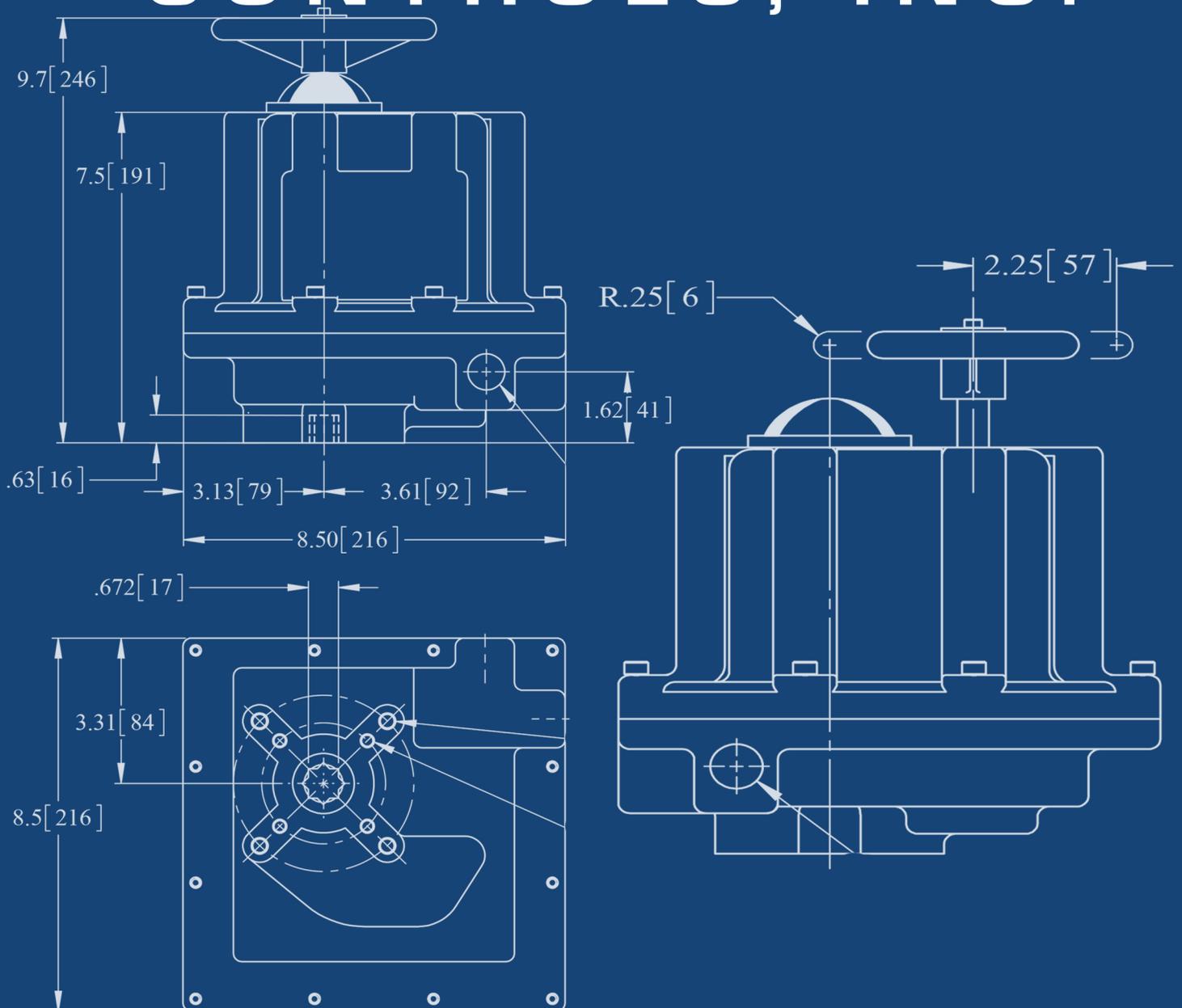


INDELAC

CONTROLS, INC.



ELECTRIC FAIL-SAFE ACTUATOR

Safe & Secure Series SNS4-15

Installation, Operation & Maintenance Manual



INDELAC CONTROLS, INC.
ELECTRIC ACTUATORS & CONTROLS

Safe & Secure Series Electric Actuator
with Internal Battery Back-up
Installation, Operation &
Maintenance Manual

For Use with:

SNS4, SNS6, SNS10 & SNS15 Models

Additional supplements may be needed for selected optional equipment including, but not limited to models with: modulating controls, timers, speed controllers & remote/off/local controls.

REVISED: JULY 2016

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For a digital copy of this manual, access to training videos, access to 3D product renderings,
or to request additional support

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INTRODUCTION:

Thank you for selecting Indelac Controls, Inc. (ICI) for your valve or damper automation requirement. We at ICI are proud of our products and feel confident they will meet or exceed your expectations of quality and reliability.

Every precaution has been taken to insure that your equipment will arrive undamaged; however, accidents do occur. Therefore, the first thing you must do upon receipt of your package is to inspect it for damage. If the box is damaged there is a possibility that the equipment inside the box may be damaged as well. If this is the case **YOU MUST FILE A CLAIM** with the delivering **CARRIER**. All shipments are **F.O.B.** our factory and it is **YOUR RESPONSIBILITY** to file a claim for damages.

STORAGE:

If the actuators are scheduled for installation at a later date:

1. Store off the floor.
2. Store in a climate controlled building.
3. Store in a clean and dry area.

FOR FUTURE REFERENCE RECORD:

1. Actuator model number _____
2. Actuator enclosure type NEMA 4 __, NEMA 4X __, NEMA 7 __, NEMA 4 & 7 _
3. Actuator output torque _____ LB-IN
4. Motor characteristics, Voltage _____ Hertz _____ Phase _____
5. Actuator serial number _____
6. Date of installation _____ Put into operation _____
7. Valve Data:
 - 7a. Manufacturer _____
 - 7b. Style & fig. No. _____
 - 7c. Size _____
 - 7d. End connection _____
 - 7e. Material of construction, Body _____ Stem & ball _____
 - 7f. Brake away torque _____ LB-IN @ _____ PSI
 - 7g. Other helpful data _____

MEDIA:

1. System media _____
2. Temperature, _____ (deg. F.) Maximum, _____ Minimum, _____.
3. Pressure _____ PSI

*As this information is listed it is important to pay attention to all of the actuator specifications relative to the valve specifications and system requirements. If the actuator is not properly sized for the valve and application the life will be shortened or it may not work at all.



TOOLS REQUIRED:

****ADDITIONAL TOOLS WILL BE REQUIRED FOR THE SCREWS TO MOUNT THE VALVE TO THE ACTUATOR.***

SNS4 – 15 SERIES

Cover Screws	7/16" Socket.
Terminal Strip Screws	3/16" Wide Flat Head Screwdriver.
Cam Set Screw	5/64" Allen Wrench.
Mounting Pad Screws	1/2" Socket.

SUGGESTED MAXIMUM TORQUE VALUES FOR FASTENERS (IN-LBS.)

SCREW SIZE	LOW CARBON STEEL	18-8 SS	316 SS	ALUMINUM
2-56	2.2	2.5	2.6	1.4
4-40	4.7	5.2	5.5	2.9
6-32	9	10	10	5
8-32	18	20	21	10
10-24	21	23	24	13
10.32	30	32	33	19
1/4-20	65	75	79	45
5/16-18	129	132	138	80
3/8-16	212	236	247	143
1/2-13	465	517	542	313
5/8-11	1000	1110	1160	715



PRODUCT DESCRIPTION:

The SNS4-15 Safe & Secure Series Actuator is a quarter turn Open/Close Actuator with Battery Backup Power – **ALL IN ONE!** No more mounting a separate Fail Safe Unit to provide power in case of external power failure. The actuator's internal battery will provide power to the motor in the event of an external power failure. The actuator can be configured in the field for FAIL OPEN, FAIL CLOSE or Continue to run upon power failure (run time is dependent on size of actuator and torque load – see additional data below).

This new series of actuator can operate loads from 400 in/lbs. to 1500 in/lbs. These actuators can be ordered to operate on input voltages of 115vac, 230vac, 24vac, 24vdc or 12vdc and are enclosed in a standard "M" series NEMA 7 housing.

Switching from external power to battery power is seamless – when the external power source fails, the internal transfer circuit switches to battery power automatically without any operator intervention. Depending on the fail setting that the operator made for the actuator, the valve will go to that position. Once the external power is restored, the actuator will automatically switch back to external power and the battery will be re-charged! The actuator will then return to its last position before the power had failed.

This unit is available as a Standard OPEN/CLOSE Actuator or with the Modulating Option for precise valve position control using 4-20mA, 0-10V or 1-5V external input signal.

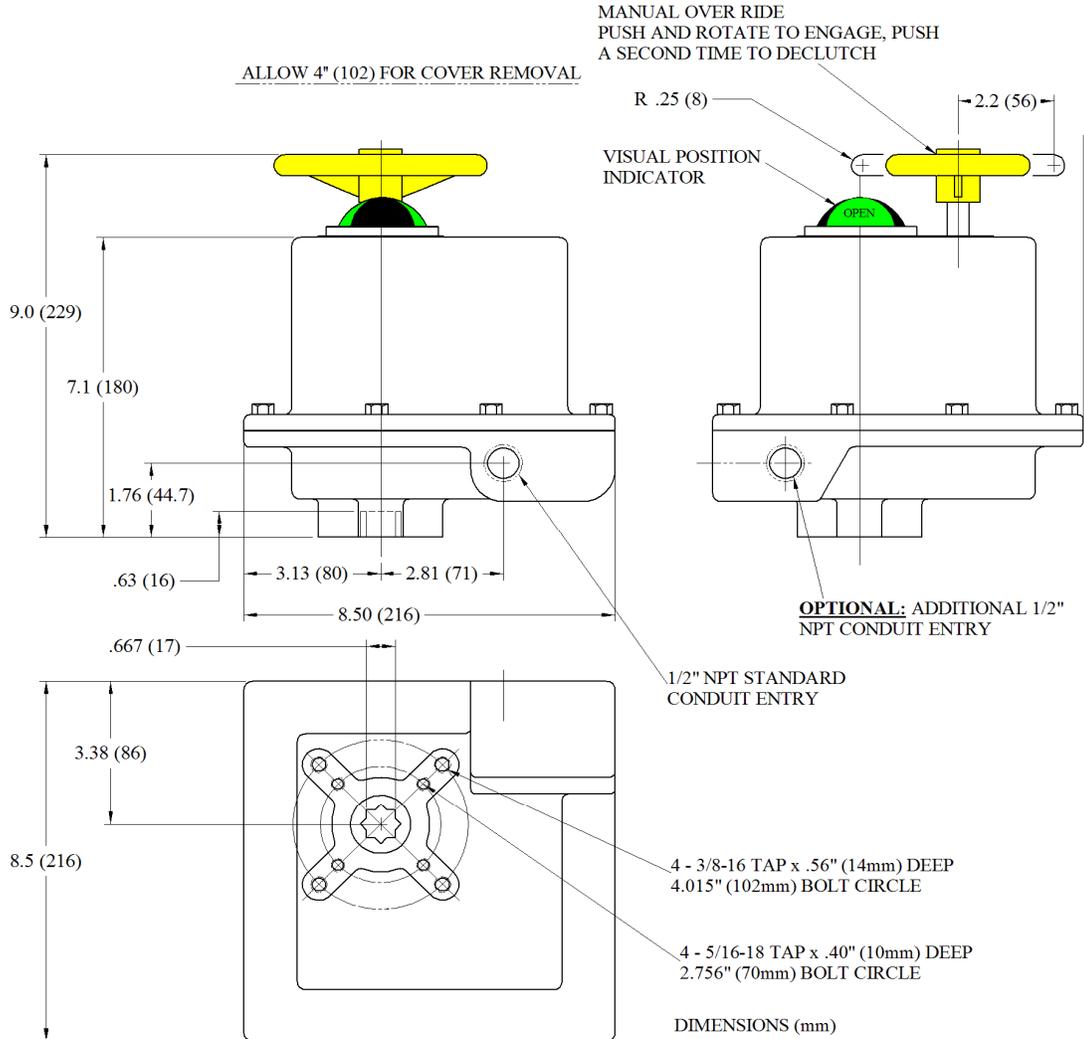
UNIT SPECIFICATIONS:

Enclosure rating:	NEMA 4 Standard; 4X, 7 & 4/7 also available
Motor Duty Cycle:	100% Standard
Locked Rotor Current:	4.2 Amps
Full Load Amps:	1.8 Amps
Weight:	18 Lbs.
Mounting Pad:	ISO 5211 F07
Operating Voltages:	115vac, 230vac, 24vac, 24vdc, 12vdc
Incoming Power Fuse:	TR5 Pico Fuse, 250V / 115vac & 230vac = 500mA; 24vac = 3.15A
Motor Fuse:	6A PTC Automatic Resettable
Power:	30 Watts Max. / add 20 Watts for optional heater
Position Indication:	Dome Style Visual Indicator and wired for Light Indication
Battery:	12vdc, 0.8Ahr
Battery Recharge Time:	Approximately 8 Hours
Battery Life on Trickle Charge:	4-5 years
Auxiliary Switch Rating:	Dry Contact, 15 Amps @ 125vac
Feedback Indicator Lamps:	12vdc @ 100mA max.
Input Signal Contact Rating:	12vdc @ 3A



MECHANICAL MOUNTING:

The Safe & Secure Actuator can be direct mounted to any valve using the standard ISO 5211 F07 Output. Optional Inserts are available for ISO 5211 F03 and ISO 5211 F04. See the drawing below for the actuator output mounting dimensions for valves requiring mounting hardware.



Reference Image:
Actuator mounted to
sample ball valve.



Actuator Bottom View

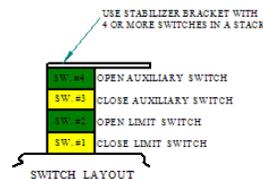
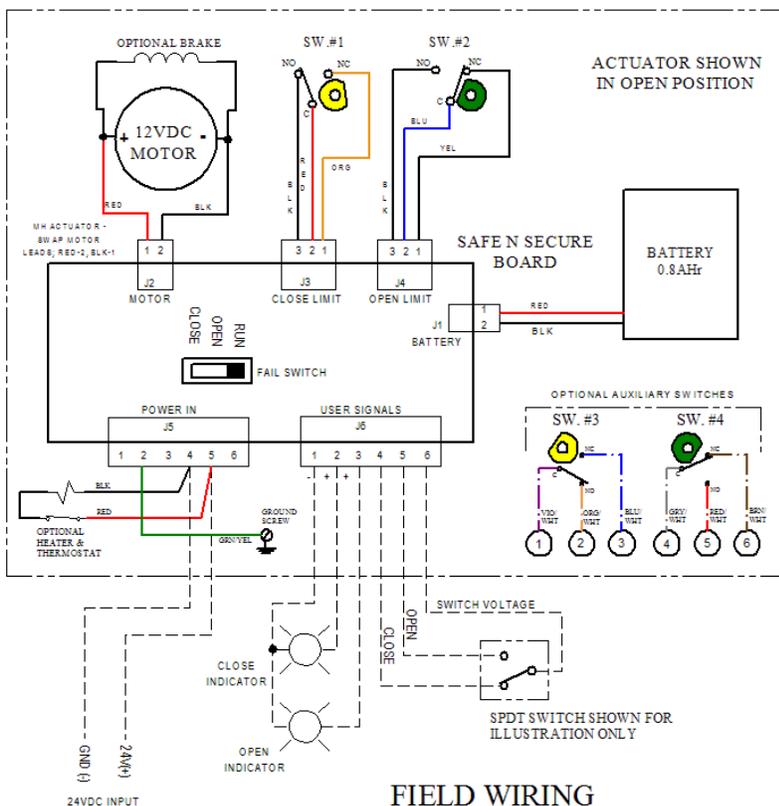




CUSTOMER ELECTRICAL CONNECTIONS FOR STANDARD OPEN/CLOSE:

All customer electrical connections are done per the below wiring diagrams. Incoming power should be wired using 18awg minimum. Control signal wiring may be 22awg or larger for direction control and indicator lamps. All wiring is to be completed through the conduit opening using the appropriate conduit – **Refer to your local electrical codes.** Remove the actuator cover by loosening the cover screws and pulling straight up on the cover to complete the wiring and set-up.

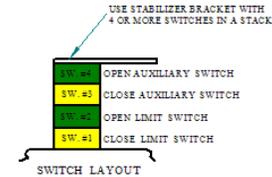
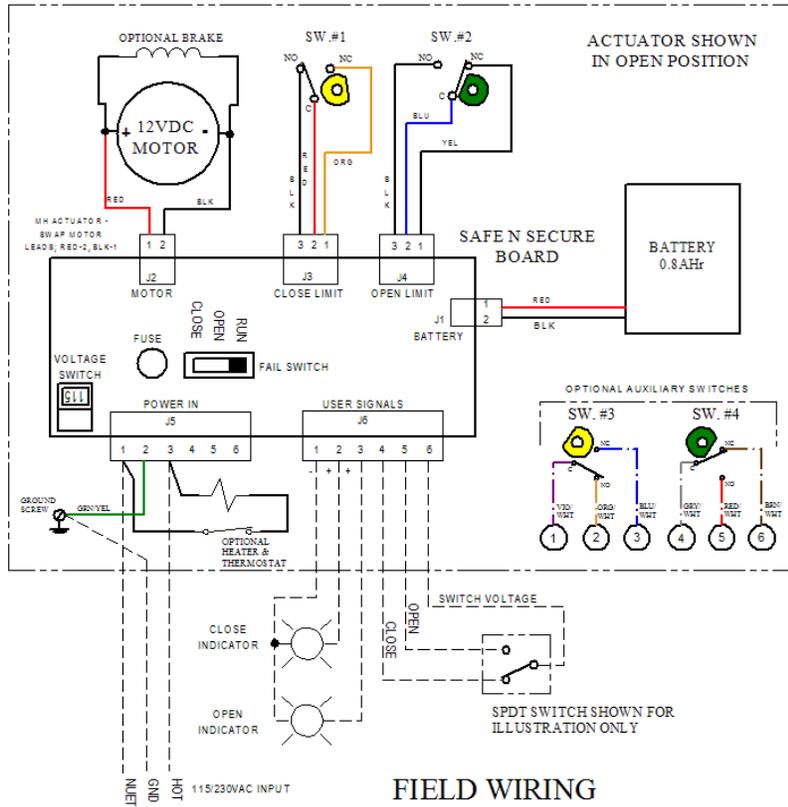
⚠ WARNING!
 Pay close attention to the Wiring Diagrams when connecting the input power to the actuator. Improper power connection can result in damage to the actuator or serious injury to the installer.



- NOTES:**
- CONTROL CAN OPERATE WITH 24VDC INPUT. INPUT POWER SOURCE TO BE @ 2.0A MINIMUM (INCLUDES HEATER).
 - UNIT IS SHIPPED WITHOUT THE BATTERY PLUGGED IN. AFTER INSTALLING UNIT AND CONNECTING INCOMING POWER, PLUG BATTERY CONNECTOR INTO THE SAFE N SECURE BOARD, J1.
 - CAMS FOR LIMIT SWITCHES ARE PRESET AT THE FACTORY. TO INCREASE OR DECREASE VALVE MOTION, THE CAMS CAN BE ADJUSTED SLIGHTLY.
 - THE FAIL SWITCH NEEDS TO BE SET IN THE "RUN", "OPEN" OR "CLOSE" POSITION PRIOR TO INSTALLING THE COVER. WHEN INCOMING POWER FAILS:
 "RUN" = ACTUATOR WILL CONTINUE TO RUN WITH USER COMMAND SIGNAL UNTIL BATTERY DIES.
 "OPEN" = ACTUATOR WILL MOVE TO THE OPEN POSITION.
 "CLOSE" = ACTUATOR WILL MOVE TO THE CLOSE POSITION.
 - INDICATOR LAMPS NEED TO BE +12VDC ONLY. NEGATIVE OF LAMP IS CONNECTED TO PIN 1 OF J6.
 - COMMAND SIGNAL USES A SINGLE POLE, DOUBLE THROW CONTACT (RELAY OR SWITCH) RATED FOR 3AMPS OR MORE. DO NOT CONNECT EXTERNAL VOLTAGE.
 - WHEN INCOMING POWER IS PRESENT, BLUE LED WILL BE LIT AND ACTUATOR RUNS OFF OF INCOMING POWER. WHEN INCOMING POWER FAILS, BLUE LED WILL TURN OFF AND THE GREEN BATTERY LED WILL LIGHT - ACTUATOR WILL NOW RUN OFF OF BATTERY POWER UNTIL INCOMING POWER IS RESTORED.
 - RED LED WILL LIGHT WHEN BATTERY VOLTAGE GETS TOO LOW.

W130924

DC CONNECTION WIRING DIAGRAM



- NOTES:**
- CONTROL CAN OPERATE WITH 115 or 230 VAC INPUT. VOLTAGE INPUT SWITCH NEEDS TO BE MOVED TO POSITION THAT MATCHES THE POWER INPUT VOLTAGE. INPUT POWER SOURCE TO BE @ 0.5A MINIMUM.
 - FUSE IS PICO STYLE, 500mA, 250VAC.
 - UNIT IS SHIPPED WITHOUT THE BATTERY PLUGGED IN. AFTER INSTALLING UNIT AND CONNECTING INCOMING POWER, PLUG BATTERY CONNECTOR INTO THE SAFE N SECURE BOARD, J1.
 - CAMS FOR LIMIT SWITCHES ARE PRESET AT THE FACTORY. TO INCREASE OR DECREASE VALVE MOTION, THE CAMS CAN BE ADJUSTED SLIGHTLY.
 - THE FAIL SWITCH NEEDS TO BE SET IN THE "RUN", "OPEN" OR "CLOSE" POSITION PRIOR TO INSTALLING THE COVER. WHEN INCOMING POWER FAILS:
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 - RED LED WILL LIGHT WHEN BATTERY VOLTAGE GETS TOO LOW.

FIELD WIRING

W130911

AC CONNECTION WIRING DIAGRAM



J6, Customer Connections –
Pin 1 towards bottom

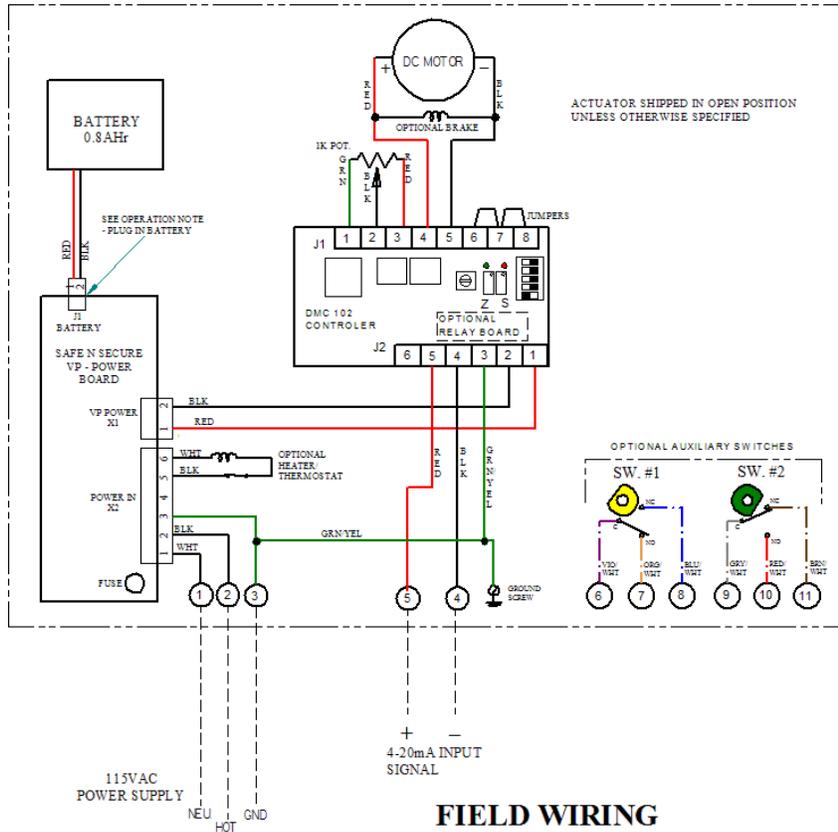
J5, Power Input Connections –
Pin 1 towards bottom

Customer Connections, Board Connector View

NOTE: Make sure the connectors are fully seated after making all wiring connections.



CUSTOMER ELECTRICAL CONNECTIONS FOR MODULATING OPTION:



POSITIONER SWITCH SETTINGS FOR 4-20mA INPUT, STANDARD OPERATION SEE OPERATION MANUAL FOR SETTING CHANGES.



OPERATION

ACTUATOR IS SHIPPED WITH THE BATTERY UNPLUGGED FROM THE BOARD. WHEN THE ACTUATOR IS INSTALLED, PLUG THE BATTERY INTO J1 ON THE SAFE AND SECURE BOARD.

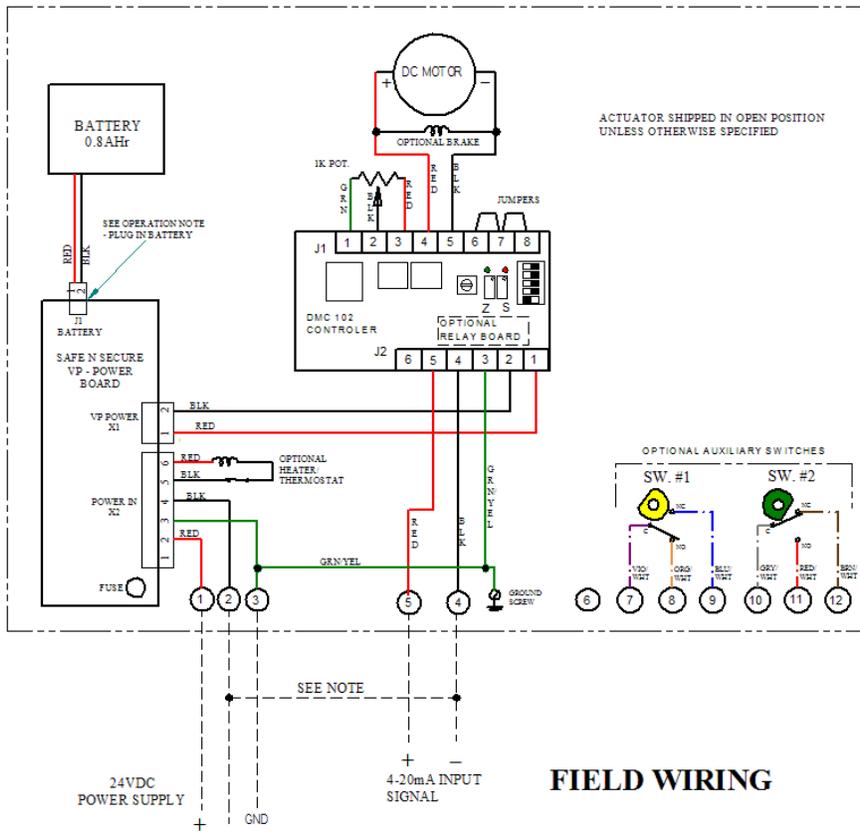
ACTUATOR WILL RUN ON AC INPUT POWER USING 4 - 20mA COMMAND SIGNAL FROM CONTROL PANEL. IF COMMAND SIGNAL COMMUNICATION SHOULD BE BROKEN OR POWER TO ACTUATOR & COMMAND SIGNAL DROP OUT, BATTERY POWER WILL DRIVE THE ACTUATOR TO THE SET FAIL POSITION AND REMAIN THERE UNTIL THE INPUT POWER COMES BACK ON. SEE MANUAL FOR SETTING THE DESIRED FAIL POSITION USING THE SELECTOR SWITCHES.

IF INPUT POWER SHOULD FAIL, BUT THE COMMAND SIGNAL IS STILL PRESENT, THE ACTUATOR WILL CONTINUE TO RUN ON BATTERY POWER UNTIL BATTERY POWER DROPS BELOW 9 VDC.

FURTHER TRAVEL OF THE ACTUATOR IN THE OPEN DIRECTION CAN BE ACCOMPLISHED BY ADJUSTING THE SPAN 'S' POT CLOCKWISE. FURTHER TRAVEL IN THE CLOSED DIRECTION CAN BE ACCOMPLISHED BY ADJUSTING THE 'ZERO' 'Z' POT COUNTER-CLOCKWISE.

W150716

AC CONNECTION WITH 4-20mA CONTROL WIRING DIAGRAM



FIELD WIRING



POSITIONER SWITCH SETTINGS FOR 4-20mA INPUT, STANDARD OPERATION SEE OPERATION MANUAL FOR SETTING CHANGES.



OPERATION

ACTUATOR IS SHIPPED WITH THE BATTERY UNPLUGGED FROM THE BOARD. WHEN THE ACTUATOR IS INSTALLED, PLUG THE BATTERY INTO J1 ON THE SAFE AND SECURE BOARD.

USER IS REQUIRED TO MAKE SURE THAT THE DC POWER GROUND (-) AND THE CONTROL SIGNAL GROUND (-) ARE TIED TOGETHER.

ACTUATOR WILL RUN ON DC INPUT POWER USING 4 - 20mA COMMAND SIGNAL FROM CONTROL PANEL. IF COMMAND SIGNAL COMMUNICATION SHOULD BE BROKEN OR POWER TO ACTUATOR & COMMAND SIGNAL DROP OUT, BATTERY POWER WILL DRIVE THE ACTUATOR TO THE SET FAIL POSITION AND REMAIN THERE UNTIL THE INPUT POWER COMES BACK ON. SEE MANUAL FOR SETTING THE DESIRED FAIL POSITION USING THE SELECTOR SWITCHES.

IF INPUT POWER SHOULD FAIL BUT THE COMMAND SIGNAL IS STILL PRESENT, THE ACTUATOR WILL CONTINUE TO RUN ON BATTERY POWER UNTIL BATTERY POWER DROPS BELOW 9 VDC.

FURTHER TRAVEL OF THE ACTUATOR IN THE OPEN DIRECTION CAN BE ACCOMPLISHED BY ADJUSTING THE SPAN 'S' POT CLOCKWISE. FURTHER TRAVEL IN THE CLOSED DIRECTION CAN BE ACCOMPLISHED BY ADJUSTING THE ZERO 'Z' POT COUNTER-CLOCKWISE.

W160303

DC CONNECTION WITH 4-20mA CONTROL WIRING DIAGRAM



ACTUATOR SET-UP FOR STANDARD OPEN/CLOSE ACTUATOR:

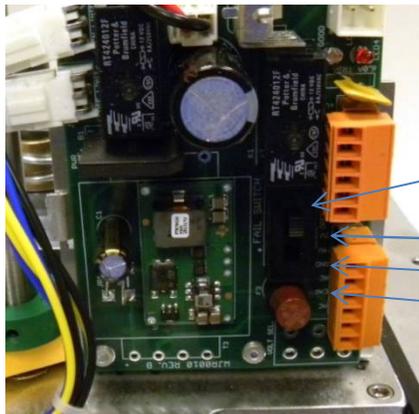
After the actuator is mounted mechanically to the valve and the external electrical wiring is complete, the actuator is ready for set up. The actuator cover will need to be removed, if not already done so.

- 1) On the circuit board, move the "Fail Switch" to the desired "FAIL" position. The description of the 3 positions are as follows:

RUN = ACTUATOR WILL CONTINUE TO RUN WITH USER COMMAND SIGNAL WHEN POWER FAILS UNTIL THE BATTERY DIES.

OPEN = ACTUATOR WILL MOVE TO THE OPEN POSITION WHEN POWER FAILS.

CLOSE = ACTUATOR WILL MOVE TO THE CLOSE POSITION WHEN POWER FAILS.



Fail Switch – Slide to the desired position

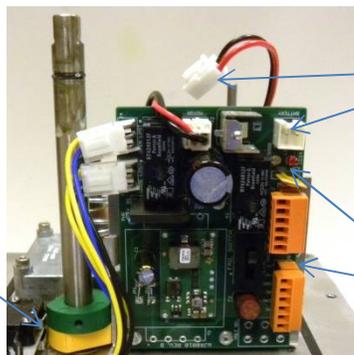
RUN
OPEN
CLOSE

**** DO NOT switch the FAIL switch while the actuator is moving – Turn OFF power before moving switch!**

- 2) Plug the battery connector into the circuit board at position J1. **NOTE:** If the "Fail Switch" was moved to the "CLOSE" position, the actuator will begin to move to the Close location.

Limit Switch CAMs

(Bottom = Close; Top = Open) – Loosen the set screw to rotate for adjustment.



J1, Battery Connector – Plug the battery into the J1 Connector on the board

Status LEDs

- 3) Apply external power to the actuator.
- 4) Using the external direction control signal, run the actuator open and closed to verify that the valve is opening and closing fully. If not, the Open and Close CAMs may be adjusted to allow more or less motion in both directions. The CAM set screw needs to be loosened to rotate the CAM. Re-tighten the set screw when the desired valve position is achieved.

**** If control signal is provided by a PLC, program needs to incorporate a delay between the OPEN & CLOSE signal.**

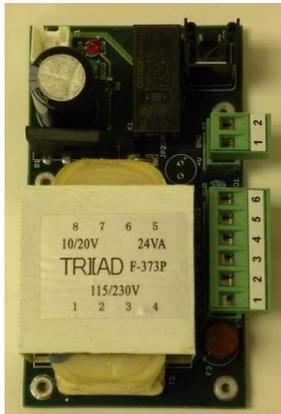


ACTUATOR SET-UP FOR MODULATING OPTION ACTUATOR:

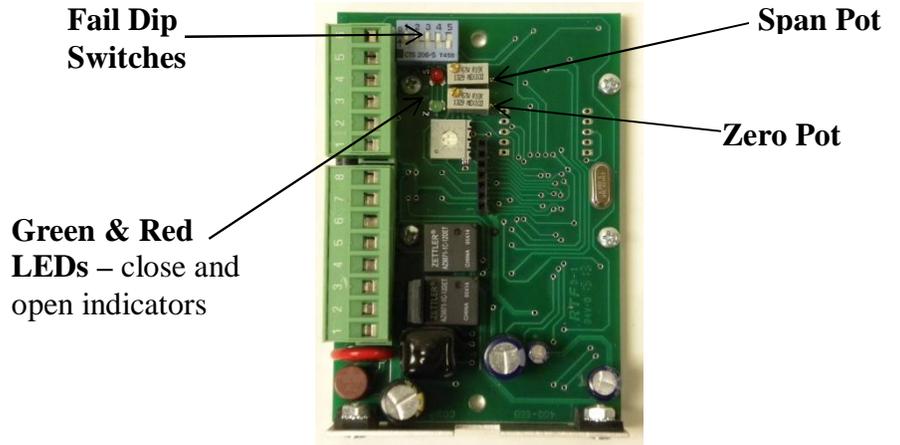
After the actuator is mounted mechanically to the valve and the external electrical wiring is complete, the actuator is ready for set up. The actuator cover will need to be removed, if not already done so.

- 1) The Safe & Secure board will supply power to the Modulating Controller Board. When the incoming power fails, the battery will supply power to run the motor to the selected FAIL position.

Safe and Secure Board



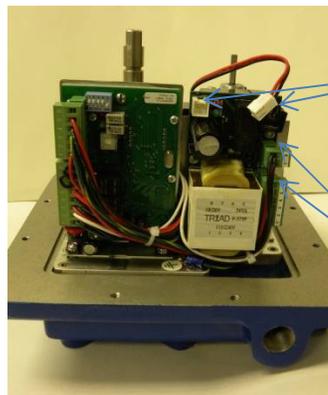
DC Modulating Controller



- 2) Set the DIP Switch #3 to ON (up) & #4 to OFF (down) on the DMC 102 Controller Board. This will run the actuator to the CLOSED position in the event of a **loss of input control signal**. If it is desired to have the actuator go to the OPEN position when the input signal is lost, then DIP Switch #3 is set to OFF (down) & #4 is set to ON (up).

NOTE: If the incoming power should fail, the battery will supply the Controller board and the actuator will operate normally as long as the input signal is present. The actuator will operate until the battery loses power. If the input signal should fail along with the incoming power, the Controller Board will drive the actuator to the selected FAIL Position on battery power and remain until power & signal are restored.

- 3) Plug the battery connector into the circuit board at position J1.



J1, Battery Connector –
Plug the battery into the J1 Connector on the board

Status LEDs

- 4) Apply external power to the actuator.



- 5) Apply the input signal (4-20mA, 0-10v, etc.) to run the actuator open and closed to verify that the valve is opening and closing fully. If not, the ZERO and SPAN pots on the Controller Board may be adjusted to allow more or less motion in both directions.

OPERATION:

Upon applying external supply power to the actuator, the Blue LED on the Safe & Secure Board should illuminate indicating that the power from the external source is on. See picture above for LED location. When the external power fails, the Blue LED will turn off and the Green LED will illuminate indicating that the actuator is now running on battery power. When this occurs, the actuator will move to the desired position (RUN, OPEN or CLOSED), as selected by the operator during set-up.

For example, if the actuator is moving towards the Open position with the Fail Switch set for CLOSED, the actuator will STOP, and move to the Closed position if the external power should fail.

On the Modulating version, the actuator will continue to operate from the input signal, as long as it is present. **Only when the input control signal fails, will the actuator move to the CLOSED or other set position.**

If the Safe and Secure Board Green LED should turn off and the Red LED turn on, this indicates that the battery power is low. The battery either needs to be charged or replaced. There is a battery charge circuit built into the Safe & Secure actuator that will charge the battery when the external power is on. If after 8 hours of "on board" charging, the Red LED remains on, then the battery needs to be replaced. **If the battery is too low, the actuator will FAIL in place.**

With the external power on, switch the direction control contact or change the input control signal from Open to Close to verify that the actuator/valve Opens and Closes. If Open and Close indicator Lamps have been installed, the Open Lamp will come on when the valve gets to the fully Open position. The Close Lamp will come on when the valve gets to the fully closed position.

If the Optional Heater and Thermostat have been installed, the Heater will operate when the external power supply is on. If the external power supply should fail and the actuator runs on battery power, the Heater will **NOT** be operational.

TESTING AND TROUBLESHOOTING:

Battery Condition Test

- 1) Remove the external power and verify that the Green LED illuminates. If it does, then the battery is properly charged and ready for operation.
- 2) If the Red LED illuminates, the battery is low.
- 3) Apply external power to the actuator and verify that the Blue LED illuminates.
- 4) Wait 8 hours and repeat by removing the external power.
- 5) If the Green LED illuminates, the battery is good and is charged.
- 6) If the Red LED illuminates, or is OFF, the battery is bad and needs to be replaced.

Power Test ****DO NOT CHANGE ANY SWITCH SETTINGS WITH THE POWER ON****

- 1) Apply external power to the actuator. The Blue LED should illuminate.
- 2) If there is no Blue LED, check that the incoming power is terminated & the breaker is on.
- 3) Next, verify that the power is correctly connected to the actuator and the wires are tight in the input connector.
- 4) On AC versions, make sure that the 115/230V switch is in the proper position for the appropriate power input.
- 5) On the DC versions, verify that either the 24V or 12V is connected to the appropriate terminal.
- 6) If still no Blue LED, check the on board fuse (AC & modulating versions only) in the Safe & Secure Actuator.
- 7) If the fuse is blown, replace the fuse.



- 8) If the fuse is good, the circuit board is bad and needs to be replaced.
- 9) On modulating versions, a control input signal needs to be present to run the actuator.

DUTY CYCLE:

All SNS Series actuators are rated 100% duty cycle at 100% ambient temperature at rated torque.

THERMAL OVER LOAD:

The Safe and Secure series actuator motors are internally fused with a resettable fuse. When the motor current rises to an overload level, the on-board fuse will “trip” until the motor cools down. The fuse will automatically reset and allow the actuator to resume operation. It is the responsibility of the operator to check the entire system and clear any jams or valve binding prior to restarting the system.

MECHANICAL OVER LOAD:

ICI' actuators are all designed to withstand stall conditions. It is not recommended to subject the unit to repeated stall conditions; however, should it occur the actuator would not experience gear damage.

ORDERING PARTS:

When ordering parts please specify:

Actuator Model Number, Actuator Serial Number, Part Number & Part Description.

RECOMMENDED SPARE PARTS:

Set of limit switches, spare battery, spare fuses for specified input voltage.

NEMA 7 ENCLOSURE, GENERAL:

In general, operation and maintenance of a NEMA 7 electric actuator is no different than that of a NEMA 4 electric actuator. However, there are some precautions that must be followed.

1. **DO NOT** install in ambient temperatures that exceed **140 degrees F**.
2. **DO NOT** under any circumstances **remove the actuator cover** while in a hazardous location when the contacts are still live, this could cause ignition of hazardous atmospheres.
3. **DO NOT** under any circumstances **use a NEMA 7 electric actuator in a hazardous location that does not meet the specifications for which the actuator was designed**. The actuator is clearly tagged with the NEMA classification it was designed for.
4. Mount, test and calibrate actuator on valve in non-hazardous location.
5. When removing the cover care must be taken not to scratch, scar or deform the flame path of the cover or base of the actuator, this will negate the NEMA 7 rating of the enclosure.
6. When replacing the cover on actuators rated NEMA 4 and 7 take care that the gasket is in place to assure the proper clearance after the cover is secured. After securing the cover screws check the clearance between the cover and the base, a .002" thick by 1/2" wide feeler gauge may not enter between the two mating faces more than .125".
7. All electrical connections must be to state and local codes and in accordance with the specifications for which the unit is being used.

**After proper installation the actuator will require little or no maintenance. In the event maintenance is required remove it from the hazardous location before attempting to work on it. If the actuator is in a critical application and down time is not permitted it is advisable to have a spare actuator in stock.*



INDELAC CONTROLS INC. 
AMERICAN MADE ACTUATORS & CONTROLS



INDELAC 1-YEAR STANDARD WARRANTY POLICY:

INDELAC CONTROLS, INC. (ICI) WARRANTS THAT FOR A PERIOD OF **1 YEAR** FROM THE DATE OF SHIPMENT IT WILL EITHER REPAIR OR REPLACE, AT ITS OPTION, ANY OF ITS PRODUCTS, WHICH PROVE TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP.

THIS WARRANTY DOES NOT COVER DAMAGE RESULTING FROM CAUSES SUCH AS ABUSE, MISUSE, MODIFICATION OR TAMPERING.

THIS WARRANTY IS EXTENDED ONLY TO THE REGISTERED PARTY, FOR WHICH THE PRODUCT SERIAL NUMBER MATCHES. THE EXTENDED WARRANTY OF ICI'S PRODUCT AND IS NOT TRANSFERABLE.

TO OBTAIN SERVICE UNDER THIS WARRANTY, THE PURCHASER MUST FIRST OBTAIN A RETURN AUTHORIZATION NUMBER FROM ICI. PRODUCTS MUST BE RETURNED TO ICI FREIGHT PREPAID FOR EVALUATION.

IF THE UNIT FAILED DUE TO POOR WORKMANSHIP OR MATERIALS THE UNIT WILL BE REPAIRED OR REPLACED. THE UNIT WILL BE RETURNED GROUND/STANDARD FREIGHT PAID BY ICI, IF AIR/RUSH SHIPMENT IS REQUESTED THE PURCHASER SHALL PAY THE DIFFERENCE.

THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS, LIABILITIES OR EXPRESSED WARRANTIES. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY ARE HEREBY EXPRESSLY EXCLUDED.

IN NO EVENT SHALL ICI BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING IN CONNECTION WITH THE USE OF ITS PRODUCTS, OR FOR ANY DELAY IN THE PERFORMANCE OF THIS WARRANTY DUE TO CAUSES BEYOND ITS CONTROL.

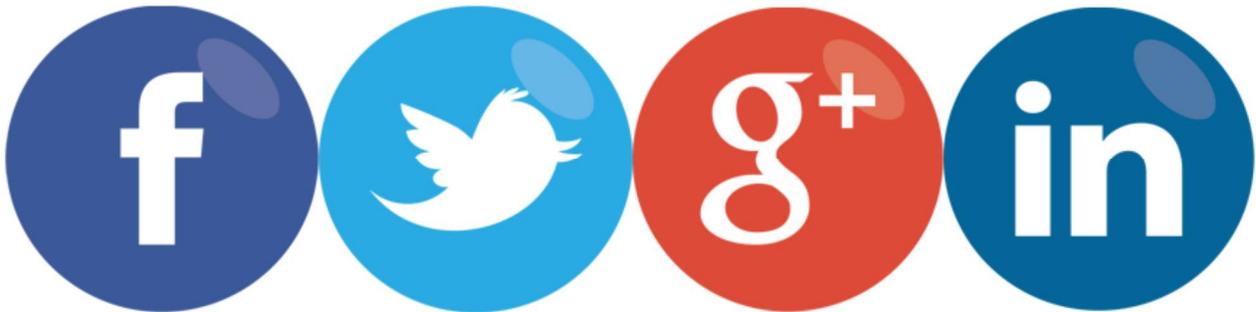
6810 POWERLINE DR. - FLORENCE, KY. 41042 - TELEPHONE 859-727-7890, TOLL FREE 1-800-662-9424
 FAX. 859-727-4070, E-MAIL: DVOGES@INDELAC.COM, OR MROBINSON@INDELAC.COM
 VISIT OUR WEBSITE AT WWW.INDELAC.COM

REGISTER ONLINE FOR INDELAC'S EXTENDED 2-YEAR WARRANTY



Frequently Asked Questions

SYMPTOM	PROBLEM	SOLUTION
ACTUATOR DOES NOT RESPOND TO CONTROL SIGNAL.	Power not on Actuator wired wrong Wrong voltage Thermal overload activated Actuator and valve in opposite positions when actuator was mounted. Fuse Blown Input signal wires not tight in terminals Bad Brake	Turn on power Check wiring diagram & rewire Check power supply & make appropriate changes Allow motor to cool, actuator will automatically reset Remove actuator and rotate 90 degrees & remount Replace with proper value fuse Tighten terminal block screws Remove brake hub & try to run
ACTUATOR WILL NOT OPEN OR CLOSE COMPLETELY.	Travel limits set wrong Valve torque too high for actuator Mechanical stops not removed	Reset cams. Install correct size actuator Remove stops, CAUTION: Do not remove any part required for proper operation
VALVE OSCILLATES.	Valve torque too high for actuator Actuator without brake installed on butterfly valve Motor brake out of adjustment. Set screw loose in brake disc	Install correct size actuator. Install brake Adjust brake Adjust brake and tighten set-screw
MOTOR RUNS BUT OUTPUT SHAFT DOES NOT ROTATE.	Gear damage or sheared pin	Contact ICI or nearest distributor



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