

Troubleshooting



The New Package Unit Will Not Start

BY STEVE WRIGHT JR.



The troubleshooting problem for this month involves a renovation project at a typical gymnasium that is used for basketball, volleyball, and occasionally is used for special events. The equipment involved is a rooftop package unit rated at 25 tons cooling capacity and is serving a very simple conditioned space. You are to determine why the new unit that was installed will not operate and then resolve the inoperative issue.

Once at the rooftop unit, you check the electrical power supply at the safety disconnect switch for

proper voltage and current rating listed on the unit's data plate. The supply power voltage is measured and is found to be approximately 215 V between all three hot legs (three phase – L1 to L2, L1 to L3, and L2 to L3). The unit's data plate lists a 208-/230-V rating, so the voltage is well within specifications.

Next, after the safety disconnect has been switched to de-energize the unit, you remove the unit's electrical cover panel and visually inspect the electrical connections and components. You observe that the control transformer is tapped for 230 V operation, so

you correct the wiring by moving the transformer lead wire to the 208 V tap.

Your next step is to ensure the unit will run properly. You energize the power to the unit, but it does not start. With your voltmeter across the contactor's coil terminals, you determine the control voltage is only 16 V. Next, you check the output voltage of the control transformer and read 26 V. Using your voltmeter once again, you measure the voltage between the control terminals Y and R and see a meter reading of 8 V. You scratch your head for a moment and decide to go to the



conditioned space to check out the renovation work completed by the general contractor.

Upon entering the gym, you notice a t-stat but soon find out it is serving another rooftop unit. After walking around and searching the conditioned space, you notice the new unit's t-stat, now located approximately 175 ft from its original location. What do you think is wrong and what action(s) will it take to resolve the inoperative unit issue? 🐼

What do you think caused this?

Compare your answer with ours on pg. 38.

Stevie Wright Jr. has been involved with Wright Brothers since he was in grade school. He started out cleaning the warehouse and over time started working with installers and service technicians. He graduated from Georgia State University with a business management degree. Wright Jr. has been an RSES Member since 1999 and considers himself a student always wanting to learn more. He enjoys spending time with his beautiful wife Ashley and their two teenagers. Stevie serves as the Technical Support Supervisor at Wright Brothers. He is following his fathers' legacy to continue the family business.

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