VFD Accessories

Float Switches - tested for use with Aquavar SOLO Controllers

6K210 Gauge Guard

9K589 Over-Pressure Switch for use with Aquavar SOLO or “S-Drive” Controllers

9K585 Moisture Sensor with Relay

Line / Load Reactors

Filters

Sine Wave Filters

CentriPro

a xylem brand
9K585  MOISTURE SENSOR WITH RELAY

- 5 VDC power supply is provided by VFD
- Will detect any conductive non-flammable liquid
- Ideal anywhere water damage could occur
- Automatic reset

Undetected water damage, such as that caused by leaking pipes or corroded water heaters, cost homeowners tens of thousands of dollars each year. Such repairs are time consuming and costly to correct. Applications could include computer room sub-floor areas, telephone equipment rooms, bathrooms, laundry rooms, any areas adjacent to a water storage tank or piping. Also evaporative air conditioners, drip pans, overflows and /or drains.

Using no mechanical parts, the GRI Water Sensors are triggered by a moisture bridge across the sensor contacts. The GRI Water Sensors can be installed to detect a layer of water as minute as 1/16 of an inch in depth.

The 9K585 Closed Loop Sensors use an external power source to energize a built-in relay contact so battery power is not recommended. Used in a closed loop configuration, an alarm condition will occur when moisture is detected, or if power to the sensor is lost, and if the sensor should fail. The relay output can be wired directly to any alarm panel or can be used to actuate an external device, i.e. transmitter, annunciator, etc.

See IM234 for wiring instructions.

9K589  OVER-PRESSURE SWITCH FOR USE WITH AQUAVAR SOLO OR “S-DRIVE” CONTROLLERS

Features

- Range scale from 60 - 120 PSI
- Factory set at 80 PSI
- Lead-free brass construction
- Gold plated contacts for long life
- Use as over-pressure protection on Aquavar SOLO or S-Drive Controller
- Normally Closed contacts - connect leads to Secondary (dry) Contact Switch
- Wire length - 72 inches
- Use a 5/32” Allen wrench to unlock barrel to change pressure setting
- Snap action, opens and closes on ± 1 - 2 PSI range, not a differential pressure switch.
- Installation instructions and applications are detailed in the Aquavar SOLO IOM, IM229.
- NEMA 4, 13 (outdoor use)

This is the only pressure switch we have tested and approved for use with our variable speed drives. Standard pressure switch contacts tend to corrode and malfunction when used with dry contacts.
FLOAT SWITCHES - Tested For Use with Aquavar SOLO Controllers
The A2X Series of Float Switches have been tested and approved for use with CentriPro Variable Speed Controllers. The Float Switches come in various lengths and in Normally Open (N.O.) type for pumping down or emptying a tank as well as Normally Closed (N.C.) type, identified by a U Suffix, for pumping up, filling a tank or pond. Instructions for using these switches are in the SOLO IOM, IM229. The Float Switch bulletin is in the SES catalog and the wastewater section of our website, literature code is BCPFS.

Float Switch Order Numbers

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Normally Open</td>
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<tr>
<td></td>
<td>A2X13 10’</td>
<td>A2X33 20’</td>
<td>A2X53 30’</td>
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<td>Normally Closed</td>
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<tr>
<td></td>
<td>A2X23U 15’</td>
<td>A2X33U 20’</td>
<td>A2X53U 30’</td>
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Features
- Gold plated contacts for low current applications
- Operates on a 45º differential, above or below horizontal
- Includes a mounting clamp for attaching to pipe (as shown)
- Not sensitive to rotation
- 18 gauge, 2 conductor wire
- Maximum submergence is 30’
- Maximum water temperature 140º F
- Polypropylene float housing is impact and corrosion resistant
- Installation and application information is in the Aquavar SOLO IOM.

6K210 GAUGE GUARD

Features
- Low unit cost - makes it feasible to protect even moderate priced instruments.
- Compact size makes these isolators ideal for limited-space installations.
- + 4% accuracy, will handle most applications.
- Hermetically-sealed, molded uni-body construction - avoids possibility of leaks.
- Glass-filled Polypro bodies for chemical compatibility and maximum temperatures to 100º F
- Housing is glass filled Polypropylene.
- Each Gauge Guard features a durable and flexible Buna-N diaphragm which serves as a protective barrier between the process fluid and instrument.
- Simple to fill and install. Completely fill the internal space on the instrument side of the diaphragm with mineral or vegetable oil in order to transmit the process pressure to the instrument.

Maximum Pressure Ratings

<table>
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<tr>
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<th>Liquids</th>
<th>Gases</th>
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<tr>
<td></td>
<td>200 PSI (13.8 bars)</td>
<td>100 PSI (6.9 bars)</td>
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</table>

Maximum Temperature: 100ºF (38ºC)
Residential and Commercial Water

TCI MODEL KDR OPTIMIZED LINE REACTOR

KDR line reactors reduce harmonic current and help prevent nuisance tripping.

FEATURES
• High Z (Application where 5% reactor would be applied)
• 208/240V
• NEMA 3R Enclosure
• Ambient Temperature 40° C
• Fundamental Frequency: 50/ 60Hz
• Agency Approvals: UL, cUL; UL Recognized, CE Marked
• Short term overload rating – 200% rated current for minimum of 3 minutes
• Inductance Characteristics
  - Min 95% L at 110% Load
  - Min 80% L at 150% Load
• Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)

BENEFITS
• Cost effective
• Improve power factor of supply
• Increase life of drive
• Reduce nuisance tripping
• Protect drives and other sensitive equipment
• Reduce transient voltages
• Dampen overshoot peak voltage
• Balance drive input currents
• Reduce motor heating
• Reduce motor noise

TCI MODEL KLR HEAVY DUTY LINE / LOAD REACTOR

TCI KLR™ series three phase AC reactors are intended for use as input or output filters for AC-PWM variable frequency drives.

FEATURES
• 3 Phase 240 – 600V
• NEMA 3R Enclosure
• 6% Reactor
• Ambient Temperature 40° C
• Gapped Iron Core Inductor - All Copper Windings
• K-Rated, UL/ULC Recognized; CSA Certified; RoHS Compliant
• Short term overload rating – 200% rated current for min. of 3 minutes
• Inductance Characteristics
  - Min 95% L at 110% Load
  - Min 80% L at 150% Load
• *Maximum Altitude: 3,000 feet (Derate for applications above 3,000 feet)

BENEFITS
• Reduce voltage notching
• Limit magnitude of inrush current
• Prevent drive shutdown / overcurrent tripping
• Reduce harmonic distortion
• Improve phase to phase voltage imbalance
• Improve true power factor
• Protect VFD from damage

CentriPro Drive Model Number | Part Number | Current Rating (Amps)
--- | --- | ---
1AS15 | KDRULD21HE3R | 30.8
3AS20 | KDRULD21HE3R | 30.8
3AS30 | KDRULD21HE3R | 30.8
3AS50 | KDRULD22HE3R | 46.2
1151AB2 | KDRULB25HE3R | 16.7
1AB2 | KDRULB25HE3R | 16.7
2AB2 | KDRULB26HE3R | 24.2
3AB2 | KDRULD21HE3R | 30.8
5AB2 | KDRULD22HE3R | 46.2

KDR Reactor is designed for three phase use. For single phase use, connect input to Terminals A and C.

Controller Model Number | Part Number | Current Rating (Amps)
--- | --- | ---
1AS15 | KLRUL25ATBE3R | 25
3AS20 | KLRUL25ATBE3R | 25
3AS30 | KLRUL35ATBE3R | 35
3AS50 | KLRUL45ATBE3R | 45
1151AB2 | KLRUL18ATBE3R | 18
1AB2 | KLRUL18ATBE3R | 18
2AB2 | KLRUL18ATBE3R | 18
3AB2 | KLRUL35ATBE3R | 35
5AB2 | KLRUL45ATBE3R | 45

KLR Reactor is designed for three phase use. For single phase use, connect input to Terminals A and C.
TCI MODEL HG7 HARMONIC FILTER
HG7 harmonic filter provides a low impedance path for the major harmonic currents demanded by the drive.

FEATURES
- Meets IEEE-519 1992
- 3 Phase 240 – 600V
- NEMA 3R Enclosure
- Ambient Temperature 40° C
- Typical Efficiency: 98 - 99%
- Internal fusing protection
- Fundamental Frequency: 60Hz (50Hz for 400V)
- Agency Approvals: UL, cUL
- Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)
- Performance guarantee

BENEFITS
- Harmonic Reduction: < 7%
- High quality capacitors
  - Designed, built and tested specifically for use in harmonically rich environments
- Easy Installation
  - Fits easily into motor control centers and ships ready to install
- Uninterrupted operation
  - Drive continues to operate in the event of an HG7 shutdown
- Protect drives and other sensitive equipment
- Eliminates nuisance tripping
- Increase drive uptime dramatically
- Improves power factor
- Improves system efficiency and reliability
- Extends equipment life

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<tr>
<td>HG20BW03ST</td>
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TCI MODEL HSP SINGLE PHASE HARMONIC FILTER

The TCI HSP Single-Phase Line to Line Harmonic Filter is an optimal solution for mitigating harmonics in single-phase applications.

FEATURES
• 60Hz, 1 Phase, 240 & 480 Volt
• NEMA 3R Enclosure
• Ambient Temperature: -40° C to 50° C
• *Agency Approvals: UL, cUL
• Maximum Altitude: 3,300 feet (Derate for applications above 3,300 feet)

BENEFITS
• Harmonic Reduction to 12% THID
• High quality capacitors
  - Designed, built and tested specifically for use in harmonically rich environments
• Small footprint and rugged outdoor enclosure
• Large range of amp ratings to meet varying demands
• Easy Installation
• Protects inverter against voltage spikes caused by capacitor switching and other rapidly changing loads
• Protects upstream components (circuit breakers, fuses, conductors, transformers) from damage caused by harmonics

<table>
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<th>Part Number</th>
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<td>5AB2</td>
<td>HSP052BG3SC</td>
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TCI MODEL V1K DV/DT MOTOR PROTECTION OUTPUT FILTERS

V1K provides motor protection by limiting voltage spikes below 1,000 volts for long lead applications. For lead lengths above 1500 feet, consult factory.

**FEATURES**
- 2 - 130 amps; 240V - 600V; 2 - 125HP
- NEMA 3R Enclosure
- Carrier Frequency: 1 - 12 kHz
- Fundamental Frequency: 0 - 60Hz
- Efficiency: > 98%
- Insulation Rating 600V Class
- Agency Approvals: UL, cUL
- Maximum Altitude: 6,000 feet (Derate for applications above 6,000 feet)

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<tr>
<th>Order Number</th>
<th>Rated AMPS</th>
<th>Nominal HP* (240V)</th>
<th>Nominal HP* (480V)</th>
<th>Nominal HP* (600V)</th>
<th>Recommended ABII Number</th>
<th>Recommended SPD Number 1 Phase In</th>
<th>Recommended SPD Number 3 Phase In</th>
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<td>5</td>
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<td>SPD40050</td>
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<td>50</td>
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<td>100</td>
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<td>SPD20400 SPD40750</td>
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* Horsepower values are for reference purposes only.

Size filter by full load amperage draw.
SINEWAVE OUTPUT FILTERS

Sinewave Filters improve system performance by protecting the motor from the harmful effects of reflected waves and preventing motor failure associated with insulation failure, overheating, and noise. These filters are designed to extend motor life in variable torque applications such as fans and pumps with lead lengths up to 15,000 feet.

TYPICAL APPLICATIONS

- Mining
- Power Plants
- Oil & Gas
- Data Centers
- Pulp & Paper
- Renewable Energy
- HVAC Systems
- Material Handling
- Chemical Processing

OTHER FEATURES

- Nema 3R Enclosure
- Output Frequency to 80 Hz
- UL & cUL Listed
- Carrier Frequency 2 kHz to 16 kHz

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Description</th>
<th>Enclosure</th>
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<tbody>
<tr>
<td>MSD0009A300</td>
<td>5 HP 9AMP 460V Sine Wave Filter</td>
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<tr>
<td>MSD012A300</td>
<td>7.5 HP 12AMP 460V Sine Wave Filter</td>
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<tr>
<td>MSD016A300</td>
<td>10 HP 16AMP 460V Sine Wave Filter</td>
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<td>MSD023A300</td>
<td>15 HP 23AMP 460V Sine Wave Filter</td>
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<td>MSD055A300</td>
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<td>NEMA 3R</td>
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<td>250 HP 305AMP 460V Sine Wave Filter</td>
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<td>MSD362A300</td>
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<td>MSD480A300</td>
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<td>MSD0008C300</td>
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<tr>
<td>MSD010C300</td>
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<td>MSD020C300</td>
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Motor Input Waveform Without MotorShield

Motor Input Waveform With MotorShield

Xylem Inc.
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Fax: (888) 322-5877
www.centripro.com

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