

Happ Controls Engineering Redesigns Pushbutton, Reduces Costs 60%

The Situation:

- Customer supplies control panels in quantities of hundreds per year.
- Each panel requires multiple lighted pushbuttons.
- Market conditions are dictating a low cost control panel.

The Problem:

- Present pushbuttons are high material cost item.
- Installation requires 8 steps.
- Wiring is complex.

The Customer Request:

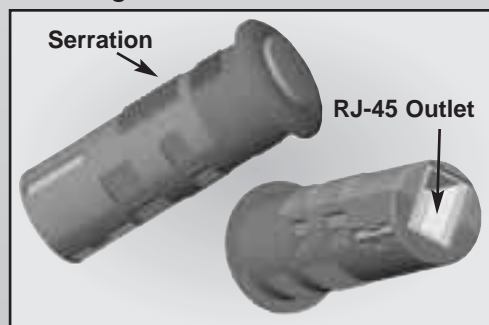
- Bring down material and labor costs 60%.
- Allow entry-level personnel to assemble-install-wire with 3-sigma reliability.
- Pushbuttons must meet robust quality of present offering.

Background:

The present model requires parts and assembly operations common to most pushbuttons:

- Tools required – wire crimp.
- 4 ea. panel wire leads.

- 4 pushbutton subassemblies.
- 8 installation steps:
 1. Into panel front, insert bezel assembly.
 2. Into panel rear, slide the adapter bracket, being careful not to push device out of socket.
 3. Install & tighten nut.
 4. Fit the lamp holder assembly into button.
 5. Fasten panel signal wire #1 onto specified lamp terminal.
 6. Fasten panel signal wire #2 onto specified lamp terminal.
 7. Fasten panel power wire #3 onto specified switch terminal.
 8. Fasten panel power wire #4 onto specified switch terminal.



Key Issue – Wiring errors. 50% chance of wiring to wrong leads. Result? The switch remains 'on' giving false positive annunciation. QA re-testing is costly!

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The Happ Controls Solution:

Happ engineers met customer's requirements with a novel approach. To keep installation steps down, engineers designed a one-piece switch with serrated edges to capture the button as it was inserted. To avoid the problems with mis-wiring, and to reduce material costs, Happ engineers scrapped the use of standard control wiring and used - an RJ-11 connector to carry power and control signals in one easy-to-install cable.

Easy assembly with new Happ Controls Device:

- Tools required – none
- 1 part.
- 2 installation steps:
 1. Into panel front, insert bezel assembly. (One way serration keeps switch assembly in place.)
 2. Attach RJ-11 connector. Done.

Review:

We want to solve your control problems. Our capabilities include:

- **Broad range of existing control device platforms** available to save development costs.
- **SolidWorks™** software used to make design decisions faster, easier.
- **Engineering, testing, and solid modeling departments** at Happ Controls consistently deliver a prototype within required deadline.

Happ Controls combines a cost-effective high capacity manufacturing arm and a quick response engineering team to generate custom solutions.

Call us to find how Happ Controls can solve your control components and system requirements.