SENSORS & CONTROLLERS

ANALYZERS & SAMPLERS

LEVEL, FLOW & PRESSURE

WEB APP & DATALOGGING

ACCESSORIES

DFM 6.1 DATASHEET

FIXED DOPPLER-EFFECT FLOW METERS FOR PRESSURIZED PIPES

MAIN FEATURES

- Continuously frequency deviation measurement ensures precise fluid velocity data
- Can be installed without interrupting plant operation
- Intuitive programming menu
- Password-protected totalization and calibration data
- Sensor unaffected by dirt or deposits

APPLICATIONS

- Water
- Wastewater
- Chemicals
- Sludge
- Viscous liquids

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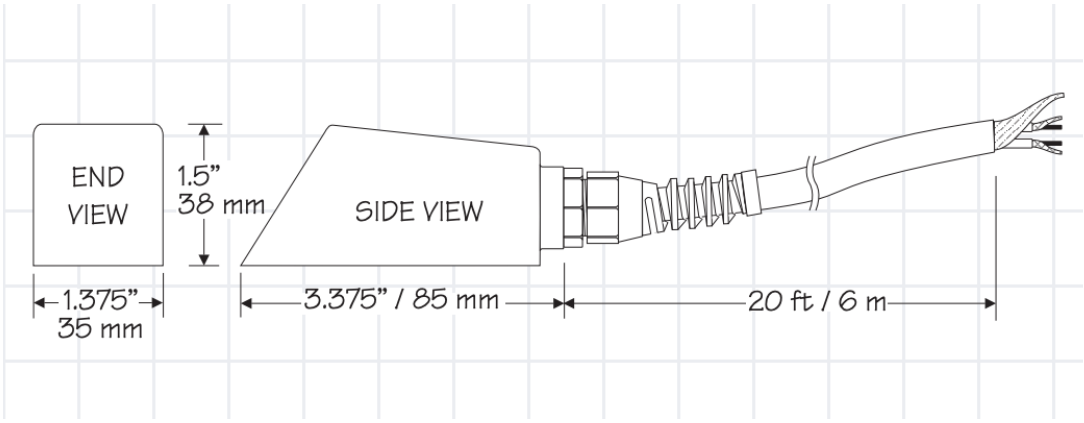
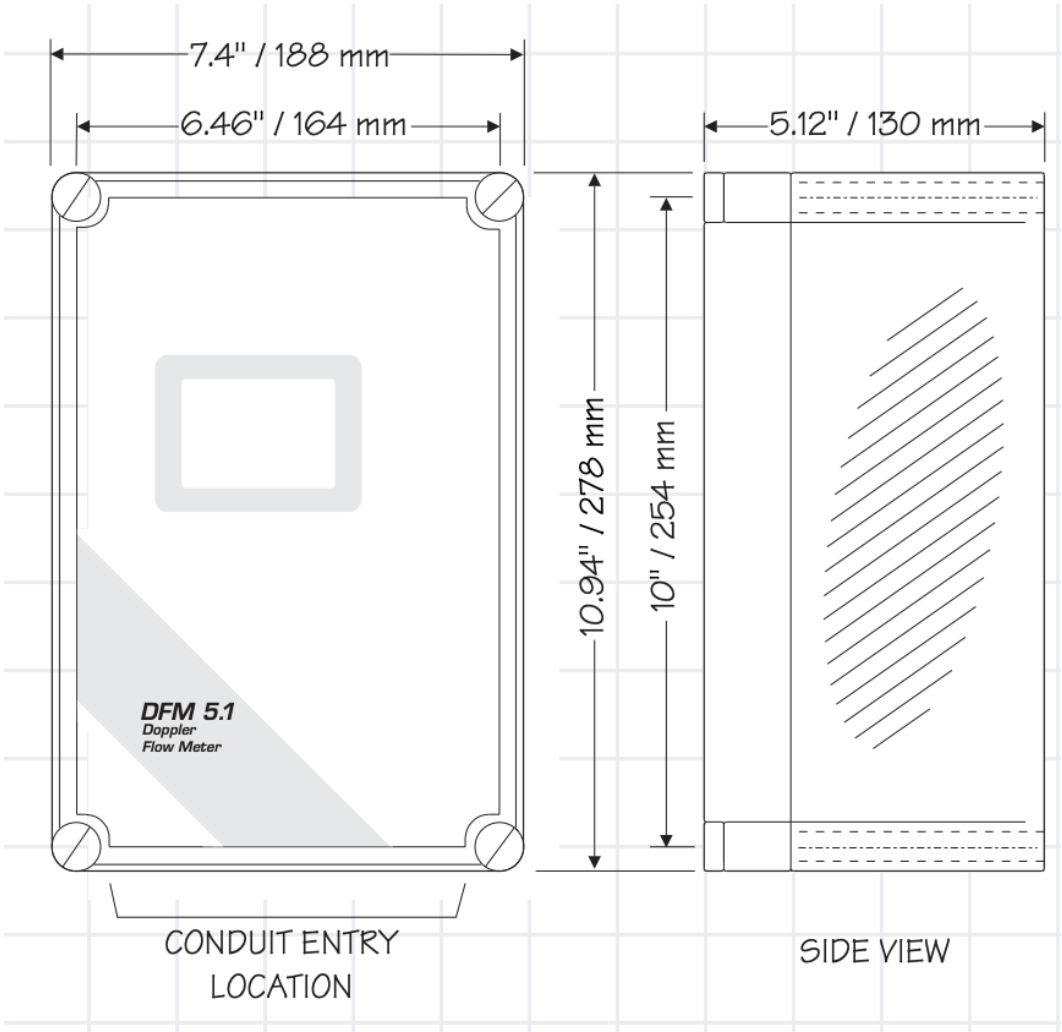
TECHNICAL DATA

Liquid characteristics	Required suspended solids or air bubbles with minimum cross section of 100microns, concentration 75ppm
Piping / DN and materials	½"...180" (12.7...4500mm) Steel, stainless steel, cast iron, ductile iron, concrete-lined ductile iron, PVC, HDPE or any other sound-conducting pipe material, including pipe lined with a coating bonded to the pipe wall. Avoid pipes with deteriorated coatings that contain air
Velocity measurement range	±0.03 up to 12.2 m/sec
Accuracy	±2% of reading or 0.05 ft/sec (0.015 m/sec). Repeatability±0.1%, Linearity ±0.5%
Display	White, backlit - Display of instantaneous flow rate, totalization, relay status
Programming	5-digit keypad
Analogue output	4...20mA opto-isolated (1000 ohm max.)
Control relay	Two (2) SPDT, 5 A programmable for flow alarm and/or pulse output
Power supply	100...240VAC 50-60Hz (other on request), Absorption 5 Watts max.
Enclosure	Polyester IP 66 NEMA4X. Clear polycarbonate front panel
Operating temperature	-23….60°C (-10...140°F)

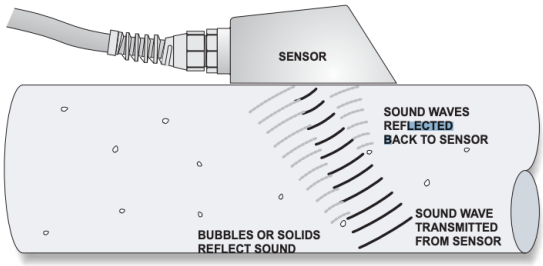
DIMENSIONS


END
VIEW
1.5"
38 mm
SIDE VIEW
1.375"
35 mm
3.375" / 85 mm
20 ft / 6 m


7.4" / 188 mm
6.46" / 164 mm
5.12" / 130 mm
10.94" / 278 mm
10" / 254 mm
DFM 5.1
Doppler
Flow Meter
CONDUIT ENTRY
LOCATION
SIDE VIEW

PRINCIPLE OF OPERATION

The DFM 5.1 Sensor transmits continuous high frequency sound through the pipe wall into the flowing liquid. Sound is reflected back to the Sensor from particles or gas bubbles in the liquid. If the liquid is flowing, the reflected sound returns at an altered frequency (the Doppler effect). The DFM 5.1 continuously measures this frequency shift to accurately measure flow.



ENHANCED SIGNAL PROCESSING FOR RELIABLE ACCURACY

The DFM 5.1 Doppler flow algorithm filters out background noise and interference. The high speed digital signal processor discriminates against weak and distorted signals for increased reliability and accuracy. If the processor cannot measure accurately the meter will display zero flow.

EASY TO INSTALL

Each DFM 5.1 Doppler Flow Meter includes a strap-on ultrasonic sensor, an adjustable stainless steel mounting clamp and sensor coupling compound. The sensor fits on the outside of any pipe diameter ½" (12.7 mm) or larger. It takes just a few minutes to install. There is no need to shut down flow.

SIMPLE, SINGLE-HEAD SENSOR DESIGN

Ultrasonic signals are transmitted and received from a single-head sensor. The mounting clamp (included) ensures correct sensor alignment on horizontal or vertical pipes. The DFM 5.1 automatically self-tunes to the cable length up to 500 ft. (152 m).

WORKS ON MOST PIPES

The Chemitec DFM 5.1 Flow Meter measures flow in PVC, carbon steel, stainless steel, cast iron, fiberglass, and lined pipes... any pipe material that conducts ultrasound. Doppler signals cannot transmit through pipe walls which contain air pockets (e.g. concrete or wood), or loose pipe liners (with an air gap between the liner and pipe wall).

BACKLIT MATRIX DISPLAY WITH SIMPLE, 5-KEY MENU SYSTEM

Calibration is easy with the new DFM 5.1 user-friendly menu system. Press the arrow keys to scroll through menus, change settings and enter calibration values. You can select English, French or Spanish menus, enable a password to protect settings and control brightness of the digital display.

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