

WaterCompass FM300-US Ultrasonic Flow Monitor

Product Overview

The WaterCompass FM300-US is a customized product made up of an integrated WT2W-H20 Flow Decoder, a clamp-on flow monitor and a 30V power supply. These non-invasive flow monitors clamp onto existing pipe with mounting brackets that fit pipe sizes from ¼ inch up to 8”.

The integrated 2W-H20-FS Flow Decoder transfers the data from the flow monitor to the WaterCompass Data Collector where it is analyzed, reported, and acted on. Data is available for viewing on the WaterCompass dashboard.

- The monitor clamps onto the outside of a pipe and can accurately sense the flow of water through the pipe
- Requires no pipe modification
- Takes ultrasonic readings

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FM300-US Features

- Specifically designed for either indoor use or outdoor use
- Integrated 2W-H20-FS Flow Decoder. The flow decoder can be connected directly to the two-wire path on the WaterCompass Data Collector-no additional equipment required
- Pre-configured K and offset values
- Indoor series: available in ¼”, ⅜”, ½”, ¾”, 1”, 1 ¼”, 1 ½”, and 2”
- Indoor/outdoor series: available in 1 ½”, 2”, 2 ½”, 3”, 4”, 5”, 6” and 8”
- Settings are locked to prevent inadvertent changes
- Supported Pipe Materials
 - Steel, brass, copper, Schedule 40PVC and Schedule 80PVC
- Supported Fluids
 - Water
- Supported fluid temperature range indoor series: 32° to 185° F. (No freezing on the pipe surface)
- Supported fluid temperature indoor/outdoor series: -4° to 248°F. (No freezing on the pipe surface)

Technical Specification Ultrasonic Flow Monitor

- Flow Direction
 - Pre-configured for left-to-right flow
 - The settings can be changed to accommodate right-to-left flow
- Flow Units
 - Pre-configured for gallons per minute (GPM)
- Connection Type: Clamp-on
- Repeatability: 1.5%
- Maximum Rated Flow: Indoor series

¼"	5.2 gpm	1"	52.8 gpm
⅜"	7.9 gpm	1¼"	79.3 gpm
½"	15.9 gpm	1½"	105.7 gpm
¾"	26.4 gpm	2"	132.1 gpm
- Maximum Rated Flow: indoor/outdoor series

2"	150 gpm	5"	990 gpm
3"	390 gpm	6"	1400 gpm
4"	660 gpm	8"	2500 gpm
- Oil-resistant Polyurethane connector cable
- Supported Fluid Temperature-indoor series: 14° to 140°F
- Supported Fluid Temperature-indoor/outdoor series: -4° to +140°F

Environmental Resistance

- Enclosure ratings – indoor series: IP65/67 (IEC60259)
- Enclosure ratings –indoor/outdoor series: IP65/67 (IEC60259), IP69K (ISO20653), Enclosure Type 4X (NEMA250)
- Ambient temperature-indoor series: 14° to 140°F (no freezing)
- Ambient temperature-indoor/outdoor series: -4° to +140°F (no freezing)
- Relative humidity-indoor series: 5 to 90% (no condensation)
- Relative humidity-indoor/outdoor series: 25 to 85% (no condensation)
- Vibration Resistance: 10 to 55 Hz, compound amplitude 1.5 mm 0.06", XYZ axes 2 hours for each axis
- Shock Resistance: 100 m/s², 16 ms pulse, XYZ axes, 1000 for each axis

FM300-US Power Specifications

- Protection circuit: Power supply reverse connection protection, power supply surge protection, each output short-circuit protection, each output surge protection
- Requires a dedicated duplex outlet with a minimum rating of 120V/20VA. One receptacle for the WaterCompass Data Collector, and one for the flow monitor.
- 8-foot cord length
- If additional wire is needed to span a longer distance than the feet included with the sensor's transformer, additional wire can be added between the sensor and the transformer based on the following table:

Wire Gauge	#18	#16	#14	#12
Wire Length	1,900	3,100	5,000	8,000

Indoor Series

- Power I/O connector: M12 4-pin connector
- Power Supply Voltage: 20-30 VDC, ripple (P-P) 10% max, Class 2/LP's
- Input: 100-240V~, 50-60Hz, 1.6-0.7A
- Output: 30V 2.0A
- Current consumption-indoor series: 100-130mA or less (load current excluded)

Indoor/Outdoor Series

- Power I/O connector: DC Power Supply: M12 4-pin connector/AC Power Supply: M4 screw terminal block (selectable)
- Power Supply Voltage: 20-30 VDC, ripple (P-P) 10% max, Class 2/LP's
- Current consumption-indoor/outdoor series: When using AC power supply 15 VA or less

Technical Specification Ultrasonic Flow Monitor

FM300 to WaterCompass Data Collector Specifications

Use the following recommended wire:

Wire Size: 12, 14, 16 or 18 AWG

Construction: Special irrigation control wire

Conductor: 2 same gauge solid core conductors conforming to ASTM B-33, B-3, or B-8

Insulation: Polyvinyl Chloride (PVC) conforming to UL-493 or UL-719 for thermo-plastic-insulated style UF (underground feeder)

Outer Jacket: Low density, high molecular weight polyethylene (PE) with a thickness of 0.045"

Temperature: 140°F

Voltage: 600 volts RMS max

Example of approved wire:

- Coleman Cable #51452
- Paige P7072D, P7296D, P7350D, and P7354D
- Regency 14/2 and 12/2 Maxi Cable
- Toro Decoder Cable
- Hunter Decoder Jacketed Service Wire DEC12/2BE and DEC14/2BE

Cable splice:

- Indoor: Paige7072D
- Outdoor: 3M DBR/Y-6 splice kit

Wire length limits:

Wire Gauge	#18	#16	#14	#12
Wire Length	1,900	3,100	5,000	8,000

WaterCompass Data Collector Features

- Flow monitors can be managed by using decoders on the 2-wire path.
- Metal enclosures and existing enclosure retrofit chassis

WaterCompass Data Collector Power Specifications

- Transformer Input: 120 VAC +/- 10%, 60Hz OR 220 VAC +/- 10% (60Hz)
- Transformer Output: 24VAC, 3.0 amps (80VA)
- FCC Approved
- UL Listed enclosures and UL Registered chassis

WaterCompass Data Collector Enclosure

- Wall Mount Enclosure: 12" w X 17" h X 5.75" d
- 16 gauge wall mount enclosure available in stainless or powder coated finish
- Key-hole mounting for wall mount
- Key lock entry NEMA-3R weather-resistant

Technical Specification Ultrasonic Flow Monitor

How to Specify the FM300-US Ultrasonic Flow Monitor Indoor Series

HydroPoint Part #	Nominal Pipe Size	Outside Diameter (mm)	Outside Diameter (in)
WC-FM300-US-25	¼"	13 - 16 mm	0.51 - 0.63
WC-FM300-US-37	⅜"	16 - 18 mm	0.63 - 0.71
WC-FM300-US-50	½"	18 - 23 mm	0.71 - 0.91
WC-FM300-US-75	¾"	23 - 28 mm	0.91 - 1.10
WC-FM300-US-100	1"	28 - 37 mm	1.10 - 1.46
WC-FM300-US-125	1¼"	37 - 44 mm	1.46 - 1.73
WC-FM300-US-150	1½"	44 - 52 mm	1.73 - 2.05
WC-FM300-US-200	2"	52 - 64 mm	2.05 - 2.52

How to Specify the FM300-US-OD Ultrasonic Flow Monitor Indoor/Outdoor Series

HydroPoint Part #	Nominal Pipe Size	Outside Diameter (mm)	Outside Diameter (in)
WC-FM300-US-150-OD	1 ½"	44-52 mm	1.73-2.05
WC-FM300-US-200-OD	2"	52-64 mm	2.05-2.52
WC-FM300-US-250-OD	2 ½"	64-83 mm	2.52-3.27
WC-FM300-US-300-OD	3"	83-100 mm	3.27-3.94
WC-FM300-US-400-OD	4"	100-127 mm	3.94-5.0
WC-FM300-US-500-OD	5"	127-152 mm	5.0-5.98
WC-FM300-US-600-OD	6"	152-191 mm	5.98-7.52
WC-FM300-US-800-OD	8"	191-220 mm	7.52-8.66

