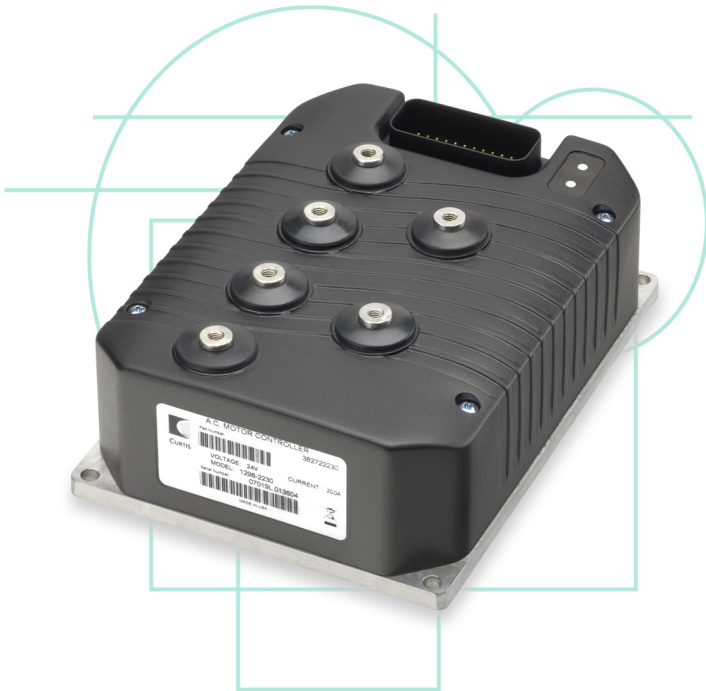


INTEGRATED AC TRACTION & DC PUMP SYSTEM CONTROLLER

MODEL 1298



CURTIS



DESCRIPTION

The Curtis Model 1298 combines advanced control of AC induction traction motors with solid state DC hydraulic pump and proportional valve control. It offers vehicle developers a highly cost-effective combination of power and functionality in a very compact integrated package.

APPLICATION

Designed primarily for class III material handling vehicles, such as walkie stackers that require variable speed, or soft-start and soft-stop control of the lift and lower functions.

Only Curtis AC can offer:

- **Curtis VCL -Vehicle Control Language** is an easy to use programming language that allows vehicle developers to write powerful logic functions and create a 'virtual system controller'. Curtis offers customers VCL development tools and training. Curtis also provides a VCL service where Curtis engineers will work with the OEM to create any custom VCL code required.
- **Indirect Field Orientation (IFO) vector control** algorithm generates the maximum possible torque and efficiency across the entire speed range. Advanced Curtis IFO vector control provides superb drive 'feel', improved speed regulation and increased gradeability.
- **Curtis Auto-Tune** function enables quick and easy characterization of the AC motor without having to remove it from the vehicle. Curtis AC controllers are fully compatible with any brand of AC motor.
- **Dual-Drive functionality** is standard, allowing correct control of applications featuring twin traction motors. This function ensures smooth and safe operation, minimal tire wear and correct load sharing between the traction motors at all times.
- **Configurable CANbus** connection allows communication with other CANbus enabled devices. Model 1298 is CANopen compatible and can be further customized and configured using VCL.
- **Integrated System Controller** - More than just a motor controller, it is also powerful system controller. It features a comprehensive allocation of multi-function I/O pins for use as analog inputs, digital inputs, contactor coil drivers and proportional valve drivers. In addition to this local I/O, this controller can use VCL to map and configure the remote I/O available on other CANbus devices, send messages to CAN displays and thus control and monitor the entire system.

FEATURES

Complete system control

- High frequency, silent operation across the 0-300Hz stator frequency range.
- Variable speed half-bridge DC pump output provides superior regulation of pump motor speed and current demand.
- Fully programmable proportional valve and load-hold valve drivers.
- Programmable options for variable speed or soft-start lift and lower modes.
- Models available for 250A rms traction with 300A DC pump, or 300A rms traction with 350A DC pump. These are true 2 minute ratings, not short duration 'boost' ratings

MODEL 1298

FEATURES *continued*

- Powerful operating system allows parallel processing of vehicle control tasks, motor control tasks and user configurable programmable logic.
- Advanced Pulse Width Modulation techniques produce low motor harmonics, low torque ripple and minimized heating losses, resulting in high efficiency.

Unmatched Flexibility

- Field upgradeable software.
- Integrated Battery state-of-charge algorithm and hour meter.
- Multi-Mode™ provides user-selectable vehicle operating profiles.
- Fully-featured generic software and VCL for typical Warehouse Truck applications is included.
- Comprehensive programming options and VCL allow other applications to be easily supported.
- Curtis hand-held or PC Windows programming tools provide easy programming and powerful system diagnostic tools.
- Integrated status LED provides instant diagnostic indication.

Robust Safety and Reliability

- Insulated Metal Substrate power base provides superior heat transfer for increased reliability.
- Fail-Safe power component design.
- Redundant hardware watchdog timers.
- Reverse polarity protection on battery connections.
- Short circuit protection on all output drivers.
- Thermal cutback, warning, and automatic shutdown provide protection to motor and controller.
- Rugged sealed housing and connectors meet IP65 environmental sealing standards for use in harsh environments.

Meets or complies with relevant US and International Regulations

EMC: Designed to the requirements of EN12895

Safety: Designed to the requirements of EN1175

IP65 Rated per IEC 529

UL recognized

Regulatory compliance of the complete vehicle system with the controller installed is the responsibility of the vehicle OEM.

MODEL CHART

| Model | Battery Voltage (V) | 2 Min RMS Current Rating (A) | 2 Min RMS Traction Power Rating (kVA) | 2 Min Pump Current Rating (A DC) |
|-----------|---------------------|------------------------------|---------------------------------------|----------------------------------|
| 1298-22XX | 24 | 250 | 7.2 | 300 |
| 1298-23XX | 24 | 300 | 8.6 | 350 |

SYSTEM ACCESSORIES



The Curtis Model 840 LCD Multifunction display contains 8 large, easy to read characters to provide display of battery discharge (BDI), hour meter and error messages. Built-in backlight is also available.



The Curtis model 1352 CANbus I/O expansion module features 9 I/O pins, including 6 proportional valve drivers. This module can be used to further expand the I/O capability of Curtis AC motor controllers using VCL.

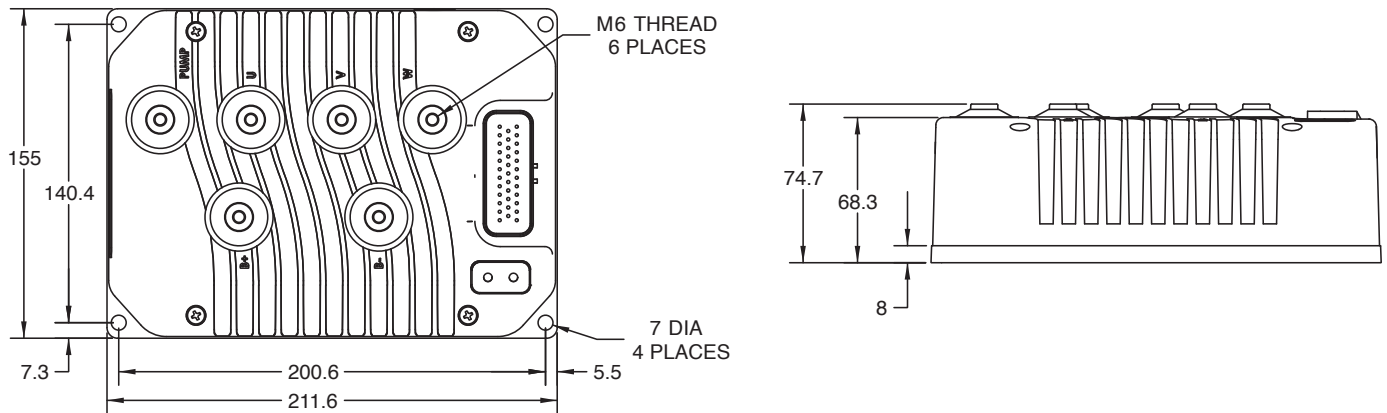


The Curtis Model 1313 Handheld Programmer is ideal for setting parameters and performing diagnostic functions.

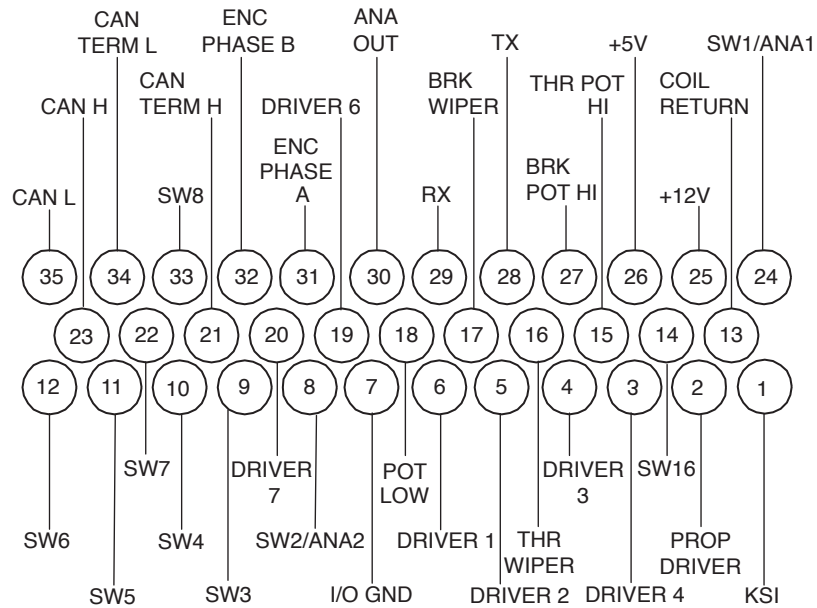
Contact Curtis to obtain the VCL Vehicle Control Language compiler and development tools.

MODEL 1298

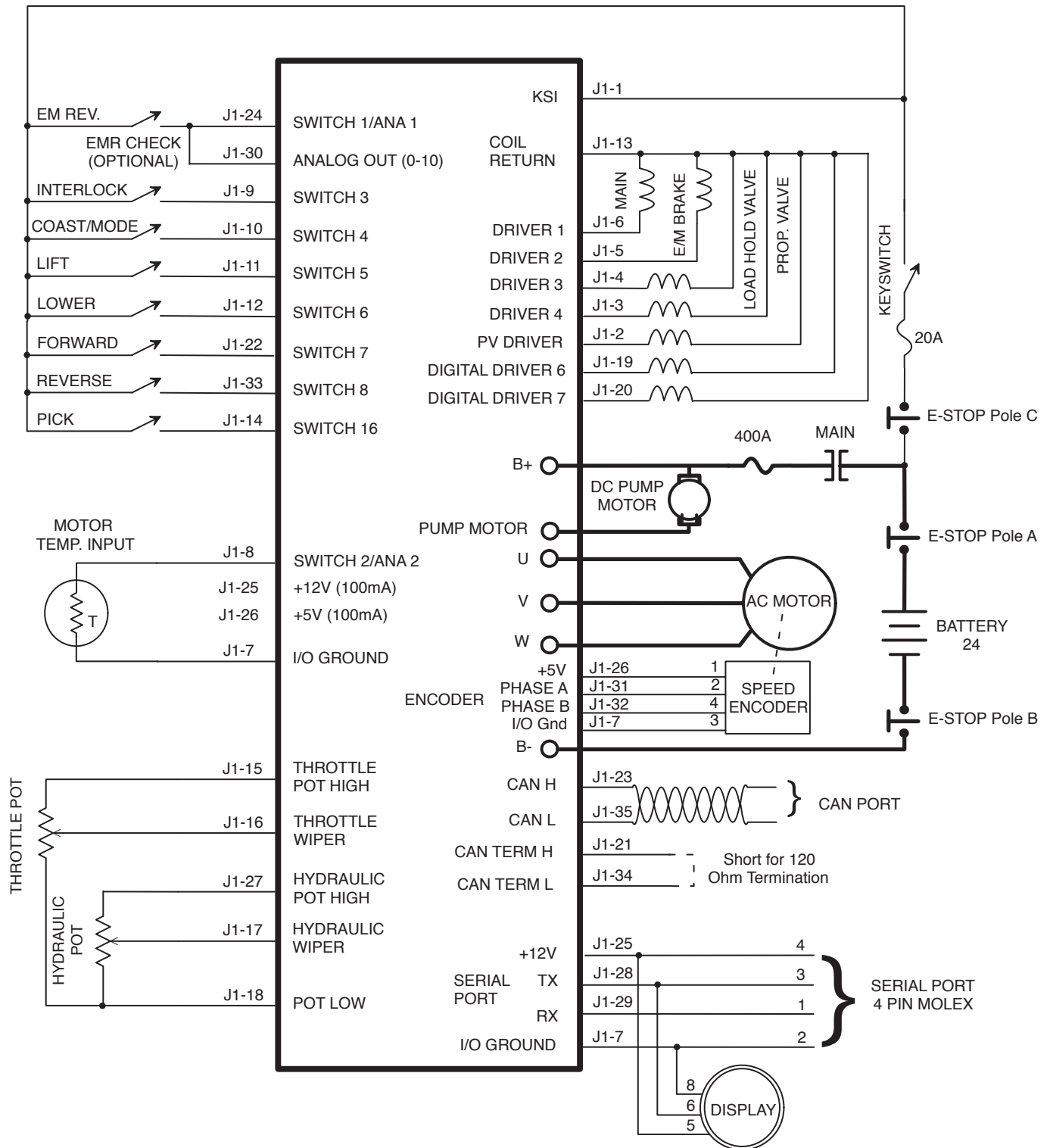
DIMENSIONS mm



CONNECTOR WIRING



TYPICAL WIRING DIAGRAM



WARRANTY Two year limited warranty from time of delivery.