

Therm Dynamics - Control Panel Operation

Display Layout



1. Encoder Knob
2. Home Button
3. Escape Button
4. Next Screen
5. Parameter Selection Buttons
6. Not Used

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Display

Start up screen:

Screen will show when power is applied to the display for approx. 10 sec.



Loading screen:

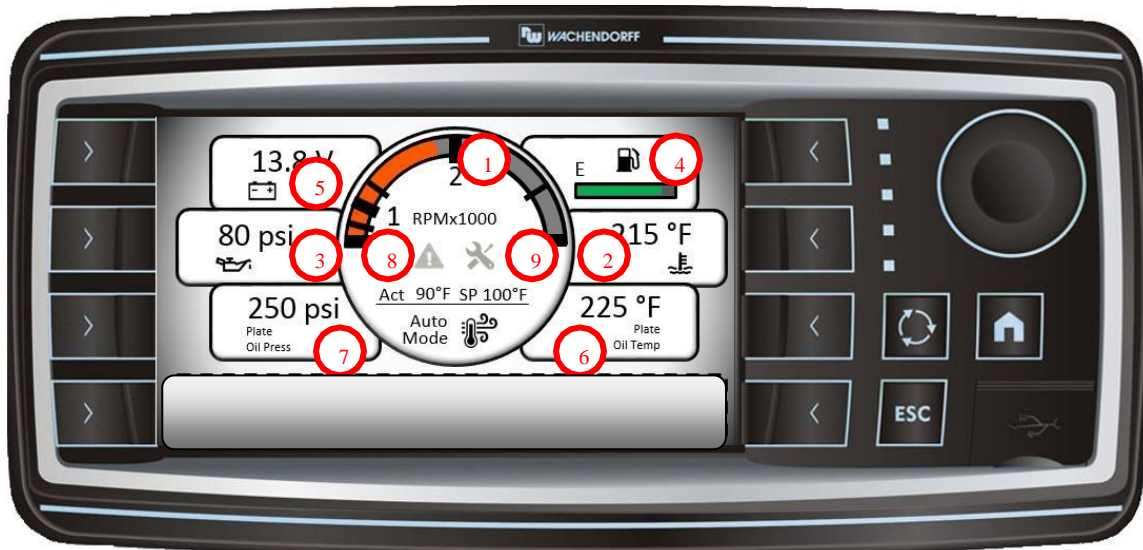
Screen will show right after Start up screen for approx. 10 sec.



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Home screen:

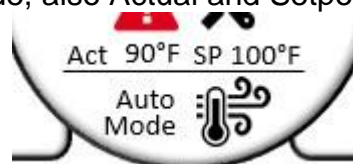
Home Screen will show right after the loading screen.



Display Legend

The following parameters will be displayed on the Home Screen:

1. Engine RPM
2. Engine Coolant Temperature
3. Engine Oil Pressure
4. Fuel Level (Red in color if below 20%)
5. Voltmeter
6. Plate Oil Temperature
7. Plate Oil Pressure
8. Fault Icon
9. Service Icon
10. Air Temperature - Mode, also Actual and Setpoint if in Auto Mode



(Auto Mode shown)

ACT= Probe temperature

SP= Set point temperature

If the Air Temperature is in Manual Mode, the encoder knob will be tied to the Engine RPM Setpoint.

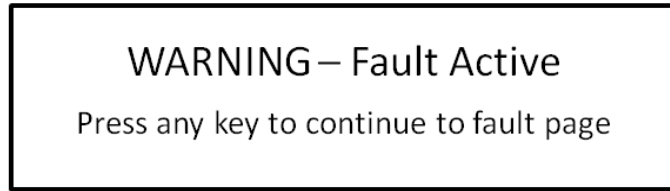
If the Air Temperature is in Auto Mode, encoder knob will be tied to the Air Temperature Setpoint for immediate adjustment. The Air Temperature Setpoint will be blue in color.

11. Warm Up Icon

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Fault Active:

The Fault Window will pop up on any screen except the Fault Screen if any faults become active:

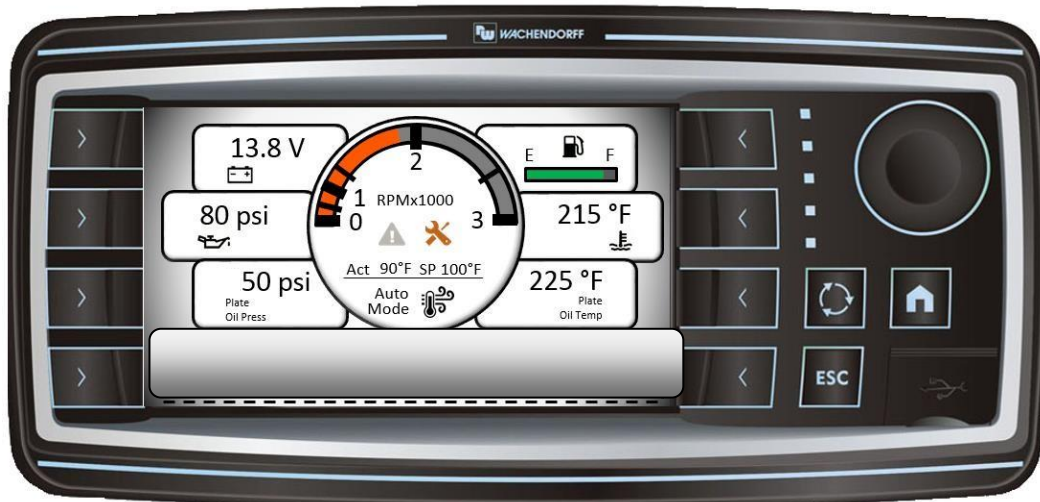


When a Fault is active, the Fault Icon will flash On and Off from gray to red.



Service Reminder:

When a Service Reminder is active, the Service Icon will flash On and Off from gray to orange.



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Navigation:

A Left Pop Up Menu will show if one of the left buttons (#5 on Display Legend) is pressed. A Right Pop Up Menu will show if one of the right buttons (#5 on Display Legend) is pressed. The Pop Up Menu will disappear after 3 seconds if no selection is made.

Home

- When the Home button is pressed, the display will go to the Home screen.

Control

- When the Control button is pressed, the display will go to the Control screen.

Faults

- When the Faults button is pressed, the display will go to the Active Faults screen.

Service

- When the Service button is pressed, the display will go to the Service screen.



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Control screen:

The Control screen will show when the Control button is pressed from the Pop Up Menu.



The following parameters will be displayed on the Control Screen:

- **Note: Indicated set point must be highlighted and encoder knob used to adjust set point**

Engine RPM adjustment: (Air Temp; Must be in manual mode to adjust).

****Heater will startup in the Default “manual” mode)**

- Highlight RPM button on left side of the control panel
- Use encoder knob to select desired RPM
- Press Escape button to return to Home screen Engine Ramp Rate
 - One click of the Encoder Knob, Clockwise or Counter Clockwise equals 50 Engine RPMs
- Low Idle
 - 1500 RPM
- High Idle
 - 2500 RPM

Air Temperature: (Plate Oil Temp; Louver control)

Auto/Manual Button

- Toggles the Air Temperature Control between Auto Mode and Manual Mode.
- **Setting the louver manually.**
 - Select the manual mode by pressing the top right parameter button.
 - Press the % open button(second parameter button on right side) and use encoder knob to adjust the louvers to desired open setting.

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- Press Escape button to return to Home screen

Setting the louvers up in Auto Mode

- Select the Auto mode by pressing the top right parameter button.
- Press the Plate Oil Temp set point parameter button (second parameter button on right side) and use encoder knob to adjust the louvers to open at desired temperature.
- Press Escape button to return to Home screen

Active Fault Screen:

The Active Fault screen will show when the Fault button is pressed from the Pop Up Menu.



The Active Fault screen will display a table indicating the J1939 DM1 message fault codes. The fault codes will be displayed as numerical values unless otherwise specified in the Appendix A: Fault Code Table.

- The ECU (electronic control unit) column indicates which controller the fault is coming from.
- Engine – refers to Cat 3.4B codes
- ECM – refers to Heater control codes
- The SPN (suspect parameter number) column indicates what function has a fault.
- The OC (occurrence count) column indicates how many times the fault has occurred.
- The FMI (fault mode indicator) column indicates the reason for the fault.

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If a fault occurs, it will latch on until it is reset by the operator.

- Exception: Air Temp Sensor: Open Circuit

Fault Reset Button

- The Fault Reset button will reset all active faults.

Service Screen:

The Service screen will show when the Service button is pressed from the Pop Up Menu.



The Service screen will be used to reset the machine service reminders.

Engine Oil Life

- Engine Oil Life will be a percent based on 250 hours.
- By pressing the reset button, the engine oil life will reset to 100%.

Plate Oil Life

- Plate Oil Life will be a percent based on 1000 hours.
- By pressing the reset button, the plate oil life will reset to 100%.

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A Pop up page will ask the user to confirm they want to reset.

- When the Plate Oil Temperature is less than 30 deg F, the Plate Oil Pressure is greater than 5 psi and the Engine Coolant Temperature is greater than 100 deg F for 5 minutes the Plate Oil Temp Sensor: Open Circuit fault will become active.
- When the Plate Oil Temperature Control is in Auto Mode and there is no Plate Oil Temperature input sensor detected the Damper output will be commanded to 0 percent and a fault will be listed in the fault table.

Engine RPM:

Engine Ramp Rate

- 300 RPM per second

Low Idle

- 1500 RPM

High Idle

- 2500 RPM

Shutdown Conditions:

Low Fuel

- If the fuel level is less than 10 percent, the ECU-0809R will send a CANbus message to the Engine to shutdown and a fault will be listed in the fault table.

High Plate Oil Temperature

- If the Plate Oil Temperature is greater than the High Plate Oil Temperature Shutdown setting (250°) or if there is a Plate Oil Temperature sensor fault, the ECU-0809R will send a CANbus message to the Engine to shutdown and a fault will be listed in the fault table.

Low Plate Oil Pressure

- If the Plate Oil Pressure is less than 5 psi for 30 seconds and the Engine RPM is greater than 100 RPM or if there is a Plate Oil Pressure sensor fault, the ECU-0809R will send a CANbus message to the Engine to shutdown and a fault will be listed in the fault table.

Engine Aftertreatment: (see supplemental aftertreatment guide)

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Customer Setup Screen:

The Customer Setup screen will show when the correct password is entered from the Login screen.



°F or °C Units

- When the button is pressed the setting will cycle between °F and °C. Default = °F
- When °C selected, all temperatures will be displayed in degrees of Celsius.

Throttle Temperature Interlock

- When the button is pressed the setting will cycle between Disabled and Enabled. Default = Disabled
- Throttle Temperature Interlock
 - When the Throttle Temperature Interlock is Active, the Engine RPM will not be able to increase until the Engine Coolant Temperature reaches 120°F or 5 minutes of engine running has passed.
 - Once the interlock has been released, it will not become active again until the engine has stopped running.
 - If the throttle is currently interlocked, an icon will show on the Home screen next to the Engine Coolant Temperature.

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Login Screen:

The Login screen will show when the Login button is pressed from the Pop Up Menu.



The Login screen will be used to access the Stored Fault screen and the OEM Setup screen.

Login:

- Stored Faults Password:
 - Hard password: 377368
 - Soft password: Password System Faults (Impulse software, Values 0 and 9 cannot be used)
- Setup Password:
 - Hard password: 163283
 - Soft password: Password OEM (Impulse software, Values 0 and 9 cannot be used)
- Customer Setup Password:
 - Hard password: 764235
- If the password is entered correctly the display will jump to the desired screen.
- If the password is entered incorrectly the Login page will reset.

Logout:

- If the Home or ESC buttons are pressed.
- Power cycle.
- 5 minute timer.