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## **QMS41-2AL Limit Switch Box**

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# **INSTALLATION, OPERATION & MAINTENANCE MANUAL**



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## CHAPTER 1: PRODUCT DESCRIPTION

The **QMS41-2AL** series of switchboxes represent a completely new dimension in switchboxes for actuators. The Tru-Flo QMS41-2AL limit switch box is manufactured from die cast aluminum and powder epoxy coated for corrosion resistance. Also standard are stainless steel fasteners and shaft with a NEMA 4, 4x rating. Each Tru-Flo limit switch box has been carefully designed and manufactured for most corrosive environments.

Tru-Flo QMS41-2AL Limit Switch Boxes are equipped in the standard configuration with the following unique features:

**Quick Set Cams:** the operating position of the switches can be easily changed by manually adjusting the high resolution spline cams. The cams are spring backed and will not be affected by normal vibration.

**Easy wiring:** Tru-Flo switch boxes are easy to wire up with plenty of room to bring wires into the enclosure. As standard, they have two conduit entries ½" NPT. Tru-Flo switch boxes are equipped with an 8 terminal point strip with easy access points for quick installation.

**Compact Design:** Tru-Flo Switch Box has a compact construction, minimizing valve package envelope size.

**Inclusive Mounting Bracket:** A mounting bracket is supplied as standard with each Tru-Flo Switch Box and it fits the NAMUR top-mounting hole spacing 80 mm per 30mm. The bracket allows the use of standard NAMUR stem height 30 mm. Also available are an option "L" bracket design for universal mounting on any actuator. Please call for more information.

**High Visibility Indicator:** Each Tru-Flo Limit Switch Box comes standard with a high visibility indicator for both open and closed positions in the actuator stroke.

## CHAPTER 2: LIMIT SWITCH BOX INSTALLATION

### CAUTION – PLEASE READ CAREFULLY

**BEFORE CARRYING OUT ANY OPERATIONS AND REMOVING THE COVER, IT IS ESSENTIAL THAT THE SWITCH BOX IS NOT ENERGIZED.**

**THE CONDUIT DUST CAP OR COVER TAPE SUPPLIED WITH EACH MAX-AIR SWITCH BOX IS FOR TRANSIT PURPOSE ONLY. IP65 PROTECTION DEPENDS ON THE PLUG AND WIRING METHODS USED. ANY CONDUIT (USED OR UNUSED) MUST BE CLOSED WITH A PLUG SUITABLE FOR THE REQUIRED PROTECTION.**

### INSTALLATION

- a. Align the shaft to the actuator pinion and engage it.
- b. Using the provided mounting bracket, screws and washers, tighten the brackets to the actuator, and the bracket to the switchbox.

### SWITCH ADJUSTMENT

- a. Remove the four screws and remove the cover.
- b. Turn the actuator until to the open position.
- c. Push the upper cam down – “cam open” – turn until the switch is activated and then release; the spring between the 2 cams will ensure the cam re-engagement onto the shaft. **Note:** on the shaft there is a spline and each spline tooth adjusts approximately 2°.
- d. Turn the actuator until to the closed position.
- e. Pull the lower cam up – “cam closed” – turn until the switch is activated and then release; the spring between the 2 cams will ensure the cam re-engagement onto the shaft. **Note:** on the shaft there is a spline and each spline tooth adjusts approximately 2°.
- f. Reassemble the cover and tighten the screws.



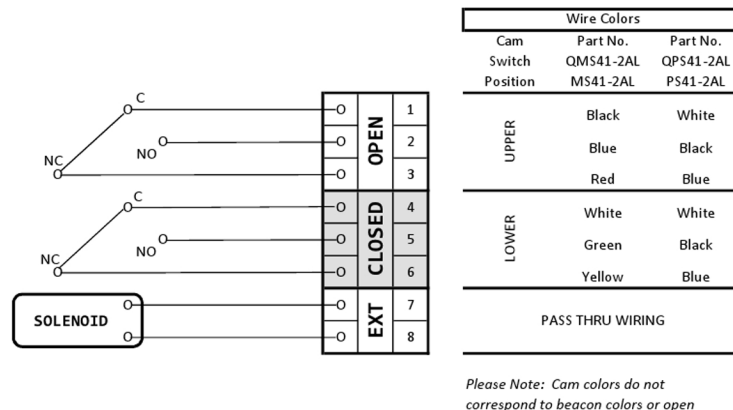
## CHAPTER 3: TECHNICAL DATA

### 3 – 1 WIRING DIAGRAM

- a. Remove the four screws and remove the cover.
- b. Remove the protection cap or shipping tape and substitute it with an appropriate plug that ensures the desired protection. Conduits are threaded ½" NPT.

**WARNING:** NEMA 4, 4x (IP65) protection depends on the wiring connection; use of inappropriate components and/or wrong installation leads to a decrease in the protection of the switch box.

- c. Using a screw driver, wire the eight points terminal strips according to the diagram below:
- d. Reassemble the cover and tighten the four screws.



### 3 – 2 LIMIT SWITCH BOX CLASSIFICATION

The **Tru-Flo QMS41-2AL Series** Switch Box is designed to NEMA 4, 4x standards.

NEMA 4, 4x: Watertight and Dust tight – indoor & outdoor. Protects against windblown dust rain, splashing water and hose directed water. Also corrosion resistant.

### 3 – 3 MATERIAL

#### Materials

<b>Box:</b>	Die Cast Aluminum, Powder Epoxy Coated
<b>Brackets:</b>	Powder Epoxy Coated or 304 SS
<b>Position Indicator:</b>	Plastic
<b>Fasteners:</b>	Stainless Steel
<b>Seals:</b>	Buna-N
<b>Operating Shafts:</b>	304SS
<b>Cams:</b>	Plastic
<b>Microswitches:</b>	Plastic/Polymer Housed Microswitch
<b>Terminal Strip:</b>	Standard Electrical Terminal Strip

### 3 – 4 LIMIT SWITCH BOX SPECIFICATIONS

#### SPDT Mechanical Switches

8 Point Terminal Strip

#### Technical Data

Operating Force	0.60 N (61 Gram Max)
Release Force	0.06 N (6 Gram Max)
Differential Travel	4.8 mm
Overtravel	0.8 mm

#### Electrical Rating

Contact Arrangement: SPDT (Form C)

Rated Voltage	Resistive Load	Inductive Load
125 VAC	5 Amp	3 Amp
250 VAC	3 Amp	2 Amp
8 VDC	5 Amp	5 Amp
14 VDC	5 Amp	4 Amp
30 VDC	4 Amp	3 Amp
125 VDC	0.4 Amp	0.4 Amp
250 VDC	0.2 Amp	0.2 Amp

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