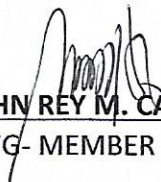


TECHNICAL SPECIFICATIONS OF ULTRASONIC CLAMP-ON FLOWMETER (FIXED TYPE)

SPECIFICATION		STATEMENT OF COMPLIANCE
A. General		
Type of Application		Fixed Type Non-Intrusive
Fluid	:	Potable Water
Measure Quantities	:	Volumetric Flowrate, Mass Flowrate, Flow Velocity
Measuring Principle	:	Transit time method using ultrasonic method. Can switch automatically to Doppler or Noise trek mode without changing the measuring setup
Flow Velocity		.01 - 25ms
Pipe Sizes	:	250mm or lower - 2450 or higher
Process Interface		Modbus RTU
Transducer Coupling		Must be permanent solid and not Paste or Grease
Repeatability	:	± 0.15 % of reading ± 0.01 m/s
Accuracy	:	± 0.5 % of reading ± 0.01 m/s
B. Main Unit		
Measuring Input	:	1 or 2 Channels
Measurement		Bidirectional
Ingress Protection (Main Unit)	:	IP 65 or better
Ingress Protection (Transducer)	:	IP 68
Operating Temperature	:	-10 to 60 °C or better
Power Supply	:	AC 220-230 V
Communication Interface	:	RS 232 or USB
Display	:	LCD Display with backlight
Diagnostic Functions	:	sound speed , signal amplitude, Signal -Noise- Ratio(SNR),Signal-Coherent-Noise-Ratio(SCNR)
Output	:	2 analogue 4-20mA, and 2 Digital pulse
C. Software		
Data transfer software must capable but not limited to the following functions:	:	Display measured data in table
	:	Display measured data in graph
	:	Export text file.
	:	Enter remarks.
	:	Compatible with Windows base platforms.
D. Special Features		

Memory	:	Must have built-in data logger capable of storing data.	
	:	Min. 500,000 measured values	
temperature compensation	:	corresponding to the recommendation in ANSI/ASME MFC-5.1-2011	
E. Standard Accessories (compliance upon delivery)			
Software Installer and USB /RS232 for downloading stored data			
F. Transducer Cover			
supplied with Mounting Cover SS316 to avoid tampering and Vandalism			
G. Power Supply			
220 - 230 Vac (with Uninterruptible Power Supply- max 30mins)			
H. Additional Requirements (to be submitted during opening of bids)			
1. The manufacturer should have ISO 17025 and 9001:2008 certificate.			
2. The supplier must submit original or computer-generated company profile / brochure and ISO 9001:2015 certificate			
3. Must submit certificate of calibration			
4. Must submit warranty certificate			
5. Supplier should submit an original or computer-generated copy of Operating and Maintenance Manual.			
I. Other Requirements (compliance upon delivery)			
Minimum manufacturer's warranty of one (1) year.			
J. Testing (compliance upon delivery)			
In the presence of the owner, the necessary field testing are conducted by a qualified technician of the supplier such as installation and operation of the flow meter before acceptance of goods.			


PREPARED BY:


JOHN REY M. CAWIT
 TWG- MEMBER

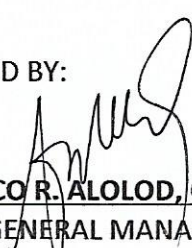
NOTED BY:


MICHAEL G. GABALES, REE
 TWG-HEAD

RECOMMENDING APPROVAL:


ROGELIO A. BESANA, JR., CE, RMP
 OTS- ASST. GENERAL MANAGER A

APPROVED BY:


FRANCISCO R. ALOLOD, CPA, CESE
 ACTING GENERAL MANAGER