

CODE SHEET

VISTA Projects Limited VENDOR DRAWING/DOCUMENT SQUAD CHECK			
A	Reviewed without exception. Proceed with fabrication. Issue final drawings/documents.		
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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DG03	PNL-ENT-250/310	P.VALLA	4 Jun 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-1

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Bill of Materials

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

PANEL BILL OF MATERIALS

ITEM NUMBER	PANEL QTY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION
10	1	SAGINAW	THE4-72EL3624SSLP-1	ENCLOSURE, NEMA 4X, 72" X 36" X 24", WALL MOUNTED WITH LIFTING EYES, FINISH IS 304 STAINLESS STEEL
14	2	HOFFMAN	A-NADFK	ENCLOSURE, SWING PANEL MOUNTING KIT
17	1	HAFFMAN	C-MFKSS	ENCLOSURE, WALL MOUNTED KID, STAINLESS STEEL
18	1	SAGINAW	SCE-DS36SS	ENCLOSURE, DRIP SHIELD, FOR 36" WIDE STAINLESS STEEL ENCLOSURES
20	1	SAGINAW	SCE-36P36	ENCLOSURE, PANEL, 33" X 33"
21	1	SAGINAW	SCE-72P36	ENCLOSURE, PANEL, 69" X 33"
66	1	HOFFMAN	A-PWK2315NFSS	ENCLOSURE, WINDOW, 23" X 15" WITH STAINLESS STEEL FRAME
70	1	THERMON	270671	TAG, CABINET, PLASTIC, WHITE WITH BLACK LETTERS, 3" (76MM) X 12" (305MM)
71	2	THERMON	270701	TAG, CABINET, PLASTIC, WHITE WITH BLACK LETTERS, 2" (51MM) X 6" (152MM)
75	1	THERMON	270941	TAG, CABINET, PLASTIC, RED WITH WHITE LETTERS, 2" (51MM) X 6" (152MM)
80	3	THERMON	270611	TAG, IDENTIFICATION, PLASTIC, WHITE WITH BLACK LETTERS, 1" (25MM) X 3" (76MM)
100	3	THERMON	TC-1818A.18.1.C	CONTROLLER, TEMPERATURE, CONTROL & MONITORING FOR 18 CKTS, WITH TEMPERATURE, CURRENT & GROUND FAULT MONITORING
130	9	THERMON	6RTD	CONTROLLER, INTERFACE BOARD, SIX RTD INPUTS, TERMINAL POINTS TO RIBBON CABLE
131	2	THERMON	TC 1818A RM3 ASSY	CONTROLLER INTERFACE BOARD, SIX OUTPUTS, 6 CURRENT TRANSFORMER AND 6 GROUND CURRENT TRANSFORMER INPUTS
510	7	THERMON	6SSR30C-600	RELAY, ASSEMBLY, WITH HEAT SINK, CURRENT & GROUND FAULT C.T.S AND SIX SOLID STATE RELAYS, EACH RATED 30 AMPS AT 240 VAC
511	24	THERMON	RLY D2450	RELAY, SOLID STATE, 1 POLE, 30 AMP, 240 VAC
521	1	PHOENIX	PLC-RSC-120UC/21 C1D2	RELAY, SPD, 6 AMP CONTACTS AT 250 VAC/DC, 120 VAC/DC COIL. RATED FOR CLASS 1 DIV 2 / ZONE 2 AREA, GROUPS A, B, C, D
580	2	THERMON	6SSR-HAS	HEAT SINK, ALUMINUM, ANODIZED, SIX CIRCUIT, WITH COVER
401	3	ABB	XUS001736	TRACK, DIN MOUNTING, 2 METER LENGTH, ELEVATED, ALUMINUM
471	162	PHOENIX	UT 2.5	TB SECTION, 24 AMP, 600 VAC ACCEPTS 0.14 MM2 (#20 AWG) TO 4 MM2 (#12 AWG) WIRE
472	14	PHOENIX	UT-6	TB SECTION, 50 AMP, 600VAC ACCEPTS 0.2 MM2 (#24 AWG) TO 10 MM2 (#8 AWG) WIRE
473	54	PHOENIX	UT-4PE	TB SECTION, UNIVERSAL GROUND, ACCEPTS 0.14 MM2 (#26 AWG) TO 6 MM2 (#10 AWG) WIRE
474	132	PHOENIX	UT 10	TERMINAL BLOCK SECTION, 65 AMP, 600 VAC ACCEPTS 0.5 MM2 (#20 AWG) TO 16 MM2 (#6 AWG) WIRE
481	10	PHOENIX	D-UT2.5/10	TB END COVER D-UT 2.5/10 3047028
501	29	PHOENIX	CLIP FIX 35-5	TERMINAL BLOCK END CLAMP
504	324	PHOENIX	UC-TM5	TERMINAL BLOCK MARKER FOR UT 2.5
504	108	PHOENIX	UC-TM6	TERMINAL BLOCK MARKER FOR UT4 AND UT-4 PE
504	28	PHOENIX	UC-TM8	TERMINAL BLOCK MARKER FOR UT 6
550	262	PHOENIX	UC-TM10	TERMINAL BLOCK MARKER FOR UT10, UK16N, AND UK35
710	12	THERMON	CT-30	TRANSFORMER, CURRENT, 0.75" OPENING, FOR USE WITH THE TC CONTROLLERS TO PROVIDE CURRENT MONITORING
711	12	THERMON	CT-180	TRANSFORMER, CURRENT, 0.75" OPENING, FOR USE WITH THE TC CONTROLLERS TO PROVIDE GROUND FAULT MONITORING
761	75	ANIXTER	1015-14/41-5	WIRE, #14 AWG (2.1MM2), STRANDED COPPER, 600V, GREEN, CSA TEW (105C), UL AWM (105C), AND UL MTW (90C)
762	200	ANIXTER	1015-14/41-8	WIRE, #14 AWG (2.1MM2), STRANDED COPPER, 600V, CSA TEW (105C), UL AWM (105C), AND UL MTW (90C)
763	2800	ANIXTER	1015-10/105-8	WIRE, #8 AWG (2.1MM2), STRANDED COPPER, 600V, CSA TEW (105C), UL AWM (105C), AND UL MTW (90C)
766	9	THERMON	RTD-28 RC	ASSEMBLY, RIBBON CABLE, 10 FEET, 26 CONDUCTOR, RTD BOARD TO CONTROLLER
767	9	THERMON	PM-40 RC	ASSEMBLY, RIBBON CABLE, 15 FEET, 40 CONDUCTOR, POWER MODULE TO CONTROLLER
770	50	BELDEN	8760	WIRE, #18 AWG, STRANDED COPPER, ONE PAIR, SHIELDED
791	600	BRADY	3PS-375-2WT-2	WIRE MARKER, PERMASLEEVE, HEAT SHRINK
800	1	SQUARE D	PK27GTA	GROUND BAR KIT WITH ONE GROUND LUG FOR #6 TO 2/0 WIRE AND 24 POINTS FOR #8 AWG WIRE
869	1	THERMON	THERMOSTAT N7G +40F	THERMOSTAT ASSEMBLY, 40F, WITH MOUNTING BRACKET RATED C1, DIV 2
872	1	INTERTEC	DSE-200-1	SPACE HEATER, 200 WATTS AT 120 VAC, CLASS 1, DIV 2, T3
840	1	CORCOM	EMI #5 VK, 120 V	FILTER ASSEMBLY, EMI, 5 AMP, 115/250 VAC, 50 TO 400 HZ, 120 VAC, WITH MOV
889	1	CROUSE HINDS	ACDPES4/050NPT-15	BREATHER DRAIN, STAINLESS STEEL WITH 1/2" NPT THREADS, CLASS 1, DIV 2
996	1	THERMON	LABEL, P/N 81246	LABEL, DATE OF MFG., PANEL AND JOB INFORMATION
997	1	HARKINS SAFETY	401-S-155	TAG FOR LOCK-OUT, TAG-OUT PROCEDURE
998	1	THERMON	CSA	CSA REQUIREMENT

NOTE: ITEMS WITHOUT HEXAGONS ARE NOT SHOWN ON THE PANEL LAYOUT.

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										<p>SCALE: NONE</p>			
										<p>THERMON PROJECT. NO. 0447</p>			
										<p>THERMON DWG. NO. 12-CDR-017</p>			
										<p>SHT. 1 REV. 0</p>			
										<p>TCAP# 0013114 PO# 1780-023</p>			
										<p>CUSTOMER: VISTA PROJECTS LIMITED</p>			
										<p>FOR: MURPHY OIL CANADA</p>			
										<p>ITEM NO. -</p>			
										<p>BILL OF MATERIALS</p>			
										<p>THERMON CANADA INC. The Heat Tracing Specialists 333 28th STREET N.E. CALGARY, ALBERTA T2A 7P4</p>			
										<p>0 04/10/12 ISSUED FOR CONSTRUCTION SH SH KN BP</p>			
										<p>B 03/29/12 REVED UP TO B NO CHANGES THIS DRAWING TK SH KN BP</p>			
										<p>A 03/12/12 ISSUED FOR APPROVAL KC SH KN BP</p>			
REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED	REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

BORDER for PANEL DWGS Set Macro.DWG 04-01-04 JNG



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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE03	PNL-EHT-202/300	P.VALLA	7 JUN 2012

PROJECT NAME: Murphy Oil Cabotte / 1780-023

VENDOR NAME: Thermon Canada Inc

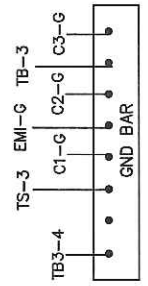
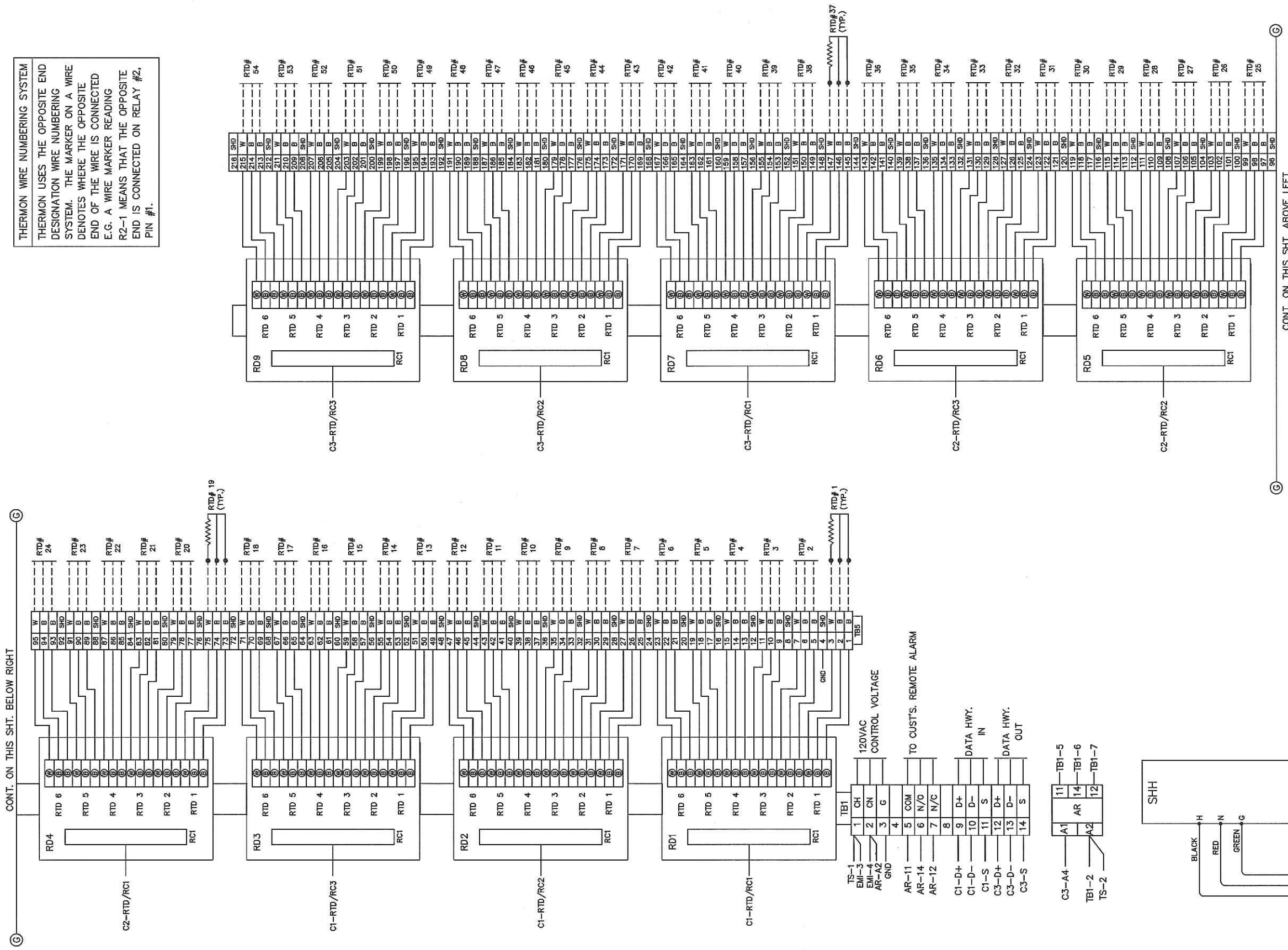
DOCUMENT NUMBER: 12-CDR-017-10

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Back Panel Wiring Diagram

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

THERMON WIRE NUMBERING SYSTEM
 THERMON USES THE OPPOSITE END
 DESIGNATION WIRE NUMBERING
 SYSTEM. THE MARKER ON A WIRE
 DENOTES WHERE THE OPPOSITE
 END OF THE WIRE IS CONNECTED
 E.G. A WIRE MARKER READING
 R2-1 MEANS THAT THE OPPOSITE
 END IS CONNECTED ON RELAY #2,
 PIN #1.



LEFT SIDE OF
 BACK PANEL WIRING

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

BACK PANEL
 WIRING DIAGRAM

THERMON CANADA INC.
 The Heat Tracing Specialists®

 333 28th STREET N.E.
 CALGARY, ALBERTA T2A 7P4

CUSTOMER:
 VISTA PROJECTS LIMITED
 FOR:
 MURPHY OIL CANADA
 TCAP# 0013114
 PO# 1780-023

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 SCALE: NONE
 THERMON PROJECT. NO.
 0447
 THERMON DWG. NO.
 12-CDR-017
 SHT. 10 REV. 0



CODE SHEET

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DE03	ENC-EHT-200/300	P.VALLA	4 JUN 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

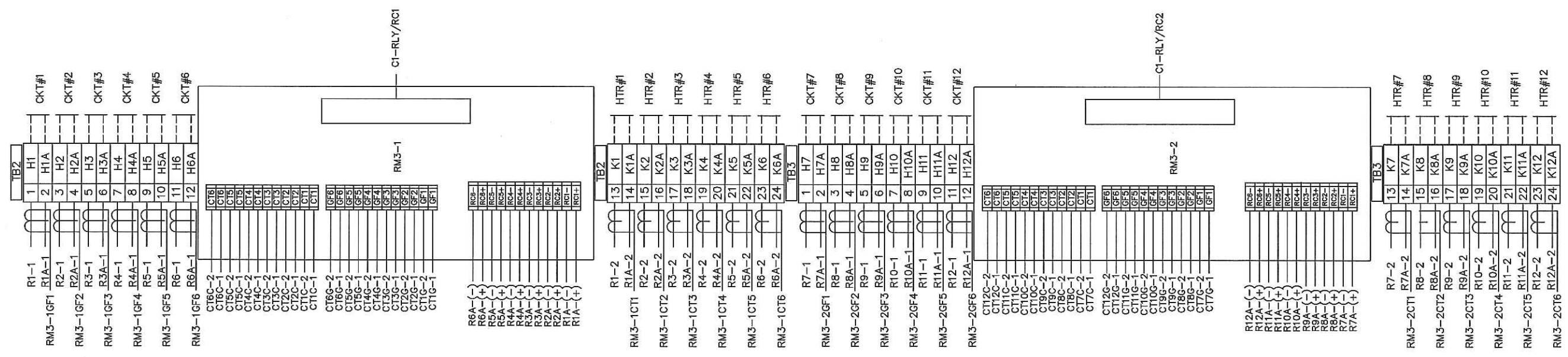
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-11

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Center and Right Side of Back Panel Wiring Diagram

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



RIGHT SIDE OF
BACK PANEL WIRING

HTR#	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54																																										
	RB3-HL1	RB3-HN1	RB3-HL2	RB3-HN2	RB3-HL3	RB3-HN3	RB3-HL4	RB3-HN4	RB3-HL5	RB3-HN5	RB3-HL6	RB3-HN6	RB4-HL1	RB4-HN1	RB4-HL2	RB4-HN2	RB4-HL3	RB4-HN3	RB4-HL4	RB4-HN4	RB4-HL5	RB4-HN5	RB4-HL6	RB4-HN6	RB5-HL1	RB5-HN1	RB5-HL2	RB5-HN2	RB5-HL3	RB5-HN3	RB5-HL4	RB5-HN4	RB5-HL5	RB5-HN5	RB5-HL6	RB5-HN6	RB6-HL1	RB6-HN1	RB6-HL2	RB6-HN2	RB6-HL3	RB6-HN3	RB6-HL4	RB6-HN4	RB6-HL5	RB6-HN5	RB6-HL6	RB6-HN6	RB7-HL1	RB7-HN1	RB7-HL2	RB7-HN2	RB7-HL3	RB7-HN3	RB7-HL4	RB7-HN4	RB7-HL5	RB7-HN5	RB7-HL6	RB7-HN6	RB8-HL1	RB8-HN1	RB8-HL2	RB8-HN2	RB8-HL3	RB8-HN3	RB8-HL4	RB8-HN4	RB8-HL5	RB8-HN5	RB8-HL6	RB8-HN6	RB9-HL1	RB9-HN1	RB9-HL2	RB9-HN2	RB9-HL3	RB9-HN3	RB9-HL4	RB9-HN4	RB9-HL5	RB9-HN5	RB9-HL6	RB9-HN6

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION				
B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING				
A	03/12/12	ISSUED FOR APPROVAL				

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0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

CENTER AND RIGHT SIDE OF BACK PANEL WIRING DIAGRAM

THERMON CANADA INC.
The Heat Tracing Specialists[®]
 333 29th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED
FOR: MURPHY OIL CANADA
TCAP# 0013114
PO# 1780-023

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SCALE: NONE
THERMON PROJECT NO. 0447
THERMON DWG. NO. 12-CDR-017
SHT. 11 REV. 0



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE03	PNL-ENT-200/300	PVALLA	7 JUN 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

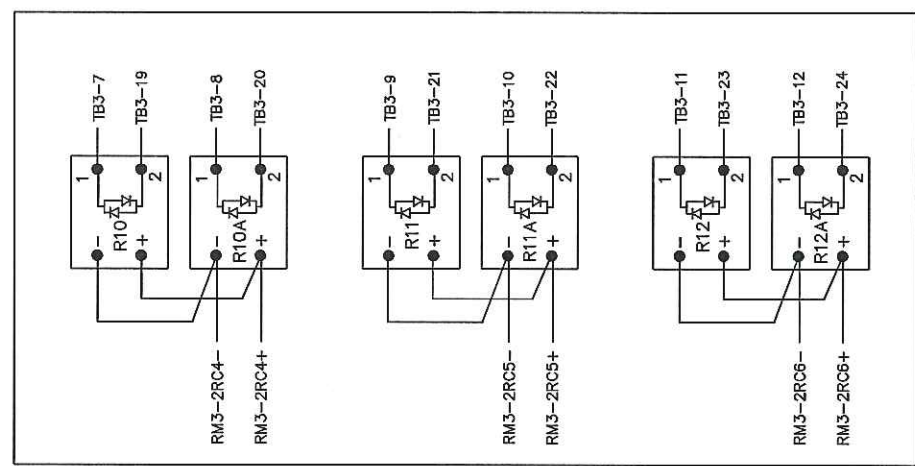
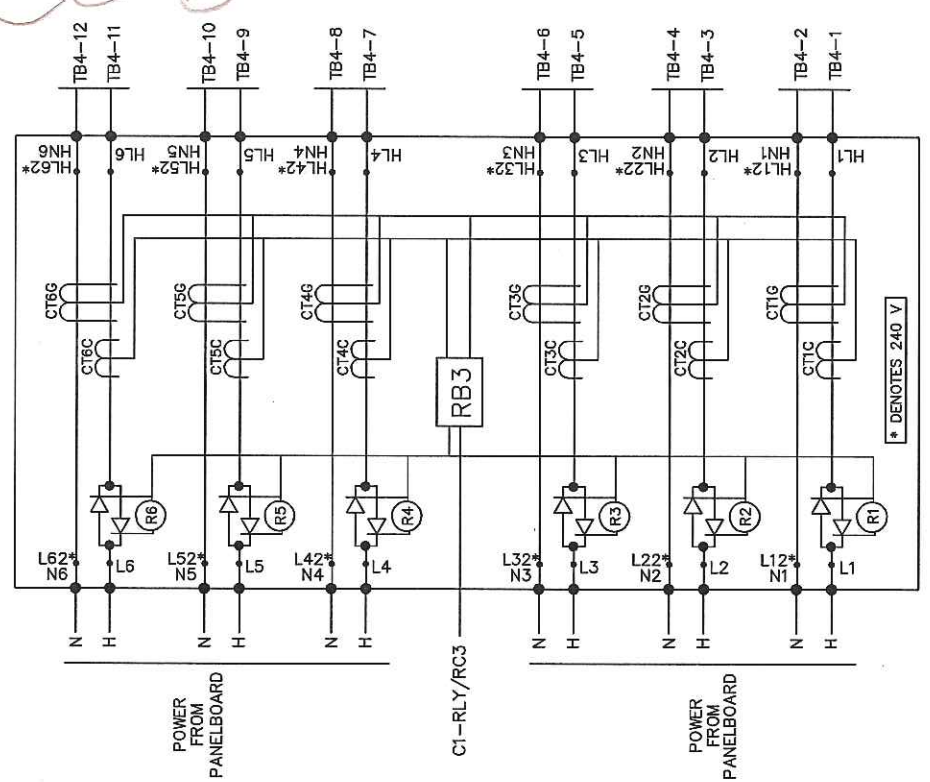
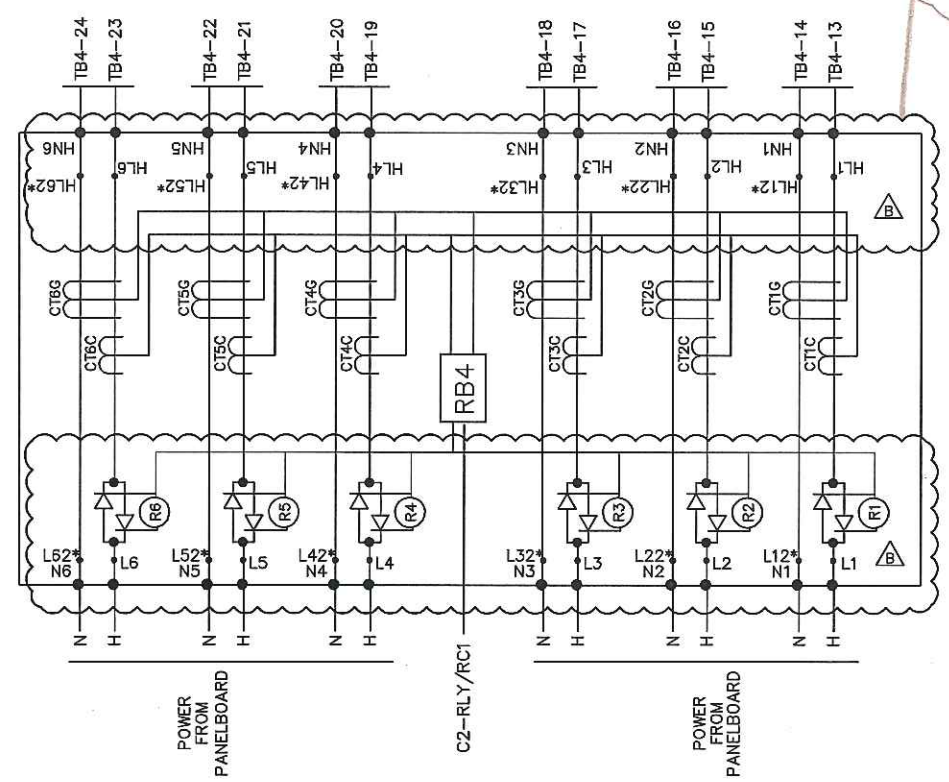
DOCUMENT NUMBER: 12-CDR-017-12

VENDOR REVISION: 0

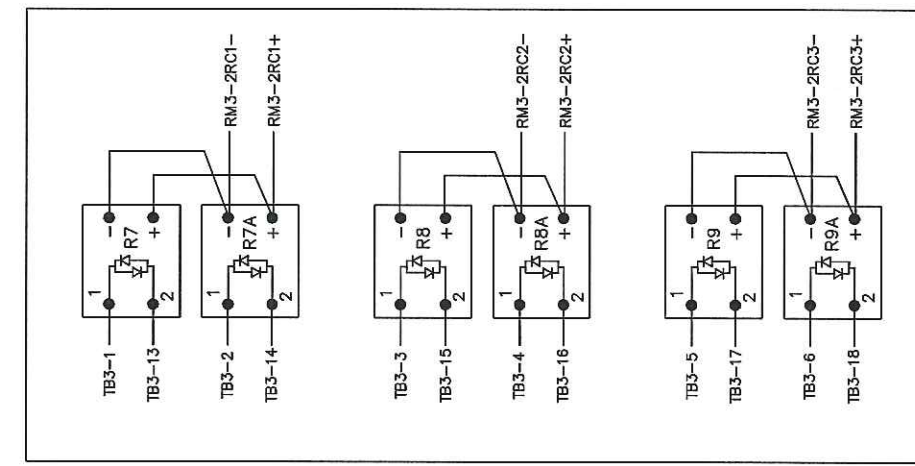
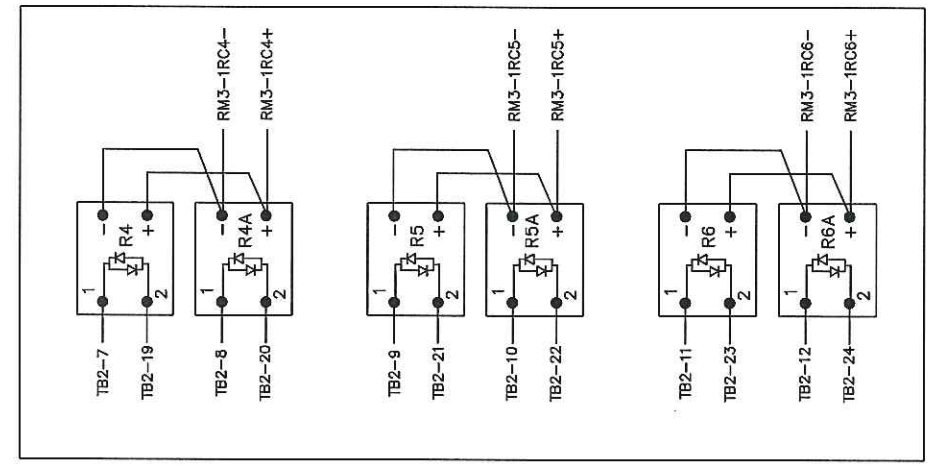
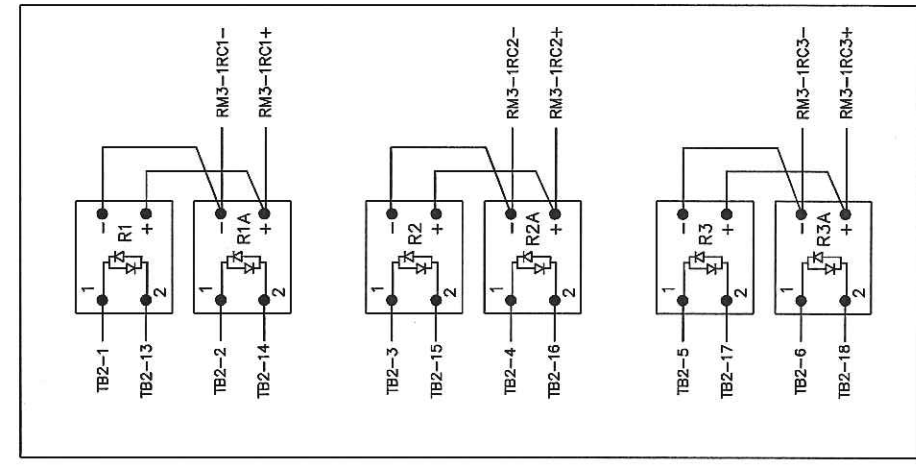
DOCUMENT DESCRIPTION: Solid State Relay Wiring Diagram

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

Remove cloud + Rev D
RB



RIGHT SIDE WIRING DIAGRAM



LEFT SIDE WIRING DIAGRAM

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
D	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED AS SHOWN	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

SOLID STATE RELAY WIRING DIAGRAM

ITEM NO. -

THERMON CANADA INC.
The Heat Tracing Specialists[®]



333 26th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED

FOR: MURPHY OIL CANADA

TCAP# 0013114
PO# 1780-023

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SCALE: NONE

THERMON PROJECT NO. 0447

THERMON DWG. NO. 12-CDR-017

SHT. 12 REV. 0

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DE#3	PNC-ENT-200/300	P.VALLA	4 JUN 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

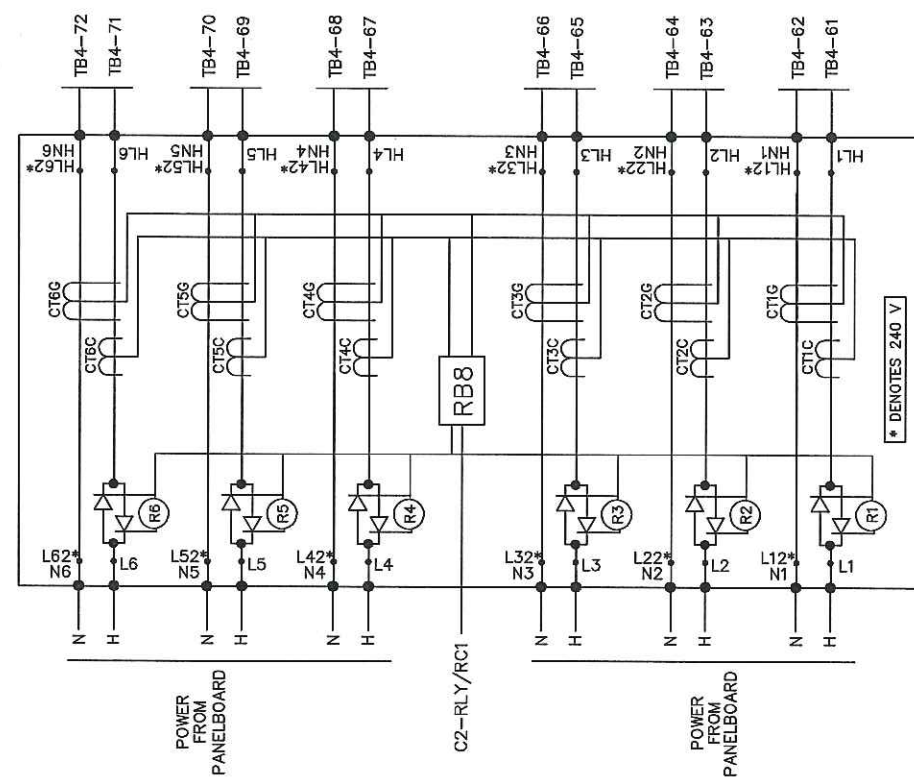
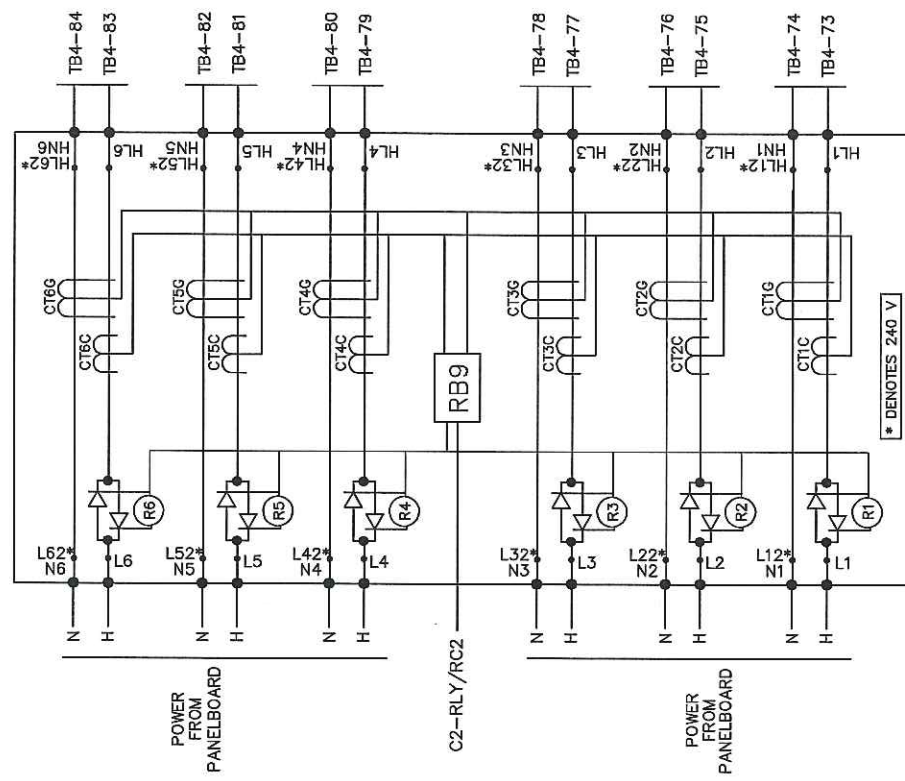
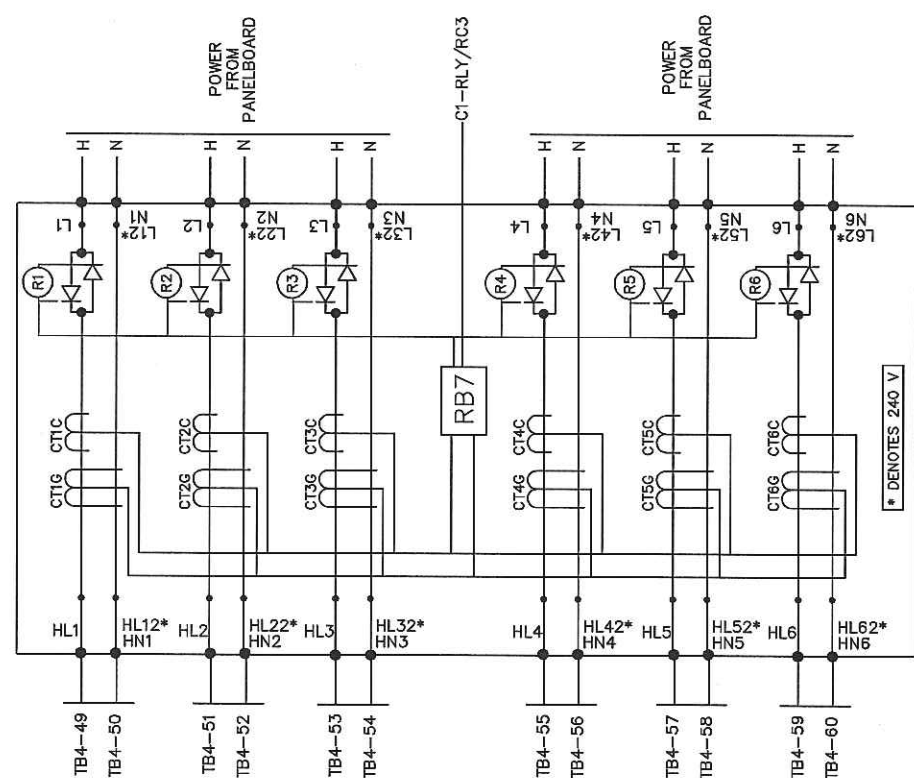
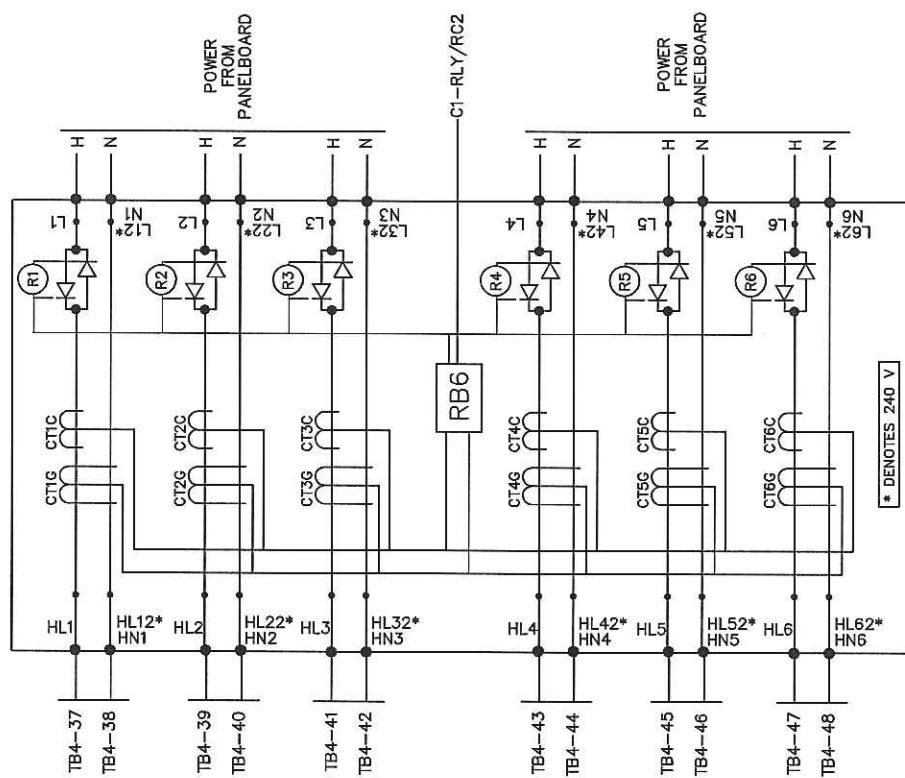
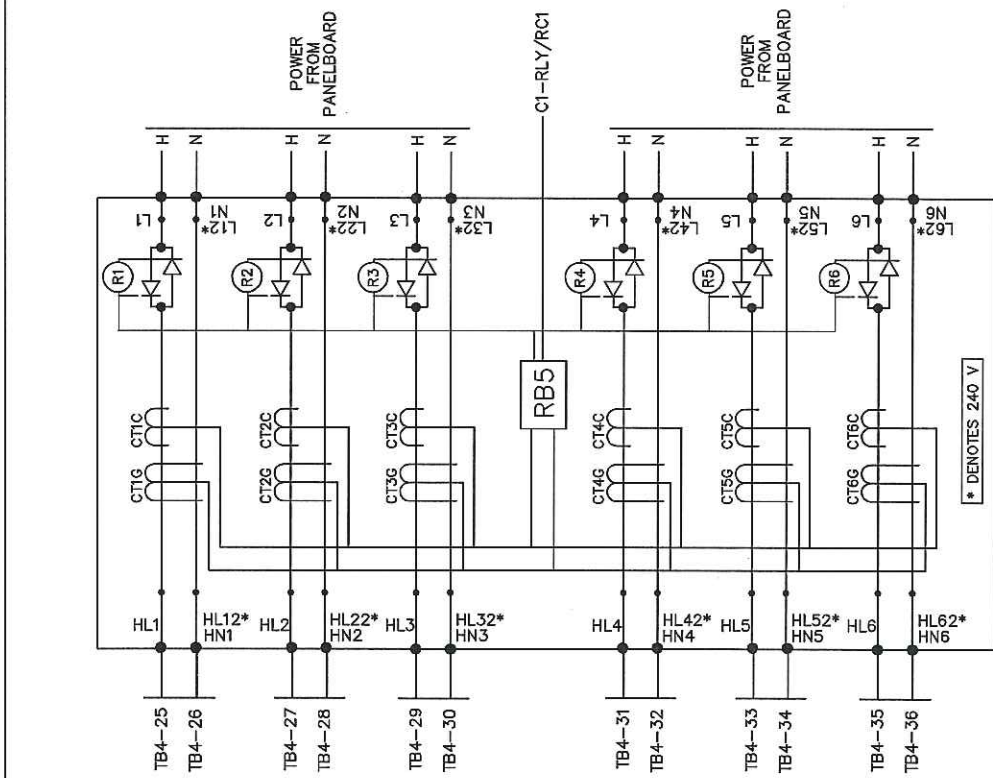
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-13

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Solid State Relay Wiring Diagram

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



LEFT SIDE WIRING DIAGRAM

RIGHT SIDE WIRING DIAGRAM

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

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B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

SOLID STATE RELAY WIRING DIAGRAM

ITEM NO. -

THERMON CANADA INC.
The Heat Tracing Specialists
 333 28th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER: VISTA PROJECTS LIMITED
FOR: MURPHY OIL CANADA
TCAP# 0013114
PO# 1780-023

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THERMON PROJECT NO. 0447
THERMON DWG. NO. 12-CDR-017
SHT. 13 REV. 0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE#2	PNL-EHT-200/300	P.VALLA	4 Jun 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

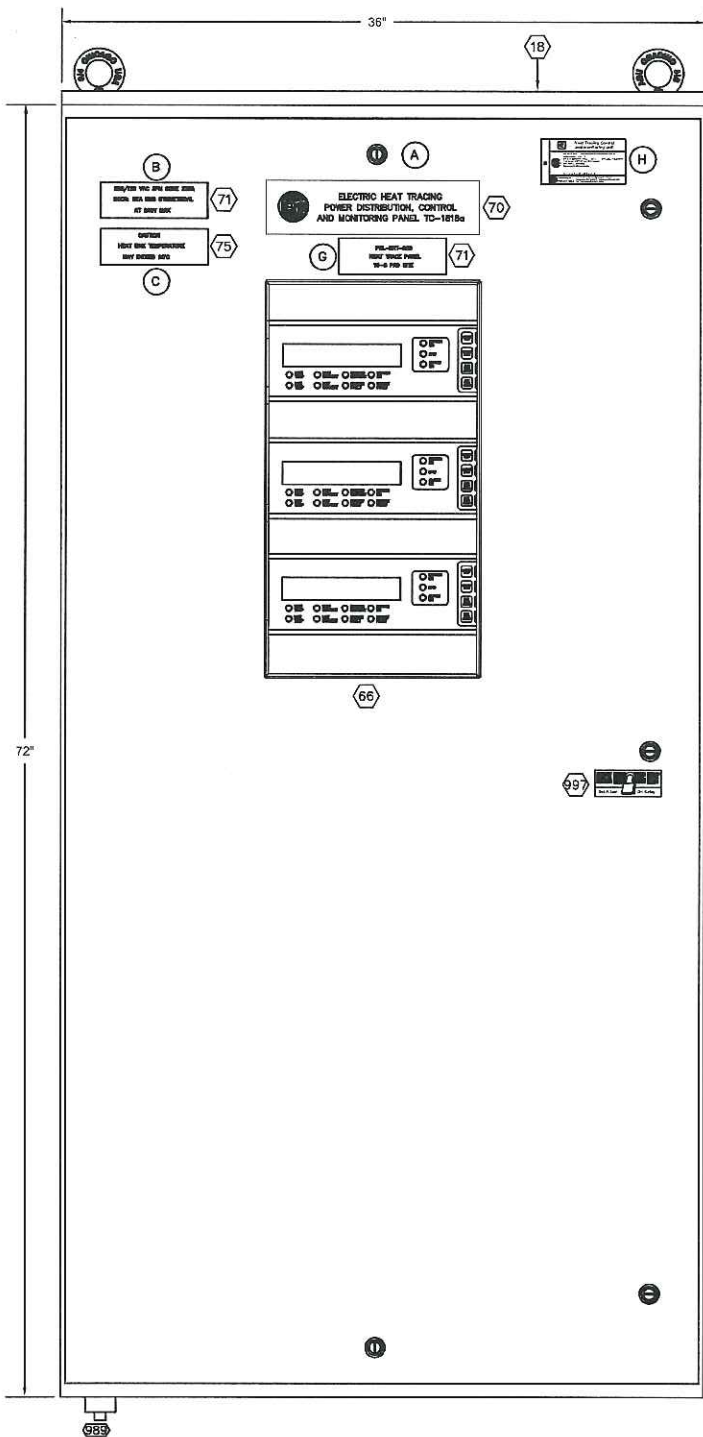
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-2

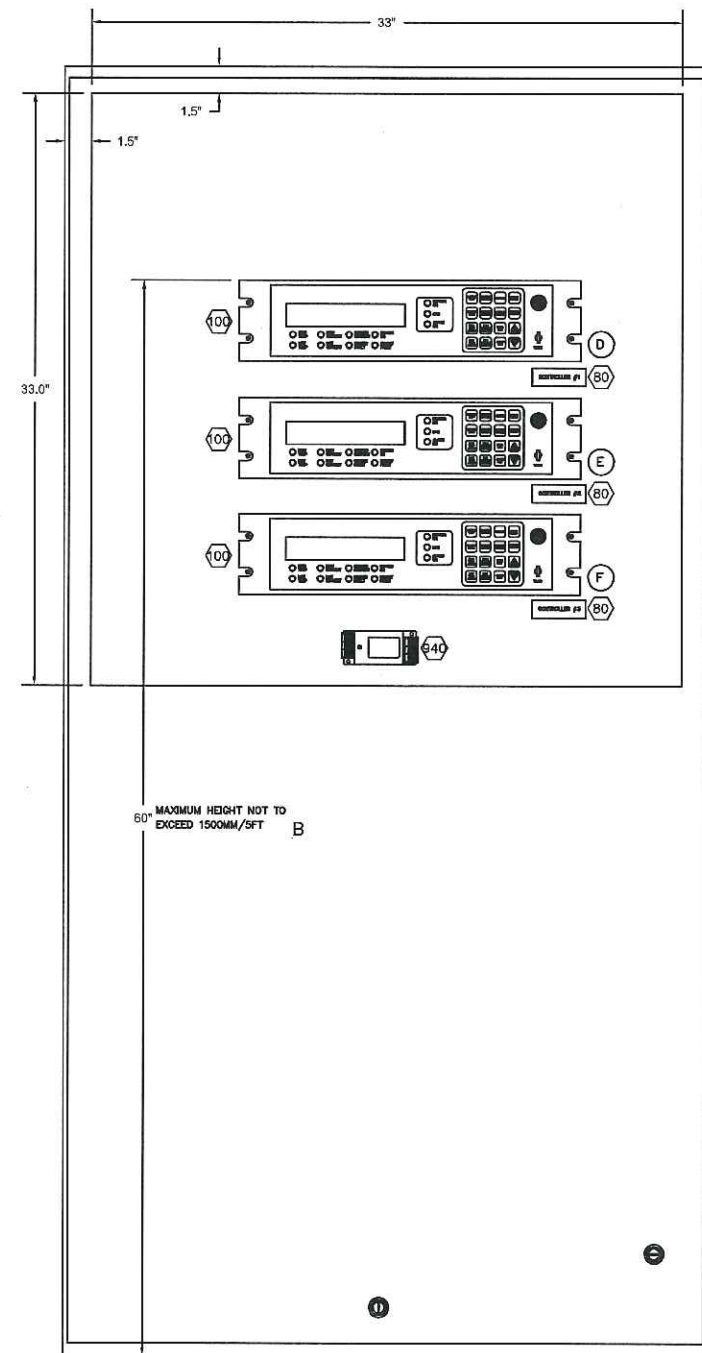
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Equipment Layout

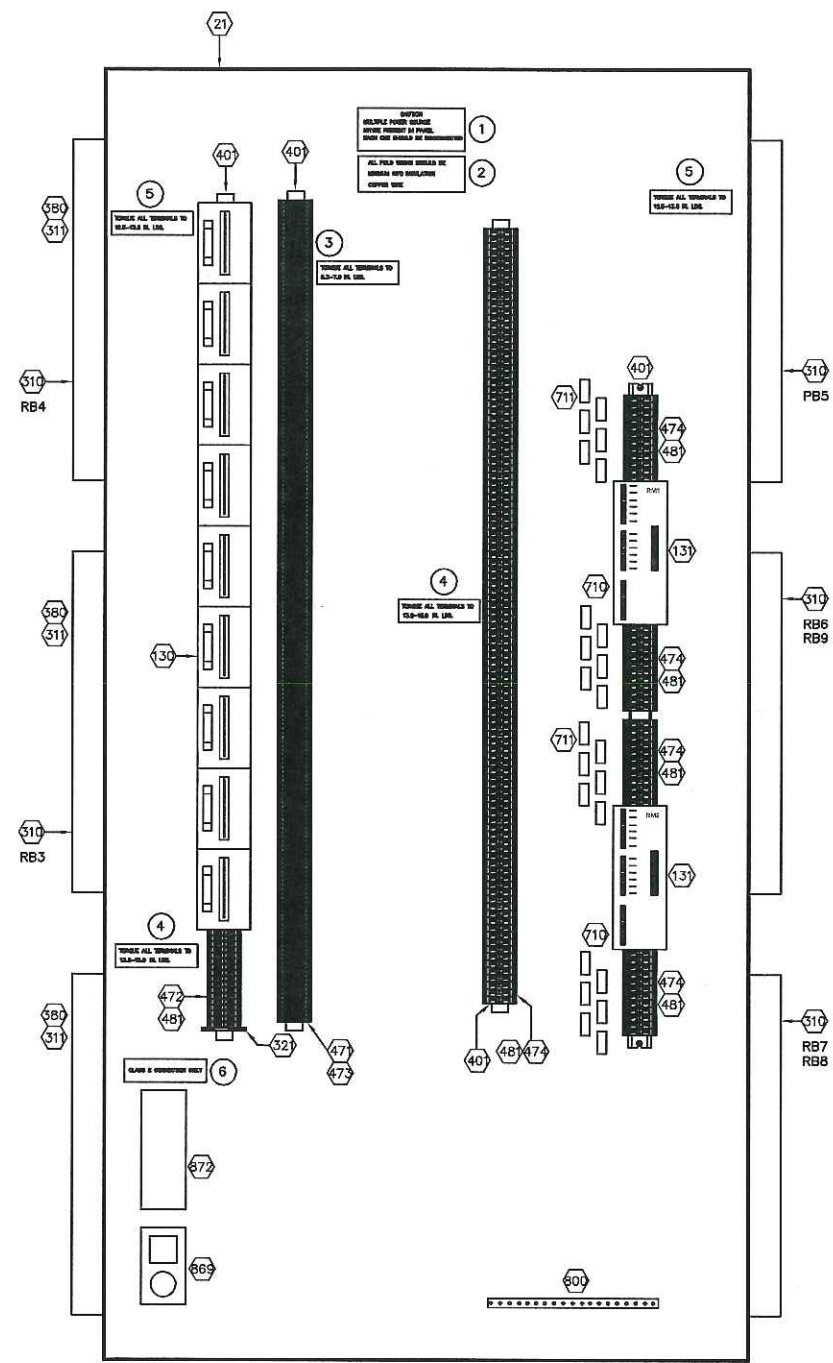
VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



FRONT VIEW



SWING-OUT PANEL



BACK PANEL LAYOUT

NAMEPLATE SCHEDULE	
TAG	DESCRIPTION
A	ELECTRIC HEAT TRACING POWER DISTRIBUTION, CONTROL AND MONITORING PANEL TC-1818a
B	120/208 VAC 3PH 60HZ 225A SCCR: 5KA RMS SYMMETRICAL AT 240V MAX
C	CAUTION HEAT SINK TEMPERATURE MAY EXCEED 60°C
D	CONTROLLER #1
E	CONTROLLER #2
F	CONTROLLER #3

TAGGING SCHEDULE	
G	PNL-EHT-200 HEAT TRACE PANEL 16-8 PAD SITE
	PNL-EHT-300 HEAT TRACE PANEL 13-9 PAD SITE

MARKING SCHEDULE	
TAG	MARKING
1	CAUTION MULTIPLE POWER SOURCES MAY BE PRESENT IN PANEL EACH ONE SHOULD BE DISCONNECTED BEFORE SERVICING
2	ALL FIELD WIRING SHOULD BE MINIMUM 60°C INSULATION COPPER WIRE
3	TORQUE ALL TERMINALS TO 5.3-7.0 IN. LBS.
4	TORQUE ALL TERMINALS TO 13.2-15.9 IN. LBS.
5	TORQUE ALL TERMINALS TO 12.5-13.5 IN. LBS.
6	CLASS 2 CONNECTION ONLY

Heat Tracing Control and Monitoring Unit

CATALOG NO. TC-1818A, 18.3-C-RB03, 2-655R-R, 655R03, 2G, 655R03C, 1718-6R10, 1818-55-00CALH1, 1-80-DS-SH1, 1

ENCLOSURE TYPE: 1818A 6A

DATE OF MANUFACTURE: 03/02/11 DIVG. NO. 12-CDR-017

VOLTAGE: 208/120 VAC, 600 W/815 MAX. MAX AMPS: 225A

WEIGHT: 00006

HAZ. LOC. CL. 1, ZONE 2, GROUP BA, T28

Refer to enclosed installation drawings.

THERMON INDUSTRIES 150 Therman Dr. San Marcos, TX 78667-0009
 Telephone: 512-295-5000 Facsimile: 512-295-2527
 TOLL FREE: 1-800-874-HEAT (4242)

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/28/12	REVISED AS SHOWN	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

EQUIPMENT LAYOUT

ITEM NO. -

THERMON CANADA INC.
 The Heat Tracing Specialists

333 28th STREET N.E.
 CALGARY, ALBERTA T2A 7P4

CUSTOMER: VISTA PROJECTS LIMITED

FOR: MURPHY OIL CANADA

TCAP# 0013114
 PO# 1780-023

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SCALE: NONE

THERMON PROJECT NO. 0447

THERMON DWG. NO. 12-CDR-017

SHT. 2 REV. 0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE02	PNL-ENT-200/300	P.VALLA	4 Jun - 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

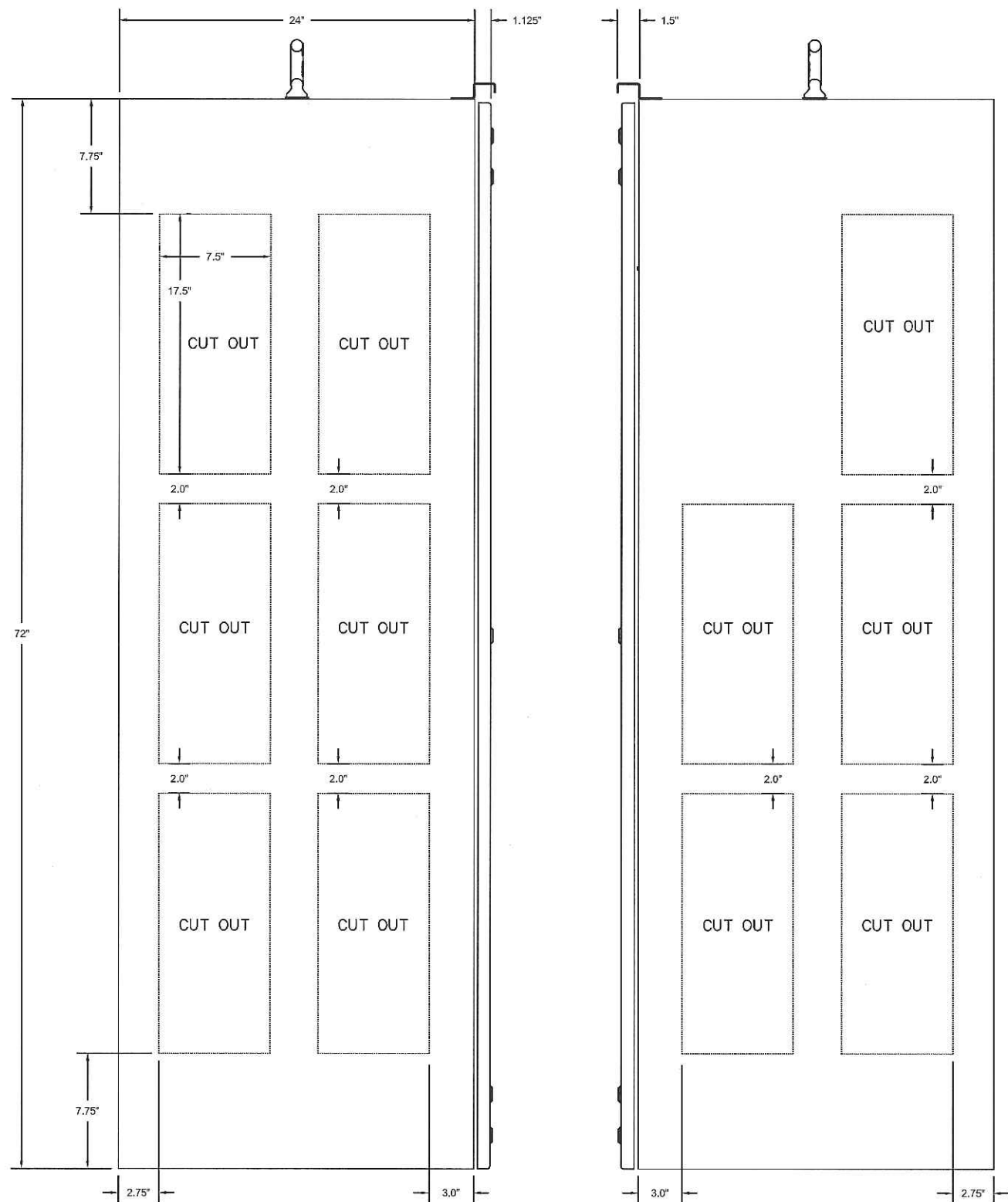
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-3

VENDOR REVISION: 0

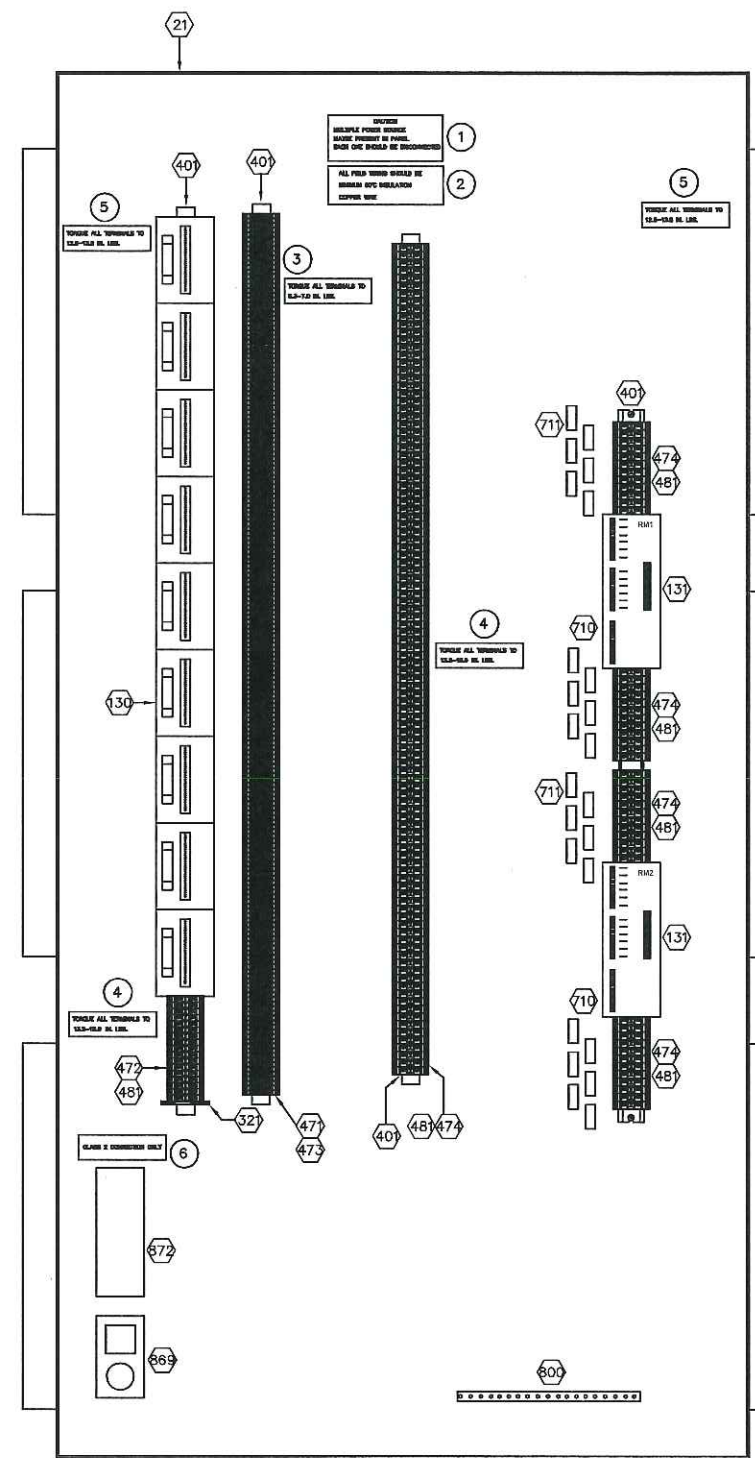
DOCUMENT DESCRIPTION: Equipment Layout. Cut-outs & dimensions

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



LEFT SIDE PANEL
POWER MODULE CUTOUT

RIGHT SIDE PANEL
POWER MODULE CUTOUT



BACK PANEL LAYOUT

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

EQUIPMENT LAYOUT
CUT-OUTS AND
DIMENSIONS

ITEM NO. -

THERMON CANADA INC.

The Heat Tracing Specialists



333 28th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED

FOR: MURPHY OIL CANADA

TCAP# 0013114
PO# 1780-023

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SCALE: NONE

THERMON PROJECT. NO.
0447

THERMON DWG. NO.
12-CDR-017

SHT. 3 | REV. 0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE02	PNL-EHT-200/350	P.VALLA	4-JUN-2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-4

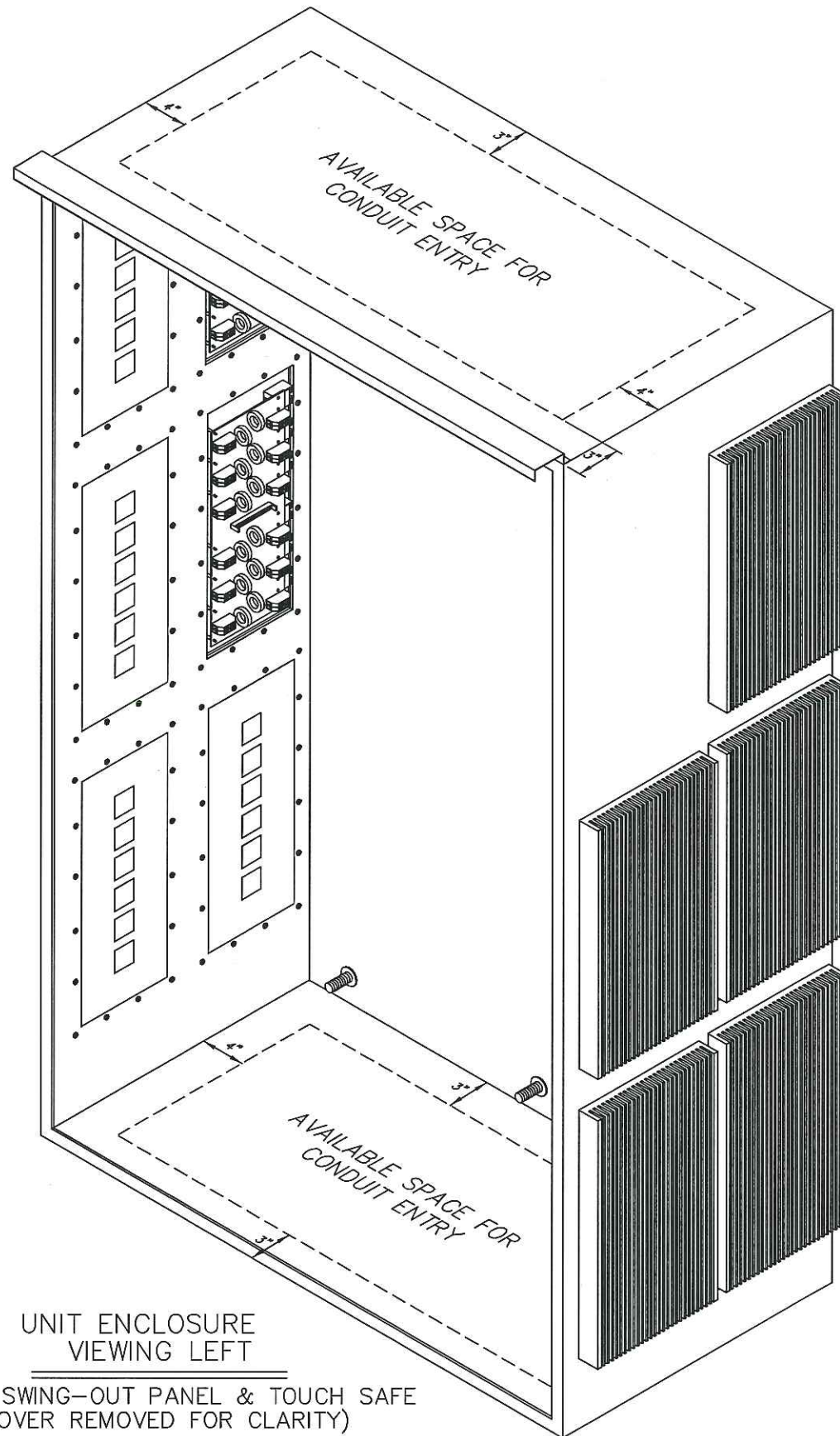
VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Heat Sink layout and Conduit Entry Locations

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

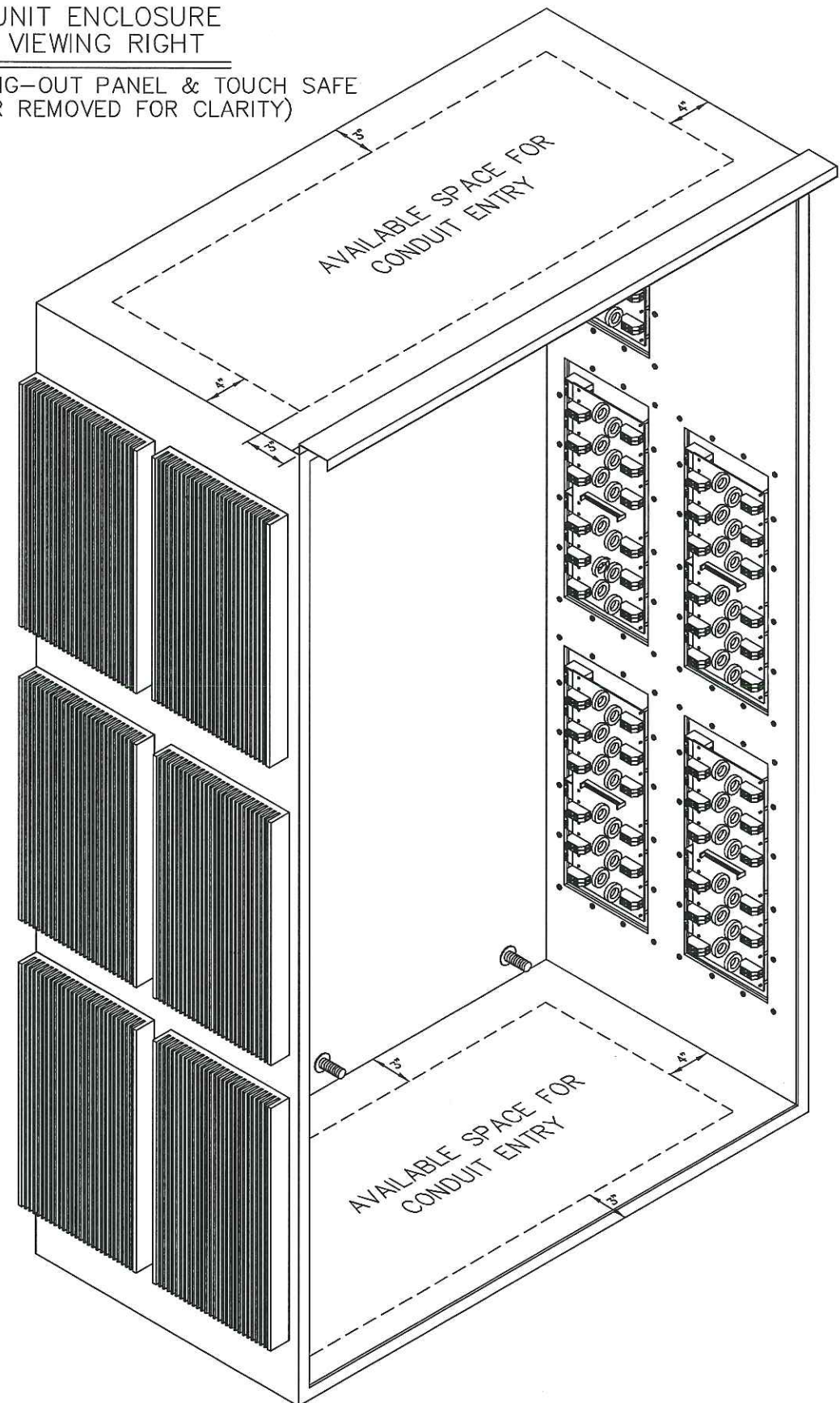
CSA CONDUIT NOTE

CONDUIT ENTRY IS PERMITTED IN THE LOCATIONS SHOWN ON THE DRAWING. TO MAINTAIN TYPE 4 CERTIFIED CONDUIT HUBS MUST BE USED. HUBS SHOULD BE INSTALLED IN ACCORDANCE WITH CSA STD C22.2 - NO.14-05.



UNIT ENCLOSURE
VIEWING LEFT
(DOOR, SWING-OUT PANEL & TOUCH SAFE
COVER REMOVED FOR CLARITY)

UNIT ENCLOSURE
VIEWING RIGHT
(DOOR, SWING-OUT PANEL & TOUCH SAFE
COVER REMOVED FOR CLARITY)



REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
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A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

HEAT SINK LAYOUT
AND CONDUIT
ENTRY LOCATIONS

ITEM NO. -

THERMON CANADA INC.

The Heat Tracing Specialists



333 28th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED

FOR:
MURPHY OIL CANADA

TCAP# 0013114
PO# 1780-023

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SCALE: NONE

THERMON PROJECT. NO.
0447

THERMON DWG. NO.
12-CDR-017

SHT. 4 REV. 0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DEV3	PNL-EHT-200/300	P.VALLA	7-Jun-2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

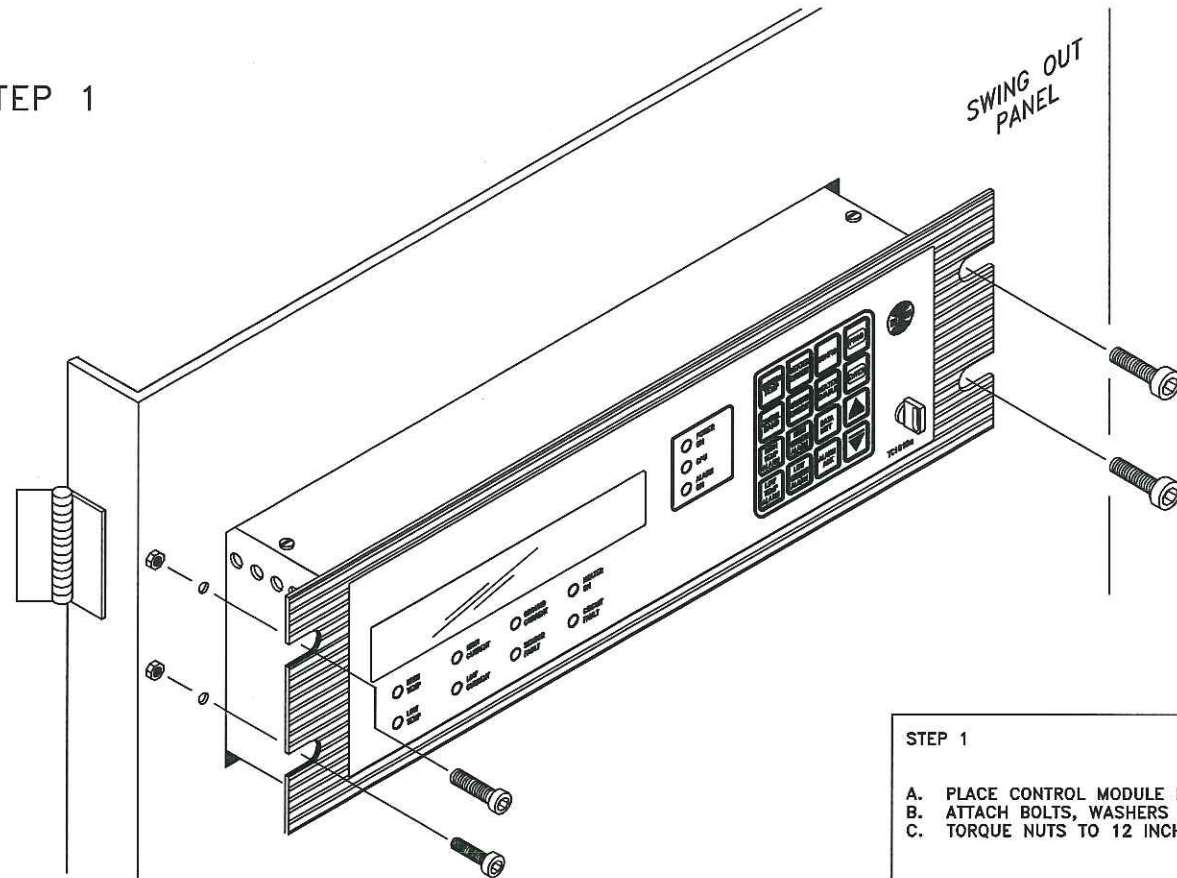
DOCUMENT NUMBER: 12-CDR-017-5

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Controller Installation Instructions

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

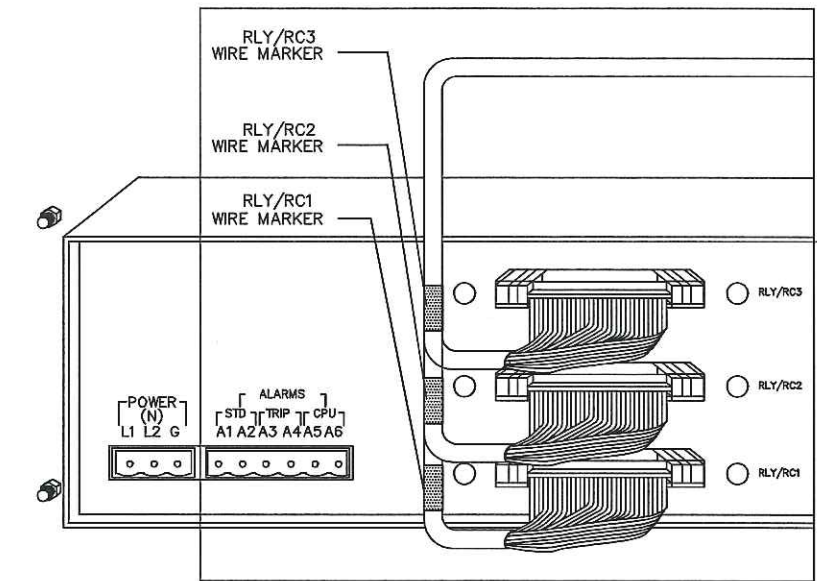
STEP 1



STEP 1

A. PLACE CONTROL MODULE IN SWINGOUT PANEL.
 B. ATTACH BOLTS, WASHERS AND NUTS.
 C. TORQUE NUTS TO 12 INCH/LBS.

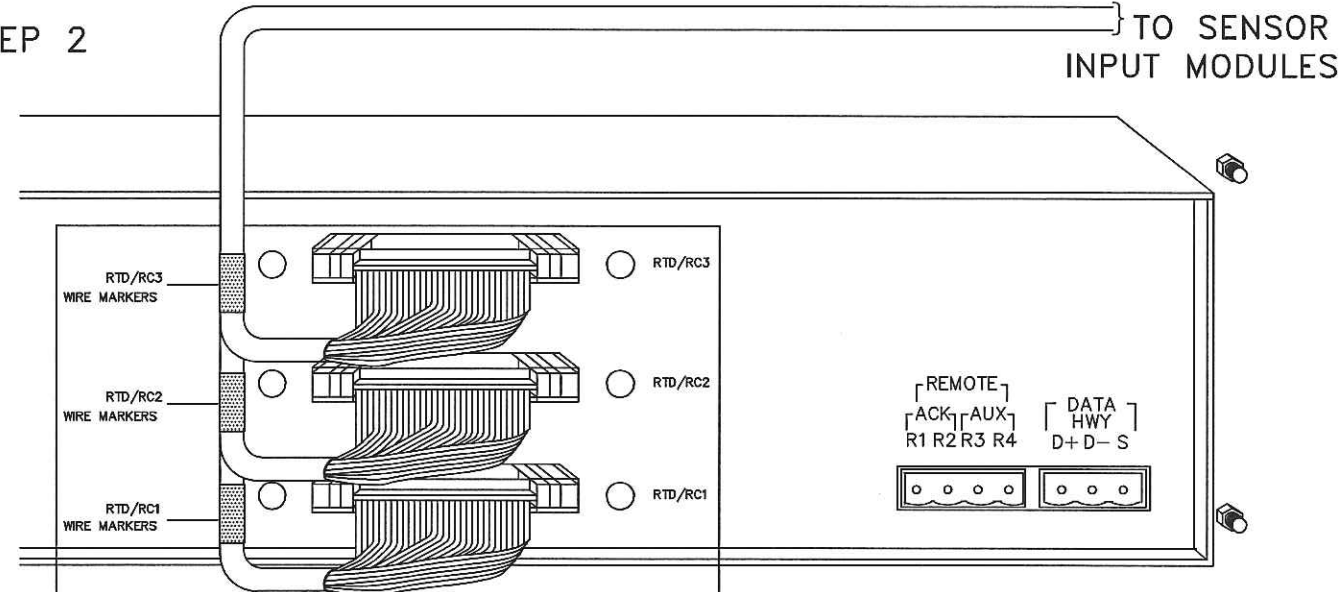
STEP 3



STEP 3
 (MAKE SURE BREAKER SWITCH IS IN OFF POSITION.)

A. ATTACH 40 PIN RIBBON CABLE CONNECTORS ACCORDING TO WIRE MARKERS. (FITS ONLY ONE WAY)
 MATCH WIRE MARKERS TO BACK OF CONTROL MODULE.

STEP 2



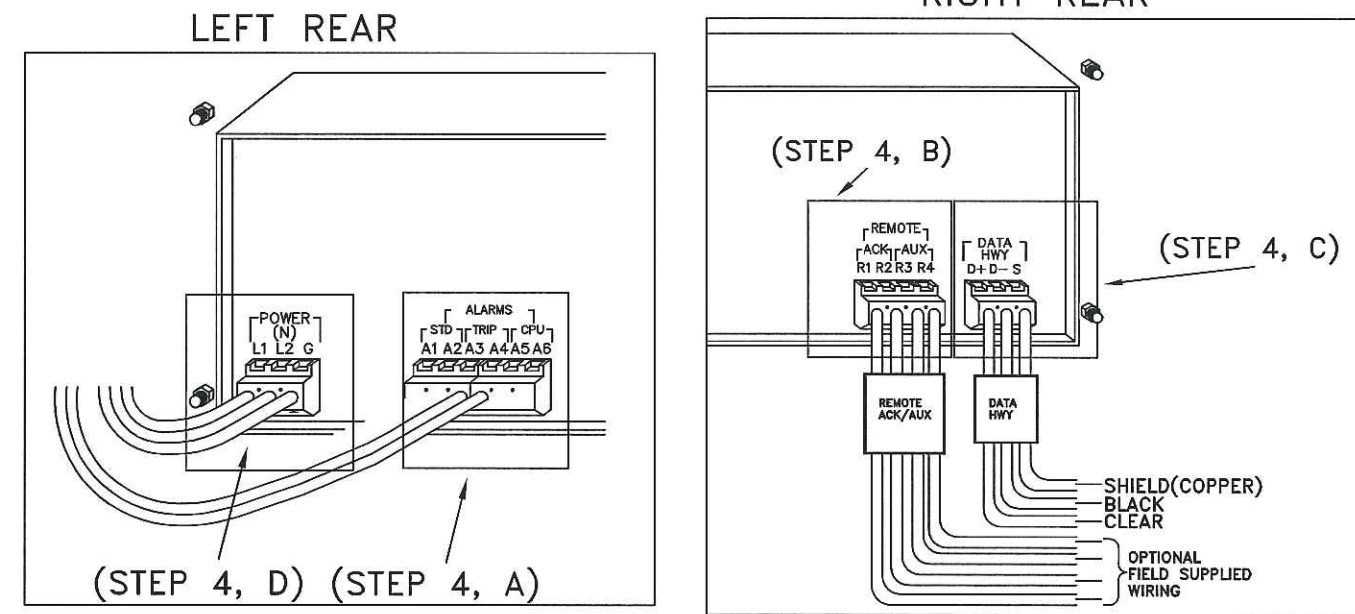
NOTES:

1. CHECK CONTROLLER SLIDE SWITCH SETTING. INPUT VOLTAGE SWITCH IS FACTORY SET TO 120 VAC ON CONTROLLER.

STEP 2
 (MAKE SURE BREAKER SWITCH IS IN OFF POSITION.)

A. ATTACH 26 PIN RIBBON CABLE CONNECTORS ACCORDING TO WIRE RTD MARKERS. (FITS ONLY ONE WAY)
 MATCH WIRE MARKERS TO BACK OF CONTROL MODULE.

STEP 4



STEP 4
 (MAKE SURE BREAKER SWITCH IS IN OFF POSITION.)

MATCH WIRE MARKERS ACCORDINGLY.

A. ATTACH 6 POINT MALE ALARM PLUG-IN TERMINAL BLOCK.
 B. ATTACH 4 POINT MALE REMOTE/ACK/AUX PLUG-IN TERMINAL BLOCK.
 C. ATTACH 3 POINT MALE DATA HWY PLUG-IN TERMINAL BLOCK.
 D. ATTACH 3 POINT MALE POWER INPUT PLUG-IN TERMINAL BLOCK.

REV	DATE	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
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B	03/29/12	REVED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

CONTROLLER INSTALLATION INSTRUCTIONS

ITEM NO. -

THERMON CANADA INC.
 The Heat Tracing Specialists

393 26th STREET N.E.
 CALGARY, ALBERTA T2A 7P4

CUSTOMER:
 VISTA PROJECTS LIMITED

FOR:
 MURPHY OIL CANADA

TCAP# 0013114
 PO# 1780-023

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SCALE: NONE

THERMON PROJECT. NO. 0447

THERMON DWG. NO. 12-CDR-017

SHT. 5 REV. 0

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE03	PNL-ENT-20/30	P.VALLA	4 June 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

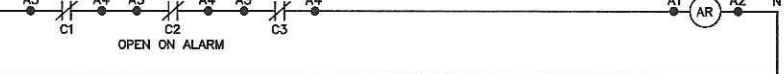
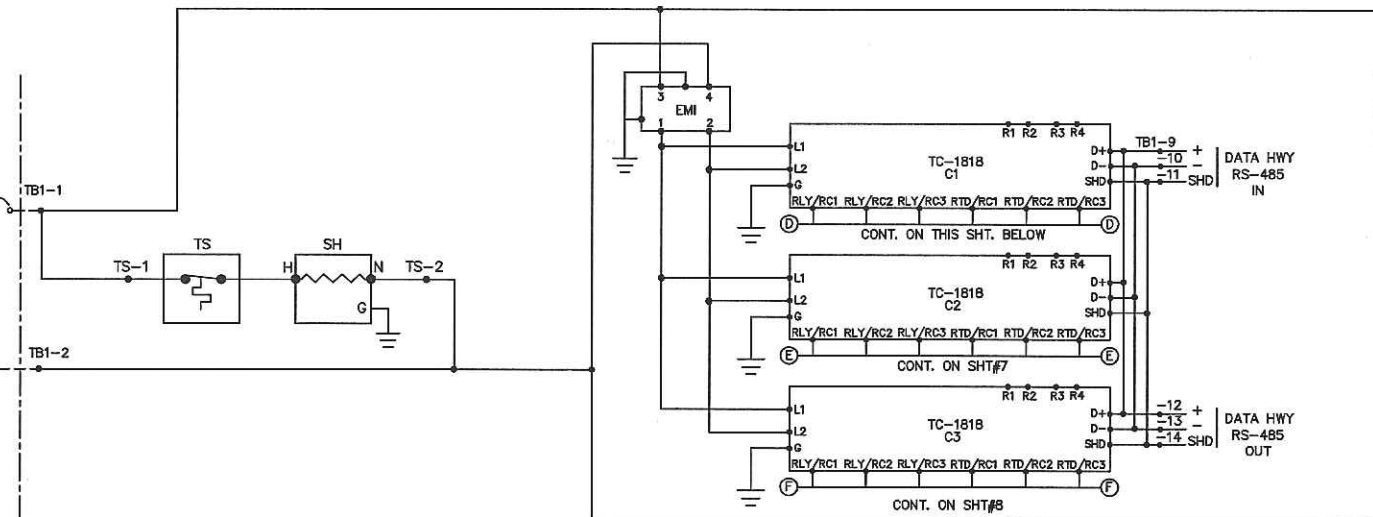
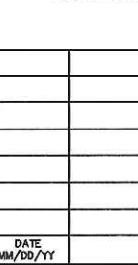
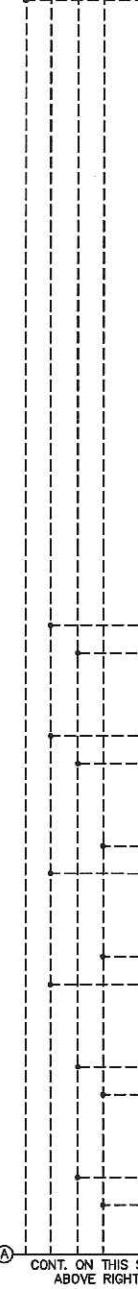
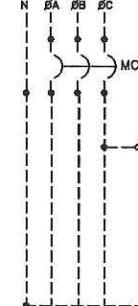
DOCUMENT NUMBER: 12-CDR-017-6

VENDOR REVISION: 0

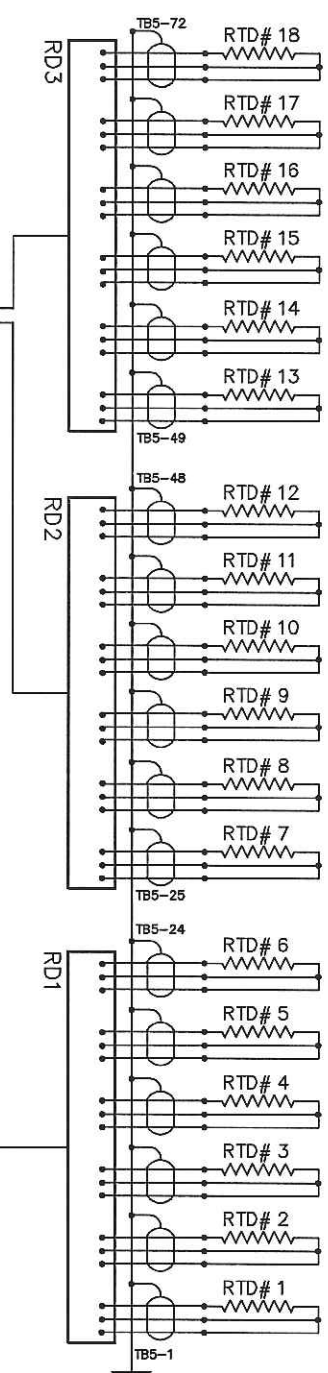
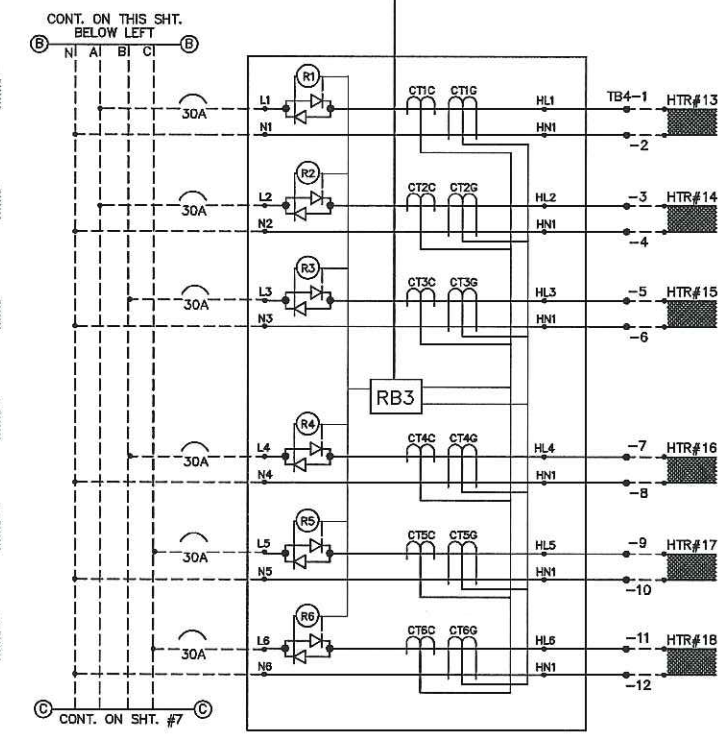
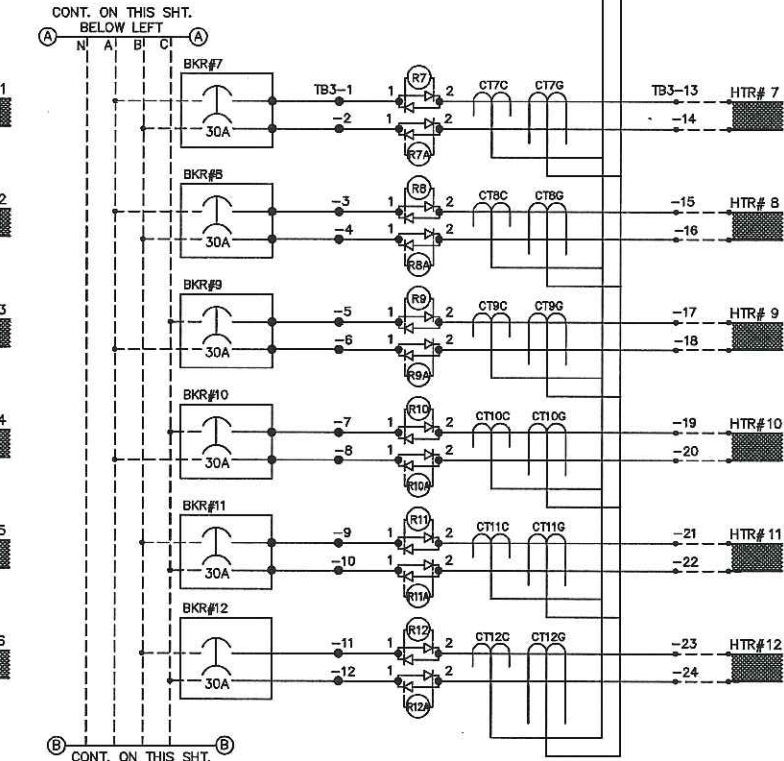
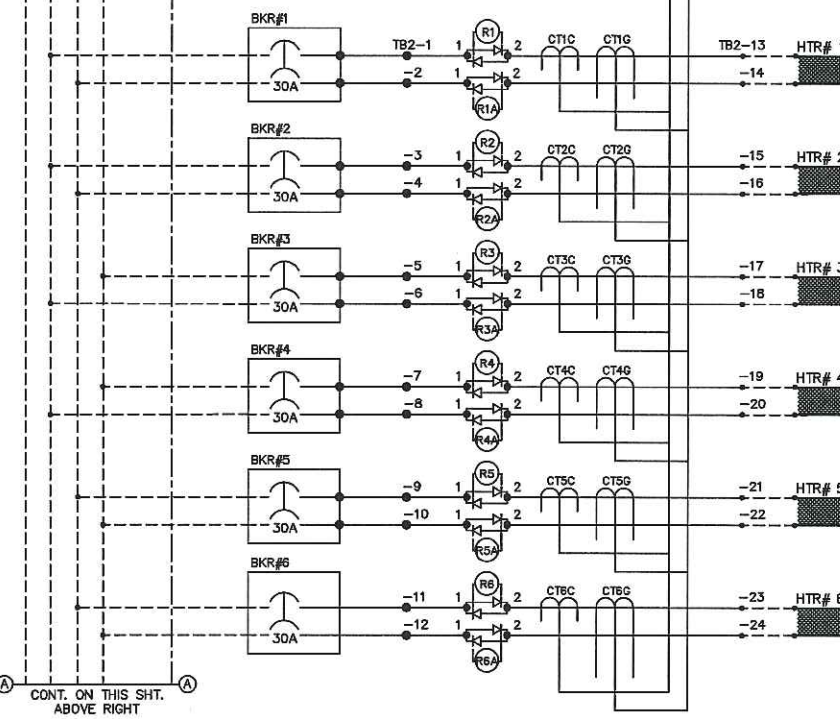
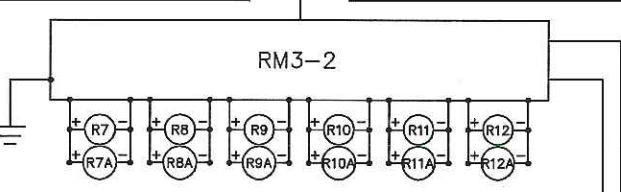
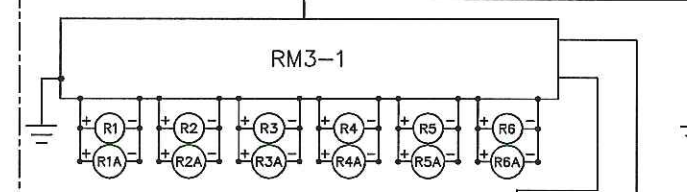
DOCUMENT DESCRIPTION: Wiring Schematic

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

3 PHASE 4 WIRE
208/120 VAC



6 AMP AT 250VAC/DC
CONTACTS SHOWN ARE IN OFF THE SHELF STATE



REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
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B	03/29/12	REVISED AS SHOWN	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

WIRING SCHEMATIC
ITEM NO. -

THERMON CANADA INC.
The Heat Tracing Specialists
 333 28th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED
FOR: MURPHY OIL CANADA
TCAP# 0013114
PO# 1780-023

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SCALE: NONE
THERMON PROJECT NO. 0447
THERMON DWG. NO. 12-CDR-017
SHT. 6 REV. 0

CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE83	PNL-EHT-200/300	P.VALLA	7 JUNE 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

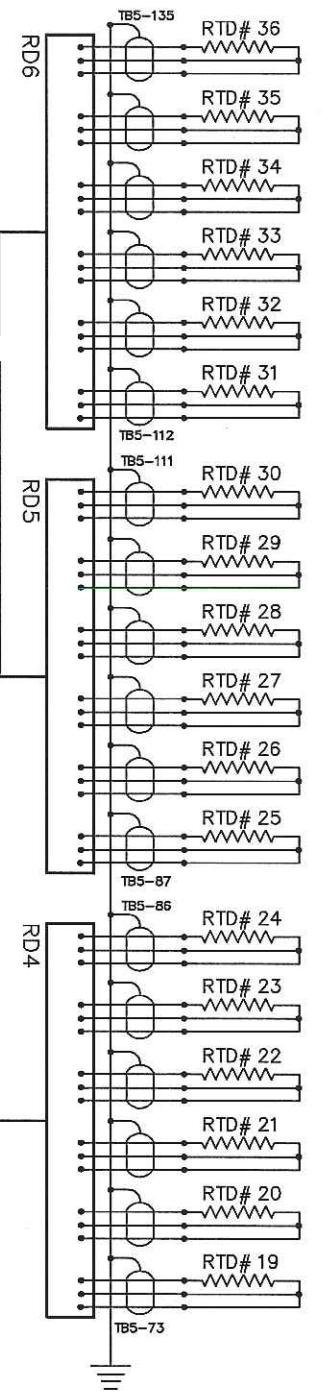
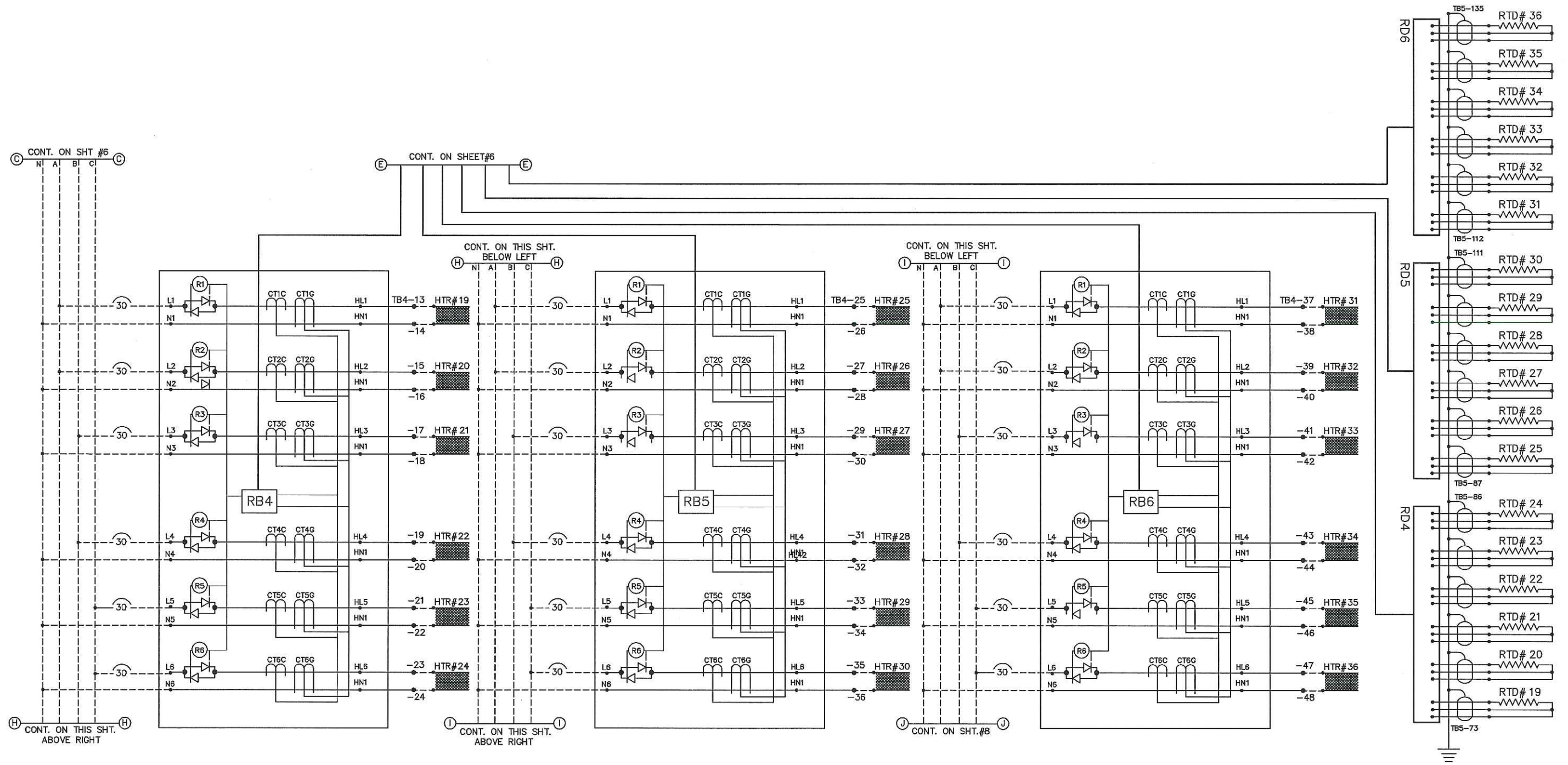
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-7

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Wiring Schematic

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
0	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED AS SHOWN	TK	SH	KN	BP
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REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
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A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

WIRING SCHEMATIC
ITEM NO. -

THERMON CANADA INC.
The Heat Tracing Specialists[®]



333 28th STREET N.E.
CALGARY, ALBERTA T2A 7P4

CUSTOMER:
VISTA PROJECTS LIMITED

FOR: MURPHY OIL CANADA

TCAP# 0013114
PO# 1780-023

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SCALE: NONE

THERMON PROJECT NO. 0447

THERMON DWG. NO. 12-CDR-017

SHT. 7 REV. 0



CODE SHEET

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SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE03	PNL-EHT-200/300	P. IALLA	4 JUN 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

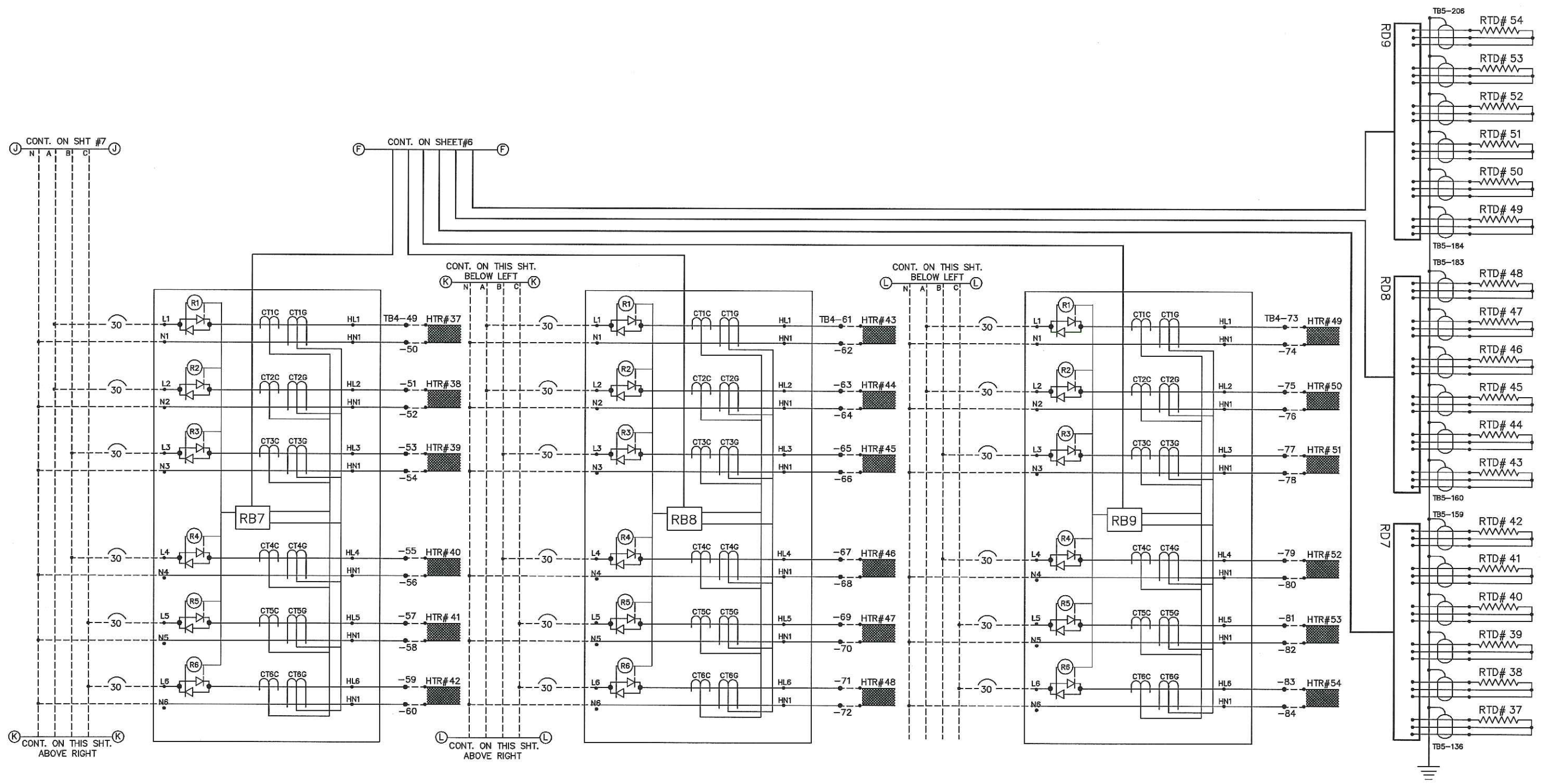
VENDOR NAME: Thermon Canada Inc

DOCUMENT NUMBER: 12-CDR-017-8

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Wiring Schematic

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23



REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
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B	03/29/12	REVISED AS SHOWN	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

WIRING SCHEMATIC

ITEM NO. -

THERMON CANADA INC.
The Heat Tracing Specialists



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CALGARY, ALBERTA T2A 7P4

CUSTOMER:
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FOR: MURPHY OIL CANADA

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SCALE: NONE

THERMON PROJECT NO. 0447

THERMON DWG. NO. 12-CDR-017

SHT. 8 REV. 0

CODE SHEET

VISTA Projects Limited VENDOR DRAWING/DOCUMENT SQUAD CHECK			
A	Reviewed without exception. Proceed with fabrication. Issue final drawings/documents.		
B	Reviewed except as marked and/or noted. Proceed with fabrication and resubmit drawing/document. Shipment will not be released, if any drawings/documents requiring approval, as per purchase order conditions, are at this code.		
C	Not accepted. Revise as marked and resubmit drawing/document for review. Shipment will not be released, if any drawings/documents requiring approval, as per purchase order conditions, are at this code.		
D	Not required for review. Received for information.		
Reviewed only as to general conformity with the design concept and specifications provided. The engineer does not warrant or represent that the information contained on this drawing/document is either accurate or complete. Sole responsibility for correct design, detail and dimensions shall remain with the party submitting the drawing/document.			
SDR CODE	EQUIPMENT TAG	REVIEWED BY	DATE
DE03	PNL-EHT-200/300	P.VALLA	4 JUN 2012

PROJECT NAME: Murphy Oil Cadotte / 1780-023

VENDOR NAME: Thermon Canada Inc

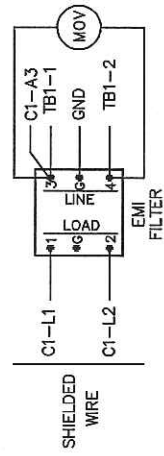
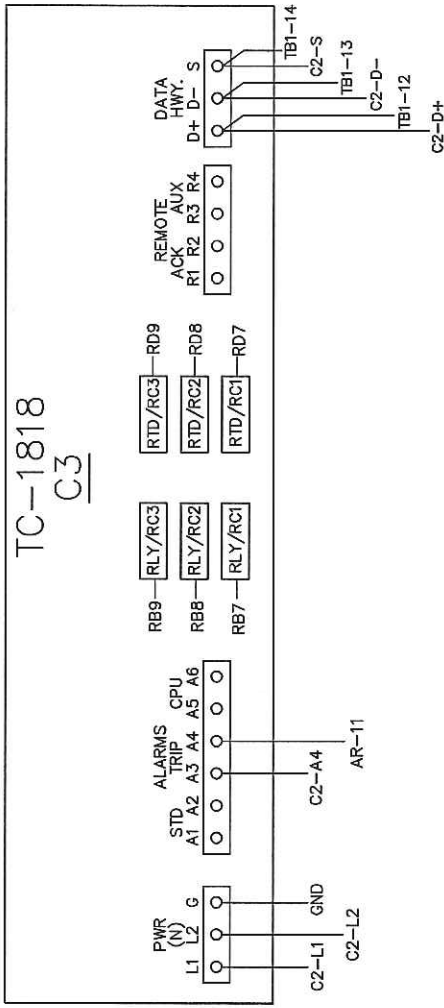
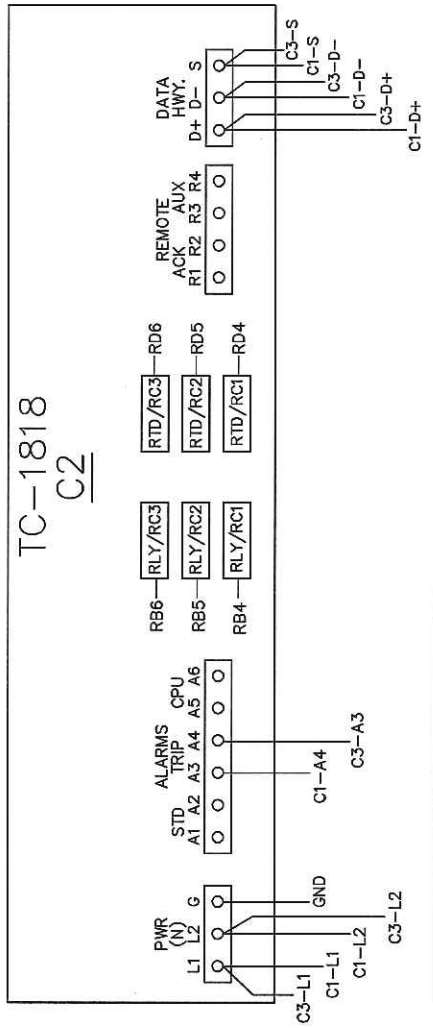
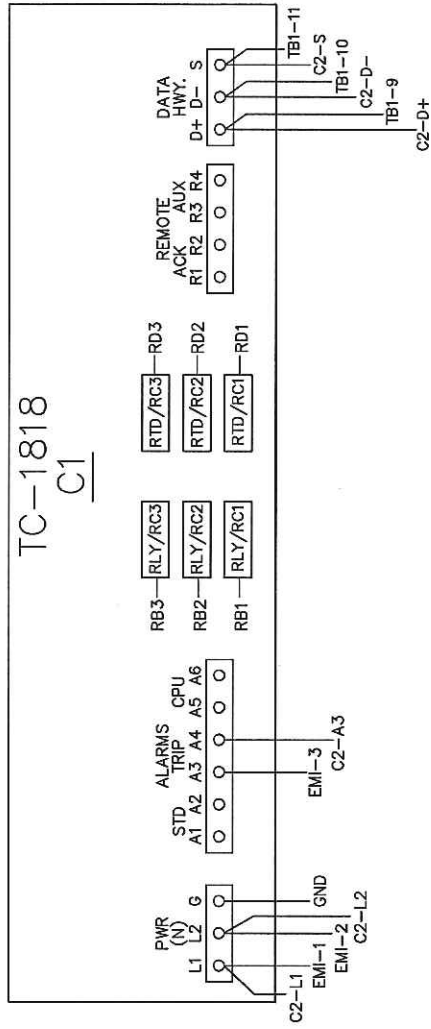
DOCUMENT NUMBER: 12-CDR-017-9

VENDOR REVISION: 0

DOCUMENT DESCRIPTION: Rear View and Swing Out Panel Wiring Diagram

VENDOR TRANSMITTAL NUMBER: 12-8232 2012/05/23

THERMON WIRE NUMBERING SYSTEM
 THERMON USES THE OPPOSITE END DESIGNATION WIRE NUMBERING SYSTEM. THE MARKER ON A WIRE DENOTES WHERE THE OPPOSITE END OF THE WIRE IS CONNECTED E.G. A WIRE MARKER READING R2-1 MEANS THAT THE OPPOSITE END IS CONNECTED ON RELAY #2, PIN #1.



SWING-OUT PANEL WIRING
 (REAR VIEW)

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED

REV	DATE MM/DD/YY	DESCRIPTION OF REVISION	DRAWN	DESIGNED	REVIEWED	APPROVED
D	04/10/12	ISSUED FOR CONSTRUCTION	SH	SH	KN	BP
B	03/29/12	REVISED UP TO B NO CHANGES THIS DRAWING	TK	SH	KN	BP
A	03/12/12	ISSUED FOR APPROVAL	KC	SH	KN	BP

REAR VIEW AND SWING-OUT PANEL WIRING DIAGRAM
 ITEM NO. -

THERMON CANADA INC.
 The Heat Tracing Specialists
 333 28th STREET N.E.
 CALGARY, ALBERTA T2A 7P4

CUSTOMER: VISTA PROJECTS LIMITED
 FOR: MURPHY OIL CANADA
 TCAP# 0013114
 PO# 1780-023

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 SCALE: NONE
 THERMON PROJECT NO. 0447
 THERMON DWG. NO. 12-CDR-017
 SHT. 9 REV. 0