X-VENTISO by earthcore

SUBMITTAL DATA

VMASS MAKEUP AIR

XV-VMASS · Modulating makeup air, 25 to 400 CFM, 6 in. duct

PROJECT INFORMATION

Project _____ **Location** _____

Contractor _____ **Engineer / Architect** _____

Submitted by _____ **Date** _____

MODEL SELECTION (CHECK AS SUPPLIED)

	PART NUMBER	DESCRIPTION	AIRFLOW	POWER	QTY	TAG(S)
☐	**XV-VMASS**	Filter box with backdraft damper, fan with controller, 2.0 kW duct heater	25 to 400 CFM	Dedicated 20 A		
☐	**XV-VMASS-HTR**	Second 2.0 kW heater with probe (option, cold climates)		Own 20 A circuit		

One VMASS per zone: the rooms that share air with no closed door between them, however many exhaust devices are in it. A zone whose combined exhaust could exceed one unit takes a second unit. Send plans to plans@x-ventiso.com for the zone count.

DESCRIPTION

Supplies makeup air for the exhaust in a zone. VMASS measures the pressure difference between the room it serves and the outdoors and adjusts its fan to hold the zone at neutral, within ±0.02 in. w.c. (±5 Pa). It responds to the pressure itself, whatever caused it: a range hood, a dryer, bath fans, a vented appliance. Nothing to program. A makeup air system, not a whole-house ventilation system.

SEQUENCE OF OPERATION

1. Enabled: as shipped, the enable wires are joined in a lever nut, so VMASS runs whenever it is plugged in. Or a switch, dry contact or XV-INTG.
2. Runs a continuous 25 CFM baseline, under 15 FPM at the diffuser.
3. Exhaust pulls the zone negative: VMASS ramps to match, up to 400 CFM, then back to baseline as it clears.
4. The heater runs only with the fan and holds its dial setting (61 to 90°F) as capacity allows.
5. Off: the backdraft damper springs closed. Through XV-INTG, VMASS purges for 20 seconds after the call.

KEY DATA

Airflow	25 CFM baseline, modulating to 400 CFM. Delivered maximum depends on duct static pressure
Pressure control	Closed loop, indoor vs. outdoor, to neutral within ±0.02 in. w.c. Not field programmable
Pressure sensing	Outdoor probe and indoor wall-plate pickup, 20 ft tubing each, in the box
Duct	6 in. round, supply and intake
Filter	10 x 10 x 1 in. MERV 8
Backdraft damper	6 in., spring closed, any orientation
Heater	2.0 kW, 16.7 A. 61 to 90°F set point. Zero clearance to combustibles. Manual-reset high limit
Electrical	120 VAC, 60 Hz. Fan and controller 1.9 A; heater 16.7 A
Power	Fan: NEMA 5-15P, 8 ft. Heater: NEMA 5-20P, 6 ft. One dedicated 20 A circuit, 5-20R
Enable	Dry contact only: lever nut (as shipped), switch, remote contact or XV-INTG
BAS	Optional BACnet/IP (XV-BACnet INTF) or Modbus RTU. Read only, plus on / off
Code basis	Makeup air for kitchen exhaust over 400 CFM (IRC M1503, IMC 505) and against depressurization of vented appliances

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PRODUCT VIEWS AND DIMENSIONS



Fan + controller



Indoor pickup



Outdoor probe

COMPONENT	LENGTH	WIDTH	DEPTH	WEIGHT
Filter box + backdraft damper	19-1/2	11	10-1/16	1.9 lb
Fan + controller	16-3/16	11-1/2	8-3/8	11.9 lb
Duct heater, 2.0 kW	15	12-1/2	8 on its side	10.9 lb

Inches, from drawing VMASS-400-SPEC (PDF and DWG); lengths include collars. Linked by 6 in. duct in airflow order: filter box, fan, heater. Heater on its side, a level run needs about 10-1/8 in.: fits 2x12 and 11-7/8 in. I-joists.

SYSTEM (CHECK AS SUPPLIED)

Option

☐ XV-VMASS-HTR second heater

Enable

☐ Lever nut ☐ Wall switch ☐ Dry contact
☐ XV-INTG

Building automation

☐ None ☐ BACnet/IP ☐ Modbus RTU

By the installer

☐ 6 in. duct ☐ Supply diffuser ☐ Access panels
☐ 20 A circuit

CONSTRUCTION AND LISTING

Placement	Joist cavity, dry crawlspace or basement, sealed attic, soffit or built chase. Never outdoors, garage or vented attic
Space temp.	0 to 120°F year-round. Below -13°F design: cold-climate order
Enclosure	Controller NEMA 1, indoor, dry. Fan IP44
Warranty	2 years, with a documented annual inspection
Controller	UL 508, UL/ULC 378. ETL Listed, Intertek 4007025
Fan	UL Listed
Duct heater	cETLus, UL 1996 / CSA C22.2 No. 155

INSTALLATION NOTES

1. Install per XV-IM-VMASS. Indoor, dry locations; every component accessible for service.
2. Outdoor air only: never a garage, attic, crawlspace or another dwelling unit. Intake hood 10 ft from contaminant sources (or 3 ft below).
3. 36 in. of straight duct each side of the heater; heater probe 36 in. downstream. Heater always downstream of the fan.
4. Indoor pickup in open wall in the zone, clear of doors, windows and the diffuser. Rigid or metal tubing over 20 ft.
5. Dedicated 20 A circuit, nothing else on it; second heater on its own. No extension cords or adapters.
6. Where code calls for makeup air interlocked with a specific exhaust device, confirm with the AHJ how pressure-sensed operation is accepted, or use an enable connection from that device.
7. Filter at every HVAC filter change. Codes are adopted and amended locally, and the authority having jurisdiction makes the final call on every installation. Specifications subject to change.

ENGINEER / ARCHITECT REVIEW

☐ No exceptions taken
☐ Make corrections noted
☐ Revise and resubmit
☐ Rejected

Reviewed by _____

Date _____

REMARKS