



#### **HCM4** – Thermal Energy Calculating Meter For The 'Digital' Age Suitable for Heating or Chilled Circuits



- 1 - The Worlds **ONLY** Digital Heat Calculating Meter.
- 2 - The **ONLY** product of its kind designed and developed for a **MINIMUM 20 year life**
- 3 - The **ONLY** Heating Calculating product to provide a 'Prepayment' option

#### Data Sheet

**Case** -- Heavy Duty Nylon Case with perspex front viewing panel, two programming buttons located on the front panel

**Case Size** -- 124mm wide 170 mm high 95 mm deep

**Mounting** -- Wall mounted

**Case Weight** 0.9kg

**Voltages** – 230 volts (standard) 110 volts (export only) 24 volts

**LCD Display** -- 16 Characters including spaces

**Display Visual Size** -- 65mm wide 13 mm high with dots per character 5 x 7

**Environmental Class** -- Confirms to the operational requirements of both Class B (Domestic Outdoor Installations) and Class C (Industrial Installations)

**Temperature Operating Range** 0c to 90c

**Accuracy Class** -- Complete Unit = Calculating Module & DHAS = Accuracy Class 1

**Temperature Sensors** – DHAS – Digital High Accuracy Sensors

**Long Distance Sensors** ( LD Version) – Perfect data accuracy transferable up to 200metres cable lengths manufactured in 50,100,200 metres

**Sensor Mounting/Fixing** –Strap on sensors (standard) - brass pockets into pipe work optional

**Sensor Accuracy** -- Conforms to within the ISOEN 1434 Parts 1 to 6 - Class 1 requirements (Standard Version)

**Low Flow Error Compensation** – Software compensation to greatly improve accuracy at low flows

**Power Consumption** – Idle 0.03amps Operational 0.1amp

**High Precision Version** --HCM4 DHAS sensors have a software error compensation which provides a error compensation of up to factor 10. By compensating for the known offset and curvature of the device characteristics. This method is successful due to the simple second order error curve and the repeatable nature of the output over temperature for band gap – based sensors. An accuracy factor of up to 0.02% is possible.

**CE Conformity** -- Conforms to Low Voltage Directive 73/23/EEC

**Conformity** – Conforms to both RoHS & WEEE directives

**Pulse Output** - Open collector --with grab circuit – band width 50ms – 10 pulses per KWh/MWh

**Wiring** -- 21 way (max) Terminal block on PCB -- Removal of case cover is required -- sealable terminals on completion of wiring

**CAT Terminal** – (Optional ) Calculator Alarm Terminal – despatches voltage alarm at error code points.

#### Operational Error Codes

- ERROR 1 No sensors connected or shorted to 5volts
- ERROR 2 Data shorted to 0 volts
- ERROR 3 Data transmission error
- ERROR 4 Only 1 sensor connected
- ERROR 5 Not a pair (either 2 hot or two cold connected)



### ELECTRICITY – GAS – HEAT – WATER METERS

**4 - 20 mA Outputs** -- Control signal with 2 test points at 4 mA & 20 mA -- Programmable for either Active(standard)or passive signals (0 to 10mA available as an alternative)

Total no of graduations 800 = Value of each graduation 20 micro amps Supply Voltage 15 volts Maximum Voltage 30 volts. High Refresh Rate 1 Sec

#### Product List

HCM 4000 Pulsed Output ( Standard Product)  
HCM 4001 2 Pulse Outputs  
HCM 4002 2 Pulse Inputs + 2 Pulse Outputs  
HCM 4003 Pulsed Out + Variable Flow Input  
HCM 4004 Pulsed Output + 4 - 20 mAmp  
HCM 4005 Pulsed Output + VAV Hot & Chilled Split System  
HCM 4006 M Bus  
HCM 4007 RS485  
HCM 4008 Modbus  
HCM TOM Thermal Oil Meter