

# MECHTRIC



## Metering



## Automation: Powered by Mechtric's Expertise and Global Partnerships

With over 60 years of industry experience, Mechtric proudly partners with world-class manufacturers to deliver innovative solutions.

Mechtric's **Metering** solutions include energy meters, multifunction meters, digital power analysers, and power monitoring systems designed to provide accurate measurement and visibility of electrical consumption and performance. Supporting devices such as solid-core and split-core current transformers ensure precise data capture and easy installation.

Through these partnerships, Mechtric delivers high-quality products, competitive pricing, and unparalleled technical support, empowering your business to perform at its best.



# Metering

## Digital Meters

Energy meters



Lovato

E-1

Multifunction meters



Lovato

E-2...3

Digital power analysers



Lovato

E-5

Power monitoring systems



Lovato

E-6

## Current Transformers

Solid-core type current transformers



Lovato

E-7

Split-core type current transformers



Lovato

E-7



## Energy meters



DMED111



DMED121



DMECD



EXM1...

## Single-Phase Direct Connection Energy Meters



DMED111

DMED121

Type	DMED111	DMED121
Maximum current	40A	63A
Rated voltage	220...240 VAC	
Display		
Vertical, no backlight	•	—
Horizontal, backlight	—	•
Measurements		
kWh	•	•
kWh, kW (avg. & max demand)	•	•
kvarh, kvar, V, I, Hz, PF,	•	•
Interface		
Pulse output	—	—
Prog. output (pulses/thresholds)	—	—
Built-in Modbus-RTU (RS485)	•	•
Compatibility with S <sup>energy</sup>	•	•

## Three-Phase Energy Meters



DMED311

DMED330

Type	DMED311	DMED330
Maximum current	80A	CT /5 or CT /1
Rated voltage	380...415 VAC	
Connection type		
Direct	•	—
Via CT	—	•
Expandability		
RS485, Ethernet, USB	—	—
Relay outputs (load disconnection)	•	•
Data memory (Data logger)	—	—
Interface		
Pulse output	—	—
Prog. output (pulses/thresholds)	—	—
Built-in Modbus-RTU (RS485)	•	•
Compatibility with S <sup>energy</sup>	•	•

**DMED series** of energy meters are digital instruments for the measurement of electrical energy consumption in single and three-phase systems with direct connection or via a current transformer (CT).

type	input current	description	static pulse output	width in 18 mm
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## DMED series - Digital meters with LCD screen

## Single-phase direct connection 40/63A

(modular design DIN-rail mountable)

- Input current: 40/63A (*direct connection*)
- Active energy: Class 1 (IEC/EN 62053-21)
- Reactive energy: Class 2 (IEC/EN 62053-23)

## Multi-measurements:

Total and partial active, reactive energy, active, reactive power, voltage, current and power factor, hour counter (*exclude DMED100T1*)

DMED111	40A	direct connection with RS-485 interface	—	1
DMED121	63A	direct connection with RS-485 interface	—	2

## Three-phase direct connection 80A

(modular design DIN-rail mountable)

## Multi-measurements:

Total and partial active and reactive energy, voltage, current, active and reactive power, power factor, hour counter

- Graphic backlit LCD screen with 6+1 digits
- Tariff selection (*2 tariffs*)

DMED311	80A	direct connection with RS-485 interface	—	4
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## Three-phase CT connection .../5A

(modular design DIN-rail mountable)

## Multi-measurements:

Total and partial active and reactive energy, voltage, current, active and reactive power, power factor, hour counter

- Backlit LCD screen (*128 x 80 pixels*)

DMED330	1/5A	direct connection with RS-485 interface	—	4
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★ Accepts **EXM...** (up to 3) plug-in optic expansion modules

## DMECD series - Data concentrator

(modular design DIN-rail mountable)

DMECD data concentrator designed in combination with energy meters, permitting connection to (up to 8) devices. The concentrator is able to count static pulse outputs from the connected energy meters, storing data for viewing on its display or directly on a PC through the built-in RS-485 port.

- Graphic backlit LCD screen (*128 x 80 pixels*)
- 8 inputs for pulse count, expandable up to 14 using **EXM...** type expansion modules
- 8 total and 8 partial energy meters
- Built-in RS-485 interface (Modbus-RTU or ASCII)
- Expandable with **EXM...** (up to 3) plug-in optic expansion modules (*below*)

## Data concentrator

DMECD	data concentrator for up to 8 connected energy meters	—	4
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## Expansion modules for DMECD

(DIN-rail mountable)

EXM1001	2 opto-isolated digital inputs and 2 relay outputs (5A 250 VAC)	2
EXM1012	opto-isolated RS-485 interface	2
EXM1013	opto-isolated Ethernet interface	2





DMG100



DMG3000


**EASY BRANCH** COMPATIBLE


EXM1...

### DMG series - Multifunction meters

DMG series enables control of energy distribution systems by detecting potential issues that could compromise power quality and availability. Its wide range and expandability make it easy to select the ideal solution for both current and future measurement needs, providing a technically robust and cost-effective choice.

- Modular DIN-rail mounting (*aligns with standard MCB 45 mm cut-out*)
- Accuracy:
 

Voltage/Current:	±0.5%	(True RMS measurements)
Power:	±1% f.s.	
Frequency:	±0.05%	
Active energy:	Class 1 (IEC/EN 62053-21)	
Reactive energy:	Class 2 (IEC/EN 62053-23)	

#### Main measurements:

- Voltage: phase, line and system values
- Current: phase values (*neutral current calculated*)
- Power: apparent, active and reactive phase and total values
- Power Factor (PF) per phase and total
- HIGH-LOW-AVERAGE value functions of all measurements
- Maximum demand of power and current values
- Asymmetric voltage and current
- Energy meters for active, reactive and apparent values
- Bidirectional (*import and export of active reactive energy*)

type	comm. ports	description	width in 18 mm
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### DMG series - Multifunction meters

- Auxiliary power supply: 100...240 VAC / 120...250 VDC
- Input current: CT - 1A or 5A
- Voltage measurement: 50 - 720 VAC L-L
- Harmonic analysis of V and I up to the 15th order

### DMG100 series - LCD multifunction meters *economical with icon display*

<b>DMG100</b>	no	modular power analyser	4
<b>DMG110</b>	RS-485	modular power analyser	4

### DMG2000 series - Multifunction meters

DMG2000-3000 series represents the next generation of modular power analyzers, succeeding the DMG200 and DMG300 models.

Key upgrades include built-in Ethernet connectivity, web server capabilities, RS485 communication, and compatibility with the EASY Branch system, ensuring greater flexibility and scalability for diverse applications.

As above **DMG100** but with following additional features:

- Voltage measurement: 20...830 VAC L-L
- EASY Branch support with EXM0000 (2 modules)
- Supporting EXS4... (see page E-6)

### DMG2000 series (expandable) *with graphic backlight LCD display*

<b>DMG2000</b>	Ethernet	modular power analyser	4
<b>DMG2500</b>	RS-485	modular power analyser	4

### DMG3000 series - Multifunction meters

As above **DMG2000** but with following additional features:

- Voltage measurement: 20...830 VAC L-L / 10...480 VAC L-N

### DMG3000 series (expandable) *with graphic backlight LCD display*

<b>DMG3000*</b>	RS-485	modular power analyser	4
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\* Accepts **EXM...** (up to 2) EASY Branch support with EXM0000 (2 modules), see page E-1

### DMG series - 2000/3000 selection guide

	DMG2000	DMG2500	DMG3000	*DMG3011...
Built-in Ethernet port	•	EXM1013	•	•
Web server	•	—	•	•
RS485 port	—	•	EXM1012	EXM1012
Gateway RS485-ethernet	—	•	•	•
Memory for data log	—	—	•	•
NFC	—	•	•	•
Expandability	—	•	•	•
EASY Branch support	—	•	•	•
Rogowski coils input	—	—	—	•

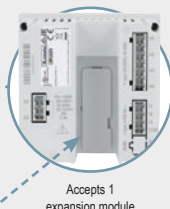
\*DMG3011...(on request only)



DMG620



DMG611...



Accepts 1 expansion module



EXP1004

**Flush mounting digital metering instruments (96 x 96 mm)**

**DMG range** of digital multifunction meters are capable of viewing electrical measurements with high accuracy, permitting complete monitoring of networks.

The meters feature an extended power supply voltage range, high measurement accuracy, expandability and a graphic interactive interface that is easy to use.

**Main measurement functions include:**

- Voltage: phase, line and system values
- Current: phase values (neutral current calculated) via CT 1/5A
- Power: apparent, active and reactive phase and total values
- Power Factor (PF) 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<sup>th</sup> order

type	comm. port	optical port	description	expansion slots
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**DMG series - digital multifunction meters****DMG500 series - "Basic" multi-measurement instrument with backlit LCD**

Auxiliary power supply:	100...240 VAC			
Voltage measurement range:	480 VAC (50/60 Hz)			
<b>DMG500</b>	no	no	digital panel-mount power analyser	—
<b>DMG510</b>	RS-485	no	digital panel-mount power analyser	—

**DMG600 series -**

As above **DMG 500** but with following additional features:

Auxiliary power supply:	100...440 VAC / 110...250 VDC
Voltage measurement:	50...720 VAC L-L
Rated input current:	By external CT 5A or 1A
Memory:	Non volatile memory for data storage
Display:	Wide graphic LCD
Expansion:	Accepts 1 plug-in expansion module
Measurement accuracy:	<b>DMG600/610</b> - voltage/current $\pm 0.5\%$ - Active energy Class 1
	<b>DMG615/620</b> - voltage/current $\pm 0.2\%$ - Active energy Class 0.5

**DMG600 series - Multi-measurement instrument with backlit LCD**

<b>DMG615</b>	RS-485	yes	digital panel-mount power analyser	1
<b>DMG620</b>	Ethernet	yes	digital panel-mount power analyser	1

**DMG611 series - Supplied with calibrated Rogowski coils**

• Current reading:	Through 3 Rogowski coils <i>(included)</i>				
• Measurement range:	5...100% I <sub>max</sub>				
<b>DMG611R0500</b>	RS-485	yes	25...500A	power analyser with Rogowski coils	1
<b>DMG611R3000</b>	RS-485	yes	100...3000A	power analyser with Rogowski coils	1

**Expansion modules and accessories for above DMG series****Inputs and outputs**

<b>EXP1000</b>	4 digital opto-isolated inputs			
<b>EXP1001</b>	4 static opto-isolated outputs			
<b>EXP1002</b>	2 digital inputs and 2 static outputs, opto-isolated			
<b>EXP1003</b>	2 output relays (5A 250 VAC)			
<b>EXP1004</b>	2 Analogue opto-isolated inputs	0/4 - 20mA or 0-5/10V	(for DMG75/8/9000)	
<b>EXP1005</b>	2 Analogue opto-isolated outputs	0/4 - 20mA or 0-5/10V	(for DMG75/8/9000)	

**Communication ports**

<b>EXP1010</b>	opto-isolated USB interface		
<b>EXP1011</b>	opto-isolated RS-232 interface		
<b>EXP1012</b>	opto-isolated RS-485 interface		
<b>EXP1013</b>	opto-isolated Ethernet interface		
<b>EXP1014</b>	opto-isolated Profibus-DP interface		(for DMG75/8/9000)

**Communication devices**

<b>CX01</b>	USB/optical communication device for programming, download and diagnostics
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# DMG SERIES POWER ANALYSER



- **WIDESCREEN** COLOUR LCD
- HIGH ACCURACY LEVEL FOR **MEASUREMENTS**
- INTEGRATED COMMUNICATION
- NFC CONFIGURATION
- VOLTAGE AND CURRENT HARMONIC ANALYSIS UP TO THE **63rd ORDER**
- **STATISTICS** ACCORDING TO **EN 50160**
- INTEGRATED DATA **MEMORY**
- **WEB SERVER**
- **NFC CONFIGURATION**



## Comparative table

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



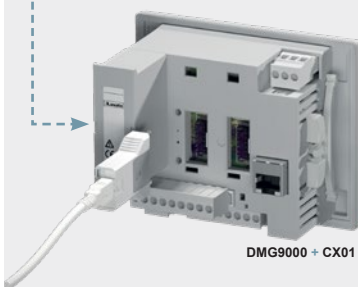
## Digital power analysers



DMG...



Embedded Web-Server



DMG9000 + CX01

**Power analysers with widescreen colour LCD** (flush mounting: cut-out 92 x 92 mm)

**DMG series** of power analysers display electrical values on their large colour LCD with exceptional accuracy for the optimal view of measurements and parameters in a clear, simple and intuitive way.

- Wide colour screen LCD: 4.3" Widescreen (H) 96 x (W) 118 mm colour LCD permits optimal indication of measures and parameters
- Programmable LEDs: 3 programmable front LEDs provide device status at a glance
- PLC logic: Perform simple automation with built-in PLC logic functionality via **Xpress**
- Communication: Availability of models with built-in RS485 and Ethernet communication ports
- High accuracy level for measurements: Measurements are verified according to the recognised Intl. standards: IEC 62053-22 (class 0.5s), IEC 62053-24 (class 1) and IEC 61557-12
- Measurements on 4 quadrants
- Power (*active, reactive and apparent phase and total power*)
- Power factor (*phase and total*)
- Maximum (HIGH), minimum (LOW) and average (AVERAGE) of all measured values
- Phase current (calculated neutral current and measured neutral current on the **DMG9000...**)
- Peak power/current (*max demand*)
- Voltage and current asymmetry and active power unbalance
- Voltage and current harmonic analysis up to the 63rd order
- Active, reactive and apparent energy metering (*partial and total*)
- Hour meter (*total and partial, programmable*)

**Operational characteristics**

- Auxiliary power: 100...240 VAC / 110...250 VDC
- Voltage measurement range: 40...830 VAC L-L / 5...480 VAC L-N
- Nominal input current: 5A or 1A with an external CT
- Frequency measurement range: 45...66Hz, 360...440Hz
- Protection rating: IP65 for front panel
- Communications protocols: Modbus-RTU, ASCII and TCP
- Integrated communications ports (RS485 or Ethernet)
- Integrated data memory (DMG8000, DMG9000)

**Web server functional (DMG8000 and DMG9000)**

In addition to having built-in data memory the **DMG8000** and **DMG9000** host an embedded web-server functionality, making it possible to access the devices remotely through a browser.

- **Setting of all parameters:**
  - Programming of all parameters can be done through the browser or front panel
- **Web server and data memory:**
  - Select measures to be recorded (*up to 128*)
  - Set the sampling frequency of historical data
  - Download reports (.CSV file) with the acquired information
  - Sampling 20 measures within a minute, provides 10 days of historical data
- **Measurement view:**
  - Representation of the measured values by means of tables and charts

type	comm. port	description	expansion slots
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**DMG series - Power analyser with built-in RS-485 ①** **IP65**

- Compatible with EASY BRANCH power monitoring system

**Digital power analyser**

<b>DMG7500</b>	RS-485	digital panel-mount power analyser	3
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**DMG series - Power analyser with built-in Ethernet and Web Server ①** **IP65**

- Web Server and memory for data collection
- Compatible with EASY BRANCH power monitoring system

**Digital power analyser**

<b>DMG8000</b>	Ethernet / Web Server	digital panel-mount power analyser	3
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**DMG series - Power analyser with built-in Ethernet and RS-485 ①** **IP65**

As above **DMG8000** but with following additional features:

- Statistics of network quality according to EN50160
- Neutral current measurement through dedicated CT
- Neutral-Earth voltage measurement

**Digital power analyser**

<b>DMG9000</b>	Ethernet + RS-485	digital panel-mount power analyser	3
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**Communication devices**

<b>CX01</b>	USB/optical communication device for programming, download and diagnostics
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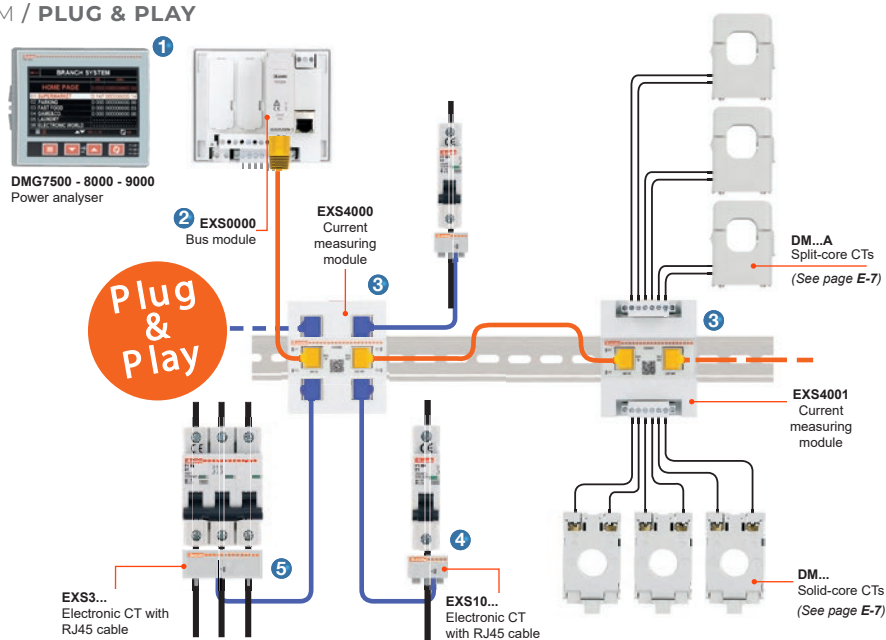
## EASY BRANCH POWER MONITORING SYSTEM / PLUG & PLAY

When the parameters of several loads have to be monitored, **EASY BRANCH** power monitoring system is a more efficient and simpler alternative to install than traditional systems which requires an independent instrument for each measuring point.

Distribution panels in shopping centres or in the departments of a production facility represent ideal applications for **EASY BRANCH** system.

### Advantages:

- 4 components needed
- Reduction of wiring times
- Setting time reduction
- No special cables needed
- Measurement accuracy



EXS0000

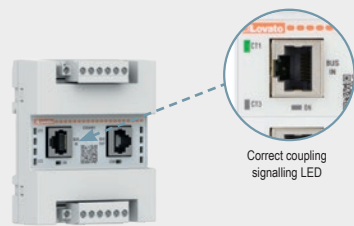


EXS4000



EXS1063

EXS3063



EXS4001

Correct coupling  
signalling LED



DM0T0080

### EASY BRANCH - Power monitoring system

EASY BRANCH multi-circuit metering system is a modern solution to monitoring more than one load within a single electrical enclosure. Each DIN-rail mounting current metering unit can monitor 2 or 4 measurement points and display the values on the **DMG7500**, **DMG8000** or **DMG9000** power analysers to which it is connected, thus centralising the display of data.

- Up to 33 three-phase loads or 99 single-phase loads
- Uses standard ethernet cable (Cat6) - cable not supplied

type	inputs	description
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### EASY BRANCH - modules

#### Bus module - Expansion module for DMG7500 / 8000 / 9000 ②

Installed in one of the expansion slots of the power analyser, accepts up to 8 current measuring modules (**EXS4...**). When connecting 5 or more **EXS4...** current models. (bus module requires an additional 24 VDC - 200mA power supply)

**EXS0000** bus module for EASY BRANCH power monitoring system

#### Current measuring modules - Connects to bus module using Ethernet cable (Cat6) ③

The module collects the measurements of loads monitored by either electronic (**EXS4000**) or traditional (**EXS4001**) current transformers.

**EXS4000** 4 current measuring module for electronic RJ45 CTs  
**EXS4001** 6 current measuring module for traditional CTs

For traditional CTs, see page E-7

#### Electronic current transformers - For use with EXS4000

The Electronic current transformers are designed to be installed immediately downstream from the circuit breakers. The diameter and pitch of the pass through holes have been designed in line with MCBs.

- Integrated 2 meter RJ45 cable for fast and fail-safe installation

type	current	dia. Ø	pitch (mm)	description	cable length
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#### Single-phase ④

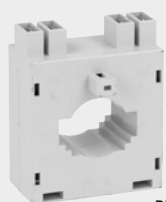
<b>EXS1032</b>	32A	7.8	7 mm	single-phase electronic CT	2m
<b>EXS1063</b>	63A	7.8	7 mm	single-phase electronic CT	2m
<b>EXS1080</b>	80A	12.2	12 mm	single-phase electronic CT	2m
<b>EXS1125</b>	125A	12.2	12 mm	single-phase electronic CT	2m

#### Three-phase ⑤

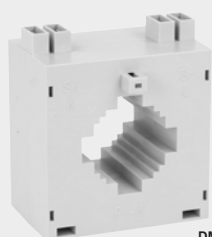
<b>EXS3032</b>	32A	7.6	18 mm	three-phase electronic CT	2m
<b>EXS3063</b>	63A	7.6	18 mm	three-phase electronic CT	2m
<b>EXS3080</b>	80A	12.2	27 mm	three-phase electronic CT	2m
<b>EXS3125</b>	125A	12.2	27 mm	three-phase electronic CT	2m



DM0T0080



DM2T0300



DM3T0300



DM35T0800



DM1TMA0150

**Current transformers****Class 1**

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 series... are instrument transformers in class 1/0.5 without a primary winding and are normally used for high primary current values starting from 40A. The number of loops of the primary cable does not modify the accuracy but converts the primary current value proportional to secondary current.

Ideal for use with the EASY Branch system, providing accurate current measurements for monitoring and managing electrical loads in various applications. (see page E-6)

**General specifications:**

- Nominal frequency: 50/60Hz
- Insulation (dry type): Class E
- Nominal thermal short-time current:  $I_{th} = 40...60 \times I_N$
- Maximum operating voltage:  $U_m \leq 0.72 \text{ kV}$
- Over-current limiting factor: FS 5 up to 1500 A nominal current
- Certification: IEC/EN/BS 61869-2, IEC/EN/BS 61869-1
- Mounting: Fixing on 35 mm DIN rail (IEC/EN/BS 60715) or by screws (fixing elements standard supplied with the product)

type	ratio	class	Burden (VA)	description	max. hole diameter (mm) round B/bar 1 B/bar 2
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**Solid-core type current transformers****5A secondary - class 1****DM0T** current transformers

(H) 66 x (W) 44 x (D) 32 mm

DM0T0040	40/5A	1	1.25	tube current transformer
DM0T0050	50/5A	1	1.25	tube current transformer
DM0T0060	60/5A	1	1.5	tube current transformer
DM0T0080	80/5A	1	1.5	tube current transformer
DM0T0100	100/5A	1	1.5	tube current transformer
DM0T0150	150/5A	1	2	tube current transformer

Ø 22 – –

**Busbar mounted current transformers****5A secondary - class 1****DM2T** current transformers

(H) 65.5 x (W) 52 x (D) 46.5 mm

DM2T0100	100/5A	1	1	std current transformer
DM2T0150	150/5A	1	1.5	std current transformer
DM2T0200	150/5A	1	2	std current transformer
DM2T0250	200/5A	1	2.5	std current transformer
DM2T0300	300/5A	1	3	std current transformer
DM2T0400	400/5A	1	3	std current transformer

Ø 23 30x10 25x12.5

**DM3T** current transformers

(H) 81.5 x (W) 71 x (D) 62.5 mm

DM3T0200	200/5A	1	5	std current transformer
DM3T0250	550/5A	1	5	std current transformer
DM3T0300	300/5A	1	5	std current transformer
DM3T0400	400/5A	1	5	std current transformer
DM3T0500	500/5A	1	5	std current transformer
DM3T0600	600/5A	1	10	std current transformer
DM3T0800	800/5A	1	10	std current transformer

Ø 30 40x10 30x20

**DM35T** current transformers

(H) 126.5 x (W) 105 x (D) 41.6 mm

DM35T0800	800/5A	1	15	std current transformer
DM35T1000	1000/5A	1	20	std current transformer
DM35T1250	1250/5A	1	20	std current transformer

Ø 66 80x12.5 60x30

**DM4T** current transformers

(H) 155 x (W) 140 x (D) 58 mm

DM4T1600	1600/5A	1	30	std current transformer
DM4T2000	2000/5A	1	45	std current transformer
DM4T2500	2500/5A	1	45	std current transformer
DM4T3000	3000/5A	1	45	std current transformer

Ø 86 100x30 80x50

**Split-core (Pre-wired) type current transformers****5A secondary - class 1**

- 2m cable supplied as standard

**DM1TM** current transformers

(H) 66.5 x (W) 45.5 x (D) 34.5 mm

DM1TMA0100	100/5A	1	–	prewired split-core CT
DM1TMA0150	150/5A	1	–	prewired split-core CT
DM1TMA0200	200/5A	1	–	prewired split-core CT
DM1TMA0250	250/5A	1	–	prewired split-core CT

24 x 24 mm

**DM2TM** current transformers

(H) 86 x (W) 57.5 x (D) 42 mm

DM2TMA0250	250/5A	1	0.5	prewired split-core CT
DM2TMA0400	400/5A	1	0.5	prewired split-core CT

24 x 24 mm

[illegible]

*World Class Innovation, Local Commitment*

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