TOPAS® SONIC

Technical data sheet

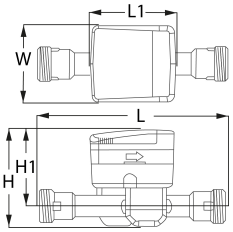
Product description

TOPAS® SONIC Ultrasonic Meter, developed, manufactured and calibrated by INTEGRA Metering, is designed for domestic water networks and smart metering applications.

Based on unique sensor technology, direct ultrasonic measurement provides superior measurement stability over time for accurate billing and monitoring of water consumption at minimal pressure drop.

Dimensions

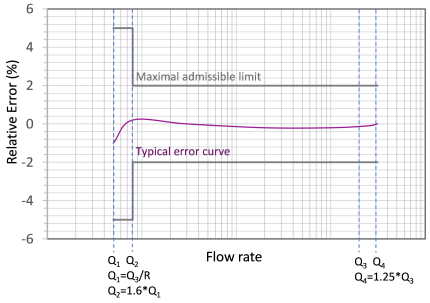
Dimensions	DN	15	20	25	32	40	50
	Thread	G3 / 4" B	G1" B	G1" 1/4 B	G1" 1/2 B	G2" B	G2" 1/2 B
Weight	Kg	0.8	1	1.4	1.5	1.9	2.4
Height (H1)	mm	77	77	77	77	77	77
Total height (H)	mm	98	98	98	101	107	115
Width (W)	mm	76	76	76	76	76	76
Housing length (L1)	mm	87	87	87	87	87	87



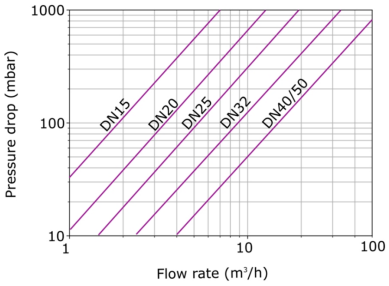
Metrological data

Nominal diameter	DN		15	15	20	20	20	20	25	25	25	32	40	50
	Thread		G3/4 " B	G3/4 " B	G1" B	G1" B	G1" B	G1" B	G1" 1/4B	G1" 1/4B	G1" 1/4B	G1" 1/2B	G2" B	G2" 1/2B
	Material		CW617N											
Length	L	mm	110	170	105	190	220	130	200	260	260	260	300	300
Continuous flow	Q_3	m^3/h	2.5	2.5	4	4	4	4	10	10	6.3	10	16	25
Overload flow	Q_4	m^3/h	3.125	3.125	5	5	5	5	12.5	12.5	7.9	12.5	20	31
Transition flow	Q_2	l/h	8	8	13	13	13	13	32	32	21	32	51	80
Min. flow	Q_1	l/h	5	5	8	8	8	8	20	20	13	20	31	50
Starting flow rate	Q_{START}	l/h	2.5	2.5	4	4	4	4	10	10	6	10	16	25
Pressure drop class @ Q_3	ΔP	-	ΔP 25					ΔP 40	ΔP 25					
Measuring range	R	-	R 500											

Metrological class 2



Pressure drop



Please note that these diagrams should not be regarded as absolute and may be subject to variation.

Power supply

Type	Lithium battery
Lifetime	Up to 16 years*

** Depending on sending interval of radio telegram, telegram length and operating temperature*

Display characteristics

Display indication	LCD 10 digits
Units	m^3, L, hour
Displayed values	Volume, flow, reverse flow, display test, events and alarms status, F/W version
Events and alarms	Reverse flow, low battery, leakage, air bubbles, burst, frost, heat, dry, over temperature, no consumption

ParamApp®: an app for diagnostics and configuration

ParamApp® is a powerful and user-friendly Android application developed by INTEGRA Metering dedicated to commissioning, configuration and diagnostics of smart devices or smart meters directly on site, with a smartphone and through NFC.
https://integra-metering.com/product/paramapp/

ParamApp® action			
Editable parameters		Diagnostics	
Display	Net or forward volume, reverse volume, index decimals, flow rate decimals, sequence timings	Recorded parameters	• Temperature (minimum, average, maximum) • Flowrate (minimum, average, maximum) • Volume (minimum, average, maximum) • Events and alarms
Communications	Pulse configuration, M-Bus communication parameters, LoRaWAN force join or message	Recording granularity	Hourly, daily, monthly, yearly
		Data export	CSV
		Data reading	TOPAS® SONIC allows data collection even with an empty battery

Communication systems

Global view of communication systems

Naming	Wireless
LW8	MultiCom: simultaneous LoRaWAN 868 MHz and wM-Bus 868 MHz
LW	LoRaWAN EU 868 MHz
W4	wM-Bus 434 MHz
W8	wM-Bus 868 MHz

Detail of communication systems

LoRaWAN communication system			
Frequency	868.95 MHz	Readout interval	Permanent
Standard	LoRaWAN EU V 1.0.3	Telegram type	Historical or OMS type
Emitted power	25 mW (14 dBm)	Class	A
Transmission interval	Twice a day	Historical type telegram	Time stamp, instant volume (positive or net), instant alarm / event, 12 hourly volumes
Connection mode Historical type	Over-the-air activation (OTAA) by default	OMS telegram content by default	Net or forward volume, reverse volume, medium temperature, date / time, target monthly value, target date, events / alarms, remaining battery lifetime

wM-Bus 868 MHz communication system			
Frequency	868.95 MHz	Readout interval	Permanent
Standard	OMS V4 (OMS V3 compliant) / EN13757	Encryption	Profile A (security mode 5) or profile B (security mode 7)
Connection mode	T1 (unidirectional)	Telegram content by default	Net or forward volume, reverse volume, medium temperature, date / time, target monthly value, target date, events / alarms, remaining battery lifetime
Transmission interval	16 seconds by default (configurable for drive-by or walk-by)		
Emitted power	25 mW (14 dBm)		

wM-Bus 434 MHz communication system			
Frequency	434 MHz	Readout interval	Permanent
Standard	OMS V4 (OMS V3 compliant) / EN13757	Encryption	Profile A (security mode 5)
Connection mode	T1 (unidirectional)	Telegram content by default	Net or forward volume, reverse volume, medium temperature, date / time, target monthly value, target date, events / alarms, remaining battery lifetime
Transmission interval	16 seconds by default (configurable for drive-by or walk-by)		
Emitted power	10 mW (10 dBm)		

Conditions relating to TOPAS® SONIC

Operating conditions

Nominal pressure	PN 16 (PN 10 DN200: PN 10)
Protection class	IP 68
Medium	Potable water
Medium temperature	From 0.1° C to + 50° C
Environmental temperature	From 1° C to + 70° C
Storage temperature	Minimum –10° C and +70° C maximum (maximum 4 weeks at T> 35° C)
Environment class	B (indoor installation) / O (outdoor installation)
Mechanical environment class	M1
Electromagnetic environment class	E2
Sensitivity	U0D0
Measurement flow rate	Bi-directional

Approvals, certificates and regulations

EU directives compliance: MID 2014/32/UE, RED 2014/53/EU, RoHS 2 2011/65/EU, REACH

Drinking water approvals: ACS, WRAS, SVGW, DM 174, KTW 270, BELGAQUA

Market approval: CE marking

Other certifications: OMS V4 (wM-Bus), LoRa certified (LoRaWAN)