



## *Heat Flow Meter System For Building Thermal Analysis HFS300*



- *Direct reading of heat flow through structures.*
- *Designed for use by Engineers.*
- *Eight heat flow channels, expandable in multiples of eight.*
- *Computer based data acquisition.*
- *Easily installed and operated by unskilled personnel.*
- *Remote logging option available.*
- *Two Year Warranty.*



## ***Introduction***

The Hilton HFS300 gives engineers, architects and researchers the ability to directly measure heat flow through building fabric or similar engineering structures and enclosures.

Ruggedly designed for site use, the HFS300 is a semi-portable data collection system capable of recording temperature, heat flow and thermal conductivity from up to 8 sensors located on a homogenous or composite material surface.

The HFS300 utilises patented sensor technology employed in the Hilton B480 Thermal Conductivity Unit.

The standard package includes the Hilton D102,

43 channel Data Logging System for rapid data collection and detailed analysis of results.

An optional battery powered remote data acquisition system is also available for remote or mobile logging such as in vehicles.

The unit will be of particular interest to those studying or researching:

- **Architecture**
- **Building Services**
- **Heat Transfer**
- **Refrigeration**
- **Air Conditioning**

## ***Description***

Eight patented Heat Flow Sensors are connected through standard 1m connecting leads or the supplied 5m extension leads to two four channel conditioning boxes.

The Heat Flow Sensors are applicable for surfaces experiencing heat fluxes in the range 0 to approximately 350W/m<sup>2</sup>.

The conditioning boxes connect through the leads supplied to the Hilton D102, Data Logging System.

A set of five Class 1 type T (Nickle-chrome, nickel-aluminium) thermocouples are also supplied that allow the overall thermal conductivity of the structure to be determined.

The latest 32 bit Windows<sup>TM</sup> data logging software is pre-configured to display thermal conductivity and temperature immediately upon assembly and activation for ease of operation.

The software is menu driven and easily configured for other specialised applications and additional transducers. The software will operate on virtually any low specification Windows compatible PC with an RS232 serial port and CD drive for software installation.

The Heat Flow Sensors are suitable for surface temperature between -40°C and +70°C. This enables use in even extreme ambient conditions.

An optional remote logging upgrade **HFS300A** is available that allows up to 4 heat flow sensors to be monitored using a battery (13.8V lead acid or equivalent) power supply.

## ***Specification***

8 patented metal faced heat flow sensors with on board temperature compensation, connecting via 1m or 5m connecting cables (supplied) to two, four channel conditioning boxes. Supplied complete with 43 channel Data Logger and pre-configured Windows<sup>TM</sup> based software to collect and display data from the 8 heat flow sensors and 5 Class 1 type T thermocouples that also connect to the D102 Data Logger.

Up to three 8 channel heat flow sensor packages may be connected to a single computer RS232 port using the lead supplied and the standard Windows<sup>TM</sup> software.

A supply of thermal compound for location of the sensors and to ensure elimination of air gaps is supplied together with a battery powered meter for transducer testing during installation.

The equipment is supplied in a tough waterproof case with all cables, connectors, operating and maintenance manual.

Optional Battery powered remote monitoring system available for multiples of four heat flow sensors.

## ***Calibration***

UKAS calibration certificates for the data collection system can also be provided at an extra cost.



Either: English, Spanish, French.

### **Requirements**

An IBM PC AT or true compatible with free serial port (COM1 to 10). Recommended Pentium processor and 16Mb RAM. Operates within Windows™ 95/98 2000 or XP. Support for recorded data transfer to Excel V5.0 and above and similar spreadsheet applications is included.

For site use DOS (MSDOS) software is also available that will allow data collection on even lower specification computers. Details available on request.

### **Dimensions**

#### **HFS300**

Height: 200mm  
Width: 555mm

Depth: 430mm  
Weight: 20kg

#### **HFS300A**

Height: 26mm  
Width: 70mm

Depth: 54mm  
Weight: 1kg

### **Services Required**

Either A. 40W, 220/240v single phase,  
50/60Hz (with earth/ground).

Or B. 40W, 110/120v single phase,  
50/60Hz (with earth/ground).

With the HFS300A remote logging option, up to 4 heat flow sensors (Two sets required per HFS300 unit) may be powered using any suitable 13.8V dc battery supply.

### **Ordering Information**

**Order as:** **HFS300**  
Heat Flow Meter System for  
Building Thermal Analysis  
**HFS300A**  
4 Channel Remote Logging  
Option

#### **Electrical Specification**

220/240 Volts, Single Phase, 50Hz(With  
earth/ground).

All units may be configured on site for  
110/120v single phase 50/60Hz.

#### **Instruction Manual Language**

### **Shipping Specifications**

**Net Weight:** 20kg.  
**Approximate Gross Weight:** 35kg.

**Packing Case Dimensions:**  
**810mm x 710mm x 360mm**

**Packing Case Volume:**  
0.21m<sup>3</sup>

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