11 Jocama Blvd., Suite 11A, Old Bridge NJ 08857 USA p. 718.824.4901 f. 718.409.3605 www.alstromenergygroup.com

,QVWDQWDQHRXV :DWHU +HDWHU
6HULHV ´(&2 3$&.µ

6WDQGDUG)HDWXUHV (TXLSP

/ 6WDLQOHVV 6WHHO 7XEH %XQGOH

&RQWURO 9DOYH
6HOI RSHUDWHG
3LORW RSHUDWHG
$LU RSHUDWHG
(OHFWULF RSHUDWHG

7ULP

$ 6 0 (:DWHU 5HOLHI 9DOYH

9DFXXP %UHDNHU

+RW :DWHU 7KHUPRPHWHU

7KHUPDO ,QVXODWLRQ

0HWDO -DFNHW

2SWLRQDO)HDWXUHV

&LUFXODWLQJ 3XPS

7KUHH :D\ 9DOYH

&XVWRP 'HVLJQHG &RQILJXUDWLRQV

2WKHU /LTXLGV 0DWHULDOV

$OVWURP ³(FR 3DFN´ :DWHU +HDWHU UHSUHVHQWV D SURYHQ HFRQRPLFDO VROXWLRQ
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LQVWDQWDQHRXVO\ WR ZDWHU IORZ IOXFWXDWLRQV
8QLTXH VWDQG GHVLJQ SHUPLWV YHUWLFDO RU KRUL]RQWDO LQVWDOODWLRQ GHSHQG
6LQJOH RU 'RXEOH 7XEHVKHHW PRGHOV SURYLGH HQJLQHHULQJ VROXWLRQ IRU PRVW

6HUYLFH :DWHU

8VXDOO\ FLW\ ZDWHU LV KHDWHG WR) IRU GRPHVWLF XVH DQG
RWKHU VHUYLFH DSSOLFDWLRQV ,Q RUGHU WR SUHYHQW FRUURVLRQ RI WKH
WXEH EXQGOH DQG KHDG DUH PDQXIDFWXUHG IURP VWDLQOHVV VWHHO
9DULRXV W\SHV RI WHPSHUDWXUH UHJXODWRUV DUH DYDLODEOH
DFKLHYHG E\ XVH RI DGGLWLRQDO WHPSHULQJ YDOYH
7KLV V\VWHP UHTXLUHV WKDW FRQWLQXRXV UXQQLQJ
FLW\ ZDWHU EHIRUH HQWHULQJ WHPSHULQJ YDOYH
FRQILUP WKDW WKH RXWJRLQJ WHPSHUDWXUH LV PDLQWDLQHG LQ WKH UDQJH RI)
$66(6WDQGDUG 3HUIRUPDQFH UHTXLUHPHQWV IRU 7HPSHUDWXUH $FWXDWHG 0L[LQ
IRU 3ULPDU\ 'RPHVWLF 8VH

3URFHVV 6WHDP

7KLV FXVWRP GHVLJQHG IRU WKH ZDWHU XVH
RI D JLYHQ SURFHVV
VPDOO FRPPHUFLDO DQG LQGXVWULDO VSDFH KHDWLQJ
QRQ IUHH]LQJ PL[WXUH RI HWK\OHQH JO\FRO
FLUFXODWLQJ SXPS PD\ EH XVHG 7KUHH Z
UHJXODWLQJ ZDWHU WHPSHUDWXUH DV WKH FRPSOH[
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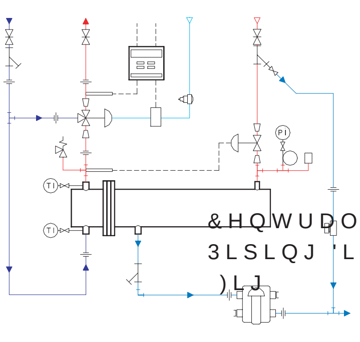

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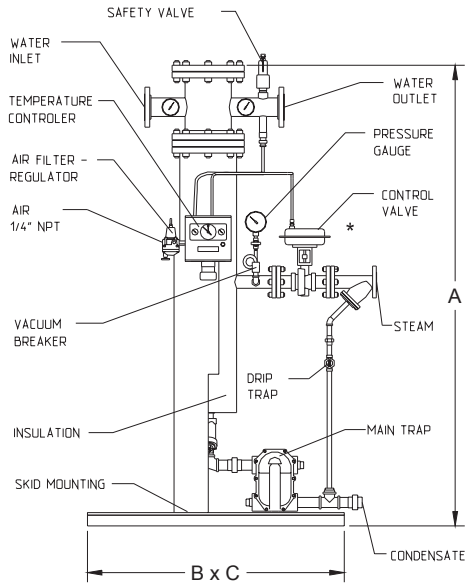
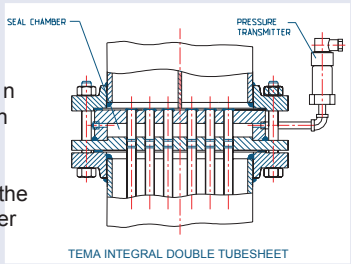
HEATER DIMENSIONS IN INCHES				OPENING SIZE BASED ON FLOW VELOCITY	
MODEL NO.	A	B	C	GPM	OPENING SIZE
EP - A	85	48	24	73	2 1/2
	85	48	24	49	2
	85	48	24	50	2
EP - B	86	48	24	186	4
	86	48	24	126	3
	86	48	24	98	3
	86	48	24	80	2 1/2
	86	48	24	47	2
EP - C	90	54	30	299	5
	90	54	30	259	5
	90	54	30	132	3
	90	54	30	134	3
	90	54	30	102	3
EP - D	90	54	30	480	6
	90	54	30	295	5
	90	54	30	350	5
	90	54	30	120	3
Control valve, type and size, is selected per job specification				MAX. VELOCITY - 6 ft/sec	



SELECTION TABLES											
STEAM LINE PRESSURE		2	5	10	15	25	40	50	75	100	150
STEAM PRESSURE IN ELEMENT		0	2	5	10	15	25	30	50	65	100
STEAM FACTOR - K		0.516	0.52	0.523	0.528	0.534	0.543	0.548	0.55	0.567	0.583
MODEL NO		TUBE BUNDLE SELECTION IN GPM									
TEMP. RANGE 40° 110°	EP - A	23	25	28	31	35	39	43	47	52	73
	EP - B	68	75	82	90	99	109	120	132	146	186
	EP - C	122	134	144	151	159	167	175	184	193	299
	EP - D	160	176	184	194	203	261	271	282	296	480
TEMP. RANGE 40° 120°	EP - A	19	21	23	24	26	27	28	31	33	49
	EP - B	51	60	66	71	75	79	85	89	94	126
	EP - C	104	106	118	132	148	163	168	178	184	259
	EP - D	144	155	179	189	201	241	265	273	287	295
TEMP. RANGE 40° 140°	EP - A	14	15	17	19	21	24	26	27	30	50
	EP - B	36	36	42	46	54	57	60	63	72	98
	EP - C	51	56	59	66	69	83	89	106	109	132
	EP - D	102	113	127	153	180	223	238	245	275	350
TEMP. RANGE 40° 160°	EP - B	30	35	36	40	46	51	55	58	66	80
	EP - C	50	60	72	84	88	91	93	112	128	134
TEMP. RANGE 40° 180°	EP - B	10	10	13	16	19	27	30	38	44	47
	EP - C	20	23	28	35	41	51	56	72	80	102
	EP - D	36	42	51	63	72	82	91	102	115	120
STEAM RATE (Ms) lbs/hour = STEAM FACTOR (K) • GPM • (T_2 - T_1)											
CUSTOM DESIGNS AVAILABLE FOR VARIOUS CONDITIONS PLEASE PROVIDE MAX LENGTH AND PRESSURE DROP											

Optional Double Tubesheet Lea Eli inatin Construction



TEMA INTEGRAL DOUBLE TUBESHEET

This TEMA reco ended desi n eli inates possible conta ination of either tube or shell side fluid ith at tube-to-tubesheet joint lea a e. Should a lea occur, the li uid oes into the seal cha ber filled ith inert li uid. This event ill be reported via pressure trans itter to syste control or can be visually detected by pressure au e readin . Mean hile, the lea ill stop due to e ual pressure in the seal cha ber and lea in part. Seal eldin of tubes to the external tube sheet and uality expansion in to the double rooved inner tube sheet provides sufficient ti e for replace ent.