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ENERGY MONITORING & METERING

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Water Meters - WRAS Approved

Cold Water Meters

- EEC Class B approved
- Working pressure 16 Bar, 30°C
- Dry dial
- Counter hermetically sealed
- Supplied with unions & washers as standard

Pulsed Cold Water Meters WRAS Approved

Description	Size (mm)	Union Size	Part No.
Screwed BSP	15	½"	S15MJC
	20	¾"	S20MJC
	25	1"	S25MJC
	30	1¼"	S30MJC
	40	1½"	S40MJC
	50	2"	S50MJC
Flanged PN16	50		F50MJFC
	65		F65WC
	80		F80WC
	100		F100WC
	150		F150WC
	200		F200WC

Hot Water Meters

- EEC Class B approved
- Working pressure 16 Bar, 90°C
- Dry dial
- Counter hermetically sealed
- Supplied with unions & washers as standard

Pulsed Hot Water Meters

Description	Size (mm)	Union Size	Part No.
Screwed BSP	15	½"	S15MJH
	20	¾"	S20MJH
	25	1"	S25MJH
	30	1¼"	S30MJH
	40	1½"	SD40MJH
	50	2"	S50MJH
Flanged PN16	50		F50MJFH
	65		F65WH
	80		F80WH
	100		F100WH
	150		F150WH
	200		F200WH



Flow Sensors

The MW range of flow sensors are meters especially designed for the special conditions in heating and cooling circuits. The pulse transmission takes place via the tried and tested reed-contact and is thus, compatible with the MW-MD. The special construction and the material design guarantee long-term measuring stability and high reliability. All of the flow sensors are designed for temperatures up to 120°C with safety up to 130°C.

Single-Jet Types

Union Size	Litres /pulse	Qi (l/h)	Qp (m³/h)	Qs (m³/h)	Part No.
½"	10	12	0.6	1.2	MW-SJ-15A
½"	10	30	1.5	3	MW-SJ-15B
¾"	10	50	2.5	5	MW-SJ-20

Multijet-Jet Horizontal Types

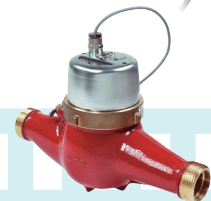
¾"	10	30	1.5	3	MW-MJ-20A
¾"	10	50	2.5	5	MW-MJ-20B
1"	10	65	3.5	7	MW-MJ-25A
1"	10	90	6	12	MW-MJ-25B
1¼"	10	90	6	12	MW-MJ-32
1½"	10	160	10	20	MW-MJ-40

Multijet-Jet Vertical Riser Pipe Types

¾"	10	30	1.5	3	MW-MJR-20
1"	10	65	3.5	7	MW-MJR-25A
1"	10	90	6	12	MW-MJR-25B
1¼"	10	90	6	12	MW-MJR-32
1½"	10	160	10	30	MW-MJR-40

Multijet-Jet Vertical Down Pipe Types

¾"	10	30	1.5	3	MW-MJD-20
1"	10	65	3.5	7	MW-MJD-25A
1"	10	90	6	12	MW-MJD-25B
1¼"	10	90	6	12	MW-MJD-32
1½"	10	160	10	30	MW-MJD-40



How to size your water meter...

Sontay offer a wide range of water & heat metering products

Upper Limit (m ³ /h)	90	120	150	250	300	350	650
Permanent (m ³ /h)	15	25	40	60	100	150	250
Lower Limit (m ³ /h)	0.35	0.45	0.8	1.5	3	3.5	6.5
Meter Code	MW-xF-50	MW-xF-65	MW-xF-80	MW-xF-100	MW-xF-125	MW-F-150	MW-F-200
Upper Limit (m ³ /h)	60	60	90	180	250	300	500
Permanent (m ³ /h)	15	25	40	60	100	150	250
Lower Limit (m ³ /h)	0.6	1	3.2	2	3	8	10
Meter Code	MW-F-50	MW-F-65	MW-F-80	MW-F-100	MW-F-125	MW-F-150	MW-F-200
Upper Limit (m ³ /h)	3	5	7	12	12	20	
Permanent (m ³ /h)	1.5	2.5	3.5	6	6	10	
Lower Limit (l/h)	30	50	65	90	90	160	
Meter Code	MW-MJx-20A	MW-MJx-20B	MW-MJx-25A	MW-MJx-25B	MW-MJx-32	MW-MJx-40	
Upper Limit (m ³ /h)	3	5	7	12	20	30	
Permanent (m ³ /h)	1.5	2.5	3.5	6	10	15	
Lower Limit (l/h)	15	25	35	60	100	450	
Meter Code	MW-MxS-15	MW-xS-20	MW-xS-25	MW-xS-32	MW-xS-40	MW-CS-50	
Qi. Minimum (l/h)	12	30	50				
Qp. Nominal (m ³ /h)	0.6	1.5	2.5				
Qs. Maximum (l/h)	1.2	3	3.5				
Meter Code	MW-SJ-15A	MW-SJ-15B	MW-SJ-20				

To ensure you get the best performance and accuracy from your meter it is essential that it is sized correctly. To do this you will need to know your permanent, upper limit and lower limit flow rates. Select the closest match from these tables.

In today's energy efficient environment, metering isn't just desirable, in many cases it's a legal requirement.

New standards and EU directives are brought into UK law by SIs (Statutory Instruments), so it's vital that metering products and systems are compliant.

Metering in buildings falls into basic categories such as:

Gas
(MG Series)

Electricity
(PM series)

Water
(MW series)

Heat
(MW series)

All these categories are covered by MID (the Measuring Instruments Directive).

Sontay have all the in-house knowledge of the SI's, standards and directives (the legal metrology) applicable to this complex range of products to allow the correct choices to be made when specifying.

Flow parts for metering

Sontay offer flow parts for two distinct applications

Flow parts for water

denoted in the Sontay catalogue as 'water meters'

They are used specifically for sanitary water only, i.e. water without additives or chemical treatment, and are designed for non-continuous flow, such as domestic cold and hot water supplies.

- The total daily flow should not exceed 3 hours, over a 6 year period
- Volumetric flows higher than this can lead to increased wear in the bearings of the impellor, causing inaccuracies in reading meters
- Water meters have a narrow fluid temperature range, typically between:
0 to +90°C for hot water meters
0 to +30°C for cold water meters

Flow parts for heating

denoted in the Sontay catalogue as 'flow sensors'

They can be used with chemically treated water, and are designed for continuous or very high duty cycle flow conditions typically found in hot water heating systems.

- Flow sensors have a wider fluid temperature range than water meters, typically between 0 to +120°C

Note: Because of these distinct differences, only flow parts designed specifically for heat metering should be used for heat metering applications. Although water meters can, in theory, be used for heat meter applications. Sontay cannot warranty water meters if used in this manner.

The Importance of MID Certification

After October 2016 every new meter installed for billing must be MID approved. It is a criminal offence to use a non-approved meter for billing. MID makes no distinction between primary main supply meters and secondary sub-billing meters.

For billing purposes, meters must be approved to one of the following:

- MID Annex B + Annex D
- MID Annex B + Annex F. or
- MID Annex H1.

From October 2016, for residential, commercial or industrial landlords or property managers, an MID approved meter must be employed in:

- Multi-use commercial buildings
- Industrial Estates
- Sub-let shops or concessions
- Residential flats
- Marinas
- Caravan parks
- Data centre server supplies
- Sports facilities
- Any charging of electricity by meter reading



The use of unapproved meters is prohibited by the Electricity Act 1989, and to bill electricity or gas with a non-approved meter is a breach of the 1989 Act and is classed as a criminal offence.

Mechanical & Ultrasonic Flow Meters

- Easy to use with easy setup menu
- Non invasive sensing
- Cost effective solution with no draindown

Non Invasive Ultrasonic Flow meters	
Description	Part No.
15-80mm strap on ultrasonic flow meter 230V	U3000A
50-1000mm strap on ultrasonic flow meter 230V	U3000B
250-2000mm strap on ultrasonic flow meter 230V	U3000C

Non Invasive 230V/Battery Heat Meter with Strap On Sensors

- Temp sensors are clamp on type with no insertion required
- No programming required

Non-Intrusive 230V Heat meters	
Description	Part No.
Calek non-intrusive heat meter c/w pulse & M-Bus	CALEC PM
Calek non-intrusive heat meter c/w pulse & LONWorks	CALEC PL
Calek non-intrusive heat meter c/w 4-20mA & M-Bus	CALEC AM
Calek non-intrusive heat meter c/w 4-20mA & LONWorks	CALEC AL

Non-Intrusive Battery Heat Meters	
Description	Part No.
Calek non-intrusive heat meter c/w pulse & M-Bus	CALEC PB
Calek non-intrusive heat meter c/w pulse & LONWorks	CALEC PMB

Electromagnetic Flow meters

- No moving parts, no wear, no maintenance
- Accuracy of +/- 0.5%
- Pulse and 4 -20mA outputs as standard Triowirl VT Steam Flow meters

Electromagnetic Water Meters		
Description	Size (mm)	Part No.
Flanged PN10	25	MAG25
	40	MAG40
	50	MAG50
	65	MAG65
Flanged PN16	80	MAG80
	100	MAG100
	150	MAG150
	200	MAG200
Flanged PN10	250	MAG250
	300	MAG300

Triowirl VT Steam Flow Meters

- No moving parts, no wear, no maintenance
- Accuracy of +/- 1%
- Pulse and 4 -20mA outputs as standard

Electromagnetic Water Meters		
Description	Size (mm)	Part No.
Triowirl VT steam meter wafer pattern	25	TRIWIRL 25
	40	TRIWIRL 40
	50	TRIWIRL 50
	80	TRIWIRL 80
	100	TRIWIRL 100
	150	TRIWIRL 150



SIEMENS



kamstrup



MULTICAL® 403 Heat & Cooling Meter

Now, you only need to keep one meter in stock. With MULTICAL® 403 everything from inlet/outlet position to energy unit, cut-off dates and much more can be configured individually via the meter's front panel directly at the installation site.

What's in the box

- 1 x Heat Meter + Kamstrup calibration certificate
- 1 x matched pair temperature sensors with 1.5m cable + Kamstrup calibration certificate
- 1 x pair 65mm temperature sensor pockets
- 1 x lithium battery power supply
- 1 x pair unions

Multical 403® Series

Size (mm)	QP Flow (m ³ /hr)	Body Length (mm)	Heat Meter Part No.	Cooling Meter Part No.
15 (½")	0.6	110	403Wx10xxx	403Tx10xxx
20 (¾")	0.6	190	403Wx30xxx	403Tx30xxx
15 (½")	1.5	110	403Wx40xxx	403Tx40xxx
15 (½")	1.5	165	403Wx50xxx	403Tx50xxx
20 (¾")	1.5	130	403Wx70xxx	403Tx70xxx
20 (¾")	1.0	190	403Wx90xxx	403Tx90xxx
20 (¾")	2.5	130	403WxA0xxx	403TxA0xxx
20 (¾")	2.5	190	403WxB0xxx	403TxB0xxx
25 (1")	3.5	260	403WxD0xxx	403TxD0xxx
25 (1")	6.0	260	403WxF0xxx	403TxF0xxx
DN25	6.0	260	403WxG0xxx	403TxG0xxx
40 (1½")	10.0	300	403WxH0xxx	403TxH0xxx
DN40	10.0	300	403WxJ0xxx	403TxJ0xxx
DN50	15.0	270	403WxK0xxx	403TxK0xxx

Calibration Certificates

Description

Set of manufacturer's calibration certificates (2 pcs.)

Communication Module

Description	Part No.
PT500 (2-wire) prepared for Ultraflow	MC603-E
Data + 2 pulse inputs (A, B)	HC-003-10
Data + 2 pulse outputs (C, D)	HC-003-11
M-Bus, Configurable+ 2 pulse inputs (A, B)	HC-003-20
M-Bus, Configurable + 2 pulse outputs (C, D)	HC-003-21
Mbus configurable w/ thermal disconnect	HC-003-22
Wireless M-Bus, Configurable, 868 MHz + 2 pulse inputs (A, B)	HC-003-30**
Analog 0/4...20mA outputs**	HC-003-40**
BACnet MS/TP (RS485) + 2 pulse inputs (A, B)**	HC-003-66**
Modbus RTU (RS-485) + 2 pulse inputs (A, B)**	HC-003-67

** denotes that the meter must be mains powered

Power Supply

Battery, D-cell	603-Batt
230V AC high power	603-230HP
24V AC high power	603-24HP
230V AC	603-230VAC
24V AC	603-24VAC

Temperature Sensor Set – PT500

1.5m PT500 pocket sensors (matched pair)	6700000A
3m PT500 pocket sensors (matched pair)	6700000B
5m PT500 pocket sensors (matched pair)	6700000C
10m PT500 pocket sensors (matched pair)	6700000D

Sensor Pockets

65mm stainless steel pocket (1 pc.)	65-57-324
90mm stainless steel pocket (1 pc.)	65-57-327
140mm stainless steel pocket (1 pc.)	65-57-314

Mounting Bracket

Flat mounting bracket for wall mounting	30-26-207-A
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MULTICAL® 603 Heat & Cooling Meter

The MULTICAL® 603 heat and cooling meter comes with a built-in Auto Detect function, making it possible to replace the ULTRAFLOW® when needed, without having to manually re-configure the calculator.

- Increases flexibility, allows you to keep only one type of calculator in stock to be used for all Kamstrup ultrasonic flow meters.
- Auto Detect is compatible with fourth generation ULTRAFLOW®, which has been produced since 2008.
- Auto Detect delivers clear benefits when you need to switch the flow part but not the calculator
- It is simple: MULTICAL® 603 is connected to the new flow meter and will automatically detect the flow meter and re-configure accordingly without any need for technical support or special tools. This level of flexibility saves resources, money and unnecessary worries.

Calculator / Integrator

Description	Part No.
PT500 (2-wire) prepared for Ultraflow	MC603-E

Communication Module

Data + 2 pulse inputs (A, B)	HC-003-10
Data + 2 pulse outputs (C, D)	HC-003-11
M-Bus, Configurable+ 2 pulse inputs (A, B)	HC-003-20
M-Bus, Configurable + 2 pulse outputs (C, D)	HC-003-21
Mbus configurable w/ thermal disconnect	HC-003-22
Wireless M-Bus, Configurable, 868 MHz + 2 pulse inputs (A, B)	HC-003-30**
Analog 0/4...20mA Outputs**	HC-003-40**
BACnet MS/TP (RS485) + 2 pulse inputs (A, B)**	HC-003-66**
Modbus RTU (RS-485) + 2 pulse inputs (A, B)**	HC-003-67

** denotes that the meter must be mains powered

Power Supply

Battery, D-cell	603-Batt
230V AC high power	603-230HP
24V AC high power	603-24HP
230V AC	603-230VAC
24V AC	603-24VAC

Temperature Sensor Set – PT500

1.5m PT500 pocket sensors (matched pair)	6700000A
3m PT500 pocket sensors (matched pair)	6700000B
5m PT500 pocket sensors (matched pair)	6700000C
10m PT500 pocket sensors (matched pair)	6700000D

Sensor Pockets

65mm stainless steel pocket (1 pc.)	65-57-324
90mm stainless steel pocket (1 pc.)	65-57-327
140mm stainless steel pocket (1 pc.)	65-57-314

Mounting Bracket

Flat mounting bracket for wall mounting	30-26-207-A
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Ultrasonic Flow Sensors

ULTRAFLOW 54 is a static flow sensor based on the ultrasonic measuring principle. It is primarily used as a volume flow sensor for use with the MULTICAL calculators and has been designed for heating and cooling applications where water is the heat-bearing medium. The volume is measured using a bi-directional ultrasonic technique based on transit time. This principle has proven long-term stability and accuracy.

BSP Threaded Connection, PN16

Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Heat Meter Part No.	Cooling Meter Part No.
15 (½")	1.5	110	65-5-CDHA-XXX	65-1-CDAA-XXX
	1.5	130	65-5-CDHD-XXX	65-1-CDAD-XXX
20 (¾")	1.5	190	65-5-CDHF-XXX	65-1-CDAF-XXX
	2.5	190	65-5-CEHF-XXX	65-1-CEAF-XXX
25 (1")	3.5	260	65-5-CGJG-XXX	65-1-CGAG-XXX
	6.0	260	65-5-CHJG-XXX	65-1-CHAG-XXX
30 (1¼")	6.0	260	65-5-CHJH-XXX	
40 (1½")	10.0	300	65-5-CJJJ-XXX	65-1-CJAJ-XXX

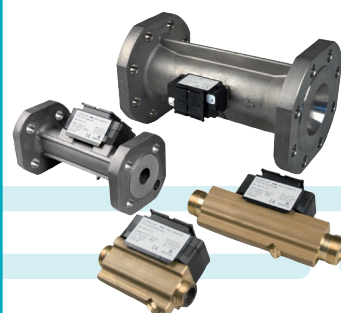
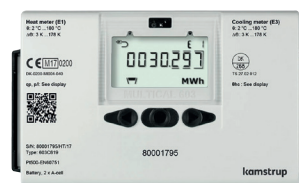
Flanged Connection, PN25

DN50	15	270	65-5-CKCE-XXX	65-1-CKCE-XXX
DN65	25	300	65-5-CLCG-XXX	65-1-CLCG-XXX
DN80	40	300	65-5-CMCH-XXX	65-1-CMCH-XXX
DN100	60	360	65-5-FACL-XXX	65-1-FACL-XXX
	100	360	65-5-FBCL-XXX	65-1-FBCL-XXX
DN125	100	350	65-5-FBCM-XXX	65-1-FBCM-XXX
	150	500	65-5-FCCN-XXX	65-1-FCCN-XXX
DN150	250	500	65-5-FDCN-XXX	65-1-FDCN-XXX
	400	500	65-5-FECN-XXX	65-1-FECN-XXX
DN200	400	500	65-5-FECP-XXX	65-1-FECP-XXX
	600	500	65-5-FFCP-XXX	65-1-FFCP-XXX
DN250	400	600	65-5-FECP-XXX	65-1-FECP-XXX
	600	600	65-5-FFCR-XXX	65-1-FFCR-XXX
DN250	1000	500	65-5-FGCR-XXX	65-1-FGCR-XXX
	1000	500	65-5-FGDS-XXX	65-1-FGDS-XXX

Calibration Certificates

Description
Set of manufacturer's calibration certificates (2 pcs.)

kamstrup





Ultrasonic Energy Meters & Calculators

(Other variants available on request)

SonoSelect are ultrasonic compact energy meters approved to MID class 2. Intended for measuring energy consumption in heating applications they feature upgradeable communication slot, are focused on user friendliness via SonoApp and long operating life introducing genuine diagnostic function.

SonoSafe Heat Meter (pockets, connections and other communication options are sold as accessories)

Description	Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Part No.
SonoSafe 10	15 (1/2")	0.6	110	014U0003
		1.5		014U0007
	20 (3/4")	2.5	130	014U0011
		3.5		014U0015
	25 (1")	3.5	160	014U0019

SonoSelect Heat Meter (pockets, connections and other communication options are sold as accessories)

Description	Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Part No.
SonoSelect 10	15 (1/2")	0.6	110	014U0165
		1.5		014U0167
	20 (3/4")	2.5	130	014U0169
		3.5		014U0171
SonoSelect 10 Pulse input module (2 inputs)	15 (1/2")	0.6	110	014U0173
	20 (3/4")	1.5	130	014U0183
	25 (1")	2.5	160	014U0185
	25 (1")	3.5	160	014U0187
	25 (1")	3.5	160	014U0189
	25 (1")	3.5	160	014U0191

SonoSelect Cooling Meter (pockets, connections and other communication options are sold as accessories)

Description	Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Part No.
SonoSelect 10	15 (1/2")	0.6	110	014U1400
		1.5		014U1401
	20 (3/4")	2.5	130	014U1402
		3.5		014U1403
SonoSelect 10 Pulse input module (2 inputs)	15 (1/2")	0.6	110	014U1404
	20 (3/4")	1.5	130	014U1405
	25 (1")	2.5	160	014U1406
	25 (1")	3.5	160	014U1407
	25 (1")	3.5	160	014U1408
	25 (1")	3.5	160	014U1409

Accessories for SonoSafe/Select

Description	Part No.
M-bus communication module	M-Bus module with 2 pulse input 014U1998
Radio module	Wireless OMS 868.95MHz with 2 pulse input 014U1999
Bluetooth dongle	Dongle to link Sonoselect/safe to Sonoapp 014U1963

Heating Meters, Battery (pockets, connections and other communication options are sold as accessories)

Description	Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Part No.
Sonometer 30	15 (1/2")	0.6	110	187F3001
		1.5		187F3015
	20 (3/4")	2.5	130	187F3130
		3.5		187F3029
	25 (1")	6.0	260	187F3043
		10.0		187F3057
40 (1 1/2")	10.0	300	187F3071	

Heat and Cool Meters, Battery, M-Bus, with 2x Pulse Input

(can be changed to output in DN15-50). Pockets, connections and other communication options are sold as accessories

Description	Size (mm)	QP Flow (m3/hr)	Body Length (mm)	Part No.
Sonometer 30	15 (1/2")	0.6	110	187F3008
		1.5		187F3022
	20 (3/4")	2.5	130	187F3036
		3.5		187F3050
	25 (1")	6.0	260	187F3064
		10.0		187F3078
Sonometer 31	65	25.0	300	187F3106
	80	40.0	300	187F3304
	100	40.0	350	187F3312
		60.0		187F3320

Heating Meters, Battery (pockets, connections and other communication options are sold as accessories)

Description	Size (mm)	QP FLOW (m3/hr)	Body Length (mm)	Part No.
Sonometer 30	15 (½")	0.6	110	187F3001
		1.5		187F3015
	20 (¾")	2.5	130	187F3130
		3.5		187F3029
	25 (1")	6.0	260	187F3043
	10.0	300	187F3057	
	40 (1½")			187F3071

Heat and Cool Meters, Battery, M-Bus, with 2x Pulse Input
(can be changed to output in DN15-50). Pockets, connections and other communication options are sold as accessories

Sonometer 30	15 (½")	0.6	110	187F3008
		1.5		187F3022
	20 (¾")	2.5	130	187F3036
		3.5		187F3050
	25 (1")	6.0	260	187F3064
Sonometer 31	40 (1½")	10.0	300	187F3078
	25 (2")	15.0	270	187F3106
	65	25.0	300	187F3304
	80	40.0		187F3312
	100	60.0	350	187F3320

Accessories

Description	Part No.
Sono31 Battery 3.6V DC (D-cell)	187F3380
Sono31 Mains unit 230V AC	187F3381
Sono31 M-Bus module	187F3382
Sono31 Radio OMS 868.95 MHz	187F3383
Sono31 RS-485 Modbus RTU	187F3384
Sono31 RS-232 M-Bus	187F3385
Sono31 RS-485 M-Bus	187F3386
Sono31 M-Bus, RS232 and 2X pulses output	187F3387
Sono31 M-Bus, RS232 and 2X 4-20mA output	187F3388
Sono31 2 x Pulse Output Module	187F3392
Sono30 Optical head OG-1-USB	187F3112
Sono30 Battery 3.6V DC A-cell	187F3113
Sono30 Main unit 230V AC	187F3114
Sono30 Mains unit 24V AC	187F3115
Sono30 M-Bus module	187F3116
Sono30 Radio OMS 868,95 MHz module	187F3117
Sono30 RS-485 Modbus	187F3118
Pt500/f5.2 mm/2.0m JUMO	187F3126
Pt500/f5.2 mm/2.0m JUMO	187F3127
Pt500/f5.2 mm/2.0m JUMO	187F3390
Pt500/f5.2 mm/10.0m JUMO	187F3391

Sono3500CT Ultrasonic Flowmeter 115-230V AC with Pulsed Outputs

Description	Size (mm)	QP FLOW (m3/hr)	Diameter (mm)	Part No.
Sono 3500	125	100.0	100	187F3531
	150		150	187F3532
	200	250.0	200	187F3533
	250	400.0	250	187F3534
	300	560.0	300	187F3535

Infocal 9 Energy Calculator, 240V with M-Bus Output, c/w Sensors

Description	Part No.
Infocal 9 Suitable for 1 litre pulse input from mechanical meter	187F9011
Infocal 9 Suitable for 10 litre pulse input from mechanical meter	187F9012
Infocal 9 Suitable for 100 litre pulse input from mechanical meter	187F9014

Infocal 9 Energy Calculator, Battery with M-Bus Output, c/w Sensors

Infocal 9 Suitable for 1 litre pulse input from mechanical meter	187F9000
Infocal 9 Suitable for 10 litre pulse input from mechanical meter	187F9001
Infocal 9 Suitable for 100 litre pulse input from mechanical meter	187F9010

Accessories & Spare Parts - Sensor Pockets

Description	Part No.
Pocket - 35mm Brass pocket for meters DN15-DN32 (set of 2)	087G6053
Pocket - 52mm Brass pocket for meters DN40-DN65 (set of 2)	087G6054
Pocket - 85mm Brass pocket for meters DN80-DN125 (set of 2)	087G6055
Pocket - 120mm Brass pocket for meters DN125+ (set of 2)	087G6056
Pocket - 85mm Stainless steel pocket for meters DN80-DN125 (set of 2)	087G6057
Pocket - 120mm Stainless steel pocket for meters DN125+ (set of 2)	087G6058

Connection Sets

DN15 connection set	DN15 connection set for SonoSelect and SonoSafe heat meters	087G6071
DN20 connection set	DN 20 connection set for SonoSelect and SonoSafe heat meters	087G6072
DN25 connection set	DN25 connection set for SonoSelect and SonoSafe heat meters	087G6073
DN40 connection set	R1½ x G2B pack of 2 threaded connections	087G6074
Adapter	M10 Adapter (single)	087G6075
Adapter	M10 Adapter (32 Pack)	087G6076





Heat Meter Calculator

The CF 51 represents a technology step forward in the heat energy metering. The multifunctional display facilitates easy reading, providing fast and clear access to the most important billing data. The display enables the diagnosis of failures alarms from a single glance. The LCD has a long life time and through a push button you get easily access to each level of data.

Standards Compliance

- Class 2.0 acc. EN 1434, Env. Class C acc. EN 1434, PTB approved

Heat Meters

Description	Part No.
Includes the Integrator, Battery or 230V Power supply, 1.5m sensor leads Mbus output with energy and volume pulse repetition and 50mm brass pockets. Available in K=1, K=10, K=100 and K=1000. To match the water meter you are using.	CF51
Modbus to BACnet Converters	
Modbus to BAC net signal converter 240V	CCI-2X485/240V
Modbus to BAC net signal converter 24V	CCI-2X485/24V
Field programming device for CCI-2X485 signal converter	FPT-601

US Echo II Ultrasonic Flow Meter

US ECHO II easily adapts its self to different types of calculators. Its powerful electronics enables any user to take advantage of all state of the art functions maintaining an extraordinary high precision throughout the entire measurement curve.

Standards Compliance

- MID 2014/32/EU Module B+D
- Env. Class C acc. EN 1434
- PED compliance
- Class 2.0 acc. EN 1434
- PTB approved

US ECHO II Ultrasonic Flowmeter

Size (mm)	Description	Part No.
15	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-15
20	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-20
25	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-25
32	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-32
40	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-40
50	Ultrasonic flow heat meter c/w dual output, 1.5m sensors & pockets	CF-ECHO-50

Above are based on Battery c/w pulsed & Mbus output - 230V version is available

US ECHO Flow Parts – Retro Fitting

The US ECHO flow parts are manufactured by Itron for use with the CF55/51 range of calculators, as these are manufactured to Class 2 accuracy this will be suitable for use on RHI applications and are suitable to be retro fitted.

Axonic

A static ultrasonic flow meter perfectly adapted to the needs of district heating and cooling applications. It has been developed for heating and cooling applications where water is used as an energy transfer medium. Equipped with an universal interface which allows it to be easily combined with Itron calculators such as CF51, CF55 or CF800. It is powered by the connected calculators and therefore it doesn't require its own source of electrical power (e.g. battery).

Standards Compliance

- IP68
- Cooling approval according PTB 7.2
- Environmental class EN1434 class C, MID class E2 + M2
- MID approval according to 2014/32/EU
- Class 2 acc. to EN1434

Axonic Flow Meters

Size (mm)	Application	QP (M ³ /h)	L (mm)	PN (bar)	Pulse weight (L)	Part No.
65	Heating	25	200	16	10	AX-AH24C11Z10FM1EN
65	Heating	25	300	16	10	AX-BH24C11Z10FM1EN
65	Heating	25	300	25	10	AX-CH24C11Z10FM1EN
65	Heating	25	300	40	10	AX-DH24C11Z10FM1EN
80	Heating	40	200	16	10	AX-EH24C11Z10FM1EN
80	Heating	40	225	16	10	AX-FH24C11Z10FM1EN
80	Heating	40	300	16	10	AX-GH24C11Z10FM1EN
80	Heating	40	350	16	10	AX-IH24C11Z10FM1EN
80	Heating	40	300	25	10	AX-HH24C11Z10FM1EN
80	Heating	40	350	40	10	AX-JH24C11Z10FM1EN
100	Heating	60	250	16	10	AX-KH24C11Z10FM1EN
100	Heating	60	360	16	10	AX-LH24C11Z10FM1EN
100	Heating	60	360	25	10	AX-MH24C11Z10FM1EN
100	Heating	60	400	16	10	AX-NH24C11Z10FM1EN
100	Heating	60	400	40	10	AX-OH24C11Z10FM1EN
150	Heating	150	300	16	100	AX-QH24E11Z10FM1EN
150	Heating	150	300	40	100	AX-RH24E11Z10FM1EN
150	Heating	150	500	16	100	AX-SH24E11Z10FM1EN
150	Heating	150	500	25	100	AX-TH24E11Z10FM1EN
65	Cooling	25	200	16	10	AX-AC24C11Z10FF2EN
65	Cooling	25	300	16	10	AX-BC24C11Z10FF2EN
65	Cooling	25	300	25	10	AX-CC24C11Z10FF2EN
80	Cooling	40	200	16	10	AX-EC24C11Z10FF2EN
80	Cooling	40	225	16	10	AX-FC24C11Z10FF2EN
80	Cooling	40	300	16	10	AX-GC24C11Z10FF2EN
80	Cooling	40	350	16	10	AX-IC24C11Z10FF2EN
80	Cooling	40	300	25	10	AX-HC24C11Z10FF2EN
100	Cooling	60	250	16	10	AX-KC24C11Z10FF1EN
100	Cooling	60	360	16	10	AX-LC24C11Z10FF1EN
100	Cooling	60	360	25	10	AX-MC24C11Z10FF1EN
150	Cooling	150	300	16	100	AX-QC24F11Z10FF1EN
150	Cooling	150	500	16	100	AX-SC24F11Z10FF1EN
150	Cooling	150	500	25	100	AX-TC24F11Z10FF1EN

Equipped with 3m cable length, Pulse A active, Pulse B disabled. Heat: MID certificate and test report / Cooling: including factory test report.

Oil Meters, Mechanical

- Suitable for heating oil, naphtha, diesel and petrol applications
- Volume display on roller counter, in litres
- For horizontal, vertical or inclined mounting
- Threaded or flanged connections
- Suitable for temperatures for up to 130°C

Oil Flow Meter

Description	Size (mm)	QP Flow (ltrs/hr)	Part No.
Mechanical oil meter	4 (1/8")	1 - 50	VZ04
	8 (1/4")	4 - 135	VZ08
	15 (1/2")	10 - 400	VZ015
	20 (3/4")	30 - 1000	VZ020
	25 (1")	75 - 2000	VZ025
	40 (1 1/2")	225 - 6000	VZ040
Mechanical oil meter with pulse output	4 (1/8")	1 - 50	VZ04-RV
	8 (1/4")	4 - 135	VZ08-RV
	15 (1/2")	10 - 400	VZ015-RV
	20 (3/4")	30 - 1000	VZ020-RV
	25 (1")	75 - 2000	VZ025-RV
	40 (1 1/2")	225 - 6000	VZ040-RV
	50 (2")	750 - 20000	VZ050-RV



Gas Meters

C.P.T. Quantometer Range with Low Pressure Drop

The CPT Quantometer is a turbine meter based on the rotation of an impellor, the speed of rotation being proportional to the flow rate of the gas.

- The meters are constructed for installation between flanges
- The turbine rotors extract the maximum energy before the gas exits, expanding to minimise pressure losses
- The index head can be rotated through 350°
- Suitable for: Natural gas, LPG, compressed air etc

Mechanical Turbine Gas Flow Meters

Description	Size (mm)	Qmin (m³/hr)	Qmax (m³/hr)	Part No.
G40	50	6	65	CPT50G40
G65	50	10	100	CPT50G65
	65	5	100	CPT65G65
G100	65	8	160	CPT65G100
	80	8	160	CPT80G100
G160	80	13	250	CPT80G160
	100	13	250	CPT100G160
G250	80	20	400	CPT80G250
	100	20	400	CPT100G250
G400	100	32	650	CPT100G400
	150	32	650	CPT150G400
G650	150	50	1000	CPT150G650
	150	80	1600	CPT150G1000
G1000	200	80	1600	CPT200G1000
	200	80	2500	CPT200G1600
G1600	200	80	2500	CPT200G1600
	200	120	4000	CPT200G2500



Diaphragm Type Gas Meter

- Suitable for various gases
- MID approved
- Supplied with pulse lead
- Complete with BS746 unions

BK Range

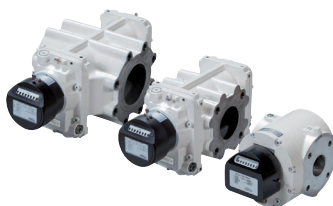
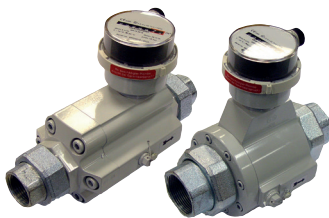
Max. flow Q _h (m³/hr)	Min. flow Q _b (m³/hr)	Threaded connection on meter	Connection size with unions (mm)	Part No.
6	0.04	1"	25	BK-G4P
10	0.06	1"	25	BK-G6P
16	0.1	1 1/4"	32	BK-G10P
25	0.16	2"	50	BK-G16P
40	0.25	2"	50	BK-G25P
65	0.40	3"	80	BK-G40P
100	0.65	3"	80	BK-G65P

Turbine Quantometer, Pulsed Output, Internally Threaded

QA Range

Max. flow Q _h (m³/hr)	Min. flow Q _b (m³/hr)	Threaded connection on meter	Connection size with unions (mm)	Part No.
16	1.6	1"	25	QA10
25	2.0	1"	25	QA16
40	2.5	1"	25	QA25
65	5.0	1 1/2"	40	QA40DN40
100	6.0	2"	50	QA65
160	10.0	3"	80	QA100
400	20.0	4"	100	QA250
650	32.0	6"	150	QA400
1000	50.0	6"	150	QA650





Diaphragm Type Gas Meter

- Suitable for various gases
- MID Approved
- Supplied with Pulse Lead
- Complete with BS746 Unions

IGDM Range

Max. flow Q_p (m ³ /hr)	Min. flow Q_p (m ³ /hr)	Threaded Connection on Meter	Connection Size with Unions (mm)	Body Length (mm)	Part No.
6	0.04	G1B	20	226	IGDM-G4P
10	0.06	G1½B	25	327	IGDM-G6P
16	0.1	G1½B	30	264	IGDM-G10P
25	0.16	G2B	50	405	IGDM-G16P
40	0.25	G2B	50	465	IGDM-G25P

Gas Meters - G4 Meter Installation Kit

Description	Part No.
Includes isolation valve, flexible connector, gas regulator and bracket	METKIT/G4

Gas Meters - Mounting Shelf/Bracket

Description	Part No.
Bracket for mounting of G4 diaphragm gas meter	METBRAG4
Shelf for mounting of G6 & G10 diaphragm gas meters	METBRAG6/G10
Shelf for mounting of G16 & G25 diaphragm gas meters	METBRAG16/G25

Chatterbox-e Unit

Description	Part No.
Isolation Barrier/Relay Unit	CHATTERBOX-E

Screwed Turbine Type Gas Meter

- Compact size
- Maintenance free
- Supplied with pulse plug
- Reducers available to ¾" and 1¼"
Screwed BSP connections

IGQM Range

Max. flow Q_p (m ³ /hr)	Min. flow Q_p (m ³ /hr)	Threaded connection on meter	Connection size with unions (mm)	Body length (mm)	Part No.
16	1.6	G1B	25	240	IGQM-10
25	2	G1B	25	240	IGQM-16
40	2.5	G1B	25	240	IGQM-25
65	3.3	G1½B	40	405	IGQM-40

Wafer Pattern Turbine Type Gas Meter

- IP65 protection
- Supplied with pulse plug and lead
- Top hat filters to suit
- 8 digit mechanical counter

DN50-DN200 Range

Max. flow Q_p (m ³ /hr)	Min. flow Q_p (m ³ /hr)	Threaded connection on meter	Connection size with unions (mm)	Body length (mm)	Part No.
100	10	N/A	50	120	IGTM DN50 G40/65
160	10	N/A	65	120	IGTM DN65 G65/100
250	8	N/A	80	120	IGTM DN80 G100/160
400	20	N/A	80	120	IGTM DN80 G250
400	13	N/A	100	150	IGTM DN100 G160/250
650	32	N/A	100	150	IGTM DN100 G400
1000	32	N/A	150	180	IGTM DN150 G400/650
1600	80	N/A	150	180	IGTM DN150 G1000
1600	50	N/A	200	200	IGTM DN200 G650/1000
2500	130	N/A	200	200	IGTM DN200 G1600

Rotary Turbine Type Gas Meter

- Low pressure drop
- Supplied with pulse plug
- IP67 protection
- Top hat filters to suit

DN50-DN150 Range

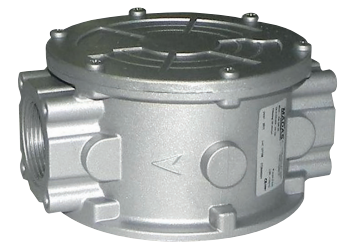
Max. flow Q_p (m ³ /hr)	Min. flow Q_p (m ³ /hr)	Threaded connection on meter	Connection size with unions (mm)	Body length (mm)	Part No.
120	0.8	N/A	50	171	IGRM DN50 MAX
280	1.4	N/A	80	171	IGRM DN80 MAX
480	2.4	N/A	100	241	IGRM DN100 MAX

Gas Filters

- Filters for non aggressive gases (dry)
- Max pressure rating to 2 Bar
- Fully removeable filters for inspection/cleaning.
- Biomass versions are available also

Filters			
Connection	Size (mm)	Filter Size (Micron)	Part No.
Screwed	15	50	FM02 B50
	20		FM03 B50
	25		FM04 B50
	32		FM05 B50
	40		FM06 B50
	50		FM07 B50
	65		FF08 B50
Flanged	80	10	FF09 B50
	100		FF10 B50
	125		FF11 B10
	150		FF12 B10
	200		FF13 B10
	250		FF14 B10
	300		FF15 B10

coster group
PERSONAL AUTOMATION



M-Bus System

The M-Bus (meter bus) is a cost-optimized field bus for the transfer of energy consumption data. A central master - in the simplest case a PC with level converter - communicates by a 2 wire bus with the bus users (up to 250 slaves per segment: Heat meter, water meter, electrical meter, gas meter... and also sensors and actuators of any type).

More and more manufacturer implement the electrical M-Bus interface with protocol layer into their meters. The M-Bus is european standard and described in the EN1434.

- Standard field bus system (EN1434)
- Two-wire bus with power supply of the bus users
- No special requirements to the bus cable (electricity installation cable or telephone cable is enough)
- Almost any wiring topology (line, star and tree)
- Large extension (up to some kilometers)
- Remote reading of consumption data (heat, water, gas and electricity)
- Communication with sensors and actuators of any type
- Energy monitoring and - optimization
- Leakage monitoring
- Applicable in the industry and in private households
- Good availability of system components
- Superior costing / performance relation
- Remote read out with modem possible from any place

M-Bus Master

Description	Part No.
PW3 - 3 slave M-Bus level converter	MR005
PW20 - 20 slave M-Bus level converter	MR006
PW60 - 60 slave M-Bus level converter	MR004

M-Bus Slaves

1 Pulse to M-Bus converter	IM001G
2 pulse to M-Bus converter	IM003G
4 Pulse to M-Bus converter	IM002G

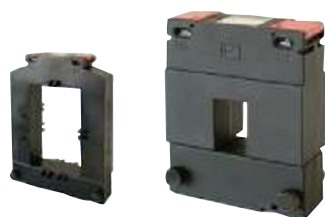
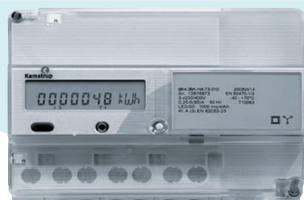
M-Bus Accessories

3 Way digital pulse splitter	Pulse Splitter
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Relay M-BUS SOLUTIONS



kamstrup



Sontay®



Control Panel Meters & Current Transformers

- Single function DIN96
- Shallow depth (45mm), plastic enclosure
- Singleline LCD display
- Not approved for MID or billing

E300 Meter Range

Type	Part No.
3 Phase energy meter	E300-110
3 Phase energy meter with pulse output	E300-111

382 DN Meter

- kWh meter 5(85)A 382GH
- Measurement in 4 quadrant
- Measurement in up to 8 tariffs
- Voltage quality measurement
- Safe data logging of consumption
- Safe data logging of events
- Immune to magnetic influence
- OBIS identification codes
- Real time clock (RTC) with supercap

382 DN Meter Range

Type	Part No.
kWh meter	382DN

Current Transformers - Moulded Case Current Transformers

- Suitable for 'new' installations

Moulded Case Current Transformers

Rating	Cable Dia. (mm)	Part No.
100-5 Amp	23	M100-5
200-5 Amp	23	M200-5
300-5 Amp	23	M300-5
400-5 Amp	24	M400-5
500-5 Amp	24	M500-5

Note: Larger ratios are available on request – please contact sales for details

Split Ring / Moulded Case Clip Together Current Transformers

- Suitable for installation on existing applications

Split Ring / Moulded Case Current Transformers

Rating	Window Dia. (mm)	Part No.
100-5 Amp	30 x 20	S100-5
200-5 Amp	30 x 20	S200-5
300-5 Amp	30 x 20	S300-5
400-5 Amp	30 x 20	S400-5
500-5 Amp	80 x 50	S500-5

Note: Larger ratios are available on request – please contact sales for details

PM-CTR Series Current Transducers

This series of current transducers provide accurate load trending information with a choice of 4-20mA, 0-10V DC and 0-5V DC output signals. They provide accurate, reliable and maintenance-free operation. Solid and split-core versions are available with current ratings up to 100A. Current versions are supplied with pre-wired 400mm tails and voltage versions have screw terminals. Both versions have a unique self-gripping feature which allows the switch to literally clip on to a cable without the need for a base mounting plate.

4-20mA Output

Description	Hole Dia. (mm)	Part No.
0 to 20A split core Current Transducer	13 x 13	PM-CTR-01
0 to 50A split core Current Transducer	13 x 13	PM-CTR-02
0 to 100A split core Current Transducer	13 x 13	PM-CTR-03
0 to 20A solid core Current Transducer	13dia	PM-CTR-04
0 to 50A solid core Current Transducer	13dia	PM-CTR-05
0 to 100A solid core Current Transducer	13dia	PM-CTR-06

0-5V DC Output

0 to 10A solid core Current Transducer	13dia	PM-CTR-07
0 to 20A solid core Current Transducer	13dia	PM-CTR-08
0 to 50A solid core Current Transducer	13dia	PM-CTR-09
0 to 100A solid core Current Transducer	13dia	PM-CTR-10

0-10V DC Output

20/50/100A split core Current Transducer	13 x 13	PM-CTR-11
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PowerLogic PM5000 Series Energy Meters

The PowerLogic PM5000 series power meters are the new benchmark in affordable, precision metering. It is the ideal fit for high-end cost management applications, providing the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality in an electrical network.

- Three phases, neutral and ground can be monitored simultaneously
- Power quality measurements
- Data recording
- Graphical display, large characters and powerful backlighting
- Easy to understand menus
- Text in 8 selectable languages
- Highly accurate devices with global billing certifications
- IP52 front display
- Single 96x96mm unit

PM5000 Series	
Description	Part No.
PM5100 15th THD CL0.5 1DO Pulse	METSEP5100
PM5110 15th THD CL0.5 1DO Modbus	METSEP5110
PM5111 MID Version	METSEP5111
PM5310 31st CL0.5 4 tariffs 2DI/2DO Modbus	METSEP5310
PM5320 31st CL0.5 4 tariffs 2DI/2DO Ethernet	METSEP5320

Acti 9 iEM3000 3-Phase DIN Rail-Mounted Energy Meters

Feature-rich energy metering offer for DIN rail, modular enclosures. With native Modbus, BACnet, M-Bus and LON protocol support, you can easily integrate these meters into commercial and non-critical buildings to add simple energy management applications to virtually any BMS, AMR or EMS system. The iME3100 energy measurement counter is used to measure the active energy consumed by single-phase, three-phase or three-phase + neutral type electrical circuits.

- Accuracy class 1.0 and 0.5s for active energy metering
- Accuracy class 2 for reactive energy metering
- Compliance to regulations EN50470-1/3 (MID), IEC 61557-12, IEC 62053-21/22, IEC 62053-23
- Graphical display for easy viewing
- Compact size mounts easily on DIN rail with two clips
- Anti-tamper sealing parts prohibit accessibility to all metering connections (voltage, current, DI/DO) and ensure the integrity of your data
- Internal clock saves the date and time of the last reset
- Internal clock saves date and time for 48hr in case of power outage
- Multi-tariff selection by digital inputs or internal clock
- Digital output for alarming or configured as pulse output
- WAGES monitoring

PM5000 Series	
Description	Part No.
iEM3210 Energy Meter CT Pulse MID	A9MEM3210
iEM3250 Energy Meter CT Modbus MID	A9MEM3255
iEM3110 Energy Meter 63 A Direct Pulse MID	A9MEM3110
iEM3150 Energy Meter 63 A Direct Modbus MID	A9MEM3150



CARLO GAVAZZI



Gateway Logging Devices & Controllers

VMU-C EM is a modular system that records, monitors and transmits analog and digital signals from an industrial, commercial or residential installation with a specific focus on energy efficiency. The system includes a web server with a powerful and intuitive user interface to monitor data and set up the system. Data can be transmitted using various protocols (FTP, HTTP, Modbus TCP/IP) and via wired or wireless connection.

VMU-C EM System

Description	Part No.
WEB Server and FTP master unit	VMU-CEMAWSSUX
USB Dongle connection module	VMUDAUDCX
BACnet gateway and field wiring controller	SB2WEB24

Single Phase MID Direct Connect

The EM11 Series is also a 120 or 230V AC single-phase device, which provides information concerning the status of the power supply, in conjunction with energy measurement. It is the ideal solution for any application requiring a power analyser to display and control the main energy supply. It prevents line overload conditions by switching off selected non-priority loads through its alarm output.

EM11 Series

Description	Part No.
1-ph energy meter, 45A, 230V LN, self power supply, 1 open collector output - certified MID, Annex "B" + Annex "D"	EM110DINAV81X01PFB
1-ph energy meter, 45A, 230V LN, self power supply, back lit LCD display, touch interface, 1 open collector output - certified MID, Annex "B" + Annex "D"	EM111DINAV81X01PFB
1-ph energy meter, 45A, 230V LN, self power supply, back lit LCD display, touch interface, Modbus RS485 output - certified MID, Annex "B" + Annex "D"	EM111DINAV81XS1PFB
1-ph energy meter, 45A, 230V LN, self power supply, back lit LCD display, touch interface, M-bus output - certified MID, Annex "B" + Annex "D"	EM111DINAV81XM1PFB
1-ph energy meter, 100A, 230V LN, self power supply, back lit LCD display, touch interface, 1 open collector output - certified MID, Annex "B" + Annex "D"	EM112DINAV01X01PFB
1-ph energy meter, 100A, 230V LN, self power supply, back lit LCD display, touch interface, Modbus RS485 output - certified MID, Annex "B" + Annex "D"	EM112DINAV01XS1PFB
1-ph energy meter, 100A, 230V LN, self power supply, back lit LCD display, touch interface, M-bus output - Certified MID, Annex "B" + Annex "D"	EM112DINAV01XM1PFB

Three Phase MID Direct Connect

EM300 range offers a cost effective, compact and MID certified 3-phase metering solution. The meters are ideal for remote monitoring with 1 digital input, 1 pulse output and with the option of either M-Bus or Modbus RTU to communicate with PLCs.

EM300 Series

Description	Part No.
3-ph energy meter, 65A, 400V AC L-L, self power supply, back lit LCD display, touch interface, 1 open collector output - certified MID, Annex "B" + Annex "D"	EM340DINAV23X01PFB
3-ph energy meter, 65A, 400V AC L-L, self power supply, back lit LCD display, touch interface, Modbus RS485 output - certified MID, Annex "B" + Annex "D"	EM340DINAV23XS1PFB
3-ph energy meter, 65A, 400V AC L-L, self power supply, back lit LCD display, touch interface, M-Bus output - certified MID, Annex "B" + Annex "D"	EM340DINAV23XM1PFB

3 Phase CT Connect

EM210 is an innovative, cost-effective and compact energy meter: it is the first on the market to have a detachable display, allowing it to be mounted either on a panel of just 72x72 mm or on a DIN-rail in only 4 modules with no adaptor or external accessory.

EM210 Series

Description	Part No.
EM210 energy analyser, self power supply, 40-480V AC, 45-65Hz; 400V LL, 333 mV input; pulse + Modbus output	EM21072DMV53X0XX
EM210 energy analyser, self power supply, 40-480V AC, 45-65Hz; 400V LL, 333 mV input; pulse output	EM21072DMV53X0SX
EM210 energy analyser, self power supply, 40-480V AC, 45-65Hz; 400V LL, 1 or 5A input; pulse + Modbus output- certified MID, Annex "B" + Annex "D"	EM21072DAV53H0XPFB
EM210 energy analyser, self power supply, 40-480V AC, 45-65Hz; 400V LL, 1 or 5A input; pulse output- certified MID, Annex "B" + Annex "D"	EM21072DAV53H0SPFB

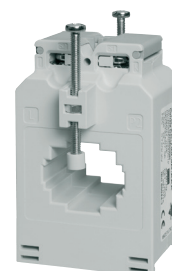
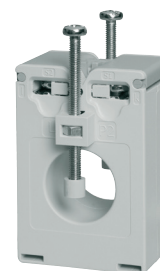
3 Phase Power Analyser

Web Based Energy Management Solution

Description	Part No.
WM20 base with 18-60V AC/DC power supply 400V/5A input	WM20AV53H
WM20 base with 90-260V AC/DC power supply 100V/5A input	WM20AV63H
RS485 / RS232 module	MC485232
Ethernet module	MCETH
BACnet-IP module	MCBACIP
BACnet-MS/TP module	MC BAC MS
BACnet-MS/TP Profibus DP V0 module	M C PB
Dual relay output (SPDT) module	M O R2
Dual static output (AC/DC Opto-Mos) module	M O O2

Accessories

Description	Part No.
ROGOWSKI current sensor package 3 coils 400mm for EM21072DMV	ROG4K1002M4003X
ROGOWSKI current sensor package 3 coils 600mm for EM21072DMV	ROG4K1002M6003X
ROGOWSKI current sensor package 3 coils 900mm for EM21072DMV	ROG4K1002M9003X
EM200 series adapter from 72x72 to 96x96	EM200-96 ADAPTER
Current transformer 50A primary 5A secondary class 1 23mm	CTD-1X505AXXX
Current transformer 60A primary 5A secondary class 1 23mm	CTD-1X605AXXX
Current transformer 70A primary 5A secondary class 1 23mm	CTD-1X705AXXX
Current transformer 75A primary 5A secondary class 0.5 23mm	CTD-1X755AXXX
Current transformer 80A primary 5A secondary class 0.5 23mm	CTD-1X805AXXX
Current transformer 100A primary 5A secondary class 0.5 23mm	CTD-1X1005AXXX
Current transformer 120A primary 5A secondary class 0.5 23mm	CTD-1X1205AXXX
Current transformer 125A primary 5A secondary class 0.5 23mm	CTD-1X1255AXXX
Current transformer 150A primary 5A secondary class 0.5 23mm	CTD-1X1505AXXX
Current transformer 160A primary 5A secondary class 0.5 23mm	CTD-1X1605AXXX
Current transformer 200A primary 5A secondary class 0.5 23mm	CTD-1X2005AXXX
Current transformer 250A primary 5A secondary class 0.5 23mm	CTD-1X2505AXXX
Current transformer 300A primary 5A secondary class 0.5 23mm	CTD-1X3005AXXX
CTD-2X current transformer 40A 24mm	CTD2X405AXXX
CTD-2X current transformer 50A 24mm	CTD2X505AXXX
CTD-2X current transformer 60A 24mm	CTD2X605AXXX
CTD-2X current transformer 70A 24mm	CTD2X705AXXX
CTD-2X current transformer 75A 24mm	CTD2X755AXXX
CTD-2X current transformer 80A 24mm	CTD2X805AXXX
CTD-2X current transformer 100A 24mm	CTD2X1005AXXX
CTD-2X current transformer 120A 24mm	CTD2X1205AXXX
CTD-2X current transformer 125A 24mm	CTD2X1255AXXX
CTD-2X current transformer 150A 24mm	CTD2X1505AXXX
CTD-2X current transformer 160A 24mm	CTD2X1605AXXX
CTD-2X current transformer 200A 24mm	CTD2X2005AXXX
CTD-2X current transformer 250A 24mm	CTD2X2505AXXX
CTD-2X current transformer 300A 24mm	CTD2X3005AXXX
CTD-2X current transformer 400A 24mm	CTD2X4005AXXX
CTD-2X current transformer 500A 24mm	CTD2X5005AXXX
CTD-2X current transformer 600A 24mm	CTD2X6005AXXX





Single Circuit Measurement

- Options from 40A single phase to current transformer fed
- MID B+D approved versions available for sub-billing applications
- Communication options: pulse, RS485 Modbus, M-Bus, Ethernet inc webserver

Countis E range

Description	Part No.
COUNTIS E10 1PH 63A	48503000
COUNTIS E10 1PH 63A	48503000
COUNTIS E11 1PH 63A 2T	48503001
COUNTIS E12 1PH 63A MID	48503002
COUNTIS E20 3PH 63A	48503003
COUNTIS E21 3PH 63A 2T	48503004
COUNTIS E30 3PH 100A	48503005
COUNTIS E31 3PH 100A 2T	48503006
COUNTIS E32 3PH 100A 2MID	48503007
COUNTIS E40 3PH CT/5A	48503008
COUNTIS E41 3PH CT/5A 2T	48503009
COUNTIS E50 96x96 3PH CT/5A	48503010
COUNTIS E53 96x96 CT/5A RS485	48503011
COUNTIS E33 3PH 100A RS485	48503012
COUNTIS E34 3PH 100A RS485+MID	48503013
COUNTIS E44 CT/5A MID RS485	48503014
COUNTIS E42 CT/5A MID	48503015
COUNTIS E63 3x1PH 100A RS485	48503016
COUNTIS E43 CT/5A RS485	48503017
COUNTIS E00 1PH 32A	48503019
COUNTIS E02 1PH 32A MID	48503020
COUNTIS E35 3PH M-Bus	48503025
COUNTIS E36 3PH 100A M-Bus MID	48503026
COUNTIS E45 3PH M-Bus	48503027
COUNTIS E46 3PH M-Bus MID	48503028
COUNTIS E03 1PH 32A Modbus	48503029
COUNTIS E04 1PH 32A Modbus MID	48503030
COUNTIS E13 1PH 80A Modbus	48503031
COUNTIS E14 1PH 80A Modbus MID	48503032
COUNTIS E15 1PH 80A M-Bus	48503033
COUNTIS E16 1PH 80A M-Bus MID	48503034
COUNTIS E23 3PH 63A Modbus	48503035
COUNTIS E24 3PH 63A Modbus MID	48503036
COUNTIS E26 3PH 63A M-Bus MID	48503038
COUNTIS E04 1PH 40A Modbus MID	48503040
COUNTIS E06 1PH 40A M-Bus MID	48503042
COUNTIS E14 1PH 80A Modbus MID	48503044
COUNTIS E15 1PH 80A M-Bus	48503045
COUNTIS E16 1PH 80A M-Bus MID	48503046
COUNTIS E17 1PH 80A Ethernet	48503047
COUNTIS E18 1PH 80A Ethernet MID	48503048
COUNTIS E22 3PH 80A 2T MID	48503049
COUNTIS E23 3PH 80A Modbus	48503050
COUNTIS E24 3PH 80A Modbus MID	48503051
COUNTIS E25 3PH 80A M-Bus	48503052
COUNTIS E26 3PH 80A M-Bus MID	48503053
COUNTIS E27 3PH 80A Ethernet	48503054
COUNTIS E28 3PH 80A Ethernet MID	48503055

Sensors

TE-18 5-20A	48290500
TE-18 25-63A	48290501
TE-25 40-160A	48290502
TE-35 63-250A	48290503
TE-45 160-630A	48290504
TR-10 25-63A	48290555
TR-14 40-160A	48290556
TR-21 63-250A	48290557
TF-32 160-600A	48290558

Measurement System Package

Kit PLOMBAGE DIRIS B-30	48290049
Cable Configuration USB	48290050
Cable RJ45-1M	48290183
Cable RJ45-2M	48290184



Single Circuit Measurement

- The original multi-function meter and still the best
- Choose between a fully integrated meter (A10, A14, A40) or an expandable meter (A20, A30, A41)
- Easily retrofit the new A40 - split-core and Rogowski coil current sensors
- IEC 61557-12, IEC 62053-22 class 0.5S, IEC 62053-23 class 2

Diris A range

Description	Part No.
DIRIS A10 without RS485	48250400
DIRIS A10 AVEC COM	48250401
DIRIS A14 RS485+MID	48250020
DIRIS A14 RS485+MID Panel Mounted	48250021
Kit D'ENCASTREMENT 92x92 4U	48250070
DIRIS A20 Module ENERGIES	48250080
DIRIS A20 Module RS485	48250082
Module TERRE DIRIS A	48250087
Kit ENCASTREMENT DIRIS	48250088
Protection IP65 DIRIS A	48250089
DIRIS/ATYS Module ENERGIES	48250090
Module RS485 DIRIS/ATYS	48250092
Module 2 x 0/4-20mA DIRIS AP	48250093
Module 2 in/2 out DIRIS	48250094
Module Profibus-DP A40/A41	48250096
Module Memory A40/A41	48250097
DIRIS A20	48250402
DIRIS A30	48250403
DIRIS A41	48250404
DIRIS A40 RS485 Modbus - 3 inputs / 2 outputs	48250500
DIRIS A40 Ethernet Modbus TCP and webservice - RS485 Modbus - 3 inputs / 2 outputs	48250501
DIRIS A40 Profibus DPV1 - RS485 Modbus - 3 inputs / 2 outputs	48250502
Module Ethernet DIRIS / ATYS	48250203
Ethernet+RS485 DIRIS / ATYS	48250204
Module Profibus-DP DIRIS A40	48250205
Temperature module DIRIS A40	48250206
DIRIS A60	48250207
Sonde PT100 Vis M6	48250208
Sonde PT100 Oeillet	48250209
DIRIS A41 12-48V DC	48250406

Multi Circuit Measurement

- Cutting edge multi-circuit power monitoring system for AC & DC applications
- Accuracy IEC 61557-12 class 0.5 from 2% to 120% of current sensor rating
- Quick connect and configuration
- From 1 to 186 single-phase loads monitored in one system
- Ideal for branch circuit monitoring
- AC current range up to 6300A / DC current range up to 5000A
- Retrofit option using split-core and Rogowski coils
- Communication options: RS485 Modbus, Modbus TCP, SNMP, Bacnet
- Webserver options for local monitoring and FTP export

Performance Monitoring Devices

DIRIS B-30 RS485 - Modbus - 230V AC	48290000
DIRIS B-30 RF - Modbus - 230V AC	48290002
DIRIS O-iod Digital Module	48290030
DIRIS O-iod 0/4-20mA Module	48290031
DIRIS O-it Temperature Module	48290032
DIRIS O-m Modbus RS485 Module	48290033
DIRIS O-p PROFIBUS DP Module	48290034
DIRIS O-b/ip BACNET Module	48290035
DIRIS O-b/mstp BACNET Module	48290036

Displays

DIRIS D-40 AFFICHEUR Digiware	48290199
DIRIS D-30 AFFICHEUR MONOPOINT	48290200
DIRIS D- 50 AFFICHEUR Digiware	48290201

Gateways & Concentrators

DIRIS G-30 RS/ETH	48290300
DIRIS G-40 RS/RF/ETH	48290301
DIRIS G-50 RS/ETH	48290302
DIRIS G-60 RS/RF/ETH	48290303

DIRIS Digiware S

DIRIS Digiware S-130	48290160
DIRIS Digiware S-135	48290161
DIRIS Digiware S-Datacenter	48290162

