

Compu-Flow

Superior Doppler Measurement for Any High Solid-Content Application

Key Features

- **Smart display LCD**
- **Sensor options**
- **Standard NEMA 4x case**
- **Easy configuration**
- **LED indicators**
- **Excellent performance**
- **Maintenance free**

The Compu-Flow FDPD is a fixed ultrasonic doppler-type flow meter that combines ease of use with accuracy and instant setup. The Compu-Flow is best suited for flow measurement applications such as: sludges, slurries, aerated liquids, sewage, dredges, pulp, plastics, and activated sludges. It uses clamp-on sensors or insertion wetted sensors. The Compu-Flow is housed in a rugged NEMA 4X enclosure. It is perfect for long-term, maintenance-free operation. A typical system is comprised of a converter (display module) and a detector (clamp-on or insertion). The unit may be set up with sensor cable lengths up to 5000 ft.

Features

- **Smart display LCD** – 32 characters provide rate and totalization simultaneously, in all metric, standard English, and engineering units
- **Sensor options** – choice of external clamp-on sensors for smooth, clean pipes, or stainless steel wetted flush mount sensors for irregular or corroded pipes
- **Standard NEMA 4X case** – hose-down splash-proof and protected from water and caustic chemicals
- **Easy configuration** – on screen prompting for keypad entry, with color-coded LED indicators
- **Excellent performance**
- **Maintenance free** – “set it and forget it”
- **High accuracy** – typically $\pm 2.0\%$
- **Wide pipe diameter range** – from 1/2” to 300” outside diameter

Additional Features

- AC or DC Operation
- Large, high-resolution, 32-character, 2-line alphanumeric display (LCD)
- Quick scrolling menu screens for easy set-up and operation
- Analog current output (4 to 20 mA) standard option
- Hi/Lo alarm outputs with status indication standard options
- Extended cable distance (5000 ft/1524m) from sensors to display module
- Plug-in modular construction simplifies field service

Performance Specifications

Fluid Conditions

Measured fluid Homogeneous liquids with Newtonian flow profiles (sludges, slurries, sewage, waste-water and other fluids containing suspended particles)

State of flow Axis-symmetric flow in pipe filled with fluid

Fluid type Liquid containing suspended particles of at least 35 ppm @ 40 micron, 0.2% density of undissolved solids or air bubbles

Fluid temperature -40 to 300°F (-40 to 149°C)

Velocity range 0.05 to 50.0 ft/sec (0.02 to 15.25 m/sec)

Flow sensitivity 0.05 ft/sec (0.02 m/sec)

Piping Conditions

Pipe diameter range 0.5 to 300 in. (13 to 7620mm), for velocity indication. 0.5 to 100 in. (13 to 2540mm) for volumetric indication

Pipe material Including but not limited to: Carbon steel, stainless steel, ductile iron, cast iron, frp, pvc, fiberglass, teflon and most concrete lined or coated pipes

Pipe lining material Including but not limited to tar, epoxy, mortar, rubber, teflon, PVC and glass

Measurement Accuracy

Accuracy Typically $\pm 2.0\%$ of velocity (accuracy is a function of flow profile)

Linearity $\pm 0.5\%$ of full scale

Repeatability $\pm 0.1\%$ of full scale

Physical Specifications

Display Module

Ambient temperature range -13 to 132°F (-25 to 56°C)

Ambient humidity less than 100% RH

Enclosure Flame retardant, fiberglass reinforced polyester with padlock latch, gray in color

Environmental rating NEMA 4X (IP65)

Dimensions (HxWxD) 9.21 x 7.21 x 5.09 in. (285 x 183 x 129 mm)

Weight 12 lbs. (5.45 kg)

Functional Specifications

Power supply 110 or 220 VAC 50/60 HZ (AC line voltage selectable via internal selector switch); 12V DC (DC operation)



enabled by internal AC-DC selector switch)

Power consumption 10 watts typical

LCD display 2-line, 16 character each line, high resolution

LED indicators Yellow: echo signal received. Red: Hi/Lo alarm activated; Green: power

Keypad 12 Keys, tactile feedback

Keypad lock-out Internal switch which prevents keypad entry, preventing unauthorized use

Power failure backup Internal "Super-Capacitor" retains all parameter information and current totalizer value, effective term 10 days (replenished automatically on restoration of line power)

Response time 1 sec. or less

Analog output signal 4-20 mA DC, max. load resistance 700 ohms, internally fused

Alarm output (15.0 VDC = active alarm). Hi alarm: switched 15.0 VDC, 500 mA. Low Alarm: switched 15.0 VDC, 500 mA

Measurement display screen Clamp-on or wetted sensor selection, rate selection, totalizer selection, "K" factor selection, analog output set, low flow cutoff set, update time (damping) set, Hi/Low alarm set, ft/sec or m/sec selection, totalizer reset

Output setting function 4-20 mA output scaling set in velocity from keypad

Alarm setting function High and low alarm set points entered in velocity from keypad

Rate indication 4-digit LCD, velocity or volume. English units: ft/sec, gal. per min., cu. ft. per sec., million gal. per day. Metric units: m/sec., liters per sec., cu. meters per sec. (*Note: gal. refers to U.S. gallons*)

Totalizer indication 11-digit LCD. English units: gal., cu. ft., acre ft., millions of gal. Metric units: liters, cu. meters (*Note: gal. refers to U.S. gallons*)

Update time 0 to 99 seconds, entered from keypad

Low flow cutoff 0 to 2.5 ft/sec (0 to 0.76 m/sec), entered from keypad

'K' factor A value of '1 to 256', entered from keypad depending on sensor type

Totalizer reset Totalizer can be manually reset to zero from keypad

Detectors (Models FDTC and FDTW)

Ambient temperature range Clamp-on FDTC: -4.0 to 130°F (-20 to 60°C); Wetted FDTW: -4.0 to 130°F (-20 to 60°C)

Ambient humidity less than 100% RH

Environmental rating NEMA 6 (IP67)

Housing material Clamp-on: Cast aluminum. Wetted: 316 stainless steel

Crystal wedge material All detector models: Epoxy resin

Dimensions (clamp-on FDTC) Heads: 4.85L x 1.33W x 1.35D in. (123 x 33.8 x 34.3mm). Module: 4.45L x 2.50W x 1.10D in. (113 x 63.5 x 28mm)

Dimensions (wetted FDTW) Heads: 0.625 dia. x 4.00 in. (15.9 mm dia. x 102mmL). Module: 4.45L x 2.50W x 1.10D in. (113 x 63.5 x 28mm)

Weight (clamp-on FDTC) 2.30 lbs. (1 kg)

Weight (wetted FDTW) 1.65 lbs. (.75 kg)

Mounting method (clamp-on FDTC)

Mounted to outside of pipe by means of stainless straps, nylon belts, or bungee and steel chain

Mounting method (wetted FDTW)

Threaded through wall of pipe using Swagelok type bore through tube fittings (1/2 in NPT, male thread, type 316 stainless)

Straight pipe length Upstream side: 10D or more recommended. downstream side: 5D or more recommended

Signal cable 2 twisted pairs, 24 awg, Belfoil shield. Standard cable length = 25 ft. (7.6m) (optional cable lengths available). Max. cable length = 5000 ft. (1524m)

We attempt to provide you with complete information in this catalog. Because of the specific nature of ultrasonic technology, we strongly recommend you contact us regarding application and availability before placing your order.

Ordering Information

Included in standard delivery: Converter, operating manual

FDPD	Compu-Flow fixed doppler flow meter converter	\$ 2,100
FDPP	Compu-Flow portable doppler flow meter converter	2,600

Accessories

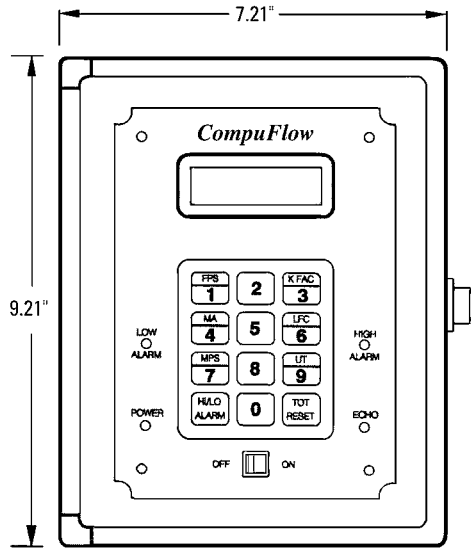
Each detector kit includes: Detector unit, 25 ft. signal cable, mounting hardware, sonic coupling compound

	Description	Pipe diameter range	Temperature range	
FDTC	Clamp-on detector set for the fixed or portable Compu-Flow	0.5 to 300 in	-40 to 300°F	\$ 1,400
FDTW	Wetted detector set for the fixed Compu-Flow	0.5 to 300 in	-40 to 300°F	1,600
FD000002	Mounting hardware kit			10
FD000003	Air injector, stainless steel, 5/16" x 10"			145
FD000005	Signal cable			1.50/ft
FD000006	Gel-cell battery			65
FD000007	Power adapter/charger			45

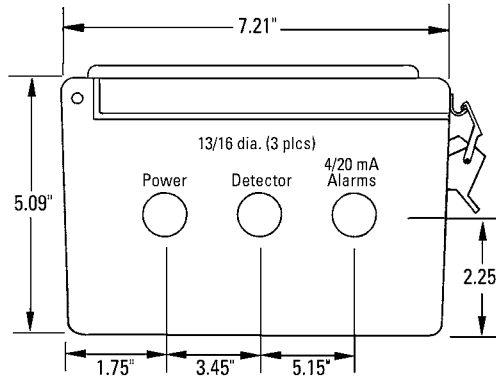
Compu-Flow

(continued)

FDPP Converter (Fixed)

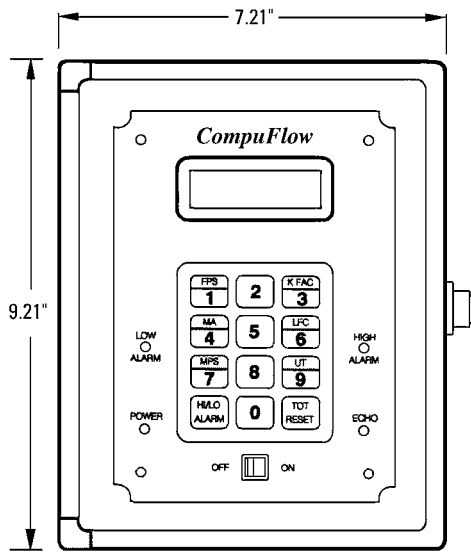


FRONT VIEW

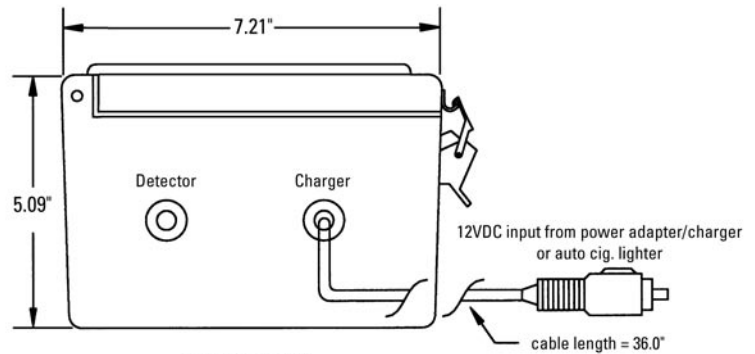


BOTTOM VIEW

FDPP Converter (Portable)

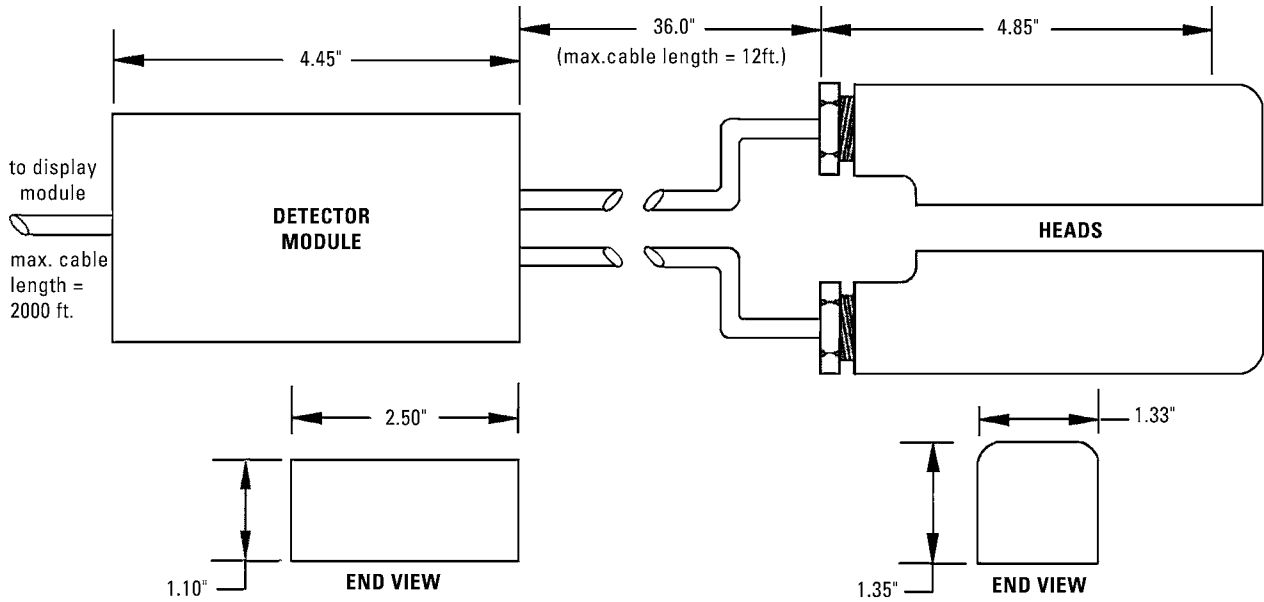


FRONT VIEW



BOTTOM VIEW

FDTC Detector Set (Clamp-On)



FDTW Detector Set (Wetted Flush Mount)

