



# R8845U Universal Switching Relay

## INSTALLATION INSTRUCTIONS

### APPLICATION

The R8845U Universal Switching Relay provides intermediate switching of line- and low-voltage devices from a line- or low-voltage controller. The R8845U may be used to replace several Resideo or competitive switching relays and is typically applied in hydronic heating systems.

### SPECIFICATIONS

#### Electrical Ratings:

Voltage: 120 Vac, 60 Hz.

Thermostat Heat Anticipator Setting: 0.12A.

#### Transformer Ratings

Primary: 120V, 60 Hz.

Secondary: 24 Vac, 12 VA maximum; 9 VA available for external loads. Output protected by replaceable 1A automotive fuse.

#### Contact Ratings:

7.4 AFL, 44.4 ALR on each set of line voltage contacts; maximum connected load is 2000 VA.

#### Switching Action:

2 Spst, plus Powerpile® rated low-voltage Spst. If normally closed contacts are needed, use RA889A Switching Relay.

#### Electrical Connections:

No. 8 captivated wire clamp screw terminals.

#### Dimensions:

See Fig. 1.

#### Cross Reference:

The R8845U replaces Resideo models R182A,B,C,J; R482A,B,C,J; R845A, R882A,B,C,J and RA832A, as well as several competitive models. See Table 1 for additional cross reference information.

#### Replacement Parts:

32002190-001 Replacement Relay.

Replacement Fuse: Use a 1A automotive fuse.

Table 1. R8845U Replacement Cross Reference.

Manufacturer	Model	Connections											Comments
		Input Line Voltage		Power Relay 1		Power Relay 2		Low Voltage Relay		Thermostat			
Resideo	R8845U	L1	L2	COM	N.O.	A	B	X1	X2	W(T)	R(T)	C	--
Resideo	R845A	1	2	3	4	5	6	-	-	T	T	-	--
Resideo	RA832A	1	2	-	3	-	4	X	X	T	T	-	Jumper L1 to COM and A in R8845U.
Resideo	R182A	1	2	7	8	-	-	-	-	See Fig. 8 thermostat connections.			R8845U has lower output load rating. Check load requirements. Use RA889A if normally closed contacts are required
Resideo	R182B	1	3	6	8	-	-	-	-				
Resideo	R182C	1	2	6	8	3	5	-	-				
Resideo	R182J	L1	L2	-	4	-	7	-	-	Jumper R(T) to W(T).			If used to replace an R182J, install a jumper between L1, COM and A.
Resideo	R482A	1	2	7	8	-	-	-	-				Line voltage switched inputs go to L1 and L2. See Fig. 9B.



Table 1. R8845U Replacement Cross Reference.

Manufacturer	Model	Connections										Comments	
		Input Line Voltage		Power Relay 1		Power Relay 2		Low Voltage Relay		Thermostat			
Resideo	R482B	1	2	6	8	-	-	-	-	Jumper R(T) to W(T) (continued).		Use RA889A if normally closed contacts are required. Line voltage switched inputs go to L1 and L2. See Fig. 9B.	
Resideo	R482C	1	2	6	8	3	5	-	-				
Resideo	R482J	1	2	6	8	3	4	-	-				
Resideo	R882A	-	-	7	8	-	-	-	-	W	-	B	R8845U has lower output load rating. Check load requirements.
Resideo	R882B	-	-	6	8	-	-	-	-	W	-	B	Use RA889A if normally closed contacts are required
Resideo	R882C	-	-	6	8	3	5	-	-	W	-	B	
Resideo	R882J	-	-	6	8	3	4	-	-	1	-	2	
Argo	AR821	1	2	3	4	5	6	-	-	T	T	-	R8845U has lower output load rating. Check load requirements.
Argo	AR822	L1	L2	3	4 N.O.	5	6 N.O.	-	-	G(T)	R(T)	C	Use RA889A if normally closed contacts are required.
Erie	SR100AT	L1	N	3	4 N.O.	5	6 N.O.	-	-	G(T)	R(T)	C	
White-Rodgers	829-189	1	2	3	4	-	-	-	-	B	R	W	R8845U has lower output load rating. Check load requirements.
White-Rodgers	829-832	1	2	-	4	-	3	X1	X2	T	T	-	
Taco	SR501	H	N	3	4 N.O.	5	6 N.O.	-	-	W(T)	R(T)	C	Use RA889A if normally closed contacts are required.

## INSTALLATION

### When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.
5. Follow local codes for installation and application.

## ⚠ WARNING

### Electrocution Hazard.

Power supply can cause severe injury, or death. Transformer core not bonded. Disconnect power supply before wiring.

## MOUNTING

In replacement applications, mount the new relay in the same location as the old relay. For new installations, locate the relay vertically on a solid wall or partition as close as possible to the device to be controlled. Select a location that is easily accessible for installation and service.

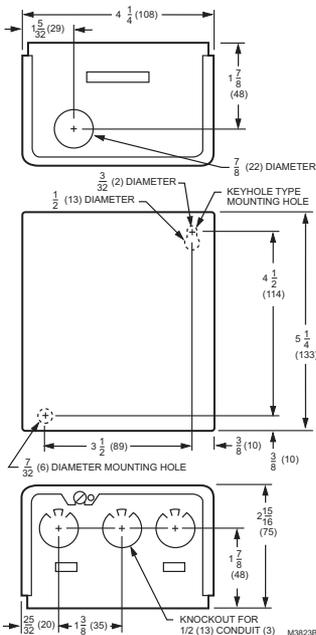


Fig. 1. R8845U dimensions in in. (mm).

**NOTE:** To reduce the possible transformer hum and relay noise that is sometimes amplified by mounting surfaces such as sheet metal, plasterboard, and similar materials, place rubber or felt washers between the case and the mounting surface.

1. Position the relay and mark the mounting holes. See Fig. 1.
2. Start a screw in the upper right corner for the key-hole type mounting hole. Screw it down within about 1/8 in. (3 mm) of the surface.
3. Hang the relay on the screw, position the case, and start the bottom screw.
4. Tighten both screws.

## WIRING



### CAUTION

**Electrical Shock or Personal Injury Hazard. Power supply can shock.**

Use only NEC Class 1 wire for all line voltage wiring connections. Class 1 wires must be rated for at least 167°F (75°C).

All wiring must comply with all applicable electrical codes, ordinances, and regulations. Follow all instructions furnished with the controlled equipment.

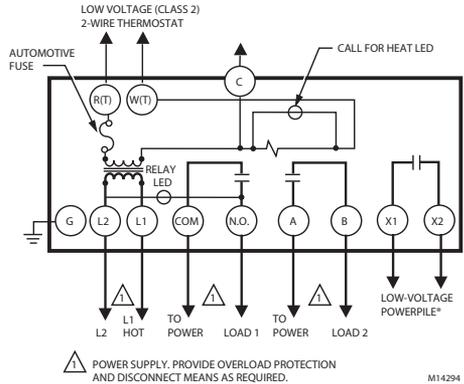
### IMPORTANT

*The switching relay terminals are approved only for use with copper wires.*

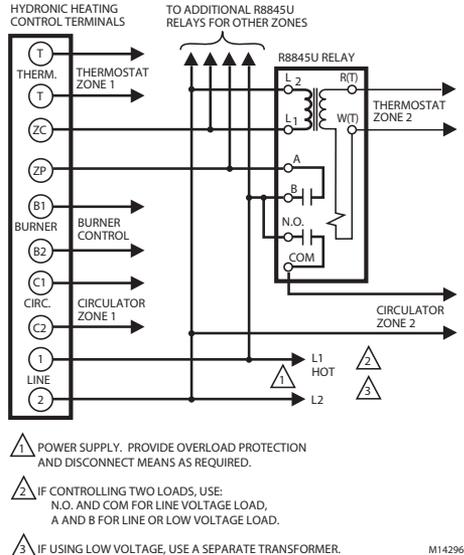
When two or more line-voltage load devices are to be controlled in parallel, the total current must not exceed the rating for the relay load outputs. Never connect load terminals to a load that uses more current than the amount listed in the electrical ratings on the relay. See Table 2 for maximum low-voltage wiring length specifications. See the schematic and typical hookups in Fig. 2 through 9.

**Table 2. Low-Voltage Maximum Wire Lengths.**

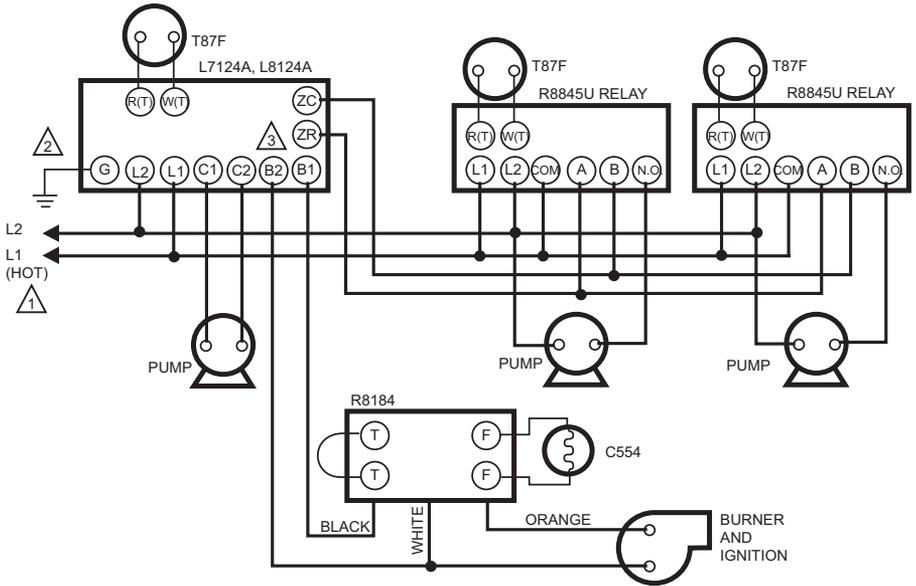
Wire Size (AWG)	Total Wire Length		Wire Length of Run to Thermostat	
	Ft	M	Ft	M
22	120	38.0	60	18.0
20	200	61.0	100	30.5
18	300	91.5	150	45.5
16	500	152.5	250	76.0
14	800	244.0	400	122.0



**Fig. 2. R8845U Internal schematic and typical hookup.**



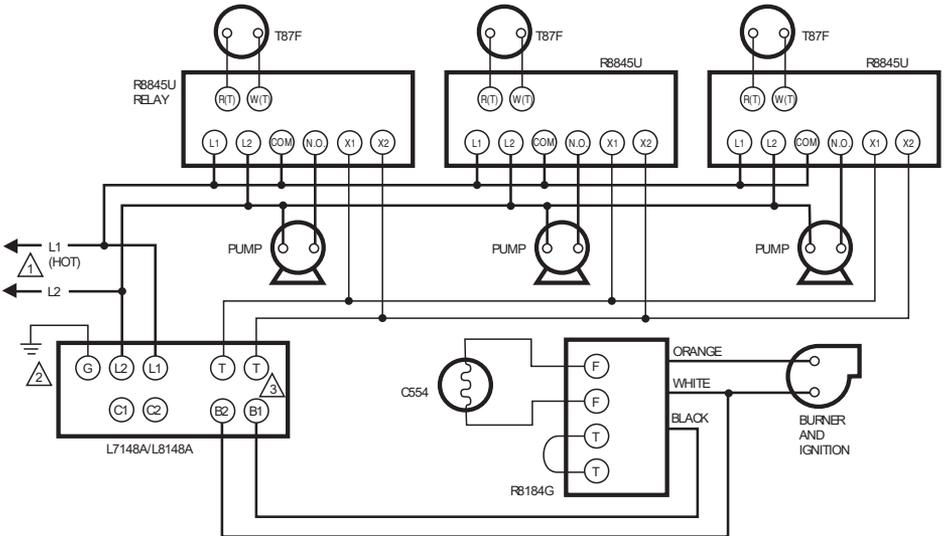
**Fig. 3. R8845U schematic diagram for multizone, hydronic heating system (applies for any number of additional zones).**



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 3 B1 IS 1/4 IN. TAB TERMINAL.

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**Fig. 4. R8845U hookup for L7124A/L8124A in an oil-fired, tankless hot water, zoned, pump system.**



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 3 B1 IS 1/4 IN. TAB TERMINAL.

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**Fig. 5. R8845U hookup for L7148A/L8148A in an oil-fired, tankless hot water, zoned, pump system.**

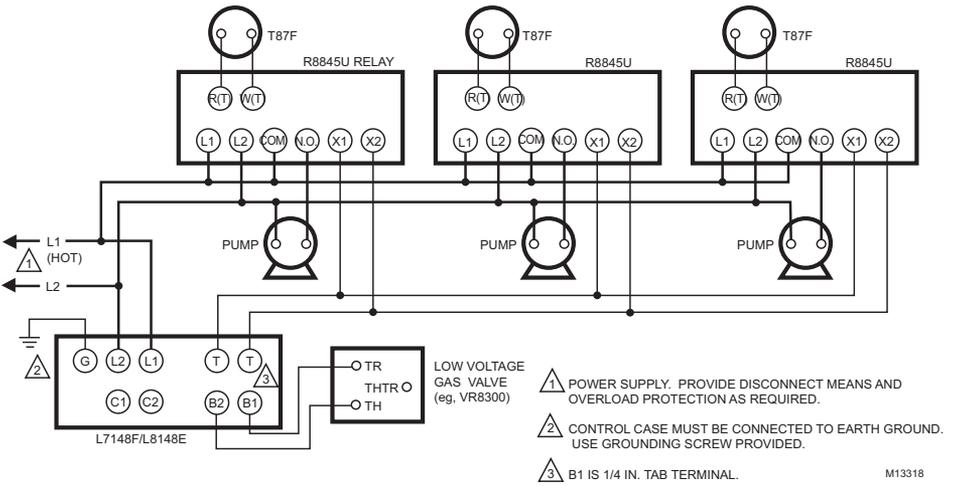


Fig. 6. R8845U hookup for L7148F/L8148E in a gas-fired, 24V, zoned, pump system.

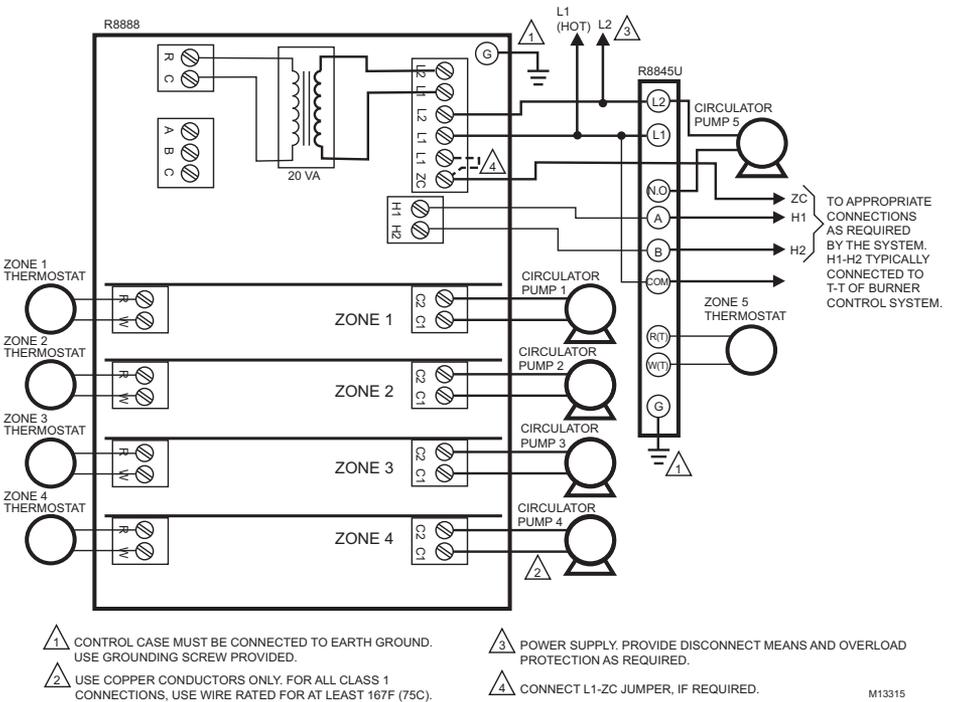


Fig. 7. R8888 Zone expansion using additional R8845U Universal Switching Relays.

## CHECKOUT

1. Keep the cover on the relay during normal operation and remove only for service and checkout.
2. Relay contacts require no cleaning; they are arranged to close with a wiping action and are self-cleaning. The contacts may turn black after being in service for some time; this discoloration does not prevent proper operation.
3. After installation is complete, operate system through at least one cycle from the controller to make certain the relay controls the equipment as intended.

## TROUBLESHOOTING

### Test Button

- This connection is the same as a call for heat connection between the R(T) and W(T) terminals.

### Heat Call LED

- The LED should light if there is a call for heat or if the test button is pressed.
- If the LED remains off during a call for heat and turns on when the Test Button is pressed, the thermostat is not operating correctly.
- If the LED remains off on a call for heat and also remains off when the Test Button is pressed, the R8845U is not operating correctly. Check the fuse; if the fuse is intact, replace the control.

### Relay LED

- This LED lights whenever there is 120 Vac (L1) on the N.O. terminal (when COM/N.O. relay contacts are closed).

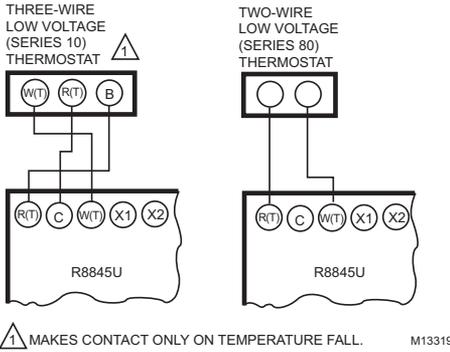
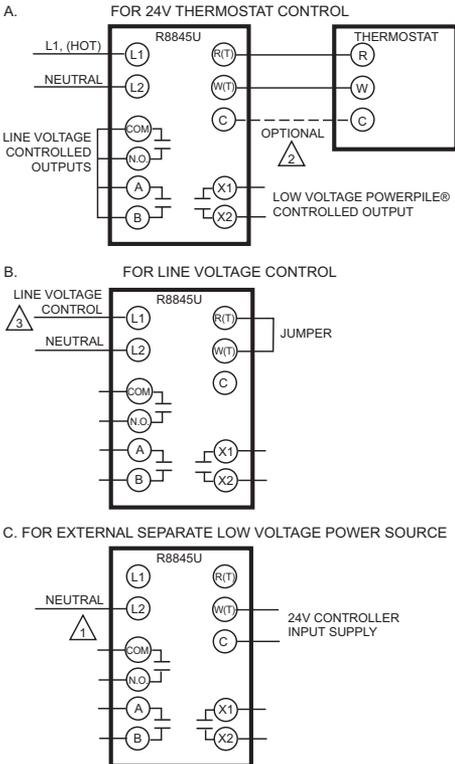


Fig. 8. R8845U thermostat connections.



- ① REQUIRED FOR OUTPUT LED OPERATION.
- ② FOR SERIES 10 OR OTHER HARDWIRED ELECTRONIC 3-WIRE THERMOSTATS.
- ③ WARNING! ELECTROCUTION HAZARD. POWER SUPPLY CAN CAUSE SEVERE INJURY OR DEATH. DISCONNECT POWER BEFORE WIRING OR SERVICING L1. POWERED RELAYS MUST BE WIRED AS DRY CONTACTS.

Fig. 9. R8845U control options.





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[www.resideo.com](http://www.resideo.com) 69-1292-03 M.S. Rev. 05-20 | Printed in United States