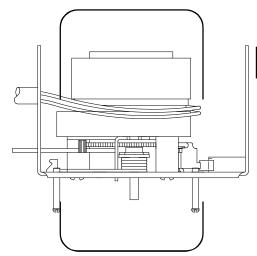


☆STAR DAMPERS *ASTRAL* ACTUATOR (DA SERIES)

An On/Off Motorized Damper Actuator.



★Star dampers are designed primarily for use on cool or warm air ducted systems. ★Star actuators are compatible and interchangeable with all ★Star series linkages, dampers and accessories.

BENEFITS & SPECIAL FEATURES

- Actuator is removable without removing or dismantling the damper housing or vane.
- Actuator is interchangeable with all ☆Star series actuators
- Actuator fits all ☆Star series dampers and may be linked to virtually any other damper.
- Motor is replaceable without removing the actuator
- Convertible Spring Return[™] can be set to open or close on power failure
- 0 90 degree travel with Autostop[™] feature
- Very high temperature ratings using optional "F" coil motors
- Digital 2 wire control signal
- 30 second complete cycle time.
- Delrin bearing for long life
- Position indicator
- Auxiliary switch available

Astral Actuator



Description

A spring return, on/off, motorized damper actuator that is both normally closed and normally open. Controlled by a two-wire thermostat.

Application

The Astral ☆Star damper is used where on-off control is required. Applications include but are not limited to the control of duct mounted zone dampers for heating and cooling, humidity control and industrial and process control. Other applications include fresh air inlets on fan coils, air control for burners, make-up air units and dumper dampers.

Installation Notes

Dampers may be installed without regard to direction. Damper rods may be mounted at any angle but care should be taken to avoid placement of actuator in an inaccessible location, directly above a heating duct if maximum exhaust temperature may be exceeded or where condensation or leaking water could enter the actuator. Several mounting systems and linkages are available.

Operation

The Astral \$\frac{1}{12}\$ Star actuator utilizes a synchronous hysteresis motor which drives a shaft in one direction while powered until it reaches a stop. The motor can remain stalled under power indefinitely in any position. Upon discontinuing power the spring return overcomes the motor and returns the actuator to its "normal" position. A unique feature of the Astral is the ability to change the "normal" position at any time. An optional auxiliary switch at either end of the travel can trigger an external device. The actuator may be replaced or upgraded (and reused elsewhere) to another \$\frac{1}{2}\$ Star series actuator without disabling the system.

Warranty

POWER REQUIREMENTS either 24, 110, 208, 220, 240, or 277 VAC.

MINIMUM WIRING REQUIREMENTS 18 gauge 90° C.

ACTUATOR MOTOR

Power draw requirements 6 watts.

Torque (running) 62.6 in./oz. (.44 N/M) minimum at 90% of rated

power.

Timing motor cycles in 15 seconds (0.25 min.), spring cycles

in 15 seconds (0.25 min.).

Characteristics power close , spring open or power open, spring

close.

Type synchronous, hysteresis.

AUXILIARY SWITCHES 1 snap acting micro switches, 5 amps resistive at

125/250 VAC, N/O, N/C, or N/O/C contacts. WIRE TYPE BX, cable, leads, modular plug-in cable.

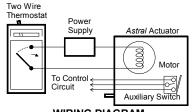
WIRE LENGTH 4 - 96", (10 - 244 cm).

TEMPERATURE RATINGS (ambient) standard - 221° F / 105° C

high temperature - 311° F / 155° C auxiliary switch - 185° F / 85° C

GROSS WEIGHT (average)

Individually packed, actuator only 12 ozs. (340g)



WIRING DIAGRAM WITH OPTIONAL SPDT AUXILIARY SWITCH

MATERIALS

4. Strain relief

1. Motor leads 10. Cover (aluminum)

2. Motor retainer stud 11. Nut

3. Motor mounting plate 12. Motor (galvanized steel)

13. Ground screw

14. Gear (galvanized steel)

5. Torsion spring 15. Shaft

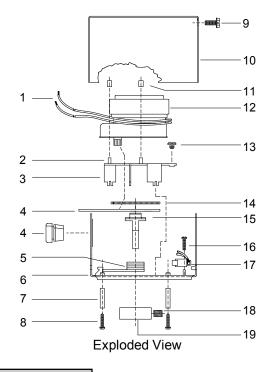
6. Frame (galvanized steel) 16. Mounting screw

7. Spacer 17. Auxiliary switch

8. Mounting screw 18. Set screw

Cover screw

19. Collar



Items in italic type are optional. Other options not shown.

OPTIONS

See power, auxiliary switch, wire type and wire length in "specifications".

Actuators may be ordered assembled with a damper, indi-Packaging: vidually packed. Actuators may also be ordered separately

and bulk packed with like actuators or in mixed lots of 24.

Deluxe: All actuators are available in a deluxe model suitable for harsh and high humidity environments. Upgrade includes: stainless steel: springs and screws, sealed auxiliary switch,

and heavy duty condensate protected motor.

REFERENCE

For more information on: compatible dampers

other ☆Star damper actuators mounting and linkage accessories actuator pages (this section)

other Flair products reference material

weight & shipping information suggested pricing

See:

damper pages

actuator pages (this section)

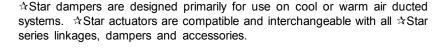
other sections appendix appendix pricing section





☆STAR DAMPERS CORVUS ACTUATOR (DC SERIES)

A Mid-position Damper Actuator.



Corvus Actuator



BENEFITS & SPECIAL FEATURES

- Actuator is removable without removing or dismantling the damper housing or vane.
- Actuator is interchangeable with all ☆Star series actuators
- Actuator fits all *Star series dampers and may be linked to virtually any other damper.
- Motor is replaceable without removing the actuator
- Convertible Spring Return[™] can be set to open or close on power failure
- 0 90 degree travel with an electronic stop at 45° with AutostopTM feature
- Very high temperature ratings using optional "F" coil motors
- Digital 4 wire control signal
- 11 second complete cycle time
- Delrin bearing for long life
- Position Indicator
- Auxilliary switch available

Description

A spring return, 3-position (on, off and mid-position) motorized actuator. Controlled by (two) two-wire thermostats.

Application

The Corvus AStar damper is used where on-off control is required in addition to a half-open position. Applications include but are not limited to the control of duct mounted zone dampers for heating and cooling, humidity control, and industrial and process control. Other applications include fresh air inlets on fan coils, air control for burners, make-up air units and dumper dampers.

Installation Notes

Dampers may be installed without regard to direction. Damper rods may be mounted at any angle but care should be taken to avoid placement of actuator in an inaccessible location, directly above a heating duct if maximum exhaust temperature may be exceeded or where condensation or leaking water could enter the actuator. Several mounting systems and linkages are available.

Operation

The Corvus ★Star actuator utilizes a synchronous hysteresis motor which drives a shaft in one direction while powered until it reaches a stop. The stop is electronically controlled at the mid-position or physically controlled at either extreme. The motor can remain stalled under power indefinitely in any position. Upon discontinuing power the spring return overcomes the motor and returns the actuator to its "normal" position. An optional auxiliary switch can trigger an external device. The actuator may be replaced or upgraded (and reused elsewhere) to another ★Star series actuator without disabling the system.

Warranty

POWER REQUIREMENTS either 24 or 240 VAC. MINIMUM WIRING REQUIREMENTS 18 gauge 90° C.

ACTUATOR MOTOR

Power draw requirements 6 watts when closed or closing

power.

Timing motor cycles in 3 seconds (0.05 min.), spring

cycles in 8 seconds (0.1333 min.).

Characteristics one port is powered open, one port is spring open.

Port sharing is controlled electronically under

power

..... synchronous, hysteresis.

AUXILIARY SWITCHES snap acting micro switch, 5 amps resistive at 125/

250 VAC., N/O contacts. The second switch is used for the mid-position feature.

WIRE TYPE BX, cable, leads, plenum cable, modular plug-in

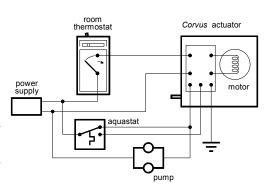
WIRE LENGTH 4 - 96", 10 - 244cm.

TEMPERATURE RATINGS (ambient) class A motor 221° F / 105° C

> 185° F / 85° C auxiliary switch

GROSS WEIGHT (average)

Individually packed, actuator only 12 ozs. (340g)



Wiring Diagram

Typical application using (2) two-wire thermostats

MATERIALS

1. Motor retainer tab 10. Cover (aluminum)

2. Motor mounting plate 11. Motor (class B/F) (galvanized steel)

12. Ground screw

3. Eyelet (steel)

13. Extension spring

Sector gear/lever (brass)

14. Ground lug

5. Bushing (Delrin)

15. Insulator shield

6. Strain relief

16. PC board

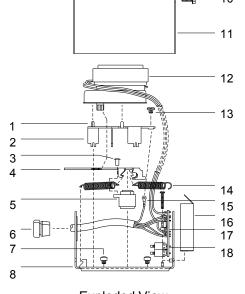
7. Mounting screw

17. Position/auxiliary switches

8. Frame (galvanized steel)

9. Cover screw

Items in italic type are optional. Other options not shown.



Exploded View

OPTIONS

See power, auxiliary switch, wire type and wire length in "specifications".

Packaging:

Actuators may be ordered assembled with a damper, individually packed. Actuators may also be ordered separately and bulk packed with like actuators or in mixed lots of 24.

Deluxe:

All actuators are available in a deluxe model suitable for harsh and high humidity environments. Upgrade includes: stainless steel: springs and screws, sealed auxiliary switch, and heavy duty condensate protected motor.

REFERENCE

For more information on: compatible dampers

other ☆Star damper actuators mounting and linkage accessories actuator pages (this section) other Flair products

reference material weight & shipping information suggested pricing

See:

damper pages

actuator pages (this section)

other sections appendix appendix pricing section

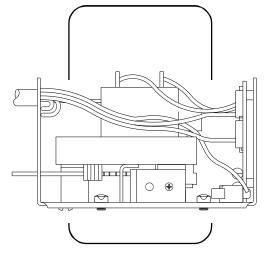




☆STAR DAMPERS *LUMINA* ACTUATOR (DL SERIES)

A High Power Reversible Damper Actuator.

☆Star dampers are designed primarily for use on cool or warm air ducted systems. ☆Star actuators are compatible and interchangeable with all ☆Star series linkages, dampers and accessories.



Lumina Actuator



BENEFITS & SPECIAL FEATURES

- Actuator is removable without removing or dismantling the damper housing or vane.
- Actuator is interchangeable with all ☆Star series actuators
- Actuator fits all ☆Star series dampers and may be linked to virtually any other damper.
- Motor is replaceable without removing the actuator
- Power open power close
- No current draw while stopped
- 0 90 degree travel with Autostopä feature
- Very high temperature ratings using class "E" coil motors
- Digital 3 wire control signal
- 30 second complete cycle time
- Delrin bearing for long life
- Position indicator
- Auxiliary switch available

Description

A high powered, on/off, motorized actuator used where large vane area or high pressure differential conditions exceed the specifications of the Astral actuator. Controlled by a standard three wire thermostat.

Application

The Luminal ☆Star damper is used where heavy duty on-off control is required. Applications include but are not limited to the control of duct mounted zone dampers for heating and cooling, humidity control, and industrial and process control. Other applications include fresh air inlets on fan coils, air control for burners, make-up air units and dumper dampers.

Installation Notes

Dampers may be installed without regard to direction. Damper rods may be mounted at any angle but care should be taken to avoid placement of actuator in an inaccessible location, directly above a heating duct if maximum exhaust temperature may be exceeded or where condensation or leaking water could enter the actuator. Several mounting systems and linkages are available.

Operation

The Lumina ☆Star actuator utilizes a powerful dc motor which drives a shaft in either direction . The stop is electronically controlled without using a limit switch. With this unique feature, the Lumina has the ability to detect end of travel or a malfunction and stop automatically. It is automatically self-adjusting for wear. An optional auxiliary switch at either end of the travel can trigger an external device. The actuator may be replaced or upgraded (and reused elsewhere) to another ☆Star series actuator without disabling the system.

Warranty

POWER REQUIREMENTS either 24, 110, 208, 220, 240, or 277 VAC. MINIMUM WIRING REQUIREMENTS 18 gauge 90° C. ACTUATOR MOTOR

rated power at the valve stem

Timing motor cycles in 15 seconds (0.25 min.)

from end to end in either direction

Characteristics power close, power open;

Type dc

AUXILIARY SWITCHES snap acting micro switch, 5 amps resistive at 125/250 VAC, N/O, N/C, or N/O/C

contacts.

WIRE TYPE BX, cable, leads, plenum cable, modular

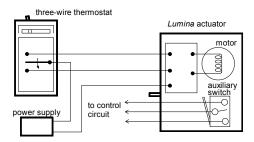
plug-in cable.

WIRE LENGTH 4 - 96", 10 - 244cm.

TEMPERATURE RATINGS (ambient) class E motor - 275° F / 135° C auxiliary switch - 185° F / 85° C

GROSS WEIGHT (average)

Individually packed, actuator only 12 ozs. (340g)



Typical application wiring diagram using a standard three-wire thermostat .

12

MATERIALS

- 1. Motor (class "E")
- 2. Motor retainer tab
- 3. Motor mounting plate (galvanized steel)
- 4. Eyelet
- 5. Sector gear/position indicator (brass)
- 6. Bushing (delrin)
- 7. Strain relief
- 8. Mounting screw

- 9. Frame (galvanized steel)
- 10. Cover screw
- 11. Cover (aluminum)
- 12. Ground screw
- 13. Ground lug
- 14. Insulator shield
- 15. PC board
- 16. Auxiliary switch

Items in italic type are optional. Other options not shown.

OPTIONS

See power, auxiliary switch, wire type and wire length in "specifications".

Packaging: Actuators may be ordered assembled with a damper, individually packed. Actuators may also be ordered separately

vidually packed. Actuators may also be ordered separately and bulk packed with like actuators or in mixed lots of 24.

stainless steel: springs and screws, sealed auxiliary switch,

Deluxe: All actuators are available in a deluxe model suitable for harsh and high humidity environments. Upgrade includes:

and heavy duty condensate protected motor.

REFERENCE

For more information on: compatible dampers other ☆Star damper actuators

mounting and linkage accessories actuator pages (this section) other Flair products other sections reference material appendix

weight & shipping information suggested pricing See:

damper pages

actuator pages (this section)

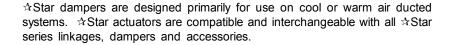
other sections appendix appendix pricing section

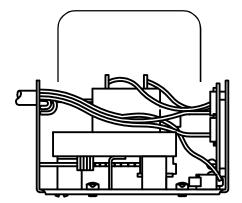




☆STAR DAMPERSPULSAR ACTUATOR (DP SERIES)

A 3-point Floating Control Damper Actuator.







Pulsar Actuator



BENEFITS & SPECIAL FEATURES

- Actuator is removable without removing or dismantling the damper housing or vane.
- Actuator is interchangeable with all ☆Star series actuators
- Actuator fits all ☆Star series dampers and may be linked to virtually any other damper.
- Motor is replaceable without removing the actuator
- Power open power close
- No current draw while stopped
- 0 90 degree travel with Autostop[™] and reversing features
- Very high temperature ratings using class "E" coil motor
- Digital 3-wire control signal
- 90 second complete cycle time
- Delrin bearing for long life
- Position indicator
- Auxiliary switch available

Description

A floating control, modulating motorized actuator. Controlled by a standard, PI or PID three wire thermostat with continuous or pulsed output. May be stopped at any intermediate position and reversed an infinite number of times.

Application

The Pulsar ☆Star damper is used where continuous modulating control is required. Applications include but are not limited to the control of duct mounted zone dampers for heating and cooling, humidity control, and industrial and process control. Other applications include fresh air inlets on fan coils, air control for burners, make-up air units and dumper dampers.

Installation Notes

Dampers may be installed without regard to direction. Damper rods may be mounted at any angle but care should be taken to avoid placement of actuator in an inaccessible location, directly above a heating duct if maximum exhaust temperature may be exceeded or where condensation or leaking water could enter the actuator. Several mounting systems and linkages are available.

Operation

The Pulsar * Star actuator utilizes a powerful dc motor which drives a shaft in either direction. The stop is electronically controlled without using a limit switch. With this unique feature, the Pulsar has the ability to detect end of travel or a malfunction and stop automatically. It is automatically self-adjusting for wear. An optional auxiliary switch at either end of the travel can trigger an external device. The actuator may be replaced or upgraded (and reused elsewhere) to another * Star series actuator without disabling the system.

Warranty

POWER REQUIREMENTS 24 VDC. MINIMUM WIRING REQUIREMENTS 18 gauge 90° C.

ACTUATOR MOTOR

Power draw requirements 6 watts when opoening or closing. No draw

while at rest.

Torque (running) 62.6 in./oz. (.44 N/M) minimum at 90% of

rated power at the valve stem

Timing motor cycles in 90 seconds (1.5 min.) Characteristics power close, power open; can be stopped

and/or reversed at any point

AUXILIARY SWITCHES 1 or 2 snap acting micro switches, 5 amps

resistive at 125/250 VAC, N/O, N/C or

N/O/C contacts.

WIRE TYPE BX. cable. leads. plenum cable. modular

plug-in cable.

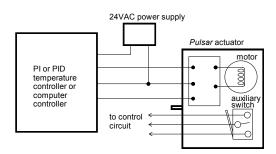
WIRE LENGTH 4 - 96", 10 - 244cm.

TEMPERATURE RATINGS (ambient) class E motor - 275° F / 135° C

auxiliary switch - 185° F / 85° C

GROSS WEIGHT (average)

Individually packed, actuator only 12 ozs. (340g)



Typical application wiring diagram using controller, providing an incremental output signal, direct or revrse acting, through 24VAC, 0.5A, switching triacs or relay contacts.

10

MATERIALS

1. Motor (class "E")

8. Mounting screw

2. Motor retainer tab

9. Frame (galvanized steel)

3. Motor mounting plate

10. Cover screw

(galvanized steel)

11. Cover (aluminum)

4. Eyelet

12. Insulator shield

5. Sector gear/position indicator (brass)

13. PC board

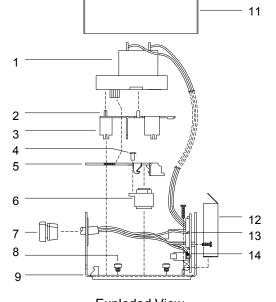
Bushing (delrin)

14. Auxiliary switch

7. Strain relief

15. Cable

Items in italic type are optional. Other options not shown.



Exploded View

OPTIONS

See power, auxiliary switch, wire type and wire length in "specifications".

Packaging:

Actuators may be ordered assembled with a damper, individually packed. Actuators may also be ordered separately and bulk packed with like actuators or in mixed lots of 24.

Deluxe:

All actuators are available in a deluxe model suitable for harsh and high humidity environments. Upgrade includes: stainless steel: springs and screws, sealed auxiliary switch, and heavy duty condensate protected motor.

REFERENCE

For more information on: compatible dampers

other ☆Star damper actuators

other Flair products

reference material weight & shipping information

suggested pricing

See:

damper pages

actuator pages (this section) mounting and linkage accessories actuator pages (this section)

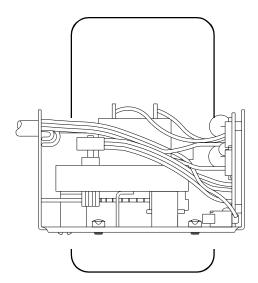
other sections appendix appendix pricing section





☆STAR DAMPERS *REGULUS* ACTUATOR (DR SERIES)

A Damper Actuator with Infinite Proportional Control.



Regulus Actuator



☆Star dampers are designed primarily for use on cool or warm air ducted systems. ☆Star actuators are compatible and interchangeable with all ☆Star series linkages, dampers and accessories.

BENEFITS & SPECIAL FEATURES

- Actuator is removable without removing or dismantling the damper housing or vane.
- Actuator is interchangeable with all ☆Star series actuators
- Actuator fits all ☆Star series dampers and may be linked to virtually any other damper.
- Motor is replaceable without removing the actuator
- Power open power close
- No current draw while stopped
- 0 90 degree travel with Autostop[™] and Seek[™] features
- Very high temperature ratings using class "E" coil motor
- Analog 2-wire control signal
- 90 second complete cycle time
- Delrin bearing for long life
- Position indicator
- Auxiliary switch available

Description

A motorized proportional actuator. Controlled by a PI or PID thermostat with 0-10 volt or 4-20 milliamp output. May be stopped at any intermediate position for variable flow.

Application

The Regulus Astar damper is used where infinite proportional control is required. Applications include but are not limited to the control of duct mounted zone dampers for heating and cooling, humidity control, and industrial and process control. Other applications include fresh air inlets on fan coils, and air control for burners.

Installation Notes

Dampers may be installed without regard to direction. Damper rods may be mounted at any angle but care should be taken to avoid placement of actuator in an inaccessible location, directly above a heating duct if maximum exhaust temperature may be exceeded or where condensation or leaking water could enter the actuator. Several mounting systems and linkages are available.

Operation

The Regulus \$\frac{1}{2}\star\ star\ actuator\ utilizes\ a\ powerful\ dc\ motor\ which\ drives\ a\ shaft\ in\ either\ direction.\ The\ stop\ is\ electronically\ controlled\ without\ using\ a\ limit\ switch.\ With\ this\ unique\ feature\,\ the\ Regulus\ has\ the\ ability\ to\ detect\ end\ of\ travel\ or\ a\ malfunction\ and\ stop\ automatically.\ It\ is\ self-adjusting\ for\ wear.\ The\ actuator\ can\ "seek\"\ a\ predetermined\ position\ chosen\ by\ the\ controller.\ An\ optional\ feedback\ control\ can\ transmit\ exact\ position\ to\ this\ controller.\ The\ actuator\ may\ be\ replaced\ or\ upgraded\ (and\ reused\ elsewhere)\ to\ another\ \$\frac{1}{2}\star\ series\ actuator\ without\ disabling\ the\ system.\}

Warranty

POWER REQUIREMENTS 24VDC. MINIMUM WIRING REQUIREMENTS 18 gauge 90° C.

ACTUATOR MOTOR

Power draw requirements 6 watts when opening or closing. No

draw while at rest.

Torque (running) 62.6 in./oz. (.44 N/M) minimum at 90% of rated power at the valve stem Timing motor cycles in 30 seconds (.5 min.)

Characteristics power close, power open; can be stopped and/or reversed at any point.

Type dc

FEEDBACK 0-10V or 4-20mA (selectable) feed-

back position indicator

WIRE TYPE BX, cable, leads, plenum cable, modu-

lar plug-in cable.

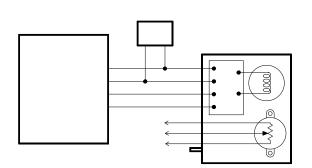
WIRE LENGTH 4 - 96", 10 - 244cm.

TEMPERATURE RATINGS (ambient) classE motor - 275° F / 135° C

auxiliary switch - 185° F / 85° C

GROSS WEIGHT (average)

Individually packed, actuator only 12 ozs. (340g)



MATERIALS

1. Motor leads 9. Cover screw

2. Motor retainer tab 10. Cover (aluminum)

3. Motor mounting plate (galvanized)

11. Motor

4. Eyelet

12. Extension spring

5. Sector gear/position indicator (brass)

13. Mounting screw 14. Auxiliary switch

6. Strain relief

15. Feedback potentiometer

7. Bushing (delrin)

16. Position indicator

8. Frame (galvanized steel)

Items in italic type are optional. Other options not shown.

OPTIONS

See power, auxiliary switch, wire type and wire length in "specifications".

Packaging:

Actuators may be ordered assembled with a damper, individually packed. Actuators may also be ordered separately and bulk packed with like actuators or in mixed lots of 24.

Deluxe:

All actuators are available in a deluxe model suitable for harsh and high humidity environments. Upgrade includes: stainless steel: springs and screws, sealed auxiliary switch, and heavy duty condensate protected motor.

REFERENCE

For more information on:

compatible dampers other ☆Star damper actuators

mounting and linkage accessories actuator pages (this section) other Flair products

reference material weight & shipping information

suggested pricing

See:

damper pages

actuator pages (this section)

other sections appendix appendix pricing section

