IACS® Intelligent Single / Dual Float Switch Board (Float Switch Kit 'X1D')
(Water / Liquid Level Switch Board, Single Channel) Information / Instructions / Datasheet

Last Updated: February 2020

Float Kit X-Series Board Overview

'Float Switch Kit X-Series'

Wiring on page 2 >>>

Figure 1

Specification & Features

- Switch rating of 25 Amperes (continuous) at domestic voltage (250V AC) or 10A at 30V DC with a peak / surge rating of 30 amps.
- Pluggable terminals with screw connectors for power source and float switch(es) and high quality flip up protected screw terminals on the channel (NO, COM, NC and optional grounding / earth terminal)
- Customisable programming on chip can allow the board to run on basic 'on / off' logic or a very basic form of artificial intelligence to decide whether to turn the channel on or off.
- Various kit options can include different types of float switches, or different programs to suit the user's application.
- You can wire devices to turn on or off as the state changes as the board has both Normally Open and Normally Closed.
- Power indicator (Red) and status indicator (Yellow) and channel (relay state) indicator (Blue or Green).
- Powered by a separate DC circuit, therefore the circuit / power source powering the board does not necessarily have to be the same as what you are switching.
- Dual-plated tracks conduct more current and make the device more reliable, the quality coating on the board makes it more resistant to residual moisture (not visible moisture) and corrosion.
- M3 Screw mounting holes (one at each corner).
- Optical protection on both float switch / button inputs to protect the microcontroller from surges *insulation is rated up to 1000V.
- Flywheel protection and input polarity protection along with an integrated logic level regulator makes this device suitable to be connected directly to 12V transformers (as an example for the 12V version).
- Suitable for both domestic and industrial use, robotics and for reliable switching situations.
- Program examples: This device can be programmed to do the following (but not limited to), Morse code / SOS signals, emergency bilge pump, high / low tank level control, resettable float switch system e.g. a push button on one terminal and a float switch on the other.
- Compatible with 'IACS® Ripple Correction Code™' subject to program options selected, this technology helps to eliminate problems caused by 'waves' or 'ripples' in for example tanks of water that can cause switches to lift and drop repeatedly. This technology can thus help increase the life expectancy and reliability of any devices connected to the board by reducing excessive switching operations to produce a smoother more consistent output.
- You should not allow the board to get wet, we advise you to house it in an IP rated enclosure and for mains voltage applications we urge you to have a qualified electrician perform the installation.
- CE, RoHS and WEEE compliant, manufactured in Europe. This product is designed for integration into your own design which may require further certification.

** All versions of this product are tested before shipping but relay / connectors / LED colour / size may vary per batch listing.

*** DIMENSIONS: **The pluggable connectors overhang the board by approx. 14mm on its length**

**** Availability / dispatch time, we process your order as fast as we can. **Time estimates are provided as an ESTIMATE not as a guarantee. We usually perform ahead of schedule and rare delays are often the cause of weather, customs, courier or other sources outside our control. Custom programming and development projects may take longer.**

DISCLAIMER: The board should be installed preferably by a qualified electrician if working with mains voltage. All power sources must be isolated before touching the circuit or interacting with the board. The PCB should be mounted away from water or liquids to ensure it does not get wet. Where needed it may be appropriate to mount the PCB inside an 'IP rated' water proof enclosure or securely mounted away from liquids. It may also be necessary to extend the wires that connect the float switch to the board, this can be done easily. Diagrams and instructions provided in this datasheet are given as an example in good faith and are accurate to the best of our knowledge. The manufacturer / retailer is not responsible for accidents, damage or injury.

Web: www.iacselectronics.com Tel: 07807 566 640 Mail: enquiries@iacselectronics.com

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Version Codes & Variants

F K – X 1 D 1 – 12VDC

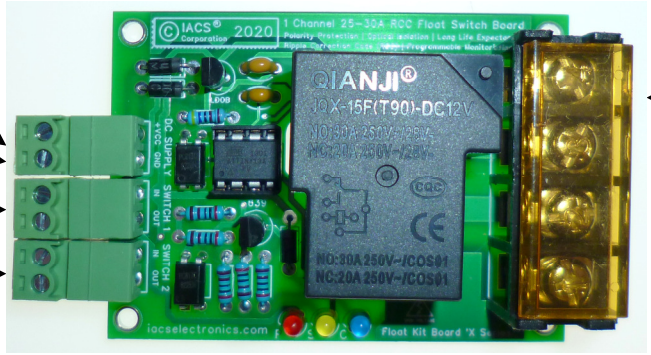
- **FK-X** — The kit type / name. FK-X denotes: 'Float Kit X Series'
- **1** — This single character denotes the type of float switch included with the kit, for example. 0 = No float switch included, 1 = Black polypropylene SE
- **D** — This single character denotes what the kit consists of for example: D = Dual Float Switch, S = Single Float Switch
- **1** — This single character 0-9 A-Z denotes the programming or 'firmware type' which determines what the board does and how it reacts / processes / times the signals from the switches.
- **12VDC** — The voltage variant (supply voltage) for the board. This could be 12 or 24 volts.

Basic Wiring Theory

+VCC (Put your DC supply positive here e.g. +12V DC)

GND (Put your DC supply negative here)

These two terminals go to the two wires on the float switch. It should not matter which way around they are and the wires can be easily extended.



These three terminals operate like a light switch. Also known as 'SPDT' you get three terminals:

Normally Open

Common

Normally Closed

Generally whatever you want to control, if it fits the specification and is safe: you should be able to cut / intersect one of the wires e.g. positive or live (take care when working with high voltages) and route it through the switch, usually COM and NO.

Normally Open (NO) – usually this goes to your device on the positive side

Common (COM) – Usually this goes to your power source e.g. positive side of battery

Normally Closed (NC) – depends on set up – leave empty if not in use. DO NOT GROUND

When the LED marked 'C' is ON / float switch is activated the COM and NO terminals are closed and in effect 'connected together'.

Power does not go through the board from the control side to the switch side.

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Float Switch Specification

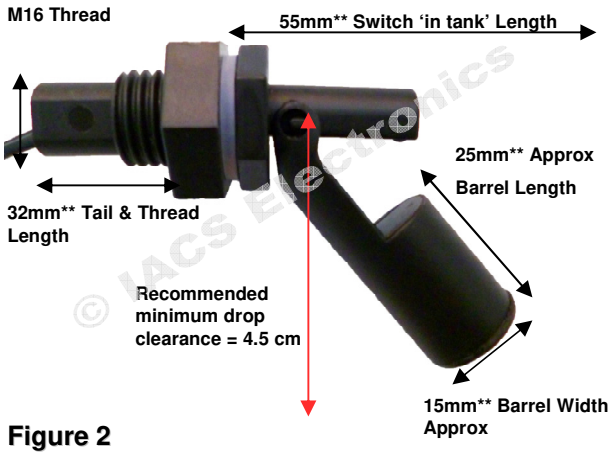

Figure 2

*Some float switches may have small marks that resemble dents, this is from the manufacturing process and does not indicate damage and does not affect their specified performance.

Thread pitch may vary slightly, the suitable nut is supplied with the float switch but improvements are being made all the time.

** Measurements are provided in good faith to aid the installation process. Please allow 1-3mm variation, we have provided some measurements such as recommended clearances to allow for example a 1mm gap at the end to prevent drag, not as an exact measurement.

Float Switch Name (s) / Type	Side-Entry Float Switch Black Polypropylene (PP) Float
Rated Switching Power	10 Watts, with board: 2.4kW / 2400 Watts
Maximum Switching Voltage	100V DC, with board: 250V AC or 30V DC @ 10A (Higher DC voltages achievable if running lower amperage)
Maximum Switching Current	0.5A, with board: 10 Amps
Max Breakdown Voltage	100VDC / 220V AC (switch only) Recommended to be used with PCB only.
Max Carry Current	1A, with board: 10 Amps
Max Contact Resistance	100mΩ (Switch Only)
Max Temperature	-10°C - +85°C (Not suitable for boiling water)
Material	Polypropylene (P.P.) May be used with salt water such as aquariums
Thread Diameter (Approximate)	16mm / M16 x 1.5mm Pitch*
Thread Length	18mm / 0.69"*
Switch Protruding Length 'in tank'	40mm
Cable Length	At least 28cm of cable will be attached to the switch, this can be extended easily using appropriate 2 core cable.

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