

AEHD-250 NEMA-4
ELECTRICAL SCHEMATICS

WIRING METHODS

POWER 460V = BLACK THHN
120VAC = RED 16AWG
NEUTRAL = WHITE 16AWG
24VDC = BLUE 16AWG
24V COMMON = WHITE/BLUE 16AWG
GROUND = GREEN

SCHEMATIC TYPICAL INDEX

POWER DISTRIBUTION/BRANCH CIRCUITS
PLC BASE UNIT INPUT/OUTPUTS
PLC OUTPUT CARD
PLC THERMOCOUPLE CARD
TERMINAL LAYOUTS
ENCLOSURE

MAX VOLTAGE_____460_____

TOTAL FLA_____6.6_____

LARGEST MOTOR FLA__NA__

NUMBER OF PHASES_____3_____

FREQUENCY_____60HZ_____



CUSTOMER SERIAL

NO._____

UNDERWRITERS LAB SERIAL

NO._____



Test Wire Size Installed In Connector AWG or MCM (mm ²)		Tightening Torque, Pound-Inches (N.m)			
		Slotted Head No. 10 and Larger ¹		Hexagonal Head - External Drive Socket Wrench	
		Slot Width - 0.047 Inch (1.2 mm) or Less and Slot Length - 1/4 Inch (6.4 mm) or Less	Slot Width - Over 0.047 Inch (1.2 mm) or Slot Length - Over 1/4 Inch (6.4 mm)	Split-Bolt Connectors	Other Connectors
18-10	(.082-5.3)	20 (2.3)	35 (4.0)	80 (9.0)	75 (8.5)
8	(8.4)	25 (2.8)	40 (4.5)	80 (9.0)	75 (8.5)
6-4	(13.3-21.2)	35 (4.0)	45 (5.1)	165 (18.6)	110 (12.4)
3	(26.7)	35 (4.0)	50 (5.6)	275 (31.1)	150 (16.9)
2	(33.6)	40 (4.5)	50 (5.6)	275 (31.1)	150 (16.9)
1	(42.4)	-	50 (5.6)	275 (31.1)	150 (16.9)
1/0-2/0	(53.5-67.4)	-	50 (5.6)	385 (43.5)	180 (20.3)
3/0-4/0	(85.0-107.2)	-	50 (5.6)	500 (56.5)	250 (28.2)
250-350	(127-177)	-	50 (5.6)	650 (73.4)	325 (36.7)
400	(203)	-	50 (5.6)	825 (93.2)	325 (36.7)
500	(253)	-	50 (5.6)	825 (93.2)	375 (42.4)
600-750	(304-380)	-	50 (5.6)	1000 (113.0)	375 (42.4)
800-1000	(406-508)	-	50 (5.6)	1000 (124.3)	500 (56.5)
1250-2000	(635-1010)	-	-	1100 (124.3)	600 (67.8)

TABLE 7.4:
¹ For values of slot width or length not corresponding to those specified, select the largest torque value associated with the conductor size. Slot width is the nominal design value. Slot length is measured at the bottom of the slot.

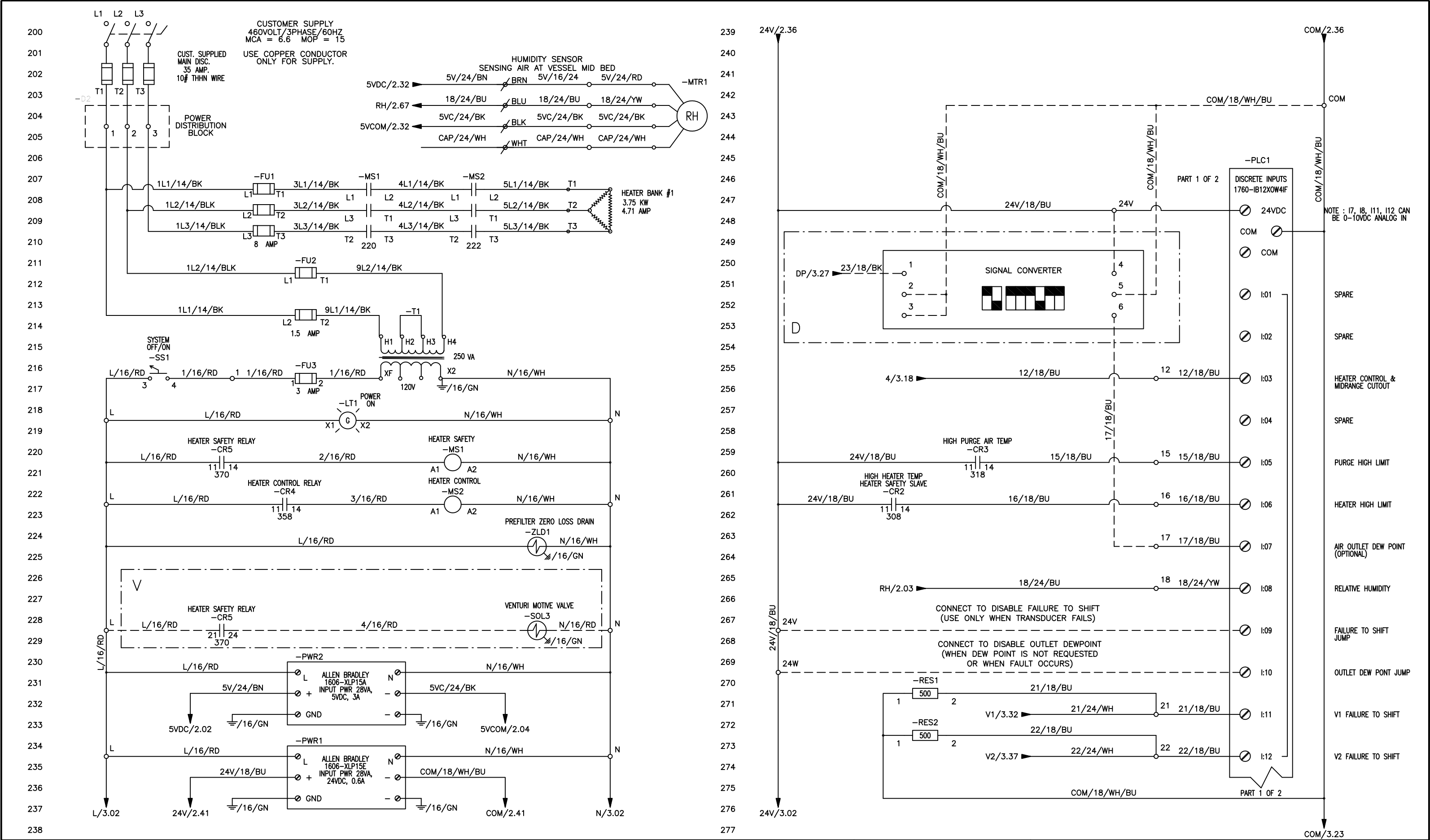
NOTES:

REV	REVISION DESCRIPTION	APPROVAL/DATE
1	ADDED SIGNAL CONVERTER	08/21/2014
2	PRODUCTION REDLINES	08/14/2015
3	ADDED VENTURI OPTION	04/11/2016

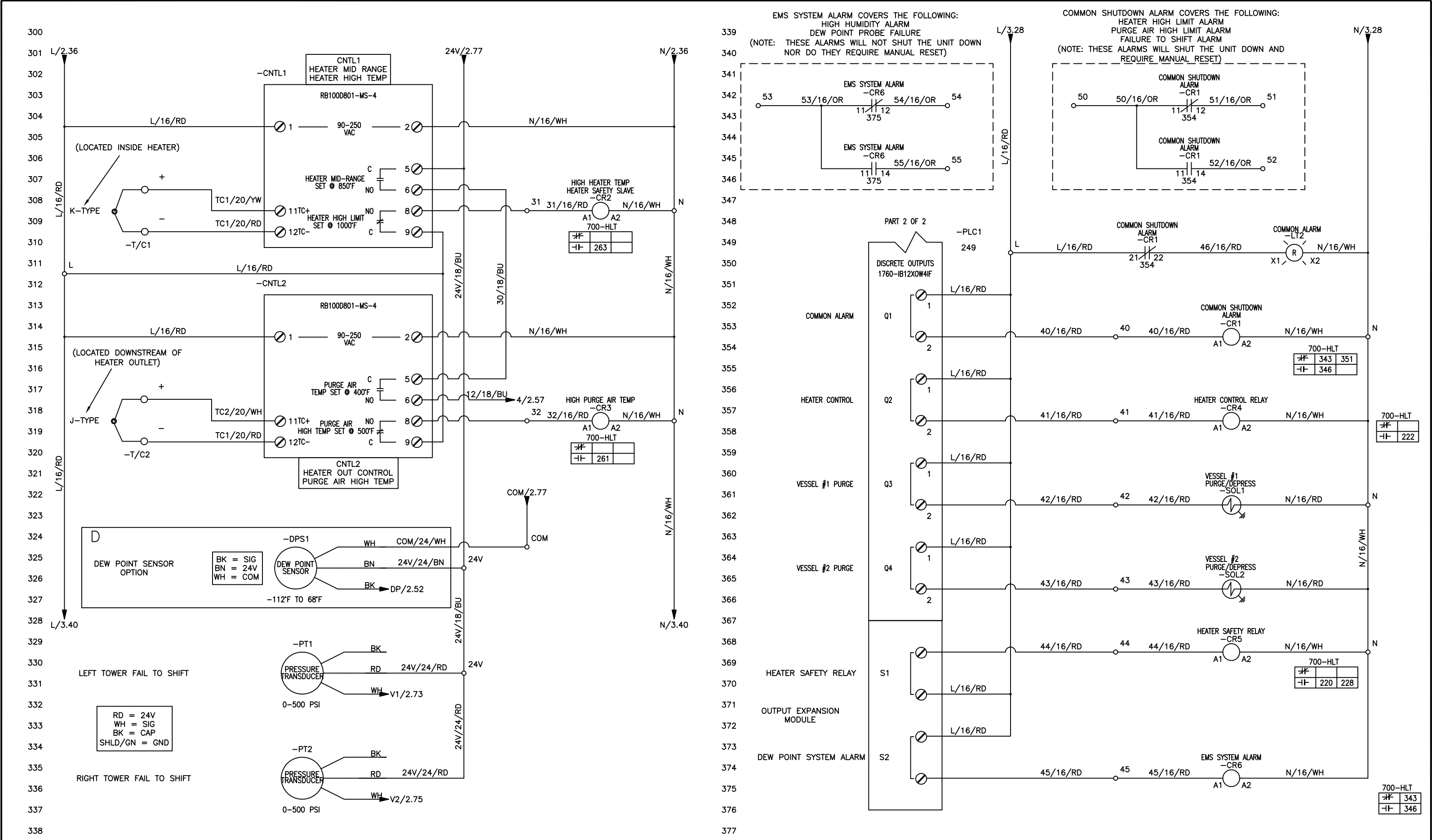
THIS DOCUMENT CONTAINS
INFORMATION THAT IS CONFIDENTIAL
AND/OR PROPRIETARY TO AIRCEL
CORP. ALL RIGHTS TO DISCLOSE, COPY
REPRODUCE MANUFACTURE FROM OR
DISPOSE OF THIS DOCUMENT OR ITS
CONTENTS ARE RESERVED UNLESS
SPECIFIED IN WRITING BY AIRCEL.



PROJECT AEHD-250 N4	DRAWN BY TRAVIS.RYAN	DATE 9/24/2013
TITLE DESCRIPTION ELECTRICAL ASSEMBLY	CHK'D BY MICHAEL.SCHWEER	DATE 9/24/2013
PAGE DESCRIPTION WIRING SCHEMATICS	JOB No. AEHD-E2	DRAWING No. AG3945131 - 1 of 6
PAGE DESCRIPTION INDEX		



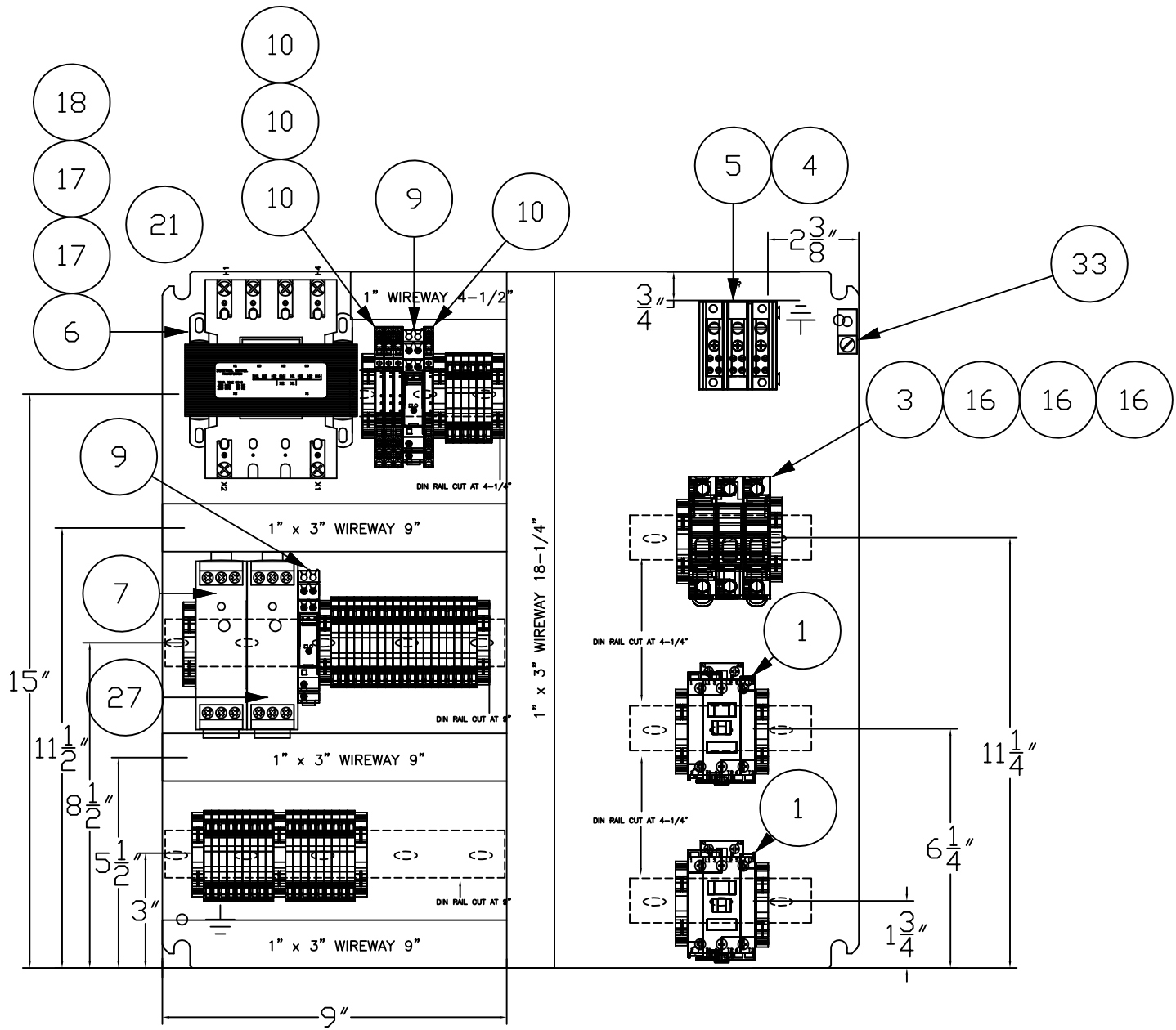
NOTES: "D" = DEW POINT ADDER OPTION "V" = VENTURI ADDER OPTION	REV	REVISION DESCRIPTION	APPROVAL/DATE	THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND/OR PROPRIETARY TO AIRCEL CORP. ALL RIGHTS TO DISCLOSE, COPY, REPRODUCE, MANUFACTURE FROM OR DISPOSE OF THIS DOCUMENT OR ITS CONTENTS ARE RESERVED UNLESS SPECIFIED IN WRITING BY AIRCEL. 323 Crisp Circle Maryville, TN 37801	PROJECT	AEHD-250 N4	DRAWN BY	TRAVIS.RYAN	DATE	04/08/2013
	1	ADDED SIGNAL CONVERTER	08/21/2014		TITLE DESCRIPTION	ELECTRICAL ASSEMBLY	CHK'D BY	MICHAEL.SCHWEER	DATE	04/08/2013
	2	PRODUCTION REDLINES	08/14/2015		PAGE DESCRIPTION	POWER DISTRIBUTION	JOB No.	AEHD-E2	DRAWING No.	AG3945131-2 of 6
	3	ADDED VENTURI OPTION	04/11/2016		PAGE DESCRIPTION	PLC INPUTS				



NOTES: "D" = DEW POINT ADDER OPTION	REV	REVISION DESCRIPTION	APPROVAL/DATE	THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND/OR PROPRIETARY TO AIRCEL CORP. ALL RIGHTS TO DISCLOSE, COPY, REPRODUCE OR MANUFACTURE FROM OR DISPOSE OF THIS DOCUMENT OR ITS CONTENTS ARE RESERVED UNLESS SPECIFIED IN WRITING BY AIRCEL. 323 Crisp Circle Maryville, TN 37801	PROJECT	AEHD-250 N4	DRAWN BY	TRAVIS.RYAN	DATE	04/08/2013
	1	ADDED SIGNAL CONVERTER	08/21/2014		TITLE DESCRIPTION	ELECTRICAL ASSEMBLY	CHK'D BY	MICHAEL.SCHWEER	DATE	04/08/2013
	2	PRODUCTION REDLINES	08/14/2015		PAGE DESCRIPTION	TEMP CONTROLLERS	JOB No.	AEHD-E2	DRAWING No.	AG3945131 - 3 of 6
	3	ADDED VENTURI OPTION	04/11/2016		PAGE DESCRIPTION	PLC OUTPUTS				

END ANCHOR	RELAY – CR2
	RELAY – CR3
	RELAY – CR4
	RELAY – CR5
	RELAY – CR6
END ANCHOR	
	50
	51
	52
	53
	54
	55
END ANCHOR	

TOP ROW



ITEM #	AIRCEL#	DESCRIPTION	QTY
1	AG3939548	CONTACTOR, 5HP @ 460V, 9A (AC-3)	2
2	AG3251901	END ANCHORS, STD 35MM DIN RAIL	17
3	AG3948870	FUSE HOLDER, 3POLE	1
4	AG3933257	POWER DISTRIBUTION BLOCK COVER	1
5	AG3933256	POWER DISTRIBUTION BLOCK	1
6	AG3948911	TRANSFORMER, 250 VA	1
7	AG3948924	POWER SUPPLY, 24VDC	1
9	AG3948855	RELAY, SCREW TYPE, DPDT	2
10	AG3948856	RELAY, SCREW TYPE, SPDT	4
14	AG3480590	COVER, WHITE DUCT, 1"	4.5
15	AG3480591	DUCT, WHITE, NARROW SLOT 1 X 3'"	4.5
16	AG3205101	FUSE, 5 AMP	3
17	AG3480363	FUSE, 1-1/2 AMP	2
18	AG3329701	FUSE, 3 AMP	1
21	AG3934747	SUB PANEL FOR 20x20x8 ENCLOSURE	1
27	AG3934769	POWER SUPPLY, 5VDC	1
30	AG3933345	TERMINAL BLOCK, GRAY, J3	33
31	AG3933672	TERMINAL BLOCK, BLUE, J3	6
32	AG3933346	TERMINAL BLOCK, GREEN/YELLOW, JG3	4
33	AG3481252	GROUND LUG, ALUMINIUM	1

END ANCHOR	24V PWR	5V PWR	RELAY – CR1	END ANCHOR	N	1	12	15	16	17	18	21	22	31	32	40	41	42	43	44	45	46	GND	END ANCHOR
------------	---------	--------	-------------	------------	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	------------

MIDDLE ROW

BOND N's

END ANCHOR	N	N	N	N	N	L	L	L	L	END ANCHOR	24V	24V	24V	24V	COM	COM	GND	GND	GND	END ANCHOR
------------	---	---	---	---	---	---	---	---	---	------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	------------

BOTTOM ROW

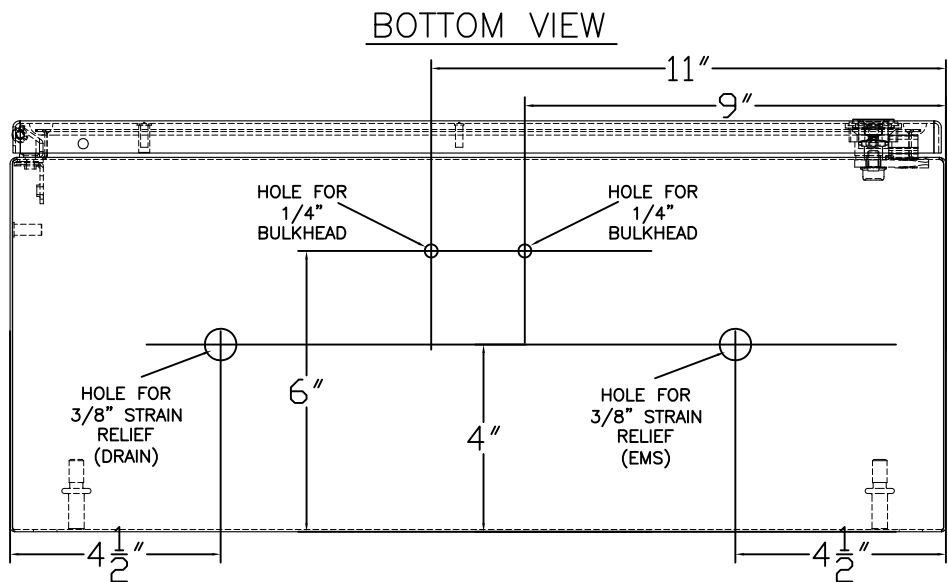
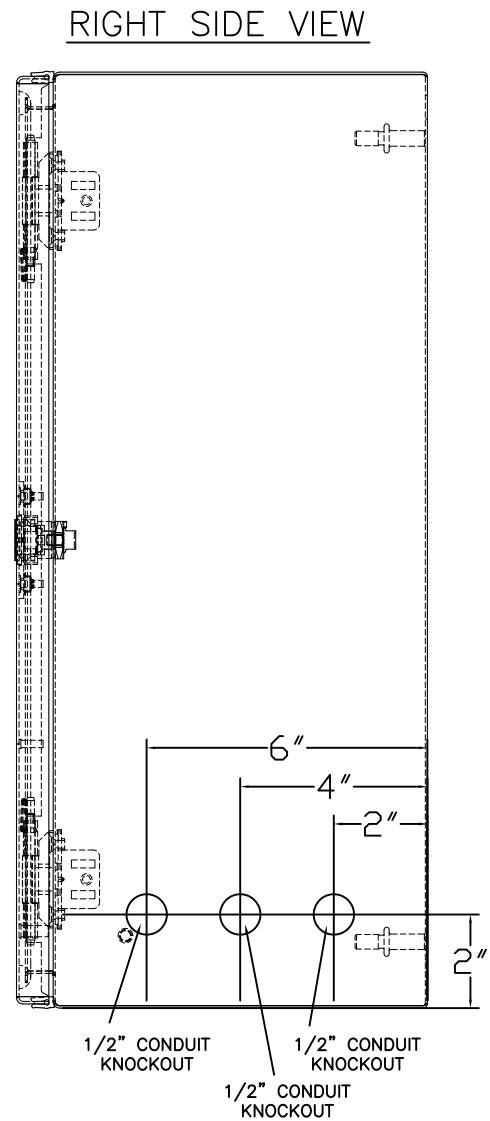
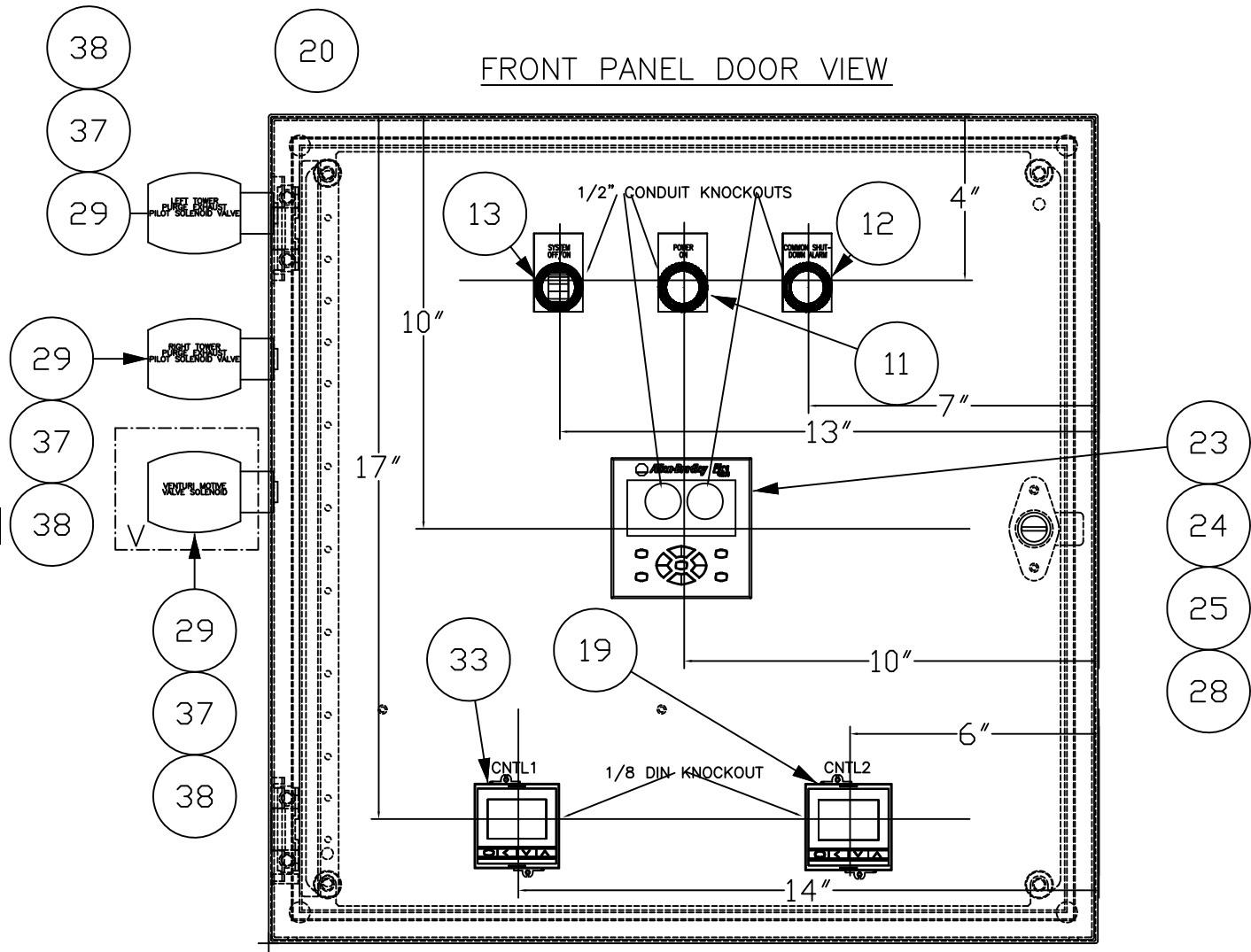
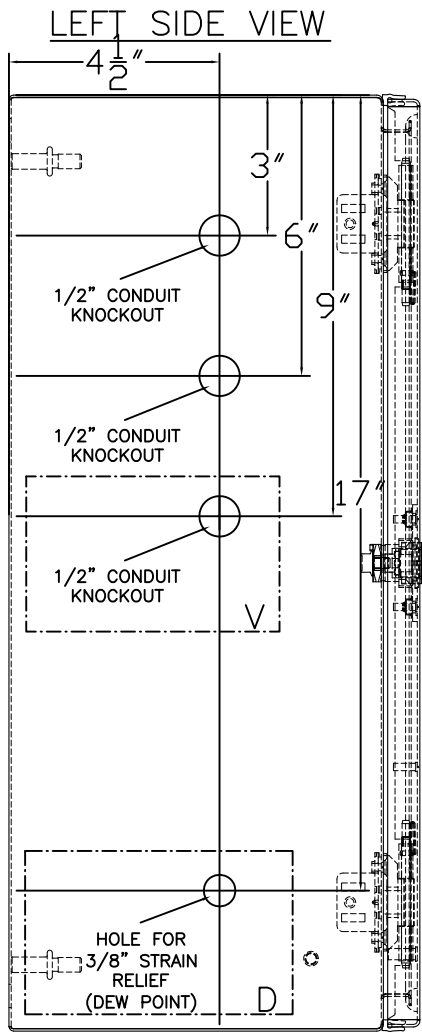
NOTES:

REV	REVISION DESCRIPTION	APPROVAL/DATE
1	ADDED SIGNAL CONVERTER	08/21/2014
2	PRODUCTION REDLINES	08/14/2015
3	ADDED VENTURI OPTION	04/11/2016

THIS DOCUMENT CONTAINS
INFORMATION THAT IS CONFIDENTIAL
AND/OR PROPRIETARY TO AIRCEL
CORP. ALL RIGHTS TO DISCLOSE, COPY
REPRODUCE MANUFACTURE FROM OR
DISPOSE OF THIS DOCUMENT OR ITS
CONTENTS ARE RESERVED UNLESS
SPECIFIED IN WRITING BY AIRCEL.



PROJECT	AEHD-250 N4	DRAWN BY	TRAVIS.RYAN	DATE	04/08/2013
TITLE DESCRIPTION	ELECTRICAL ASSEMBLY	CHK'D BY	MICHAEL.SCHWEER	DATE	04/08/2013
PAGE DESCRIPTION	PANEL LAYOUT	JOB No.	AEHD-E2	DRAWING No.	AG3945131 - 4 of 6
PAGE DESCRIPTION					



ITEM #	AIRCEL#	DESCRIPTION	QTY
11	AG3939623	LIGHT, GREEN, 120 VAC, NEMA-4X	1
12	AG3939624	LIGHT, RED, 120 VAC, NEMA-4X	1
13	AG3939622	SWITCH, 2-POS, MAINTAINED, NEMA-4X	1
19	AG3934780	TEMPERATURE CONTROLLER, J-TYPE	1
20	AG3934746	ENCLOSURE, 20x20x8 CONCEPT	1
23	AG3934775	PROCESSOR, 12 DC INPUTS, 4 RELAY OUTPUTS	1
24	AG3934777	CPU, STANDARD	1
25	AG3934778	DISPLAY WITH BUTTONS	1
28	AG3934785	MODULE, EXPANSION, 2 RELAY	1
29	AG3101501	SOLENOID, 3-WAY, NEMA-4X	2
33	AG3934781	TEMPERATURE CONTROLLER, K-TYPE	1

NOTES: "D" = DEW POINT ADDER OPTION
"V" = VENTURI ADDER OPTION

REV	REVISION DESCRIPTION	APPROVAL/DATE
1	ADDED SIGNAL CONVERTER	08/21/2014
2	PRODUCTION REDLINES	08/14/2015
3	ADDED VENTURI OPTION	04/11/2016

THIS DOCUMENT CONTAINS
INFORMATION THAT IS CONFIDENTIAL
AND/OR PROPRIETARY TO AIRCEL
CORP. ALL RIGHTS TO DISCLOSE, COPY
REPRODUCE MANUFACTURE FROM OR
DISPOSE OF THIS DOCUMENT OR ITS
CONTENTS ARE RESERVED UNLESS
SPECIFIED IN WRITING BY AIRCEL.



PROJECT	AEHD-250 N4	DRAWN BY	TRAVIS.RYAN	DATE	04/08/2013
TITLE DESCRIPTION	ELECTRICAL ASSEMBLY	CHK'D BY	MICHAEL.SCHWEER	DATE	04/08/2013
PAGE DESCRIPTION	ENCLOSURE LAYOUT	JOB No.	AEHD-E2	DRAWING No.	AG3945131 - 5 of 6
PAGE DESCRIPTION					

QTY	AIRCEL#	DESCRIPTION
2	AG3939548	CONTACTOR, 5HP @ 460V, 9A (AC-3)
17	AG3251901	END ANCHORS, STD 35MM DIN RAIL
1	AG3948870	FUSE HOLDER, 3-POLE
1	AG3933257	POWER DISTRIBUTION BLOCK COVER
1	AG3933256	POWER DISTRIBUTION BLOCK
1	AG3948911	TRANSFORMER, 250 VA
1	AG3948924	POWER SUPPLY, 24VDC
1	AG3934769	POWER SUPPLY, 5VDC
2	AG3948855	RELAY, SCREW TYPE, DPDT
4	AG3948856	RELAY, SCREW TYPE, SPDT
1	AG3939623	LIGHT, GREEM, 120 VAC, NEMA-4X
1	AG3939624	LIGHT, RED, 120 VAC, NEMA-4X
1	AG3939622	SWITCH, 2-POS, MAINTAINED, NEMA-4X
33	AG3933345	TERMINAL BLOCK, GRAY, J3
6	AG3933672	TERMINAL BLOCK, BLUE, J3
4	AG3933346	TERMINAL BLOCK, GREEN/YELLOW, JG3
4.5	AG3480590	COVER, WHITE DUCT, 1"
4.5	AG3480591	DUCT, WHITE, NARROW SLOT 1 X 3""
3	AG3205101	FUSE, 5 AMP
2	AG3480363	FUSE, 1-1/2 AMP
1	AG3329701	FUSE, 3 AMP
1	AG3934746	ENCLOSURE, 20x20x8 CONCEPT
1	AG3934747	SUB PANEL FOR 20x20x8 ENCLOSURE
1	AG3934775	PLC INPUT MODULE, 8 DC INPUTS, 4 ANALOG INPUTS
1	AG3934777	PLC PROCESSOR MODULE, CPU
1	AG3934785	PLC EXPANSION MODULE, 2 RELAY OUTPUTS
1	AG3934778	PLC DISPLAY MODULE WITH BUTTONS
2	AG3936238	TRANSDUCER,PRESS,0-500PSI,
2	AG3101501	SOLENOID, 3-WAY, NEMA-4X

QTY	AIRCEL#	DESCRIPTION
1	AG3934781	TEMPERATURE CONTROLLER, K-TYPE
1	AG3934780	TEMPERATURE CONTROLLER, J-TYPE
1	AG3163001	CONNECTOR, CONDUIT, LT 3/8"
5	AG3287701	CONNECTOR, ELBOW, 90 DEGREE, 3/8"
2	AG3342801	NIPPLE, CONDUIT, 1/2" X CLOSE,
1	AG3481252	GROUND LUG, ALUMINUM
2	AG3288701	HUB, MYERS, 1/2"
10	AG3480861	CONDUIT, SEAL TITE, 3/8"
2	AG3481168	STRAIN RELIEF, 3/8"
2	AG3481159	SEAL RING, 3/8", FOR NYLON
2	AG3481158	LOCK NUT, 3/8", FOR NYLON
2	AG3934918	RESISTOR, 500 OHMS, HIGH
1	AG3482390	TERMINAL LUG, ALUMINIUM
1	AG3301501	BOLT, HEX, 5/16"-18 X 1/2"
16	AG3275301	WIRE #14 BLACK
107	AG3374201	WIRE #16 RED
34	AG3374901	WIRE #16 WHITE
18	AG3372301	WIRE #16 MTW GREEN
72	AG3480463	WIRE #18 BLUE
11	AG3465901	WIRE #16 WHITE W/BLE STRIPE
9	AG3373901	WIRE #16 ORANGE
8	AG3284101	WASHER, FLAT, 3/8"
8	AG3465601	WIRE, 3 CONDUCTOR, 24 AWG
4	0900806	BOLT, HEX, 3/8" -16 X 1-1/2"
4	AG3344601	NUT, KEP, 3/8"-16
1	AG3296601	BUSHING, CONDUIT, REDUCING,
15	AG3374301	WIRE, THERMOCOUPLE, J TYPE
8	AG3462801	WIRE ,THERMOCOUPLE, K-TYPE, 20
1	AG3353001	STRAP EMT 1-HOLE 1/2"

NOTES: AEHD-250 NEMA-4 ELECTRICAL ASSEMBLY	REV	REVISION DESCRIPTION	APPROVAL/DATE	THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND/OR PROPRIETARY TO AIRCEL CORP. ALL RIGHTS TO DISCLOSE, COPY REPRODUCE MANUFACTURE FROM OR DISPOSE OF THIS DOCUMENT OR ITS CONTENTS ARE RESERVED UNLESS SPECIFIED IN WRITING BY AIRCEL.  323 Crisp Circle Maryville, TN 37801	PROJECT	AEHD-250 N4	DRAWN BY	TRAVIS.RYAN	DATE	10/02/2013
			/		TITLE DESCRIPTION	ELECTRICAL ASSEMBLY	CHK'D BY	MICHAEL.SCHWEER	DATE	10/02/2013
			/		PAGE DESCRIPTION	EBOM	JOB No.	AEHD-E2	DRAWING No.	AG3945131 - 6 of 6
			/		PAGE DESCRIPTION					