Combining Dual Frequency Doppler (DFD) technology with digital signal processing, the Thermo Scientific SX40 is immune to much higher levels of external noises than with standard Doppler technology. The DFD technique reduces errors in the flow measurement of fluids containing particulates, enabling the SX40 to operate in applications that were previously considered marginal to heighten process efficiency and provide a rapid return on your investment.

Ultrasonic yet Easy-to-Install
Unlike conventional Doppler flowmeters which operate at a single frequency, the Thermo Scientific SX40 generates two independent ultrasonic signals at different frequencies. By correlating these frequencies, the instrument automatically identifies and eliminates noise errors from sources such as variable frequency drives. In addition, the operation of the instrument is enhanced by an Expert System which allows the flowmeter to automatically “learn” the application parameters. As a result, the SX40 can be easily commissioned in a fraction of the time necessary to configure competitive ultrasonic flowmeters.

Durable & Versatile
Housed in an IP65 enclosure, the instrument is well suited to most municipal and industrial environments. The backlit graphics display provides excellent visibility even in poorly lit conditions. Outputs include a 12-bit, optically isolated, 4-20 mA analog signal and up to four independent programmable relays. The relays can be used for pump control, fault indication, limit switching, sampler activation, power down alarming or remote totalizer driving, enabling this versatile device to fulfill a variety of applications and process needs.

Cost-Effective, All-in-One Device
The SX40 is available with a contact closure that is activated by a remote pump or other control device to eliminate unwanted or erroneous flow volume data when backflow conditions are present. For applications where continuous flow recording is required, a powerful 90,000 point data logger with non-volatile memory enables users to avoid the additional cost of a chart recorder or external data logger.

A Range of Flowmeters
We manufacture 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 and chemicals.
## Thermo Scientific SX40

### Performance Specifications
- **Velocity Range**: 0.06 m/s to 5.5 m/s (0.2 ft/s to 18 ft/s), volumetric value based on cross-sectional area of pipe
- **Accuracy**: ±1% of velocity full scale
- **Fluids**: Liquids containing particulate or entrained gas bubbles
- **Pipe Size**: 25.4 mm to 5 m (1 in to 200 in)

### Physical Specifications
- **Transmitter**: IP65, flame retardant fiberglass-reinforced polyester
- **Transducers**: Two encapsulated dual frequency sensor heads suitable for underground service
  - Encased in stainless steel shrouds with integral transducer clamps
  - 9 m (30 ft) cable length - standard
- **Weight**: Approximately 5.4 kg (12 lbs)

### Functional Specifications
- **Outputs**: 4-20 mA (into 750 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); 11-28 Vdc
- **Temperature Range**:
  - Transducers: pipe surface -40°C to +121°C (-40°F to +250°F); ambient air limited to +80°C (+176°F)
  - Electronics: -29°C to +60°C (-20°F to +140°F)
  - With integral heater: -40°C to +60°C (-40°F to +140°F)
- **Keypad**: 19 key with tactile action
- **Display**: Backlit, 240 x 60 dot, high resolution graphics display
- **Data Logger**: 90,000 point data logger
  - Programmable in log intervals of 30 seconds or 1, 5, 15, 30 or 60 minutes
  - HydraScan retrieval software for Microsoft® Windows® included as standard
  - Compatible with Microsoft Excel®, Lotus 1-2-3® and other similar packages

### Ordering Information
- **MODEL NUMBER**
  - SX40: Thermo Scientific SX40
- **POWER SUPPLY**
  - 1: 90-132 Vac, 50/60 Hz
  - 2: 190-250 Vac, 50/60 Hz
  - 3: 11-28 Vdc
- **OUTPUTS**
  - 0: 4-20 mA, no relay (standard)
  - 1: One relay, 5 amp, SPDT, programmable
  - 2: Two relays, 5 amp, SPDT, programmable
  - 3: Three relays, 5 amp, SPDT, programmable
  - 4: Four relays, 5 amp, SPDT, programmable
- **TRANSMITTER ENCLOSURE**
  - 1: NEMA 4X (standard)
  - 2: NEMA 7
- **TRANSDUCER CABLE LENGTH**
  - X30: 9 m (30 ft) standard cable
  - XXX: Optional cable length in feet, XXX = 050, 075, 100, 125, 150 or 200
- **HAZARDOUS AREA CERTIFICATION**
  - A: CSA Class I or II, Div. 2

### Dimensions
- **Optional Mounting Foot**: 0.25 in. Diameter
- **Mounting Holes (4 places)**: Alternate Foot Orientation (similar all corners)
- **CABLE LENGTH**: D
- **CERTIFICATION**: E

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