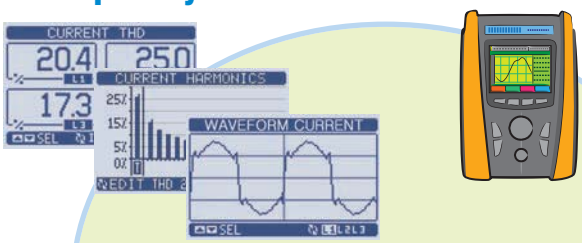
- Digital voltmeters, ammeters, wattmeters, frequency meters and cosphi meters
- Digital multimeters and power analyzers, expandable, with graphic LCD
- Connection to single, two, three phase systems
- Ideal for distribution systems, co-generation energy systems, stand-by generating sets and on-board machinery installation
- High measurement accuracy
- Totally programmable digital outputs
- RS485, RS232, USB, Ethernet, Profibus DP serial interface for remote control and data-logger.

Installation supervision

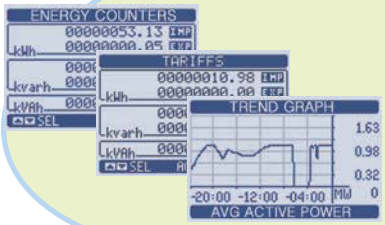



Networks with Synergy software
Web browsing
of each instrument
connected in Ethernet
Wi-Fi
Tablet,
Smartphone
SWITCH
Ethernet
Internet VPN
Ethernet
SMS,
e-mail
Server
FTP
EXP 1013
EXP 1012
8+4 max with
EXM 10 ...
DMG 300
+
EXM 1013
DMG 800-900
+
EXP 1013
DMG 800-900
DME CD
Data
concentrator
+
EXM 1013
DMG 210
DMK...
RS485
Energy meters
DME ... T1
with pulse outputs
Antenna GSM
CX03
DMG 900
EXP 10 15
8+6 max with
EXM 10 ...
ETH-RS485
ETH-RS485
RS485
DMG 210
DMG 700
DMK...
DME CD
Data
concentrator
RS485

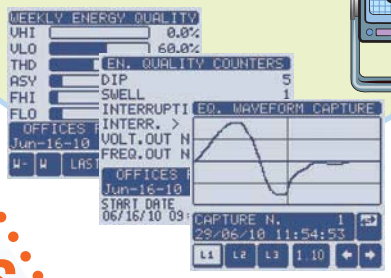
Grid quality verification

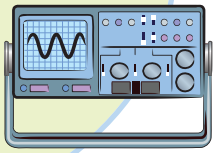


Energy consumption control



Quality analysis per EN 50160

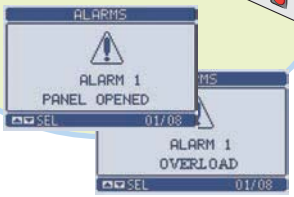


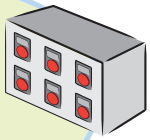


- High versatility
- Easy and intuitive consulting and configuration.

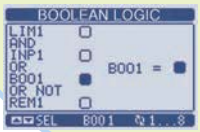
DMG series multimeters and DME series energy meters

Alarms



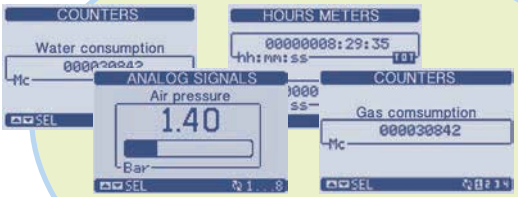


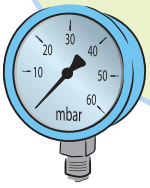
Boolean logic

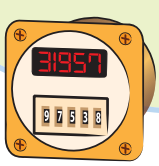


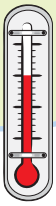
Micro PLCs

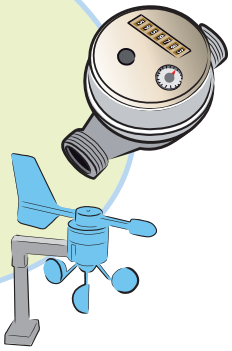
Data acquisition of environmental conditions



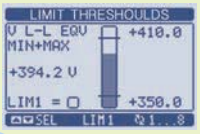






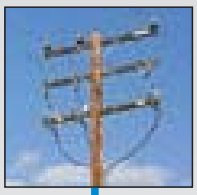


Diagnostics and control



Protection relays

Photovoltaic installation management



① ②

Option for distinct values of import and export energy

DMED energy meter: ENERGY PRODUCED ②

ELECTRIC LINE

② DMED energy meter: ENERGY CONSUMED

ELECTRIC PULSES

AC/DC INVERTER STATUS/ALARM

DME CD PV1 data concentrator views:
- Energy
  - Produced
  - Consumed
  - Exchanged ①
- Self-consuming index
- AC/DC inverter alarms, any others.

+

Option for 2 load disconnection by EXM10 01

+

Option for Ethernet connection by EXM10 03

Enabling / Commands

ETHERNET

Wi-Fi®

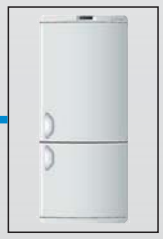
Router

CONTROLLABLE LOADS

Contactors

APP: PV VIEW

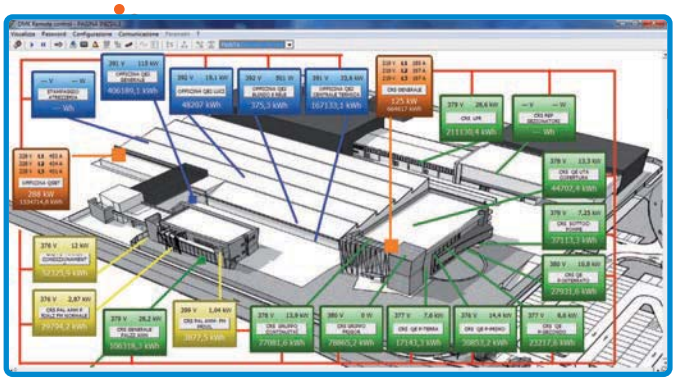
PRIVILEGED LOADS



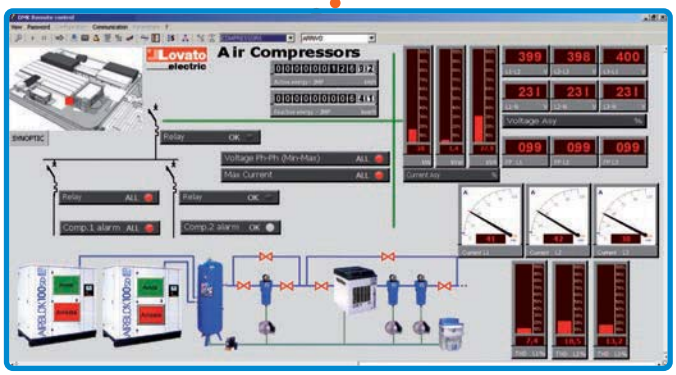
Supervision option remoted by Synergy software (see Section 27)

① If the distinct values of import and export energy need to be known, a third energy meter should be installed on the in-coming line; the exchanged energy is the difference between import and export energy with the power supplier.
② The energy meters can be single or three phase based on the type of installation.

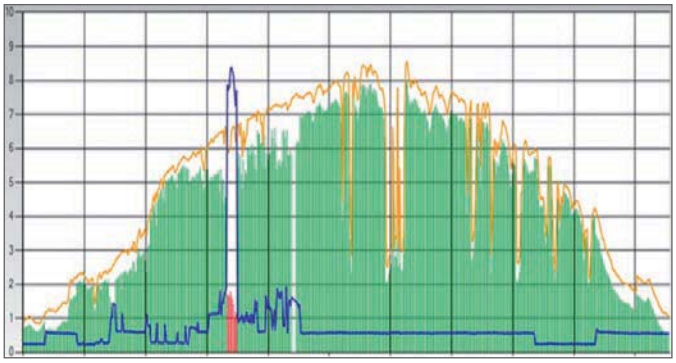
Synergy
remote control and supervision software



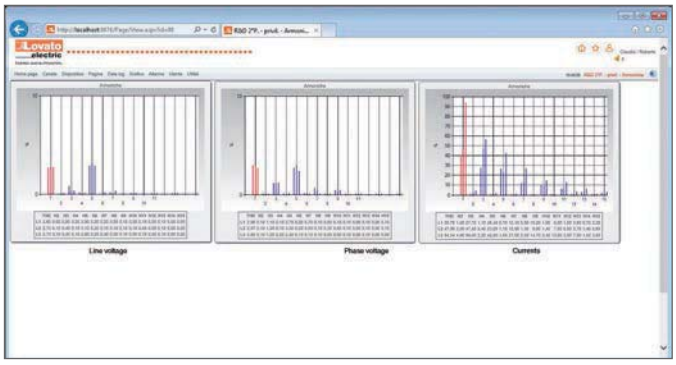
Main plant synoptic view



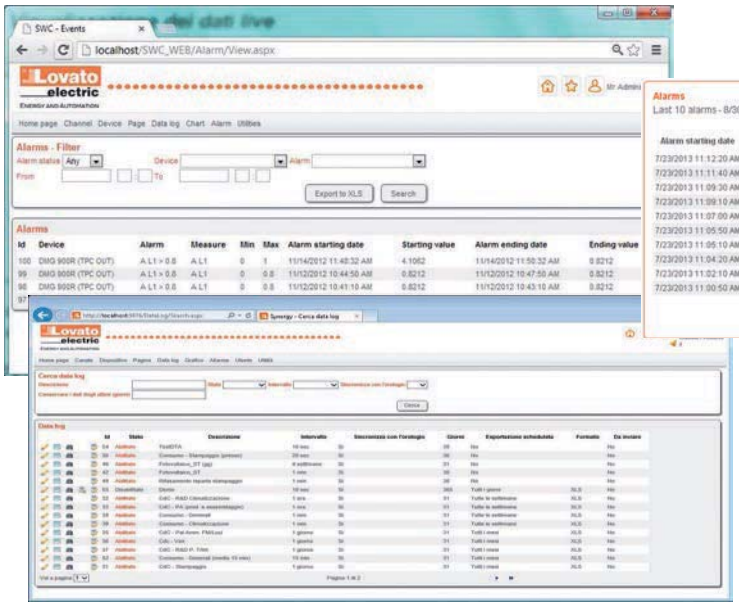
Detailed pages of each user with status monitoring and command sending



View trend lines

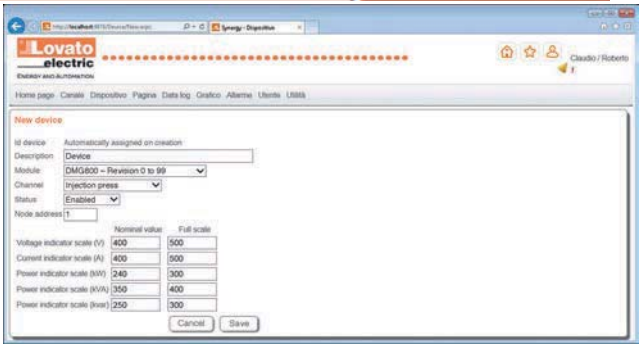


Harmonic analysis in bar graph and table format



Alarm and event list with upload to text or Excel file

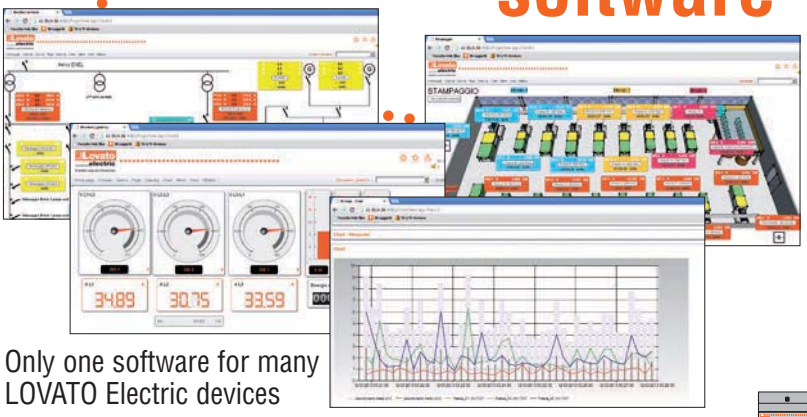
Data log consulting with periodical manual or automatic uploading



Device parameterising

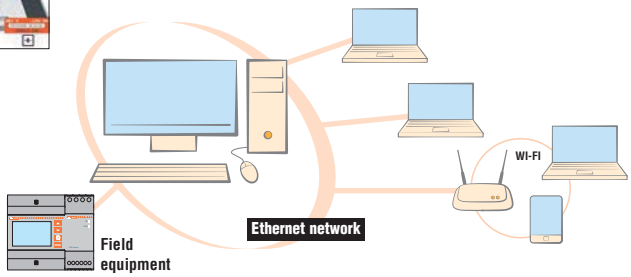
See Section 27 for details.

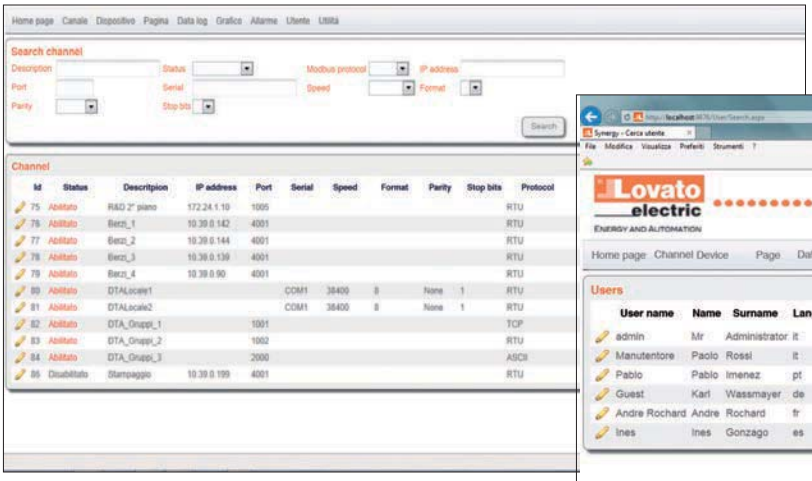
Synergy
remote control and supervision software



Only one software for many LOVATO Electric devices

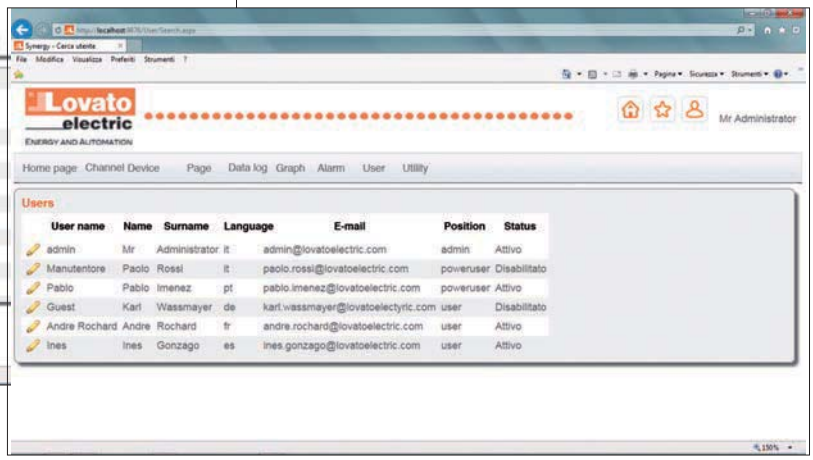
Multiclient-server structure and web-based application with multi-language support
(including those of East Europe and Far East)

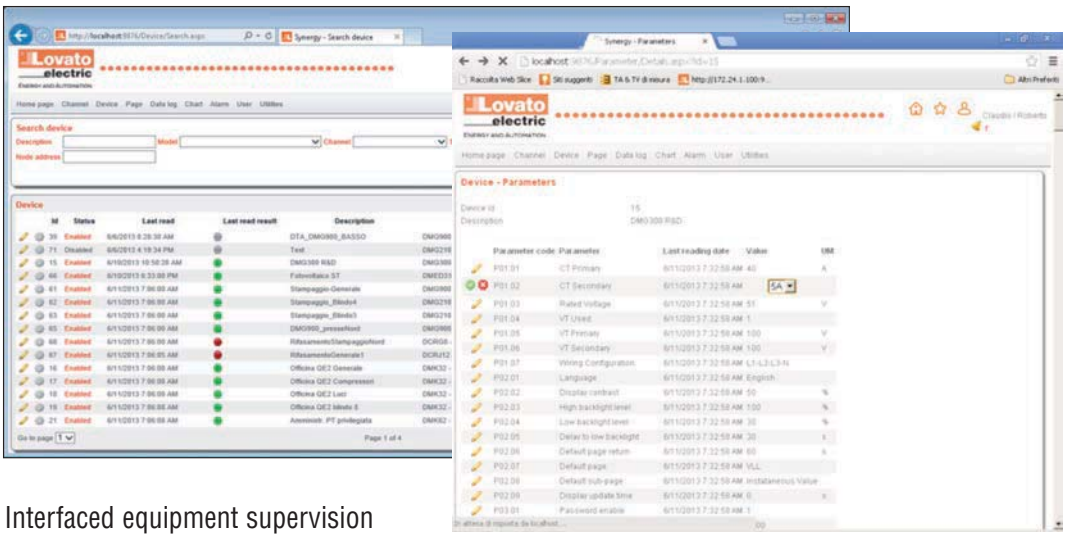




Simultaneous management of several channels

Multiclient structure with three access levels





Interfaced equipment supervision

See Section 27 for details.

	ENERGY METERS - MULTIMEASUREMENT			ENERGY METERS - MULTIMEASUREMENT				
Functions / Measurements	DME M100	DME M100 T1	DME D100 T1	DME D110 T1	DME D115 T1	DME D120 T1	DME D121	DME D130
INSTALLATION								
Connection	Single phase							
Direct	32A	32A	40A	40A	40A	63A	63A	63A
Through CT								
MV usage								
Built-in digital outputs		1 Pulse	1 Pulse	1 Programmable	1 Programmable	1 Programmable		
Built-in digital inputs								
Built-in communication port							RS485	
Expandible								●
MID certified version			●	●		●		
Version with UTF certificates								
Current/Votlage accuracy	±0.5%							
Active energy accuracy (IEC/EN 62053-21/EN 50470-3)	Class 1 / Class B							
Degree of protection	IP40							
MEASUREMENTS								
Active energy Total	●	●	●	●	●	●	●	●
Active energy Partial				●	●	●	●	●
Reactive energy Total	●	●	●	●		●	●	●
Reactive energy Partial				●		●	●	●
Separate energy count Import - Export								
Voltage Current Power Active power max demand Power factor Frequency				●	Active power max demand only	●	●	●
Cosφ								
THD (Total Harmonic Distortion)								
Detailed hamonic analysis (orders)								
Page	23-10/11			23-10/11	23-10	23-10/11	23-10/11	
EXPANSION MODULES								
Digital inputs/outputs								●
Analog inputs/outputs								
Communication ports								USB RS232 RS485 Ethernet
Ethernet Gateway function								
GPRS-GSM modem								
Type of memory								

	ENERGY METERS - MULTIMEASUREMENT			MULTIMETERS - POWER ANALYZERS								
												
	DME D300 T2	**DME D310 T2**	**DME D320**	**DMG 200**	**DMG 210**	**DMG 300**	**DMG 600**	**DMG 610**	**DMG 700**	**DMG 800**	**DMG 900**	**DMG 900T**
	Three phase			Single / Three phase								
	63A											
		5A	5A	5A	5A	5-1A	5-1A	5-1A	5A	5-1A	5-1A	5-1A
			●	●	●	●	●	●	●	●	●	●
	2 Programmable	2 Programmable										
	1 Programmable	1 Programmable										
			RS485		RS485			RS485				RS485 or RS232
		●				●	●	●	●	●	●	●
	●	●										
	●	●										
	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.2%	±0.5%	±0.5%	±0.5%	±0.2%	±0.2%	±0.2%
	Class 1 / Class B	Class 1 / Class B	Class 1	Class 1	Class 2	Class 0.5S	Class 1	Class 1	Class 1	Class 0.5S	Class 0.5S	Class 0.5S
	IP40			IP40			IP54		IP65			
	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●
											●	●
			●	●	●	●	●	●	●	●	●	●
						2 to 31°				2 to 31°	2 to 63°	2 to 63°
	23-12 to 14		23-12	23-16		23-17	23-18		23-18		23-19	
		●				●	●	●	●	●	●	
										●	●	
		USB RS232 RS485 Ethernet				USB RS232 RS485 Ethernet	USB RS232 RS485 Ethernet	USB RS232 RS485 Ethernet	USB RS232 RS485 Ethernet	USB RS232 RS485 Ethernet Profibus	USB RS232 RS485 Ethernet Profibus	
						●				●	● (SMS, email, Client FTP), GPRS data connection	
											●	
		Data-logger				Data-logger				Data-logger	Data-logger + Energy Quality EN 50160	

Single phase, non expandable

DME M100

DME D110 T1...

DME D115
DME D120 T1... - DME D121

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Mechanical meter with mechanical display.			
DME M100	32A direct connection, 1U	1	0.084
DME M100 T1	32A direct connection, 1U 1 pulse output	1	0.088
Digital meter, with LCD screen.			
DME D100 T1	40A direct connection, 1U 1 pulse output, 220-240VAC	1	0.086
DME D100 T1 A120	40A direct connection, 1U 1 pulse output, 110-120VAC	1	0.086
DME D110 T1	40A direct connection, 1U 1 programmable static output, multi-measurements ❶, 220-240VAC	1	0.090
DME D110 T1 A120	40A direct connection, 1U 1 programmable static output, multi-measurements ❶, 110-120VAC	1	0.090
Digital meter with backlight LCD screen.			
new **DME D115 T1**	40A direct connection, 2U, 1 programmable static output, multi-measurements ❷, 220-240VAC	1	0.090
DME D120 T1	63A direct connection, 2U 1 programmable static output, multi-measurements ❶, 220-240VAC	1	0.148
DME D120 T1 A120	63A direct connection, 2U 1 programmable static output, multi-measurements ❶, 110-120VAC	1	0.148
new **DME D121**	63A direct connection, 2U, RS485 interface multi-measurements ❶, 220-240VAC	1	0.148

Single phase, expandable

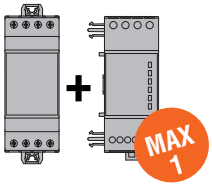
DME D130

EXM 10 10

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter with backlight LCD screen.			
new **DME D130**	63A direct connection, 2U, multi-measurements❶, expandable, 220-240VAC	1	0.148

Order code	Description
DME D130 EXPANSION MODULES.	
Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs 5A 250VAC
new **EXM10 02**	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Opto-isolated Ethernet interface
EXM10 20	Opto-isolated RS485 and 2 relay outputs rated 5A 250VAC

Maximum combination



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

Operational characteristics
DME M... (mechanical display)
- Rated supply voltage: 230VAC -20...+15%
- Direct connection
- 32A maximum current
- Active energy measurements
- Active energy accuracy: Class 1 (IEC/EN 62053-21)
- Mechanical meter with 6+1 digit count
- Flashing LED for consumption indication
- Static pulse output for DME M100 T1 only
- Modular DIN 43880 housing, 1 module
- Sealable terminal blocks, standard supplied
- IEC degree of protection: IP40 on front; IP20 at terminals.

DME D110T1–DME D110 T1–DME D115 T1–DME D120 T1–DME D121–DME D130
- Nominal supply voltage:
  - 220-240VAC for DME D…T1 - DME D1120/130
  - 110-120VAC for DME D…T1 A120
- Voltage range:
  - 187-265VAC 50/60Hz for DME D…T1-DME D120/130
  - 93-132VAC 60 Hz for DME D…T1 A120
- Direct connection
- Maximum current: 40A for DME D100/110 T1…, DME D115 T1; 63A for DME D120 T1… and DME D121/130
- Active energy measurement and accuracy: Class 1 (IEC/EN 62053-21)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23) except for DME D115 T1
- LCD meter : With 5+1 digit count for DME D100/110 T1…; backlight with 6+1 digit count for DME D115/120 T1… and DME D121/130
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurement except for DME D100/110 T1…
- One output: Pulse for DME D100 T1; programmable static for all other types
- Built-in RS485 port for DME D121 and optional for DME D130; both compatible with Synergy
- Modular housing, 1 module for DME D100/110 T1…; 2 module for all other types
- Sealable terminal blocks, standard supplied
- IEC/UL/CSA protection degree: IP51 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E346886), as Electrical Process Control Equipment - Energy meters, for DME D... types.
Compliant with standards: IEC/EN 61326-1 for DME M... type; EN 50470-3, IEC/EN 61010-1, UL 61010-1, CSA C22.2 n°61010-1 for DME D... types.

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 on every last 15 minutes)
- Maximum demand.

❷ Multi-measurements:
- Total and partial active energy
- Active power
- Average active power (calculation on every last 15 minutes)
- Maximum demand.

Single phase, non expandable, MID certified

MID

DME D110 T1 MID

DME D120 T1 MID

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter with LCD display.			
DME D100 T1 MID	40A direct connection, 1U 1 pulse output, 230VAC	1	0.086
DME D110 T1 MID	40A direct connection, 1U 1 programmable static output, multi-measerements ❶, 230VAC	1	0.090
DME D120 T1 MID	63A direct connection, 2U 1 programmable static output, multi-measerements ❶, 230VAC	1	0.148

General characteristics
The DME series energy meters, MID certified, are needed for billing purposes between electricity supplliers 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 must be certified accordingly whenever used for monetary transactions in this territory.

Operational characteristics
Nominal supply voltage: 230VAC
- Voltage range: 187-264VAC 50Hz
- Direct connection
- Maximum current: 40A for DME D100/110 T1 MID; 63A for DME D120 T1 MID
- Measurement of 14 electrical parameters for DME D110/120 T1 MID
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- LCD meter:
  - With 5+1 digit count for DME D100/110 T1 MID
  - Backlight with 6+1 digit count for DME D120 T1 MID
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements in DME D120 T1 MID
- One output: pulse for DME D100 T1 MID; programmable static for other types
- Modular housing, 1 module for DME D100/110 T1 MID; 2 module for DME D120 T1 MID
- Sealable terminal blocks, standard supplied
- EN protection degree: IP51 on front; IP20 at terminals.

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

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 on every last 15 minutes)
- Maximum demand.

Three phase with or without neutral, non expandable

DME D300 T2

DME D320

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three phase with neutral.			
DME D300 T2	63A direct connection, 4U, 2 programmable static outputs, multi-measurements ❶	1	0.360
Digital meter for three phase with or without neutral.			
DME D320	Connection by CT /5A secondary, 4U, RS485 interface, multi-measurements❶	1	0.332

Three phase with or without neutral, expandable

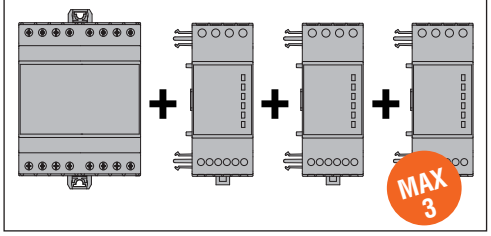
DME D310 T2

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three phase with or without neutral.			
DME D310 T2	Connection by CT /5A secondary, 2 programmable static outputs, 4U, multi-measurements ❶, expandable	1	0.332

EXM 10 10

Order code	Description
DME D310 T2 EXPANSION MODULES. Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Ethernet interface with Web server function
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC
EXM10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging

Maximum combination



General characteristics
The energy meters are digital meters/analyzers of electric energy for systems with direct three-phase connection or by CT.
Expandable with up to 3 EXM series interfaced by infrared beam.

Operational characteristics
- Nominal supply voltage:
  - 220-240VAC (L-N); 380-415VAC (L-L) for DME D300/310 T2
  - 100-240VAC / 110-250VDC for DME D320
- Voltage range:
  - 187-264VAC (L-N); 323-456VAC (L-L) 50/60Hz for DME D300/310 T2
  - 85-264VAC 50/60Hz; 93.5-300VDC for DME D320
- Direct connection 63A for DME D300 T2
- Connection by CT /5A for DME D320 T2 and DME D320
- Active energy measurement and accuracy: Class 1 (IEC/EN 62053-21)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- Voltage measurement range: 20-830VAC L-L; 10-480VAC (L-N) for DME D320
- LCD multifunction meter
- Metrological LED with pulse emission for consumption indication
- Clearable partial active energy measurements
- 1 programmable digital input except DME D320
- 2 programmable static outputs except DME D320
- Built-in RS485 port for DME D320 and optional for DME D310 T2; compatible with Synergy software
- Optic interface for EXM series expansion modules with DME D310 T2
- Modular housing, 4 module
- Sealable terminal blocks, standard supplied
- IEC/UL/CSA degree of protection: IP51 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

Certifications and compliance
Certifications obtained: EAC for all; UL Listed for USA and Canada (cULus – File E93601), as Auxiliary Devices, Multimeters for DME D320.
Compliant with standards: EN 50740-3, IEC/EN 61010-1, UL508,CSA C22.2 n°14.

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 on every last 15 minutes)
- Maximum demand.

Three phase with neutral, non expandable, MID certified

MID

DME D300 T2 MID

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three phase with neutral.			
DME D300 T2 MID	63A direct connection, 4U 2 programmable static outputs, non expandable, multi-measurements❶	1	0.360

Three phase with or without neutral, expandable, MID certified

MID

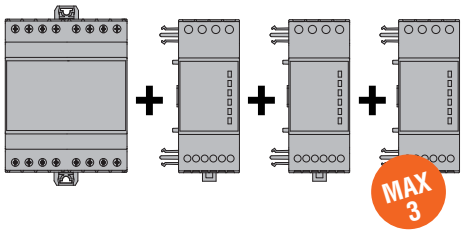
DME D310 T2 MID

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three phase with or without neutral.			
DME D310 T2 MID	Connection by CT /5A secondary, 2 programmable static outputs, 4U, multi-measurements ❶, expandable	1	0.332

EXM 10 10

Order code	Description
DME D310 T2 MID EXPANSION MODULES. Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Ethernet interface with Web server function
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC
EXM10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging

Maximum combination



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 or CT connected three-phase installations.
Expandable with up to 3 EXM series interfaced by infrared beam.

Operational characteristics
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187-264VAC (L-N); 323-456VAC (L-L) 50Hz
- Direct connection 63A for DME D300 T2
- Connection by CT /5A for DME D320 T2
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- LCD multifunction meter
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- 2 programmable static outputs
- Optic interface for EXM series expansion modules with DME D310 T2 MID compatible with Synergy software
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN protection degree: IP51 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

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

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 on every last 15 minutes)
- Maximum demand.

Three phase with or without neutral, MID certified

DME D300 F

new

new

Starter kits

DME D310 F...

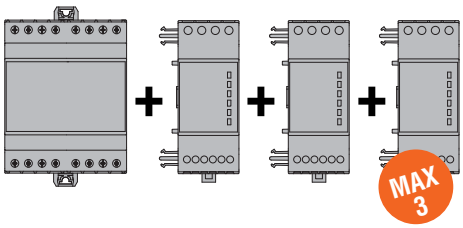
EXM 10 10

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three phase with neutral, complete with UTF certificates for installations in Italy.			
DME D300 F	MID certified type, 63A direct connection, 4U, 2 programmable static outputs, non expandable, multi-measurements, complete with UTF certificate	1	0.360
Starter kits with digital MID certified meter 4U, expandable for three phase with or without neutral and 3 current transformers, 0.5S class, all with UTF certificates for installations in Italy.			
DME D310 F060	Composed of one DMED310T2MID and n°3 transformers DM5T0060	1	2.100
DME D310 F080	Composed of one DMED310T2MID and n°3 transformers DM5T0080	1	2.200
DME D310 F100	Composed of one DMED310T2MID and n°3 transformers DM5T0100	1	1.900
DME D310 F150	Composed of one DMED310T2MID and n°3 transformers DM5T0150	1	1.900
DME D310 F200	Composed of one DMED310T2MID and n°3 transformers DM5T0200	1	1.900
DME D310 F250	Composed of one DMED310T2MID and n°3 transformers DM5T0250	1	1.900
DME D310 F300	Composed of one DMED310T2MID and n°3 transformers DM5T0300	1	1.900

NOTE: Other starter kits are available with 3 CTs up to 1600A.
Consult Customer Service for information; see contact details on inside front cover.

Order code	Description
DME D310 F EXPANSION MODULES. Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Opto-isolated Ethernet interface
EXM10 20	Opto-isolated RS485 and 2 relay outputs rated 5A 250VAC

Maximum combination



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 or CT connected three-phase installations.
Expandable with up to 3 EXM series expansion modules interfaced by infrared beam.
MID is the Measuring Instruments Directive of the European Union; instruments must be certified accordingly whenever used for monetary transactions in this territory.
The UTF certificate is required for revenue tax purposes by Italian authorities when equipment is part of generating electricity installations (e.g. solar, wind) and there is electricity exchange with the power grid.

Operational characteristics
DME D300 F and DME D310 T2 MID of starter kits
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187-264VAC (L-N); 323-456VAC (L-L) 50Hz
- Direct connection 63A for DME D300 F
- Connection by CT /5A, standard supplied, for DME D320 T2 MID
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- LCD multifunction meter
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- 2 programmable static outputs
- Optic interface for EXM series expansion modules with DME D310 T2 MID compatible with Synergy software
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN protection degree: IP51 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 on every last 15 minutes)
- Maximum demand.

DM5T CURRENT TRANSFORMERS of starter kits
- Operating frequency: 50-60Hz
- Secondary output current: 5A
- Class 0.5S burden
- 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
- For Ø28mm/1.1" cable
- For 21.5x21.5mm/0.85x0.85", 26x26mm/1.02x1.02", 31.5x31.5mm/1.24x1.24" busbars
- Screw fixing terminals
- Standard supplied sealable terminal covers and fixing elements
- EN degree of protection: IP30.

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

Certifications and compliance
Certifications obtained: MID Class B, certifications per module B (type tests) and per module D (production conformity) for DME D300 F and DME D310F energy meters. UTF certificates for the DME D300F and for each component of the starter kits are standard supplied.
Compliant with standards: EN 50470-1, EN 50470-3 for DME D300F and DME D310 T2 MID; IEC/EN 60044-1 for DM5T...

Expandable

DME CD - DME CD PV1

DME KIT CD PV1100

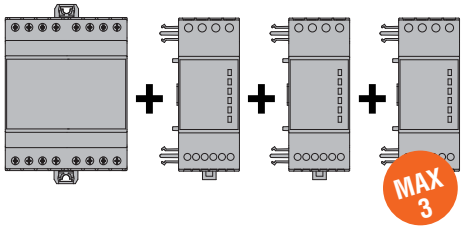
Order code	Description	Qty per pkg	Wt
		n°	[kg]
Data concentrator for general use.			
DME CD	With 8 programmable digital inputs, 4U, expandable, RS485 port, for data collection+pulse count from DMEM100T1 and DMED…❶, expandable	1	0.337
Data concentrator for photovoltaic applications.			
DME CD PV1	Programmed for installation control and data collection+pulse count from two DMED❶ minimum, 4U, RS485 port, expandable	1	0.340
DME KIT CD PV1100	Starter kit composed of one data concentrator DMECDPV1 and two energy meters DMED110T1	1	0.515

❶ Use with DMED110T1, DMED115T1, DMED120T1, DMED300T2 and DMED310T2.

EXM 10 10

Order code	Description
DME CD AND DME CD PV1 EXPANSION MODULES. Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
EXM10 02	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Ethernet interface with Web server function
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs, rated 5A 250VAC
EXM10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging

Maximum combination



General characteristics
DMECD is equipped with 8 inputs, which can be increased up to a maximum of 14 and allows to indirectly interface devices without communication as long as they have at least one pulse output.
It is capable of pulse counting that come 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 (STILIZZATO) software.
It can be expanded with up to 3 EXM series modules by optic interface.
With the programmable functions, average values can be determined for instantaneous quantities, such as power, speed, production rate, gas and water consumption, etc.

DMECDPV1 is specific for the monitoring of solar installations and needs to be connected to at least two DMED… meters (single or three phase). The user can avail of data, such as energy produced by the generating installation, energy consumed by loads as well as exchanged energy (difference between import and export energy) with the power supplier.
It is already programmed to automatically calculate the self-consuming index, mean power values, production (total and partial values) and the operating status of the AC/DC inverter, if it is equipped with digital outputs.
In addition, it can be customised by the user for load supervision, using the EXM series expansion modules, according to the defined logics and on the basis of the energy available.

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

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

Certifications and compliance
Certifications obtained: EAC for all; UL listed for USA and Canada (cULus – File E346886), as Electrical Process Control Equipment – Data concentrator for DMECD; pending for DMECDPV1 and DMEKITCDPV1100.

Modular LCD multimeters non expandable

DMG 200 - DMG 210

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 200	Graphic 128x80 pixel LCD, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.294
DMG 200 L01	Graphic 128x80 pixel LCD, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.294
DMG 210	Graphic 128x80 pixel LCD, RS485 port, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.300
DMG 210 L01	Graphic 128x80 pixel LCD, RS485 port, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.300

Starter kits

DMG KIT 200 150

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG KIT 200 060	Composed of one DMG200 multimeter and n°3 CTs 60/5A for Ø22mm/0.87" cable	1	1.035
DMG KIT 200 080	Composed of one DMG200 multimeter and n°3 CTs 80/5A for Ø22mm/0.87" cable	1	1.035
DMG KIT 200 100	Composed of one DMG200 multimeter and n°3 CTs 100/5A for Ø22mm/0.87" cable	1	1.035
DMG KIT 200 150	Composed of one DMG200 multimeter and n°3 CTs 150/5A for Ø23mm/0.91" cable	1	0.856
DMG KIT 200 200	Composed of one DMG200 multimeter and n°3 CTs 200/5A for Ø23mm/0.91" cable	1	0.856
DMG KIT 200 250	Composed of one DMG200 multimeter and n°3 CTs 250/5A for Ø23mm/0.91" cable	1	0.856

General characteristics
DMG 200... and DMG 210 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 an installation. Very accurate measurements combined with their extreme compactness provide an ideal solution for every type of application.
The DMG 210 version is supplied with RS485 opto-isolated built-in interface.
Main measurements and functions include:
- 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
- Total harmonic distortion (THD) of voltage and current values
- Energy meters for active, reactive and apparent values
- Hour counter for programmable total and partial hours.

Operational characteristics
DMG200 - DMG210
- 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
- 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% (50-830VAC)
  - Current: ±0.5% (0.1-1.1 In)
  - Power: ±1% f.s.
  - Frequency: 0.05%
  - Active energy: Class 1 (IEC/EN 62053-21)
  - Reactive energy: Class 2 (IEC/EN 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU and ASCII for DMG 210 only
- Programming and remote control by software for DMG 210 only; compatible with Synergy software
- Modular housing, 4 module
- IEC protection degree: IP40 on front; IP20 at terminals.

CURRENT TRANSFORMERS (CTs) of starter kits
- Operating frequency: 50-60Hz
- Secondary output current: 5A
- Class 1 burden
- 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
- Standard supplied fixing elements
- IEC degree of protection: IP30.

Synergy supervision and energy management software
See Section 27.

Certifications and compliance
Certifications obtained: EAC for all; UL Listed for USA and Canada (cULus - File E93601) as Auxiliary Devices - Multimeter for DMG200/210… types.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL508, CSA C22.2 n°14 for DMG200/210…; IEC/EN 60044-1 for transformers of starter kits.

Modular LCD multimeters expandable

DMG 300

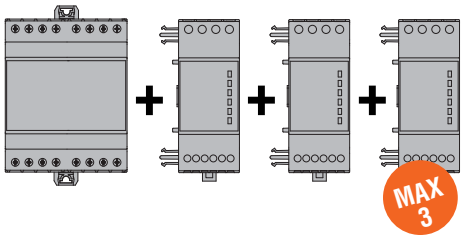
Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 300	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.320
DMG 300 L01	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100-240VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.320

EXM 10 10

new

Order code	Description
DMG 300 EXPANSION MODULES. Inputs and outputs.	
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated
EXM10 01	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
EXM10 02	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXM10 10	Opto-isolated USB interface
EXM10 11	Opto-isolated RS232 interface
EXM10 12	Opto-isolated RS485 interface
EXM10 13	Ethernet interface with Web server function
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs rated 5A 250VAC
EXM10 30	Data storage, clock-calendar (RTC) with backup battery for data logging

Maximum combination



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 EXM series modules interfaced by infrared beam.
Main measurements and functions include:
- 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 measuements
- 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
- Accuracy:
  - Voltage: ±0.2% (50-830VAC)
  - Current: ±0.2% (0.1-1.1 In)
  - Power: ±0.5% f.s.
  - Power factor: ±0.5%
  - Frequency: 0.05%
  - Active energy: Class 0.5S (IEC/EN 62053-22)
  - Reactive energy: Class 2 (IEC/EN 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 software
- Modular housing, 4 module
- IEC protection degree: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 27.

EXM series expansion modules
See Section 28, page 3.

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

Flush mount LCD multimeters, expandable

DMG 600 - DMG 610

DMG 700 - DMG 800…

DMG M3 800 01

EXP 10…

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 600	Backlight icon LCD, 72x46mmm/2.8x1.8", auxiliary supply 100-400VAC / 120-250VDC, front optical port	1	0.300
DMG 610	Backlight icon LCD, 72x46mmm/2.8x1.8", auxiliary supply 100-400VAC / 120-250VDC, front optical port and RS485 port	1	0.350
DMG 700	Graphic 128x80 pixel LCD, auxiliary supply 100-440VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.510
DMG 700 L01	Graphic 128x80 pixel LCD, auxiliary supply 100-440VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.510
DMG 800	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100-440VAC/110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.510
DMG 800 L01	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100-440VAC/110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.510
DMG 800 D048	Graphic 128x80 pixel LCD, with harmonic analysis, auxiliary supply 12-24-48VDC	1	0.520
DMG M3 800 01	DMG 800 portable unit in M3N case, prewired, for mobile applications, with USB port, without external cable (see page 23-31)	1	3.300

Order code	Description
DMG 600/610, DMG 700 AND DMG 800 EXPANSION MODULES Inputs and outputs.	
EXP10 00	4 opto-isolated digital inputs
EXP10 01	4 opto-isolated static outputs
EXP10 02	2 digital inputs and 2 static outputs, opto-isolated
EXP10 03	2 relay outputs rated 5A 250VAC
EXP10 04	2 opto-isolated analog inputs 0/4-20mA or PT100 or 0-10V or 0...±5V for DMG 800
EXP10 05	2 opto-isolated analog outputs 0/4-20mA or 0-10V or 0...±5V for DMG 800
EXP10 08	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXP10 10	Opto-isolated USB interface
EXP10 11	Opto-isolated RS232 interface
EXP10 12	Opto-isolated RS485 interface
EXP10 13	Opto-isolated Ethernet interface with web server function for DMG 800
EXP10 14	Opto-isolated Profibus-DP interface for DMG 800
EXP10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging for DMG 800

General characteristics
DMG 600, DMG 610, DMG 700 and DMG 800 digital multimeters are capable of viewing the measurements with high accuracy on the wide graphic LCD, which allow to control energy distribution networks.
They are available with a flush-mount housing, 96x96mm/3.78x3.78" size, and expansion slots to fit plug-in expansion modules (1 for DMG 600/610 and 4 for DMG 700/800) suitable for numerous applications.
The main features include an extended power supply voltage range, high measurement accuracy, expandability and graphic interactive interface for simple use.
Main measurements and functions include:
- 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 31° order with DMG 800 only
- Energy meters for active, reactive, apparent partial and total values with 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:
  - 100-400VAC / 120-250VDC for DMG 600/610
  - 90-484VAC / 93.5-300VDC for DMG 700/800
  - 9-70VDC for DMG 800 D048
- Voltage measurement range:
  - 50-720VAC for DMG600/610
  - 20-830VAC L-L / 10-480VAC L-N for DMG 700/800
- Usage in medium and high voltage systems with voltage transformers
- Rated input current: By external CT 5A for DMG 700; 1A or 5A for DMG 600/610 and DMG 800…
- Frequency measurement range: 45-66Hz
- True RMS measurements: for voltage and current
- Measurement accuracy for DMG 600/610-DMG 700:
  - Voltage: ±0.5% (50-720VAC DMG 600/610; 50-830VAC DMG 700)
  - Current: ±0.5% (0.1-1.1In)
  - Power: ±1% f.s.
  - Frequency: ±0.05%
  - Active energy: Classe 1 (IEC/EN 62053-22)
  - Reactive energy: Class 2 (IEC/EN 62053-23)
- Measurement accuracy for DMG 800…:
  - 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: Classe 0.5S (IEC/EN 62053-22)
  - Reactive energy: Class 2 (IEC/EN 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU, ASCII and TCP
- Compatible with Synergy software
- Flush-mount housing 96x96mm/3.78x3.78"
- IEC degree of protection: On front IP54 DMG600/610; IP65 all others. All IP20 at terminals

Overall M3N case dimensions: See page 4-17.

Synergy supervision and energy management software See Section 27.

EXP series expansion modules See Section 28, page 2.

Certifications and compliance
Certifications obtained: EAC for all except DMGM380001; UL listed for USA and Canada (cULus – File E93601), as Auxiliary Devices – Multimeters for DMG… types pending for DMG600/610 and excluding DMGM380001.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22-2 n°14.

Flush mount LCD touch-screen power analyzers, expandable

DMG 900...

new

DMG M3 900 01

DMG 900T...

DMG 900RD

new

EXP 10...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 900	Graphic 128x112 pixel touch-screen LCD, harmonic analysis, 4 current channels, (neutral meas.) auxiliary supply 100-440VAC/ 110-250VDC. Multilanguage: Italian, English, French, Spanish and Portuguese	1	0.566
DMG 900 L01	Graphic 128x112 pixel touch-screen LCD, harmonic analysis, 4 current channels, (neutral meas.) auxiliary supply 100-440VAC/ 110-250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.566
DMG M3 900 01	DMG 900 portable unit in M3N case, prewired for mobile applications, with USB port, without external cables (see page 23-31)	1	3.400
DMG 900 D048	Graphic 128x112 pixel touch-screen LCD, harmonic analysis, auxiliary supply 12-24-48VDC	1	0.580
DMG 900T	Measurement transducer, harmonic analysis, 4 channels, auxiliary supply 100-440VAC/110-250VDC, RS232/RS485 ports ❶	1	0.570
DMG 900T D048	Measurement transducer, harmonic analysis, 4 channels, auxiliary supply 12-24-48VDC, RS232/RS485 ports ❶	1	0.590
Remote display for DMG 900T...			
DMG 900RD	Graphic 128x112 pixel touch screen LCD, with 3m/9.8ft long connecting cable ❷	1	0.396

❶ No simultaneous operations of serial ports; only one port can be used at a time. Consult instructions manual for details.
❷ Direct link to DMG 900T dedicated port: powered directly by DMG 900T.

Order code	Description
DMG 900 and DMG 900 T EXPANSION MODULES. Inputs and outputs.	
EXP10 00	4 opto-isolated digital inputs
EXP10 01	4 opto-isolated static outputs
EXP10 02	2 digital inputs and 2 static outputs, opto-isolated
EXP10 03	2 relay outputs rated 5A 250VAC
EXP10 04	2 opto-isolated analog inputs 0/4-20mA or PT100 or 0-10V or 0...±5V
EXP10 05	2 opto-isolated analog outputs 0/4-20mA or 0-10V or 0...±5V
EXP10 08	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC
Communication ports.	
EXP10 10	Opto-isolated USB interface
EXP10 11	Opto-isolated RS232 interface
EXP10 12	Opto-isolated RS485 interface
EXP10 13	Opto-isolated Ethernet interface with Web server function
EXP10 14	Opto-isolated Profibus-DP interface
EXP10 15	GPRS/GSM modem
EXP10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging
EXP10 31	Data storage, with Energy Quality (EN 50160), clock-calendar (RTC) with backup reserve energy for data logging

General characteristics
DMG 900... expandable digital power analyzers are available with a flush-mount housing, 96x96mm/3.78x3.78" size. The wide graphic touch screen display provides extremely simple interacting between the device and the user.
The high performance of the power analyzers gives very accurate measurements and can control energy distribution networks, to detect and prevent energy problems which could compromise quality and supply.
The main features include an extensive power supply voltage range, high measurement accuracy, expandability up to 4 plug in expansion modules.
There also is available the DMG 900T measurement transducer which can be used with the DMG 900RD remote display. The DMG 900T, without display, is arranged for mounting inside the panel board, on 35mm DIN rail, and is an ideal solution for installations where the measurements of various multimeters must be remotely viewed.
The DMG 900RD remote display connected to the DMG 900T transducer can display the measurements on the panel front while power connections remain inside the panel.
Main measurements and functions include:
- Voltage: phase, phase-neutral and ground neutral-earth
- Supply voltage value for the DC supply types only
- Current: phase values
- Neutral current calculated and true values
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Cosφ per phase and total
- Frequency of measured voltage value
- Voltage and current asymmetry
- Total harmonic distortion (THD) of voltage and current
- Harmonic analysis of voltage and current up to the 63° order
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Energy meters for active, reactive, apparent partial and total values with 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
- Energy quality analysis to EN 50160 with expansion module only.

Operational characteristics
- Auxiliary supply voltage range:
  90-484VAC / 93.5-300VDC for DMG 900 and DMG 900T;
  9-70VDC for DMG 900 D048 and DMG 900T D048
- 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: 5A or 1A by CT up to 10,000A
- Current measurement range: 0.01-10A or 0.002-1.2A
- Frequency measurement range: 45-66Hz / 360-440Hz
- True RMS measurements for voltage and current values
- 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 62053-22)
  - Reactive energy: Class 2 (IEC/EN 62053-23)
- Non-volatile memory for data and event (last 100) storage
- Communication protocol Modbus-RTU, ASCII and TCP with communication expansion modules only
- Programming and remote control by software with communication expansion modules only; Synergy compatible
- Housing: Flush mount 96x96mm/3.78x3.78" for DMG900... and DMG 900RD; 35mm DIN rail (IEC/EN 60715) fixing for DMG 900T
- IEC protection degree: IP65 on front for DMG 900... and DMG 900RD; IP20 at terminals for DMG 900... - DMG 900T.

Synergy supervision and energy management software
See Section 27.

EXP series expansion modules
See Section 28, page 2.

Certifications and compliance
Certifications obtained: EAC for all except DMG M3...;
UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters for all except DMG M3...
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 508, CSA C22.2 n°14.

Flush-mount LED instruments single phase non expandable

DMK 0...

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK 00	1 voltage value 1 max voltage value 1 min voltage value	–	1	0.290
DMK 00 R1❷		1	1	0.323
Ammeter.				
DMK 01	1 current value 1 max current value 1 min current value	–	1	0.290
DMK 01 R1❷		1	1	0.323
Voltmeter or ammeter.				
DMK 02❶	1 voltage or current value 1 maximum voltage or current value 1 minimum voltage or current value	–	1	0.290
Frequency meter.				
DMK 03	1 frequency value 1 max frequency value 1 min frequency value	–	1	0.290
DMK 03 R1❷		1	1	0.323
Cosphi meter.				
DMK 04	1 cosphi value 1 power factor value	–	1	0.290
DMK 04 R1❷		1	1	0.323

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 DMK 0... instruments are available with flush-mount housing, 96x48mm/3.78x1.9" size.
Measurements are True RMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415AC type on request
- Operating frequency: 50-60Hz
- True RMS measurements
- HIGH and LOW measurement storage
- 1 relay output with 1 changeover contact (SPDT) for DMK...R1 only
- Housing: Flush mount 96x48mm/3.78x1.9"
- Terminals: 4mm^2
- IEC protection degree: IP54 on front; IP20 at terminals.

DMK 00 - DMK 00 R1
- Voltage measurement range: 15-660VAC
- Operating frequency range: 45-65Hz
- Programmable VT ratio: 1.00-500.00
- Accuracy: ±0.25% f.s. ±1 digit

DMK 01 - DMK 01 R1
- 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

DMK 02
- Voltage measurement range: 15-660VAC
- 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

DMK 03 - DMK 03 R1
- Measurement input: 15-660VAC
- Frequency measurement range: 15-65Hz
- Accuracy: ±1 digit

DMK 04 - DMK 04 R1
- Cosphi measurement error: ±0.5° ±1 digit
- Cosphi measurement in 4 quadrants
- Accuracy: ±1° ±1 digit

Control and protection functions
DMK 00 R1
- 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, phase loss ❸: 0.0-900.0 seconds.

DMK 01 R1
- 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 ❸: 0.0-900.0 seconds.

DMK 03 R1
- Maximum frequency: OFF/101-110%
- Minimum frequency: OFF/90-99%
- Time delay for min-max frequency ❸: 0.5-900.0 seconds.

DMK 04 R1
- Minimum-maximum cosφ thresholds in 4 quadrants
- Minimum-maximum PF thresholds in 4 quadrants
- Delay time for max or min threshold ❸: 1-9,000 seconds.

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

❸ Independent adjustable delays.

Flush-mount LED instruments three phase non expandable

DMK 1...

Order code	Displayd measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK 10	3 phase voltage values	–	1	0.297
DMK 10 R1❷	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.				
DMK 11	3 phase current values	–	1	0.292
DMK 11 R1❷	3 maximum phase current values 3 minimum phase current values	1	1	0.336
Combined voltmeter, ammeter and wattmeter.				
DMK 15	3 phase voltage values	–	1	0.332
DMK 15 R1❶❷	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 DMK 1... instruments are available with flush-mount housing, 96x48mm/3.78x1.9" size.
Measurements are TRMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415VAC type on request
- Operating frequency: 50-60Hz
- TRMS measurements
- HIGH and LOW measurement storage
- 1 relay output with 1 changeover contact (SPDT) for DMK...R1 only
- Housing: Flush mount 96x48mm/3.78x1.9"
- Terminals: 4mm^2
- IEC protection degree: IP54 on front; IP20 at terminals.

DMK 10 - DMK 10 R1
- Voltage measurement range: 15-660VAC
- Operating frequency range: 45-65Hz
- Programmable VT ratio: 1.00-500.00
- Accuracy: ±0.25% f.s. ±1 digit.

DMK 11 - DMK 11 R1
- 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.

DMK 15 - DMK 15 R1
- 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
DMK 10 R1
- 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.

DMK 11 R1
- 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.

DMK 15 R1
- 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%
- Freuency
  - 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; UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 508, CSA C22.2 n° 14.

❸ Independent adjustable delays.

Flush-mount LED multimeter three phase non expandable

DMK 16

Order code	Displayed measurements	Qty per pkg	Wt
		n°	[kg]
DMK 16	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	1	0.350

General characteristics
The DMK 16 multimeter is available with flush-mount housing, 96x48mm/3.78x1.9” size.
Measurements are True RMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415VAC type on request
- 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 62053-21 and IEC/EN 62053-23)
- HIGH and LOW measurement storage
- Voltage measurement range: 35-660VAC
- Current measurement range: 0.05-5.75A
- Operating frequency range: 45-65Hz
- Programmable VT ratio: 1.00-500.0
- Programmable CT ratio: 5-10,000
- Housing: Flush mount 96x48mm/3.78x1.9”
- Terminals: 4mm^2
- IEC protection degree: IP54 on front; IP20 at terminals.

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

Flush-mount LED multimeter three phase non expandable

DMK 16 R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
DMK 16 R1❶	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 minimum and maximum active power values, phase and total 4 minimum and maximum reactive power values, phase and total 4 minimum and maximum 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 DMK 16 R1 multimeter is available with flush-mount housing, 96x48mm/3.78x1.9” size.
Measurements are True RMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415VAC type on request
- 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 62053-21 and IEC/EN 62053-23)
- HIGH and LOW 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/3.78x1.9”
- Terminals: 4mm^2
- IEC protection degree: 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: EAC; UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices-Multimeters.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 508, CSA C22.2 n° 14.

❷ Independent adjustable delays.

Flush mount LED multimeters non expandable 47 electrical parameters

DMK 2...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMK 20	Basic version, auxiliary supply 208-240VAC	1	0.434
DMK 21	Version with energy meters included, auxiliary supply 208-240VAC	1	0.477
DMK 22	Version with energy meters and RS485 port included, auxiliary supply 208-240VAC	1	0.477
DMK 25	Version for generating set duty, auxiliary supply 12-24VDC	1	0.350

General characteristics
DMK 2... digital multimeters are available with fush-mount housing, 96x96mm/3.78x3.78" size. They monitor and view reliable readings of electrical parameters, even in presence of critical operating conditions, such as voltages and currents with high harmonic content and variable frequency. The total and partial hour counter feature provides an interesting feature for electric panels of emergency generating sets.
The diversified and accurate measurements give the multimeters valuable technical and cost effective advantages respect to traditional analog instrumentation.
DMK2... digital multimeters view 47 electrical parameters:
- Voltage: phase, line and system values
- Battery voltage: 9-32VDC for DMK 25 only
- Current: phase values
- Power: apparent phase, active and reactive values
- P.F.: power factor per phase
- Frequency (measured voltage frequency)
- HIGH/LOW: instantaneous minimum and maximum values of each phase voltage and current, total active power (ΣW), total reactive power (Σvar) and total apparent power (ΣVA) values
- Total hours: non-volatile clearable log for DMK 20 and DMK 25 only
- Partial hours: non-volatile configurable log for DMK 20 and DMK 25 only
- Active and reactive energy meters for DMK21 and DMK22 only.

Operational characteristics
- Auxiliary supply voltage range:
  - 154-288VAC for DMK 20
  - 177-264VAC for DMK 21-DMK 22
  - 9-32VDC for DMK 25
- Voltage measurement range: 60-830VAC phase-phase
  30-480VAC phase-neutral
- Current measurement range: 0.05-6A
- Frequency measurement range: 45-65Hz
- Programmable CT ratio: 1.0-2,000
- Voltage accuracy: Class 0.5 ±0.35% f.s. (830V)
- Current accuracy: Class 0.5 ±0.5% f.s. (6A)
- Active energy accuracy: Class 2
- Non-volatile total and partial hour counter with separate clearing; used as maintenance interval with alarm display in DMK 20 - DMK 25 only
- HIGH and LOW value functions to read and log instantaneous voltage, current and power values
- Delayed automatic resetting of default measurements
- Averaging function to slow down repetitive fluctuations to obtain more stable readouts
- Current connection in ARON configuration by 2 current transformers (CTs) only
- Single, two, three phase, with or without neutral, and balanced three-phase connection
- RS485 serial port, compatible with Synergy software
- TRMS measurements up to 22° harmonic order
- Housing: Flush mount 96x96mm/3.78x3.78"
- IEC protection degree: IP54 on front; IP 20 at rear.

Synergy supervision and energy management software
See Section 28.

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

Flush mount LED multimeters non expandable 251 electric parameters

DMK 3...
DMK 40

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMK 30	Basic version, auxiliary supply 100-240VAC / 110-250VDC	1	0.410
DMK 31	Version with 1 relay and 1 static programmable outputs, auxiliary supply 100-240VAC / 110-250VDC	1	0.480
DMK 32	Version with 1 relay and 1 static programmable outputs and RS485 opto-isolated port, auxiliary supply 100-240VAC / 110-250VDC	1	0.490
DMK 32 D048	Version with 1 relay and 1 static programmable outputs and RS485 opto-isolated port, auxiliary supply 24-48VDC	1	0.485
DMK 40	Version with data-logger, RS232 and RS485 opto-isolated ports, auxiliary supply 100-240VAC / 110-250VDC	1	0.470

General characteristics
DMK3... and DMK40 digital multimeters are available with flush-mount housing, 96x96mm/3.78x3.78" size. They comprise excellent features so distorted waveform conditions, such as very disturbed supply lines having voltage and currents with high harmonic content and variable freqeuncy, do not influence the high accuracy of DMK multimeter readouts, because of the rigorous deisgn in addition to the use of the latest generation of microprocessor technology. Measurement of the phase angle (cosφ) in addition to power factor, harmonic analysis and HIGH-LOW-MAX DEMAND functions are just a few of those which are difficult to find on higher category equipment.
The DMK 40 version includes a reliable data-logger system, extremely easy to use. DMK 3... and DMK 40 multimeters can display 251 electric parameters; a few of these are listed below:
- Voltage: phase, line and system values
- Current: phase and system values
- Power: active, reactive, apparent phase and total values
- Energy: import, export, active and reactive values
- P.F.: power factor per phase
- cosφ: angle displacement, i.e. power factor related to the harmonic fundamental only
- Frequency of measured voltage value
- Harmonics (HARM.): residual and total harmonic content for each harmonic order up to the 22° per phase, both for voltage and current values
- HIGH / LOW: maximum / minimum values of phase voltage and current and ΣW, Σvar and ΣVA power
- Maximum demand (MAX): maximum current and total active power values, both calculated on programmable integration time.

The technical features of the DMK 40 data-logger are:
- 2Mbyte (MB) non-volatile memory for data logging
- Real Time Clock (RTC) with replaceable backup lithium battery
- Sampling time, 1s to 24h configurable
- Number of sampling measurements, 1 to 32 configurable at a time
- Communication protocols: Modbus-RTU and Modbus-ASCII
- Data logging of one electrical parameter in continuous format or with begin-end by programmable thresholds
- Compatible with Synergy software
- Suspension of data acquisition at full memory or refreshing oldest data.

Operational characteristics
- Operating auxiliary voltage range: 85-265VAC / 93.5-300VDC; 18-70VDC for DMK32 D048
- Voltage measurement range: 20-830VAC phase-phase; 10-480VAC phase-neutral
- VT ratio programming: 1.0-5,000
- Current measurement range: 0.02-6A
- Frequency measurement range: 45-65Hz
- CT ratio programming: 1.0-2,000
- Voltage accuracy: ±0.25% f.s. (830V)
- Current accuracy: ±0.35% f.s. (6A)
- Frequency and harmonic distortion accuracy: ±1 digit
- Active energy accuracy: Class 1
- HIGH and LOW value functions to detect and log instantaneous voltage, current and power values
- Averaging function to slow down repetitive fluctuations to obtain more stable readouts
- Current connection in ARON configuration by 2 current transformers only
- Single, two, three phase, with or without neutral, and balanced three-phase connection by 1 CT only
- Usage with voltage transformers for voltages >830VAC
- Operating frequency range: 45-65Hz
- True RMS measurements up to 22° harmonic order
- Power factor and cosφ measurements
- Voltage and current harmonic analysis per phase up to 22° harmonic order
- Active energy meters (import-export)
- Reactive energy meters (import-export)
- Housing: Flush mount 96x96mm/3.78x3.78"
- IEC protection degree: IP54 on front; IP 20 at rear.

Synergy supervision and energy management software
See Section 28.

Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices - Multimeters.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, CISPR11/EN 55011, UL508, CSA C22.2 n° 14.

Modular LED instruments single phase non expandable


DMK 80


DMK 80 R1


DMK 81


DMK 81 R1


DMK 82


DMK 82


DMK 83


DMK 83 R1


DMK 84


DMK 84 R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK 80	1 voltage value 1 max voltage value 1 min voltage value	–	1	0.237
DMK 80 R1❷		1	1	0.268
Ammeter.				
DMK 81	1 current value 1 max current value 1 min current value	–	1	0.237
DMK 81 R1❷		1	1	0.268
Voltmeter or ammeter.				
DMK 82❶	1 voltage or current value 1 maximum voltage or current value 1 minimum voltage or current value	–	1	0.241
Frequency meter.				
DMK 83	1 frequency value 1 max frequency value 1 min frequency value	–	1	0.237
DMK 83 R1❷		1	1	0.268
Cosphi meter.				
DMK 84	1 cosphi value 1 power factor value	–	1	0.241
DMK 84 R1❷		1	1	0.272

❶ The DMK82 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 with control and protection functions.

General characteristics
The DMK 8... instruments are available with modular housing, 3 module size.
Measurements are True RMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415VAC type on request
- Operating frequency: 50-60Hz
- True RMS measurements
- HIGH and LOW measurement storage
- 1 relay output with 1 changeover contact (SPDT) for DMK...R1 version only
- Terminals: 4mm^2
- Modular DIN 43880 housing, 3 modules
- IEC degree of protection: IP40 on front; IP20 on terminals.

DMK 80 - DMK 80 R1
- Voltage measurement range: 15-660VAC
- Operating frequency range: 45-65Hz
- Programmable VT ratio: 1.00-500.00
- Accuracy: ±0.25% f.s. ±1 digit

DMK 81 - DMK 81 R1
- 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

DMK 82
- Voltage measurement range: 15-660VAC
- 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

DMK 83 - DMK 83 R1
- Measurement input: 15-660VAC
- Frequency measurement range: 50-60Hz ±10%
- Measurement accuracy: ±1 digit
- Accuracy: ±1 digit

DMK 84 - DMK 84 R1
- Cosphi measurement error: ±0.5° ±1 digit
- Cosphi measurement in 4 quadrants
- Accuracy: ±1° ±1 digit

Control and protection functions
DMK 80 R1
- 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, phase loss ❸: 0.0-900.0 seconds.

DMK 81 R1
- 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 ❸: 0.0-900.0 seconds.

DMK 83 R1
- Maximum frequency: OFF/101-110%
- Minimum frequency: OFF/90-99%
- Time delay for min-max frequency ❸: 0.5-900.0 seconds.

DMK 84 R1
- Minimum-maximum cosφ thresholds in 4 quadrants
- Minimum-maximum PF thresholds in 4 quadrants
- Delay time for max or min threshold ❸: 1-9,000 seconds.

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

❸ Independent adjustable delays.

Modular LED instruments three phase non expandable


DMK 70


DMK 70 R1


DMK 71


DMK 71 R1


DMK 75


DMK 75 R1

Order code	Displayed measurements	Relay output	Qty per pkg	Wt
	n°	n°	n°	[kg]
Voltmeter.				
DMK 70	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	0.233
DMK 70 R1❷		1	1	0.264
Ammeter.				
DMK 71	3 phase current values 3 max phase current values 3 min phase current values	–	1	0.241
DMK 71 R1❷		1	1	0.272
Combined voltmeter, ammeter and wattmeter.				
DMK 75	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	0.271
DMK 75 R1❶❷		1	1	0.280

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

General characteristics
The DMK 7... instruments are available with modular housing, 3 module size.
Measurements are True RMS values and provide for reliable operation even in presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC standard; 24VAC, 110-127VAC or 380-415VAC type on request
- Operating frequency: 50-60Hz
- True RMS measurements
- HIGH and LOW measurement storage
- 1 relay output with 1 changeover contact (SPDT) for DMK...R1 version only
- Terminals: 4mm^2
- Modular DIN 43880 housing, 3 module
- IEC degree of protection: IP40 on front; IP20 on terminals.

DMK 70 - DMK 70 R1
- Voltage measurement range: 15-660VAC
- Operating frequency range: 45-65Hz
- Programmable VT ratio: 1.00-500.00
- Accuracy: ±0.25% f.s. ±1 digit

DMK 71 - DMK 71 R1
- 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

DMK 75 - DMK 75 R1
- 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

Control and protection functions
DMK 70 R1
- 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.

DMK 71 R1
- 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.

DMK 75 R1
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 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3.

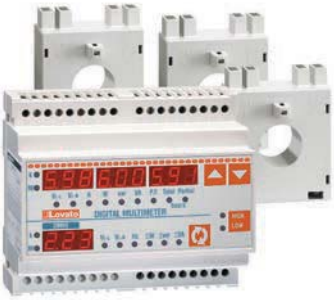
❸ Independent adjustable delays.

Modular LED multimeters non expandable 47 electric parameters

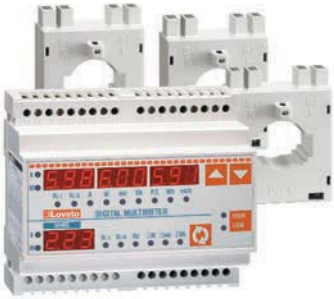
DMK 5...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMK 50	Basic version, auxiliary supply 208-240VAC	1	0.398
DMK 51	Version with energy meters included, auxiliary supply 208-240VAC	1	0.420
DMK 52	Version with energy meters and RS485 port, auxiliary supply 208-240VAC	1	0.420

Starter kits



DMKKIT 51 060
DMKKIT 51 080
DMKKIT 51 100



DMKKIT 51 150
DMKKIT 51 200
DMKKIT 51 250

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMKKIT 51 060	Kit composed of one DMK 51 multimeter and three 60/5A CTs for Ø22mm/0.87" cable	1	1.020
DMKKIT 51 080	Kit composed of one DMK 51 multimeter and three 80/5A CTs for Ø22mm/0.87" cable	1	1.020
DMKKIT 51 100	Kit composed of one DMK 51 multimeter and three 100/5A CTs for Ø22mm/0.87" cable	1	1.020
DMKKIT 51 150	Kit composed of one DMK 51 multimeter and three 150/5A CTs for Ø23mm/0.91" cable	1	0.810
DMKKIT 51 200	Kit composed of one DMK 51 multimeter and three 200/5A CTs for Ø23mm/0.91" cable	1	0.810
DMKKIT 51 250	Kit composed of one DMK 51 multimeter and three 250/5A CTs for Ø23mm/0.91" cable	1	8.210

General characteristics
DMK 5... digital multimeters are available with modular housing, 6 module size. They monitor and view reliable readings of electric parameters, even in presence of critical operating conditions, such as voltages and currents with high harmonic content and variable frequency.
The total and partial hour counter feature provides an interesting feature for electric panels of emergency generating sets.
The diversified and accurate measurements give the multimeters valuable technical and cost effective advantages respect to traditional analog instrumentation.
The digital multimeters DMK 5... view 47 electric parameters:
- Voltage: phase, line and system values
- Current: phase values
- Power: apparent phase, active and reactive values
- P.F.: power factor per phase
- Frequency of measured voltage value
- HIGH/LOW: instantaneous minimum and maximum values of each phase voltage and current, total active power (ΣW), total reactive power (Σvar) and total apparent power (ΣVA) values
- Total hours: non-volatile clearable log for DMK 50 only
- Partial hours: non-volatile configurable log for DMK 50 only
- Active and reactive energy meters for DMK 51 and DMK 52 only.

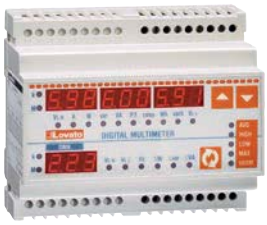
Operational characteristics
DMK 50 - DMK 51 - DMK 52
- Auxiliary supply voltage range:
  - 154-288VAC for DMK 50
  - 177-264VAC for DMK 51-DMK 52
- Voltage measurement range: 60-830VAC phase-phase; 30-480VAC phase-neutral
- Current measurement range: 0.05-6A
- Frequency measurement range: 45-65Hz
- Programmable CT ratio: 1.0-2,000
- Accuracy: Voltage-class 0.5 ±0.35% f.s. (830V)
  Current-class 0.5% ±0.5% f.s. (6A)
- Active energy accuracy: Class 2
- Non-volatile total and partial hour counter with separate clearing; used as maintenance interval with alarm display in DMK 50 only
- HIGH and LOW value functions to read and log instantaneous voltage, current and power values
- Delayed automatic resetting of default measurements
- Averaging function to slow down repetitive fluctuations to obtain more stable readouts
- Current connection in ARON configuration by 2 current transformers (CTs) only
- Single, two, three phase with or without neutral
- True RMS measurements up to 22° harmonic order
- RS485 serial port, Synergy software compatible for DMK 52
- Modular DIN 43880 housing, 6 module
- IEC degree of protection: IP41 on front; IP 20 on terminals.

CURRENT TRANSFORMERS (CTs) of starter kits
- Operating frequency: 50-60Hz
- Secondary output current: 5A
- Class 1 burden
- 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
- Standard supplied fixing elements
- IEC degree of protection: IP30.

Synergy supervision and energy management software
See Section 27.

Certifications and compliance
Certifications obtained: EAC for DMK 5...; UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices - Multimeters for DMK5... types, in the starter kits as well.
Compliant with standards, IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14 for DMK5...; IEC/EN 60044-1 for transformers of starter kits.

Modular LED multimeters non expandable 251 electric parameters



DMK 6...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMK 60	Basic version, auxiliary supply 100-240VAC/110-250VDC	1	0.290
DMK 61	Version with 1 relay and 1 static programmable outputs, auxiliary supply 100-240VAC / 110-250VDC	1	0.300
DMK 62	Version with 1 relay and 1 static programmable outputs, and RS485 port, auxiliary supply 100-240VAC / 110-250VDC	1	0.320

General characteristics
DMK6... digital multimeters are avaibalble with modular housing, 6 module size. They comprise excellent features, superior to devices of the same category currently on the marketplace. Distorted waveform conditions, such as very disturbed electric lines having voltage and currents with high harmonic content and variable frequency, do not influence the high accuracy DMK multimeter readouts because of rigorous design in addition to the use of the latest generation of microprocessor technology. Measurement of the phase angle (cosφ) in addition to power factor, harmonics analysis and HIGH-LOW-MAX functions are just a few of those which are difficult to find on higher category equipment.
DMK 6... digital multimeter can display 251 electric parameters; a few of these are listed below.
- Voltage: phase, line and system values
- Current: phase and system values
- Power: active, reactive, apparent phase and total values
- Energy: active, reactive import and export values
- P.F.: power factor per phase
- cosφ: angle displacement, i.e. power factor related to the harmonic fundamental only
- Frequency of measured voltage value
- Harmonics (HARM.): residual and total harmonic content for each harmonic order up to the 22° per phase, both for voltage and current values
- HIGH / LOW: maximum / minimum values of phase voltage and current and ΣW, Σvar and ΣVA power
- Maximum (MAX): maximum current and total active power values, both calculated on programmable integration time.

Operational characteristics
- Auxiliary supply voltage range: 85-265VAC/93.5-300VDC
- Voltage measurement range: 20-830VAC phase-phase
  10-480VAC phase-neutral
- VT ratio programming: 1.0-5,000
- Current measurement range: 0.02-6A
- Frequency measurement range: 45-65Hz
- CT ratio programming: 1.0-2000
- Accuracy: Voltage ±0.25% f.s. (830V)
  Current ±0.35% f.s. (6A)
  Frequency and harmonic distortion ±1 digit
- Active energy accuracy: Class 1
- HIGH and LOW value functions to detect and log instantaneous voltage, current and power values
- Averaging function to slow down repetitive fluctuations to obtain more stable readouts
- Current connection in ARON configuration via 2 current transformers only
- Single, two, three phase with or without neutral and balanced three-phase connection via 1 current transformer only
- Usage with voltage transformers for voltages >830VAC
- True RMS measurements up to 22° harmonic order, class 1 accuracy
- Power factor and cosφ measurement
- Voltage and current harmonic analysis per phase up to 22° harmonic order
- Active energy meters (import-export)
- Reactive energy meters (import-export)
- RS485 serial port, compatible with Synergy software for DMK 62
- Modular DIN 43880 housing, 6 module
- IEC degree of protection: IP41 on front; IP 20 on terminals.

Synergy supervision and energy management software
See Section 27.

Certifications and compliance
Certifications obtained: EAC; UL Listed for USA and Canada (cULus - File E93601) as Auxiliary Devices - Multimeters.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, CISPR11/EN55011, UL508, CSA C22.2 n°14.

Communication devices


CX 01


CX 02


CX 03

Order code	Description	Qty per pkg	Wt
		n°	[kg]
CX 01	USB/optical dongle with PC ↔ LOVATO Electric product connecting cable, for programming, data download, diagnostics and firmware upgrade	1	0.090
CX 02	Wi-Fi dongle for PC ↔ LOVATO Electric product programming, data download, diagnostics and cloning	1	0.090
CX 03	GSM/GPRS quad-band antenna (800/900/1800/199Mhz) for EXP1015 expansion module	1	0.090

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

CX 01
The USB/optical dongle, 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.

CX 02
By Wi-Fi connection, compatible LOVATO Electric products can be viewed on PCs, smartphones and tablets with no need for cabling.

CX 03
Antenna compatible with the major part of worldwide mobile networks thanks to the available frequencies at 800/900/1800/1900MHz.
IEC degree of protection: IP67. Fixing by Ø12mm/0.04” drilling.

For dimensions, wiring schemes and technical characteristics, refer to technical instructions in Downloads of local or global websites or consult Customer Service. See contact details on the inside front cover.

Protection covers

Order code	Description	Qty per pkg	Wt
		n°	[kg]
PA 96X48	Front protection cover, IEC IP65 for DMK 0… and DMK 1…	1	0.048
31 PA 96X96	Front protection cover, IEC IP54 for DMK 2…, DMK 3… and DMK 40	1	0.077

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


EXP80 00

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXP80 00	Plastic insert for customising label fixing for DMG 600/610	10	0.005
EXM80 04	Set of sealable terminal covers for DMG 200/210/300	1	0.020

RS232-RS485 converter drive

4 PX1

Order code	Description	Qty per pkg	Wt
		n°	[kg]
4 PX1	RS2322/RS485 converter drive, opto-isolated, 220-240VAC ❶	1	0.600

❶ RS232/RS485 opto-isolated converter drive, 38,400 Baud rate maximum, automatic or manual TRANSMIT line supervision, 220-240VAC ±10% (110-120VAC supply on request).

Connecting cables

51 C4

DMG M3 KIT...

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Connecting cables.			
51 C2	For PC↔multimeter RS232 port, 1.8m/2yd long	1	0.090
51 C4	For PC↔4 PX1 converter drive, 1.8m/2yd long	1	0.147
51 C5	For analog modem↔multimeter RS232 port, 1.8m/2yd long	1	0.111
51 C9	For 4PX 1 converter drive↔analog modem, 1.8m/2yd long	1	0.137
Current clamp kits for DMG M3…. portable devices.			
DMG M3 KIT01	Composed by 3 current clamps 1000/1 and 4 alligator clip cables for voltage measurements	1	6.900
DMG M3 KIT02	Composed by 1 current clamps 1000/1 and 1 alligator clip cable for voltage measurements. For DMGM3900, if measuring inputs for neutral-earth/ground and neutral current are used too	1	0.860

Software

DMK SW10

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Software.			
DMK SW	Remote control software for PC-DMK 22/32/40/52/62 and PC-DMG 210/200/600/800/900 having Modbus-RTU and ASCII protocols, complete with 51 C4 connecting cable	1	0.246
DMK SW 10	Data-logger software complete with 31 C2 connecting cable. Remote control and supervision Software for PC-DMK / DMG (as above) having Modbus-RTU and ASCII protocols, complete with 51 C4 connecting cable	1	0.400

General characteristics
RS232-RS485 CONVERTER DRIVE
It can interface "slave" devices connected in an RS485 bus with a "master" equipped with RS232 interface port. When configured appropriately, it can also be used as RS485 repeater whenever the devices connected to the bus are many or the maximum distance among the bus devices is longer than the allowed.

CONNECTING CABLES 51 C…
To connect energy meters and/or multimeters with:
– Personal computers
– Modems
– Bus converters.

Electrical safety for DMG M3…
(IEC/EN 61010-1 and IEC/EN 61010-2-032)
CURRENT CLAMPS
– 600V category III (industrial and services) with anti-slip protection and conductor anti-pinching system
– 300V category IV.
VOLTAGE MEASURING CABLES
– 1000V category III (industrial and services).

DMK SW SOFTWARE
Remote control software for DMK 22, DMK 32, DMK 40, DMK 52, DMK 62, DMG 210, DMG 300, DMG 700, DMG 800, DMG 900 and DMG 900T.
This software is capable of controlling a maximum of 250 digital multimeters remotely connected to one RS485 bus.
The DMK SW is subdivided into modules which warrant simple and easy use:
– Main synoptic page which includes the most important in-coming data of the various DMK/DMG connected
– Detailed page with data related to the selected DMK/DMG unit
– Data log which consents to store sampled measurements on disk (max 128 measurements)
– Events / alarms log with alarm data acquisition of the various DMKs/DMGs as well as the elaborated analysis
– Trend graphs to control electric parameters status
– Harmonic content analysis bar graph
– Energy count to periodically view energy counters of the various instruments and monitor energy consumption.

DMK SW10 SOFTWARE
Data-logger and remote control for DMK 40 and DMG... with memory modules.
The DMK SW10 includes the data-logger software and the remote control DMK SW software, two applications with separate installation.
The data-logger software permits:
– To configure multimeter parameters for data logging and installation parameters (VT and CT ratio, etc.)
– To view and print acquired data from the multimeter storage memory in table or trend graph format. No data-logger configuration or stored data viewing is obtainable on the unit front
– To download data in ACCESS, EXCEL or TEXT file
– To view all actual electric parameter measurements on a virtual multimeter display (DMK only)
– To program the multimeter clock-calendar (RTC - Real Time Clock) to automatically manage daylight saving time
– To connect directly or via modem with the multimeters.

Synergy supervision and energy management software
See Section 27.

Reference standards
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

For dimensions, wiring schemes and technical characteristics, refer to technical instructions in Downloads of local or global websites or consult Customer Service. See contact details on the inside front cover.

Solid-core


DM0T...


DM2T...


DM3T...


DM4T...


DM5T...

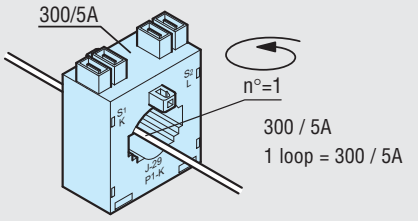
Versions with Italian UTF certificates on request.

Order code	Primary current Ipn	Burden Class 0.5	Class 1	Qty per pkg	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø22mm/0.9" cable.					
DM0T 0050	50	—	1.25	1	0.200
DM0T 0060	60	—	1.5	1	0.200
DM0T 0080	80	—	1.5	1	0.200
DM0T 0100	100	—	1.5	1	0.200
DM0T 0150	150	—	—	1	0.200
For Ø23mm/0.9" cable. For 30x10mm/1.2x0.4", 25x12.5mm/1x0.5", 20x15mm/0.8x0.4" busbars.					
DM2T 0100	100	—	1.5	1	0.130
DM2T 0150	150	—	1.5	1	0.130
DM2T 0200	200	—	2.5	1	0.130
DM2T 0250	250	—	2.5	1	0.130
DM2T 0300	300	1.5	3	1	0.130
DM2T 0400	400	2	3	1	0.130
For Ø30mm/1.2" cable. For 40x10mm/1.6x0.4", 30x20mm/1.2x0.8", 25x25mm/1x1" busbars.					
DM3T 0200	200	—	5	1	0.260
DM3T 0250	250	—	5	1	0.260
DM3T 0300	300	2.5	5	1	0.260
DM3T 0400	400	2.5	5	1	0.260
DM3T 0500	500	2.5	5	1	0.260
DM3T 0600	600	5	10	1	0.260
DM3T 0800	800	5	10	1	0.260
DM3T 1000	1000	5	10	1	0.260
For Ø86mm/3.4" cable. For 100x30mm/3.9x1.2", 80x50mm/3.1x2", 70x60mm/2.8x2.4" busbars.					
DM4T 1000	1000	10	20	1	0,700
DM4T 1200	1200	15	30	1	0.700
DM4T 1250	1250	15	30	1	0.760
DM4T 1500	1500	30	30	1	0.760
DM4T 1600	1600	30	30	1	0.800
DM4T 2000	2000	45	45	1	0.840
DM4T 2500	2500	45	45	1	0.900
DM4T 3000	3000	45	45	1	0.900
DM4T 3500	3500	50	50	1	0.900
DM4T 4000	4000	50	50	1	0.900

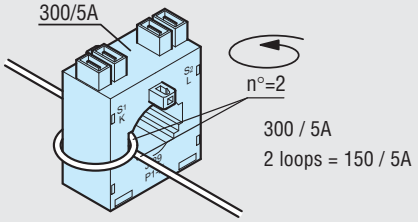
Order code	Primary current Ipn	Burden Class 0.5S	Class 0.5	Qty per pkg	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø28mm/1.1" cable. For 20x10mm/0.8x0.4" and 30x10mm/1.2x0.4" busbars.					
DM5T 0060❶	60	1.5	1.5	1	0.560
DM5T 0080❶	80	2.5	2.5	1	0.580
DM5T 0100❶	100	2.5	3.75	1	0.480
DM5T 0150❶	150	2.5	3.75	1	0.480
DM5T 0200❶	200	2.5	3.75	1	0.460
DM5T 0250❶	250	2.5	5	1	0.480
DM5T 0300❶	300	2.5	5	1	0.480

❶ Consult Customer Service to query about versions with Italian UTF certificates; see contact details on inside front cover.

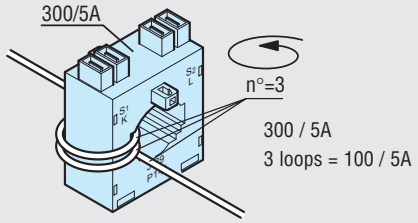
General characteristics
The DM... series current transformers (CTs) are installed in electric installations to reduce the line current to a secondary value of 5A, which is compatible with current inputs of digital multimeters or protection relays.
These are without primary winding and are used for high primary current values from 50A upward.
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
300:2/5A=150/5A



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, DM4T and DM5T types
- Sealable terminal covers for DM0T, DM4T and DM5T types
- Fixing on 35mm DIN rail (IEC/EN 60715) or by screws (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%.

Reference standards
Compliant with standards: IEC/EN 60044-1.

The UTF certificate is required for revenue tax purposes by Italian authorities when equipment is part of generating electricity installations (e.g. solar, wind) and there is electricity exchange with the power grid.

Dimensions page 23-35

Split-core

DM1TA...

DM2TA...

DM3TA...

DM4TA...

Order code	Primary current Ipn	Burden Class 0.5	Class 1	Qty per pkg	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For 50x60mm/2x2.4" busbar.					
DM1TA 0250	250	1	2	1	0.900
DM1TA 0300	300	1.5	3	1	0.900
DM1TA 0400	400	1.5	3	1	0.900
DM1TA 0500	500	2.5	5	1	0.900
DM1TA 0600	600	2.5	5	1	0.900
DM1TA 0750	750	3	6	1	0.900
DM1TA 0800	800	3	7.5	1	0.900
DM1TA 1000	1000	5	10	1	0.900
For 80x80mm/3.1x3.1" busbar.					
DM2TA 0250	250	1	2	1	1.050
DM2TA 0300	300	1.5	3	1	1.050
DM2TA 0400	400	1.5	3	1	1.050
DM2TA 0500	500	2.5	5	1	1.050
DM2TA 0600	600	2.5	5	1	1.050
DM2TA 0750	750	3	6	1	1.050
DM2TA 0800	800	3	7.5	1	1.050
DM2TA 1000	1000	5	10	1	1.050
For 80x120mm/3.1x4.7" busbar.					
DM3TA 0500	500	—	4	1	1.250
DM3TA 0600	600	—	5	1	1.250
DM3TA 0750	750	2.5	6	1	1.250
DM3TA 0800	800	3	7.5	1	1.250
DM3TA 1000	1000	5	10	1	1.250
DM3TA 1200	1200	6	12.5	1	1.250
DM3TA 1250	1250	7.5	15	1	1.250
DM3TA 1500	1500	8	17	1	1.250
For 80x160mm/3.1x6.3" busbar.					
DM4TA 2000	2000	15	20	1	3.160
DM4TA 2500	2500	15	20	1	3.340
DM4TA 3000	3000	20	25	1	3.500
DM4TA 4000	4000	20	25	1	3.760

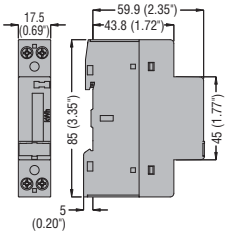
General characteristics
The DM... series current transformers (CTs) are installed in electric installations to reduce the line current to a secondary value of 5A, which is compatible with current inputs of digital multimeters or protection relays.
These are without primary winding and are used for high primary current values from 250A upward.

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%.

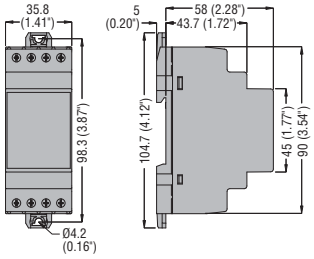
Reference standards
Compliant with standards: IEC/EN 60044-1.

ENERGY METERS

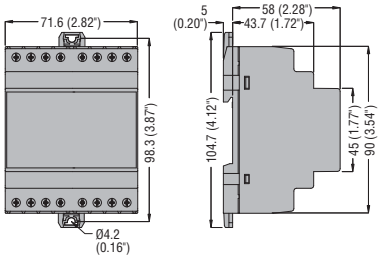
Mechanical meter **DME M100...**
Digital meter **DME D100... - DME D110...**



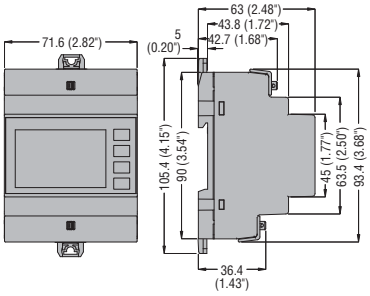
Digital meter **DME D115 T1 - DME D120 T1...**
DME D121 - DME D130



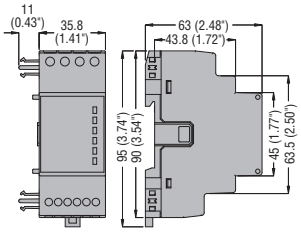
Digital meter **DME D300 T2... - DME D300 F - DME D310 F... - DME D310 T2... - DME D320**
Data concentrator **DME CD - DME CD PV1...**



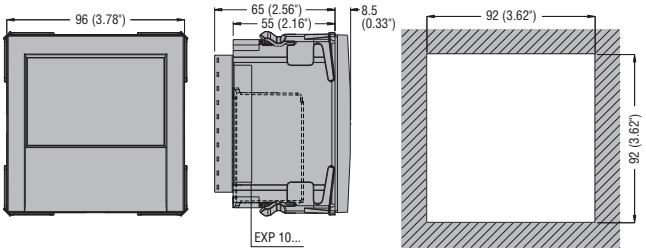
MULTIMETERS
DMG 200 - DMG 210 - DMG 300



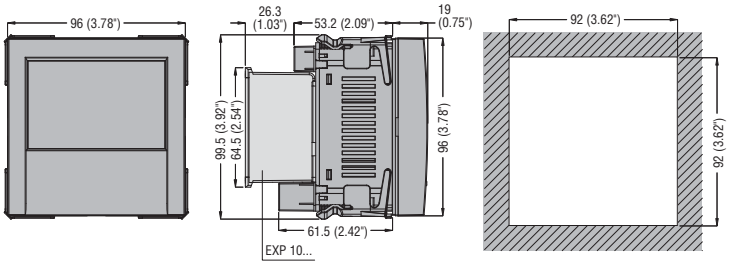
Expansion modules **EXM...**



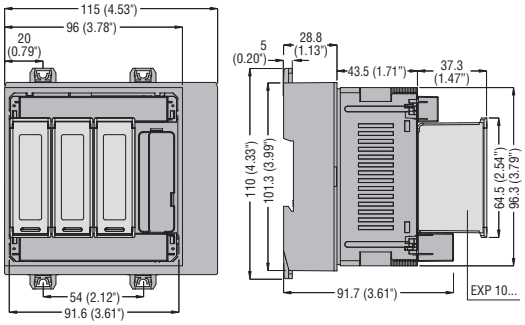
DMG 600 - DMG 610



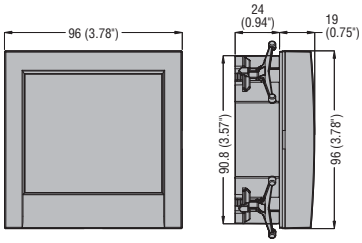
DMG 700 - DMG 800... - DMG 900... with expansion modules **EXP...**



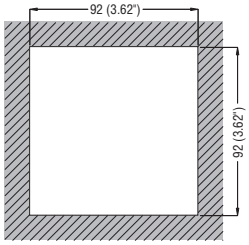
Transducer **DMG 900T** with expansion modules **EXP...**



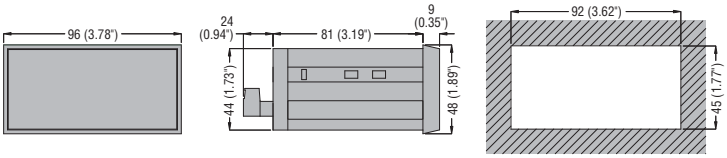
DMG 900RD remote display



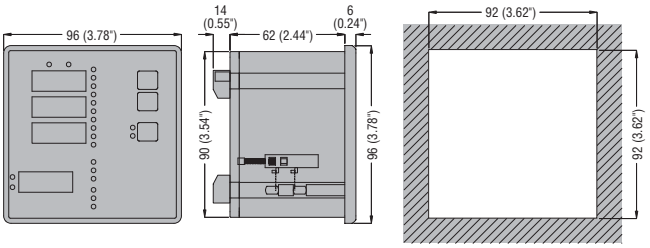
Cutout



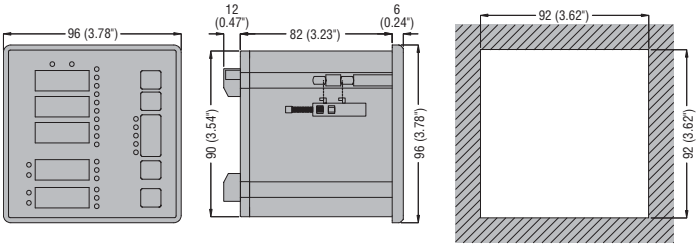
INSTRUMENTS
DMK 0... - DMK 1...



MULTIMETERS
DMK 2...

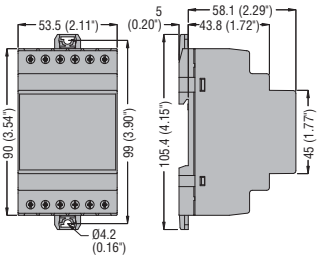


DMK 3... - DMK 40

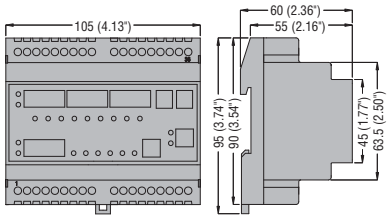


INSTRUMENTS

DMK 7... - DMK 8...

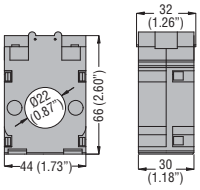


Multimetri **DMK 5... - DMK 6...**

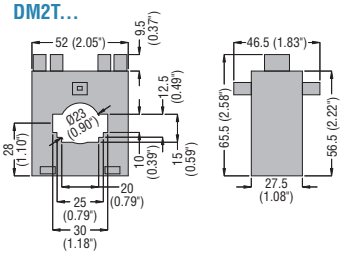


CURRENT TRANSFORMERS

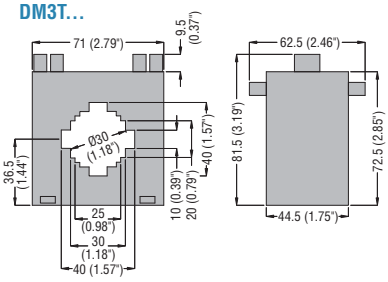
Solid core **DM0T...**



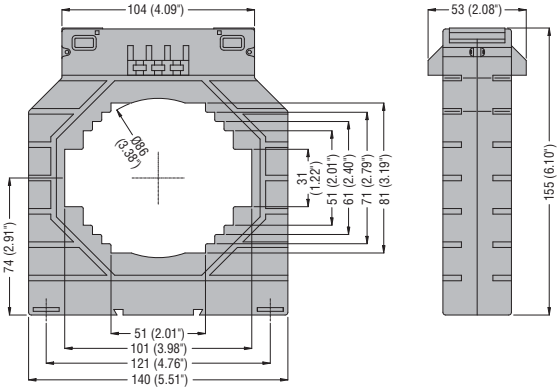
DM2T...



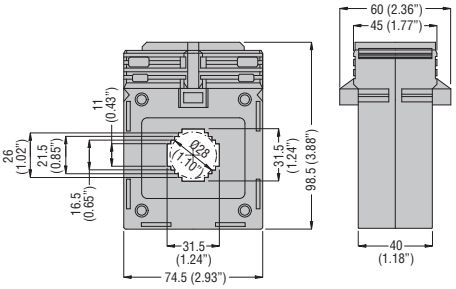
DM3T...



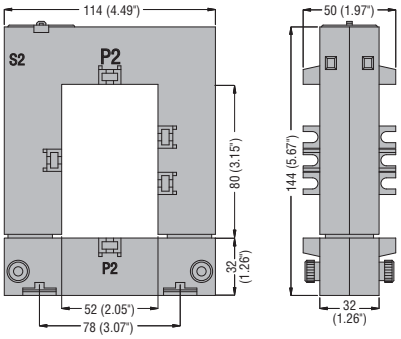
DM4T...



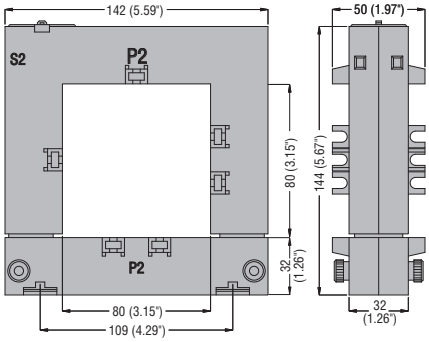
DM5T...



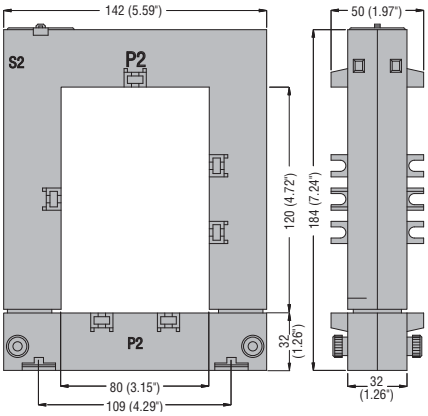
Split core **DM1TA...**



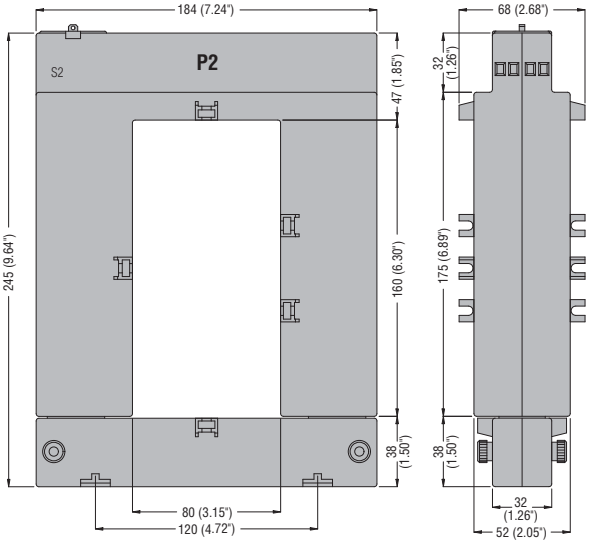
DM2TA...



DM3TA...

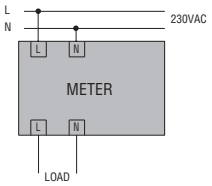


DM4TA...

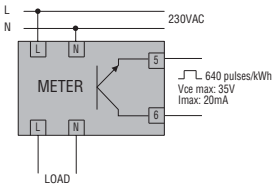


ENERGY METERS

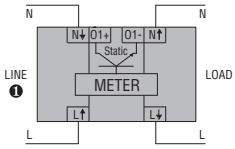
Mechanical **DME M100**



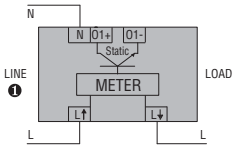
DME M100 T1



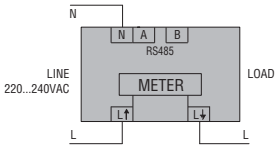
Digital **DME D100 T1... - DME D110 T1...**



DME D115 T1 - DME D120 T1... - DME D130

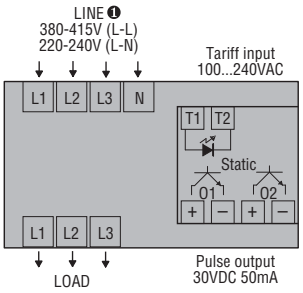


DME D121

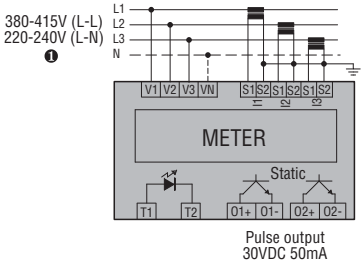


❶ 110-120VAC DMED...A120; 220-240VAC DMED...; 230V 50Hz DMED... T1 MID.

DME D300 T2... - DME D300 F



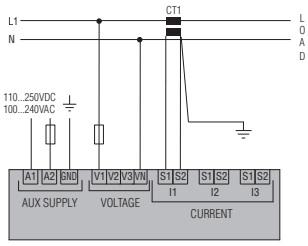
DME D310 T2... - DME D310 F...



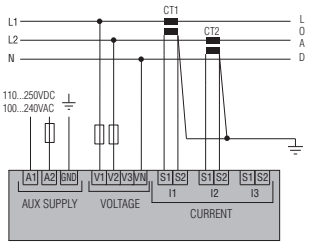
❶ 230V 50Hz (L-N), 400V 50Hz (L-L) DMED... T2 MID / DMED... F.

DME D320

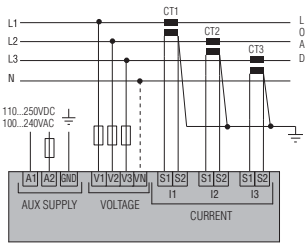
Single phase



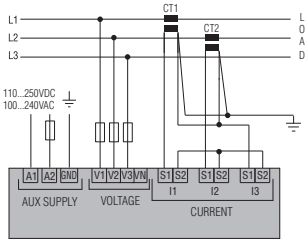
Two phase

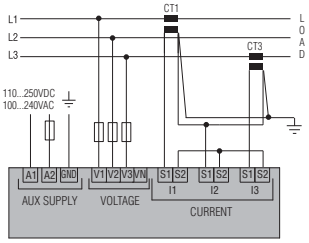


Three phase with or without neutral

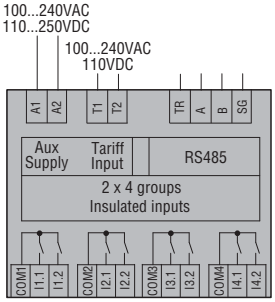


Three phase without neutral in ARON connection



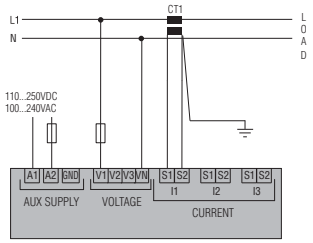


Data concentrator **DME CD - DME CD PV1**

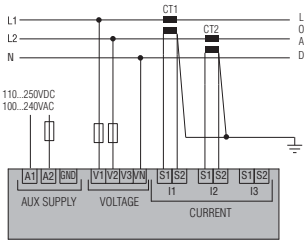


MULTIMETERS DMG 200 - DMG 210 - DMG 300

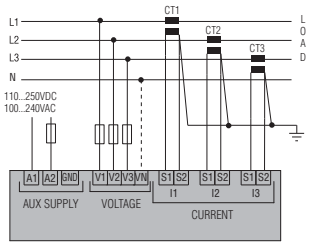
Single phase



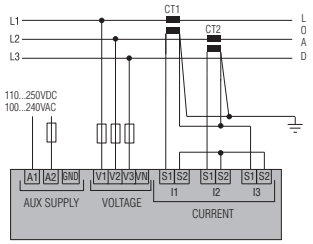
Two phase

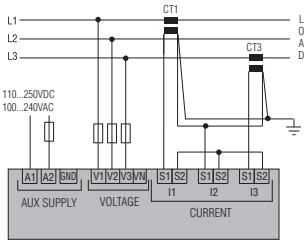


Three phase with or without neutral



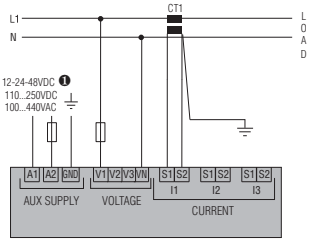
Three phase without neutral in ARON connection



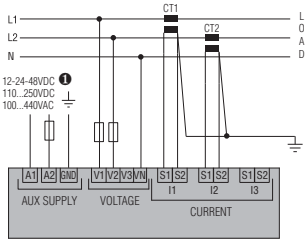


MULTIMETRI DMG 700 - DMG 800...

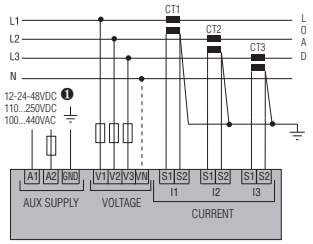
Single phase



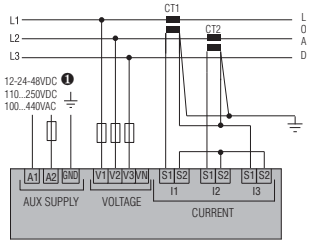
Two phase

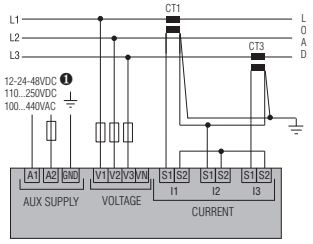


Three phase with or without neutral



Three phase without neutral in ARON connection

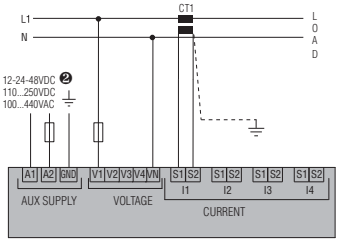




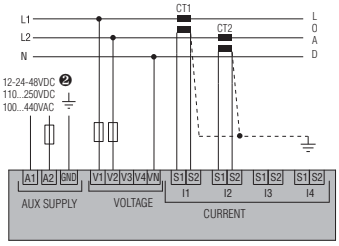
❶ For DMG 800 D048 only.

DMG 900...

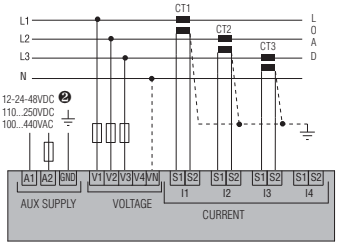
Single phase



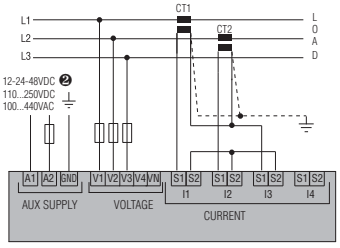
Two phase

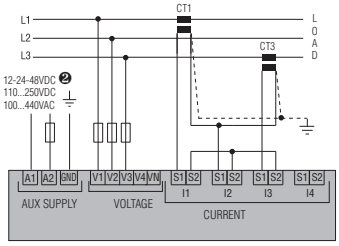


Three phase with or without neutral

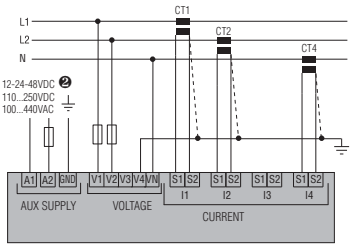


Three phase without neutral in ARON connection

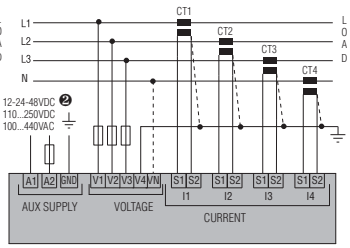




Two phase with neutral. Measurement of neutral current and neutral-earth voltage



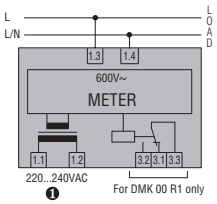
Three phase with neutral. Measurement of neutral current and neutral-earth voltage



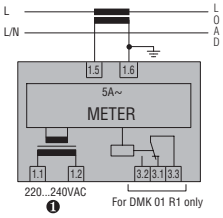
❷ For DMG 900... D048 only.

INSTRUMENTS

DMK 00 - DMK 00 R1

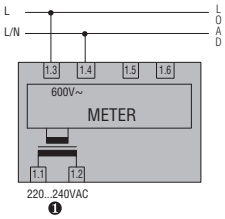


DMK 01 - DMK 01 R1

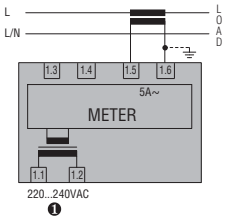


DMK 02

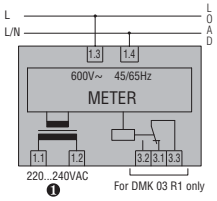
Voltmeter



Ammeter

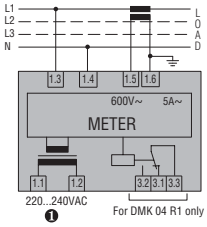


DMK 03 - DMK 03 R1

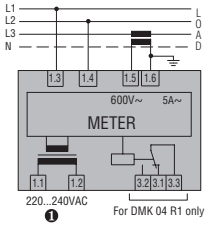


DMK 04 - DMK 04 R1

Single phase

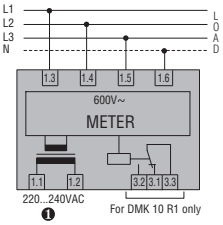


Three phase

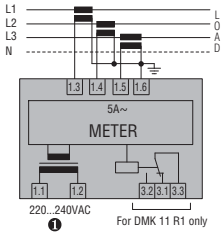


❶ Input for other supply voltages on request.

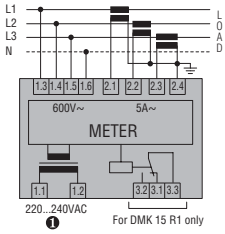
DMK 10 - DMK 10 R1



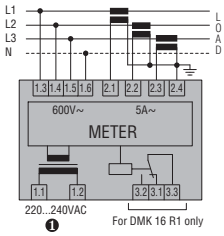
DMK 11 - DMK 11 R1



DMK 15 - DMK 15 R1

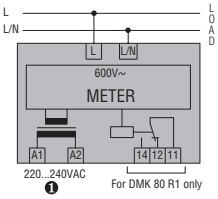


DMK 16 - DMK 16 R1

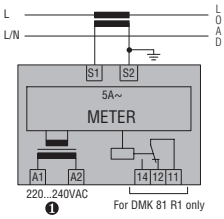


❶ Input for other supply voltages on request.

DMK 80 - DMK 80 R1

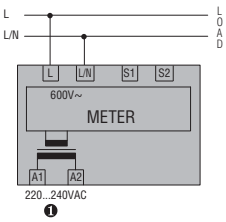


DMK 81 - DMK 81 R1

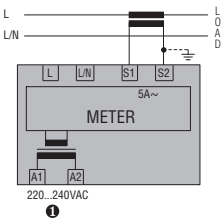


DMK 82

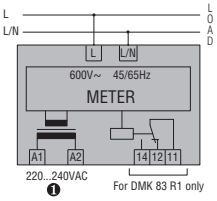
Voltmeter



Ammeter

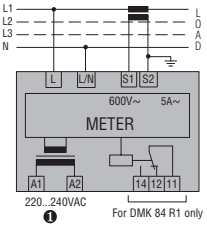


DMK 83 - DMK 83 R1

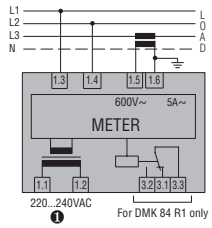


DMK 84 - DMK 84 R1

Single phase

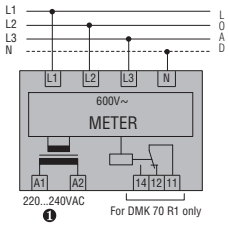


Three phase

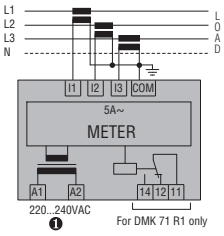


❶ Input for other supply voltages on request.

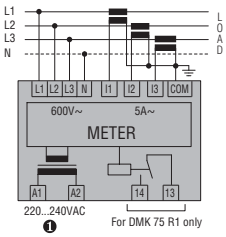
DMK 70 - DMK 70 R1



DMK 71 - DMK 71 R1



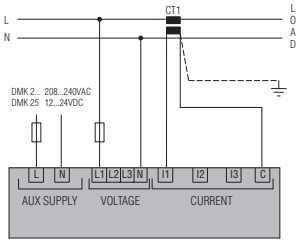
DMK 75 - DMK 75 R1



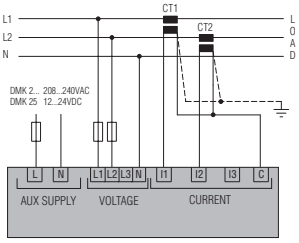
❶ Input for other supply voltages on request.

MULTIMETERS DMK2...

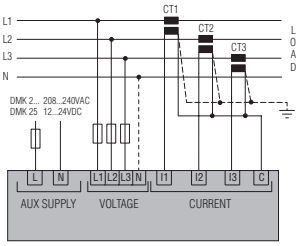
Single phase



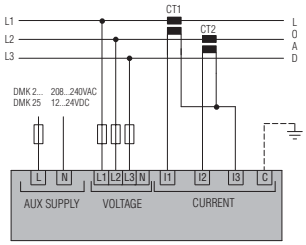
Two phase

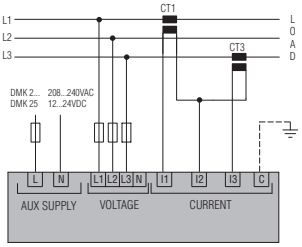


Three phase with or without neutral



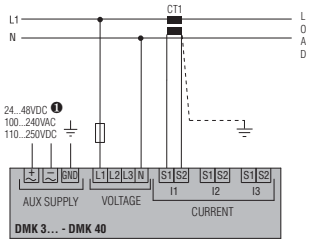
Three phase without neutral in ARON connection



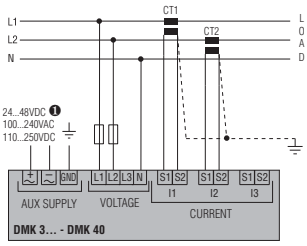


DMK3... - DMK40 - DMK6...

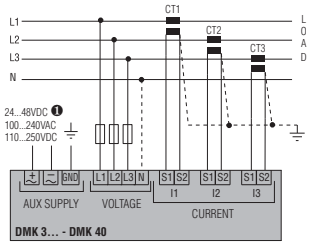
Single phase



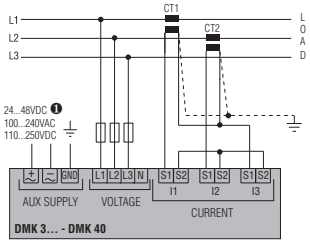
Two phase

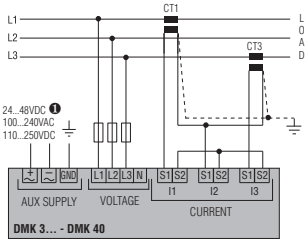


Three phase with or without neutral



Three phase without neutral in ARON connection

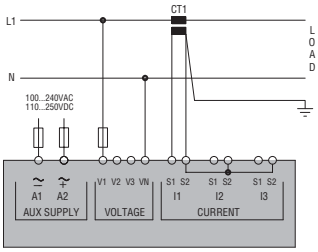




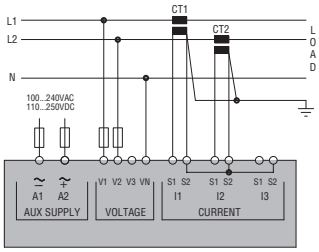
❶ For DMK 32 D048 only.

DMK5...

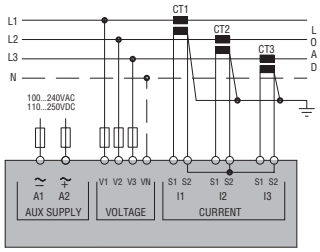
Single phase



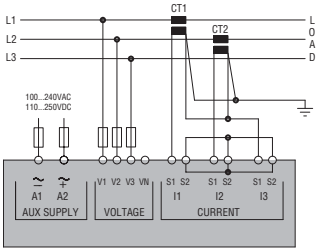
Two phase

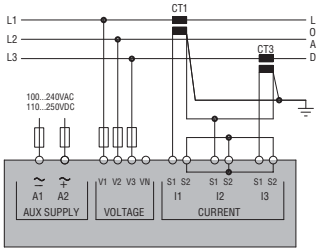


Three phase with or without neutral



Three phase without neutral in ARON connection





TYPE	DME M100...	DME D100 T1	DME D100 T1 A120	DME D100 T1 MID	DME D110 T1	DME D110 T1 A120
	Single phase mechanical	Single phase digital	Single phase digital	Single phase MID certified	Monofase digital	Monofase digital
AUXILIARY SUPPLY						
Rated voltage Ue	230VAC	220...240VAC	110...120VAC	230VAC	220...240VAC	110...120VAC
Operating voltage range	184...264VAC	187...264VAC	93...132VAC	187...264VAC	187...264VAC	93...132VAC
Rated frequency	50/60Hz	50/60Hz	60Hz	50Hz	50/60Hz	60Hz
Maximum power consumption	<7VA	7VA				
Maximum power dissipation	–	0.45W				
CURRENT						
IEC maximum current Imax	32A	40A				
IEC minimum current Imin	–	0.25A				
IEC rated current Iref/Ib	5A	5A				
IEC start current Ist	20mA	20mA				
Transition current Itr	–	0.5A				
ACCURACY						
Active energy (per IEC/EN 62053-21)	Class 1	Class 1		Class B (per EN 50470-3)	Class 1	
OUTPUTS						
LED rate	640 flashes/kWh	1000 flashes/kWh				
Pulse rate	640 pulses/kWh (Vce=35VImax=20mA) DME M...T1 only	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	Fixed				
Conductor section min - max	2.5-6mm^2	1.5-10mm^2 (16-6 AWG)				
Maximum tightening torque	1.2Nm	1.5Nm (14lbin)				
PULSE OUTPUT CONNECTION						
Type of terminals	Fixed	Fixed				
Conductor section min-max	1-1.5mm^2 for DME M100 T1 only	0.2-4mm^2 (24-12AWG)				
Maximum tightening torque	0.6Nm	0.8Nm (7lbin)				
AMBIENT CONDITIONS						
Operating temperature	-25...+55°C	-25...+55°C				
Storage temperature	-30...+80°C	-25...+70°C				
Relative humidity	–	<80%				
Maximum pollution degree	2	2				
Overvoltage category	–	III				
Mechanical environment	–	–	–	Class M1	–	–
Magnetic environment	–	–	–	Class E1	–	–
HOUSING						
Material	Polyamide	Polyamide				

	DME D110 T1 MID	DME D115 T1	DME D120 T1	DME D120 T1 A120	DME D120 T1 MID	DME D121	DME D130
	Single phase MID certified	Single phase digital	Single phase digital	Single phase RS485	Single phase MID certified	Single phase RS485	Single phase expandable
	230VAC	220...240VAC	220...240VAC	110...120VAC	230VAC	220...240VAC	220...240VAC
	187...264VAC	187...264VAC	187...264VAC	93...132VAC	187...264VAC	187...264VAC	187...264VAC
	50Hz	50/60Hz	50/60Hz	60Hz	50Hz	50/60Hz	50/60Hz
	7VA	7VA				4.8VA	
	0.45W	0.45W				1.4W	
	40A	63A				63A	
	0.25A	0.5A				0.5A	
	5A	10A				10A	
	20mA	40mA				40mA	
	0.5A	1A				1A	
	Class B (per EN 50470-3)	Class 1			Class B (per EN 50470-3)	Class 1	
	1000 flashes/kWh	1000 flashes/kWh				1000 flashes/kWh	
	1000 pulses/kWh	1000 pulses/kWh				1000 pulses/kWh	
	30ms	30ms				30ms	
	1-10-100-1000 pulses/kWh programmable	1-10-100-1000 pulses/kWh programmable				–	
	100ms	100ms				–	
	10...30VDC	10...30VDC				–	
	50mA	50mA				–	
	250VAC	250VAC				250VAC	
	6kV	6kV				6kV	
	4kV	4kV				4kV	
	Fixed	Fixed				Fixed	
	1.5-10mm^2 (16-6 AWG)	2.5...16mm^2 (14...6AWG stranded; 14...10AWG solid)				2.5...16mm^2 (14...6AWG stranded; 14...10AWG solid)	
	1.5Nm (14lbin)	2Nm (26.5lbin)				2Nm (26.5lbin)	
	Fixed	Fixed				Fixed	
	0.2-4mm^2 (24-12AWG)	0.5-4mm^2 (20-11AWG)				0.5-4mm^2 (20-11AWG)	
	0.8Nm (7lbin)	1.3Nm (12.1lbin)				1.3Nm (12.1lbin)	
	-25...+55°C	-25...+55°C				-25...+55°C	
	-25...+70°C	-25...+70°C				-25...+70°C	
	<80%	<80%				<80%	
	2	2				2	
	III	III				III	
	Class M1	–	–	–	Class M1	–	–
	Class E1	–	–	–	Class E1	–	–
	Polyamide	Polyamide				Polyamide	

TYPE	DME D300 T2	DME D300 T2 MID / F	DME D310 T2	DME D310 T2 MID / F	DME D320
	3 phase with neutral	3 phase with neutral MID certified	3 phase c/w and w/o neutral	3 phase c/w and w/o neutral MID certified	3 phase c/w and w/o neutral
AUXILIARY SUPPLY					
Rated voltage Ue	220-240VAC phase-neutral 380-415VAC phase-phase	230VAC phase-neutral 400VAC phase-phase	220-240VAC phase-neutral 380-415VAC phase-phase	230VAC phase-neutral 400VAC phase-phase	100-240VAC 110-250VDC
Voltage range	187-264VAC phase-neutral 323-456VAC phase-phase				85-264VAC 93.5-300VDC
Rated frequency	50/60Hz	50Hz	50/60Hz	50Hz	45...66Hz
Maximum power consumption	20VA		2.1VA		4.5VA
Maximum power dissipation	1.35W		0.8W		1.7W
CURRENT					
IEC maximum current Imax	63A		5A		5A
IEC minimum current Imin	0.5A		0.05A		0.01A
IEC rated current Iref/Ib	10A		5A		—
IEC start current Ist	40mA		0.01A		—
IEC transition current It	1A		0.25A		—
ACCURACY					
Active energy (per IEC/EN 62053-21)	Class 1	Class B (EN50470-3)	Class 1	Class B (EN50470-3)	Class 1
TARIFF CIRCUIT INPUT					
Rated voltage Uc	100-240VAC		100-240VAC		—
Voltage range	85-264VAC		85-264VAC		—
Frequency	50/60Hz		50/60Hz		—
Maximum power consumption	0.25VA		0.25VA		—
Maximum power dissipation	0.18W		0.18W		—
OUTPUTS					
LED rate	1000 flashes/kWh		10000 flashes/kWh		—
Pulse rate	1000 pulses/kWh		10000 pulses/kWh		—
Pulse duration	30ms		30ms		—
STATIC OUTPUTS					
Pulse rate	Programmable 1-10-100-1000 pulses/kWh		Programmable 0.1-1-10-100 pulses/kWh		—
Pulse duration	100ms for 1-10-100 pulse rates; 60ms for 1000 pulse rate		100ms		—
External voltage	10-30VDC		10-30VDC		—
Maximum current	50mA				—
INSULATION					
IEC rated insulation voltage Ui	250VAC		250VAC		690VAC
IEC rated impulse withstand voltage Uimp	6kV		6kV		9.5kV
IEC power frequency withstand voltage	4kV		4kV		5.2kV
SUPPLY/MEASURMENT CIRCUIT CONNECTIONS					
Type of terminals	Fixed		Fixed		
Conductor section min-max	2.5-16mm^2 (16-6 AWG)		0.2-4mm^2 (24-12 AWG) for supply/voltage measurement; 0.2-2.5mm^2 (24-12 AWG) for current measurement		
Maximum tightening torque	2Nm (14lbin)		0.8Nm (7lbin)		
TARIFF CONTROL CIRCUIT CONNECTIONS					
Type of terminals	Fixed		Fixed		
Conductor section min-max	0.2-2.5mm^2 (24-12AWG)		0.2-4mm^2 (24-12AWG)		
Maximum tightening torque	0.49Nm (4.4lbin)		0.8Nm (7lbin)		
PULSE OUTPUT CONNECTIONS					
Type of terminals	Fixed		Fixed		—
Conductor section min-max	0.2-1.3mm^2 (24-16AWG)		0.2-2.5mm^2 (24-12AWG)		—
Maximum tightening torque	0.15Nm (1.7lbin)		0.44Nm (4lbin)		—
AMBIENT CONDITIONS					
Operating temperature	-25...+55°C		-25...+55°C		-20...+60°C
Storage temperature	-25...+70°C		-25...+70°C		-30...+80°C
Relative humidity	<80% non condensing		<80% non condensing		<90%
Maximum pollution degree	2		2		2
Overvoltage capacity	III		III		III
Mechanical environment	—	Class M1	—	Class M1	—
Magnetic environment	—	Class E1	—	Class E1	—
HOUSING					
Material	Polyamide		Polyamide		

TYPE	DME CD	DME CD PV1
AUXILIARY SUPPLY		
Rated voltage Us	100-240VAC/110-250VDC	
Operating 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 separation	2 for 4 pairs (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 (24-12 AWG)	
Maximum tightening torque	0.8Nm (7lbin)	
TARIFF INPUT CIRCUIT CONNECTIONS		
Type of terminals	Fixed	
Conductor section min-max	0.2-4mm^2 (24-12 AWG)	
Maximum tightening torque	0.8Nm (7lbin)	
RS485 CONNECTION		
Type of terminals	Fixed	
Conductor section min-max	0.2-4mm^2 (24-12 AWG)	
Maximum tightening torque	0.8Nm (7lbin)	
ENERGY METER INPUT CONNECTIONS		
Type of terminals	Fixed	
Conductor section min-max	0.2-2.5mm^2 (24-12 AWG)	
Maximum tightening torque	0.44Nm (4lbin)	
AMBIENT CONDITIONS		
Operating temperature	-20...+60°C	
Storage temperature	-30...+80°C	
Relative humidity	<90%	
Maximum pollution degree	2	
Overvoltage capacity	III	
HOUSING		
Material	Polyamide	

TYPE	DMG 200	DMG 210 ❶	DMG 300
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	4.5VA	4.2VA
Maximum power dissipation	1.2W	1.7W	1.3W
Microbreaking immunity	≥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	1A / 5A
Measurement range	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	0.2-4.0mm^2 (24-12 AWG)		
Maximum tightening torque	0.8Nm (7lbin)		
CURRENT MEASUREMENT CIRCUIT AND RS485❶ CONNECTIONS			
Type of terminal	Fixed		
Conductor section min-max	0.2-2.5mm^2 (24-12 AWG)		
Maximum tightening torque	0.44Nm (4lbin)		
AMBIENT CONDITIONS			
Operating temperature	-20...+60°C		
Storage temperature	-30...+80°C		
Relative humidity	<90%		
Maximum pollution degree	2		
Measurement class	III		
Overload capacity	III		
HOUSING			
Material	Polyamide		

❶ RS485 communication port for DMG 210 and DMG 900T only.
❷ For DMG 800 D048, DMG 900 D048 and DMG 900T D048 only.

	DMG 600	DMG 610	DMG 700	DMG 800	DMG 900	DMG 900 T ❶
	100-400VAC 120-250VDC		100-440VAC / 110-250VDC - (12-48VDC❷)			
	100-400VAC 120-250VDC		90-484VAC / 93.5-300VDC - (9-70VDC❷)			
	45-65Hz		45-66Hz			
	9.5VA		3.9VA			
	3.5W		3.4W			
	≥50ms		≥50ms			
	Three phase + neutral		Three phase + neutral			
	600VACL-L (300VAC L-N)		690VAC L-L (400VAC L-N)			
	50-720VAC L-L (30-360 L-N)		20-830VAC L-L (10-480VAC L-N)			
	45-66Hz		45-66Hz		45-66Hz e 360-440Hz	
	True RMS		True RMS			
	Single, two, three phase c/w or w/o neutral		Single, two, three phase with or without neutral, balanced three phase systems			
	5A		5A	1A/5A	1A/5A	
	0.01-6A		0.01-6A	0.01-1.2A / 0.01-6A	0.002-1.2A / 0,01-10A	
	True RMS		True RMS			
	–		+20% Ie by external CT with 5A secondary			
	–		50A for 1s			
	600VAC		690VAC			
	9.5kV		9.5kV			
	5.2kV		5.2kV			
	Removable / Plug-in					
	0.2-2.5mm^2 (24-12AWG)					
	0.5Nm (4.5lbin)					
	Fixed		Fixed			
	0.2-1,5mm^2 (24-12 AWG)		0.5-4mm^2 (26-10 AWG); 0.2-1.5mm^2 (24-12 AWG) for RS485 ❶			
	0.8Nm (7lbin)		0.8Nm (7lbin)			
	-20...+60°C					
	-30...+80°C					
	<90%					
	2					
	III					
	III					
	Polyamide					

TYPE	DMK 00 - DMK 00 R1 DMK 80 - DMK 80 R1	DMK 01 - DMK 01 R1 DMK 81 - DMK 81 R1	DMK 02 DMK 82	DMK 03 - DMK 03 R1 DMK 83 - DMK 83 R1	DMK 04 - DMK 04 R1 DMK 84 - DMK 84 R1
AUXILIARY SUPPLY					
Rated voltage Us	24VAC❶ 110-127VAC❶ 220-240VAC 380-415VAC❶				
Operating voltage range	0.85-1.1 Us				
Rated frequency	50-60Hz ±10%				
Maximum power consumption	3.3VA (DMK...) 3.6VA (DMK... R1)		3.3VA	3.3VA (DMK...) 3.6VA (DMK... R1)	
Maximum power dissipation	1.5W (DMK...) 1.8W (DMK... R1)		1.5W	1.5W (DMK...) 1.8W (DMK... R1)	
VOLTAGE INPUTS					
Rated voltage Ue	600VAC	—	600VAC	—	600VAC
Operating voltage range	15-660VAC	—	15-660VAC	—	—
Operating voltage range, phase-phase	—	—	—	—	15-660VAC (DMK...) 25-660VAC (DMK... R1)
Rated frequency	50-60Hz ±10%	—	50-60Hz ±10%	—	50-60Hz ±10%
Method of measuring	TRMS	—	TRMS	—	TRMS
CURRENT INPUTS					
Rated current Ie	—	5A		—	5A
Measuring range	—	0.05-5.75A		—	0.05-5.75A (DMK...) 0.1-5.75A (DMK... R1)
Rated frequency	—	50-60Hz ±10%		—	50-60Hz ±10%
Type of input	—	Shunts connected by external low voltage CT 5A max		—	Shunts connected by external low voltage CT 5A max
Type of measuring	—	TRMS		—	TRMS
Overload capacity	—	+20% Ie		—	+20% Ie
FREQUENCY INPUTS					
Measuring range and type	—	—	—	15-65Hz ±10% TRMS	—
Voltage range	—	—	—	15-660VAC	—
Input rated voltage	—	—	—	600VAC	—
MEASURING ACCURACY					
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.) — cosφ	—	—	—	—	± 1° ±1 digit
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	—	—
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.) — current	—	±0.5% f.s. ±1 digit		—	—
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.) — frequency	—	—	—	±1 digit	—
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 tyoe of contact	1 changeover (SPDT)				
Rated voltage	250VAC				
UL/CSA and IEC/EN 60947-5-1 designation	8A 250VAC in AC1 / B300				
Electrical life	10^5				
Mechanical life	$30x10^6$				
INSULATION					
Rated insulation voltage Ui	600VAC	415VAC	600VAC		
CONNECTIONS					
Type of terminals	Fixed (DMK 8...); Removable (DMK 0...)				
Maximum tightening torque	0.8Nm (7lbin) for DMK 0... / 0.5Nm (4.5lbin for DMK 8...)				
Conductor section min-max	0.2-2.5mm² (24-12 AWG) for DMK 0... 0.2-4.0mm² (24-12 AWG) for DMK 8...				
AMBIENT CONDITIONS					
Operating temperature	-20...+60°C				
Storage temperature	-30...+80°C				
HOUSING					
Material	Thermoplastic (DMK 0...) / Polyamide (DMK 8...)				

❶ On specific request.

TYPE		DMK 10 - DMK 10 R1 DMK 70 - DMK 70 R1	DMK 11 - DMK 11 R1 DMK 71 - DMK 71 R1	DMK 15 - DMK 15 R1 DMK 75 - DMK 75 R1	DMK 16 DMK 16 R1
AUXILIARY SUPPLY					
Rated voltage Us		24VAC❶ 110-127VAC❶ 220-240VAC 380-415VAC❶			
Operating voltage range		0.85-1.1 Us			
Rated frequency		50-60Hz ±10%			
Maximum power consumption		3.3VA (DMK...) 3.6VA (DMK... R1)	3.3VA (DMK...) 3.6VA (DMK... R1)	3.3VA (DMK...) 3.6VA (DMK... R1)	3.6VA (DMK...) 3.9VA (DMK... R1)
Maximum power dissipation		1.5W (DMK...) 1.8W (DMK... R1)	1.5W (DMK...) 1.8W (DMK... R1)	1.5W (DMK...) 1.8W (DMK... R1)	1.8W (DMK...) 2.1W (DMK... R1)
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
Frequency range		50-60Hz ±10%	—	50-60Hz ±10%	50-60Hz ±10%
Method of measuring		TRMS	—	TRMS	TRMS
CURRENT INPUTS					
Rated current Ie		—	5A	5A	5A
Measuring range		—	0.05-6A	0.05-5.75A	0.05-5.75A
Frequency range		—	50-60Hz ±10%	50-60Hz ±10%	50-60Hz ±10%
Type of input		—	Shunts connected by external low voltage CT 5A max		
Type of measuring		—	TRMS	TRMS	TRMS
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	—	—	—	Classe 2
	frequency	—	—	±1 digit	±1 digit
RELAY OUTPUT FOR DMK... R1 TYPES ONLY					
Number and type of contact		1 changeover (SPDT)	1 changeover (SPDT)	1 changeover (SPDT) ❷	1 changeover (SPDT)
Rated voltage		250VAC	250VAC	250VAC	250VAC
UL/CSA and IEC/EN 60947-5-1 designation		AC1 8A 250VAC / B300	AC1 8A 250VAC / B300	AC1 8A 250VAC / B300	AC1 8A 250VAC / B300
Electrical life		10^5	10^5	10^5	10^5
Mechanical life		$30x10^6$	$30x10^6$	$30x10^6$	$30x10^6$
INSULATION					
Rated insulation voltage Ui		600VAC	415VAC	600VAC	600VAC
CONNECTIONS					
Type of terminals		Removable (DMK 1...); Fixed (DMK 7...)			
Maximum tightening torque		0.5Nm (4.5lbin) for DMK 0...; 0.8Nm (7lbin) for DMK 7...			
Conductor section min-max		0.2-2.5mm² (24-12 AWG) for DMK 0... 0.2-4.0mm² (24-12 AWG) for DMK 7...			
AMBIENT CONDITIONS					
Operating temperature		-20...+60°C			
Storage temperature		-30...+80°C			
HOUSING					
Material		Polyamide (DMK 7...) / Thermoplastic (DMK 1...)			

❶ On specific request.
❷ One N/O (SPST) contact for DMK 75 R1.

TYPE		DMK 20 - DMK 21 - DMK 22	DMK 25
AUXILIARY SUPPLY			
Rated supply voltage Us		208-240VAC	12-24VDC from battery
Operating voltage range		154-288VAC for DMK 20 177-264VAC for DMK 21 - DMK 22	9-32VDC
Frequency		45...65Hz	—
Maximum power consumption		5.5VA (Us=240V) for DMK 20 - DMK 21 6VA (Us=240) for DMK 22	1.1W maximum
Maximum power dissipation		2.5W (Us=240V) for DMK 20 - DMK 21 2.8W (Us=240) for DMK 22	1.1W maximum
Immunity time of microbreakings		20ms	500ms
VOLTAGE INPUTS			
Maximum rated voltage Ue		690VAC phase-phase (400VAC phase-neutral)	
Operating voltage range		60-830V phase-phase (30-480VAC phase-neutral)	
Frequency range		45-65Hz	
Method of measuring		True RMS value	
Measuring input impedance		>1.1MΩ phase-phase and >570kΩ phase-neutral	
Method of connections		Single phase, two-phase, three-phase or balanced three-phase system	
Measuring error		±0.25% full scale ±1digit (Class 0.5)	
CURRENT INPUTS			
Rated current Ie		Standard 5A (1A on request)	
Measuring range		0.05...6A	
Method of measuring		True RMS value	
Overload capacity		+20% Ie by external CT with 5A secondary	
Overload peak		50A for 1s	
Dynamic peak		125A for 10ms	
Power consumption		<0.6W per phase	
Measuring error		Class 0.5 ±0.25% f.s. ±1digit	
MEASURING ACCURACY			
Measurement conditions (Temperature +23°C ±1°C Humidity 45 ±15% R.H.)	voltage	Class 0.5 ±0.35% f.s. (830V)	
	current	Class 0.5 ±0.5% f.s. (6A)	
	active energy	Class 2	
	frequency	—	
	harmonic distorsion	—	
OUTPUTS			
Relay		—	
Static		—	
INSULATION			
IEC rated insulation voltage Ui		690V	
CONNECTIONS			
Type of terminals		Removable	
Maximum tightening torque		0.5Nm (4.5lbin)	
Conductor section min-max		0.2-2.5mm^2 (24-12 AWG)	
AMBIENT CONDITIONS			
Operating temperature		-20...+60°C	
Storage temperature		-30...+80°C	
Relative humidity		<90%	
MAximum pollution degree		2	
HOUSING			
Material		Self-extinguishing black plastic	

❶ For DMK 32D 048 only.

	DMK 30 - DMK 31 - DMK 32	DMK 40	DMK 50 - DMK 51 - DMK 52	DMK 60 - DMK 61 - DMK 62
	24-48VDC❶/100-240VAC/110-250VDC		208-240VAC	100-240VAC/110-250VDC
	18-70VDC❶ 85-265VAC/93.5-300VDC		154-288VAC for DMK 50 177-264VAC for DMK 51 - DMK 52	85-265VAC/93.5-300VDC
	45-450Hz		45-65Hz	45-450Hz
	10VA/4W		5.5VA (Us=240V) for DMK 50 - DMK 51 6VA (Us=240) for DMK 52	10VA/4W
	3W (DMK 30) 4W (DMK 31 - DMK 32)	4W	2.5W (Us=240V) for DMK 50 - DMK 51 2.8W (Us=240) for DMK 52	3W for DMK 60 4W for DMK 61 - DMK 62
	20ms			
	690VAC phase-phase (400VAC phase-neutral)			
	20-830V phase-phase (10-480VAC phase-neutral)		60-830V phase-phase (30-480VAC phase-neutral)	20-830V phase-phase (10-480VAC phase-neutral)
	45...65Hz			
	True RMS value			
	>1.1MΩ phase-phase and >570kΩ phase-neutral			
	Single phase, two-phase, three-phase systems with or without neutral		Single phase, two-phase, three-phase or balanced three-phase system	Single phase, two-phase, three-phase systems with or without neutral
	Class 0.5 ±0.25% full scale ±1digit			
	standard 5A (1A on request)			
	0.02-6A		0.05-6A	0.02-6A
	True RMS value			
	+20% Ie by external CT with 5A secondary			
	50A for 1s			
	125A for 10ms			
	<0.3VA		<0.6W per phase	<0.3VA
	Class 0.5 ±0.25% full scale ±1digit			
	0.25% f.s. (830V)		Class 0.5 ±0.35% f.s. (830V)	0.25% f.s. (830V)
	0.35% f.s. (6A)		Class 0.5 ±0.5% f.s. (6A)	0.35% f.s. (6A)
	Class 1		Class 2	Class 1
	±1 digit		—	±1 digit
	±1 digit		—	±1 digit
	5A - 250VAC in AC1 for DMK 31 - DMK 32	—	—	5A - 250VAC in AC1 for DMK 61 - DMK 62
	55mA - 60VAC/DC in AC1 for DMK 31 - DMK 32	—	—	55mA - 60VAC/DC in AC1 for DMK 61 - DMK 62
	690V			
	Removable		Fixed	
	0.5Nm (4.5lbin)		0.45Nm (4lbin)	
	0.2-2.5mm² (24-12AWG)		0.2-1.5mm² (24-16 AWG)	
	-20...+60°C			
	-30...+80°C			
	<90%			
	2			
	Self-extinguishing black plastic		Self-extinguishing grey plastic	