KP SERIES

PROBE LEVEL SWITCH

Compact three-wire float switch for highly accurate and repeatable single point level sensing



FEATURES

- No external moving parts
- Reliable solid construction
- S.P.D.T. three-wire switch
- PVC, polypropylene & fluorosilicone construction
- Stable repeatable switching action
- No mercury or lead components
- Compact size, 25 mm diameter
- Optional cable weights available

45 m
Maximum submergence (450 kPa static)

25 mm
Compact diameter for narrow wells and pipes

±1 mm
Switching repeatability

pH 1–14
UPVC and polypropylene wetted parts

APPLICATIONS

- Deep well bore pump protection
- Suitable for saline water use
- Withstands most common chemicals
- Bilge level control
- High & low level alarms
- Intrinsically safe circuits (simple apparatus)
- General purpose liquid level sensing

HAZARDOUS AREAS

The KP is simple apparatus under AS/NZS 60079.11 and may be used in a hazardous area only as part of an intrinsically safe circuit, connected through suitably certified associated apparatus. It is not Ex certified in its own right. The full conditions of use are given in the installation sheet.

OUTLINE

The KP Series probe level switch 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 acids and alkali solutions. It will provide a stable switching action with a very high degree of reliability and repeatability. 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.

OPERATING PRINCIPLE

The KP probe level switch consists of a vented UPVC housing that contains a polypropylene float. Rising liquid level causes the float to lift and actuate a magnetically coupled reed switch within the switch head. A falling liquid level allows the float to drop, de-actuating the reed switch.

SAFETY NOTE

The KP probe level switch is not suitable for use at mains voltage. It is a low voltage signalling device designed for low voltage applications only. It is ideal as an input device for BMS and PLC applications. It is also ideal as an alternative to conductivity probes in submersible bore hole pump installations.

CONSTRUCTION

The KP probe level switch is constructed from UPVC and polypropylene, with a fluorosilicone cable boot, and is supplied with three-core S05RN-F cable. The float chamber is heavy walled and vented and provides a robust, stable cell for the internal float. The switch sensor head is CNC machined from solid UPVC and is fully potted. The switch housed within the float cell is a high compliance single pole double throw dry contact reed switch that can switch up to 140 VAC or 150 VDC maximum at currents up to 0.25 Amp resistive load. The KP probe switch can switch loads of 5 Watts / VA maximum. The switch can be disassembled for cleaning if required.

ORDERING

Build your part number from the codes below – for example **KP-10M**.

KP – **10M**

SERIES

KP Series probe switch

CABLE LENGTH

10 m cable only.
No other lengths are available.

SWITCH TYPE

Contact form / switching action	**Single pole double throw, C form (S.P.D.T.), break before make**

IMPORTANT

Contact power rating is the product of switching voltage and current and it must never exceed 5 Watts / VA.

ELECTRICAL RATINGS

Switch type	**Dry contact reed switch**
Contact form	**Single pole double throw (S.P.D.T.), break before make**
Contact power rating maximum	**5 Watts / VA**
Switching voltage maximum	**140 VAC / 150 VDC**
Switching current maximum	**0.25 Amp**
Carry current maximum	**1 Amp**
Breakdown voltage minimum	**200 VDC**
Typical applications	**PLC, telemetry & general low voltage control**

OPERATING ENVIRONMENT

Maximum submergence	**45 metres, 450 kPa static pressure**
Minimum burst pressure	**3500 kPa or 350 metres static pressure**
Maximum liquid temperature	**50 °C**
Minimum liquid temperature	**–1 °C**
Liquid specific gravity	**> 0.9**
Liquid pH	**1 to 14**
Smallest diameter hole or well that the switch can operate in	**Within a 25.4 mm inside diameter vertically oriented hole or pipe**
Liquid level change for the switch to operate (on to off or off to on)	**5 mm**
Closest switching point to tank floor	**80 mm**
Smallest opening through which the switch will fit	**25.4 mm diameter**
Suitability for use in sea water	**Fully compatible**
Suitability for use in potable water	**Fully compatible**
Switching repeatability	**±1 mm liquid level change**
Must be installed vertically	**Within 5 degrees of vertical**

CABLE DATA

Cable type	**S05RN-F 3 × 0.75 mm^2**
Outer sheath	**CPE (chlorinated polyethylene), black**
Cable boot	**Fluorosilicone**
Cable length	**10 m only (no other lengths available)**
Insulation	**EPR**
Conductor	**3 × 24/0.2 mm plain copper (0.75 mm^2)**
Cable diameter	**7.0 ± 0.2 mm**
Core colours	**Blue (common), Black (normally closed), Brown (normally open)**
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**
Conductor resistance	**26.7 Ω/km max per core (20 °C)**
Cable current rating	**6 A max (switch ratings apply)**
Maximum suspended length	**Approx. 45 m free-hanging cable**

DIMENSIONS

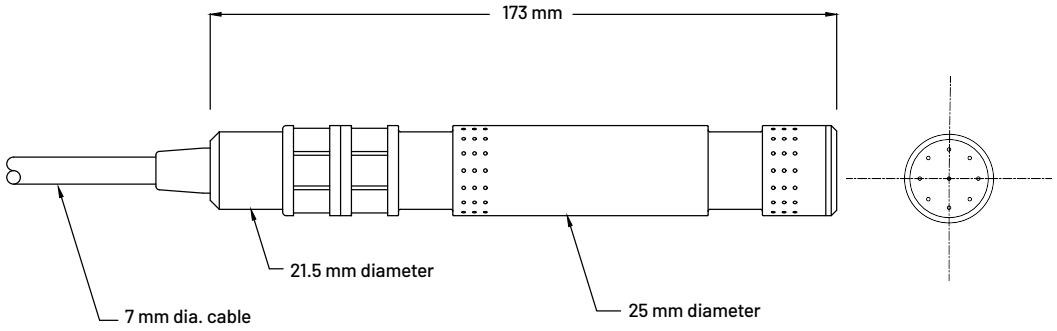


FIG. 1 KP Series dimensions

TYPICAL INSTALLATION

IMPORTANT

The KP probe switch must be installed vertically with its cable at the top. It will not operate in any other orientation.

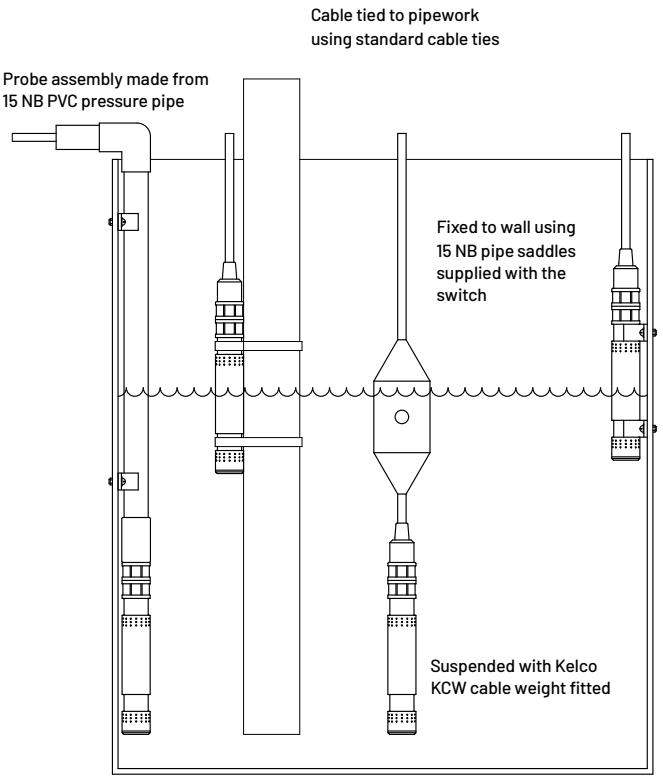


FIG. 2 Typical KP Series installations

Kelco Engineering Pty Ltd

ABN 20 002 834 844

HEAD OFFICE & FACTORY
9/9 Powells Road
Brookvale NSW 2100, Australia

POSTAL ADDRESS
PO Box 7485, Warringah Mall
Brookvale NSW 2100, Australia

SALES ENQUIRIES
sales@kelco.com.au
www.kelco.com.au

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