



## SPECIFICATION SHEET

### Therma-Start (On-Road 12V) TS-12xxx...

**Type:** Engine Start/Stop Idle Management Controller

**Enclosure Type:** The Enclosure body shall be Formed 12 GA Mild Steel.

**Enclosure Lid Type:** The Enclosure Lid shall be Formed 12 GA Mild Steel with Weather Tight Seal and Latch

**Dimensions:** The physical dimensions of the Controller shall be 8" W x 4" D x 10" H

**Power:** The input voltage shall be 11 - 14VDC, the nominal voltage shall be 12VDC.

**Wiring Harness:** The Wiring Harness shall connect to the enclosure by means of a multi-pin screw-on connector

**Terminations:** The Wiring Harness shall connect to sensors and components using Deutsch connectors

**Thermal Sensors:** The Temperature Sensors shall be Thermocouple ring terminals encased in stainless steel flex.

**Warning Alarm:** Alarm shall not exceed 100 dB

**Operating Temperature:** The Ambient Operating Temperature shall be from -40C to 50C (122F).

**Installation:** The installation of the Controller and associated Components shall be performed in accordance with Owners Manual provided.

**Equipment Owner Controls:** User Interface shall display scrollable operating and standby parameters. Factory Settings shall be password protected and shall be field editable by a factory certified technician.

**Data Logging:** System shall continuously log parameters once every minute plus log every state change.

Log files shall be saved to an SD card retrievable for downloading by the Equipment Owner

**Warranty:** The warranty on the ThermaStart Controller shall be for 2 full years from Date of Purchase.

## Features and Performance

Downloadable data logging records on/off runtime cycles, ambient temperatures, block temperatures, battery voltage, etc.

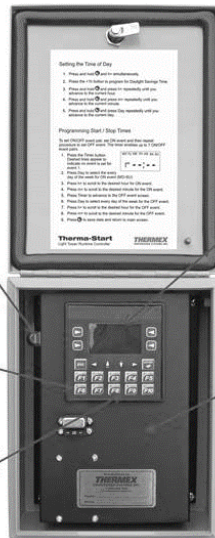
Automatic summer/winter changeover regulated by ambient temperature selection.

User selectable start activation by choice of ambient temperature, programmable timer or both.

Illuminated screen with user selectable options including scheduled start/stops if desired

Optional telematics module transmits data via choice of Satellite, Cell, WiFi or Mine Radio Network

Pressure-wash duty enclosure facilitates wide range of installation locations

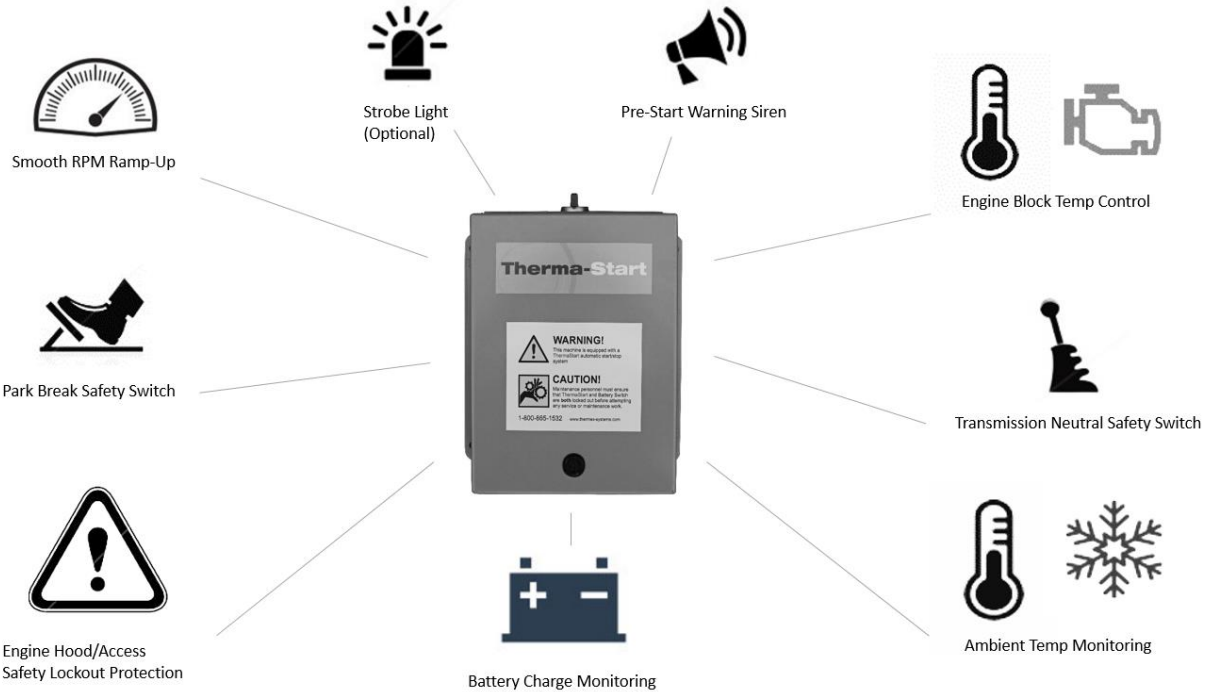


#### CANADA

2234 Carpenter Street  
Abbotsford BC V2T 6B4

#### USA

726 Cherry Street  
Sumas WA 98295



## FEATURES

<b>Ambient Temperature Control</b>	Engine block temperature response is not enabled until ambient temperature drops below freezing, provides automatic summer/winter switchover (settings adjustable)
<b>Engine Block Temperature Control</b>	Engine is started when block temperature drops to 15C and then shut off again when block reaches 60C (adjustable)
<b>Battery Charge Monitoring</b>	Engine is started when voltage drops below 10.5 Volts and shuts off again when voltage reaches 14.0 Volts (adjustable)
<b>Safety Lockout Protection</b>	Daisy chain safety loop on Engine hood and access panels immediately disables ThermaStart if any access is attempted by maintenance personnel
<b>Park Break Safety Switch</b>	Air pressure sensor verifies Park Break engagement while under ThermaStart control
<b>Transmission Neutral Switch</b>	Neutral sensor switch verifies transmission remains in neutral position while under ThermaStart control
<b>Fast Idle Activation</b>	Starts at low idle then ramps up to fast idle after 30 seconds
<b>Pre-Start Warning Siren</b>	Activates 15 seconds prior to initiating startup (adjustable)
<b>Data Logging</b>	System continuously logs key parameters once every minute to an SD card retrievable for PC downloading to clearly identify operational cost savings and data history

## PERFORMANCE DATA

The following test results were compiled over 3 seasons from multiple Start-Stop equipped Kenworth Class 8 Trucks operating throughout Western North America. During each 10 hour shift with average -23C temperatures the cumulative idle-time averaged 3.1 hours....pretty impressive!

- ✓ **Reduced idle time by 70% - from 10 hours down to 3.1 hours per shift**
- ✓ **Reduced fuel consumption by 70% - from 38 liters down to 11.4 liters per shift**
- ✓ **Reduced carbon emissions by 70% per shift**

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