Base Load Power Hub (BLPH)

ELECTRICAL HEAT TRACING

EHT CALCULATION LIST

Document Number:

1724001647-EL-LIS-00003

Document Class: 2

02	09-12-24	Accepted for Construction (AFC)	L. Gentile	A. Martelli	G. Pupilli
01	29-10-24	Issue for Review (IFR)	L. Gentile	A. Martelli	G. Pupilli
00	23-09-24	Issue for Review (IFR)	L. Gentile	A. Martelli	G. Pupilli
Rev.	Date	Description	Prepared	Reviewed	Approved

nVent

This document undergoes an issuance cycle within EDMS "Fusionlive".
Its distribution is electronically controlled. Once printed shall be considered as “NOT CONTROLLED” copy

Table of Contents

SH.	DESCRIPTION	REVISIONS							
		00	01	02					
1	Cover	X	X	X					
2	Table of Contents	X	X	X					
3	Revision / Change Log / Hold List	X	X	X					
4	References	X	X	X					
5	EHT CALCULATION LIST	X	X	X					

This document undergoes an issuance cycle within EDMS "Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
2.	
3.	
4.	

This document undergoes an issuance cycle within EDMS "Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

EHT CALCULATION LIST

PIT240024_ED01-1001

		ENGINEERING DATA				MECHANICAL & INSULATION DATA						PROCESS DATA				EHT BASIC DESIGN							EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA						
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**						
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

EHT CALCULATION LIST

PIT240024_ED01-1001

		ENGINEERING DATA				MECHANICAL & INSULATION DATA						PROCESS DATA				EHT BASIC DESIGN												EHT TEMP. CONTROL DATA						
Main EHT Box Number	Item Number	Heater Number	Equipment ID	nVent Circuit Number	Plant Area	Heated Area [m²]	Available Area [m²]	Vessel Dry Area [m²]	Vessel Wet Area [m²]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Heather Spacing [mm]	Fixing Method	Heating Cable Output [W/m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																			GRAND TOTAL		**17.3**				**1.19**	**274**	**1.83**							
ETB-200N1-17-L1-04	1	EHT-1004-A	V-43001	3001	EQUIPMENT	2.4	6.9	0.8	6.0	RW/MF 1:2015	20	5	100	11	11	197.8	3BTV2-CT	150.0	ATE-180	13.9	17.3	153	Single L-N	230	1.19	274	1.83	Ambient sensing, standard	5	6	22	47	00	Combined with EHT-1004-B
																			TOTAL		**17.3**			**230**	**1.19**	**274**	**1.83**							