mwa TECHNOLOGY

Metering with Accuracy

INDEPENDENT METERING SPECIALISTS

NEW

New Products for 2016!

Find the very latest in metering technology right here

Even more product data inside!

Tonnes of technical information covering over 150 products

Guaranteed Next Day Delivery!

On all stocked orders placed before 4pm

www.mwatechnology.com

Catering for all your metering needs

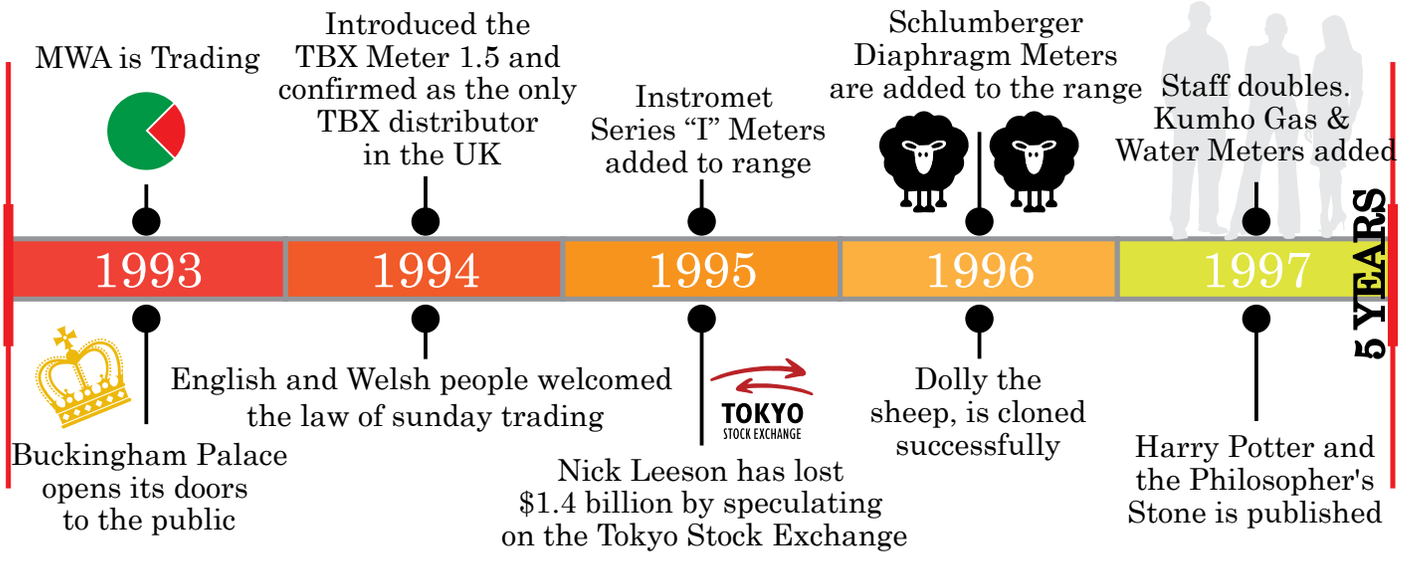
As the UK's leading distributor with over 20 years of experience, we have developed a comprehensive meter range for the Commercial, Industrial and Domestic market. Moving with the changes in technology has been the mission of the company since its genesis and we are adding products that can support energy sustainability using precision metering; reducing wasted energy and water without compromising building conditions and business operations, as defined in the EU's Renewable Energy Directive (RED). MWA Technology is leading from the front and our experts are waiting to discuss your metering needs.

Based in Birmingham, we are ideally located to access the motorway network to allow fast and efficient delivery throughout the UK.

PROVIDING ALL YOUR METERING REQUIREMENTS

Our staff have unparalleled technical product knowledge. This enables us to help you service your customers' metering needs with confidence. Our product range includes:

- Gas Meters - Diaphragm, Rotary, Turbine, Ultrasonic, Variable Area and Insertion
- Water Meters - Mechanical, Electromagnetic, Ultrasonic, Clamp On, Insertion
- Energy Meters - Ultrasonic, Electromagnetic, Clamp On, Mechanical, Insertion, Heat Interface Units, Pre-Payment Systems
- Steam Meters - Variable area, Vortex, Insertion
- Oil Meters - Mechanical, Ultrasonic, Vortex, Insertion
- Electricity Meters - Directly Connected, CT Operated, Wall, Panel and DIN Rail Mounted, Card and Coin Operated Meters and Timers
- Automatic Meter Reading and Billing Systems
- Meter Calibration and Commissioning Services



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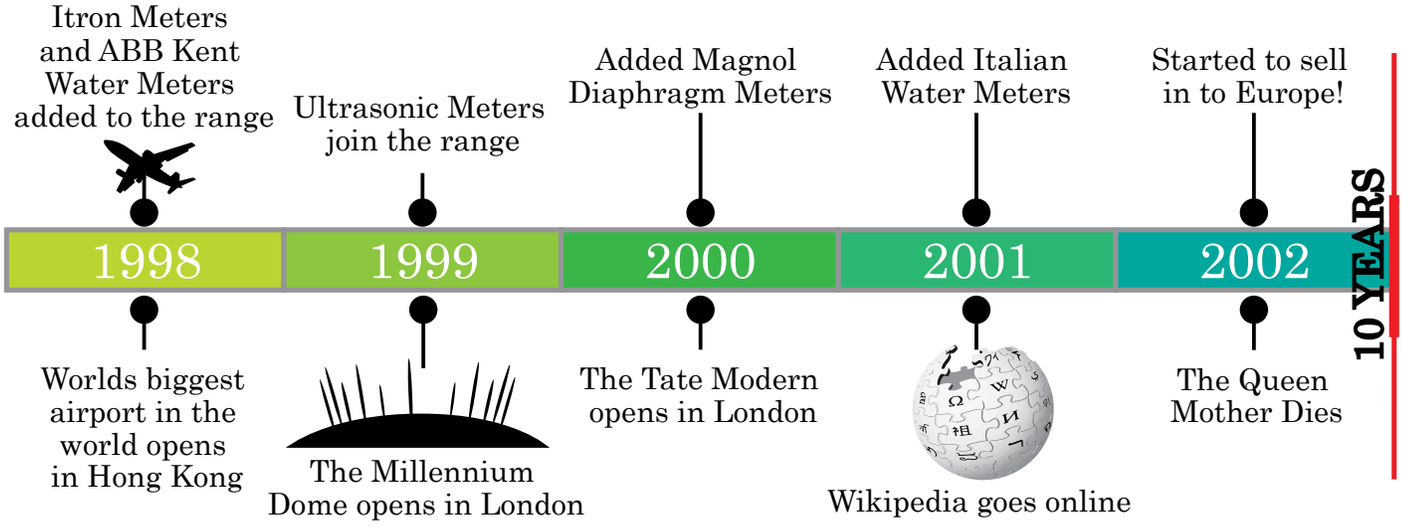
THE MWA SERVICE PLEDGE

Customer satisfaction is the key to our success. To show our determination to stay the number one independent meter provider for the UK, we would like to share with you our service pledge.

- Ensure that our customers receive the best meter recommendations specific to their requirements
- Provide the fastest and most efficient metering maintenance and testing service in the UK
- Keep an extensive supply of stock items to help increase service levels to our customers
- Supply the highest quality tested products



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A full 360° service

REPAIR

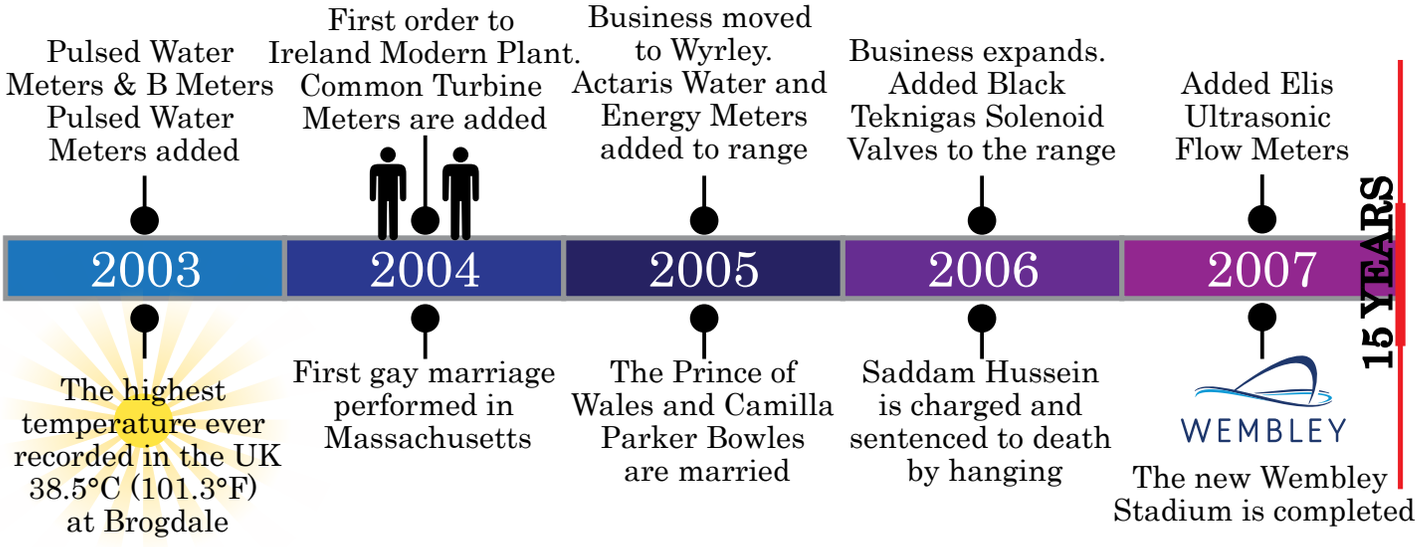
Send your products to us at our head office in Birmingham for test analysis and repair. If we can't help, we will coordinate all repairs with the manufacturer on your behalf. You will always be given a full quote before any work is administered.

ONSITE SUPPORT

A technical support person is available, to work in partnership with you, for onsite training, technical issues and project development whether on site or at your client's location. We will provide you with feedback and advice on a variety of products, services and ideas. Tell us what you need and let us do the rest.

TECHNICAL SUPPORT

As well as onsite support we can help you with the most common technical meter issues by telephone or by email. Whether you are looking for advice on the most appropriate meter, want to ask about compliance, cost components of metering and advanced metering systems or need installation advice, we are here to help.



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TESTING

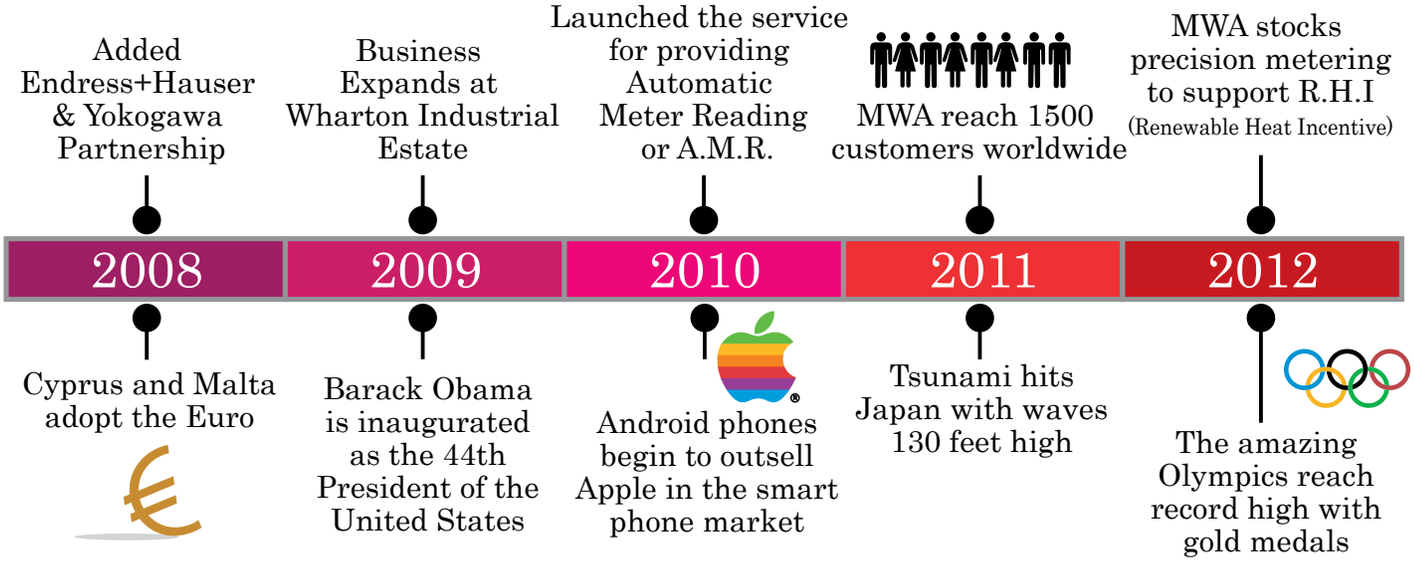
We can provide a comprehensive and highly skilled test service to assist you with inspection, test and maintenance checks. Using micro processing technology our test rig equipment is state of the art, if we can't test it then we can advise you of the best options for all your meter and ancillary products.

AMR

Precision metering is vital when planning the implementation of remote and data-logging energy solutions. From the adaptation of old meters to SMART meters or the replacement of new meter, into multi-site locations, we can help. Talk to our technical team for advice on energy consumption and data transfer.

TRAINING

Our training team will deliver a course that is appropriate to your needs. We deliver training across many areas for operatives working in the field or at trade counters. We will help you to develop the knowledge and skills needed for correct installation, exchanging, testing & commissioning of a portfolio of meters plus instruction for on-going checks.



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PRODUCT SECTIONS

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PLEASE NOTE
All information is correct at time of going to press. Colours may vary from products shown due to the constraints of the printing process.

RHI - Kamstrup Meters

Offering fixed payments, currently to the non-domestic sector for renewable heat generated, RHI is a UK Government scheme designed to increase the number of renewable heat technologies.

RHI is expected to significantly contribute towards the Governments 2020 goal, which sees 12 per cent of heating being generated from renewable sources.

KAMSTRUP MULTICAL 402 HEAT METER

- Kamstrup Multical 402 heat meter (EN1434 & MID) with integrated ultrasonic flow sensor with 1.5m signal cable
- Standard optical data output, including power supply, a set of short direct or pocket sensors with 1.5m cable stainless pockets and 2 nipples or stainless steel pockets, 65mm or 90mm

MWA Code	Description	Body Length
MCAL402W1	Kam 402. ½" BSP Heat Meter Qp 0.6m³/h, PN16	110mm
MCAL402W3	Kam 402. ¾" BSP Heat Meter Qp 0.6m³/h, PN16	190mm
MCAL402W4	Kam 402. ½" BSP Heat Meter Qp 1.5m³/h, PN16	110mm
MCAL402W5	Kam 402. ½" BSP Heat Meter Qp 1.5m³/h, PN16	165mm
MCAL402W7	Kam 402. ¾" BSP Heat Meter Qp 1.5m³/h, PN16	130mm
MCAL402W9	Kam 402. ¾" BSP Heat Meter Qp 1.5m³/h, PN16	190mm
MCAL402WA	Kam 402. ¾" BSP Heat Meter Qp 2.5m³/h, PN16	130mm
MCAL402WB	Kam 402. ¾" BSP Heat Meter Qp 2.5m³/h, PN16	190mm
MCAL402WD	Kam 402. 1" BSP Heat Meter Qp 3.5m³/h, PN16	260mm
MCAL402WF	Kam 402. 1" BSP Heat Meter Qp 6m³/h, PN16	260mm
MCAL402WG	Kam 402. DN25 Heat Meter Qp 6m³/h, PN25	260mm
MCAL402WH	Kam 402. 1.½" BSP Heat Meter Qp 10.0m³/h, PN16	300mm
MCAL402WJ	Kam 402. DN40 Heat Meter Qp 10m³/h, PN25	300mm
MCAL402WK	Kam 402. DN50 Heat Meter Qp 15m³/h	270mm

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RHI - Itron Meters

ITRON CF ECHO II ULTRASONIC COMPACT HEAT METERS

- Heat meter (EN1434 Class 2 & MID)
- 130°C maximum operating temperature
- 1.5 metre Signal Cable
- 1.7 metre PT100 Temperature Sensor Cables
- 230v or battery operation
- Combined Pulse and Mbus output module
- Other output option modules available

MWA Code	Description	Body Length
CFECHO15 - 1.5	CF ECHO. ½" BSP Heat Meter qp 1.5 m³/h PN16	110mm
CFECHO20 - 1.5	CF ECHO. ¾" BSP Heat Meter qp 1.5 m³/h PN16	130mm
CFECHO20 - 2.5	CF ECHO. ¾" BSP Heat Meter qp 2.5 m³/h PN16	130mm
CFECHO25 - 2.5	CF ECHO. 1" BSP Heat Meter qp 2.5 m³/h PN16	260mm
CFECHO25 - 3.5	CF ECHO. 1" BSP Heat Meter qp 2.5 m³/h PN16	260mm
CFECHO30 - 6	CF ECHO. 1.¼" BSP Heat Meter qp 6 m³/h PN16	260mm
CFECHO40 - 10	CF ECHO. 1.½" BSP Heat Meter qp 10 m³/h PN16	200mm
CFECHO50 - 15	CF ECHO. DN50 Heat Meter qp 15 m³/h PN25	250mm
CFECHO65 - 25	CF ECHO. DN65 Heat Meter qp 25 m³/h PN25	300mm
CFECHO80 - 40	CF ECHO. DN80 Heat Meter qp 40 m³/h PN25	300mm
CFECHO100 - 60	CF ECHO. DN100 Heat Meter qp 60 m³/h PN25	360mm

NB Cooling Meter options also available.

MWA Code	Description
CFMBUS/2INPUTS	Mbus, pulse output option plug with water meter inputs 6200000006
CFMBUSPULSE	Mbus, pulse output option plug 6201000005
CFBATTERY	Battery pack – 12 years 620700006
CF230V	230V AC power supply 620800006
CFCENSORS1.7	Temperature sensor PT100 2 wire without pockets 1.7m length 2960830006

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RHI - Sontex Meters

SONTEX SUPERSTATIC 449

The Superstatic 449 is a battery or mains powered static compact heat meter. It is used in building automation or in district or local heating to record the consumption-dependent thermal or cooling energy for the billing of thermal energy consumption costs. It covers the range of lower flow rates and energy quantities. The Superstatic 449 meets the requirements of the European guideline MID-2004/22/EC and the standard EN 1434 class 2.

The Superstatic 449 is designed on the basis of the proven fluid oscillation principle used exclusively by Sontex. Due to the use of a static flow sensor, the heat meter Superstatic 449 does not have any moving parts and thus no wear. The fluid oscillation principle guarantees a high stability and repeatability for a reliable and precise measurement of flow and thermal energy.

The Superstatic 449 can be used in the following fields:

- Thermal heat energy
- Energy for the production of cooling energy with water

The heat and cooling meters Superstatic 449 are optimised for the measurement and calculation of energy consumption in district or local heating systems. They are also very well suited to use purely as volumetric flow meter for various media.

- For flows of qp 0.6 – 2.5 m³/h
- Purchase and maintenance costs are reasonable compared with other static flow sensors
- Corrosion resistant materials
- Threaded fittings
- No moving parts, thus no wear
- Not sensitive to dirt
- Stable
- Dynamic range 1:100 at qp 1 – 2.5 m³/h
- Direct pick-up of voltage pulses without reflectors
- Medium-independent measurement possible
- Long-term stability, accurate and reliable measurement

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RHI - Elster Meters

ELSTER F90 HEAT METER

Available in three types for a multitude of job profiles.

- PICOTHERM 2e COMPACT –
  the economy heat meter without data outputs
- PICOTHERM 2 COMPACT –
  the compact-size heat meter with data outputs
- PICOTHERM 2 SPLIT –
  the split heat meter with data outputs

The F90 offers versatile capabilities for billing and monitoring. For small, medium-sized and large systems, depending on the version involved. It fully satisfies the stringent requirements of commercial heat metering.

The heart of the device is the calculator, which is controlled by a high-performance micro-processor functioning with indefatigable efficacy. At the touch of a button, the LC display indicates the heat consumption in MWh whenever needed.

- High-performance calculator
- Sensitive temperature sensors
- Accurate volume measuring units
- Long-lived battery with energy guarantee for the entire calibration period
- Easy-read LC display
- Swivelling calculator in the COMPACT model
- 37 monthly reporting days
- Error messages
- Economy heat meters without data outputs
- Compact heat meters with multiple data outputs: M-Bus to EN 1434, opto-interface to EN 60870-5, 2 pulse outputs for heat quantity and volume

SYSTEM FUNCTION

To put it simply, the system functions like this: a hot-water meter is installed in the system's return pipe, known in the trade as a volume measuring unit. The rotor RPM is transmitted to the calculator, and evaluated together with the signals from the resistance temperature sensors. Each system incorporates two paired sensors, in the supply and return lines. Depending on the metering job involved, the system can be delivered in different configurations

WIDE CHOICE

Volume measuring units are available with all customary nominal flow rates, from Qn 0.6 to Qn 250, and can always be combined with the arithmetic-logic unit, thus opening up extensive application options.

As you can rightly expect, a steel hood protects the flow meter against manipulation. Technical data can be found in our prospectus L 09.09 Volume measuring units.

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RHI - Sharky Meters

SHARKY 773 ULTRASONIC HEAT METER

SHARKY ultrasonic compact energy meter can be used for measuring the energy consumption in heating / cooling application for billing purposes. The measurement principle is static and based on the measurement of the transit time. Ultrasonic technology offers many benefits : no moving parts (avoids wear and tear of the metering components), low pressure loss, large metering dynamics and low start flowrate, insensitiveness to suspended particles.

KEY FEATURES

- Approved according EN 1434 and MID in class 2
- 1st approval in Europe for ultrasonic meter with dynamic range of 1:250 (qi:qp) in class 2
- Complete range from ND 15 mm qp 1.5 m³/h up to ND 100 mm qp 60 m³/h
- Available in threaded or flanged version
- Extremely low power consumption enabling a long battery lifetime (16 years in standard use)
- Modular version, options Radio, M-Bus, RS232, pulse outputs and pulse inputs.

SHARKY 775 ULTRASONIC HEAT METER

SHARKY ultrasonic compact energy meter can be used for measuring the energy consumption in heating / cooling application for billing purposes. The measurement principle is static and based on the measurement of the transit time. Ultrasonic technology offers many benefits: no moving parts (avoids wear and tear of the metering components), low pressure loss, large metering dynamics and low start flowrate, insensitiveness to suspended particles.

KEY FEATURES

- Approved according EN 1434 and MID in class 2
- 1st approval in Europe for ultrasonic meter with dynamic range of 1:250 (qi:qp) in class 2
- Complete range from ND 15 mm qp 1.5 m³/h up to ND 100 mm qp 60 m³/h
- Extremely low power consumption enabling a long battery lifetime (16 years in standard use)
- Radio option integrated
- Modular version, M-Bus, RS232, RS485, Analog outputs 4-20mA, pulse outputs and pulse inputs

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RHI - Sharky Meters

SHARKY FS 473 ULTRASONIC FLOW SENSOR

SHARKY FS 473 ultrasonic flow sensor can be used for flow measuring in local and district heating / cooling systems. The measurement principle is static and based on the measurement of the transit time. Ultrasonic technology offers many benefits: no moving parts (avoids wear and tear of the metering components), low pressure loss, large metering dynamics, low start flowrate, insensitiveness to suspended particles.

KEY FEATURES

- Approved according EN 1434 and MID in class 2
- 1st approval in Europe for ultrasonic flow sensor with a dynamic range of 1:250 (qi:qp)
- Complete range from DN 15 mm qp 1.5 m³/h up to DN 100 mm qp 60 m³/h
- Available in threaded or flanged version
- Extreme low power consumption enabling a long battery lifetime (12 years in standard use)
- Applicable for calculators with impulse input
- Temperature range 5°C to 90°C / 5°C to 105°C

SHARKY SOLAR 773

The ultrasonic compact energy meter SHARKY Solar can be used for measuring the energy consumption in solar systems.

KEY FEATURES

- Energy meter for the media TYFOCOR LS
- Available in the sizes qp 0.6 up to 2.5 m³/h
- Extremly low power consumption –> long battery lifetime
- Versatile possibility of power supply
- Inidividual remote reading (AMR)
- Extensive readable data memory
- Insensitive against dirt
- Easy and economic remanufacture possibility
- No calming sections necessary in the inlet or outlet (standard installation)

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RHI - Landis+Gyr Meters

ZENNER ULTRASONIC HEAT/COOLING METER

The Zelsius® C5 ultrasonic heat and cooling meter operates with an innovative ultrasonic technology, specially developed for domestic engineering and district heating. Thanks to a combination of modern measuring technology and a very compact design, this meter is outstandingly suitable for recording all accounting data for measuring energy consumption in heating and/or cooling systems. The wear-free ultrasonic technology is impervious to debris, stable over the long term and is also reliable for very low volume flow rates.

The energy calculator of the Zelsius® C5 is removable and has a large, legible display. This is self-explanatory and, thanks to its innovative functions, different opera- tional statuses can be identified quickly.

All important device and consumption data, such as due-date values, maximum values or the saved readings for the last 24 months, can be invoked at the touch of a button. Thanks to its versatile optional communication interfaces, Zelsius® C5 guarantees cost effectiveness and ecological efficiency in consumer data recording.

KEY FEATURES

- Available as heat, cooling or combined heat/cooling meters
- Lowest design height
- With optional wireless M-bus
- With optional M-bus
- With optional 3 inlets or 2 pulse inputs or outputs
- Any installation position (even overhead)
- Stores 24 months' readings
- With optional 11-year battery service life
- Precise, long-term stable, wear-free
- Very wide dynamic range
- Conforms to MID, Class 2

LANDIS+GYR ULTRA HEAT/COLD® 2WR5

With the ULTRAHEAT® 2WR5 from Landis+Gyr, you got one of the most precise meter on the market. The exact recording of even the smallest consumption amount and long service life guarantee the highest economy, and the interchangeable communication interface ensures system integration.

APPLICATIONS OF 2WR5

- Heat meters
- Cold meters
- Heat-cold meters combined
- Condensation meters

FUNCTIONS

- High precision and wear-free ultrasonic measurement
- Freely parametrisable rate register
- Monthly register with up to 36 months of values with diverse parameters
- Interchangeable communication modules with automatic recognition and Free positioning for mounting
- Up to 16 years battery supply, alternative mains connection possible
- Models from qp 0.6 up to qp 60, nominal pressure from PN 25

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RHI - Itron CF Ultramaxx

CF-ULTRAMAXX V

Utrasonic compact thermal energy meter qp0,6, qp1,5 and 2,5. The new CF-UltraMaXX V is the result of the consequent evolution of the successful Itron CF-Family series of static flow and thermal energy meters.

CF-UltraMaXX can be used for the measurement of all relevant billing data in heating and cooling systems.

KEY FEATURES

- Extended dynamic range covers usual flow rate conditions in residential metering
- Different options for implementation in communication systems
- Versions with 2 indexes for use in combined heating and cooling applications
- Advanced features for field data analysis
- Removable calculator

CF-UltraMaXX V equipped with T-Sensors, K-correction cold pipe, LCD in kWh, Li.- Battery 10+1 years lifetime (except UltraMaXX M-Bus PS + 2 WM which is powered by M-Bus 2 ULs), English labels & manuals.

DYNAMIC RANGE

Due to it's wide dynamic range, the CF-UltraMaXX V qp1,5 can be used for all applications in residential metering which requires usually two different product versions qp0,6 or qp1,5. Both UltraMaXX V qp1,5 and 2,5 are approved for a dynamic range of 1/250 (qi/qp).

Product versions Pocket Short 1,2m (PS6)	Memory	Calculator Size	References*** qp1.5 - ¾ " - 110mm	qp1.5 - ¾ " - 130mm
UltraMaXX V	Standard	S	5614 23 0600 37	5618 23 0600 37
UltraMaXX V Advanced	Advanced	S	5614 23 0900 37	5618 23 0900 37
UltraMaXX V M-Bus	Standard	S*	5614 23 1600 37	5618 23 1600 37
UltraMaXX V M-Bus Advanced	Advanced	S*	5614 23 1900 37	5618 23 1900 37
UltraMaXX V M-Bus + 4WM	Advanced	L**	5614 23 2900 37	5618 23 2900 37
UltraMaXX V M-Bus PS + 2WM	Advanced	L**	5614 23 5300 37	5618 23 5300 37
UltraMaXX V Repetition E & V	Advanced	S*	5614 23 4900 37	5618 23 4900 37
UltraMaXX V RF Radio	Advanced	L	5614 23 6900 37	5618 23 6900 37

Product versions Direct Short 1,75m (DS EN1434))	Memory	Calculator Size	References*** qp1.5 - ¾ " - 110mm	qp1.5 - ¾ " - 130mm
UltraMaXX V	Standard	S	5614 73 0604 37	5618 73 0604 37
UltraMaXX V Advanced	Advanced	S	5614 73 0904 37	5618 23 0904 37
UltraMaXX V M-Bus	Standard	S*	5614 73 1604 37	5618 23 1604 37
UltraMaXX V M-Bus Advanced	Advanced	S*	5614 73 1904 37	5618 23 1904 37
UltraMaXX V M-Bus + 4WM	Advanced	L**	5614 73 2904 37	5618 23 2904 37
UltraMaXX V M-Bus PS + 2WM	Advanced	L**	5614 73 5304 37	5618 23 5304 37
UltraMaXX V Repetition E & V	Advanced	S*	5614 73 4904 37	5618 23 4904 37
UltraMaXX V RF Radio	Advanced	L	5614 73 6904 37	5618 23 6904 37

*product delivered with cable 1m length for connection to AMR systems (M-Bus: 2 wires, Rep E&V: 4 wires)
**product equipped with cable clamps for connection to AMR system

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RHI - Sontex Meters

SONTEX SUPERSTATIC 440

The Superstatic 440 is a static heat or cooling meter according to standard EN1434 class 2 based on the fluid oscillation principle, covering a wide range of flows for all applications in district heating and cooling or building automation. The fluid oscillation principle guarantees a high stability and repeatability for a reliable and precise measurement of flow and thermal energy.

The heat meters Superstatic 440 are optimized for the measurement and calculation of energy consumption in district heating systems. They are also extremely well suited to use purely as volumetric flow meters for various media.

- Interchangeable measuring head
- Complete range of pipes 1–1500 m³/h
- Purchase and maintenance costs are reasonable compared with other static flow sensors
- Corrosion resistant materials
- Threaded and flange fittings
- No straight section necessary up to DN40
- No moving parts, therefore no wear
- Not sensitive to dirt
- Stable
- For horizontal, upstream and downstream pipes, independent mounting position
- Common spare parts 1qp 1–1500 m³/h
- Dynamic range 1:100 at 1–25 m³/h
- Direct pick-up of voltage pulses without reflectors
- Measurement independent of medium
- Long-term, stable, accurate and reliable measurement, even with poor water quality

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ENERGY METERS - Kamstrup 302

KAMSTRUP 302

MWA Code	Description	Body Length
MCAL302Q910	Kam 302. ½" BSP Heat Meter Qp 0.6m³/h, PN16/25	110mm
MCAL302Q911	Kam 302. ½" BSP Heat Meter Qp 0.6m³/h, PN16/25	130mm
MCAL302Q912	Kam 302. ½" BSP Heat Meter Qp 0.6m³/h, PN16/25	165mm
MCAL302Q940	Kam 302. ½" BSP Heat Meter Qp 1.5m³/h, PN16/25	110mm
MCAL302Q941	Kam 302. ½" BSP Heat Meter Qp 1.5m³/h, PN16/25	130mm
MCAL302Q942	Kam 302. ½" BSP Heat Meter Qp 1.5m³/h, PN16/25	165mm
MCAL302Q970	Kam 302. ¾" BSP Heat Meter Qp 1.5m³/h, PN16/25	130mm
MCAL302Q971	Kam 302. ¾" BSP Heat Meter Qp 1.5m³/h, PN16/25	190mm
MCAL302Q972	Kam 302. ¾" BSP Heat Meter Qp 1.5m³/h, PN16/25	220mm
MCAL302Q9A0	Kam 302. ¾" BSP Heat Meter Qp 2.5m³/h, PN16/25	130mm
MCAL302Q9A1	Kam 302. ¾" BSP Heat Meter Qp 2.5m³/h, PN16/25	190mm
MCAL302Q9A2	Kam 302. ¾" BSP Heat Meter Qp 2.5m³/h, PN16/25	220mm

MWA Code	Accessories Description
30-26-655.A	Kam 302. Wall Bracket
31-30-262	Kam 302. Blind plug for temperature sensor in flow sensor
59-20-257	Kam 302. G ½" ball valve with M10x1 sensor pocket
59-20-271	Kam 302. G ¾" ball valve with M10x1 sensor pocket
65-61-346	Kam 302. Holder for optical reading head
MCAL302T20	Kam 302. Mbus card c/w 1.5mtr cable
MCAL302T21	Kam 302. Mbus card c/w 2.5mtr cable
MCAL302T30	Kam 302. Wireless Mbus 868MHz
MCAL3021	Kam 302. 6 Year Battery Normal Response
MCAL302	Kam 302. 12 Year Battery Normal Response
MCAL3023	Kam 302. 6 Year Battery Fast Response

ENERGY METERS - Kamstrup 402

KAMSTRUP MULTICAL 402 HEAT & COOLING METERS

- Kamstrup Multical 402 heat meter (EN1434 Class 2 & MID) with integrated ultrasonic flow sensor with 1.5m signal cable.
- Standard optical data output, including power supply, a set of short direct or pocket sensors with 1.5m cable stainless pockets and 2 nipples or stainless steel pockets, 65mm or 90mm.

MWA Code	Description	Body Length
MCAL402W1	Kam 402. ½" BSP Heat Meter Qp 0.6m³/h, PN16	110mm
MCAL402W3	Kam 402. ¾" BSP Heat Meter Qp 0.6m³/h, PN16	190mm
MCAL402W4	Kam 402. ½" BSP Heat Meter Qp 1.5m³/h, PN16	110mm
MCAL402W5	Kam 402. ½" BSP Heat Meter Qp 1.5m³/h, PN16	165mm
MCAL402W7	Kam 402. ¾" BSP Heat Meter Qp 1.5m³/h, PN16	130mm
MCAL402W9	Kam 402. ¾" BSP Heat Meter Qp 1.5m³/h, PN16	190mm
MCAL402WA	Kam 402. ¾" BSP Heat Meter Qp 2.5m³/h, PN16	130mm
MCAL402WB	Kam 402. 3¾" BSP Heat Meter Qp 2.5m³/h, PN16	190mm
MCAL402WD	Kam 402. 1" BSP Heat Meter Qp 3.5m³/h, PN16	260mm
MCAL402WF	Kam 402. 1" BSP Heat Meter Qp 6m³/h, PN16	260mm
MCAL402WG	Kam 402. DN25 Heat Meter Qp 6m³/h, PN25	260mm
MCAL402WH	Kam 402. 1.½" BSP Heat Meter Qp 10.0m³/h, PN16	300mm
MCAL402WJ	Kam 402. DN40 Heat Meter Qp 10m³/h, PN25	300mm
MCAL402WK	Kam 402. DN50 Heat Meter Qp 15m³/h	270mm

MWA Code	Description	Body Length
MCAL402T1	Kam 402. ½" BSP Cooling Meter Qp 0.6m³/h, PN16	110mm
MCAL402T3	Kam 402. ¾" BSP Cooling Meter Qp 0.6m³/h, PN16	190mm
MCAL402T4	Kam 402. ½" BSP Cooling Meter Qp 1.5m³/h, PN16	110mm
MCAL402T5	Kam 402. ½" BSP Cooling Meter Qp 1.5m³/h, PN16	165mm
MCAL402T7	Kam 402. ¾" BSP Cooling Meter Qp 1.5m³/h, PN16	130mm
MCAL402T9	Kam 402. ¾" BSP Cooling Meter Qp 1.5m³/h, PN16	190mm
MCAL402TA	Kam 402. ¾" BSP Cooling Meter Qp 2.5m³/h, PN16	130mm
MCAL402TB	Kam 402. ¾" BSP Cooling Meter Qp 2.5m³/h, PN16	190mm
MCAL402TD	Kam 402. 1" BSP Cooling Meter Qp 3.5m³/h, PN16	260mm
MCAL402TF	Kam 402. 1" BSP Cooling Meter Qp 6m³/h, PN16	260mm
MCAL402TG	Kam 402. DN25 Cooling Meter Qp 6m³/h, PN25	260mm
MCAL402TH	Kam 402. 1.½" BSP Cooling Meter Qp 10.0m³/h, PN16	300mm
MCAL402TJ	Kam 402. DN40 Cooling Meter Qp 10m³/h, PN25	300mm
MCAL402TK	Kam 402. DN50 Cooling Meter Qp 15m³/h, PN25	270mm

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MULTICAL 402 COMMUNICATION MODULES & ACCESSORIES

MWA Code	Description
MCAL402x10	Data + 2 pulse inputs (VA, VB)
MCAL402x11	Data + 2 pulse outputs (CE, CV)
MCAL402x20	M-Bus + 2 pulse inputs (VA, VB)
MCAL402x21	M-Bus + 2 pulse outputs (CE, CV)
MCAL402x10	Data + 2 pulse inputs (VA, VB)
MCAL402x11	Data + 2 pulse outputs (CE, CV)
MCAL402x20	M-Bus + 2 pulse inputs (VA, VB)
MCAL402x21	M-Bus + 2 pulse outputs (CE, CV)
MCAL402x29	M-Bus + 2 pulse inputs - MULTICAL® III compatible data
MCAL402x30	Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antenna
MCAL402x31	Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL402x35	Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antenna, pulse inputs
MCAL402x37	Wireless M-Bus, T1, standard registers, common key, 868 MHz, internal antenna
MCAL402x38	Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed networks
MCAL402x40	Radio, EU, 434 MHz, int. ant., NET0
MCAL402x41	Radio, EU, 434 MHz, int. ant., NET1
MCAL402x42	Radio, EU, 434 MHz, int. + ext. ant., NET0 + 2 pulse inputs (VA, VB)
MCAL402x43	Radio, EU, 434 MHz, int. + ext. ant., NET0 + 2 pulse outputs (CE, CV)
MCAL402x44	Radio, EU, 434 MHz, int. + ext. ant., NET1 + 2 pulse inputs (VA, VB)
MCAL402x45	Radio, EU, 434 MHz, int. + ext. ant., NET1 + 2 pulse outputs (CE, CV)
MCAL402x50	Radio, SE, 444 MHz, int. ant., NET0 + 2 pulse inputs (VA, VB)
MCAL402x52	Radio, SE, 444 MHz, int. ant., NET1 + 2 pulse inputs (VA, VB)
MCAL402x54	Radio, SE, 444 MHz, ext. ant., NET0 + 2 pulse inputs (VA, VB)
MCAL402x56	Radio, SE, 444 MHz, ext. ant., NET1 + 2 pulse inputs (VA, VB)

MULTICAL 402 POWER SUPPLY MODULES

MWA Code	Description
MCAL402-BATTERY	D - cell battery
MCAL402-230VAC	230v AC, supply module
MCAL402-24V	24v AC, supply module

- 6 Year and 12 Year battery options available

MULTICAL 402 PT500 SENSORS

MWA Code	Description
TEMPSENSOR1.5	Pocket Temp sensor set with 1.5m cable
TEMPSENSOR3	Pocket Temp sensor set with 3.0m cable
SHORTTEMP1.5	Short direct Temp sensor set with 1.5m cable
SHORTTEMP3	Short direct Temp sensor set with 3.0m cable

ENERGY METERS - Kamstrup 602

KAMSTRUP 602 ULTRASONIC HEAT METER AND INTEGRATOR

- EN1434 Class 2 & MID for Heating 130°C max
- Including Calculator, pulse output Module, Power Supply battery or 230v AC, and 1.5M temperature sensors and pockets
- Ultraflow 54 ultrasonic flow sensors with 2.5m signal cable Threaded Connection PN16

THREADED CONNECTION. FORGED PROFILE - PN16

MWA Code	Description	Body Length
65-5-CAHA	Kam 602. ½" BSP Heat Meter qp 0.6 m³/h PN16	110mm
65-5-CAHD	Kam 602. ¾" BSP Heat Meter qp 0.6 m³/h PN16	130mm
65-5-CDHA	Kam 602. ½" BSP Heat Meter qp 1.5 m³/h PN16	110mm
65-5-CDHC	Kam 602. ½" BSP Heat Meter qp 1.5 m³/h PN16	165mm
65-5-CDHD	Kam 602. ¾" BSP Heat Meter qp 1.5 m³/h PN16*	130mm
65-5-CDHF	Kam 602. ¾" BSP Heat Meter qp 1.5 m³/h PN16	190mm
65-5-CEHF	Kam 602. ¾" BSP Heat Meter qp 2.5 m³/h PN16	190mm

** For installation size G1B (R¾) x 165 mm please add extension Part Number 13-30-023.*

THREADED CONNECTION. ROD PROFILE - PN16

MWA Code	Description	Body Length
65-5-CGAG	Kam 602. 1" BSP Heat Meter qp 3.5 m³/h PN16	260mm
65-5-CHAG	Kam 602. 1" BSP Heat Meter qp 6.0 m³/h PN16	260mm
65-5-CHAH	Kam 602. 1.¼" BSP Heat Meter qp 6.0 m³/h PN16	260mm
65-5-CJAJ	Kam 602. 1.½" BSP Heat Meter qp 10.0 m³/h PN16	300mm

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FLANGED CONNECTION - PN25

MWA Code	Description	Body Length
65-5-CDCA	Kam 602. DN20 Heat Meter qp 1.5 m³/h PN25	190mm
65-5-CECA	Kam 602. DN20 Heat Meter qp 2.5 m³/h PN25	190mm
65-5-CGCB	Kam 602. DN25 Heat Meter qp 3.5 m³/h PN25	260mm
65-5-CHCB	Kam 602. DN25 Heat Meter qp 6.0 m³/h PN25	260mm
65-5-CHCC	Kam 602. DN32 Heat Meter qp 6.0 m³/h PN25	260mm
65-5-CJCD	Kam 602. DN40 Heat Meter qp 10.0 m³/h PN25	300mm
65-5-CKCE	Kam 602. DN50 Heat Meter qp 15.0 m³/h PN25	270mm
65-5-CLCG	Kam 602. DN65 Heat Meter qp 25.0 m³/h PN25	300mm
65-5-CMCH	Kam 602. DN80 Heat Meter qp 40.0 m³/h PN25	300mm
65-5-FACL	Kam 602. DN100 Heat Meter qp 60 m³/h PN25	360mm
65-5-FBCL	Kam 602. DN100 Heat Meter qp 100 m³/h PN25	360mm
665-5-FBCM	Kam 602. DN125 Heat Meter qp 100 m³/h PN25	350mm
65-5-FCCN-10	Kam 602. DN150 Heat Meter qp 150 m³/h PN25	500mm
65-5-FDCN-10	Kam 602. DN150 Heat Meter qp 250 m³/h PN25	500mm
65-5-FECN-10	Kam 602. DN150 Heat Meter qp 400 m³/h PN25	500mm
65-5-FECP-10	Kam 602. DN250 Heat Meter qp 400 m³/h PN25	500mm
65-5-FECR-10	Kam 602. DN250 Heat Meter qp 400 m³/h PN25	600mm
65-5-FFCP-10	Kam 602. DN200 Heat Meter qp 600 m³/h PN25	500mm
65-5-FFCP-10	Kam 602. DN200 Heat Meter qp 600 m³/h PN25	500mm
65-5-FFCR-10	Kam 602. DN250 Heat Meter qp 600 m³/h PN25	600mm
65-5-FGCR-10	Kam 602. DN250 Heat Meter qp 1000 m³/h PN25	600mm
65-5-FGDS-10	Kam 602. DN300 Heat Meter qp 1000 m³/h PN16	500mm

MULTICAL® 602 CALCULATOR FOR HEAT (EN 1434 & MID)

MWA Code	Description
602-A	Pt100-2-wire, prepared for ULTRAFLOW® or Reed-switch
602-B	Pt500 4-wire, prepared for ULTRAFLOW® or Reed-switch
602-C	Pt500 2-wire, prepared for ULTRAFLOW® or Reed-switch
602-D	Pt500 4-wire, prepared for flow sensors with 24 VAC active pulses

ENERGY METERS - Kamstrup 602

KAMSTRUP 602 TOP MODULE

MWA Code	Description
MCAL 67020000	Kam 602. Δenergy calculation + hourly data logger
MCAL 67030000	Kam 602. PQT limiter + hourly data logger*
MCAL 67050000	Kam 602. Data output + hourly data logger
MCAL 67070000	Kam 602. M-Bus**
MCAL 67090000	Kam 602. Δvolume calculation + hourly data logger
MCAL 670A0000	Kam 602. 2 pulse outputs (CE and CV) + scheduler + hourly data logger
MCAL 670B0000	Kam 602. 2 pulse outputs (CE and CV) + prog. data logger
MCAL 6020C000	Kam 602. 2 pulse outputs (CE and CV)

** When used in heat meters it supports flow, power and temperature limitation; when used in cooling meters it supports flow and power limitation; when used in water meters it supports flow limitation.*

*** The meter must be mains supplied. We recommend the 230/24 VAC safety transformer 66-99-403.*

KAMSTRUP 602 BASE MODULE

MWA Code	Description
MCAL 67001000	Kam 602. Data output + 2 pulse inputs (VA, VB)
MCAL 67002000	Kam 602. M-Bus module + 2 pulse inputs (VA, VB)
MCAL 67002200	Kam 602. Prog. data logger + RTC + 4...20 mA inputs + 2 pulse inputs (VA, VB)
MCAL 67002300	Kam 602. Analog 0/4...20 mA outputs **
MCAL 67002400	Kam 602. LonWorks module + 2 pulse inputs (VA, VB)**
MCAL 67002500	Kam 602. Radio module + 2 pulse inputs (VA, VB)
MCAL 67002700	Kam 602. M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL 67002800	Kam 602. M-Bus module with medium data package + 2 pulse inputs (VA, VB)
MCAL 67002900	Kam 602. M-Bus module with MULTICAL® III compatible data + 2 pulse inputs (VA, VB)
MCAL 60200300	Kam 602. Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antenna + 2 pulse inputs (VA, VB)
MCAL 67003100	Kam 602. Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL 60200350	Kam 602. Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antenna + 2 pulse inputs (VA, VB)
MCAL 60200360	Kam 602. Wireless M-Bus, T1 OMS short interval, encrypted, 868 MHz, internal and external antennas
MCAL 60200380	Kam 602. Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed network
MCAL 67006000	Kam 602. ZigBee 2.4 GHz with internal antenna + 2 pulse inputs (VA, VB)
MCAL 67006200	Kam 602. Metasys N2 (RS-485) + 2 pulse inputs (VA, VB)**
MCAL 67006400	Kam 602. SIOX module (Auto detect Baud rate)
MCAL 67006600	Kam 602. BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)**
MCAL 67006700	Kam 602. Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)**
MCAL 60200800	Kam 602. GSM/GPRS module***
MCAL 60200810	Kam 602. 3G GSM/GPRS module (GSM 8H 3G)***
MCAL 60200840	Kam 602. High Power Radio Router + 2 pulse inputs (VA, VB)

*** The meter must be mains supplied. We recommend the 230/24 VAC safety transformer 66-99-403*

**** Requires high power supply module*

SENSOR FITTINGS

Description
½ nipple for Pt500 direct sensor, short probe, brass
¾ nipple for Pt500 direct sensor, short probe, brass
65mm x ½ sensor pocket, stainless steel for 5.8mm
90mm x ½ sensor pocket, stainless steel for 5.8mm
140mm x ½ sensor pocket, stainless steel for 5.8mm

SIGNAL CABLE

MWA Code	Description
50-00-259	Signal cable for Ultraflow Stainless Steel - 5 metres
50-00-270	Signal cable for Ultraflow Stainless Steel - 10 metres

TEMPERATURE SENSOR SET PT500

Description	
Set of pocket sensors with 1.5m cable 5.8mm dia	6700000A
Set of pocket sensors with 3.0m cable 5.8mm dia	6700000B
Set of pocket sensors with 5.0m cable 5.8mm dia	6700000C
Set of pocket sensors with 10m cable 5.8mm dia	6700000D
Set of pocket sensors with short probe 1.5m cable	6700000F
Set of pocket sensors with short probe 3.0m cable	6700000G

POWER SUPPLY

MWA Code	Description
MCAL160606400	Kam 602. D-cell battery with connector
MCAL6020000300	Kam 602. 230 VAC high power
MCAL6020000400	Kam 602. 24 VAC high power
MCAL6020000700	Kam 602. 230 VAC
MCAL6020000800	Kam 602. 24 VAC

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ENERGY METERS - Kamstrup 801

KAMSTRUP MULTICAL® 801

- Precise measuring of heat and cooling up to 30,000m³/h
- Remote reading with four communication channels
- 4 analogue outputs
- Two plug-in modules simultaneously: GSM, M-Bus, RadioRouter, LonWorks pulse inputs for electricity and water meters
- Data logger with latest 460 days, 36 months and 15 years as well as programmable data logger
- Complies with EN 1434:2007 Class C and MID M1, E1 and E2

Multical® 801 is a robust and rugged calculator. It is ideal for buildings and industries using extra communication possibilities, programmable functions and a wide range of other modules.

This meter is used for measurement of both heat and cooling in all water based plants with flow temperatures from 2°C to 180°C and with all water meter sizes between q_p 0.6m³/h and q_p 30,000m³/h.

The meter is simple to install, read and verify. Furthermore, Multical® 801 contributes to keeping the annual operating costs at a minimum with its unique combination of high measuring accuracy and long lifetime.

If Multical® 801 is connected to flow meters installed in both inlet and outlet pipes, the meter can monitor leaks and bursts in the heating/cooling system. Leakages in the tap water system can be monitored by means of pulses if a water is connected. Multical® 801 receives volumes pulses from the connected flow meters and calculates the energy for every predetermined water volume. The energy calculation includes temperature measurements in inlet and outlet as well as correction for density and heat content according to EN 1434.

Multical® 801 can be supplied by 230VAC or 24VAC.

Multical® 801 can be extended by two independent modules in the form of GSM/GPRS, M-Bus, RadioRouter and LonWorks. The modules also include two extra pulse inputs for connection of water and electricity meters. The modules make remote reading of the meter possible.

Multical® 801 fulfils the IP67 requirements to very rugged design and robust functionality. The IP67 seal guarantees that the meter is resistant to dust, humidity and water. Pulse outputs, valve control, battery backup and many other features are standard functions in Multical® 801.

TEMPERATURE SENSOR SET PT500

Description	
Set of pocket sensors with 1.5m cable 5.8mm dia	6700000A
Set of pocket sensors with 3.0m cable 5.8mm dia	6700000B
Set of pocket sensors with 5.0m cable 5.8mm dia	6700000C
Set of pocket sensors with 10m cable 5.8mm dia	6700000D
Set of pocket sensors with short probe 1.5m cable	6700000F
Set of pocket sensors with short probe 3.0m cable	6700000G

KAMSTRUP 801 INTEGRATOR ONLY FOR HEAT METERING

- Battery, 230v or 24v powered, with pulsed energy output, 1.5 temperature sensors and 1.5m signal cables & pockets
- Mounting Bracket, standard optical data output
- Pulse value to be advised

SENSOR FITTINGS

Description	
65mm x ½ sensor pocket,stainless steel for 5.8mm	65-57-324
90mm x ½ sensor pocket,stainless steel for 5.8mm	65-57-327
140mm x ½ sensor pocket,stainless steel for 5.8mm	65-57-314

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POWER SUPPLY

MWA Code	Description
66-99-622	230 VAC for MULTICAL® 801 with GSM or High Power Radio Router
66-99-634	24 VAC for MULTICAL® 801 with GSM or High Power Radio Router

KAMSTRUP 801 TOP MODULE

MWA Code	Description
MCAL 670M	KAM 801. SIOX module (Auto detect Baud rate)
MCAL 670P	KAM 801. M-Bus module with alternative registers
MCAL 670Q	KAM 801. M-Bus module with MULTICAL® III compatible data
MCAL 670U	KAM 801. 3G GSM/GPRS module (GSM 8H 3G)*
MCAL 670V	KAM 801. M-Bus module
MCAL 670W	KAM 801. RadioRouter module**
MCAL 670Y	KAM 801. LonWorks module
MCAL 670Z	KAM 801. GSM6H module excl. external antenn**
MCAL 16-40-080	KAM 801. Module connector

** Requires High Power besides standard power supply / GSM module and RF module are not compatible in one meter*
*** GSM module and RF module are NOT compatible in one meter*

KAMSTRUP 801 BASE MODULE

MWA Code	Description
MCAL 67002000	KAM 801. M-Bus module + 2 pulse inputs (VA, VB)
MCAL 67002100	KAM 801. RadioRouter module + 2 pulse inputs (VA, VB)*
MCAL 67002200	KAM 801. Prog. data logger + RTC + 4...20 mA inputs + 2 pulse inputs (VA, VB)
MCAL 67002400	KAM 801. LonWorks module + 2 pulse inputs (VA, VB)***
MCAL 67002700	KAM 801. M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL 67002900	KAM 801. M-Bus module with MULTICAL® III compatible data + 2 pulse inputs (VA, VB)
MCAL 67003000	KAM 801. Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antenna + 2 pulse inputs (VA, VB)
MCAL 67003100	KAM 801. Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL 67003500	KAM 801. Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antenna + 2 pulse inputs (VA, VB)
MCAL 67003800	KAM 801. Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed networks
MCAL 67006000	KAM 801. ZigBee 2.4 GHz with internal antenna + 2 pulse inputs (VA, VB)
MCAL 67006200	KAM 801. Metasys N2 (RS-485) + 2 pulse inputs (VA, VB)***
MCAL 67006400	KAM 801. SIOX module (Auto detect Baud rate)
MCAL 67006600	KAM 801. BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)***
MCAL 67006700	KAM 801. Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)***
MCAL 67008400	KAM 801. High Power RadioRouter + 2 pulse inputs (VA, VB) *
MCAL 16-40-080	KAM 801. Module connector

** GSM module and RF module are NOT compatible in one meter*
**** The meter must be mains supplied, we recommend the 230/24 VAC safety transformer 66-99-403*

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ENERGY METERS - Itron CF ECHO II

ITRON CF ECHO II ULTRASONIC COMPACT HEAT METERS

- Heat meter (EN1434 Class 2 & MID)
- 130°C maximum operating temperature
- 1.5 metre Signal Cable
- 1.7 metre PT100 Temperature Sensor Cables
- 230v or Battery operation
- Combined Pulse and Mbus output module
- Other output option modules available

MWA Code	Description	Body Length
CFECHO15 - 1.5	CF ECHO. ½" BSP Heat Meter qp 1.5 m³/h PN16	110mm
CFECHO20 - 1.5	CF ECHO. ¾" BSP Heat Meter qp 1.5 m³/h PN16	130mm
CFECHO20 - 2.5	CF ECHO. ¾" BSP Heat Meter qp 2.5 m³/h PN16	130mm
CFECHO25 - 2.5	CF ECHO. 1" BSP Heat Meter qp 2.5 m³/h PN16	260mm
CFECHO25 - 3.5	CF ECHO. 1" BSP Heat Meter qp 2.5 m³/h PN16	260mm
CFECHO30 - 6	CF ECHO. 1.¼" BSP Heat Meter qp 6 m³/h PN16	260mm
CFECHO40 - 10	CF ECHO. 1.½" BSP Heat Meter qp 10 m³/h PN16	200mm
CFECHO50 - 15	CF ECHO. DN50 Heat Meter qp 15 m³/h PN25	250mm
CFECHO65 - 25	CF ECHO. DN65 Heat Meter qp 25 m³/h PN25	300mm
CFECHO80 - 40	CF ECHO. DN80 Heat Meter qp 40 m³/h PN25	300mm
CFECHO100 - 60	CF ECHO. DN100 Heat Meter qp 60 m³/h PN25	360mm

NB Cooling Meter options also available

ITRON CF ECHO OPTION BOARDS

The CF ECHO II is pre-equipped for communication. Different option boards can be plugged simply to the meter and start working automatically. The following option boards are available:

MWA Code	Description
Board 1	M-Bus + E/V Repetition
Board 2	M-Bus + 2 Water Meters pulse input
Board 3	GPRS Modem + E/V Repetition + M-Bus Master
Board 4	LON + 2 Water Meters pulse input
Board 5	Radio + 2 Water Meters pulse input
Board 6	M-Bus + 2 Water Meters pulse input + power supply by M-Bus
Board 7	RS232 + 2 Water Meters pulse input

OPTIONS

MWA Code	Description
CFMBUS/2INPUTS	Mbus, pulse output option plug with water meter inputs 6200000006
CFMBUSPULSE	Mbus, pulse output option plug 6201000005
CFBATTERY	Battery pack - up to 12 years 620700006
CF230V	230v AC power supply 620800006
CFCENSORS1.7	Temperature sensor PT100 2 wire without pockets 1.7m length 2960830006

CF51 HEAT INTEGRATOR

- Calculator EN 1434 MID Heating or cooling
- Battery or 230v AC 1.5m signal cables, Pt100 (1.7m, 5m or 10m) temperature sensors and pockets
- Mbus and pulse output

MWA Code	Description	Pulse Valve
CF51K1	CF51 without power supply	1 pulse = 1 litre
CF51K10	CF51 without power supply	1 pulse = 10 litre
CF51K100	CF51 without power supply	1 pulse = 100 litre
CFMBUSPULSE	Mbus / pulse option plug	
CFMBUS//2INPUT	Mbus / pulse option plug with 2 water meters inputs	
CFSENSORS1.7	Temperature sensor PT100 2 wire w/o pockets 1.7m, meters 15 to 50mm	
CFSENSORS5	Temperature sensor PT100 2 wire w/o pockets 5m meters, 50 to 50mm	
CFSENSORS10	Temperature sensor PT100 2 wire w/o pockets 10m meters, 50 to 50mm	
CFBATTERY	Battery pack - up to 12 years	
CF230V	230v AC power supply	

CF55 HEAT INTEGRATOR

- Calculator EN 1434 MID Heating or Cooling
- Mbus and pulse output
- Battery or 230v AC 1.5m signal cables, Pt100 (1.7m, 5m or 10m) temperature sensors and pockets

MWA Code	Description	Pulse Valve
CF55K1	CF55 without power supply	1 pulse = 1 litre
CF55K10	CF55 without power supply	1 pulse = 10 litre
CF55K100	CF55 without power supply	1 pulse = 100 litre
CFMBUSPULSE	Mbus/pulse option plug	
CFMBUS/2INPUT	Mbus/pulse option plug with 2 wm inputs	
CFCENSORS1.7	Temperature sensor PT100 2 wire w/o pockets 1.7m, meters 15 to 50mm	
CFCENSORS5	Temperature sensor PT100 2 wire w/o pockets 5m meters ,50 to 50mm	
CFCENSORS10	Temperature sensor PT100 2 wire w/o pockets 10m meters, 50 to 50mm	
CFBATTERY	Battery pack - up to12 years	
CF230VAC	230v AC power supply	

MBUS CONCENTRATORS WITH DISPLAY

MWA Code	Description
CF-MINIZE20	Mbus - data logger for up to 20 meters
CF-MINIZE60	Mbus - data logger for up to 60 meters
CF-MINIZE250	Mbus - data logger for up to 250 meters

ENERGY METERS - Siemens

SITRANS FLOWMETER FUS380

- Battery-powered up to 6 years
- 115/230 V mains-powered with back-up battery option in case of mains power failure
- Fast measuring frequency 15 Hz/0.5 Hz (230 V AC/Battery)
- Easy one-button straight forward display
- 2-path measuring principle for optimum accuracy
- Compact or remote mounting
- Measures on most district water qualities and water conductivities
- No pressure drop
- Long-term stability
- 2 galvanically isolated digital outputs for easy connection to a calculator (potential-free)
- Bidirectional measurement, with 2 totalizers and outputs
- Dynamic range Qi (min) : Qs (max) up to 1:400

The 2-path flowmeter SITRANS FUS380 comes as battery or mains-powered and is designed to measure water flow in district heating plants, local networks, boiler stations, substations, chiller plants and other general water applications.

APPLICATION

The main application for SITRANS FUS380 is measurement of water flow or water flow in energy meter systems in district heating networks or chilled water.

Design

The 2-path design of SITRANS FUS380 ensures maximum accuracy under short inlet conditions. The flowmeter consists of a flow sensor pipe, 4 transducers/transducer cables and a transmitter SITRANS FUS380.

The unit is available in a compact or a remote version with up to 30 meter distance from flowmeter to transmitter. When ordering a compact version the transducer cables are pre-mounted and ready for installation.

Compact mounting is only possible up to 120°C (248°F). The sensor must be isolated to protect transmitter from heat. The transmitter is available in an IP67/NEMA 4X/6 enclosure.

Integration

The flowmeter digital output is often used as input for an energy meter or as input for digital systems for remote reading.

SITRANS FUS380 has two digital output functions that can be individually selected. Pulse output rate is defined when ordering. To get optimal benefit the pulse value must be selected as low as possible.
If the flowmeter forms part of an energy meter system for custody transfer, no further approvals are needed, except possible local approvals on the flowmeter.

Function

Together with the SIMATIC PDM tool the FUS380 offers the possibility of testing and verifying the flowmeter on site and creating a printed "Qualification Certificate" with specific data that defines the quality status of the measurement.

- The Qualification Certificate shows information, totaliser values, and pulse output settings.
- Detailed information about the transmitter and the sensor functionally, and a main parameter list for evaluating the functionality of the flowmeter.

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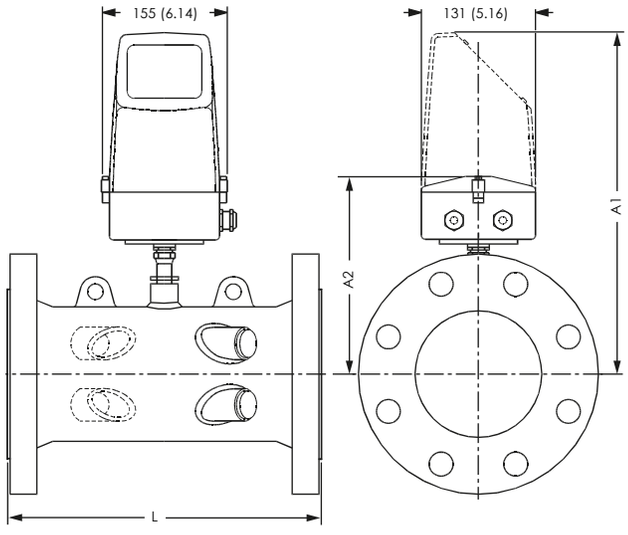
DN	Q_s (m³/h)	Q_{max} (m³/h) (105% of Q_s)	Q_p (m³/h)	Q_{max} (m³/h) (100% of Q_p)	Cut-off (m³/h)	Cut-off (% of Q_{max})	Typical pulse value[1] (l/pulse)
50	15	15.75	15	0.15	0.075	0.48	1
50	45	47.25	15	0.15	0.075	0.16	1
50	45	47.25	30	0.3	0.150	0.32	1
65	25	26.25	25	0.25	0.125	0.48	1
65	72	75.6	25	0.25	0.125	0.17	1
65	72	75.6	50	0.5	0.250	0.33	1
80	40	42	40	0.4	0.200	0.48	2.5
80	120	126	40	0.4	0.200	0.16	2.5
80	120	126	80	0.8	0.400	0.32	2.5
100	60	63	60	0.6	0.300	0.48	2.5
100	180	189	60	0.6	0.300	0.16	2.5
100	240	252	120	1.2	0.600	0.24	2.5
125	10	10.5	100	1	0.500	4.76	2.5
125	280	294	100	1	0.500	0.17	2.5
125	400	420	200	2	1.000	0.24	2.5
150	150	157.5	150	1.5	0.750	0.48	10
150	420	441	150	1.5	0.750	0.17	10
150	560	588	300	3	1.500	0.26	10
200	250	262.5	250	2.5	1.250	0.48	10
200	700	735	250	2.5	1.250	0.17	10
200	900	945	500	5	2.500	0.26	10
250	400	420	400	4	2.000	0.48	10
250	1120	1176	400	4	2.000	0.17	10
250	1400	1470	800	8	4.000	0.27	10
300	560	588	560	5.6	2.800	0.48	50
300	1560	1638	560	5.6	2.800	0.17	50
300	2100	2205	1120	11.2	5.600	0.25	50
350	750	787.5	750	7.5	3.750	0.48	50
350	2100	2205	750	7.5	3.750	0.17	50
350	2800	2940	1500	15	7.500	0.26	50
400	950	997.5	950	9.5	4.750	0.48	50
400	2660	2793	950	9.5	4.750	0.17	50
400	3600	3780	1900	19	9.500	0.25	50
500	1475	1548.75	1475	14.75	7.375	0.48	100
500	4130	4336.5	1475	14.75	7.375	0.17	100
500	5500	5775	2950	29.5	14.750	0.26	100
600	2150	2257.5	2150	21.5	10.750	0.48	100
600	6020	6321	2150	21.5	10.750	0.17	100
600	8000	8400	4300	43	21.500	0.26	100
700	2900	3045	2900	29	14.500	0.48	100
700	8120	8526	2900	29	14.500	0.17	100
700	10800	11340	5800	58	29.000	0.26	100
800	3800	3990	3800	38	19.000	0.48	100
800	10640	11172	3800	38	19.000	0.17	100
800	14200	14910	7600	76	38.000	0.25	100
900	5000	5250	3800	38	19.000	0.36	100
900	14000	14700	5000	50	25.000	0.17	100
900	20000	21000	5000	50	25.000	0.12	100
1000	6000	6300	3800	38	19.000	0.30	100
1000	16800	17640	6000	60	30.000	0.17	100
1000	24000	25200	12000	120	60.000	0.24	100
1200	9000	9450	3800	38	19.000	0.20	100
1200	25200	26460	9000	90	45.000	0.17	100
1200	36000	37800	18000	180	90.000	0.24	100

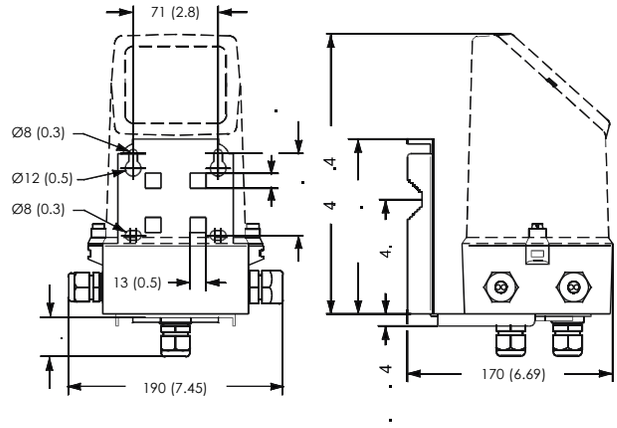
The values Qi, Qp and Qs are shown on the system label of the FUS380. Qi (Qmin) means the minimal and Qp (Qnom) the nominal flow rate. Qs is the highest operatable flow rate. The maxium flow rate (Qmax) is 105 % of Qs. The low flow cut-off is 50 % of Qi. In order to obtain best pulse output resolution in the range Qmin to Qs of approx. 100 Hz at Qs, two or three flow values for every dimension can be selected at ordering. Therefore the ordering data table also shows Qp (Qn). This flow rate is between Qi (Qmin) and Qs and indicates the normal or typical flow.

SITRANS FLOWMETER FUS380

Dimensional drawings



Transmitter IP67/NEMA 4X/6, wall mounting



Dimensions in mm (inch)

Size DN	PN16 L mm	Weight kg	PN25 L mm	Weight kg	PN40 L mm	Weight kg	A_1 mm	A_2 mm	Lift hug
50	-	-	-	-	300 +0/-2	10	350	196	No
65	-	-	-	-	300 +0/-2	15	360	206	No
80	-	-	-	-	350 +0/-3	18	370	216	No
100	350 +0/-2	15	-	-	350 +0/-3	18	375	221	No
125	350 +0/-2	18	-	-	350 +0/-3	24	380	226	No
150	500 +0/-3	28	-	-	500 +0/-3	34	390	236	No
200	500 +0/-3	38	500 +0/-3	47	500 +0/-3	55	414	260	No
250	600 +0/-3	60	600 +0/-3	76	600 +0/-3	91	440	286	No
300	500 +0/-3	66	500 +0/-3	81	-	-	466	312	Yes
350	550 +0/-3	94	550 +0/-3	121	-	-	495	341	Yes
400	600 +0/-3	124	600 +0/-3	153	-	-	507	353	Yes
500	625 +0/-3	194	625 +0/-3	231	-	-	558	404	Yes
600	750 +0/-3	303	750 +0/-3	365	-	-	609	455	Yes
700	875 +0/-3	361	875 +0/-3	553	-	-	660	506	Yes
800	1000 +0/-3	494	1000 +0/-3	770	-	-	710	556	Yes
900	1230 +6/-6	475	1300 +6/-6	835	-	-	760	606	Yes
1000	1300 +6/-6	594	1370 +6/-6	1000	-	-	810	656	Yes
1200	1360 +6/-6	732	-	-	-	-	910	756	Yes

NOTES

Weight for transmitter/electronics 1.5kg (compact version) or approximately 5kg (remote version including 10m cable set)

- Means not available.

All weights are approximate.

For flange values - see norm EN 1092-1

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SITRANS FLOWMETER FUE950

SITRANS FUE950 is a universal thermal energy calculator, which meets the requirements EN 1434 and has the MID and PTB K7.2 approval for energy metering with the media water.

SITRANS FUE950 has been developed for the SITRANS FUS380/FUE380 and alternatively MAG 5000/6000 or FST020. SITRANS FUE950 is modular in construction and can by order be fitted with optional modules depending on the application. The FUE950 supports none of the SITRANS FX, FC products and only some of the FUS clamp-on products.

- Prepared for heating, cooling measurement
- Approval for MID for heat metering and PTB K7.2 for cooling
- High-accuracy thermal energy metering, meets EN1434 requirements
- Measured temperature range -20 … +190 °C (-4 … +374 °F)
- Instantaneous values for energy/volume flow
- Battery or mains powered
- Battery version with battery lifetime of typical 16 years
- Optical data interface
- Real date and time
- Auto-detection of 2-wire or 4-wire temperature sensors
- Individual tariff functions
- Advanced functions for cooling/heating applications or the combination
- Memory for 24 periods (months, weeks, days)
- Data logger function
- Expandable functionality with 2 optional plug and play add-on modules
- Communication over M-Bus, RS485 or RS232

APPLICATION

The SITRANS FUE950 is able to handle 3 kinds of applications, means energy calculation in:

- District heating applications
- Chilled water applications
- Combined cooling/heating applications

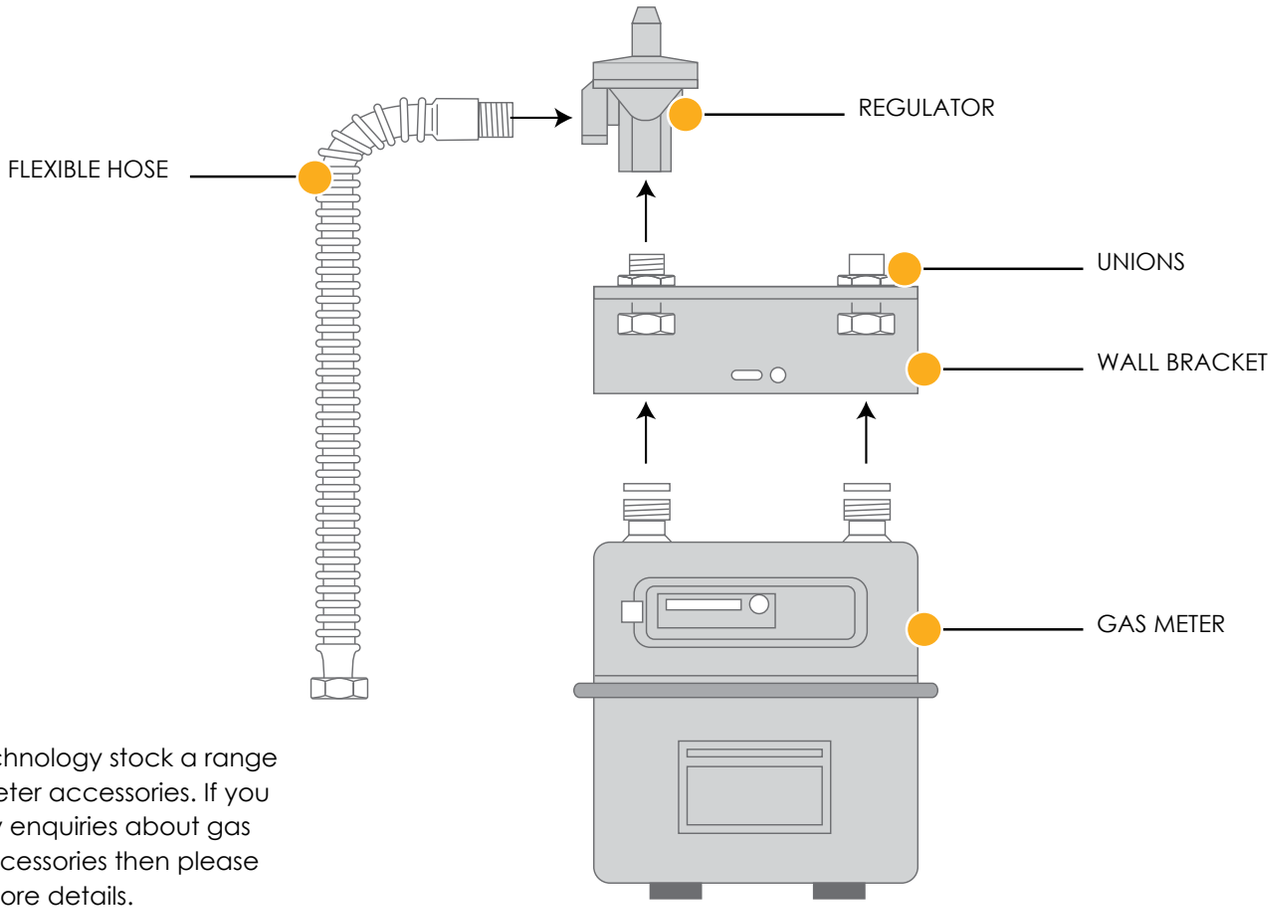
GAS METERS - Diaphragm

ITRON NATIONAL GRID APPROVED DIAPHRAGM GAS METER

- Manufactured by BS EN ISO 9001 and ISO 14001
- G1.6 to G6 Fireproof up to 650°C @100mbar according to EN1359
- Diaphragm meter for Natural Gas, Propane and Butane
- Maximum working pressure 75Mbar
- Meters read in cubic metres

MWA Code	Description	Centres
SEMI	Itron. 1" BS746 Semi Concealed Diaphragm Meter Qmax 6m³/h	152.4mm
U6P	Itron. 1" BS746 Diaphragm Meter Qmax 6m³/h	152.4mm
U16P	Itron. 1.¼" BS746 Diaphragm Meter Qmax 16m³/h	152.4mm
U25P	Itron. 2" BS746 Diaphragm Meter Qmax 25m³/h	250mm
U40P	Itron. 2" BS746 Diaphragm Meter Qmax 40m³/h	280mm
U65P	Itron. DN65 Diaphragm Meter Qmax 65m³/h. PN10	335mm
U100P	Itron. DN80 Diaphragm Meter Qmax 100m³/h. PN10	430mm
U160P	Itron. DN100 Diaphragm Meter Qmax 160m³/h. PN10	430mm

MWA Code	Description
UPULSE	Itron. MDA Series Pulse Module and Lead



MWA Technology stock a range of gas meter accessories. If you have any enquiries about gas meter accessories then please call for more details.

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METRIX EUROPEAN DIAPHRAGM GAS METER

- Manufactured by BS EN ISO 9001 and ISO 14001
- G1.6 to G6 Fireproof up to 650°C @100mbar according to EN1359
- Diaphragm meter for Natural Gas, Propane and Butane
- Maximum working pressure 500Mbar
- Meters read in cubic metres

MWA Code	Description	Centres
G4-UGBS	Metrix. 1" BS746 Diaphragm Meter. Qmax 6m³/h	110mm
G4-UGBS-130	Metrix. 1" BS746 Diaphragm Meter. Qmax 6m³/h	130mm
G4-UGPBS	Metrix. 1" BS746 Pulsed Diaphragm Meter. Qmax 6m³/h	130mm
G4-UGBS-6"	Metrix. 1" BS746 Pulsed Diaphragm Meter. Qmax 6m³/h	152.4mm
G6PBS	Metrix. 1" BS746 Pulsed Diaphragm Meter. Qmax 10m³/h	130mm
G10BS	Metrix. 1.1¼" BS746 Diaphragm Meter. Qmax 16m³/h	280mm
G10PBS	Metrix. 1.¼" BS746 Pulsed Diaphragm Meter. Qmax 16m³/h	280mm
G10BS2"	Metrix. 2" BS746 Diaphragm Meter. Qmax 16m³/h	280mm
G16PBS	Metrix. 2" BS746 Pulsed Diaphragm Meter. Qmax 25m³/	280mm

MWA Code	Description	Centres
G4-UG	Metrix. 1" BSP Diaphragm Meter. Qmax 6m³/h	110mm
G4-UGP	Metrix. 1" BSP Pulsed Diaphragm Meter. Qmax 6m³/h	110mm
G6P	Metrix. 1" BSP Pulsed Diaphragm Meter. Qmax 10m³/h	130mm
G10P	Metrix. 1.½" BSP Pulsed Diaphragm Meter. Qmax 16m³/h	280mm
G16P	Metrix. 1.½" BSP Pulsed Diaphragm Meter. Qmax 25m³/h	280mm
G25P	Itron. 2" BSP Pulsed Diaphragm Meter. Qmax 40m³/h	335mm
G40P	Itron. DN100 Pulsed Diaphragm Meter. Qmax 65m³/h	400mm
G65P	Itron. DN100 Pulsed Diaphragm Meter. Qmax 100m³/h	500mm

MWA Code	Description
NI-3	Metrix. Diaphragm Meter Pulse Module and Lead

GAS METER UNIONS

MWA Code	Description
CON¾	Gas Meter Union & Washer. 1" BS746 - ¾" BSP
CON22MM	Gas Meter Union & Washer. 1" BS746 - 22mm Plain
CON1	Gas Meter Union & Washer. 1" BS746 - 1" BSP
CON1-28	Gas Meter Union & Washer. 1" BS746 - 28mm End Feed
CON1.¼	Gas Meter Union & Washer. 1.¼" BS746 - 1.¼" BSP
CON1.½	Gas Meter Unions & Washers. 1.1½" BSP for Metrix G10 & G16
CON2	Gas Meter Union & Washer. 2" BS746 - 2" BSP

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GAS METERS - Diaphragm

WIZIT DIAPHRAGM GAS METERS

- Compact strong aluminium die cast construction
- High sensitivity suitable for low gas flow rates
- Suitable for Natural Gas, LPG, Air, Nitrogen and all inert gases
- Pulse lead supplied & fitted

MWA Code	Size	Model	Height	Width	Depth	CRS	Qmin cmh	Qmax cmh
KG2	½" BSP	G1.6	197	126	110	100	0.016	2.5
KG2P	½" BSP	G1.6P	197	126	110	100	0.016	2.5
KG3	¾" BSP	G1.6	197	126	110	130	0.016	2.5
KG3P	¾" BSP	G1.6P	197	126	110	130	0.016	2.5
KG4	¾" BSP	G2.5	214	164	130	130	0.025	4
KG4P	¾" BSP	G2.5P	214	164	130	130	0.025	4
KG6	¾" BSP	G2.5	214	164	130	130	0.025	6
KG6P	¾" BSP	G2.5P	214	164	130	130	0.025	6

DRESSER CHATTERBOX ISOLATION UNIT

- Provides an approved barrier for hazardous area to safe area equipment
- 10 year battery life benefit
- Four channels as a standard
- Atex certified I.S.

MWA Code	Description
CHATT	Chatterbox - Barrier
CHATTENC	Chatterbox complete with enclosure

ISKRA P2G INTRINSICALLY SAFE LOGGER & COMMUNICATOR

- For collection and recording pulses from electrical, gas and water meters
- An internal GSM modem is used for remote transmission of data by SMS

MWA Code	Description
P2G	Communicator / Logger
P2G Enc	Communicator logger complete with enclosure

GAS VOLUME CORRECTION - Safety

ITRON CORUS GAS VOLUME CONVERTER

CORUS is an electronic volume converter dedicated to commerical and indutrial applications. It converts the actual volume measured by the gas meter to reference conditions. Thus, CORUS is a key element in the whole Itron chain, from the meter to billing data.

Corus provides 6 different logs:

- Hourly log: last 1440 hours (2 months)
- Daily log: last 124 days (4 months)
- Montly log: last 24 months
- Interval log:
  - from 3100 to 5900 records according selected data
  - interval programmable form 1 to 60 mn
- Events log: last 800 events
- Parameters log: last 200 records

Power supply:

- Battery operating or external supply mode (mains or solar)
- Battery:
  - Specific 16.5 A.h lithium battery pack including all required protections for intrinsic safety
  - Pack can be changed in hazardous area without interrupting the normal operation of the device
  - 5 years autonomy in typical conditions

CORUS MOUNTING BRACKET

ITRON ISB+ INSTRINIC SAFETY BOX

ISB+ is an electronic attachment with ensures a galvanic insulation between hazardous and safe areas for RS232 and RS485 ports. RS232 and RS485 port are available on both sides and it is possible to convert a signal from RS232 to RS485 and vica versa.

KEY FEATURES

- Instrinsic safe interface for RS232 and RS485 ports
- ATEX approved as associated apparatus
- Din Rail mounting
- Power supply output for one CORUS

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GAS METERS - Rotary

CGR ROTARY GAS METER RANGE

- Inline gas meter with wafer connections to suit PN16 flanges, ANSI 150 alternative
- Fitted with low frequency pulse output as standard
- Aluminium body, suitable for natural gas and LPG, - 20°C to +60°C
- Nominal rangeability 1:50, Meters read in cubic metres, index can be head rotated through 360°

MWA Code	Description	Body Length
CGRDN40G10	Common. DN40 Rotary Gas Meter Qmin 0.3 m³/h Qmax 16 m³/h PN16	171mm
CGRDN40G16	Common. DN40 Rotary Gas Meter Qmin 0.5 m³/h Qmax 25 m³/h PN16	171mm
CGRDN40G25	Common. DN40 Rotary Gas Meter Qmin 0.8 m³/h Qmax 40 m³/h PN16	171mm
CGRDN40G40	Common. DN40 Rotary Gas Meter Qmin 1.3 m³/h Qmax 65 m³/h PN16	171mm
CGRDN50G10	Common. DN50 Rotary Gas Meter Qmin 0.3 m³/h Qmax 16 m³/h PN16	171mm
CGRDN50G16	Common. DN50 Rotary Gas Meter Qmin 0.5 m³/h Qmax 25 m³/h PN16	171mm
CGRDN50G25	Common. DN50 Rotary Gas Meter Qmin 0.8 m³/h Qmax 40 m³/h PN16	171mm
CGRDN50G40	Common. DN50 Rotary Gas Meter Qmin 1.3 m³/h Qmax 65 m³/h PN16	171mm
CGRDN50G65	Common. DN50 Rotary Gas Meter Qmin 2 m³/h Qmax 100 m³/h PN16	171mm
CGRDN50G100	Common. DN50 Rotary Gas Meter Qmin 3.2 m³/h Qmax 160 m³/h PN16	171mm
CGRDN80G65	Common. DN80 Rotary Gas Meter Qmin 2 m³/h Qmax 100 m³/h PN16	171mm
CGRDN80G100	Common. DN80 Rotary Gas Meter Qmin 3.2 m³/h Qmax 160 m³/h PN16	171mm
CGRDN80G100	Common. DN80 Rotary Gas Meter Qmin 3.2 m³/h Qmax 160 m³/h PN16	241mm
CGRDN80G160	Common. DN80 Rotary Gas Meter Qmin 5 m³/h Qmax 250 m³/h PN16	241mm
CGRDN100G100	Common. DN100 Rotary Gas Meter Qmin 3.2 m³/h Qmax 160 m³/h PN16	241mm
CGRDN100G160	Common. DN100 Rotary Gas Meter Qmin 5 m³/h Qmax 250 m³/h PN16	241mm
CGRDN100G250	Common. DN100 Rotary Gas Meter Qmin 8 m³/h Qmax 400 m³/h PN16	241mm

CGR ROTARY GAS METER ANCILLARIES

CGR calibration certificates
CGR 6 pin pulse plug
CGR 6 pin pulse plug and 2 metre lead
CGR high frequency pulse output - external
CGR high frequency pulse output - internal
CGR Remote 6 digit single LCD display Programmable installed in IP67 enclosure
CGR Chatterbox - e.Model unit, battery operated, 4 outputs, Atex IS.
CGR Chatterbox - e.Model unit, battery operated, 4 outputs, Atex IS. C/W enclosure

ROTARY METER DELTA QD

- Delta QD volumetric meters
- High accuracy and rangeability meter
- ATEX Directive 94/9/EC
  (Intrinsic safety level: Ex II ½G Ex ia IIC T5 c T6)
- Standard pulse output
- Very low pressure loss
- Protection class IP67

MWA Code	Size	Connections	Max Pressure	Min m³/hr	Max m³/hr	Weight
QD 25	40mm	Screwed	16 bar	0.8 m³/hr	25.0	3.6kg
QD 60	40mm	Screwed	16 bar	2.0 m³/hr	60.0	3.6kg

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ELSTER ROTARY GAS METER

The advantages of a Rotary Gas Meter over Diaphragm or Turbine Type

- Compact size
- Low pressure drop
- High accuracy
- Ease of installations
- No straight lengths of pipe required
- Excellent Turndown
- Immune to pulsating loads
- No change of accuracy with increase in operating pressure

Design innovations for the new Elster RABO range

- Reduced overall dimension while enlarged volume of measuring chamber
- Reduced pressure loss due to enlarged chamber volume
- Robust Impeller design. Short Impeller shafts
- Usage of permanent-lubricated ball bearings
- Rotatable Index on Meter front, to allow vertical or horizontal installation
- Several Index variants as i.e. S1 Index, ABSOLUTE-Encoder
- Environmental friendly "Hard Coat" Surface
- Increased cyclic volume for reduced pressure drop
- Lower piston speed for low-noise operation
- Short housing depth for short wall spacing
- Harmonization of the permitted temperature range to MID/PED/ATEX (-25 to 70°C)
- Available in 32mm and 40mm sizes (G16 – G65)

MWA Code	Description	Body Length
RABODN32G16	Elster. DN32 Rotary Gas Meter Qmin 1.3 m³/h Qmax 25 m³/h PN16	171mm
RABODN32G25	Elster. DN32 Rotary Gas Meter Qmin 2 m³/h Qmax 40 m³/h PN16	171mm
RABODN32G40	Elster. DN32 Rotary Gas Meter Qmin 3 m³/h Qmax 65 m³/h PN16	171mm
RABODN32G65	Elster. DN32 Rotary Gas Meter Qmin 5 m³/h Qmax 100 m³/h PN16	171mm
RABODN40G16	Elster. DN40 Rotary Gas Meter Qmin 1.3 m³/h Qmax 25 m³/h PN16	171mm
RABODN40G25	Elster. DN40 Rotary Gas Meter Qmin 2 m³/h Qmax 40 m³/h PN16	171mm
RABODN40G40	Elster. DN40 Rotary Gas Meter Qmin 3 m³/h Qmax 65 m³/h PN16	171mm
RABODN40G65	Elster. DN40 Rotary Gas Meter Qmin 5 m³/h Qmax 100 m³/h PN16	171mm
RABODN50G16	Elster. DN50 Rotary Gas Meter Qmin 1.3 m³/h Qmax 25 m³/h PN16	171mm
RABODN50G25	Elster. DN50 Rotary Gas Meter Qmin 2 m³/h Qmax 40 m³/h PN16	171mm
RABODN50G40	Elster. DN50 Rotary Gas Meter Qmin 3 m³/h Qmax 65 m³/h PN16	171mm
RABODN50G65	Elster. DN50 Rotary Gas Meter Qmin 5 m³/h Qmax 100 m³/h PN16	171mm
RABODN50G100	Elster. DN50 Rotary Gas Meter Qmin 8 m³/h Qmax 160 m³/h PN16	171mm
RABODN80G100	Elster. DN80 Rotary Gas Meter Qmin 8 m³/h Qmax 160 m³/h PN16	171mm
RABODN80G160	Elster. DN80 Rotary Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	241mm
RABODN80G250	Elster. DN80 Rotary Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	241mm
RABODN100G160	Elster. DN100 Rotary Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	241mm
RABODN100G250	Elster. DN100 Rotary Gas Meter Qmin 20 m³/h Qmax 4000 m³/h PN16	241mm
RABODN100G400	Elster. DN100 Rotary Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	241mm
RABODN150G400	Elster. DN150 Rotary Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	241mm

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GAS METERS - Turbine

TBX LOW PRESSURE DROP TURBINE GAS METERS - LCD DISPLAY

- Inline meter takes up less space
- Self supporting in pipework
- 50mm meter same output as 3 inch diaphragm meter

MWA Code	Description	Fitting	Min m^3/hr	Max m^3/hr
TBX30L-0.75	Low pressure drop turbine meter	¾" Screwed	1.5	30
TBX30L-1.0	Low pressure drop turbine meter	1" Screwed	1.5	30
TBX30L-1.25	Low pressure drop turbine meter	1.¼" Screwed	1.5	30
TBX30L-1.5	Low pressure drop turbine meter	1.½" Screwed	1.5	30
TBX100L-2	Low pressure drop turbine meter	2" Screwed	5	100
TBX150F	Low pressure drop turbine meter	2"/50mm Flanged PN6	7.5	150
TBX-PLUG	TBX pug with 2 metre lead - 4 Pin Plug			

TBZ LOW PRESSURE DROP TURBINE GAS METER - LCD DISPLAY

- Inline meter takes up less space
- Self supporting in pipework
- 50mm meter same output as 3 inch diaphragm meter

MWA Code	Description	Fitting	Min m^3/hr	Max m^3/hr
TBZ60	TBZ60 Low pressure drop meter	1½"/40mm Flanged PN6	6	60
TBZ150	TBZ150 Low pressure drop turbine meter	2"/50mm Flanged PN6	7.5	150
TBZ300	TBZ300 Low pressure drop turbine meter	3"/80mm Flanged PN6	15	300
TBZ300KIT	TBZ300 Kit PN6 80mm Flanges, Gaskets & BZP M16 Bolts & Nuts	3"/80mm Flanged PN6		
TBZPULSE	TBZ300 plug with 2 metre lead - 3 Pin Plug			

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COMMON CGT RANGE

Common Flanged Turbine Gas Meter for Primary and Secondary Metering

- **Pressure Rating:** PN10 + PN110 & ANSI150 + ANSI600
- **Nominal Diameter:** DN50 up to DN400
- **Meter Bodies:** Ductile cast iron or steel
- **Flow Range:** 6.5 to 10 000 m3/h
- **Rangeability:** 1:20 min at atmospheric pressure (increased rangeability also available)
- **Upstream Pipe:** Minimum 2 x DN
- **Temperature Range:** Gas temperature -20°C to +60°C, ambient Temperature -25°C to +70°C
- **Operating Position:** Horizontal or vertical
- Measurement Accuracy According to EN12261 Standard: 0.2 Qmax ÷ Qmax < ±1%, Qmin ÷ 0.2Qmax < ±2% Improved Accuracy on Request
- **Approvals:** MID, PED, ATEX. Traceability to PTB standards

MWA Code	Description	Body Length
CGTDN50G65	Common. DN50 Flanged Turbine Qmin 5 m³/h Qmax 100 m³/h PN16	150mm
CGTDN80G100	Common. DN80 Flanged Turbine Qmin 8 m³/h Qmax 160 m³/h PN16	240mm
CGTDN80G160	Common. DN80 Flanged Turbine Qmin 13 m³/h Qmax 250 m³/h PN16	240mm
CGTDN80G250	Common. DN80 Flanged Turbine Qmin 20 m³/h Qmax 400 m³/h PN16	240mm
CGTDN100G160	Common. DN100 Flanged Turbine Qmin 13 m³/h Qmax 250 m³/h PN16	300mm
CGTDN100G250	Common. DN100 Flanged Turbine Qmin 20 m³/h Qmax 400 m³/h PN16	300mm
CGTDN100G400	Common. DN100 Flanged Turbine Qmin 32 m³/h Qmax 650 m³/h PN16	300mm
CGTDN150G400	Common. DN150 Flanged Turbine Qmin 32 m³/h Qmax 650 m³/h PN16	450mm
CGTDN150G650	Common. DN150 Flanged Turbine Qmin 50 m³/h Qmax 1000 m³/h PN16	450mm
CGTDN150G1000	Common. DN150 Flanged Turbine Qmin 80 m³/h Qmax 1600 m³/h PN16	450mm
CGTDN200G650	Common. DN200 Flanged Turbine Qmin 50 m³/h Qmax 1000 m³/h PN16	600mm
CGTDN200G1000	Common. DN200 Flanged Turbine Qmin 80 m³/h Qmax 1600 m³/h PN16	600mm
CGTDN200G1600	Common. DN200 Flanged Turbine Qmin 130 m³/h Qmax 2500 m³/h PN16	600mm
CGTDN250G1000	Common. DN250 Flanged Turbine Qmin 80 m³/h Qmax 1600 m³/h PN16	750mm
CGTDN250G1600	Common. DN250 Flanged Turbine Qmin 130 m³/h Qmax 2500 m³/h PN16	750mm
CGTDN250G2500	Common. DN250 Flanged Turbine Qmin 200 m³/h Qmax 4000 m³/h PN16	750mm
CGTDN300G1600	Common. DN300 Flanged Turbine Qmin 130 m³/h Qmax 2500 m³/h PN16	900mm
CGTDN300G2500	Common. DN300 Flanged Turbine Qmin 200 m³/h Qmax 4000 m³/h PN16	900mm
CGTDN300G4000	Common. DN300 Flanged Turbine Qmin 320 m³/h Qmax 6500 m³/h PN16	900mm
CGTDN400G2500	Common. DN400 Flanged Turbine Qmin 200 m³/h Qmax 4000 m³/h PN16	1200mm
CGTDN400G4000	Common. DN400 Flanged Turbine Qmin 320 m³/h Qmax 6500 m³/h PN16	1200mm
CGTDN400G6500	Common. DN400 Flanged Turbine Qmin 500 m³/h Qmax 10000 m³/h PN16	1200mm

GAS METERS - Turbine

ITRON MTA RANGE

Itron Flanged Turbine Gas Meter for Primary and Secondary Metering. Traceability to PTB standards.

MWA Code	Description	Body Length
MTADN50G65	Itron. DN50 Flanged Turbine Gas Meter Qmin 5 m³/h Qmax 100 m³/h PN16	150mm
MTADN80G100	Itron. DN80 Flanged Turbine Gas Meter Qmin 8 m³/h Qmax 160 m³/h PN16	240mm
MTADN80G160	Itron. DN80 Flanged Turbine Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	240mm
MTADN80G250	Itron. DN80 Flanged Turbine Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	240mm
MTADN100G160	Itron. DN100 Flanged Turbine Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	300mm
MTADN100G250	Itron. DN100 Flanged Turbine Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	300mm
MTADN100G400	Itron. DN100 Flanged Turbine Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	300mm
MTADN150G400	Itron. DN150 Flanged Turbine Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	450mm
MTADN150G650	Itron. DN150 Flanged Turbine Gas Meter Qmin 50 m³/h Qmax 1000 m³/h PN16	450mm
MTADN150G1000	Itron. DN150 Flanged Turbine Gas Meter Qmin 50 m³/h Qmax 1000 m³/h PN16	450mm
MTADN200G650	Itron. DN200 Flanged Turbine Gas Meter Qmin 50 m³/h Qmax 1000 m³/h PN16	600mm
MTADN200G1000	Itron. DN200 Flanged Turbine Gas Meter Qmin 80 m³/h Qmax 1600 m³/h PN16	600mm
MTADN200G1600	Itron. DN200 Flanged Turbine Gas Meter Qmin 130 m³/h Qmax 2500 m³/h PN16	600mm
MTADN250G1000	Itron. DN250 Flanged Turbine Gas Meter Qmin 80 m³/h Qmax 1600 m³/h PN16	750mm
MTADN250G1600	Itron. DN250 Flanged Turbine Gas Meter Qmin 130 m³/h Qmax 2500 m³/h PN16	750mm
MTADN250G2500	Itron. DN250 Flanged Turbine Gas Meter Qmin 200 m³/h Qmax 4000 m³/h PN16	750mm
MTADN300G1600	Itron. DN300 Flanged Turbine Gas Meter Qmin 130 m³/h Qmax 2500 m³/h PN16	900mm
MTADN300G2500	Itron. DN300 Flanged Turbine Gas Meter Qmin 200 m³/h Qmax 4000 m³/h PN16	900mm
MTADN300G4000	Itron. DN300 Flanged Turbine Gas Meter Qmin 320 m³/h Qmax 6500 m³/h PN16	900mm
MTADN400G2500	Itron. DN400 Flanged Turbine Gas Meter Qmin 200 m³/h Qmax 4000 m³/h PN16	1200mm
MTADN400G4000	Itron. DN400 Flanged Turbine Gas Meter Qmin 320 m³/h Qmax 6500 m³/h PN16	1200mm
MTADN400G6500	Itron. DN400 Flanged Turbine Gas Meter Qmin 500 m³/h Qmax 10000 m³/h PN16	1200mm
MTADN500G4000	Itron. DN500 Flanged Turbine Gas Meter Qmin 320 m³/h Qmax 6500 m³/h PN16	1500mm
MTADN500G6500	Itron. DN500 Flanged Turbine Gas Meter Qmin 500 m³/h Qmax 10000 m³/h PN16	1500mm

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ELSTER TRZ METER

Elster Flanged Turbine Gas Meter for Primary and Secondary Metering.

Elster - Instromet TRZ2 turbine gas meters are robust meters for use in stationary condiitions. Over years they have proved themselves to be highly accurate and reliable devices for measuring the flow of gaseous substances. With the patented Elster - Intromet measuring cartridge it is possible to save service time by replacement of the cartridge on site.

The measuring cartridge is supported with O-rings, is free of tension and is, therefore, not affected by any influences stemming fromt he housing or the ambient conditions such as temperature fluctuations.

- Turbine gas meters with measuring cartridge
- Aluminium flow straightener DN80 – 150
- **Meter Types:** G 65 – 1000
- **Flow Range:** 5 – 1600m³/h
- **Diameters:** DN50* – 150 (2" – 6")
- **Pressure rates:** PN10 – 100, ANSI 150 – 600
- **Temperature Range:** MID -25°C to +55°C
  PED -25°C to +55°C (steel)
  ATEX -20°C to +60°C
- Manual oil pump (standard for PN25 – 100 and ANSI 300 – 600)
- Compact installation, inlet pipe length L ≥ 2DN
- Length 3DN
- Thermowell built into meter housing (optional)
- Inegrated HF-pulser (optional)
- Absolute-ENCODER S1 (optional)
- EC, MID as well as different national approvals
- **Media:** Natural gas, petroleum gas, town gas, nitrogen, argon, further gases on request

MWA Code	Description	Body Length
TRZDN50G65	Elster. DN50 Flanged Turbine Gas Meter Qmin 5 m³/h Qmax 100 m³/h PN16	150mm
TRZDN80G100	Elster. DN80 Flanged Turbine Gas Meter Qmin 8 m³/h Qmax 160 m³/h PN16	240mm
TRZDN80G160	Elster. DN80 Flanged Turbine Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	240mm
TRZDN80G250	Elster. DN80 Flanged Turbine Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	240mm
TRZDN100G160	Elster. DN100 Flanged Turbine Gas Meter Qmin 13 m³/h Qmax 250 m³/h PN16	300mm
TRZDN100G250	Elster. DN100 Flanged Turbine Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	300mm
TRZDN100G400	Elster. DN100 Flanged Turbine Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	300mm
TRZDN150G250	Elster. DN150 Flanged Turbine Gas Meter Qmin 20 m³/h Qmax 400 m³/h PN16	450mm
TRZDN150G400	Elster. DN150 Flanged Turbine Gas Meter Qmin 32 m³/h Qmax 650 m³/h PN16	450mm
TRZDN150G650	Elster. DN150 Flanged Turbine Gas Meter Qmin 50 m³/h Qmax 1000 m³/h PN16	450mm
TRZDN150G1000	Elster. DN150 Flanged Turbine Gas Meter Qmin 80 m³/h Qmax 1600 m³/h PN16	450mm

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GAS METERS - Turbine

CPT-01 QUANTOMETER

Reliable and inexpensive measuring instruments for secondary flow measurements.

We created the instrument with excellent metrological characteristics and operating performance close to performances of the turbine gas meters designed for custody transfer measurements.

The CPT Quantometers are high quality and easy maintenance with wide range of external devices that can co-operate with the quantometers, e.g. volume correctors, data loggers, data transmission systems. Therefore the CPT Quantometers are well accepted by our domestic and foreign customers.

The basic components of the CPT Quantometer are as follows:

- pressure resistant meter body
- inlet flow conditioner
- measuring cartridge with the turbine wheel
- magnetic coupling as the transferring element between measuring
- cartridge and the index
- index head
- range extended to include 1 inch,1.¼ inch, 1.**½** inch, 2 inch screwed options
- meter for Biogas available
- Atex approved index head
- meter tested to 2004/22/EC MID, Annex-MI-002 Class; 1.5

LOW PRESSURE DROP TURBINE GAS METERS - SCREWED CONNECTION

MWA Code	Description	Wafer Pattern	Body Length
CPT25SG16	Common. 1" BSP. Turbine Gas Meter. Qmin 2.5m³/h. Qmax 25m³/h	PN16	200mm
CPT25SG25	Common. 1" BSP. Turbine Gas Meter. Qmin 4m³/h. Qmax 40m³/h	PN16	200mm
CPT32SG25	Common. 1.¼" BSP. Turbine Gas Meter. Qmin 4m³/h. Qmax 40m³/h	PN16	200mm
CPT40SG40	Common. 1.½" BSP. Turbine Gas Meter. Qmin 6m³/h. Qmax 65m³/h	PN16	160mm
CPT40SG65	Common. 1.½" BSP. Turbine Gas Meter. Qmin 10m³/h. Qmax 100m³/h	PN16	160mm
CPT50SG40	Common. 2" BSP. Turbine Gas Meter. Qmin 6m³/h. Qmax 65m³/h	PN16	160mm
CPT50SG65	Common. 2" BSP. Turbine Gas Meter. Qmin 10m³/h. Qmax 100m³/h	PN16	160mm

RECOMMENDED ACCESSORIES

MWA Code	Descriptions
CPTPLUGLEAD	Common. Turbine Gas Meter Pulse Plug and 2 Metre Lead
CPT-HF/LFPLUGLEAD	Common. Turbine Gas Meter Pulse Plug and 2 Metre Lead. High Frequency
CPT - CGT - OIL - Lubrina 23	Common. Turbine Gas Meter. Oil 500ml
FM25	25mm inline filter 50 micron
FM32	32mm inline filter 50 micron
FM40	40mm inline filter 50 micron
FM50	50mm inline filter 50 micron

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COMMON CPT LOW PRESSURE DROP TURBINE GAS METERS - FLANGE FITING

MWA Code	Description	Wafer Pattern	Body Length
CPT50G40	Common. DN50 Wafer Fit. Qmin 6m³/h. Qmax 65m³/h	PN16	100mm
CPT50G65	Common. DN50 Wafer Fit. Qmin 10m³/h. Qmax 100m³/h	PN16	100mm
CPT65G65	Common. DN65 Wafer Fit. Qmin 10m³/h. Qmax 100m³/h	PN16	120mm
CPT65G100	Common. DN65 Wafer Fit. Qmin 8m³/h. Qmax 160m³/h	PN16	120mm
CPT80G100	Common. DN80 Wafer Fit. Qmin 8m³/h. Qmax 160m³/h	PN16	120mm
CPT80G160	Common. DN80 Wafer Fit. Qmin 13m³/h. Qmax 250m³/h	PN16	120mm
CPT80G250	Common. DN80 Wafer Fit. Qmin 20m³/h. Qmax 400m³/h	PN16	120mm
CPT100G160	Common. DN100 Wafer Fit. Qmin 13m³/h. Qmax 250m³/h	PN16	150mm
CPT100G250	Common. DN100 Wafer Fit. Qmin 20m³/h. Qmax 400m³/h	PN16	150mm
CPT100G400	Common. DN100 Wafer Fit. Qmin 32m³/h. Qmax 650m³/h	PN16	150mm
CPT150G400	Common. DN100 Wafer Fit. Qmin 32m³/h. Qmax 650m³/h	PN16	180mm
CPT150G650	Common. DN150 Wafer Fit. Qmin 50m³/h. Qmax 1000m³/h	PN16	180mm
CPT150G1000	Common. DN150 Wafer Fit. Qmin 80m³/h. Qmax 1600m³/h	PN16	180mm
CPT200G650	Common. DN200 Wafer Fit. Qmin 50m³/h. Qmax 1000m³/h	PN16	200mm
CPT200G1000	Common. DN200 Wafer Fit. Qmin 80m³/h. Qmax 1600m³/h	PN16	200mm
CPT200G1600	Common. DN200 Wafer Fit. Qmin 125m³/h. Qmax 2500m³/h	PN16	200mm

MEASUREMENT OUTPUTS

The operating pressure (reference pressure) can be taken from the pressure tap, marked pr, located on the side of the meter body.

PULSE SENSORS

The mechanical index unit indicates the actual volume of the measured gas at operating temperature and operating pressure. It can be rotated axially by 350° in order to facilitate the readings and enable easier connection of pulse sensor plugs. The index unit is provided with one low frequency LFK reed contact pulse transmitter, as a standard.

ON REQUEST THE INDEX MAY BE EQUIPPED WITH:

LFI inductive pulse sensor (NAMUR) or HF inductive pulse sensor (NAMUR).

The turbine wheel, as a standard, is made of aluminium. This allows to provide each CPT Quantometer with one HF3 inductive pulse sensor. There are no extra costs due to the replacement of the turbine wheel.

GAS METERS - Turbine

MZ METERS

MZ meters are flow meters. The flow of gas turns the turbine wheel, and thus the rotating speed of the turbine is proportional to the linear speed of the gas. The movement is mechanically transmitted to the totaliser through a magnetic coupling. The MZ meter is composed of five main parts;

- A body part containing all the components
- A flow straightener to stabilise and accelerate the flow before the turbine wheel
- A measuring unit including the turbine wheel
- A magnetic coupling to transmit the movement of the turbine wheel to the totaliser
- A totaliser to register the measured gas

Features	Detail
Intrinsic safety approval	L.C.I.E. 06 ATEX 6031 X
Flow rate	From 10 m^3/h to 100m^3/h
Nominal diameters	From DN 2" to 16", 50 to 400mm
Material	Ductile iron, cast steel or welded steel Compliant with the Pressure Equipment Directive 97/23/EC
Maximum working pressure	Up to 100 bar depending on the body material and flanging
Temperature range	Ambient: -30°C to +60°C, Gas:-30°C to +60°C, Storing temperature: -40°C to +70°C
Metrology	The tolerance of acception is +/-1.5% from Qmin to Qmax

ITRON MZ250c TURBINE GAS METER 80mm

- Flow rate: from 16m³/h to 250m³/h
- DN80
- Wafer: ISO PN10

ITRON MZ100c TURBINE GAS METER 50MM MZ meters are suitable for both natural gas and other filtered and non-corrosive gases. They are used to measure low to medium and high flow, at low or medium, or high pressure. Various additional fitting options are available including an oil pump and a PTFE coating version, making them also suitable for heavy duty measurement.

MWA Code	Description	Body Length
MZ50G65	MZ. DN50 Wafer Fit Turbine Gas Meter Qmin 6m³/h Qmax 100m³/h	60mm
MZ80G160	MZ. DN80 Wafer Fit Turbine Gas Meter Qmin 10m³/h Qmax 250m³/h	120mm
MZ80G250	MZ. DN80 Wafer Fit Turbine Gas Meter Qmin 25m³/h Qmax 400m³/h	120mm
MZ100G250	MZ. DN100 Flange Fit Turbine Gas Meter Qmin 16m³/h Qmax 400m³/h	150mm
MZ100G400	MZ. DN100 Flange Fit Turbine Gas Meter Qmin 40m³/h Qmax 650m³/h	150mm
MZ150G650	MZ. DN150 Flange Fit Turbine Gas Meter Qmin 40m³/h Qmax 1000m³/h	200mm
MZ150G1000	MZ. DN150 Flange Fit Turbine Gas Meter Qmin 100m³/h Qmax 1600m³/h	200mm
MZ200G1000	MZ. DN200 Flange Fit Turbine Gas Meter Qmin 65m³/h Qmax 1600m³/h	200mm
MZ200G1600	MZ. DN200 Flange Fit Turbine Gas Meter Qmin 160m³/h Qmax 2500m³/h	200mm

NB. Ordered by special request, the above meter ranger is also available with Mbus, High Frequency and 4-20mA output.

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ELSTER QUANTOMETERS

Elster Quantometers are highly reliable gas meters which meet the highest standards. By using the quantometers in production and heating processes, it is possible to control flow of gas precisely and therefore optimise the use of energy. They work on the principle of the rotating turbine wheel. The rotation of the turbine wheel is proportional to the volume of the flowing gas.

The QA quantometers are fitted with a 7-digit mechanical totaliser which registers the volume in cubic meters. Besides the normal registration of the total volume, the QAe can also display the flow rate, the volume of a key day and the date of the key day.

Meters can be fitted with a high and low frequency pulse output. The Quantometers are available in a number of flow ranges, diameters and pressure ratings. Depending on the version, a low or medium-frequency pulser and an optical readout or an optical readout with additional M-bus output is available. All of the Quantometers are DVGW approved. For special industrial applications, stainless steel versions are also available.

QA65 50mm

QA10 1inch

FEATURES & BENEFITS

- DVGW - approved
- Compact in size
- High reliability & standards
- Optional pulse output facility
- Suitable for various gases

TECHNICAL DATA

- Rangeability: up to 1:20
- Flow ranges: 1.6 -1,600 m³/h (56 - 56,000 ft³/h)
- Diameters: DN 25 - 150
- Pressure rates: PN 4, PN 16, ANSI 150
- Gas temperature QA: -10°C to +60°C (14° to 140°F)
- Ambient temperature QA: -20°C to +70°C (-4° to 158°F)
- Ambient- / gas temperature QAe: 0°C to +50°C (32° to 122°F)

MWA Code	Description	Body Length
QA10/25	QA. DN25 Turbine Gas Meter Qmin 1.6m³/h Qmax 16m³/h	240mm
QA16/25	QA. DN25 Turbine Gas Meter Qmin 2m³/h Qmax 25m³/h	240mm
QA25/25	QA. DN25 Turbine Gas Meter Qmin 2.5m³/h Qmax 40m³/h	240mm
QA40/25	QA. DN25 Turbine Gas Meter Qmin 3.3m³/h Qmax 65m³/h	240mm
QA40/40	QA. DN40 Turbine Gas Meter Qmin 5m³/h Qmax 65m³/h	190mm
QA65/50	QA. DN 50 Turbine Gas Meter Qmin 6m³/h Qmax 100m³/h	60mm
QA100/80	QA. DN 80 Turbine Gas Meter Qmin 10m³/h Qmax 160m³/h	120mm
QA160/80	QA. DN 80 Turbine Gas Meter Qmin 13m³/h Qmax 250m³/h	120mm
QA250/80	QA. DN 80 Turbine Gas Meter Qmin 20m³/h Qmax 400m³/h	120mm
QA250/100	QA. DN 100 Turbine Gas Meter Qmin 20m³/h Qmax 400m³/h	150mm
QA400/100	QA. DN 100 Turbine Gas Meter Qmin 32m³/h Qmax 650m³/h	150mm
QA400/150	QA. DN 150 Turbine Gas Meter Qmin 32m³/h Qmax 650m³/h	180mm
QA650/150	QA. DN 150 Turbine Gas Meter Qmin 50m³/h Qmax 1000m³/h	180mm
QA1000/150	QA. DN 150 Turbine Gas Meter Qmin 80m³/h - 1600m³/h	180mm

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SPECIALIST GAS METERS

SIARGO METER

Siargo - USA Thermal Mass Flow meters utilise the worlds leading MEMS (micro electro mechanical systems) mass flow sensing technology. Siargo offer a wide spectrum of standard products as well as customized products which serve the increasingly demanding requirements of modern gas flow measurement. Products are available for monitoring and controlling a variety of gases in many sectors including energy generation, medical, food and beverage, process machinery, environmental monitoring and many other industries.

MWA Code	Size	Min Flow m3/h	Initial Flow m3/h	Max Flow m3/h
MF32GD10	1¼" (32mm)	0.1	0.05	10
MF32GD16	1¼" (32mm)	0.16	0.05	16
MF32GD25	1¼" (32mm)	0.25	0.05	25
MF50GD40	2" (50mm)	0.4	0.1	40
MF50GD65	2" (50mm)	0.65	0.1	65
MF65GD100	2½" (65mm)	1.0	0.2	100
MF80GD160	3" FL (80mm)	1.6	0.2	160

AST ULTRASONIC LOW PRESSURE DROP METER - LCD DISPLAY

- For air and gas
- Self supporting in pipework
- 50mm meter same output as 3inch diaphragm meter

MWA Code	Description	Body Length
AICHI-25A	Aichi. AS DN25 Ultrasonic Pulsed Gas Meter Qmin 0.7m³/h Qmax 35m³/h	147mm
AICHI-32A	Aichi. AS DN32 Ultrasonic Pulsed Gas Meter Qmin 1.3m³/h Qmax 65m³/h	147mm
AICHI-40A	Aichi. AS DN40 Ultrasonic Pulsed Gas Meter Qmin 1.6m³/h Qmax 80m³/h	200mm
AICHI-50A	Aichi. AS DN50 Ultrasonic Pulsed Gas Meter Qmin 3m³/h Qmax 150m³/h	220mm
AICHI-80A	Aichi. AS DN80 Ultrasonic Pulsed Gas Meter Qmin 6m³/h Qmax 300m³/h	250mm
AICHI-100A	Aichi. AS DN100 Ultrasonic Pulsed Gas Meter Qmin 10m³/h Qmax 500m³/h	250mm
AICHI-150A	Aichi. AS DN150 Ultrasonic Pulsed Gas Meter Qmin 24m³/h Qmax 1200m³/h	300mm
AICHI-200A	Aichi. AS DN200 Ultrasonic Pulsed Gas Meter Qmin 40m³/h Qmax 2000m³/h	350mm

SPECIALIST TURBINE METERS

NIXON TURBINE METERS

The Nixon range of turbine flow meters offers high accuracy and high reliability. Available in a wide variety of body sizes and styles, all NT flow meters possess an electrical pulse output directly proportional to flow rate, based upon the operating principle described in this publication. Remote flow rate indication, alarms, totalising and batch control functions are available utilising our wide range of secondary electronic instruments.

Standard end connections are screwed BSP parallel thread with included 30 degree internal cones to BS5200, but Ermeto threads are also available. Flanged meters are normally to ANSI 150 or BS4504 (DIN) standards, but older type flanges to BS10 tables D-H may also be fitted. A unique feature of the design is the use of helically milled rotors cut from solid in sizes up to 65mm.

Bearing bushes are of PTFE/Carbon HY49 or similar, or tungsten carbide depending upon the nature of the metered fluid. In all cases, the spindle is of tungsten carbide with Cobalt binder, and thrust balls of tungsten carbide. Stainless steel ball races are used in the smaller sizes. The electrical signal is a sinusoidal pulse of minimum height 50mV peak at lowest flow rate, rising to 800mV peak at max flow rate. For normal transmission distances pre-amplifiers are not essential since pulse shaping and conditioning are carried out in the appropriate electronic readout unit.

In cases where heavy electrical noise is present or where transmission distances are over 500 metres, pre-amplifiers of standard or intrinsically safe design are available as head mounted weatherproof units and loop powered.

NT INDUSTRIAL FLOW METERS

- Temperature range -30°C to 150°C (400°C special design)
- Horizontal or vertical mounting
- Upto 500m transmission without pre-amplifiers

MWA Code	Product Name	Fitting	Minlts/min	Maxlts/min
NT3	Nixon turbine flow meter	⅜" Screwed	0.5	5
NT5	Nixon turbine flow meter	½" Screwed	1.2	10
NT7	Nixon turbine flow meter	½" Screwed	2	20
NT11	Nixon turbine flow meter	½" Screwed	5	50
NT13	Nixon turbine flow meter	¾" Screwed	8	80
NT19	Nixon turbine flow meter	1" Screwed	15	150
NT24	Nixon turbine flow meter	1" Screwed	25	250
NT32	Nixon turbine flow meter	1¼" Screwed	45	450
NT38	Nixon turbine flow meter	1½" Screwed	65	650
NT48	Nixon turbine flow meter	2" Screwed	110	1100
NT65	Nixon turbine flow meter	3" Screwed	200	2000
NT80	Nixon turbine flow meter	3" Flanged	300	3000
NT100	Nixon turbine flow meter	4" Flanged	500	5000
NT150	Nixon turbine flow meter	6" Flanged	1000	10000

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GAS REGULATORS

INDUSTRIAL REGULATORS J48

- Inline connections, can be mounted in any position
- Industrial Gas Governors, for natural gas, propane and butane
- Alternative outlet pressure springs available
- Also available with angled connections
- Temperature -20°C to 70°C

MWA Code	Description	Maximum Inlet Pressure	Standard Outlet Pressure
J48-20	Jeavons. ¾" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-25	Jeavons. 1" BSP Inline Gas Regulator 12.5	350 mbar	12.5 to 25 mbar
J48-30	Jeavons. 1.¼" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-40	Jeavons. 1.½" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-50	Jeavons. 2" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-65s	Jeavons. 2.½" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-65	Jeavons. DN65 Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-80s	Jeavons. 3" BSP Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-80	Jeavons. DN80 Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-100	Jeavons. DN100 Inline Gas Regulator	350 mbar	12.5 to 25 mbar
J48-150	Jeavons. DN150 Inline Gas Regulator	350 mbar	12.5 to 25 mbar

INDUSTRIAL GAS REGULATORS J78R

- Inline connections, can be mounted in any position, Compact Gas Governors, for natural gas, propane and butane
- Alternative outlet pressure springs available

MWA Code	Size	Connections	Maximum Inlet Pressure	Standard Outlet Pressure
J78R-15	½"	½" female screwed	350 mbar	15 to 23 mbar
J78R-20	¾"	¾" female screwed	350 mbar	15 to 23 mbar
J78R-25	1"	1" female screwed	350 mbar	20 to 24 mbar

MWA Code	Orifice	Size	Connections	Maximum Inlet Pressure	Standard Outlet Pressure
FE7	5mm	¾"	¾" female screwed	5 bar	37 mbar
FE25	5mm	1"	1" female screwed	5 bar	37 mbar
FE30	5mm	1.½"	1.½" female screwed	5 bar	37 mbar

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INDUSTRIAL GAS REGULATORS J125

- Medium Pressure Service Governor
- Inline connections can be mounted vertical or horizontal
- Industrial Gas Governors for natural gas, propane and butane
- Fitted with OPSO 75 mbar and UPSO 25 mbar and pressure relief
- Alternative outlet pressure springs available
- Temperature - 20°C to 70°C
- Inlet pressures to 8.6 bar available

MWA Code	Orifice	Size	Connections	Maximum Inlet Pressure	Standard Outlet Pressure
J125-S9-20	5mm	¾"	¾" female screwed	8.6 bar	37 mbar
J125-S9-25	5mm	1"	1" female screwed	8.6 bar	37 mbar
J125-S9-40	5mm	1.½"	1.½" female screwed	8.6 bar	37 mbar
J125-S9-50	5mm	2"	2" female screwed	8.6 bar	37 mbar

- Propane low pressure regulators second stage complete with UPSO/OPSO

DOMESTIC GAS REGULATORS 60DJ, 80DJ, 150DJ

- Appliance and Domestic regulators, 90/396/EEC
- Appliance/Pilot Regulator
- Inline connections can be mounted in any position
- Gas regulators for natural gas, propane and butane
- Alternative outlet pressure springs available
- Temperature -20°C to 70°C

MWA Code	Size	Connections	Maximum Inlet Pressure	Standard Outlet Pressure
60DJ6	¼"	¼" BS EN 10226	100 mbar	5 to 17.5 mbar
80DJ13	⅜"	⅜" BS EN 10226 parallel	100 mbar	5 to 17.5 mbar
150DJ23	½"	½" BS EN 10226 taper	100 mbar	5 to 17.5 mbar

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GAS ANCILLARIES

CAST ALUMINIUM INLINE GAS FILTER

- 50 micron filtration of gases for control applications
- Max pressure 2.0 bar

MWA Code	Size	Connections
FILTER GAS/25	1"	1" female screwed
FILTER GAS/30	1.¼"	1.¼" female screwed
FILTER GAS/40	1.½"	1. ½" female screwed
FILTER GAS/50	2"	2" female screwed
FILTER GAS/100	4"	PN16 Flange
FILTER GAS/125	5"	PN16 Flange
FILTER GAS/150	6"	PN16 Flange
FILTER GAS/200	8"	PN16 Flange
FILTER GAS/250	10"	PN16 Flange
FILTER GAS 300	12"	PN16 Flange

PIPELINE GAS FILTERS - TOP HAT CLOSED TYPE

- For installation in gas control system for commissioning only

MWA Code	Size	Connections	Stainless Steel Filter Mesh
THF50	2"	To suit PN16 flanges	250 mesh
THF65	2.½"	To suit PN16 flanges	250 mesh
THF80	3"	To suit PN16 flanges	250 mesh
THF100	4"	To suit PN16 flanges	250 mesh
THF150	6"	To suit PN16 flanges	250 mesh
THF200	8"	To suit PN16 flanges	250 mesh

ALSO AVAILABLE OPEN ENDED SKIRT TYPE

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PIPELINE FLANGE FIXING KITS

- Includes flanges, gaskets, fixing rods, nuts and washers

MWA Code	Size	Connections	Flanges
KIT50s	2"	PN16	Screwed
KIT50	2“	PN16	Slip On weld type
THF65	2.½"	To suit PN16 flanges	Slip On weld type
THF80	3"	To suit PN16 flanges	Slip On weld type
THF100	4"	To suit PN16 flanges	Slip On weld type
THF150	6"	To suit PN16 flanges	Slip On weld type
THF200	8"	To suit PN16 flanges	Slip On weld type

PULSE CONNECTORS

MWA Code	Description
UPULSE	U6 to U160 pulse module - current models
R5	R5 pulse lead 2m for U6 to U160 module - current models
PULSEIND	U65 to U160 4 PIN Fisher plug and lead - prior 2009
DISP	Remote 6 digit single LCD display. Programmable installed in IP67 enclosure
SEMIPULSE	SC6 Pulse module

GAS METER HOSE CONNECTIONS

MWA Code	Description
FLEX25	1" B5746 x ¾" BSPT
FLEX30	1 ¼" B5746 x 1 ¼" BSPT
FLEX50	2" B5746 x 2" BSPT
FLEX65	2 ½" PN10 x 2 ½" PN10

GENERAL GAS ANCILLARIES

MWA Code	Description
CERT	Calibration Certificate(s)
FREQ	High frequency to Analogue Converter
PADPlus1	Pulse to M-Bus conversion unit
EVC1	Electronic Micro Pressure and Temperature Volume Corrector

WATER METERS - Utility Class

ITRON AQUADIS COLD WATER METER

- Aquadis cold water meter 30°C 16 bar MID 2004/22/ EN14154-2005 (Class D)
- Positive displacement volumetric Water Meter
- WRAS approved
- Brass body - Horizontal & Vertical Installation. Accuracy +/- 2%

MWA Code	Description	Body Length
AQU15/Composite	Itron. ½" BSP Volumetric Composite Water Meter. Q3 = 2.5m³/h R=315	134mm
AQU20	Itron. ¾" BSP Volumetric Water Meter Q3 = 4m³/h R=160	190mm
AQU25	Itron. 1" BSP Volumetric Water Meter Q3 = 6.3m³/h	260mm
AQU30	Itron. 1.¼" BSP Volumetric Water Meter Q3 = 6.3m³/h	260mm
AQU40	Itron. 1.½" BSP Volumetric Water Meter Q3 = 16m³/h	300mm
AQU1.5Man/ Composite	Itron. 1.½" BSP Manifold Composite Water Meter Q3 = 2.5m³/h R=315	N/A

For Cyble pulse units, please see table on page 50

MAIN BENEFITS

- Long-lasting high accuracy
- High efficiency
- Robust and compact
- Lighter and ergonomic
- Resistant to dezincification

ITRON FLOSTAR COLD WATER METER

- Flostar Cold Water Meter 50°C 16 bar EEC/ISO Class C
- Single Jet Inline Water Meter
- WRAS approved
- Vertical Installation Class C
- Horizontal installation Class B

MWA Code	Description	Body Length
FLO40	Itron. 1.½" BSP Flostar Water Meter Qnom 10m³/h	300mm
FLO50	Itron. 2" BSP Flostar Water Meter Qnom 15m³/h	300mm
FLO50F	Itron. DN50 Flostar Water Meter Qnom 15m³/h	300mm
FLO65F	Itron. DN65 Flostar Water Meter Qnom 20m³/h	300mm
FLO80F	Itron. DN80 Flostar Water Meter Qnom 30m³/h	350mm
FLO100F	Itron. DN100 Flostar Water Meter Qnom 50m³/h	350mm
FLO150F	Itron. DN150 Flostar Water Meter Qnom 100m³/h	450mm

For Cyble pulse units, please see table on page 50

ELSTER V100 COLD WATER METER

- Water meter 50°C 10 bar Class C (MID R315)
- Inline meters without pulse lead
- Positive displacement volumetric water meter
- Horizontal and vertical installation
- WRAS approved

MWA Code	Description	Body Length
V100/15	Elster. ½" BSP Volumetric Water Meter Qnom 1.5m³/h Qmax 3m³/h	165mm
V100/20	Elster. ¾" BSP Volumetric Water Meter Qnom 2.5m³/h Qmax 5m³/h	190mm
V100/25	Elster. 1" BSP Volumetric Water Meter Qnom 3.5m³/h Qmax 7m³/h	199mm
V100/30	Elster. 1.¼" BSP Volumetric Water Meter Qnom 6m³/h Qmax 12m³/h	199mm
V100/40	Elster. 1.½" BSP Volumetric Water Meter Qnom 10m³/h Qmax 20m³/h	300mm

MWA Code	Description
V100/PROBE	Elster. PSM / V100 T Probe. K=0.5. c/w 5 metre Lead

ELSTER (V200) INLINE METERS

- WRAS approved
- Inline meters without pulse lead
- Positive displacement volumetric Water Meter
- Horizontal and Vertical Installation
- 16 bar max

MWA Code	Description	Qnom m³/hr
V200 - 15	Composite Class D	1.5
V200 - 20	Brass Class C	2.5
V200 - 25	Brass Class C	3.5
V200 - 30	Brass Class C	6

ELSTER (V210) MANIFOLD MOUNTED METERS

- WRAS approved
- Meters without pulse lead
- Positive displacement volumetric Water Meter
- Horizontal and Vertical Installation
- 16 bar max

MWA Code	Description
V210P/1.5/Composite	Elster. 1.½" BSP Manifold Composite Water Meter Q3 = 2.5m³/h
V210P/1.5	Elster. 1.½" BSP Manifold Water Meter Qnom 1.5m³/h Qmax 3m³/h
V210P/2.5	Elster. 1.½" BSP Manifold Water Meter Qnom 2.5m³/h Qmax 5m³/h
V210P/3.5	Elster. 2" BSP Manifold Water Meter Qnom 3.5m³/h Qmax 7m³/h

PULSE MODULES FOR ELSTER V200 & V210 RANGE

MWA Code	Description
PR6 - 1221	Elster. PR6 LU2925M1221 Inductive Pulse Sensor c/w 2m lead
PR6 - 1268	Elster. PR6 LU2925M1268 Inductive Mbus Sensor c/w 2m lead

WATER METERS - Bulk Flow

B-METER WOLTMANN BULK FLOW METER

WDE K40

- Horizontal Woltmann with removable insert
- Sealed counter mechanism with magnetic transmission
- Direct reading on numerical rolls
- Rotating ring 360°
- Use for industry and irrigation
- Prepared for impulse switch (mountable even after installation)
- First quality materials resistant to corrosion

MWA Code	Description
MW65CPF	WDE K40 2-½/65mm Flanged Pulsed Water Meter K100
MW50CPF	WDE K40 2 50mm Flanged Pulsed Cold Water Meter K100

ITRON WOLTEX WATER METER

- Woltex Horizontal Woltmann Meter for water distribution applications Flanged PN16
- Woltman Type Class B, EEC/ISO Cold Water 30°C - Horizontal & Vertical Installation, 16 bar
- WRAS and MID approved

MWA Code	Description	Body Length
WOLTEX50	Itron. DN50 PN16 Water Meter Qnom 15m³/h Qmax 30m³/h	200mm
WOLTEX65	Itron. DN65 PN16 Water Meter Qnom 25m³/h Qmax 50m³/h	200mm
WOLTEX80	Itron. DN80 PN16 Water Meter. Qnom 40m³/h Qmax 80m³/h	200mm
WOLTEX100	Itron. DN100 PN16 Water Meter Qnom 60m³/h Qmax 120m³/h	250mm
WOLTEX125	Itron. DN125 PN16 Water Meter Qnom 100m³/h Qmax 200m³/h	250mm
WOLTEX150	Itron. DN150 PN16 Water Meter Qnom 150m³/h Qmax 300m³/h	300mm
WOLTEX200	Itron. DN200 PN16 Water Meter Qnom 250m³/h Qmax 500m³/h	350mm
WOLTEX250	Itron. DN250 PN16 Water Meter. Qnom 400m³/h Qmax 800m³/h	450mm
WOLTEX300	Itron. DN300 PN16 Water Meter Qnom 600m³/h Qmax 1200m³/h	500mm
WOLTEX400	Itron. DN400 PN16 Water Meter Qnom 1000m³/h Qmax 2000m³/h	600mm
WOLTEX500	Itron. DN500 PN16 Water Meter Qnom 1500m³/h Qmax 3000m³/h	800mm

For Cyble pulse units, please see below:

- Itron Cyble pulse units Low frequency 2 wire, 30v DC max, 100 Ma, battery life up to 12 years, IP68, 5M cable

MWA Code	Description
CYBLE	Itron. Cyble Pulse Sensor 5 Wire. c/w 5 metre Lead
CYBLE1	Itron. Cyble Pulse Sensor K=1. c/w 5 metre Lead
CYBLE1/ATEX	Itron. Cyble Pulse Sensor K=1. c/w 5 metre Lead - ATEX Approved
CYBLE10	Itron. Cyble Pulse Sensor K=10. c/w 5 metre Lead
CYBLE100	Itron. Cyble Pulse Sensor K=100. c/w 5 metre Lead
CYBLE2.5	Itron. Cyble Pulse Sensor K=2.5. c/w 5 metre Lead
CYBLE25	Itron. Cyble Pulse Sensor K=25. c/w 5 metre Lead
CYBLEMBUS-5M	Itron. Cyble Mbus. c/w 5 metre Lead
DRT00001	Digital remote totaliser

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ELSTER H4300 WOLTMANN BULK FLOW METER

- H4300 Flanged PN16
- Woltman Hot Water 130°C - Pulse Output
- Horizontal and Vertical Installation
- 16 bar

MWA Code	Description	Body Length
HELIX50H	Elster. DN50 PN16 Hot Water Meter Qnom 15m³/h. Qmax 30m³/h	200mm
HELIX65H	Elster. DN65 PN16 Hot Water Meter Qnom 25m³/h Qmax 60m³/h	200mm
HELIX80H	Elster. DN80. PN16 Hot Water Meter Qnom 40m³/h Qmax 90m³/h	225mm
HELIX100H	Elster. DN100. PN16 Hot Water Meter Qnom 60m³/h Qmax 140m³/h	250mm
HELIX125H	Elster. DN125 PN16 Hot Water Meter Qnom 100m³/h. Qmax 200m³/h	250mm
HELIX150H	Elster. DN150 PN16 Hot Water Meter Qnom 150m³/h Qmax 300m³/h	300mm
HELIX200H	Elster. DN200 PN16 Hot Water Meter Qnom 250m³/h Qmax 500m³/h	350mm

ELSTER H4000 WOLTMANN BULK FLOW METER

- Bulk Flow Meters H4000 Flanged PN16
- Woltman Type Class B Cold Water 50°C
- Horizontal and Vertical Installation, 16 bar
- WRAS approved

MWA Code	Description	Body Length
HELIX40	Elster. DN40 PN16 Water Meter Qnom 10m³/h Qmax 20m³/h	300mm
HELIX50	Elster. DN50 PN16 Water Meter Qnom 15m³/h Qmax 30m³/h	200mm
HELIX65	Elster. DN65 PN16 Water Meter Qnom 25m³/h Qmax 50m³/h	200mm
HELIX80	Elster. DN80 PN16 Water Meter Qnom 40m³/h Qmax 80m³/h	200mm
HELIX100	Elster. DN100. PN16 Water Meter Qnom 60m³/h Qmax 120m³/h	250mm
HELIX125	Elster. DN125 PN16 Water Meter Qnom 100m³/h Qmax 200m³/h	250mm
HELIX150	Elster. DN150 PN16 Water Meter Qnom 150m³/h Qmax 300m³/h	300mm
HELIX200	Elster. DN200 PN16 Water Meter Qnom 250m³/h Qmax 500m³/h	350mm
HELIX250	Elster. DN250 PN16 Water Meter Qnom 400m³/h Qmax 800m³/h	450mm
HELIX300	Elster. DN300 PN16 Water Meter Qnom 600m³/h Qmax 1200m³/h	500mm

For Elster pulse units, please see below:

MWA Code	Description
PR7 - 1222	Elster. PR7 LU2925M1222 Pulse Sensor K=10. c/w 5 metre Lead
PR7 - 1224	Elster. PR7 LU2925M1224 Pulse Sensor K=1. c/w 5 metre Lead
PR7 - 1263	Elster. PR7 LU2925M1263 Pulse Sensor K=100. c/w 5 metre Lead

WATER METERS - Single Jet

GSD8-45 Single jet dry dial, direct reading with antitampering sealing cup. The 45° position of the reading windows and the rotating dial at 360° allow the consumption reading from different angles, always maintaining the meter in horizontal position, thus assuring also the best accuracy and sensibility. The meter can be wall mounted, installed in multi-utility boxes and in positions difficult to be reached.

Approved according to MID standards R160H - R50V.

GSD8 COLD WATER METER

- Direct read and pulsed
- Single Jet – Cold Water 30˚C max Class B
- Horizontal & Vertical Installation
- 16 bar

GSD8 COLD WATER METER

Single jet, dry dial, direct reading on 8 numerical rolls. Produced in the versions for cold water (30°C) and hot water (90°C) in the diameters 15 and 20 mm (½"-¾"). 360° rotating dial. Risks of corrosion and sedimentation are excluded. Long durability and elevated precision guaranteed.

Approved according to MID standards up to R160H - R50V.

MWA Code	Description	Body Length
GSD8/15	B Meter. ½" BSP Cold Water Meter. Q3 = 2.5m³/h	110mm
GSD8/15P	B Meter. 1/2" BSP Pulsed Cold Water Meter. Q3 = 2.5m³/h	110mm
GSD8/20	B Meter. ¾" BSP Cold Water Meter. Q3 = 4m³/h	130mm
GSD8/20P	B Meter. ¾" BSP Pulsed Cold Water Meter. Q3 = 4m³/h	130mm
GSD8-RFM/15	B Meter. ½" BSP MBus Cold Water Meter. Q3 = 2.5m³/h	110mm
GSD8-RFM/20	B Meter. ¾" BSP Mbus Cold Water Meter. Q3 = 4m³/h	130mm

** Extra signalling module is required for Mbus or Wireless Mbus output of the above meters*

Installation Position

Manufactures comment that all Single Jet Water meters may be installed in the Horizontal or Vertical Positions. However, meters installed in the vertical position will have accuracy Class reduced to R50V.

CE MID 2004/22/CE RANGE 160-H RANGE 50-V

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WATER METERS - Multi Jet

NEW

B.METERS GMDM RANGE

Now MID and WRAS approved. Replaces GMDX Range

Multi jet, dry dial, direct reading. Made in the version for cold water (30°C) in the diameters 15 to 50 mm (½" ÷2"). Risks of corrosion and sedimentation free. Antimagnetic protetion upon request. Long durability and elevated precision guaranteed. Approved according to MID standards up to R160H.

MWA Code	Description	Body Length
GMDM15	B Meter. ½" BSP Cold Water Meter. Q3 = 2.5m³/h.	145mm
GMDM15P	B Meter. ½" BSP Pulsed Cold Water Meter. Q3 = 2.5m³/h.	145mm
GMDM20	B Meter. ¾" BSP Cold Water Meter. Q3 = 4m³/h.	190mm
GMDM20P	B Meter. ¾" BSP Pulsed Cold Water Meter. Q3 = 4m³/h.	190mm
GMDM25	B Meter. 1" BSP Cold Water Meter. Q3 = 6.3m³/h.	260mm
GMDM25P	B Meter. 1" BSP Pulsed Cold Water Meter. Q3 = 6.3m³/h.	260mm
GMDM32	B Meter. 1.¼" BSP Pulsed Cold Water Meter. Q3 = 10m³/h.	260mm
GMDM32P	B Meter. 1.¼" BSP Pulsed Cold Water Meter. Q3 = 10m³/h.	260mm
GMDM40	B Meter. 1.½" BSP Cold Water Meter. Q3 = 16m³/h.	300mm
GMDM40P	B Meter. 1.½" BSP Pulsed Cold Water Meter. Q3 = 16m³/h.	300mm
GMDM50	B Meter. 2" BSP Cold Water Meter. Q3 = 25m³/h.	300mm
GMDM50P	B Meter. 2" BSP Pulsed Cold Water Meter. Q3 = 25m³/h.	300mm

Installation Position

Manufactures comment that all Multi Jet Water meters should only be installed in the Horizontal Position with the Dial Face Upwards

CE MID 2004/22/CE RANGE 160-H RANGE 50-V

WRAS

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WATER METERS - Hot

ITRON AQUADIS HOT WATER METER

- Aquadis Hot Water Meter 90°C 16 bar MID 2004/22/ EN14154-2005 (Class R160)
- Rotary piston volumetric water meter
- Brass body - Horizontal & Vertical Installation. Accuracy +/- 2%

MWA Code	Type Class C (MID R315)	Body Length
AQU15H	Itron. ½" BSP Volumetric Hot Water Meter Q3 = 2.5m³/h R=160	110mm
AQU20H	Itron. ¾" BSP Volumetric Hot Water Meter Q3 = 4m³/h R=160	190mm

For Cyble pulse units, please see table on page 50

B-METER MULTIJET MOD. CMC-R

Multi jet, dry dial, direct reading. Produced in the hot water version (120°C) in the diameters 15 to 50mm (½" - 2"). Equipped with pulse emitter device.

MWA Code	Description	Body Length
MW15HP/120C	B Meter. ½" BSP Hot Water Meter 120°C Pulsed. Qnom 1.5m³/h	165mm
MW20HP/120C	B Meter. ¾" BSP Hot Water Meter 120°C Pulsed. Qnom 2.5m³/h	190mm
MW25HP/120C	B Meter. 1" BSP Hot Water Meter 120°C Pulsed. Qnom 3.5m³/h	260mm
MW30HP/120C	B Meter. 1.¼" BSP Hot Water Meter 120°C Pulsed. Qnom 6m³/h	260mm
MW40HP/120C	B Meter. 1.½" BSP Hot Water Meter 120°C Pulsed. Qnom 10m³/h	300mm
MW50HP/120C	B Meter. 2" BSP Hot Water Meter 120°C Pulsed. Qnom 15m³/h	270mm

NB. The B Meter range above and below are also available for 90°C maximum temperature, omit the /120C from the MWA Code for the 90°C variants.

B-METER WOLTMAN MOD. WDC-R

Horizontal Woltman with removable inster. Sealed counter mechanism with magnetic transmission. Direct reading on numerical rolls. Equipped with pulse emitter device.

MWA Code	Description	Body Length
MW40HPF/120C	B Meter. DN40 Hot Water Meter 130°C Pulsed. Qnom 15m³/h	200mm
MW50HPF/120C	B Meter. DN50 Hot Water Meter 130°C Pulsed. Qnom 15m³/h	200mm
MW65HPF/120C	B Meter. DN65 Hot Water Meter 130°C Pulsed. Qnom 25m³/h	200mm
MW80HPF/120C	B Meter. DN80 Hot Water Meter 130°C Pulsed. Qnom 40m³/h	225mm
MW100HPF/120C	B Meter. DN100 Hot Water Meter 130°C Pulsed. Qnom 60m³/h	250mm
MW125HPF/120C	B Meter. DN125 Hot Water Meter 130°C Pulsed. Qnom 100m³/h	250mm
MW150HPF/120C	B Meter. DN150 Hot Water Meter 130°C Pulsed. Qnom 150m³/h	300mm
MW200HPF/120C	B Meter. DN200 Hot Water Meter 130°C Pulsed. Qnom 250m³/h	350mm
MW250HPF/120C	B Meter. DN250 Hot Water Meter 130°C Pulsed. Qnom 400m³/h	450mm
MW300HPF/120C	B Meter. DN300 Hot Water Meter 130°C Pulsed. Qnom 600m³/h	500mm

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WATER METERS - Ancillaries

MANIFOLD WATER METER CARRIER

- 1.½" BSP x ¾" BSPF Connections
- WRAS Approved
- Fits all British Standard Water Meters
- Fitted with an EN331 quarter turn full bore lever ball and non-return valve
- NB Blanking plug available but not included

MWA CODE	DESCRIPTION
WBBADAPT112-BV	Manifold water meter carrier and valve

MANIFOLD WATER METER CARRIER

- 1.½" BSP x ½" Compression
- WRAS Approved
- Fitted with Non-return Valve and Fixing Legs
- Fits all British Standard Water Meters

MWA CODE	DESCRIPTION
WBBADAPT112	Manifold water meter carrier

WATER METER CONNECTION KIT

- Fits all British Standard ½" and ¾" Water Meters
- 15mm or 22mm Compression Ends
- WRAS Approved
- Fitted with an EN331 quarter turn full bore lever ball and non-return valve
- Includes key operated drain off valve

MWA CODE	DESCRIPTION
4VMK–1–15	15mm Water Meter Connection Kit
4VMK–1–22	22mm Water Meter Connection Kit

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WATER METERS - Kamstrup 21

MULTICAL® 21 / FLOWIQ® 2101

MULTICAL®21/flowIQ® 2101 is available as both hot water meter up to 70°C (T70) and cold water meter. When ordering the meter, please remember country code 7xx for hot water meter and 8xx for cold water meter. Country code refers to last three digits of the product type number. As per 2014 MULTICAL® 21 water meters are supplied with strainer mounted in the meter.

MULTICAL® 21 ULTRASONIC COLD WATER METER WITH WIRELESS M-BUS (868 MHZ) AND C-CELL BATTERY (OIML R49-2006 TYPE TESTED)

MWA Code	Description	Body Length
021-46-C0A-8XX	Kam 21.½" Cold Water Meter Q3 1.6 m³/h PN16	110mm
021-46-C0D-8XX	Kam 21.½" Cold Water Meter Q3 2.5 m³/h PN16	110mm
021-46-C0G-8XX	Kam 21.¾" Cold Water Meter Q3 2.5 m³/h PN16	105mm
021-46-C0H-8XX	Kam 21.¾" Cold Water Meter Q3 2.5 m³/h PN16	130mm
021-46-C0E-8XX	Kam 21.¾" Cold Water Meter Q3 2.5 m3/h PN16	190mm
021-46-C0L-8XX	Kam 21.¾" Cold Water Meter Q3 4.0 m³/h PN16	130mm
021-46-C0N-8XX	Kam 21.¾" Cold Water Meter Q3 4.0 m3/h PN16	190mm

MULTICAL® 21 ULTRASONIC HOT WATER METER WITH WIRELESS M-BUS (868 MHZ) AND C-CELL BATTERY (OIML R49-2006 TYPE TESTED)

MWA Code	Description	Body Length
021-46-C0A-7XX	Kam 21.½" Hot Water Meter Q3 1.6 m³/h PN16	110mm
021-46-C0D-7XX	Kam 21.½" Hot Water Meter Q3 2.5 m³/h PN16	110mm
021-46-C0G-7XX	Kam 21.¾" Hot Water Meter Q3 2.5 m³/h PN16	105mm
021-46-C0H-7XX	Kam 21.¾" Hot Water Meter Q3 2.5 m³/h PN16	130mm
021-46-C0E-7XX	Kam 21.¾" Hot Water Meter Q3 2.5 m3/h PN16	190mm
021-46-C0L-7XX	Kam 21.¾" Hot Water Meter Q3 4.0 m³/h PN16	130mm
021-46-C0N-7XX	Kam 21.¾" Hot Water Meter Q3 4.0 m3/h PN16	190mm

PULSE ADAPTER

MWA Code	Description	Body Length
66-99-021	Pulse adapter, 10 litre/pulse*	110mm

**Can be used for water meter software version H1 and onwards*

EXTENSIONS

MWA Code	Description	Body Length
30-26-522	Extension G¾B	55mm
30-26-523	Extension G1B	60mm
30-26-524	Extension G1B	90mm
30-26-683	Extension G1B	85mm
30-26-692	Extension G¾B	60mm
30-26-697	Extension G1B	70mm

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WATER METERS - Kamstrup 62

MULTICAL® 62

MULTICAL® 21/flowIQ® 2101 is available as both hot water meter up to 90°C (T90) and cold water meter. When ordering the meter, please remember country code 7xx for hot water meter and 8xx for cold water meter. Country code refers to last three digits of the product type number.

MULTICAL® 62 WATER METER WITH INTEGRATED ULTRASONIC FLOW PART ULTRAFLOW® 24 WITH 2.5M SIGNAL CABLE, INCL. POWER SUPPLY AND MOUNTING BRACKET *(OIML R49-2006 TYPE TESTED)*

MWA Code	Description	Body Length
65-2-CDAA-xxx	Kam 62.½" Water Meter Q3 1.6 m³/h PN 16	110mm
65-2-CDA1-xxx	Kam 62.¾" Water Meter Q3 1.6 m³/h PN 16	110mm
65-2-CDAC-xxx	Kam 62.½" Water Meter Q3 1.6 m³/h PN 16*	165mm
65-2-CDAF-xxx	Kam 62.¾" Water Meter Q3 1.6 m³/h PN 16	190mm
65-2-CEAF-xxx	Kam 62.¾" Water Meter Q3 2.5 m³/h PN 16	190mm
65-2-CGAG-xxx	Kam 62.1" Water Meter Q3 4.0 m³/h PN 16	260mm
65-2-CHAG-xxx	Kam 62.1" Water Meter Q3 6.3 m³/h PN 16	260mm
65-2-CJAJ-xxx	Kam 62. 1.½ " Water Meter Q3 10.0 m³/h PN 16	300mm
65-2-CKCE-xxx	Kam 62. DN50 Water Meter Q3 16.0 m³/h PN 25	270mm
65-2-CLCG-xxx	Kam 62. DN65 Water Meter Q3 25.0 m³/h PN 25	300mm
65-2-CMCH-xxx	Kam 62. DN80 Water Meter Q3 40.0 m³/h PN 25	300mm

**Only available as cold water meter*

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WATER LEAK DETECTION SYSTEM

Designed to detect major leaks and help prevent flood damage caused by leaking pipes and fittings or by vandalism. The WLDS-10 panel is connected to a pulse water meter installed at the main intake point of the building and hence monitors the consumption of water. An alarm output is activated when a continuous flow of water passes through the water meter at a flow rate above a preset maximum for a preset period of time.

A normally open free contact is provided for connection to a BMS (Building Management System) or to activate a local beacon/sounder type alarm.

A normally closed free contact is also provided to shut off the water supply via a solenoid shut off valve if required.

The WDLS-20 has a second pulse water meter installed at the site boundary and in addition can detect a loss of water between the site boundary and the main intake point.

FEATURES

- Multi parameters enables efficient monitoring
- Highly versatile, user friendly interface
- Accepts 1,10,100 L/Pulse meters
- Optional beacon / sounder alarm
- Rugged steel enclosure to IP65
- Shut off valve and BMS options

SPECIFICATIONS

- Power requirements: Universal input 100 - 260v AC 50/60Hz 1.5A max
- Pulse Meter Input: 24v DC 5mA maximum for reed switch type pulse meter, programmable for 1,10 or 100 LPP
- PSU Output: 24v DC @ 1.1A for powering alarm or solenoid valves
- Alarm Output: Normally open free relay contact rated at 5A resistive load 250v AC / 30v DC
- Valve Output: Normally open free relay contact rated at 5A resistive load 250v AC / 30v DC
- LCD display: 2 lines x 16 character with LED backlight
- Keypad: with tactile feedback 0-9 numeric keys plus navigation keys for parameter setting and monitoring
- Parameters: Litres input range 1 - 32,767, time input range 10 seconds - 45 hrs, time to alarm range 1 min - 45 hrs
- Real time clock: battery backed (10 year life) Connections: via DIN rail terminals, maximum conductor size
- 2.5mm², cable entry via stuffing glands
- Enclosure: IP65, steel wall mounting overall dimensions 300 x 200 x 150mm (W x H x D) RAL7035 powder coated
- Overall weight: 4.25Kg

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MAG METERS

FLONET FN20XX ELECTROMAGNETIC FLOWMETERS

Suitable for Glycol up to 40% concentration with PTFE lining and stainless steel electrodes. Available with special linings; Hard Rubber, Soft Rubber and PFTE. Suitable for liquids, dirty water and high temperature fluids.

FLOMIC ULTRASONIC FLOW METERS

Designed for clean water. Battery powered units.

FL102X 32mm to 200mm

FL103X 32mm to 300mm

FL3085X 200mm to 1200mm

FL5024.5044 32mm to 200mm
FL5034/5054 32mm to 300mm

ELIS FL5034 AND 5054

ELIS FL303X

ELIS FL5024 AND 5044

ELIS FL3085

ELIS FLFN20XX

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MAG METERS

SITRANS F M MAG 6000 TRANSMITTER

The SITRANS F M MAG 6000 is a microprocessor-based transmitter engineered for high performance, easy installation, commissioning and maintenance. The transmitter is robust and suitable for all-round applications, has a measuring accuracy of ± 0.2% of the flow rate and can be fitted with optional plug-in communication modules.

- Superior signal resolution for optimal turn down ratio
- Built-in advanced batch control
- Comprehensive diagnostic and service menu enhancing trouble shooting and meter verification
- SENSORPROM technology facilitates easy transmitter setup and replacement with automatically re-programming of any new transmitter without loss of data and accuracy
- USM II platform enables fitting of add-on bus modules without loss of functionality and all modules can be fitted as true Plug & Play

MWA Code	Type	Class	Accuracy	Ambient temp.
MAG6000	Transmitter	FM/CSA Class 1, Div 2	0.2 % ±1 mm/s	-20 to 50 °C

SITRANS F M MAG 5000 OPTIONS

MWA Code	Type	Usage
MAG1100	Sensor	Small sizes and wafer design
MAG1100F	Sensor	Food and pharma applications
MAG5100W	Sensor	Water applications
MAG3100	Sensor	Chemical and process applications
MAG3100P	Sensor	Comprehensive product program
FUE950	Calculator	Energy calculator

MAG METERS

SITRANS F M MAG 5100W SENSOR

The SITRANS F M MAG 5100 W with its patented liners of hard rubber NBR or ebonite and EPDM is a sensor for all water applications such as ground water, drinking water, cooling water, waste water, sewage or sludge applications.

- Short lead time
- Rugged NBR hard rubber liner for all water and wastewater applications
- EPDM liner specifically for drinking water applications requiring special approvals
- Ebonite liner for drinking water, water and wastewater applications
- Increased low flow accuracy for water leakage detection (NBR or EPDM liner)
- Suitable for direct burial and constant flooding (IP68)
- Designed to allow patented MAG in-situ verification using the SENSORPROM fingerprint

MWA Code	Type	Class	Accuracy	Ambient temp.
MAG5100W	Sensor	DN15 - DN2000	0.2 % ±2.5 mm/s	-40 to 70 °C

SITRANS F M MAG 3100P SENSOR

The SITRANS F M MAG 3100 P sensor is designed to meet the most common specifications within the chemical and process industries. It has PTFE or PFA liners and Hastelloy electrodes being the ideal combination. The fully welded construction provides a ruggedness that fits almost every flow application.

- Short lead time 5 days + transportation
- Excellent chemical resistance also during high process temperature
- Designed to allow patented MAG in-situ verification using the SENSORPROM fingerprints
- Approved for hazardous areas

MWA Code	Type	Class	Accuracy	Ambient temp.
MAG3100P	Sensor	DN15 - DN300	0.2 % ±1 mm/s	-40 to 100 °C

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MAG METERS

SITRANS F UE380 FLOWMETER

The 2-track SITRANS FUE380 is the custody transfer approved version of SITRANS FUS380. It can be verified and sealed for use in various countries. The approvals (MID, EN 1434 and OIML R75) are valid for energy metering systems. The battery or mains supply powered SITRANS FUE380 has a display that indicates various measurement values and diagnostics. In addition, it features an IrDA optical interface for communication with SIMATIC PDM used for data transfer. Optional add-on RS 232 and RS 485 modules include MODBUS RTU protocol.

- Flexibility to customize your perfect flowmeter solution
- Designed to provide accurate high-resolution energy measurement
- Provides uncompromising performance for high volume, water-based applications
- Approved according to the MID directive and is designed and approved for custody transfer
- Custody transfer sealed to ensure total data security

MWA Code	Type	Class	Accuracy	Ambient temp.
FUE380	Flowmeter	DN50-DN1200	±0.5%	0 to 60 °C

SITRANS F UE950 ENERGY CALCULATOR

The battery or mains powered SITRANS FUE950 is a universal custody transfer approved energy calculator. It is designed for use in hot water, chilled water and cooling/heating applications.

The calculator has a modular construction which means that it can be fitted with optional output modules when it is ordered. These include a pulse output, pulse input, current output and an M-Bus add-on module. If needed, the necessary temperature sensor pair and pockets can be ordered along with the calculator.

- MID directive approval for custody transfer for water energy metering
- Cooling approval (according national German PTB K7.2 standard)
- Suitable for 2 and 4 wire temperature sensor connection
- Delivered with heat-/cooling approved PT500 sensor set (incl. sensor pockets)
- Optical M-Bus data reading in accordance with EN 1434
- Instantaneous values for energy and volume flow
- Flexible input / output option modules
- Long battery lifetime (up to 16 years)
- Option for 2 current outputs (4 ... 20mA, passive)

MWA Code	Type	Range	Accuracy	Ambient temp.
FUE950	Calculator	Qp ≤ 360000 m³/h (600000 GPM) P ≤ 15000000 kW	EN1434 Class 3	0 to 55 °C

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SIEMENS

SITRANS F M MAG 5000 TRANSMITTER

The SITRANS F M MAG 5000 is a microprocessor-based transmitter engineered for high performance, easy installation, commissioning and maintenance. The transmitter is truly robust, cost-effective and suitable for all-round applications and has a measuring accuracy of ± 0.4% of the flow rate (incl. sensor).

- Cost effective transmitter with good performance
- SENSORPROM technology facilitates easy transmitter without loss of data and accurace
- Multiple functional output for process control
- Multi-lingual display and keypad interface
- Comprehensive diagnostic and service menu enhancing trouble shooting and meter verification

MWA Code	Type	Class	Accuracy	Ambient temp.
MAG5000	Transmitter	FM/CSA Class 1, Div 2	0.4 % ±1 mm/s	-20 to 50 °C

SITRANS F M MAG 5000 OPTIONS

MWA Code	Type	Usage
MAG1100	Sensor	Small sizes and wafer design
MAG1100F	Sensor	Food and pharma applications
MAG5100W	Sensor	Water applications
MAG3100	Sensor	Chemical and process applications
MAG3100P	Sensor	Comprehensive product program
FUE950	Calculator	Energy calculator

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OIL METERS & ANCILLARIES

ELSTER KENT OIL METERS - NON PULSED

- All suitable for light and medium grade heating oil and diesel oil. ¾" - 2" for heavy grade oil
- Maximum temperature 60°C to ¼", 180°C to 2", horizontal and vertical pipes
- Accuracy +/- 1%, with inbuilt strainer

MWA Code	Description
FC4	Elster. 1/8" BSP Oil Meter Qmin 1 Lt/h Qmax 80 Lt/h
FC4P8	Elster. 1/8" BSP Pulsed Oil Meter Qmin 1 Lt/h Qmax 80 Lt/h
FC4KIT	Elster. 1/8" BSP Angled Banjo Fixing Kit
FC8	Elster. ¼" BSP Oil Meter Qmin 4 Lt/h Qmax 200 Lt/h
FC8P8	Elster. ¼" BSP Pulsed Oil Meter Qmin 4 Lt/h Qmax 200 Lt/h
FC8KIT	Elster. ¼" BSP Angled Banjo Fixing Kit

ELSTER OIL METERS - PULSED

- All suitable for light and medium grade heating oil and diesel oil. ¾" - 2" for heavy grade oil
- Maximum temperature 60°C to ¼", 130°C to 2", horizontal and vertical pipes
- Accuracy +/- 1%, with inbuilt strainer

MWA Code	Description	Body Length
FB15	Elster. ½" BSP Oil Meter Qmin 10 Lt/h Qmax 600 Lt/h	165mm
FB15P	Elster. ½" BSP Pulsed Oil Meter Qmin 10 Lt/h Qmax 600 Lt/h	165mm
FB20	Elster. ¾" BSP Oil Meter Qmin 30 Lt/h Qmax 1500 Lt/h	165mm
FB20P	Elster. ¾" BSP Pulsed Oil Meter Qmin 30 Lt/h Qmax 1500 Lt/h	165mm
FB25	Elster. 1" BSP Oil Meter Qmin 75 Lt/h Qmax 3000 Lt/h	190mm
FB25P	Elster. 1" BSP Pulsed Oil Meter Qmin 75 Lt/h Qmax 3000 Lt/h	190mm
FB40	Elster. 1.½" BSP Oil Meter Qmin 225 Lt/h Qmax 9000 Lt/h	300mm
FB40P	Elster. 1.½" BSP Pulsed Oil Meter Qmin 225 Lt/h Qmax 9000 Lt/h	300mm
FB50	Elster. DN50 Oil Meter Qmin 750 Lt/h Qmax 30000 Lt/h	350mm
FB50PF	Elster. DN50 Pulsed Oil Meter Qmin 750 Lt/h Qmax 30000 Lt/h	350mm

BRAUN NON PULSED DOMESTIC OIL METER HZ5

- 0.7 - 40 Litres per hour
- 1/8" BSP female connections

MWA Code
Braun HZ5

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CONTOIL® VZO 4 AND VZO8

- Oil meter with internal threaded connections located on the bottom plate
- With mechanical roller counter, volume display in litres
- Meters in US-Gallons 2
- For mounting in horizontal, vertical and inclined positions
- VZOA 4 and 8 with EEC legal verification

NB Optional Reed Pulser 48v

MWA Code	Description
VZ04P	Aqua Metro. 1/8" Pulsed Oil Meter Min Flow 1 Litre/hour Max Flow 80 Litre/hour
VZ08P	Aqua Metro. ¼" Pulsed Oil Meter Min Flow 4 Litre/hour Max Flow 200 Litre/hour
VZ15P	Aqua Metro. ½" Pulsed Oil Meter. Min Flow 15 Litre/hour Max Flow 600 Litre/hour

AQUA METRO 4-20mA OUTPUT OIL METER

- Flow range 10 to.30000 Lt/h (see tables)
- Temperature ranges 130°C and180°C
- Nominal pressure PN16 and 25 bar (PN 40 on request)

MWA Code	Description	Body Length
VZF15RC130/16	Aqua Metro. ½" BSP 4-20 mA Oil Meter Qmin 10 Lt/h Qmax 600 Lt/h	165mm
VZF20RC130/16	Aqua Metro. ¾" BSP 4-20 mA Oil Meter Qmin 30 Lt/h Qmax 1500 Lt/h	165mm
VZF25RC130/16	Aqua Metro. 1" BSP 4-20 mA Oil Meter Qmin 75 Lt/h Qmax 3000 Lt/h	190mm
VZF40RC130/16	Aqua Metro. 1.½" BSP 4-20 mA Oil Meter Qmin 225 Lt/h Qmax 9000 Lt/h	300mm

MWA Code	Description	Body Length
VZF15FL130/25	Aqua Metro. DN15 4-20 mA Oil Meter Qmin 10 Lt/h Qmax 600 Lt/h	165mm
VZF20FL130/25	Aqua Metro. DN20 4-20 mA Oil Meter Qmin 30 Lt/h Qmax 1500 Lt/h	165mm
VZF25FL130/25	Aqua Metro. DN25 4-20 mA Oil Meter Qmin 75 Lt/h Qmax 3000 Lt/h	190mm
VZF40FL130/25	Aqua Metro. DN40 4-20 mA Oil Meter Qmin 225 Lt/h Qmax 9000 Lt/h	300mm
VZF50FL130/25	Aqua Metro. DN50 4-20 mA Oil Meter Qmin 750 Lt/h Qmax 30000 Lt/h	350mm

NB Optional 180°C versions also available for the above range of VZF meters

OIL FILL & LEVEL SYSTEMS

OIL FILL POINT CABINETS AND OIL FILL VALVES

The oil fill cabinet is designed to house all of the standard oil fill equipment used whilst filling the oil tank. The oil fill cabinet can accommodate the oil fill valve assembly, oil contents gauge, overfill alarm, BMS integration and door activated lighting. Oil fill point cabinets are available with or without the inspection window fitted in the door panel. All oil fill cabinets are complete with a locking handle and drip tray as standard.

- Single point oil fill cabinet
- Twin point oil fill cabinet
- Triple point oil fill cabinet
- All oil fill valves are complete with support tube, valve, fill cap and chain

THE SIZES AVAILABLE ARE

- 50mm oil fill valve assembly
- 65mm oil fill valve assembly
- 80mm oil fill valve assembly
- 100mm oil fill valve assembly

OVERFILL ALARMS

The overfill alarm panel when used with the high level float switch will prevent overfilling of the oil tank. This is an essential component when the oil tank is remote from the oil fill point cabinet. This panel is compatible with two oil tanks giving audible and visual alarm for individual oil tanks. Test and mute buttons ensure easy testing of the oil fill alarm system.

High and low level alarms are available upon request.

HYDROSTATIC CONTENTS LEVEL GAUGES

MWA Technology hydrostatic contents level gauges are manufactured from stainless steel and are of the highest quality. Each hydrostatic contents level gauge is manufactured and calibrated to each individual oil storage tank to ensure the system can maintain high accuracy and a long service life. The standard system will comprise of three components, the hydrostatic tank sensor, capillary tube and the hydrostatic contents level gauge. Relays and switches are available to fully integrate with BMS systems.

HYDROSTATIC CONTENTS LEVEL GAUGES AVAILABLE

- 100mm dial hydrostatic oil contents level gauge wall mounting
- 160mm dial hydrostatic oil contents level gauge wall mounting
- 250mm dial hydrostatic oil contents level gauge wall mounting
- 100mm dial hydrostatic oil contents level gauge flush panel mounting
- 160mm dial hydrostatic oil contents level gauge flush panel mounting

HYDROSTATIC TANK LEVEL SENSORS AVAILABLE

- External hydrostatic tank sensor
- Internal hydrostatic tank sensor
- Hygienic hydrostatic tank sensor

TRANSMITTER AND REPEATER GAUGES

- 100mm dial oil level gauge wall mounting
- 160mm dial oil level gauge wall mounting
- 100mm dial oil level gauge flush panel mounting
- 160mm dial oil level gauge flush panel mounting

LEVEL RELAYS

- Single level relay
- Two level relay
- Two level relay with latching relay
- Single level relay with test buttons
- Two level relay with test buttons

Ultrasonic and Capacitance equipment is available upon request, please contact our technical support team.

STEAM METERS

KROHNE VORTEX FLANGED STEAM FLOW METER

- Series Optiswirl Vortex Steam Flowmeter 200°C max
- Pulse output and 4-20 mA Output

MWA Code	Type	Connections	Qnom m^3/hr	Qmax m^3/hr
STEAM15	Optiswirl	½" PN16 stainless steel	11.4	111.7 at 8 bar
STEAM25	Optiswirl	1" PN16 stainless steel	42.6	698.0 at 8 bar
STEAM40	Optiswirl	1.½" PN16 stainless steel	85	1815.0 at 8 bar
STEAM50	Optiswirl	2" PN16 stainless steel	114	2327.0 at 8 bar
STEAM80	Optiswirl	3" PN16 stainless steel	269	4992 at 8 bar
STEAM100	Optiswirl	4" PN16 stainless steel	530	8840 at 8 bar
STEAM150	Optiswirl	6" PN16 stainless steel	1060	20940 at 8 bar
STEAM200	Optiswirl	8" PN16 stainless steel	2260	45090.0 at 8 bar
STEAM250	Optiswirl	10" PN16 stainless steels	2870	65610 at 8 bar

ABB STEAM METER

- For metering liquids, gases and steam
- FV4000 Vortex flowmeter
- FS4000 Swirl flowmeter for very short steadying zones
- Approvals for explosion protection, ATEX, IEC, cFMus
- Zone 1, Zone 2, dust ignition protection
- Magnetic pen operation (Configuration also possible with closed housing)
- Integrated switching output (Used as limit contact or pulse output)
- Compensation of temperature influences by means of temperature measurement integrated as an option

SPIRAX TFA STEAM METER

- No moving parts – gives you greater reliability
- Cost-effective – measures steam flow in smaller line sizes with easy compact installation
- Designed for steam velocities – accurate metering at lower flowrates and improved equipment life
- Improved management information accurate costing with point of use accountability

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GAS SOLENOID VALVES

GAS SOLENOID VALVES AUTO or MANUAL RESET CLASS A EN161

- Class A EN161 DIN3391 to 3394 IP54
- Gas solenoid valves suitable for natural gas, propane and LPG
- 8mm Tapping's for pressure gauge or connection to a gas proving or interlock system with the gas solenoid valve
- Available in 230vAc, 24V AC gas solenoid valves
- Class F coil
- Open / Close <1 second
- Die cast aluminium body with steel mesh filter
- Auto reset gas solenoid valves, manual reset gas solenoid valves available
- the 'Auto reset' meets EN161 but the 'manual reset' doesn't
- Easy fit cpi switch for closed indication

MWA Code	Description	Maximum Pressure
GSSV3/8	Madas. ⅜" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV15	Madas. ½" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV20	Madas. ¾" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV25	Madas. 1" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV30	Madas. 1.¼" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV40	Madas. 1.½" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV50	Madas. 2" BSPF. Automatic Reset Gas Solenoid Valve. 230Volt	200 Mbar
GSSV65F	Madas. DN65. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV80F	Madas. DN80. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV100F	Madas. DN100. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV125F	Madas. DN125. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV150F	Madas. DN150. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV200F	Madas. DN200. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar
GSSV250F	Madas. DN250. Automatic Reset Gas Solenoid Valve. 230Volt	350 Mbar

** Manual reset versions available for the above range. CPI switches also available.*

WATER SOLENOID VALVES

NORMALLY CLOSED DIRECT ACTING SOLENOID VALVES

MWA range of direct acting solenoid valves are suitable for water, air and oil at temperatures of -10°C to +160°C. The direct acting solenoid valve is ideal for smaller pipe sizes where there is no pressure differential across the solenoid valve. This means that the solenoid valve will operate if there is equal pressure on the up stream and down stream of the solenoid valve.

- ⅜" 0 - 8.5 bar pressure rated solenoid valve
- ½" 0 - 8.5 bar pressure rated solenoid valve
- ¾" 0 - 8.5 bar pressure rated solenoid valve
- 1" 0 - 5.0 bar pressure rated solenoid valve
- 1¼" 0 - 7 bar pressure rated solenoid valve
- 1½" 0 - 7 bar pressure rated solenoid valve
- 2" 0 - 7 bar pressure rated solenoid valve

Power supply available for solenoid valves

24v AC 50/60Hz, 110v AC 50/60Hz, 230v AC 50/60Hz, 12v DC and 24v DC solenoid coils

NORMALLY OPEN OR NORMALLY CLOSED SERVO ASSISTED SOLENOID VALVES

MWA range of servo assisted solenoid valves are suitable for water, air and oil at temperatures of -10°C to +120°C. The servo assisted solenoid valve has a far higher pressure rating as it uses the differential pressure across the solenoid valve to help it to open with the solenoid operator. There must be a difference of 0.5 bar from the up stream and down stream pressures across the solenoid valve.

- ⅜" 0.5 - 10 bar pressure rated solenoid valve
- ½" 0.5 - 10 bar pressure rated solenoid valve
- ¾" 0.5 - 10 bar pressure rated solenoid valve
- 1" 0.5 - 10 bar pressure rated solenoid valve
- 1 ¼" 0.5 - 10 bar pressure rated solenoid valve
- 1 ½" 0.5 - 10 bar pressure rated solenoid valve
- 2" 0.5 - 10 bar pressure rated solenoid valve

Normally Closed Servo

Normally Open Servo

Power supply available for solenoid valves

24v AC 50/60Hz, 110v AC 50/60Hz, 230v AC 50/60Hz, 12v DC and 24v DC solenoid coils

FREE FALL FIRE VALVES

MWA Technology free fall fire valves comply to BS799 and are for use on gas or oil line installations. These valves are often referred to as either 'dead weight valves' or 'drop arm valves'. The free fall fire valve can be used as an emergency shut off valve or oil dump line valve and can be used in a numerous amount of different configurations which can be operated by heat, electrically or manually. Full BMS and fire alarm integration can be very easily achieved through various different types of switching methods depending on specification requirements. Valve kits are complete with the valve body, weight, arm, pulleys, fusible link and cable connectors. Valve sizes available ½" to 3" bsp 15mm to 200mm flanged PN16.

RELEASE MECHANISMS AND SWITCHES

- Electro magnetic release mechanism 24v DC
- Electro magnetic release mechanism 110v AC
- Electro magnetic release mechanism 230v AC
- Electro magnetic release mechanism 24v DC with auxiliary switch
- Electro magnetic release mechanism 110v AC with auxiliary switch
- Electro magnetic release mechanism 230v AC with auxiliary switch
- Valve arm tilt switch 1ph and Valve arm tilt switch 3ph
- Manual quick release mechanism
- Electro thermal link
- Emergency panic button twist to reset
- Emergency panic button key to reset

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ACTUATOR VALVES

ROTARY SHOE VALVE - 3 port valve for mixing and diverting

The 3 port rotary shoe valve is used in heating and cooling systems to control and distribute the operating medium. The 3 port rotary shoe valve can be used as a mixing valve or diverting valve.

- The bsp female threaded valve is available DN20/50
- The PN6 flanged valve is available DN20/150

ACTUATORS FOR ROTARY SHOE VALVE

The 5Nm actuator is a compact design for operating rotary mixing valves and diverting valves DN15/50. The motor is reversible with fixed limit switches for an operating range of 90°C and has manual override facility. Available in 230v Ac or 24v Ac.

The 15Nm actuators are for operating rotary mixing valves and diverting valves up to DN150 with high torque ratings. Power supply can be either 230v AC or 24v AC to suit all building management systems.

PLUG AND SEAT VALVES FOR MIXING & DELIVERING

Motorised plug & seat valves for control of heating and cooling systems. Valves and actuators are important products in heating, cooling and air-conditioning systems. They must operate reliably in rapidly changing conditions.

MWA Technology supply high-quality linear actuated valves. Our actuated valves are used in applications for heating systems, cooling and domestic hot water. The plug and seat valve have been developed based on market requirements to maximize on safe and accurate regulation for problem-free operation. The valves have a design which makes them self cleaning, resulting in a long trouble free service life. 2 and 3 port control valves are available in a wide range, which are very cost effective due to low service requirements and a long service life.

Valves are also available with a pressure-balanced plug, allowing them to be regulated with low thrust even with large pressure drops. The design of the valve plug prevents particles in the medium from getting caught. It also offers excellent resistance to erosion and corrosion damage. The plug is guided into the seat to prevent vibrations. The patented design also helps minimise flow noise. The valve's flow characteristic has been modified by an equal percentage, providing good regulating control for the installation. This gives a high level of precision even with small flow rates. The motorised plug and seat valves can be used as a mixing valve or diverting valve.

ACTUATORS FOR PLUG AND SEAT VALVES

MWA Technology actuators for plug and seat valves are all self stroking (no need for limit switch adjustment) for easy on site commissioning. Available in either 230v AC, 24v AC, 24v DC & 24v DC 0-10v.

ELECTRICITY METERS

A100C SINGLE PHASE METER

- Accuracy Class 1 or Class 2
- kWh import or kWh import/export
- 20 years certified life
- Large digit (9.8mm) multilingual display with chevron information indication
- Extensive security data
- High security, compact design (130mm Wide x 97mm High x 47mm Deep)
- MID approved
- Pulse option available

MWA Code	Description	Current Rating
A100C	Elster single phase electricity meter	100amp

A1100 3 PHASE ELECTRICITY METER

- Accuracy Class 1 or Class 2
- kWh import or kWh import/export
- 3 phase, 4 wire or 3 phase, 3 wire
- Large figure display
- IrDA (Infrared Data Association) output for transmitting billing, security and status data
- Double insulated, glass filled polycarbonate case to DIN43857 Part2 & Part4 (except for top fixing centres)
- Case to IP53 to IEC 60529-89

MWA Code	Description	Current Rating
A1100	Elster three phase electricity meter	100amp

COIN OPERATED MWE100 PREPAID METER

- Credit is added by £1 & £2 coins
- The default message on the display indicates the remaining credit
- LED flashes when a load is connected at 1000 pulses per kWH of used energy
- Additional credit is updated and continues to display the new total
- The landlord can set the rate and/or credit as required
- The tenant can find out the rate being charged and the remaining credit

MWA Code	Description	Current Rating
MWE100	Coin operated prepaid meter	100amp

ACE3000 TYPE 100/110

- Residential Three-Phase Electronic Meter with active energy measurement
- Single and double tariff drum register
- Import and export measurement
- Compatible with current connection standard
- Anti-tampering registration mode
- Long-term performance
- MID approved

MWA Code	Description	Current Rating
ACE3000	Itron three phase electricity meter	100amp

EQ ELECTRIC A SERIES METERS

The A series EQ meters for single phase and three phase metering. The A series meters are mounted on a DIN rail and are suitable for installation in distribution boards and small enclosures such as consumer units.

With the main terminals in accordance with DIN 73857 and accessible from the below the meters, the A series is suitable for many applications.

- Single and three phase
- Pulse output
- Built in M-Bus
- Wide temperature range
- Direct connected upto 80A
- Low power consumption

MWA Code	Type	Class	Max	Pulse Frequencey
A41	Single phase	B	80A	1000 imp/kWh
A42	Single phase	B	6A	5000 imp/kWh
A43	Three phase	A	80A	1000 imp/kWh
A44	Three phase	B	6A	5000 imp/kWh

TOKEN OPERATED METER

- Credit is added by token
- The default message on the display indicates the remaining credit
- LED flashes when a load is connected at 1000 pulses per kWH of used energy
- Additional credit is updated and continues to display the new total
- The landlord can set the rate and/or credit as required
- The tenant can find out the rate being charged and the remaining credit

MWA Code	Description	Current Rating
PPELECTOKEN	Token operated prepaid meter	100amp

ELECTRICITY METERS

EQ ELECTRIC B SERIES METER

The B series EQ meters for single phase and three phase metering. The B series meters are mounted on a DIN rail and are suitable for installation in distribution boards and small enclosures such as consumer units.

The B series are suitable in applications where there is a need for reliable energy measurements and where space is limited.

- Single and three phase
- Pulse output
- Built in M-Bus
- Wide temperature range
- Direct connected upto 65A
- Low power consumption

MWA Code	Type	Class	Max	Pulse Frequencey
B21	Single phase	B	65A	1000 imp/kWh
B23	Single phase	B	65A	1000 imp/kWh
B24	Three phase	B	6A	5000 imp/kWh

EQ ELECTRIC C SERIES METER

The EQ meters, C series are truly compact meters for single phase and three phase metering. The C series is mounted on a DIN rail and is suitable for installation in distribution boards and small consumer units.

- Single and three phase
- Pulse output
- Compact
- Wide temperature range
- Direct connected upto 40A
- Low power consumption

MWA Code	Type	Class	Max	Pulse Frequencey
C11	Single phase	B	40A	1000 imp/kWh
C13	Three phase	B	40A	1000 imp/kWh

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ND CUBE 300 METER

Cube 300, a DIN 96x96 mounting electronic kWh meter. Easy to install and convenient to use. Equally suitable for both 3 wire and 4 wire 3φ unbalanced loads (optionally for single phase or balanced 3φ systems), these meters have been designed to measure accurately irrespective of the type of load – ideal for a motor or heater, or for a modern electronically controlled load.

- Large clear display
- Isolated pulse output
- Accuracy better than class 1
- 5 year manufacturers warranty

ND CUBE 350 METER

Standard feature on the Cube 350 is 2 pulse outputs, which can be configured for kWh, kvarh or kVAh. To aid with installation and commissioning the meter offers a pulse test function to simulate pulses without any load being measured, allowing installation engineers to check cabling is complete.

Standard communications are RS485 Modbus, however the Cube 350 is available with a range of powerful IP communications options MODBUS TCP and other TCP/IP protocols such as HTTP, FTP, TFTP, SNMP. The various TCP/IP protocols make this the ideal meter to interface directly with energy management software and building control solutions, without the need for data loggers or concentrators.

The web pages on the IP enabled Cube 350-IP allows the user to view important instantaneous values and access the setup pages should the need arise to change any of the parameters.

- Phase indicators
- 2 pulse outputs as standard
- Individual harmonics to the 15th
- Serial or TCP/IP communication
- 5 year manufacturers warranty

ND CUBE 400 METER

Standard feature on the Cube 400 is 2 pulse outputs, which can be configured for kWh, kvarh or kVAh. To aid with installation and commissioning the meter offers a pulse test function to simulate pulses without any load being measured, allowing installation engineers to check cabling is complete.

Our useful auto-rotation feature, enables the meter to detect and correct any current transformers that may have been installed the wrong way around.

Cube 400 uses standard RS485 ModbusRTU communication, however the Cube 400 is available with a range of powerful IP communications options MODBUS TCP and other TCP/IP protocols such as HTTP, FTP, TFTP, SNMP. The various TCP/IP protocols make this the ideal meter to interface directly with energy management software and building control solutions, without the need for data loggers or concentrators.

The IP enabled Cube 400 (Cube400IP) also has data logging functionality and an additional 3 Pulse inputs plus 2 pulse/alarm outputs. These allow collection of additional utility data such as incoming electricity meters, water, air, gas and steam.

Simple setup and instantaneous values are also available remotely through the Cube 400IP's web pages.

- Single and three phase
- Pulse output
- Built in M-Bus
- Wide temperature range
- Direct connected upto 65A
- Low power consumption

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ND MULTICUBE

The Multicube Modular Meter is a metering system designed for applications where multiple meters need to be installed. It provides a high density system with simplified wiring and advanced features. It's modular design allows for future expansion if required and it's autorotation feature allows the meter to correct for any current transformers which may have been installed the wrong way around.

If you are looking for a multiple metering solution which is space efficient, time efficient to install and setup, and future-proofs any installation for expansion then the Multicube is the solution.

One display and one communication port accesses and configures all Meter Modules. Meter System & Meter Channels can store Real-World Names e.g. Outside Lighting. Multicube's flexible design permits configuration and expansion from 1 to 10 meter modules. Single Modbus request to 'master' will return energies from ALL slaves, allowing extremely fast response times – ideal for real-time monitoring. DIN rail mount.

- Modular design
- DIN-rail mount
- 5 year manufacturers warranty
- Modbus, TCP/IP, M-Bus

ND RAILS 350

Standard feature on the Rail 350 is 2 pulse outputs, which can be configured for kWh and kvarh. To aid with installation and commissioning the meter offers a pulse test function to simulate pulses without any load being measured, allowing installation engineers to check cabling is complete.

Standard communications are RS485 Modbus, however the Rail 350 is available with a range of powerful IP communications options MODBUS TCP and other TCP/IP protocols such as HTTP, FTP, TFTP, SNMP. The various TCP/IP protocols make this the ideal meter to interface directly with energy management software and building control solutions, without the need for data loggers or concentrators. The web pages on the IP enabled Rail 350 allows the user to view important instantaneous values and access the setup pages should the need arise to change any of the parameters.

- Modular design
- Individual harmonics to the 15th
- 5 year manufacturers warranty
- 2 pulse outputs as standard

DRY RISER CABINET SPECIFICATIONS

Cabinet & Door 16swg Zintec Steel
Colour As Standard Red Ral 3002
Architrave 30mm Wide All Round
Glass 6mm Georgian Wired, PRV Lettering
Lock Yale Slam Lock Keyed Alike
Hinge Stainless Steel Piano Hinge
Conforms To BS 5041 Part 5

DRY RISER

An inlet breeching at ground level provides the connection to the water supply of the dry riser system. The dry riser system is normally dry and is charged by the fire brigade in an emergency. Breeching inlets to the dry riser have either 2 or 4 inlet connections complete with 2.5" male instantaneous inlets to BS336 fitted with non-return valves and with a 1" drain valve.

- 100mm (4") dry rising main uses a 2- way inlet breeching in a vertical or horizontal position
- 150mm (6") dry rising main uses a 4-Way inlet breeching
- Dry riser equipment complies with the requirements of BS 5041 Part 3
- The Breechings are normally housed in dry riser inlet cabinets, normally recessed into the external wall of the building and the outlet valves are housed in dry riser outlet cabinets on every floor of the building.
- Dry riser landing valves are available with bsp or PN16 connections

FOAM INLET CABINETS AND ADAPTORS

Cabinet and Door 16swg Zintec Steel
Colour As Standard Red Ral 3002
Architrave 30mm Wide All Round
Glass 6mm Georgian Wired, PRV Lettering
Lock Yale Slam Lock Keyed Alike
Hinge Stainless Steel Piano Hinge
Conforms To BS 5041 Part 5

OPTIONS

Full cabinet manufactured from 16swg zintec steel polyester powder coated to your colour specifications. Available in full stainless steel all front faces satin polished finish.

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FOAM INLET ADAPTORS

Foam Inlet adaptor (Instantaneous)

- Inlet 2½" Inst. Male BS336 - Outlet 2½ " BSP Female
- Inlet 2½" Inst. Male BS336 - Outlet 3 " BSP Female

Foam Inlet adaptor (Instantaneous)

- Inlet 2½" Inst. Male BS336
- Outlet flanged to your specifications

Taper foam Inlet

- Inlet Taper Bore to accept Branchpipe - Outlet 2½" BSP Female
- Inlet Taper Bore to accept Branchpipe - Outlet 3" BSP Female

Foam spreader

- Straight type Inlet 2½" BSP Female
- Straight type Inlet 3" BSP Female

Foam spreader

- Elbow type Inlet 2½" BSP Female
- Elbow type Inlet 3" BSP Female

HOSES

Fire hoses manufactured to fully meet with JCDDI/I and British Standards BS6391:1983 type 3.

They are available with either a screwed thread or instantaneous couplings.

BRANCH PIPES AND NOZZLES

Available with screw thread or instantaneous inlets, including:

- Straight stream branch pipes with screw on or integral nozzles
- Diffuser branch pipes with jet/spray/shut-off functions

STANDPIPES

Standpipes are used to connect delivery hose to underground hydrant valves, they are available with single or double head 2.5" instantaneous female outlets, the standpipes have an integral 2.5" female BS750 round thread inlet.

OPTIONS

- Anti-syphon configuration with integral check valves
- Contractors version with bib tap outlets
- Anti-freezing standpipes for fixed installations
- Keys and bars for hydrant valve operation are available

HOSE REELS

- Hose reels conform to BS EN 671-1 1995 and are available in a wide range
- Automatic or manual in 19mm and 25mm hose
- Surface mount fixed
- Surface mount swinging
- Recessed swinging

BUILDING CONTROL & SYSTEMS

SYSTEMS

Technical advances are moving faster and faster and every market has its own specific needs. To us, future proofing and openness toward integration with standardised protocols are guiding principles. Today, you'll be able to find MWA Technology's products in all kinds of properties, all around the UK.

SCADA SYSTEM SOFTWARE

PROGRAMMING TOOLS

DRIVERS

COMPLETE WEB HOSTING SERVICE

PROCESSOR HOUSING AND FREELY PROGRAMMABLE CONTROLLERS

FREELY PROGRAMMABLE ROOM CONTROLLER

I/O MODULES

DISPLAYS

CLOUDIGO

SYSTEM ACCESSORIES

BUILDING CONTROL & SYSTEMS

HVAC

Many of us who work at MWA Technology have experience in fieldwork. We know that field products need to be of the highest quality, that they need to be easy and quick to install, and that they should come with easy-to-understand instructions. With MWA Technology's comprehensive HVAC range you'll always have what you need to succeed.

PRE-PROGRAMMED CONTROLLERS

ROOM CONTROLLERS

ELECTRIC HEATING CONTROLLERS

THERMOSTATS

SENSORS & SWITCHES

DETECTORS

ENERGY METERS

VALVE ACTUATORS

VALVES

DAMPER ACTUATORS

ACCESSORIES

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GAS SYSTEMS - Flamefast

THE FLAMEFAST GASGUARD MANUAL KITCHEN INTERLOCK

The GasGuard Manual Kitchen Interlock is designed to meet the requirements IGEM/UP/19 and BS6173:2009 (where all appliances are fitted with Flame Failure Devices), with numerous additional safety features added based on our 35 years of experience in the industry.

This cost effective non-proving system combines unrivalled functionality with the same user friendly interface as all Flamefast systems. With individual alarm indications for external devices and a dedicated engineers button, diagnosis of any site issues can be done quickly and hassle free.

KEY FEATURES

- No commissioning required
- 24v DC auxiliary power output
- Interfaces for Gas Sensors & CO2 Monitors, Ventilation Interlocks, Building Management Systems (BMS), Remote Emergency Sto Buttons and Fire Alarm Systems
- Built in time delays to avoid nuisance tripping
- Engineers Mode for easy fault diagnosis
- 5 Year Warranty

THE FLAMEFAST GASGUARD GAS PROVING SYSTEM

The GasGuard I gas proving system is designed to meet the requirements of IGEM/UP/11 Edition 2, IGEM/UP/19 and BS6173:2009 with numerous additional safety features added based on our 35 years of experience in the industry.

Due to the ease of installation, user friendly interfaces and clear visual indications, the GasGuard I is widely considered to be the most cost effective system on the market, with quality product build and safety in mind. With individual alarm indications for external devices and a dedicated engineers button, diagnosis of any site issues can be done quickly and hassle free.

KEY FEATURES

- No commissioning required
- 24v DC auxiliary power output
- Interfaces for Gas Sensors & CO2 Monitors, Ventilation Interlocks, Building Management Systems (BMS), Remote Emergency Stop Buttons and Fire Alarm Systems
- Built in time delays to avoid nuisance tripping
- Engineers Mode for easy fault diagnosis
- 5 Year Warranty

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GAS SYSTEMS - Intelligas

INTELLIGAS 100 SERIES GAS INTERLOCK

The Intelligas 100 series is the simplest, most economical system that we offer. It meets the requirements of BS 6173, and it's easy to install, even if you're not technically qualified.

It's carefully designed and clearly labeled, and if you're having problems our 24-hour helpline is moments away.

KEY FEATURES

- Available as a stand alone panel or supplied complete with air pressure switches
- Comprehensive fan, fire & emergency stop status indication
- Audible signal for failure & system ready
- Wipe clean fascia
- On board emergency stop button
- All connections on front panel, leaving the complete enclosure for cable entry
- Clearly-marked terminals for easy installation
- Fire alarm interlock
- Additional emergency stop buttons can be connected directly to the PCB
- 2 Year Warranty

INTELLIGAS EGIP-1 AUTOMATIC GAS PROVING SYSTEM

The Intelligas EGIP-1 automatic gas proving system is easy to install, with a straight forward LED display & low voltage wiring to the sensors and emergency stop buttons. This means installation is about 30% quicker than alternative systems, saving on labour. All this, plus it's backed with our 2-year guarantee. It's a safe choice.

KEY FEATURES

- System automatically purges and proves the gas line for integrity, and gas is only made available when full prove is carried out
- Simple to install single valve and pressure switch arrangement (pressure switch screws directly into gas valve piezo port)
- System only uses a main gas solenoid valve (not included) so no need for an unsightly proving valve and bulky arrangement
- Early warning of failed air pressure switch when installed as per instructions
- Low voltage: sensor outputs and interlocks are all 24v, electrically isolated supply, safer wiring and safer for service personnel
- The system has the power to supply upto 2, 0-10v sensor heads (CO2, Methane, LPG, O2 etc) and has the ability to interpret these signals into a relay switched output facilitating the emergency control of services via noxious gas detectors
- 2 Year Warranty

GAS SYSTEMS - S&S Northern

Merlin CT1250

The Merlin CT1250 ventilation interlock system, with built in current monitoring, is designed specifically for use in commercial kitchens to meet BS6173. This panel is to be used when the kitchen appliances do have flame failure devices, therefore Gas proving is not a requirement.

KEY FEATURES

- The Merlin CT1250 acts as an interlock between the ventilation system and the gas solenoid valve
- The system has built in current monitors in order to interlock with up to 2 fans and offers an alternative to using air pressure differential switches
- 3 Year Warranty

Merlin 1000S

The Merlin 1000S gas pressure proving system is designed specifically for use in School and University Laboratories. This panel is to be used to carry out a gas proving test on the pipe work in order to highlight if there is a gas appliance open or a gas leak in the laboratory. The Merlin 1000S is designed to give the teacher full control over the incoming gas supply with the lockable key-switch operation.

KEY FEATURES

- The Merlin 1000S can work in conjunction with carbon dioxide, natural gas, carbon monoxide and LPG sensors
- The Merlin 1000S also has a built in "timeout" facility which will automatically shut off the gas solenoid valve at the end of a specific time period, this time period can be adjusted to 2, 5, 8 hours or can be overridden if required
- 3 Year Warranty

GAS SYSTEM - Ancillaries

GAS DETECTORS

- Do not expose to extreme ambient or oily/dirty conditions
- 24VAC supply, green power led
- Red led and sounder alarm
- Volt free alarm relay rating 1A-Factory set threshold
- Analogue output 0 to 10VDC or 4-20mA
- Dimensions 86 x 120 x 53, 180gm
- Standard housing IP41

MWA Code	Gas Type	Range	Relay Set Point
EGS-NG	Nat Gas (methane)	0 to 5,000ppm	2500ppm
EGS-LPG	LP Gas	0 to 2,000ppm	1000ppm
EGS-CO	Carbon monoxide	0 to 100ppm	30ppm
EGS-R134	Refrig R134	0 to 1000ppm	500ppm
EGS-H	Hydrogen	0 to 2,000ppm	1000ppm
EGS-CO2/IR	Carbon dioxide	0 to 10,000ppm	5000ppm
ECS-OZ	Ozone	0-1ppm	0.2ppm
EGS-O	Oxygen	0 to 25%	19%
EGS-H2S	Hydrogen sulphide	0 to 30ppm	5ppm
EGS-SD	Sulphur dioxide	0 to 10ppm	2ppm
EGS-ND	Nitrogen dioxide	0 to 10ppm	3ppm
EGS-CL	Chlorine	0 to 10ppm	0.5ppm

MWA Code	Description
EMSTOP	Emergency Stop Panic Button c/w Key Reset
STOP	Emergency Stop Panic Button

MWA Code	Description
AX-ADPS-80	Air Differential Pressure Switch
AX-ADPS-DFK	Air Differential Pressure Switch Duct Kit

GAS DETECTION

P60 STAND ALONE GAS DETECTOR

A high sensitivity sensor for the detection of gas concentration. The stand alone gas detector is available in two models. P60 for use on natural gas detection and the P60 used for LPG and cylinder liquid gas.

- Pre-alarm LED signal when below the L.E.L
- Internal audible alarm
- Automatic gas solenoid valve shut off
- Continual sensor diagnostic tests
- Fault indication
- Mute override for 10 minutes
- Insulated shock resistant enclosure
- Complies with UNI CEI 70028 standards
- IMQ homologation
- 230v 50Hz

3 ZONE GAS DETECTION

The P30 gas detection electronic control centre is used for the detection of gas within industrial environments. Natural gas, town gas, LPG and cylinder gas can be detected using the various sensors available. This unit will provide gas detection for three separate zones.

- Visual LED indication for three separate zones
- Internal audible alarm
- Adjustable alarm time delay
- IP40 protection
- Wall or panel front mounting
- Insulated enclosure
- Two SPDT relays for use of closing the gas solenoid valve and BMS alarms
- Alarm delay setting - up to 60 seconds
- Complies with CEI EN 60730-1 standards
- 230v 50Hz or 12vDc

4 ZONE GAS DETECTION

The P82 gas detection electronic control centre is used for the detection of gas within industrial environments. Natural gas, town gas, LPG and cylinder gas can be detected using the various sensors available.

- Visual LED indication for four separate zones
- Internal audible alarm
- Adjustable alarm time delay
- Din Mounting
- Insulated enclosure
- Two SPDT relays for use of closing the gas solenoid valve and BMS alarms
- Alarm delay setting - up to 60 seconds
- Complies with CEI EN 60730-1 standards
- 230v 50Hz

DETECTION HEADS

These gas sensor heads are to be used with either P30 or P82 gas detection units. There are two types available, the S81 for natural gas and light gas, the S82 for LPG heavy gases. The sensor for alarm is set below the L.E.L level (Lower Explosion Limit) however there is internal regulation for the sensitivity if required.

- Green LED for power on indication
- Red LED for gas presence indication
- Amber LED for fault indication
- Anti-shock casing material
- IP54

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NOTES

PLEASE NOTE

All information is correct at time of going to press. Colours may vary from products shown due to the constraints of the printing process.

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TERMS & CONDITIONS

1. Introduction

1.1 In these Terms a reference to:

- "Contract" means the contract between MWA and You for the supply of Goods in accordance with these Terms;
- "Goods" means the goods supplied by MWA to You, as set out in the Order;
- "MWA" means MWA Technology Limited;
- "Order" means the method by which You communicate Your order for the Goods You require from MWA from time to time;
- "You" or "Your" means the person or firm who purchases Goods from MWA.

1.2 These Terms apply to the Contract to the exclusion of any other terms that You seek to impose or incorporate, or which are implied by trade, custom, practice or course of dealing.

1.3 No variation, and no additional terms and conditions to this Order, will be valid unless accepted in writing and signed by MWA.

2. The Contract

2.1 The Order constitutes an offer by You to purchase Goods from MWA in accordance with these Terms. You are responsible for ensuring that the Order and any specification are complete and accurate.

2.2 The Order shall only be deemed to be accepted when MWA issues a written acceptance of the Order or proceeds to arrange supply of the Goods ("Order Acceptance"), whichever is earlier, at which point the Contract shall come into existence, as set out in any Order Acceptance form sent by MWA in relation to Your Order and these Terms ("Contract Documents").

2.3 Should it become necessary to amend any detail of the Order following the issue of the Order Acceptance, the variation will only become part of the Contract when agreed in writing by MWA.

3. Warranty and Guarantee

3.1 MWA warrants that the Goods will be free from any defects in material or workmanship for a period of one year after the date of delivery to You.

3.2 Where MWA is not the manufacturer of the Goods, MWA will use reasonable endeavours to transfer to You the benefit of any warranty or guarantee given by the manufacturer.

4. Performance, Specification and Design

4.1 MWA will provide the Goods to You in accordance in all material respects with any specification You have supplied and that has been referenced in the Order Acceptance.

4.2 Where You have supplied a specification to MWA, You shall indemnify MWA against all liabilities, costs, expenses, damages and losses (including any direct, indirect or consequential losses, loss of profit, loss of reputation and all interest, penalties and legal and other reasonable professional costs and expenses) suffered or incurred by MWA in connection with any claim made against MWA for actual or alleged infringement of a third party's intellectual property rights arising out of or in connection with MWA's use of the specification. This Clause 4.2 shall survive termination of the Contract.

4.3 Where the Goods are manufactured in accordance with information or drawings supplied by You or to Your design or specification or where standard Goods are altered in accordance with Your instructions, no guarantee or warranty is given by MWA as to the practicability, efficiency, safety or otherwise of the Goods (this being without prejudice to any of the other Terms).

4.4 Where no specification has been supplied by You:

4.4.1 MWA will provide the Goods based on the information You have supplied and use all reasonable endeavours to ensure the Goods meet the purpose for which they are required.

4.4.2 MWA will not be liable if the Goods do not meet the particular level of performance that they are required for.

4.5 Where MWA provides advice on specification, You remain responsible for ensuring that the specification is adequate for the purposes You require.

4.6 No variation in the specification or design of any Goods, which in the reasonable opinion of MWA does not affect the suitability of the Goods for the purpose for which they are supplied, will constitute a breach of Contract or impose upon MWA any liability whatsoever.

4.7 Unless otherwise agreed, all patterns, drawings, tools or other similar items produced or other property (whether intellectual property or not) owned or created by MWA will remain the property of MWA and must not be used or copied by You.

5. Delivery

5.1 MWA may deliver the Goods by instalments, which shall be invoiced and paid for separately. Each instalment shall constitute a separate Contract. Any delay in delivery or defect in an instalment shall not entitle You to cancel any other instalment.

5.2 MWA will use all reasonable endeavours to meet any delivery dates specified by You, but any such dates are estimates only and time shall not be of the essence for the delivery of the Goods unless specifically agreed in writing by MWA.

5.3 If You fail to accept delivery of the Goods within three working days of MWA notifying You that the Goods are ready, then, except where such failure or delay is caused by an event outside of Your or MWA's reasonable control or MWA's failure to comply with its obligations under the Contract: (a) delivery of the Goods shall be deemed to have been completed at 9am on the third working day after the day on which MWA notified You that the Goods were ready; and (b) MWA shall store the Goods until delivery takes place, and charge You for all related costs and expenses (including insurance).

5.4 If, 10 working days after the day on which MWA notified You that the Goods were ready for delivery, You have not accepted delivery of them, MWA may resell or otherwise dispose of part or all of the Goods.

5.5 MWA will not be liable for any failure or delay in performance of any obligations under the Contract due to anything beyond its reasonable control, such as adverse weather, industrial dispute or failure of a utility service. Where such events occur, MWA will use reasonable endeavours to provide the Goods. However, where the circumstances prevent the delivery of all or part of the Goods for more than 90 days, MWA reserves the right to terminate the Contract.

6. Your Obligations

You will:

6.1 Ensure the details of the Order and any information provided regarding a specification are complete and accurate.

6.2 Ensure that any specification requested by You or proposed by MWA is sufficient to ensure that the end product of the Goods is fit for the purpose required by You.

6.3 Provide MWA with such information as it may reasonably require in order to supply the Goods.

6.4 Notify MWA within 14 days of delivery where a defect is discovered in the Goods upon delivery.

7. Payment

7.1 You will pay MWA the price for the Goods stated in the Order Acceptance plus VAT within 30 days from the date of the invoice. Where the Order Acceptance sets out payment terms inconsistent with this Clause 7.1, the Order Acceptance terms will apply.

7.2 Where payment is not received by the due date for payment, MWA has the right to charge interest at a rate of 4 percent per annum above National Westminster Bank Plc's base lending rate from time to time.

7.3 MWA may, by giving notice to You at any time before delivery, increase the price of the Goods to reflect any increase in the cost of the Goods that is due to: (a) any factor beyond MWA's control (including foreign exchange fluctuations, increases in taxes and duties, and increases in labour, materials and other manufacturing costs); (b) any request by You to change the delivery date(s), quantities or types of Goods ordered; or (c) any delay caused by any instructions by You or failure by You to give MWA adequate or accurate information or instructions.

7.4 Time for payment is of the essence of the Contract.

7.5 You shall not be entitled to claim set off or to counterclaim against MWA in relation to the whole or part of the invoiced amount.

8. Title and Risk

8.1 The risk in the Goods shall pass to You on completion of delivery.

8.2 Title to the Goods shall not pass to You until MWA has received payment in full (in cash or cleared funds) for the Goods.

8.3 Until title to the Goods has passed to You, You shall: (a) hold the Goods on a fiduciary basis as MWA's bailee; (b) store the Goods separately from all other Goods and any other stock held by You so that they remain readily identifiable as MWA's property; (c) not remove, deface or obscure any identifying mark or packaging on or relating to the Goods; (d) maintain the Goods in satisfactory condition and keep them insured against all risks for their full price from the date of delivery; and (e) notify MWA immediately if You become subject to any of the events listed in Clause 8.5; but You may resell or use the Goods in the ordinary course of Your business.

8.4 If, before title to the Goods passes to You, You become subject to any of the events listed in Clause 8.5, or MWA reasonably believes that any such event is about to happen and notifies You accordingly, then, provided that the Goods have not been resold, or irrevocably incorporated into another product, and without limiting any other right or remedy MWA may have, MWA may at any time require You to deliver up the Goods and, if You fail to do so promptly, enter Your premises or those of any third party where the Goods are stored in order to recover them.

8.5 For the purposes of Clause 8, a relevant event means You becoming bankrupt, going into liquidation (either voluntary or compulsory unless as part of a bona fide scheme of reconstruction or amalgamation), being dissolved, entering into a voluntary arrangement or having a receiver, an administrative receiver or an administrator appointed in respect of the whole or any part of Your assets.

9. Liability

YOUR PARTICULAR ATTENTION IS DRAWN TO THIS CLAUSE

9.1 Except as set out in these Terms, all warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

9.2 Nothing in these Terms excludes or limits MWA's liability for death or personal injury caused by negligence, or for fraud or fraudulent misrepresentation.

9.3 MWA will not be liable to You, whether in Contract, tort (including negligence), breach of statutory duty, or otherwise for any loss of profit, or any indirect or consequential loss arising under or in connection with the Contract.

9.4 MWA shall have no liability for defective Goods unless the relevant Goods are returned to MWA for inspection within 28 days of the discovery of any defect. MWA shall use all reasonable endeavours to rectify defects in the Goods, provided that the defective Goods are made available to MWA in the same condition as they were supplied i.e. are not damaged or altered.

9.5 This Clause 9 shall survive termination of the Contract.

10. Termination

10.1 Without limiting its other rights or remedies, each party has the right to terminate the Contract by giving 3 months' written notice.

10.2 Either party may terminate this Contract with immediate effect by giving written notice to the other party if that other party have committed a material breach of the Contract which has not been remedied satisfactorily within 7 days of written notice.

11. General

11.1 This Contract does not confer rights on any person under the Contracts (Rights of Third Parties) Act 1999.

11.2 If MWA's performance of its obligations under the Contract is delayed or prevented as a result of an act or omission by You, MWA will not be liable for any costs or losses sustained by You and You will reimburse MWA for any costs or losses it sustains as a result of the delay.

11.3 The Contract constitutes the entire agreement between You and MWA. You acknowledge You have not relied on any statement, promise or representation given on behalf of MWA which is not set out in the Contract Documents.

11.4 Where Goods are to be exported outside of the United Kingdom, payment will be in pounds sterling. You will be responsible for arranging any necessary export paperwork (including any export licence). Uniform Laws on International Sales shall not apply to the Contract.

11.5 Any waiver of any right under the Contract is only effective if it is in writing and it applies only to the party to whom it is addressed and to the circumstances for which it is given. No failure or delay in exercising any right or remedy under the Contract or by law constitutes a waiver of such right or remedy, nor shall it prevent or restrict any future exercise or enforcement of such right or remedy.

11.6 This Contract shall be governed by English law and the parties shall submit to the exclusive jurisdiction of the English courts.

11.7 Illegality or unenforceability of any part of the Contract shall not affect the enforceability or legality of the remainder of the Contract.

12. Notices

12.1 All notices or other communications in connection with the Contract must be in writing and shall be validly served if:

- delivered to the other party personally; or
- sent by prepaid first-class post or recorded delivery to its registered office (if a company) or principal address.

13. Returns

13.1 Goods are to be returned at buyer's expense, if the goods are found to be defective MWA Technology Ltd will refund the costs. Non defective Goods will be subject to a restocking charge

INDEPENDENT METERING SPECIALISTS

"Customer satisfaction is the key to our success. Our staff has unparalleled technical product knowledge. This enables us to help you service your customers' metering needs with confidence."

Martin Wardell, Managing Director

MWA Technology Ltd
(incorporating Empire Controls)

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Lic No. EMS/R44/0011

Issue 6 January 2016