

## Installation Instructions for the **MICRO SWITCH Explosion-proof Momentary Cable Pull Limit Switch**

ISSUE 1

PK 80026

### **▲ WARNING**

#### **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.
- Failure to comply with these instructions could result in death or serious injury.

#### **GENERAL INFORMATION (Figure 1)**

- Explosion-proof switches are designed specifically for use in hazardous location applications. Flame paths within the switch housing cool exploding gases below kindling temperature of the atmosphere.
- Complies with NEMA standards: 1, 3, 4, 7, 9, 13. UL listed and CSA certified: Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G.
- A pull on the actuating cable will cause all switch contacts to change state: NC (normally closed) to open and NO (normally open) to close. When cable is released, switch contacts return to their original state.
- Available basic switch options:
  - Direct acting switch contact: 1 NC.
  - Direct acting switch contacts: 1 NO 1 NC.
  - Snap action switch contacts: 1 NO 1 NC. (NC circuit does not meet requirements for positive break and is not electrically isolated from the NO circuit.)
- Head may be positioned in any of four directions.

#### **AUXILIARY CONTACTS**

- Used for monitoring or signaling, i.e., indicators, pilot lights and alarms.

#### **MAXIMUM ACTUATING CABLE LENGTH**

- Depending upon variations in ambient temperature, maximum cable length is 200 ft. (60 m).

#### **OTHER AVAILABLE FEATURES**

- Conduit opening options.
- Hardware kits and cables for various length installations.

**Figure 1: Momentary Switch**

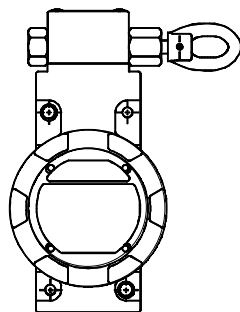
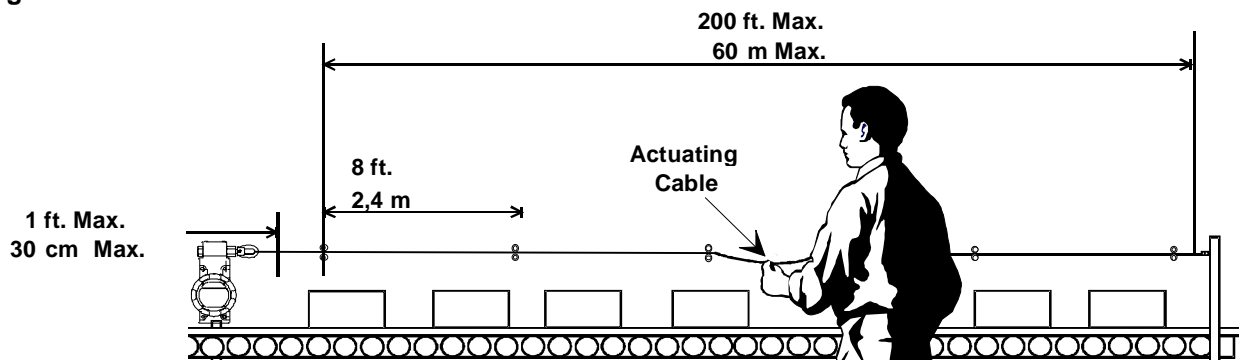


Figure 2: Installation



## SWITCH MOUNTING, WIRING AND SEALING

### Step 1 - Ensure you have the following:

- Switch.
- (2) 1/4-20 or (2) 5/15-18 screws.
- #14-#16 AWG stranded or #16-#18 AWG solid wire.

### Step 2 - Mount switch:

#### CAUTION

#### SWITCH DAMAGE

Do NOT mount switch upside down or at low point of conduit runs. Condensation problems may develop. Failure to comply with these instructions may result in product damage.

- Mount using (2) 1/4-20 screws from front of switch, or with (2) 5/15-18 screws from back of switch. Torque to 43-52 in.-lb (4.9-5.9 N-m).

### Step 3 - Wire switch:

- With a bar or screwdriver in the cover wrenching lugs, loosen and remove circular cover on front of switch.
- Connect stranded or solid wire to switch's pressure type connector terminals. (Refer to circuit diagram on switch housing. Diagram depicts switch contacts when cable is at proper tension.) Torque terminal screws and ground screw to 7-9 in.-lb (0,8-1 N-m).
- Reassemble cover and tighten securely.

**Step 4 - Seal conduit connection:** Proper sealing ensures explosion-proof integrity of the conduit system.

- Seal in accordance with National Electrical Code, paragraphs 500-2 and 501-4.

## ACTUATING CABLE INSTALLATION

### Step 1 - Ensure you have the following (Figure 2):

- Plastic coated aircraft cable 1/8 in. (3,18 mm) to 3/16 in. (4,76 mm) dia. Use a distinctive color, such as red, to differentiate actuating cable from other wires or cables in the area.
- Thimbles, U-bolt clamps.
- Cable supports (eyebolts).

### Step 2 - Attach cable to switch:

- Ensure cable is fully seated and tightly fitted in the thimble groove.
- Attach using two U-bolt clamps. U-bolt clamps should be installed as close as possible to thimble.
- Tighten U-bolts to 4.5 in.-lb. (0,51 N-m) for 1/8 in. (3,18 mm) cable and 7.5 in.-lb. (0,85 N-m) for 3/16 in. (4,76 mm) cable.

### Step 3 - Install cable supports:

**CAUTION**  
**SWITCH DAMAGE**  
Do NOT allow excessive side loads that could bend the switch operating shaft. Failure to comply with these instructions may result in product damage.

- Install a cable support as close as practical to end of shaft without interfering with switch operation.
- If cable tension adjusting turnbuckle is in mid-span of cable, the first cable support should be in line with, and no further than, 12 in. (30 cm.) from end (eye) of shaft. If adjusting turnbuckle is attached directly to shaft eye, this distance may be increased to 18 in. (46 cm).
- Support cable at intervals of 8 ft. (2,4 m).

### OPTIONAL CABLE TENSION (Figure 3)

The actuating cable does not need to be under tension. A small amount of slack is permissible. If cable tension is desired, install a turnbuckle (see Actuating Cable installation, Step 2). Use jam nuts to maintain adjustment.

**WARNING**  
**IMPROPER INSTALLATION**  
Do NOT install turnbuckle too closely to cable supports or other barriers that may hinder proper operation. Failure to comply with these instructions could result in death or serious injury.

- Increase cable tension until the switch operating shaft just starts to move out of its guide bushing. Cable is now under proper tension.
- If desired, an endspring may be attached in the same manner as the turnbuckle.
- Periodically check and adjust cable tension as necessary.

With endspring installed, switch/cable will operate satisfactorily over a temperature range of +/- 25°F (+/- 12°C), up to maximum cable length of 200 ft. (60 m).

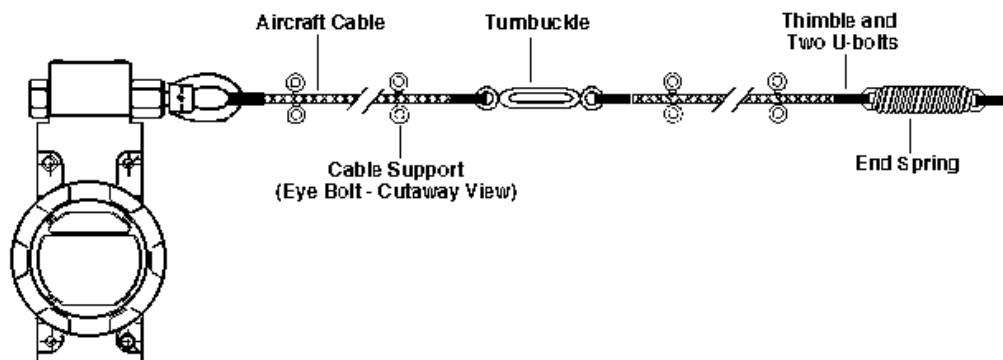
### OTHER ADJUSTMENTS

To reposition operating head, loosen the four captive screws, place head in desired position. Securely tighten the four screws to 12-16 in.-lb (1,36-1,80 N-m).

### RECOMMENDED REPLACEMENT

Replace entire switch every 100,000 operations.

Figure 3: Switch with Turnbuckle and Endspring



# Momentary Explosion-proof Cable Pull Limit Switch

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