



KARI Float Switch Operation *Manual*

A diagram of a KARI float switch. A grey cable descends from the top left, passes through a black conical float, and then splits into two branches. Each branch ends in a yellow conical float with a black top. The floats are positioned in a blue liquid. A green circle is next to the upper float, and another green circle is next to the lower float.

Start

Large amount of liquid.
Discharging pump starts.

Stop

Lower limit for
discharging.
Discharging
pump stops.

A large, light grey "C2" inside a double-lined circle.

C2

Image C2H shows the operation
of the KARI Float Switch

KARI Float Switch – compact and reliable

The KARI Float Switch is a control device for charging and discharging pumps and motor and magnetic valves. It is also an alarm device that alerts the user at specified surface levels. SGS FIMKO Oy (the Finnish Electrical Inspectorate) has performed testing in accordance with the Low Voltage Directive (LVD) and approved the KARI Float Switch for use in non-flammable liquids at 250 volts.

FUNCTIONS

DISCHARGING-PUMP CONTROL

C2H	Pump control with one switching element.
C2Y	Pump control with two switching elements. Optionally, two high level alarms.

CHARGING-PUMP CONTROL

C2L	Pump control with one switching element.
C2A	Pump control with two switching elements. Optionally, two low level alarms.

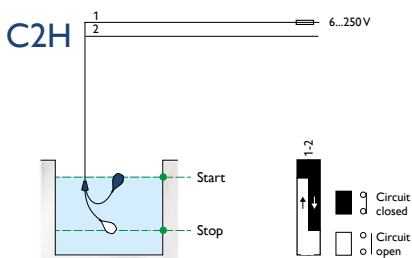
ALARM

C2HL	High and low level alarms.
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ORDER CODE

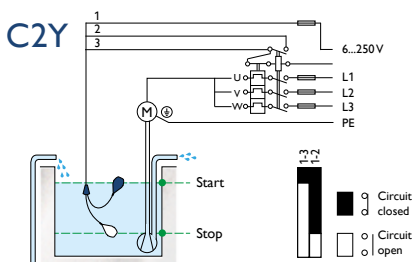
C2H	K	N	Au		_KP	_20
				Deviating surface levels (cm) Dxx	Cable length (m)	
				Special type ID Vxx	1st letter Non-standard cable weight K = 700 g L = 1000 g	
				Gold-plated contacts (Au) 1 mA ... 100 mA	2nd letter P = pressure-resistant	
Heat-resistant cable types N = TPU S = silicone T = teflon U = UL/CSA PVC						
Cable types Empty = PVC A = rubber N = TPU S = silicone T = teflon U = UL/CSA PVC K = heat-resistant						
Circuit diagram C2H, C2Y, C2L, C2A, C2HL						

CIRCUIT DIAGRAM



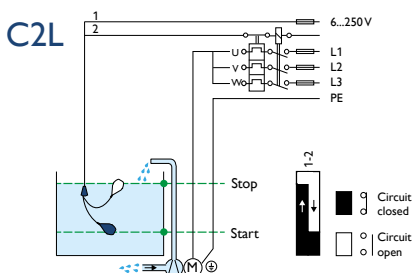
DISCHARGING-PUMP CONTROL

Pump control with one switching element.



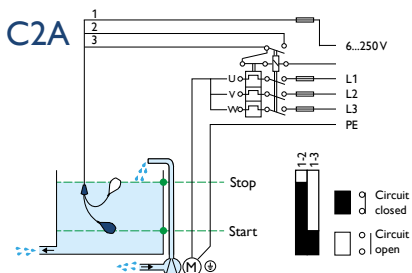
DISCHARGING-PUMP CONTROL

Pump control with two switching elements. Take note of the auxiliary contact of the contactor.



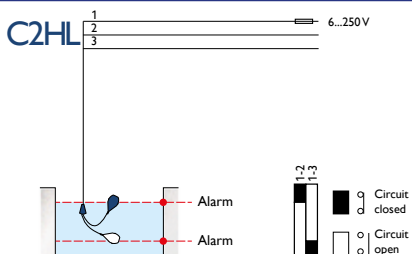
CHARGING-PUMP CONTROL

Pump control with one switching element.



CHARGING-PUMP CONTROL

Pump control with two switching elements. Take note of the auxiliary contact of the contactor.



HIGH AND LOW LEVEL ALARM

INSTALLATION AND ADJUSTMENT

The KARI Float Switch is mounted to hang from its own cable. The float switch floats on the surface of the liquid and follows the movement of the liquid's surface. Functions are controlled in the various tilt angles of the float. The switching distance differential is adjusted by moving the weight along the cable.

Installation considerations

- The height at which the float hangs and the distance of the cable weight from the float can be adjusted. The differential between the start and stop levels is at its lowest when the cable weight is about 10 cm from the tip of the float's strain-relief (see page 6).
- If the viscosity of the liquid is high or floating to the sides needs to be restricted, we recommend a heavier weight of cable, which we supply as required. The weights are fixed to the cable with a clamp wedge (see Image 1 on the next page).
- It is important to keep the junction box in a dry environment. If this is not possible, the ends of float switch cables must be covered with, for example, protective grease (see Images 2 and 3 on the next page). An IP68 junction box is also available.
- The float switch needs a cable weight or other anchor point to operate.
- The installation site must be selected such that the float cannot become caught under or stay on top of any surface or get entangled in other structures (see Image 4 on the next page).
- When the float switch is tested without being floated, its correct orientation must be considered: the 'UP' mark on the side of the bottom portion must face upward. For example, when placed on the floor on its side, the float switch settles into this position because of its internal keel weight (see Image 5 on the next page).
- Tying the float switch from its cable near the float to, for example, the ascension pipe of the pump decreases the useful life of the cable; the float switch should hang freely from its cable (as shown in Image 6 on the next page).

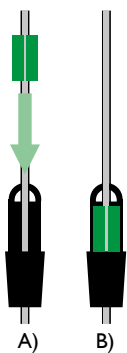


Image 1. Cable weights and the hanging loop are fixed to the cable with a clamp wedge (A–B).

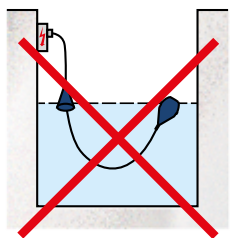


Image 2. Avoid extending or connecting the cable in humid conditions.

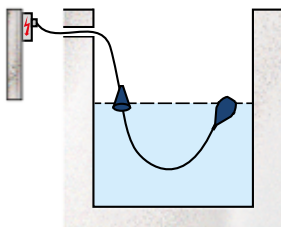


Image 3.

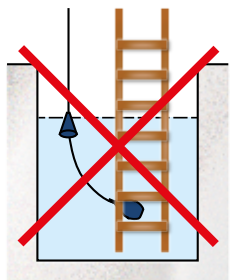


Image 4. Take care to ensure the free movement of the float.

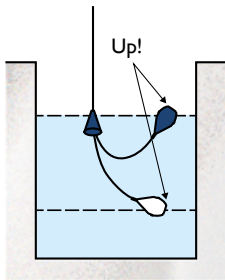


Image 5. Note the correct orientation of the float.

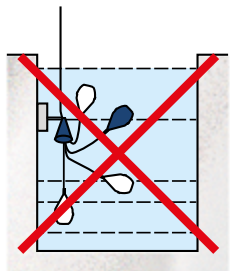
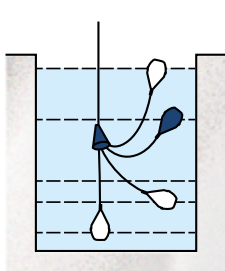


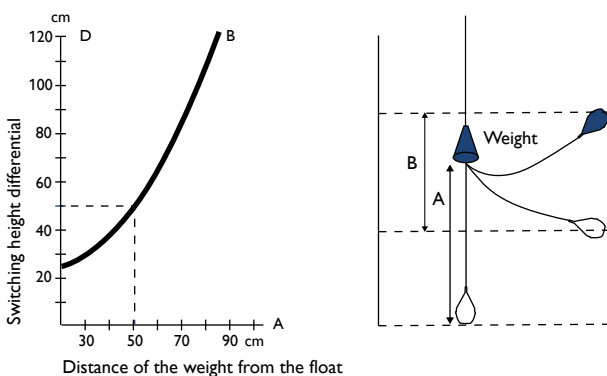
Image 6. Avoid fixing the float such that a sharp corner can cause kinks or wear to the cable.



TECHNICAL INFORMATION

Switching element	Microswitch
Voltage	6 ... 250V AC
Max. rated current	6A res., 3A ind.
Rated current with gold-plated contacts	1 mA ... 100 mA
Maximum DC power	75 VA (=0,3A, 250V)
Pressure rating for special types	200 kPa
Max. operating temperature	+55 °C (+75 °C supplied to order)
Range of adjustment for standard product (start to stop)	200 mm ... 1200 mm
Cable length	5 m (other lengths supplied to order)
Weight of 5 m cable	1,2 kg... 1,25 kg
Largest diameter	99 mm
Length of float casing	140 mm
Buoyancy in water	4 N
Float material	Polypropylene (PP)
Cable insulation (standard)	PVC
Other cable options	Rubber, TPU, teflon, silicone
Water-tightness	IP 67

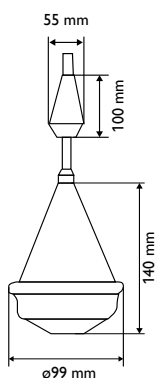
OPERATING CURVE



The dimensions in the drawings are for illustrative purposes only.

The switching height differential is adjusted to the required level by means of the cable weight. Curve B shows the start- and stop-height differential of the KARI Float Switch in relation to the distance of the weight from the float.

DIMENSIONS



A QUALITY FINNISH PRODUCT

Our quality control is based on the ISO 9001 quality management system. Each product is subject to a full operation test. The KARI Float Switch is also available in versions which fulfills the U.S. and Canadian national safety standards.



ROHS

