

EFQS-HM180-A10 high-temperature float switch

Mercury-contact version | Complete English instruction manual

1. Product overview

EFQS-HM180-A10 is a cable float level sensor for water supply and drainage, wastewater treatment, chemical and petroleum applications at elevated temperatures. A fully welded stainless steel housing encloses a mercury switch. It is intended for media that do not strongly corrode SUS304, including compatible mildly corrosive liquids. The source also identifies high-temperature steam environments as an application, subject to the instrument’s temperature and pressure limits.

2. Operating principle and features

A counterweight balances gravity and buoyancy. As liquid level changes, the float tilts and liquid mercury moves inside the sealed switch to make or break electrical contact. The contacts connect to external equipment through the cable. With no mechanical contact mechanism, the mercury switch avoids mechanical contact wear; no numerical electrical-life rating is supplied.

The stainless steel enclosure and silicone cable suit compatible weakly acidic or alkaline liquids. The stated temperature capability is –20°C to 180°C. The features section says the assembly can withstand 1MPa.

3. Complete technical table

Parameter	Chinese manual value
Voltage rating	20VAC/DC
Current rating	0.5A
Actuation angle	Approximately ±10°
Float-body density	0.7g/cm³
Protection rating	IP68
Working temperature	–20°C to 180°C
Working pressure	1MPa pressure resistance
Material	SUS304 stainless steel housing; silicone insulation with tinned copper conductors

Pressure resistance: 1MPa. Select the complete assembly for the actual installation conditions; this figure does not define an unrestricted operating range above 1MPa.

Dedicated operating limit: the precautions explicitly limit the instrument to 20VAC/DC and 0.5A. The Chinese webpage’s 0–24V value does not override that manual instruction.

Installation, contacts and precautions

4. Installation

Disconnect power before installation. Confirm that model, specification, operating voltage and load current match the application.

1. Loosen the counterweight fixing screw. Pass the cable through the central hole and adjust the weight position so that switching occurs at approximately -10° downward and $+10^\circ$ upward, with $\pm 2^\circ$ tolerance. Check the action and tighten the ball-ended screw.
2. Connect blue (lower-level signal), brown (upper-level signal) and black or yellow-green (common) to the appropriate receiving circuit or contactor circuit, according to the load. Keep within 20VAC/DC and 0.5A. Insulate and secure every unused conductor with electrical insulating tape. Protect cable joints against moisture so condensation cannot enter the float.

The source identifies black or yellow-green as common. Confirm the delivered conductor functions with power isolated; do not confuse a switching common with protective earth.

5. Signal identification

Float position / movement	Contact operation
Downward to -10°	Blue closes to common: falling liquid-level signal
Upward to $+10^\circ$	Brown closes to common: rising liquid-level signal
Between -10° and $+10^\circ$	Retains the previous switching state

6. Precautions — complete list

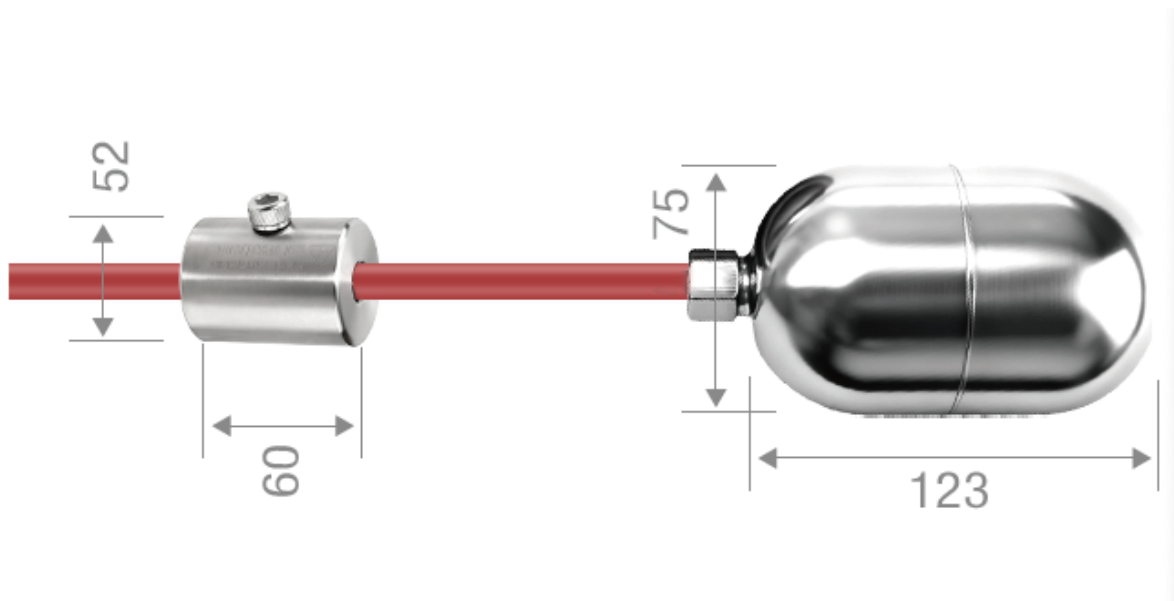
1. Maximum operating voltage is 20VAC/DC and maximum current is 0.5A; strictly observe both limits.
2. Because its operating angle is only $\pm 10^\circ$, the instrument is recommended only for liquid-level sensing and indication.
3. Do not apply external force to the enclosure weld. Stop using the product if its shell is dented or deformed, or a weld leaks.
4. Do not puncture or cut the cable with sharp objects; damaged insulation can cause electrical leakage.
5. Inspect regularly. Do not use the product if the enclosure or wires are damaged.
6. The mercury switch contains metallic mercury. At end of life, handle it under hazardous-waste procedures; do not discard it indiscriminately.
7. Installation requires 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.

Switching diagrams and assembly dimensions



Left: level rising, float tilted upward by 10°, upper contact (brown) closes. Right: level falling, float tilted downward by 10°, lower contact (blue) closes. Black or yellow-green is common. The intermediate angular region retains the prior state.

7. Dimensional reference



Dimensions in mm: float $\varnothing 75 \times 123$; adjustable counterweight $\varnothing 52 \times 60$. The dimensions image is supplied separately on the product page.

8. Additional Chinese product-page specifications

The webpage lists 0–180°C, 0.69g/cm³, SUS304/SUS316 options, 0.75mm² tinned copper conductors, silicone cable, a liquid-level difference greater than 0.3m, and 2m / 3m / 4m / 5m / 10m cable lengths with customization. The manual specifically describes SUS304, –20–180°C and rounded density 0.7g/cm³. Its stricter 20VAC/DC / 0.5A operating limits and sensing-only recommendation take precedence over the webpage's 0–24V and general pump-control wording.

9. Source identification

Original manual VI-EFQS-250614; sheet size 148×210mm. Manufacturer and trademark holder: Yueqing ELECALL Electric Co., Ltd., No.246 Weishi Road, Yueqing Economic Development Zone, Zhejiang, China. Telephone: 4006-111-323. Slogan: "ELECALL — producing high-quality products"; "Do Better Forever." Product design and specifications may change without notice.