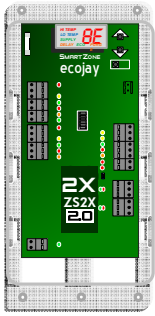


DAMPERS





ZONE CONTROL

ZS2X-2.0

ZS4X-2.0

● 2 ZONE CONTROLLER W/ SUPPLY SENSOR

● 4 ZONE CONTROLLER W/ SUPPLY SENSOR

[EXPANDABLE TO 20 ZONES, BUILT IN FRESH AIR]

DAMPERS

[xx / yy DIMENSIONS IN INCHES 06 TO 30]

SUPPLY

DSUSxx

DSUPxx

DSESxx*yy

DSEPxx*yy

FRESH AIR

DFUSxx

BYPASS

DBUBxx

DBUMxx

DBEMxx*yy

● ROUND SPRING OPEN / POWER CLOSE

● ROUND POWER OPEN / POWER CLOSE

● RECTANGULAR SPRING OPEN / POWER CLOSE

● RECTANGULAR POWER OPEN / POWER CLOSE

*[MOTOR MOUNTED ON 2ND DIMENSION yy OF ALL RECTANGULAR]

● ROUND SPRING CLOSE / POWER OPEN

● ROUND BAROMETRIC W/ WEIGHT ARM

● ROUND MODULATING KIT W/ ASPC2

● RECTANGULAR MODULATING KIT W/ ASPC2

ACCESSORIES

ASPC2

● STATIC PRESSURE CONTROL FOR MODULATING BYPASS

AESW

● ECO MODE SWITCH ALLOWS USER CONTROLLED ZONING

AFET

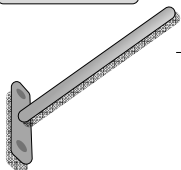
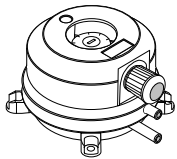
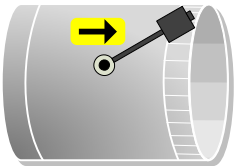
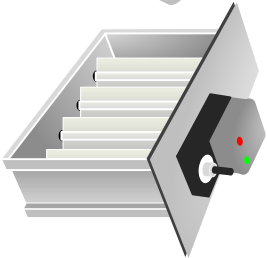
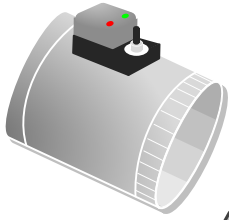
● FRESH-AIR ECONOMIZER TSTAT (OUTDOOR TEMP CONTROL)

ASAS

● SUPPLY AIR TEMP SENSOR INCLUDED W/ SMARTZONE

ECOJAY LLC
1527 W. State Highway 114
Suite 500-281
Grapevine, TX 76051

888-523-3265
ecojay.com



DAMPER OVERVIEW

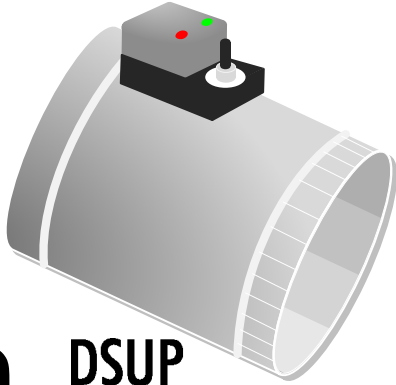
SMARTZONE

5

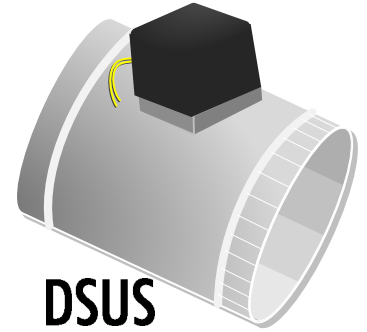
YEAR LIMITED WARRANTY

MADE IN THE USA

ecojay.com
888-523-3265



ECOJAY DAMPERS ARE AVAILABLE IN OVER 100 DIFFERENT SIZES AND STYLES. FOR DETAILED INFORMATION ON EACH OF THE DAMPERS, REFER TO THE SPEC SHEETS FOR EACH ONE OF THESE PART NUMBERS. AVAILABLE AT ECOJAY.COM OR BY CALLING 888-523-ECOJ(3265).



ROUND

DSUP

POWER OPEN / POWER CLOSE

PART #	D	L
DSUP06	6"	10"
DSUP07	7"	10"
DSUP08	8"	10"
DSUP09	9"	10"
DSUP10	10"	12"
DSUP12	12"	14"
DSUP14	14"	16"
DSUP16	16"	18"
DSUP18	18"	18"

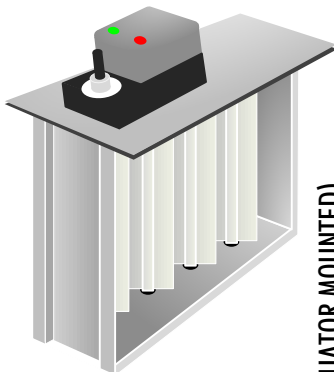
DSUS

SPRING OPEN

PART #	D	L
DSUS06	6"	9"
DSUS07	7"	9"
DSUS08	8"	9"
DSUS09	9"	10"
DSUS10	10"	12"
DSUS12	12"	14"
DSUS14	14"	16"
DSUS16	16"	18"

- QUALITY
- RELIABILITY
- SIMPLICITY

RECTANGULAR



DSEP

POWER OPEN / CLOSE

DSES

SPRING OPEN

HEIGHT (ACTUATOR MOUNTED)

WIDTH (INCHES)

PART #

W	H
WIDTH	HEIGHT

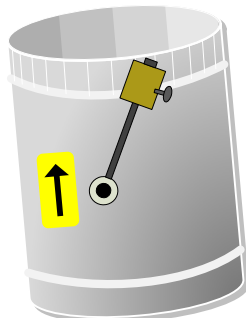
	08	10	12	14	16	18	20	22	24
08	DSEP0808	DSEP1008	DSEP1208	DSEP1408	DSEP1608	DSEP1808	DSEP2008	DSEP2208	DSEP2408
10	DSEP0810	DSEP1010	DSEP1210	DSEP1410	DSEP1610	DSEP1810	DSEP2010	DSEP2210	DSEP2410
12	DSEP0812	DSEP1012	DSEP1212	DSEP1412	DSEP1612	DSEP1812	DSEP2012	DSEP2212	DSEP2412
14	DSEP0814	DSEP1014	DSEP1214	DSEP1414	DSEP1614	DSEP1814	DSEP2014	POWER-OPEN DAMPER PART NUMBERS SHOWN IN CHART, REPLACE "P" WITH "S" IN ANY PART NUMBER FOR SPRING MOTOR	
16	DSEP0816	DSEP1016	DSEP1216	DSEP1416	DSEP1616	DSEP1816			
18	DSEP0818	DSEP1018	DSEP1218	DSEP1418	DSEP1618				
20	DSEP0820	DSEP1020	DSEP1220	DSEP1420					
22	DSEP0822	DSEP1022	DSEP1222						
24	DSEP0824	DSEP1024	DSEP1224						

BYPASS

DBUB

BAROMETRIC BYPASS DAMPER

PART #	D	L
DBUB10	10"	12"
DBUB12	12"	14"
DBUB14	14"	16"
DBUB16	16"	18"



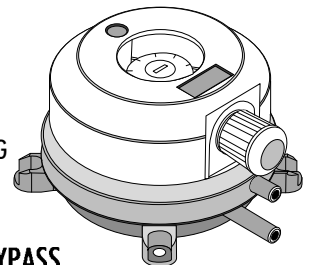
ASPC2

STATIC PRESSURE CONTROLLER INCLUDED WITH DSUP OR DSEP TO MAKE MODULATING BYPASS (ASPC2 ALSO SOLD SEPARATELY)

MODULATING (STATIC PRESSURE) BYPASS

DBUM
ROUND

DBEM
RECTANGULAR





SMARTZONE DAMPER – BYPASS SIZING

SMARTZONE DUCT SYSTEM

A ZONING SYSTEM CAN TYPICALLY USE THE SAME DUCT SIZING AS A TRADITIONAL SINGLE-THERMOSTAT SYSTEM IF THE PRESSURE RELIEF IS INSTALLED CORRECTLY AND THE SYSTEM IS 4 OR LESS ZONES. TO MINIMIZE BYPASS AIR FLOW, INCREASE THE DUCT CAPACITY BY ONE SIZE FOR EACH ZONE LESS THAN 25% OF THE TOTAL SYSTEM AIR FLOW CAPACITY AS SYSTEMS GET LARGER THAN 4 ZONES, IT MAY BECOME NECESSARY TO INCREASE THE DUCT & DAMPER SIZES OF THE SMALLER ZONES (OR ALL THE ZONES) IN ORDER TO MINIMIZE THE AMOUNT OF PRESSURE RELIEF NEEDED WHEN ONLY THE SMALLEST ZONE IS OPEN.
NOTE: CONNECT DAMPERS DIRECTLY TO THE PLENUM WHEN POSSIBLE AND BRANCH OFF SMALLER DUCTS GOING TO DIFFERENT AREAS WITHIN THE ZONES. USING THIS TRUNK/BRANCH DUCT DESIGN WILL MINIMIZE COST AND REDUCE AIR NOISE

ZONE BALANCING

TO MAINTAIN OPTIMAL EQUIPMENT PERFORMANCE IN A TYPICAL ZONING APPLICATION, IT IS PREFERABLE TO DESIGN ALL ZONES TO BE CLOSE TO EQUAL IN SIZE. (IN TERMS OF CFM). THIS DOES NOT MEAN THAT EVERY ZONE MUST HAVE EXACTLY THE SAME CFM REQUIREMENTS BUT THE SYSTEM WILL WORK MOST EFFICIENTLY IF THEY ARE APPROXIMATELY THE SAME SIZE. FOLLOWING THIS GUIDELINE WILL MINIMIZE THE AMOUNT OF PRESSURE RELIEF (BYPASS) NECESSARY. FOR MOST RESIDENTIAL ZONING INSTALLATIONS USING SINGLE SPEED EQUIPMENT, AVOID CREATING MORE THAN THREE ZONES WITH NO ZONE SMALLER THAN 20% OF THE TOTAL EQUIPMENT CFM CAPACITY.

AIR NOISE

SHOULD BE ALWAYS BE MINIMIZED AND IN A ZONING SYSTEM WITH OPENING & CLOSING DAMPERS IT CAN BE MORE CHALLENGING. INSTALL THE DAMPER AS CLOSE AS POSSIBLE TO THE SUPPLY PLENUM TO PREVENT AIR NOISE TRANSMISSION INTO THE CONDITIONED SPACE. TO MINIMIZE NOISE AND MAINTAIN ADEQUATE THROW, SUPPLY AIR DUCT SYSTEM SHOULD BE DESIGNED TO PROVIDE 600 TO 700 FPM VELOCITY AIRFLOW. THIS CAN BE ACHIEVED BY PROVIDING LARGE ENOUGH DUCTS/DAMPERS TO SUPPLY THE VOLUME (CFM) OF AIR NEEDED FOR THE ZONE. USE THE "NORMAL CFM" CHART TO CHECK ROUND DUCT SIZE(S) THAT WILL ACHIEVE THIS VELOCITY.

- ▶ FOR ZONES WITH MULTIPLE DAMPERS, THE TOTAL ZONE CFM IS THE SUM OF ALL THE DAMPERS "NORMAL CFM"
- ▶ FOR RECTANGULAR DUCT SYSTEMS USE THE RECTANGULAR CFM EQUATION PROVIDED FOR "NORMAL CFM"

BYPASS - PRESSURE RELIEF

A BYPASS SYSTEM CONSISTS OF A SHORT DUCT CONNECTING THE SUPPLY PLENUM TO THE RETURN AIR PLENUM. A "BYPASS" DAMPER IS INSTALLED IN THIS DUCT THAT OPENS/CLOSES AUTOMATICALLY TO MAINTAIN CONSTANT PRESSURE INSIDE THE SUPPLY AIR DUCT WHEN ZONES OPEN AND CLOSE. WHEN THE CORRECT SIZE BYPASS DAMPER IS INSTALLED AND ADJUSTED PROPERLY, IT WILL BE FULLY CLOSED WHEN ALL ZONES ARE CALLING (NO AIR BYPASSING) AND WILL OPEN PROPORTIONATELY AS ZONE DAMPERS CLOSE.

BYPASS SIZING

SELECT A ROUND DAMPER SIZE WITH A MAX CFM GREATER THAN THE CFM-NEEDED TO BYPASS. USE THE FORMULA BELOW TO CALCULATE CFM NEEDED TO BYPASS AND THE ROUND DAMPER CFM CHART TO CHECK MAX CFM.

TYPICALLY 400	
CFM	PER TON
800	2
1200	3
1600	4
2000	5

EQUIPMENT AIRFLOW CAPACITY IN CFM (HIGH SPEED)

CFM OF SMALLEST ZONE USE "NORMAL CFM"

CFM-NEEDED TO BYPASS USE A BYPASS DAMPER THAT HAS LARGER "MAX CFM"

BYPASS DAMPER "RULE OF THUMB"

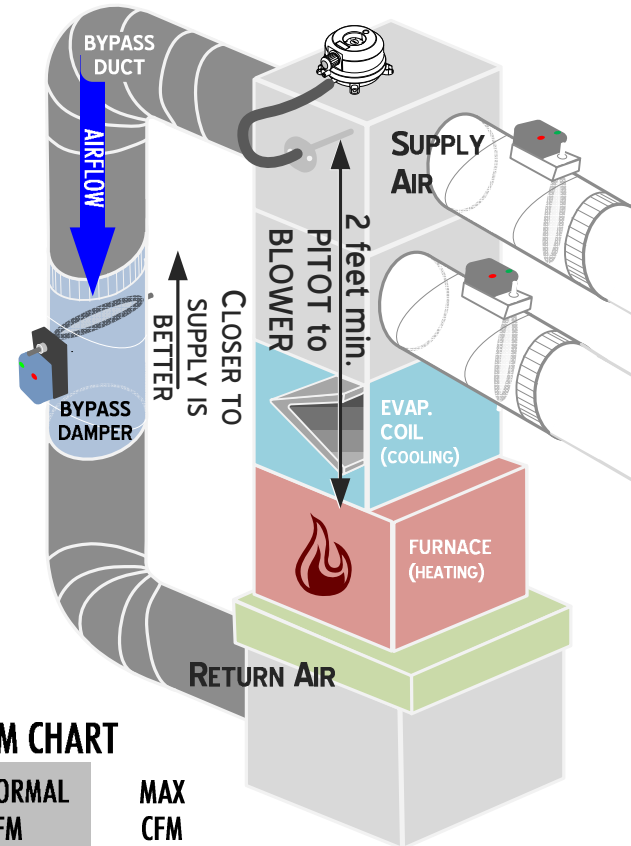
BELOW CHART ASSUMES 400 CFM PER TON *USE NEXT SIZE UP ROUND BYPASS DAMPER FOR ANY SYSTEM WITH A SINGLE ZONE LESS THAN 200 CFM.

UNIT SIZE(TONS)

- 2-2.5
- 3-3.5
- 4-4.5
- 5

ROUND DAMPER SIZE (INCHES)*

- 10"
- 12"
- 14"
- 14-16"



ROUND CFM CHART

DAMPER SIZE	NORMAL CFM	MAX CFM
6"	100	200
7"	150	250
8"	200	300
9"	300	450
10"	400	600
12"	600	900
14"	900	1400
16"	1400	2000

EXAMPLE

1600 CFM / (4 TON EQUIP)
 - 400 CFM (10 "SMALL ZONE")
 = 1200 CFM NEEDED

SO, FROM THE ROUND DAMPER MAX CFM, A 14" ROUND DAMPER SHOULD BE USED FOR BYPASS.

RECTANGULAR CFM FORMULA

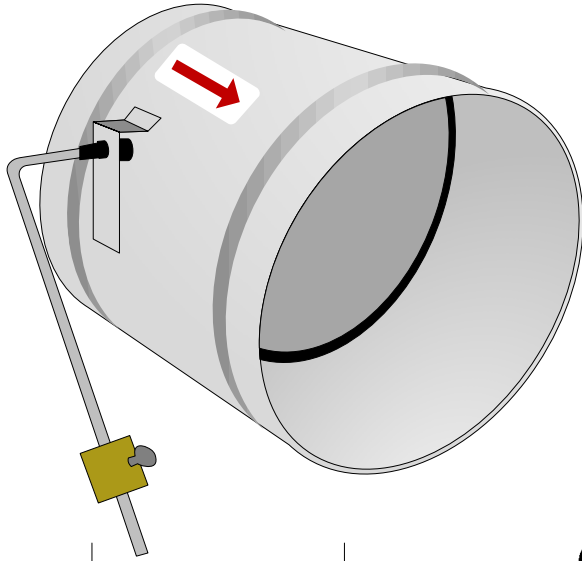
*SURFACE AREA IN SQ. FT. = ("HEIGHT" X "WIDTH") / 144

NORMAL CFM = (SURFACE AREA IN SQ. FT. *) X 600 FPM

MAX CFM = (SURFACE AREA IN SQ. FT. *) X 900 FPM

BAROMETRIC BYPASS

THE ECOJAY BAROMETRIC BYPASS DAMPERS WERE DEVELOPED WITH ECONOMY AND SIMPLICITY IN MIND. THE NECESSITY FOR A BYPASS DAMPER IN ALMOST ALL ZONING APPLICATIONS CALLS FOR AN EASY TO USE AND COST EFFECTIVE DAMPER TO SERVE THIS PURPOSE. THE WEIGHTED ARM METHOD OF CONTROLLING BYPASSED AIR HAS FIELD PROVEN RELIABILITY AND QUIET OPERATION. CUSTOM COMPONENTS WITH CRITICAL DIMENSIONS ARE MANUFACTURED USING LASER CUTTERS TO ENSURE A PRECISION FIT.

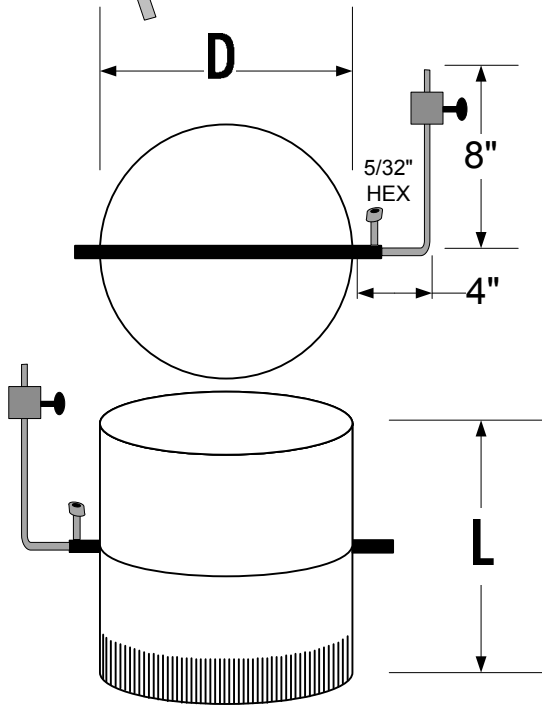
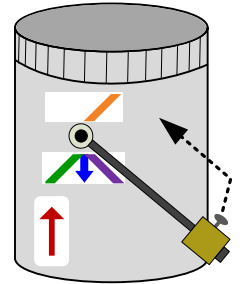


PART # D L SPECIFICATIONS

DBUB10	10"	12"	ACTUATOR	WEIGHTED ARM (360° ROTATION)
DBUB12	12"	14"		3/8" ID SHAFT COLLAR W/ 3/16 HEX SCREW (8" ARM LENGTH)
DBUB14	14"	16"		ARM WEIGHT (THUMB SCREW)
DBUB16	16"	18"	POSITION	BLADE POSITION ON END OF SHAFT
			INDICATOR	AIR-FLOW ► DIRECTION ON CAN
			SET SCREW	ALLEN/HEX: 5/32"
			WEIGHT SCREW	THUMB

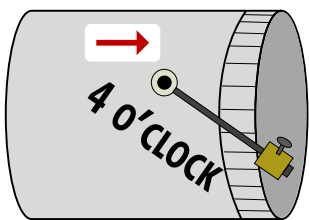
CONFIGURATION

- IT IS CRITICAL THE BYPASS DAMPER BE CALIBRATED PROPERLY FOR THE ZONING SYSTEM TO WORK CORRECTLY.
- LOOSEN (3/16" HEX) THE WEIGHT ARM FROM THE DAMPER AT THE SHAFT COLLAR AND MOVE THE WEIGHT TO THE END OF THE WEIGHT ARM BOLT.
- FOLLOW DRAWINGS TO CHOOSE THE PROPER INITIAL WEIGHT ARM POSITION BASED ON THE DIRECTION OF AIRFLOW.
- MAKE A CALL FOR COOLING FROM ALL ZONES & VERIFY THAT ALL ZONE DAMPERS ARE OPEN AND HI SPEED FAN IS RUNNING.
- MAKE SURE THE BYPASS DAMPER REMAINS CLOSED. ADD MORE WEIGHT IF NEEDED (ABDW).
- ONCE THE BYPASS DAMPER IS REMAINING CLOSED, SLOWLY MOVE THE WEIGHT TOWARD THE SHAFT (1/2 INCH AT A TIME) UNTIL THE BYPASS DAMPER STARTS TO OPEN SLIGHTLY. *In rare cases, reducing weight by cutting off a section of the counterbalance rod may be necessary.*
- MOVE THE WEIGHT BACK ABOUT 1/2 INCH SO THE BYPASS DAMPER REMAINS CLOSED WITH ALL ZONES OPEN.
- CLOSE ONE OR MORE ZONES BY REMOVING THE COOLING CALLS AND ENSURE THAT THE BAROMETRIC BYPASS DAMPER OPENS. (NOTE: IT WILL NOT FULLY OPEN, THIS IS NORMAL)

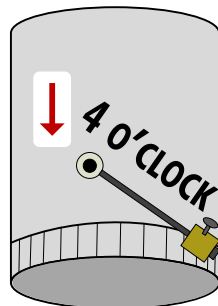


3 INITIAL WEIGHT-ARM POSITIONS DEPEND ON AIRFLOW AND ORIENTATION OF THE BYPASS DAMPER. FOLLOW THE DRAWINGS BELOW BASED ON APPLICATION.

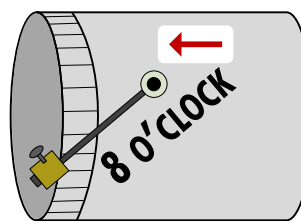
LEFT TO RIGHT



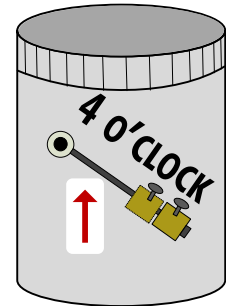
DOWN-FLOW



RIGHT TO LEFT



UP-FLOW



NOTE:
EXTRA WEIGHT MAY BE REQUIRED FOR UPFLOW APPLICATIONS. (PART# ABDW)

DAMPER – BYPASS MODULATING & STATIC PRESSURE CONTROL

ASPC2
DBUM
DBEM



ROUND - KIT



RECTANGULAR - KIT



THE ECOJAY MODULATING BYPASS DAMPER USE THE ASPC-2 (STATIC PRESSURE CONTROLLER) WITH DSUP(ROUND) & DSEP (RECTANGULAR) TO PROVIDE THE MOST EFFICIENT AND QUIETEST PRESSURE RELIEF OPTION. THE GOAL IS TO CALIBRATE THE BYPASS DAMPER SO THAT IT IS "BARELY" STAYING CLOSED WHEN ALL ZONE DAMPERS ARE OPEN. THIS WILL CAUSE THE BYPASS DAMPER TO OPEN IF SUPPLY DAMPERS CLOSE AND THE PLENUM PRESSURE INCREASES. FOLLOW THE STEPS FOR CONFIGURATION

STATIC PRESSURE SWITCH



INCLUDES PITOT TUBE & TUBING TO MOUNT IN A PLACE TO ACCURATELY MEASURE PLENUM PRESSURE. LOCATE AT LEAST 2 FEET DOWNSTREAM OF AIR SOURCE AS CLOSE TO CENTER OF THE AIRSTREAM POSSIBLE

DO NOT ALLOW SUPPLY AIR PRESSURE TO BLOW DIRECTLY INTO THE PITOT TUBE

CONNECT THE INCLUDED FLEXIBLE TUBING TO THE HIGH-PRESSURE INLET

CONFIGURATION

THE GOAL IS TO CALIBRATE THE BYPASS DAMPER TO OPEN IF SUPPLY DAMPERS CLOSE AND THE PLENUM PRESSURE INCREASES. FOLLOW THE STEPS BELOW.

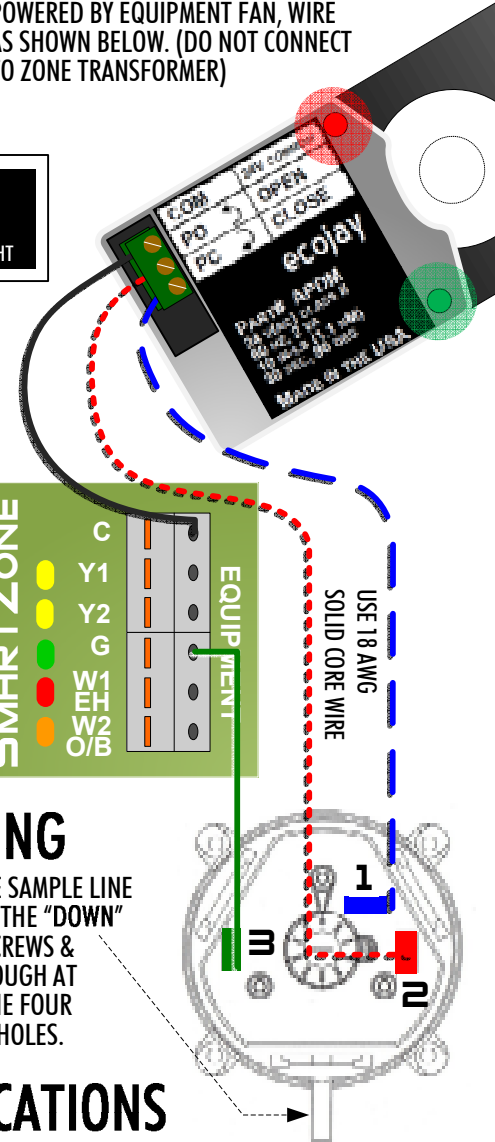
- 1 MAKE A CALL FROM ALL ZONES FOR COOLING SO ALL ZONE DAMPERS ARE FULLY OPEN AND THE EQUIPMENT FAN (BLOWER) IS RUNNING AT THE HIGHEST SPEED.
- 2 TURN KNOB CLOCKWISE SLOWLY UNTIL THE BYPASS DAMPER MOTOR STARTS CLOSING IF DAMPER STARTS OPENING AGAIN BEFORE FULLY CLOSING, TURN THE KNOB CLOCKWISE SLOWLY UNTIL IT STARTS CLOSING AGAIN. REPEAT THIS PROCESS UNTIL THE DAMPER IS FULLY CLOSED. (RED LED WILL BE ON)
- 3 VERY SLOWLY TURN THE KNOB COUNTER-CLOCKWISE UNTIL THE BYPASS DAMPER MOTOR STARTS TO OPEN. (RED LED WILL GO OFF)
- 4 JUST AS SOON AS THE MOTOR STARTS TO RUN OPEN, TURN THE KNOB BACK CLOCKWISE JUST ENOUGH THAT THE DAMPER MOTOR STAYS CLOSED. (RED LED WILL BE SOLID)

TESTING

TO TEST IF BYPASS IS SIZED AND CONFIGURED PROPERLY, MAKE A CALL ONLY FROM THE SMALLEST ZONE FOR COOLING WITH THE FAN AT THE HIGHEST SPEED AND THE BYPASS DAMPER SHOULD FULLY OR ALMOST FULLY OPEN WITHIN 1 TO 2 MINUTES

WIRING

POWERED BY EQUIPMENT FAN, WIRE AS SHOWN BELOW. (DO NOT CONNECT TO ZONE TRANSFORMER)



MOUNTING

MOUNT WITH THE SAMPLE LINE CONNECTIONS IN THE "DOWN" POSITION. USE SCREWS & STANDOFFS THROUGH AT LEAST TWO OF THE FOUR MOUNTING FEET HOLES.

SPECIFICATIONS

SET POINT RANGE	0.08" w.c. to 0.80" w.c. (20 to 200 PA)
PRESSURE CONNECTIONS	P1 (+) HIGH PRESSURE P2 (-) LOW PRESSURE
SWITCHING DIFFERENTIAL	20PA (0.08" w.c.)
MAXIMUM PRESSURE	10KPA
OPERATING TEMPERATURE	-4 °F to +140 °F
ELECTRICAL RATING	1.0 A MAX
CONTACT ARRANGEMENT	SPDT
ELECTRICAL CONNECTIONS	1 NO – OPER. CONTACT 2 NC – BREAK CONTACT 3 COM – POWER SUPPLY
CONDUIT CONNECTION	1/2" NPT THREADED
SAMPLE LINE CONNECTIONS	1/4" ID TUBING
WEIGHT	5.6 Oz

5 YEAR LIMITED WARRANTY MADE IN THE USA ecojoy.com 888-523-3265

POWER OPEN / POWER CLOSE

LOW-POWER MOTOR WITH LEDS INDICATE OPEN (GREEN) & CLOSE (RED)

STURDY GALVANIZED WITH CRIMPED & BEADED END

PRECISION CONSTRUCTION & PARTS FOR LONG-LIFE & WHISPER QUIET OPERATION

ENGINEERED TO BE HEAVY-DUTY & STURDY

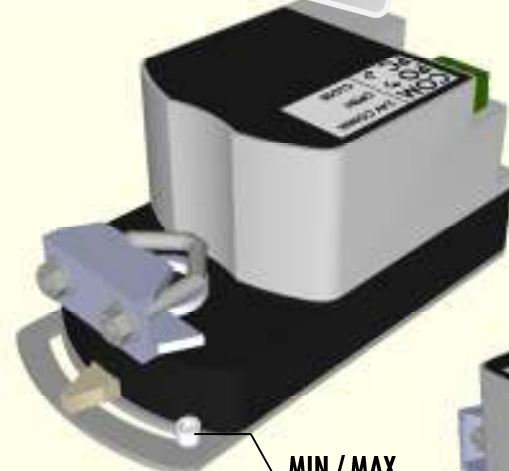
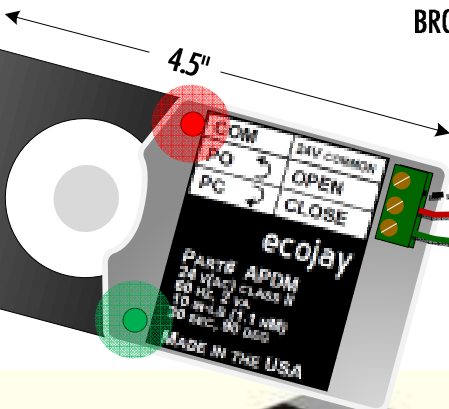
CLOSED-CELL FOAM GASKET FOR LOW LEAKAGE SEAL

SET MINIMUM OR MAXIMUM OPEN & CLOSE

BRONZE SHAFT BUSHINGS & METAL SHAFT PIECES TO ENSURE LONG LIFE

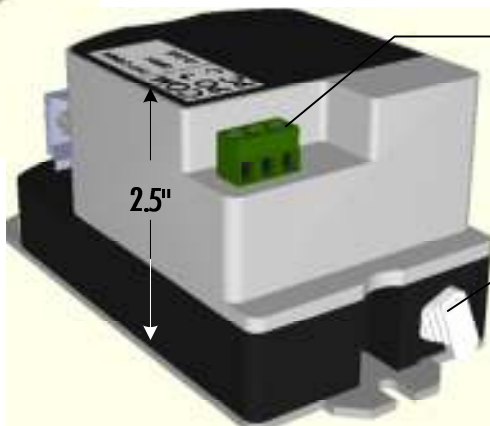
*SEE DRAWINGS ON BACK OF PAGE

CONNECT TO SMARTZONE DAMPER TERMINAL



SHAFT CLAMP
TO REMOVE MOTOR, LOOSEN TWO NUTS ATTACHED TO THE V-BOLT

MIN / MAX SETTING
MOVE THIS CAP-SCREW TO SET A MINIMUM OR MAXIMUM OPEN OR CLOSE OF THE DAMPER (7/64 HEX)



DESCRIPTION

ECOJAY'S DSUP SERIES OF ROUND 24VAC POWER OPEN/CLOSE LOW PRESSURE SUPPLY AIR DAMPERS ARE DESIGNED AND PRECISION BUILT FOR LONG TERM RELIABILITY. THE RUBBERIZED FOAM GASKET INSURES A TIGHT AIR SEAL WHEN CLOSED AND ALLOWS MINIMUM OBSTRUCTION TO AIR FLOW WHEN OPEN. DSUP DAMPERS USE HEAVY GAUGE GALVANIZED STEEL RIBBED CAN CONSTRUCTION INSURING LONG-LIFE AND STRUCTURAL INTEGRITY UNDER HARSH INSTALLATION CONDITIONS. ADJUSTABLE MIN/MAX OPEN AND CLOSE SETTINGS ALLOW FLEXIBILITY FOR A WIDE RANGE OF APPLICATIONS. GREEN (OPEN) AND RED (CLOSED) LEDS MAKE TROUBLESHOOTING EASY WHEN DETERMINING DAMPER OPERATING STATUS ESPECIALLY IN DIFFICULT TO ACCESS INSTALLATION LOCATIONS. RAISED BEADS ON EACH END OF CAN MAKE FOR EASY ZIP-TIE DUCT INSTALLATION.

SPECIFICATIONS

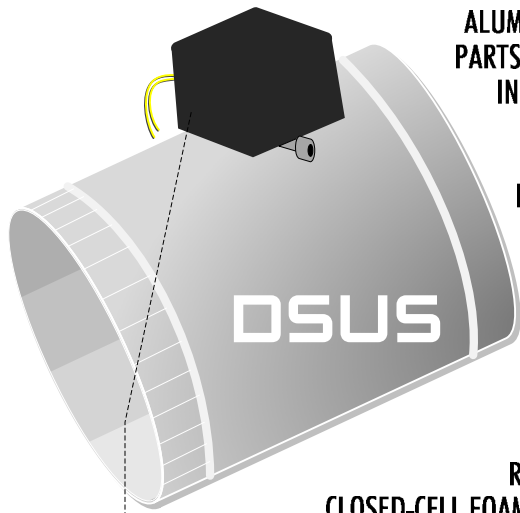
POWER	24VAC, 2 VA TYPICAL (4 VA MAX)
ACTUATOR (DIRECT DRIVE)	MODEL # APDM-2 ELECTRONIC TIME-OUT AT END OF TRAVEL 10 IN-LB TORQUE (1.1 NM) POWER-CLOSE / POWER-OPEN 30 SECOND MOTOR MAX 90 DEGREE TRAVEL
POSITION INDICATOR	LEDS: GREEN=OPEN, RED=CLOSE
WIRING	POWEROPEN (PO), POWERCLOSE (PC), COMMON (COM) USE 18 AWG SOLID, 3-CONDUCTOR WIRE
MOUNTING	ANY ORIENTATION EXCEPT "BOTTOM-MOUNTED" MOTOR TO PREVENT POTENTIAL CONDENSATION DAMAGE TO MOTOR OR MECHANISM.

SIZES & PART #S

D	S	U	P	D
DAMPER	SUPPLY	ROUND	POWER	DIAMETER

WIRING	PART #	D	L
USE 18-AWG SOLID WIRE TO CONNECT "COM", "PO" & "PC" TERMINALS TO ZONE CONTROLLER	DSUP06	06"	9"
	DSUP07	07"	10"
	DSUP08	08"	10"
	DSUP09	09"	11"
	DSUP10	10"	11"
	DSUP12	12"	12"
	DSUP14	14"	14"
	DSUP16	16"	16"
	DSUP18	18"	18"
	CLUTCH USE THIS BUTTON TO FREELY ROTATE THE BLADE & SHAFT OF THE DAMPER		

SPRING OPEN / POWER CLOSE



ALUMINUM & PLASTIC EXPOSED PARTS FOR LOW CONDENSATION INSULATION PRE-INSTALLED UNDER MOTOR

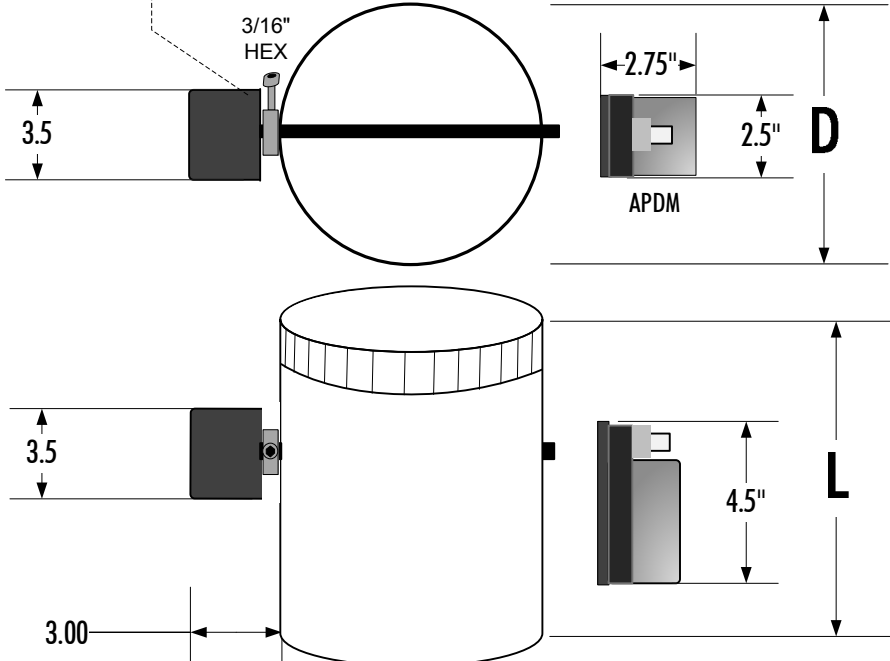
PRECISION CONSTRUCTION & PARTS FOR LONG-LIFE & QUIET OPERATION

STURDY GALVANIZED & ALUMINUM RIVETED CAN

RIVET-REINFORCED GASKET CLOSED-CELL FOAM FOR LOW LEAKAGE SEAL

TO REMOVE MOTOR, ALLEN (3/16 HEX) WRENCH REQUIRED

CONNECT TO SMARTZONE DAMPER TERMINAL (PC & COM)



DESCRIPTION

ECOJAY'S DSUS SERIES OF ROUND 24VAC POWER CLOSE/SPRING OPEN LOW PRESSURE SUPPLY AIR DAMPERS ARE DESIGNED AND PRECISION BUILT FOR LONG TERM RELIABILITY. A FOAM GASKET IS USED TO INSURE A TIGHT AIR SEAL WHEN CLOSED. DSUS DAMPERS USE HEAVY GAUGE GALVANIZED STEEL RIBBED CAN CONSTRUCTION INSURING STRUCTURAL INTEGRITY UNDER HARSH INSTALLATION CONDITIONS AND RIBS ALLOW FOR EASY & SECURE FIT TO FLEX OR RIGID DUCT. HIGH QUALITY METAL GEARS ON MOTOR PREVENT FAILURES & WHISPER QUIET OPERATION.

SPECIFICATIONS

POWER	24VAC / 60HZ, 10 VA
ACTUATOR (DIRECT DRIVE)	MODEL # ASDM-2 TORQUE: 90 TO 45 IN-OZ (MOTOR) 45 TO 15 IN-OZ (SPRING)
MOTOR:	MOTOR-CLOSE / SPRING-OPEN
TRAVEL:	30 SECOND (MOTOR) 8 SECOND (SPRING) MAX 90 DEGREE
SET SCREW	ALLEN/HEX: 3/16"
POSITION INDICATOR	LED: RED = CLOSE
WIRING	POWER CLOSE (PC), COMMON (COM) USE 18 AWG SOLID, 2-CONDUCTOR WIRE
MOUNTING	ANY ORIENTATION EXCEPT "BOTTOM-MOUNTED" MOTOR TO PREVENT POTENTIAL CONDENSATION DAMAGE TO MOTOR OR MECHANISM.

SIZES & PART #S

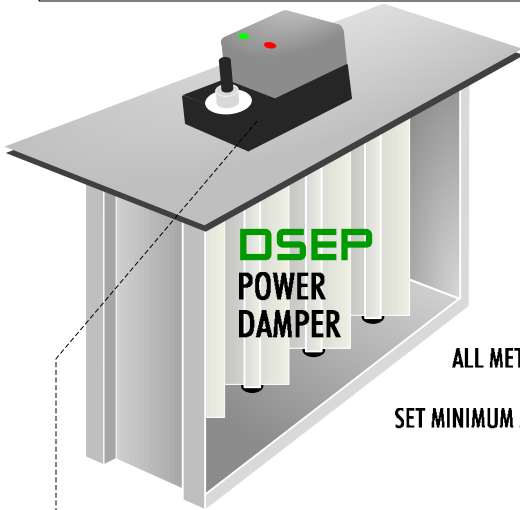
D	S	U	S	D
DAMPER	SUPPLY	ROUND	SPRING	DIAMETER
PART #	D	L		
DSUS06	06"	9"		
DSUS07	07"	10"		
DSUS08	08"	10"		
DSUS09	09"	11"		
DSUS10	10"	11"		
DSUS12	12"	12"		
DSUS14	14"	14"		
DSUS16	16"	16"		

DAMPER – SUPPLY RECTANGULAR

**DSEP
DSES**



POWER OPEN / POWER CLOSE SPRING OPEN / POWER CLOSE



LOW-POWER MOTOR WITH
LEDS INDICATE OPEN
(GREEN) & CLOSE (RED)
POWER MOTOR ONLY

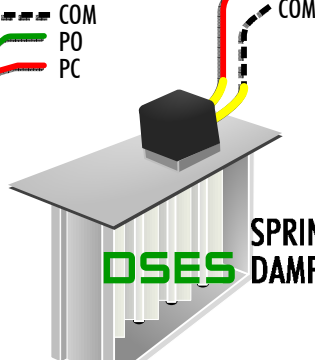
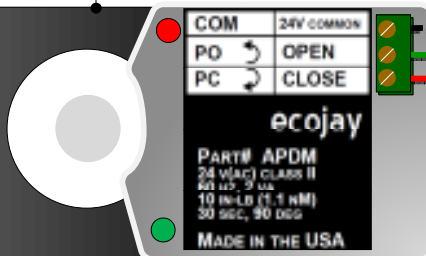
STURDY EXTRUDED
ALUMINUM FRAME

PRECISION CONSTRUCTION
& PARTS FOR LONG-LIFE
& QUIET OPERATION

ALL METAL PARTS PREVENT FAILURES

SET MINIMUM AND MAXIMUM OPEN & CLOSE

CONNECT TO SMARTZONE
DAMPER TERMINAL



COM
PO
PC

PC
COM



DESCRIPTION

ECOJAY'S DSEP & DSUS SERIES OF RECTANGULAR 24VAC POWER RECTANGULAR SUPPLY AIR DAMPERS ARE DESIGNED AND PRECISION BUILT FOR LONG TERM RELIABILITY. ECOJAY RECTANGULAR DAMPERS ARE COMMERCIAL GRADE USING EXTRUDED ALUMINUM FRAME AND BLADES FOR LIGHT WEIGHT AND LOW CONDENSATION PERFORMANCE. HEAVY DUTY METAL LINKAGE TO INSURE SMOOTH AND QUIET OPERATION. THE OVERLAP BLADE DESIGN CREATES A TIGHT AIR SEAL WHEN CLOSED WHILE MAINTAINING LINEAR AIRFLOW THROUGHOUT THE OPEN/CLOSE CYCLE. ADJUSTABLE MIN/MAX OPEN AND CLOSE SETTINGS ALLOW FLEXIBILITY FOR A WIDE RANGE OF APPLICATIONS (DSEP ONLY).

SPECIFICATIONS

POWER	24VAC, 2 VA TYPICAL (4 VA MAX)
ACTUATOR (DIRECT DRIVE)	MODEL # APDM-2 ELECTRONIC TIME-OUT AT END OF TRAVEL 10 IN-LB TORQUE (1.1 NM) POWER-CLOSE / POWER-OPEN 30 SECOND MOTOR MAX 90 DEGREE TRAVEL
POSITION INDICATOR	LEDS: GREEN=OPEN, RED=CLOSE
WIRING	POWEROPEN (PO), POWERCLOSE (PC), COMMON (COM) USE 18 AWG SOLID, 3-CONDUCTOR WIRE
MOUNTING	ANY ORIENTATION EXCEPT "BOTTOM-MOUNTED" MOTOR TO PREVENT POTENTIAL CONDENSATION DAMAGE TO MOTOR OR MECHANISM.

SIZES & PART #S

ORDER RECTANGULAR SIZE BY THE SIZE OF THE DUCT IT WILL FIT. THE ACTUAL SIZES ARE SMALLER TO ALLOW THE DAMPER TO SLIP IN FROM ANY DIRECTION.

- ACTUAL WIDTH = [WIDTH - 0.125"]
- ACTUAL HEIGHT = [HEIGHT - 0.25"] (ACTUATOR MOUNTED ON THE HEIGHT SIDE) SEE BACK OF PAGE FOR DRAWING

HEIGHT (ACTUATOR MOUNTED)

WIDTH (INCHES)

	08	10	12	14	16	18	20	22	24	
08	DSEP0808	DSEP1008	DSEP1208	DSEP1408	DSEP1608	DSEP1808	DSEP2008	DSEP2208	DSEP2408	
10	DSEP0810	DSEP1010	DSEP1210	DSEP1410	DSEP1610	DSEP1810	DSEP2010	DSEP2210	DSEP2410	
12	DSEP0812	DSEP1012	DSEP1212	DSEP1412	DSEP1612	DSEP1812	DSEP2012	DSEP2212	DSEP2412	
14	DSEP0814	DSEP1014	DSEP1214	DSEP1414	DSEP1614	DSEP1814	DSEP2014	POWER-OPEN DAMPER PART NUMBERS SHOWN IN CHART, REPLACE "P" WITH "S" IN ANY PART NUMBER FOR SPRING MOTOR		
16	DSEP0816	DSEP1016	DSEP1216	DSEP1416	DSEP1616	DSEP1816				
18	DSEP0818	DSEP1018	DSEP1218	DSEP1418	DSEP1618					
20	DSEP0820	DSEP1020	DSEP1220	DSEP1420						
22	DSEP0822	DSEP1022	DSEP1222							
24	DSEP0824	DSEP1024	DSEP1224							

SMARTZONE



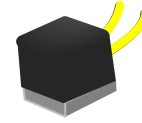
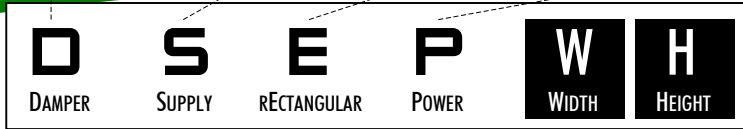
5 YEAR LIMITED
WARRANTY

MADE
IN THE
USA

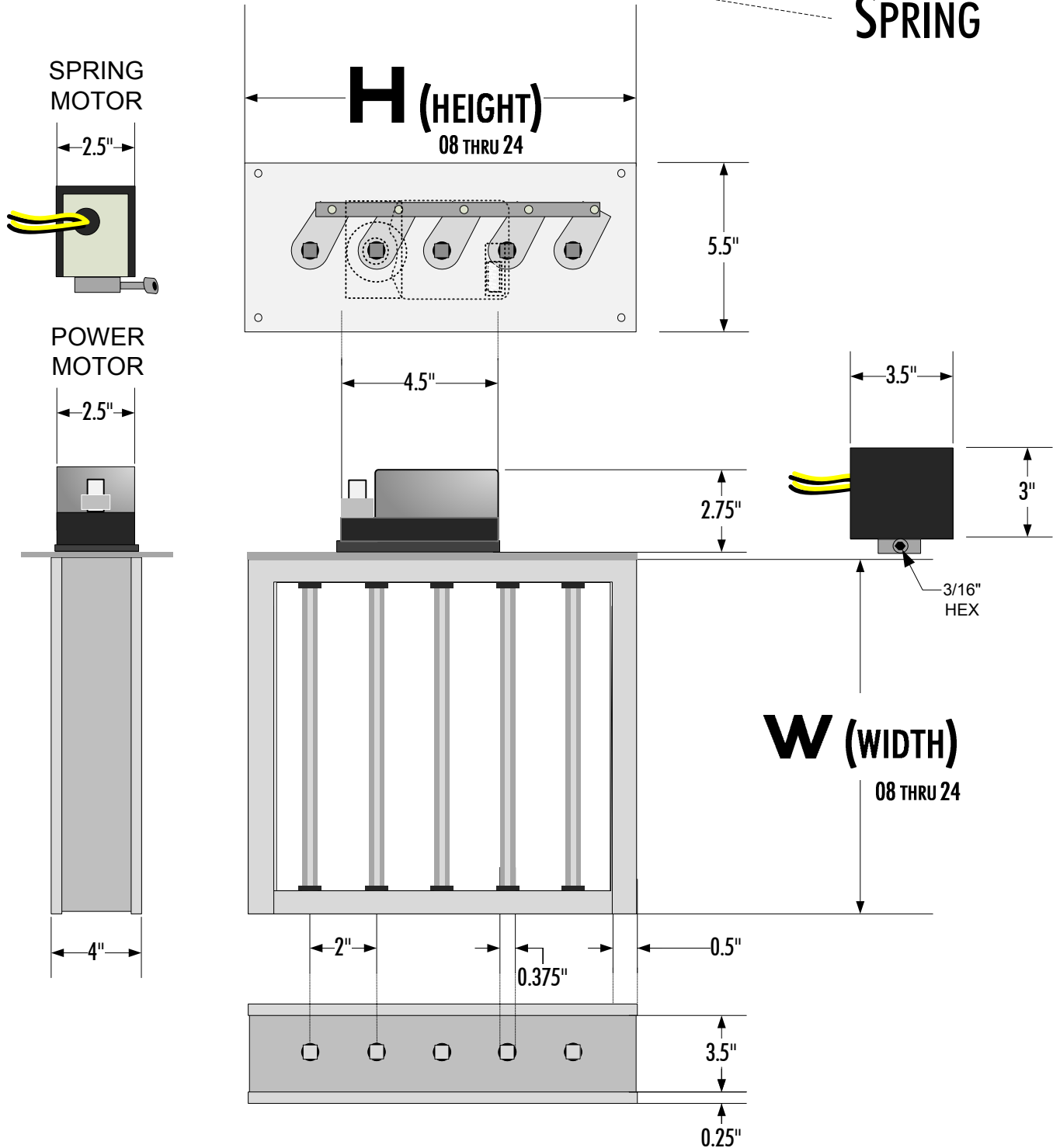
ecojoy.com
888-523-3265



DAMPER – SUPPLY RECTANGULAR POWER



SPRING



AIR (PNEUMATIC) DAMPERS

COST EFFECTIVE

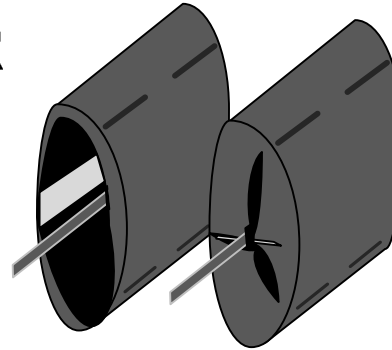
- LOWER COST COMPARED WITH TRADITIONAL MECHANICAL DAMPERS IN MULTI-DUCT SYSTEMS REQUIRING MULTIPLE DAMPERS PER ZONE.
- EASY INSTALLATION WHERE DUCTS ARE DIFFICULT TO ACCESS.
- USE FOR RETROFIT AND NEW CONSTRUCTION INSTALLATIONS.
- USE INFLEX AND RIGID DUCT

DURABLE & RELIABLE

- PROVEN LONG LIFE AND DURABLE MATERIALS DEVELOPED FOR AND USED ON MILITARY AIRCRAFT AND HVAC DUCTS AROUND THE WORLD.
- MEDICAL GRADE SAFE FOR USE IN RESIDENTIAL AND COMMERCIAL AIR DUCT APPLICATIONS.
- LOW PRESSURE HVAC AIR DUCT APPLICATION DOES NOT STRETCH OR FATIGUE THE AIRDAMPER SKIN.
- IN THE UNLIKELY EVENT THE AIRDAMPER SKIN IS PUNCTURED, THE CONSTANT AIR SUPPLY FROM THE AIRDAMPER PUMP PANEL MAKES THE LEAK VIRTUALLY UNNOTICEABLE TO SYSTEM OPERATION.

ROUND AIR DAMPER

POWER: PNEUMATIC
 DAIMETERS: 4", 5", 6", 7", 8", 9", 10", 12", 14"
 MATERIAL: MILITARY AIRCRAFT GRADE POLYMER
 WEIGHT: 6oz – 20 oz

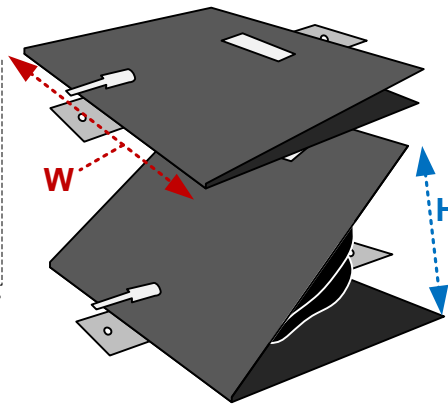


ROUND SIZES

DSUA 04
 DSUA 05
 DSUA 06
 DSUA 07
 DSUA 08
 DSUA 09
 DSUA 10
 DSUA 12
 DSUA 14

RECTANGLE AIR DAMPER

POWER: PNEUMATIC
 DIMENSIONS: (WW" x HH")
 MAX MIN
 12" x 5"
 14" x 08"
 14" x 12"
 24" x 08"
 24" x 12"
 MATERIAL: MILITARY AIRCRAFT GRADE POLYMER

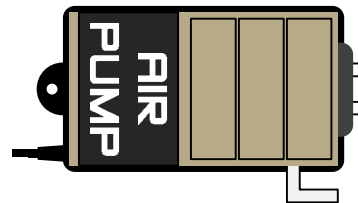


RECTANGLE SIZES WWHH

DSEA 1205
 DSEA 1408
 DSEA 1412
 DSEA 2408
 DSEA 2412

AIR DAMPER PUMP

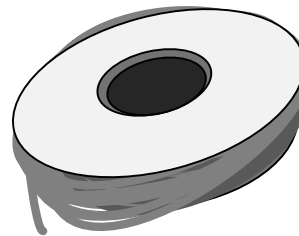
POWER: 24V AC 0.3 AMP
 8VA
 SIZE: 4.5" x 2.5" x 3"



PART # AADA

AIR DAMPER TUBE

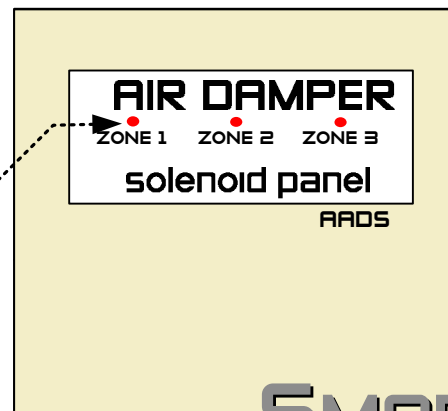
LENGTH: 120 feet
 250 feet



PART # AART-120' AART-250'

SOLENOID PANEL

POWER: 24V AC 0.33 AMPS
 per solenoid
 SIZE: 12" x 12" x 4"
 STATUS: RED LED = CLOSED



PART # AADS-1 AADS-1 AADS-1 AADS-4 AADS-5 AADS-6

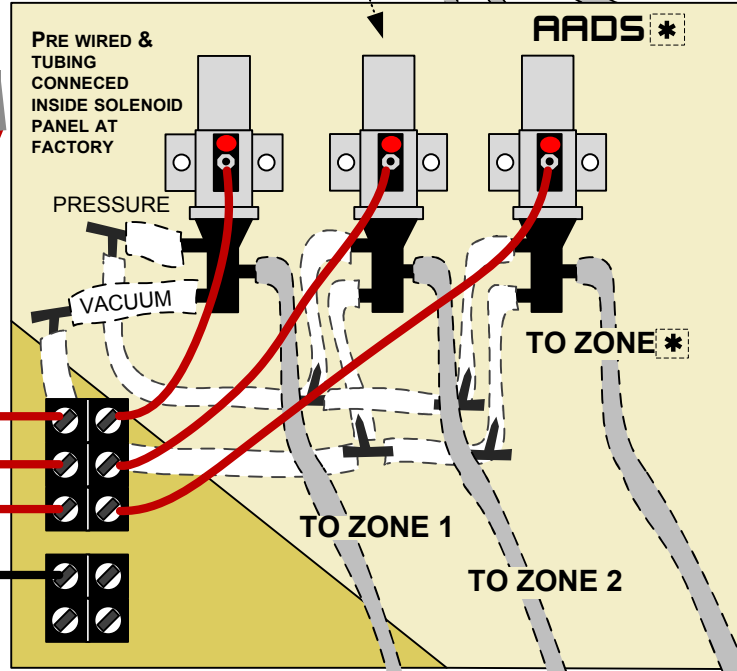
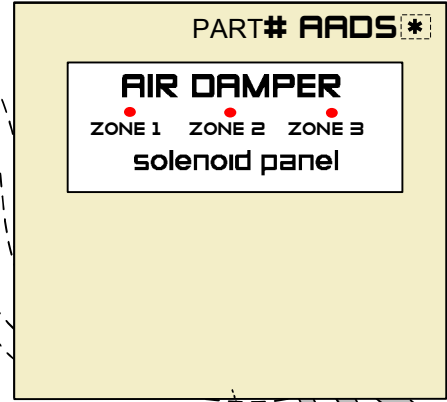
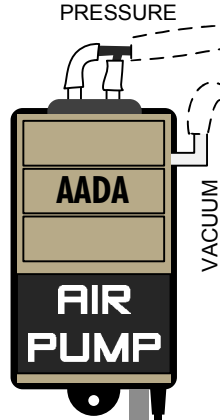
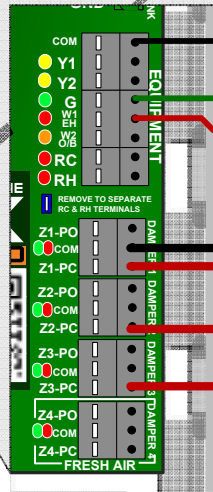
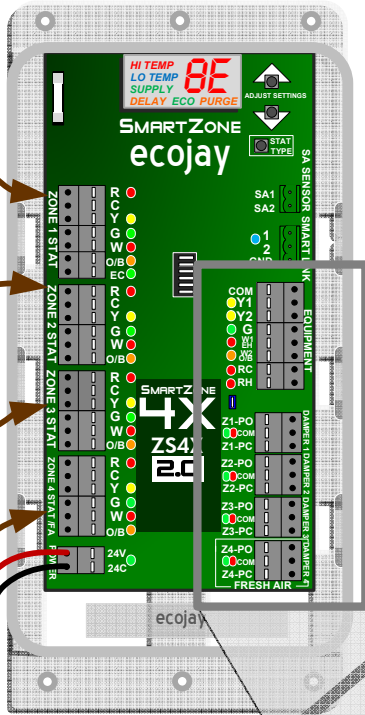


SEE
SMARTZONE
INSTALL GUIDE

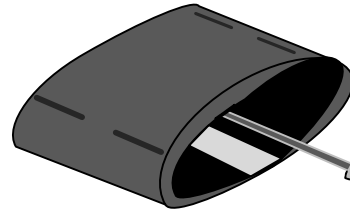
- 1
- 2
- 3
- 4

THERMOSTATS

24VAC ZONING
TRANSFORMER



DSUA
ROUND
AIR DAMPER



DSEA
RECTANGLE
AIR DAMPER

