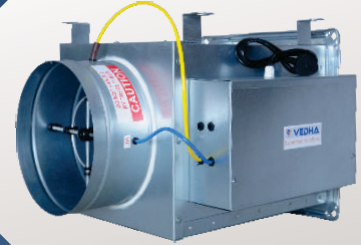


# VAV TERMINALS

 **VEDHA**  
Expertise to rely on



Suits with Duct of any shape  
Rectangular | Round | Flat Oval



Multi point signal pickup centre  
averaging flow sensor



In-built Transition Cone piece



Suitable for minimum  
architectural heights



An ISO 9001:2015 Certified Company



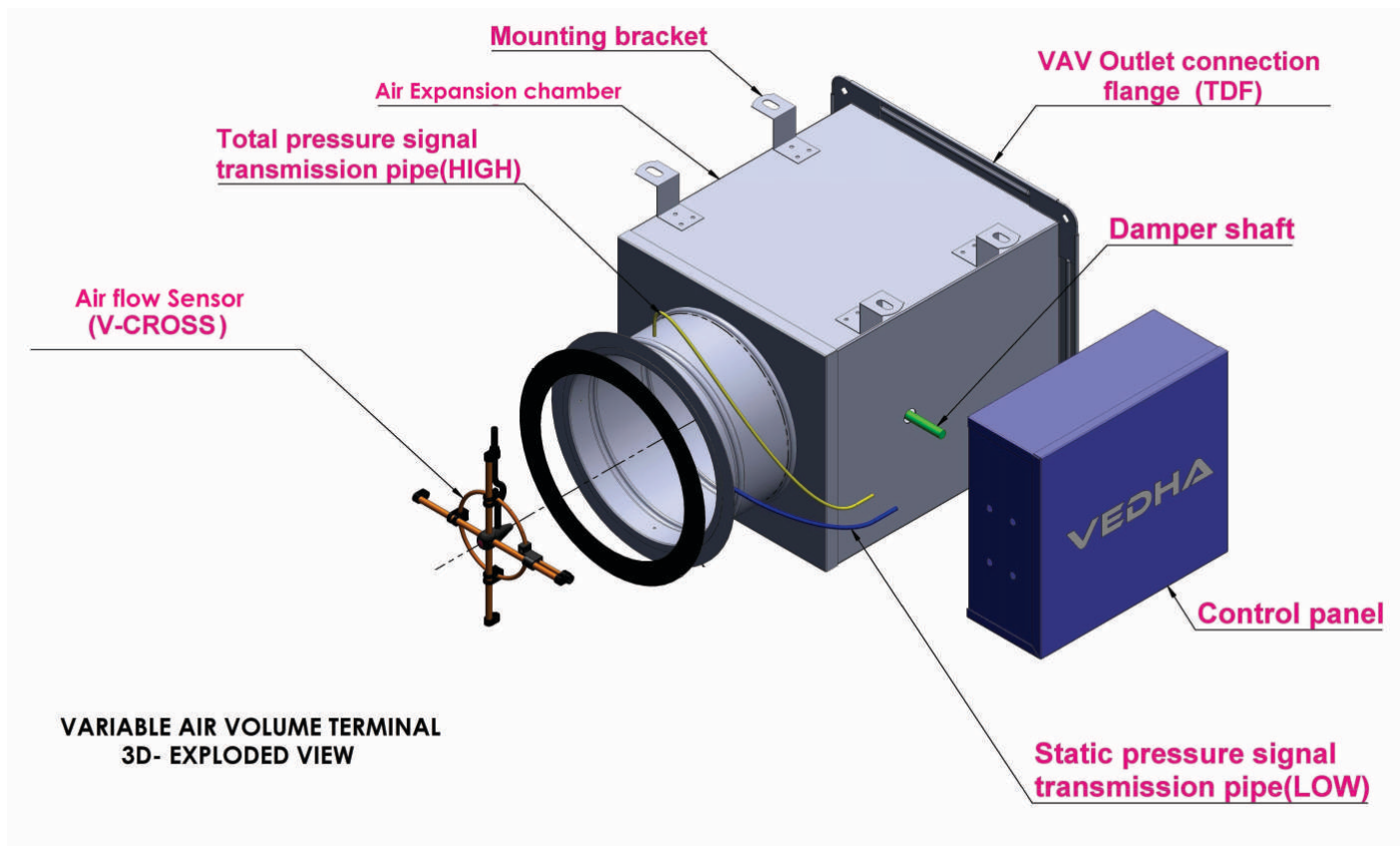
# VAV TERMINAL

Variable-Air-Volume (VAV) system is a single path system that controls temperature of a **Zone** by modulating airflow while maintaining constant supply air temperature. VAV terminal units, located at each Zone, adjust the quantity of air reaching each Zone depending on its load requirements.

A VAV Terminal provides constant or variable airflow depending on the temperature demands of the Zone. As the temperature raises the VAV damper opens to send a designed amount of airflow to the Zone.

Pressure independent VAV controls use Cross airflow sensor which transmits the velocity pressure signal to the VAV controller. This allows the VAV terminal to deliver the calibrated airflow independent of the upstream Air pressure. VAVs are with Single or Double skin construction depending upon requirement.

## VAV TERMINAL MAJOR PART IDENTIFICATION

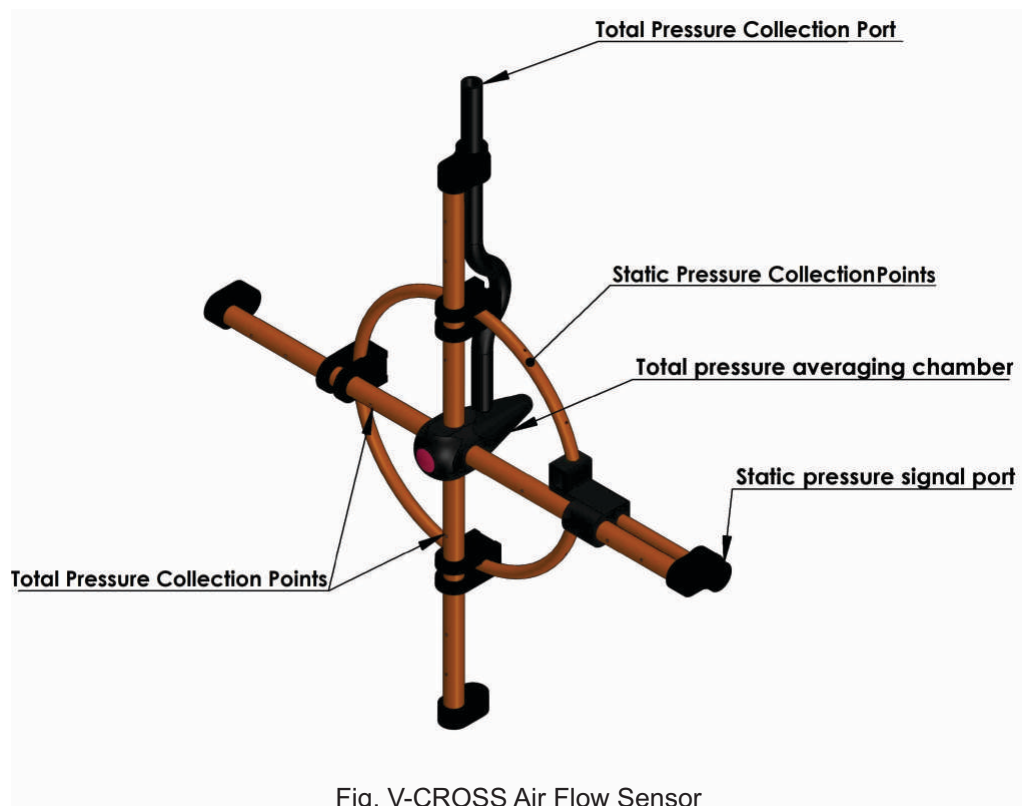


# KEY PART DESCRIPTION

## AIR FLOW SENSOR (V-CROSS)

Air Flow Sensor (V-CROSS) a specially designed Airflow station for measuring the Air flow which transmits the velocity pressure signal to the VAV controller by mechanically amplifying the signal.

The Velocity pressure signal is transmitted as two signals to the transducer in the Controller, High Signal – Total Pressure signal & Low Signal – Static pressure signal.



Total pressure collection points placed in the Airstream direction to cover equally concentric circular areas or covering full Inlet area of flow measurement grid and routed to centre averaging chamber for high accuracy measurement and further transmitted to controller.

Static Pressure collection points placed in perpendicular to the Air stream direction on a radial ring and further transmitted to the controller.

Air flow sensor designed with improved amplification factor for accurate measurement of Air flow. Pneumatic connectors used for avoiding damages while disconnection and reconnection of signal tubes to the controller multiple times during maintenance.

# AIR FLOW SENSOR (V-CROSS)

## AIR FLOW SENSOR TECHNICAL DATA<sup>[1][2]</sup>

MODEL	VC-04	VC-05	VC-06	VC-08	VC-10	VC-12	VC-14	VC-16	VC-0404	VC-0505	VC-0606	VC-0805	VC-0808	VC-1206	VC-1208	VC-1606	VC-1608	VC-1810	VC-2012
<b>INLET SIZE</b>	Ø 4"	Ø 5"	Ø 6"	Ø 8"	Ø 10"	Ø 12"	Ø 14"	Ø 16"	4" x 4"	5" x 5"	6" x 6"	8" x 5"	8" x 8"	12" x 6"	12" x 8"	16" x 6"	16" x 8"	18" x 10"	20" x 12"
<b>VAV INLET AREA</b>	0.088 ft <sup>2</sup>	0.139 ft <sup>2</sup>	0.196 ft <sup>2</sup>	0.349 ft <sup>2</sup>	0.545 ft <sup>2</sup>	0.785 ft <sup>2</sup>	1.06 ft <sup>2</sup>	1.39 ft <sup>2</sup>	0.119 ft <sup>2</sup>	0.183 ft <sup>2</sup>	0.260 ft <sup>2</sup>	0.291 ft <sup>2</sup>	0.455 ft <sup>2</sup>	0.512 ft <sup>2</sup>	0.686 ft <sup>2</sup>	0.688 ft <sup>2</sup>	0.896 ft <sup>2</sup>	1.251 ft <sup>2</sup>	1.667 ft <sup>2</sup>
<b>K-FACTOR (ft<sup>3</sup>/min @ 1 IN-WC)</b>	240 ft <sup>3</sup> / min	400 ft <sup>3</sup> / min	560 ft <sup>3</sup> / min	1060 ft <sup>3</sup> / min	1650 ft <sup>3</sup> / min	2360 ft <sup>3</sup> / min	3270 ft <sup>3</sup> / min	4350 ft <sup>3</sup> / min	325 ft <sup>3</sup> / min	520 ft <sup>3</sup> / min	720 ft <sup>3</sup> / min	885 ft <sup>3</sup> / min	1350 ft <sup>3</sup> / min	1480 ft <sup>3</sup> / min	1980 ft <sup>3</sup> / min	1980 ft <sup>3</sup> / min	2750 ft <sup>3</sup> / min	3805 ft <sup>3</sup> / min	5050 ft <sup>3</sup> / min
<b>AMPLIFICATION FACTOR (F)</b>	2.17	1.82	1.97	1.75	1.74	1.78	1.70	1.63	2.16	1.98	2.09	1.73	1.82	1.92	1.93	1.94	1.70	1.73	1.75

<sup>1</sup>Above technical data is subject to change without prior intimation for betterment of product from time to time.

<sup>2</sup>Data Revised R01 – 09/02/2021.

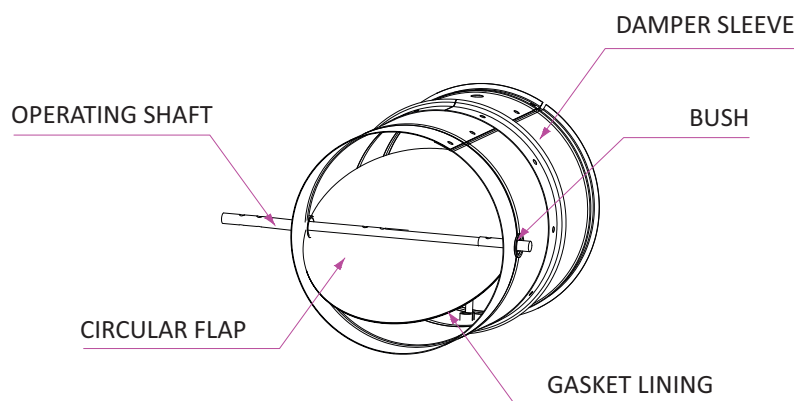
# DAMPER

**Damper Assembly** used for control of Air flow for delivering Variable Air Volume and ensuring low pressure drop.

Two types of Damper viz., Circular Damper & Aerofoil profile blade Damper.

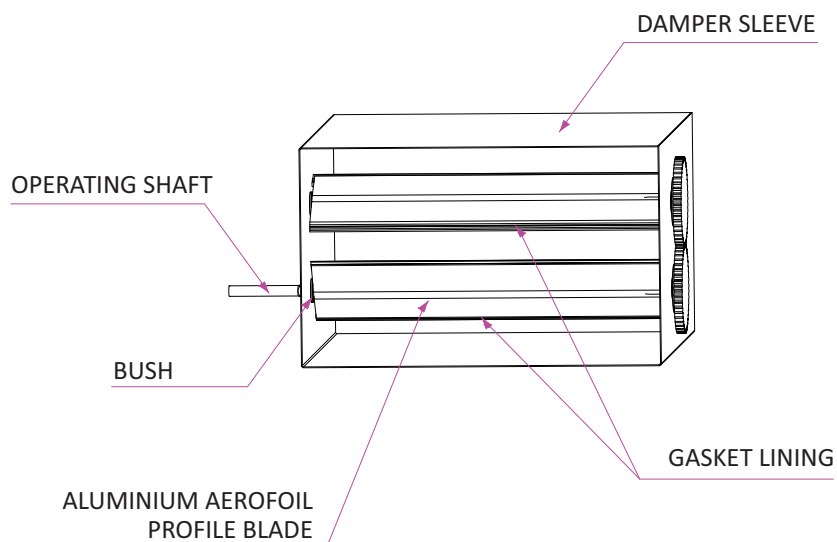
## Circular Damper

Damper arrangement having Specially made **Twin 22SWG GSS Sandwich Circular flap with Neoprene Gasket lining** for Leak proofing when in close position and assembled with Zinc plated steel shafts and Self lubricated bushes.



## Aerofoil Profile Blade Damper

Damper Assembly having Aerofoil profile aluminium blade integrated with Gasket lining for additional Leak proofing. Damper operating by action of opposed blade volume control damper with high quality nylon gear train and self-lubricated bushes.



# MODELS



AEROFOIL PROFILE DAMPER  
RECTANGULAR - ADR



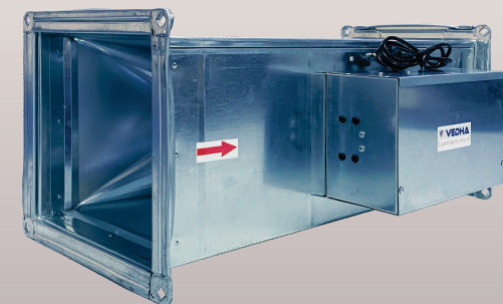
AEROFOIL PROFILE DAMPER  
SPIRAL FLATOVAL - ADSF



CIRCULAR DAMPER  
BASIC - CDB



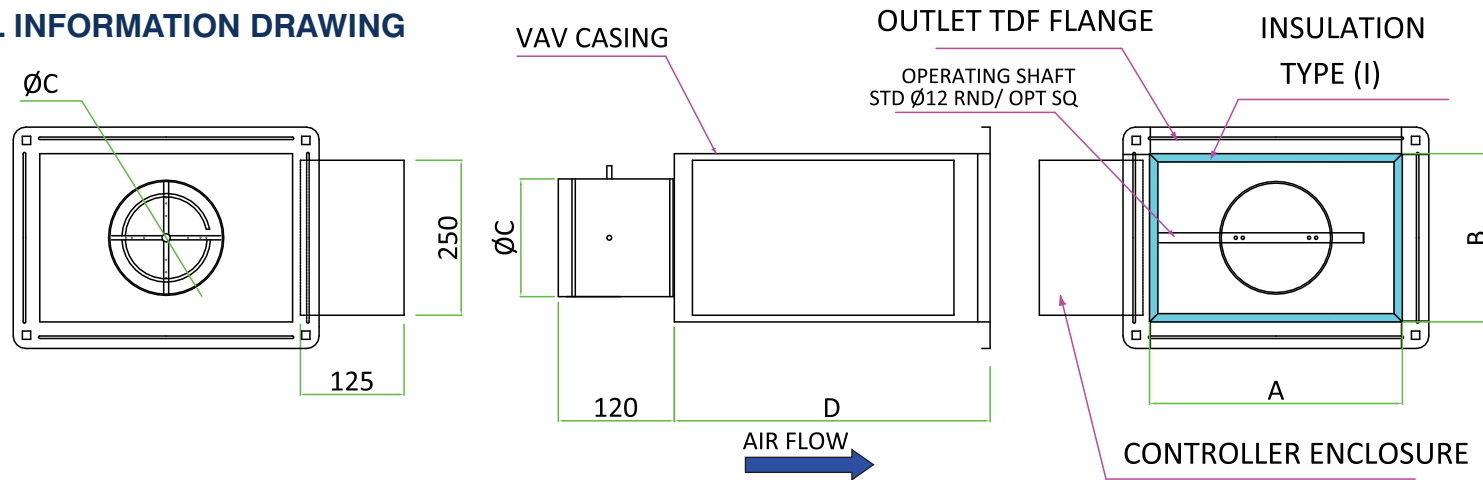
CIRCULAR DAMPER SPIRAL  
ROUND - CDSR



CIRCULAR DAMPER BASIC –  
INTEGRATED TRANSITION PIECE

# CIRCULAR DAMPER BASIC (CDB)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

## TECHNICAL DATA

S NO	MODEL	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET DIMENSIONS				INSULATION TYPE (I)	
						A (mm)	B (mm)	ØC (mm)	D (mm)	SINGLE SKIN	DOUBLE SKIN
1	CDB-04	VC-04	4	46 - 230	35	250	200	101	400	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM	GLASS WOOL FIBRE WITH PROTECTIVE TISSUE & ALU. PERFORATED SHEET
2	CDB-05	VC-05	5	76 - 380	35	250	200	126	400		
3	CDB-06	VC-06	6	106 - 530	35	305	203	152	400		
4	CDB-08	VC-08	8	200 - 1000	33	305	254	203	400		
5	CDB-10	VC-10	10	314 - 1570	32	356	318	254	400		
6	CDB-12	VC-12	12	448 - 2240	32	405	381	305	400		
7	CDB-14	VC-14	14	620 - 3100	30	508	444	356	500		
8	CDB-16	VC-16	16	826 - 4130	29	610	457	406	500		

# CIRCULAR DAMPER BASIC (CDB)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Circular Damper Basic (CDB).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	46 - 4130 CFM.
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE). <b>Double Skin</b> – Glass wool Fibre with Protective (RP) tissue and Aluminium Perforated Sheet.
7.	<b>Inlet type</b>	Spigot assembly with Circular Plain Inlet end (Optional: with Circular Flange).
8.	<b>Outlet type</b>	<b>Rectangular with TDF Flange</b> (same sheet folded) similar to Duct flange for easy, seamless & leak proof connectivity with ducts.
9.	<b>Damper</b>	Specially made <b>Twin 22SWG GSS Sandwich Circular flap with Neoprene Gasket lining</b> for Leak proofing when in close position and assembled with Zinc plated steel shafts and Self lubricated bushes.
10.	<b>Casing</b>	Inlet side mounted with Round Spigot assembly and Outlet side having <b>TDF Flanges</b> .
11.	<b>Controller Enclosure</b>	Mounted on the Damper shaft side of the Casing, The enclosure is designed with provision to mount Various types of Controller Packages. <b>Flow measurement signal transmitted via high quality PU tubes</b> routed to controller enclosure and <b>Pneumatic connectors</b> used for connecting sensor signal transmitting pipes to controller. <b>Top entry points for communication &amp; power cables</b> and side entry for Sensor signal transmission pipes with rubber grommets for Water and Dust resistant sealing.



# CIRCULAR DAMPER BASIC (CDB)

## BOQ SPECIFICATION

Pressure independent VAV terminal of different capacities with Inlet spigot assembly with Circular damper capable of delivering variable air volume with gasket lining integrated circular flap for leak proofing.

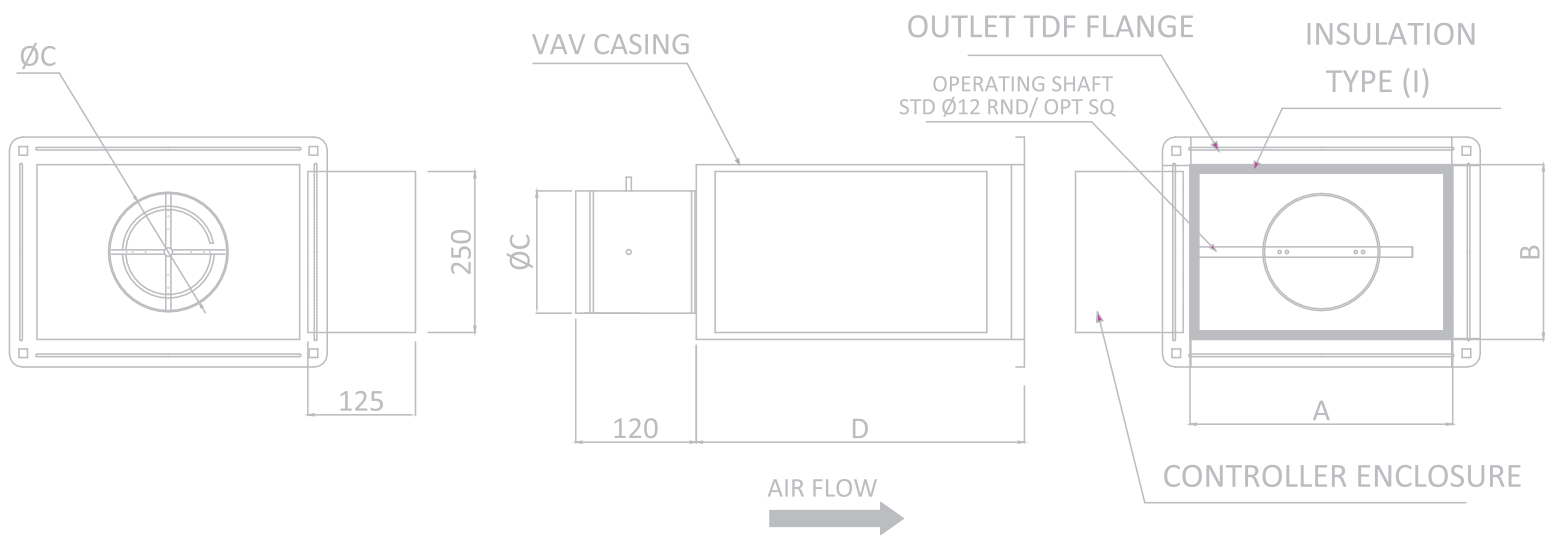
VAV box casing shall be made with 22SWG Galvanized sheet steel construction completely sealed at all joints and with Outlet side TDF flanges (Same sheet folded) similar to Duct flange for seamless, easy and leak proof connectivity with Inlet & Outlet ducts, and Casing with internal Insulation Lining.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering equally concentric areas of flow measurement grid and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup points for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed from Spigot to Controller enclosure. Pneumatic connectors shall be used for connecting signal tubes to controller.

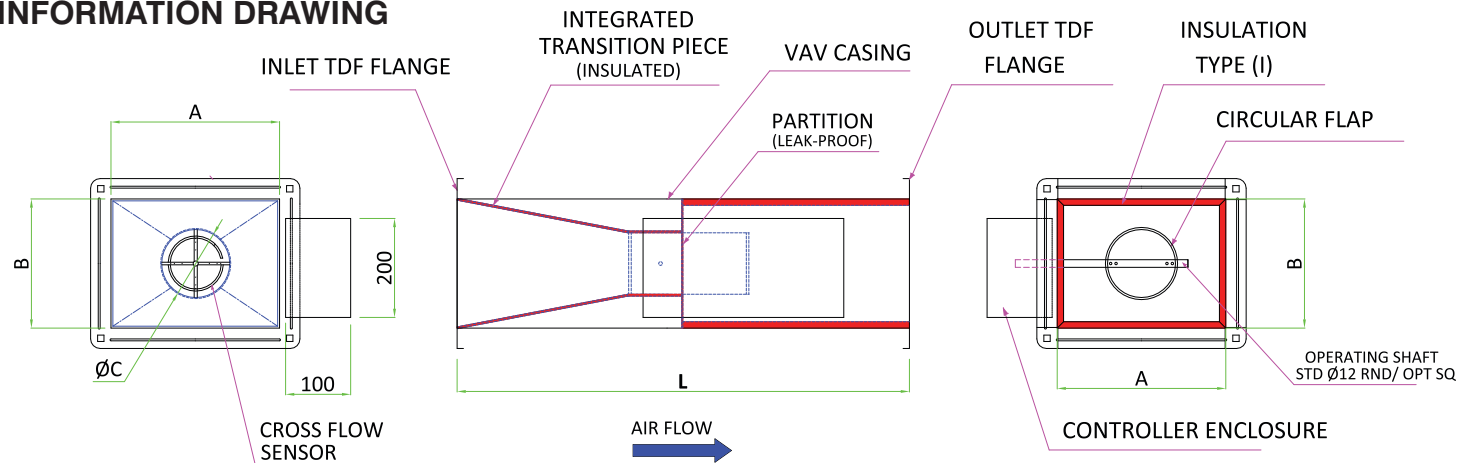
The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer, unit hanger brackets etc.



# CIRCULAR DAMPER BASIC-INTEGRATED TRANSITION PIECE (CDB-ITP)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

**SUIT TO DUCT  
OPTION AVAILABLE\***

## TECHNICAL DATA

S NO	MODEL <sup>[1]</sup>	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS *				INSULATION TYPE (I)	
						A (mm)	B (mm)	f C (mm)	L (mm)	SINGLE SKIN	DOUBLE SKIN
1	CDB-ITP-04	VC-04	4	46 - 230	35	200	200	101	800	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM	GLASS WOOL FIBRE WITH PROTECTIVE TISSUE & ALU. PERFORATED SHEET
2	CDB-ITP-05	VC-05	5	76 - 380	35	200	200	126	800		
3	CDB-ITP-06	VC-06	6	106 - 530	35	250	250	152	800		
4	CDB-ITP-08	VC-08	8	200 - 1000	33	300	300	203	800		
5	CDB-ITP-10	VC-10	10	314 - 1570	32	350	350	254	800		
6	CDB-ITP-12	VC-12	12	448 - 2240	32	400	400	305	800		
7	CDB-ITP-14	VC-14	14	620 - 3100	30	450	450	356	900		
8	CDB-ITP-16	VC-16	16	826 - 4130	29	500	500	406	900		

<sup>1</sup>Higher CFM models available, details shall be provided on request.

\* Suit to duct option available, details shall be shared upon request.

# CIRCULAR DAMPER BASIC-INTEGRATED TRANSITION PIECE (CDB-ITP)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Circular Damper Basic – Integrated Transition Piece (CDB-ITP).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	46 - 4130 CFM (Higher CFM models available on requirement).
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Steel Sheet conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Steel Sheet conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Steel Sheet conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - Closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE). <b>Double Skin</b> - Glass wool Fibre with Protective (RP) tissue and Aluminium Perforated Sheet.
7.	<b>Inlet type</b>	<b>TDF Flange</b> similar to Duct flange for easy, seamless & leak proof connectivity with ducts and with <b>Inlet transition piece (Insulated)</b> integrated inside the VAV Casing.
8.	<b>Outlet type</b>	<b>TDF Flange</b> similar to Duct flange for easy, seamless & leak proof connectivity with ducts.
9.	<b>Damper</b>	Specially made <b>Twin 22SWG GSS Sandwich Circular flap</b> with Gasket lining for Leak proofing when in close position and assembled with Zinc plated steel shafts and Self lubricated bushes
10.	<b>Casing</b>	GSS Duct with Inlet Side and Outlet side having TDF Flanges.
11.	<b>Controller Enclosure</b>	Mounted on the Damper shaft side of the Casing, The enclosure is designed with provision to mount Various types of Controller Packages.
		<b>Flow measurement signal transmitted</b> via high quality PU tubes internally routed to controller enclosure and Pneumatic connectors used for connecting sensor signal transmitting pipes to controller. <b>Top entry points for communication &amp; power cables</b> and side entry for Sensor signal transmission pipes with rubber grommets for Water and Dust resistant sealing.

# CIRCULAR DAMPER BASIC-INTEGRATED TRANSITION PIECE (CDB-ITP)

## BOQ SPECIFICATION

Rectangular pressure independent VAV terminal of different capacities with Inlet spigot assembly with Circular damper capable of delivering variable air volume with gasket lining integrated circular flap for leak proofing. Inlet transition cone piece integrated inside VAV box casing with external Insulation treatment and connected to Damper Sleeve.

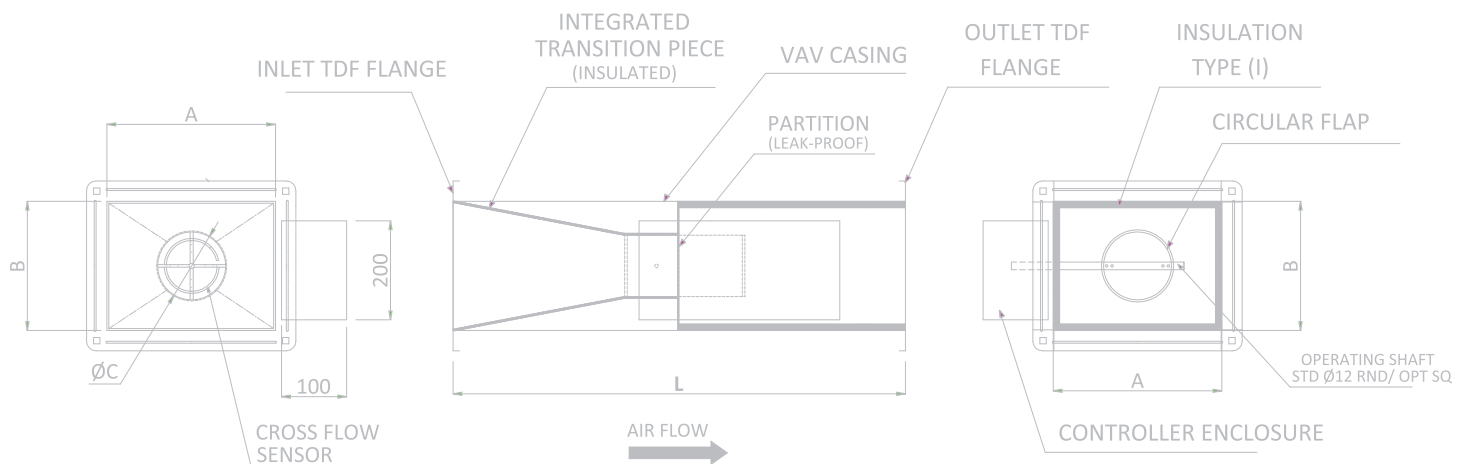
VAV box casing shall be made with single sheet of 22SWG Galvanized sheet steel construction completely sealed at all joints and with TDF flanges (Same sheet folded) similar to Duct flange for seamless, easy and leak proof connectivity with Inlet & Outlet ducts, and casing with internal Insulation Lining.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering full Inlet area of flow measurement grid and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup points for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed inside from Casing to Controller enclosure without being exposed to prevent accidental damages to signal tubes. Pneumatic connectors shall be used for connecting signal tubes to controller.

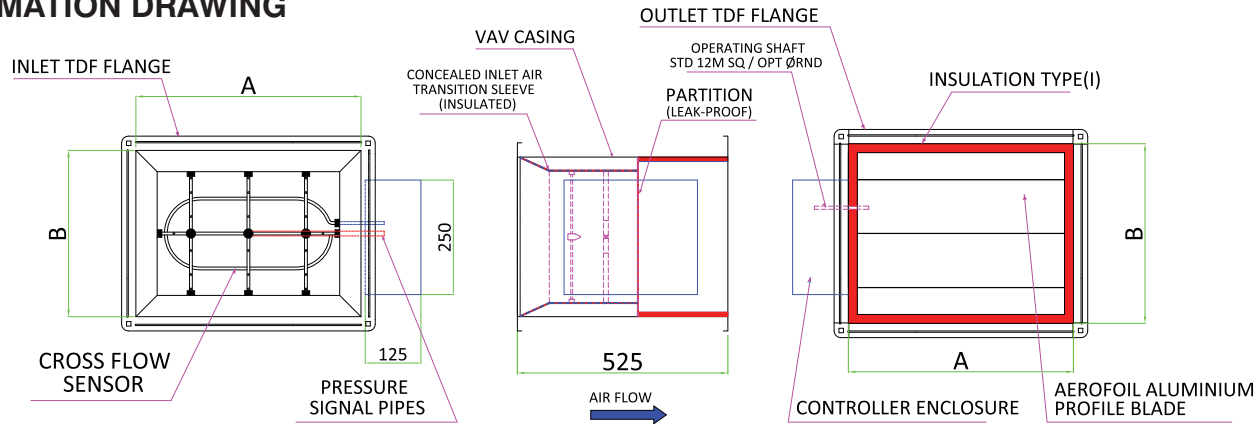
The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer, unit hanger brackets etc.



# AEROFOIL BLADE DAMPER RECTANGULAR (ADR)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

## TECHNICAL DATA

S NO	MODEL <sup>[1]</sup>	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS		INSULATION TYPE (I)	
						A (mm)	B (mm)	SINGLE SKIN	DOUBLE SKIN
1	ADR-04x04	VC-0404	04 x 04	60 - 300	29	200	200	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM	GLASS WOOL FIBRE WITH PROTECTIVE TISSUE & ALU. PERFORATED SHEET
2	ADR-05x05	VC-0505	05 x 05	98 - 490	29	200	200		
3	ADR-06x06	VC-0606	06 x 06	136 - 680	28	250	250		
4	ADR-08x08	VC-0808	08 x 08	256 - 1280	28	300	300		
5	ADR-12x06	VC-1206	12 x 06	280 - 1400	26	400	250		
6	ADR-12x08	VC-1208	12 x 08	376 - 1880	26	400	300		
7	ADR-16x08	VC-1608	16 x 08	522 - 2610	24	500	300		
8	ADR-18x10	VC-1810	18 x 10	722 - 3610	23	550	350		
9	ADR-20x12	VC-2012	20 x 12	958 - 4790	23	600	400		

<sup>1</sup>Higher CFM models available, details shall be provided on request.

# AEROFOIL BLADE DAMPER RECTANGULAR (ADR)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Aerofoil blade Damper Rectangular (ADR).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	60 - 4790 CFM (Higher CFM models available on requirement).
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - Closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE). <b>Double Skin</b> - Glass wool Fibre with Protective (RP) tissue and Aluminium Perforated Sheet.
7.	<b>Inlet type</b>	<b>TDF Flange</b> similar to Duct flange for easy, seamless and leak proof connectivity with ducts.
8.	<b>Outlet type</b>	<b>TDF Flange</b> similar to Duct flange for easy, seamless and leak proof connectivity with ducts.
9.	<b>Damper</b>	<b>Aerofoil profile aluminium blade</b> integrated with Gasket lining for additional Leak proofing.  Operating by action of <b>opposed blade volume control damper</b> with high quality nylon gear train and Self lubricated bushes.
10.	<b>Casing</b>	Made of GSS Duct with Inlet & Outlets having <b>TDF flanges</b> (same sheet folded) <b>similar to duct flange</b> .
11.	<b>Controller Enclosure</b>	Mounted on the Damper shaft side of the Casing, The enclosure is designed with provision to mount Various types of Controller Packages.  <b>Flow measurement signal transmitted</b> via high quality PU tubes <b>routed to controller enclosure internally without being exposed</b> and Pneumatic connectors used for connecting sensor signal transmitting pipes to controller.  <b>Internal entry points for communication &amp; power cables</b> with rubber grommets for Water and Dust resistant sealing.

# AEROFOIL BLADE DAMPER RECTANGULAR (ADR)

## BOQ SPECIFICATION

Rectangular pressure independent VAV terminal of different capacities with Aluminium Aerofoil profile blade damper capable of delivering variable air volume by action of opposed blade volume control damper with gasket lining integrated aerofoil blades for leak proofing.

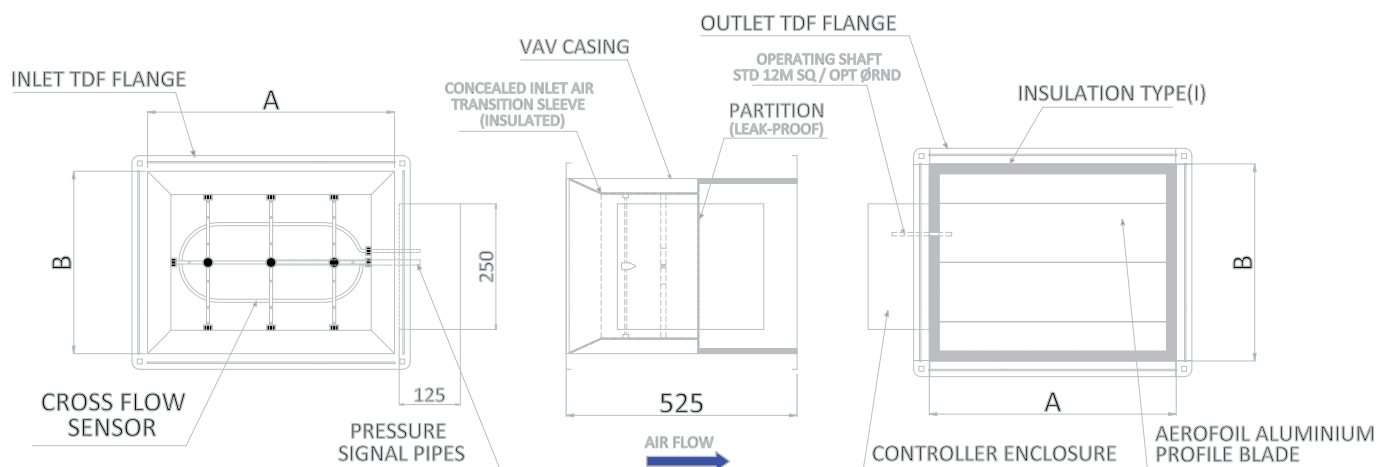
VAV box casing shall be made with single sheet of 22SWG Galvanized sheet steel construction completely sealed at all joints and with TDF flanges (Same sheet folded) similar to Duct flange for seamless, easy and leak proof connectivity with Inlet & Outlet ducts, and casing with internal Insulation Lining.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering full Inlet area of flow measurement grid and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup points for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed inside from Casing to Controller enclosure without being exposed to prevent accidental damages to signal tubes. Pneumatic connectors shall be used for connecting signal tubes to controller.

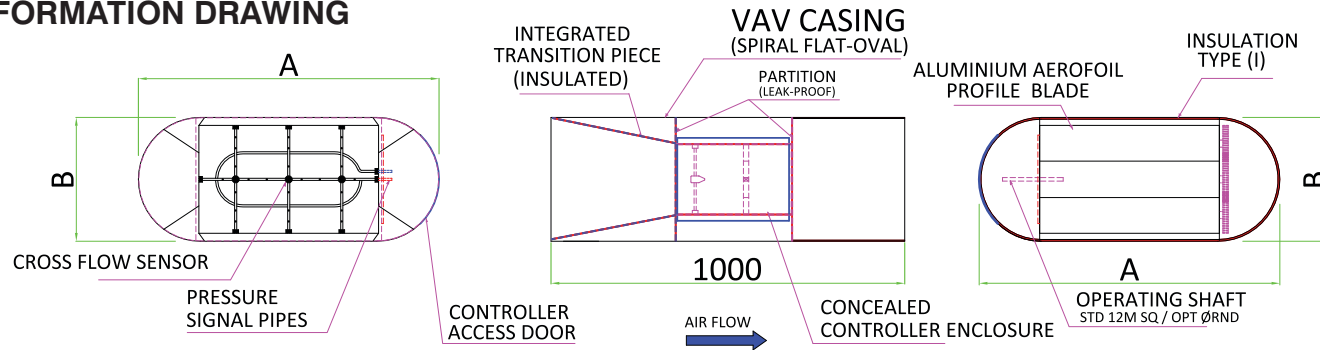
The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer, unit hanger brackets etc.



# AEROFOIL BLADE DAMPER SPIRAL FLATOVAL (ADSF)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

**SUIT TO DUCT  
OPTION AVAILABLE\***

### TECHNICAL DATA

S NO	MODEL*	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS**		INSULATION TYPE (I)
						A (mm)	B (mm)	
1	<b>ADSF-05x05</b>	<b>VC-0505</b>	<b>05 x 05</b>	<b>98 - 490</b>	<b>29</b>	<b>550</b>	<b>150</b>	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM
2	ADSF-06x06	VC-0606	06 x 06	136 - 680	28	525	200	
3	<b>ADSF-08x05</b>	<b>VC-0805</b>	<b>08 x 05</b>	<b>168 - 840</b>	<b>28</b>	<b>550</b>	<b>150</b>	
4	<b>ADSF-12x06</b>	<b>VC-1206</b>	<b>12 x 06</b>	<b>280 - 1400</b>	<b>26</b>	<b>600</b>	<b>200</b>	
5	ADSF-16x06	VC-1606	16 x 06	<b>376 - 1880</b>	26	675	200	
6	<b>ADSF-12x08</b>	<b>VC-1208</b>	<b>12 x 08</b>		<b>26</b>	<b>575</b>	<b>250</b>	
7	ADSF-20x06	VC-2006	20 x 06	<b>522 - 2610</b>	24	825	200	
8	<b>ADSF-16x08</b>	<b>VC-1608</b>	<b>16 x 08</b>		<b>24</b>	<b>650</b>	<b>250</b>	
9	ADSF-22x08	VC-2208	22 x 08	<b>722 - 3610</b>	23	800	250	
10	<b>ADSF-18x10</b>	<b>VC-1810</b>	<b>18 x 10</b>		<b>23</b>	<b>700</b>	<b>300</b>	
11	ADSF-24x10	VC-2410	24 x 10	<b>958 - 4790</b>	23	850	300	
12	<b>ADSF-20x12</b>	<b>VC-2012</b>	<b>20 x 12</b>		<b>23</b>	<b>750</b>	<b>350</b>	

\* Higher CFM models available, details shall be provided on request.

\*\* Suit to duct option available, details shall be shared upon request.



# AEROFOIL BLADE DAMPER SPIRAL FLATOVAL (ADSF)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Aerofoil blade Damper Spiral Flat Oval (ADSF).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	98 - 4790 CFM (Higher CFM models available on requirement).
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE).
7.	<b>Inlet type</b>	<b>Coupling Joint similar to Flat Oval Duct Joint</b> for easy, seamless and leak proof connectivity with ducts.
8.	<b>Outlet type</b>	<b>Coupling Joint similar to Flat Oval Duct Joint</b> for easy, seamless and leak proof connectivity with ducts.
9.	<b>Damper</b>	<b>Aerofoil profile aluminium blade</b> integrated with Gasket lining for additional Leak proofing. Operating by action of <b>opposed blade volume control damper</b> with high quality nylon gear train and Self lubricated bushes.
10.	<b>Casing</b>	Casing made of <b>GSS Spiral Flat Oval Duct</b> with Inlet & Outlet having <b>Coupling Joints</b> similar to Round Duct. <b>Casing having Internal leak proof partition arrangement for Inlet Air Transmission chamber, Controller enclosure and Damper arrangement.</b>
11.	<b>Controller Enclosure</b>	Enclosure made inside the VAV with a <b>Leak proof partition</b> concealed under VAV casing with base plate to mount Various types of Controller Packages. <b>Flow measurement signal transmitted</b> via high quality PU tubes <b>routed to controller enclosure internally without being exposed</b> and Pneumatic connectors used for connecting sensor signal transmitting pipes to controller. <b>Controller enclosure is covered with Hinge mounted Door made of GSS with Spiral seam joints to match the look of the VAV Casing duct for good aesthetics.</b> <b>Internal entry points for communication &amp; power cables</b> with rubber grommets for Water and Dust resistant sealing.

# AEROFOIL BLADE DAMPER SPIRAL FLATOVAL (ADSF)

## BOQ SPECIFICATION

Flat Oval pressure independent VAV terminal of different capacities with Concealed type Control Panel and Aluminium Aerofoil profile blade damper capable of delivering variable air volume by action of opposed blade volume control damper with gasket lining integrated aerofoil blades for leak proofing. Inlet transition cone piece integrated inside VAV box casing with external Insulation treatment and connected to Damper Sleeve.

VAV box casing shall be made with Spiral Flat Oval Duct fabricated of 22SWG Galvanized sheet steel construction completely sealed at all joints and with matching coupling joints (of 18 SWG) similar to Flat Oval Duct Joint for seamless, easy and leak proof connectivity with Inlet & Outlet Flat Oval ducts, and Casing with internal Insulation.

VAV casing duct height shall be proportionally maintained w.r.to Air Flow Delivery Volume viz.

- 150 mm up to 450 cfm.
- 200 mm for 451-1200 cfm.
- 250 mm for 1201-2300 cfm.
- 300 mm for 2301-3100 cfm.
- 350 mm for 3101-4200 cfm.

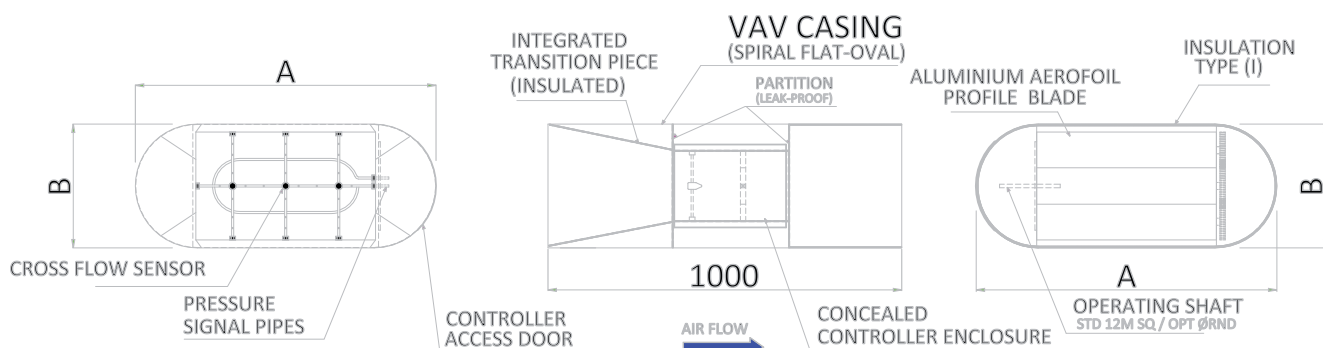
VAV box shall have leak-proof partition arrangement concealed under the Casing for accommodating Inlet air transmission chamber, controller enclosure and damper arrangement. Access to Control Panel shall be with Hinge mounted Door made of GSS with Spiral seam joints to look alike the VAV Casing duct.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering full Inlet area and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup point for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed inside from Casing to Controller enclosure. Pneumatic connectors shall be used for connecting signal tubes to controller.

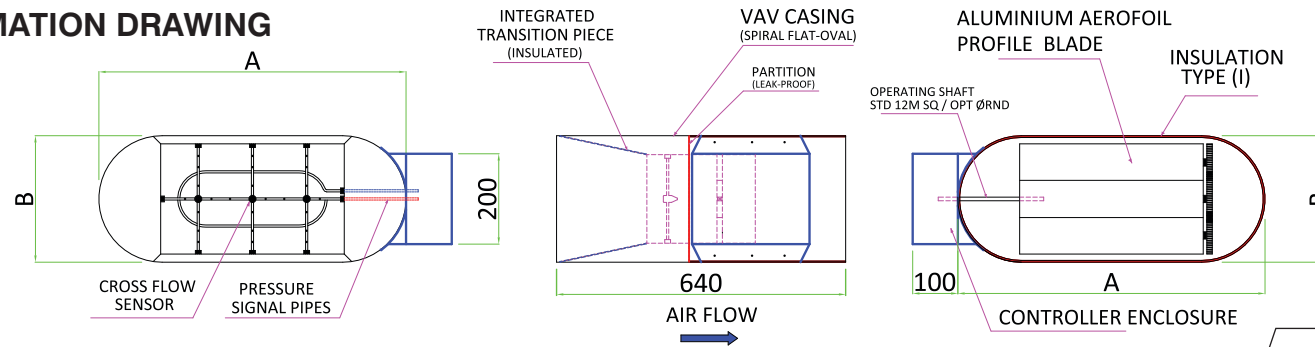
The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer etc.



# AEROFOIL BLADE DAMPER SPIRAL FLATOVAL EXPOSED PANEL (ADSF-EP)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

**SUIT TO DUCT  
OPTION AVAILABLE\***

## TECHNICAL DATA

S NO	MODEL*	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS**		INSULATION TYPE (I)
						A (mm)	B (mm)	SINGLE SKIN
1	ADSF-EP-05x05	VC-0505	05 x 05	98 - 490	29	550	150	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM
2	ADSF-EP-06x06	VC-0606	06 x 06	136 - 680	28	525	200	
3	ADSF-EP-08x05	VC-0805	08 x 05	168 - 840	28	550	150	
4	ADSF-EP-12x06	VC-1206	12 x 06	280 - 1400	26	525	200	
5	ADSF-EP-16x06	VC-1606	16 x 06	376 - 1880	26	600	200	
6	ADSF-EP-12x08	VC-1208	12 x 08		26	575	250	
7	ADSF-EP-20x06	VC-2006	20 x 06	522 - 2610	24	675	200	
8	ADSF-EP-16x08	VC-1608	16 x 08		24	575	250	
9	ADSF-EP-22x08	VC-2208	22 x 08	722 - 3610	23	725	250	
10	ADSF-EP-18x10	VC-1810	18 x 10		23	700	300	
11	ADSF-EP-24x10	VC-2410	24 x 10	958 - 4790	23	850	300	
12	ADSF-EP-20x12	VC-2012	20 x 12		23	750	350	

\* Higher CFM models available, details shall be provided on request.

\*\* Suit to duct option available, details shall be shared upon request.

# AEROFOIL BLADE DAMPER SPIRAL FLATOVAL EXPOSED PANEL (ADSF-EP)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Aerofoil blade Damper Spiral Flat Oval Exposed Panel (ADSF-EP).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	98 - 4790 CFM (Higher CFM models available on requirement).
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE).
7.	<b>Inlet type</b>	<b>Coupling Joint similar to Flat Oval Duct Joint</b> for easy, seamless and leak proof connectivity with ducts.
8.	<b>Outlet type</b>	<b>Coupling Joint similar to Flat Oval Duct Joint</b> for easy, seamless and leak proof connectivity with ducts.
9.	<b>Damper</b>	<b>Aerofoil profile aluminium blade</b> integrated with Gasket lining for additional Leak proofing. Operating by action of <b>opposed blade volume control damper</b> with high quality nylon gear train and Self lubricated bushes.
10.	<b>Casing</b>	Casing made of <b>GSS Spiral Flat Oval Duct</b> with Inlet & Outlet having <b>Coupling Joints</b> similar to Round Duct. <b>Casing having Internal leak proof partition arrangement for Inlet Air Transmission chamber, Controller enclosure and Damper arrangement.</b>
11.	<b>Controller Enclosure</b>	Enclosure made inside the VAV with a <b>Leak proof partition</b> concealed under VAV casing with base plate to mount Various types of Controller Packages. <b>Flow measurement signal transmitted</b> via high quality PU tubes <b>routed to controller enclosure internally without being exposed</b> and Pneumatic connectors used for connecting sensor signal transmitting pipes to controller. <b>Controller enclosure is covered with Hinge mounted Door made of GSS with Spiral seam joints to match the look of the VAV Casing duct for good aesthetics.</b> <b>Internal entry points for communication &amp; power cables</b> with rubber grommets for Water and Dust resistant sealing.

# AEROFOIL BLADE DAMPER SPIRAL FLAT-OVAL EXPOSED PANEL (ADSF-EP)

## BOQ SPECIFICATION

Flat Oval pressure independent VAV terminal of different capacities with Exposed Control Panel and Aluminium Aerofoil profile blade damper capable of delivering variable air volume by action of opposed blade volume control damper with gasket lining integrated aerofoil blades for leak proofing. Inlet transition cone piece integrated inside VAV box casing with external Insulation treatment and connected to Damper Sleeve.

VAV box casing shall be made with Spiral Flat Oval Duct fabricated of 22SWG Galvanized sheet steel construction completely sealed at all joints and with matching coupling joints (of 18 SWG) similar to Flat Oval Duct Joint for seamless, easy and leak proof connectivity with Inlet & Outlet Flat Oval ducts, and Casing with internal Insulation.

VAV casing duct height shall be proportionally maintained w.r.to Air Flow Delivery Volume viz.

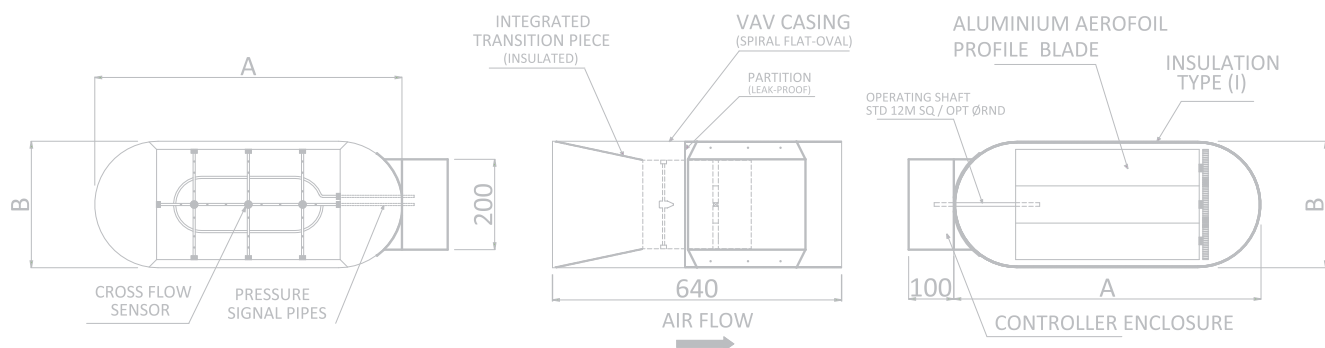
- 150 mm up to 450 cfm.
- 200 mm for 451-1200 cfm.
- 250 mm for 1201-2300 cfm.
- 300 mm for 2301-3100 cfm.
- 350 mm for 3101-4200 cfm.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering full Inlet area and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup point for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed inside from Casing to Controller enclosure. Pneumatic connectors shall be used for connecting signal tubes to controller.

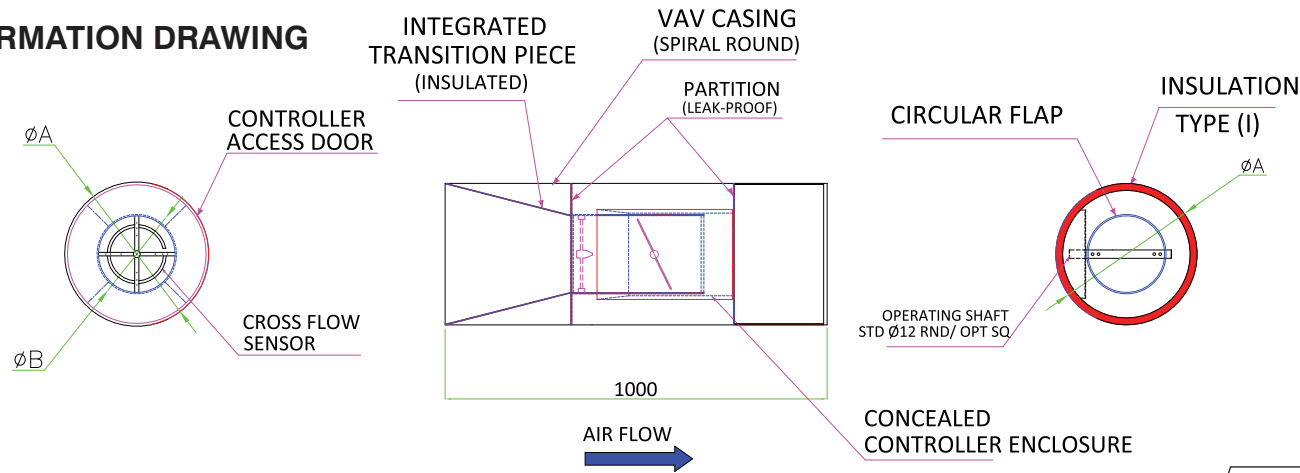
The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer etc.



# CIRCULAR DAMPER SPIRAL ROUND (CDSR)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

**SUIT TO DUCT  
OPTION AVAILABLE\***

TECHNICAL DATA								
S NO	MODEL	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS *		INSULATION TYPE (I)
						ØA (mm)	ØB (mm)	
1	CDSR-04	VC-04	4	46 - 230	35	250	101	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM
2	CDSR-05	VC-05	5	76 - 380	35	300	126	
3	CDSR-06	VC-06	6	106 - 530	35	300	152	
4	CDSR-08	VC-08	8	200 - 1000	33	350	203	
5	CDSR-10	VC-10	10	314 - 1570	32	400	254	
6	CDSR-12	VC-12	12	448 - 2240	32	450	305	
7	CDSR-14	VC-14	14	620 - 3100	30	500	356	
8	CDSR-16	VC-16	16	826 - 4130	29	550	406	

\* Suit to duct option available, details shall be shared upon request.

# CIRCULAR DAMPER SPIRAL ROUND (CDSR)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Circular Damper Spiral Round (CDSR).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	46 - 4130 CFM (Higher CFM models available on requirement)
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - Closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE).
7.	<b>Inlet type</b>	<b>Coupling Joint similar to Spiral Round Duct Joint with Inlet transition piece (Insulated)</b> integrated inside the VAV Casing.
8.	<b>Outlet type</b>	<b>Coupling Joint</b> similar to Spiral Round Duct Joint for easy, seamless and leak proof connectivity with ducts.
9.	<b>Damper</b>	Specially made <b>Twin 22SWG GSS Sandwich Circular flap</b> with Neoprene Gasket lining for Leak proofing when in close position and assembled with Zinc plated steel shafts and Self lubricated bushes.
10.	<b>Casing</b>	Casing made of <b>GSS Spiral Round duct</b> with Inlet & Outlet having Coupling Joints similar to Round Duct.
11.	<b>Controller Enclosure</b>	<p>Enclosure made inside the VAV with a <b>Leak proof partition</b> concealed under VAV casing with base plate to mount Various types of Controller Packages.</p> <p><b>Flow measurement signal transmitted</b> via high quality PU tubes <b>routed to controller enclosure internally without being exposed</b> and Pneumatic connectors used for connecting sensor signal transmitting pipes to controller.</p> <p><b>Internal entry points for communication &amp; power cables</b> with rubber grommets for Water and Dust resistant sealing..</p>

# CIRCULAR DAMPER SPIRAL ROUND (CDSR)

## BOQ SPECIFICATION

Pressure independent VAV terminal of different capacities with Circular damper capable of delivering variable air volume with gasket lining integrated circular flap for leak proofing. Inlet transition cone piece integrated inside VAV box casing with external Insulation treatment and connected to Damper Sleeve.

VAV box casing shall be made with 22SWG Galvanised Sheet Steel Single Spiral Round duct with Inlet and Outlet side Coupling joints similar to Spiral round Duct for seamless, easy and leak proof connectivity with Inlet & Outlet ducts, and Casing with internal Insulation Lining.

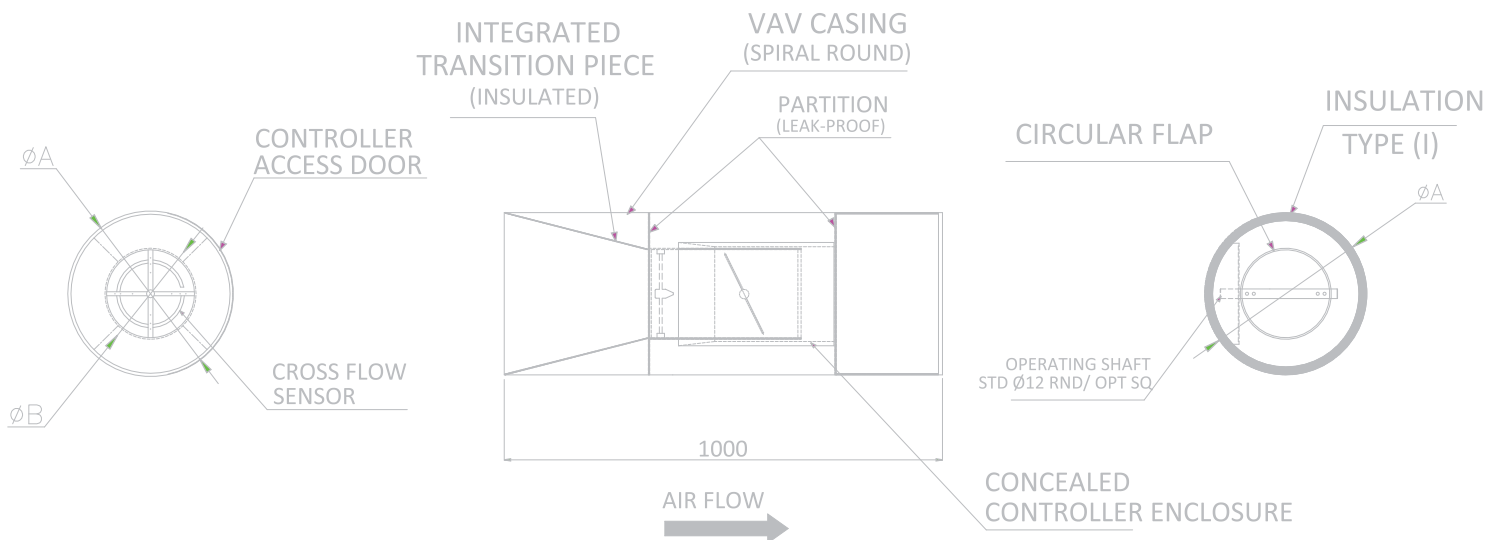
VAV box shall have leak-proof partition arrangement concealed under the Casing for accommodating Inlet air transmission chamber, controller enclosure and damper arrangement. Access to Control Panel shall be with Hinge mounted Door made of GSS with Spiral seam joints to look alike the VAV Casing duct.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering full Inlet area and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup point for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed inside from Casing to Controller enclosure. Pneumatic connectors shall be used for connecting signal tubes to controller.

The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

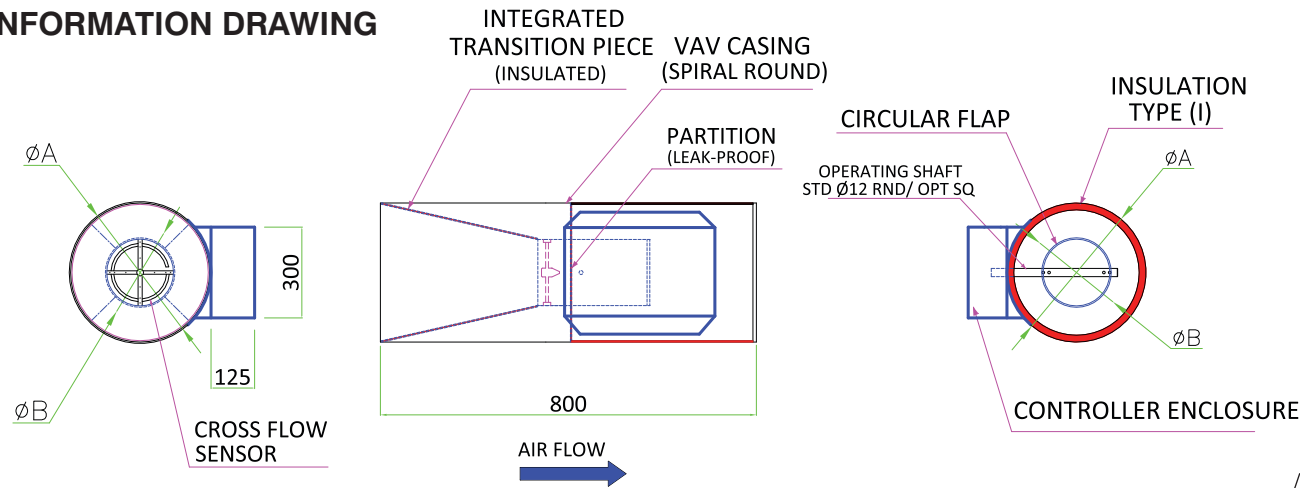
VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer etc.





# CIRCULAR DAMPER SPIRAL ROUND EXPOSED PANEL (CDSR-EP)

## TECHNICAL INFORMATION DRAWING



**Important Note:** While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM given in the below table.

**SUIT TO DUCT  
OPTION AVAILABLE\***

## TECHNICAL DATA

S NO	MODEL	CROSS FLOW SENSOR	INLET SIZE (Inch)	AIR FLOW RANGE (CFM)	PRESSURE DROP (Pa)	CASING INLET & OUTLET STANDARD / MINIMUM DIMENSIONS *		INSULATION TYPE (I)
						øA (mm)	øB (mm)	SINGLE SKIN
1	CDSR-EP-04	VC-04	4	46 - 230	35	250	101	CLOSED CELL / OPEN CELL NITRILE RUBBER FOAM
2	CDSR-EP-05	VC-05	5	76 - 380	35	250	126	
3	CDSR-EP-06	VC-06	6	106 - 530	35	250	152	
4	CDSR-EP-08	VC-08	8	200 - 1000	33	300	203	
5	CDSR-EP-10	VC-10	10	314 - 1570	32	350	254	
6	CDSR-EP-12	VC-12	12	448 - 2240	32	400	305	
7	CDSR-EP-14	VC-14	14	620 - 3100	30	450	356	
8	CDSR-EP-16	VC-16	16	826 - 4130	29	500	406	

\* Suit to duct option available, details shall be shared upon request.

# CIRCULAR DAMPER SPIRAL ROUND EXPOSED PANEL (CDSR-EP)

TECHNICAL MODEL DATA (GENERAL)		
1.	<b>Type</b>	Pressure Independent.
2.	<b>Model</b>	Circular Damper Spiral Round Exposed Panel (CDSR-EP).
3.	<b>Make &amp; Origin</b>	Vedha, India.
4.	<b>Air Flow Range</b>	46 - 4130 CFM.
5.	<b>VAV Terminal Selection Criteria</b>	While selecting the VAV Terminal, we recommend to maintain a minimum buffer of 15% between the design CFM and VAV Terminal max CFM.
6.	<b>Material For Construction</b>	
	A. Casing	22SWG Galvanised Sheet Steel conforming to IS:277.
	B. Damper Sleeve	22SWG Galvanised Sheet Steel conforming to IS:277.
	C. Controller Enclosure	22SWG Galvanised Sheet Steel conforming to IS:277.
	D. Insulation	<b>Single Skin</b> - Closed cell Nitrile rubber foam. (Optional – Open cell Nitrile rubber foam / XLPE).
7.	<b>Inlet type</b>	<b>Coupling Joint</b> similar to Spiral Round Duct Joint with <b>Inlet transition piece (Insulated)</b> integrated inside the VAV Casing.
8.	<b>Outlet type</b>	<b>Coupling Joint</b> similar to Spiral Round Duct Joint for easy, seamless and leak proof connectivity with ducts.
9.	<b>Damper</b>	Specially made <b>Twin 22SWG GSS Sandwich Circular flap</b> with Neoprene Gasket lining for Leak proofing when in close position and assembled with Zinc plated steel shafts and Self lubricated bushes.
10.	<b>Casing</b>	Casing made of <b>GSS Spiral Round duct</b> with Inlet & Outlet having Coupling Joints similar to Round Duct.
11.	<b>Controller Enclosure</b>	<p>Mounted on the Damper shaft side of the Casing, The enclosure is designed with provision to mount Various types of Controller Packages.</p> <p><b>Flow measurement signal transmitted via high quality PU tubes</b> routed to controller enclosure and <b>Pneumatic connectors</b> used for connecting sensor signal transmitting pipes to controller.</p> <p><b>Top entry points for communication &amp; power cables</b> and side entry for Sensor signal transmission pipes with rubber grommets for Water and Dust resistant sealing.</p>

# CIRCULAR DAMPER SPIRAL ROUND EXPOSED PANEL (CDSR-EP)

## BOQ SPECIFICATION

Pressure independent VAV terminal of different capacities with Circular damper capable of delivering variable air volume with gasket lining integrated circular flap for leak proofing. Inlet transition cone piece integrated inside VAV box casing with external Insulation treatment and connected to Damper Sleeve.

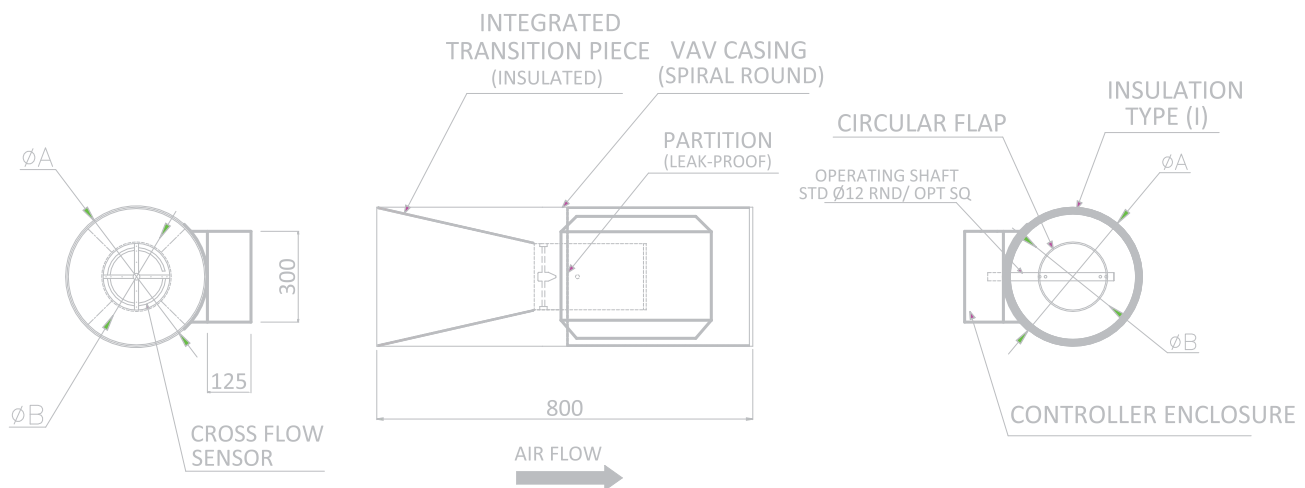
VAV box casing shall be made with 22SWG Galvanised Sheet Steel Single Spiral Round duct with Inlet and Outlet side Coupling joints similar to Spiral round Duct for seamless, easy and leak proof connectivity with Inlet & Outlet ducts, and Casing with internal Insulation Lining.

VAV box shall have Air Flow Sensor having total pressure collected from multiple pickup points covering equally concentric areas of flow measurement grid and routed through centre averaging chamber to controller, static pressure collected from points placed in perpendicular to the total pressure pickup points for better sample collection and high accuracy.

Flow measurement signal transmitted via high quality PU tubes routed from VAV casing to Controller enclosure. Pneumatic connectors shall be used for connecting signal tubes to controller.

The VAV shall be suitable to operate on 230 V, single phase electrical supply and shall have built-in transformer suitable to the controller operating voltage.

VAV shall be electronically controlled networkable controller type complete with low leakage damper, actuator, Microprocessor unit, and wall/ ceiling mounted thermostat with ON/OFF Switch, control transformer etc.



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## **VEDHA ENTECH INDIA PVT. LTD.**

**Unit 1:** Survey No. 404 - 2, Puttaparthi Road, Kodur village

Chilamathur Mandal, Anantapuramu District, AP, India - 515601 | **E : sales@vedhaentech.in**

**Unit 2:** Plot nos: 86 & 99, Chandanvelly Industrial park, TSIIIC Shamshabad Zone

Shabad (Md), Rangareddy (Dt), Telangana, India -509217 | **E : sales@vedhaentech.in**

**Corporate Sales Office:** #14, Ground Floor, 14th Cross, Shiridi Sai Nagar, Munnekolala

Marathahalli, Bangalore, India - 560037 | **T : +91 80 35504095 | E : sales@vedhaentech.in**

**[www.vedhaentech.in](http://www.vedhaentech.in)**