mwa TECHNOLOGY

The UK's largest independent metering & controls specialists

2017

mwatechnology.com

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

Introduction

With over 20 years industry experience, we pride ourselves on being able to provide you with detailed technical support, and assist you with your choice of the right product for the right metering application.

MWA Technology has spent years searching the metering world and developing a comprehensive meter range for the Commercial, Industrial and Domestic markets. We have developed strong relationships with local distributors, as they are able to rely on us to provide, not only them, but also their customers with the very best technical metering knowledge. We take great pride in ensuring the product we recommend will be fit for your applications specification.

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:

- We ensure that our customers receive the best metering and controls 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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At MWA Technology, we have £1m worth of metering and building control products in stock, and ready for next day delivery. Whatever you need, order it by 4pm to guarantee next day delivery.

Our Recent Projects

The Blavatnik School of Government

This RIBA National Award winning building for the University of Oxford's business school sought out MWA's expertise for metering and building controls which we adivsed and supplied on budget and in time.

The Blavatnik building was also shortlisted for the Stirling Prize for excellence in architecture.

Grand Central, Birmingham New Street Railway Station

Working alongside the main contractor, transforming New Street Railway Station, Birmingham's biggest infrastructure project. MWA Technology delivered metering products, on site support and technical advice.

Resorts World

The 'home of outlet shopping in the West Midlands' required MWA Technology's assistance for metering advice and supply to ensure the energy management for this entertainment complex was the best it could possibly be.

For more project reviews...

visit our case studies webpage mwatechnology.com/case-studies/

We offer a full 360° service

TECHNICAL 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.

ON SITE SUPPORT

A technical support person is available to work in partnership with you for on site 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.

REPAIR & REFURBISHMENT

Our meter repair and refurbishment service provides peace of mind for all owners, purchasers and suppliers.

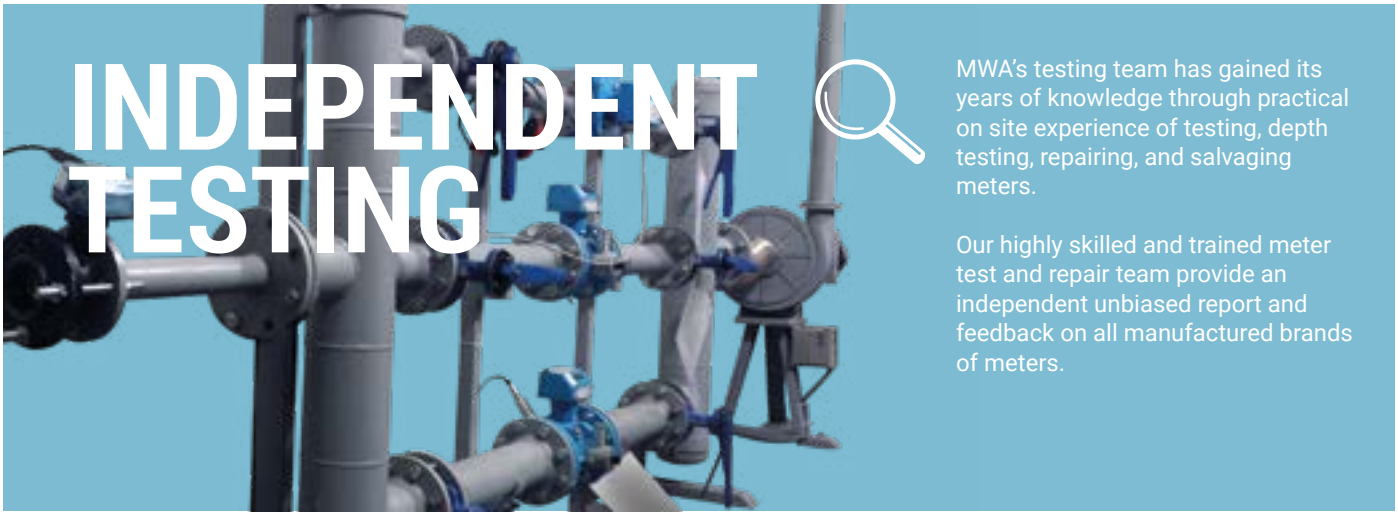
Equipment is tested, repaired, recalibrated or refurbished with the same effort and precision that goes into the manufacture at the outset.

We use cutting-edge technologies to ensure that equipment operates to within the exacting standards set by regulatory bodies, utility companies and our own stringent guidelines and expectations.

TRAINING SERVICES

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, and commissioning of a portfolio of meters, plus instruction for on-going checks.



INDEPENDENT TESTING

MWA's testing team has gained its years of knowledge through practical on site experience of testing, depth testing, repairing, and salvaging meters.

Our highly skilled and trained meter test and repair team provide an independent unbiased report and feedback on all manufactured brands of meters.

AUTOMATIC METER READING

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.

KEY

WRAS	WRAS approved
MID	Measurement Instrument Directive
VERT	Vertical fitting
HORI	Horizontal fitting
VOL	Volumetric meter
SJET	Single Jet
MJET	Multi Jet
WOLT	Woltmann
ULTRA	Ultrasonic
PULSED	Pulsed monitoring
Q MAX	Maximum continuous flow rate
Qn	Normal running rate for an indefinite period
M-Bus	M-Bus Wired connections
M-Bus	M-Bus Wireless connections
RADIO	Radio frequency

WATER METERS

As a specialist water meter supplier, of domestic and commercial water meters, you can trust MWA to take care of all your water metering needs.

MWA Technology are a leading supplier of WRAS and MID approved Cold or Hot Water Meters; including Kamstrup, Itron, Elster and B-Meter brands.

We have a range of both single and multi jet meters in stock and ready for next-day delivery. Single jets are an economical option with a direct impact to the impeller from the water flow. Multi jet water meters rotate the impeller at several points of impact, this gives a far longer life-span, and improves accuracy as flow is spread more evenly across the impeller.

Water meter classification

Traditionally, meters are rated by Class A to Class D, and for billing capabilities, meters must be at least Class C.

With MID, measurement instrument directive, meters are rated by “Q3 : Q1 Ratio”, where Q3 is continuous flow rating of the meter, and the Ratio represents the ratio of the minimum accurate flow to Q3 flow rate.

The higher the Ratio the greater the range of accuracy of the meter:

- Class B < R100
- Class C > R160
- Class D > R500

Itron elster kamstrup BMETERS ELIS

Itron Meters

ITRON AQUADIS COLD WATER METER

AQU15/COMPOSITE – AQU40

VOL VERT HORI M-Bus M-Bus MID WRAS

See page 08 for further details

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

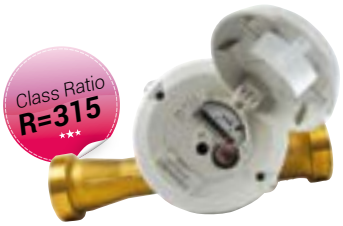
ITRON FLOSTAR COLD WATER METER

FLO40 – FLO150F

SJET VERT HORI M-Bus MID WRAS

CLASS C

See page 08 for further details



MWA Code	Description	Body Length
FLO40	1.½" BSP Flostar Water Meter Qnom 10m³/h	300mm
FLO50	2" BSP Flostar Water Meter Qnom 15m³/h	300mm
FLO50F	DN50 PN16 Flostar Water Meter Qnom 15m³/h	300mm
FLO65F	DN65 PN16 Flostar Water Meter Qnom 20m³/h	300mm
FLO80F	DN80 PN16 Flostar Water Meter Qnom 30m³/h	350mm
FLO100F	DN100 PN16 Flostar Water Meter Qnom 50m³/h	350mm
FLO150F	DN150 PN16 Flostar Water Meter Qnom 100m³/h	450mm

Elster Meters

ELSTER V100 COLD WATER METER

V100/15 – V100/40

VOL VERT HORI MID WRAS

CLASS C

See page 08 for further details

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

ADDITIONS

MWA Code	Description
V100/PROBE	V100 T Probe, c/w 5 metre lead

ELSTER V200 VOLUMETRIC COLD WATER METER

V200/15 – V200/40

VOL VERT HORI M-Bus MID WRAS

See page 08 for further details

MWA Code	Description
V200/15	½" BSPT Unions, R400, composite body Water Meter, Q3 max 2.5m³/hr, min flow 6.25l/hr
V200/20	¾" BSPT Unions, R315, Brass body Water Meter, Q3 max 4.0m³/hr, min flow 12.7l/hr
V200/25	1" BSPT Unions, R160, Brass body Water Meter, Q3 max 6.3m³/hr, min flow 39.375l/hr
V200/30	1¼" BSPT Unions, R160, Brass body Water Meter, Q3 max 10.0m³/hr, min flow 62.5l/hr
V200/40	1½" BSPT Unions, R160, Brass body Water Meter, Q3 max 10.0m³/hr, min flow 62.5l/hr

ADDITIONS

MWA Code	Description
Pulse	Pulse unit c/w 2 metre Lead

Elster Meters

ELSTER V210 MANIFOLD MOUNTED WATER METER

V210P/1.5/COMPOSITE – V210P/3.5

VOL VERT HORI M-Bus MID WRAS

See page 08 for further details

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

ADDITIONS

MWA Code	Description
PR6 - 1221	PR6 LU2925M1221 Inductive Pulse Sensor c/w 2m lead
PR6M - 1268	PR6M LU2925M1268 Inductive Mbus Sensor c/w 2m lead

ELSTER H4300 WOLTMANN BULK HOT WATER METER

HELIX50H – HELIX200H

WOLT VERT HORI M-Bus PULSED

See page 08 for further details

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

V200 & V210

The V200 and V210 volumetric cold water meters from Elster are ideal for utility, commercial and domestic applications, specifically designed to maximise revenue collection and both are available in a range of sizes covering a wide range of flow rates.

Elster Meters

ELSTER H4000 WOLTMANN BULK COLD WATER METER

HELIX40 – HELIX300

WOLT VERT HORI M-Bus MID WRAS

See page 08 for further details

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

ADDITIONS

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

ELSTER H5000 WOLTMANN BULK COLD WATER METER

H5000/50 – H5000/150

WOLT VERT HORI M-Bus MID WRAS

See page 08 for further details

MWA Code	Description
H5000/50	1 pulse = 1 litres, 2” flanged PN16 connections, Min flow 0.08m³/hr, R1600 flow range, Q3 Max 63m³/hr
H5000/65	1 pulse = 1 litres, 2½” flanged PN16 connections, Min flow 0.08m³/hr, R1600 flow range, Q3 Max 63m³/hr
H5000/80	1 pulse = 10 litres, 3” flanged PN16 connections, Min flow 0.2m³/hr, R2000 flow range, Q3 Max 160m³/hr
H5000/100	1 pulse = 10 litres, 4” flanged PN16 connections, Min flow 0.2m³/hr, R2000 flow range, Q3 Max 160m³/hr
H5000/150	1 pulse = 10 litres, 6” flanged PN16 connections, Min flow 0.2m³/hr, R2000 flow range, Q3 Max 160m³/hr

Itron Meters

ITRON WOLTEX BULK COLD WATER METER

WOLTEX50 – WOLTEX500

WOLT VERT HORI M-Bus MID WRAS

See page 08 for further details

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

ADDITIONS

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

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

B-Meters

B-METER WDEK40 WOLTMANN COLD WATER METER

WDEK40/50 – WDEK40/200

WOLT HORI MID WRAS

See page 08 for further details

MWA Code	Description
WDEK40/50	2" Flanged PN16 Pulsed Water Meter, Min flow 0.4m³/hr, Qmax 40m³/hr
WDEK40/65	2½" Flanged PN16 Pulsed Water Meter, Min flow 0.63m³/hr, Qmax 63m³/hr
WDEK40/80	3" Flanged PN16 Pulsed Water Meter, Min flow 1.0m³/hr, Qmax 100m³/hr
WDEK40/100	4" Flanged PN16 Pulsed Water Meter, Min flow 1.6m³/hr, Qmax 160m³/hr
WDEK40/125	5" Flanged PN16 Pulsed Water Meter, Min flow 1.6m³/hr, Qmax 160m³/hr
WDEK40/150	6" Flanged PN16 Pulsed Water Meter, Min flow 2.5m³/hr, Qmax 250m³/hr
WDEK40/200	8" Flanged PN16 Pulsed Water Meter, Min flow 4m³/hr, Qmax 400m³/hr

B-METER GSD8 COLD WATER METER

GSD8/15 – GSD8-RFM/20

SJET VERT HORI M-Bus MID WRAS

See page 08 for further details

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

B-METER MULTI-JET MOD CMC-R HOT WATER METER

MW25HP/120C – MW40HP/120C

MJET HORI MID WRAS

See page 08 for further details

MWA Code	Description	Body Length
MW25HP/120C	1" BSP Hot Water Meter 120°C Pulsed. Qnom 3.5m³/h	260mm
MW30HP/120C	1.¼" BSP Hot Water Meter 120°C Pulsed. Qnom 6m³/h	260mm
MW40HP/120C	1.½" BSP Hot Water Meter 120°C Pulsed. Qnom 10m³/h	300mm

B-Meters

B-METER GMDM COLD WATER METER

GMDM15 – GMDM50P

MJET HORI MID WRAS

See page 08 for further details

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

B-METER WOLTMANN MOD. WDC-R HOT WATER METER

MW40HPF/120C – MW300HPF/120C

SJET VERT MID WRAS

CLASS B

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

Itron Meters

ITRON AQUADIS HOT WATER METER

AQU15H – AQU20H

VOL VERT HORI MID WRAS

See page 08 for further details

MWA Code	Description	Body Length
AQU15H	½" BSP Volumetric Hot Water Meter Q3 = 2.5m³/h	110mm
AQU20H	¾" BSP Volumetric Hot Water Meter Q3 = 4m³/h	190mm

ADDITIONS

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

Ancillaries

WARIX™ IN-LINE METER KIT

4VMK-1-15

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
4VMK-1-15	The kit consists of a stop tap, rotating drain off cock, meter tail and washers, supplied with either 15mm compression connection ends.

WARIX™ BUTTERFLY IN-LINE METER KIT

CONN15KIT – CONNECTOR22

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
AVMK-1-15COMP	The kit consists of a butterfly valve, drain off cock, meter tail and washers. The Warix™ Butterfly In-Line Meter incorporates a rotating a drain off cock, quarter turn lever ball valve, tail and washers. The main body is 70mm in length and 15mm connection.
AVMK-1-22COMP	The kit consists of a butterfly valve, drain off cock, meter tail and washers. The Warix™ Butterfly In-Line Meter incorporates a rotating a drain off cock, quarter turn lever ball valve, tail and washers. The main body is 70mm in length and 22mm connection.

WARIX™ CONCENTRIC CARRIER

CONN15KIT – CONNECTOR22

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
WBBADAPT112-BV	¾” F+F Lever Ball Valve with Non-return valve and Fixing Legs. The Warix™ Concentric carrier is a ¾” x ¾” carrier that incorporates an EN331 quarter turn full bore lever ball and non-return valve. This is primarily used in new build multi-dwellings.

Ancillaries

WARIX™ CONCENTRIC ADAPTOR

CARRIER15 / 40 – CARRIER20 / 40

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
carrier15 / 40	15mm with non-return valve and fixing legs. The Warix™ concentric Meter Adaptor is supplied complete with non-return valve and fixing legs. For use with screw in meters.
carrier20 / 40	¾" Fx F with non-return valve and fixing legs. The Warix™ concentric Meter Adaptor is supplied complete with non-return valve and fixing legs. For use with screw in meters.

CONCENTRIC METER CAPS

PP112

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
carrierplug	1.½" Concentric Meter Caps. 1.½" White plastic plug and O-ring

MELCO MULTI MANIFOLD

NMASSY-4 – NMASSY

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
NMASSY-4	For multiple meter installation above or below ground. ¾" 4 Port.
NMASSY	For multiple meter installation above or below ground. ¾" 6 Port.

Ancillaries

THREADED METER TAIL KIT BSP

MTK12 – MTK112

VERT HORI WRAS

See page 08 for further details

MWA Code	Description
conn15	½" Threaded meter tail kit BSP
conn20	¾" Threaded meter tail kit BSP
conn25	1" Threaded meter tail kit BSP
conn30	1¼" Threaded meter tail kit BSP
conn40	1½" Threaded meter tail kit BSP
conn50	2" Threaded meter tail kit BSP

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 21 ULTRASONIC COLD WATER METER

021-46-C0A-8XX – 021-46-C0N-8XX

ULTRA HORI M-Bus MID WRAS

See page 08 for further details

MWA Code	Description	Body Length
021-46-C0A-8XX	½" Cold Water Meter Q3 1.6 m³/h PN16	110mm
021-46-C0D-8XX	½" Cold Water Meter Q3 2.5 m³/h PN16	110mm
021-46-C0G-8XX	¾" Cold Water Meter Q3 2.5 m³/h PN16	105mm
021-46-C0H-8XX	¾" Cold Water Meter Q3 2.5 m³/h PN16	130mm
021-46-C0E-8XX	¾" Cold Water Meter Q3 2.5 m³/h PN16	190mm
021-46-C0L-8XX	¾" Cold Water Meter Q3 4.0 m³/h PN16	130mm
021-46-C0N-8XX	¾" Cold Water Meter Q3 4.0 m³/h PN16	190mm

KAMSTRUP MULTICAL® 21 ULTRASONIC HOT WATER METER

021-46-C0A-7XX – 021-46-C0N-7XX

ULTRA HORI M-Bus MID WRAS

See page 08 for further details

MWA Code	Description	Body Length
021-46-C0A-7XX	½" Hot Water Meter Q3 1.6 m³/h PN16	110mm
021-46-C0D-7XX	½" Hot Water Meter Q3 2.5 m³/h PN16	110mm
021-46-C0G-7XX	¾" Hot Water Meter Q3 2.5 m³/h PN16	105mm
021-46-C0H-7XX	¾" Hot Water Meter Q3 2.5 m³/h PN16	130mm
021-46-C0E-7XX	¾" Hot Water Meter Q3 2.5 m3/h PN16	190mm
021-46-C0L-7XX	¾" Hot Water Meter Q3 4.0 m³/h PN16	130mm
021-46-C0N-7XX	¾" Hot Water Meter Q3 4.0 m³/h PN16	190mm

ADDITIONS

MWA Code	Description	Body Length
66-99-021	Pulse adapter, 10 litre/pulse. Can be used for water meter software H1 and onwards	n/a
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

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 62 ULTRASONIC WATER METER

65-2-CDAA-XXX – 65-2-CMCH-XXX

ULTRA HORI M-Bus MID WRAS

See page 08 for further details

MWA Code	Description	Body Length
65-2-CDAA-XXX	½" Water Meter Q3 1.6 m³/h PN 16	110mm
65-2-CDA1-XXX	¾" Water Meter Q3 1.6 m³/h PN 16	110mm
65-2-CDAC-XXX	½" Water Meter Q3 1.6 m³/h PN 16*	165mm
65-2-CDAF-XXX	¾" Water Meter Q3 1.6 m³/h PN 16	190mm
65-2-CEAF-XXX	¾" Water Meter Q3 2.5 m³/h PN 16	190mm
65-2-CGAG-XXX	1" Water Meter Q3 4.0 m³/h PN 16	260mm
65-2-CHAG-XXX	1" Water Meter Q3 6.3 m³/h PN 16	260mm
65-2-CJAJ-XXX	1.½" Water Meter Q3 10.0 m³/h PN 16	300mm
65-2-CKCE-XXX	DN50 Water Meter Q3 16.0 m³/h PN 25	270mm
65-2-CLCG-XXX	DN65 Water Meter Q3 25.0 m³/h PN 25	300mm
65-2-CMCH-XXX	DN80 Water Meter Q3 40.0 m³/h PN 25	300mm

*Only available as cold water meter

ADDITIONS

MWA Code	Description	Body Length
XXX	MBus c/w 2 Pulse Inputs	n/a
XXX	ModBus c/w 2 Pulse Inputs	55mm
XXX	Pulse Card	60mm
XXX	Wireless MBus	90mm
XXX	XXX	85mm
XXX	XXX	60mm
XXX	XXX	70mm

90°C

The MULTICAL® 21/FlowIQ® 2101 is available as both a hot water meter, up to 90ºC, and as a cold water meter.

Please remember when ordering the meter, the specific codes for each: 7XX for hot water and 8XX for cold water.

ELIS METERS

ELIS ULTRASONIC FLOMIC FL102X ULTRASONIC WATER METER

FL102X32 – FL102X125

ULTRA WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FL102X32	DN32, PN16, Min 0.12 m^3/hr, Max 12 m^3/hr.
FL102X40	DN40, PN16, Min 0.20 m^3/hr, Max 20 m^3/hr
FL102X50	DN50, PN16, Min 0.45 m^3/hr, Max 30 m^3/hr
FL102X65	DN65, PN16, Min 0.75 m^3/hr, Max 50 m^3/hr
FL102X80	DN80, PN16, Min 1.20 m^3/hr, Max 80 m^3/hr
FL102X100	DN100, PN16, Min 1.80 m^3/hr, Max 120 m^3/hr
FL102X125	DN125, PN16, Min 3.00 m^3/hr, Max 200 m^3/hr
FL102X150	DN150, PN16, Min 4.50 m^3/hr, Max 300 m^3/hr
FL102X200	DN200, PN16, Min 7.50 m^3/hr, Max 360 m^3/hr

ELIS ULTRASONIC FLOMIC FL103X ULTRASONIC WATER METER

FL103X32 – FL103X300

ULTRA WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FL103X32	DN32, Pulse 10 Kl l/imp, Min 0.20 m^3/hr, Max 20 m^3/hr.
FL103X40	DN40 Pulse 25 Kl l/imp, Min 0.313 m^3/hr, Max 31.25 m^3/hr
FL103X50	DN50 Pulse 25 Kl l/imp, Min 0.50 m^3/hr, Max 50 m^3/hr
FL103X65	DN65 Pulse 50 Kl l/imp, Min 0.788 m^3/hr, Max 78.75 m^3/hr
FL103X80	DN80 Pulse 100 Kl l/imp, Min 1.25 m^3/hr, Max 125 m^3/hr
FL103X100	DN100 Pulse 100 Kl l/imp, Min 2.00 m^3/hr, Max 200 m^3/hr
FL103X125	DN125 Pulse 250 Kl l/imp, Min 2.50 m^3/hr, Max 250 m^3/hr
FL103X150	DN150 Pulse 250 Kl l/imp, Min 3.13 m^3/hr, Max 312.50 m^3/hr
FL103X200	DN200 Pulse 500 Kl l/imp, Min 6.35 m^3/hr, Max 500 m^3/hr
FL103X250	DN250 Pulse 500 Kl l/imp, Min 10 m^3/hr, Max 787.50 m^3/hr
FL103X300	DN300 Pulse 1000 Kl l/imp, Min 15.87 m^3/hr, Max 1250 m^3/hr

ELIS METERS

ELIS ULTRASONIC FLOMIC FL3085 ULTRASONIC
WATER METER
FL3085

ULTRA WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FL3085	DN200, PN10 – PN25, temperatures range from 0 – 150°C

ELIS ULTRASONIC FLOMIC FL50XX ULTRASONIC
WATER METER
FL5032 – FL50300

ULTRA WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FL5032	DN32, Pulse 10 Kl l/imp, Min 0.05 m^3/hr, Max 20 m^3/hr.
FL5040	DN40 Pulse 10 Kl l/imp, Min 0.079 m^3/hr, Max 31.25 m^3/hr
FL5050	DN50 Pulse 25 Kl l/imp, Min 0.127 m^3/hr, Max 50 m^3/hr
FL5065	DN65 Pulse 50 Kl l/imp, Min 0.20 m^3/hr, Max 78.75 m^3/hr
FL5080	DN80 Pulse 50 Kl l/imp, Min 0.25 m^3/hr, Max 125 m^3/hr
FL50100	DN100 Pulse 100 Kl l/imp, Min 0.32 m^3/hr, Max 200 m^3/hr
FL50125	DN125 Pulse 100 Kl l/imp, Min 0.40 m^3/hr, Max 250 m^3/hr
FL50150	DN150 Pulse 100 Kl l/imp, Min 0.50 m^3/hr, Max 312.50 m^3/hr
FL50200	DN200 Pulse 250 Kl l/imp, Min 1.0 m^3/hr, Max 500 m^3/hr
FL50250	DN250 Pulse 250 Kl l/imp, Min 1.575 m^3/hr, Max 787.50 m^3/hr
FL50300	DN300 Pulse 500 Kl l/imp, Min 2.0 m^3/hr, Max 1250 m^3/hr

ELIS METERS

ELIS ELECTROMAGNETIC FLONET FN20XX WATER METER

FN20XX

WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FN20XX	FLONET FN20XX type 1 series are intended for professional application and measurement of flow rates of electrically-conductive liquids in water and heat-supply systems, food processing and chemical industries. From 15mm to 800mm.

ELIS ELECTROMAGNETIC FLONET FN30XX WATER METER

FN30XX

WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FN30XX	FLONET FN30XX flowmeter with MODBUS communications, designed for the measurement of flow rates of electrically-conductive liquids in water and heat-supply systems, food processing and chemical industries. Available in sizes DN20 to DN1200

ELIS ELECTROMAGNETIC FLONET FN50XX WATER METER

FN50XX

WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FN30XX	FLONET FN50XX flowmeter is the economic version of the range, with high accuracy and pulse outputs. Ideal for heat measurement. Available in sizes DN20 to DN500.

ELIS METERS

ELIS ELECTROMAGNETIC FLONET FL303X WATER METER

FL303X

WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FL303X	For Glycol up to 40% concentrate with PTFE lining and stainless steel electrodes. Suitable for liquids, dirty water, and high temperature fluids.

ELIS ELECTROMAGNETIC FLONEX FX31XX WATER METER

FX31XX

WRAS HORI VERT

See page 08 for further details

MWA Code	Description
FN20XX	FLONET FX31XX is an inductive flowmeter with an EX certificate, which is designed to measure the flow of electrically conductive fluids in explosive environments. Flowmeters comes equipped with HART communication protocol. Available in sizes DN15 to DN300.

Faraday's Law

Did you know that Magnetic flowmeters use Michael Faraday's Law of Electromagnetic Induction to determine the flow of liquid in a pipe. So, in a magnetic flowmeter, a magnetic field is generated and channeled into the liquid flowing through the pipe, which generates the measurement.

Elster Meters

ELSTER AJUSTA BOUNDARY BOXES

AJUSTA BOUNDARY BOXES

Elster produce a comprehensive range of boundary box products, catering for every installation eventuality, whether it be new-build or retrofitting applications.

At MWA, we stock a wide range of options and accessories offering solutions with unrivalled flexibility and reliability whilst significantly reducing overall operational and logistical costs.

FEATURES

- Suitable for Elster manifold mounted water meters type V210
- Bayonet option simplifies box fitting in confined dig-outs and assists with concentric meter installation
- Fully adjustable Ajusta Box height from 590mm to 800mm with five tonne weight bearing capability
- Available with pre-installed SmartMeter intelligent water meter for ease of installation
- Push-fit boundary box utilises renowned John Guest fittings for ultimate leak-free reliability whilst simplifying installation

ACTARIS

DIGITAL REMOTE TOTALISER

DIGITAL REMOTE TOTALISER

The Digital Remote Totaliser counts and accumulates water meter pulses allowing for the remote reading of water consumption through a system without obtaining access to the water meter .

FEATURES

- Clear display
- IP67
- IR Communications
- Alarms

SPECIFICATIONS

- The Digital Remote Totaliser is Volt free / open collector of the water meter pulses
- 100m cable length
- Frequency response of 32Hz
- Input wires include: Ground (brown), Pulse (white), and Tamper (green)

WATER LEAK DETECTION SYSTEM

WLDS

WLDS-10 – WLDS-20

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, 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 back-light
- 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


Here for you
Our technical support team is always on hand for your metering queries.
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 by telephone or via email.
Contact our metering experts today,
+44 (0)121 327 7771
mwatechnology.com

KEY

DIAP	Diaphragm
ROTA	Rotary
TURB	Turbine
ULTRA	Ultrasonic
MASS	Mass Flow
MID	Measurement Instrument Directive
NATU	Natural gas
LPG	Liquefied petroleum gas
PROP	Propane
BUTA	Butane
FLANGED	Flanged fitting
SCREW	Screwed fitting
WAFER	Wafer pattern fitting
M-Bus	M-Bus Wired connections
M-Bus	M-Bus Wireless connections
PULSED	Pulsed monitoring

GAS METERS

MWA Technology are expert gas meter suppliers, stocking a wide range of both domestic and commercial gas meters, gas meter parts and accessories.

Whether you are seeking a turbine, rotary, diaphragm, or prepayment gas meter, a solenoid valve, gas regulator, or gas ancillary, we have the right solution for all your gas metering needs.

Meter sizings

The size of the meter needed is established by the volume of gas flowing and not the size of pipework. The maximum flow can be calculated from the number of applications downstream of the meter.

A Btu or kilowatt rating can be converted into a flow rate using the table below:

NATURAL GAS		PROPANE	BUTANE	kW	Btus
m^3/h	ft^3/h	m^3/h	m^3/h		
2.5	88	1.04	0.80	26.9	91,783
6.0	212	2.50	1.91	64.9	220,415
10.0	353	4.16	3.18	107.7	367,472
16.0	565	6.66	5.09	172.3	587,888
25.0	883	10.41	7.96	269.2	918,510
40.0	1,412	16.65	12.72	430.5	1,468,866

As a guide, the common domestic meter is a size U6/G4 diaphragm meter which will cope with the normal requirements of a medium sized home, including central heating. U6 and G4 meters have the same maximum capacity ($6m^3/h$); but the distance between the inlet and outlet bosses may differ. Size G1.6 is for lighter applications such as a caravan with, for example, a cooker and two fires. The number immediately after the U and SC refers to the maximum capacity of the meter in cubic metres per hour.

Itron elster metrix GRUPA APATOR DRESSER COMMON Aichi tokei nixon FLOWMETERS DURECOM

Itron Meters

ITRON DIAPHRAGM NATIONAL GRID APPROVED GAS METER

U6P – U160P

DIAP NATU LPG PULSED MID

See page 30 for further details

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

ADDITIONS

MWA Code	Description
UPLUSE	MDA series Pulse module and lead

ITRON MZ250C TURBINE GAS METER

MZ50G65 – MZ200G1600

TURB NATU LPG WAFER FLANGED M-Bus PULSED WRAS

See page 30 for further details

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

Itron Meters

ITRON MTA FLANGED TURBINE GAS METER

MTADN50G65 – MTADN500G6500

TURB NATU LPG FLANGED M-Bus PULSED MID WRAS

See page 30 for further details

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

METRIX METERS

METRIX EUROPEAN DIAPHRAGM GAS METER

G4-UGBS – G65P

DIAP NATU LPG PROP SCREW M-Bus M-Bus PULSED MID

See page 30 for further details

MWA Code	Description	Centres
G4-UGBS	1" BS746 Diaphragm Meter. Qmax 6m³/h	110mm
G4-UGPBS	1" BS746 Pulsed Diaphragm Meter. Qmax 6m³/h	152.4mm
G4-UGBS-6"	1" BS746 Pulsed Diaphragm Meter. Qmax 6m³/h	152.4mm
G6PBS	1" BS746 Pulsed Diaphragm Meter. Qmax 10m³/h	130mm
G10BS	1.1¼" BS746 Diaphragm Meter. Qmax 16m³/h	280mm
G10PBS	1.¼" BS746 Pulsed Diaphragm Meter. Qmax 16m³/h	280mm
G10BS2"	2" BS746 Diaphragm Meter. Qmax 16m³/h	280mm
G16PBS	2" BS746 Pulsed Diaphragm Meter. Qmax 25m³/h	280mm
G2SPBS	2" BS746 Pulsed Diaphragm Meter. Qmax 40m³/h	335mm
G4-UG	1" BSP Diaphragm Meter. Qmax 6m³/h	110mm
G4-UGP	1" BSP Pulsed Diaphragm Meter. Qmax 6m³/h	110mm
G6P	1" BSP Pulsed Diaphragm Meter. Qmax 10m³/h	130mm
G10P	1.½" BSP Pulsed Diaphragm Meter. Qmax 16m³/h	280mm
G16P	1.½" BSP Pulsed Diaphragm Meter. Qmax 25m³/h	280mm
G25P	2" BSP Pulsed Diaphragm Meter. Qmax 40m³/h	335mm

ADDITIONS

MWA Code	Description
NI-3	Metrix diaphragm meter pulse module and lead
WIRELESSMBUS	Wireless MBus

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

Elster Meters

ELSTER TRZ METER

TRZDN50G65 – TRZDN150G1000

TURB NATU LPG FLANGED M-Bus PULSED MID

See page 30 for further details

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

ELSTER QUANTOMETER GAS METER

QA10/25 – QA1000/150

TURB NATU LPG SCREW WAFER PULSED

See page 30 for further details

QA65 50mm

QA10 1inch

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

Elster Meters

ELSTER ROTARY GAS METER

RABODN32G16 – RABODN150G400

ROTA NATU LPG FLANGED PULSED MID

See page 30 for further details

MWA Code	Description	Centres
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

Aichi Tokei Meters

AICHI TOKEI TBX TURBINE GAS METER

TBX30L-0.75 – TBX150F

TURB NATU LPG FLANGED SCREW PULSED

See page 30 for further details

MWA Code	Description	Fitting	Min m3/hr	Max m3/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

ADDITIONS

MWA Code	Description
TBX-PLUG	TBX plug with 2 metre lead – 4 pin plug

AICHI TOKEI TBZ TURBINE GAS METER

QA10/25 – QA1000/150

TURB NATU LPG FLANGED PULSED

See page 30 for further details

MWA Code	Description	Fitting	Min m3/hr	Max m3/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

ADDITIONS

MWA Code	Description
TBZ300KIT	TBZ300 Kit PN6 80mm Flanges, Gaskets & BZP M16 Bolts & Nuts. 3”/80mm Flanged PN6 fitting
TBZPULSE	TBZ300 plug with 2 metre lead - 3 Pin Plug

Aichi Tokei Meters

AICHI TOKEI AST ULTRASONIC TURBINE GAS METER

AICHI-25A – AICHI-200A

ULTRA NATU FLANGED PULSED WRAS HORI

See page 30 for further details

MWA Code	Description	Centres
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

Common Meters

COMMON CGT GAS METER

CGTDN50G65 – CGTDN400G6500

TURB NATU LPG FLANGED PULSED MID

See page 30 for further details

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

COMMON ROTARY DELTA QD GAS METER

QD 25 – QD 60

ROTA NATU LPG SCREW M-Bus M-Bus PULSED MID

See page 30 for further details

MWA Code	Description
QD 25	40mm screwed connections, 16 bar max pressure, 0.8m³/h min, 25.0m³/h max, weighing 3.6kg
QD 60	40mm screwed connections, 16 bar max pressure, 2.0m³/h min, 60.0m³/h max, weighing 3.6kg

Common Meters

COMMON CGR ROTARY GAS METER

CGRDN40G10 – CGRDN100G250

ROTA NATU LPG SCREW PULSED MID

See page 30 for further details

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

Common Meters

COMMON CPT QUANTOMETER GAS METER

CPT25SG16 – CPT50SG65

TURB NATU LPG SCREW PULSED

See page 30 for further details

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

RECOMMENDED ACCESSORIES

MWA Code	Descriptions
CPTPLUGLEAD	Turbine Gas Meter Pulse Plug and 2 Metre Lead
CPT-HF/LFPLUGLEAD	Turbine Gas Meter Pulse Plug and 2 Metre Lead. High Frequency
CPT - CGT - OIL Lubrina 23	Turbine Gas Meter. Oil 500ml
filtergas25	25mm inline filter 50 micron
filtergas32	32mm inline filter 50 micron
filtergas40	40mm inline filter 50 micron
filtergas50	50mm inline filter 50 micron

Common Meters

COMMON CPT TURBINE FLANGE FITTING GAS METER

CPT50G40 – CPT200G1600

TURB NATU LPG WAFER PULSED

See page 30 for further details

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

Itron Meters

CORUS GAS VOLUME CONVERTER

CORUS

CORUS is an electronic volume converter dedicated to commercial and industrial 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.

FEATURES

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

Corus mounting bracket

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.

ITRON ISB+ INSTRINIC SAFETY BOX

ISB SAFETY BOX

ISB+ is an electronic attachment which 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 vice versa.

FEATURES

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

Durecom Meters DURECOM

DURECOM WIZIT DIAPHRAGM GAS METER

WIZIT DIAPHRAGM

DIAP NATU LPG SCREW PULSED

See page 30 for further details

MWA Code	Description
KG2	Model G1.6, ½" BSP, 197mm (h) x 126mm (w) x 110mm (d), CRS 100, Qmin 0.016cmh, Qmax 2.5cmh
KG2P	Model G1.6, ½" BSP, 197mm (h) x 126mm (w) x 110mm (d), CRS 100, Qmin 0.016cmh, Qmax 2.5cmh
KG3	Model G1.6, ¾" BSP, 197mm (h) x 126mm (w) x 110mm (d), CRS 100, Qmin 0.016cmh, Qmax 2.5cmh
KG3P	Model G1.6, ¾" BSP, 197mm (h) x 126mm (w) x 110mm (d), CRS 100, Qmin 0.016cmh, Qmax 2.5cmh
KG4	Model G1.6, ¾" BSP, 214mm (h) x 164mm (w) x 130mm (d), CRS 130, Qmin 0.025cmh, Qmax 4cmh
KG4P	Model G1.6, ¾" BSP, 214mm (h) x 164mm (w) x 130mm (d), CRS 130, Qmin 0.025cmh, Qmax 4cmh
KG6	Model G1.6, ¾" BSP, 214mm (h) x 164mm (w) x 130mm (d), CRS 130, Qmin 0.025cmh, Qmax 6cmh
KG6P	Model G1.6, ¾" BSP, 214mm (h) x 164mm (w) x 130mm (d), CRS 130, Qmin 0.025cmh, Qmax 6cmh

Dresser Meters

DRESSER CHATTERBOX ISOLATION UNIT

CHATTERBOX

Provides an approved barrier for hazardous area to safe area equipment.

10 year battery life, four channels as standard, and ATEX certified I.S.

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

Siargo Meters

SIARGO MF-GD SERIES GAS FLOW METER

SIARGO

MASS NATU LPG SCREW PULSED

See page 30 for further details

MWA Code	Description
MF32GD	DN 32mm, Max. Flow Rate 25 Nm3/h, Min. Flow Rate 0.25 Nm3/h
MF50GD	DN 50mm, Max. Flow Rate 65 Nm3/h, Min. Flow Rate 0.65 Nm3/h
MF65GD	DN 65mm, Max. Flow Rate 100 Nm3/h, Min. Flow Rate 1 Nm3/h
MF80GD	DN 80mm, Max. Flow Rate 160 Nm3/h, Min. Flow Rate 1.6 Nm3/h

Nixon Meters

NIXON INDUSTRIAL TURBINE GAS METER

NT3 – NT150

TURB NATU LPG PROP BUTA FLAN SCREW PULSED MID

See page 30 for further details

MWA Code	Description
NT3	⅜” Screwed, Min 0.5 L/min, Max 5 L/min
NT5	½” Screwed, Min 1.2 L/min, Max 10 L/min
NT7	½” Screwed, Min 2 L/min, Max 20 L/min
NT11	½” Screwed, Min 5 L/min, Max 50 L/min
NT13	¾” Screwed, Min 8 L/min, Max 80 L/min
NT19	1” Screwed, Min 15 L/min, Max 150 L/min
NT24	1” Screwed, Min 25 L/min, Max 250 L/min
NT32	1¼” Screwed, Min 45 L/min, Max 450 L/min
NT38	1½” Screwed, Min 65 L/min, Max 650 L/min
NT48	2” Screwed, Min 110 L/min, Max 1100 L/min
NT65	3” Screwed, Min 200 L/min, Max 2000 L/min
NT80	3” Flanged, Min 300 L/min, Max 3000 L/min
NT100	4” Flanged, Min 500 L/min, Max 5000 L/min
NT150	6” Flanged, Min 1000 L/min, Max 10000 L/min

Regulators

JEAVONS INDUSTRIAL REGULATOR J48

J48-20 – J48-150

HORI VERT NATU

See page 30 for further details

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

JEAVONS INDUSTRIAL REGULATOR J78R

J78R-15 – J78R-25

HORI VERT NATU

See page 30 for further details

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

ADDITIONAL

MWA Code	Description	Maximum Inlet Pressure	Standard Outlet Pressure
FE7	5mm orifice, ¾" female screwed	5 mbar	37 mbar
FE25	5mm orifice, 1" female screwed	5 mbar	37 mbar
FE30	5mm orifice, 1.½" female screwed	5 mbar	37 mbar

Regulators

JEAVONS INDUSTRIAL REGULATOR J125

J125-S9-20 – J125-S9-50

HORI VERT NATU

See page 30 for further details

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

Propane low pressure regulators second stage complete with UPSO/OPSO

DOMESTIC GAS REGULATORS 60DJ, 80DJ, 150DJ

60DJ, 80DJ, 150DJ

HORI VERT NATU

See page 30 for further details

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

ANCILLARIES

CAST ALUMINIUM INLINE GAS FILTER

FILTER GAS/25 – FILTER GAS 300

MWA Code	Description
FILTER GAS/25	1" female screwed, Max pressure 2.0 bar
FILTER GAS/30	1.¼" female screwed, Max pressure 2.0 bar
FILTER GAS/40	1. ½" female screwed, Max pressure 2.0 bar
FILTER GAS/50	2" female screwed, Max pressure 2.0 bar
FILTER GAS/100	PN16 Flange, Max pressure 2.0 bar
FILTER GAS/125	PN16 Flange, Max pressure 2.0 bar
FILTER GAS/150	PN16 Flange, Max pressure 2.0 bar
FILTER GAS/200	PN16 Flange, Max pressure 2.0 bar
FILTER GAS/250	PN16 Flange, Max pressure 2.0 bar
FILTER GAS 300	PN16 Flange, Max pressure 2.0 bar

PIPELINE GAS FILTER – TOP HAT CLOSED TYPE

THF50 – THF200

MWA Code	Description
THF50	2”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh
THF65	2.½”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh
THF80	3”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh
THF100	4”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh
THF150	6”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh
THF200	8”, to suit PN16 flanges, 250 Stainless Steel Filter Mesh

GENERAL GAS ANCILLIARIES

CERT, FREQ, PADPlus1, EVC1

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

ANCILLARIES

PIPELINE FLANGE FIXING KITS

J125-S9-20 – J125-S9-50

MWA Code	Description
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

UPULSE – SEMIPULSE

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

FLEX25 – FLEX65

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

GAS SYSTEMS

MERLIN GDP2 GAS SAFETY DETECTION SYSTEM

MERLIN GDP2

The Merlin GDP2 is a two-zone gas detection panel which can be used in many applications; factories, car parks, shopping centres and, most commonly, boiler houses.

The GDP2 is compatible with many varieties of detectors; Natural Gas, Carbon Monoxide, LPG, and oxygen depletion. These detectors can be used in any combination. Multiple thermal links can be used and wired in series. The GDP2 can be integrated with a BMS, fire alarm and remote emergency shut-off buttons.

MERLIN GDP4 GAS SAFETY DETECTION SYSTEM

MERLIN GDP4

The Merlin GDP4 is a multi-zone gas detection panel which can be used in many applications; factories, car parks, shopping centres and, most commonly, boiler houses.

The GDP4 can be used with up to 12 gas detectors wired in parallel, with a maximum of 3 detectors per zone.

GAS SYSTEMS

MERLIN 1000BH GAS PROVING / DETECTION SYSTEM

MERLIN 1000BH

The Merlin 1000BH is a gas pressure proving & gas detection panel for use in various applications.

The system comprises a control panel and a gas pressure sensor. The Merlin 1000BH can receive connections from remote emergency shut-off buttons, two gas detectors, fire panel and heat detector. It also can be integrated with a BMS.

MERLIN 4500PPM CO_2 GAS SAFETY MONITOR

MERLIN 4500PPM

The Merlin 4500PPM CO_2 Monitor has an LED display to show the user a clear and precise reading of the CO_2 level in the room, also the traffic light colour system indicates the air quality in an area.

The Merlin CO_2 Monitor can be used independently or can work in conjunction with one of our Merlin gas control systems. If the CO_2 reaches alarm level the Merlin CO_2 Monitor would sound an audible alarm to alert the user and also send a signal to the Merlin gas control system which will in turn close the gas solenoid valve.

GAS SYSTEMS flamefast

GASGUARD MANUAL KITCHEN INTERLOCK GAS SYSTEM

GASGUARD

The GasGuard Manual Kitchen Interlock is designed to meet all the requirements of IGEM/UP/19 and BS6173:2009, where all appliances are fitted with Flame Failure Devices.

This Interlock gas system has numerous additional safety features and is a cost effective non-proving system which combines unrivalled functionality with the same user-friendly interface as all Flamefast products.

With individual alarm indications for external devices and a dedicated engineers button, diagnosis of any site issues can be done quickly and hassle free.

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

GASGUARD I GAS PROVING SYSTEM

GASGUARD-1

The GasGuard I Gas Proving System is designed to meet all the requirements of IGEM/UP/19 edition 2 and BS6173:2009, and is fitted with numerous additional safety features.

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.

FEATURES

- No commissioning required
- 24v DC auxiliary power output
- Interfaces for Gas Sensors & CO_2 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

GAS SYSTEMS

INTELLIGAS
Gas safety & control systems

100P GAS INTERLOCK SYSTEM

100P 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.

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

EGIP-1 AUTOMATIC GAS PROVING SYSTEM

EGIP-1

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.

Installation is considered quicker than alternative systems, thus saving on labour, and all this is backed by Intelligas' 2 year guarantee.

- 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 up to 2, 0-10v sensor heads (CO_2, Methane, LPG, O_2 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 SYSTEM ANCILLARIES

GAS DETECTORS

EGS-NG – EGS-CL

FEATURES

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

MWA Code	Description
EGS-NG	Nat Gas (Methane), 0 to 5,000ppm range, 2500ppm relay set point
EGS-LPG	LP Gas, 0 to 2,000ppm range, 1000ppm relay set point
EGS-CO	Carbon Monoxide, 0 to 100ppm range, 30ppm relay set point
EGS-R134	Refrig' R134, 0 to 1000ppm range, 500ppm relay set point
EGS-H	Hydrogen, 0 to 2,000ppm range, 1000ppm relay set point
EGS-CO2/IR	Carbon Dioxide, 0 to 10,000ppm range, 5000ppm relay set point
ECS-OZ	O-Zone, 0 to 1ppm range, 0.2ppm relay set point
EGS-O	Oxygen, 0 to 25% range, 19% relay set point
EGS-H2S	Hydrogen Sulphide, 0 to 30ppm range, 5ppm relay set point
EGS-SD	Sulphur Dioxide, 0 to 10ppm range, 2ppm relay set point
EGS-ND	Nitrogen Dioxide, 0 to 10ppm range, 3ppm relay set point
EGS-CL	Chlorine, 0 to 10ppm range, 0.5ppm relay set point

GAS SYSTEM ANCILLARIES

EMERGENCY STOP PANIC BUTTON

EMSTOP – STOP

MWA Code	Description
EMSTOP	Emergency Stop Panic Button unit with Reset Key
STOP	Emergency Stop Panic Button unit

AIR DIFFERENTIAL PRESSURE SWITCH

AX-ADPS-80 – AX-ADPS-DFK

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

KEY

ULTRA	Ultrasonic flow sensor
RHI	Renewable Heat Incentive
GLYC	Ethylene Glycol CH_2OH_2
IP	International Protection Rating, IP Code
RETURN	Return
FLOW	Flow Meter
HEAT	Heating meter
COOL	Cooling meter
BATTERY	Battery powered
MAINS	Mains powered
FLANGED	Flanged fitting
SCREW	Screwed fitting
WAFER	Wafer pattern fitting
M-Bus	M-Bus Wired connections
M-Bus	M-Bus Wireless connections
PULSED	Pulsed monitoring
LON	LonWorks Module
4-20 Ma	4-20 Ma Module
RADIO	Radio Module

HEAT METERS

MWA Technology specialise in domestic and commercial energy flow meters and accessories, our range includes ultrasonic and turbine energy meters, modules, sensors and ancillaries.

A heat meter is a device which measures thermal energy provided by a source or delivered to a sink, by measuring the flow rate of the heat transfer fluid and the change in its temperature between the outflow and return legs of the system.

DIEHL Metering · Itron · kamstrup · SIEMENS · Landis+Gyr · Sontex

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 302 ULTRASONIC HEAT METER

MCAL302TQ910 – MCAL302TQ9A0

ULTRA RHI HEAT BATTERY SCREW M-Bus M-Bus

See page 56 for further details

MID approved, EN1434, 1.2m signal cable, 1.5m temperature sensors, with battery, unions and wall bracket

MWA Code	Description	Body Length
MCAL302TQ910	qp 0.6 m³/h, G¾B (R½) x 110mm, PN 16/25	110mm
MCAL302TQ940	qp 1.5 m³/h, G¾B (R½) x 110mm, PN 16/25	110mm
MCAL302TQ970	qp 1.5 m³/h, G1B (R½) x 130mm, PN 16/25	130mm
MCAL302TQ9A0	qp 2.5 m³/h, G1B (R½) x 130mm, PN 16/25	130mm

The MCAL302TQ910 – MCAL302TQ9A0 above are our best sellers, but seeking an alternative size not there? Speak with our sales team to see what we can do for you.

COMMUNICATION MODULES

MWA Code	Description
MCAL302T20	M-Bus (comes with 1.5m factory mounted cable)
MCAL302T21	M-Bus (comes with 2.0m factory mounted cable)
MCAL302T30	Wireless M-Bus, 868 MHz (configurable mode C1 or T1 OMS)

BATTERY OPTIONS

MWA Code	Description
MCAL302T1	6 year battery, normal response meter
MCAL302T2	12 year battery, normal response meter
MCAL302T3	6 year battery, fast response meter

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KAMSTRUP MULTICAL® 302 ULTRASONIC COOLING METER

MCAL302Q910 – MCAL302Q9A2

ULTRA COOL BATTERY SCREW M-Bus M-Bus

See page 56 for further details

1.2m signal cable, 1.5m temperature sensors, with battery, unions and wall bracket

MWA Code	Description	Body Length
MCAL302TQ910	qp 0.6 m³/h, G¾B (R½) x 110mm, PN 16/25	110mm
MCAL302TQ940	qp 1.5 m³/h, G¾B (R½) x 110mm, PN 16/25	110mm
MCAL302TQ970	qp 1.5 m³/h, G1B (R½) x 130mm, PN 16/25	130mm
MCAL302TQ9A0	qp 2.5 m³/h, G1B (R½) x 130mm, PN 16/25	130mm

The MCAL302TQ910 – MCAL302TQ9A0 above are our best sellers, but seeking an alternative size not there? Speak with our sales team to see what we can do for you.

COMMUNICATION MODULES

MWA Code	Description
MCAL302T20	M-Bus (comes with 1.5m factory mounted cable)
MCAL302T21	M-Bus (comes with 2.0m factory mounted cable)
MCAL302T30	Wireless M-Bus, 868 MHz (configurable mode C1 or T1 OMS)

BATTERY OPTIONS

MWA Code	Description
MCAL302T1	6 year battery, normal response meter
MCAL302T2	12 year battery, normal response meter
MCAL302T3	6 year battery, fast response meter

EXTRAS

Optional extras are available upon request

Kamstrup Meters kamstrup

BRAND NEW FOR 2017

KAMSTRUP MULTICAL® 403 ULTRASONIC METER

ULTRA | BATTERY | MAINS | SCREW | FLANGED | M-Bus | M-Bus | PULSED

See page 56 for further details

The MULTICAL® 403 is a static heat meter, cooling meter or combined heating/cooling meter based on the ultrasonic principle.

The Multical® 403 Heat & Cooling meter is MID approved according to EN1434, with integrated ultrasonic flow sensor. The standard unit supplied as 230v, 24v, or battery powered c/w pulsed output, pockets and 1.5m sensor cables.

Features & Benefits

- Programmable data logger with AMR
- Configurable Mbus modules
- Highly flexible due to modular design
- Pulse inputs and pulse outputs
- Real-time clock back-up
- 16 years battery life
- IP68 flow sensor

Kamstrup Meters kamstrup

BRAND NEW FOR 2017

KAMSTRUP MULTICAL® 403 ULTRASONIC HEAT METER

MCAL403X10 – MCAL403XK0

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 1.5m signal cable, 1.5m temperature sensors, with battery, 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

MWA Code	Description	Body Length
MCAL403X10	qp 0.6 m³/h, G¾B (R½) x 110mm	110mm
MCAL403X40	qp 1.5 m³/h, G¾B (R½) x 110mm	110mm
MCAL403X70	qp 1.5 m³/h, G1B (R¾) x 130mm	130mm
MCAL403XA0	qp 2.5 m³/h, G1B (R¾) x 130mm	130mm
MCAL403XD0	qp 3.5 m³/h, G1¼B (R1) x 260mm	260mm
MCAL403XF0	qp 6.0 m³/h, G1¼B (R1) x 260mm	260mm
MCAL403XH0	qp 10.0 m³/h, G2B (R1½) x 300mm	300mm
MCAL403XK0	qp 15.0 m³/h, DN50 x 270mm	270mm

The MCAL403X10 – MCAL403XK0 above are our best sellers, but seeking an alternative size not there? Speak with our sales team to see what we can do for you.

COMMUNICATION MODULES

MWA Code	Description	
MCAL40310	Data + 2 pulse inputs (A, B)	
MCAL40311	Data + 2 pulse inputs (C, D)	
MCAL40320	M-Bus, configurable + 2 pulse inputs (A, B)	
MCAL40321	M-Bus, configurable + 2 pulse inputs (C, D)	
MCAL40330	Wireless M-Bus, configurable, 868 MHz + 2 pulse inputs (A, B)	
MCAL40340	Analog 0/4 – 20 mA outputs*	BRAND NEW FOR 2017
MCAL40366	BACnet MS/TP (RS-485) + 2 pulse inputs (A, B)	BRAND NEW FOR 2017
MCAL40367	Modbus RTU (RS-485) + 2 pulse inputs (A, B)*	BRAND NEW FOR 2017

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL403X2	Battery, 1 x D-cell
MCAL403X7	230 VAC supply
MCAL403X8	24 VAC supply
MCAL403X9	Battery, 2 x D-cell

Kamstrup Meters kamstrup

BRAND NEW FOR 2017

KAMSTRUP MULTICAL® 403 ULTRASONIC HEAT METER

MCAL403X10 – MCAL403XK0

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 1.5m signal cable, 1.5m temperature sensors, with battery, 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL40311	Set of direct short sensor, 27.5mm with 1.5m cable – PT500
MCAL40312	Set of direct short sensor, 27.5mm with 3.0m cable – PT500
MCAL40331	Set of pocket sensor, ø 5.8mm with 1.5m cable – PT500
MCAL40332	Set of pocket sensor, ø 5.8mm with 3.0m cable – PT500

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

NIPPLES & POCKETS

MWA Code	Description
65-56-491	R½ M10 nipples for direct sensor, brass
65-57-324	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
65-57-327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
65-57-314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

Kamstrup Meters kamstrup

BRAND NEW FOR 2017

KAMSTRUP MULTICAL® 403 ULTRASONIC COOLING METER

MCAL403X10 – MCAL403XK0

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

1.5m signal cable, 1.5m temperature sensors, with battery, 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

MWA Code	Description	Body Length
MCAL403X10	qp 0.6 m³/h, G¾B (R½) x 110mm	110mm
MCAL403X40	qp 1.5 m³/h, G¾B (R½) x 110mm	110mm
MCAL403X70	qp 1.5 m³/h, G1B (R¾) x 130mm	130mm
MCAL403XA0	qp 2.5 m³/h, G1B (R¾) x 130mm	130mm
MCAL403XD0	qp 3.5 m³/h, G1¼B (R1) x 260mm	260mm
MCAL403XF0	qp 6.0 m³/h, G1¼B (R1) x 260mm	260mm
MCAL403XH0	qp 10.0 m³/h, G2B (R1½) x 300mm	300mm
MCAL403XK0	qp 15.0 m³/h, DN50 x 270mm	270mm

The MCAL403X10 – MCAL403XK0 above are our best sellers, but seeking an alternative size not there? Speak with our sales team to see what we can do for you.

COMMUNICATION MODULES

MWA Code	Description	
MCAL40310	Data + 2 pulse inputs (A, B)	
MCAL40311	Data + 2 pulse inputs (C, D)	
MCAL40320	M-Bus, configurable + 2 pulse inputs (A, B)	
MCAL40321	M-Bus, configurable + 2 pulse inputs (C, D)	
MCAL40330	Wireless M-Bus, configurable, 868 MHz + 2 pulse inputs (A, B)	
MCAL40340	Analog 0/4 – 20 mA outputs*	BRAND NEW FOR 2017
MCAL40366	BACnet MS/TP (RS-485) + 2 pulse inputs (A, B)	BRAND NEW FOR 2017
MCAL40367	Modbus RTU (RS-485) + 2 pulse inputs (A, B)*	BRAND NEW FOR 2017

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL403X2	Battery, 1 x D-cell
MCAL403X7	230 VAC supply
MCAL403X8	24 VAC supply
MCAL403X9	Battery, 2 x D-cell

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BRAND NEW FOR 2017

KAMSTRUP MULTICAL® 403 ULTRASONIC COOLING METER

MCAL403X10 – MCAL403XK0

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

1.5m signal cable, 1.5m temperature sensors, with battery, 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL40311	Set of direct short sensor, 27.5mm with 1.5m cable – PT500
MCAL40312	Set of direct short sensor, 27.5mm with 3.0m cable – PT500
MCAL40331	Set of pocket sensor, ø 5.8mm with 1.5m cable – PT500
MCAL40332	Set of pocket sensor, ø 5.8mm with 3.0m cable – PT500

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

NIPPLES & POCKETS

MWA Code	Description
65-56-491	R½ M10 nipples for direct sensor, brass
65-57-324	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
65-57-327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
65-57-314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 602 ULTRASONIC HEAT METER

MCAL602-A – MCAL602-D

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

MWA Code	Description
MCAL602-A	PT100 2-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-B	PT500 4-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-C	PT500 2-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-D	PT500 4-wire, prepared for flow sensors with 24v AC active pulses Calculator

TOP COMMUNICATION MODULES

MWA Code	Description
MCAL6707	M-Bus*
MCAL670A	2 pulse outputs (CE and CV) + scheduler + hourly data logger
MCAL670B	2 pulse outputs (CE and CV) + prog. data logger
MCAL6020C	2 pulse outputs (CE and CV)

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

BASE COMMUNICATION MODULES

MWA Code	Description
MCAL670010	Data output + 2 pulse inputs (VA, VB)
MCAL670020	M-Bus module + 2 pulse inputs (VA, VB)
MCAL670022	Prog. data logger + RTC + 4 – 20mA inputs + 2 pulse inputs (VA, VB)
MCAL670023	Analog 0/4 – 20mA outputs*
MCAL670024	LonWorks module + 2 pulse inputs (VA, VB)*
MCAL670025	Radio module + 2 pulse inputs (VA, VB)
MCAL670027	M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL670028	M-Bus module with medium data package + 2 pulse inputs (VA, VB)
MCAL6020030	Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670031	Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL6020035	Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL6020036	Wireless M-Bus, T1 OMS short interval, encrypted, 868 MHz, internal and external antennas
MCAL6020038	Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed network
MCAL670066	BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)*
MCAL670067	Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)*
MCAL6020080	GSM/GPRS modules*
MCAL6020081	3G GSM/GPRS module (GSM 8H 3G)

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 602 ULTRASONIC HEAT METER

MCAL602-A – MCAL602-D

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL1606064	Battery, 1 x D-cell, with connector
MCAL60200003	230v AC high power supply, with connector
MCAL60200004	24v AC high power supply, with connector
MCAL60200007	230v AC supply, with connector
MCAL60200008	24v AC supply, with connector

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL65000A0	Set of ø 5.8mm pocket sensors, 1.5m cable – PT500
MCAL65000B0	Set of ø 5.8mm pocket sensors, 3.0m cable – PT500
MCAL65000C0	Set of ø 5.8mm pocket sensors, 5.0m cable – PT500
MCAL65000D0	Set of ø 5.8mm pocket sensors, 10.0m cable – PT500
MCAL65000F0	Set of direct sensors, DS 27.5mm, 1.5m cable – PT500
MCAL65000G0	Set of direct sensors, DS 27.5mm, 3.0m cable – PT500

NIPPLES & POCKETS

MWA Code	Description
MCAL6556491	R½ M10 nipple for direct sensor, brass
MCAL6556494	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

4-WIRE TEMPERATURE SENSORS INCL. POCKETS

MWA Code	Description
MCAL655642000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 90mm pockets
MCAL655643000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 140mm pockets
MCAL655644000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 180mm pockets

Kamstrup Meters kamstrup

ULTRAFLOW® 54 ULTRASONIC FLOW SENSOR
WITH 2.5M SIGNAL CABLE (EN1434 & MID)

THREADED CONNECTION, FORGED HOUSING, PN16

MWA Code	Description	Body Length
65-5-CAHA	qp 0.6m³/h, G¾B (R½) x 110mm	110mm
65-5-CDHA	qp 1.5m³/h, G¾B (R½) x 110mm	110mm
65-5-CDHD	qp 1.5m³/h, G1B (R¾) x 130mm*	130mm
65-5-CEHF	qp 2.5m³/h, G1B (R¾) x 190mm	190mm

*For installation size G18 (R¾) x 165mm please add extension 13-30-023

THREADED CONNECTION, ROD PROFILE HOUSING, PN16

MWA Code	Description	Body Length
65-5-CGAG	qp 3.5m³/h, G1¼B (R1) x 260mm	260mm
65-5-CHAG	qp 6.0m³/h, G1¼B (R1) x 260mm	260mm
65-5-CJAJ	qp 10.0m³/h, G2B (R1½) x 300mm	300mm

FLANGED PN25

MWA Code	Description	Body Length
65-5-CKCE	qp 15.0m³/h, DN50 x 270mm	270mm
65-5-CLCG	qp 25.0m³/h, DN65 x 300mm	300mm
65-5-CMCH	qp 40.0m³/h, DN80 x 300mm	300mm
65-5-FACL	qp 60.0m³/h, DN100 x 360mm	360mm
65-5-FBCL	qp 100.0m³/h, DN100 x 360mm	360mm
65-5-FBCM	qp 100.0m³/h, DN125 x 350mm	350mm

Kamstrup Meters kamstrup

ULTRAFLOW® 54 SEPARATE ULTRASONIC FLOW SENSOR

WITHOUT SIGNAL CABLE (EN1434 & MID)

For Multical® 602 or Multical® 801

FLANGED PN25

MWA Code	Description	Body Type
65-5-FCCN	qp 150m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FDCN	qp 250m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FECN	qp 400m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FECP	qp 400m³/h, DN200 x 500mm, PN25	Stainless Steel
65-5-FECR	qp 400m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FFCP	qp 600m³/h, DN200 x 500mm, PN25	Stainless Steel
65-5-FFCR	qp 600m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FGCR	qp 1000m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FGDS	qp 1000m³/h, DN300 x 500mm, PN16	Stainless Steel

SIGNAL CABLE OPTIONS

MWA Code	Description
50-00-259	Signal cable - 5m
50-00-270	Signal cable - 10m

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 602 ULTRASONIC COOLING METER

MCAL602-A – MCAL602-D

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

Temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

MWA Code	Description
MCAL602-A	PT100 2-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-B	PT500 4-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-C	PT500 2-wire, prepared for ULTRASONIC® or Reed-switch Calculator
MCAL602-D	PT500 4-wire, prepared for flow sensors with 24v AC active pulses Calculator

TOP COMMUNICATION MODULES

MWA Code	Description
MCAL6707	M-Bus*
MCAL670B	2 pulse outputs (CE and CV) + prog. data logger
MCAL6020C	2 pulse outputs for CE and CV

*The meter must be mains supplied, Kamstrup recommends the 230/24 VAC safety transformer 66-99-403

BASE COMMUNICATION MODULES

MWA Code	Description
MCAL670010	Data output + 2 pulse inputs (VA, VB)
MCAL670020	M-Bus module + 2 pulse inputs (VA, VB)
MCAL670022	Prog. data logger + RTC + 4 – 20mA inputs + 2 pulse inputs (VA, VB)
MCAL670023	Analog 0/4 – 20mA outputs*
MCAL670024	LonWorks module + 2 pulse inputs (VA, VB)*
MCAL670025	Radio module + 2 pulse inputs (VA, VB)
MCAL670027	M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL6020030	Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670031	Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL6020035	Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL6020036	Wireless M-Bus, T1 OMS short interval, encrypted, 868 MHz, internal and external antennas
MCAL6020038	Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed network
MCAL670066	BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)*
MCAL670067	Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)*
MCAL6020080	GSM/GPRS module*

*The meter must be mains supplied, Kamstrup recommends the 230/24v AC safety transformer 66-99-403

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 602 ULTRASONIC COOLING METER

MCAL602-A – MCAL602-D

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

Temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL1606064	Battery, 1 x D-cell, with connector
MCAL60200003	230v AC high power supply, with connector
MCAL60200004	24v AC high power supply, with connector
MCAL60200007	230v AC supply, with connector
MCAL60200008	24v AC supply, with connector

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL67A	Set of ø 5.8mm pocket sensors, 1.5m cable – PT500
MCAL67B	Set of ø 5.8mm pocket sensors, 3.0m cable – PT500
MCAL67C	Set of ø 5.8mm pocket sensors, 5.0m cable – PT500
MCAL67D	Set of ø 5.8mm pocket sensors, 10.0m cable – PT500
MCAL67F	Set of direct sensors, DS 27.5mm, 1.5m cable – PT500
MCAL67G	Set of direct sensors, DS 27.5mm, 3.0m cable – PT500

NIPPLES & POCKETS

MWA Code	Description
MCAL6556491	R½ M10 nipple for direct sensor, brass
MCAL6556491	R¾ M10 nipple for direct sensor, brass
MCAL6556494	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

4-WIRE TEMPERATURE SENSORS INCL. POCKETS

MWA Code	Description
MCAL655642000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 90mm pockets
MCAL655643000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 140mm pockets
MCAL655644000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 180mm pockets

Kamstrup Meters kamstrup

ULTRAFLOW® 34 ULTRASONIC FLOW SENSOR
WITH 2.5M SIGNAL CABLE

THREADED CONNECTION, PN16

MWA Code	Description	Body Length
65-3-CDAA	qp 1.5m³/h, G¾B (R½) x 110mm	110mm
65-3-CDAD	qp 1.5m³/h, G1B (R¾) x 130mm	130mm
65-3-CDAF	qp 1.5m³/h, G1B (R¾) x 190mm	190mm
65-3-CEAF	qp 2.5m³/h, G1B (R¾) x 190mm	190mm
65-5-CGAG	qp 3.5m³/h, G1¼B (R1) x 260mm	260mm
65-3-CHAG	qp 6.0m³/h, G1¼B (R1) x 260mm	260mm
65-3-CJAJ	qp 10.0m³/h, G2B (R1½) x 300mm	300mm

FLANGED PN25

MWA Code	Description	Body Length
65-3-CHCB	qp 6.0m³/h, DN25 x 260mm	260mm
65-3-CJCD	qp 10.0m³/h, DN40 x 300mm	300mm
65-3-CKCE	qp 15.0m³/h, DN50 x 270mm	270mm
65-3-CLCG	qp 25.0m³/h, DN65 x 300mm	300mm
65-3-CMCH	qp 40.0m³/h, DN80 x 300mm	300mm
65-3-FACL	qp 60.0m³/h, DN100 x 360mm	360mm
65-3-FBCL	qp 100.0m³/h, DN100 x 360mm	360mm
65-3-FBCM	qp 100.0m³/h, DN125 x 350mm	350mm

SIGNAL CABLE OPTIONS

MWA Code	Description
655-50	UF Signal Cable - 5m
655-100	UF Signal Cable - 10m

Kamstrup Meters kamstrup

ULTRAFLOW® 54 SEPARATE ULTRASONIC FLOW SENSOR

WITHOUT SIGNAL CABLE

For Multical® 602 or Multical® 801

FLANGED PN25

MWA Code	Description	Body Type
65-5-FCCN-10-5	qp 150m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FDCN-10-5	qp 250m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FECN-10-5	qp 400m³/h, DN150 x 500mm, PN25	Stainless Steel
65-5-FECP-10-5	qp 400m³/h, DN200 x 500mm, PN25	Stainless Steel
65-5-FECR-10-5	qp 400m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FFCP-10-5	qp 600m³/h, DN200 x 500mm, PN25	Stainless Steel
65-5-FFCR-10-5	qp 600m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FGCR-10-5	qp 1000m³/h, DN250 x 600mm, PN25	Stainless Steel
65-5-FGDS-10-5	qp 1000m³/h, DN300 x 500mm, PN16	Stainless Steel

SIGNAL CABLE OPTIONS

MWA Code	Description
50-00-333	Signal cable - 2.5m
50-00-259	Signal cable - 5m
50-00-270	Signal cable - 10m
50-00-286	Supply cable - 1.5m, 2 x 0.75mm²

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 801 CALCULATOR FOR HEAT

MCAL602-A – MCAL602-D

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

MWA Code	Description
MCAL67-F	PT100 4-wire with no analog outputs
MCAL67-G	PT500 4-wire with no analog outputs
MCAL67-K	PT100 4-wire with analog outputs
MCAL67-L	PT500 4-wire with analog outputs

TOP COMMUNICATION MODULES

MWA Code	Description
MCAL670P	M-Bus module with alternative registers
MCAL670U	3G GSM/GPRS module (GSM 8H 3G)*
MCAL670V	M-Bus module
MCAL670W	RadioRouter module**
MCAL670Y	LonWorks module
MCAL670Z	GSM6H module excl. external antenna**

*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

BASE COMMUNICATION MODULES

MWA Code	Description
MCAL670020	M-Bus module + 2 pulse inputs (VA, VB)
MCAL670021	RadioRouter module + 2 pulse inputs (VA, VB)*
MCAL670022	Prog. data logger + RTC + 4 – 20mA inputs + 2 pulse inputs (VA, VB)
MCAL670024	LonWorks module + 2 pulse inputs (VA, VB)***
MCAL670027	M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL670030	Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670031	Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL670035	Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670038	Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed networks
MCAL670066	BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)***
MCAL670067	Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)***

*GSM module and RF module are not compatible in one meter
**The meter must be mains supplied, Kamstrup recommend the 230 / 24v AC safety transformer 66-99-403

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 801 CALCULATOR FOR HEAT

MCAL602-A – MCAL602-D

ULTRA RHI HEAT BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

MID approved, EN1434, temperature sensors, with battery 24v AC, 230v AC, unions, pockets or nipples, wall bracket, and communication modules

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL6699622	230v AC high power supply
MCAL6699634	24v AC high power supply

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL67000A	Set of ø 5.8mm pocket sensors, 1.5m cable – PT500
MCAL67000B	Set of ø 5.8mm pocket sensors, 3.0m cable – PT500
MCAL67000C	Set of ø 5.8mm pocket sensors, 5.0m cable – PT500
MCAL67000D	Set of ø 5.8mm pocket sensors, 10.0m cable – PT500

NIPPLES & POCKETS

MWA Code	Description
MCAL6556491	R½ M10 nipple for direct sensor, brass
MCAL6557324	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

4-WIRE TEMPERATURE SENSORS INCL. POCKETS

MWA Code	Description
MCAL655642000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 90mm pockets
MCAL655643000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 140mm pockets
MCAL655644000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 180mm pockets

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 801 CALCULATOR FOR COOLING

MCAL67-F – MCAL67-L

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

Temperature sensors, 4 – 20Ma, with 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

MWA Code	Description
MCAL67-F	PT100 4-wire with no analog outputs
MCAL67-G	PT500 4-wire with no analog outputs
MCAL67-K	PT100 4-wire with analog outputs
MCAL67-L	PT500 4-wire with analog outputs

TOP COMMUNICATION MODULES

MWA Code	Description
MCAL670P	M-Bus module with alternative registers
MCAL670U	3G GSM/GPRS module (GSM 8H 3G)*
MCAL670V	M-Bus module
MCAL670W	RadioRouter module**
MCAL670Y	LonWorks module
MCAL670Z	GSM6H module excl. external antenna**

*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

BASE COMMUNICATION MODULES

MWA Code	Description
MCAL670020	M-Bus module + 2 pulse inputs (VA, VB)
MCAL670021	RadioRouter module + 2 pulse inputs (VA, VB)*
MCAL670022	Prog. data logger + RTC + 4 – 20mA inputs + 2 pulse inputs (VA, VB)
MCAL670024	LonWorks module + 2 pulse inputs (VA, VB)***
MCAL670027	M-Bus module with alternative registers + 2 pulse inputs (VA, VB)
MCAL670030	Wireless M-Bus, C1, standard registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670031	Wireless M-Bus, T1 OMS, encrypted, 868 MHz, internal and external antennas
MCAL670035	Wireless M-Bus, C1, alternative registers, encrypted, 868 MHz, internal and external antennas + 2 pulse inputs (VA, VB)
MCAL670038	Wireless M-Bus, C1, encrypted, 868 MHz, internal and external antennas, fixed networks
MCAL670066	BACnet MS/TP module (RS-485) + 2 pulse inputs (VA, VB)***
MCAL670067	Modbus RTU module (RS-485) + 2 pulse inputs (VA, VB)***

*GSM module and RF module are not compatible in one meter
**The meter must be mains supplied, Kamstrup recommend the 230 / 24v AC safety transformer 66-99-403

Kamstrup Meters kamstrup

KAMSTRUP MULTICAL® 801 CALCULATOR FOR COOLING

MCAL6699622 – MCAL6699634

ULTRA COOL BATTERY MAINS SCREW FLANGED M-Bus M-Bus PULSED

See page 56 for further details

Temperature sensors, 4 – 20Ma, with 24v AC, 230v AC, unions, pockets or nipples, and wall bracket

POWER SUPPLY OPTIONS

MWA Code	Description
MCAL6699622	230v AC high power supply
MCAL6699634	24v AC high power supply

TEMPERATURE SENSOR SET

MWA Code	Description
MCAL67000A	Set of ø 5.8mm pocket sensors, 1.5m cable – PT500
MCAL67000B	Set of ø 5.8mm pocket sensors, 3.0m cable – PT500
MCAL67000C	Set of ø 5.8mm pocket sensors, 5.0m cable – PT500
MCAL67000D	Set of ø 5.8mm pocket sensors, 10.0m cable – PT500

NIPPLES & POCKETS

MWA Code	Description
MCAL6556491	R½ M10 nipple for direct sensor, brass
MCAL6557324	R½ x 65mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557327	R½ x 90mm pocket for ø 5.8mm sensor, stainless steel
MCAL6557314	R½ x 140mm pocket for ø 5.8mm sensor, stainless steel

4-WIRE TEMPERATURE SENSORS INCL. POCKETS

MWA Code	Description
MCAL655642000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 90mm pockets
MCAL655643000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 140mm pockets
MCAL655644000	Set of 4-wire (ø 5.8mm x 90mm) pocket sensors with connecting head incl. 180mm pockets

Itron Meters

ITRON CF ULTRAMAXX V COMPACT ULTRASONIC HEAT METER

CF ULTRAMAXX V 15-0.6 – CF ULTRAMAXX V 20-2.5

ULTRA RHI HEAT BATTERY SCREW M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 1.7m temperature sensors, with battery, AC, unions, pockets or nipples

MWA Code	Description
CF ULTRAMAXX V 15-0.6	Nominal flow: qp 0.6m³/h, maximum flow: qs 1.2m³/h, minimum flow: qi 6l/h
CF ULTRAMAXX V 15-1.5	Nominal flow: qp 1.5m³/h, maximum flow: qs 3m³/h, minimum flow: qi 6l/h
CF ULTRAMAXX V 20-2.5	Nominal flow: qp 2.5m³/h, maximum flow: qs 5m³/h, minimum flow: qi 15l/h

TOP COMMUNICATION MODULES

MWA Code	Description
MCAL670P	M-Bus module with alternative registers
MCAL670U	3G GSM/GPRS module (GSM 8H 3G)*
MCAL670V	M-Bus module
MCAL670W	RadioRouter module**
MCAL670Y	LonWorks module
MCAL670Z	GSM6H module excl. external antenna**

ITRON AXONIC ULTRASONIC HEAT METER

AXONIC65-25 – AXONIC80-40

ULTRA RHI HEAT BATTERY MAINS FLANGED M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 3.0m signal cable, 1.7m temperature sensors, with battery, AC, 230v AC, pockets and wall bracket

MWA Code	Description
AXONIC65-25	DN65, maximum flow: qs 50m³/h, minimum flow (R250): qi 100l/h, nominal flow: qp 25m³/h
AXONIC80-40	DN80, maximum flow: qs 80m³/h, minimum flow (R250): qi 160l/h, nominal flow: qp 40m³/h

The Itron Axonic uses the CF55 Calculator found on page 73.

Itron Meters

ITRON CF ECHO II ULTRASONIC HEAT METER

CFECHO15-1.5 – CFECHO50-15

ULTRA | RHI | HEAT | BATTERY | MAINS | SCREW | FLANGED | M-Bus | PULSED

See page 56 for further details

MID approved, EN1434, 1.5 signal cable, 1.7m temperature sensors, with battery, 230v AC, unions, pockets or nipples, and wall bracket

MWA Code	Description
CFECHO15-1.5	DN15, maximum flow: qs 3m³/h, minimum flow: qi 15l/h, G¾B, maximum temperature 130°C
CFECHO20-1.5	DN20, maximum flow: qs 3m³/h, minimum flow: qi 15l/h, G1B, maximum temperature 130°C
CFECHO20-2.5	DN20, maximum flow: qs 5m³/h, minimum flow: qi 25l/h, G1B, maximum temperature 130°C
CFECHO25-2.5	DN25, maximum flow: qs 5m³/h, minimum flow: qi 25l/h, G1¼B, maximum temperature 130°C
CFECHO25-3.5	DN25, maximum flow: qs 7m³/h, minimum flow: qi 35l/h, G1¼B, maximum temperature 130°C
CFECHO30-6.0	DN32, maximum flow: qs 15m³/h, minimum flow: qi 60l/h, G1½B, maximum temperature 130°C
CFECHO40-10.0	DN40, maximum flow: qs 20m³/h, minimum flow: qi 150l/h, G2B, maximum temperature 130°C
CFECHO50-15.0	DN50, maximum flow: qs 30m³/h, minimum flow: qi 150l/h, Flanges, maximum temperature 130°C

OPTION BOARDS

MWA Code	Description
CFECHO BOARD 1	M-Bus + E/V Repetition
CFECHO BOARD 2	M-Bus + 2 Water Meters Pulse Input
CFECHO BOARD 3	GPRS Modern + 2 Water Meters Pulse Input + M-Bus Master
CFECHO BOARD 4	LON + 2 Water Meters Pulse Input
CFECHO BOARD 5	Radio + 2 Water Meters Pulse Input
CFECHO BOARD 6	M-Bus + 2 Water Meters Pulse Input + power supply by M-Bus
CFECHO BOARD 7	RS232 + 2 Water Meters Pulse Input

POWER SUPPLY OPTIONS

MWA Code	Description
CFBATTERY	Battery Pack - 12 years 6207000006
CF230V	203v AC Power Supply 6208000006

TEMPERATURE SENSOR SET

MWA Code	Description
CFSENSORS 1.7	Pair of PT100 temperature sensors 1.7m 2960830006

NIPPLES & POCKETS

MWA Code	Description
CFBUSH	½" nipple for direct temperature sensors
SOCKET 50	½" x 50mm Brass Pockets
SOCKET 77	½" x 77mm Brass Pockets

Itron Meters

ITRON CF 51 HEAT METER CALCULATOR

RHI HEAT BATTERY MAINS M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 1.5m signal cable, 1.7m temperature sensors, with battery, AC, 230v AC, unions, pockets or nipples, and wall bracket

OPTION BOARDS

MWA Code	Description
CF51 BOARD 1	M-Bus + E/V Repetition
CF51 BOARD 2	M-Bus + 2 Water Meters Pulse Input
CF51 BOARD 3	GPRS Modem + 2 Water Meters Pulse Input + M-Bus Master
CF51 BOARD 4	LON + 2 Water Meters Pulse Input
CF51 BOARD 5	Radio + 2 Water Meters Pulse Input
CF51 BOARD 6	M-Bus + 2 Water Meters Pulse Input + power supply by M-Bus
CF51 BOARD 7	Double M-Bus Output
CF51 BOARD 8	RS232 + 2 Water Meters Pulse Input

POWER SUPPLY OPTIONS

MWA Code	Description
CFBATTERY	Battery Pack - 12 years 6207000006
CF230V	203v AC Power Supply 6208000006

TEMPERATURE SENSOR SET

MWA Code	Description
CFSENSORS 1.7	Pair of PT100 temperature sensors 1.7m 2960830006
CFSENSORS 5.0	Pair of PT100 temperature sensors 5.0m 2955830106
CFSENSORS 10.0	Pair of PT100 temperature sensors 10.0m 2960830506

NIPPLES & POCKETS

MWA Code	Description
CFBUSH	½" nipple for direct temperature sensors
SOCKET 50	½" x 50mm Brass pockets
SOCKET 77	½" x 77mm Brass pockets

Itron Meters

ITRON CF 55 HEAT METER CALCULATOR

RHI HEAT BATTERY MAINS M-Bus PULSED

See page 56 for further details

MID approved, EN1434, 1.5m signal cable, 1.7m temperature sensors, with battery, AC, 230v AC, unions, pockets or nipples, and wall bracket

OPTION BOARDS

MWA Code	Description
CF51 BOARD 1	M-Bus + E/V Repetition
CF51 BOARD 2	M-Bus + 2 Water Meters Pulse Input
CF51 BOARD 3	GPRS Modem + 2 Water Meters Pulse Input + M-Bus Master
CF51 BOARD 4	LON + 2 Water Meters Pulse Input
CF51 BOARD 5	Radio + 2 Water Meters Pulse Input
CF51 BOARD 6	M-Bus + 2 Water Meters Pulse Input + power supply by M-Bus
CF51 BOARD 7	Double M-Bus Output
CF51 BOARD 8	RS232 + 2 Water Meters Pulse Input

POWER SUPPLY OPTIONS

MWA Code	Description
CFBATTERY	Battery Pack - 12 years 6207000006
CF230V	203v AC Power Supply 6208000006

TEMPERATURE SENSOR SET

MWA Code	Description
CFSENSORS 1.7	Pair of PT100 temperature sensors 1.7m 2960830006
CFSENSORS 5.0	Pair of PT100 temperature sensors 5.0m 2955830106
CFSENSORS 10.0	Pair of PT100 temperature sensors 10.0m 2960830506

NIPPLES & POCKETS

MWA Code	Description
CFBUSH	½" nipple for direct temperature sensors
SOCKET 50	½" x 50mm Brass pockets
SOCKET 77	½" x 77mm Brass pockets

Diehl Meters

DIEHL SHARKY COMPACT ULTRASONIC HEAT METER

SHARKY774 15-1.5 – SHARKY774 20-2.5

ULTRA RHI HEAT BATTERY SCREW M-Bus M-Bus

See page 56 for further details

MID approved, EN1434, 1.45m direct temperature sensors, with battery, AC, and nipples

The ultrasonic compact energy meter SHARKY 774 can be used for measuring the energy consumption in heating applications for billing purposes.

Key Features

- AMR Smart Meter
- M-Bus or wireless M-Bus Communication. Combined with Diehl Metering AMR System technology highest transmission performance is achievable
- Constantly high measuring rates (vol.: 2s; temp.: 16s) with up to 12 years battery life time. Current power is calculated and updated every 2s
- AA-Cells contain less Lithium (0.7g per piece) than A-Cells. Not affected by dangerous goods transportation rules
- Springless battery contact (hard-solder) is corrosion-protected
- MID electromagnetic class E2 – less sensitive to neg. influence, e.g. culprit PWM pump
- 8-digit LCD offers 3 fractional digits without risk of display overflow. Comfortable reading by removable calculator (0.45m coax cable)
- Only 54mm design height from pipe centre, hence easy to install in compact heat stations
- MID Class 2

MWA Code	Description
SHARKY774 15-1.5	DN15, nominal flow: qp 1.5m³/h, length: 110mm, starting flow rate: 2.5l/h, maximum flow: qs 3m³/h, minimum flow: qi 15l/h
SHARKY774 20-2.5	DN20, nominal flow: qp 2.5m³/h, length: 130mm, starting flow rate: 4l/h, maximum flow: qs 5m³/h, minimum flow: qi 25l/h

Diehl Meters

DIEHL SHARKY 775 ULTRASONIC HEAT METER

SHARKY775 15-1.5 – SHARKY775 100-60

ULTRA | RHI | HEAT | BATTERY | MAINS | SCREW | FLANGED | M-Bus | M-Bus | PULSED

See page 56 for further details

MID approved, EN1434, 2.0m temperature sensors, with battery, AC, unions, pockets or nipples

SHARKY ultrasonic compact energy meter can be used for measuring the energy consumption in heating / cooling application for billing purposes.

Key Features

- Approval with dynamic range up to 1:250 (qi:qp) MID in Class 2 (depends on meter size), standard 1:100
- Complete range from DN 15mm qp 0.6m³/h up to DN 100mm qp 100m³/h
- Extremely low power consumption enabling a long battery lifetime (up to 16 years), 24v AC & 230v AC
- Radio option integrated
- Modular version, M-Bus, RS232, RS485, Analog outputs 4-20mA, pulse outputs and pulse inputs
- Communication modules: M-Bus, Wireless M-Bus, Pulse, Modbus, Analog outputs 4-20mA, & Pulse Inputs

MWA Code	Description
SHARKY775 15-1.5	DN15, 110mm, nominal flow: qp 1.5m³/h, starting flow: 2.5l/h, min. flow: qi 6l/h, max. flow: qs 3m³/h
SHARKY775 20-2.5	DN20, 130mm, nominal flow: qp 2.5m³/h, starting flow: 4l/h, min. flow: qi 10l/h, max. flow: qs 5m³/h
SHARKY775 25-6.0	DN20, 260mm, nominal flow: qp 6m³/h, starting flow: 7l/h, min. flow: qi 24l/h, maxi. flow: qs 12m³/h
SHARKY775 30-6.0	DN32, 260mm, nominal flow: qp 6m³/h, starting flow: 7l/h, min. flow: qi 24l/h, max. flow: qs 12m³/h
SHARKY775 40-10	DN40, 300mm, nominal flow: qp 2.5m³/h, starting flow: 20l/h, min. flow: qi 40l/h, max. flow: qs 20m³/h
SHARKY775 50-15	DN50, 270mm, nominal flow: qp 2.5m³/h, starting flow: 40l/h, min. flow: qi 60l/h, max. flow: qs 30m³/h
SHARKY775 65-25	DN65, 300mm, nominal flow: qp 2.5m³/h, starting flow: 50l/h, min. flow: qi 100l/h, max. flow: qs 50m³/h
SHARKY775 80-40	DN80, 300mm, nominal flow: qp 2.5m³/h, starting flow: 80l/h, min. flow: qi 160l/h, max. flow: qs 80m³/h
SHARKY775 100-60	DN100, 360mm, nominal flow: qp 2.5m³/h, starting flow: 120l/h, min. flow: qi 240l/h, max. flow: qs 120m³/h

TEMPERATURE SENSOR SET

MWA Code	Description
PT500 2.0	Set of PT500 temperature sensors 2.0m
PT500 3.0	Set of PT500 temperature sensors 3.0m
PT500 5.0	Set of PT500 temperature sensors 5.0m

NIPPLES & POCKETS

MWA Code	Description
M10	½" bush
SOCKET 65	½" x 65mm Socket
SOCKET 90	½" x 90mm Socket

Sontex Meters

SONTEX 749 COMPACT ULTRASONIC HEAT METER
COOLING OPTION AVAILABLE

SONTEX 749 15-1.5 – SONTEX749 20-2.5

ULTRA | RHI | HEAT | BATTERY | MAINS | SCREW | M-Bus | PULSED
LON | 4-20 Ma | RADIO

See page 56 for further details

MID approved, EN1434, 1.5 direct temperature sensors, with battery and pockets

MWA Code	Description
SONTEX749 15-1.5	qp 1.5m³/h, DN15, qs 3.0m³/h, qi 15l/h, low flow threshold value(50°C): 10, length: 110mm
SONTEX749 20-2.5	qp 2.5m³/h, DN20, qs 5.0m³/h, qi 25l/h, low flow threshold value(50°C): 16, length: 130mm

COMMUNICATION OPTIONS

- M-Bus technology
- Radio module
- Pulse outputs

Sontex Meters

SONTEX 531 / 440 ULTRASONIC HEAT METER
COOLING OPTIONS AVAILABLE

SONTEX 15-1.5 – SONTEX 150-60

ULTRA | RHI | HEAT | BATTERY | MAINS | SCREW | FLANGED | M-Bus
PULSED | LON | 4-20 Ma | RADIO

See page 56 for further details

MID approved, EN1434, 3.0m temperature sensors, with battery, 24v AC, 230v AC, and pockets

MWA Code	Description
SONTEX 15-1.5	qp 1.5m³/h, DN15, qs 3m³/h, qi 15l/h, low flow threshold (50°C): 10l/h
SONTEX 20-2.5	qp 2.5m³/h, DN20, qs 5m³/h, qi 25l/h, low flow threshold (50°C): 10l/h
SONTEX 25-3.5	qp 3.5m³/h, DN25, qs 7m³/h, qi 35l/h, low flow threshold (50°C): 15l/h
SONTEX 25-6.0	qp 6m³/h, DN25, qs 12m³/h, qi 60l/h, low flow threshold (50°C): 30l/h
SONTEX 40-10	qp 10m³/h, DN40, qs 20m³/h, qi 100l/h, low flow threshold (50°C): 50l/h
SONTEX 50-15	qp 15m³/h, DN50, qs 30m³/h, qi 150l/h, low flow threshold (50°C): 75l/h
SONTEX 65-25	qp 25m³/h, DN65, qs 50m³/h, qi 250l/h, low flow threshold (50°C): 125l/h
SONTEX 80-40	qp 40m³/h, DN80, qs 80m³/h, qi 800l/h, low flow threshold (50°C): 400l/h
SONTEX 100-60	qp 60m³/h, DN100, qs 120m³/h, qi 1200l/h, low flow threshold (50°C): 600l/h
SONTEX 150-150	qp 150m³/h, DN150, qs 300m³/h, qi 3000l/h, low flow threshold (50°C): 1500l/h

COMMUNICATION OPTIONS

- M-Bus technology
- Wireless M-Bus technology
- Pulse outputs
- Modbus
- 4-20 Ma module
- Pulse inputs

POWER SUPPLY OPTIONS

MWA Code	Description
BATTERY	Battery Pack
24V AC	24v AC Power Supply
230V AC	230v AC Power Supply

TEMPERATURE SENSOR SET

MWA Code	Description
SENSORS 3.0	Pair of PT500 temperature sensors 3.0m
SENSORS 5.0	Pair of PT500 temperature sensors 5.0m

Siemens Meters SIEMENS

SIEMENS SITRANS FLOWMETER FUS380 HEAT METER

SITRANS Flowmeter FUS380

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

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.

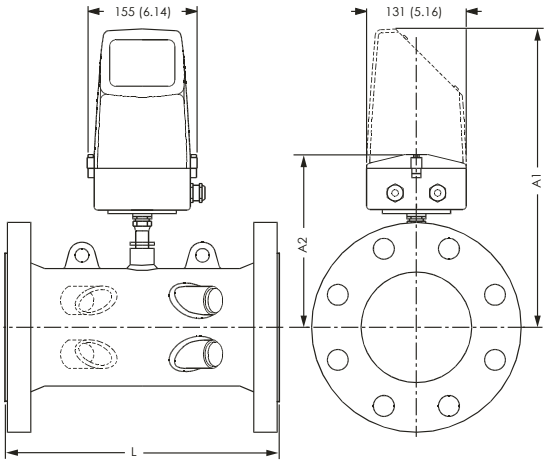
Compact mounting is only possible up to 120°C (248°F). The sensor must be isolated to protect transmitter from heat. The transmitter is available in an IP67/ NEMA 4X/6 enclosure.

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.

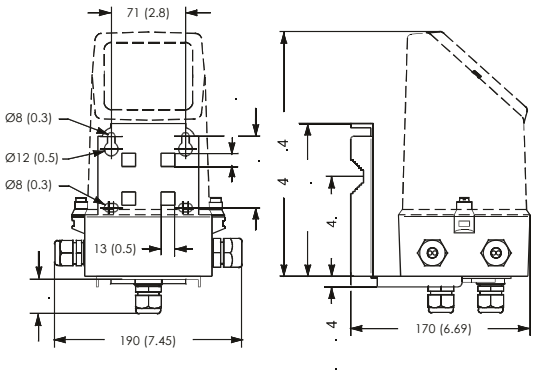
The SITRANS Flowmeter FUS380:

- Battery-powered up to 6 years
- 115/230v mains-powered with back-up battery option in case of mains power failure
- Fast measuring frequency 15 Hz/0.5 Hz (230v 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

Dimensional drawings



Transmitter IP67/NEMA 4X/6, wall mounting



Dimensions in mm (inch)

Siemens Meters SIEMENS

SIEMENS SITRANS FLOWMETER FUE950 HEAT METER

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.

The SITRANS FUE950 is capable of handling 3 kinds of energy calculations; district heating, chilled water, and combined cooling & heating applications.

Features & Benefits

- 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 of -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

KEY

SINGLE	Single Phase
THREE	Three Phase
SMART	SMART meter
PREPAY	Prepayment
COMBI	Combination
CLASS 1	Accuracy Class 1
CLASS 2	Accuracy Class 2
CLASS 3	Accuracy Class 3
MID	Measurement Instrument Directive
IrDA	Infrared Data Association
MODBUS	ModBus connections
M-Bus	M-Bus Wired connections
M-Bus	M-Bus Wireless connections
PULSED	Pulsed monitoring outputs

ELECTRIC METERS

Whether you are looking for a single phase meter, a three phase meter, a prepayment meter or a combination meter please contact us and we will offer help and advice to make sure that you get the right electricity meter.

Single Phase

Single phase electricity is connected at 230v or 240v via 2 wires, active and neutral, and is found in most domestic settings.

The electricity meters in our single phase meter range are all MID approved meters. Our MID meters are all compact, lightweight and rated as Class 1 and 2, so you can rely on electricity meter accuracy. Choose from analogue meters and digital meters.

Three Phase

Three phase electricity is connected at 400v or 415v, by three active wires or phases and one neutral. This is mostly used in industrial and large commercial settings where powerful appliances are powered.

Again, as with our single phase meters, all three phase meters that we stock are MID approved meters. With class 1 and 2 accuracy rating, these meters are reliable, compact, and lightweight and offer a choice between digital meters and analogue meters.

Itron elster ND Metering Solutions CARLO GAVAZZI EQ Meters

Elster Meters

A100C BS SINGLE PHASE ELECTRICITY METER

A100C

SINGLE CLASS 1 CLASS 2 MID PULSE

See page 86 for further details

MWA Code	Description
A100C	Accuracy Class 1 or Class 2, the A100C BS single phase meter has kWh import or kWh import/export and 20 years certified life. Large digit (9.8mm) multilingual display with chevron information indication. Extensive security data and compact design (130mm W x 97mm H x 47mm D)

AS230 BS SINGLE PHASE SMART ELECTRICITY METER

AS230

SINGLE SMART CLASS 1 CLASS 2 MID

See page 86 for further details

MWA Code	Description
AS230	EN 62053-21 Accuracy Class 1 or Class 2 EC Directive 2004/22/EC MID Class A or B. Smart meter with Modular WAN/LAN capabilities. Extensive security features and product design life of 20 years. Optical communications port. IP53 in accordance with IEC 60529:1989.

Elster Meters

A1100 THREE PHASE ELECTRICITY METER

A100C

THREE | CLASS 1 | CLASS 2 | MID | IrDA

See page 86 for further details

MWA Code	Description
A1100	3 phase 4 wire, or 3 phase 3 wire, direct or CT operated with kWh import or kWh import/export with large figure display. Double insulated, glass filled polycarbonate case to DIN43857 Part 2 & Part 4 (except for top fixing centres). Case to IP53 to IEC 60529-1989. Current direct rating 20 – 100A / 10 – 60A.

A1140 THREE PHASE ELECTRICITY METER

A1140

THREE | CLASS 2 | CLASS 3 | MID

See page 86 for further details

MWA Code	Description
A1140	Whole current or CT operated, the A1140 is to EC Directive 2004/22/EC MID kvarh, Class 2 or Class 3. IEC 62056-21 communications port, with 10 years product life and 12kV impulse withstand. IP54 in accordance with IEC 60529. Windows™ 'Power Master Unit' programming and reading software.

Itron Meters

A1700 THREE PHASE ELECTRICITY METER

A1700

THREE CLASS 1 CLASS 2 MID

See page 86 for further details

MWA Code	Description
A1700	Class 1 or Class 2 for direct connected, CT or CT/VT operation. EC Directive 2004/22/EC MID Class A, B or C. 2 line, multilingual display with voltage imbalance detection and temperature compensation to maintain RTC accuracy during power outages.

ACE3000 TYPE 100/110 THREE PHASE ELECTRICITY METER

ACE3000

THREE CLASS 2

See page 86 for further details

MWA Code	Description
ACE3000	Residential three phase meter with active energy measurement. Single and double tariff drum register. Import and export measurement, and compatible with current connection standard. Anti-tampering registration mode, and capable of long-term performance.

EQ Meters

A SERIES SINGLE PHASE ELECTRICITY METER

A41 / A42

SINGLE | M-Bus | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
A41	Single phase, Class B meter with Pulse and Mbus outputs, maximum 80amps, and a pulse frequency of 1000 imp/kWh, direct connected.
A42	Single phase, Class B meter with Pulse and Mbus outputs, maximum 6amps, and a pulse frequency of 5000 imp/kWh, CT operated.

B SERIES SINGLE PHASE ELECTRICITY METER

B21 / B23

SINGLE | M-Bus | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
B21	Single phase, Class B meter with Pulse and Mbus outputs, maximum 65amps, and a pulse frequency of 1000 imp/kWh, direct connected.
B23	Single phase, Class B meter with Pulse and Mbus outputs, maximum 65amps, and a pulse frequency of 1000 imp/kWh, direct connected.

C SERIES SINGLE PHASE ELECTRICITY METER

C11

SINGLE | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
C11	Single phase, Class B meter with Pulse and Mbus outputs, maximum 40amps, and a pulse frequency of 1000 imp/kWh, direct connected.

EQ Meters

A SERIES THREE PHASE ELECTRICITY METER

A43 / A44

THREE | M-Bus | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
A43	Three phase, Class A meter with Pulse and Mbus outputs, maximum 80amps, and a pulse frequency of 1000 imp/kWh, direct connected.
A44	Three phase, Class B meter with Pulse and Mbus outputs, maximum 6amps, and a pulse frequency of 5000 imp/kWh

B SERIES THREE PHASE ELECTRICITY METER

B24

THREE | M-Bus | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
B24	Three phase, Class B meter with Pulse and Mbus outputs, maximum 6amps, and a pulse frequency of 5000 imp/kWh, CT operated.

C SERIES THREE PHASE ELECTRICITY METER

C13

THREE | PULSED | MID | CLASS 1

See page 86 for further details

MWA Code	Description
C13	Three phase, Class B meter with Pulse and Mbus outputs, maximum 40amps, and a pulse frequency of 1000 imp/kWh, direct connected.

ND Meters

ND CUBE 300 ELECTRICITY METER

ND300

THREE MODBUS PULSED

See page 86 for further details

MWA Code	Description
ND300	The Cube 300 is a CT operated, DIN 96 x 96 mounting, kWH electricity meter that is easy to install and convenient to use. Suitable for both 3 wire and 4 wire 3φ unbalanced loads, optional for single phase or balanced 3φ systems. Large clear display, isolated outputs, and accuracy better than Class 1.

ND CUBE 350 ELECTRICITY METER

ND350

THREE MODBUS CLASS 1 PULSED

See page 86 for further details

MWA Code	Description
ND350	The CT operated Cube 350 comes with 2 pulse outputs, both configured for kWh, kvarh or kVah. Standard communications are RS485 Modbus, but the unit does offer Modbus TCP and TCP/IP protocols such as HTTP, FTP, TFTP, SNMP. The meters come with phase indicators and individual harmonics to the 15th.

ND CUBE 400 ELECTRICITY METER

ND400

THREE MODBUS CLASS 1 PULSED

See page 86 for further details

MWA Code	Description
ND400	The Cube 350 comes with 2 pulse outputs, both configured for kWh, kvarh or kVah. The meter features a useful auto-rotation feature, enabling the meter to detect and correct any current transformers that may be been installed the wrong way round. 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 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.

ND Meters

ND MULTI-CUBE ELECTRICITY METER

NDMC

THREE MODBUS CLASS 1 PULSED

See page 86 for further details

MWA Code	Description
NDMC	The Multicube Modular Meter is a CT operated, metering system designed for applications where multiple meters need to be installed. 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.

ND RAIL 350 ELECTRICITY METER

NDR350

THREE MODBUS CLASS 1 PULSED

See page 86 for further details

MWA Code	Description
NDR350	Standard feature on the Rail 350 is 2 pulse outputs, which can be configured for kWh and kvarh. 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. This meter is modular in design, CT operated, individual harmonics to the 15th and comes with 2 pulse outputs as standard.

Carlo Gavazzi

BUS ADAPTER TYPE VMU-B 01 ENERGY MANAGEMENT

VMU-B 01

Compact "Bus to Port" communication adapter capable to convert from ModBus to M-Bus.

The module is provided with universal power supply and is able to recognize and auto-set the variable format and mapping according to the connected Carlo Gavazzi instrument. Housing for DIN-rail mounting, IP40 (front) protection degree.

Key Features

- EM24-DIN, EM21-72D and EM33-DIN self recognition
- Front diagnostic LED's
- Universal 18 to 260 VAC/DC power supply
- Dimensions: 1-DIN module
- Protection degree (front): IP40

ENERGY ANALYZER TYPE EM24 DIN ENERGY MANAGEMENT

EM24

THREE CLASS 1 MODBUS

See page 86 for further details

Three-phase, CT operated energy analyzer with built-in configuration joystick and LCD data displaying; particularly indicated for active and reactive energy metering and for cost allocation.

Key Features

- Application adaptable display and programming procedure (Easyprog function)
- Easy connections management
- Accuracy ±0.5 RDG (current/voltage)
- Instantaneous variables readout: 4 DGT
- Energies / gas / water readout: 8 DGT

Carlo Gavazzi

ENERGY METER TYPE EM110 ENERGY MANAGEMENT

EM110

SINGLE CLASS 1 PULSED

See page 86 for further details

Single phase energy meter with electro-mechanical display to Class 1 (kWh) according to EN62053-21 or Class B (kWh) according to EN50470-3.

Key Features

- Energy readout on display: 6+1 digit
- Measurements on display: total kWh
- Direct current measurement up to 45AAC
- Self power supply
- Dimensions: 1-DIN module
- Protection degree (front): IP51
- Pulse output (by open collector PNP)
- Detects wrong current direction

Carlo Gavazzi

ENERGY METER TYPE EM21 72D ENERGY MANAGEMENT

EM21 72D

THREE CLASS 1 CLASS 2 MODBUS PULSED

See page 86 for further details

Three-phase, CT operated energy meter with removable front LCD display unit. The same unit can be used either as a DIN-rail mounting or a panel mounting energy meter.

This general purpose three-phase energy meter is suitable for both active and reactive energy metering for cost allocation but also for main electrical parameter measurement and retransmission (transducer function).

Key Features

- Instantaneous variables readout: 3 DGT
- Energies readout: 7 DGT
- System variables: W, var, PF, Hz, Phase-sequence
- Self power supply
- Protection degree (front): IP50
- Easy connections management
- Detachable display

INTEGRATED WEB BASED SOLITION TYPE VMU-C ENERGY MANAGEMENT

VMU-C

VMU-C is a combination of modules which performs the monitoring of an Energy Management installation.

The core unit is VMU-C gathering data from up to 32 energy meters; the meters can be both AC or DC meters. In addition to the data-logging, it performs also the management of local or remote (via VMU-M) VMU-O “I/O unit” and/or VMU-P “Environment variable unit”, and provides an FTP push functionality.

Key Features

- Integrated modular local monitoring system for Energy Management plants based on Webserver and FTP/push capability
- Up to 8 DIN modules configuration equivalent to 140mm width
- VMU-C EM can manage on RS485 bus up to 32 Energy Meters or Power Analyzers
- VMU-C EM can manage on local bus 1 VMU-W modem unit

Pre-Payment Meters

MWE 100 COIN OPERATED PRE-PAYMENT ELECTRICITY METER

MWE 100

SINGLE PREPAY PULSED

See page 86 for further details

Credit is inserted by £1 and £2 coins, with a message display indicating the remaining credit. Additional credit is updated and continues to display the new total.

Key Features

- LED flashes when a load is connected at 1000 pulses per kWH of used energy
- The landlord can set the rate and/or credit as required
- The tenant can find out the rate being charged and the remaining credit

TOKEN OPERATED PRE-PAYMENT ELECTRICITY METER

ELEC TOKEN

SINGLE PREPAY PULSED

See page 86 for further details

Credit is inserted by use of tokens, with a message display indicating the remaining credit. Additional credit is updated and continues to display the new total.

Key Features

- LED flashes when a load is connected at 1000 pulses per kWH of used energy
- The landlord can set the rate and/or credit as required
- The tenant can find out the rate being charged and the remaining credit

KEY

PRE	Pre-Configured
IND	For industrial use
COM	For commercial use
TEMP	Suitable for temperature monitoring
HUM	Suitable for temperature monitoring
CO_2	Suitable for Carbon Dioxide monitoring
DUCT	Duct mounting
ROOM	Room mounting
IMM	Immersion mounting
MAN	Manual reset
AUTO	Automatic reset
IP	International pressure rating
PN	Pressure rating
LCD	Liquid Crystal Display
LED	Light-emitting diodes

BUILDING CONTROLS

At MWA Technology, 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 building controls range you'll always have what you need to succeed.

REGIN THE CHALLENGER

ESBE

Regin Controls

OPTIGO 24V CONTROLLER

RC-OP10 / 230

PRE IND COM

See page 98 for further details

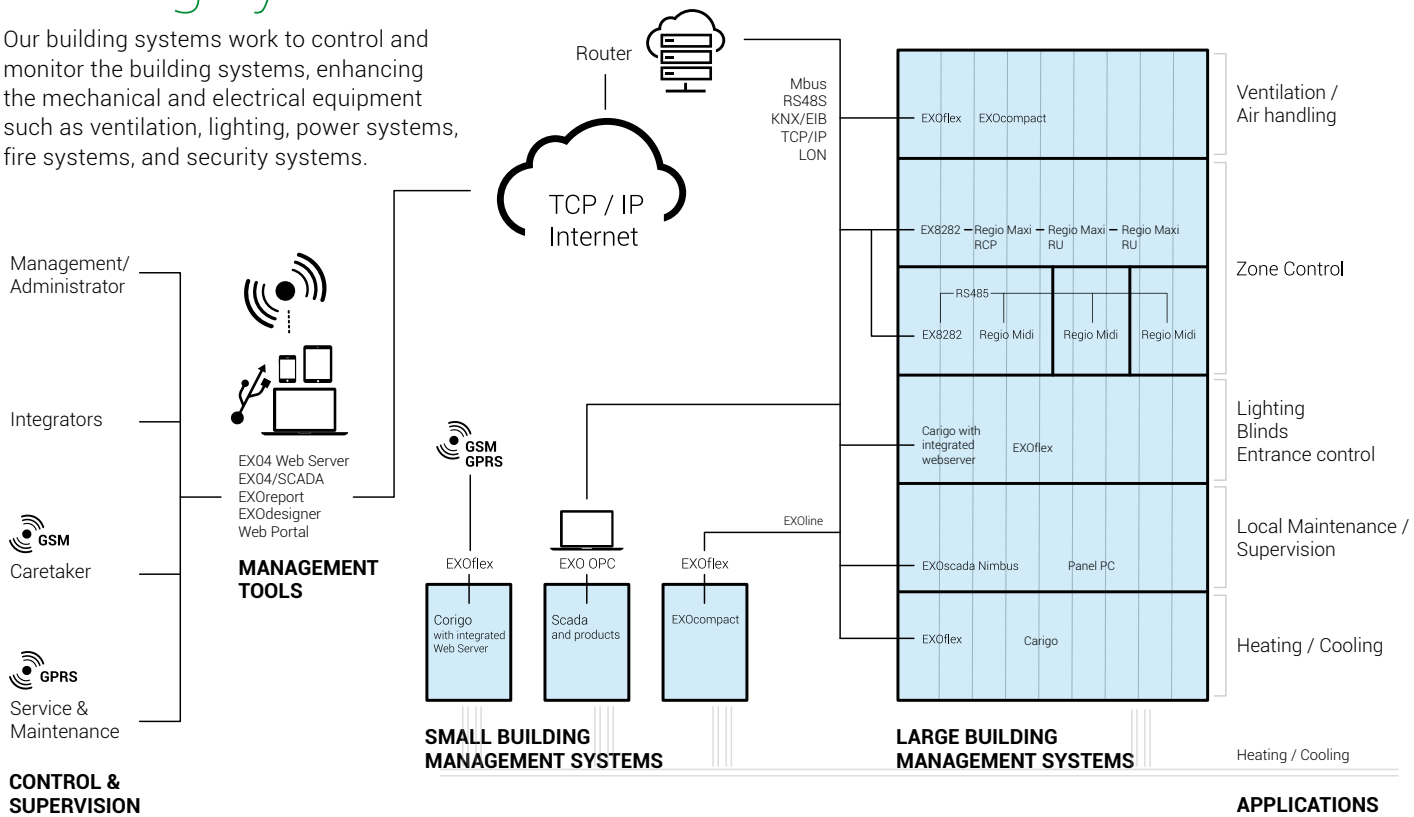
Pre-configured controller that can be used for control of temperature, CO_2, pressure, and humidity in air handling and heating applications.

It is capable of being used as a stand-alone controller for simpler applications, as well as extremely easy to install, commission and control.

MWA Code	Description
RC-OP10	Capable of 24v, Class IP20, SPI PT1000. Backlit display, and input for external setpoint devices. Pre-loaded with several application modes.
RC-OP10-230	Capable of 230v, Class IP20, SPI PT1000. Backlit display, and input for external setpoint devices. Pre-loaded with several application modes.

Building Systems

Our building systems work to control and monitor the building systems, enhancing the mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems.



Regin Controls

CO_2 & TEMPERATURE TRANSMITTER FOR DUCT MOUNTING

RC-CTDT2

CO_2 TEMP DUCT

See page 98 for further details

Transmitter for measuring carbon dioxide concentration and temperature in air. Measuring range 0 – 2000 ppm and output signal 0 –10v DC, passive PT1000 output and 0 – 10v DC for temperature.

Key Features

- Combined CO_2 and temperature transmitter
- Infrared technology (NDIR)
- CO_2 concentration 0 – 2000 ppm measuring range
- Excellent long-term stability
- Easy installation and service-friendly housing
- Probe only 12mm
- Automatic CO_2 calibration

CO_2 TRANSMITTERS FOR ROOM MOUNTING

RC-CO2RT

ROOM LCD TEMP

See page 98 for further details

CO2RT is a series of room transmitters for measuring carbon dioxide levels in air. The units have a built-in temperature sensor with output signal 0 – 10v DC and PT1000-sensor.

Key Features

- CO_2 level 0 – 2000 ppm
- Temperature 0 – 50°C
- Relative humidity 10 – 90% RH (CO2HRT)
- With or without LCD display
- Excellent long term stability
- Snap-in cover

HAVE YOU CONSIDERED...

What is the required range? Where is the sensor being mounted; room, duct, immersion, clamp on, or outside?

Regin Controls

COMBINED HUMIDITY / TEMPERATURE TRANSMITTER FOR DUCT MOUNTING

RC-HTDT2500 (-420)

HUM TEMP DUCT IP65

See page 98 for further details

Transmitter for measuring temperature and relative humidity, the HTDT2500 (-420) has a capacitive thin-film element that provides a signal proportional to the relative humidity and a transmitter with a high degree of accuracy.

Key Features

- Output signal 0 – 10v DC or 4 – 20 mA, as well as passive PT1000
- Supply voltage 24v AC or 15 – 35v DC
- Protection class IP65
- High accuracy
- Short reaction time
- Long-term stability

FILTER

The transmitter sensor element is protected by a membrane filter. This can be changed to a sintered brass filter, which is recommended if operating in an environment with a high degree of pollution.

HUMIDITY / TEMPERATURE TRANSMITTER FOR ROOM MOUNTING

RC-HTRTN-420

TEMP IP30 LCD HUM

See page 98 for further details

The HRTN humidity and temperature transmitters are for measurement of humidity and temperature, intended for room mounting in HVAC systems.

The transmitters have a capacitive thin-film element which gives a signal that is proportional to the relative humidity. The measuring signal is converted by the built-in electronics to an output signal 0 – 10v or 4 – 20 mA. The sensor element has rapid response to changes in humidity and excellent long-term stability. The element also has good durability in contaminated environments.

HTRTN, HTRTN-D and HTRTN-420 also have a temperature sensor, which gives an output signal 0 – 10v DC or 4 – 20 mA via the built-in electronics.

Key Features

- Output signal 0 – 10v DC or 4 – 20 mA
- Protection class IP30
- Good long-term stability
- Snap-on cover
- Option with display
- Resistant to contamination
- Accuracy ±2% RH (40 – 60% RH), ±3% RH (10 – 90% RH)

Regin Controls

BULB SENSOR PT1000

RC-TG-B640 / PT1000

IP67

See page 98 for further details

For surface temperature measurement.

Key Features

- Nom. Resistance 1000 Ω/0°C
- Temperature range of -50 – 110°C
- Class IP67
- 1.5m cable length

CLAMP-ON SENSOR PT1000

RC-TG-AH1/PT1000

IP42

See page 98 for further details

Temperature sensor with PT1000 element for surface temperature measurement.

R-TG-AH1/PT1000 is a temperature sensor with a modern design that suits all environments. It is intended for clamp-on mounting as the sensor is delivered with a metal strap and contact heat paste; the construction of the strap makes it easy to fix the sensor to the pipe.

Key Features

- Simple mounting
- Delivered with a metal strap for easy fastening
- Large contact surface
- Modern design and compact format
- Nom. Resistance 1000 Ω/0°C
- Temperature range of -20 – 120°C
- Class IP42
- M16 gland

HAVE YOU CONSIDERED...

What is the sensing element? Is it passive or active? What is it sensing; temperature, humidity, pressure, or CO_2?

Regin Controls

DUCT SENSOR WITH HOUSING PT1000

RC-TG-KH/PT1000

DUCT TEMP IP65

See page 98 for further details

Temperature sensor with PT1000 element for air temperature measurement in ventilation and air handling installations.

Temperature sensor with a modern design suiting all environments. The sensor is very easy to mount, has an adjustable insertion length and a flexible mounting bracket that closes tightly against ducts.

Key Features

- Anti-tear M16 cable gland
- Screw cap
- 10mm hole for probe
- Adjustable insertion length (60 – 405mm) and good sealing
- Modern design and compact format
- Nom. Resistance 1000 Ω/0°C
- Temperature range of -30 – 70°C
- Class IP65
- 60 – 405mm insertion

IMMERSION SENSOR WITH HOUSING PT1000

RC-TG-DHW1/PT1000

IMM IP65

See page 98 for further details

Immersion sensor with a modern design, PT1000 element for water temperature measurement.

Suiting all environments, the sensor part has a snap-on fastening for the pocket, making it easy to mount.

Key Features

- Anti-tear M16 cable gland
- Screw cap
- R ½" connection
- Pocket and probe in stainless steel
- Modern design and compact format
- Simple and quick installation
- Nom. Resistance 1000 Ω/0°C
- Temperature range of -20 – 120°C
- Class IP65
- PN25 rating

Regin Controls

OUTDOOR TEMPERATURE SENSOR WITH HOUSING PT1000

RC-TG-UH/PT1000

TEMP IP65

See page 98 for further details

Sensor with PT1000 element for outdoor temperature measurement or for use in areas requiring a higher protection class.

Temperature sensor with a modern design suiting all environments. R-TG-UH/PT1000 is intended for wall mounting, outdoors or in areas where a high protection class is required.

Key Features

- Screw cap
- Tight casing, IP65
- Anti-tear cable gland
- Modern design and compact format
- Nom. Resistance 1000 Ω/0°C
- Temperature range of -30 – 70°C
- Class IP65
- M16 gland

ROOM SENSOR PT1000

RC-TG-R5/PT1000

TEMP IP30

See page 98 for further details

Sensor with PT1000 element for room temperature measurement. Room sensor with a modern design for all environments.

Modern, compact design with simple and quick installation process due to snap-on lid.

Key Features

- Nom. Resistance 1000 Ω/0°C
- Temperature range of 0 – 50°C
- Class IP30

Regin Controls

ROOM SENSOR WITH SETPOINT ADJUSTER PT1000

RC-TG-R4/PT1000

ROOM TEMP IP30

See page 98 for further details

Sensor with PT1000 element for room temperature measurement, a modern, compact design for all environments.

Key Features

- Nom. Resistance 1000 Ω/0°C
- Temperature range of 0 – 50°C
- Class IP30

Regin Controls

CLAMP ON SENSOR WITH HOUSING NTC10K

RC-TG-AH1/NTC10-01

TEMP IP42

See page 98 for further details

Temperature sensor with NTC10k element for surface temperature measurement.

Key Features

- High measurement accuracy
- Compatibility with Aquatrol, Johnson Controls, Satchwell, Trend, Cylon, and Honeywell
- Easy to mount
- Delivered with stainless steel metal strap for easy fastening
- Large contact surface
- Modern design and compact format
- Nom. Resistance 10 kΩ/25°C
- Temperature range of -20 – 120°C
- Class IP42
- M16 gland

IMMERSION SENSOR WITH HOUSING NTC10K

RC-TG-DHW1/NTC10-01

TEMP IP65

See page 98 for further details

Temperature sensor with NTC10K element for water temperature measurement.

Key Features

- Immersion sensor suiting all environments
- Snap-on fastening for easy mounting
- Compatibility with Aquatrol, Johnson Controls, Satchwell, Trend, Cylon, and Honeywell
- Anti-tear M16 cable gland
- R ½" connection
- Pocket and probe in stainless steel
- Modern design and compact format
- PN25 pressure
- Temperature range of -20 – 120°C
- Class IP65

Regin Controls

DUCT SENSOR WITH HOUSING NTC10K

RC-TG-KH/NTC10-01

DUCT TEMP IP65

See page 98 for further details

Temperature sensor with a modern design suiting all environments is very easy to mount, has an adjustable insertion length and a flexible mounting bracket that closes tightly against ducts.

Key Features

- High measurement accuracy
- Nom. Resistance 10 kΩ/25°C
- Compatibility with Aquatrol, Johnson Controls, Satchwell, Trend, Cylon, and Honeywell
- Insertion length of 60 – 205mm
- Diameter of 8mm
- Class IP65
- Nom. Resistance 10 kΩ/25°C
- Temperature range of -30 – 70°C

OUTDOOR SENSOR NTC10K

RC-TG-UH/NTC10-01

IP65

See page 98 for further details

Temperature sensor with NTC10k element for outdoor temperature measurement or for use in areas requiring a higher protection class.

Key Features

- Screw cap
- Tight casing, Class IP65
- Anti-tear cable gland
- Modern design and compact format
- Compatibility with Aquatrol, Johnson Controls, Satchwell, Trend, Cylon, and Honeywell
- Simple and quick installation
- Nom. Resistance 1000 Ω/25°C
- Temperature range of -30 – 70°C
- M16 gland

Regin Controls

ROOM SENSOR NTC10K

RC-TG-R5/NTC10-01

ROOM IP30

See page 98 for further details

Temperature sensor with NTC10k element for room temperature measurement.

Key Features

- Simple mounting
- High measurement accuracy
- Compatibility with Aquatrol, Johnson Controls, Satchwell, Trend, Cylon, and Honeywell
- Modern design and compact format
- Nom. Resistance 10 kΩ/25°C
- Temperature range of 0 – 50°C
- Class IP30

MECHANICAL FROST PROTECTION FT SERIES THERMOSTAT

RC-FT60

MAN AUTO IP65

See page 98 for further details

FT is a series of high quality electro-mechanical frost protection thermostats for use in cooling, heating and ventilation systems.

The FT electro-mechanical thermostats are constructed around a gas-filled capillary tube and sensor housing that transfers the changes in temperature to a change-over relay. The relay is capable of breaking up to 15A at 230v AC.

The FT series consists of frost protection thermostat for protecting air heaters in ventilation and climate control systems and heat exchangers in cooling systems. They can also be used to control electrical heating systems and for switching acoustic or optical alarm signals.

Key Features

- Gas-filled copper sensor element with a 1.8m, 3m or 6m long capillary tube
- Dust-tight micro switch with switching contacts (heating/cooling)
- Easy installation and wiring
- Manual or automatic reset
- Protection class IP65
- Storage temperature -30 – 60°C
- Ambient temperature 55°C
- Accuracy ± 1K

Regin Controls

MECHANICAL MTIB IMMERSION THERMOSTAT

RC-MTIB

MAN AUTO IP65 TEMP

See page 98 for further details

MTIB is a series of high quality electro-mechanical thermostats for use in cooling, heating and ventilation systems.

The MTIB electro-mechanical thermostats are constructed around a fluid-filled capillary tube and sensor housing that transfers the changes in temperature to a change-over relay. The relay is capable of breaking up to 15 A at 230v AC.

MTIB is intended for use in temperature control in pipes using water for heating or cooling, as well as in air conditioning systems, boilers and heaters.

Key Features

- Wide setpoint range
- Fixed hysteresis
- Manual or automatic reset
- Protection class IP65
- Temperature range 20 – 90°C
- Ambient humidity 10 – 90°C RH
- Ambient temperature -35 – 65°C
- Capacity 15(8)A, 24 – 250v AC

MECHANICAL MTIR WALL THERMOSTAT

RC-MTIR

WALL IP65

See page 98 for further details

MTIR is a series of high quality electro-mechanical thermostats for use in cooling, heating and ventilation systems.

The MTIR electro-mechanical thermostats are constructed around a fluid-filled capillary tube and sensor housing that transfers the changes in temperature to a change-over relay. In thermostats constructed for wall mounting, the capillary tube is wound and mounted on top of the housing. The relay is capable of breaking up to 15 A at 230v AC.

Key Features

- Wide setpoint range
- Adjustable or fixed hysteresis
- Protection class IP65
- Ambient humidity 10 – 90°C RH
- Ambient temperature -35 – 65°C
- Capacity 15(8)A, 24 – 250v AC

Regin Controls

TORQUE 20NM DAMPER ACTUATOR

RC-RDAB20-230S

IP54

See page 98 for further details

Damper actuator for control of dampers in ventilation systems up to approximately 4m².

Key Features

- Power supply 100 – 240v AC
- On / off or 3-point control signal
- Built-in auxiliary switch RDAB20-230S
- For 10 – 20mm Jack Shaft
- Maximum damper 4m²
- Class IP54

TORQUE 20NM 24 DAMPER ACTUATOR

RC-RDAB20-24A / RC-RDAB20-24S

IP54

See page 98 for further details

Damper actuator for control of dampers in ventilation systems up to approximately 4m².

RC-RDAB20-24A

- Torque 20 Nm
- Power supply 24v AC/DC
- 0 – 10v DC Signal
- Built-in auxiliary switch RDAB20-24S
- Round 10 – 20mm Ø
- Square 14 – 25.4mm
- Maximum damper 4m²
- Class IP54

RC-RDAB20-24S

- Torque 20 Nm
- Power supply 24v AC/DC
- On/Off, 3-point Signal
- Built-in auxiliary switch RDAB20-24S
- Round 10 – 20mm Ø
- Square 14 – 25.4mm
- Maximum damper 4m²
- Class IP54

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Regin Controls

24v MOTORISED VALUE ACTUATOR

RC-RVAPC-24/24A

LED IP43

See page 98 for further details

The RVAPC-24 valve actuator is intended for use in HVAC applications together with Regin's pressure independent valves PCTV, PCMTV and PCTVS DN15-32.

The actuator is compact, easy to install and has a LED indicator which shows the status and diagnostic of the actuator.

Key Features

- Removable cable for easy installation and maintenance
- Stroke time of 8s/mm
- Clear operating status indication

MWA Code	Description
RC-RVAPC 24	3 point signal, 120N force, 6mm stroke, max. temperature of 95°, IP43 class
RC-RVAPC 24A	0 – 10v signal, 120N force, 6 / 3.2mm (adjustable) stroke, max. temperature of 95°, IP43 class

24v THERMAL ACTUATOR

RC-RTAN 24/24A

IP40

See page 98 for further details

Thermal actuator with position indicator for control of valves in heating or cooling systems.

The actuator can be used for controlling radiator circuits, solar heating systems, heating or cooling coils, under floor heating, etc. To be combined with the VTTV/VTTR/VTTB range of valves.

Key Features

- Noiseless and maintenance-free
- Modern and compact design
- For M30 x 1.5 connection
- 24v AC and 230v AC
- On/Off and 0 – 10v

MWA Code	Description
RC-RTAN 24	On/off signal, 100N force, ambient temperature of 0 – 50°C, IP40 class
RC-RTAN 24A	0 – 10v signal, 100N force, ambient temperature of 0 – 50°C, IP40 class

Regin Controls

SPRING RETURN ACTUATOR

RC-RVAFC

TEMP IP44 MAN

See page 98 for further details

The RVAFC series of actuators is designed for temperature control in heating and cooling systems.

The actuators are intended for use with Regin's ZFCM valves and are available in two versions: RVAFC-2302 for 2-way valves and RVAFC-2303 for 3-way valves. Valves and actuators are ordered separately.

Key Features

- Tight closing
- Supply voltage 230v AC
- Manual operation
- Spring return

MWA Code	Description
RC-RVAFC	6 VA power, 0 – 60°C ambient temperature, IP44 Class

HAVE YOU CONSIDERED...

What is the torque rating? What is the stroke of the valve?

Regin Controls

RVAN18 VALVE ACTUATOR

RC-RVAN18 24/24A/230

IP54 MAN

See page 98 for further details

Valve actuator for control of Regin's valves. The actuator can be operated manually.

Key Features

- Protection class IP54
- Manual operation
- Easy to mount on the valve
- Stroke 10 – 52mm
- Position indication

MWA Code	Description
RC-RVAN18 24	8 VA consumption, 1800N force, 10 – 52mm stroke, 3-point signal
RC-RVAN18 24A	8 VA consumption, 1800N force, 10 – 52mm stroke, 0 – 10v DC / 2 – 10v DC
RC-RVAN18 230	8 VA consumption, 1800N force, 10 – 52mm stroke, 3-point signal

RVAN25 VALVE ACTUATOR

RC-RVAN25 24/24A/230

IP54 MAN

See page 98 for further details

Valve actuator for control of Regin's valves. The actuator can be operated manually.

Key Features

- Protection class IP54
- Manual operation
- Easy to mount on the valve
- Stroke 10 – 52mm
- Position indication

MWA Code	Description
RC-RVAN18 24	24v AC/DC, 2500N force, 10 – 52mm stroke, 3-point signal
RC-RVAN18 24A	24v AC/DC, 2500N force, 10 – 52mm stroke, 0 – 10v DC / 2 – 10v DC
RC-RVAN18 230	230v AC ±15% 50Hz, 2500N force, 10 – 52mm stroke, 3-point signal

Regin Controls

RVAN5 VALVE ACTUATOR

RC-RVAN5 24/24A/230

IP54 MAN

See page 98 for further details

Valve actuator for control of Regin's valves. The actuator can be operated manually.

Key Features

- Protection class IP54
- Manual operation
- Easy to mount on the valve
- Stroke 10 – 30mm
- Position indication

MWA Code	Description
RC-RVAN5 24	4.5 VA consumption, 500N force, 10 – 30mm stroke, 3-point signal
RC-RVAN5 24A	4.5 VA consumption, 500N force, 10 – 30mm stroke, 0 – 10v DC / 2 – 10v DC
RC-RVAN5 230	4.5 VA consumption, 500N force, 10 – 30mm stroke, 3-point signal

HAVE YOU CONSIDERED...

What is the control voltage? Who's valve is it going on? Should the Actuator you're seeking be motorised or thermic?

Regin Controls

RVAZ4 VALVE ACTUATOR

RC-RVAZ4-24/24A/230

IP44

See page 98 for further details

The valve actuators in the RVAZ4 range can be used together with valves in the ZTVB/ZTRB range. They are easy to mount and have a clear position indicator which shows the position of the valve. The actuator also has a manual override function.

Key Features

- 3-position or 0 – 10v control signal
- 24v AC or 230v AC supply voltage
- Manual override
- Easy to mount on the valve
- Stroke 5.5mm
- Position indicator

MWA Code	Description
RC-RVAZ4-24	24v AC ±15%, 0.6 VA consumption, 400N force, Class IP44, 3-point signal
RC-RVAZ4-24A	24v AC ±15%, 6 VA consumption, 400N force, Class IP44, 0 – 10v DC
RC-RVAZ4-230	230v AC ±15% 50Hz, 6 VA consumption, 400N force, Class IP44, 3-point signal

RVAZ4L1 VALVE ACTUATOR

RC-RVAZ4L1 24/24A/230

All the valve actuators in the RVAZ4L1 range can be used together with valves in the MVFL range. They are easy to mount and have a clear position indication which shows the position of the actuator. The actuator has manual override.

Key Features

- 3-position or 0 – 10v control signal
- Manual override
- Easy to mount on the valve
- Stroke 5.5mm
- Position indication

MWA Code	Description
RC-RVAN18 24	24v AC/DC, 2500N force, 10 – 52mm stroke, 3-point signal
RC-RVAN18 24A	24v AC/DC, 2500N force, 10 – 52mm stroke, 0 – 10v DC / 2 – 10v DC
RC-RVAN18 230	230v AC ±15% 50Hz, 2500N force, 10 – 52mm stroke, 3-point signal

Regin Controls

2-WAY BRASS CONTROL VALVE

RC-BTV50-39

2-WAY GLYC PN16

See page 98 for further details

Female threaded 2-way valve. Pressure balanced (from DN20-50, not DN15) valve intended for control of hot, cold or glycol-mixed water together with the Regin Controls RVAN range of actuators.

Key Features

- Rangeability 100:1
- No leakage
- Pressure balanced (smaller actuators can be used)
- Temperature range -5 – +140°C

MWA Code	Description
RC-BTV50-39	2” connection, DN50 diameter, 1600kPa max. diff. pressure, 39Kvs, PN16 pressure

2-WAY CHILLED BEAM VALVE

RC-VTTV15-20

2-WAY GLYC PN16

See page 98 for further details

The control valves are for control of heating and cooling in fan coil or chilled beams applications.

The valve body is in brass, the spindle and plug are in PA+GF. O-rings made of FKM. The valves have linear flow characteristics and are compatible with the RTAN and RVAPC range of actuators.

Key Features

- For water and refrigerants (max. 40 % glycol)
- Media temperature 2 – 95°C
- Pressure class PN16
- For differential pressure up to 250 kPa
- No leakage when the valve is closed

MWA Code	Description
RC-VTTV15-1,6	DN15 diameter, 1.6m³/h, 2 – 95°C temperature, PN16 pressure
RC-VTTV20-2,5	DN20 diameter, 2.5m³/h, 2 – 95°C temperature, PN16 pressure

Regin Controls

2-WAY FLANGED VALVE

RC-GTVS 50-150

2-WAY GLYC STEAM PN16

See page 98 for further details

Control valves intended for use in heating and ventilation systems, suitable for cold and hot water, glycol-mixed water or steam together with RVAN range of actuators.

MWA Code	Description
RC-GTVS 50	DN50 diameter, 39Kvs, max. diff. pressure 1000kPA, PN16 pressure
RC-GTVS 65	DN65 diameter, 63Kvs, max. diff. pressure 600kPA, PN16 pressure
RC-GTVS 80	DN80 diameter, 100Kvs, max. diff. pressure 400kPA, PN16 pressure
RC-GTVS 100	DN100 diameter, 160Kvs, max. diff. pressure 250kPA, PN16 pressure
RC-GTVS 125	DN125 diameter, 215Kvs, max. diff. pressure 170kPA, PN16 pressure
RC-GTVS 150	DN150 diameter, 310Kvs, max. diff. pressure 120kPA, PN16 pressure

2-WAY THREADED CONTROL VALVE

RC-MVFL 215 - 240 /T

2-WAY PN16

See page 98 for further details

MVFL-T is a series of control valves intended for use in heating and air conditioning systems, used together with Regin Controls' RVAZ4L1 series of actuators.

MWA Code	Description
RC-MVFL 215 / 1T	DN15 diameter, 4Kvs, max. diff. pressure 400kPA, PN16 pressure
RC-MVFL 215 / 2T	DN15 diameter, 2.5Kvs, max. diff. pressure 400kPA, PN16 pressure
RC-MVFL220 / T	DN20 diameter, 6.3Kvs, max. diff. pressure 350kPA, PN16 pressure
RC-MVFL225 / T	DN25 diameter, 10Kvs, max. diff. pressure 200kPA, PN16 pressure
RC-MVFL232 / T	DN32 diameter, 16Kvs, max. diff. pressure 110kPA, PN16 pressure
RC-MVFL240 / T	DN40 diameter, 25Kvs, max. diff. pressure 60kPA, PN16 pressure

Regin Controls

2-WAY CONTROL VALVE

RC-ZTVB25/40

2-WAY PN16

See page 98 for further details

The control valves in the ZTVB range are suitable for heating and cooling ventilation systems. The body and plug are in brass, the spindle is stainless steel and the O-ring is made of EPDM. The valves have linear flow characteristics and are used with the RVAZ actuator range.

MWA Code	Description
RC-ZTVB25-8	DN25 diameter, 8Kvs, G1" connection, max. diff. pressure 250kPA, PN16 pressure
RC-ZTVB32-15	DN32 diameter, 15Kvs, G1¼" connection, max. diff. pressure 250kPA, PN16 pressure
RC-ZTVB40-20	DN40 diameter, 20Kvs, G1½" connection, max. diff. pressure 125kPA, PN16 pressure

2-WAY SPRING RETURN VALVE

RC-ZFCM-215X/232X

2-WAY PN16

See page 98 for further details

Intended for on/off control of hot or cold water in heating or cooling systems. The valves can only be used together with Regin Controls' RVAFC actuators.

The ZFCM valves are designed for temperature control in heating and cooling systems. The ZFCM valves can only be used together with Regin's RVAFC actuators, these are ordered separately.

MWA Code	Description
RC-ZFCM-215X	DN15 diameter, 3.2Kvs, G½" connection, max. diff. pressure 200kPA, PN16 rating
RC-ZFCM-220X	DN20 diameter, 4.6Kvs, G¾" connection, max. diff. pressure 150kPA, PN16 rating
RC-ZFCM-225X	DN25 diameter, 5.7Kvs, G1" connection, max. diff. pressure 100kPA, PN16 rating
RC-ZFCM-232X	DN32 diameter, 10Kvs, G1¼" connection, max. diff. pressure 80kPA, PN16 rating

Regin Controls

3-WAY ZTRB CONTROL VALVE

RC-ZTRB25 – RC-ZTRB40

3-WAY GLYC PN16

See page 98 for further details

The control valves are suitable for heating and cooling ventilation systems. The body and plug are in brass, the spindle is in stainless steel and the O-ring is made of EPDM. The valves have linear flow characteristics and is suitable for the RVAZ actuator range.

Key Features

- For water and refrigerants (max. 50% glycol)
- Fluid temperature 1 – 110°C
- Pressure class PN16
- Rangeability 50:1
- For differential pressure up to 250kPa
- No leakage when the valve is closed

MWA Code	Description
RC-ZTRB25-8	DN25 diameter, G 1" connection, 8Kvs, max. diff. pressure 250kPa, PN16 pressure
RC-ZTRB32-15	DN32 diameter, G 1¼" connection, 15Kvs, max. diff. pressure 250kPa, PN16 pressure
RC-ZTRB40-20	DN40 diameter, G 1½" connection, 20Kvs, max. diff. pressure 125kPa, PN16 pressure

HAVE YOU CONSIDERED...

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Regin Controls

3-WAY (+ BYPASS) CHILLED BEAM VALVE

RC-VTTB15 – RC-VTTB1520

3-WAY GLYC PN16

See page 98 for further details

The control valves are suitable for heating and cooling in fan coil or chilled beam applications. The body is in brass, the spindle and plug are in PA+GF, the O-rings are made of FKM. The valves have linear flow characteristics and are suitable for the RTAN and RVAPC actuator range.

MWA Code	Description
RC-VTTB15	DN15 diameter, 1.6m³/h Kvs, 2 – 95°C temperature range, PN16 pressure
RC-VTTB20	DN20 diameter, 2.5m³/h Kvs, 2 – 95°C temperature range, PN16 pressure

3-WAY FLANGED VALVE

RC-GTRS 50 – RC-GTRS 150

3-WAY GLYC STEAM PN16

See page 98 for further details

Control valves intended for use in heating and ventilation systems, suitable for cold and hot water, glycol-mixed water or steam.

MWA Code	Description
RC-GTRS 50	DN50 diameter, 39Kvs, max. diff. pressure 1000kPA, PN16 pressure
RC-GTRS 65	DN65 diameter, 63Kvs, max. diff. pressure 600kPA, PN16 pressure
RC-GTRS 80	DN80 diameter, 100Kvs, max. diff. pressure 400kPA, PN16 pressure
RC-GTRS 100	DN100 diameter, 160Kvs, max. diff. pressure 250kPA, PN16 pressure
RC-GTRS 125	DN125 diameter, 215Kvs, max. diff. pressure 170kPA, PN16 pressure
RC-GTRS 150	DN150 diameter, 310Kvs, max. diff. pressure 120kPA, PN16 pressure

Regin Controls

3-WAY THREADED CONTROL VALVE

RC-ZTVB25/40

3-WAY PN16

See page 98 for further details

MVFL-T is a series of control valves intended for use in heating and air conditioning systems together with the RVAZ4L1 series of actuators.

The valve's body in grey cast iron permits high temperatures, with a fluid temperature range of 2 – 110°C, and a rangeability of >50 : 1. Available in sizes DN15 up to DN40, this valve has a pressure rating of PN16.

MWA Code	Description
RC-MVFL315/1T	DN15 diameter, 4Kvs, max. diff. pressure 400kPA, PN16 rating
RC-MVFL315/2T	DN15 diameter, 2.5Kvs, max. diff. pressure 400kPA, PN16 rating
RC-MVFL320/T	DN20 diameter, 6.3Kvs, max. diff. pressure 350kPA, PN16 rating
RC-MVFL325/T	DN25 diameter, 10Kvs, max. diff. pressure 200kPA, PN16 rating
RC-MVFL332/T	DN32 diameter, 16Kvs, max. diff. pressure 110kPA, PN16 rating
RC-MVFL340/T	DN40 diameter, 25Kvs, max. diff. pressure 60kPA, PN16 rating

3-WAY MTRS CONTROL VALVE

RC-MTRS50-39

3-WAY PN16

See page 98 for further details

The MTVS and MTRS range of valves are intended for use in heating and ventilation systems. They are also highly suitable for use in fresh water systems, as they are made of dezincification resistant brass and gunmetal.

Used in heating and ventilation systems, this valve has a temperature range of -5 – 185°C, and a rangeability of 100 : 1. Available DN15 and a pressure rating of PN16, this valve has a G 2" connection and Kvs of 39.

ESBE System Controls

3-WAY VALVES CAST IRON BODIES
FLANGED PN6 ACTUATOR

92P/M, 95M

3-WAY PN6

See page 98 for further details

The ESBE series 90 compact actuator for operating rotary mixing valves. The 3 point signal control actuator is suitable 24v AC and 230v AC.

Available with limit switch options.

MWA Code	Description
92P	Proportional 15Nm, 24v AC / 0 – 10v DC voltage, 45 – 120sec operation
95M	3 point SPDT 15Nm, 230v AC, 60sec operation
92M	3 point SPDT 15Nm, 24v AC, 60sec operation

ARA600 SERIES ACTUATOR

ARA659 / ARA664

Series ARA659/664 with proportional (voltage/current) signal is suitable for mixing operations together with VRG131.

In these applications can any position of the actuator operating range be used to get the desired mix level. The actuator is controlled by a voltage or current control signal and offer a more precise operation of the actuator and valve.

MWA Code	Description
ARA659	Proportional 6Nm, 24v AC / 0 – 10v DC, 24 – 120sec operation
ARA659	3 point SPDT 6Nm, 230v AC, 60sec operation
ARA664	3 point SPDT 6Nm, 24v AC, 60sec operation

ESBE System Controls

3-WAY VALVES CAST IRON BODIES FLANGED PN6 CONTROL VALVE

3F50-50 – 3F150-150

3-WAY PN16

See page 98 for further details

The ESBE series F valve is made of cast iron for use in heating and cooling applications.

Available in sizes 50 – 150mm flanged PN6

MWA Code	Description
3F50-50	Rotary valve, 2" PN16, 60Kv flow
3F65-65	Rotary valve, 2½" PN16, 90Kv flow
3F80-80	Rotary valve, 3" PN16, 150Kv flow
3F100-100	Rotary valve, 4" PN16, 225Kv flow
3F150-150	Rotary valve, 6" PN16, 400Kv flow

3-WAY THREADED CONTROL VALVE

VRG131-20 – VRG131-50

3-WAY

See page 98 for further details

The ESBE series VRG130 is a range of compact low leakage mixing valves. Material is brass alloy, suitable for heating and cooling installations in sizes 15 – 50mm screwed BSPT connections.

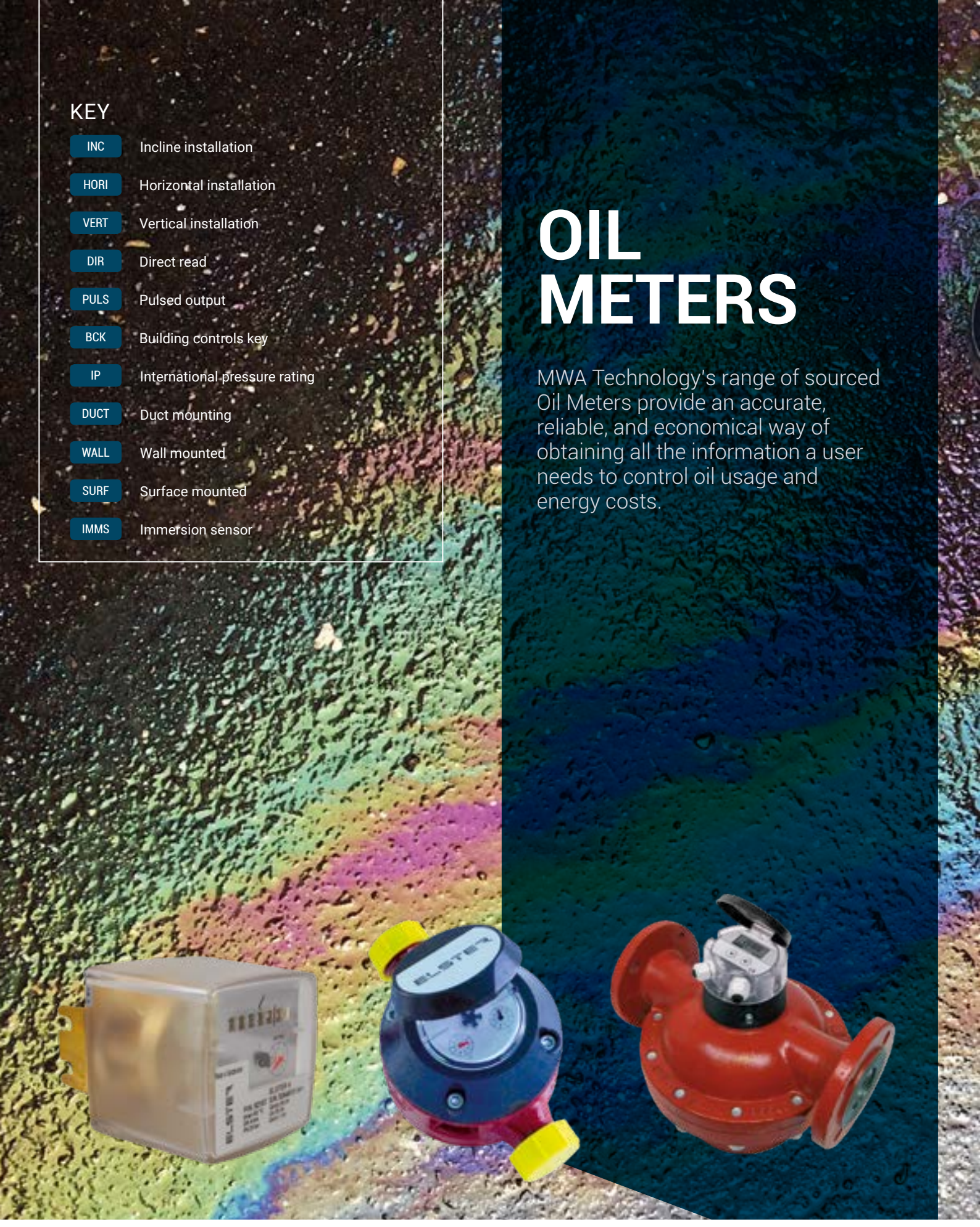
MWA Code	Description
VRG131-20	Rotary valve, ¾" BSP, 6.3Kv flow
VRG131-25	Rotary valve, 1" BSP, 10Kv flow
VRG131-30	Rotary valve, 1¼" BSP, 16Kv flow
VRG131-40	Rotary valve, 1½" BSP, 25Kv flow
VRG131-50	Rotary valve, 2" BSP, 40Kv flow

KEY

INC	Incline installation
HORI	Horizontal installation
VERT	Vertical installation
DIR	Direct read
PULS	Pulsed output
BCK	Building controls key
IP	International pressure rating
DUCT	Duct mounting
WALL	Wall mounted
SURF	Surface mounted
IMMS	Immersion sensor

OIL METERS

MWA Technology's range of sourced Oil Meters provide an accurate, reliable, and economical way of obtaining all the information a user needs to control oil usage and energy costs.



elster BRAUN aqua metro

Elster Meters

ELSTER NON-PULSED OIL METER

FC4 – FC8KIT

PRE IND COM

See page 126 for further details

All models suitable for light and medium grade heating oil and diesel oil, ¾" – 2" for heavy grade oil types.

Maximum temperatures of 60°C to ¼", and 180°C to 2" diameters, suitable for horizontal and vertical pipework. An accuracy of +/-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 PULSED OIL METER

FB15 – FB50PF

PRE IND COM

See page 126 for further details

All models suitable for light and medium grade heating oil and diesel oil, ¾" – 2" for heavy grade oil types.

Maximum temperatures of 60°C to ¼", and 130°C to 2" diameters, suitable for horizontal and vertical pipework. An accuracy of +/-1% with inbuilt strainer.

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

Braun Meters

BRAUN NON-PULSED DOMESTIC HZ5 OIL METER

BRAUN HZ5

PRE IND COM

See page 126 for further details

The Braun non-pulsed domestic HZ5 oil meter measures 0.7 – 40 litres per hour.

This meter has 1/8” BSP female connections.

Aquametro AG Meters

AQUAMETRO AG CONTOIL® VZO4 & VZO8 OIL METER

VZO4 – VZO8

PRE IND COM

See page 126 for further details

Oil meter with internal threaded connections located on the bottom plate, comes with a mechanical roller counter and volume display in litres.

For mounting in horizontal, vertical, and inclined positions, this oil meter comes with EEC legal verification.

MWA Code	Description
VZO4P	1/8" Pulsed Oil Meter, min flow 1 litre/hour, max flow of 80 litres/hour
FB15P	¼" Pulsed Oil Meter, min flow 4 litres/hour, max flow of 200 litres/hour
FB20	½" Pulsed Oil Meter, min flow 51 litres/hour, max flow of 600 litres/hour

Please note, optional Reed Pulser 48v is available upon request

AQUAMETRO AG CONTOIL® VZF/A OIL METER

VZO4 – VZO8

PRE IND COM

See page 126 for further details

The Contoil® VZF has a flow range of 10 up to 30,000 litres/hour, a temperature range of 130°C up to 180°C, and a nominal pressure of PN16 and 25 bar.

MWA Code	Description
VZF15RC130/16	½" BSP, 4 – 20mA oil meter, Qmin 10 litres/hour, Qmax 600 litres/hour, body length of 165mm
VZF20RC130/16	¾" BSP, 4 – 20mA oil meter, Qmin 30 litres/hour, Qmax 1500 litres/hour, body length of 165mm
VZF25RC130/16	1" BSP, 4 – 20mA oil meter, Qmin 75 litres/hour, Qmax 3000 litres/hour, body length of 190mm
VZF40RC130/16	1½" BSP, 4 – 20mA oil meter, Qmin 225 litres/hour, Qmax 9000 litres/hour, body length of 300mm
VZF40RC130/16	DN15, 4 – 20mA oil meter, Qmin 10 litres/hour, Qmax 600 litres/hour, body length of 165mm
VZF40RC130/16	DN20, 4 – 20mA oil meter, Qmin 30 litres/hour, Qmax 1500 litres/hour, body length of 165mm
VZF40RC130/16	DN25, 4 – 20mA oil meter, Qmin 75 litres/hour, Qmax 3000 litres/hour, body length of 190mm
VZF40RC130/16	DN40, 4 – 20mA oil meter, Qmin 225 litres/hour, Qmax 9000 litres/hour, body length of 300mm
VZF40RC130/16	DN50, 4 – 20mA oil meter, Qmin 750 litres/hour, Qmax 30,000 litres/hour, body length of 350mm

Please note, optional 180oC versions are also available for the above range of VZF meters

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:

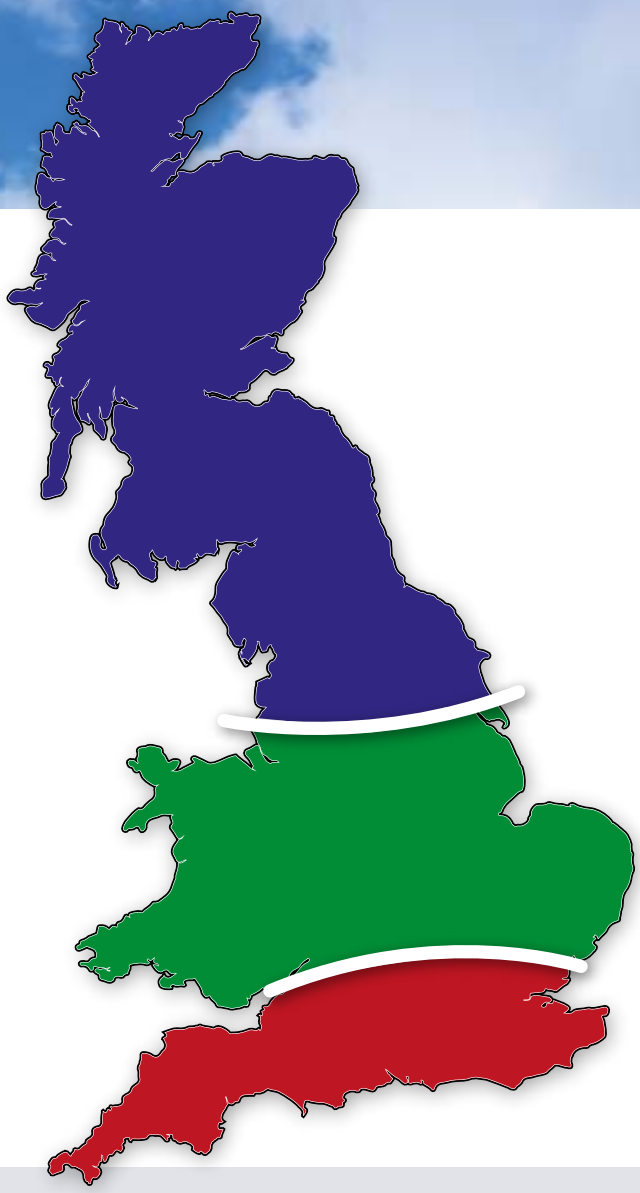
- delivered to the other party personally; or
- sent by prepaid first-class post or recorded delivery to its registered office (if a company) or principal address.

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

UK-WIDE COVERAGE

Based in Aston, Birmingham, we are ideally located to access the motorway network to allow fast and efficient delivery throughout the UK. Plus, our sales representatives up and down the country are here to support you.



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Issue 7 June 2017