



## NON MAG SENSOR

Our design combines Sindcon's expertise in single-chip solutions with LC sensor interface and LoRa communication technology, powered by STMicroelectronics' advanced LoRa SoC. This design is highly compatible with Itron water meters and gas meters that is equipped with Cyble target. It delivers an incredibly long battery life with up to 10 years, as precisely calculated by our battery management system, making it the ideal choice for users who value high-quality and long lasting performance.

## FEATURES AND BENEFITS

- Sindcon's unique temperature and drift compensation algorithm is used for the LC sensor.
- Anti-tampering function triggers automatically and sends alarm to system when sensor is away from Cyble target of meter.
- The SoC solution is designed for super-low power consumption, with a battery life of up to 10 years.
- The SoC integrating ARM Cortex-M4 core is capable to realize complex algorithms and functions to meet the needs of different IoT applications.
- Sindcon's unique primary (Li-SOCI2) battery management technology not provides precision usage calculation and loading leakage detection but also keep the battery in health condition across the battery life.
- The casing is designed to be waterproof with an IP68 rating and features a replaceable battery.
- Built-in timer can be set remotely via API. The device RTC is synchronized by server clock.

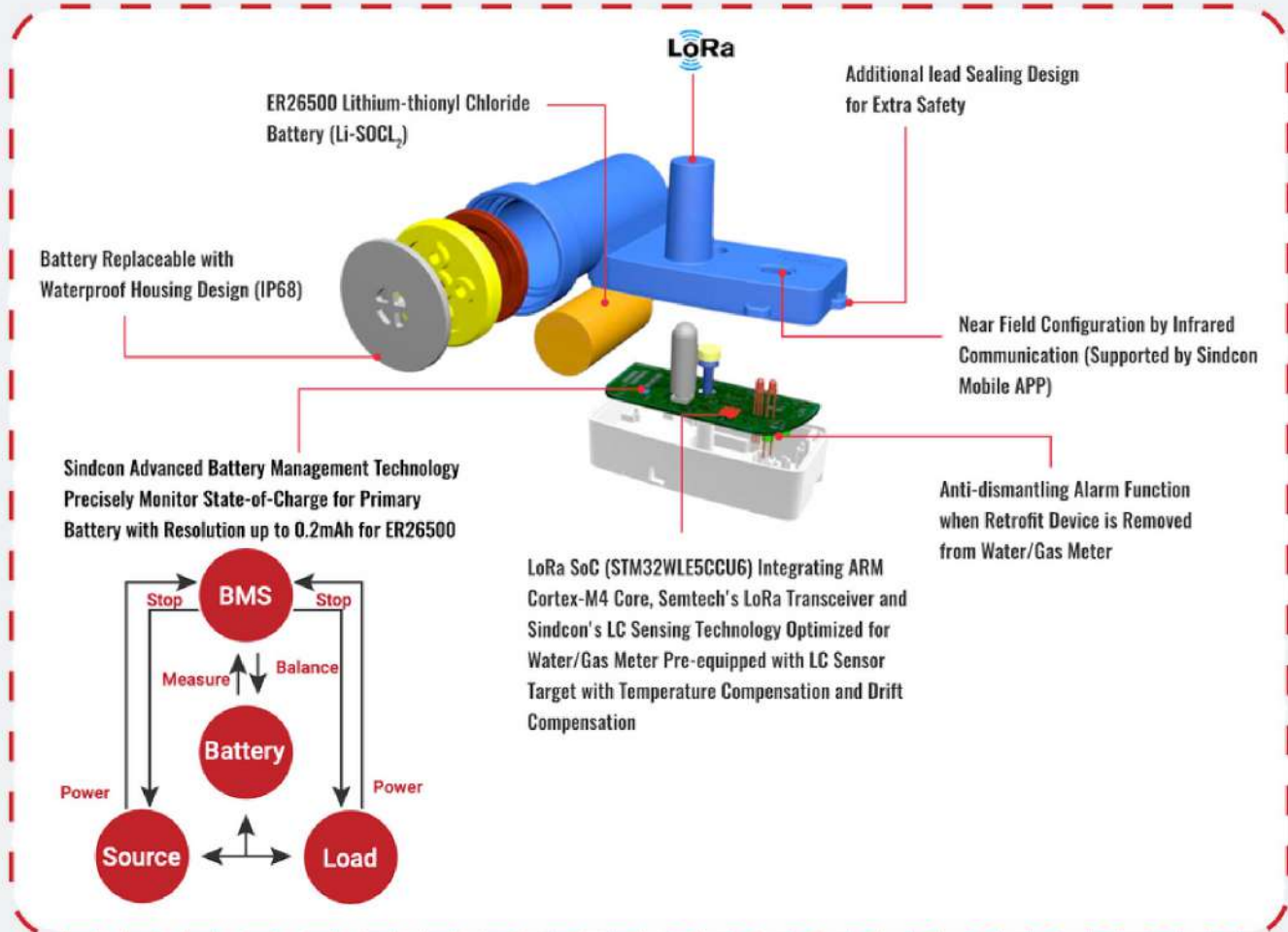
## LORA RADIO PARAMETERS

Communication Protocol	LoRaWAN
LoRa MAC Version	1.0.3
Device Type	Class A
Network Registration Way	OTAA, ABP
LoRaWAN Uplink Confirmation	Confirm or Partially Confirm
LoRa Chip	STM32WLE5CCU6
MCU	Arm® 32-bit Cortex®-M4
Memory	256KB Flash; 64KB RAM
ISM Bands	AS923, AU915, EU868
TX Power	Up to 22dBm
Uplink Channels	8 settable channels with bandwidth of 125kHz
RX Sensitivity	Down to -125dBm@BW = 125 kHz, SF = 7
Spreading Factor	SF7 ~ SF10(Adaptive)
LBT(Listen Before Talk)	Yes
Report Interval	Configurable via Downlink Commands
Data Cach when LoRa Network Interrupt	Yes
Data Logger in local device	Optional
Communication Distance	3km to 10km (Eyesight distance in open space)
Near Field Communication Way	Infrared Tools (with Sindcon Mobile APP)
Anti-tampering	Yes
Anti-dismantling Alarm Function	Yes



Power Supply	3.6V (ER26500 8500mAh)
Standby Current	≤70uA
Active Current	≤5mA
TX Current	≤127mA @ 22dBm
Battery Life	Up to 10 years
Battery Usage Monitoring	Accurate Coulomb Measurement
Battery Undervoltage Warning	Yes
MCU Temperature Monitoring	Yes
CPU Working Temperature	-10°C to 60°C
Storage Temperature	-10°C to 60°C

## SMART RETROFIT DEVICE FOR WATER/GAS METER PRE EQUIPPED WITH LC SENSOR TARGET



## MULTI-JET RESIDENTIAL LORAWAN SMART METER



Multimag TM II is a velocity meter multi-jet type, for cold water application. It has been developed based on years of experience in the metering business and considering several different demands, creating a whole product family. The value of the whole family is not only all the additional features presented in each version, but the metrology performance and the high robustness and durability.

## FEATURES AND BENEFITS

- Enhanced design and technologies with long-term reliability.
- High quality engineering materials
- Register can be oriented to allow easy reading.
- 100% of the products are calibrated on electronic test benches and all results can be provided.
- Robust against different types of frauds.

## APPROVALS

- ABNT NM212 (South America)
- EEC 75/33 (Europe)
- IS:779:1994 (India)
- ISO 4064 (and derived standards)
- NOM-012-SCFI (Mexico)
- Portaria INMETRO 246 (Brazil)
- SANS 1529-1:2003 (South Africa)
- SNI 2547-2008 (Indonesia)

## FEATURES AND BENEFITS

Nominal diameter (DN)	mm pol	15 1/2"		20 3/4"		25 1 1/4"		30 1 1/2"		40 2"		50 Flanged	
Metrology*	Class	B	C	B	C	B (H)	B (H)	B (H)	B (H)	B (H)	B (H)	B (H)	B (H)
Typical Start-up	L/h	10	7	18	12	25	30	70	90				
Minimum Flow Rate – Qmin	L/h	30	15	50	25	70	100	200	300				
Transitional Flow Rate – Qt	L/h	120	22.5	200	37.5	280	400	800	1200				
Nominal Flow Rate – Qn	m <sub>3</sub> /h	1.5	1.5	2.5	2.5	3.5	5.0	10	15				
Maximum Flow Rate – Qmax	m <sub>3</sub> /h	3	3	3	5	7	10	20	30				
Maximum temperature	°C							40					
Maximum temperature (<1h)	°C	50								---			
Maximum Operating Pressure	bar							16					
Head Loss at Qmax	bar							< 1					
Maximum Reading	m <sub>3</sub>							9.999 or 99.999		99.999			
Minimum Reading	L							0.02		0.2			

\* Tested under laboratory conditions and for guideline purposes only

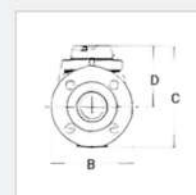
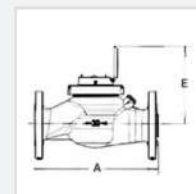
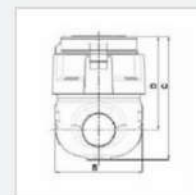
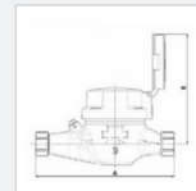
## DIMENSIONS

### Nominal diameter (DN) 15-20

Nominal diameter (DN)	mm pol	15 1/2"		20 3/4"	
Weight	Kg	1	1.1	1.19	
Threads	mm	G 3/4"	G 3/4"	G 1"	
A	mm	165 / 170	190	190	
B	mm	80	80	80	
C	Kg	112	112	112	
D	mm	88	88	88	
E	mm	147	147	147	
Entry hole diameter	mm	12.7	12.7	23	

### Nominal diameter (DN) 25-50

Nominal diameter (DN)	mm	25/30		40		50	
A (long)	mm	260	300	270			
B (width)	mm	98	130	165			
C (height)	mm	120	150	210			
D (axis to cover)	mm	70	90	110			
E (open cover shaft)	mm	140	160	180			







## WOLFTEX M

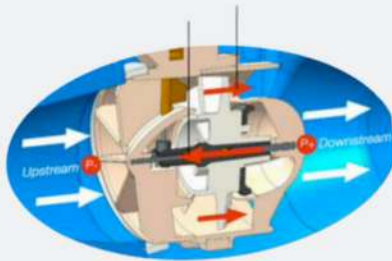
Woltex M is a horizontal Woltmann meter available as MID approved in sizes from DN 50 to 300mm. Recognized for its robustness, the woltex M range is dedicated to all applications around water distribution where high reliability and accuracy is requested.

### FEATURES AND BENEFITS

- Sensitivity class U0D0.
- Hermetically sealed register (copper can/mineral glass envelope).
- Approved interchangeable mechanisms allow maintenance of on-site existing bodies, with preserved CE marking on the whole instrument according to the provisions of 2014/32/EU Directive.
- Pre-equipped through Cyble as a standard
- Excellent resistance to corrosion with 300 microns epoxy coating.

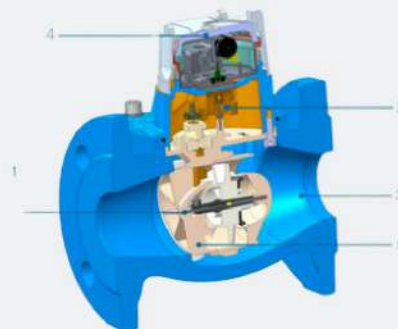
### Ease of Installation, Read and Maintenance

Woltex M range is available in various lengths and connections to minimize installation costs. Interchangeable approved mechanisms allows easy maintenance without re-calibration. Ease of read in the toughest environments (ie: flooded pits) is secured by orientable hermetically sealed register (copper can/mineral glass envelope).



### Working Principle

The water velocity is rotating the horizontal axis propeller. Special shape of its inlet and outlet bearing 1 is counteracting the natural hydraulic thrust applied on the propeller, then preventing any downstream pivot wear. The hydrodynamic balance proved its ability for more than 30 years. This results in a meter able to withstand sustained high flows without impacting low flow accuracy. The propeller rotation is transmitted by a protected transmission and direct magnetic coupling 2 to the register. The cast iron body 3 is durably protected against the effects of corrosion by epoxy powder coating. The hermetically sealed copper can/mineral glass register 4 is safeguarding the read and integrity of the indicator in the toughest environments (flooded pits, mechanical tampering attempts, ...). New stabilizer design 5 for DN 50/65/80 mm.



### Insensitivity to flow perturbation

The design of Woltex M range has been improved to achieve the sensitivity class U0D0, thanks to a new integrated stabilizer.

### Endurance & Peak Flow Resistance

This extended range of measurement is the result of more than twenty years experience in Horizontal Woltmann design, from the first hydrodynamically balanced helix patent in 1985 still resulting in unmatched endurance capabilities to the use of high quality materials.

### Communication Device

Pre-equipped for future communication through Cyble.



## TYPICAL PERFORMANCE

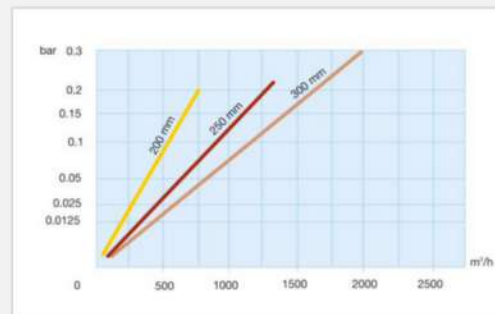
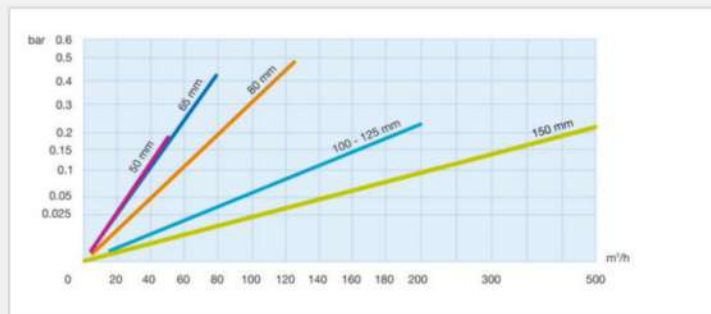
Nominal diameter (DN)	mm inches	50 2"	65 2 1/2"	80 3"	100/125 4"	150 6"	200 8"	250 10"	300 12"
Starting flowrate*	m <sup>3</sup> /h	0.19	0.22	0.25	0.38	0.4	1.6	3	10
Accuracy ± 2% from*	m <sup>3</sup> /h	0.4	1	1.2	1.5	1.6	3.5	5	15
Accuracy ± 5% from*	m <sup>3</sup> /h	0.35	0.5	0.75	0.9	1	2.5	3.5	12
Admissible peak flow (10' max)	m <sup>3</sup> /h	90	160	250	300	700	1000	1500	2500
Max. admissible flowrate (continuous)	m <sup>3</sup> /h	50	79	125	200	500	788	1250	2000
Head loss at Q3	bar	0.09	0.27	0.31	0.15	0.14	0.12	0.12	0.2
Max. admissible temperature	°C	30							
Climatic environment temperature	°C	70							
Max. admissible pressure	bar	20							
Min. Verification scale interval	L	0.2	0.2	0.2	0.2	0.2	2	2	2
Indicating range m <sup>3</sup>	m <sup>3</sup>	999 999.99				9 999 999.99			
Sensitivity Class		U0D0				U0D0			
Cyble HF pulse weight	L	10	10	10	10	10	100	100	100

\* Average values

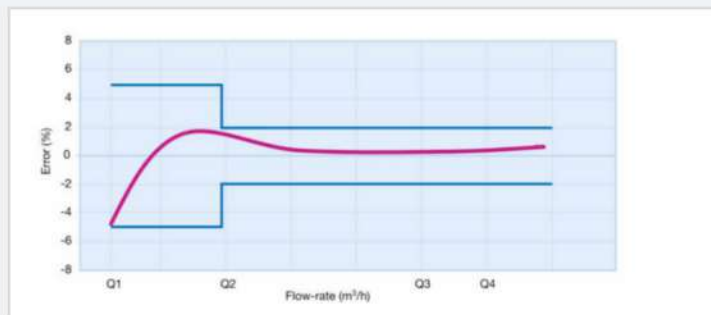
## TYPICAL PERFORMANCE

Nominal diameter (DN)	mm inches	50 2"	65 2 1/2"	80 3"	100/125 4"	150 6"	200 8"	250 10"	300 12"
Q3 Permanent flow rate	m <sup>3</sup> /h	40	63	100	160	400	400	1000	1600
Q4 Overload flow rate	m <sup>3</sup> /h	50	79	125	200	500	787.5	1250	2000
Q2 Transitional flowrate	m <sup>3</sup> /h	0.64	1	1.60	1.60	4.00	25.20	40.00	32.00
Q1 Minimum flowrate	m <sup>3</sup> /h	0.4	0.63	1.00	1.00	2.50	15.75	25.00	20.00
MID approval ratio		100	100	100	160	160	40	40	80
Production ratio		100	100	100	100	100	40	40	80
Maximum admissible Pressure (MAP)	bar	20							
Pressure Loss Class at Q3	bar	0.16	0.4	0.4	0.4	0.16	0.25	0.25	0.25
Mid Approval number		LNE-23696							
Max. temperature	°C	30							

## HEAD LOSS

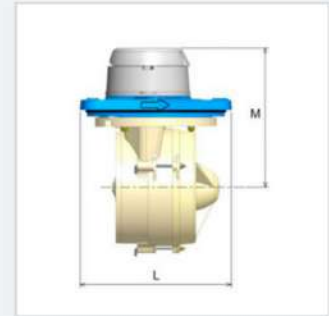
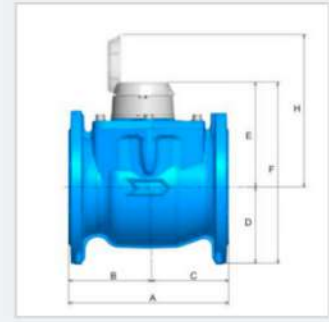


## ACCURACY CURVE



## INSTALLATION REQUIREMENTS

- Woltex M could be installed regardless of position.
- Installation of a strainer upstream of the meter is recommended to protect the hydraulics against raw particles (see Itron strainer leaflet).
- In case of particular installation conditions, we recommend the installation of a flow straightener directly upstream of the meter to cancel the effects of hydraulic perturbations on Horizontal Woltmann accuracy (see Itron installation leaflet).



## DIMENSIONS

Nominal diameter (DN)		mm	50	65	80	100	125	150	200	250	300
		inches	2"	2 1/2"	3"	4"	5"	6"	8"	10	12
End connection*			Flange PN 10/16					Flange PN 10 or PN 16			
<b>Meter</b>											
A (length)	ISO	mm	200	200	200	250	250	300	350	450	500
	DIN	mm	300	200	225	250	-	300			
	AS (Australia/UK)	mm	311	-	413	-	-				
B		mm	100	100	100	111	111	139	164	214	200
C		mm	100	100	100	139	139	161	186	236	300
D		mm	82.5	92.5	100	110	110	142.5	171	204	230
E		mm	142	142	142	169	169	194	220	195	342
F		mm	224	234	242	279	279	339	391	339	564
H		mm	222	222	222	309	309	395	420	395	729
Weight		Kg	11.4	12.6	14.1	19.5	19.5	34	55	75	175
<b>Mechanism</b>											
L		mm	119	119	119	166	166	212	332	256	350
l (max. width)		mm	148	148	148	182	182	273	276	276	426
M		mm	142	142	142	169	241	194	195	195	342
Weight		Kg	3	3	3	5.4	5.4	7.8	8,5	8,5	54

\* Other drillings are available, under request