The patented DFD technology helps eliminate background noise and improve accuracy. It is specifically designed for unsurpassed operability in multiphase flow environments.

**Polysonics SX50**

**Dedicated Dual Frequency Doppler Flowmeter**

The advanced Polysonics SX50 flowmeter uses the patented Dual Frequency Doppler (DFD) technology to accurately measure the flow of emulsions and fluids containing particulate. The non-intrusive device offers reliable measurement in multi-phase flow environments.

**Polysonics SX50**

**Dedicated Dual Frequency Doppler Flowmeter**

Thermo Electron Polysonics SX50

The Polysonics SX50 is an advanced dedicated Doppler flowmeter with exceptional performance and simple operation. Unlike conventional Doppler flowmeters operating at a single frequency, the Polysonics SX50 uses unique patented Dual Frequency Doppler (DFD) technology to transmit two independent ultrasonic signals at different frequencies. By analyzing the returned frequencies, the instrument automatically identifies and minimizes noise errors from external sources such as variable frequency drives. The DFD technique significantly improves the ability of the Polysonics SX50 to operate in what were previously considered marginal applications for Doppler flowmeters.

In addition, the operation of the instrument is enhanced by an “Expert System” allowing the flowmeter to automatically “learn” the application parameters. As a result, the Polysonics SX50 can be easily commissioned in a fraction of the time necessary to configure competitive ultrasonic flowmeters.

Housed in a NEMA 4X (IP65) enclosure, the Polysonics SX50 is well suited to most industrial environments. The high resolution, backlit graphics display provides excellent visibility even in poorly lit conditions. Outputs include a 12-bit, optically isolated, 4-20mA analog signal and relay.

The independent programmable relay can be used for functions such as pump control, fault indication, limit switching, sampler activation, power down alarming, or remote totalizer driving. In addition, a contact closure from a remote pump or other control device is available to eliminate unwanted or erroneous flow volume data when backflow conditions are present. A powerful 90,000-point data logger with non-volatile memory is also incorporated in the instrument. This avoids the additional cost of a chart recorder or external data logger for applications where continuous flow recording is required.

**HydraScan Application Software**

The flowmeter is equipped with an RS232 communication port and can be easily configured using the inclusive HydraScan software package. HydraScan can also retrieve all saved data log files from the flowmeter. HydraScan is user-friendly and runs on Windows® 98 or higher.

**Applications**

- Crude oil emulsions
- Slurries
- Sludge
- Effluent monitoring

**Features**

- Flexible design
- External, clamp-on sensors
- Powerful, 90,000-point data logger

**Benefits**

- Accurate within ±1% of velocity full scale
- Installs easily on any size pipe
- Installs without process interruption
- Easy to commission and use

**Analyze • Detect • Measure • Control™**

Thermo ELECTRON CORPORATION
Thermo manufactures a comprehensive range of ultrasonic flowmeters for closed full pipe, partially filled pipe, and open channel applications. Models are available for raw sewage, centrates, filtrates, plant effluent, raw water, surface water, groundwater, finished water, chemicals, and oil. For further information, please contact the factory or your local representative.

### Polysonics SX50 Dedicated Dual Frequency Doppler Flowmeter

#### Specifications

**Performance Specifications**
- **Velocity Range**: 0.06 to 5.5 m/s (0.2 to 18 ft/s)
- **Accuracy**: ±1% of velocity full scale
- **Fluids**: Liquids containing particulate or entrained gas bubbles
- **Pipe Size**: 12 to 5000 mm (0.5 to 200 in)

**Physical Specifications**
- **Transmitter**: NEMA 4X (IP65), flame retardant fiberglass-reinforced polyester
- **Transducers**: Two encapsulated dual frequency sensor heads suitable for submersible/underground service. Encased in stainless steel shrouds with integral transducer clamps; 9 m (30 ft) cable length standard
- **Weight**: Approximately 5.4 kg (9 lb)

**Functional Specifications**
- **Outputs**: 4-20 mA (into 1k - 5k ohms), 12-bit, 5 kV, opto-isolated, loop or self-powered; RS232 serial interface
- **Power Supply**: 90-132 Vac or 190-250 Vac, 50/60 Hz (switch selectable); 10-32 Vdc
- **Temperature Range**: Transducers: pipe surface -40° to +121°C (-40° to +250°F); ambient air limited to +80°C (+176°F)
- **Display**: 2 line, 20 character alpha numeric backlit display
- **Data Logger**: 90,000 point data logger; Programmable in log intervals of 30 sec, 1, 5, 15, 30, 60 mins

**Software**: HydraScan retrieval software for Windows® included as standard

**Compatible with Microsoft® Excel, Lotus® 1-2-3 and other similar packages**

### Polysonics SX50 — Physical Dimensions

- **MAXIMUM CABLE LENGTH**: 300 FEET
- **231.8 mm**: 9.125 in
- **215.9 mm**: 8.500 in
- **175.4 mm**: 6.907 in
- **101.6 mm**: 4.001 in
- **91.4 mm**: 3.600 in
- **54.5 mm**: 2.150 in
- **43.3 mm**: 1.700 in
- **25.4 mm**: 1.000 in
- **19.0 mm**: 0.750 in
- **10.1 mm**: 0.400 in
- **7.2 mm**: 0.280 in
- **4.8 mm**: 0.190 in
- **4.0 mm**: 0.160 in

### Ordering Information

- **MODEL NUMBER**: SX50: Polysonics SX50 Dedicated DFD Doppler Flowmeter
- **OUTPUT**: 4-20 mA with one relay
- **TRANSMITTER ENCLOSURE**: NEMA 4X
- **TRANSDUCER CABLE LENGTH**: Optional cable length in feet, XXX: 050, 075, 100, 125, 150, 200, 250 or 300

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