04
METERS

Contents

Meters

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Onicon Flow Meters

ONICON Incorporated has been a leading provider of the flow and energy measurement solutions required by the HVAC industry for more than 30 years.

Delivering engineered products - ready to use right out of the box. All ONICON products are custom configured for your application and receive an industry traceable wet calibration. Our goal is to provide industry leading application and technical support as well as exceptional sales and customer service assistance. Please contact our office if you require additional help.

F-1000 SERIES TURBINE FLOW METERS

The F-1000 Series family of inline and insertion style turbine flow meters are designed to provide accurate and reliable flow measurement in a variety of applications in the HVAC market.

ONICON's F-1000 Series is a family of insertion and inline style turbine flow meters that provide accurate, reliable flow measurement in a variety of applications.

The F-1000 Series flow meters are suitable for use in pipes ranging in size from ¾" to 72" in diameter. Each model utilizes ONICON's patented electronic turbine rotation sensing system and unique low mass turbine design that is accurate over wide flow ranges with excellent low flow measurement capability.

D-100 FLOW DISPLAY MODULE

The D-100 is a totalizing display module that provides a local indication of liquid or steam flow rate and total   data. The flexible design can also be configured with an optional network interface to communicate flow data to the building control network. It is housed in a steel wall mounted enclosure with a built-in user interface/display. The standard flow input accepts 4-20 mA, pulse or contact closure flow signals. The versatile D-100 can also function as a network interface for 2 additional analog rate inputs and one additional totalizing pulse input. It can also be configured with up to 4 optional analog outputs.

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F-3500 SERIES INSERTION ELECTROMAGNETIC FLOW METERS

ONICON's F-3500 series insertion electromagnetic fl ow meters are suitable for measuring electrically conductive liquids in a wide variety of applications. Each F-3500 provides a single analog output for fl ow rate, a high resolution frequency output to drive peripheral devices, a scalable pulse output for totalization, and an empty pipe alarm signal.

Two versions of the F-3500 are available. The standard confi guration F-3500 is suitable for pipe sizes ranging from 3" to 72" in diameter. The small pipe confi guration F-3500 is suitable for pipes ranging in size from 1¼" to 2½" in diameter.Optional remote displays and BTU measurement systems are also available for both versions.

D-1200 FLOW METER DISPLAY MODULE

ONICON's D-1200 series is a family of remote displays for indication of flow rate and total volume for a variety of applications.

D-1200 series displays are modular flow display centers that convert ONICON insertion and inline flow meters into complete flow monitoring stations. The wall-mounted modules display the current flow rate and total and pro-vide a low voltage DC power source capable of powering most ONICON inline and insertion flow meters.

The versatile display module can be located close to the flow meter or up to several hundred feet away. Using the flow meter with the display module will also allow you to support other remote devices such as BTU meters, building control systems, and data acquisition systems.

ONICON
Flow and Energy Measurement

F-3500 INSERTION
ELECTROMAGNETIC FLOW METER

HOT-TAPPABLE AND RETROFIT
CAPABLE HYDRONIC HVAC
FLOW METER

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FT-3000 SERIES INLINE ELECTROMAGNETIC FLOW METER

The FT-3000 Series family of inline flow meters are designed to provide accurate and reliable flow measurements for a variety of challenging applications in the HVAC market.

ONICON FT-3000 Series Inline Electromagnetic Flow Meters are suitable for measuring electrically conductive liquids in a wide variety of applications. The FT-3000 series provides analog and digital outputs for flow rate and programmable pulse outputs for flow totalization and/or alarms.

F-4600 INLINE ULTRASONIC FLOW METER

The F-4600 series is a family of inline flow meters that provide accurate, reliable flow measurement for a variety of applications. ONICON Inline Ultrasonic Flow Meters accurately and reliably measure the flow of water and water glycol solutions in pipe sizes ranging from ½" to 2½". These cost-effective meters have excellent low-flow measurement capabilities, and the unique flow tube design accurately measures flow in very limited straight run installations.

SYSTEM-10 BTU METERS

The System-10 is the most versatile energy (BTU) measurement system ONICON offers. It utilizes a matched pair of calibrated temperature sensors combined with one of ONICON's custom configured flow meters (ordered separately). The versatile design is available with a vast array of output options which include RS485 and IP serial networks, multiple pulse outputs, auxiliary pulse inputs and multiple analog outputs.

FEATURES
• Configured to match the accuracy and performance requirements of the application
• Delivered fully calibrated, programmed and ready to use
• Network interface options:
    BACnet MS/TP
    BACnet/IP (UDP/IP)*
    MODBUS RTU (RS485)
    MODBUS TCP/IP
    LonWorks (FTT-10)

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ONICON's System-20 and System-40 BTU Meters utilize a BACnet MS/TP serial interface that is certified by the BACnet® Testing Laboratory (BTL).

SYSTEM-20 BTU METERS

The System-20 is designed to measure the thermal energy associated with the most common systems found in today's HVAC applications and communicate directly with the BMS/BAS. This flexible design will provide energy, flow and temperature data on the local display and over the BACnet MS/TP or MODBUS RTU networks. In addition, the System-20 provides an analog output signal, pulse outputs, and auxiliary pulse inputs, all of which are configurable via an intuitive user interface.

FEATURES
• Delivered fully calibrated, programmed, and ready to use
• Provides the most common communication options and outputs used in the HVAC industry
• Network interface options: BACnet MS/TP* and MODBUS RTU (RS485)

SYSTEM-40 BTU METERS

The System-40 is a complete BTU measurement system ideally suited for sub-metering applications. It includes a pair of matched temperature sensors, an integral inline ultrasonic flow sensor, and local/remote display. It communicates via BACnet® MS/TP or MODBUS® RTU. A configurable output array consisting of a combination of pulse outputs, an optional analog output, and three auxiliary pulse inputs that provide a means for other devices, such as utility meters, to connect to the BAS through the System-40's serial network connection.

FEATURES
• Accurate, reliable, no-moving-parts, wetted ultrasonic flow sensor
• Individually wet-calibrated and delivered fully programmed and ready to use upon delivery
• Network interface options: BACnet MS/TP* and MODBUS RTU (RS485)

The ideal, non-invasive tool for testing and validating liquid flow

FP-4400
Portable Clamp-on Ultrasonic Flow Meter

• Wide flow range – 400:1 turndown from 0.1 to 40 ft/s
• One instrument for ½" to 48" pipe sizes
• Built-in 12 million point data logger
• Easy set-up via intuitive menus
• Up to 15 hours of battery life
• ±1% of reading accuracy

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Datasheets & install guides available at
www.intelligentbuildingcontrols.co.uk / www.ibc.ie

Kamstrup Heating & Cooling Meters

kamstrup

KAMSTRUP MULTICAL® 403

- Compact energy meter for heat, cooling & combined heat/cooling
- MID Class 2 Approved for heat
- DK-BEK 1178 Approved for cooling
- On-site configurable flow or return installation positions
- Suitable for water-based systems
- Interchangeable components to suit specific requirements

PULSE **M-Bus** **M-Bus wireless** **BACnet™** **Modbus**

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
403x10xxx	15	0.6	1.2	0.006	110
403x30xxx	20	0.6	1.2	0.006	190
403x40xxx	15	1.5	3.0	0.015	110
403x50xxx	15	1.5	3.0	0.015	165
403x60xxx	20	1.5	3.0	0.015	110
403x70xxx	20	1.5	3.0	0.015	130
403x80xxx	20	1.5	3.0	0.015	165
403x90xxx	20	1.5	3.0	0.015	190
403xA0xxx	20	2.5	5.0	0.025	130
403xB0xxx	20	2.5	5.0	0.025	190
403xD0xxx	25	3.5	7.0	0.035	260
403xF0xxx	25	6.0	12	0.06	260
403xG0xxx	DN25	6.0	12	0.06	260
403xH0xxx	40	10	20	0.1	300
403xJ0xxx	DN40	10	20	0.1	300
403xK0xxx	DN50	15	30	0.15	270

KAMSTRUP MULTICAL® 603

- Modular communication outputs - 2 slots
- Auto Detect of ULTRAFLOW®
- MID Class 2 Approved for heat
- DK-BEK 1178 Approved for cooling
- On-site configurable flow or return installation positions
- 2 or 4 wire temperature sensor options

PULSE **M-Bus** **M-Bus wireless** **BACnet™** **Modbus**

METERS

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MULTICAL® COMMUNICATION MODULES

• Comes with Serial Identification Number

• Latest QR technology to identify data sheet

• Various options available

[PULSE] [M-Bus] [M-Bus wireless] [BACnet™] [Modbus]

Part Number	Description
HC-003-10	Data + 2 Pulse Inputs
HC-003-11	Data + 2 Pulse Outputs
HC-003-20	M-Bus, Configurable + 2 Pulse Inputs
HC-003-21	M-Bus, Configurable + 2 Pulse Outputs
HC-003-30	Wireless M-Bus 868 Mhz + 2 Pulse Inputs
HC-003-31	Wireless M-Bus 868 Mhz + 2 Pulse Outputs
HC-003-40	Analog Outputs, 0/4...20mA*
HC-003-41	Analog Outputs, 0/4...20mA*/ 0...10V*
HC-003-43	PQT Controller*
HC-003-51	Low Power Radio, GDPR + 2 Pulse Inputs
HC-003-60	LON FT-X3 + 2 Pulse Inputs**
HC-003-66	BACnet (RS-485) + 2 Pulse Inputs*
HC-003-67	Modbus RTU (RS-485) + 2 Pulse Inputs*
HC-003-80	2G/4G Network**
HC-003-82	Modbus RTU/KMP TCP/IP + 2 Pulse Inputs**
HC-003-85	High Power Radio, GDPR + 2 Pulse Inputs

* The meter must be mains supplied
** The meter must be high power supplied

MULTICAL® ACCESSORIES

SIGNAL CABLES

Part Number	Size (m)
50-00-333	2.5
50-00-259	5
50-00-270	10

CONFIGURATION TOOLS

Part Number	Size (m)
66-99-099	USB Optical Eye
66-99-102	RS232 Optical Eye
66-99-035	Module Configurator

TRANSMITTER AND EXTENDER BOX

Part Number	Description
66-99-903-20	Transmitter Box
66-99-036	Cable Extender Box

WALL BRACKETS

Part Number	Size (m)
30-26-655	403 Wall Bracket
30-26-207.A	603 Wall Bracket
59-15-574	803 Wall Bracket

ULTRAFLOW® FLOW SENSORS - FLANGED

- Static Meter with no moving parts
- For flow rates from 1.5 m³/h to 1000 m³/h
- No Wear and exceptional longevity
- 2.5m Signal Cable as standard
- PN25 Flanged Connection (DN300 PN16)

kamstrup

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
65-X-CDCA-XXX	20	1.5	3.0	0.015	190
65-X-CECA-XXX	20	2.5	5.0	0.025	190
65-X-CGCB-XXX	25	3.5	7.0	0.035	260
65-X-CHCB-XXX	25	6.0	12.0	0.060	260
65-X-CHCC-XXX	32	6.0	12.0	0.060	260
65-X-CJCD-XXX	40	10.0	20.0	0.100	300
65-X-CKCE-XXX	50	15.0	30.0	0.150	270
65-X-CLCG-XXX	65	25.0	50.0	0.250	300
65-X-CMCH-XXX	80	40.0	80.0	0.400	300
65-X-FACL-XXX	100	60.0	120.0	0.600	360
65-X-FBCM-XXX	125	100.0	200.0	1.000	350
65-X-FCCN-XXX	150	150.0	300.0	1.500	500
65-X-FDCN-XXX	150	250.0	500.0	2.500	500
65-X-FECP-XXX	200	400.0	800.0	4.000	500
65-X-FFCP-XXX	200	600.0	1200.0	6.000	500
65-X-FFCR-XXX	250	600.0	1200.0	6.000	600
65-X-FGDS-XXX	300	1000.0	2000.0	10.000	500

ULTRAFLOW ® FLOW SENSORS - THREADED

- For flow from 0.6m³/h to 10 m³/h
- Static Meter with no moving parts
- Large dynamic range
- No Wear and exceptional longevity
- PN16 Threaded Connection

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
65-X-CAHA-XXX	15	0.6	1.2	0.006	110
65-X-CAHD-XXX	20	0.6	1.2	0.006	130
65-X-CDHA-XXX	15	1.5	3.0	0.015	110
65-X-CDHC-XXX	15	1.5	3.0	0.015	165
65-X-CDHD-XXX	20	1.5	3.0	0.015	130
65-X-CDHF-XXX	20	1.5	3.0	0.015	190
65-X-CEHD-XXX	20	2.5	5.0	0.025	130
65-X-CEHF-XXX	20	2.5	5.0	0.025	190
65-X-CGJG-XXX	25	3.5	7.0	0.035	260
65-X-CHJG-XXX	25	6.0	12.0	0.06	260
65-X-CHJH-XXX	32	6.0	12.0	0.06	260
65-X-CJJJ-XXX	40	10.0	20	0.10	300

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FLOWIQ® 3100

- MID Approved, MI-001, Accuracy Class 2
- Remote Reading Options
- 16 Year Battery

M-Bus   M-Bus wireless   WRAS APPROVED PRODUCT   MID APPROVED

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
031-YY-C03-XXX	25	4.0	5.0	0.04	175
031-YY-C0J-XXX	40	10.0	12.5	0.10	300
031-YY-C0L-XXX	50	16.0	20.0	0.16	270
031-YY-C0M-XXX	65	25.0	31.0	0.25	300
031-YY-C0N-XXX	80	40.0	50.0	0.40	300

Danfoss

Danfoss Energy Meters
DANFOSS SONO30 ULTRASONIC ENERGY METERS

The Danfoss Sono30 is a range of ultrasonic, compact energy meters intended for measuring energy consumption in heating and cooling applications for billing purposes.

Part Number	Size (DN)	Nom Flow (m3/h)
SONO30/15/1.5	15	1.5
SONO30/20/2.5	20	2.5
SONO30/25/3.5	25	3.5
SONO30/25/6.0	25	6
SONO30/40/10	40	10
SONO30/50/15	50	15
SONO30/65/25	65	25
SONO30/80/40	80	40
SONO30/100/60	100	60

Options
RS-485 MODBUS MODULE
BACnet OPTION
3M TEMP SENSORS
5M TEMP SENSORS
10M TEMP SENSORS

NOTE: To be mounted in return line as standard, flow versions available on request

FEATURES

- MID Approved Class II
- DN15-40 (Screwed) - suitable for heating & cooling as standard
- M-Bus & 2 x Pulse input/output as standard
- BACnet & Modbus options available
- Battery as standard, 230v or 24v available please specify
- Meters complete with 1.5m temperature sensors, pockets & connections
- DN15-20 meters - return sensor mounted directly into supplied to allow flow sensor to be mounted direct into line/media

Aquamotion Water Meters

MJC MULTI JET COLD WATER METER

- Super Dry, Sealed Register
- MID Approved, MI-001 R80, Accuracy Class 2
- Pressure Rated to 16 Bar

PULSE | **WRAS** APPROVED PRODUCT | **MID** APPROVED

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
S15MJC	15	2.5	3.13	0.03	165
S20MJC	20	4.0	5.0	0.05	190
S25MJC	25	6.3	7.88	0.07	260
S32MJC	32	10.0	12.5	0.12	260
S40MJC	40	16.0	20.0	0.20	300
S50MJC	50	25.0	31.3	0.31	300

MJH MULTIJET HOT WATER METER

- Super Dry, Sealed Register
- MID Approved, MI-001 R80, Accuracy Class 2
- Pressure Rated to 16 Bar

PULSE | **WRAS** APPROVED PRODUCT | **MID** APPROVED

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
S15MJH	15	2.5	3.13	0.03	165
S20MJH	20	4.0	5.0	0.05	190
S25MJH	25	6.3	7.8	0.07	260
S32MJH	32	10.0	12.5	0.12	260
S40MJH	40	16.0	20.0	0.20	300
S50MJH	50	25.0	31.3	0.31	300

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AIR QUALITY

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WC WOLTMANN COLD WATER METER

- Super Dry, Sealed Register
- MID Approved, MI-001 R80, Accuracy Class 2
- Pressure Rated to 16 Bar

PULSE | **WRAS** APPROVED PRODUCT | **MID** APPROVED

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
F50WC	50	40	50	0.50	200
F65WC	65	63	78	0.78	200
F80WC	80	63	78	0.78	225
F100WC	100	100	125	1.25	250
F125WC	125	160	200	2.00	250
F150WC	150	250	313	3.13	300
F200WC	200	400	500	5.00	350

WH WOLTMANN HOT WATER METER

- Super Dry, Sealed Register
- Pressure Rated to 16 Bar
- Factory tested to MID Standards

PULSE

Part Number	Size (mm)	Nom. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Min. flow q_i (m3/hr)	Body length (mm)
F50WH	50	40	50	0.50	200
F65WH	65	63	78	0.78	200
F80WH	80	63	78	0.78	225
F100WH	100	100	125	1.25	250
F125WH	125	160	200	2.00	250
F150WH	150	250	313	3.13	300
F200WH	200	400	500	5.00	350

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Vemm Tec Gas Meters

vemm tec
Messtechnik GmbH

IGTM TURBINE GAS METER

- Wafer Pattern 'Sandwich' Type
- 8 Digit Mechanical Counter
- Lightweight Aluminium Body
- Suitable for non-aggressive gases

PULSE

Part Number	Size (mm)	Min. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Body length (mm)
IGTM DN50 G40/65	50	10	100	120
IGTM DN65 G65/100	65	13	160	120
IGTM DN80 G100/160	80	10	250	120
IGTM DN80 G250	80	20	400	120
IGTM DN100 G160/250	100	13	400	150
IGTM DN100 G400	100	32	650	150
IGTM DN150 G400/650	150	32	1000	180
IGTM DN150 G1000	150	80	1600	180
IGTM DN200 G650/1000	200	50	1600	200
IGTM DN200 G1600	200	130	2500	200

IGQM TURBINE GAS METER

- Compact Dimensions
- 7 Digit Mechanical Counter
- Lightweight Aluminium Body
- Suitable for non-aggressive gases

PULSE

Part Number	Size (mm)	Min. flow q_p (m3/hr)	Max. flow q_s (m3/hr)	Body length (mm)
IGQM-10	25	1.6	16	185
IGQM-16	25	2	25	185
IGQM-25	25	2.5	40	185
IGQM-40	40	5	65	126

Reducers Available 3/4" & 11/4"

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Sigma Gas Meters

DIAPHRAGM GAS METER INSTALLATION KIT

Installation kits include everything you need to complete a domestic gas meter installation. This kit is supplied as a complete package that consists of an MID Approved domestic Gas Meter, Gas Regulator, Control Valve, Flexi Hose, Unions and Wall Bracket.

PULSE   **MID** APPROVED

Part Number	Comprising of
G4 Installation Kit	3/4" Diaphragm Gas Meter
	3/4" Diaphragm Gas Meter Bracket
	3/4" Meter Flexible Hose
	3/4" Diaphragm Gas Meter Union Kit
	3/4" Angled Gas Regulator
	3/4" Meter Control Valve

UG DIAPHRAGM GAS METER

- BSP Screwed Connection
- MID Approved 2014/32/EU
- Low Pressure Drop
- Suitable for low flow rates

PULSE   **MID** APPROVED

Part Number	Size (mm)	Min. flow q_i (m3/hr)	Max. flow q_s (m3/hr)	Pipe Centres (mm)
UG-G4P	20	0.04	6	110
UG-G6P	25	0.06	10	250
UG-G10P	30	0.10	16	250
UG-G16P	40	0.16	25	280
UG-G25P	50	0.25	40	280

Reducers Available 3/4" & 11/4"

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Aquametro Oil Meters

VZO RANGE

- Mechanical Roller Counter
- Pulse Ouptut Available
- Rated to 130°C (VZO4 & VZO8 - 80°C)
- Suitable for pressures up to 16 Bar

PULSE

Part Number	Size (mm)	Min. flow q_i (l/hr)	Max. flow q_s (l/hr)	Body length (mm)
VZO4	4	1	80	N/A
VZO8	8	4	200	N/A
VZO15	15	10	600	165
VZO20	20	30	1500	165
VZO20	25	75	3000	190
VZO40	40	225	9000	300

VZF RANGE

- Mechanical Roller Counter
- Pulse Ouptut Available
- Rated to 130°C
- Suitable for pressures up to 25 Bar

PULSE

Part Number	Size (mm)	Min. flow q_i (l/hr)	Max. flow q_s (l/hr)	Body length (mm)
VZO15FL	15	10	600	165
VZO20FL	20	30	1500	165
VZO25FL	25	75	3000	190
VZO40FL	40	225	9000	300
VZO50FL	50	750	30000	350

VZFII RANGE

- Digital Counter
- Pulse or Analogue Outputs
- Rated to 130°C
- Pressures up to 16 Bar (Screwed) 25 Bar (Flanged)

PULSE

Part Number	Size (mm)	Min. flow q_i (l/hr)	Max. flow q_s (l/hr)	Body length (mm)
VZFII-15	15	10	600	165
VZFII-20	20	30	1500	165
VZFII-25	25	75	3000	190
VZFII-40	40	225	9000	300
VZFII-50	50	750	30000	350

Contact our RoI sales team on **+353 (0)1 457 5421** or email **sales@ibc.ie**

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