170 CONTROLLERS

170E HC11
170 ATC HC11

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Overview

SWARCO McCain Inc.'s 170 Controllers are industry standard controllers in compliance with applicable Caltrans Transportation Electrical Equipment Specification (TEES) standards. Built to McCain's high quality standards, the controllers' rugged and dependable construction is reliable and capable of operating in harsh environments. The controllers' 19-inch Electronics Industry Alliance (EIA) rack mount form allows them to easily fit any standard EIA-based cabinet. Built on a modular design, McCain's 170 line of controllers easily accommodate the interchange of modules and components.

Benefits

- Multi-purpose microcomputer
- Operates in harsh environments
- Vertical board design
- Accepts two plug-in communications modules
- Low maintenance
- Low wattage, removable power supply

Product Description

The McCain 170E HC11 and 170 ATC HC11 controllers' primary design function is to operate 8-phase dual ring intersections. Based on the software control package utilized, the 170's control applications can expand to include: ramp metering, variable message signs, sprinklers, pumps, and changeable lane control.

McCain's proven and reliable 170 controllers are used extensively throughout the United States and abroad. The controllers are economically designed, allowing for large scale deployment at reasonable rates. The printed circuit boards (PCBs) are mounted vertically, maximizing usable space and ease of maintenance.

McCain offers a variety of compatible software programs that integrate 170 controllers into an overall Intelligent Transportation System (ITS) solution.

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170 Controllers

Standard Features

Operating System
- None

Modules (standard, included)
- CPU Module
- Input Module
- Output Module
- Front Panel Module
- Power Supply

Microprocessors
- 170E HC11 & 170 ATC HC11: 68HC11 operating at 9.8 MHz (typical)

Memory
- EPROM:
  - 32KB (170 E)
  - 128KB EPROM, 2 banks of 32KB (170E HC11 and 170 ATC HC11)
- RAM: 32KB

Backup real-time clock (170 E HC11 and 170 ATC HC11)

Applicable standards
- Compatible with applicable Caltrans TEES standards

General Specifications

Dimensions:	19"W x 7"H x 13"D (rounded to the nearest inch)
Form Factor:	EIA rack mount compatible
Power:	120 VAC, 60 Hz (typical), 40 watts

+ 5 V	Logic	± 0.1 V	2.4 A
+ 5 V	External	± 0.25 V	300 mA
+ 5 V	Front Panel	± 0.25 V	500 mA
- 5 V	Spare	± 0.25 V	300 mA
+12 V	Modem	±0.6 V	1.0 A
12 V	Modem	± 0.6 V	300 mA

Environment:	Operating Temperature: -37° C to + 74° C
	Humidity: 0 to 95%
Weight:	(non-condensing)
	± 15 lbs (based on final module selection)

Interfaces

Communication interfaces
- RS232 serial ports (4)
- Modem slots (2 slots for the 170E HC11 and 4 slots for the 170 ATC HC11)

Front panel interface
- Display: (6) seven-segment LED display plus 10 call active LEDs
- Keyboard: 4 x 4 keypads

Cabinet interfaces
- Rear connectors C1S, C2S, C20S, C30S, C40S, and T1
- Rear connector C12S (170 ATC HC11 only)

Software

Compatible with McCain's 233 intersection control, 245 arterial master control, 242 ramp metering control, and 247 reversible lane control software. Also compatible with 170 compliant third party software. (See separate data sheets for details on McCain's software control programs).

Options

- McCain control software
- Diagnostic software
- Loop-back cables (used with diagnostic software)

Available modules
- 412F PROM module (170 E HC11)
- 412C PROM module (170 E HC11)
- Ethernet module
- GPS (Global Positioning System) module
- Modem module