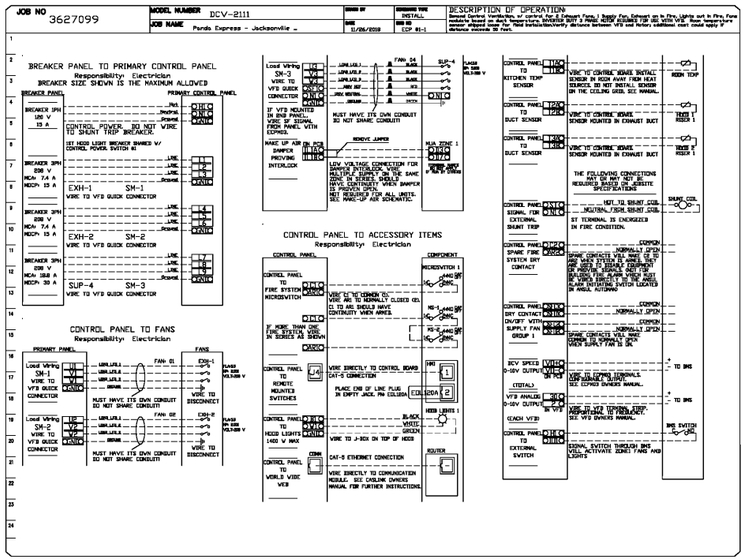
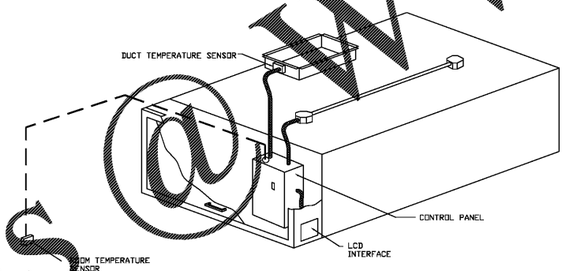
ELECTRICAL PACKAGE – Job#3627099

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	Φ	H.P.	VOLT	FLA
1		DCV-2111	Wall Utility Cabinet Left	08 – Ship Loose w/ Prewire	1 Light 1 Fan	Smart Controls DCV	Exhaust	3	2.000	208	5.9
							Exhaust	3	2.000	208	5.9
							Supply	3	5.000	208	15.0



Demand Control Ventilation Hood Control Panel Specifications:

- Controls shall be listed by ETL (UL 508A) and shall comply with demand ventilation system turndown requirements outlined in IECC 403.2.8 (2015).
- The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.
- Temperature probe(s) located in the exhaust duct riser(s) shall be constructed of stainless steel.
- A digital controller shall be provided to activate the hood exhaust fans dynamically based on a fixed differential between the ambient and duct temperatures sensors. This function shall meet the requirements of IMC 507.1.1.
- A digital controller shall provide adjustable hysteresis settings to prevent cycling of the fans after the cooking appliances have been turned off and/or the heat in the exhaust system is reduced.
- A digital controller shall provide an adjustable minimum fan run-time setting to prevent fan cycling.
- Variable Frequency Drives (VFDs) shall be provided for fans as required. The digital controller shall modulate the VFDs between a minimum setpoint and a maximum setpoint on demand. The duct temperature sensor input(s) to the digital controller shall be used to calculate the speed reference signal.
- The VFD speed range of operation shall be from 0% to 100% for the system, with the actual minimum speed set as required to meet minimum ventilation requirements.
- An internal algorithm to the digital controller shall modulate supply fan VFD speed proportional to all exhaust fans that are located in the same fan group as the supply fan.
- The system shall operate in PREP MODE during light cooking and/or COOL DOWN MODE when sufficient heat remains underneath the hood system after cooking operations have completed. Operation during either of these periods will disable the supply fans and provide an exhaust fan speed that is equal to the minimum ventilation requirement.
- A digital controller shall disable the supply fan(s), activate the exhaust fan(s), activate the appliance shunt trips and disable the electric gas valve automatically when fire condition is detected on a covered hood.
- A digital controller shall allow for external BMS on/off control via Dry Contact (external control shall not override any operation logic as required by code).
- An LCD interface shall be provided with the following features:
  a. On/Off push button fan & light switch activation
  b. Integrated gas valve reset for electronic gas valves (no reset relay required)
  c. Clear Fault display with audible & visual alarm notification
  d. Duct temperature sensor failure detection with audible & visual alarm notification
  e. Misplaced duct temperature sensor detection with audible & visual alarm notification
  f. A simple low voltage Cat-5 RJ45 wiring connection
  g. An energy savings indicator that utilizes measured kWh from the VFDs

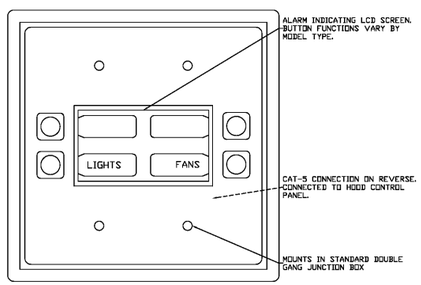


TYPICAL HOOD CONTROL PANEL INSTALLATION

Sequence of Operations:

The hood control panel is capable of operating in one or more of the following states at any given time:

- Automatic: The system operates based on the differential between room temperature and the temperature at the hood cavity or exhaust duct collar. Fans activate at a configurable temperature differential threshold. Depending on the job configuration each fan zone can be configured as static or dynamic. These terms refer to whether a variable motor (such as EC Motors or VFD driven motors) modulate with temperature. If the panel is equipped with variable speed fans and the zone is defined as 'dynamic', these will modulate within a user-defined range based on the temperature differential. Panels equipped with variable speed fans and a fan zone defined as 'static', fans will run at a set speed calculated for the drive. Demand control ventilation systems are capable of modulating exhaust and make up air fan speeds per the requirements outlined in IECC 403.2.8.
- Manual: The system operates based on human input from an HMI.
- Scheduled: A weekly schedule can be set to run fans for a specified period throughout the day. There are three occupied times per day to allow for the user to set up a time that is suitable to their needs. Any time that is within the defined occupied time, the system will run at modulation mode and follow the fan procedure algorithm based on temperature during this time. During unoccupied time, the system will have an extra offset to prevent unintended activation of the system during a time where the system is not being occupied.
- Other: The system operates based on the input from an external source (DDC, BMS or hard-wired interlock)



NOTE: UNLESS OTHERWISE STATED, PANDA RESTAURANT GROUP SHALL PROVIDE ALL EQUIPMENT ON THE FOLLOWING CAPTIVEAIRE SHEETS, INCLUDING: HOODS, FIRE SYTEM, EXHAUST FANS, SUPPLY FAN, BATHROOM FAN AND ELECTRICAL INTERLOCK PACKAGE

ANSUL GAS VALVE:

THE ANSUL GAS VALVE IS PROVIDED BY CAPTIVEAIRE SYSTEMS. CONTACT OUR OFFICE WITH THE VALVE SIZE 3 DAYS IN ADVANCE OF WHEN IT IS NEEDED ON SITE.

FOR QUESTIONS CALL THE CAPTIVEAIRE SOUTHERN CALIFORNIA OFFICE
STONE MILL DESIGN CENTER
2915 RED HILL AVE, SUITE C106
COSTA MESA, CA 92626
TEL: 800-967-7701 EMAIL: REG86@CAPTIVEAIRE.COM

Online Plans @ WWW.IDILine.com

REVISIONS

	DESCRIPTION	DATE:
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△		
△		
△		

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REVISIONS:

ISSUE DATE:

1	ISSUED FOR BID & PERMIT	12-11-18
2	BID SET	01-30-19

DRAWN BY: SJM

PANDA PROJECT #: S8-19-D6573
ARCH PROJECT #: P7336

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1/29/2019

PANDA EXPRESS

WARM & WELCOME 2200
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M-404

HOOD DETAIL PLAN

TRUE WARM & WELCOME 2200