

# OPEN CHANNEL FLOW METER MODEL 668 FLOW METER

TS 668

## FEATURES

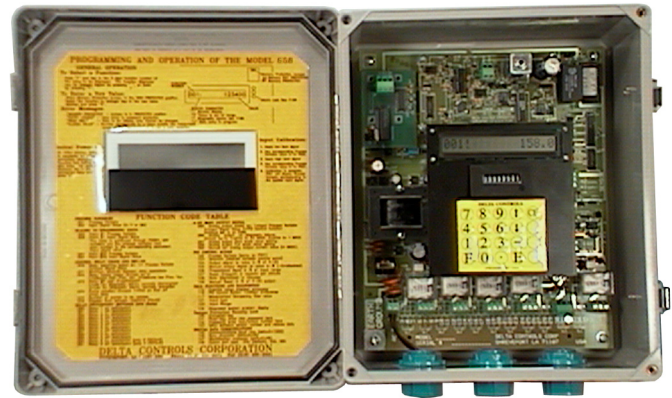
- DUAL 4-20 mA INPUTS ACCEPT A WIDE VARIETY OF OPEN CHANNEL FLOW TRANSMITTERS USING PRESSURE, RF, AND ULTRASONIC SENSORS.
- SUBMERGED FLOW CAPABILITY
- BUILT-IN KEYPAD FOR EASY FIELD CALIBRATION.
- SIXTEEN CHARACTER ALPHANUMERIC DISPLAY.
- EIGHT DIGIT NON-RESET TOTALIZER.
- SAMPLER PACER AND ALARM RELAYS.
- INTEGRAL RS-232 COMMUNICATIONS PORT.
- STORED EQUATIONS FOR MOST FLUMES, AND WEIRS; ALSO CUSTOM CURVES.
- OVERRANGE FEATURE-TOTALIZATION CONTINUES AT FLOW RATES GREATER THAN CALIBRATED MAXIMUM RATE (UP TO ANY PRESET LIMIT).
- MEMORY IS PROTECTED FOR OVER 5 YEARS FOLLOWING LOSS OF SUPPLY POWER.
- PROGRAMMABLE ACCESS LOCKOUT FUNCTION.
- SELF-DIAGNOSTIC TESTS & PROTECTION.

## OPERATING PRINCIPLE

The 668 accepts 4-20mA signals representing head or level in the flume or weir primary element. The signals can come from any loop powered or 24vdc powered level transmitter. The level information is applied to any of a number of stored equations to calculate flow rate. A second 4-20mA input is provided for an optional second transmitter that is placed downstream of the flume or weir to calculate flow under submerged conditions

## SIGNALS AND OUTPUTS

A 9-digit LCD display showing flow rate or accumulated flow quantity (resetable) is included. An isolated 4-20 MADC analog signal proportional to flow rate and an RS-232 communications port is standard. A 10 amp SPDT relay contacts are provided and can be used for alarm and/ or control functions. Relays can be programmed to drive a remoted electromechanical totalizer, a loss-of-echo alarm, a high flow rate alarm, a flood alarm, and other functions. An optional 8-digit electro-mechanical totalizer that accumulates flow in gallons or other engineering units is available. Input signals are internally scaled to the appropriate range that is to flow through the primary element



Model 668 Open Channel Flow Meter



R.F. Probe



Head Pressure

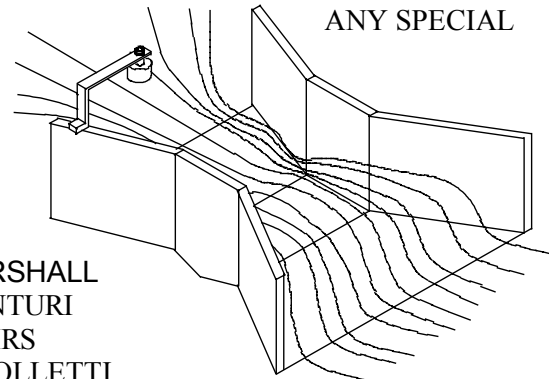


Ultrasonic

Works With A Variety Of Level Transmitters

## PRIMARY ELEMENTS

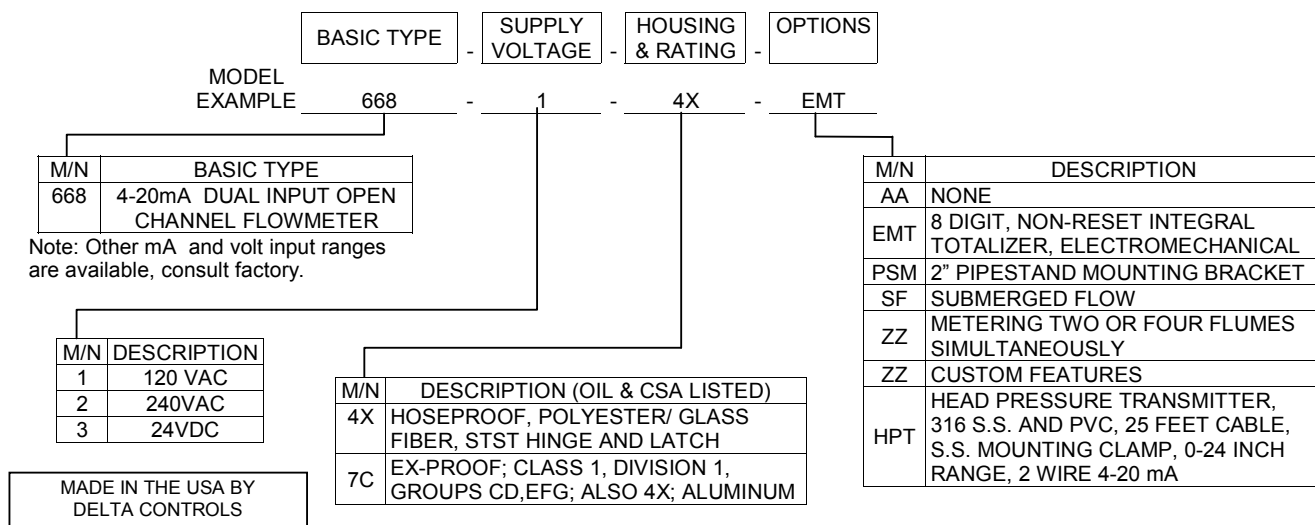
PALMER-BOWLUS  
LEOPOLD-LAGCO  
MANNING  
FORMULA  
"H" FLUMES  
ANY SPECIAL



PARSHALL  
VENTURI  
WEIRS  
CIPOLLETTI  
KENNISON NOZZLE

**DELTA CONTROLS** Corporation

# MODEL NUMBERING SYSTEM



## SPECIFICATIONS

**GENERAL TYPE:** Microprocessor based.

**POWER REQUIREMENTS:** 120 or 240VAC; 24VDC

**AMBIENT TEMPERATURE RANGE:** -20° to 160°F without heater.

**ANALOG INPUT:** 14 bit 4-20mA, two or three wire.

**ANALOG OUTPUT:** Isolated 4-20 MADC, up to 1,000 loop ohms. Better than 0.001 (12 bit) resolution.

**DIGITAL INPUT/OUTPUT:** RS-232 or RS-485 to a host computer or telemeter.

**ALARMS:** High flow rate, low flow rate, overrange and lost echo

**CALIBRATION ENTRY:** Board mounted keypad, 20 keys.

**CALIBRATION PARAMETERS:** Zero, Span, flume or weir type, flume size, maximum flow rate (or custom 20 point head to flow curve), dampening, flow engineering units to be displayed, sampler frequency rate, alarm set points, RS-232 baud rate, failsafe action for outputs, and a lockout code to prevent tampering by unauthorized persons.

**INDICATION:** Board mounted 16 character, alpha-numeric LCD display; user selectable to read flow rate, head, accumulated flow, temperature, calibration parameters and diagnostic data. Accumulated flow can be reset for various time studies. LCD illuminated display is optional.

**MEMORY PROTECTION:** Non-volatile, maintains stored data for more than 5 years following loss supply power. No battery to replace.

**SELF-DIAGNOSTICS:** Continuous self-checking; various actions can programmed for various modes of detected failure.

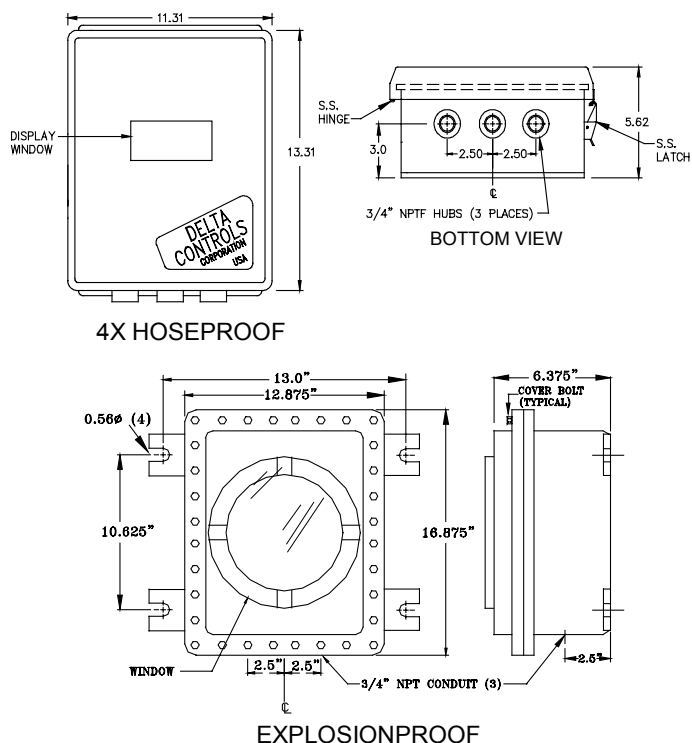
**ANALOG ACCURACY:** 0.02%FS

**ANALOG REPEATABILITY:** 0.01%FS

**WIRING CONNECTIONS:** Clamp type up to 12 gage (2mm).

**RELAYS:** Five; SPDT, 10 amp at 240 VAC contacts

## OUTLINE DIMENSIONS



## RECOMMENDED TRANSMITTER IF FURNISHED BY DELTA CONTROLS



The Model HPT transmitter uses head pressure sensing methods; is cable connected; made of 316 S.S. and PVC wetted materials; is calibrated 0-24 inches head pressure. It is mounted by insertion into existing stilling wells; by attachment to the bottom of a flume; to the upstream side of a weir plate; or directly to the "slide in" probe plate of an existing capacitance based OCFM (the old coax and electronics are to be discarded). This highly reliable transmitter has been proven in thousands of world wide applications.

**DELTA CONTROLS** Corporation

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