



Basics of Custom Controller Installation

There's an old saying, "too many cooks in the kitchen can spoil the broth". The same can be said about creating or installing a custom controller. An installation must be well thought out, and if more than one person is involved, there needs to be constant sharing of information and a plan for organizing the wiring and parts.

When Rice Lake Weighing Systems' Engineered Products Division sends out a completed system, the installer's critical role is to ensure the unit has a safe ground and a reliable source of power. With all EPD systems sold, RLWS provides specifications to make installation as easy and straightforward as possible. This includes blueprints, installation manuals, and engineering specs.

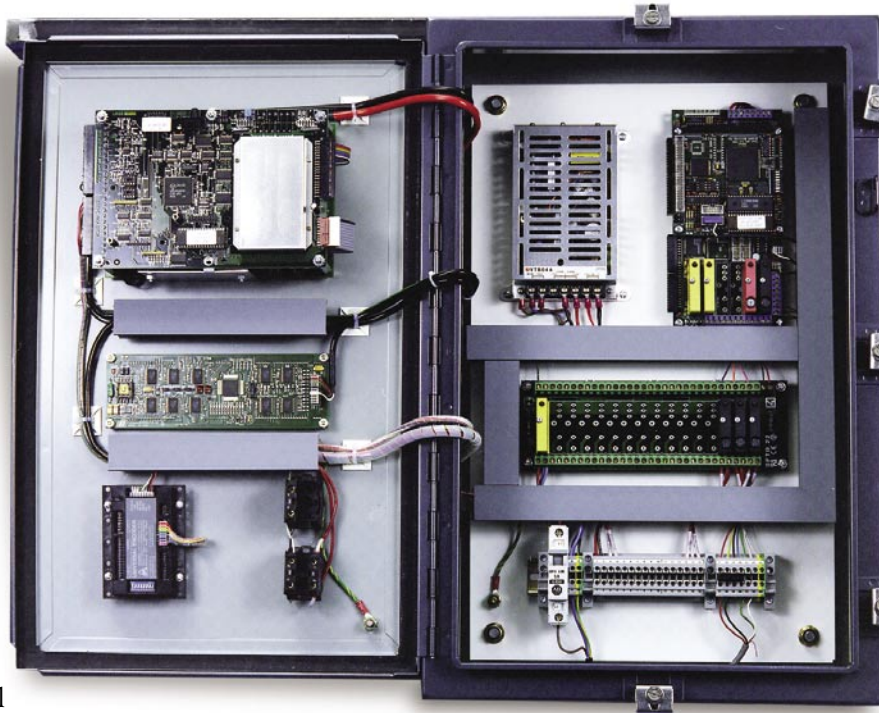
If you're installing component parts separately for a system, the following list of guidelines should be addressed.

Physical Layout

Careful consideration must be made to hardware placement inside a controller. Improperly placed relays, CPU boards, and power supplies can create additional "noise" within the controller. Pay careful attention to your blueprints so the items are placed correctly.

Routing Power Cables

One of the most common problems and probably the easiest to correct is placement of power cables within the controller. Specifically, don't run AC and DC lines together in the same trough. This can cause intermittent lockups, drifting, or error readings that are often difficult to diagnose. Run the AC/DC lines separate from one another, and if they have to cross, do so by placing them at 90° angles from each other. Also ensure that AC and DC lines do not cross sensitive digital signals.



and make sure to use them. Speaking of grounding, you should always use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD). You can refer to my previous columns for additional grounding information by visiting our web site, at rlws.com.

Be Tidy and Careful

The components inside of an indicator or controller are expensive. Take great care not to scratch

Routing Bus Cables

Pay careful attention to where ribbon cables are placed. Specifically, keep them away from high voltage AC and DC power. In addition, watch their length. RLWS specifications will state the optimum cable run length based on that particular system.

Cooling/Heating of Unit

Cold, heat, and humidity can have a detrimental effect on a controller's performance. Documentation accompanying controllers and components often point out the optimal operating temperatures. If a unit will be placed in a cold environment such as an outdoor truck scale application, I'd recommend you install heaters.

Heat may be generated from the unit's electronics. In areas where heat is a concern, install an internal fan to circulate the air to cool the controller. If you know that a unit is operating in areas of high humidity, place desiccants inside it to limit moisture.

Grounding

Always ensure that ground wires are properly connected. Referring back to my Summer 2000 column, single point grounding is a way to avoid unnecessary transient damage to your system. Ensure there are ground studs on the enclosure

or damage any of them during installation. Also, when doing any maintenance, keep track of the screws you remove and make sure none get dropped or lost inside the enclosure. Those lost screws have a habit of turning up again when you remove your fried CPU board.

Final Inspection

The most important job you can do after installing a system is to carefully inspect all components, making sure there are no loose pieces and the hardware is firmly in place. In addition, do a system test to make sure that the unit is running smoothly before turning over the reins to your end-user.

When your customer invests in a product, it is necessary to ensure they have a properly installed system. A clean installation, done right the first time, makes a great impression and will save both you and your customer from future headaches.

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