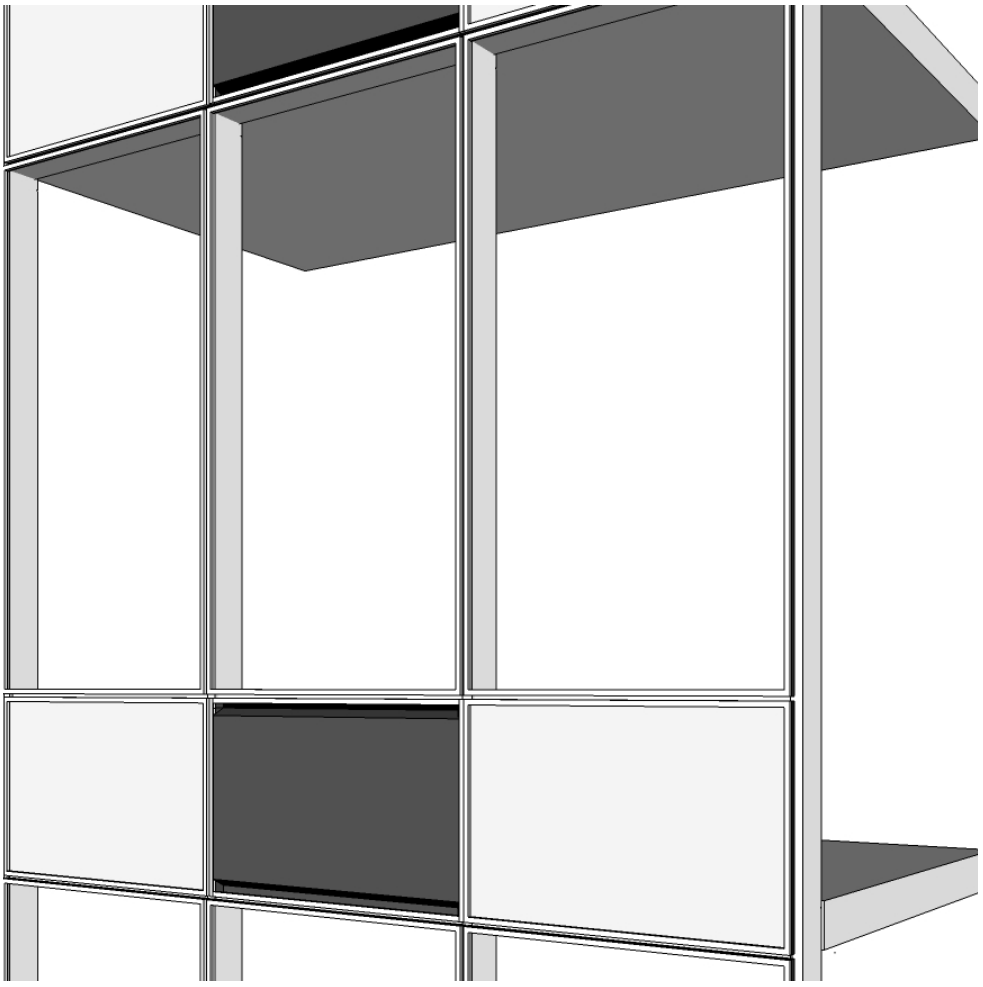
AirFlow™ Panels
CW-Series

Envelope Panel with
Integral Energy Recovery Ventilation

Technical, Installation, Operations, and Maintenance Manual



Contents

General Safety Information

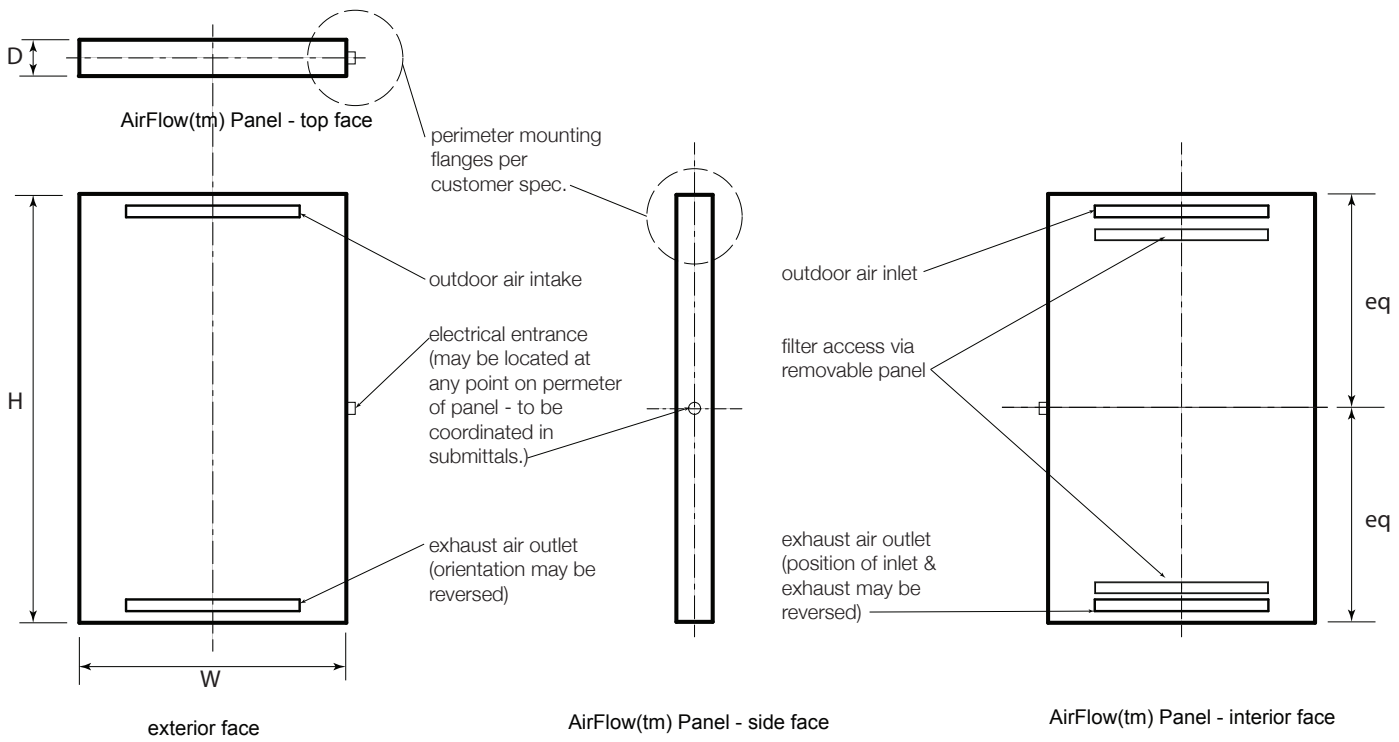
Only qualified personnel should install this system. Personnel should have a clear understanding of these instructions and should be aware of general safety precautions. Improper installation can result in electric shock, possible injury due to coming in contact with moving parts, as well as other potential hazards. Other considerations may be required if high winds or seismic activity are present. If more information is needed, contact a licensed professional engineer before moving forward.

! DANGER !

Always disconnect power before working on or near this equipment. Lock and tag the disconnect switch or breaker to prevent accidental power up.

1. Follow all local electrical and safety codes as well as the National Electric Code (NEC), the National Fire Protection Agency (NFPA) where applicable.
2. All moving parts must be free to rotate without striking or rubbing any stationary objects.
3. Unit must be securely and adequately grounded (earthed).
4. Do not spin fans faster than maximum cataloged fan RPM. Adjustments to fan speed significantly effect motor load. If the fan RPM is changed, the motor current should be checked to make sure it is not exceeding the motor nameplate amps.
5. Do not allow the power cables to kink or come in contact with oil, grease, hot surfaces or chemicals. Replace cord immediately if damaged.
6. Verify that the power source is compatible with the equipment.
7. Never attempt to access the unit while fans are running.

Technical Specifications



DIMENSIONS	min.	max.
W	62"	168"
H	38"	72"
D	11"	18"

FINISH OPTIONS	
	galvanized steel (as substrate for surface veneer)
	painted metal (as finished surface)

Technical Specifications

Energy Exchange System..... Proprietary engineered enthalpic exchanger core.

Dampers..... Barometric backflow prevention

Defrost..... Passive frost-free operation under most conditions.

Access..... Removable filter access covers on interior face. Removable rear housing to provide access to exchanger core and fans.

Duct Connections..... None required

Insulation..... Continuous insulation throughout

Fans..... 84W, single phase, electronically commutated

Filters..... Supply: MERV13 (Class F7) | Return: MERV 8

Electrical..... 120 V, 60 Hz, single-phase

Controls..... 2 fan (4 wire) 24 VDC relays for 3 operational modes

Mounting..... Compatible with window, curtainwall, storefront, SIP and other exterior wall systems

Warranty.....Limited 3-year coverage on parts

Operational Parameters

Supply Air Flow..... 200 cfm

Exhaust Air Flow..... 200 cfm

Effective R-value..... R12-R15 depending on operating conditions

Power Consumption..... 135 W

Performance Data

Off-panel Supply Air Conditions:

Outdoor Air Humidity Ratio [lb/lb]

Outdoor Air Temperature [F]

Temperature [F] / Humidity Ratio [lb/lb] / RH [%]	0.0017	0.0043	0.0069	0.0095	0.0121	0.0147	0.0173	0.0199	0.0225	0.0251	0.0277
30	67.5 0.0081 56%	67.5 0.0087 61%	67.5 0.0094 65%	67.5 0.0100 70%	67.5 0.0107 74%	67.5 0.0113 78%	67.5 0.0119 83%	67.5 0.0126 87%	67.5 0.0132 91%	67.5 0.0139 96%	67.5 0.0145 100%
35	68.4 0.0081 55%	68.4 0.0087 59%	68.4 0.0094 63%	68.4 0.0100 68%	68.4 0.0107 72%	68.4 0.0113 76%	68.4 0.0119 80%	68.4 0.0126 85%	68.4 0.0132 89%	68.4 0.0139 93%	68.4 0.0145 97%
40	69.2 0.0081 53%	69.2 0.0087 57%	69.2 0.0094 62%	69.2 0.0100 66%	69.2 0.0107 70%	69.2 0.0113 74%	69.2 0.0119 78%	69.2 0.0126 82%	69.2 0.0132 86%	69.2 0.0139 90%	69.2 0.0145 94%
45	70.0 0.0081 52%	70.0 0.0087 56%	70.0 0.0094 60%	70.0 0.0100 64%	70.0 0.0107 68%	70.0 0.0113 72%	70.0 0.0119 76%	70.0 0.0126 80%	70.0 0.0132 84%	70.0 0.0139 88%	70.0 0.0145 92%
50	70.9 0.0081 50%	70.9 0.0087 54%	70.9 0.0094 58%	70.9 0.0100 62%	70.9 0.0107 66%	70.9 0.0113 70%	70.9 0.0119 74%	70.9 0.0126 78%	70.9 0.0132 81%	70.9 0.0139 85%	70.9 0.0145 89%
55	71.7 0.0081 49%	71.7 0.0087 53%	71.7 0.0094 57%	71.7 0.0100 60%	71.7 0.0107 64%	71.7 0.0113 68%	71.7 0.0119 72%	71.7 0.0126 75%	71.7 0.0132 79%	71.7 0.0139 83%	71.7 0.0145 87%
60	72.5 0.0081 48%	72.5 0.0087 51%	72.5 0.0094 55%	72.5 0.0100 59%	72.5 0.0107 62%	72.5 0.0113 66%	72.5 0.0119 70%	72.5 0.0126 73%	72.5 0.0132 77%	72.5 0.0139 81%	72.5 0.0145 84%
65	73.3 0.0081 46%	73.3 0.0087 50%	73.3 0.0094 54%	73.3 0.0100 57%	73.3 0.0107 61%	73.3 0.0113 64%	73.3 0.0119 68%	73.3 0.0126 71%	73.3 0.0132 75%	73.3 0.0139 78%	73.3 0.0145 82%
70	74.2 0.0081 45%	74.2 0.0087 49%	74.2 0.0094 52%	74.2 0.0100 56%	74.2 0.0107 59%	74.2 0.0113 62%	74.2 0.0119 66%	74.2 0.0126 69%	74.2 0.0132 73%	74.2 0.0139 76%	74.2 0.0145 80%
75	75.0 0.0081 44%	75.0 0.0087 47%	75.0 0.0094 51%	75.0 0.0100 54%	75.0 0.0107 57%	75.0 0.0113 61%	75.0 0.0119 64%	75.0 0.0126 68%	75.0 0.0132 71%	75.0 0.0139 74%	75.0 0.0145 78%
80	75.8 0.0081 43%	75.8 0.0087 46%	75.8 0.0094 49%	75.8 0.0100 53%	75.8 0.0107 56%	75.8 0.0113 59%	75.8 0.0119 62%	75.8 0.0126 66%	75.8 0.0132 69%	75.8 0.0139 72%	75.8 0.0145 75%
85	76.7 0.0081 41%	76.7 0.0087 45%	76.7 0.0094 48%	76.7 0.0100 51%	76.7 0.0107 54%	76.7 0.0113 57%	76.7 0.0119 61%	76.7 0.0126 64%	76.7 0.0132 67%	76.7 0.0139 70%	76.7 0.0145 73%
90	77.5 0.0081 40%	77.5 0.0087 43%	77.5 0.0094 47%	77.5 0.0100 50%	77.5 0.0107 53%	77.5 0.0113 56%	77.5 0.0119 59%	77.5 0.0126 62%	77.5 0.0132 65%	77.5 0.0139 68%	77.5 0.0145 71%
95	78.3 0.0081 40%	78.3 0.0087 43%	78.3 0.0094 47%	78.3 0.0100 50%	78.3 0.0107 53%	78.3 0.0113 56%	78.3 0.0119 59%	78.3 0.0126 62%	78.3 0.0132 65%	78.3 0.0139 68%	78.3 0.0145 71%
100	79.2 0.0081 38%	79.2 0.0087 41%	79.2 0.0094 44%	79.2 0.0100 47%	79.2 0.0107 50%	79.2 0.0113 53%	79.2 0.0119 56%	79.2 0.0126 59%	79.2 0.0132 62%	79.2 0.0139 65%	79.2 0.0145 68%

legend

Return Air Conditions:

T = 75 F
RH = 55%

Installation

Installing the AirFlow™ Panel

The AirFlow™ Panel is available with a range of perimeter flange types to enable installation within any standard window, curtainwall, storefront or other glazing system. The flange can be specified to the desired thickness and depth to suit the glazing bite of the framing system. (Figure 3)

The product may also be installed in masonry, wood-framed or SIP walls via an inboard or outboard continuous perimeter face flange. (Figure 4)

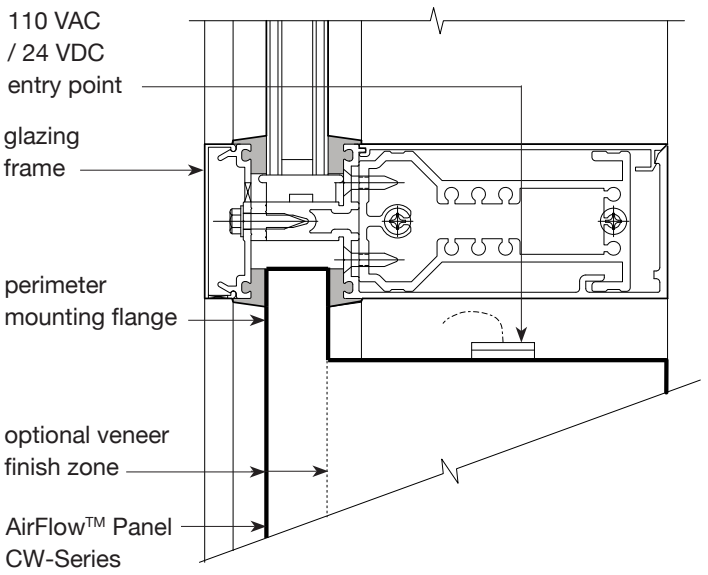


Figure 3 - Glazing Frame Installation Detail

Electrical Connection

The AirFlow™ Panel requires a 120 V, 60 Hz, single phase supply to a NEMA-rated connection point located on a lateral face of the panel. The perimeter gap around the panel can serve as a cable pathway. (see Figures 3,4).

Control Connection

The AirFlow™ Panel operates in three distinct modes; On, Off, and Bypass. Operational modes are controlled by a 4-wire, 24 VDC connection to two relays located adjacent to the electrical entry point. The operational signal is generated external to the panel within the logic of a central controlsystem or elsewhere, and sent to the panels. HVAC system designer is free to determine the source of the signal controlling operational modes, such as occupancy, CO2 level, or other.

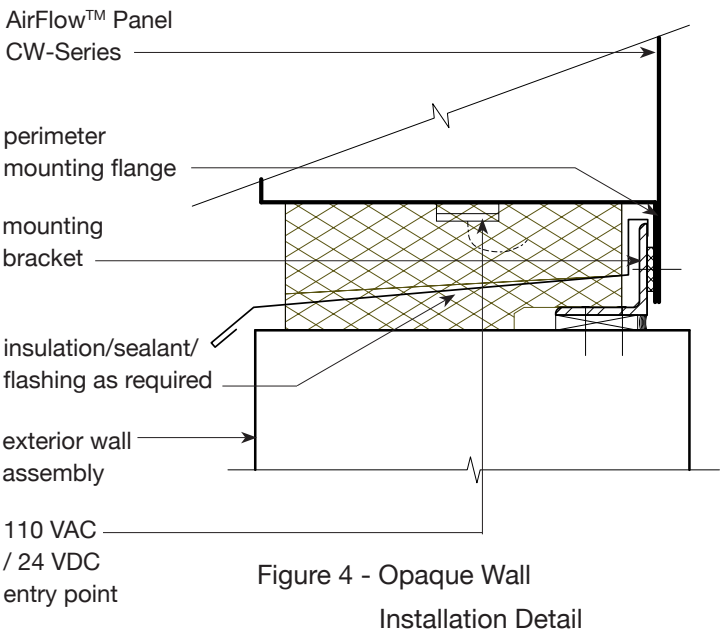


Figure 4 - Opaque Wall Installation Detail

Operation & Maintenance

In order to insure optimal performance, maintain AirFlow CW-Series Panels as described below:

! WARNING !

Risk of Electric Shock or Injury

Before servicing or cleaning he unit, unplug the unit line cord.

Make sure the unit is not running before opening the housing.

Filters:

Supply Air (MERV13) and Exhaust Air (MERV 8) filters should be changed at intervals of 6 months or more frequnetly, depending on the quality of local ambient air. The filters are readily accessibly via removable cover plates on in the inteior face of the AirFlow™ Panel.

Fans:

AirFlow™ Panel fans are durable and reliable, with one of the longest rated service livesavailable. No regular maintenance is required. Access for fan replacement, should the need arise, is possible via the removable inner face of the panel.

Exchanger Core:

The AirFlow™ Panel exhanger core is an inert, plastic, water washable, antimicrobial component. No maintenance is required, but the core is accessible via the removable inner face of the panel.

Condensation and Drainage

The energy exchanger core within the AirFlow RS-Series panel uses an air-to-air non-condensing technology. Water vapor is transferred between air streams via a mechanism of adsorption of the water vapor onto the membrane, diffusion of the water vapor through the membrane, and desorption of the water vapor into the opposing air stream. The moisture remains in vapor form, and no condensation occurs as a part of the exchange.

Under certain ambient conditions, some degree of condensation may occur naturally. The AirFlow Panel is designed to drain this water to the panel exteriror Due to its vertical orientation witin the wall assembly, standing water will not remain within the device. No external drain point is needed.

AirFlow™ Panels

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