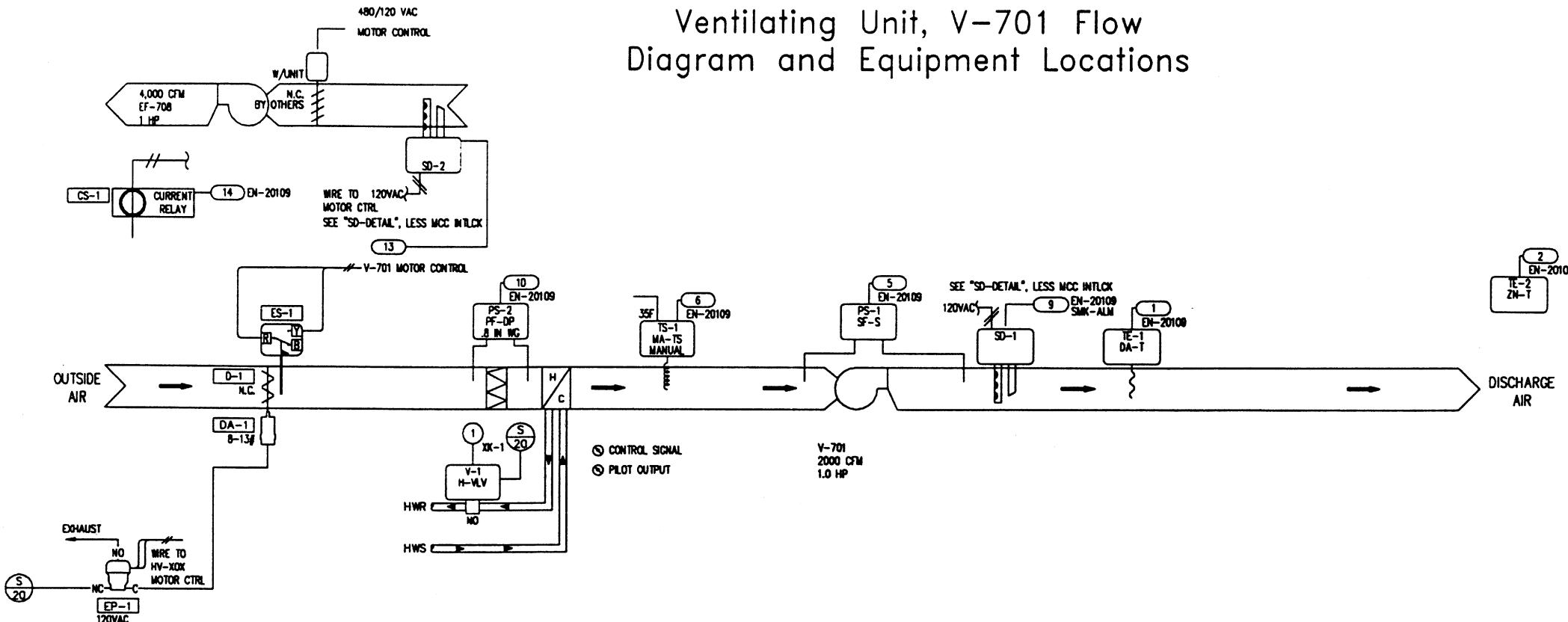


Ventilating Unit, V-701 Flow Diagram and Equipment Locations



Sequence Of Operations

SYSTEM: 100 Percent Outside Air Constant Volume Air Handling Unit
V-701

CONFIGURATION: Supply air temperature reset from zone temperature

Discharge Air Temperature Setpoint

The building operating engineer will set the discharge air temperature by adjusting the discharge air setpoint from any ICS terminal. The digital controller will modulate controlled devices as described below to maintain a fan discharge temperature of 65 F. (adjustable at any ICS terminal)

Discharge Temperature Loop

The discharge cooling deadband is added to the discharge air setpoint. This value establishes the point at which mechanical cooling begins when the controller uses proportional only control. The digital controller will continually adjust the heating command according to the controller's result of the proportional-integral heating loop calculation. The digital controller will modulate the heating control valve, V-1, until the discharge air temperature equals the setpoint. The controller will provide an output between 0 and 100 percent as the discharge air temperature travels through the proportional bands.

Fans' Status

Sensitive differential pressure switches, PS-1(supply fan) and PS-2(exhaust fan) will close upon air flow being present, this will set Fan status ON. The digital AHU controller switch to normal control.

Fan failure will be set if the binary feed back does not match the start/stop command or the discharge flow rate drops below 85 percent of the fan's design capacity.

Power Fail Restart

The power fail restart will delay the startup of the digital controller for 1 minute(adjustable at the operator workstation) after a power failure for controller reset condition. This logic will hold the controller in the shutdown mode until the restart timer has expired.

Electric low limit

Heating discharge low limit temperature switch, TS-1 will stop the supply fan, close the mixed air dampers and the AHU digital controller will issue an alarm to the ICS network in the event that the heating discharge temperature drops below 35 F. (Adj.)

In the event that supply/exhaust smoke detectors, SD-1 and SD-2 sense smoke, the ASC controller will issue and alarm to the ICS network.

Mixed air filter alarm

The mixed air filter condition will be monitored by differential pressure switch, PS-2. The switch will close in the event that the pressure drop exceeds .8 inches WG(adjustable) and an alarm will be sent to the ICS network, 'Dirty Mixed air Filter'.

Exhaust Control

The exhaust fan is interlocked in the following manner:
EF-708 w/ V-701

In the event that the respective supply fan fails, as sensed by sensitive differential pressure switches, PS-1 and PS-2, or analog air flow measuring stations, the digital controller will stop the associated exhaust fan.

The following point objects will be adjustable from any ICS terminal:

- Discharge air setpoint
- Heating lockout setpoint
- User start/stop time

The following objects will be monitored/alarmed at an ICS terminal:

- Fan Discharge Air Temperature
- Filter Status
- Supply Fan Status
- Exhaust Fan Status, EF-708
- Smoke Detectors' Status
- Supply Air Flow Rate
- Exhaust Air Flow Rate

Loss of Air Flow

Upon loss of air flow as determined by sensitive differential pressure switch, PS-1 and the controlled devices will be commanded to the following states:

- Heating valve, V-1 will remain under control.
- Outside air temperature will be shared through the ICS network.

FIELD MATERIAL			
DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
ACC	2	G-2010-5	AIR GAGE 1-1/2"
D-1	—	—	SEE DAMPER SCHEDULE
DA-1	—	—	SEE DAMPER SCHEDULE
EP-1	1	V-2410-2	VALVE, SOL.AIR, 3-WAY
ES-1	1	802T-CVP	END SWITHC-A/B
TE-2	1	TE-6000-4	RTD
	1	T-4000-2139	COVER
PS-1	1	TE-6001-4	SEE DAMPER SCHEDULE
	1	P32AF-2C	DUCT DETECTOR, ION.
SD-1,SD-2	2	FTG18A-600R	DUCT DETECTOR, REMOTE MTD PROBE
	2	RTS-451	RESET/TEST
TE-1	1	TE-6100-1	TEMP SENSING ELEMENT 17'
TS-1	1	A70HA-1C	TEMP CONTROL, 4 WIRE, 2-C
V-1	1	—	SEE VALVE SCHEDULE
CS-1	1	702-HD	CURRENT SWITCH
V-2	1	—	SEE VALVE SCHEDULE
TE-3	1	TE-6000-4	SENSOR, 1000 OHM +/- .25%
TE-3	1	TE-6000-3	PACKING NUT & FTG.S
PS-2	1	V-2100-2	STAINLESS STELL VELL, 1/2"
R-1	1	P74FA-SC	DIFFERENTIAL PRES CONTROL
PD-1	1	HG46A1	ALLEN BRADLEY RELAY-ALLEN BRADLEY
	1	BZ-1000-6	ENCLOSURE 8-1/4"X6-1/4"X3-5/8"

ANY MATERIAL WITH A (P) PRECEDING THE DEVICE TAG IS CONSIDERED PROPRIETARY EQUIPMENT AND IS BEING SUPPLIED BY JOHNSON CONTROLS, INC. ALL OTHER MATERIAL IS NON-PROPRIETARY EQUIPMENT.

Motor Control

