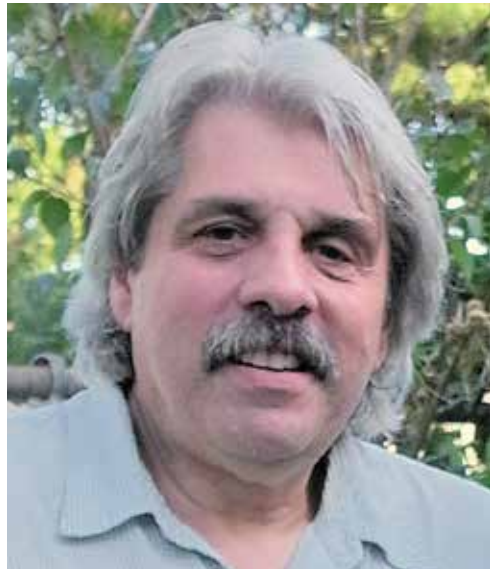


# Troubleshooting Nightmares

By Roy G. Bardowell, CDDC



After 35 years troubleshooting and providing customer support for door companies, I have seen a number of troublesome installations. Some of the issues have been downright nasty and, in some cases, could have led to job failure.

I consider a job a failure when an installing company must uninstall all the products and start over. This usually results in a huge monetary loss and can place a big financial burden on the company. Fortunately, job failure is rare—but it does happen.

The following case studies describe four such situations and explain how the installation errors were remediated by addressing them properly. I hope they help you avoid troubleshooting nightmares of your own.

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## NIGHTMARE #1: Disregarding safety requirements

I have seen several cases where a building owner refuses to install all the necessary safety products required by UL 325. Sometimes this happens because the photo sensors were not included in the previous install. Using prior installation requirements to determine what products are needed for your current job is a mistake.

UL 325 is a living document that is modified regularly with new safety requirements. Most door installers are familiar with the residential door changes that went into effect in 1993. Fewer are aware of the new UL entrapment protection requirements for commercial door operators that went into effect in 2010.

### Case study

In January 2018, a door dealer friend asked me to call a customer who was having a hard time understanding why photoelectric sensors needed to be installed at the 6"-high mark. He was confused because two other doors at his fire station had photo sensors installed at 32". These were placed at the exact height to sense a fire truck bumper and were installed in 2008.

### Solution

I explained UL 325, emphasizing the rationale for the 6" rule, and suggested other solutions such as electric edges, a second set of photo sensors, or light bars. I told him that the 6" rule was not negotiable; it is a requirement. I also pointed out that he was in the business of safety. So not only did he accept my explanations, he decided to add another set of photo sensors at the height of the truck bumper.

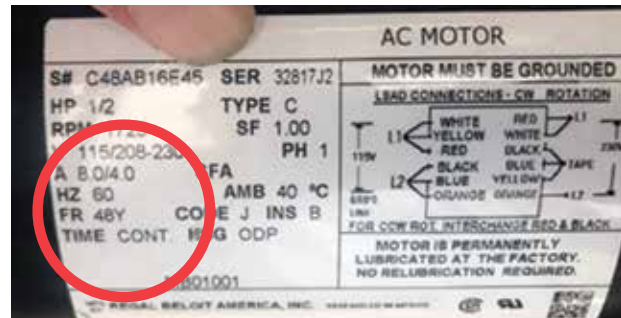
## NIGHTMARE #2: Wrong voltage

One of the more common field errors is when an electrician applies 230 volts to an operator that is clearly labeled as 120 volts. Every commercial door operator has a label on the front cover enclosure indicating model, serial number, horsepower rating, voltage, amps, phase, torque rating, and manufacture date. Installers must refer to the information clearly stated on the operator label to ensure proper installation. The voltage is specific, not variable or optional.

Applying incorrect voltage to an operator happens for multiple reasons:

- The person doing the wiring is not a qualified electrician.
- The electrician ignores the operator label indicating the only voltage that should be connected to the operator and, instead, uses the motor sticker to determine what voltage to connect to the operator.

- The electrician uses a 120-volt operator with a 230-volt power source because that is the power source nearby.



The voltage written on the operator cover label is the only voltage that should be connected to the operator. The motor sticker may list more than one voltage (e.g., 115/208-230 as shown in photo). These are not voltage choices. They are requirements.

### Solution

In my experience, when an electrician wires the incorrect voltage to an operator, he will rarely confess. Instead, he may say that a bunch of components are burned up in the operator. To avoid this, require electricians to use only the operator voltage listed on the operator sticker. Additionally, installers should always supervise the electrician to ensure proper voltage is applied.

## NIGHTMARE #3: Ignoring environmental factors

The most common error is installing a NEMA 1 general purpose operator in a wet area such as a wash bay or car wash. This is a recipe for disaster because when an operator takes on water, it will malfunction!

### Case study

My first year living in Canada, I was asked to assist a technician connecting a radio control to a commercial door operator. I met the technician at the site—an oil refinery in East Montreal. I came across the NEMA 1 installation and immediately realized we were in a hazardous area.

I asked the technician to put out his cigarette before entering the building. Apparently, he had ignored the multiple “no smoking” signs posted everywhere! After I entered the building, I saw a general purpose NEMA 1 commercial trolley operator mounted to the ceiling.

I told the tech, “You’ve got the wrong operator installed here. You need to replace it with the proper unit.” The tech said, “I didn’t order the operator; my boss did.” I called his boss and explained the situation.

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The guy had quoted the job without seeing the location, and he said it would be too expensive to make changes now. I tried to explain the risks if flammable fumes were ignited in a closed building. The smell of gasoline was intense, so, in my opinion, changes were needed to stave off a disaster. His response was, "Roy, if there is an explosion, your operator would be blown to the moon, so why worry?"

### Solution

In the field, there is no way to modify an operator to meet a different NEMA category. The solution is to order the correct operator the first time.

### Resistance from customers

On occasion, people will challenge these safety requirements. You must stay firm, do your due diligence, and always put



This NEMA 1 station was installed in a wash bay and used for three years. Always remember that water and electricity don't mix.

safety first. You cannot permit a customer to put your business in legal jeopardy.

For example, if a customer is resistant to using photo sensors or objects to the 6" rule, you can add a compatible safety edge or you can wire the operator to close with constant contact. These two options are acceptable and safe alternatives that comply with UL 325. You can also refer to DASMA Technical Data Sheet #364, Installation Location of Photoelectric Sensors, for help with your explanation.

### Why do these nightmares happen?

Lack of education is the main culprit. All of us must constantly educate ourselves by staying abreast of evolving safety requirements—and evolve, they will.

If you need advice or want to share an unusual experience, contact me at [roy@micanan.com](mailto:roy@micanan.com). ■

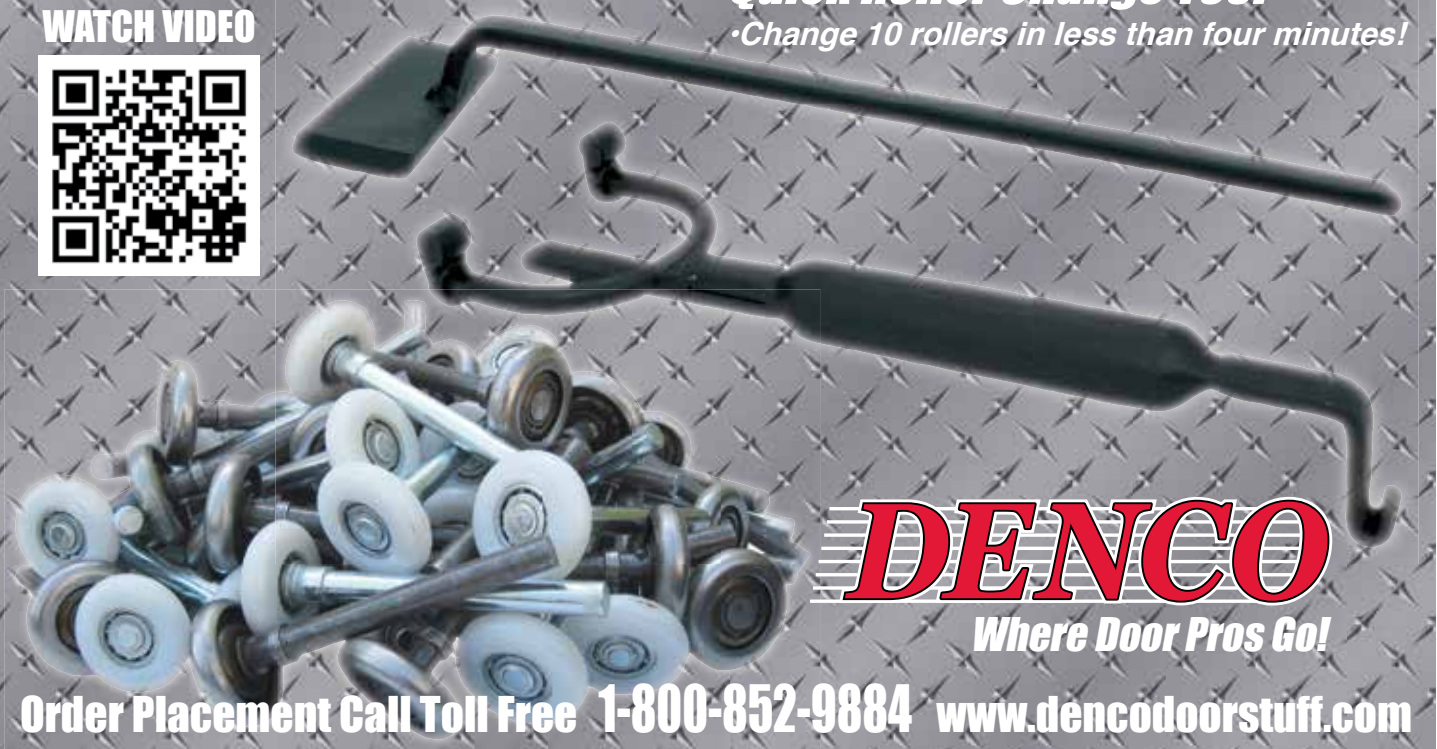
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