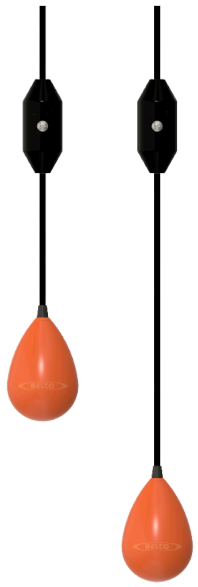
K SERIES

HEAVY DUTY LEVEL REGULATOR

Compact three-wire float switch for single point level sensing and control



FEATURES

- Low differential switching
- All position tilt action
- S.P.D.T. three-wire single point switch
- Polypropylene, SAN, fluorosilicone & CPE construction
- Wide range of cable lengths available
- Stable repeatable switching action
- No mercury or lead components
- Compact size, 75 mm diameter
- IP68 rating
- Optional cable weight available

APPLICATIONS

- Basic liquid level control
- Multi-point level control
- Sewage level control
- Chemical level control
- High & low level alarms
- Self powered signalling
- Pump protection

35 mm
Liquid level change to operate the switch

75 mm
Compact float diameter

30 m
Maximum submergence

IP68
Rated float switch

OUTLINE

The K Series heavy duty level regulator is a compact three-wire float switch for highly accurate and repeatable single point level sensing and control applications. It is ideal for use in water, sea water and most acid and alkali solutions. It will provide a stable switching action with a very high degree of reliability.

The teardrop shape of the float makes it ideal for effluent and sewage usage, as the float cell has no shoulders or edges for solids to build on. These float switches can be reliably and safely used in potable water systems, as they do not contain hazardous materials such as mercury or lead.

SAFETY NOTE

The K Series level regulators are rated for mains voltage operation. However, in the interest of safety we recommend that they are only ever operated at low voltage, preferably at 24 to 48 VAC. Where mains voltage operation is unavoidable, an earth leakage circuit breaker should always be installed in the control circuit. The application and wiring of this float switch should always be carried out by qualified electrical personnel and must always conform to local wiring rules.

OPERATING PRINCIPLE

The K Series level regulator houses a heavy ball that is balanced on the actuating arm of a high precision switch. When a rising liquid level causes the float to lift and tilt, the centre of gravity of the ball moves away from the actuating axis of the switch and allows it to de-actuate. A falling liquid level allows the float to straighten up, and the centre of gravity of the ball shifts back onto the switch, causing it to actuate again. This simple, reliable action only requires the float to tilt by 45 degrees in any direction for the switch to operate.

CONSTRUCTION

The K Series heavy duty level regulator is constructed from polypropylene and high compliance three core CPE cable. The float chamber is a double moulded, hermetically sealed cell with a double moulded barrier of solid polypropylene sealing the cable entry, with a fluorosilicone boot protecting the cable where it leaves the float. The switch housed within the float cell is a precision single pole double throw device rated from 5 to 500 VAC at up to 15 A resistive load (10 A at 500 VAC). Product load current is limited to 6 A by the 0.75 mm^2 cable.

ORDERING

Build your part number from the codes below – for example **K10M**.

K	10M
SERIES	**CABLE LENGTH**
K Series float switch	Cable length in metres

The cable length options for the K Series switches are **4 m, 6 m, 10 m, 20 m, 30 m** and **50 m**.

DIMENSIONS

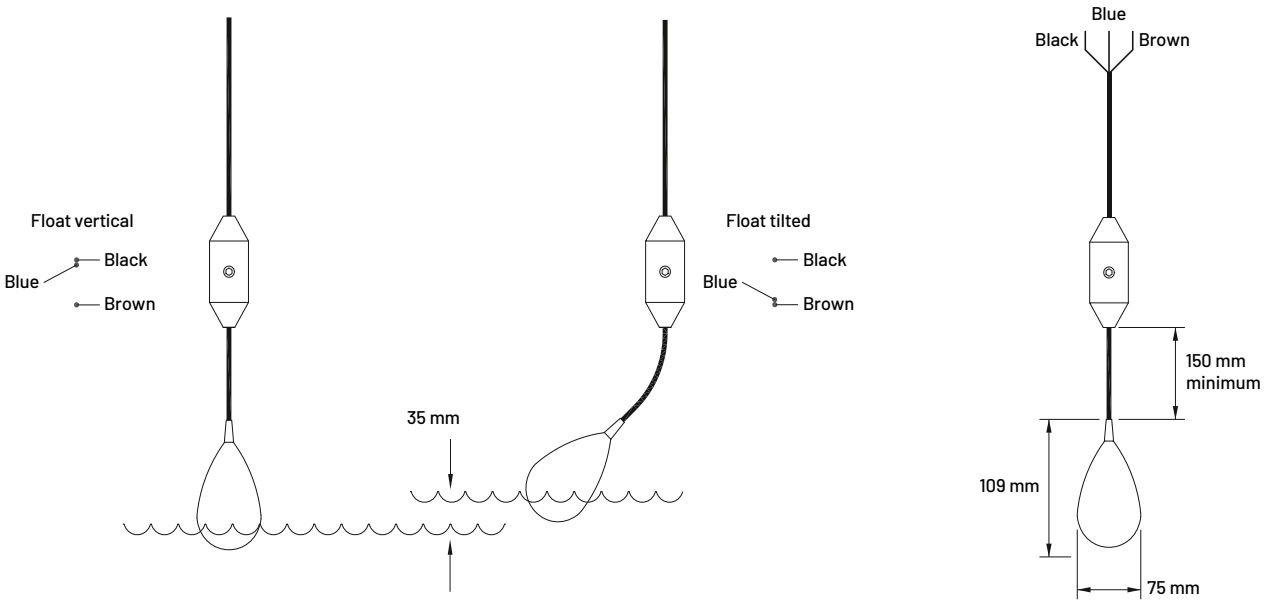


FIG. 1 Float vertical and tilted, with wire colours (left); overall dimensions (right)

SWITCH DATA

Switch type	**Single pole double throw (S.P.D.T.)**
Contact gap	**0.5 mm**
Contact material	**Silver alloy**
Contact resistance	**15 milliohms maximum (initial)**
Rated voltage AC	**125, 250 and 500 VAC**
Rated voltage DC	**8, 14, 30, 125 and 250 VDC**
Current rating resistive AC	**15 A at 250 VAC, 15 A at 125 VAC (10 A at 500 VAC)**
Motor load current rating AC	**NO 2.5 A / NC 5 A at 125 VAC (⅛ HP) NO 1.5 A / NC 3 A at 250 VAC (¼ HP)**
Current rating resistive DC	**15 A at 8 and 14 VDC, 6 A at 30 VDC 0.5 A at 125 VDC, 0.25 A at 250 VDC**
Maximum lamp load AC	**NO 1.25 A / NC 2.5 A at 250 VAC**
Maximum lamp load DC	**NO 1.5 A / NC 3 A at 30 VDC**
Minimum operating load	**160 mA at 5 VDC**
Maximum operating frequency, electrical	**20 operations per minute**
Dielectric strength between contacts	**1000 VAC, 50/60 Hz for 1 minute**
Dielectric strength to ground	**2000 VAC, 50/60 Hz for 1 minute**
Insulation resistance	**100 megohms minimum (at 500 VDC)**
Life expectancy mechanical	**10,000,000 operations minimum**
Life expectancy electrical	**500,000 operations minimum**
Approved standards	**UL1054 E41515, CSA C22.2 No. 55 (File No. LR21642)**

CABLE DATA

Cable type	**S05RN-F 3 × 0.75 mm²**
Conductor	**3 cores, 24/0.2 mm plain copper**
Insulation	**EPR**
Core colours	**Blue, brown, black**
Outer sheath	**CPE (chlorinated polyethylene), black**
Cable diameter	**7.0 ± 0.2 mm**
Voltage rating Uo/U	**300/500 V**
Test voltage	**2000 V / 2500 V**
Minimum bending radius	**6 × overall diameter (42 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, 20, 30, 50 metres**
Conductor resistance	**26.7 Ω/km max. per core at 20 °C**
Cable current rating	**6 A max. (cable limited)**
Maximum suspended length	**Approx. 45 m (cable only)**

OPERATING ENVIRONMENT

Maximum submergence	**30 m, 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	**Within a 160 mm inside diameter vertically mounted pipe**
Liquid level change for the switch to operate	**35 mm**
Closest switching point to tank floor	**50 mm**
Smallest opening through which the switch will fit	**75 mm**
Minimum distance between float and closest tethering point / cable weight	**150 mm**
Suitability for use in sodium hypochlorite	**Fully compatible**
Suitability for use in sea water	**Fully compatible**
Suitability for use in potable water	**Fully compatible**

TYPICAL INSTALLATION

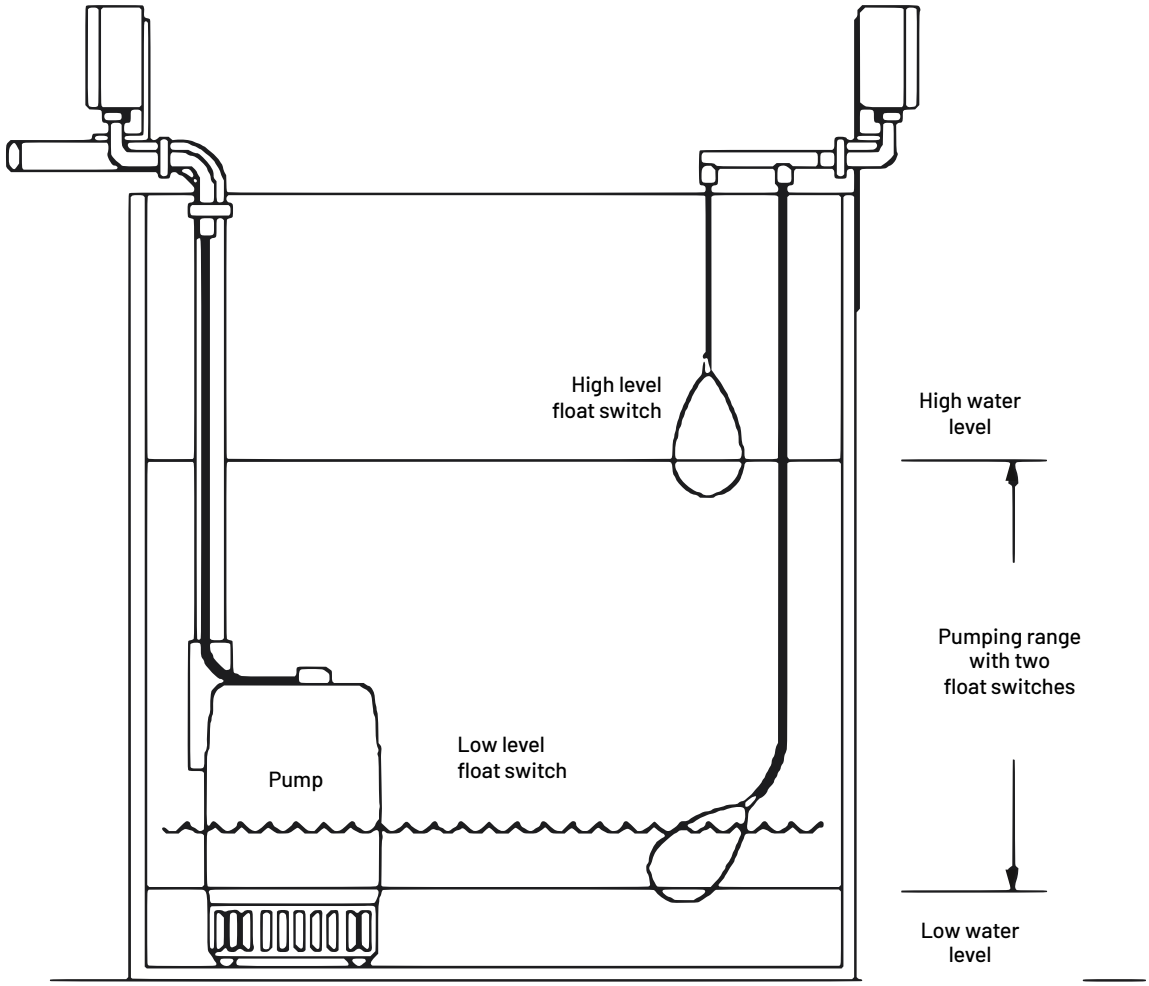


FIG. 2 Two K Series float switches controlling a pump

HAZARDOUS AREAS

The K 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).

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