P.A. Hilton Ltd

Hilton Data Logger System
D102 Series

D102 Shown with a Selection of Optional Transcucers

▶ *43 Channel Data Logger; Expandable to 129 channels.*

▶ *On Board Transducer Power Supplies +/- 5v, +/- 15v, +12v.*

▶*User Configurable, Menu Driven Windows Software.*

▶ *Accepts Most Commercially Available Transducers.*

▶*Individual Transducers and Transducer Kits Available.*

▶*Removable Screw Terminal Connections for Ease of Use.*

▶ *Two Years Warranty.*

Introduction

With the increasing power and availability of microprocessor technology most new industrial and environmental plant equipment is built to include some form of automatic monitoring and control.

In addition, due to the cost effectiveness of remote data logging and control systems these are often being installed on existing plant to improve efficiency and prolong the useful life of otherwise out dated equipment.

The Hilton D102 Data Logger System has been specifically designed to allow engineers, researchers or students to rapidly instrument, monitor and control almost any laboratory equipment or industrial process using a compatible PC.

The Hilton D102 Data Logger System consists of a 43-channel computer interface and menu driven software. Together with a range of optional transducers this allows monitoring and control of virtually all physical parameters found in engineering laboratories

For higher level and research students the ability to write monitoring and control software in the language of their choice is given by virtue of the simple command structure of the interface.

The DlO2 Data Logger System is applicable to research and teaching programmes for engineers of all disciplines but especially those in: -
• **Refrigeration and Air Conditioning**
• **Mechanical/Electrical Engineering**
• **Building Services**
• **Plant and Process Engineering**
• **Control and Instrumentation**
• **Marine Engineering**
• **Chemical Engineering**
• **Mining Engineering**
• **Energy Conservation**
• **Environmental Engineering**
• **Industrial Research**
• **Electronics**
• **Heat transfer**

Description

The complete D102 Data Logger System consists of the Computer Interface and Data Acquisition and Control Software. User selected transducers; actuators and controls are available as optional extras.

The Computer Interface: -
This is a 43 channel microprocessor controlled interface that connects to an IBM or IBM compatible PC via its RS232 serial port. Up to three interfaces may be linked to a single RS232 port giving up to 129 usable channels.

The 43 channels consist of: -
15 differential DC millivolt inputs (to ±80mV and ±20mV DC software configured) that may also be software configured to read temperatures directly using either type T or K thermocouples (Range -250 to +1300°C).

8 Single ended input channels for high level inputs up to ±8V DC and ±2V (software configured).

8 Digital inputs software configurable as frequency, period or logic (On/Off) inputs.

3 AC current channels allowing measurements of AC mains currents via current transformers.

1 Internal mains voltage measurement channel.

8 Software switchable output channels (l00mA sink maximum). One of which may be software controlled to burst fire a solid state switch for proportional control of heaters etc.

In addition +5V, -5V, +12V, +15V and -I5V auxiliary power outputs are available to drive transducers and solid state switches.

All input, output and auxiliary power output connections are via 84 removable high quality screw type terminals.
Communication between the D102 Data Logger System and the host Computer is achieved using simple alphanumeric strings of characters.

For users writing their own application software, the standard interface will accept linear transducer calibration factors on all inputs. In addition, type T and type K thermocouple temperature readings are returned cold junction compensated.
Configurations established in this manner may be saved to, and reloaded from, computer disc using a simple terminal program.
In addition all analogue channels may be software configured in either high or low gain mode depending upon the transducer signal level available.

A comprehensive manual giving details of interface commands, channel characteristics and configuration, is supplied with each interface.

The Data Acquisition, Calibration and Control Software: -
This is a Windows compatible user friendly, menu driven package that is very simple to operate.
The package operates on IBM or compatible PC's and enables even an inexperienced user to carry out the following essential procedures:

- Select channels and calibrate to return parameters in the engineering units of their choice.

- Control each of the output channels to respond to user set conditions on any of the input channels.

- Record, review and present data on the screen in graphical or numeric format & produce hard copy printout.

- Store complete system transducer configurations on disc and edit these to produce a user library.

- Transfer data to all compatible spreadsheet packages (e.g. Microsoft ^{TM} XL) for additional analysis.

Although inherently user friendly and menu driven, a detailed user manual is supplied with the Data Acquisition and Supply Software giving specific details and examples on all aspects of the software operation.

Instrumentation and Control Transducers: -
Transducers kits are available at extra cost for all engineering parameters and are chosen to suit customer requirements. These include, but are not limited to: - Temperature, Pressure, Flow-rate, Force, Displacement, Humidity, Power, Voltage, Current, Rotational Speed and Heat Flow.

Solid state relays are available for the direct control of single and three phase loads of up to 100 Amps line current.

In addition specialized transducer kits are available. For example:-
D102A Refrigeration and Air Conditioning Transducers is a standard package that has had extensive application in industrial applications.

The transducers include, thermocouple sensors, high and low pressure refrigerant compatible transducers, refrigerant flow transducer, water flow transducer, load cell, differential air pressure transducer, current transducer, solid state mains switch and proximity transducer. **Details available on request.**

After Sales Service: -
With extensive use of the Data logger within the refrigeration and air conditioning industry, P.A. Hilton Ltd can offer a comprehensive service of supply, after sales support and advise to customers on specialized applications.

Specification
General
A single unit 43 channel analogue and digital computer interface complete with menu driven data logging software for operation on a compatible personal computer via the RS232 serial port**.**

Detailed
The interface has on board facility to read differential voltages and temperatures from type T or K thermocouples directly in either Celsius, Fahrenheit or degrees Kelvin.

Up to three interfaces may be connected on a single RS232 port and controlled by the software package**.**

The software allows transducers to be configured to return data in the engineering units selected by the operator and these configurations to be stored on computer disc. The software provides screen displays and hard copies of graphical and numeric data.

Of the 43 channels 8 are output channels and may be used to operate solid state switches which are available in various sizes to control single and three phase loads of up to 100 Amps.

A simple, logical command format and comprehensive manuals allow user written software to be created for specialized control and instrumentation applications**.**

Dimensions

Height: 57mm Depth: 375mm
Width: 280mm Weight: 4.5kg
Transducers: -
Information on application.

Accessories and Spares

Each unit is supplied complete with:
Menu driven software suitable for operating up to 3 interfaces from one compatible personal computer with an RS232 serial port.
Interface hardware and communication manual.
Software operation manual.
Interface to computer RS232 serial lead for both 9 and 25 pin D type connectors (suitable for up to 3 interfaces).
Power lead.

Services Required

Either: A. 35 W 220/24OV,
single phase,50/6OHz.
         (with earth/ground)
     or B. 35 W 110/120V,
         single phase,50/6OHz.
         (with earth/ground)

Ordering Information

Order as: Hilton Data Logger System
       D102
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.

Language
Either:English, Spanish or French.

Shipping Specifications

D102 (Interface)
Approximate Net Weight: 6kg.
Approximate Gross Weight: 10kg.
Approximate Packing Case Dimensions:
56cm x 48cm x 32cm
Packing Case Volume: 0.086m^3

Also Available on Request

Further detailed specification.
Additional copies of instruction manual.
Alternative transducer kits for
Specialised applications

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