

## ARROW HUNTER PLUS

**Fixed Flowmeter** 

## **Process Instrumentation**

## **Fixed Transit-Time Flowmeter**

- Non-invasive flow measurement for clean or dirty liquids
- Ultrasonic Transit-Time Technology
- Measures accurately for all metal and plastic pipes with any liners from 3/8 to 118" diameters
- Dual DSP Microprocessor with digital signal for High Accuracy
- BTU Energy Measurement
- Dual Channel Flowmeter

Ultrasonic Clamp-on
Permanent Mount Flowmeter
Model: AH+FX

The ECHO Arrow Hunter Plus range of non-invasive flowmeters utilize Transit-time ultrasonic technology for accurate flow measurements of clean or dirty liquids and liquefied gases in full pipes.

The measurement of flow is based on the principle that sound waves are influenced by a flowing medium. Measurements are made by penetrating the pipe with ultrasound and measuring the frequency variations and phase shifts of the signals received. This measuring technique has no effect on the flowing medium. There is no pressure loss in the pipe and no wear on components of the measuring device.

The **Arrow Hunter Plus - FIXED (AH+FX)** is designed for single or dual channel, permanent flow metering applications where advanced options and configurations are available. It also comes with BTU Energy measurement capability (Just order it with the PT100 temperature inputs).

#### ECHO Process Instrumentation offers a 60 day Performance Guarantee!

#### **Advantages**

- Low installation effort and costs
- Measurement is independent of fluid conductivity
- No pressure loss, no possibility of leakage
- Easily retrofits failed mag meters in older plants
- No cutting of pipes necessary, no interruption of process, no plant shut down
- Quick Start Menu for intuitive programming
- "Audible Sensor Positioning Assistant" for easy transducer positioning
- Hygienic measurement, no risk of contamination, suitable for ultra clean liquids
- Cost advantages when used with large diameter pipes, high pressure systems, etc.





# Technical Specifications: ARROW HUNTER *PLUS* - FIXED



**General** 

Measuring principle : Ultrasonic Transit-time
Flow velocity range : 0.03 ... 82 ft/s (0.01 ... 25 m/s)
Resolution : 0.00082 ft/s (0.25 mm/s)

Repeatability: 0.15 % of measured value ±0.015 m/s

Accuracy

Volume flow : ± 0.5% factory calibrated (process conditions can reduce accuracy)

± 0.5% of measured value with process calibration

Flow velocity : ± 0.5 % of measured value

Turn down ratio : 1/100

Max particulates : < 10 % of volume

Flow transmitter

Enclosure : Wall mounted housing

Protection rating : NEMA 4X (IP 66 according EN60529)

Operating temp. : 14 ...140°F (-10 ... 60°C)

Housing material : Polycarbonate (transparent front door only)

Flow channels : 1 (Standard) 2 Available with additional 4-20 output

Display : LCD graphic display, 128 x 64, backlight

Dimensions : 9.3 H x 10.1 W x 5.7 D inch (237 H x 258 W x 146 D mm)

Weight : Approx. 5 lbs (2.3 kg)
 Power Supply : 100... 240 VAC 50/60 Hz (< 5W)</li>

9... 36 VOC (Optional)

Special solutions (e.g solar panel, battery) upon request

Display damping : 0 ... 99 s

Languages : English, German, French, Spanish, Russian

Response time : 1 s, faster rates upon request Dual Mode : Average/ Difference/ Sum

**Process Inputs** 

Temperature : PT100 (clamp-on sensors), 4-wire, -50 ...400°C Current : 0/4... 20mA active or passive, U= 30V, R= 50Ω

**Process Outputs** 

Current : 0/4... 20mA active (R< 500Ω), passive (optional)

16 bit resolution, U= 30V, 0.1% Accuracy

 Voltage
 : 0... 10V, R = 1000Ω

 Frequency
 : 0... 10 kHz, 24V/4mA

 HART
 : 0/4... 20mA, 24VDC, R= 220Ω

Open-Collector : Value 0.01... 1000/unit, width 1... 990ms, U= 24V, Imax= 4mA

Relay : Form C (SPOT-CO) contacts, U= 48V, Imax= 250mA

**Units of Measurement** 

Volumetric flow rate :m3/h, m3/min, m3/s, l/h, l/min, l/s, USgal/h, USgal/min,

USgal/s, USMGD, bbl/d, bbl/h, bbl/min, bbl/s

Flow velocity :m/s, ft/s, inch/s
Mass flow rate :g/s, t/h, kg/h, kg/min
Volume/ Mass :m³, I, US gal, bbl, g, kg, t

Energy :BTU, MBTU, MMBTU, W, kW, MW, J, kJ, MJ

(only with Full Spec option)

Internal data logger

Storage capacity :> 100,000 measurements (16MB)

Logging data :All measured and totalized values parameter set

Communication

Serial interface :RS 232, RS 485 (optional), ModBus RTU (optional),

**USB** with adapter (optional)

Data :Instantaneous measured value, parameter set and

configuration, logged data

**ECHO PC Plus Software** 

Functionality: Downloading of measured values/parameter sets,

graphical presentation, list format, export to third party

software, on-line transfer of measured data

Operating systems: Windows 2000, NT, XP, Vista, 07

**CLAMP-ON SENSORS** 

**XTT+SM Series**: 1.7 x 0.7x0.8" (43 x 18 x 22mm)

: Direct sensor connection

: Stainless Steel

: Additional information below

**XTT+LG Series**: 2.3 x 1.2 x 1.3" (60 x 30 x 34mm)

: Direct sensor connection

: Stainless Steel

: Additional information belo

MODEL (BASE PRICE)																			
Arrow Hunter Plus V3	Α	Н	+																
CONFIGURATION																			
Fixed				F	Х	٧	3												
POWER OPTIONS																			
100 240 VAC 50/60 Hz								Α	С										
9 36 V DC								D	С										
MODULE OPTIONS - choose up to 7	change '0' to quantity desired																		
Active 4-20mA out - standard, U=30V, RLoad<500Ω, accuracy 0.1%										1									
Passive 4-20mA out											0								
Voltage out 0 10 V, Ri = 500Ω												0							
Relay outputs, 2 Form "C"SPDT , U=48V , Imax=250mA, as Alarm or Fault													0						
Open-collector output, 1 per channel, width 30999ms, U=24V, lmax = 4mA														0					
Frequency output															0				
Modbus RTU																0			
HART (pending)																	0		
PT 100 (Pair) Clamp-on temperature sensors, range - 50400°C																		0	
Current input, 020mA active or 420mA passive, U=30V, Ri=500Ω, accuracy 0.1%MV																			0
TRANSDUCER SELECTION (standard transducers come with 5m cable)																			
XTT+LG, 1.97 118"pipe, -22°176°F, General Purpose, NEMA 6P (IP68), 5m Cable	Х	Т	Т	+	L	G	-	F											
XTT+SM, 0.39 9.8"pipe, -22°176°F, General Purpose, NEMA 6P (IP68), 5m Cable	Х	T	T	+	S	М		F											
XTT+LG-HT, 1.97 118"pipe, -22°392°F, General Purpose, NEMA 6P (IP68), 2.5m Cable	Х	T	T	+	L	G	-	Н	T	-	F								
XTT+SM-HT, 0.39 9.8"pipe, -22°392°F, General Purpose, NEMA 6P (IP68), 2.5m Cable	Х	T	T	+	S	М	-	Н	Т	-	F								
XTT+LG-EX, 1.97 118"pipe, -4248°F, ATEX II 2 GEx mb 11C T4-T6X, II 2D Ex mbD 21, 5m Cable	Х	T	T	+	L	G	•	Е	Х	-	F								
XTT+SM-EX, 0.39 9.8"pipe, -4248°F, ATEX II 2 GEx mb 11C T4-T6X, II 2D Ex mbD 21, 5m Cable	Х	Т	Т	+	S	М		Е	Х		F								