Honeywell Home
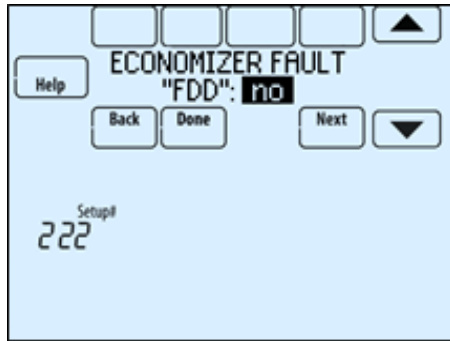
TH8321R or TH8321WF with Economizer Fault

TH8321R

- Field update file (for microSD card) currently available on the web portal.
- This feature added starting date code 1740.

TH8321WF

- This feature added starting date code 1736.
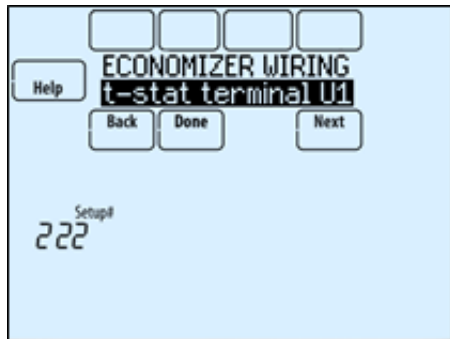- Field update automatic when connected to Wi-Fi and TCC account.
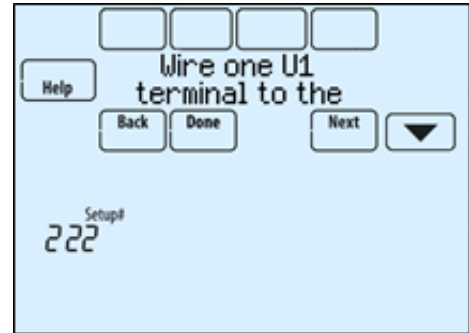
NEW ISU SCREENS

1.

NOTE: This ISU setting is the only new setting that is adjustable. If set to "yes" the other screens will appear in the ISU flow but they are informative only and not adjustable.
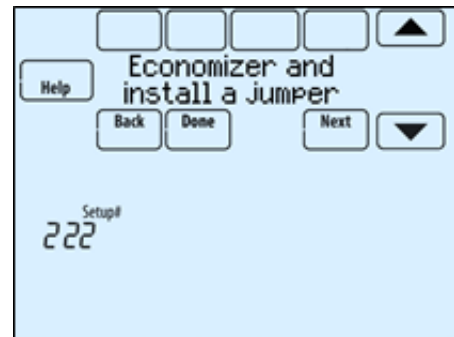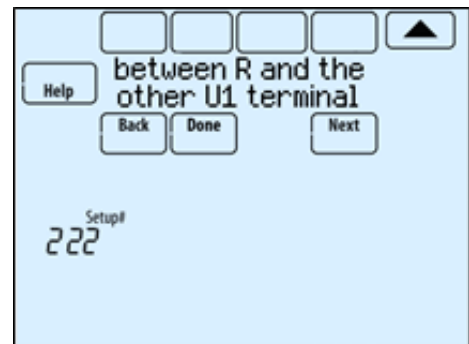
2.

3.

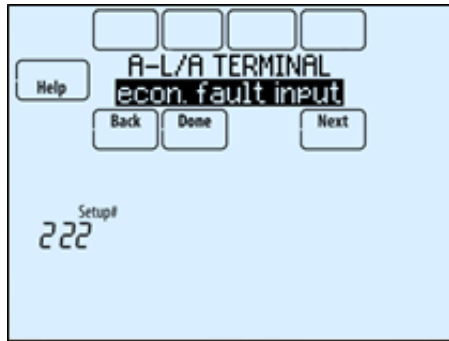NOTE: The "Help" button or down arrow shows more text. See next 2 screens.

4.

5.

33-00326-03

6.

NOTE: The product data sheets will also show the wiring diagram for this. See "Wiring Diagrams" on page 7.

TH8321R WITH ECONOMIZER FAULT

NOTE: Only applicable to TH8321R without EIM.

ISU Number	Installer Setup Name	Settings	Default	Commercial or Both	Requires EIM	Notes
222	Economizer fault "FDD"	No Yes	No	Commercial	TH8321R with no EIM only	If using a TH8321R without EIM and your code requires that the thermostat display an alert when the economizer is sending a fault code, select "Yes". When this is done, the economizer will need to be wired as shown in "Economizer control with economizer fault alert using TH8321WF or TH8321R without EIM" on page 7. If EIM used, and economizer fault required, this option is not available. See "Economizer control with custom alert when using an EIM" on page 7.
222	Economizer Wiring	T-stat terminal U1	T-stat Terminal U1	Commercial	TH8321R with no EIM only	Only shown if "economizer fault FDD" is set to yes. This setting is to inform installer only. It is not adjustable. See "Economizer control with custom alert when using an EIM" on page 7.
222	A-L/A Terminal	None Time Of Day Heat Pump Fault Econ. Fault input	None or Econ. Fault input	Commercial	No. "Econ. Fault input" for TH8321R with no EIM only	This ISU is only displayed when ISU 101 Application is **Commercial**. **Note:** When the thermostat is setup for Residential, the L/A terminal operates as described under "Heat Pump Fault". The L/A terminal requires no setup for residential applications. **None:** The A-L/A terminal is not used. **Time of Day:** The A-L/A terminal is energized during Occupied periods and when the user overrides the temperature. The terminal is deenergized during Unoccupied periods and in Standby mode. **Economizer:** The thermostat controls an economizer module to provide ventilation during Occupied periods and free cooling when outdoor conditions are favorable. The A-L/A terminal is energized during Occupied periods and during a call for cooling in Unoccupied periods. See "Economizer Operation" and "Time of Day (TOD) Operation" on page 6. **Note:** The economizer module determines when outdoor conditions are favorable for free cooling. **Heat Pump Fault:** When 24 volts is detected on the L/A terminal (compressor monitor), the thermostat displays a message to alert the user when the heat pump requires service. The L/A terminal sends a continuous output to a zone panel when the thermostat is set to Emergency Heat mode. The zone panel will not turn on the heat pump when a zone is set to Emergency Heat mode. **Econ. Fault input:** Only shown if "Economizer fault FDD" is set to "yes". Not adjustable.
222	A-L/A Terminal	Economizer Fault		Commercial	"Econ. Fault input" for TH8321R with no EIM only	This ISU is only shown when the "Economizer fault FDD" is set to "yes". It is set for "economizer fault" and is not adjustable. It is meant to inform the installer that the A-L/A terminal needs to be wired to the economizer as shown in "Economizer control with custom alert when using an EIM" on page 7.

TH8110R, TH8320R, OR TH8321R WITH EIM

NOTE: Custom alerts are only applicable to TH8110R, TH8320R, or TH8321R with EIM.

See "Economizer control with custom alert when using an EIM" beginning on page 7.

ISU Number	Installer Setup Name	Settings	Default	Residential, Commercial or Both	Requires EIM	Notes
222	A–L/A Terminal	None Time Of Day Economizer Heat Pump Fault	None	Commercial	No	This ISU is only displayed when ISU 101 Application is **Commercial**. **Note:** When the thermostat is setup for Residential, the L/A terminal operates as described under "Heat Pump Fault". The L/A terminal requires no setup for residential applications. **None:** The A–L/A terminal is not used. **Time of Day:** The A–L/A terminal is energized during Occupied periods and when the user overrides the temperature. The terminal is de–energized during Unoccupied periods and in Standby mode. **Economizer:** The thermostat controls an economizer module to provide ventilation during Occupied periods and free cooling when outdoor conditions are favorable. The A–L/A terminal is energized during Occupied periods and during a call for cooling in Unoccupied periods. See "Economizer Operation" and "Time of Day (TOD) Operation" on page 6.
617	Custom Alert	None S1 S2 S3 S4	None	Both	Yes	Dry Contact Alerts require an Equipment Interface Module. Select the terminals wired to the Custom Dry Contact Device.
618	Custom Alert is [See Settings]	Normally Open Normally Closed	Normally Open	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Choose an option appropriate for the type of device installed: **Normally Open:** The Dry Contact device is normally open and will close when the device detects a problem. **Normally Closed:** The Dry Contact device is normally closed and will open when the device detects a problem.
619	Custom Alert Name	View/Edit Custom Alert	View/Edit Custom Alert	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Enter a name for the custom alert dry contact. The thermostat displays this name including a brief message (entered on the next screen - ISU 620) when a dry contact device detects a problem.
620	Cust Alert Message	View/Edit Custom Alert	View/Edit Custom Alert	Both	Yes	Dry Contact Alerts require an EIM (Equipment Interface Module). Enter a message for the custom alert dry contact. The thermostat displays this message when a dry contact device detects a problem.

TH8321WF WITH ECONOMIZER FAULT

ISU Number	Installer Setup Name	Settings	Default	Commercial or Both	Notes
222	Economizer fault "FDD"	No Yes	No	Commercial	If your code requires that the thermostat display an alert when the economizer is sending a fault code, select "Yes". When this is done, the economizer will need to be wired as shown in "Economizer control with economizer fault alert using TH8321WF or TH8321R without EIM" on page 7
222	Economizer Wiring	T–stat terminal U1	T–stat Terminal U1	Commercial	Only shown if "economizer fault FDD" is set to yes. This setting is to inform installer only. It is not adjustable. See "Economizer control with economizer fault alert using TH8321WF or TH8321R without EIM" on page 7.
222	A–L/A Terminal	None Time Of Day Heat Pump Fault Econ. Fault input	None or Econ. Fault input	Commercial	This ISU is only displayed when ISU 101 Application is **Commercial**. **Note:** When the thermostat is setup for Residential, the L/A terminal operates as described under "Heat Pump Fault". The L/A terminal requires no setup for residential applications. **None:** The A-L/A terminal is not used. **Time of Day:** The A-L/A terminal is energized during Occupied periods and when the user overrides the temperature. The terminal is deenergized during Unoccupied periods and in Standby mode. **Economizer:** The thermostat controls an economizer module to provide ventilation during Occupied periods and free cooling when outdoor conditions are favorable. The A-L/A terminal is energized during Occupied periods and during a call for cooling in Unoccupied periods. See "Economizer Operation" and "Time of Day (TOD) Operation" on page 6. **Note:** The economizer module determines when outdoor conditions are favorable for free cooling. **Heat Pump Fault:** When 24 volts is detected on the L/A terminal (compressor monitor), the thermostat displays a message to alert the user when the heat pump requires service.The L/A terminal sends a continuous output to a zone panel when the thermostat is set to Emergency Heat mode. The zone panel will not turn on the heat pump when a zone is set to Emergency Heat mode. **Econ. Fault input:** Only shown if "Economizer fault FDD" is set to "yes". Not adjustable.
222	A–L/A Terminal	Economizer Fault		Commercial	This ISU is only shown when the "Economizer fault FDD" is set to "yes". It is set for "economizer fault" and is not adjustable. It is meant to inform the installer that the A-L/A terminal needs to be wired to the economizer as shown "Economizer control with economizer fault alert using TH8321WF or TH8321R without EIM" on page 7.

ECONOMIZER OPERATION

Thermostat Mode	Equipment Operation	A–L/A terminal or U1 contacts *
Occupied	Heat/Cool/Fan running	A–L/A energized or U1 contacts closed *
	Heat/Cool/Fan NOT running	
Occupied temporarily	Heat/Cool/Fan running	
	Heat/Cool/Fan NOT running	
Pre-occupancy purge	Fan running	
Unoccupied	Cooling system running	
Unoccupied temporarily	Cooling system running	
Standby	Cooling system running	
Unoccupied	Cooling system NOT running	A–L/A NOT energized or U1 contacts open *
Unoccupied temporarily		
Standby	Cooling system NOT running	A–L/A energized or U1 contacts closed *
Non-programmable	Fan running	
	Fan NOT running	A–L/A NOT energized or U1 contacts open *

* If an EIM is used, or ISU 222 (or 2220) "Economizer fault FDD" is set to "no" then the A–L/A is used for economizer control. If ISU 222 (or 2220) "Economizer fault FDD" is set to "yes" then the U1 contacts are used for economizer control.
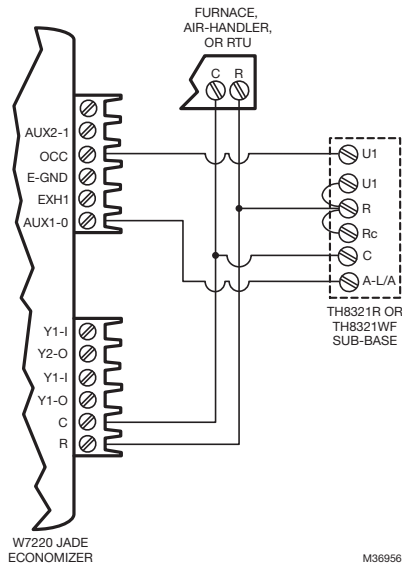
TIME OF DAY (TOD) OPERATION

Thermostat Mode	A–L/A terminal or U contacts *
Occupied	A–L/A energized or U contacts closed *
Occupied temporarily	
Temperature overrides	
Unoccupied	A–L/A NOT energized or U contacts open *
Unoccupied temporarily	
Standby	
Non-programmable	

* If an EIM is used, or ISU 222 (or 2220) "Economizer fault FDD" is set to "no" then the A–L/A is used for TOD control. If ISU 222 (or 2220) "Economizer fault FDD" is set to "yes" then the U1 contacts are used for TOD control.
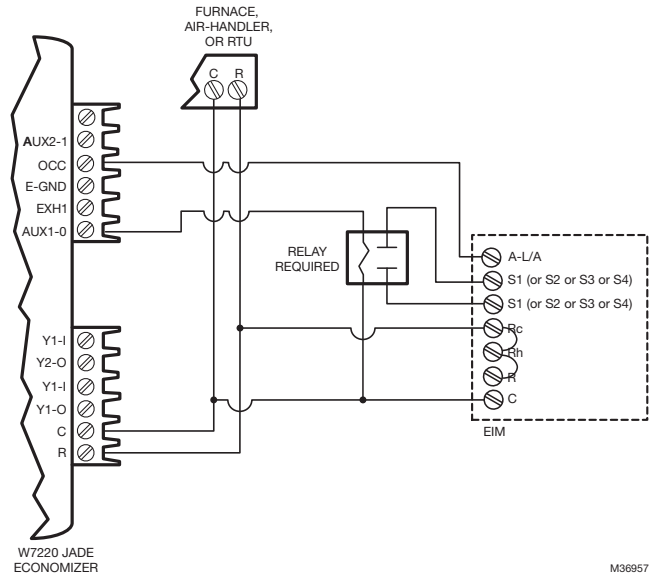
WIRING DIAGRAMS

Economizer control with economizer fault alert using TH8321WF or TH8321R without EIM

Configure the TH8321WF or TH8321R to control economizer (see ISU settings page 3 or 5). For the thermostat to economizer wiring other than the U1 and A–L/A, see the other economizer diagrams in TH8321R product data sheets. R, Rc, and U1 terminals jumpered as shown. Common required.

Economizer control with custom alert when using an EIM

Wire a relay to one of the four sets of S terminals (as shown). Configure the Prestige to control economizer and set a custom alert (see ISU settings page 4 or 6). For the EIM to economizer wiring other than the A-L/A and S contacts, see the other economizer diagrams in TH8321R or THX9421R product data sheets.

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