

# ThermaStart

## IDLE MANAGEMENT SYSTEM

*No more idling & boosting*  
Slash your costs

Save on fuel and maintenance, while protecting your fleet. ThermaStart significantly reduces idle times, even in the harshest weather, ensuring your fleet stays efficient and safe.

**Stops your hour meter**

**Fast ROI in DAYS**

**Extends asset and engine life**

↓ **Maintenance costs/hour**

↓ **Fuel + emissions**



### Extreme Weather Resistance

Always maintain optimal fleet readiness. Extreme cold or heat? ThermaStart has got you covered.

### Automated Protection

The moment conditions drop below set limits:

1. An alarm notifies the operator.
2. The truck auto-starts to recalibrate.
3. After conditions stabilize, returns to standby mode.

### Less Fuel Burn

By eliminating unnecessary idling, you not only save on fuel but also reduce maintenance costs and extend the longevity of your fleet.

That's progress towards your net-zero targets and a testament to your commitment to sustainable mining.

Slash your operating costs, decrease your carbon footprint, and step into the future of efficient fleet management.

### Applications



Trucks

Loaders

Excavators

Dozers

*Adaptable to a range of vehicles and equipment.*

**No more frozen engines.**  
**Eliminates ALL unnecessary idle hours.**



## BENEFITS & FEATURES



### Key Benefits & Features

- Easy to install and simple in design.
- No field validation required; proven reliable in mining fleets.
- Mimics an operator switching the ignition, avoiding interference with OEM ECM configurations.

We have even performed several installations with the OEMs on their equipment to their satisfaction.

### Optimal Engine Temperature

- Eliminates cold-starts, maintaining engine temperature at 25°C
- Reduces wear and strain on components
- Protects turbos in hot weather with adequate cooldown time

### Operator Comfort and Auxiliary Systems

- Runs auxiliary components (heaters, air conditioners, telemetry systems) during off-engine cycle
- Enhances operator comfort and cold-weather battery performance

**ThermaStart eliminates all unnecessary idle hours, increasing asset life and protecting against extreme weather conditions that cause unplanned maintenance or severe component wear and failure.**



### Field Issue Protection

- Integrates level and pressure sensors to prevent running low on fuel, DEF, or hydraulic fluid
- Protects against battery drain year-round, enabling use of off-engine accessories like air conditioning without compromising starting reliability

### Connectivity and Data Collection

- Offers WiFi and SIM card connectivity for raw data collection
- Tracks tendencies, alerts anomalies, and suggests parameter changes for increased gains

### Safety Features

- **Machine Lockout:** Activated with the Operator Switch ON, preventing transmission engagement even if moved from the park position.
- **Adaptability:** Equipped with various safety options and features for different machine makes and models.
- **Additional Safety Devices:** Hood, level, and pressure switches can be added.
- **Environmental & Operational Safety:** Reduced interventions in extreme weather lowers risk.





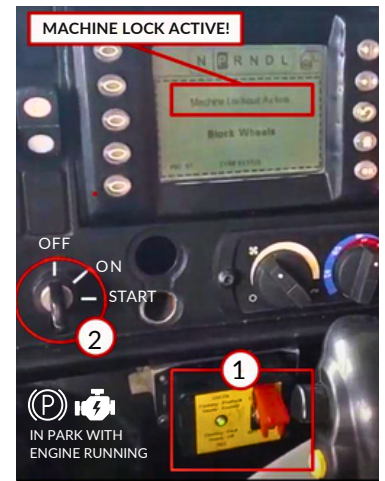
## BENEFITS & FEATURES

### How ThermaStart Works

#### 1 Enabling

1. Turn Operator Switch ON. Wait for orange flash and siren chirp (5-10 seconds). Confirm Machine Lock on display.
2. Turn Ignition Key OFF. Engine will run for 60 seconds in Cooldown Mode. Wait until engine shuts down to exit the vehicle.

With the vehicle safely parked and the engine running, the operator enables the ThermaStart which initiates the Cooldown cycle typically set to 60 seconds. After cooldown cycle the engine will shut-off and enter Standby Mode. The operator may now egress from the equipment.



#### 2 Start Cycle - Alarm (20 Seconds)

1. Timed siren and strobe activate.
2. Alarm sounds if conditions drop below limits.
3. ThermaStart starts the engine.
4. Strobe flashes continuously while enabled.



#### 3 Run Cycle (+/- 6 Minutes)

1. Warm-up Mode (idle): 60 seconds
2. Fast Idle Mode: 4 minutes
3. Fast idle module ramps engine speed.
4. Fseries Cat trucks use Cold-Mode for quick warm-up.
5. Cool Down Mode (idle): 60 seconds



**COMPLETE engine idle control and management system.**

#### 4 Standby Mode

- Minimum-off timer engages for up to 20 minutes.
- Monitors Block Temperature, Battery Voltage, and Air Pressure (if equipped).
- Vehicle remains in standby until conditions warrant a start.





**FEATURES & SPECS**

**A retrofit start-stop system that easily installs on any diesel equipment.**

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.

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**Safety Lockout Protection** Daisy chain safety loop on key access doors and panels immediately disables ThermaStart if any access is attempted by maintenance personnel

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**Ambient Temperature Control** Engine block temperature response is not enabled until ambient temperature drops below freezing, provides automatic summer/winter switchover

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**Engine Block Temperature Control** Engine is started when block temperature drops to 15°C and then shut off again when block reaches 70°C

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**Battery Charge Monitoring** Engine is started when voltage drops below 23.5 Volts and shuts off again when voltage reaches 27.0 Volts (adjustable)

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**Pre-Lube Pump Timer** For machines with a pre-lube oil pump the system will facilitate up to 1.5 minutes (adjustable) for oil pressure to reach OEM start activation

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**Air Start Pressure Monitor** On air start trucks engine will start when reservoir pressure drops to 100 PSI and shuts off again when pressure reaches 120 PSI (adjustable)

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**Fast Idle Activation** Starts at low idle then ramps up to fast idle after 30 seconds

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**Pre-Start Warning Siren** Activates 40 seconds prior to initiating startup (adjustable)

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**Strobe Monitor** White strobe indicates engine is running under ThermaStart control

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**Data Logging** System continuously logs key parameters once every minute to an SD card retrievable for PC downloading to identify operational cost savings





**SPECIFICATIONS**

**ThermaStart Specs (Off-Highway 24V)**

TS-24xxx	
Type	Engine Start/Stop Idle Management Controller
Enclosure	Formed 12 GA Mild Steel body and lid with Weather Tight Seal and Latch
Dimensions	8" W x 4" D x 10" H
Power	Input 24VDC, Output 24/12VDC
Wiring Harness	Multi-pin screw-on connector, Deutsch connectors for terminations
Thermal Sensors	Thermocouple ring terminals in stainless steel flex
Strobe Monitor	Weatherproof high-intensity LED
Warning Siren	Weatherproof, not to exceed 100 dB
Operating Temperature	-40°C to 50°C (-40°F to 122°F)
Installation	Per owner's manual
Controls	Scrollable interface for operating and standby parameters, password protected factory settings, field editable by factory certified technician
Data Logging	Logs parameters every minute and every state change, stored on SD card
Warranty	1 year from Date of Purchase

**Kit Components**



TS CONTROL UNIT



QUICK DISCONNECT HARNESS



SAFETY DOOR SWITCH



THROTTLE POSITION SENSOR



AIR PRESSURE SENSOR



COMBO STROBE AND SIREN



BLOCK / AMBIENT SENSORS



INSTALLATION WIRING HARNESS

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**EPURA Self-Cleaning Filters**

The last air filters you'll ever need.



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Up to 5% fuel efficiency.

*More fuel savings  
Cut more emissions*



**SkelStart Engine Start Module**

Never boost a dead battery again.



**DFM - Precision Fuel Flow Meters**

Unlock efficiency and savings.

