Model 170E Microcomputer/6800/68HC11

The 170E controller provides an ideal combination of flexibility of open architecture hardware with the power and performance of 2070/170 controller software packages.

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About the 170E Controller

The intelligence behind the signalized intersection is the traffic signal controller. The 2070/170 line of Safetran controllers represents some of the most widely used and trusted in the transportation industry. Combined with the traffic cabinet, the controller manages traffic flow and ensures safety for all roadway users.

For more than three decades, Safetran (an Econolite Group company) has provided industry leading innovation and service by maintaining a close alignment with its customers. Safetran's customer focus and employee experience in providing traffic management solutions for New York Department of Transportation (NYDOT), California Department of Transportation (CalTrans), Federal Highway Administration (FWHA), and Transportation Electrical Equipment Specifications (TEES) projects and standards is unequalled in the industry.

At A Glance

- Multipurpose microcomputer:
  - Traffic control
  - Ramp metering
  - Sign control
  - Sprinkler control
- Meets or exceed the Caltrans requirements
- Accepts two plug-in communication modules
- Designed for ease of maintenance
- Low wattage, removable power supply

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CPU Module

The CPU houses the 6800/68HC11 MPU, the quad Asynchronous Communication Interface Adapters (ACIA), up to 32K RAM, decode logic, and bus drivers. The optional HC11 board allows the installation of up to 128K of EPROM on the CPU, thus eliminating the requirement of a program module. The optional 470IB PROM module still communicates to the HC11 board from the communication link on the edge connector. An optional blank panel is available to cover the PROM module slot.

Input Module

The single input module draws heavily on High Speed CMOS, TTL Compatible (HCT) technology. Lightning protection devices have been added to enhance surge protection. All input circuits are resident on this module to facilitate maintenance. The power start-up and super capacitor circuitry are also located on the module.

Chassis

The model 170E chassis was designed on a CAD system. Numerically controlled production equipment guarantees perfectly matched assemblies. A printed circuit motherboard assembly provides reliable interconnect between modules and a separate bus for the I/O increases noise immunity. In addition, separate logic ground paths are supplied from the power supply to each module. Vertically mounted, the C1, C2, C20, C30, and C40 connectors are located on the back of the Model 170E. To facilitate the installation of the program module, card guides have been extended to the front panel. A hinged front panel is held in place by two thumb-screws. When closed, the front panel prevents the modules from backing out of the connectors. The Model 170E may be equipped with two communication modules.

Output Module

The single output module contains the entire output circuitry for the 170E. Operation can be easily diagnosed by simply exchanging output modules.

Power Supply Module

The Model 170E is equipped with a linear power supply. All components of the power supply, including capacitors, transformers, and power transistors are located on this removable module. Connection between the power supply and the motherboard is via a floating 15-pin, power-rated socket connector.

Standby Power

The Model 170E is supplied with super capacitors which supply standby power to volatile memory devices and the downtime accumulator circuitry.

M170E Module

An optional M170E Module can be provided to replace the 412C Program Module functions when the internal programming option is desired. The M170E Module has the 16 dip-switches and the real-time clock circuitry found on the 412C Program Module.

Applications

The Model 170E has been designed to manage virtually all traffic applications, from two-phase intersection control to computerized, networked systems. In addition, with the implementation of various software packages, the Model 170E has found applications in ramp-metering control, matrix sign control, sprinkler control, pump control, and changeable lane control.

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Basic Specifications

- Temperature
  - -35°F to 165°F (-37°C to +74°C)
- Power
  - 115 VAC, 60 Hz (40 W)
- Dimensions
  - 7 in. H x 19 in. W x 11 in. D
- Weight
  - 19 lbs

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