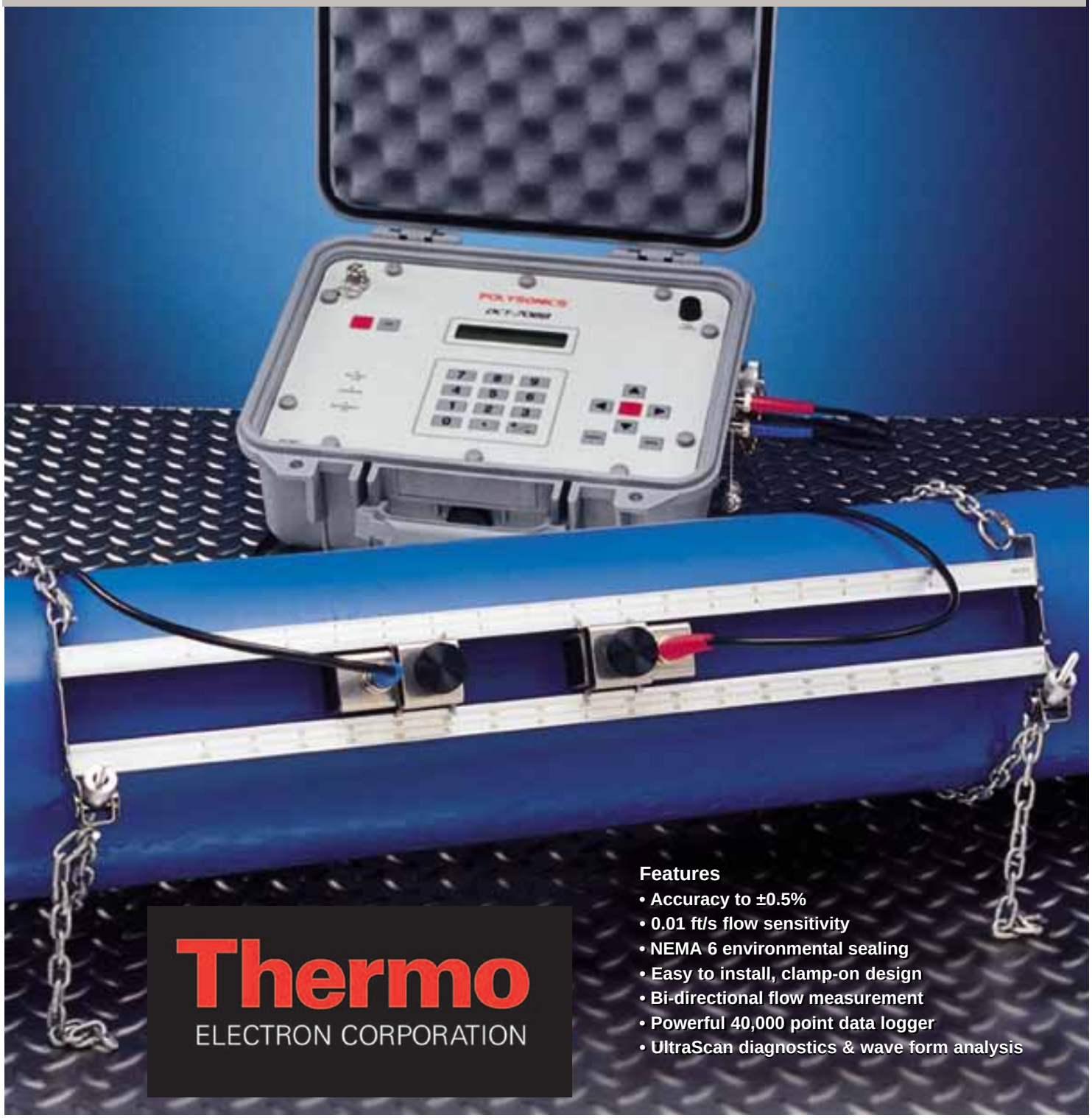
Polysonics D C T7088

Portable Digital Correlation Transit Time Flowmeter

APPLICATIONS

- HVAC
- Potable Water
- Petroleum Products
- Ultrapure Liquids
- De-ionized Water
- Water & Waste Management



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Features

- Accuracy to ±0.5%
- 0.01 ft/s flow sensitivity
- NEMA 6 environmental sealing
- Easy to install, clamp-on design
- Bi-directional flow measurement
- Powerful 40,000 point data logger
- UltraScan diagnostics & wave form analysis

Polysonics DCT7088 Portable Digital Correlation Transit Time Flowmeter

The DCT7088 is the world's most advanced portable transit time flowmeter. Combining digital signal processing (DSP) with correlation detection methods, it features exceptional performance and flexibility. While principally designed for clean liquid applications, the instrument is tolerant of liquids with higher concentrations of entrained solids or gas bubbles than was previously possible with transit time technology. The non-intrusive, clamp-on transducers can be installed without flow interruption and insure leak-free measurements with zero pressure drop. The simple menu-driven operation of the DCT7088 allows the meter to be configured in a fraction of the time necessary for competitive portable transit time flowmeters

Housed in a rugged NEMA-6 (IP67) enclosure, the DCT7088 is waterproof against accidental immersion and splashproof with the lid open. The display is a high resolution, backlit LCD providing excellent visibility, even in poorly lit conditions. Outputs include a 4-20mA analog signal and RS232 serial interface. The flowmeter also incorporates a powerful data logger that can record more than 40,000 data points for subsequent uploading to a personal computer. A separate memory function stores up to 4 sets of site parameters, eliminating the requirement to re-enter setup data when returning to a location for further measurements.

The DCT7088 can be programmed to start and finish flow measurements at predetermined times for unattended operation. In addition to password protection, a padlock can be attached to the instrument enclosure to avoid any chance of unauthorized tampering. The meter will provide up to 16 hours of continuous battery operation and can be fully recharged in only 8 hours. Unlike competitive transit time flowmeters, multiple transducers are not necessary for different pipe materials and sizes. The standard transducer set is suitable for most plastic, metal and even concrete-lined pipes, and for diameters from 1 in. (25mm) to 200 in. (5m).

The DCT7088 is available with an impressive array of optional accessories. The UTG is a compact and rugged, ultrasonic thickness gauge which allows pipe wall thickness to be quickly determined from the outside of the pipe. As an instrument separate from the DCT7088, the UTG can be used for other functions such as measuring the corrosion or erosion of storage tank walls, etc. To provide an immediate paper record of individual flow measurements, logged data and/or site parameters, a small thermal printer is also available.

U.S. Patent No. 5,818,735

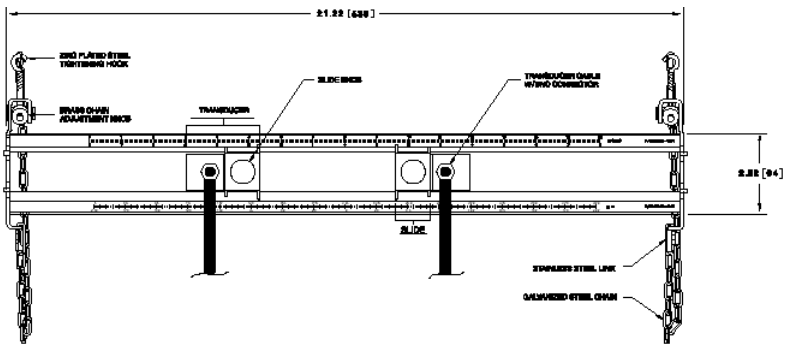
Polysonics DCT7088 Specifications

Performance Specifications

Flow Range:	±0 to 40 ft/s (±0 to 12 m/s)
Accuracy:	±0.5% of velocity or ±0.05 ft/s (±0.0152 m/s)
Sensitivity:	0.01 ft/s (0.003 m/s) at any flow rate including zero
Pipe Size:	1 in. to 200 in. (25mm to 5m)

Physical Specifications

Transmitter:	NEMA-6 (IP67), waterproof against accidental immersion and splashproof with lid open.
Transducers:	Encapsulated design. Standard cable length: 16 ft. (5m)
Weight:	Approximately 11 lbs. (4.9 kg) - 8 hr. battery Approximately 15 lbs. (6.8 kg) - 16 hr. battery opt.

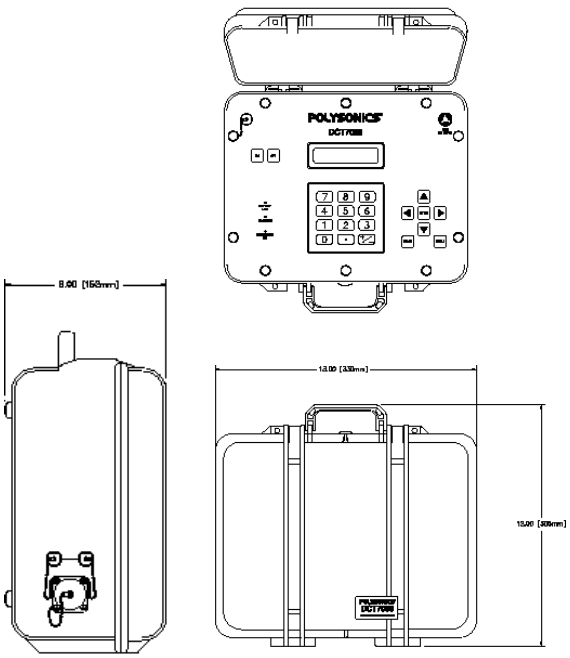


UltraScan Program

Supplied with each Polysonics DCT7088 is the UltraScan configuration and signal analysis program. While not necessary to set up or operate the instrument, it offers a simple, Microsoft Windows based method to configure the flowmeter and access the extensive waveform diagnostics available from the DCT7088. Featuring easy-to-use pull down menus and pop up windows, it provides a very rapid and versatile means to select the ideal transducer location in marginal applications. Stored site and configuration data can also be downloaded to one or more instruments, thus eliminating the need to individually program multiple meters. In addition, it provides a paperless method of retaining and archiving the calibration data - simplifying the data retention and reporting requirements necessary for ISO 9000, OSHA and FDA compliance.

While the flowmeter can be fully set up via its integral keypad, the UltraScan program provides a simple and rapid means by which multiple flowmeters can be configured. In addition, the waveform analysis allows the user to easily determine the optimum location for transducer installation

Advanced signal processing, simple operation and rugged construc - tion combine to provide a flowmeter that can confidently be used in many applications throughout the plant.



Functional Specifications

Outputs:	4-20 mA (into 1K to 5K O hms), isolated. RS232 serial interface.
Power Supply:	Built-in lead acid gel battery. 8 hours continuous operation - std. 16 hours continuous operation - opt. With AC adapter/battery charger 90-264 VAC, 50-60 Hz. - std.
Keypad:	19 key with tactile action.
Display:	40 character, 2 line alphanumeric, backlit LCD. Screens include: present and total flow, velocity, signal strength and delta T.
Data Logger:	Greater than 40,000 data points, time stamped. Programmable in one second intervals.
Temperature:	-40° to +212°F (-40° to +100°C):std transducers. -5° to +140°F (-20° to +60°C): transmitter. For higher temperature, please consult factory.

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Represented by:

Thermo is approved to the ISO 9001 quality standard.

An important benefit of the Polysonics DCT7088 is its ability to operate in the most severe weather conditions. Featuring a NEMA 6 enclosure, the instrument can even be used during heavy rain without fear of damage.

With up to 16 hours of battery operation,a 40,000 point data logger and lockable case, the meter can be used for remote and unmanned flow monitoring.

Ordering Information	
Model	**Product Description**
DCT7088	Portable Digital Correlation Transit Time Flowmeter
Code	**Battery Duration**
1 2	8 hours 16 hours
Code	**Transducer Cable Length**
16A or XXXXA	16 ft. (5m) cable, standard Additional cable, max. 300 ft. (91m) [10 ft. (3m) increments]
Code	**Additional Options**
0704/0188 0704/0187	UTG ultrasonic thickness gauge, English units UTG ultrasonic thickness gauge, Metric units
Typical Model No.	**DCT7088-1-16A**

Visit our website: www.thermo.com

In addition to the Polysonics DCT7088, other Thermo transit time flowmeters include single and multi-channel models for permanent installation. A comprehensive range of award winning digital dual frequency Doppler ultrasonic flowmeters is also available for aerated or solids bearing fluids.

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Polysonics DCT7088 Portable Digital Transit Time Flowmeter Recommended Procurement Specification

1. The instrument will utilize ultrasonic, digital, and transit time correlation technologies to provide indication, totalization, and signal transmission of liquid flow rate in full pipes.

2. The instrument will measure flow rates of clean liquids with a velocity range from +/-0 to 40 ft/s (+/-0 to 12 m/s).

   2a. Accuracy will be +/-0.5% of velocity or +/-0.05 ft/s (+/-0.0152 m/s), typical, digital output.
   2b. Flow sensitivity will be 0.01 ft/s (0.003 m/s) at any flow rate including zero.
   2c. Linearity will be 0.1% of scale, digital output.

3. The instrument will be housed in a NEMA 6 (IP67) environmentally sealed enclosure and will be waterproof against accidental immersion and splashproof with lid open.

4. Two transducers will be supplied with the instrument and will be suitable for pipe sizes from 1 to 200 in (25mm to 5m).

   4a. Transducers will be of encapsulated design and suitable for operation from -40º to +212º F (-40º to +100º C).

   4b. They will attach to the outside of the pipe using a slide-track mounting method.

   4c. The standard transducer cable length will be 16 ft (5 m).

   4d. Optional high temp transducers suitable for operation from -40 to 392 deg F (-40 to 200 deg C)

5. The analog output will be an isolated, 4-20 mA (into 1K to 5K ohms) direct current proportional to flow. Output current limiting circuitry will be incorporated in the instrument electronics. The instrument will have an RS232 serial interface.

6. The instrument will be powered by a rechargeable, internal battery suitable for 8 hours of continuous operation. An internal battery providing 16 hours of continuous operation will optionally be available. The battery must be fully recharged within a maximum of 8 hours.

7. The display will be a 40-character, 2-line, backlit, high resolution LCD.

8. Configuration will be via a front panel, 19-key keypad with tactile action. Input parameters will be password protected. The nonvolatile memory shall retain totalizer and user parameters for up to five years. Diagnostics will be accessible via the keypad.

9. The instrument electronics will be designed to operate at temperatures between -5º to +140º F (-20º to +60º C). All electronic circuits will be interchangeable with other instruments having the same model number. All circuit boards will be conformally coated with an anti-fungus compound.

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10. A 40,000-point data logger programmable in intervals of 1 s will be included as standard in the instrument. The *UltraScan* signal analysis and configuration software program for Windows® will be supplied with the instrument. The software will incorporate pull-down menus and pop-up windows to provide access to an extensive range of graphical diagnostic information. Low flow cutoff, bi-directional totalization with selectable resolution, automatic sound speed calculation of measured fluid, and adjustable damping will be standard with the software.

11. The instrument will have a built-in microprocessor to provide for adapting instrument hardware to existing piping and flow conditions. It will automatically calculate transducer spacing and read English or metric units.

12. The instrument enclosure will provide a facility for the attachment of a padlock to prevent unauthorized access to the display and front panel.

13. A test block will be supplied for instrument diagnostic testing.

14. The manufacturer will provide as an option a certified calibration in accordance with ANSI specification Z540.1.

15. The instrument will be manufactured in the USA at an ISO 9001 certified facility. The manufacturer will be Thermo Electron Corporation.

16. The instrument will be Thermo Electron Corporation's Polysonics DCT7088 Portable Digital Correlation Transit Time Flowmeter.