Q SERIES

HEAVY DUTY FLOAT SWITCHES

Fully overmoulded polypropylene float with a heavy duty S.P.D.T. microswitch



FEATURES

- Heavy duty 21 A Omron microswitch
- Extra strong polypropylene float
- S.P.D.T. three wire switch
- No mercury or lead components
- High quality CPE rubber cable
- No metal parts in contact with liquid
- Sealed tamper proof design
- Highly chemical resistant
- Wide range of cable sizes available

21 A
Omron microswitch at 250 VAC resistive

30 m
Maximum submergence 300 kPa static pressure

60 °C
Maximum liquid temperature

pH 1-14
Polypropylene float, no metal wetted parts

OUTLINE

The Q Series float switch consists of a heavy duty polypropylene float fully overmoulded around a high quality three core cable. The float contains a single pole double throw (S.P.D.T.) switch, which can be used to give adjustable control over the level of liquid in tanks, pits and dams. By careful tethering of the cable the switch can be set to give an on or off action at any desired position. The heavy duty switch can directly control small pump motors.

The float is high grade polypropylene, fully overmoulded with no external gland, and the switch terminations are encapsulated in polypropylene to stop water tracking along the conductors. The specially manufactured heavy duty cable fitted to the Q Series switch is EPR insulated and CPE sheathed, and is specifically designed for permanent immersion in water. The switch and cable are also resistant to oil, grease, fat, sewage and a variety of chemicals.

APPLICATIONS

- High and low level control
- Loss of prime protection for pumps
- Automatic control of sump pumps
- Control of tank filling and draining valves
- Control of levels in effluent & separation pits
- Level control in bulk liquid tanks
- Control of level warning equipment

ORDERING

Build your part number from the codes below – for example **Q10M**.

Q	10M	QCW
SERIES	**CABLE LENGTH IN METRES**	**OPTIONAL CABLE WEIGHT**
Q Series float switch	The cable length options for the Q Series switches are: 4 m, 6 m, 10 m, 15 m, 20 m, 30 m and 50 m.	For the Q Series float switches, there is the option of a heavy grade polypropylene cable weight, the QCW. The QCW has a 316 stainless steel screw and nut.

OPERATING ENVIRONMENT

Maximum submergence	**30 metres, 300 kPa static pressure**
Maximum liquid temperature	**60 °C**
Minimum liquid temperature	**–20 °C**
Liquid specific gravity	**>0.82**
Liquid pH	**1 to 14**
Smallest diameter well that the switch can operate in	**600 mm**
Liquid level change for the switch to operate	**300 mm (approximately)**
Smallest opening through which the switch will fit	**108 mm**
Minimum distance between float and closest tethering point / cable weight	**100 mm (see Typical Installation)**
Suitability for use in sodium hypochlorite	**Fully compatible**
Suitability for use in sea water	**Fully compatible**
Suitability for use in potable water	**Not approved**

SWITCH DATA

Switch type	**Single pole double throw**
Contact gap	**1 mm**
Contact material	**Silver alloy**
Contact resistance	**15 mΩ max (initial)**
Rated voltage AC	**250 VAC**
Rated voltage DC	**125 and 250 VDC**
Current rating resistive AC	**21 A at 250 VAC**
Motor load current rating AC	**4 A at 250 VAC**
Current rating resistive DC	**0.6 A at 125 VDC, 0.3 A at 250 VDC**
UL rating	**21 A, ½ HP at 125/250 VAC**
Minimum applicable load	**160 mA at 5 VDC**
Maximum operating frequency, electrical	**60 operations per minute**
Insulation resistance	**100 MΩ min (at 500 VDC)**
Dielectric strength, same polarity	**1000 VAC, 50/60 Hz for 1 minute**
Dielectric strength, live parts to ground	**2000 VAC, 50/60 Hz for 1 minute**
Life expectancy, mechanical	**50,000,000 operations minimum**
Life expectancy, electrical	**100,000 operations minimum**
Microswitch approval (UL)	**UL1054, File No E41515**
Microswitch approval (CSA)	**CSA C22.2 No. 55, File No LR21642**

CABLE DATA

Cable type	**S07RN-F 3 × 1.0 mm² (heavy duty rubber, CE)**
Outer sheathing	**CPE (chlorinated polyethylene), black**
Core insulation	**EPR**
Cores	**3 × 1.0 mm², 32/0.2 mm plain copper**
Cable diameter	**9.0 ± 0.2 mm**
Core colours	**Blue (common), black (NC), brown (NO)**
Cable voltage rating U_0/U	**450/750 V**
AC test voltage	**2000 V / 2500 V**
Conductor resistance	**20.0 Ω/km max per core at 20 °C**
Cable current carrying capacity	**Product rated 10 A max (cable limited)**
Maximum suspended length	**Approx. 40 m (cable only)**
Minimum bend radius	**6 × overall diameter (54 mm)**
Conductor operating temperature	**–30 °C to +60 °C (85 °C max)**
Standard of construction	**CENELEC HD 22.4 S4 & VDE 0282-4/2005**
Cable lengths available	**4, 6, 10, 15, 20, 30, 50 metres**

SAFETY NOTE

The Q Series switches have been designed and built to be as tough as possible, and can withstand harsh environments. Great care should be taken to ensure the switch is only installed in positions where it will not be subjected to entanglement, severe agitation and abrasion against tank walls or moving equipment.

If the application requires control of mains voltage, local electrical codes may require the switch to be isolated to a low voltage supply. This may be required, regardless of the high voltage rating of the float switch. Please check with your local electrical authority before connecting a Q Series float switch to a mains voltage supply.



HAZARDOUS AREAS

The Q Series is not certified for use in hazardous areas and must not be installed in any area classified as hazardous under AS/NZS 60079.10 (Zone 0, 1, 2, 20, 21 or 22).

TYPICAL INSTALLATION

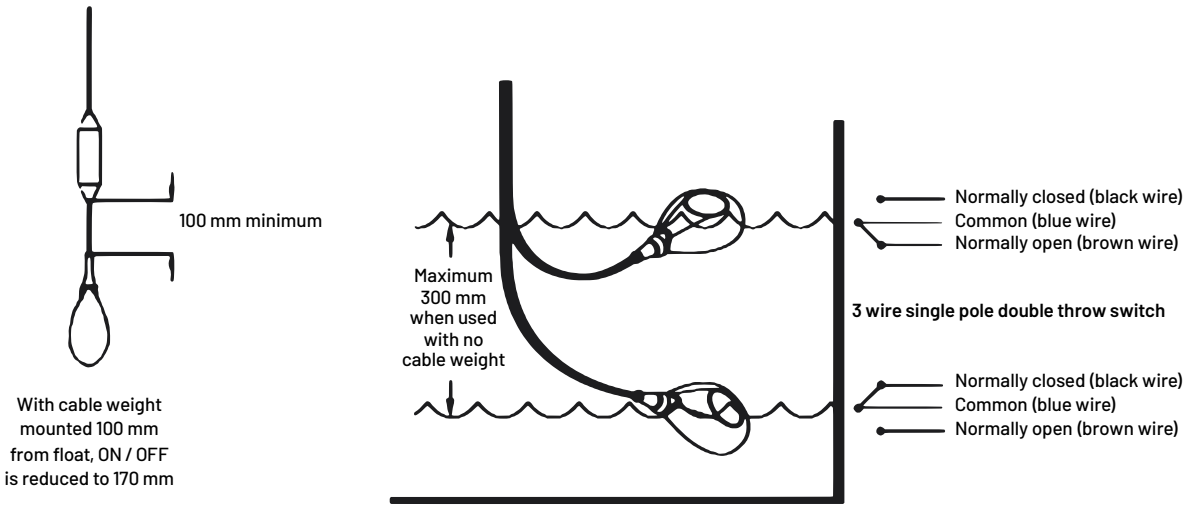


FIG. 1 Q Series float switch: switching action and tethering

DIMENSIONS

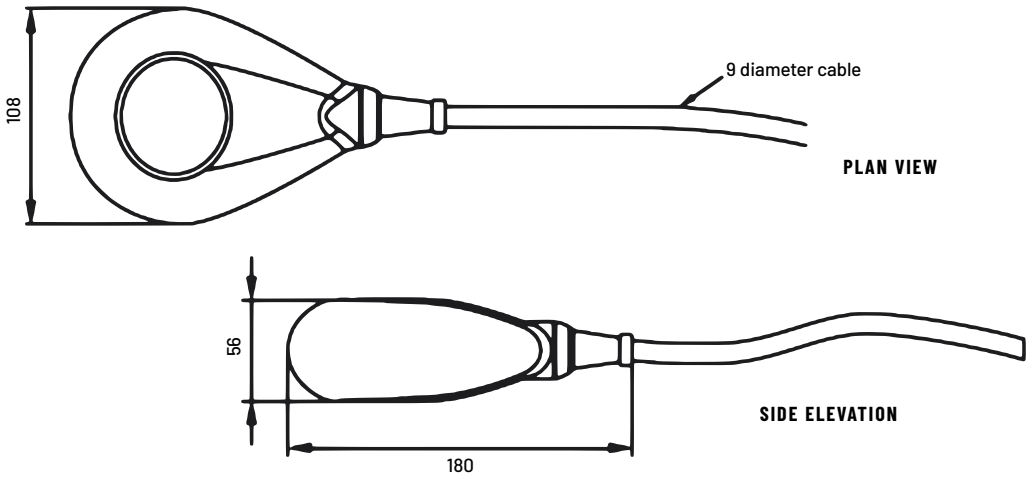


FIG. 2 Overall dimensions in millimetres

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