# Kari (KA) Level Float Switch


S (Standard) Series


C Series


M Series

RoHS Compliant

Kari cable suspended float switches are capable of up to four switching levels in a single float, and offer 25 different configurations - including some with built in hysteresis. That means you can replace up to four single level float switches with one 4-point level switch. Kari offers high chemical compatibility and durable components built to outlast any other.

## Features

- Up to 4 switching levels
- Optional built-in hysteresis
- 25 configurations
- Mercury and Lead free
- High chemical compatibility
- Proven reliability in operation
- Cost effective

## Quick Specs

- Max Voltage: 250 VAC or DC
- Temperature: Up to 175°F
- Float Material: Polypropylene
- Cable Material: PVC (standard), Polypropylene, Rubber, Teflon®
- IP67, NEMA 6
- CE, CSA General Purpose

# The World's Most Versatile & Reliable Float Switch

## Patented One Float, Multi-Switch Design

Want to make it easier to work with float switches? Want to avoid tangled floats? Kari float switches have up to four switch points in a single float.

This simplifies installation, avoids maintenance, and enhances reliability.

Stop messing around with tangles of multiple floats and streamline with Kari and APG.

## Unparalleled Reliability

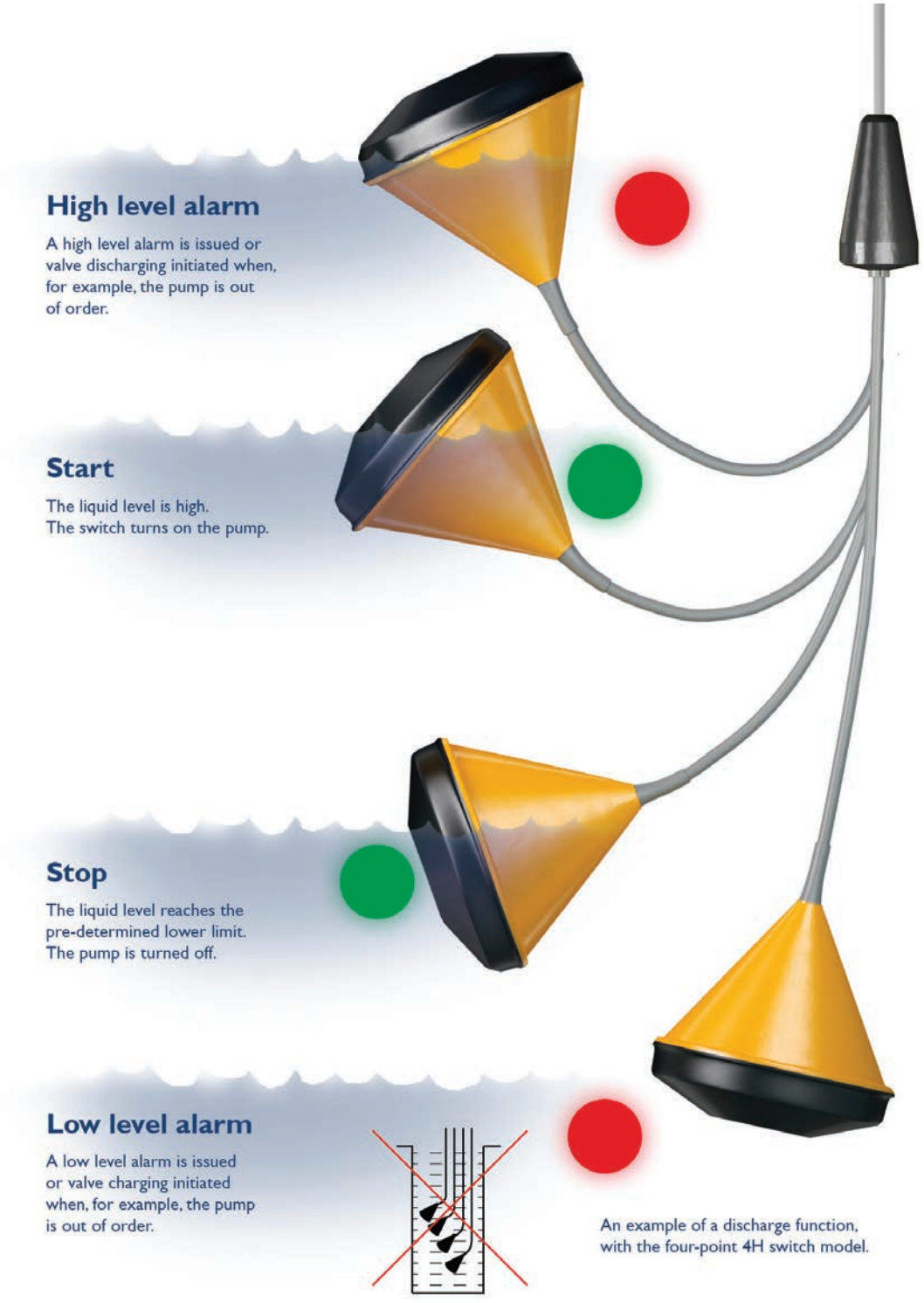
Many report the typical lifespan of a competitor cable suspended float switch to be about four years. We still have Kari floats in the field from 20 years ago.

These workhorses just keep going, much longer than your run-of-the-mill float switch.

You get uninterrupted service and a much lower cost of ownership in an easy-to-use package.

## Easy Switch Level Adjustment

The different activation levels within the float are easy to adjust by lengthening the cable and moving the weight. The closer the weight to the float, the tighter the switching differential - or the closer the switching levels are to each other.




An example of a discharge function, with the four-point 4H switch model.

# Plug & Play

## 25 Configurations, Built-In Hysteresis

Kari float switches come purpose built for a variety of unique applications with 25 different configurations. The diagram below descibes the function and available size of each model.

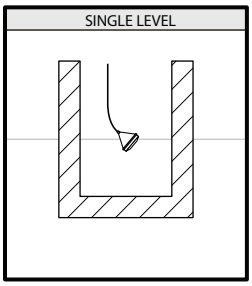
Unlike any other float switch on the market, several models include built-in hysteresis. The float handles the logic all by itself - making them ideal for backup pump control applications and reducing the need for expensive controllers.

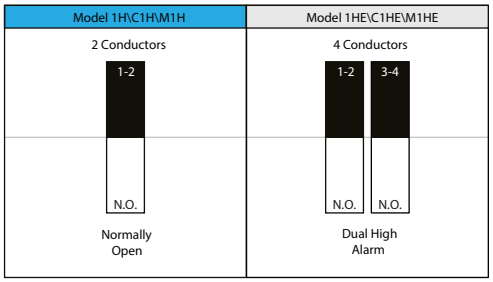
If you can wire a simple switch (and we can help you with that), then you can achieve complex pump control behavior with a single Kari float switch.

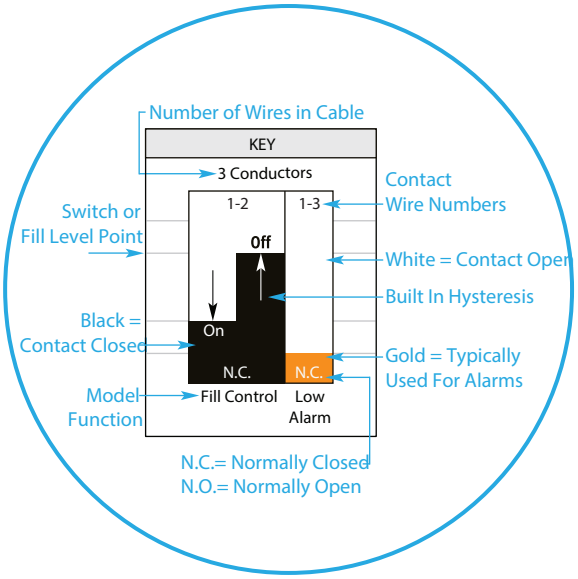
| Kari Float Switch Models | | | Model | | |
|---|---|---|---|---|---|
| Type | Description | Hysteresis | M Ø 3 in | C Ø 3.9 in | S Ø 6.7 in |
| 1H | High alarm or valve control | | ▲ | ▲ | ▲ |
| 1HE | Dual high alarm | | ▲ | ▲ | ▲ |
| 2H | Empty pump control | ▲ | ▲ | ▲ | ▲ |
| 2Y | Empty pump control | | | ▲ | ▲ |
| 3H | Empty pump control + high alarm | ▲ | | ▲ | ▲ |
| 3Y | Empty pump control + high alarm | | | ▲ | ▲ |
| 3HE | Empty pump control + isolated high alarm | ▲ | | ▲ | ▲ |
| 3YE | Empty pump control + isolated high alarm | | | | ▲ |
| 4H | Empty pump control + high and low alarm | ▲ | | | ▲ |
| 4H5E | Duplex empty pump control + isolated high alarm | ▲ | | | ▲ |
| 4Y | Empty pump control + high and low alarm | | | | ▲ |
| 4Y39 | 4 level empty pump control | | | | ▲ |
| 1L | Low alarm or valve control | | ▲ | ▲ | ▲ |
| 1LE | Dual low alarm or valve control | | ▲ | ▲ | ▲ |
| 2L | Fill pump control | ▲ | ▲ | ▲ | ▲ |
| 2A | Fill pump control | | | ▲ | ▲ |
| 3L | Fill pump control + low alarm | ▲ | | ▲ | ▲ |
| 3A | Fill pump control + low alarm | | | | ▲ |
| 3LE | Fill pump control + isolated low alarm | ▲ | | ▲ | ▲ |
| 3AE | Fill pump control + isolated low alarm | | | | ▲ |
| 4L | Fill pump control + low and high alarm | ▲ | | | ▲ |
| 4L5E | Duplex fill pump control + isolated low alarm | ▲ | | | ▲ |
| 4A | Fill pump control + low and high alarm | | | | ▲ |
| 1C | High or low alarm, change-over switch | | ▲ | ▲ | ▲ |
| 2HL | High and low alarm | | | ▲ | ▲ |

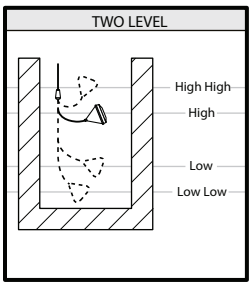
# Model Selection Guide

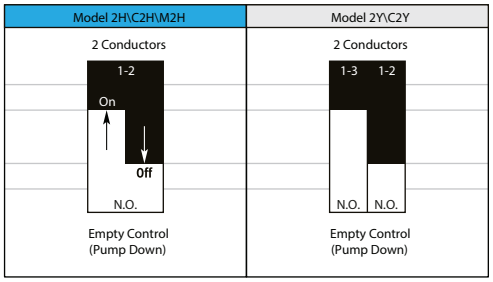
## Empty Control (Form A)

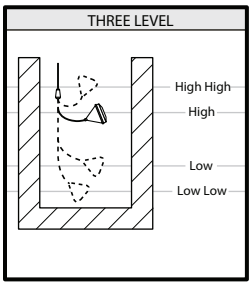


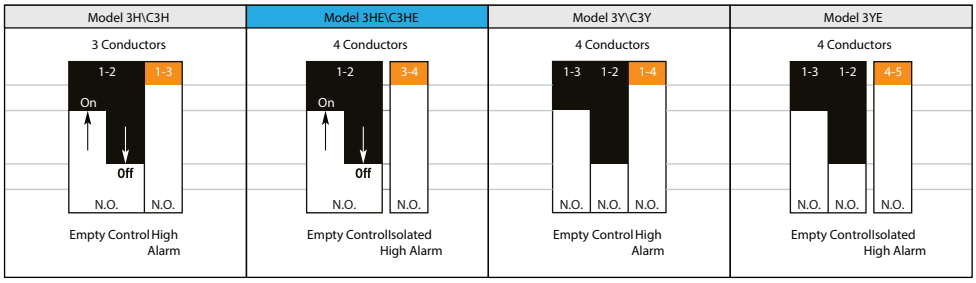



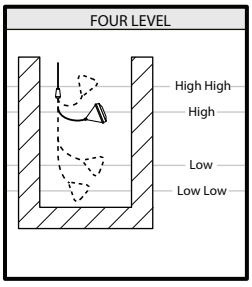



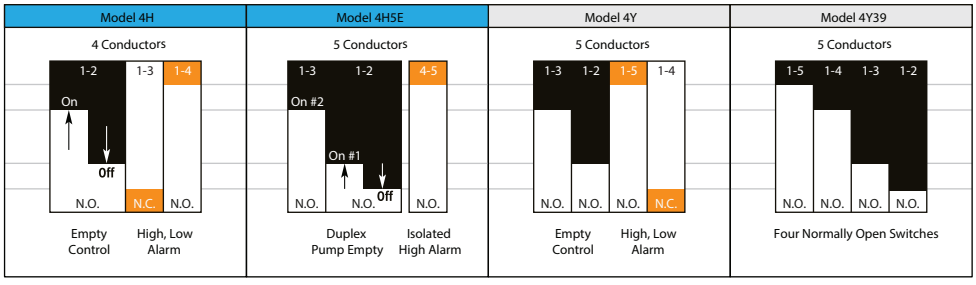




## Popular Models *(marked in blue above)*

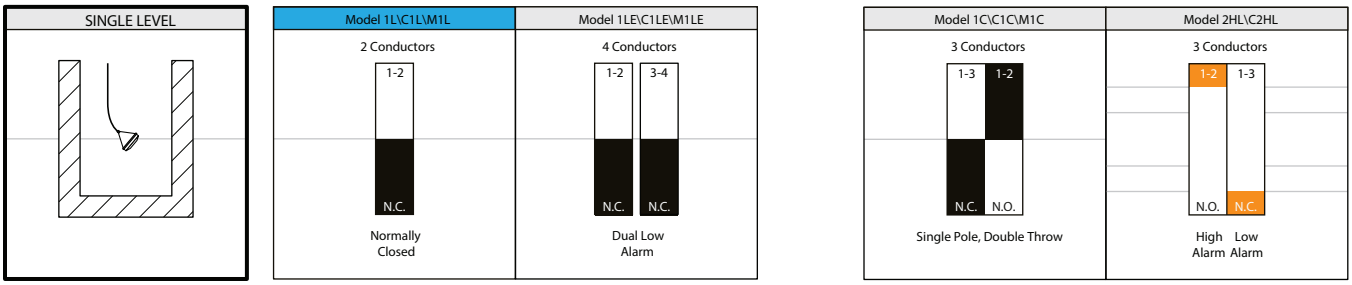
| Model Number | Model Description |
|---|---|
| KA-1H/M1H | One switch, NO |
| KA-2H/M2H | Two switch, NO, hysteresis |
| KA-3HE | Three switch, NO, hysteresis, isolated alarm |
| KA-4H | Four switch, NO, hysteresis, hi/low alarms |
| KA-4HE | Four switch, NO, hystesis, duplex control, isolated alarm |

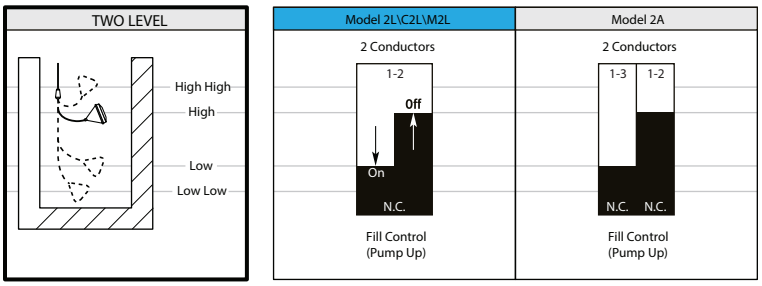
**Ideal For Lift Stations**

One long-lasting float for complex pump control. The only smart choice for float switches in lift stations.

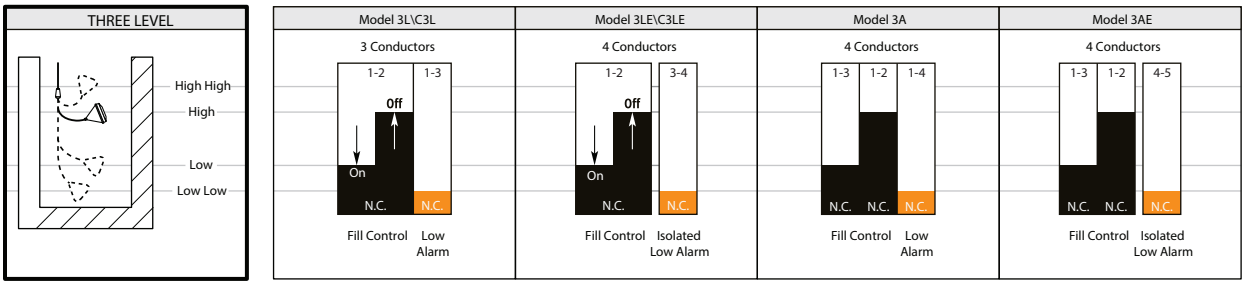
## Fill Control (Form B)

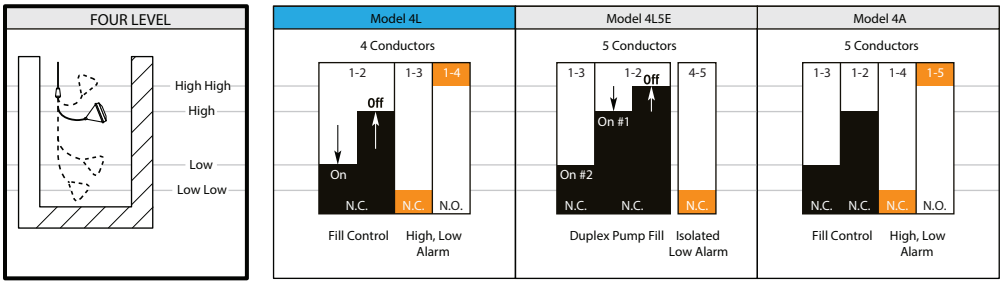
## Other




*The diagrams show the action of each Kari float switch model, organized by basic application type. Use the key to interpret each diagram. Contact Automation Products Group, Inc. for help selecting the right model.*



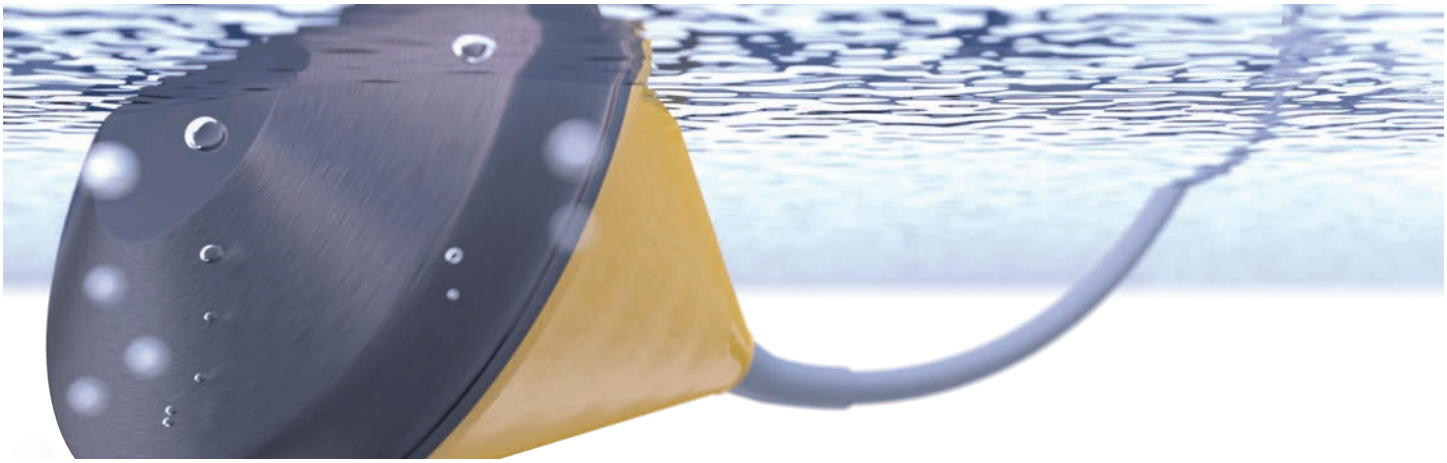

## Popular Models *(marked in blue above)*

| Model Number | Model Description |
|---|---|
| KA-1L/M1L | One switch, NC |
| KA-2L/M2L | Two switch, NC, hysteresis |
| KA-4L | Four switch, NC, hysteresis, hi/low alarms |

**Perfect Backup**

Two level control with built-in hysteresis, wired to the motor starter. What more could you ask for?

# Specifications



## Performance

- Switching Differential:
  - Standard: Min: 10 in. - Max: 50 in.
  - Optional: Min. 2.5 in - 75 in. (60 in. M series)
- Maximum Pressure: 28 psi (2 bar)

## Connectivity

- Cable: Up to 5 wires

## Environmental

- Max. Liquid Temperature:
  - Standard: 130°F (54°C)
  - Optional: 175°F (80°C)
- Protection Rating:
  - IP67
  - NEMA 6

## Certification

- CSA General Purpose
- CE

## Electrical

- Maximum Voltage: 250 VAC or DC
- Maximum AC Current (Resistive): 6 A
- Maximum AC Current (Inductive): 3 A
- Maximum DC Power: 75 VA (0.3 A @ 250 V)

## Physical

- Minimum Fluid Specific Gravity:
  - 0.7 for Standard float
  - 0.95 for Mini float
- Standard Cable Lengths:
  - 5m (16 ft)
  - 15m (49 ft)
- Weight: 1.3 - 4 lbs (varies on type)
- Float - Polypropylene
- Cable
  - Standard: PVC
  - Optional: Rubber
    - PTFE (Teflon®)
    - TPU (Oil resistant)

# Model Configuration Options

Model Number: KA - _____ - _____ - _____ - _____
A B C D

## A. Model and Function

**Null**-Large, **C**-Medium, **M**-Mini

Ex. 1H (Large), C1H (Medium), M1H (Mini)

- ☐ **__1L** Low Alarm
- ☐ **__1H** High Alarm
- ☐ **__1C** High / Low Alarm
- ☐ **__1LE** Dual Low Alarm*
- ☐ **__1HE** Dual High Alarm*

Note: A cable weight does not come with single level floats.

**Null**-Large, **C**-Medium, **M**-Mini

Ex. 2H (Large), C2H (Medium), M2H (Mini)

- ☐ **__2L** Hysteresis Fill Control (pump Up)
- ☐ **__2H** Hysteresis Empty Control (Pump Down)
- ☐ **__2Y** Empty Control (Pump Down)*
- ☐ **__2A** Fill Control (Pump Up)*

*Function not available with M-Series model.

**Null**-Large, **C**-Medium

Ex. 3H (Large), C3H (Medium)

- ☐ **__2HL** High and Low Alarm
- ☐ **__3L** Hysteresis Fill + Low Alarm
- ☐ **__3H** Hysteresis Empty + High Alarm
- ☐ **__3Y** Empty Control + High Alarm
- ☐ **__3LE** Hysteresis Fill + Isolated Low Alarm
- ☐ **__3HE** Hysteresis Empty + Isolated High Alarm

Note: Use the **M**-Mini option if no suspended solids are present, the specific gravity of the liquid is greater than 0.95 and no more than two switch points are needed.

**Null**-Large

Ex. 3Y (Large), only available in large size

- ☐ **3A** Fill Control + Low Alarm
- ☐ **3AE** Fill Control + Isolated Low Alarm
- ☐ **3YE** Empty Control + Isolated High Alarm
- ☐ **4A** Fill + High and Low Alarm (5 conductor)
- ☐ **4L** Hysteresis Fill + High and Low Alarm (4 conductor)
- ☐ **4Y** Empty + High and Low Alarm (5 conductor)
- ☐ **4H** Hysteresis Empty + High and low Alarm (4 conductor)
- ☐ **4L5E** Duplex Pump Fill + Isolated Low Alarm
- ☐ **4H5E** Duplex Pump Empty + Isolated High Alarm
- ☐ **4Y39** Lead/Lag Pump Control + High and Low Alarm

## B. High Temperature Option

- ☐ **(Null)** Standard 130°F (55°C)
- ☐ **K** High Temperature 175°F (80°C)

## C. Cable Option

- ☐ **(Null)** PVC
- ☐ **A** Rubber
- ☐ **T** PTFE (Teflon®)
- ☐ **N** TPU (Oil Resistant)

## D. Cable Length

- ☐ **(Null)** 16 ft. (5 m) cable standard
- ☐ **_L** (specify in meters)

# Kari Accessories

Please order separately, by part number.

| Description | Part Number |
|---|---|
| Kari A weight - PP covered 3/4lb (400g) - 4.3 in X 2.2 in | 122039 |
| Kari B weight - PP covered 1 1/2lb (700g) - 5.2 in X 3 in | 122040 |
| Kari C weight - PP covered 2 1/4lb (1Kg) - 5.2 in X 3 in | 122042 |

# APG & Kari-Finn

In the 1960's, Kari-Finn Oy developed a method to install four switches in a single float. They patented the product and changed the world of simple level control forever.

At APG, we fell in love with the Kari-Finn and their innovative float switch. It fits perfectly with our passion for making high quality sensors for reliable level and pressure measurement and control.

We have long had a relationship of trust based on mutual values. We're the exclusive distributor of Kari float switches in North America.

## Lift Stations

While the Kari float switch can be used in a myriad applications, it's extremely well suited for lift stations. A single float can control a duplex pumping station with built-in hysteresis.

## Backup Pump Control

The KA-2H and KA-2L models are ideal for backup pump control. They have built-in hysteresis (no need for a controller to provide this logic) and can be wired directly to the motor starter.

These floats are perfect for any backup pump control application in almost any tank or vessel.

You can find us on Twitter (@apgsensors), Facebook (APGsensors), and LinkedIn (Automation Products Group, Inc.).

For questions about Kari or APG, contact us using the information below. We also have live chat on our website.