

Technical Update



FlowCERT LITE

Features

- MCERTs Class 1 measurement device
- Ideal for flumes or weirs
- easy installation, simple menu-driven setup
- Meets BS3680 open channel flow standard
- Proven non-contacting ultrasonic technology
- Large on-board memory gives 1 year log at 15 min intervals (optional)
- Modbus and Profibus options

MCERTs Class 1 Certified Open Channel Flow Measurement

FlowCERT from Pulsar Process Measurement is the last word in accuracy for non-contacting Open Channel Flow measurement. Now, with the introduction of FlowCERT LITE, Pulsar brings the sophistication of FlowCERT, fully certified to MCERTs Class 1, within reach of many more applications.

The FlowCERT LITE system features: FlowCERT controller, dB3 transducer and an external PT100 Class B3 temperature sensor.

With a combined performance figure of $\pm 0.04\%$ error on the MCERTs official tests, FlowCERT LITE easily passes the Class 1 standard, establishing itself as one of the most accurate open channel measurement devices available.

FlowCERT LITE includes five alarm/control relays plus 4-20mA output, optional datalogging. Programming the unit is a simple, menu-driven process.

The special PT100 Class B3 temperature sensor should be mounted in a shaded area near to the path of the level measurement so that the FlowCERT LITE controller can sense and correct for changes in the speed of sound that arise from air temperature changes*. A reflective sun shield is provided.



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PROCESS MEASUREMENT

FlowCERT LITE:

Technical Information

- **Five control/alarm relays**
 - Step time
 - Pump control
 - Pump by time
 - High/Low level or flow
 - In band/out of band
 - Rate of level rise/fall
 - High/Low temperature
 - Loss of Echo
- **Optional Data logs (all date/time stamped)**
 - Flow rate (variable time intervals)
 - Total flow (and daily totals etc)
 - Average flow rate
 - Temperature (max/min)
 - Echo confidence and more...
- **Flow totalisation and outputs**
 - Relay closure assignable to totalised flow for remote totaliser
 - Relay closure assignable for flow volume or time for a flow sampler
 - Ten days logged flow at 24 hour intervals recorded by date and accessible via the key pad.
- **Open channel flow elements**
 - Simple exponential (venturi, parshall, trapezoidal weir etc
- **Selected primary element to BS 3680, ISO 1438:2008 & 4359:1983 etc.**
 - Flumes: rectangular, u-throated
 - Thin-plate weirs (standard v-notch)
 - Thin-plate weirs (rectangular and v-notch 90° and 60°)
 - Other international standards (Palmer-Bowlius, H-flume etc)
- **Universal flow calculation (32 setpoints)**
- **Penstock control using step time**

Pulsar Process Measurement Limited operates a policy of constant development and improvement and reserves the right to amend technical details as necessary

FLOWCERT CONTROLLER

Volt free contacts:	5 form C (SPDT) 5A, 240V ac
Outside dimensions:	240 x 184 x 118mm
Cable entry:	10 cable entries - 5 x M20, 1 x M16 underside, 4 x 18mm at rear
Weight:	Nominal 1kg
Case material:	Polycarbonate, flame resistant to UL94-5V
IP rating:	IP65
Max and min temp. (electronics):	-20°C to +50°C
Flammable atmosphere approval:	Safe area: compatible with approved dB transducers (see transducer specification sheet)
CE Approval:	EMC approval to BS EN 50081-1:1992 for emissions and BS EN 50082-2:1995 for immunity, and to BS EN 61010-1:1993 for low voltage directive.
Echo processing:	Patented DATEM (Digital Adaptive Tracking of Echo Movement)
Analogue output:	Isolated output 4-20mA or 0-20mA into 500Ω (user programmable), 0.1% resolution
Serial output:	Full duplex RS232 via RJ11 port
Digital output (optional):	RS485 conn for Modbus or Profibus DP V0 or V1 options.
Display:	6 digits plus 12 character text, plus bargraph with direction indicators, remote communicator identifier and program/run/test mode indicators
Data logging (optional):	Via RJ11 port has 256kb giving 1 year at 15 min intervals (needs ultralog PC software)
Programming:	Integral keypad. Also PC Programming via RS232 (RJ11 port) or RS485
Programming security:	Via password (user selectable and adjustable)
Programmed data integrity:	Via non-volatile RAM, plus backup
Power supply:	105 - 120V ac, 50/60Hz, 210 - 240V ac, 22-28V dc

dB3 TRANSDUCER

Range/frequency:	0.15 - 3m, 125kHz
Beam angle:	<10° (@ -3dB) (effective beam angle of <3 degrees on FlowCERT Lite)
Hazardous area:	ATEX EEx m IIT6 for Zone 1 and 2. FM available
Transducer cable:	Three core screened, can be extended with 2 or 3 core screened
Maximum separation:	1000m from transducer to control unit

PT 100 Class B3 TEMPERATURE SENSOR

Temp. measurement:	-25°C - +50°C ±0.5°C
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