



ISO9001:2008



# ALPHA<sup>®</sup> CONTROLS

ALPHA CONTROLS LTD



## ALS Series

### IP67 Limit Switch Box

Installation Operating & Maintenance Instructions



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## ◆ Instruction

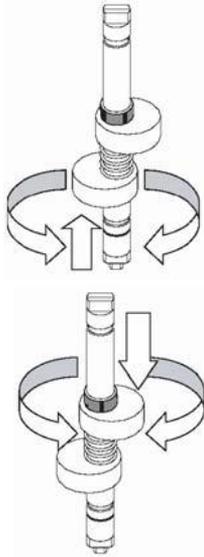
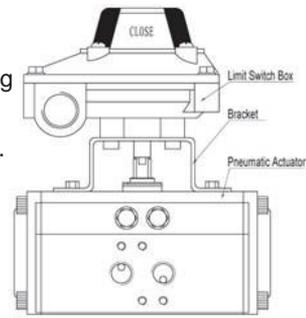
**ALS series IP67 limit switch boxes** include ALS200 and ALS300 which is a primary rotary position indication device both for local and remote. The ALS products were designed to integrate valve and rotary pneumatic actuator with a variety of mounting options, internal switches or sensors and/or analog output 4-20mA. This kind of limit switch box was designed through advance and state-of-the-art engineering technology which have the product to be solid, beautiful and with high-level quality. The product also fully meets IP67 specifications and the bracket is designed in light of ISO5211 and NAMUR standard.

## ◆ Specification

Model No.	<input type="checkbox"/> ALS200-	<input type="checkbox"/> ALS300-
Photo		
Enclosure	Die-cast Aluminum with polyester powder coated, O-ring sealed	
Weather Proof	IP67, Nema4, 4X	
Temperature Range	-20°C~85°C	
Cable Entry	<input type="checkbox"/> 2 x 1/2BSPP, <input type="checkbox"/> 2 x 1/2NPT or <input type="checkbox"/> 2 x M20-1.5	
Terminal Strips	8~12	8~14
Position Indicator	<input type="checkbox"/> 90° Yellow Open, Red Closed	<input type="checkbox"/> 90° Green OPEN, Red Closed <input type="checkbox"/> other
Mechanical Switches	Honeywell Max5A125-250VAC <input type="checkbox"/> M2: 2SPDT <input type="checkbox"/> ML2: 2SPDT Low Temp.-40°C <input type="checkbox"/> MG2: 2SPDT Gold contacts	Crouzet Max15A125-250VAC <input type="checkbox"/> M2: 2SPDT <input type="checkbox"/> M3: 3SPDT <input type="checkbox"/> M4: 4SPDT <input type="checkbox"/> M5: 2DPDT <input type="checkbox"/> ML2: 2SPDT Low Temp.-40°C <input type="checkbox"/> MG2: 2SPDT Gold contacts
Proximity Sensors	<input type="checkbox"/> PP: p+f Sensors NCB2-V3-No, NAMUR Intrinsical safe(Ex ia II CT6) 8VDC, <=1mA <input type="checkbox"/> PA: ALPS Sensors 24VDC, <=150mA(2or3 wire)	<input type="checkbox"/> PP: p+f Sensors NCB2-V3-No, NAMUR Intrinsical safe(Ex ia II CT6) 8VDC, <=1mA <input type="checkbox"/> PA: ALPS Sensors 24VDC, <=150mA(2or3 wire)
Magnet Sensors	<input type="checkbox"/> QA: ALMS Sensor 5 ~ 240VAC/DC, <=300mA (2 or 3 wire)	<input type="checkbox"/> QA: ALMS Sensor 5 ~ 240VAC/DC, <=300mA (2 or 3 wire)
Analog Output	—	<input type="checkbox"/> F: valve position transmitter Analog output 4-20mA
Bracket	<input type="checkbox"/> MB1.0: 30x80 H:20 <input type="checkbox"/> MB1.0: 30x80 H:30 <input type="checkbox"/> MB1.1: 30x130 H:30-50 <input type="checkbox"/> MB2.3: 30x80-130 H:20-30	<input type="checkbox"/> MB3.0: 30x80 H:20-30 <input type="checkbox"/> MB3.1: 30x130 H:30-50 <input type="checkbox"/> MB3.2: 30x80 H:20 <input type="checkbox"/> MB3.3: 30x80-130 H:20-30

## Installation

1. Attach proper mounting bracket to the limit switch box housing using four aniseed cap screws provided.
2. Align limit switch box shaft to top of actuator shaft and engage it.
3. Attach bracket to actuator using suitable hardware.
4. By actuating package the switch and actuator will self-align.
5. Tighten bracket to top of actuator.



## Limit Switch Adjustment

1. Loosen limit switch box cover screws and remove cover.
2. Rotate actuator to full counterclockwise position. Valve is on fully open or closed position.
3. Lift up bottom cam and turn until switch is activated and then release. Engage cam back onto the splined retainer. Spring will maintain cam engagement.
4. Rotate actuator to full clockwise position. Valve is on fully closed or open position.
5. Push down top cam and turn until switch is activated and then release. Engage cam back onto the splined retainer. Spring will maintain cam engagement.
6. Place cover on limit switch box and tighten. Take care to ensure that housing O-ring is properly located in seal groove."

## Electrical Wiring

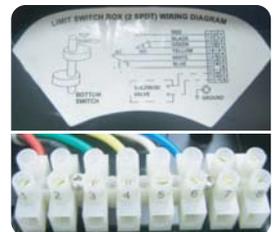
1. Remove limit switch box cover
2. Remove protection plugs from conduit entries and install conduit or plugs suitable for type of protection required.
3. Engage wires in terminal strip using a small screwdriver.

### INSTRUCTION

– All user connections are made at a numbered terminal strip. A wiring diagram is located inside the cover and indicated which terminal numbers correspond to switch contacts: normally open, normally closed common, etc. Simply follow the wiring diagram and electric code to connect switches to your system.

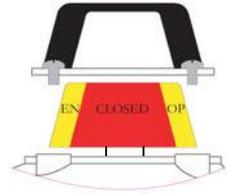
– Solenoids may also be wired through the switch box. At least two auxiliary terminals are included as an option. A ground screw is also included. Simply wire the solenoid to auxiliary terminals, and then connect power leads to the opposite terminal side. Be sure to properly ground the solenoid at provided ground terminal.

– ALS series IP67 switch boxes include two 1/2" BSPP conduit entries. Be sure to follow the National Electric Code regulations for rigid conduit, flexible conduit or cable systems as applicable.



## Indicator Setting

1. Remove four screws and remove indicator cover.
2. Lift up indicator from the cover.
3. Set indicator on cover according to valve position.
4. Replace indicator cover and fasten with cover screws. Check to ensure that position indicator O-ring is properly located in seal groove.



**NOTE:** Indicators are easily adjusted to match the dome's clear windows or the special rotor angle indicator, such as 45°, 60° or 3 way indicator. Simply loosen the four screws to adjust the indicator. Make sure dome window line up with rotor quadrants. Finally, tighten the screws to insure a good seal.



## Inspection and Maintenance

Inspect the components of the limit switch box for wear or damage and replace where necessary.

### - RECOMMENDED REPLACEMENT PARTS:

1. Limit switch.
2. Position indicator O-ring.
3. Housing O-ring.
4. Shaft O-rings(top and bottom)

## Storage

To store ALS series IP67 limit switch box, the following cautions are recommended:

- Ensure the limit switch box is completely dry and water free.
- Maintain the entrances of cable by fitting the original or replacement plastic corks.
- Protect from dust, dirt and damage by packing in box or plastic bag.

## Important Notice

**\* ALL ALS LIMIT SWITCH BOX HAVE BEEN 100% FACTORY TESTED IN OPERATION AND WATERTIGHTNESS.**

**\* INFORMATION HEREIN INCLUDING PRODUCT SPECIFICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.**