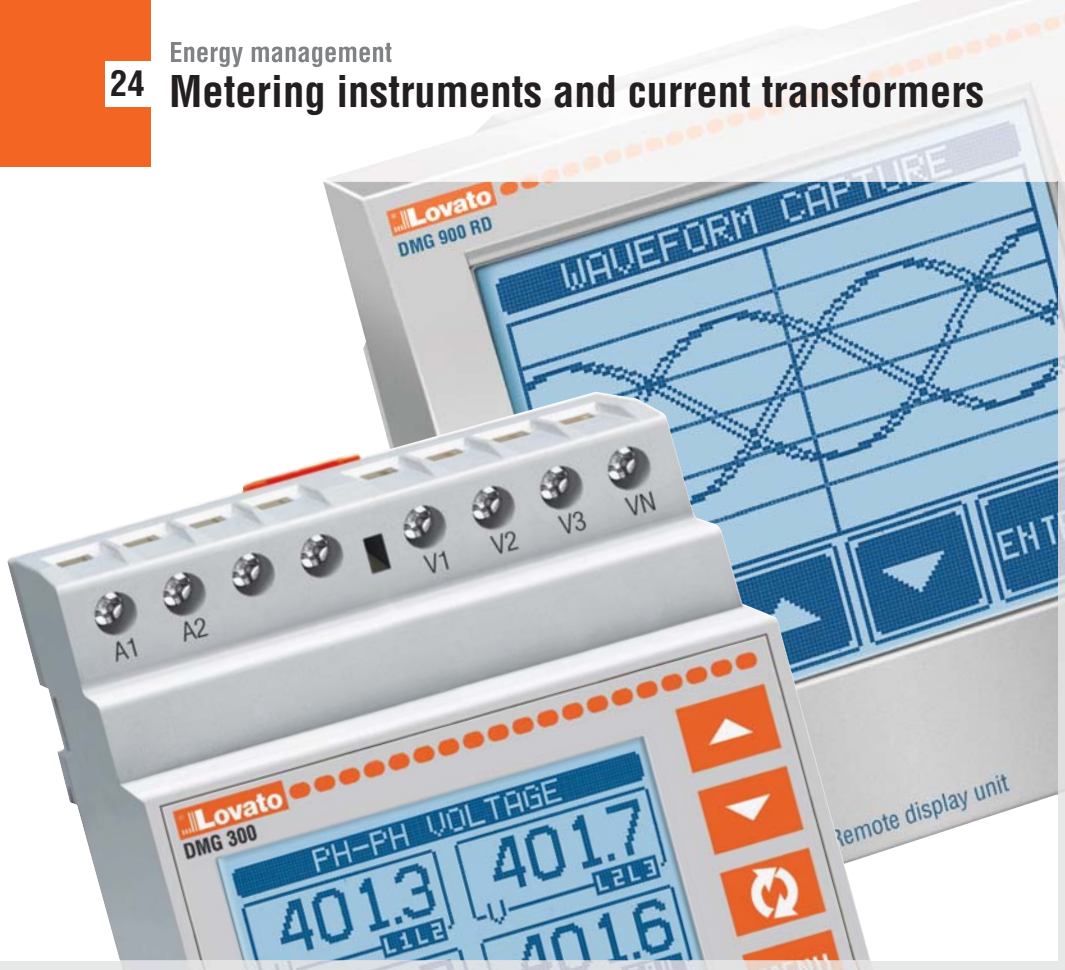
Metering instruments and current transformers



- Single and three-phase energy meters
- MID certified versions with UTF certificates
- Digital voltmeters, ammeters, wattmeters, frequency meters and cosφ meters
- Digital multimeters and power analyzers, expandable, with graphic or icon LCD
- Connection to single, two and three-phase systems
- Ideal for distribution systems, electricity cogeneration and on-board machinery installations
- High measurement accuracy
- Totally programmable digital and analog inputs and outputs
- RS485, RS232, USB, Ethernet, Profibus DP and M-Bus communication ports

Page 24-8

ENERGY METERS

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

Page 24-14

DATA CONCENTRATORS

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

Page 24-15

DIGITAL LCD MULTIMETERS AND POWER ANALYZERS

- Graphic or icon LCD
- Modular and flush-mount 96x96mm versions
- Versions expandable with EXM... and EXP... expansion modules
- Version with built-in RS485 communication port.
- Version with current reading through Rogowski coils.

Page 24-19

PORTABLE POWER ANALYZERS

- IP65 housing
- With built-in USB interface
- GPRS/GSM communications
- Available kits of current clamps and cables.

Page 24-20

LED MEASURING INSTRUMENTS

- Voltmeters, ammeters, frequency meters, cosφ meters and wattmeters.

DIGITAL LED MULTIMETERS

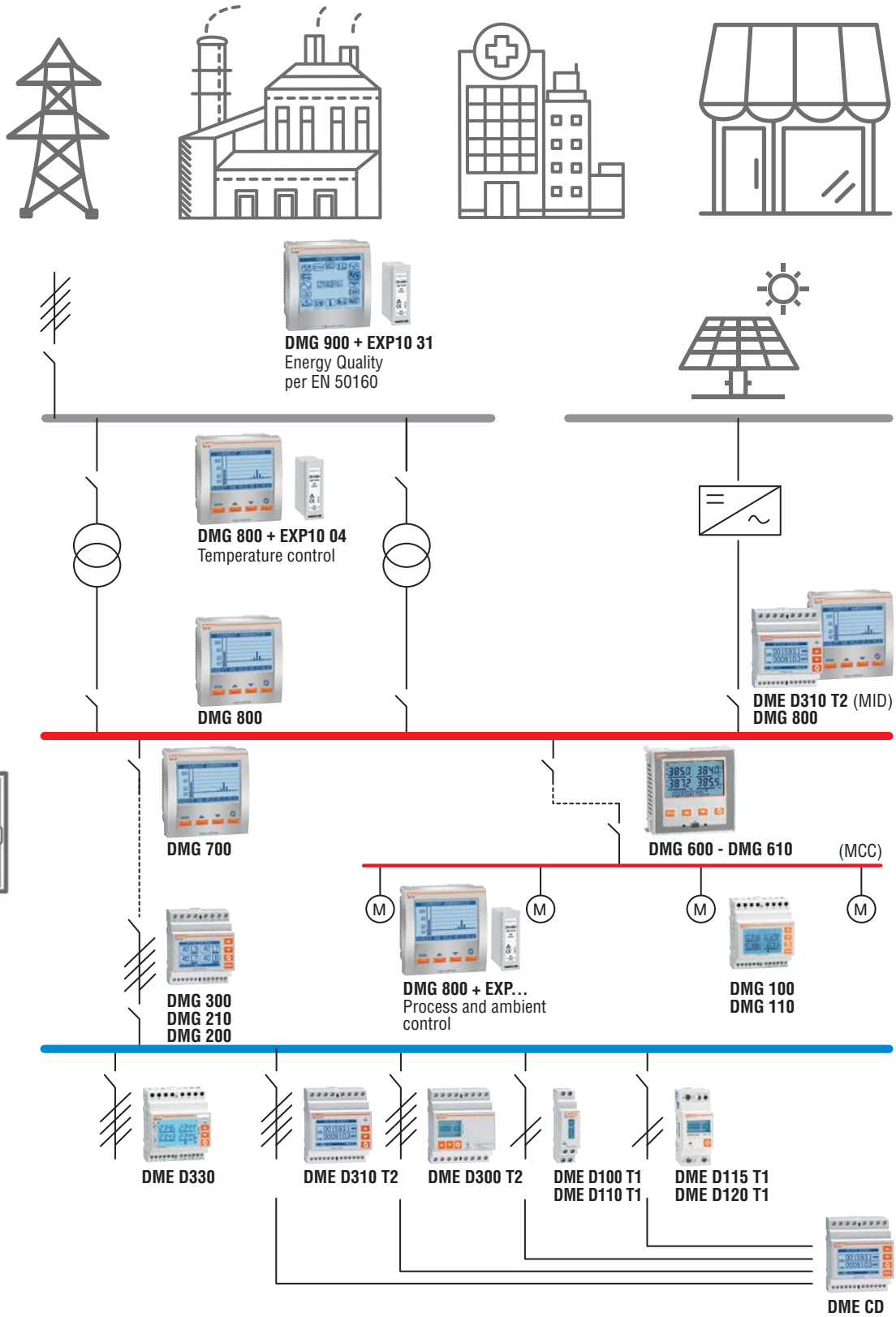
- Basic version, with energy meters, with 2 programmable outputs and built-in RS485 communication port.

Page 24-29

CURRENT TRANSFORMERS

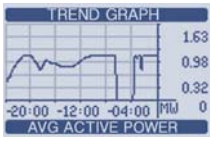
- Primary current: 50-4000A
- Secondary current: 5A
- Solid and split-core types
- Instrument and accuracy versions.

SYSTEM MANAGEMENT



DMG SERIES MULTIMETERS AND DME SERIES ENERGY METERS

Energy consumption monitoring



Energy quality verification

Energy quality analysis according to EN 50160

Water

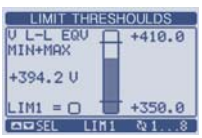
Pressure

PT100 temperature

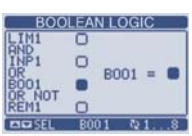
4-20mA 0-10V

Alarms

Process data collection

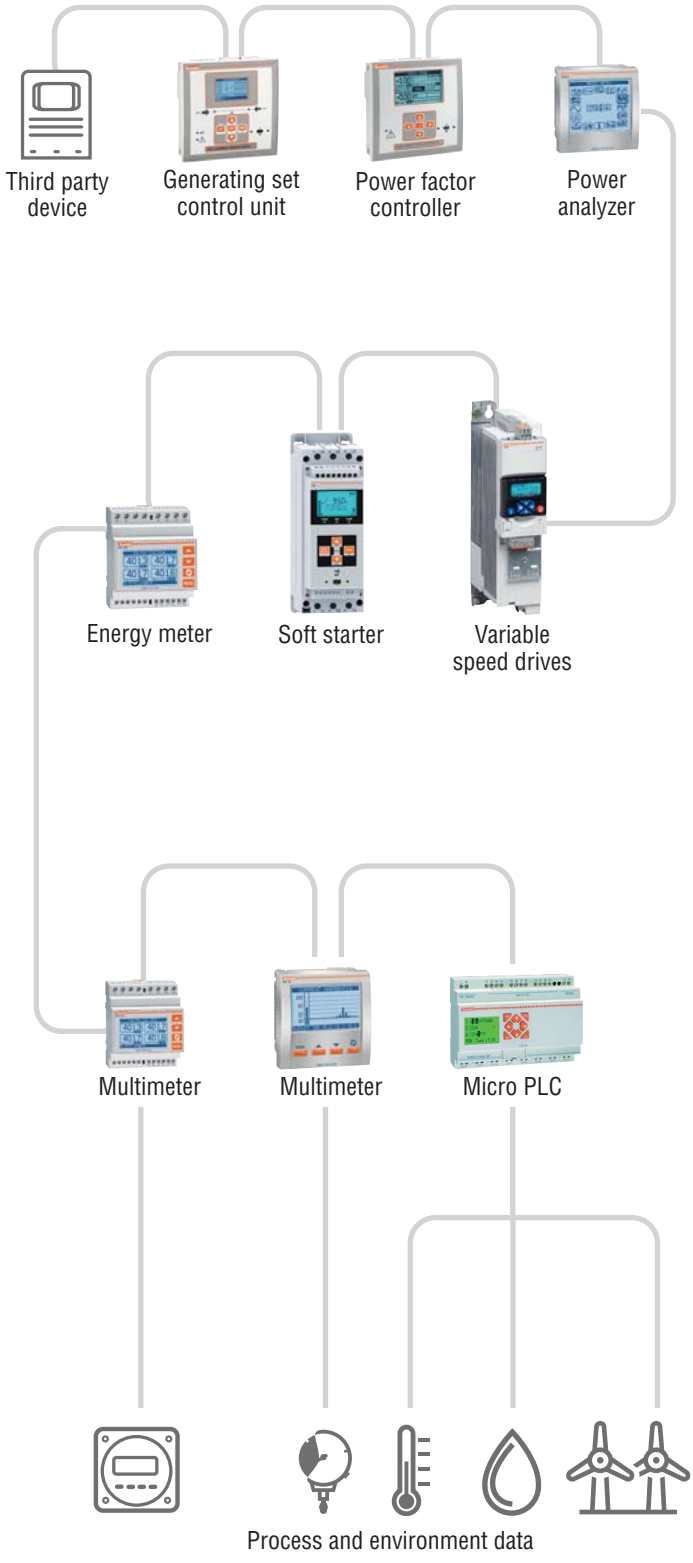


Control and diagnostic



Boolean logic combination

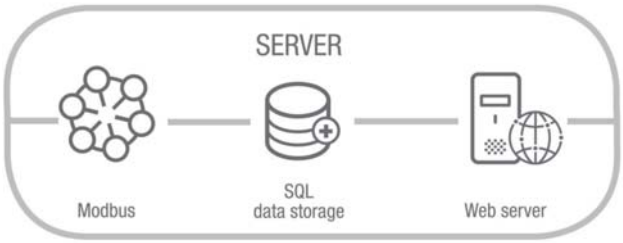
MONITORING AND CONTROL DEVICES + NETWORK INTERFACES



+ MONITORING SOFTWARE = GRAPHIC INTERFACE VIA WEB

Synergy

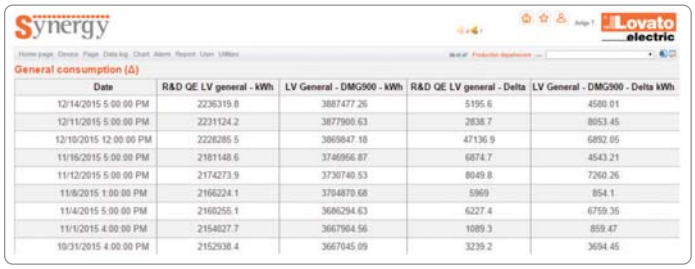
Synergy



Synergy cloud

Cloud

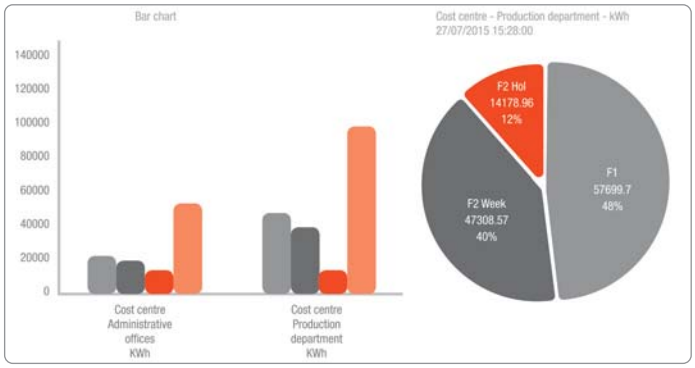
- MONITORING PAGES for the test of instantaneous data



Date	R&D QE LV general - kWh	LV General - DMG900 - kWh	R&D QE LV general - Delta	LV General - DMG900 - Delta kWh
12/14/2015 5:00:00 PM	2236319.8	3887477.26	5195.6	4580.01
12/11/2015 5:00:00 PM	2231124.2	3877900.63	2838.7	8053.45
12/10/2015 12:00:00 PM	2228285.5	3869847.18	47136.9	6892.05
11/16/2015 5:00:00 PM	2181148.6	3746956.87	6874.7	4543.21
11/12/2015 5:00:00 PM	2174273.9	3730740.53	8049.8	7260.26
11/8/2015 1:00:00 PM	2166224.1	3704870.68	5969	854.1
11/4/2015 5:00:00 PM	2160255.1	3686294.63	6227.4	6759.35
11/1/2015 4:00:00 PM	2154027.7	3667904.56	1089.3	859.47
10/31/2015 4:00:00 PM	2152938.4	3667045.09	3239.2	3694.45

- DATA LOG for data storage

- GRAPHICS for the representation over time of the data collected from the data logs



- REPORT for the processing of time band data or consumption users

SINGLE-PHASE DIRECT CONNECTION

	 DME D100 T1	 DME D110 T1	 DME D115 T1	 DME D120 T1	 DME D121	 DME D122	 DME D130 LM
Maximum current	40A	40A	40A	63A	63A	63A	63A
Display							
Vertical, no backlight	●	●					
Horizontal, backlight			●	●	●	●	●
Measurements							
kWh	●						
kWh, kW with average and max demand			●				
kWh, kvarh, kW with average and max demand, kvar, V, I, Hz, PF, total and partial hour counter		●		●	●	●	●
Interface							
Pulse output	●						
Programmable output (pulses/thresholds)		●	●	●			
Built-in Modbus RTU (RS485)					●		
Built-in M-Bus						●	
MID version availability	●	●		●	●	●	
Load management							●
Compatibility with Synergy, Synergy Net and Xpress software					●		

THREE-PHASE

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

❶ UTF-certified versions are available on request.

DIN RAIL MOUNTING (MODULAR)

	 DMG 100	 DMG 110	 DMG 200	 DMG 210	 DMG 300
Maximum rated voltage	600VAC	600VAC	690VAC	690VAC	690VAC
Voltage and current measure accuracy	0.5%	0.5%	0.5%	0.5%	0.2%
Active energy measure accuracy	Class 1	Class 1	Class 1	Class 1	Class 0.5s
Single-phase energy meter	●	●			
Harmonic analysis	15° order	15° order	THD only	THD only	31° order
Boolean logic					●
Expandable with EXM... modules					3 modules
Display type	Icons	Icons	Graphic	Graphic	Graphic
Built-in communication port		RS485		RS485	
Communication port with EXM... modules					RS232 USB RS485 Ethernet
Ethernet-RS485 gateway function					●

FLUSH-MOUNTING (96x96mm/3.78”x3.78”)

	 DMG 600	 DMG 610 DMG 611	 DMG 700	 DMG 800	 DMG 900	 DMG 900T + DMG 900RD
Maximum rated voltage	600VAC	600VAC	690VAC	690VAC	690VAC	690VAC
Current reading	CT /5A or /1A	CT /5A or /1A (for DMG 610) Rogowski coils (for DMG 611)	CT /5A	CT /5A or /1A	CT /5A or /1A	CT /5A or /1A
Voltage and current measure accuracy	0.5%	0.5%	0.5%	0.2%	0.2%	0.2%
Active energy measure accuracy	Class 1	Class 1	Class 1	Class 0.5s	Class 0.5s	Class 0.5s
Single-phase energy meter	●	●				
Harmonic analysis	15° order	15° order	THD only	31° order	63° order	63° order
Neutral-earth voltage						●
Neutral current	Calculated	Calculated	Calculated	Calculated	Calculated or measured via CT	Calculated or measured via CT
Boolean logic			●	●	●	●
Expandable with EXP... modules	1 module	1 module	4 modules	4 modules	4 modules	4 modules
Display type	Icons	Icons	Graphic	Graphic	Graphic	Graphic (DMG900RD)
Built-in communication port		RS485				RS485 or RS232 selectable
Communication port with EXP... modules	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet	RS232 USB RS485 Ethernet Profibus DP slave	RS232 USB RS485 Ethernet Profibus DP slave GSM/GPRS	RS232 USB RS485 Ethernet Profibus DP slave GSM/GPRS
Ethernet-RS485 gateway function				●	●	●
Energy quality according to EN50160						●
Degree of protection	IP54	IP54	IP65	IP65	IP65	IP65 (DMG 900RD)

Single-phase

DME M100

DME D110 T1...

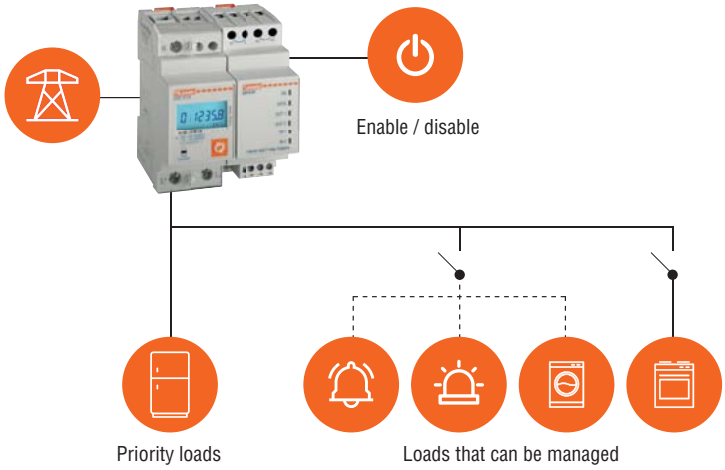
DME D115 T1...
DME D120 T1...
DME D121 - DME D122

	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 program. static output, multi-measurements❶, 220...240VAC	1	0.090
	DME D110 T1 A120	40A direct connection, 1U 1 program. static output, multi-measurements❶,110...120VAC	1	0.090
	Digital meter with backlight LCD display.			
	DME D115 T1	40A direct connection, 2U, 1 program. static output, multi-measurements ❷, 220-240VAC	1	0.090
	DME D120 T1	63A direct connection, 2U 1 program. static output, multi-measurements ❶, 220-240VAC	1	0.148
	DME D120 T1 A120	63A direct connection, 2U 1 program. static output, multi-measurements❶, 110...120VAC	1	0.148
	DME D121	63A direct connection, 2U, RS485 interface multi-measurements ❶, 220-240VAC	1	0.148
new	**DME D122**	63A direct connection, 2U, M-Bus interface multi-measurements ❶, 220-240VAC	1	0.148

Single-phase Load management

DME D130LM

	Order code	Description	Qty per pkg	Wt
			n°	[kg]
	Digital meter with backlight LCD display per load management.			
new	**DME D130 LM**	63A direct connection, 4U, multi-measurement❶, 2 inputs and 2 relay outputs for load management, 220...240VAC	1	0.148



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

Operational characteristics
DME M...
- Mechanical meter with 6+1 digit count
- Rated supply voltage: 230VAC -20...+15%
- Direct connection
- 32A maximum current
- Active energy measurement and accuracy: Class 1 (IEC/EN 62053-21)
- 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 D100 T1 – DME D110 T1 – DME D115 T1
DME D120 T1 – DME D121 – DME D122 – DME D130LM
- LCD meter : with 5+1 digit count for DME D100 T1, DME D110 T1...; backlight with 6+1 digit count for DME D115 T1, DME D120 T1, DME D121, DME D122, DME D130LM
- Nominal supply voltage:
  - 220...240VAC for DME D...T1
  - 110...120AC for DME D...T1 A120
- Voltage range:
  - 187...264VAC for DME D...T1
  - 93...132VAC for DME D...T1 A120
- Direct connection
- Maximum current: 40A for DME D100 T1, DME D110 T1..., DME D115 T1; 63A for DME D120 T1 – DME D121 – DME D122 – DME D130LM
- Active energy measurement and accuracy: Class 1 (IEC/EN 62053-21)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurement
- One output: pulse for DME D100 T1; programmable static for all other types
- Built-in RS485 port for DME D121; compatible with Synergy e Xpress
- Built-in M-Bus port for DME D122
- Modular housing: 1 module for DME D100 T1, DME D110 T1; 2 module for all other types
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E346886), as Electrical Process Control Equipment - Energy meters, for DME D100..., DME D110..., DME D120..., DME D121 types.
Compliant with standards: IEC/EN 61326-1 for DME M... type; IEC/EN 50470-1, IEC/EN 61010-1 for DME D... types; UL 61010-1, CSA C22-2 n° 61010-1 for DME D100..., DME D110..., DME D120..., DME D121.

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

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

Single-phase, MID certified

MID

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-measurements ❶, 230VAC	1	0.090
	DME D120 T1 MID	63A direct connection, 2U 1 programmable static output, multi-measurements ❶, 230VAC	1	0.148
new	**DME D121 MID**	63A direct connection, 2U, RS485 interface multi-measurements ❶, 220...240VAC	1	0.148
new	**DME D122 MID**	63A direct connection, 2U, M-Bus interface multi-measurements ❶, 220...240VAC	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 accordingly whenever used for monetary transactions in this territory.

Operational characteristics
- LCD meter:
  - With 5+1 digit count for DME D100/110 T1 MID
  - Backlight with 6+1 digit count for all other types
- 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, DME D121 MID,
  DME D122 MID
- Active energy measurement and accuracy:
  Class B (EN 50470-3)
- Reactive energy measurement and accuracy:
  Class 2 (IEC/EN 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- One output: pulse for DME D100 T1 MID; programmable static for other types
- Built-in RS485 port for DME D121 MID; compatible with Synergy and Xpress
- Built-in M-Bus port for DME D122 MID
- Modular housing, 1 module for DME D100 T1,
  DME D110 T1 MID; 2 module for other types
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

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

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

Three-phase with or without neutral, non expandable

DME D300 T2

DME D330

	Order code	Description	Qty per pkg	Wt
			n°	[kg]
	Digital meter for three-phase with neutral. 80A direct connection.			
	DME D300 T2	4U, 2 programmable static outputs, multi-measurements ❶	1	0.360
	DME D301	4U, RS485 interface, multi-measurements❶	1	0.360
new	**DME D302**	4U, M-Bus interface, multi-measurements❶	1	0.360
	Digital meter for three-phase with or without neutral. Connection by CT /5A.			
new	**DME D305 T2**	4U, 2 programmable static outputs, multi-measurements ❶	1	0.332
	DME D330	4U, RS485 interface, multi-measurements❶	1	0.332
new	**DME D332**	4U, M-Bus interface, multi-measurements❶	1	0.332

Three-phase with or without neutral, expandable

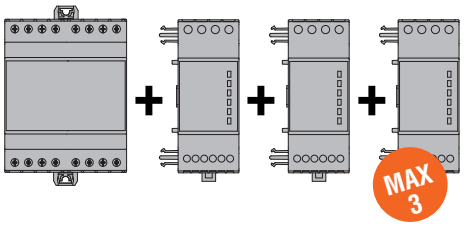
DME D310 T2

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

EXM10 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 module EXM series by optical interface.

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 380...415VAC (L-L)
- Voltage range: 323...456VAC (L-L)
- Active energy measurement and accuracy: Class 0.5s (IEC/EN 62053-22) for DME D305T2, DME D330 and DME D332, Class 1❷ (IEC/EN 62053-21) for DME D300T2, DME D301 and DME D302
- Active energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial active energy measurements
- 1 programmable digital input
- 2 programmable static outputs for DME D300T2, DME D305T2 and DME D310T2
- Built-in RS485 port for DME D301 and DME D330; compatible with Synergy and Xpress
- Built-in M-Bus port for DME D302 and DME D332
- Optical interface for EXM10... expansion modules with DME D310 T2
- Modular housing, 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-3.

Certifications and compliance
Certifications obtained: EAC for all types, RCM for DME D305T2, DME D310T2, DME D330.
Compliant with standards: IEC/EN 50470-1, IEC/EN 61010-1, IEC 61010-2-030.

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

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

Three-phase with neutral, non expandable, MID certified

MID

DME D300 T2 MID

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral. 80A direct connection.			
DME D300 T2 MID	2 programmable static outputs, multi-measurements❶	1	0.360
DME D301 MID	4U, RS485 interface, multi-measurements❶	1	0.360
DME D302 MID	4U, M-Bus interface, multi-measurements❶	1	0.360
Digital meter for three-phase with neutral. Connection by CT /5A.			
DME D305 T2 MID	2 programmable static outputs, multi-measurements❶	1	0.332
DME D330 MID	4U, RS485 interface, multi-measurements❶	1	0.332
DME D332 MID	4U, M-Bus interface, multi-measurements❶	1	0.332

Three-phase with neutral, expandable, MID certified

MID

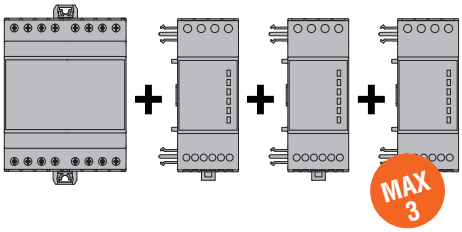
DME D310 T2 MID

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral. Connection by CT /5A.			
DME D310 T2 MID	2 programm. static outputs, multi-measurements❶, expandable, graphic LCD display	1	0.332

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

EXM10 10

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 module EXM series by optical interface.

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187...264VAC (L-N); 323...456VAC (L-L)
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- 2 programmable static outputs DME D300 T2 MID, DME D305 T2 MID and DME 310 T2 MID
- Built-in RS485 port for DME D301 MID and DME D330 MID; compatible with Synergy and Xpress
- Built-in M-Bus port for DME D302 and DME D332
- Optical interface for EXM10... expansion modules with DME D310 T2
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-3.

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

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

Three-phase with neutral, MID certified

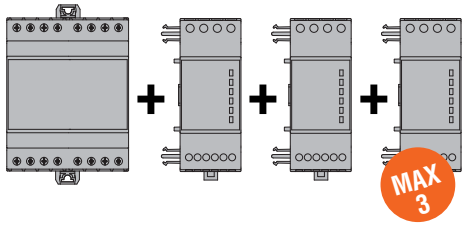
DME D300 F

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Digital meter for three-phase with neutral, non expandable, complete with UTF certificates for installations in Italy.			
DME D300 F	DME D300 T2 MID, complete with UTF certificate	1	0.360
DME D301 F	DME D301 MID, complete with UTF certificate	1	0.381
DME D305 F new	DME D305 T2 MID, complete with UTF certificate	1	0.381
DME D330 F	DME D330 MID, complete with UTF certificate	1	0.381
Digital meter for three-phase with neutral, expandable, complete with UTF certificates for installations in Italy.			
DME D310 F new	DME D310 T2 MID, complete with UTF certificate	1	0.381

EXM10 10

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
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
The UTF (Finance Technical Office) certification is required in case of applications where taxes have to be paid due to energy production (Italian regulations for plants >20kW).
The certificates must be associated to the energy meter (MID version) and to each single current transformer in needed (see page 24-13 for selection).
DME energy meters, MID version, for three-phase systems with or without current transformers can be supplied with the certificates included (DME...F). DME D310 F... can be expanded up to 3 EXM modules.
If required, the fifth certificate relevant to the meter and current transformer combination can be supplied as well (see page 24-13).

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 230VAC (L-N); 400VAC (L-L)
- Voltage range: 187...264VAC (L-N); 323...456VAC (L-L)
- Active energy measurement and accuracy: Class B (EN 50470-3)
- Reactive energy measurement and accuracy: Class 2 (IEC/EN 62053-23)
- Metrological LED with pulse emission for consumption indication
- Clearable partial energy measurements
- 1 programmable digital input
- 2 programmable static outputs for DME D300 F, DME D305 F and DME 310 F
- Built-in RS485 port for DME D301 F and DME D330 F; compatible with Synergy e Xpress
- Optic interface for EXM10... expansion modules with DME D310 F
- Modular housing 4 module
- Sealable terminal blocks, standard supplied
- EN degree of protection: IP40 on front; IP20 at terminals.

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

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-3.

Certifications and compliance
Certifications obtained: MID Class B (EN 50470-1, EN 50470-3), certifications per module B (type tests) + per module D (production conformity) for DME D300 F and DME D310 F energy meters.
UTF certificates are standard supplied.
Compliant with standards: EN 50470-1, EN 50470-3, TR 50579.

Current transformer kits with UTF certificates

DM...

new

Order code	Description of CTs included	Qty per pkg	Wt
		n°	[kg]
Kit comprising of three /5A and class 0.5s current transformers			
DM1TP 0060 F KIT	3 DM1TP0060, complete with UTF certificate	1	1.440
DM1TP 0080 F KIT	3 DM1TP0080, complete with UTF certificate	1	1.440
DM1TP 0100 F KIT	3 DM1TP0100, complete with UTF certificate	1	1.560
DM1TP 0150 F KIT	3 DM1TP0150, complete with UTF certificate	1	1.680
DM1TP 0200 F KIT	3 DM1TP0200, complete with UTF certificate	1	1.620
DM1TP 0250 F KIT	3 DM1TP0250, complete with UTF certificate	1	1.620
DM1TP 0300 F KIT	3 DM1TP0300, complete with UTF certificate	1	1.680
DM1TP 0400 F KIT	3 DM1TP0400, complete with UTF certificate	1	1.680
DM3TP 0500 F KIT	3 DM3TP0500, complete with UTF certificate	1	2.160
DM3TP 0600 F KIT	3 DM3TP0600, complete with UTF certificate	1	2.160
DM3TP 0800 F KIT	3 DM3TP0800, complete with UTF certificate	1	2.280
DM5TP 1000 F KIT	3 DM5TP1000, complete with UTF certificate	1	2.820
DM5TP 1250 F KIT	3 DM5TP1250, complete with UTF certificate	1	2.760
DM5TP 1600 F KIT	3 DM5TP1600, complete with UTF certificate	1	2.880
DM5TP 2000 F KIT	3 DM5TP2000, complete with UTF certificate	1	2.940
DM5TP 2500 F KIT	3 DM5TP2500, complete with UTF certificate	1	3.120
DM5TP 3000 F KIT	3 DM5TP3000, complete with UTF certificate	1	2.940

Certificate for whole system

Order code	Description
DM CERT UTF	UTF system certificate

General characteristics

The UTF (Finance Technical Office) certification is required in case of applications where taxes have to be paid due to energy production (Italian regulations for plants >20kW).
The certificates must be associated to the energy meter (MID version, see page 24-13 for selection) and to each single current transformer is needed.
DME energy meters, MID version, for three-phase systems with or without current transformers can be supplied with the certificates included (DME...F). DME D310 F... can be expanded up to 3 EXM modules.
If required, the fifth certificate relevant to the meter and current transformer combination can be supplied as well.
The DM...TP type accuracy current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TP are accuracy current transformers in class 0.5s without a primary winding and are normally used for high primary current values starting from 60A.
The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current (see page 24-30).

Operational characteristics

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

Compliance

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

Expandable

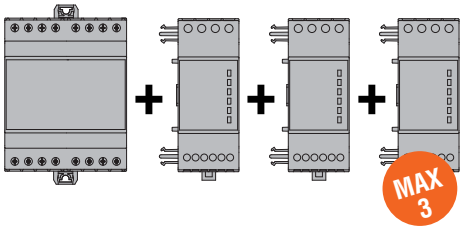
DME CD

EXM10 10

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Data concentrator for general use.			
DME CD	With 8 programmable digital inputs, expandable, for data collection + pulse count from DMEM100T1 and DME D…, RS485 port	1	0.337

Order code	Description
DME CD 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
DME CD 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 comes in from the outputs of meters for energy, water, gas and other types of consumption: All data is viewed on its display or can also be available for PCs through its built-in RS485 interface using Synergy or Xpress software.
It can be expanded with up to 3 EXM series modules by optical interface.
With the programmable functions, average values can be determined for instantaneous quantities, such as power, speed, production rate, gas and water consumption, etc.

Operational characteristics
- LCD multifunction meter
- Nominal supply voltage: 100...240VAC/110...250VDC
- Voltage range: 85...264VAC/93.5...300VDC
- Backlight graphic LCD
- 8 inputs, expandable with EXM 10… modules up to 14
- Built-in RS485 communication port
- Modbus-RTU, ASCII and TCP communication protocol
- Clearable total and partial counters for each channel
- Programmable general counters
- Calculation of derivative average values
- Mathematical operations among counters
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-3.

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 DME CD.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3.

Modular LCD multimeters, non expandable

DMG 1...

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
DMG 100	Icon LCD, auxiliary supply 100...240VAC/120...250VDC. Multilanguage: Italian, English, French, Spanish, Portuguese and German	1	0.294
DMG 110	Icon LCD, RS485 port, auxiliary supply 100...240VAC/120...250VDC. Multilanguage: Italian, English, French, Spanish, Portuguese and German	1	0.294
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

DMG 200 - DMG 210

Kits with CT

DMG KIT 100 150

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

General characteristics
DMG... digital multimeters are available with a modular housing, 4 module size, and are equipped with a graphic backlight LCD (except DMG 100/110 with icon display) capable of providing extremely clear, intuitive and flexible viewing of all electrical parameters of an installation.
For DMG 110 and DMG 210 versions, there is a built-in isolated RS485 interface.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions of all measurements
- Maximum demand of power and current values
- Asymmetric voltage and current
- Total harmonic distortion (THD) of voltage and current values
- Energy meters for active, reactive and apparent values
- Hour counter (total and partial, 1 on DMG 200/210, 4 programmable on DMG 100/110)
- Phase energy (DMG 100/110)
- Harmonic analysis up to the 15th order (DMG 100/110).

Operational characteristic
- Auxiliary supply voltage range: 100...240VAC / 110...250VDC
- Maximum rated measurement voltage
  - 600VAC (DMG 100/110)
  - 690VAC (DMG 200/210)
- Voltage measurement range:
  - 50...720VAC phase-to-phase (DMG 100/110)
  - 20...830VAC phase-to-phase (DMG 200/210)
- Usage in medium and high-voltage systems with voltage transformers
- Rated input current: With external CT /5A (also 1A for DMG 100/110)
- Current measurement range with CT up to 10,000A
- Frequency measurement range: 45-66Hz
- True RMS measurements for voltage and current values
- Accuracy:
  - Voltage: ±0.5% (50...720VAC for DMG 1...) (50...830VAC) for DMG 2...
  - Current: ±0.5% (0.1...1.1In)
  - 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 (only for DMG 210 and DMG 110)
- Programming and remote control by software (only for DMG 210 and DMG 110; compatible with Synergy and Xpress software)
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

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

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

Certifications and compliance
Certifications obtained: EAC and RCM for all; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Multimeter for DMG 1.../DMG 2... types.
Compliant with standards: DMG100/110: IEC/EN 61010-1, IEC/EN 61010-2-030, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 61010-1, CSA C22.2 n° 61010-1, UL 61010-2-030, CSA 22.2 n° 61010-2-030.
DMG200/210: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL 61010-1, UL508, CSA C22.2 n°14.

Modular LCD multimeters, expandable

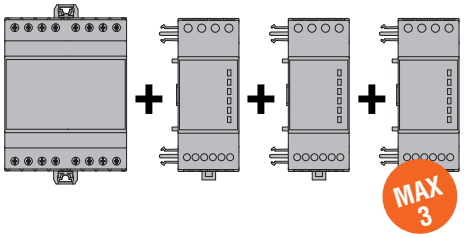
DMG 300

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

EXM10 10

Order code	Description
DMG 300 AND DMG 300 L01 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
DMG 300 digital multimeters are available with a modular housing, 4 module size, and are equipped with a graphic backlight LCD capable of providing extremely clear, intuitive and flexible viewing of all electrical parameters of a system.
The very accurate measurements combined with their extreme compactness provide an ideal solution for every type of application.
Expandable with up to 3 module EXM series by optical interface.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all 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...1.1In)
  - 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 storage
- Communication protocol Modbus RTU, ASCII and TCP (only with communication expansion modules)
- Programming and remote control by software (only with communication expansion modules); compatible with Synergy and Xpress software
- Modular housing, 4 module
- EN degree of protection: IP40 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-3.

Certifications and compliance
Certifications obtained: EAC and RCM for all; 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 611 R...

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 600	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100...440VAC/120... 250VDC, front optical port. Multilanguage❶	1	0.300
DMG 610	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100...440VAC/120... 250VDC, front optical port, built-in RS485 serial port. Multilanguage❶	1	0.350
DMG 611 R 0100	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100…440VAC/120… 250VDC, front optical port, built-in RS485 serial port. Multilanguage❶. Current reading through 3 Rogowski coils included, max current 100A	1	0.350
DMG 611 R 0500	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100…440VAC/120… 250VDC, front optical port, built-in RS485 serial port. Multilanguage❶. Current reading through 3 Rogowski coils included, max current 500A	1	0.350
DMG 611 R 3000	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100…440VAC/120… 250VDC, front optical port, built-in RS485 serial port. Multilanguage❶. Current reading through 3 Rogowski coils included, max current 3000A	1	0.350
DMG 611 R 6300	Backlight icon 72x46mm LCD, harmonic analysis, auxiliary supply 100…440VAC/120… 250VDC, front optical port, built-in RS485 serial port. Multilanguage❶. Current reading through 3 Rogowski coils included, max current 6300A	1	0.350

❶ Italian, English, French, Spanish and Portuguese.

EXP10...

Order code	Description
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 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

General characteristics
DMG 600/610/611 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/3.78"x3.78") and 1 expansion slot to fit plug-in expansion modules, suitable for numerous applications. The main features include an extended power supply voltage range, high measurement accuracy, expandability and graphic interactive interface for simple use.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Voltage and current asymmetry
- Total harmonic distortion (THD): voltage and current
- Harmonic analysis of voltage and current up to the 15° order
- Energy meters for active, reactive, apparent partial and total values
- Hour counter for programmable total and partial hours.

Operational characteristics
- Auxiliary supply voltage range:
  - 100...440VAC / 110...250VDC
- Voltage measurement range:
  50...720VAC L-L
- Usage in medium and high voltage systems with voltage transformers
- Rated input current: By external CT 5A or 1A
- Current reading through Rogowski coils for DMG 611...
- Frequency measurement range 45...66Hz
- True RMS measurements: for voltage and current
- Measurement accuracy:
  - Voltage: ±0.5% (50...720VAC)
  - Current: ±0.5% (0.1...1.1In)
  - Power: ±1% f.s.
  - Frequency: ±0.05%
  - Active energy: Class 1 (IEC/EN 62053-21)
  - Reactive energy: Class 2 (IEC/EN 62053-23)
- Non-volatile memory for data storage
- Communication protocol Modbus-RTU, ASCII and TCP
- Compatible Synergy and Xpress sofware
- Flush-mount housing 96x96mm/3.78"x3.78"
- EN degree of protection: IP54 on front.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-2.

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

Flush-mount LCD multimeters, expandable

DMG 700 - DMG 800...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
DMG 700	Graphic 128x80 pixel LCD, auxiliary supply 100...440VAC/110...250VDC Multilanguage❶	1	0.510
DMG 700 L01	Graphic 128x80 pixel LCD, auxiliary supply 100...440VAC/110...250VDC Multilanguage❷	1	0.510
DMG 800	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100...440VAC/110...250VDC Multilanguage❶	1	0.510
DMG 800 L01	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 100...440VAC/110...250VDC Multilanguage❷	1	0.510
DMG 800 D048	Graphic 128x80 pixel LCD, harmonic analysis, auxiliary supply 12-24-48VDC	1	0.520

❶ Italian, English, French, Spanish and Portuguese.
❷ English, Czech, Polish, German and Russian.

EXP10...

Order code	Description
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
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 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/3.78"x3.78") with 4 expansion slots to fit plug-in expansion modules, suitable for numerous applications.
The main features include an extended power supply voltage range, high measurement accuracy, expandability and graphic interactive interface for simple use.
Main measurements:
- Voltage: phase, line and system values
- Current: phase values (neutral current calculated)
- Power: apparent, active and reactive phase and total values
- P.F.: Power Factor per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Voltage and current asymmetry
- Harmonic analysis of voltage and current up to the 31° order (only DMG 800)
- 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.

Operational characteristics
- Auxiliary supply voltage range:
  - 100...440VAC / 110...250VDC for DMG 700/800
  - 12-24-48VDC for DMG 800 D048
- Voltage measurement range:
  20...830VAC L-L
- Usage in medium and high voltage systems with voltage transformers
- Rated input current: by external CT 5A for DMG 700; by external CT 5A or 1A for DMG 800
- Frequency measurement range 45...66Hz
- True RMS measurements: for voltage and current
- Measurement accuracy for DMG 700:
  - Voltage: ±0,5%
  - Current: ±0,5% (0,1...1,1In)
  - Power: ±1% f.s.
  - Frequency: ±0,05%
  - Active energy: Class 1 (IEC/EN 62053-21)
  - 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: 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
- Compatible with Synergy and Xpress software
- Flush-mount housing 96x96mm/3.78"x3.78"
- EN degree of protection: IP65 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-2.

Certifications and compliance
Certifications obtained: EAC and RCM for all; 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, UL 61010-1, UL508, CSA C22.2 n°14.

Flush-mount LCD touch-screen power analyzers, expandable

DMG 900...

DMG M3 900 01

DMG 900T...

DMG 900RD

EXP10...

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
DMG 900	Graphic 128x112 pixel touch-screen LCD, harmonic analysis, 4 current channels, (neutral meas.), 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.), 100...440VAC/110...250VDC. Multilanguage: English, Czech, Polish, German and Russian	1	0.566
DMG 900 D048	Graphic 128x112 pixel touch-screen LCD, harmonic analysis, 4 current channels, auxiliary supply 12-24-48VDC	1	0.580
DMG M3 900 01	DMG 900 portable unit in M3N case, prewired for mobile applications, with USB port, without external cables (see page 24-28)	1	3.400
DMG 900T	Measurement transducer, harmonic analysis, 4 current channels (neutral meas.), 100...440VAC/110...250VDC, RS232 and RS485 ports ❶	1	0.570
DMG 900T D048	Measurement transducer, harmonic analysis, 4 current channels (neutral meas.), 12-24-48VDC, RS232 and RS485 ports ❶	1	0.590
Remote display for DMG 900T...			
DMG 900RD	Graphic 128x112 pixel touch-screen LCD, with 3m long connecting cable❷	1	0.396

❶ No simultaneous operations of serial ports.
Consult Technical support for information (Tel. 035 4282422; E-mail: service@LovatoElectric.com) or the instructions manual.
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, without antenna
EXP10 30	Data storage, clock-calendar (RTC) with backup reserve energy for data logging
EXP10 31	Data storage, with Energy Quality (EN 50160 - class B), 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/3.78"x3.78".
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.
Main measurements and functions include:
– Voltage: phase, phase-neutral and ground neutral-earth
– Supply voltage value (only DMG... D048)
– 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
– 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 Class B (with expansion module).

Operational characteristics
– Auxiliary supply voltage range:
110...440VAC / 110...250VDC for DMG 900 and DMG 900T;
12-24-48VDC 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 via CT
– Current measurement range: 0.05...10A o 0.01...1.2A
– Current measurements via CT up to 10,000A
– 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
– Housing: 96x96mm/3.78"x3.78" flush-mount (for DMG 900... and DMG 900RD) and 35mm DIN rail (for DMG 900T...)
– EN degree of protection: IP65 on front for DMG 900 - DMG 900RD; IP20 at terminals for DMG 900 - DMG 900T.

Synergy supervision and energy management software
See Section 29.

Xpress configuration and remote control software
See Section 29.

EXM series expansion modules
See page 30-2.

Certifications and compliance
Certifications obtained: EAC and RCM 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 61000-6-4, 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 R1❷	1 frequency value 1 max frequency value 1 min frequency value	1	1	0.323
Cosφ meter.				
DMK 04 R1❷	1 cosφ value 1 power factor value	1	1	0.290

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

❷ Relay output for control and protection functions.

General characteristics
The DMK 0... instruments are available with flush-mount housing, 96x48mm/3.78x1.89".
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

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

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

DMK 04 R1
- Cosφ measurement error: ±0.5° ±1 digit
- Cosφ 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 loss❸: 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 loss❸: 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, UL508, CSA C22.2 n° 14.

❸ Independent adjustable delays.

Flush-mount LED instruments three-phase, non expandable

DMK 1...

Order code	Displayed 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
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/3.78x1.89".
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

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

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%
– 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; 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/3.78x1.89".
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

Operational characteristics
- Auxiliary supply voltage: 220-240VAC
- Operating frequency: 50-60Hz
- True RMS measurements
- Accuracy: Voltage ±0.25% f.s. ±1 digit
  Current ±0.5% f.s. ±1 digit
- Active energy accuracy: Class 2 (IEC/EN 62053-21 and IEC/EN 62053-23)
- Max and min 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/3.78x1.89"
- Terminals: 4mm^2
- EN degree of protection: 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 R1 ❶	3 phase voltage values 3 phase to phase voltage values 3 phase current values 4 active power values, phase and total 4 reactive power values, phase and total 4 apparent power values, phase and total 3 phase power factor values 1 frequency value 1 active energy value in kWh 1 reactive energy value in kvarh 1 hour counter 3 maximum phase voltage values 3 maximum phase to phase voltage values 3 maximum phase current values 4 maximum active power values, phase and total 4 maximum reactive power values, phase and total 4 maximum apparent power values, phase and total 3 minimum phase voltage values 3 minimum phase to phase voltage values 3 minimum phase current values 4 minimum active power values, phase and total 4 minimum reactive power values, phase and total 4 minimum apparent power values, phase and total 2 minimum and maximum power factor values	1	1	0.353

❶ Connection also to single-phase.

General characteristics
The DMK 16 R1 multimeter is available with flush-mount housing, 96x48mm/3.78x1.89”
Measurements are True RMS values and provide for reliable operation even in the presence of harmonics.

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

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

Certifications and compliance
Certifications obtained: 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.

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 22	Version with energy meters and RS485 port included, auxiliary supply 208...240VAC	1	0.477

General characteristics
DMK 2... digital multimeters are available with flush-mount housing, 96x96mm/3.78x3.78". They monitor and view reliable readings of electrical parameters, even in the presence of critical operating conditions, such as voltages and currents with high harmonic content and variable frequency.
The total and partial hour counter 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 with respect to traditional analog instrumentation.
DMK2... digital multimeters view 47 electrical parameters:
- Voltage: phase, line and system values
- Current: phase values
- Power: active and reactive values, apparent phase.
- 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
- Partial hours: non-volatile configurable log for DMK 20
- Active and reactive energy meters for DMK22 only.

Operational characteristics
- Auxiliary supply voltage range:
  - 154-288VAC for DMK 20
  - 177-264VAC for DMK 22
- 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
- Total and partial hour counter (can be used as maintenance with optical alarm and separate resetting) (DMK 20)
- 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
- RS485 serial port, compatible with Synergy software for DMK 22
- Housing: flush-mount 96x96mm/3.78x3.78"
- EN degree of protection: IP54 on front; IP20 at terminals.

Synergy supervision and energy management software
See Section 29.

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.

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 R1❷	1 frequency value 1 max frequency value 1 min frequency value	1	1	0.268
Cosφ meter.				
DMK 84 R1❷	1 cosφ value 1 power factor value	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 the presence of harmonics.

Operational characteristics
– Auxiliary supply voltage: 220-240VAC
– Operating frequency: 50-60Hz
– True RMS measurements
– Max and min measurement storage
– 1 relay output with 1 changeover contact (SPDT) for DMK...R1 version only
– Modular DIN 43880 housing, 3 modules
– Terminals: 4mm²
– EN 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
– Accuracy: Current ±0.5% f.s. ±1 digit

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

DMK 84 R1
– Cosφ measurement error: ±0.5° ±1 digit
– Cosφ 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 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	–	1	0.233
DMK 70 R1❷	3 phase to phase voltage values 3 max phase voltage values 3 max phase to phase voltage values 3 min phase voltage values 3 min phase to phase voltage values	1	1	0.264
Ammeter.				
DMK 71	3 phase current values	–	1	0.241
DMK 71 R1❷	3 max phase current values 3 min phase current values	1	1	0.272
Combined voltmeter, ammeter and wattmeter.				
DMK 75	3 phase voltage values	–	1	0.271
DMK 75 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 max active power, phase and total 3 minimum phase voltage values 3 minimum phase to phase voltage values 3 minimum phase current values 4 min active power, phase and total	1	1	0.280

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

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

Operational characteristics
- Auxiliary supply voltage: 220-240VAC
- Operating frequency: 50-60Hz
- True RMS measurements
- Max and min measurement storage
- 1 relay output with 1 changeover contact (SPDT) for DMK...R1 version only
- Modular DIN 43880 housing, 3 module
- Terminals: 4mm²
- EN 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
- Accuracy: 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.

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 penta-band antenna (850/900/1800/1900/2100Mhz) 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 850/900/1800/1900/2100MHz.
Degree of protection: IP67. Fixing by Ø10mm drilling.
Cable length: 2.5mm

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

Protection covers


31 PA96x96

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

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXP80 00	Plastic insert for customising label fixing for DMG 600/610/611...	10	0.005
EXM80 04	Set of sealable terminal covers for DMG 100/110/200/210/300	1	0.020

Converter

EXC CON 01

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
EXC CON 01	RS485/Ethernet 12...48VDC converter, including DIN rail fixing kit	1	0.400

General characteristics
The EXC CON 01 converter allows "Slave" devices connected on an RS485 network to interface with a "Master" featuring Ethernet port:
– kit comprising converter and DIN rail mounting accessory;
– programming via web interface;
– power supply not included.

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

Gateway

EXC M3G 01

new

EXC GL A01

EXC GL AX1

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXC M3G 01	RS485 Gateway/3G modem, 9.5...27VAC/9.5...35VDC, including antenna and programming cables	1	0.340
EXC GL A01	Gateway data logger for the data collecting via Modbus from the device in the field. Publishing of the data to supervision software, also in Cloud	1	0.6
EXC GL AX1	2G/3G modem communication module for EXC GL A01	1	–

EXC M3G 01 general characteristics
The EXC M3G 01 gateway allows "Slave" devices connected on an RS485 network to interface with a "Master" via 3G network:
– TCP server connection via 3G or 2G network;
– Transparent operating mode: the data is transferred from 3G side to serial side and vice versa without protocol conversion;
– Settable parameters: TCP server IP and remote port, network operator apn (with username and password), SIM card pin (with enabling), connection time-out, serial parameters (baud rate from 1,200 bps to 115,200 bps, stop bit, character length, parity)
– RJ45 port for parameter programming and diagnosis with a simple software application.
– Compatible with major worldwide mobile phone networks, thanks to the use of 850/900/1800/1900/2100MHz frequencies
– Protection rating IP67
– Fixing hole Ø10mm. Cable length 2.5m.

Reference standards
Compliant with standards: EN 60950-1.

EXC GL A01 general characteristics
EXC GL A01 gateway is able to collect data from devices which are connected through ethernet or RS485 port.
Modbus RTU, ASCII and TCP protocols are supported.
The data can be reviewed by a connection to Synergy Cloud service or to ethernet local web server and a browser.
The access to internet for data sending can be achieved with ethernet port or by adding EXC GL AX1 2G/3G modem.
– CPU ARM 1 GHz
– 2 ethernet port
– 1 RS232/RS422/RS485 serial port
– 24VDC (10…32VDC) power supply
– Operating temperature -20…+60°C
– Simplified connection to Lovato Electric devices
– Compatible with Synergy and Synergy Cloud software.

Reference standards
Compliant with standards: emissions EN 61000-6-4, immunity EN61000-6-2, for installation in industrial environment.

Connecting cables

51 C4

DMG M3 KIT...

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
51 C2	For PC-multimeter RS232 port, 1.8m long	1	0.090
51 C4	For PC-4 PX1 converter drive, 1.8m long	1	0.147
51 C5	For analog modem-multimeter RS232 port, 1.8m long	1	0.111
51 C9	For 4PX 1 converter drive-analog modem, 1.8m long	1	0.137
Current clamp kits for DMG M3…. portable devices			
DMG M3 KIT01	Composed of 3 current clamps 1000/1 and 4 alligator clip cables for voltage measurements	1	6.900
DMG M3 KIT02	Composed of 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

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

Electrical safety for DMG M3 KIT…
(IEC/EN 61010-1 and IEC/EN 611-2-032)
CURRENT CLAMPS
– 600V category III
– 300V category IV.
VOLTAGE MEASURING CABLES
– 1000V category III.

Reference standards
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3.

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

Solid-core


DM0T...


DM2T...

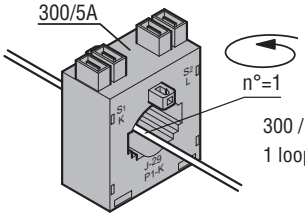

DM3T...


DM35T...


DM4T...

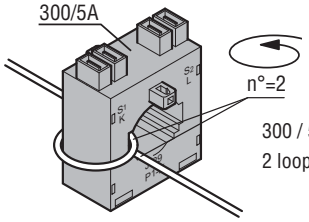
Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø22mm/0.87" cable.					
DM0T 0050	50	—	1.25	1	0.200
DM0T 0060	60	—	1.5	1	0.200
DM0T 0080	80	—	1.5	1	0.200
DM0T 0100	100	—	1.5	1	0.200
DM0T 0150	150	—	2	1	0.200
For Ø23mm/0.90" cable. For 30x10mm/1.18x0.39", 25x12.5mm/0.98x0.49", 20x15mm/0.79x0.59" busbars.					
DM2T 0100	100	—	1	1	0.130
DM2T 0150	150	—	1.5	1	0.130
DM2T 0200	200	—	2	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/1.18" cable. For 40x10mm1.57x0.39", 30x20mm/1.18x0.79", 25x25mm/0.98x0.98" 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
For Ø66mm/2.60" cable. For 80x12,5mm/3.15"x0.49", 60x30mm/2.36x1.18", 50x50mm/1.97x1.97" busbars.					
DM35T 0800	800	10	15	1	0.460
DM35T 1000	1000	15	20	1	0.460
DM35T 1250	1250	15	20	1	0.460
For Ø86mm/3.38" cable. For 100x30mm/3.94x1.18", 80x50mm/3.15x1,97", 70x60mm/2.75x2.36" busbars.					
DM4T 1000	1000	10	20	1	0.700
DM4T 1250	1250	15	30	1	0.760
DM4T 1500	1500	20	30	1	0.760
DM4T 1600	1600	20	30	1	0.800
DM4T 2000	2000	30	45	1	0.840
DM4T 2500	2500	35	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

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



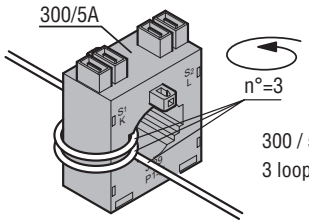
300 / 5A standard
1 loop = 300 / 5A

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



300 / 5A
2 loops = 150 / 5A

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



300 / 5A
3 loops = 100 / 5A

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

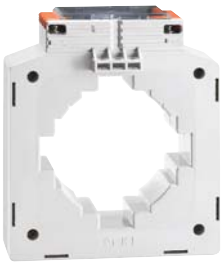
Operational characteristics
- Operating frequency: 50-60Hz
- Secondary output current: 5A
- Overload withstand: 120% Ipn
- IEC rated insulation voltage Ui: 720V
- IEC rated short-time thermal current Ith: 40-60 Ipn for 1 second
- IEC rated dynamic current Idyn: 2.5 Ith for 1 second
- Insulation (dry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

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

Accuracy solid-core

DM1TP...

DM3TP...



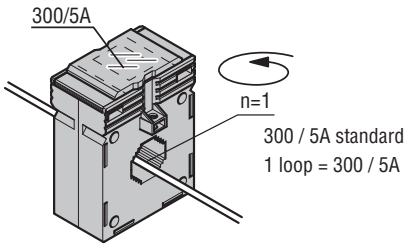
DM5TP...

Version with UTF certificates.
See page 24-13.

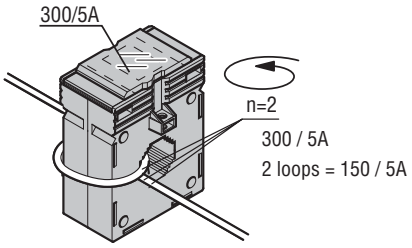
Order code	Primary current Ipn	Burden cl. 0.5s	Burden cl. 0.5	Qty per pkg.	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
For Ø28mm/1.10"❶ cable. For 30x10mm/1.18x0.39", 25x12.5mm/0.98x0.49", 20x20mm/0.79x0.79" busbar.					
DM1TP 0060	60	1.5	1.5	1	0.560
DM1TP 0080	80	2,5	2,5	1	0.580
DM1TP 0100	100	2.5	3.75	1	0.480
DM1TP 0150	150	2.5	3.75	1	0.480
DM1TP 0200	200	2.5	3.75	1	0.480
DM1TP 0250	250	2.5	5	1	0.480
DM1TP 0300	300	2.5	5	1	0.480
DM1TP 0400❷	400	5	5	1	0.480
DM1TP 0500❷	500	5	5	1	0.480
For Ø52mm/2.04"❶ cable. For 60x20mm/2.36x0.79", 50x25mm/1.97x0.98" busbar.					
DM3TP 0500	500	3.75	5	1	0.700
DM3TP 0600	600	5	10	1	0.700
DM3TP 0800	800	5	10	1	0.700
DM3TP 1000	1000	5	10	1	0.700
For Ø85.5mm/3.37"❶ cable. For 100x20mm/3.94x0.79", 80x45mm/3.15x1.77" busbar.					
DM5TP 1000	1000	5	10	1	0.900
DM5TP 1250	1250	7.5	10	1	0.900
DM5TP 1600	1600	7.5	10	1	0.900
DM5TP 2000	2000	10	15	1	0.900
DM5TP 2500	2500	10	15	1	0.900
DM5TP 3000	3000	10	15	1	0.900

❶ Consult Technical support to inquiry about versions with Italian UTF certificates.
❷ For Ø33mm cable. For 40x10mm, 30x20mm, 25x25mm busbar.

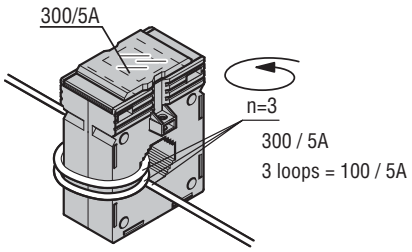
General characteristics
The DM...TP type accuracy current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TP are accuracy current transformers in class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



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



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



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

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

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

Compact prewired split-core

DM1TMA...

DM2TMA...

Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
24x24mm/0.94x0.94" hole. Cable supplied as standard, length 1m.					
DM1TMA 0100	100	—	1.2	1	0.200
DM1TMA 0150	150	—	1.2	1	0.200
DM1TMA 0200	200	—	1.2	1	0.200
DM1TMA 0250	250	—	1.2	1	0.200
36x38mm/1.42x1.50" hole. Cable supplied as standard, length 1m.					
DM2TMA 0250	250	—	1.5	1	0.380
DM2TMA 0300	300	—	1.5	1	0.380
DM2TMA 0400	400	—	1.5	1	0.380
DM2TMA 0500	500	—	1.5	1	0.380

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

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

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

Split-core

DM1TA...

DM2TA...

DM3TA...

DM4TA...

Order code	Primary current Ipn	Burden cl. 0.5	Burden cl. 1	Qty per pkg.	Weight
	/5 [A]	[VA]	[VA]	n°	[kg]
50x80mm/1.97x3.15" hole.					
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 0800	800	3	7.5	1	0.900
DM1TA 1000	1000	5	10	1	0.900
80x80mm/3.15x3.15" hole.					
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 0800	800	3	7.5	1	1.050
DM2TA 1000	1000	5	10	1	1.050
80x120mm/3.15x4.72" hole.					
DM3TA 0500	500	—	4	1	1.250
DM3TA 0600	600	—	5	1	1.250
DM3TA 0800	800	3	7.5	1	1.250
DM3TA 1000	1000	5	10	1	1.250
DM3TA 1250	1250	7.5	15	1	1.250
DM3TA 1500	1500	8	17	1	1.250
80x160mm/3.15x6.30" hole.					
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

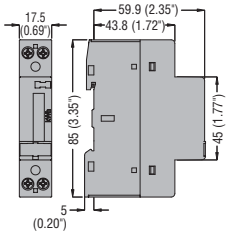
General characteristics
The DM...TA type current transformers (CTs) are installed in an electrical system to reduce the line current to a secondary value of 5A compatible with the ammeter inputs of the digital multimeters or protection relays.
DM...TA are instrument transformers in class 0.5/1 without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

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

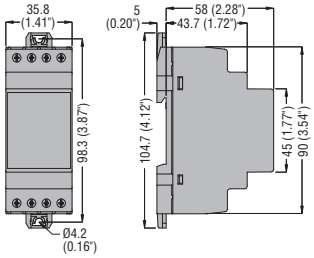
Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN 61869-2, IEC/EN 61869-1.

ENERGY METERS

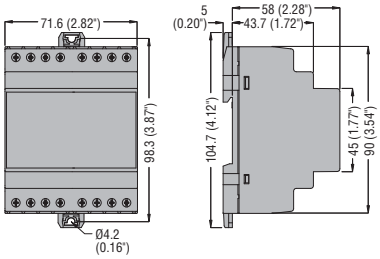
Mechanical meter **DME M100...**
Digital meter **DME D100... - DME D110...**



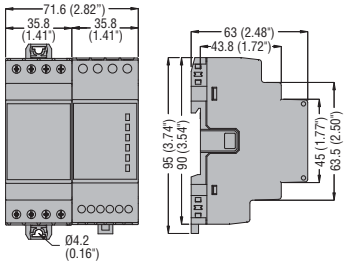
Digital meter **DME D115 T1 - DME D120 T1... DME D121 - DME D122**



Digital meter **DME D3...**
Data concentrator **DME CD - DME CD PV1...**

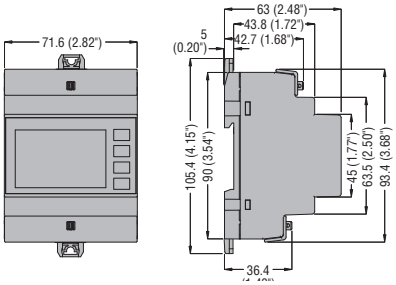


Digital meter **DME D130 LM**

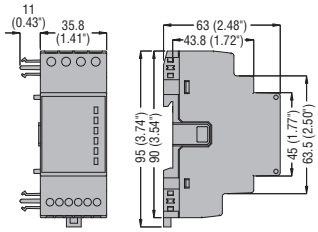


MULTIMETERS

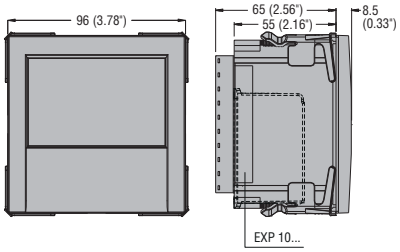
DMG 100 - DMG 110 - DMG 200 - DMG 210 - DMG 300



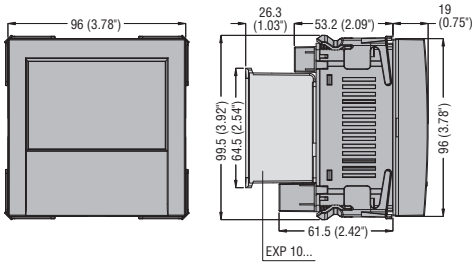
Expansion modules **EXM...**



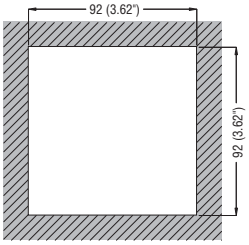
DMG 600 - DMG 610 - DMG 611...



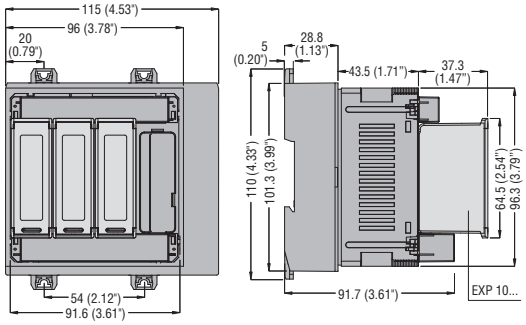
DMG 700 - DMG 800... - DMG 900... with expansion modules **EXP...**



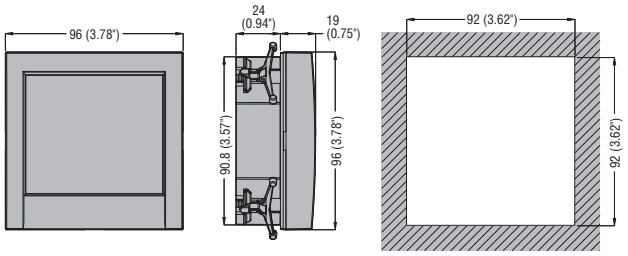
Cutout



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



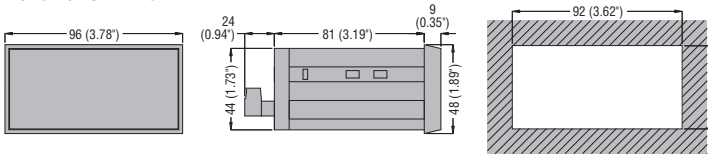
DMG 900RD remote display



Cutout

FLUSH-MOUNT METERING INSTRUMENTS

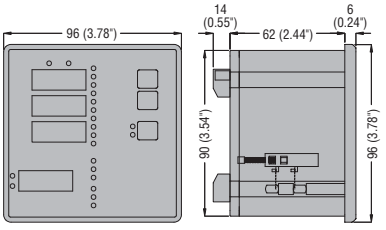
Instruments **DMK 0... - DMK 1...**



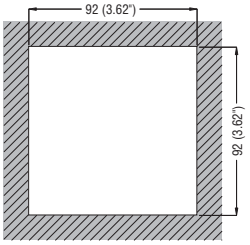
Cutout

FLUSH-MOUNT MULTIMETERS

DMK 2...

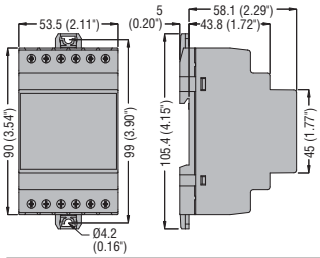


Cutout



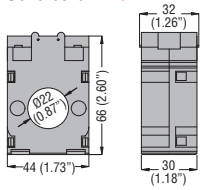
DIGITAL METERING INSTRUMENTS

DMK 7... - DMK 8...

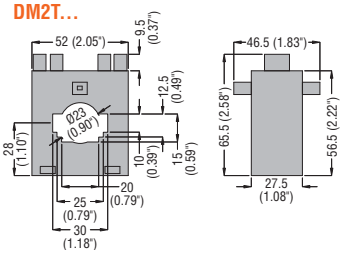


CURRENT TRANSFORMERS

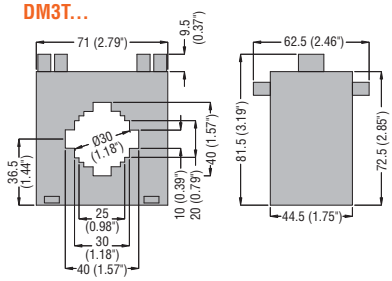
Solid core **DM0T...**



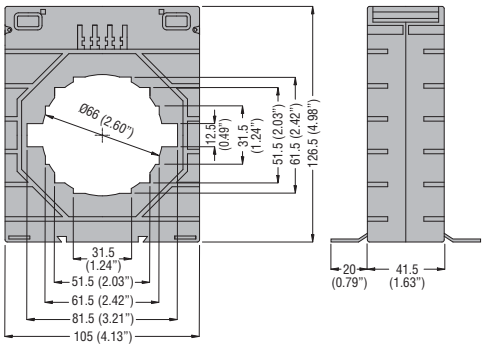
DM2T...



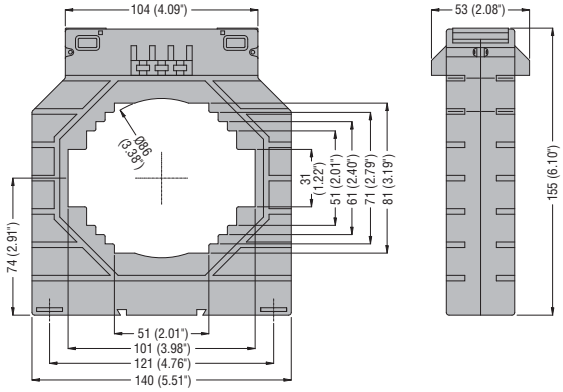
DM3T...



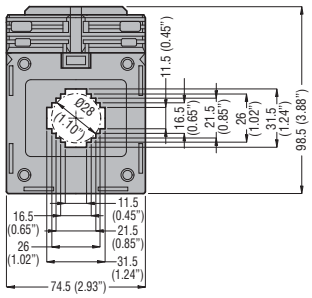
DM35T...



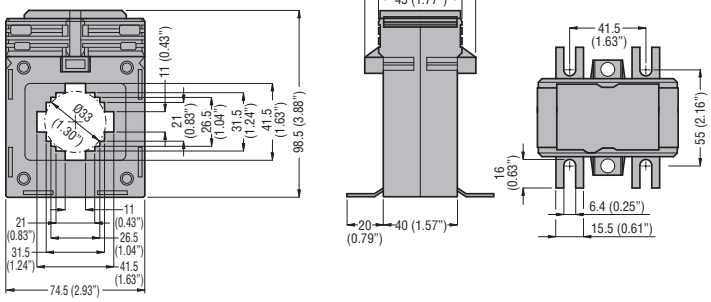
DM4T...



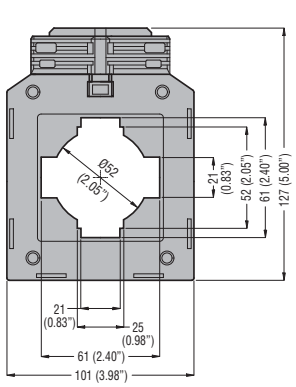
DM1TP0060... - DM1TP0300

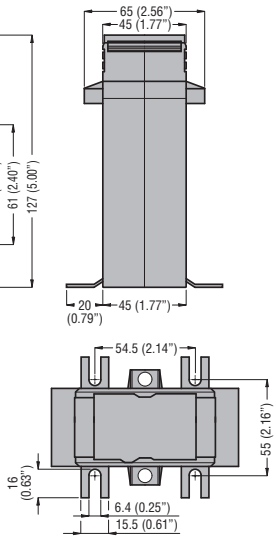


DM1TP0400... - DM1TP0500

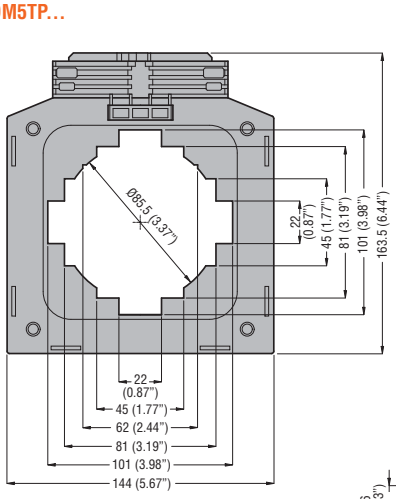


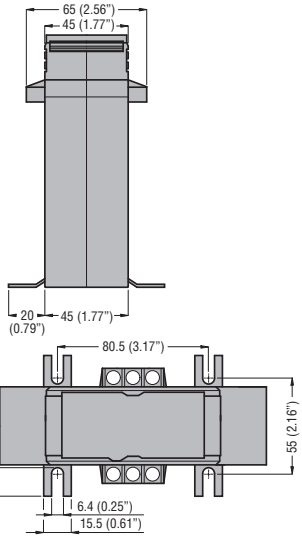
DM3TP...



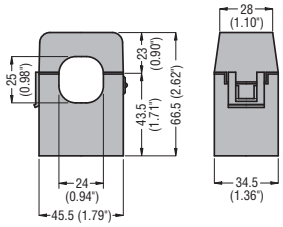


DM5TP...

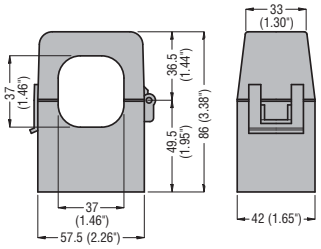




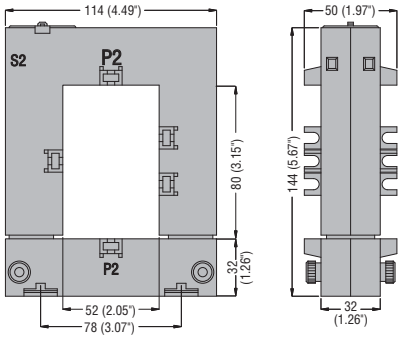
Compact prewired split-core
DM1TMA...



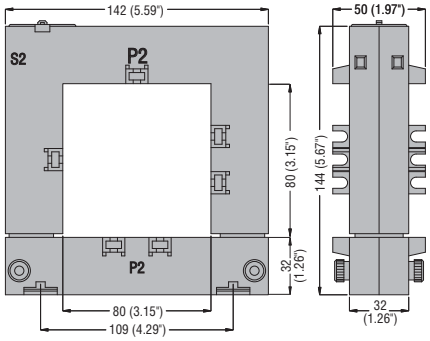
DM2TMA...



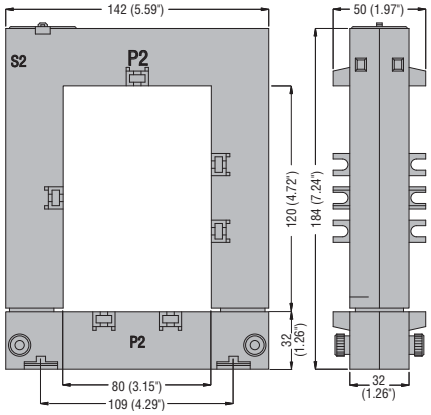
Split-core **DM1TA...**



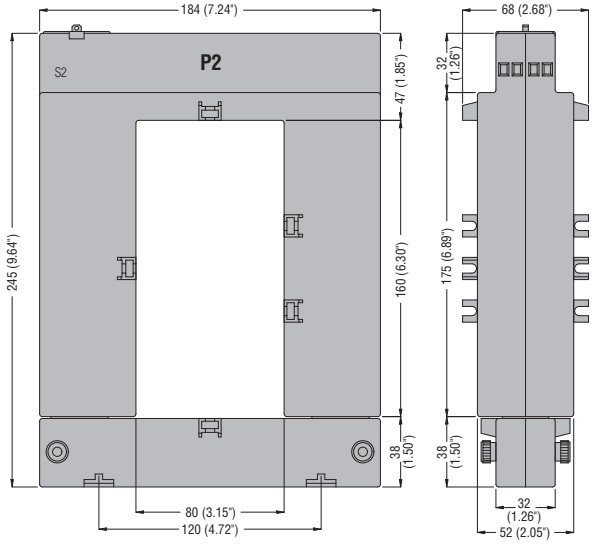
DM2TA...



DM3TA...

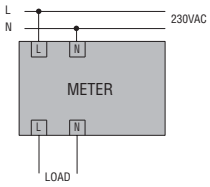


DM4TA...

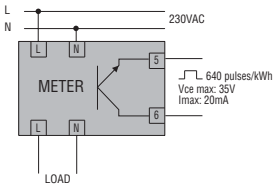


ENERGY METERS

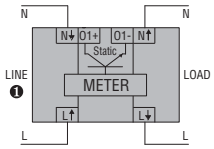
Mechanical **DME M100**



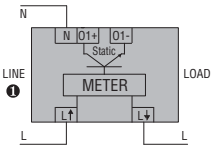
DME M100 T1



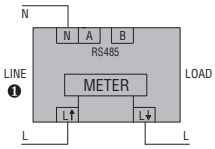
Digital **DME D100 T1... - DME D110 T1...**



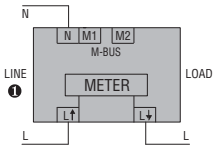
DME D115 T1 - DME D120 T1...



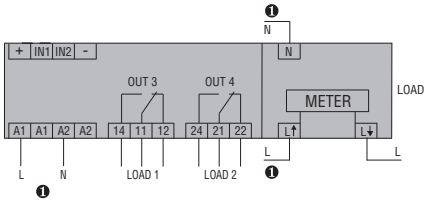
DME D121...



DME D122...

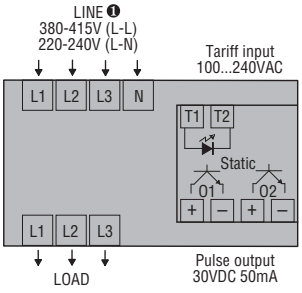


DME D130 LM

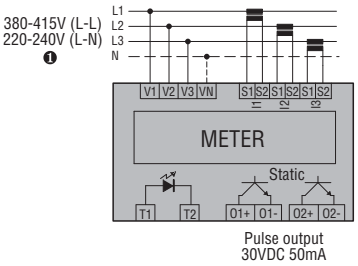


1 110-120VAC DMED...A120; 220-240VAC DMED...; 230V 50Hz DMED... T1 MID.

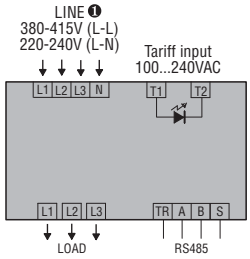
DME D300 T2... - DME D300 F



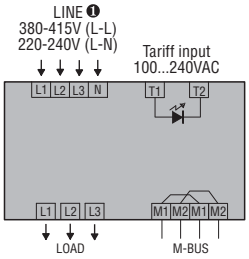
DME D310 T2... - DME D310 F...



DME D301



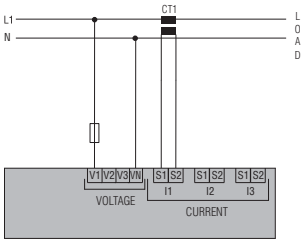
DME D302



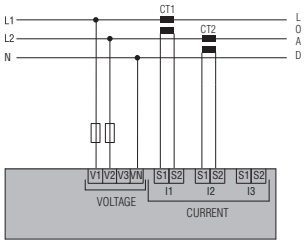
1 230V 50Hz (L-N), 400V 50Hz (L-L) DMED... T2 MID / DMED... F.

DME D330 - DME D305 T2

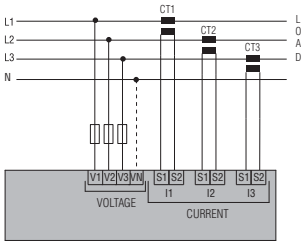
Single-phase



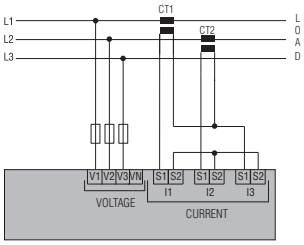
Two-phase

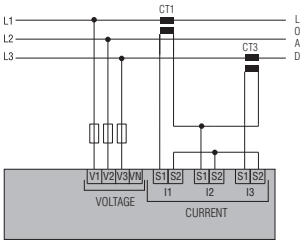


Three-phase with or without neutral



Three-phase without neutral in ARON connection

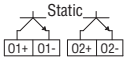




Tariff input

100...240VAC

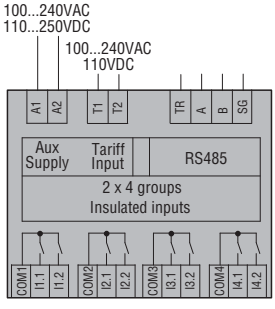
Pulse output 30VDC 50mA for DME D305 T2



RS485 for DME D330

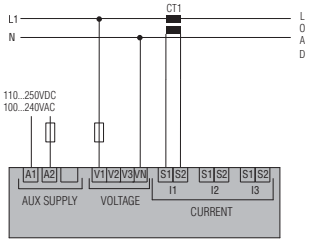
M-Bus for DME D332

Data concentrator **DME CD**

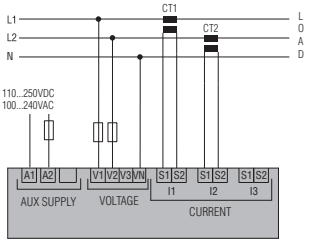


MULTIMETERS DMG 100 - DMG 110 - DMG 200 - DMG 210 - DMG 300

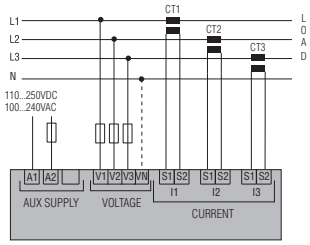
Single-phase



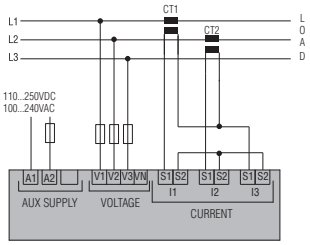
Two-phase

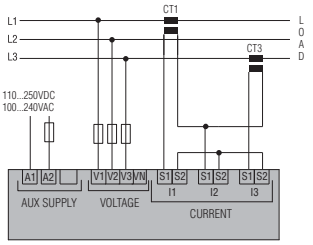


Three-phase with or without neutral

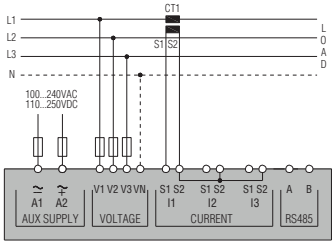


Three-phase without neutral in ARON connection



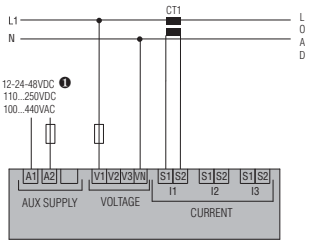


Balanced 3-phase connection with or without neutral

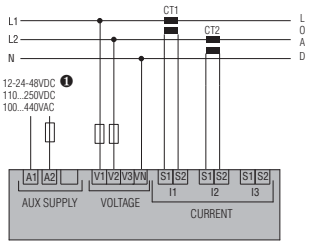


MULTIMETERS DMG 600-610... - DMG 700 - DMG 800...

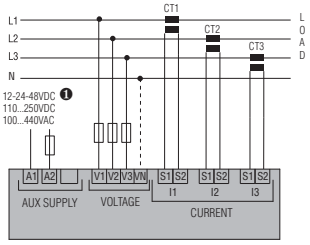
Single-phase



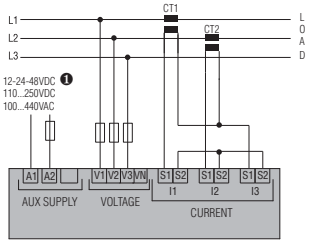
Two-phase

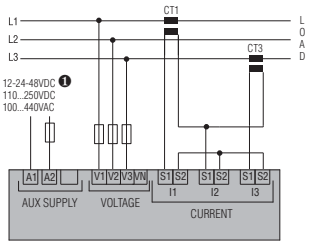


Three-phase with or without neutral



Three-phase without neutral in ARON connection

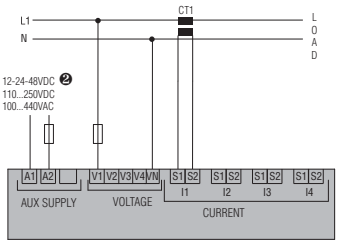




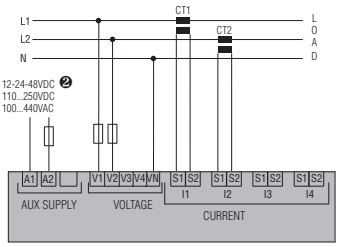
❶ For DMG 800... D048 only.

DMG 900...

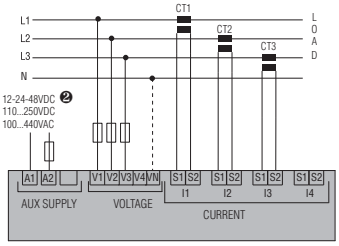
Single-phase



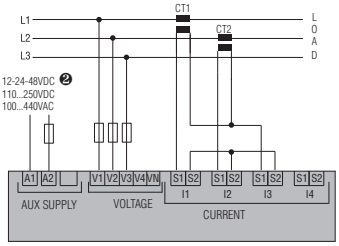
Two-phase

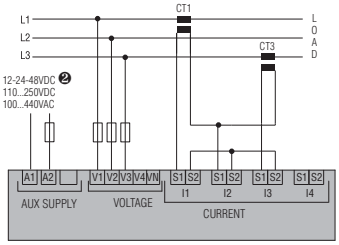


Three-phase with or without neutral

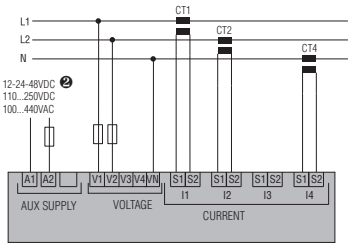


Three-phase without neutral in ARON connection

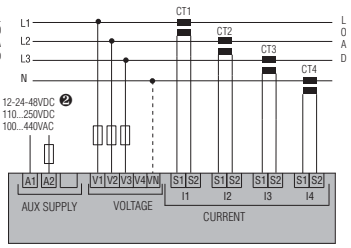




Two-phase with neutral. Measurement of neutral current and neutral-earth voltage



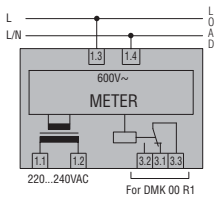
Three-phase with neutral. Measurement of neutral current and neutral-earth voltage



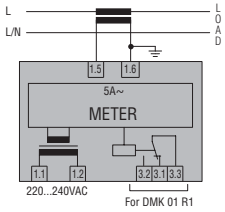
❷ For DMG 900... D048 only.

METERING INSTRUMENTS

DMK 00 - DMK 00 R1

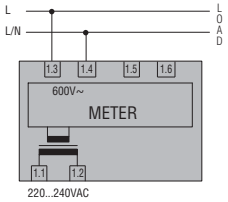


DMK 01 - DMK 01 R1

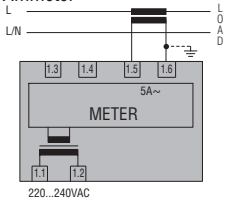


DMK 02

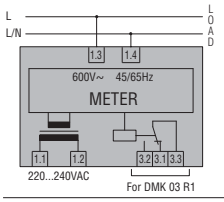
Voltmeter



Ammeter

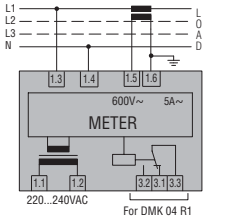


DMK 03 - DMK 03 R1

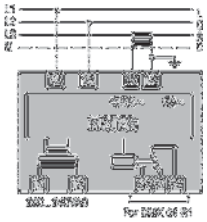


DMK 04 - DMK 04 R1

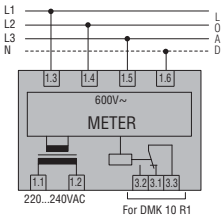
Single-phase



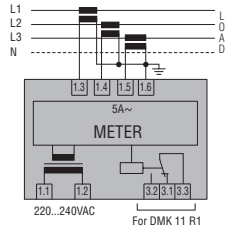
Three-phase



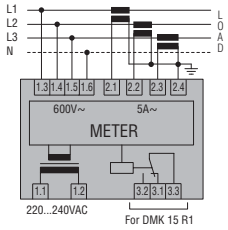
DMK 10 - DMK 10 R1



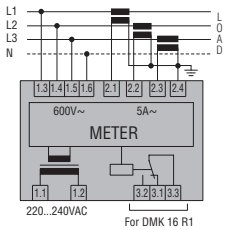
DMK 11 - DMK 11 R1



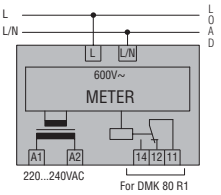
DMK 15 - DMK 15 R1



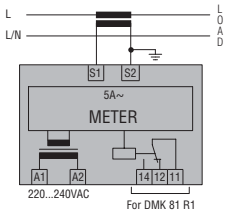
DMK 16 - DMK 16 R1



DMK 80 - DMK 80 R1

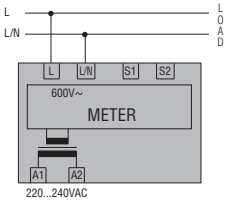


DMK 81 - DMK 81 R1

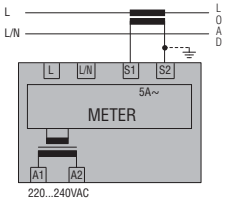


DMK 82

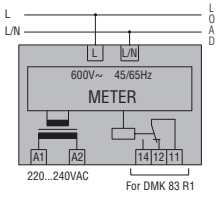
Voltmeter



Ammeter

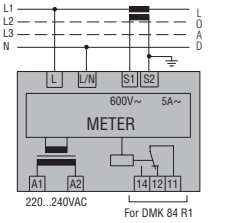


DMK 83 - DMK 83 R1

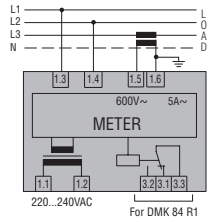


DMK 84 - DMK 84 R1

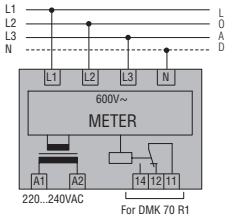
Single-phase



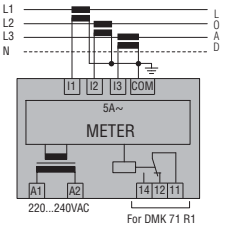
Three-phase



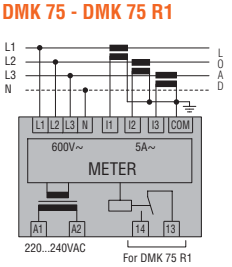
DMK 70 - DMK 70 R1



DMK 71 - DMK 71 R1



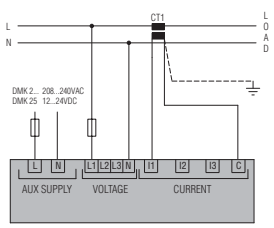
DMK 75 - DMK 75 R1



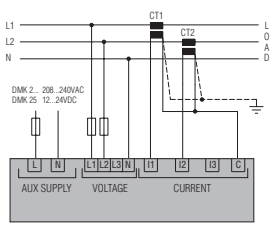
FLUSH-MOUNT MULTIMETERS

DMK2...

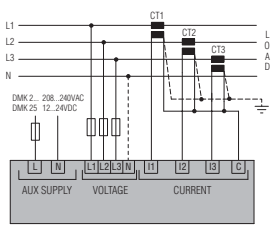
Single-phase



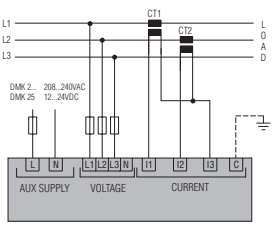
Two-phase

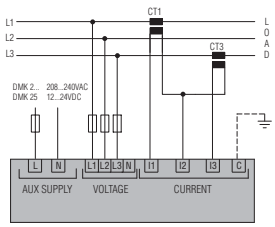


Three-phase with or without neutral



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	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	
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 (EN 50470-3)	Class 1		
OUTPUTS							
LED rate	640 flash/kWh	1000 flash/kWh					
Pulse rate	640 pulses/kWh (only for DME M100 T1)	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...6mm²	1.5...10mm² (16...6AWG)					
Maximum tightening torque	1.2Nm	1.5Nm (14lbin)					
CONNECTION (PULSE OUTPUT/RS485)							
Type of terminals	Fixed	Fixed					
Conductor section (min...max)	1...15mm² (only for DME M100 T1)	0.2...4mm² (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					
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 D122	DME D130 LM
	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
	230VAC	220...240VAC	220...240VAC	110...120VAC	230VAC	220...240VAC	
	187...264VAC	187...264VAC	187...264VAC	93...132VAC	187...264VAC	187...264VAC	
	50Hz	50/60Hz	50/60Hz	60Hz	50Hz	50/60Hz	
	7VA	7VA				4.8VA	
	0.45W	0.45W				1.4W	
	40A	40A	63A			63A	
	0.25A	0.5A				0.5A	
	5A	10A				10A	
	20mA	40mA				40mA	
	0.5A	1A				1A	
	Class B (EN 50470-3)	Class 1			Class B (EN 50470-3)	Class 1	
	1000 flash/kWh	1000 flash/kWh				1000 flash/kWh	
	1000 pulses/kWh	1000 pulses/kWh				1000 pulses/kWh	
	30ms	30ms				30ms	
	1-10-100-1000 pulses/kWh programmable	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...10mm² (16...6AWG)	2.5...16mm² (14...6AWG; 14...10AWG)				2.5...16mm² (14...6AWG; 14...10AWG)	
	1.5Nm (14lbin)	2Nm (26.5lbin)				2Nm (26.5lbin)	
	Fixed	Fixed				Fixed	
	0.2...4mm² (24...12AWG)	0.5...4mm² (20...11AWG)				0.5...4mm² (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	
	Class M1	–	–	–	Class M1	–	–
	Class E1	–	–	–	Class E1	–	–
	Polyamide	Polyamide				Polyamide	

TYPE	DME D300 T2 DME D301 DME D302	DME D300 T2 MID DME D301 MID DME D300 MID	DME D310 T2 DME D305 T2	DME D310 T2 MID DME D305 T2 MID	DME D330 DME D332	DME D330 MID DME D332 MID
	3 phase with neutral	3 phase with neutral	3 phase with and without neutral	3 phase with neutral	3 phase with and without neutral	3 phase with neutral
AUXILIARY SUPPLY						
Rated voltage (Ue)	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	220...240VAC phase-neutral 380...415VAC phase-phase	230VAC phase-neutral 400VAC phase-phase
Voltage range	187...264VAC phase-neutral / 323...456VAC phase-phase					
Rated frequency	50/60Hz	50Hz	50/60Hz	50Hz	50/60Hz	50Hz
Maximum power consumption	20VA		3.5VA			3.5VA
Maximum power dissipation	1.35W		2.7W			2.7W
CURRENT						
IEC maximum current (Imax)	63A - 80A for DME D301		5A		5A	5A
IEC minimum current (Imin)	0.5A		0.05A		0.05A	0.05A
IEC rated current (Iref-Ib)	10A		5A		5A	5A
IEC start current (Ist)	40mA		0.005A		0.005A	0.005A
IEC transition current (Itr)	1A		0.25A		0.25A	0.25A
ACCURACY						
Active energy (per IEC/EN 62053-21)	Class 1	Class B (EN50470-3)	Class 0.5s DME D305 T2 Class 1 DME D310 T2	Class B (EN50470-3)	Class 0.5s	Class B (EN50470-3)
TARIFF CIRCUIT INPUT						
Rated voltage (Uc)	100...240VAC					
Voltage range	85...264VAC					
Frequency	50/60Hz					
Maximum power consumption	0.25VA					
Maximum power dissipation	0.18W					
LED						
Pulse rate	1000 pulses/kWh					
Pulse duration	30ms					
STATIC OUTPUTS						
Pulse rate	1-10-100-1000 pulses/kWh programmable (except DME D301)		0,1-1-10-100 pulses/kWh programmable		—	—
Pulse duration	100ms for 1-10-100 pulses (except DME D301) 60ms for 1000 pulses (except DME D301)		100ms		—	—
External voltage	10...30VDC (except DME D301)		10...30VDC		—	—
Maximum current	50mA (except DME D301)				—	—
INSULATION						
IEC rated insulation voltage Ui	250VAC					
IEC rated impulse withstand voltage Uimp	6kV					
IEC power frequency withstand voltage	4kV					
SUPPLY/MEASURMENT CIRCUIT CONNECTIONS						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	2.5...16mm² (16...6AWG)		0.2...4mm² (24...12AWG) for supply/voltage measurement; 0.2...2.5mm² (24...12AWG) for current measurement			
Maximum tightening torque	2Nm (14lbin)		0.8Nm (7lbin)			
TARIFF CONTROL CIRCUIT CONNECTIONS						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	0.2...2.5mm² (24...12AWG)		0.2...4mm² (24...12AWG)			
Maximum tightening torque	0.49Nm (4.4lbin)		0.8Nm (7lbin) (0.44Nm / 4lbin for current measurement DME D320)			
CONNECTIONS (PULSE OUTPUT/RS485)						
Type of terminals	Fixed		Fixed			
Conductor section (min...max)	0.2...1.3mm² (24...16AWG)		0.2...2.5mm² (24...12AWG)			
Maximum tightening torque	0.15Nm (1.7lbin)		0.44Nm (4lbin)			
AMBIENT CONDITIONS						
Operating temperature	-25...+55°C					
Storage temperature	-25...+70°C					
Relative humidity	<80% non condensing					
Maximum pollution degree	2		2		2	
Mechanical environment	—	Class M1	—	Class M1	—	Class M1
Magnetic environment	—	Class E1	—	Class E1	—	Class E1
HOUSING						
Material	Polyamide		Polyamide			

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

TYPE	DMG 100 - DMG 110❶	DMG 200	DMG 210	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	3.5VA	4.5VA	3.2VA	
Maximum power dissipation	1.2W	1.2W	1.7W	1.3W	
Microbreaking immunity	≥50ms	≥50ms	≥50ms	≥50ms	
VOLTAGE INPUTS					
Type of input	Three-phase + neutral				
Maximum rated voltage Ue	690VAC phase-phase (400VAC phase-neutral)				
Measurement range	20...830VAC phase-phase (10...480VAC phase-neutral)				
Frequency range	45...66Hz				
Method of measurement	True RMS				
Method of connection	Single, two, three-phase with or without neutral, balanced three-phase systems				
CURRENT INPUTS					
Rated current Ie	5A	5A	5A	1A/5A	
Current reading through Rogowski coils	–	–	–	–	
Measurement range	0.01...6A	0.01...6A	0.01...6A	0.01...1.2A / 0.01...6A	
Method of measurement	True RMS				
Overload capacity	+20% Ie through external CT with 5A secondary				
Overload peak	50A for 1s				
INSULATION					
IEC rated insulation voltage Ui	690VAC				
IEC rated impulse withstand voltage Uimp	9.5kV				
IEC power frequency withstand voltage	5.2kV				
SUPPLY CIRCUIT/VOLTAGE MEASUREMENT CONNECTIONS					
Type of terminal	Fixed				
Conductor section (min...max)	0.2...4.0mm² (24...12 AWG)				
Maximum tightening torque	0.8Nm (7lbin)				
CURRENT MEASUREMENT CIRCUIT AND RS485❶					
Type of terminal	Fixed				
Conductor section (min...max)	0.2...2.5mm² (24...12AWG)				
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				
HOUSING					
Material	Polyamide				

❶ RS485 communication port for DMG 110, DMG 210, DMG 610 and DMG 900T only.
❷ For DMG 800 D048, DMG 900 D048 and DMG 900T D048 only.

	DMG 600	DMG 610 - DMG 611...	DMG 700	DMG 800	DMG 900	DMG 900 T
	100...440VAC 120...250VDC		100...440VAC 110...250VDC - (12...48VDC❷)			
	90...484VAC 93.5...300VDC		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			
	600VAC phase-phase (300VAC phase-neutral)		690VAC phase-phase (400VAC phase-neutral)			
	50...720VAC phase-phase (30...360VAC phase-neutral)		20...830VAC phase-phase (10...480VAC phase-neutral)			
	45...66Hz		45...66Hz		45...66Hz and 360...440Hz	
	True RMS		True RMS			
	Single, two, three-phase with or without neutral, balanced three-phase systems					
	1A/5A		5A	1A/5A	1A/5A	
	–	20...6300A (for DMG 611...)	–	–	–	
	0.01...1.2A / 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					
	0.2...2.5mm² (24...12AWG)					
	0.5Nm (4.5lbin)					
	Fixed		Fixed			
	0.2...1.5mm² (24...12 AWG)		0.5...4mm² (26...10 AWG); 0.2...1.5mm² (24...12 AWG) for RS485			
	0.8Nm (7lbin)		0.8Nm (7lbin)			
	-20...+60°C					
	-30...+80°C					
	<90%					
	2					
	III					
	Polyamide					

TYPE		DMK 00 - DMK 00 R1 DMK 80 - DMK 80 R1	DMK 01 - DMK 01 R1 DMK 81 - DMK 81 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)		
Maximum power dissipation		1.5W (DMK...) 1.8W (DMK... R1)		
VOLTAGE INPUTS				
Rated voltage Ue		600VAC	—	
Operating voltage range		15...660VAC	—	
Operating voltage range, phase-phase		—	—	
Rated frequency		50...60Hz ±10%	—	
Method of measuring		True RMS	—	
CURRENT INPUTS				
Rated current Ie		—	5A	
Measuring range		—	0.05...5.75A	
Rated frequency		—	50...60Hz ±10%	
Type of input		—	Shunts connected by external low voltage CT 5A max	
Type of measuring		—	True RMS	
Overload capacity		—	+20% Ie	
FREQUENCY INPUTS				
Measuring range and type		—	—	
Voltage range		—	—	
Input rated voltage		—	—	
MEASURING ACCURACY				
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.)	cosφ	—	—	
	voltage	±0.25% f.s. ±1 digit	—	
	current	—	±0.5% f.s. ±1 digit	
	frequency	—	—	
ADDITIONAL ERRORS				
Relative humidity		±1 digit 60%...90% R.H..		
Temperature		±1 digit -20...+60°C		
RELAY OUTPUT FOR DMK... R1 TYPES ONLY				
Number and tyoe of contact		1 changeover		
Rated voltage		250VAC		
IEC/EN 60947-5-1 designation		AC1 8A 250VAC / B300		
Electrical life		10^5		
Mechanical life		$30x10^6$		
INSULATION				
Rated insulation voltage Ui		600VAC	415VAC	
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...12AWG) for DMK 0... 0.2...4.0mm² (24...12AWG) 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.

	DMK 02 DMK 82	DMK 03 - DMK 03 R1 DMK 83 - DMK 83 R1	DMK 04 - DMK 04 R1 DMK 84 - DMK 84 R1
	24VAC❶ 110...127VAC❶ 220...240VAC 380...415VAC❶		
	0.85...1.1 Us		
	50...60Hz ±10%		
	3.3VA 3.6VA (DMK... R1)	3.3VA (DMK...)	
	1.5W 1.8W (DMK... R1)	1.5W (DMK...)	
	600VAC	—	600VAC
	15...660VAC	—	—
	—	— 25...660VAC (DMK... R1)	15...660VAC (DMK...)
	50...60Hz ±10%	—	50...60Hz ±10%
	True RMS	—	True RMS
	5A	—	5A
	0.05...5.75A	—	0.05...5.75A (DMK...) 0.1...5.75A (DMK... R1)
	50...60Hz ±10%	—	50...60Hz ±10%
	Shunts connected by external low voltage CT 5A max	—	Shunts connected by external low voltage CT 5A max
	True RMS	—	True RMS
	+20% Ie	—	+20% Ie
	—	15...65Hz ±10% True RMS	—
	—	15...660VAC	—
	—	600VAC	—
	—	—	± 1° ±1 digit
	±0.25% f.s. ±1 digit	—	—
	±0.5% f.s. ±1 digit		——
	—	±1 digit	—
	±1 digit 60%...90% R.H..		
	±1 digit -20...+60°C		
	1 changeover		
	250VAC		
	AC1 8A 250VAC / B300		
	10^5		
	$30x10^6$		
	600VAC		
	Fixed (DMK 8...); Removable (DMK 0...)		
	0.8Nm (7lbin) for DMK 0... / 0.5Nm (4.5lbin) for DMK 8...		
	0.2...2.5mm² (24...12AWG) for DMK 0... 0.2...4.0mm² (24...12AWG) for DMK 8...		
	-20...+60°C		
	-30...+80°C		
	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 supply 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		True RMS	—	True RMS	True RMS
CURRENT INPUTS					
Rated current Ie		—	5A	5A	5A
Measuring range		—	0.05...6A	0.05...5.75A	0.05...5.75A
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		—	True RMS	True RMS	True RMS
Overload capacity		—	+20% Ie	+20% Ie	+20% Ie
MEASURING ACCURACY					
Measurement conditions (Temperature +23°C ±1°C) (Relative humidity 45 ±15% R.H.)	voltage	±0.25% f.s. ±1 digit	—	±0.25% f.s. ±1 digit	±0.25% f.s. ±1 digit
	current	—	±0.5% f.s. ±1 digit	±0.5% f.s. ±1 digit	±0.5% f.s. ±1 digit
	power	—	—	1% f.s. ±1 digit	1% f.s. ±1 digit
	energy	—	—	—	Class 2
	frequency	—	—	±1 digit	±1 digit
RELAY OUTPUT FOR DMK... R1 TYPES ONLY					
Number and type of contact		1 changeover	1 changeover	1 changeover❷	1 changeover
Rated voltage		250VAC	250VAC	250VAC	250VAC
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 1...; 0.8Nm (7lbin) for DMK 7...			
Conductor section (min...max)		0.2...2.5mm² (24...12AWG) for DMK 0... 0.2...4.0mm² (24...12AWG) for DMK 7...			
AMBIENT CONDITIONS					
Operating temperature		-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Storage temperature		-30...+80°C	-30...+80°C	-30...+80°C	-30...+80°C
HOUSING					
Material		Thermoplastic (DMK 1...) / Polyamide (DMK 7...)			

❶ On specific request.
❷ One contact NO for DMK 75 R1.

TYPE		DMK 20 - DMK 22
AUXILIARY SUPPLY		
Rated supply voltage Us		208...240VAC
Operating voltage range		154...288VAC for DMK 20 177...264VAC for DMK 22
Frequency		45...65Hz
Maximum power consumption		5.5VA (Us=240V) for DMK 20 6VA (Us=240V) for DMK 22
Maximum power dissipation		2.5W (Us=240V) for DMK 20 2.8W (Us=240V) for DMK 22
Immunity time of microbreakings		20ms
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
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		5A (1A on request)
Measuring range		0.05...6A
Method of measuring		True RMS
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 distortion	—
OUTPUTS		
Relay (1 changeover contact)		—
Static (with 1 two-way MOSFET output)		—
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...2.5mm² (24...12AWG)
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.