

# 170 Controllers

170E  
170E HC11  
170 ATC HC11



170E



170 ATC HC11

Cabinets

**Controllers**

Signals

Signs

Software

Specialty

## Overview

McCain'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, 170E HC11, and 170 ATC HC11 controllers' primary design function is to operate eight-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.

# 170 Controllers

## Standard Features

### Operating System

- None

### Modules (standard, included)

- CPU Module
- Input Module
- Output Module
- Front Panel Module
- Power Supply

### Microprocessors

- 170E: 6802 operating at 3 or 6 MHz
- 170 E HC11 & 170 ATC HC11: 68HC11 operating at 9.8 MHz (typical)

### Memory

- EPROM:
  - 32KB (170 E)
  - 128KB EPROM, 2 banks of 32KB (170 E 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

## Interfaces

### Communication interfaces

- RS232 serial ports (4)
- Modem slots (2 slots for the 170 E and 170 E 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 keypad

### 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).

## General Specifications

Dimensions:	19" W x 7" H x 13" D (rounded to the nearest inch)
Form Factor:	EIA rack mount compatible
Power:	120VAC, 60Hz (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 Modern ± 0.6 V 1.0 A
	-12 V Modern ± 0.6 V 300 mA
Environment:	Operating Temperature: -37°C to +74°C Humidity: 0 to 95% (non-condensing)
Weight:	± 15 lbs (based on final module selection)

## Options

- McCain control software
- Available modules
  - 412F PROM module (170 E and 170 E HC11)
  - 412C PROM module (170 E and 170 E HC11)
  - Ethernet module
  - GPS (Global Positioning System) module
  - Modem module
- Diagnostic software
- Loop-back cables (used with diagnostic software)

To learn more about McCain's Integrated Traffic Solutions, please contact [info@mccain-inc.com](mailto:info@mccain-inc.com) or call (760) 727-8100



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