JERGUSON®
A PRODUCT OF CLARK-RELIANCE

# High Pressure Horizontal External Cage
## *Magnetic Level Switch*

| | |
|---|---|
| Section: | JS100 |
| Bulletin: | JS100.07 |
| Date: | 4/2017 |
| Supercedes: | 10/2006 |

# Jerguson's Tri-Magnet Level Switches deliver failure-free performance.

**The innovative use of repelling magnetic fields eliminates springs and other mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.**



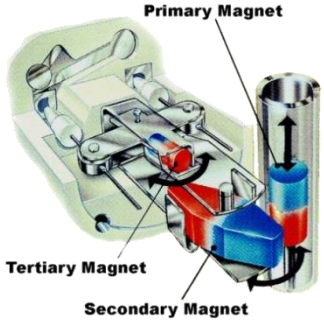
(Without Cooling Fins)



Series JH
(With Cooling Fins)

## FEATURES

- **Tri-Magnet Switching**
- **Vibration Resistant**
- **Sealed Cage**
- **ASME B31.1 Design**
- **ASME B31.3 Design**
- **Stainless Steel Trim**




**Unique 3 magnet latching.**
**No springs...No problem.**

*"The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007."*

*-Maintenance Superintendent,*
*Major Utility Power Generation Plant*

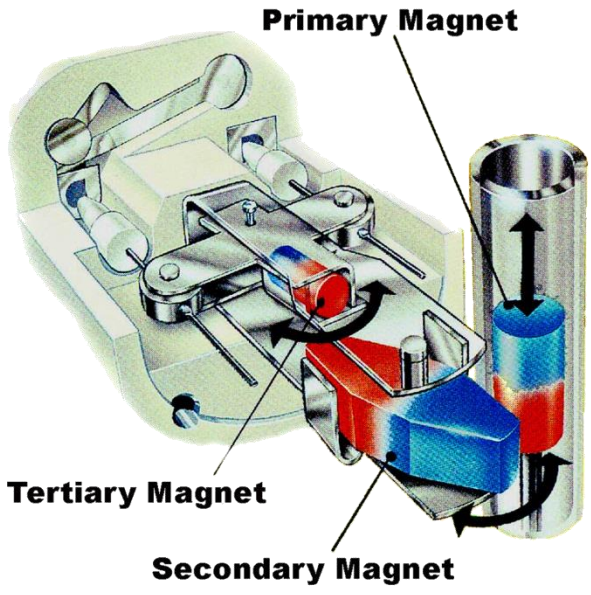
**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**

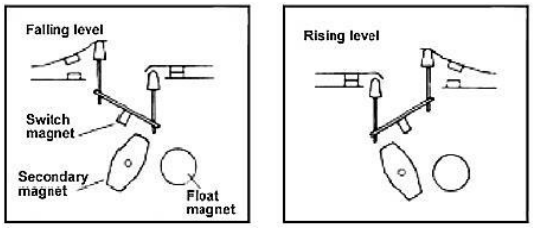
16633 Foltz Parkway ● Strongsville, OH 44149 USA Telephone: (440) 572-1500 ● Fax: (440) 238-8828
www.jerguson.com ● sales@clark-reliance.com

# JERGUSON® LEVEL SWITCHES
# THE SWITCH MECHANISM

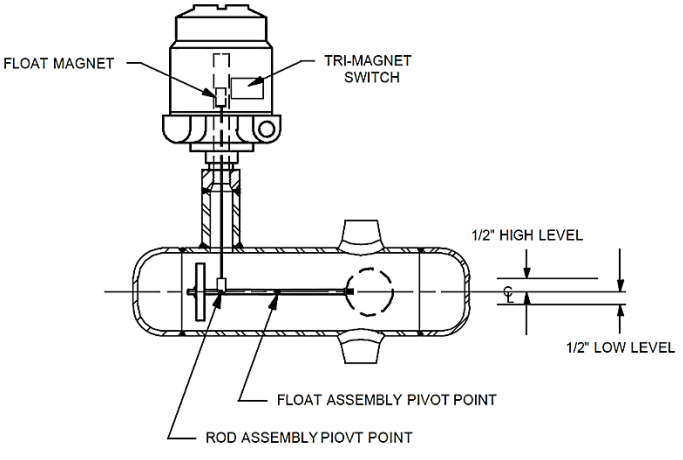
## Principle of Operation

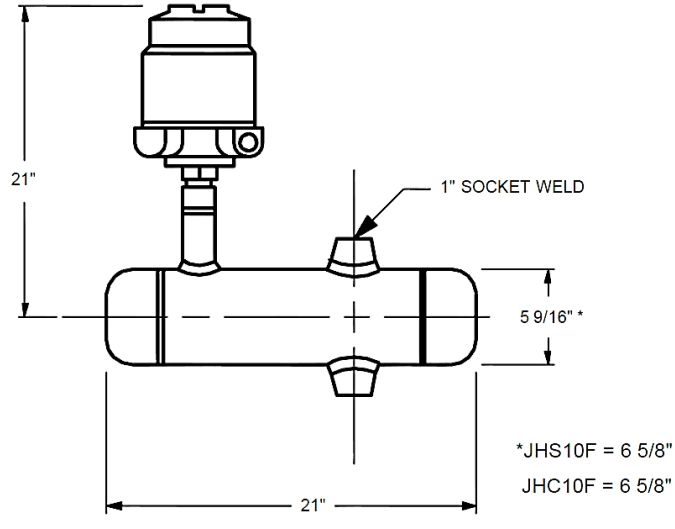
The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching…**no springs…no spring problems!**




Schematic showing three-magnet system




The JH Series is designed for high pressure/high temperature applications that are beyond the limitations of typical external cage vertical type float and displacer level switches. By utilizing a pivot and counter balance technique, the wall thickness of the float can be increased to handle higher pressure ratings. As the liquid rises and falls inside the chamber, the float assembly pivots causing the float magnet, which is attached to the rod assembly, to move in a downward or upward position. This movement causes the Tri-Magnet switch to actuate. The H series level switches can be used for a low level or high level installation. The unit is mounted relative to the actuation point from the centerline of the chamber.

# ORDERING INFORMATION

## TYPICAL MODEL

**JHC8F SA4N 1D4 1 2 S _**

| Model No. | Material | Min. S.G. | Pressure Rating (PSIG) | | |
|---|---|---|---|---|---|
| | | | @ 100°F | @ 750°F | @ 1000°F |
| **JHC8F** | Carbon Steel | 0.60 | 1300 | 845 | N/A |
| **JHC9F** | Carbon Steel | 0.60 | 2095 | 1365 | N/A |
| **JHC10F** | Carbon Steel | 0.60 | 3790 | 2460 | N/A |
| | | | | | |
| **JHS8F** | 316-SST | 0.60 | 1300 | 1045 | N/A |
| **JHS9F** | 316-SST | 0.60 | 2095 | 1690 | N/A |
| **JHS10F** | 316-SST | 0.60 | 3790 | 3050 | N/A |
| | | | | | |
| **JHH8F** | High Alloy = 1 1/4 Cr - 1/2 Mo | 0.60 | 1300 | 990 | 505 |
| **JHH9F** | High Alloy = 1 1/4 Cr - 1/2 Mo | 0.60 | 2095 | 1595 | 815 |
| **JHH10F** | High Alloy = 1 1/4 Cr - 1/2 Mo | 0.60 | 3790 | 2880 | 1475 |

**See Note Below**

**Note: All JHH Models include dual temp extension and cooling fins.**

| Design Options | |
|---|---|
| (Omitted) | Standard Design |
| WN | Weld Neck Flanges |
| SW | Socket Weld Flanges |
| RTJ | Ring Type Joint Flange |
| 3E | 3" Temperatrue Extension |
| 6F | 6" Temp. Extension w/ Cooling Fins |
| X | Special Design |

| Process Conn. Style | |
|---|---|
| F | FNPT |
| M | MNPT |
| S | FSW |
| P | Plain-End/MSW (Sch.80) |
| 1 | 150#RFSO ASME |
| 3 | 300#RFSO ASME |
| 6 | 600#RFSO ASSME |
| 9 | 900#RFSO ASME |
| 0 | 1500#RFSO ASME |

[1] Not available with all offerings, consult factory for applicability.

| Process Conn. Size | |
|---|---|
| 0 | .50" (DN15) |
| 1 | .75" (DN20) |
| 2 | 1.00" (DN25) |
| 3 | 1.25" (DN32) |
| 4 | 1.50" (DN40) |
| 5 | 2.00" (DN50) |
| 6 | 2.50" (DN65) |
| 7 | 3.00" (DN80) |

| Process Conn. Orientation | |
|---|---|
| 1 | Top-Bottom |

## ENCLOSURE TYPES

| Code | Duty | Material of cover | Material of base | Material of pressure | Material of screwed | Maximum number of switches |
|---|---|---|---|---|---|---|
| **SA4N** | Weather-proof | Aluminum Alloy | | 316 Stainless Steel | To match chamber material | 1 |
| **SA7F** | Explosion-proof Factory Mutual Cl.I,Div.1,Grps B,C &D | Drawn Steel | Aluminum Alloy | | | |

## SWITCH MECHANISM TYPES

| | Type | Max. Temp °F Standard Models | Max. Temp °F 6" Temp. Ext. + Cooling Fins | AC max. values | | | DC max. values | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | VA | Volts | Amps | Watts | Volts | Res. Amps | Ind. Amps |
| **1X4** | 4 Contact Link for SPDT | 480 | 1000 | 2000 | 440 | 10 | 50 | 250 | 10 | 0.5 |
| **1D4** | | 750 | 1000 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1H4** | | 480 | 850 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1E4** | Two independent single pole single throw contact sets | 850 | 1000 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1P4** | | 750 | 1000 | 6 | 250 | 0.25 | 3.6 | 250 | 0.25 | 0.1 |
| **1X8** | 8 Contact Link for DPDT | 480 | 1000 | 2000 | 440 | 10 | 50 | 250 | 10 | 0.5 |
| **1D8** | | 750 | 1000 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1H8** | | 480 | 850 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1E8** | Four independent single pole single throw contact sets | 850 | 1000 | 2000 | 440 | 5 | 50 | 250 | 5 | 0.5 |
| **1P8** | | 750 | 1000 | 6 | 250 | 0.25 | 3.6 | 250 | 0.25 | 0.1 |

**NOTES**:
1. Code design standard on all chambers unless otherwise specified.
2. Code radiography is available upon request.
3. ***Main Chamber***: Circumferential welds between center pipe & pipe cap(s) are full penetration, single-V, butt welds. ***Process Connections***: Immediate branch is an o'let. For flanged connections, when selected, a 1" NPS nipple is welded to the o'let, and slip-on flanges are welded to the nipple, as standard.
4. Welders qualified to ASME IX. PWHT available upon request.

**Authorised Distributor:**

NATIONWIDE OIL & GAS

46, Jalan SS 22/21, Damansara Jaya,
47400 Petaling Jaya,
Selangor Darul Ehsan, Malaysia.
*Email: nog@nog.com.my*
*Website: www.nog.com.my*

# Clark·Reliance®

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