SUREFLOW® C60 / C65

SEWAGE & WASTEWATER COMBINATION AIR VALVE

DOUBLE ORIFICE WITH SURGE PROTECTION, AIR ACCUMULATION AND VACUUM PREVENTION, LOW PRESSURE SEALING, EASIER MAINTENANCE

FEATURES

Straight flow body
Aerodynamic full-body kinetic shield
Elongated body design with non-stick coating
Valve is opened from the top
2 service ports
Compact, simple, robust and reliable structure
Fully corrosion-resistant parts
Surge Protection (optional)
Inflow Prevention (optional)
Drainage valve (optional)

DESCRIPTION

Sureflow C65 is a high quality combination air valve for a variety of sewage and wastewater networks and operating conditions.
It evacuates air during pipeline filling, allows efficient release of air and gas pockets from pressurized pipes, and enables large volume air intake in the event of network draining.
With its advanced aerodynamic design, double orifice and anti-slam/slow closing device, this valve provides excellent protection against air and gas accumulation, surge and water hammers with improved sealing under low pressure conditions

APPLICATIONS

Sewage and wastewater pumping stations – Air relief, vacuum prevention and surge protection.
Sewage and wastewater pipelines – Protection against air and gas accumulation and vacuum formation at elevations, slope change points and at road/river crossings.
Protection against vacuum formation, surge and water hammer at
points likely to experience water column separation.
Municipal and industrial wastewater treatment plants – Protection against air and gas accumulation and vacuum formation.

BENEFITS

Higher than usual air flow rates.
Low pressure sealing (0.1bar).
Vortex back washing.
Lower and easier maintenance.
Increased life span.

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PRINCIPLES OF OPERATION

Pipeline filling:
During the filling process of a pipeline, high air flow is forced out through the kinetic orifice of the air valve. Once water enters the valve's chamber, the float buoyed upwards causes the kinetic orifice to close. The unique aerodynamic structure of the valve body and float ensures that the float cannot be closed before water reaches the valve.

Pressurized Operation:
During pressurized operation of the pipeline, air accumulates in the upper part of the air valve chamber, causing the float to gravitate downwards. This in turn causes the automatic orifice to open, releasing the accumulated air. Once the air is discharged, the water level and float rise, causing the automatic orifice to close.

Pipeline Draining:
When a pipeline is drained, a negative differential pressure is created causing atmospheric air to push the float down. The kinetic orifice stays open and air enters the valve chamber, preventing vacuum formation in the pipe.

Surge Protection (anti-slam):
The anti-slam device is fitted to the air valve outlet. In the event of pressure surge, it partially closes the valve's outlet. The approaching water column decelerates due to the resistance of the rising air pressure in the valve. This is typically used on pump stations and at specific pipeline locations to minimise pressure surges during pipe filling or power failure conditions at the pump station.

Inflow Prevention:
The inflow prevention is a Normally Closed check device fitted on the valve's outlet and prevents flow of atmospheric air into the valve. Typically used to prime pump suction lines or on pipelines requiring only air discharge and no air re-entry such as siphons.

VALVE SELECTION

Body Material:
Standard – Cast ductile iron
Optional – Stainless Steel, Bronze
Coatings:
Standard – Baked epoxy, blue
Optional – Additional coatings and colors
Inlet sizes:
DN50, DN80, DN100
Connections:
Threaded Female BSPT – only for DN50 (2")Flanged AS4087 - Class 16
Outlets:
Sideways
Additional features:
Surge Protection (C65-SP)
Inflow Prevention (C65-IP)

OPERATIONAL DATA

Pressure rating: PN16

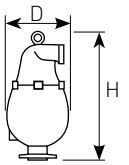
Operating pressure range: 0.1 - 16 bar

Operating temperature: up to 60°C

ORIFICES SPECIFICATION

Size		Kinetic		Surge Protection		Automatic
DN	Inch	D (mm)	Ad (mm²)	D (mm)	Ad (mm²)	Ad (mm²)
50	2"	50	1.963	5x4	79	9.1
80	3"	50	1,963	5 x 4	79	9.1
100	4"	50	1,963	5 x 4	79	9.1

DIMENSIONS & WEIGHTS



Size		Connection	Side Outlet		
DN	Inch		Width (mm)	Height (mm)	Weight (Kg)
50	2"	Threaded	300	584	33
50	2"	Flanged	300	630	36
80	3"	Flanged	300	623	37
100	4"	Flanged	300	625	39

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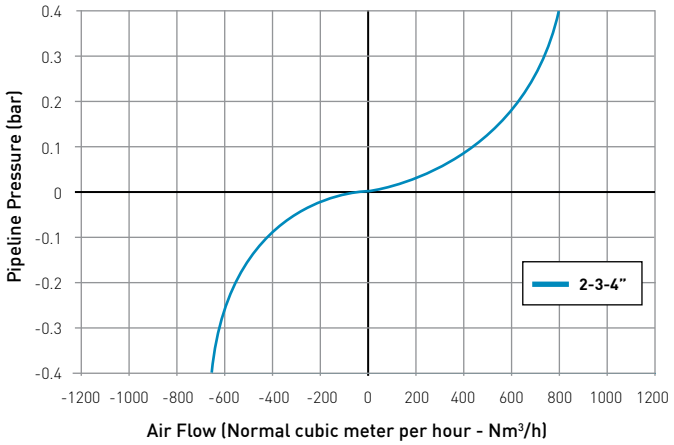
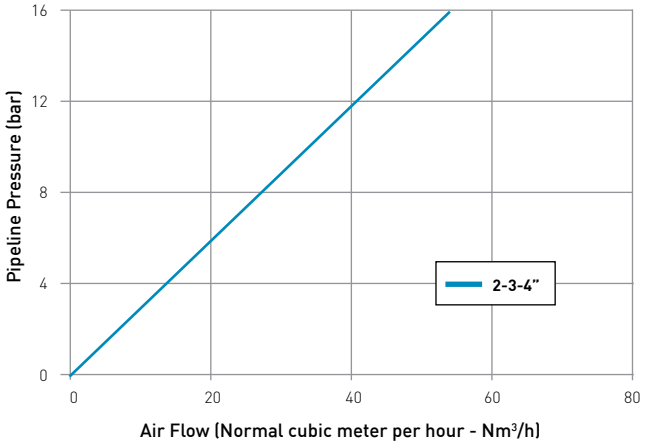
AIR FLOW PERFORMANCE CHARTS

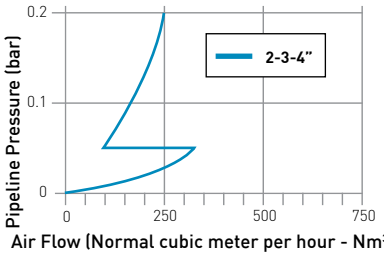
Air Relief and Intake (Pipeline Filling, Draining & Vacuum Conditions)



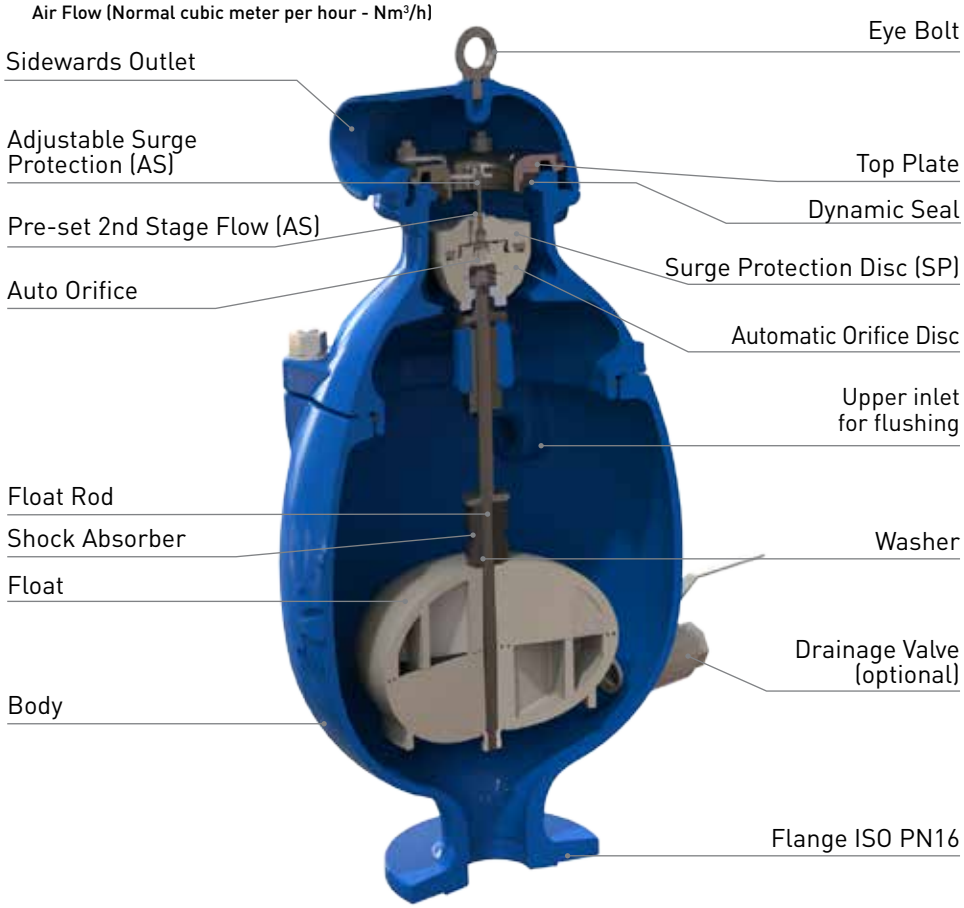
Air Release (Pressurized Operation)



Air Relief with Surge Protection



Air relief and intake charts are based on actual measurements, made during 2014 in BERMAD Air Flow test bench, according to EN-1074/4 standard and refer to Side outlet.



Without Surge Protection

With Inflow Prevention (IP)

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PARTS LIST AND MATERIALS

	Description	Material	Standards / Remarks
1	Body	Casted, Ductile Iron	ASTM A536 GR. 65-45-12 (EN-GJS 450-10 DIN EN1563)
2	Cover side	Casted, Ductile Iron	ASTM A536 GR. 65-45-12 (EN-GJS 450-10 DIN EN1563)
3	Neck	Casted, Ductile Iron	ASTM A536 GR. 65-45-12 (EN-GJS 450-10 DIN EN1563)
4	Top Plate Seal	EPDM	
5	Surge Protection Disc	Polyproylene	Only C65-SP
6	Surge Protection Disc Seal	EPDM	Only C65-SP
7	Check Disk (Inflow Prevention)	Stainless Steel + EPDM	Only C65-IP
8	Auto Orifice Disc-SW	Polyproylene	
9	Float-SW	Polyproylene	
10	Top Plate	Stainless Steel	AISI/SAE S316
11	Float Rod-SW	Stainless Steel	AISI/SAE S316
12	Gide-SW	Stainless Steel	AISI/SAE S316
13	Auto Orifice	Stainless Steel	AISI/SAE S316
14	Auto Orifice Plug	Glass Reinforced Nylon	
15	Auto Orifice Plug O-Ring	EPDM	
16	Auto Orifice Seal	EPDM	
17	Orifice Rod	Stainless Steel	AISI/SAE S316
18	Auto Orifice Plug O-Ring	EPDM	
19	Float Rod Nut-SW	Stainless Steel	AISI/SAE S316
20	Soft Stop Disc-SW	EPDM	
21	Auto Orifice O-Ring	EPDM	
22	Cover O-Ring	EPDM	
23	Eye Bolt	Stainless Steel	AISI/SAE S316 DIN580 A4
24	Stud	Stainless Steel	AISI/SAE S316 DIN939 A4
25	Washer	Stainless Steel	AISI/SAE S316 DIN125 A2
26	Nut	Stainless Steel	AISI/SAE S316 DIN934 A2
27	O-Ring	EPDM	
28	Stud	Stainless Steel	AISI/SAE S316 DIN 939 A4
29	Washer	Stainless Steel	AISI/SAE S316 DIN125A A2
30	Nut	Stainless Steel	AISI/SAE S316 DIN 934 A2
31	Nut	Stainless Steel	AISI/SAE S316 DIN 934 A2
32	Washer	Stainless Steel	AISI/SAE S316 DIN125A A2
33	Insects' Screen (Optional)	Stainless Steel	AISI/SAE S316

VIADUX WATER NETWORK SYSTEMS

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