xylem
Let's Solve Water

Overview C&I Meters

RELIABLE AND ACCURATE MEASUREMENT OF WATER

SENSUS
a xylem brand

Water is a scarce and precious resource.

Environmental costs, rising water prices and the need to reduce leakage are impacting the industry in many ways. The technologies embodied in our water meters specifically address these issues.

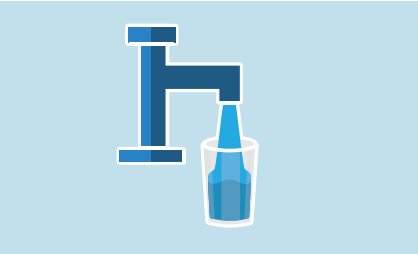
Commercial and industrial water meters are for measurement of water consumption in industrial and commercial applications, as well as in distribution networks. Applications range from water distributions systems, commercial buildings, schools and hospitals, up to industrial monitor and control applications e.g. process water. Furthermore, our ultrasonic meter can be used in smart irrigation systems.

Imagine high-performance bulk meters that enable you to manage your distribution networks much more efficiently, providing accurate and reliable data, whatever the installation and environmental conditions. With the multiple communication options of the meters you can easily move from a walk-by/drive-by AMR systems to a fixed network AMI solution for near real time data communication.

The meters cover a range from DN 40 to DN 800, depending on the meter type. The range of C&I water meters is extended by our Flow Sensors MeiStreamFS and WPD FS for measuring hot process water in heating systems, or cooling energy in HVAC systems. Available in sizes DN 40 up to DN 300 (depending on meter type).

Helping you build a smarter water network for a greener future

Benefits by Vertical Market



Potable Water Networks

All of the advanced features Sensus C&I meters provide make them the best choice for district / zonal metering applications and measuring a wide variety of flow rates in meter deployments ranging from large apartment buildings to small neighbourhood housing projects. Major features that are particularly applicable to this market include:

- U0D0 capability - making it easier to upgrade existing plumbing systems without major rework (MeiStream / MeiTwin / Cordonel)
- Cost effectiveness and low maintenance
- Consistent accuracy and robustness against sand, dirt and other contaminants in the water
- Meets KTW / DVGW, WRAS, ACS, KIWA etc. potable water quality standards
- Meters can be integrated into existing monitoring & control systems
- Fair and accurate billing
- Available also with various communicating registers for remote reading, e.g. M-Bus, MiniBus, Sensus RF
- Flexible installation
- Simple maintenance thanks to replaceable measuring inserts. (MeiStream / MeiTwin)
- Can be installed in harsh environments, IP68

Commercial & Industrial

The meters are especially suited to water metering in challenging environments such as commercial premises, manufacturing sites, production plants and large scale industrial processes, thanks to their:

- Reliable operation and consistently accurate measurement in harsh environments
- Suitability at handling nonionised, low conductivity water in industrial processes, desalination plants etc.
- Durable construction and long operational life
- Pulse output for real time control
- Secure data communication
- Pumps can be controlled by flow measurement (using meters)
- Large measuring range and long lifetime
- Controlling of (process) water intake
- Available also with various communicating registers for remote reading, e.g. M-Bus, MiniBus, Sensus RF
- Simple maintenance thanks to replaceable measuring inserts

Agriculture & Irrigation

Cordonel is a perfect fit for agricultural applications because it provides:

- High accuracy over a 20-year operational life irrespective of water quality
- High reliability as it contains no moving parts that can be damaged by stones, grit and sand in the water
- Robust construction and ability to operate in flooded pits
- Low pressure loss
- Wide choice of data communication options

Cordonel®

Static Flow Water Meter For a Smarter Network

Cordonel® is a high-performance bulk meter that enables you to manage your distribution network more efficiently and provides accurate and reliable data in any installation or environmental condition.

- Measurement for billing of potable water up to 50 °C
- Radio equipped flow meter for walk-by/drive-by readout applications
- Metering endpoint in radio based fixed Smart Water Networks
- Measurement of high flowrates, for example in pumped pipes for irrigation
- Measurement of low flow, for example in light load periods
- Leakage detection
- Flow meter for controlling industrial processes using a pulse output
- Flow meter supplying rich data for DMA analysis

Metrological Data

Nominal Diameter	DN	mm	40	50	65	80	100
Max. Peak Flow	Q_s	m³/h	78	90	125	200	310
Overload Flow acc. to MID	Q_4	m³/h	50	50	78.75	125	200
Permanent Flow acc. to MID	Q_3	m³/h	40	40	63	100	160
Transitional Flow horizontal acc. to MID	Q_2	m³/h	0.06	0.06	0.1	0.16	0.25
Minimum Flow horizontal acc. to MID	Q_1	m³/h	0.04	0.04	0.06	0.1	0.16
Max. Ratio	Q_3 / Q_1	m³/h	1000	1000	1000	1000	1000
Starting Flow		m³/h	0.012	0.012	0.02	0.033	0.054

MeiStreamRF

Industrial Water Meter With a Electronic Register

MeiStreamRF merges the high overload capability and stable measuring curve of the Woltman WP meter with the low flow performance of Woltman WS meter into an excellent reliable meter equipped with radio for walk-by / drive-by.

- Radio equipped water meter for walk-by/drive-by readout applications
- Metering endpoint in radio based Smart Water Networks
- Measurement for billing of potable water up to 50 °C
- Measurement of high flowrates e.g. in pumped pipes
- Measurement of low flow e. g. in light load periods
- For leakage detection

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Max. Peak Flow	Q_s	m³/h	60	90	120	200	300	350	600	1200	1600	2000
Continuous Flow	Q_3	m³/h	40	50	70	120	230	250	450	800	1250	1400
Transitional Flowrate horizontal	Q_{2h}	m³/h	0.32	0.4	0.63	0.51	0.81	1.02	1.6	4.0	6.3	16.0
Minimum Flow horizontal	Q_{1h}	m³/h	0.2	0.15	0.2	0.2	0.3	0.5	0.8	2.0	3.5	9.0
Transitional Flowrate vertical	Q_{2v}	m³/h	0.4	0.51	0.81	0.8	1.28	1.6	3.2	4.0	10.1	25.4
Minimum Flow vertical	Q_{1v}	m³/h	0.25	0.28	0.4	0.5	0.5	1.0	1.6	2.5	6.3	15.9
Starting Flow		m³/h	0.05	0.05	0.07	0.1	0.11	0.15	0.3	1.5	3.0	8.0

Metrological data acc. to MID Pattern approval

Nominal Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Overload Flow acc. to MID	Q_4	m³/h	31.25	50	78.75	125	200	200	500	787.5	787.5	1250
Permanent Flow acc. to MID	Q_3	m³/h	25	40	63	100	160	160	400	630	630	1000
Transitional Flow horizontal acc. to MID	Q_{2h}	m³/h	0.32	0.4	0.63	0.51	0.81	1.02	1.6	4.03	8.06	25.4
Minimum Flow horizontal acc. to MID	Q_{1h}	m³/h	0.2	0.25	0.39	0.32	0.51	0.64	1.0	2.52	5.04	15.9
Transitional Flow vertical acc. to MID	Q_{2v}	m³/h	0.4	0.51	0.81	0.8	1.28	1.6	3.2	4.03	10.1	25.4
Minimum Flow vertical acc. to MID	Q_{1v}	m³/h	0.25	0.32	0.5	0.5	0.8	1.0	2.0	2.52	6.3	15.9
Max. Ratio horizontal	Q_3 / Q_{1h}		125	160	160	315	315	250	400	250	125	63
Max. Ratio vertical	Q_3/Q_1 v		63	100	100	125	160	125	200	250	100	63
Standard Marking	Q_3 / Q_1		63	100	100	100	100	100	100	100	100	63
Headloss at Q_3 acc. to ISO 4064-1:2017	Δp	bar	0.1	0.16	0.32	0.16	0.34	0.19	0.27	0.11	0.07	0.08

MeiStreamRF Plus

Industrial Water Meter With Integrated Radio Communication

MeiStream Plus conforms to the extreme low flow requirements of high accuracy meters, while allowing considerably higher flow rates than current single jet bulk water meters. Furthermore, this is achieved with reduced pressure loss and less sensitivity to particulates in the water. Equipped with radio for walk-by/drive-by.

- Metering endpoint in radio based Smart Water Networks
- Measurement for billing of potable water up to 50 °C
- Measurement of medium and high flowrates
- Measurement of low flow e. g. in light load periods
- For leakage detection

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	40	50	65	80	100	150
Max. Peak Flow	Q_s	m³/h	50	55	60	120	160	400
Continuous Flow	$Q_{3'}$	m³/h	30	35	40	63	100	250
Transitional Flow horizontal acc. to MID	Q_{2h}	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Minimum Flow horizontal	$Q_{1h'}$	m³/h	0.08	0.07	0.1	0.13	0.2	0.35
Starting Flow		m³/h	0.03	0.03	0.035	0.04	0.065	0.12

Metrological Data acc. to 2014/32/EU (MID)

Nominal Diameter	DN	mm	40	50	65	80	100	150
Overload Flow acc. to MID	Q_4	m³/h	31.25	31.25	50	78.75	125	312.5
Permanent Flow acc. to MID	Q_3	m³/h	25	25	40	63	100	250
Transitional Flow horizontal acc. to MID	Q_2	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Minimum Flow horizontal acc. to MID	Q_1	m³/h	0.08	0.08	0.1	0.16	0.25	0.4
Max. Ratio	Q_3 / Q_1		315	315	400	400	400	630
Standard Marking	Q_3 / Q_1		315	315	315	315	315	315
Headloss at Q_3 acc. to ISO 4064-1:2017	Δp	bar	0.09	0.08	0.17	0.07	0.16	0.14

MeiStream®

Industrial Water Meter With a High Overload Capability

MeiStream merges the high overload capability and stable measuring curve of the Woltman WP meter with the low flow performance of Woltman WS meter into an excellent reliable meter.

- Measurement for billing of potable water up to 50 °C
- Measurement of medium and high flowrates
- Measurement of low flow e. g. in light load periods
- For leakage detection

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Max. Peak Flow	Q_s	m³/h	60	90	120	200	300	350	600	1200	1600	2000
Continuous Flow	Q_3	m³/h	40	50	70	120	230	250	450	800	1250	1400
Transitional Flowrate horizontal	Q_{2h}	m³/h	0.32	0.4	0.63	0.51	0.81	1.02	1.6	4.0	6.3	16.0
Minimum Flow horizontal	Q_{1h}	m³/h	0.2	0.15	0.2	0.2	0.3	0.5	0.8	2.0	3.5	9.0
Transitional Flowrate vertical	Q_{2v}	m³/h	0.4	0.51	0.81	0.8	1.28	1.6	3.2	4.0	10.1	25.4
Minimum Flow vertical	Q_{1v}	m³/h	0.25	0.28	0.4	0.5	0.5	1.0	1.6	2.5	6.3	15.9
Starting Flow		m³/h	0.05	0.05	0.07	0.1	0.11	0.15	0.3	1.5	3.0	8.0

Metrological Data acc. to 2014/32/EU (MID)

Nominal Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Overload Flow acc. to MID	Q_4	m³/h	31.25	50	78.75	125	200	200	500	787.5	787.5	1250
Permanent Flow acc. to MID	Q_3	m³/h	25	40	63	100	160	160	400	630	630	1000
Transitional Flow horizontal acc. to MID	Q_{2h}	m³/h	0.32	0.4	0.63	0.51	0.81	1.02	1.6	4.03	8.06	25.4
Minimum Flow horizontal acc. to MID	Q_{1h}	m³/h	0.2	0.25	0.39	0.32	0.51	0.64	1.0	2.52	5.04	15.9
Transitional Flow vertical acc. to MID	Q_{2v}	m³/h	0.4	0.51	0.81	0.8	1.28	1.6	3.2	4.03	10.1	25.4
Minimum Flow vertical acc. to MID	Q_{1v}	m³/h	0.25	0.32	0.5	0.5	0.8	1.0	2.0	2.52	6.3	15.9
Max. Ratio horizontal	Q_3/Q_{1h}		125	160	160	315	315	250	400	250	125	63
Max. Ratio vertical	Q_3/Q_1 v		63	100	100	125	160	125	200	250	100	63
Standard Marking	Q_3 / Q_1		63	100	100	100	100	100	100	100	100	63
Headloss at Q_3 acc. to ISO 4064-1:2017	Δp	bar	0.1	0.16	0.32	0.16	0.34	0.19	0.27	0.11	0.07	0.08

MeiStream® Plus

Industrial Water Meter With a Wide Measuring Range

MeiStream® Plus conforms to the extreme low flow requirements of high accuracy meters, while allowing considerably higher flow rates than current single jet bulk water meters. Furthermore, this is achieved with reduced pressure loss and less sensitivity to particulates in the water.

- Measurement for billing of potable water up to 50 °C
- Measurement of medium and high flowrates
- Measurement of low flow e. g. in light load periods
- For leakage detection

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	40	50	65	80	100	150
Max. Peak Flow	Q_s	m³/h	50	55	60	120	160	400
Continuous Flow	$Q_{3'}$	m³/h	30	35	40	63	100	250
Transitional Flow horizontal acc. to MID	Q_{2h}	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Minimum Flow horizontal	$Q_{1h'}$	m³/h	0.08	0.07	0.1	0.13	0.2	0.35
Starting Flow		m³/h	0.03	0.03	0.035	0.04	0.065	0.12

Metrological Data acc. to 2014/32/EU (MID)

Nominal Diameter	DN	mm	40	50	65	80	100	150
Overload Flowrate acc. to MID	Q_4	m³/h	31.25	31.25	50	78.75	125	312.5
Permanent Flowrate acc. to MID	Q_3	m³/h	25	25	40	63	100	250
Transitional Flowrate horizontal acc. to MID	Q_2	m³/h	0.13	0.13	0.16	0.25	0.4	0.63
Minimum Flowrate horizontal acc. to MID	Q_1	m³/h	0.08	0,08	0.1	0.16	0.25	0.4
Max. Ratio	Q_3 / Q_1		315	315	400	400	400	630
Standard Marking	Q_3 / Q_1		315	315	315	315	315	315
Headloss at Q_3 acc. to ISO 4064-1:2017	Δp	bar	0.09	0.08	0.17	0.07	0.16	0.14

MeiTwin® MID

Compound Water Meter With Wide Spread Flow Profiles

With the MeiTwin compound water meter there is no longer any need for the differentiation between the "by-pass meter on the right" and "by-pass meter on the left".

- Measurement of high flow rates with extremely wide spread flow profile
- Measurement of very small flow rates for leakage detection
- Ideal for fire service pipes

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	50	65	80	100
Maximum Working Pressure	PN	bar	16			
Max. Peak Flow	Q_s	m³/h	90	120	200	280
Continuous Flow	$Q_{3'}$	m³/h	50	70	120	180
Change-over Flow at Increasing Flow	Q_{x2}	m³/h	2.0 - 2.6			
Change-over Flow at Decreasing Flow	Q_{x1}	m³/h	1.1 - 1.7			
Transitional Flow	Q_2	m³/h	0.012			
Minimum Flow	$Q_{1'}$	m³/h	0.006			

Metrological Data acc. to MID Pattern Approval

Nominal Diameter	DN	mm	50	65	80	100
Maximum Working Pressure	PN	bar	16			
Max. Peak Flow	Q_4	m³/h	31.25	50	78.75	125
Continuous Flow	Q_3	m³/h	25	40	63	100
Change-over Flow at Increasing Flow	Q_{x2}	m³/h	2.0 - 2.6			
Change-over Flow at Decreasing Flow	Q_{x1}	m³/h	1.1 - 1.7			
Transitional Flow	Q_2	m³/h	0.025			
Minimum Flow	Q_1	m³/h	0.016			
Ratio	Q_3/Q_1	m³/h	1600	2500	4000	6300

Standard By-pass meter Piston meter cartridge dry dial type 612MTW Q_3 4

By-pass meter
(type 612MTW-HRI)

By-pass meter
(type 612MTW-ER56)

By-pass meter
(type 612MTW)

MeiTwinRF

Compound Water Meter With Integrated Radio

With the MeiTwinRF compound water meter there is no longer any need for the differentiation between the "by-pass meter on the right" and "by-pass meter on the left". Plus the MeiTwinRF is equipped with multiple communication options.

- Measurement of high flow rates with extremely wide spread flow profile
- Measurement of very small flow rates for leakage detection
- Ideal for fire service pipes

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	50	65	80	100
Maximum Working Pressure	PN	bar		16		
Max. Peak Flow	Q_s	m³/h	90	120	200	280
Continuous Flow	Q_3	m³/h	50	70	120	180
Change-over Flow at Increasing Flow	Q_{x2}	m³/h		2.0 - 2.6		
Change-over Flow at Decreasing Flow	Q_{x1}	m³/h		1.1 - 1.7		
Transitional Flow	Q_2	m³/h		0.012		
Minimum Flow	Q_1	m³/h		0.006		

Metrological Data acc. to MID Pattern Approval

Nominal Diameter	DN	mm	50	65	80	100
Maximum Working Pressure	PN	bar		16		
Max. Peak Flow	Q_4	m³/h	31.25	50	78.75	125
Continuous Flow	Q_3	m³/h	25	40	63	100
Change-over Flow at Increasing Flow	Q_{x2}	m³/h		2.0 - 2.6		
Change-over Flow at Decreasing Flow	Q_{x1}	m³/h		1.1 - 1.7		
Transitional Flow	Q_2	m³/h		0.025		
Minimum Flow	Q_1	m³/h		0.016		
Ratio	Q_3 / Q_1		1600	2500	4000	6300

WP-Dynamic

Turbine Water Meter for High Constant Flow Rates

The WP-Dynamic is the ideal solution for the measurement of high, relatively constant flow rates, e.g. behind pumps.

- Hermetically sealed register (IP 68)
- Register may be rotated through 355°
- High overload capability
- Interchangeable measuring element
- Powder coating provides max. corrosion protection
- Not affected by external magnetic fields

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN	mm	400
Size of meter (acc. to EEC)	Q_n		1000
Max. Peak Flow once in life time 24 h Qmax	Q_{max}	m³/h	3000
Continuous Flow	Q_n	m³/h	2000
Transitional Flow	Q_t	m³/h	50
Minimum Flow	Q_{min}	m³/h	25
Starting Flow		m³/h	15

WPV-MS 150

Compound Water Meter for cold water up to 50 °C DN 150

Main and bypass meter equipped with pulse and data interface HRI-Mei and / or pulse module type OD (with bypass meter RK-MS HRI)

- Measurement of high flow rates with extremely wide spread flow profile
- Measurement of smallest flow rates for leakage detection
- Ideal for fire service pipes

Metrological Data acc. to Manufacturers Values

Nominal Diameter	DN		150
Working pressure	PN	bar	16
Max. Peak Flow	Q_s	m³/h	600
Continuous flow	Q_3	m³/h	400
By-pass meter	DN	mm	40
Transitional flow	Q_2	m³/h	0.15
Minimum flow	Q_1	m³/h	0.035

Metrological Data acc. to MID Pattern Approval

Nominal Diameter	DN		150
Max. Peak Flow	Q_4	m³/h	315
Continuous flow	Q_3	m³/h	250
Change-over flow (increasing)	Q_{x2}	m³/h	8.3
Change-over flow (decreasing)	Q_{x1}	mm	4.7
Transitional flow	Q_2	m³/h	0.16
Minimum flow	Q_1	m³/h	0.1

WP QF

Turbine Water Meter for Cold and Hot Water

Measurement of high, relatively constant flow rates in long distance pipes.

- Sealed water-proof register (IP 67)
- Sealed register may be rotated through 355°
- Up to 3 pulsers can be fitted without breaking the meter seal
- Maximum corrosion protection by powder coating
- Not affected by external magnetic fields
- Interchangeable measuring element
- Performance data better than class B

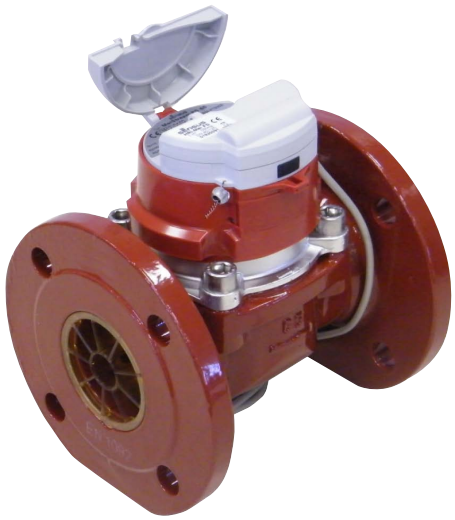
Metrological Data

Nominal Diameter	DN	mm	500
Size of meter (acc. to EEC)	Q_n		1500
Max. Peak Flow (few minutes)	Q_{max}	m³/h	4500
Continuous Flow	Q_n	m³/h	3000
Transitional Flow	Q_t	m³/h	60
Minimum Flow	Q_{min}	m³/h	45
Starting Flow		m³/h	20

MeiStream® FS

Flow sensor for heat meters DN 50...100 90 °C / PN 16

The MeiStreamFS merges the high overload capability and stable measuring curve of the Woltman WP meter with the low flow performance of Woltman WS meter into an excellent flow sensor.



- Flow sensor for heat meters for commercial and light industrial use
- For measurement of hot process water up to 90 °C
- For measurement of cooling water T > 5 °C
- For high permanent flow rates such as generated by pumps, as well as for the measurement of low flow rates in off-peak periods
- Installation in horizontal and vertical pipe

Metrological Data

Nominal Diameter	DN	mm	50	65	80	100
Max. Peak Flow		m³/h	50	60	120	140
Overload Flow	Q_s	m³/h	50	50	120	120
Continuous Flow	Q_p	m³/h	25	25	60	60
Minimum Flow horizontal	Q_i	m³/h	0.5	0.5	1.2	1.2
Ratio horizontal	Q_p / Q_i		1/50	1/50	1/50	1/50
Ratio vertical	Q_p / Q_i		1/25	1/25	1/25	1/25
Starting Flow	Q_c	m³/h	0.08	0.08	0.15	0.15
Head loss at q_p	Δp	bar	0.08	0.02	0.08	0.04
Flow rate at 1 bar pressure loss	Kvs	m³/h	88	177	212	300
Approved temperature range Heat	T	°C	15 ... 90			
Approved temperature range Cooling	T	°C	5 ... 50			

WPD FS

Flow sensor measuring hot water up to 130 °C

WPD FS is the long time established and reliable flow sensor with an extensive measuring range for commercial applications.

- Flow sensor for heat meters for commercial and light industrial use DN 50 to 150 for customer billing
- For measurement of hot process water up to 130 °C
- For high permanent flow rates such as generated by pumps, as well as for the measurement of low flow rates in off-peak periods
- Installation in horizontal and vertical pipe lines

Metrological Data WPD FS 130 °C

Nominal Diameter	DN	mm	40	50	65	80	100	125	150	200	250	300
Max. Peak Flow once lifetime 24 h Q_{max} or 5 min. 1.2 x Q_{max}	Q_{max}	m³/h	20	30	60	90	140	200	300	500	1000	1200
Continuous Flow	Q_n	m³/h	10	15	25	45	70	100	150	250	500	600
Transitional Flow	Q_t	m³/h	1.8	1.8	2	3.2	4.8	8	12	20	45	50
Minimum Flow	Q_{min}	m³/h	0.6	0.6	1	1.4	2	3.5	4.5	8	20	25
Starting Flow		m³/h	0.25	0.25	0.3	0.35	0.6	1.1	1.7	2	10	15

Metrological Data acc. to DIN EN 1434

Nominal Diameter	DN	mm	50	65	80	100	125	150
Overload Flow	q_s	m³/h	30	50	80	120	200	300
Continuous Flow horizontal	q_p	m³/h	15	25	40	60	100	150
Minimum Flow horizontal	q_{ih}	m³/h	0.6	1	1.6	2.4	4	6
Minimum Flow vertical	q_{iv}	m³/h	1.5	2.5	4	6	10	15
Ratio horizontal	q_p / q_i	25	25	25	25	25	25	25
Ratio vertical	q_p / q_i	10	10	10	10	10	10	10

CPA 01 Pulse Adapter

Pulse adapter for static flow meter Cordonel

Cordonel® is a high-performance bulk meter that enables you to manage your distribution network more efficiently and provides accurate and reliable data in any installation or environmental condition. As an addition to the on board radio communication the Cordonel can be retrofitted with the puls adapter CPA 01.

Features

- Pulse capture device for Cordonel flow meters
- Can be factory fitted or retrofitted in the installation site without breaking the meter's seal
- Provides a high-resolution pulse output with water flow direction detection
- Communication between meter and pulse adapter CPA01 via IrDA interface
- Compatible with all versions of Cordonel meters
- Meter and pulse adapter are galvanically isolated
- No switch bouncing due to electronic pulses
- Pulse value, mode and length programmable over the air
- Typical battery life 10 years
- Sealed housing (IP68)
- 3 m cable length

Application

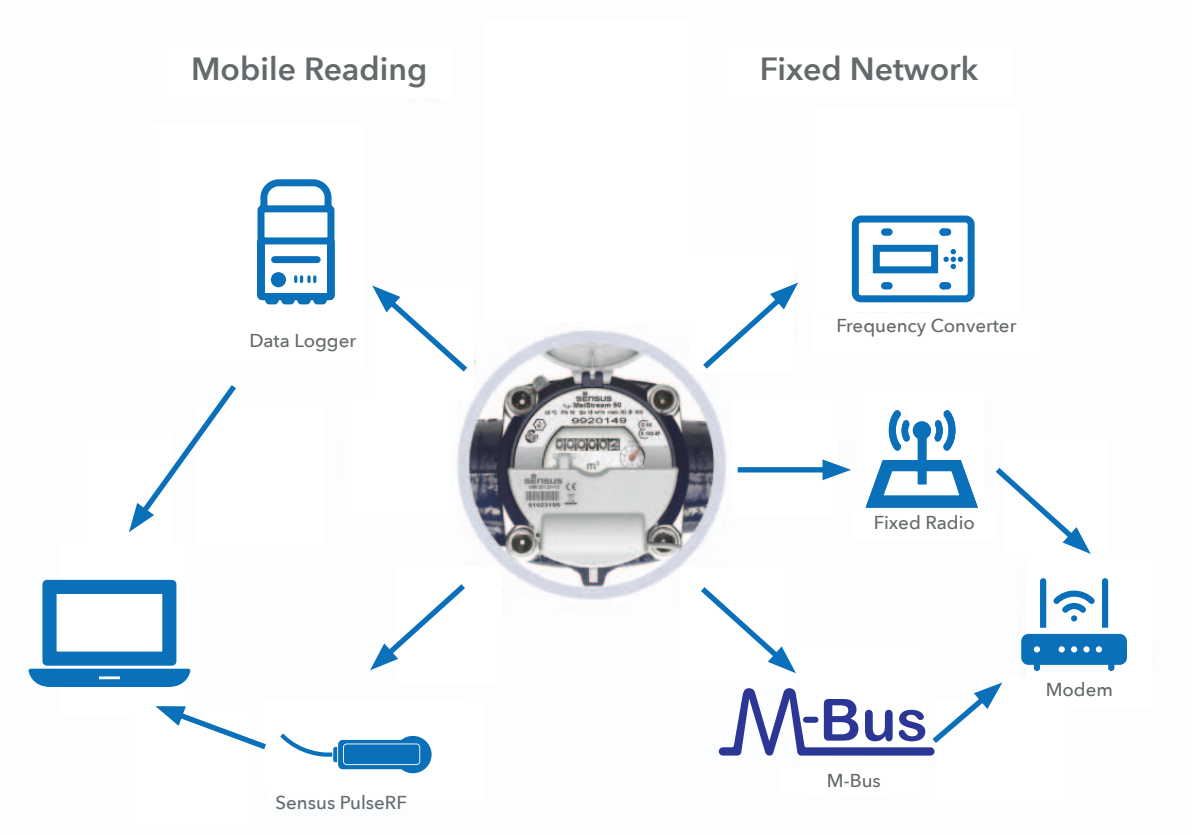
Generate volume proportional pulses from a Cordonel flow meter for:

- Connection to a building management system
- Industrial control applications with the FM-1D/K or FM-2D/K
- Data logging in combination with various data loggers; for example Sensus CDL
- A cellular gateway with pulse input for logging and transmission of flow profiles
- Installation in harsh environments like flooded pits thanks to its robust design

HRI-Mei

The data interface and flexible pulse output for C&I Water Meters

The HRI-Mei is a data capture device for MeiStream and MeiTwin MID C&I water meters. All standard registers of these meters are prepared to receive the HRI-Mei. The HRI-Mei provides a high resolution pulse output with water flow direction detection.



- Meter reading based for billing purposes i.e. mobile reading systems
- Meter remote reading and profiling via cable fixed networks with M-Bus, radio modem or GSM network
- Industrial control applications with the FM-1D/K or FM-2D/K
- Data logging in conjunction with various data loggers; i.e. CDL
- Logging and transfer of flow profiles
- Robust design allows the use of the HRI-Mei in harsh environments like flooded pits
- Compatible to bulk water meters with MeiStream and MeiTwin MID standard register
- Load-free inductive scanning of the meter's pointer
- Self diagnostic and tamper detection
- Battery lifetime up to 12 years. With external power supply e.g. a M-Bus central unit lifetime can be increased

SIRT Interface Radio Tool

Battery Powered Radio Trasciever Modem for Communication Solutions

The Sensus Interface Radio Tool (SIRT) is a battery-powered radio transceiver modem used to communicate with SensusRF and Wireless M-Bus capable meters.

Applications

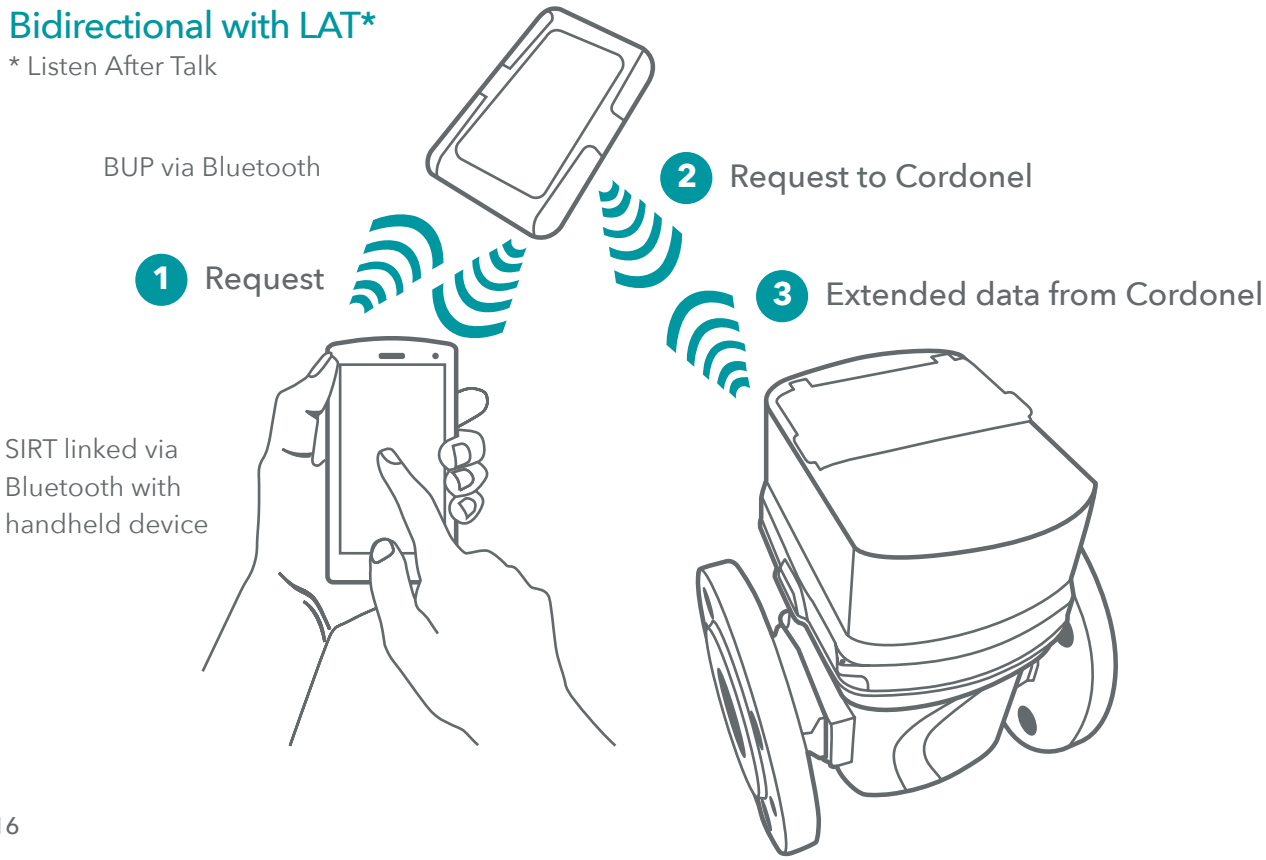
Using Sensus developed software the SIRT provides the user with the ability to:

- Receive frequently transmitted radio messages from SensusRF radio endpoints
- Receive radio telegrams from Wireless M-Bus meters
- Retrieve additional information from SensusRF radio endpoints using Listen After Talk (LAT) technology
- Instigate remote configuration of SensusRF radio endpoints
  The SIRT incorporates an internal antenna array to receive radio messages from the strongest signal (diversity capability).
  Follow system requirements according to Sensus manuals

The SIRT contains a high-capacity lithium-ion rechargeable battery, which enables long operational performance before it must be recharged. This battery must be handled and charged in accordance with the installation manual. A battery charger with four international adapters is supplied. The external antenna plug and the USB plug are provided with caps for protection against rain water ingress.

Bidirectional with LAT*

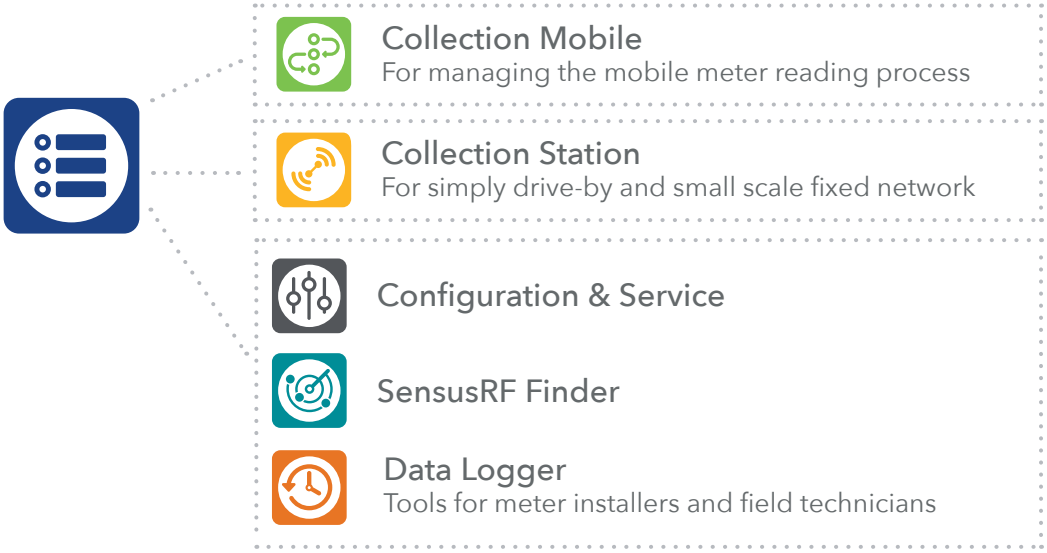
* Listen After Talk



DIAVASO Mobile Application Suite

Remote meter reading applications for SensusRF

DIAVASO is a suite of apps for remote meter reading using smartphones or tablets. The Diavaso app suite consists of 5 individual apps; SensusRF Finder, Collection Station, Collection Mobile, Configuration & Service, and Data Logger.



The different apps can be used individually or in combination depending on your requirements for remote meter reading (AMR) or small scale fixed network (AMI). The mobile applications run on an AndroidTM device and communicate with the SensusRF radio transceiver SIRT (Sensus Interface Radio Tool). The Diavaso apps are compatible with all SensusRF meters and repeaters. The Diavaso apps are designed to be used for meter installation, remote reading, maintenance and configuration of meters and repeaters. The Collection Mobile also includes a server based interface (web portal) for managing the meter reading workflow, reporting as well as data exchange with the billing system.

Features

- User friendly, modular set of apps to suite your needs
- Designed for meter installers, meter readers, route managers and administrators to make your mobile meter reading easier to manage
- Manage any SensusRF radio endpoints
- No infrastructure required - You only need to have a Collection Mobile server
- No software installation and configuration required - Just simply download the apps
- Available as a hosted solution
- Compatible with most Android smartphone and tablets

Frequency Converters

Converting volume pulses into flow signals

The FM-1D/K and 2D/K are µP-controlled frequency converters. They are applied to convert volume pulses into a flow signal. The FM-2D/K can be applied to link the signals of two input pulses with flow direction signals.

FM1 D/K

- Simple set up using 3 keys on the front
- Wall mounted or clipped onto a top hat rail acc. to EN 50022
- Accommodates a wide range of pulser inputs
- Pulse output through relay
- Current output 0 or 4 ... 20 mA
- Reverse flow identification
- Set up of input and output pulse values
- Test mode
- Local indication on the front of:
  - instantaneous flowrate
  - counter reading
  - programming data
- Data retention in case of power failure by nonvolatile memory

FM2 D/K

- Two freely programmable pulse outputs with flow direction processing
- Variable pulse provider types connectable
- Current output freely scaleable and separated for forward and reverse flow
- Output for current type with direction identification (-20 mA...+20 mA)
- Separate relay outputs for forward and reverse volumes
- 2 Opto-coupler outputs used for pulses and direction signals or limit value 1 and limit value 2
- Pulse divisor for pulse output, adjustable
- Integrated LC-Display for the display of volume, momentary flowrate and programming data
- M-Bus/MiniBus-Data connection for reading of instant values
- Programmed data is retained after power failure
- Galvanic isolation from supply, entry and output
- Programmable on site by 5 buttons
- Test mode as installation help
- Housing equipped for wall or top hat railing

CDL Datalogger

Data storage for network systems

CDL Data-Loggers for mobile data collection recording measured values from networks independent of mains power supply. The evaluation is carried out by using the CDLWin software, which is available from Sensus, running on a PC.

Features

- Recording of analogue values (pressure) and flow simultaneously
- Up to 4 sensors may be connected simultaneously (CDL - 4U)
- Inputs may be used for either digital or analogue sensing devices
- 3 independent memories (day, hour and events)
- Data logging of positive and negative values
- LC-Display for current values; switchable by reed switch
- Alarm contact
- Compact design
- Battery powered (independent of the mains power supply)
- Separate battery enclosure for standard cells (LR 6)

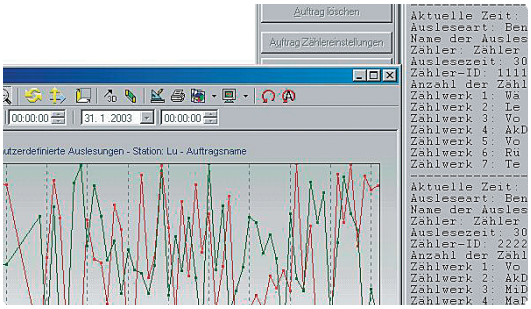
Applications

- Network management
- Recording of consumption patterns
- Recording of reservoir levels
- Recording of flow rate and pressure
- Recording of temperature deviation

DOKOM CS Remote Reading Software

Resource reading of water and energy meters via M-Bus Network.

DOKOM CS is a software custom designed to read resource meters i.e. water and energy meters (gas, electricity, heat) through an M-Bus network.



Main characteristics

- Easy to use
- Electronic mobile and remote meter reading
- M-Bus software drivers are integrated
- Phone and radio read are integrated
- Expandable for Internet and power line
- Single user or computer network compliant
- Modular
- Multi Language
- Automated data export
- Graphical and tabular evaluation
- Integration of maps
- User friendly help assistant

Application

- Remote water meter reading for reticulation management purposes
- Remote reading for billing purposes
- Meter monitoring
- Leak detection

620C/620MC Water Meter

Residential high-accuracy meter with piston measuring chamber

The 620C/620MC is a high precision meter. Due to its unique piston measuring chamber even drops of water are registered. The 620C/620MC assures a long lasting stable metrology.

Main characteristics

- DN 15 to 20, PN16
- Light and easy to handle
- Compatibility with all new and planned regulations for potable water
- Unrivalled accuracy and measuring range
- High resistance to impurities and aggressive water
- Quiet operation

Metrological Data

Metrological characteristics in accordance with Measuring Instruments Directive

			Coaxial Manifold	inline	
Nominal Diameter	DN	mm	#	15	20
Permanent flowrate	Q_3		2.5	2.5	4
Ratio "R"	Q_3/ Q_1	m³/h	40 / 80 / 160 / 315 / 400		
Maximum flowrate [1]	Q_4	m³/h	3.125	3.125	5.0
Minimum flowrate [1] (tolerance ±5%)	Q_1	m³/h	50	6.25	10.0
Transitional flowrate [1] (tolerance ±2%)	Q_2	m³/h	10.0	10.0	16.0

[1] Values for R=400

iPERL® Water Meters

Residential high-performance, solid-state smart water meters

iPERL is founded on complete and simple life-cycle principles. From the selection of the network fitting sizes for the end-point, through to delivery and usage experience and on to disposal, the technology has been designed with simplicity, productivity and sustainability in mind.

Main characteristics

- Sensus iPERL offers unrivalled, sustained R800 measurement accuracy for all sizes from DN15 to DN40 over its expected 15 year operational life when used for clean potable water:
- Operating ambient temperature range of +60 °C down to -15 °C, provided that a minimum water flow rate of 100 litre / hour is ensured to prevent freezing
- A water temperature range of +0.1 °C to +50 °C (70 °C special variant)
- Water conductivity down to 120 µS / cm
- Water pressure up to 16 bar
- As a special version available with ATEX approval

Metrological Data

			DN (mm)				
Nominal Diameter	DN		15	20	25	32	40
Permanent flowrate	Q_3	m³/h	2.5	4	6.3	10	16
Starting flowrate		l/h	1	1.6	2.5	4	6.4
Ratio "R"	Q_3/Q_1	R			800		
Maximum flowrate	Q_4	m³/h	3.125	5	7.875	12.5	20
Minimum flowrate	Q_1	l/h	3.13	5	7.88	12.5	20
Transitional flowrate	Q_2	l/h	5	8	12.6	20	32

Xylem |ˈzīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

About Sensus, a Xylem brand

Sensus, a Xylem brand, helps a wide range of public service providers—from utilities to cities to industrial complexes and campuses to do more with their infrastructure to improve quality of life in their communities. We enable our customers to reach farther through the application of technology and data-driven insights that deliver efficiency and responsiveness. We partner with them to anticipate and respond to evolving business needs with innovation in sensing and communications technologies, data analytics and services. Learn more at sensus.com

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