

APPLICATION NOTES

Series 15 Side Mount Level Switches

INSTALLATION FUNDAMENTALS

Series 15 switches can be mounted in drilled-and-tapped bulkheads, ERECTA SWITCH® accessory fittings, 1/8 NPT pipe fittings, or bracket-mounted with the supplied jam nut. Whatever the method, reliable operation requires three things: clear space for float movement, a stem free of mechanical stress, and a sealed path that prevents moisture from entering the lead wire egress.

Sealing Best Practice

Installations must include provisions to keep moisture out of the product. Unless you are using redundant O-ring-sealed ERECTA SWITCH accessories, wetted threaded connections should be sealed with PTFE (Teflon) tape. An O-ring face seal is a redundant measure that further enhances reliability.

PVC, polypropylene, and fiberglass lids and bulkheads are easily drilled and tapped using common hand tools. ERECTA SWITCH accessories also permit hole-saw, poke-in, and flange mounting.

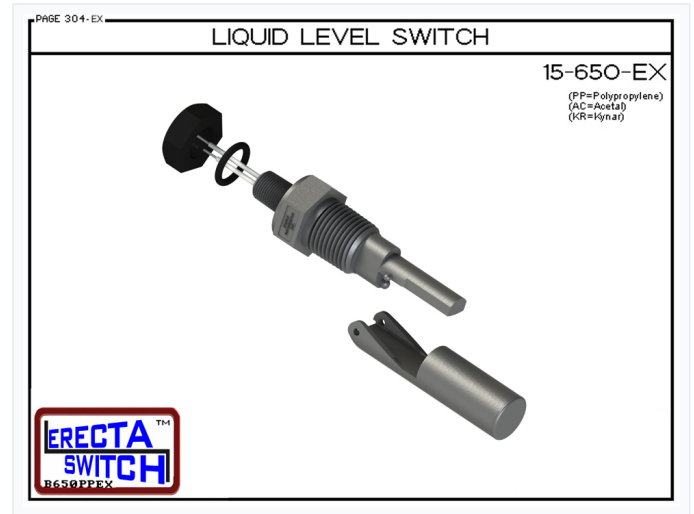
Sealing & Torque

Two wraps of PTFE tape on all tapered threads.

Tighten four full turns past hand-tight. Not more than five additional.

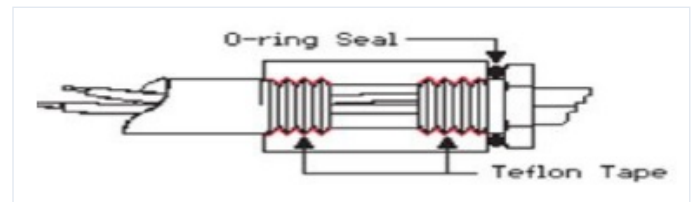
Excessive torque causes cold-flow in plastic parts and can disturb magnetic properties of the sensing switch.

15-650 Base — Exploded View



15-650-EX — fitting, jam nut, O-ring, reed switch, float/clevis

Thread Seal Detail

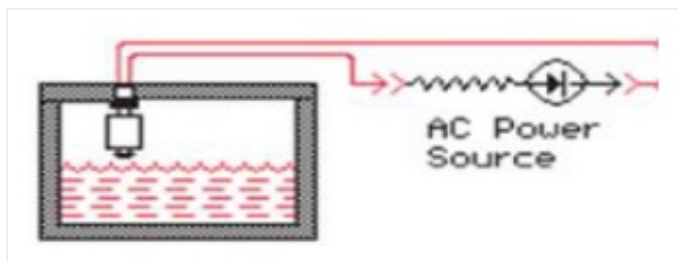


PTFE tape on threads + O-ring face seal (redundant method)

BASIC WIRING CIRCUITS

Indicator Lamp at Line Voltage

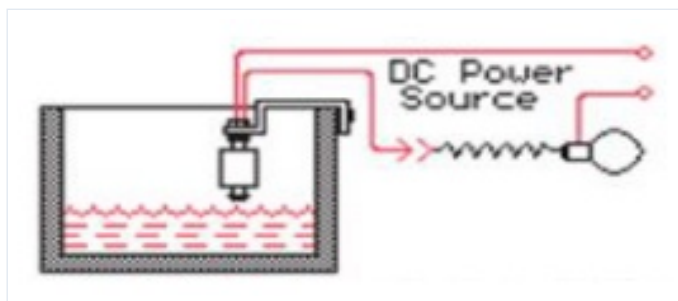
Reed switches can directly pilot small loads such as LED or incandescent indicator lamps at line voltage. Use a current-limiting resistor appropriate to the lamp — this subdues high in-rush current typical of tungsten bulbs and protects the reed contacts from early failure.



Indicator lamp controlled by level switch, AC line voltage

DC with Surge Suppression

For DC circuits driving inductive loads, place a reverse-biased diode across the load to clamp the inductive kickback. Without suppression, the voltage spike at contact-open will eventually weld or erode the reed contacts.



DC circuit with flyback diode across inductive load

Solenoid Valve Control

ERECTA SWITCH component sets allow the 15-650 to be positioned anywhere in a tank. Below, a 15-650 switch with arc suppression pilots a solenoid valve directly. For higher load currents or repeated operation, interpose a 15-650-R integrated relay or an external 50-series NistorPac® relay.

Contact Protection Principle

Base 15-650 and 15-600-AD require external contact protection when switching inductive loads (solenoids, small motors, relays).

All relay-output variants (15-650-R, 15-650-LP, 15-650-AC5) are internally rated for direct inductive switching.

When in doubt, step up to a relay-output model. The marginal cost is a fraction of a reed-switch failure in the field.

Typical Reed-Contact Failure Modes

Stuck closed: welded contacts — symptomatic of catastrophically overloaded switching. Check contact current against resistive/inductive rating.

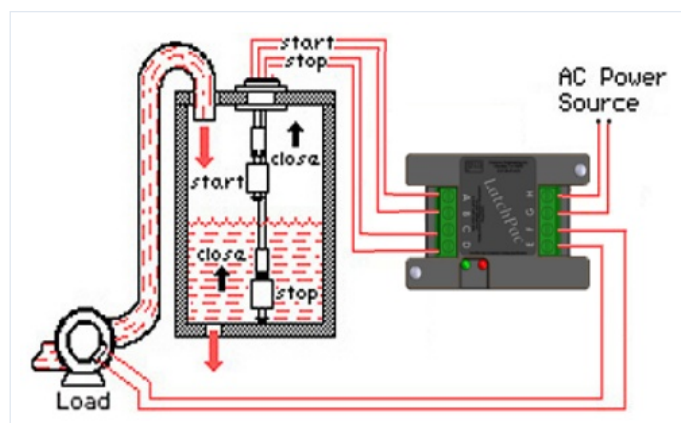
Stuck open: stressed or broken reed — typically caused by physical shock during installation or over-torqued mounting threads disturbing the glass envelope.

PUMP CONTROL & ACCESSORY INTEGRATION

LatchPac Wide-Differential Pump Control

Two 15-650 switches combined with a 50-LP-AC5 LatchPac relay provide inexpensive wide-differential pump control — no PLC, no timer, no external logic. The upper switch latches the pump ON at the START-HIGH level; the lower switch unlatches at STOP-LOW. The LatchPac holds state between events, so the pump runs continuously through the full fill or drain cycle.

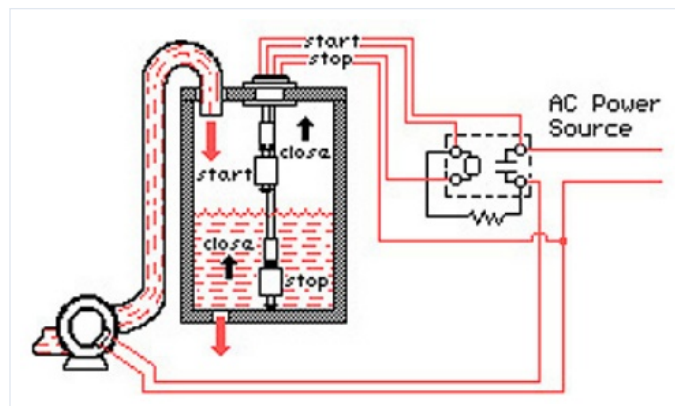
This pattern is the workhorse for sump pumping, chemical batching, and bulk fluid transfer where single-level on/off cycling would short-cycle the pump motor.



Start-low / stop-high LatchPac pump control with two 15-650 switches

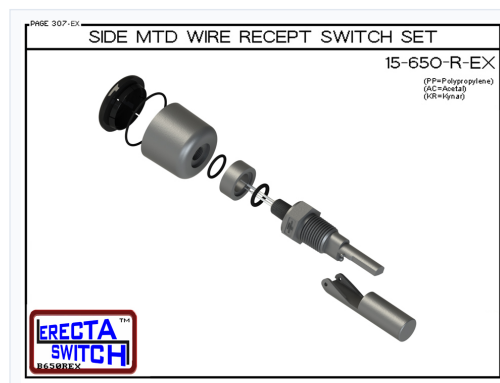
AC Solid-State Relay Latching

For applications where a latching solid-state relay is preferred over a LatchPac module, two 15-650 switches combined with ERECTA SWITCH wiring receptacles and a single-circuit AC solid-state relay produce equivalent wide-differential behavior. The start circuit latches the SSR; the stop circuit interrupts the hold current.



Wide-differential pump control with single AC SSR

Wire Receptacle Assembly

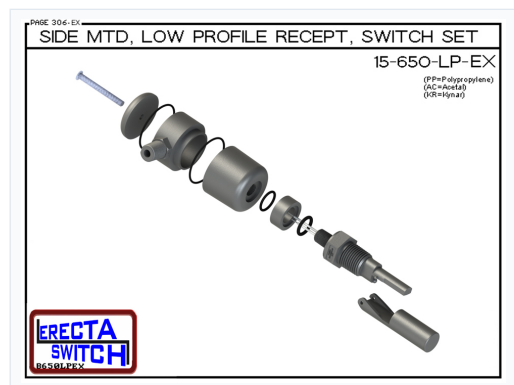


15-650-R-EX — side-mount wire receptacle switch set

ERECTA SWITCH ACCESSORY SYSTEM

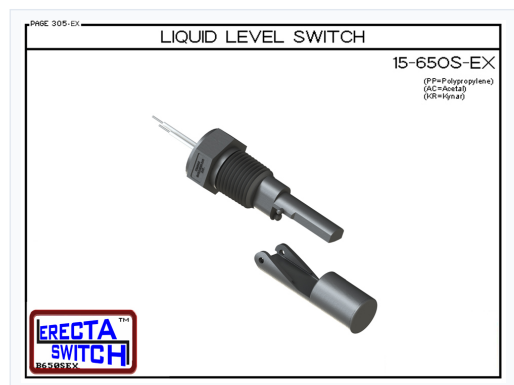
Series 15 is a component in the larger ERECTA SWITCH modular platform. Part sets and accessories extend the base switch into purpose-built assemblies for specific mounting, wiring, and protection requirements. Accessory ratings generally match those of the Series 15 base switch; where ratings differ, applicable information is stated in the accessory dimensional graphic.

Low-Profile Receptacle — 15-650-LP



15-650-LP-EX — low-profile receptacle switch set

High-Volume OEM — 15-650S



15-650S-EX — 100-pack OEM configuration

Example OEM Applications

1. Polypropylene side-mount in deionized water rinse tanks — bulkhead integration replaces top-mounted probes on crowded rack designs.
2. Acetal level sensor for hydraulic oil reservoirs in mobile construction equipment — outside-in installation survives field conditions.
3. PVDF Kynar for sulfuric acid dosing systems — chemical resistance paired with tight differential for precise batch control.
4. Polypropylene in food-grade soap dispensing units — FDA-compliant materials throughout.
5. Acetal in diesel generator fuel tanks — inexpensive alternative to fuel-rated float sensors from the major brands.
6. PVDF Kynar for chlorine bleach storage — durable service in oxidizing environments.
7. Polypropylene in commercial laundry systems — soap and rinse tanks, high duty cycle.
8. Acetal in turbine lubrication systems — small footprint side-mount for tight machinery spaces.
9. PVDF Kynar in nitric acid process tanks — semiconductor and electroplating workhorse.
10. Polypropylene multi-level arrays in plastic injection molding chillers — stacked 15-650 units on bulkhead ports.

Design Assistance Available

Compac provides free engineering consultation for OEM applications: chemical compatibility review, circuit protection recommendations, sample qualification. Contact sales@compac.com with your application details.