
DA316

Master Controller

Introduction

The DA316 is a master controller used to manage a system of slaves connected to it. It uses a keypad and display for interactive manual control and is programmed using HCBASIC for rapid development of fully dedicated systems.



Features

- Operates liquid crystal display and keypad
- Manages up to 16 slave controllers
- 8-Kbytes for storage of variables and programs
- Multitasking
- Supports special User-Input Functions
- Runs HCBASIC
- Serial port for output to printer or connection to PC

Configuration

A 'Configuration' consists of a main HCBASIC program, variable declarations and a set of User-Input Functions. A Windows® based application program called 'HCConfig' is used to create and edit Configurations.

HCBASIC

HCBASIC is a miniature version of the well-known BASIC programming language, designed with the nonexpert in mind. It performs boolean, character, integer and floating point arithmetic, supports string variables and has functions for passing instructions and exchanging data with slave controllers.

HCBASIC programs consist of keywords, functions, statements, operators and variables. 'HCConfig' part-compile the source code for downloading to a controller. It also acts as a terminal to the DA316 for program development and debugging. HCBASIC programs and variables, in condensed and tokenised form, are protected in non-volatile memory.

The programming language supports many mathematical and trigonometric functions.

Slave Controllers

The DA316 master controller operates the Serial Peripheral Interface (SPI) for communicating with and directing slave controllers. In HCBASIC one simply prefixes a command with a hash and slave address; so the position of a motor, for example, can be established by executing the line: -

```
100 Position = #1 GetAbs Motor1
```

User-Input Functions

Special functions can be defined for entering settings and modifying program flow at run-time. A function is selected using the keypad and liquid crystal display and a value entered, or a selection made, such as 'On' or 'Off'.

User-Input Functions have other powerful features - they can run short segments of BASIC code, momentarily interrupting the flow of the main program. Functions may be enabled and disabled at run-time.

Uses

The DA316 is used with one or more slave controllers, such as the DA301 3-axis stepper motor controller. It expands their capability by being able to perform complex calculations and to co-ordinate a system.

Specifications

Program Memory: 8 Kbytes

Programming Language: HCBASIC

Ports: 1 x RS232, 1 x SPI

Communication: Fully active at all times

Programmable Digital I/O: Four outputs, 1 input

Analogue Converters: Eight 8-bit analogue inputs

Timers: Four 16-bit seconds timers, 4 delay timers

Keypad: Menu-selectable 12- or 16-key keypad

Display: Standard 2-line 16 column liquid crystal

Weight: 100 grams (excluding display and keypad)

Size: 110 x 100 x 20 mm

Processor: MC68HC11