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Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

FM3540
1025
Supersedes
0925

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PIVOT PAK™ IS

Installation and Maintenance Manual

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GENERAL INFORMATION

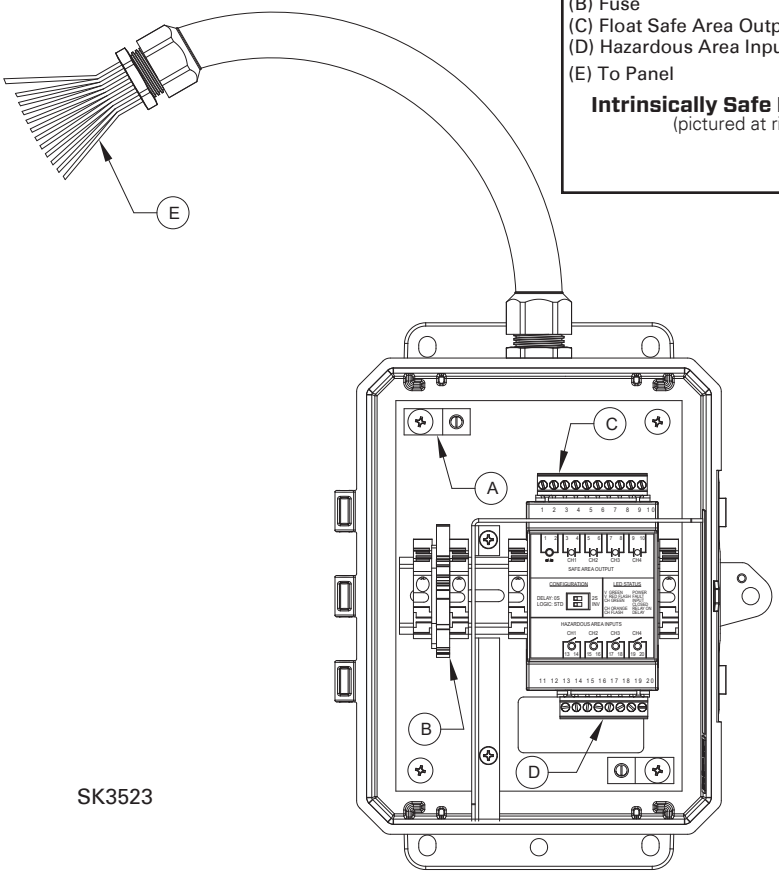
To meet the Class 1/Division 1 Intrinsically Safe requirements, float switches must be installed per Control Drawing ISD1A04 - see page 3 of this manual. This accessory junction box contains an intrinsically safe relay that limits the energy available to the float switches in a tank. The Pivot Pack IS is independent accessory junction box which allows it to be added to any of our existing Pivot panels. No other modifications are needed to our panels. The Pivot Pack MUST be installed in a general-purpose area.

Panel Components
(pictured at left)

(A) Ground Lug
(B) Fuse
(C) Float Safe Area Outputs from Panel
(D) Hazardous Area Inputs from Floats
(E) To Panel

Intrinsically Safe Relay (ISR)
(pictured at right)

Fuse Power (1)
Ground Lug (2)



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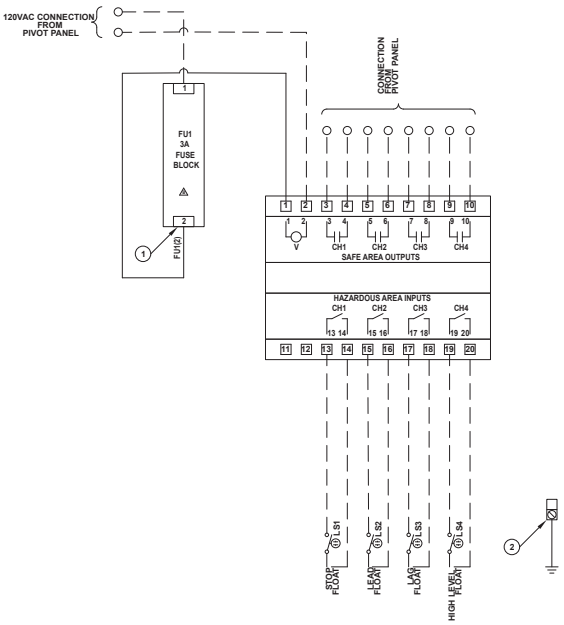


SK3488

The Pivot Pak IS must be installed and serviced by a licensed electrician in accordance with the National Electric Code NFPA-70, state, and local requirements/codes.

DO NOT DISCARD THIS MANUAL. It contains important information regarding safe use of this product. This manual should always be referenced during installation and operation. Please store this Manual in a safe location.

This Manual is aimed at professional users and is only intended to provide them guidelines for the definition of an industrial, tertiary or domestic electrical installation. Information and guidelines contained in this Manual are provided AS IS. Zoeller Pump Company and its parent company Zoeller Company makes no warranty of any kind, whether express or implied, such as but not limited to the warranties of merchantability and fitness for a particular purpose, nor assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed in this Manual, nor represents that its use would not infringe privately owned rights. The purpose of this Manual is to facilitate the implementation of International installation standards for designers & contractors, but in all cases the original text of International or local standards in force shall prevail. Professional installers should adapt these guidelines as required for their specific circumstances as required for each application and their specific jurisdiction.

LIMITED WARRANTY

Manufacturer warrants, to the purchaser and subsequent owner during the warranty period, every new product to be free from defects in material and workmanship under normal use and service, when properly used and maintained, for a period of 3 years from date of purchase by the end user. Proof of purchase is required. Parts that fail within the warranty period, that inspections determine to be defective in material or workmanship, will be repaired, replaced or remanufactured at Manufacturer's option, provided however, that by so doing we will not be obligated to replace an entire assembly, the entire mechanism or the complete unit. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to and there shall be no warranty for any material or product that has been disassembled without prior approval of Manufacturer, subjected to misuse, misapplication, neglect, alteration, accident or uncontrollable act of nature; that has not been installed, operated or maintained in accordance with Manufacturer's installation instructions; that the interior components of which have been subjected to outside substances including but not limited to the following: moisture, gases, dust, insects or other pests, or corrosive substances in all applications. The warranty set out in the paragraph above is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products. Contact Manufacturer at, 3649 Cane Run Road, Louisville, Kentucky 40211, Attention: Customer Support Department to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

MANUFACTURER EXPRESSLY DISCLAIMS LIABILITY FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR BREACH OF EXPRESSED OR IMPLIED WARRANTY; AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY. IN NO CASE, SHALL THE AMOUNT COVERED BY THE WARRANTY EXCEED THE PURCHASE PRICE.

Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

In instances where property damages are incurred as a result of an alleged product failure, the property owner must retain possession of the product for investigative purpose.

ELECTRICAL PREPARATION

Refer to the Pivot Pak IS panel's wiring schematic for detailed electrical connections. Follow best practice installation of the Pivot Pak IS panel which is required to be installed in a General-Purpose area. Ensure the float wiring from the Pivot Panel, and the field are correctly connected to the IS Relay following all local generally accepted installation practices.

INSTALLATION

1. Initial Inspection: Remove the panel from the carton and inspect for damage or missing components. Damage claims must be submitted to the panel's sales location or distributor.
2. Mounting: Mount panel as close to primary panel as possible to ensure leads can reach proper location.
3. Conduit Holes: Identify the number and sizes of required conduits (consult the wiring schematic and ensure compliance with all local and national codes). Refer to the assembly drawing AG34X00-000 for the cable entry location designated for intrinsically safe field wiring. Drill the appropriate conduit holes in the bottom of the panel, paying special attention to avoid hitting any internal panel components.
4. Conduits: Install the conduits and proper conduit fittings, and route the conduits to their various locations. NOTE: If possible, purchase equipment with sufficiently long cords to avoid splicing. If splicing is required, be sure to use a proper junction box mounted above grade and utilize wire conductors of sufficient size to meet applicable codes. If a junction box is used, be sure to follow all installation instructions provided with the box.
5. Install the Pivot Pak IS per wiring schematic.
6. Seal Conduits: All conduits must be sealed on both ends using an appropriate duct seal putty. Silicone or other caulks should not be used to seal conduits as they are not maintenance friendly and may still allow dangerous gasses to pass the barrier.

MAINTENANCE

This panel is designed to be relatively maintenance free. That said, it is good practice to inspect the components of any lift station periodically. This includes, at a minimum, the pump, floats, and control panel.

During panel inspection, check for moisture, insect infestation, gaseous odors, or component corrosion. The presence of any of these conditions implies that the panel is not sealed appropriately. Verify that all conduits are sealed at both ends with appropriate duct seal and that the door seals are in good condition.

Fuse Specifications: Power Fuse – 5x20mm, 3A, Fast Acting, rated 240VAC

CONTROL DRAWING ISD1A04

ASSOCIATED APPARATUS / APPAREILLAGE CONNEXE

Revision A

Notes:

1. The output current of this associated apparatus is limited by a resistor such that the output voltage-current plot is a straight line drawn between open-circuit voltage and short-circuit current.

2. This associated apparatus may be connected to simple apparatus as defined in Article 504.2 installed and temperature classified in accordance with Article 504.10(D) of the National Electrical Code (ANSI/NFPA 70), or other local codes as applicable.

3. Capacitance and inductance of the field wiring from the simple aparatus to the associated apparatus shall be calculated. Cable capacitance, Ccable, must be less than the marked capacitance, Ca (or Co), shown on the associated apparatus used. The same applies for inductance (Lcable, Li and La or Lo, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60 pF/ft., Lcable = 0.2 µH/ft.

4. If connected to intrinsically safe equipment, the equipment must be third party listed as intrinsically safe for the application, and have intrinsically safe entity parameters conforming with the below.

I.S. Equipment		Associated Apparatus
V max (or Ui)	≥	Voc (or Uo)
I max (or Ii)	≥	Isc (or Io)
P max, Pi	≥	Po
Ci + Ccable	≥	Ca (or Co)
Li + Lcable	≥	La (or Lo)

5. If connected to intrinsically safe equipment, capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and included in the system calculations as shown in Note 6.

6. Cable capacitance, Ccable, plus intrinsically safe equipment capacitance, Ci must be less than the marked capacitance, Ca (or Co), shown on any associated apparatus used. The same applies for inductance (Lcable, La (or Lo), respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60 pF/ft., Lcable = 0.2 µH/ft.

7. Associated apparatus must be installed in an enclosure suitable for the application in accordance with the National Electrical Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.

8. Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable.

9. This associated apparatus has not been evaluated for use in combination with another associated apparatus.

10. If connected to intrinsically safe equipment, installations in which both the Ci and Li of the intrinsically safe equipment exceed 1% of the Ca (or Co) and La (or Lo) parameters of the associated apparatus (excluding the cable), then 50% of Ca (or Co) and La (or Lo) parameters are applicable and shall not be exceeded. The reduced capacitance shall not be greater than 1 µF for Groups C and/or D, and 600 nF for Groups A and B. The values of Ca (or Co) and La (or Lo) determined by this method shall not be exceeded by the sum of all of Ci plus cable capacitances and the sum of all of the Li plus cable inductances.

11. All channels comprise a single intrinsically safe circuit.

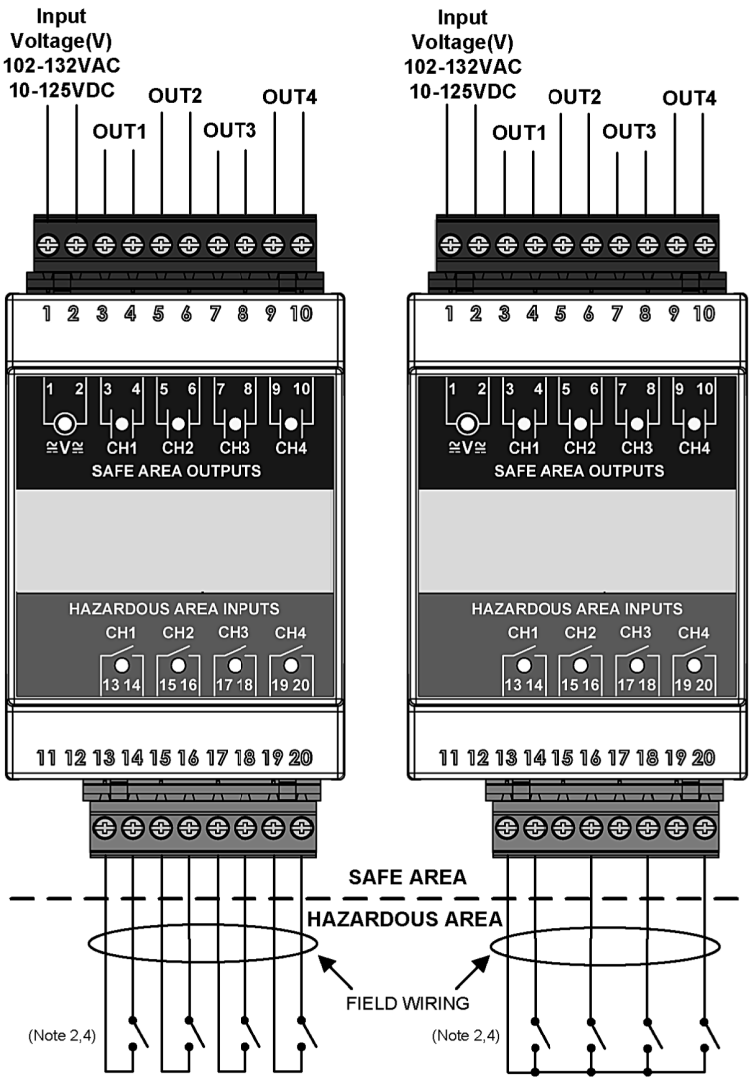
WARNING!

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

AVERTISSEMENT!

LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.

ISD, MBD SERIES



(Separate terminals are provided for connection of two conductors per channel. Use of all channels is not required. Individiual, bussed, or a combination of input wiring configurations may be used.)

(Cable length and number of conductors required can be reduced by using a single common conductor and bussing it across all connected equipment/aparatus. Use of fewer than 4 channels is acceptable. Individiual, bussed, or a combination of input wiring configurations may be used.)

Approvals:

Class I; Division I; Groups A,B,C,D
Class II; Division I; Groups E,F,G
Class III
LISTED

Zone 0; [Ex ia] IIC Ga
Zone 20; [Ex ia] IIIC Da
c LISTED

Ratings:

- Input Voltage(V): 102-132VAC 10-125VDC
- Temperature(Ta): -28°C≤Ta≤60°C (Max. 3 A)
  -28°C≤Ta≤40°C (Max. 5 A)
- Maximum Voltage(Um): 132VAC
- Contacts Ratings (terminals 3-4,5-6,7-8,9-10):
  - 5A 125VAC/30VDC (Max. Ta 40°C)
  - 3A 125VAC/30VDC (Max. Ta 60°C)
  - D300 Pilot Duty (Max. Ta 60°C)

Entity Parameters (terminals 13-14,15-16,17-18,19-20):

Voc(Uo)	**14.46 V**
Isc(Io)	**40.59 mA**
Po	**146.74 mW**
Ca(Co)	**0.65 uF**
La(Lo)	**21.58 mH**

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