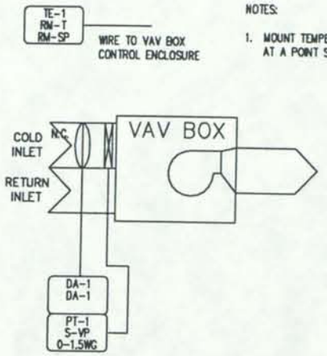
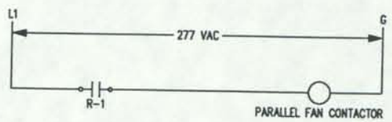
Digital ASCs Serving Series Fan VAV Terminal Units

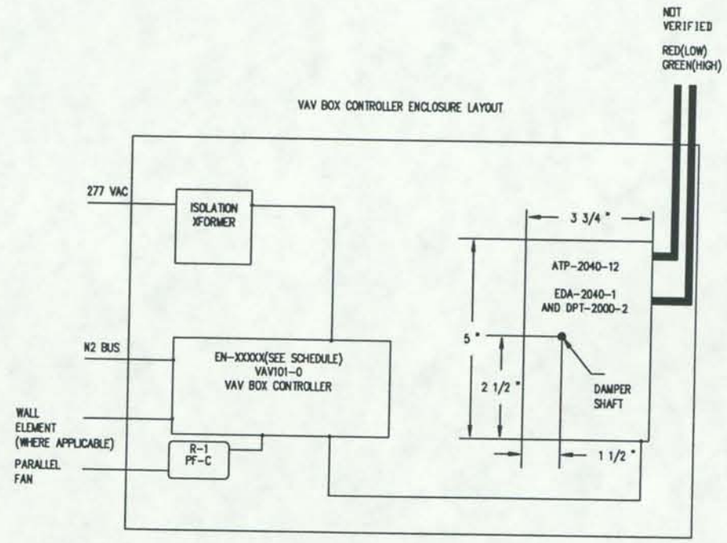


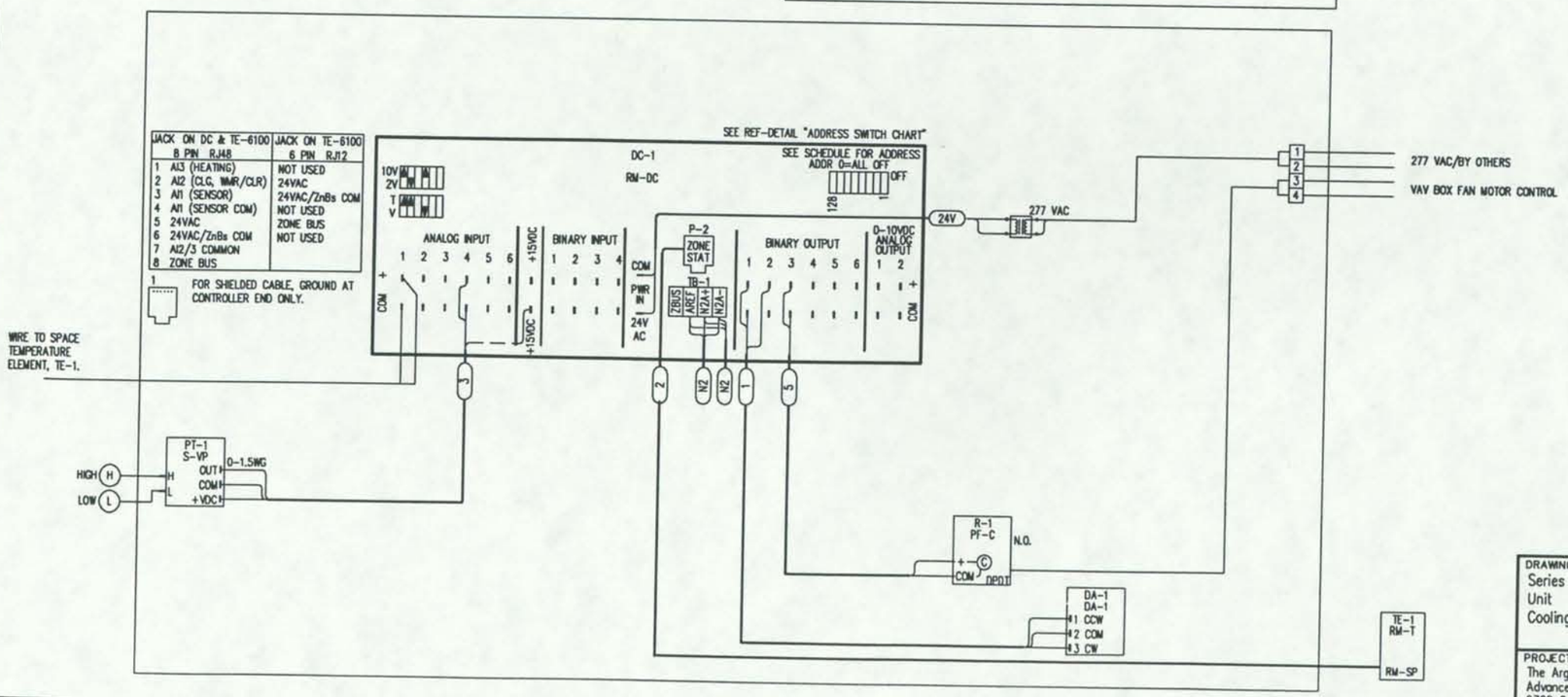
NOTES:

1. MOUNT TEMPERATURE ELEMENT, TE-1 ON A SECTION OF RIGID CONDUIT AT A POINT SO THAT THE ELEMENT IS SEVEN FEET FROM THE FLOOR.

Motor Control







COPYRIGHT JOHNSON CONTROLS, INC.1991

PANEL MATERIAL

	DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
(P)	ACC	712	PD-113-3	TERMINAL BLOCK; MEDIUM
(P)	DC-1	178	AS-VAV101-0	DIGITAL ASC VAV CONTROLLER
(P)	DA-1	178	ATP-2040-12	ACTUATOR/TRANSMITTER PACKAGE
(P)	R-1	178	RH4(24VAC)	4PDT 24 VAC RELAY WITH LIGHT-IDEK
(P)	ACC	178	RH4B	RELAY BASE-IDEK

FIELD MATERIAL

DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
TE-1	178	TE-6001-4	MOUNTING HARDWARE
	178	T-4000-2139	COVER
	178	TEP-L000000	TEMP ELEMENT, PT, 1000 OHM, PROBE

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-5001-5010	EN-40121-40130	E_16_FP1.VAC	NO
AHU-502	FP-5015-5024	EN-40131-40140	E_16_FP1.VAC	NO
AHU-503	FP-5029-5038	EN-41121-41130	E_16_FP1.VAC	NO
AHU-504	FP-5043-5052	EN-41131-41140	E_16_FP1.VAC	NO
AHU-505	FP-5057-5066	EN-42121-42130	E_16_FP1.VAC	NO
AHU-506	FP-5071-5080	EN-42131-42140	E_16_FP1.VAC	NO
AHU-507	FP-5085-5094	EN-43121-42130	E_16_FP1.VAC	NO
AHU-508	FP-5099-5108	EN-43131-42140	E_16_FP1.VAC	NO
AHU-509	FP-5113-5122	EN-44121-44130	E_16_FP1.VAC	NO
AHU-510	FP-5127-5136	EN-44131-44140	E_16_FP1.VAC	NO
AHU-511	FP-5141-5150	EN-45121-43130	E_16_FP1.VAC	NO
AHU-512	FP-5155-5164	EN-45131-43140	E_16_FP1.VAC	NO
AHU-513	FP-5169-5178	EN-46121-46130	E_16_FP1.VAC	NO
AHU-514	FP-5183-5192	EN-46131-46140	E_16_FP1.VAC	NO
AHU-515	FP-5197-5206	EN-47121-47130	E_16_FP1.VAC	NO
AHU-516	FP-5221-5220	EN-47131-47140	E_16_FP1.VAC	NO
AHU-517	FP-5225-5234	EN-48121-48130	E_16_FP1.VAC	NO
AHU-518	FP-5239-5248	EN-48131-48140	E_16_FP1.VAC	NO

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. CONTROLLED DEVICE, DA-1, VAV DAMPER WILL BE MODULATED TO MAINTAIN AN ACTUAL HEATING/COOLING SETPOINT. THE ACTUAL TEMPERATURE SETPOINT CAN BE ADJUSTED PLUS OR MINUS 5 F. FROM THE BASE SETPOINT, 75 F. AT TEMPERATURE ELEMENT, TE-1. THE BASE SETPOINT CAN BE ADJUSTED FROM ANY ICS OPERATOR WORKSTATION. THE SERIES BOX FAN WILL RUN CONSTANTLY IN THIS MODE.

UNOCCUPIED MODE:

THE ZONE MAY BE PLACED IN A TEMPORARY OCCUPANCY MODE BY DEPRESSING THE SWITCH LOCATED ON THE SPACE TEMPERTURE ELEMENT, TE-1. 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 DEVICE, DA-1, VAV DAMPER WILL BE MODULATED 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, VAV Terminal Unit
Cooling Only

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

REFERENCE DRAWING

SALES ENGR	PROJECT MGR	APPL. ENGR	DRAWN		APPROVED	
DB	SP	SF	BY SF	DATE 02/16/92	BY	DATE

FILE: 400_CVAV

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

JOHNSON CONTROLS
Systems & Services Division
3007 MALMO ROAD
ARLINGTON HEIGHTS
ILLINOIS 60005
708/364-1500 Main
708/806-4438 Eng

CONTRACT NUMBER 91390-0009

DRAWING NUMBER 91-9-E-03D