



Field Sensitive Magnetic Proximity Cycle Switch

313229C
EN

- Use with MX, MXP & MGO Valve Sections -

DC-powered 4-pin FSM proximity switches are not recommended for use on series divider valves operating at less than 20 cycles per minute.

Part No. 557752, 558938

10,000 psi (69 MPa, 689 bar) Maximum Operating Pressure







Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.



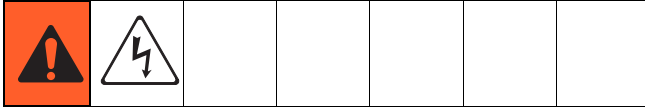
Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 WARNING	
	<p>ELECTRIC SHOCK HAZARD Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment. • Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
	<p>EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. • Do not alter or modify equipment. • Use equipment only for its intended purpose. Call your distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not kink or over bend hoses or use hoses to pull equipment. • Keep children and animals away from work area. • Comply with all applicable safety regulations.
	<p>SKIN INJECTION HAZARD High-pressure fluid from dispense valve, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point dispense valve at anyone or at any part of the body. • Do not put your hand over the end of the dispense nozzle. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow Pressure Relief Procedure in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

Valve Assembly Installation

Grounding



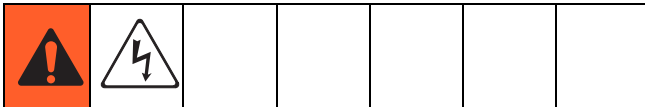
The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

Assemblies not originally equipped with cycle pin indicator pin/switch

1. Determine which valve section and side is the most convenient location for the switch.
2. Remove piston plug and discard. Screw in appropriate proximity switch using o-ring supplied. For MX and MXP valve sections, torque to 6-8 ft/lbs for o-ring seal.

NOTICE

Do not over torque! Excessive torque will cause switch failure. For MGO torque adapter to 25-30 ft/lbs and the switch to 6-8 ft/lbs.



3. Connect electrical system.

Assemblies equipped with cycle pin indicator/electrical micro-switch

(2 options available; choose either Method A or Method B)

A: Installation in any piston chamber not occupied by the cycle indicator pin

1. Determine which valve section and side is the most convenient location for the switch.
2. Install proximity switch in any other piston chamber not occupied by the cycle indicator pin.
3. Remove piston plug. (Do not discard plug if you are removing the cycle indicator pin. You will install it in step 5e.).

4. Screw in appropriate proximity switch using seal/gasket supplied. For MX and MXP valve sections, torque to 6-8 ft/lbs for o-ring seal; 10 ft/lbs for gasket seals.

NOTICE

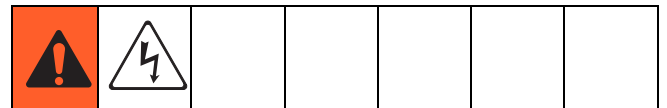
Do not over torque! Excessive torque will cause switch failure. For MGO torque adapter to 25-30 ft/lbs and the switch to 6-8 ft/lbs.

5. Either leave cycle indicator pin installed for visual indication of cycle or remove as follows:
 - a. Unscrew cycle indicator body from valve and discard.
 - b. Grasp indicator pin and pull pin/piston assembly out of feeder.

NOTICE

Piston is a ground part and all caution must be taken to avoid nicking, scratching or contaminating this part or the feeder piston bore.

- c. Remove the indicator pin by sliding it through the slot on models equipped with this arrangement (late model MX type) or drive out cross pin using a brass rod (old MX type).
- d. Discard pin. Carefully insert piston back in bore.
- e. Plug hole with piston plug removed in step 3. Torque to 35 ft/lbs for MX.



6. Make electrical connection.

B: Replacing existing cycle pin.

1. Determine which valve section and side is the most convenient location for the switch.
2. Remove piston plug and discard.
3. Screw in appropriate proximity switch using seal/gasket supplied. For MS and MH valve sections, torque to 6-8 ft/lbs for o-ring seal.

NOTICE

Do not over torque! Excessive torque will cause switch failure. For MGO torque adapter to 25-30 ft/lbs and the switch to 6-8 ft/lbs.

4. Reverse piston so proximity switch does not sense slot end of piston. Then install proximity switch in piston chamber.

Technical Data

Current Rating

4 Pin Connector

5 Pin Connector

Temperature Range

Normally Open Contacts

Maximum Cycle Rate

Maximum Operating Pressure

Material

0.1 A @ 28 VDC

2.0 A @ 120/240 VAC

-22°F to 250°F (-30°C to 121°C)

60 cycles/minute

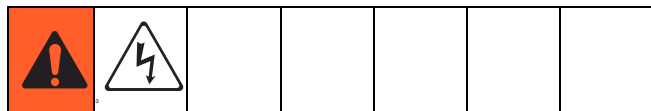
10,000 psi (69 MPa, 689 bar)

Switch - 303 stainless steel

Adapter - nickel plated steel

O-Ring - Viton 90 durometer

Wiring Instructions



In order to make proper electrical connections, connector cables must be used. The following connect cables are available:

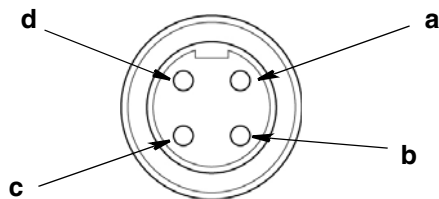
4-Pin Cable Options for DC Powered Applications with LED Power/Operation Lights

Connector	Polarity	Cable Length	Part No.
Straight	NPN	12 ft.	558968
Straight	PNP	12 ft.	558025
90°	PNP	12 ft.	558026

5-Pin Cable Options for AC Powered Applications (No Operational Indicators in Cables)

Connector	Cable Length	Part No.
Straight	6 ft.	558023
Straight	12 ft.	558024
90°	6 ft.	558965

DC Prox Switch Cables - Connecting Cable Wiring Code

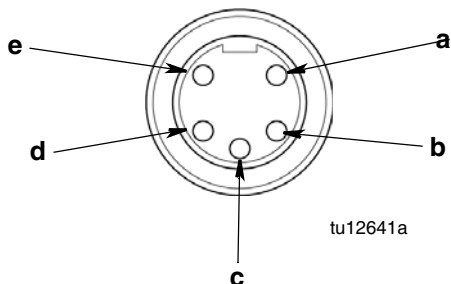


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Cable Wires Color Code	DC Cable Pin Assignments	
	PNP Cable*	NPN Cable*
Black	Pin a - N.O.	Pin a - N.O.
Brown	Pin b - Power	Pin b - Power
Blue	Pin c - Common	Pin c - Common†
White	Pin d - Ground	Pin d - Ground

*With LED Operational Indicators

Connecting Cable Wiring Code



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USA Color Code	AC Cable Pin Assignments
White	Pin a - N.O.
Red	Pin b - Not used
Green	Pin c - Ground
Orange	Pin d - Not Used
Black	Pin e - Common

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

For patent information see www.graco.com/patents.

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Original instructions. This manual contains English. MM 313229

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