

ELECTRONIC CONTROL VALVE, TYPE CXT-E

PRINCIPLE OF OPERATION

The assembly is operated when a 4 to 20 mA signal is supplied to the actuator microprocessor. The actuator circuitry modulates the valve relative to this control signal. The linkage translates the rotational movement of the actuator to a linear positioning of the valve shaft. When the valve is in the closed position, the lower pilot seat and main disc seat are held in place by the force of this actuator/linkage assembly and static inlet pressure. When the valve is signaled to open, the actuator applies sufficient force to raise the valve stem off the small inner pilot seat. This allows forces to equalize on both sides of the main disc seat. The stem and piston assembly can now rise as a balanced unit until the piston ports clear the seat cage and allow flow through the valve. When the actuator is signaled to close the valve, it applies sufficient force to lower the piston assembly and seal the stem against the pilot seat. The piston assembly is no longer balanced, and the combined force of the actuator and static inlet pressure closes the valve tight.

FEATURES

- **Long Life Plug Seat:** A zero pressure differential across the seat at the beginning of the stroke prevents wiredrawing and eliminates "pop-open" effects.
- **Tight Shut-Off:** Resilient disc provides long lasting dead tight shut-off for applications where periods of zero demand are encountered.
- **Ease of Maintenance:** Design permits maintenance without removing valve from the line, all parts come out of the top end.
- **High Rangeability:** 1 to 100% rangeability allows excellent control.
- **DDC System Compatible:** Valve is actuated via a 4-20 mA control signal.
- **Fail Safe Design:** 1"-2" valve will fail closed within 7 seconds of power loss. 2.5"-4" valve will fail closed within 9 seconds of power loss.



Cutaway View of Electronic Actuator and Valve

MAXIMUM WATER CAPACITIES U.S.G.P.M.

Pressure Drop P.S.I.	NOMINAL VALVE SIZE						
	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
1	11.5	17.5	25.0	43.5	70	95	148
2	16.3	24.7	35.4	61.5	99	134	209
3	19.9	30.3	43.3	75.3	121	165	256
4	23.0	35.0	50.0	87.0	140	190	296
5	25.7	39.1	55.9	97.3	157	212	331
6	28.2	42.9	61.2	106.6	171	233	363
8	32.5	49.5	70.7	123.0	198	269	419
10	36.4	55.3	79.1	137.6	221	300	468
15	44.5	67.8	96.8	168.5	271	366	573
20	51.4	78.3	111.8	194.5	313	425	662
25	57.5	87.5	125.0	217.5	350	475	740

SPECIFICATIONS

End Connections

- Bronze Screwed NPT 400 1" thru 2"
- Ductile Iron Flanged 150 lbs. ANSI 2-1/2" thru 4"

Actuators

- Type: Electronic, reverse acting
- Electrical Requirement: 24 VDC, 1 Amp
- Control Signal: 4 to 20 mA

Materials of Construction

- Valve Body: Bronze 1" thru 2"
Ductile Iron 2-1/2" thru 4"
- Trim: Stainless Steel
- Seat: TFE
- Packing: TFE Chevrons
- Actuator Linkage: Stainless Steel

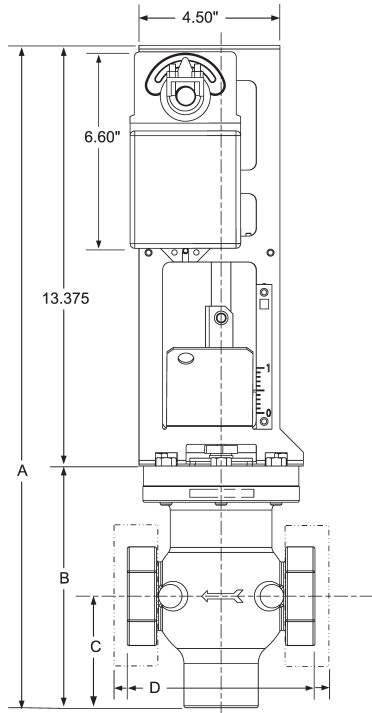
- Boiler Water Max. Oper. Press. & Temp.:

- 400 PSIG at 400°F 1" thru 2"
- 160 PSIG at 250°F ... 2-1/2" thru 4"

- Steam Max. Oper. Press. & Temp.:

- 150 PSIG at 400°F 1" thru 4"

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DIMENSIONS – INCHES

	NOMINAL VALVE SIZE						
	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
A	21.12	21.12	21.12	24.25	24.25	24.25	24.25
B	7.75	7.75	7.75	7.75	10.87	10.87	10.87
C	3.56	3.56	3.56	3.56	6.38	6.38	6.38
D	6.00	6.00	6.00	6.00	10.87	10.87	10.87
W	21	22	24	27	64	98	136

W = Weight in pounds

PART NUMBER DESIGNATION

Size & Type	Part Number
1" CXT-E	24036-1.00
1 1/4" CXT-E	24036-1.25
1 1/2" CXT-E	24036-1.50
2" CXT-E	24036-2.00
2 1/2" CXT-E	24036-2.50
3" CXT-E	24036-3.00
4" CXT-E	24036-4.00

PROPOSAL/SUBMITTAL INFORMATION

SIZE	TYPE	PART. NO.	OPERATING CONDITIONS		
			G.P.M. Lbs./Hr.	Inlet Pressure	Outlet Pressure
	CXT-E				

MAXIMUM STEAM CAPACITIES – POUNDS PER HOUR

Inlet Pressure PSIG	Outlet Pressure PSIG	NOMINAL VALVE SIZE						
		1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
		C_v						
		11.5	17.5	25.0	43.5	70	95	148
5	2	252	384	549	955	1536	2084	3248
7	2	335	509	727	1266	2037	2764	4307
	4	266	405	478	1006	1618	2196	3422
10	2	440	669	955	1662	2675	3631	5656
	5	360	548	782	1361	2190	2972	4631
	7	285	434	619	1078	1734	2230	3667
12	2	503	766	1092	1903	3062	4156	6475
	5	435	662	946	1646	2649	3595	5601
	9	297	452	646	1123	1807	2324	3822
15	2	593	903	1289	2244	3610	4900	7633
	5	537	817	1167	2030	3267	4434	6908
	10	398	606	866	1507	2424	3290	5126
	12	314	478	683	1188	1912	2595	4043
20	2	735	1118	1597	2779	4471	6068	9454
	5	690	1050	1500	2609	4199	5699	8878
	10	589	896	1280	2226	3583	4862	7575
	15	433	659	942	1639	2638	3580	5577
	16	391	591	849	1478	2378	3227	5027
30	0-7.5	937	1426	2037	3544	5703	7740	12058
	10	900	1360	1956	3403	5477	7433	11579
	15	807	1228	1754	3052	4911	6665	10383
40	0-12.5	1146	1744	2492	4335	6967	9468	14750
	15	1109	1688	2412	4796	6752	9164	14277
	20	1021	1554	2220	3863	6216	8436	13142
	25	909	1383	1976	3437	5532	7507	11695
50	0-17.5	1355	2062	2946	5126	8249	11196	17442
	20	1319	2007	2867	4988	8027	10894	16972
	25	1234	1877	2682	4667	7510	10192	15878
	30	1130	1719	2456	4273	6876	9332	14538
	35	1000	1522	2175	3784	6089	7829	12875
60	0-22.5	1546	2381	3401	5918	9522	12923	20133
	25	1528	2325	3322	5780	9302	12624	19666
	30	1445	2199	3142	5467	8798	11940	18601
	40	1229	1870	2671	4647	7478	10149	16469
	45	1048	1650	2357	4102	6600	8486	14697
70	0-29.5	1774	2699	3856	6709	10621	13656	22456
	30	1737	2644	3777	6572	10576	14353	22360
	40	1562	2377	3395	5907	9506	12901	20099
	50	1320	2009	2870	4993	8035	10905	16989
	55	1162	1769	2527	4396	7074	9096	14957
80	0-32.5	1983	3017	4310	7500	12069	15517	25516
	40	1867	2841	4058	7062	11364	14611	24026
	50	1670	2541	3630	6317	10165	13070	21492
	64	1272	1936	2765	4812	7742	9955	16371
100	0-42.5	2401	3654	5220	9082	14615	18790	30900
	50	2287	3481	4972	8652	13922	17900	29436
	65	1992	3031	4331	7535	12125	15590	25637
	80	1563	2378	3398	5912	9513	12231	20113
125	0-55	2924	4449	6356	11060	17797	22882	37629
	65	2771	4216	6024	10481	16866	21685	35659
	80	2480	3774	5392	9382	15097	19411	31920
	100	1926	2931	4187	7285	11723	15073	24786

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