

TOPAS® SONIC

Technical data sheet

Product description

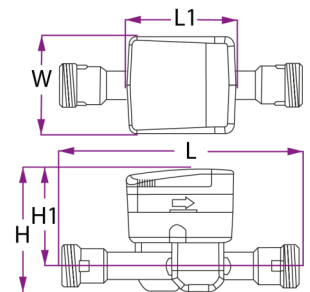
TOPAS® SONIC Ultrasonic Meter, developed, manufactured and calibrated by INTEGRA Metering, is designed for domestic water networks and smart metering applications.

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



Technical characteristics

	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" 1/4 B	G1" 1/4 B	G1" 1/4 B	G1" 1/2 B	G2" B	G2" 1/2 B	
	Material		CW617N												
Leght	L	mm	110	170	105	190	220	130	200	260	260	260	300	300	
Continuous flow rate	Q ₃	m ³ /h	2.5	2.5	2.5	4	4	4	10	10	6.3	10	16	25	
Overload flow rate	Q ₄	m ³ /h	3.125	3.125	3.125	5	5	5	12.5	12.5	7.9	12.5	20	31	
Transitional flow rate	Q ₂	L/h	8	8	8	13	13	13	32	32	21	32	51	80	
Min. flow rate	Q ₁	L/h	5	5	5	8	8	8	20	20	13	20	31	50	
Starting flow rate	Q _{START}	L/h	2.5	2.5	2.5	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												



TOPAS® SONIC

Technical data sheet

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/paramapp>



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

TOPAS® SONIC

Technical data sheet

Communication systems

Global view of communication systems

Naming	Wired / connector	Wireless
MB	M-Bus	-
OC	Pulse output (with cable cut tamper)	-
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	Telegram type	Historical or OMS type
Connection mode	Over-the-air activation (OTAA) by default	Class	A
		Historical type telegram	Time stamp, instant volume (positive or net), instant alarm / event, 12 hourly volumes
Transmission interval	Twice a day	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
Emitted power	25 mW (14 dBm)		

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		
Emitted power	25 mW (14 dBm)		


TOPAS® SONIC

Technical data sheet

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)		

M-Bus communication system

Standard	OMS V4 (OMS V3 compatibility) / EN13757	Wired connector definition		
Readout interval	Permanent	Fixed 4 wires cable	Color	Function
Baud rate	2400 by default		Yellow	-
Telegram content by default	Net or forward volume, reverse volume, medium temperature, date / time, target monthly value, target date, events / alarms, remaining battery lifetime		Green	-
			White	M-Bus
			Brown	M-Bus

Pulse output communication system

Pulse output type	Open collector	Wired connector definition		
Pulse max frequency	25 Hz	Fixed 4 wires cable	Color	Function
Pulse weight	1 L / Pulse by default		Yellow	Tamper
			Green	Flow direction
Pulse length	50 ms		White	Pulse
			Brown	Ground

TOPAS® SONIC

Technical data sheet

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
Environnement temperature	From 1°C to + 70°C
Storage conditions	Minimum -10°C and +70°C maximum (maximum 4 weeks at T> 35°C)
Environnement class	B (indoor installation) / 0 (outdoor installation)
Mechanical environment class	M1
Electromagnetic environment class	E2
Sensitivity	U0D0
Measurement flowrate	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),