

EM15 cable float switch

Complete English user manual | Consolidated Chinese editions

1. Overview

Cable float switches provide liquid-level control in industrial and domestic installations, including storage tanks, household water tanks and wastewater drainage systems. The sealed assembly is designed for reliable operation, straightforward installation and flexible use in different level-control arrangements.

2. Operating principle

The float uses gravity and buoyancy. As liquid level changes, the float rises or falls. An internal rolling ball actuates a sensitive microswitch, opening or closing its contacts. A cable connects the switch to the external control circuit.

3. Product features

- Sealed structure:** secondary edge overmolding and an integral sealing process provide airtight construction.
- Repeatable operation:** a simple mechanism with a short actuation stroke supports stable switching and long mechanical life.
- Materials:** new polypropylene housing and a quality cable.
- Installation:** pass the cable through the counterweight, secure it and place the float in the liquid.

4. General manual specification

Parameter	Specification
Voltage rating	250V / 400V, according to product marking
Current rating	4A / 8A / 12A, according to product marking
Switching angles	Drainage 40°; filling 55° magnitude, ±5°. The detailed sheet writes filling as –55°.
Operating temperature	0–70°C for the general manual configuration
Float density	692.88kg/m³
Working pressure	≤0.3MPa
Protection	IP68
Housing	Polypropylene, described in the source as nontoxic
Cable	Composite PVC / rubber / silicone insulation and copper conductors

The general ratings do not override a lower rating of a particular cable, plug, connector or ordered switch. Specific rubber/silicone, teardrop and plug-in versions are distinguished in the accompanying specification document.

Installation and control operation

5. Before installation

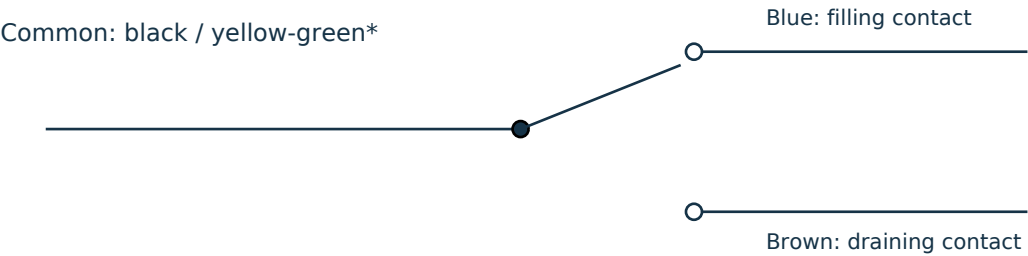
Disconnect the power supply. Check that the model, specifications, operating voltage and load current match the application.

6. Counterweight

Thread the cable through the recessed round hole on the underside of the counterweight. Set the free cable length from float to weight to approximately 0.7 times the desired difference between high and low liquid levels. Secure the cable and allow the float to move freely.

7. Cable connection

For filling, use the common conductor and blue conductor. For draining, use the common conductor and brown conductor. Fully insulate and secure the unused conductor. Protect cable joints from moisture and water, including condensation that could track back along the cable into the float.

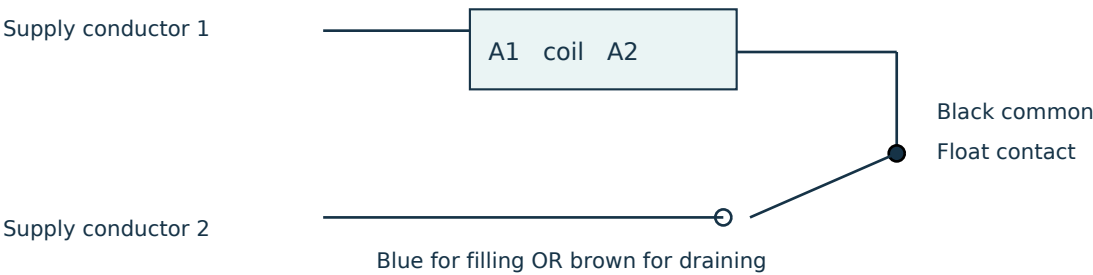


Contact identity only; drawing position is not an assigned float state.

*The Chinese documents identify common as black or yellow-green depending on cable version. This is a source-specific identification, not a general wiring-color convention. Confirm the supplied cable markings and continuity with power isolated; do not confuse a switching common with a protective-earth conductor.

Control mode	High / rising float	Low / falling float
Filling: common + blue	Open; stop filling	Closed; start filling
Draining: common + brown	Closed; start draining	Open; stop draining

8. Contactor control reference



The illustrated 220V arrangement connects supply to L1/L2 and the load to T1/T2. The 380V arrangement uses L1/L2/L3 and T1/T2/T3. A1 is connected to L1; A2 returns through the selected float contact to the other supply conductor (L2, or L3 in the three-phase illustration). Match the coil and switch ratings to the actual control voltage. The diagram above shows only the series control path, not a complete motor-protection circuit.

Precautions and edition notes

9. Precautions

1. For safety, the Chinese July 2025 edition strongly recommends a control voltage of **36V or less** through the float switch. The earlier Chinese edition recommends a safe control voltage without a number.
2. Inspect the product regularly. Do not use it if the housing or cable is damaged. Disconnect power before installation and maintenance.
3. Do not puncture or cut the cable with sharp objects; damaged insulation can cause electrical leakage.
4. Do not apply force to the housing's overmolded seams, which can damage the seal.
5. Use only in clean water or other weakly corrosive liquids compatible with the materials. Strong acids, strong alkalis and organic solvents can damage the product.
6. Use an AC contactor or relay when the load exceeds the marked power rating.
7. Installation must be performed by someone with the relevant knowledge and ability. The source excludes children, untrained persons and persons whose disability prevents safe installation.
8. Keep the product and packaging out of children's reach.

10. Control-circuit requirements

A control voltage of 36V or less is recommended through the float switch. Choose the electrical arrangement for the actual installation environment.

Connect black common to contactor coil terminal A2. The selected blue filling lead or brown draining lead completes the series return to the other control-supply conductor. Keep the float contact in series with the coil.

Use blue for filling and brown for draining, together with the common conductor. For pump loads above 500W, use an appropriately rated contactor, even where a configuration sheet lists a higher nominal pump power.

11. Source identification

Chinese manuals VI-EM15-250507 and VI-EM15-250719, each originally 142×210mm on two pages, consolidated here. The July edition adds the explicit $\leq 36\text{V}$ recommendation and omits the repeated fill/drain drawing. Manufacturer and trademark holder: Yueqing ELECALL Electric Co., Ltd., No.246 Weishi Road, Yueqing Economic Development Zone, Zhejiang, China. Telephone: 4006-111-323. Website: www.elecall.cn. Printed slogan: "ELECALL — producing high-quality products"; "Do Better Forever." Product design and specifications may change without notice.