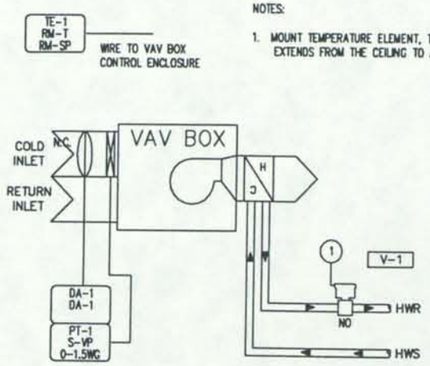
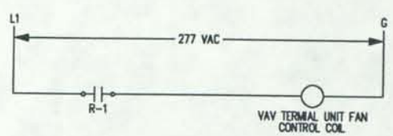
Digital ASCs Serving Series fan VAV Terminal Units

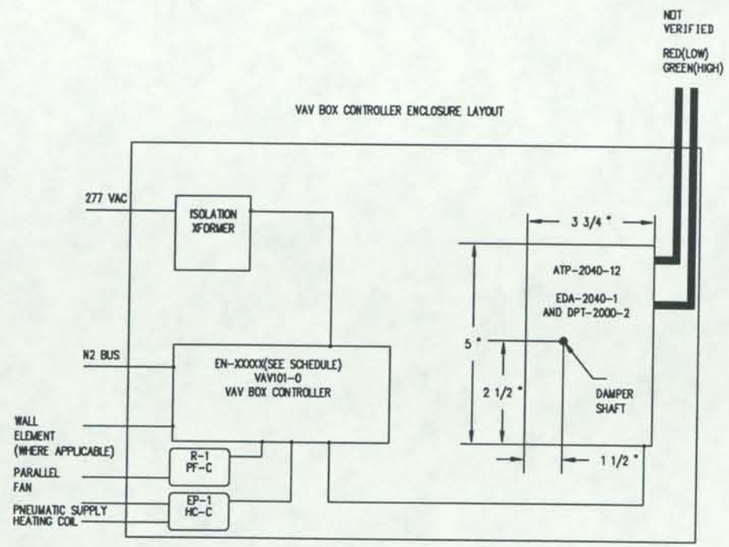
NOTES:

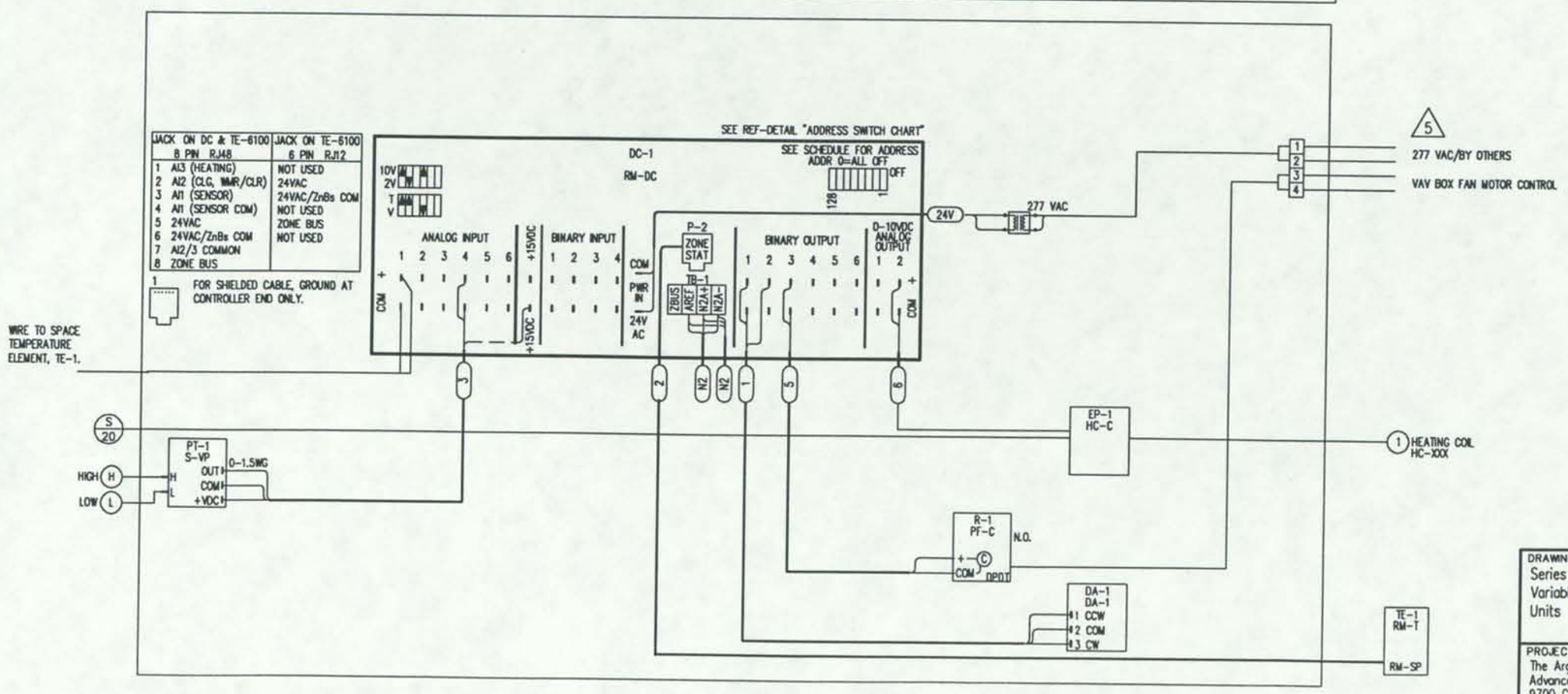
1. MOUNT TEMPERATURE ELEMENT, TE-1 ON A RIGID CONDUIT SECTION THAT EXTENDS FROM THE CEILING TO A POINT SEVEN FEET FROM THE FLOOR LEVEL.



Motor Control







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PANEL MATERIAL

	DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
(P)	ACC	284	PD-113-3	TERMINAL BLOCK; MEDIUM
(P)	DC-1	71	AS-VAV101-0	DIGITAL ASC VAV CONTROLLER
(P)	DA-1	71	ATP-2040-12	ACTUATOR/TRANSMITTER PACKAGE
(P)	R-1	71	RH4(24VAC)	4PDT 24 VAC RELAY WITH LIGHT-IDEK
(P)	ACC	71	RH4B	RELAY BASE-IDEK
(P)	EP-1	71	EP-8000-2	E/P TRANSDUCER

FIELD MATERIAL

DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
TE-1	71	TE-6001-4	MOUNTING HARDWARE
	71	T-4000-2139	COVER
	71	TEP-L000000	TEMP ELEMENT, PT, 1000 OHM, PROBE
V-1	71	-----	SEE VALVE SCHEDULE

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

Room/Enclosure Schedule

Assoc Air Handler	Associated VAV Box Tag	ICS Tag for VAV Box Controller/Enclosure	JCI HVACPRO Conf. File Name	Htg Coil
AHU-501	FP-5011-5014	EN-40151-40160	E_10_FP1.VAC	Yes
AHU-502	FP-5025-5028	EN-40161-40170	E_10_FP1.VAC	Yes
AHU-503	FP-5039-5042	EN-41151-40160	E_10_FP1.VAC	Yes
AHU-504	FP-5053-5056	EN-41161-41170	E_10_FP1.VAC	Yes
AHU-505	FP-5067-5070	EN-42151-41160	E_10_FP1.VAC	Yes
AHU-506	FP-5081-5084	EN-42161-41170	E_10_FP1.VAC	Yes
AHU-507	FP-5095-5098	EN-43151-43160	E_10_FP1.VAC	Yes
AHU-508	FP-5109-5112	EN-43161-43170	E_10_FP1.VAC	Yes
AHU-509	FP-5123-5126	EN-44151-44160	E_10_FP1.VAC	Yes
AHU-510	FP-5137-5140	EN-44161-44170	E_10_FP1.VAC	Yes
AHU-511	FP-5151-5154	EN-45151-43160	E_10_FP1.VAC	Yes
AHU-512	FP-5165-5168	EN-45161-45170	E_10_FP1.VAC	Yes
AHU-513	FP-5179-5182	EN-46151-46160	E_10_FP1.VAC	Yes
AHU-514	FP-5193-5196	EN-46161-46170	E_10_FP1.VAC	Yes
AHU-515	FP-5207-5210	EN-47151-47160	E_10_FP1.VAC	Yes
AHU-516	FP-5221-5224	EN-47161-47170	E_10_FP1.VAC	Yes
AHU-517	FP-5235-5238	EN-48151-48160	E_10_FP1.VAC	Yes
AHU-518	FP-5249-5252	EN-48161-48170	E_10_FP1.VAC	Yes

Sequence of Operations

OCCUPIED MODE:

THE DIGITAL CONTROLLER WILL MODULATE VAV TERMINAL UNIT DAMPER, DA-1 TO MAINTAIN A FLOW SETPOINT ACCORDING TO THE ASC CONFIGURATION FILE INDICATED ON THE ENCLOSURE/ROOM SCHEDULE. THE FLOW SETPOINT WILL BE CALCULATED TO MAINTAIN OCCUPIED HEATING/COOLING MINIMUM AND MAXIMUM FLOW RATES AS THE SPACE TEMPERATURE TRAVELS THROUGH THE HEATING AND COOLING PROPORTIONAL BANDS. THE CONTROLLER WILL PROVIDE A PROPROTIONAL PNEUMATIC OUTPUT TO MODULATE ZONE HEATING COIL CONTROL VALVE, V-X INSIDE THE HEATING PROPORTIONAL BAND. BOTH CONTROLLED DEVICES, DA-1 AND V-X WILL BE MODULATED IN SEQUENCE TO MAINTAIN AN ACTUAL HEATING/COOLING SETPOINT OF 72 F. THE ACTUAL TEMPERATURE SETPOINT CAN BE ADJUSTED FROM ANY ICS TERMINAL. THE SERIES FAN WILL RUN CONSTANTLY IN THE OCCUPIED MODE.

UNOCCUPIED MODE:

THE DIGITAL CONTROLLER WILL MODULATE VAV TERMINAL UNIT DAMPER, DA-1 TO MAINTAIN A FLOW SETPOINT ACCORDING TO THE CONFIGURATION FILE. THE FLOW SETPOINT WILL BE CALCULATED TO MAINTAIN UNOCCUPIED HEATING/COOLING MINIMUM AND MAXIMUM FLOW RATES AS THE SPACE TEMPERATURE TRAVELS THROUGH THE HEATING AND COOLING PROPORTIONAL BANDS. BOTH CONTROLLED DEVICES, DA-1 AND V-X WILL BE MODULATED IN SEQUENCE TO MAINTAIN AN UNOCCUPIED SPACE TEMPERATURE SETPOINT AS DEFINED IN THE ASC CONFIGURATION FILE. THE UNOCCUPIED TEMPERATURE SETPOINT IS ADJUSTABLE FROM ANY ICS OPERATOR WORKSTATION. THE SERIES BOX FAN WILL BE CYCLED PER THE BOX UNOCCUPIED HEATING TEMPERATURE SETPOINT.

DRAWING TITLE
Series Fan with Reheat
Variable Air Volume Terminal
Units

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
	5	GENERAL		11/10/92	SF
	4	GENERAL		09/28/92	SF
	3	GENERAL		08/02/92	SF

SALES ENGR	PROJECT MGR	APPL. ENGR	DRAWN		APPROVED	
DB	SP	SF	BY SF	DATE 02/12/92	BY	DATE

FILE: 400_RVAV

PROJECT
The Argonne National Labs
Advanced Photon Source Campus
9700 Cass Avenue South
Argonne, IL 60439

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ILLINOIS 60005
708/364-1500 Main
708/806-4438 Eng

CONTRACT NUMBER 91390-0009

DRAWING NUMBER 91-9-E-03E