Mobile Climate Control
On Road

Safeguarding the ideal interior climate on-line

MCC Control units and software
– flexible communication platforms for buses and off road vehicles

MCC Electronic Climate Control

An even interior climate, on-line trouble shooting and reports in real time, full unit and software safeguard – all in one package.

With MCC Electronic Climate Control software you can automatically maintain an even interior climate. The software can be updated online and you can monitor, diagnose and report faults, from anywhere around the world. The Electronic Climate Control unit has a display, main controller, and diagnostic center – all in one package – and can easily be expanded and customized to meet your exact requirements.

Summary of advantages

- Maintains an even interior climate
- Full protection of the A/C compressor and electronics
- Reduces warranty costs
- Reduces vehicle downtime
- Easily expanded and customized
- All in one package

GPRS – Remote Desktop Monitoring

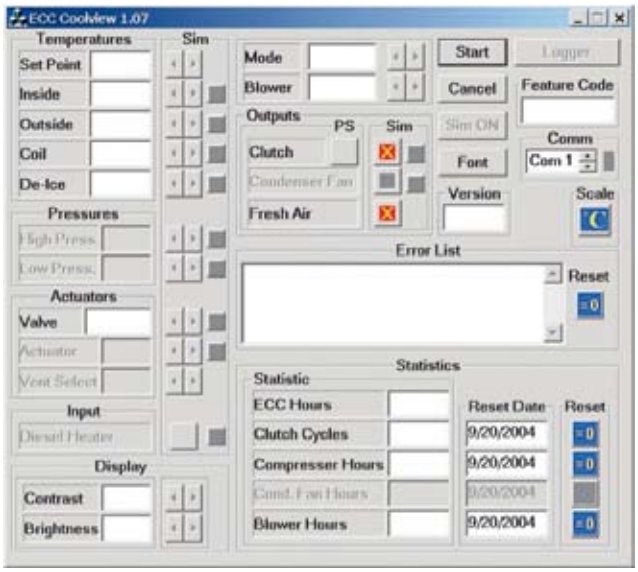
General Packet Radio Systems (GPRS) is the new communication platform for MCC Electronic Climate Controllers. With GPRS the service center can stay in touch with continuous information from the vehicle's hardware and software, from all around the world. This system is based on Remote Desktop Monitoring and can be combined with Coolview tracking.

- Integrated GPRS for flexible communication, in both continuous and SMS text modes.
- Continuous mode. Full real time operator control of the ECC.
- SMS-text mode. Send command strings and receive reports from one or several buses at any given time.
- Flash memory. Update software through the GPRS link.
- CAN-diagnostics and data logging. Hook into the CAN-BUS to monitor not only the climate control system but also any other subsystem in place on the same CAN-BUS.
- Offline diagnosis. Set up a logging session if a sensor or sensor or other attached equipment failure is suspected and receive reports through GPRS upon completion of testing.
- CAN-Command module. Send commands and receive data from other CAN enabled devices in place on the same CAN-BUS network.

MCC Coolview Fleet tracking

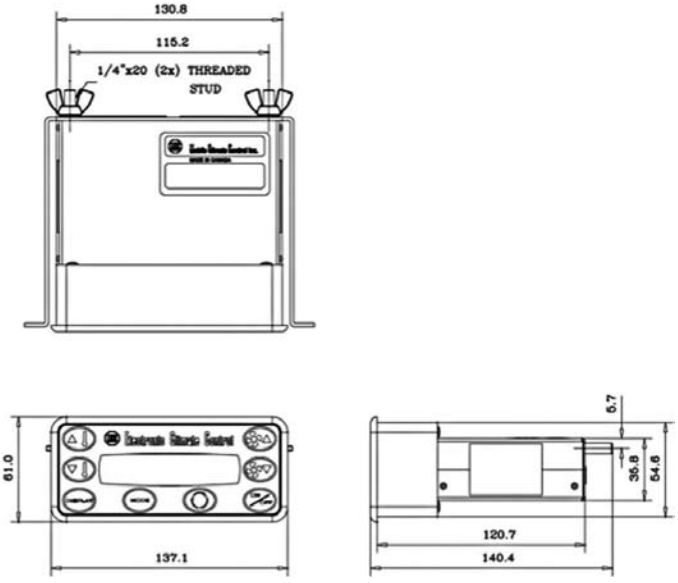
MCC Coolview Fleet tracking is the software for daily diagnostic performance tracking. With this software the service center can test run, search for errors, diagnose and report possible faults in the HVAC system online. Coolview Fleet tracking fully protects the A/C units and software and can minimize downtime as any faults will have already been diagnosed when the vehicle arrives at the nearest service center.

- Optional ECC controller equipped with WIFI transmitter.
- Transmits to a ethernet or cellular hub upon return to garage or designated service center.
- Daily diagnostic status on each unit sent back to MCC through the internet.
- Monitoring and diagnostics done by MCC.
- Service response can be dispatched before the customer is even aware there may be a problem.



MCC Electronic Climate Control

The Electronic Climate Control (ECC) is developed to meet the demanding requirements of the Off Road HVAC market. The unit consists of a micro controller based control board enclosed in a metal housing with a plastic bezel and membrane switch keypad. The ECC has a display, main controller, and diagnostic center all in one package. The ECC is designed as a programmable platform that can easily be expanded and customized to meet customers' requirements. Several methods of compressor protection are available. Proper protection of the A/C compressor results in a reduction of warranty costs and vehicle downtime.



Measurements in millimeters

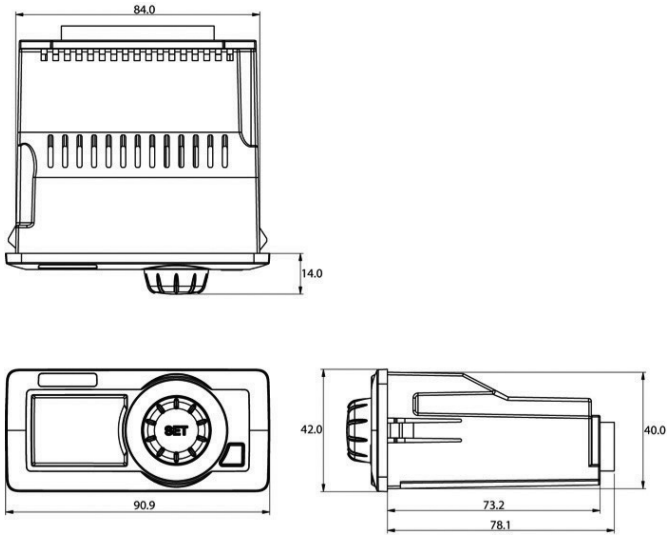
Operating Voltage		+9V to 32V DC
Operating Temperature		-40°C to + 80°C
Inputs	5 Digital	High Pressure Switch Low Pressure Switch Temperature Switch Engine On Signal Diesel Switch
	8 Analog	Inside Sensor Outside Sensor After Coil Sensor De-Ice Sensor High Pressure Low Pressure Valve 1 Position Valve 2 Position
Outputs	9 digital	Low Speed Fan Relay Medium Speed Fan Relay High Speed Fan Relay Condenser Fan Relay Valve 1 Ouput 1 Valve 1 Ouput 2 Valve 2 Ouput 1 Valve 2 Ouput 2 1 Clutch
	2 PWM	PWM
Micro Processor	Clock Speed	40 MHz (Max) 64k Flash Processor 1k EEPROM
EMI/EMC	CE SAE	EN50081-1, EN50082-1, EN95/94 SAEJ1455 sec. 4.11.2
Communication	RS-485 CanBus	J1850, J1587, J1939 2.0B

MCC Micro Electronic Climate Control

The new MCC Micro Electronic Climate Control (µECC) is developed for mini-buses and Off Road vehicles. The µECC is designed as a programmable platform that can be easily be customised and expanded to suit customers' requirements.

The unit's compact and modern design includes display, controller and diagnostic center, and is easily navigated with a dial. It regulates cabin temperature automatically by controlling the compressor, heater valve, condenser fans as well as air circulation for both air recirculation and air flow direction.

The µECC's built-in diagnostics can detect and report compressor and sensor failures directly on the µECC's screen. Compressor protection circuitry is also built-in to the µECC module. This results in ease of trouble shooting while also reducing vehicle downtime. The µECC is CAN-BUS ready.

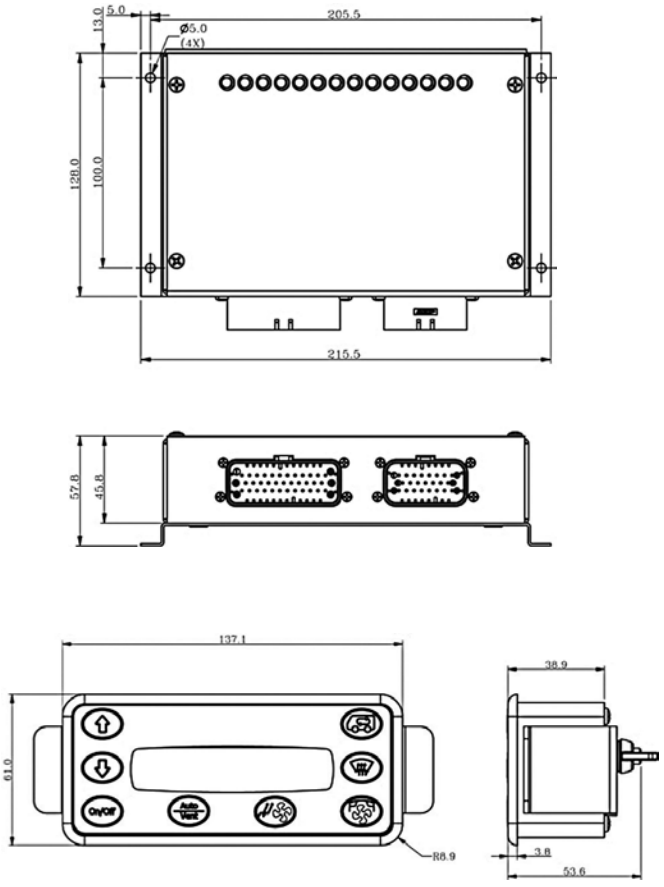


Measurements in millimeters

Operating Voltage		+9V to 32V DC
Operating Temperature		-40°C to + 80°C
Inputs	5 Digital	High Pressure Switch Low Pressure Switch Temperature Switch Engine On Signal Diesel Switch
	8 Analog	Inside Sensor Outside Sensor After Coil Sensor De-Ice Sensor High Pressure Low Pressure Valve 1 Position Valve 2 Position
Outputs	9 digital	Low Speed Fan Relay Medium Speed Fan Relay High Speed Fan Relay Condenser Fan Relay Valve 1 Ouput 1 Valve 1 Ouput 2 Valve 2 Ouput 1 Valve 2 Ouput 2 1 Clutch
	2 PWM	PWM
Micro Processor	Clock Speed	40 MHz (Max) 64k Flash Processor 1k EEPROM
EMI/EMC	CE SAE	EN50081-1, EN50082-1, EN95/94 SAEJ1455 sec. 4.11.2
Communication	RS-485 CanBus	J1850, J1587, J1939 2.0B

MCC Mass Transit Climate Controller

The Mass Transit Climate Controller is developed for the On Road HVAC market. The climate controller consists of two separate units: the micro controller based control board enclosed in a metal housing, and a display module with a plastic bezel, display and membrane lighted switch keypad. The Mass Transit Climate Controller has a display, main controller, and diagnostic center all in one package. The Mass Transit Climate Controller is designed as programmable platform that can easily be expanded and customized to meet customers' requirements. Several methods of compressor and controller protection are available. Proper protection of the A/C compressor results in a reduction of warranty costs and vehicle downtime.



Measurements in millimeters

Main Controller Module

Operating Voltage		+9V to 32V DC	
Operating Temperature		-40°C to +80°C	
Inputs	6 Digital	12V or 24V DC	Ignition
		12V or 24V DC	High Pressure
		12V or 24V DC	Low Pressure
		12V or 24V DC	Diesel Heat
		12V or 24V DC	Temperature
		12V or 24V DC	Auxiliary
	10 Analog	10kΩ@25°C	6 Temperature Sensors
		0 to 4.5V	High Pressure Sensor
		0 to 4.5V	Low Pressure Sensor
		0 to 10kΩ	Valve 1 Position Sensor
		0 to 10kΩ	Valve 2 Position Sensor
Outputs	14 Digital	12V or 24V DC	
	2 PWM	12V or 24V DC	25kHz
Communication	RS485	J1850, J1587, J1939	
	CanBus	2.0B	
Micro Processor	Clock Speed	10MHz	64k Flash Processor 1k EEPROM

ECC Display Module

Operating Voltage		+9V to 32V DC	
Operating Temperature		-40°C to +85°C	
Inputs	3 Digital	12V or 24V DC	
	1 Analog		Dimmer
Outputs	2 Digital	12V or 24V DC	High/Low Speed
Communication	RS485	J1850, J1587, J1939	
	CanBus	2.0B	
Micro Processor	Clock Speed	10MHz	48k Flash Processor 1k EEPROM

EMI/EMC	CE	EN-50081-1, EN50082,EN95/94
	SAE	SAEJ1455 sec 4.11.2

MCC Easy 200 ATM

The MCC Easy 200 ATM is an Automatic Thermostat Module system for buses and Off Road vehicles. Any number of modules can be added to this flexible system, where each module controls a specific function such as heating, fans or dampers. The MCC Easy 200 ATM is a cost effective solution when a limited number of functions are required.

- Part of the next generation Easy 200 platform
- Flash memory – easily reprogrammable
- CAN-BUS ready
- Automatic Temperature control – operator selects the temperature set point via the control knob and the micro-processor adjusts the motorized water valve to regulate the cabin/vehicle temperature
- Designed to control climate systems from mini vehicles to large buses
- Packaged in a standard SWF 44x22 mm box with integral back lighting

Every passenger deserves the best possible vehicle climate with MCC products

Our target is to become the leading global HVAC provider to the commercial vehicle industry.

We provide exceptional performance in mobile climate control for OEM customers.

Mobile Climate Control

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