

Electronic Control Valves



- Simple Proven Design
- Quality Solenoid Pilot Controls
- Ideal For SCADA Systems
- Multi-Function Capability; Hydraulic Backup
- Security System - Prevents Unauthorized Changes
- Easy To Maintain

The Cla-Val Series 131-66 Electronic Control Valves are designed specifically for applications where control of the valve with electrical signals is preferred. It is a hydraulically operated, pilot controlled, diaphragm valve. The solenoid pilot controls are actuated by electrical signals from the optional VC-22D Electronic Valve Controller. The solenoid pilots either add or relieve line pressure from the cover chamber of the valve, causing it to open or close as directed by the electronic controller.

Cla-Val Series 131-66 Electronic Control Valves can be configured to perform a wide range of functions, such as; pressure reducing, pressure sustaining, flow control, or level control. The electric controls can also be combined with hydraulic controls to create dual function, or fail-safe capability.

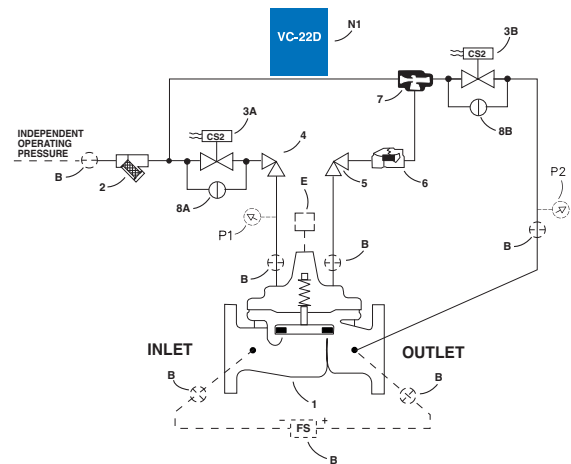
The basic 131-66/631-66 Electronic Control Valve (Schematic shown below) includes the main valve and dual solenoid pilot controls. Optional features include the VC-22D Electronic Valve Controller and the X117 Series Valve Position Transmitter.

Schematic Diagram

Item	Description
1	100-01 Hytrol Main Valve - Full Port 100-20 Hytrol Main Valve - Reduced Port
2	X43 "Y" Strainer
3	2-Way Solenoid
4	CV Flow Control (Closing)
5	CV Flow Control (Opening)
6	81-01 Check Valve
7	X50A Ejector
8	CK2 (Solenoid By-pass)

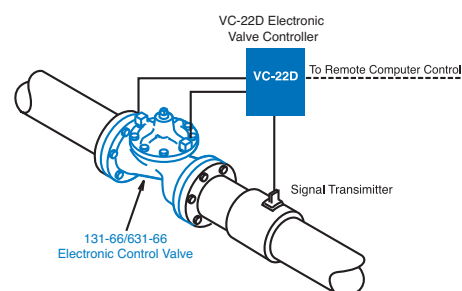
Optional Features

Item	Description
B	CK2 Isolation Valve
E	X117 Series Position Transmitter
N	VC-22D Electronic Controller
P	X141 Pressure Gauge



Typical Applications

The Model 131-66/631-66 Electronic Control Valve is typically installed in a pipeline with an electronic signal transmitter and the Model VC-22D Electronic Valve Controller. This system can be designed to control flow, pressure, tank level or valve position. The VC-22D Electronic Valve Controller enables remote computer control over valve operations.



Model 131-66 (Uses Main Hytrol Valve Model 100-01)

Pressure Ratings (Recommended Maximum Pressure - psi)

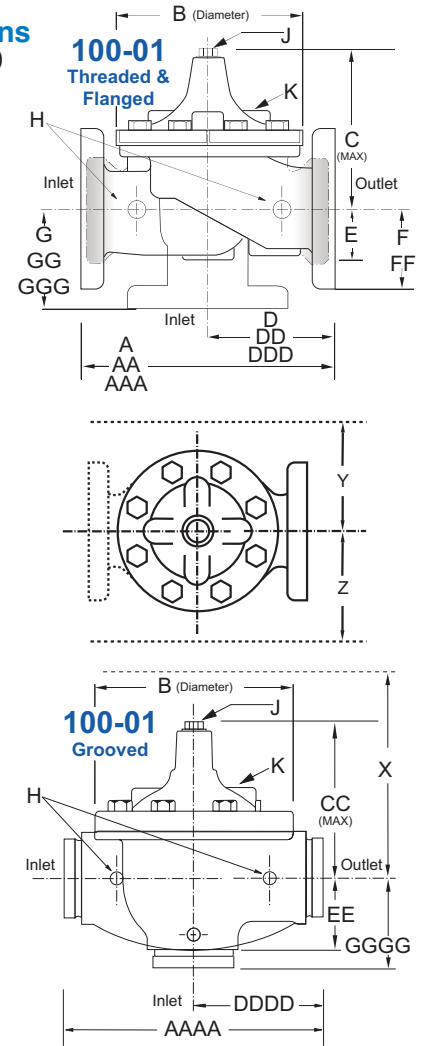
Valve Body & Cover		Pressure Class				
		Flanged			Grooved	Threaded
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End† Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
UNS 87850	Bronze	B16.24	225	400	400	400

Note: * ANSI standards are for flange dimensions only.
 Flanged valves are available faced but not drilled.
 † End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details

Materials

Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
Available Sizes	8" - 36"	8" - 16"	8" - 16"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		
For material options not listed, consult factory. Cla-Val manufactures valves in more than 50 different alloys.			

Dimensions
(In inches)



Model 131-66 Dimensions (In Inches)

Valve Size (Inches)	8	10	12	14	16	18	20	24	30	36
A Threaded	—	—	—	—	—	—	—	—	—	—
AA 150 ANSI	25.38	29.75	34.00	39.00	41.38	46.00	52.00	61.50	63.00	72.75
AAA 300 ANSI	26.38	31.12	35.50	40.50	43.50	47.64	53.62	63.24	64.50	74.75
AAAA Grooved End	25.38	—	—	—	—	—	—	—	—	—
B Diameter	20.00	23.62	28.00	32.75	35.50	41.50	45.00	53.16	56.00	66.00
C Maximum	16.00	17.12	20.88	24.19	25.00	39.06	41.90	43.93	54.60	59.00
CC Maximum Grooved End	14.62	—	—	—	—	—	—	—	—	—
D Threaded	—	—	—	—	—	—	—	—	—	—
DD 150 ANSI	12.69	14.88	17.00	19.50	20.81	—	—	30.75	—	—
DDD 300 ANSI	13.25	15.56	17.75	20.25	21.62	—	—	31.62	—	—
DDDD Grooved End	—	—	—	—	—	—	—	—	—	—
E	5.31	9.25	10.75	12.62	15.50	12.95	15.00	17.75	21.31	24.56
EE Grooved End	7.56	—	—	—	—	—	—	—	—	—
F 150 ANSI	6.75	8.00	9.50	10.50	11.75	15.00	16.50	19.25	22.50	28.50
FF 300 ANSI	7.50	8.75	10.25	11.50	12.75	15.00	16.50	19.25	24.00	30.00
G Threaded	—	—	—	—	—	—	—	—	—	—
GG 150 ANSI	8.00	8.62	13.75	14.88	15.69	—	—	22.06	—	—
GGG 300 ANSI	8.50	9.31	14.50	15.62	16.50	—	—	22.90	—	—
GGGG Grooved End	—	—	—	—	—	—	—	—	—	—
H NPT Body Tapping	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00
J NPT Cover Center Plug	1.00	1.00	1.25	1.50	2.00	1.00	1.00	1.00	2.00	2.00
K NPT Cover Tapping	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00
Stem Travel	2.30	2.80	3.40	4.00	4.50	5.10	5.63	6.75	7.50	8.50
Approx. Ship Weight (lbs)	500	780	1165	1600	2265	2982	3900	6200	7703	11720
Approx. X Pilot System	31	33	36	40	40	43	47	68	79	85
Approx. Y Pilot System	22	24	26	29	30	32	34	39	40	45
Approx. Z Pilot System	22	24	26	29	30	32	34	39	42	47

Note: The top two flange holes on valve size 36 are threaded to 1 1/2"-6 UNC.

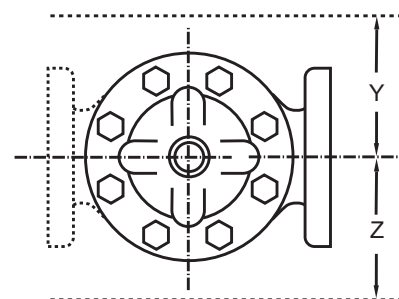
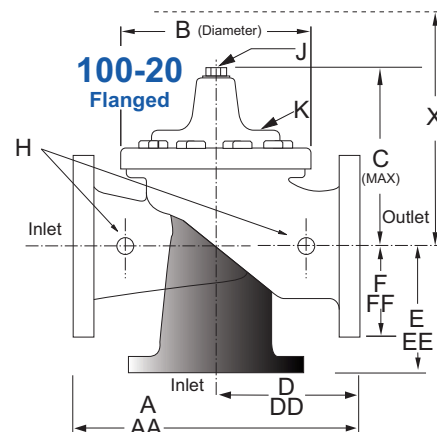
Model 631-66 (Uses Main Valve Model 100-20)

Dimensions (In inches)

Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class		
		Flanged		
Grade	Material	ANSI Standards*	150 Class	300 Class
ASTM A536	Ductile Iron	B16.42	250	400
ASTM A216-WCB	Cast Steel	B16.5	285	400
UNS 87850	Bronze	B16.24	225	400

Note: * ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.
Valves for higher pressure are available; consult factory for details



Materials

Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
Available Sizes	8" - 48"	8" - 16"	8" - 16"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

For material options not listed, consult factory.
Cla-Val manufactures valves in more than 50 different alloys.

Model 631-66 Dimensions (In Inches)

Valve Size (Inches)	8	10	12	14	16	18	20	24	30	36	48
A 150 ANSI	21.38	26.00	30.00	34.25	35.00	42.12	48.00	48.00	63.25	65.00	88.0
AA 300 ANSI	22.38	27.38	31.50	35.75	36.62	43.63	49.62	49.75	63.75	67.00	90.62
B Diameter	15.75	20.00	23.62	27.47	28.00	35.44	35.44	35.44	53.19	56.00	66.00
C Maximum	15.00	17.88	21.00	20.88	25.75	25.00	31.50	31.50	43.94	54.75	59.00
D 150 ANSI	10.69	12.75	14.94	—	—	20.93	21.06	—	—	—	—
DD 300 ANSI	11.19	—	—	—	—	—	—	—	—	—	—
E 150 ANSI	7.25	8.06	8.68	—	—	15.81	15.94	—	—	—	—
EE 300 ANSI	7.75	—	—	—	—	—	—	—	—	—	—
F 150 ANSI	6.75	8.00	9.50	11.00	11.75	15.88	14.56	17.00	19.88	25.50	34.00
FF 300 ANSI	7.50	8.75	10.25	11.50	12.75	15.88	16.06	19.00	22.00	27.50	38.50
H NPT Body Tapping	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00
J NPT Cover Center Plug	0.75	1.00	1.00	1.25	1.25	2.00	2.00	2.00	1.00	2.00	2.00
K NPT Cover Tapping	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00
Stem Travel	1.70	2.30	2.80	3.40	4.50	4.50	4.50	6.50	7.50	7.50	8.50
Approx. Ship Weight (lbs)	330	625	900	1250	1380	2365	2551	2733	6500	8545	13100
Approx. X Pilot System	30	33	36	36	41	40	46	55	68	79	86
Approx. Y Pilot System	20	22	24	26	26	30	30	30	39	40	47
Approx. Z Pilot System	20	22	24	26	26	30	30	30	39	42	49

131-66 Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes										
	Inches	8	10	12	14	16	18	20	24	30	36
	mm	200	250	300	350	400	450	500	600	750	900
Main Valve 100-01	Pattern	G, A	G, A	G, A	G, A	G, A	G	G	G, A	G	G
	End Detail	F, Gr*	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	3100	4900	7000	8400	11000	14000	17000	25000	42000	50000
	Maximum Intermittent	3900	6150	8720	10540	13700	17500	21700	31300	48000	62500
	Minimum	15	35	50	70	95	120	150	275	450	650
Suggested Flow (Liters/Sec)	Maximum	195	309	442	530	694	883	1073	1577	2650	3150
	Maximum Intermittent	246	387	549	664	863	1104	1369	1972	3028	3940
	Minimum	0.95	2.2	3.2	4.4	6.0	7.6	9.5	17.4	28.4	41.0

100-01 Series is the full internal port Hytrol.

For Lower Flows Consult Factory

*Globe Grooved Only

631-66 Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes												
	Inches	8	10	12	14	16	18	20	24	30	36	42	48
	mm	200	250	300	350	400	450	500	600	750	900	1000	1200
Main Valve 100-20	Pattern	G, A	G	G	G	G	G	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	2300	4100	6400	9230	9230	16500	16500	16500	28000	33500	33500	33500
	Minimum	10	15	35	50	50	95	95	95	275	450	450	450
Suggested Flow (Liters/Sec)	Maximum	145	258	403	581	581	1040	1040	1040	1764	2115	2115	2115
	Minimum	.63	.95	2.2	3.2	3.2	6.0	6.0	6.0	17.4	28.4	41.0	41.0

100-20 Series is the reduced internal port size version of the 100-01 Series.

For Lower Flows Consult Factory

We recommend providing adequate space around valve for maintenance work

Pilot System Specifications

Temperature Range

Water: to 180°F

Rubber Parts:

Buna-N® Rubber Synthetic

Solenoid Control

Body:

Brass ASTM B283

Enclosure:

NEMA Type 1,2,3,3S,4,4X general purpose watertight*

NEMA Type 6,6P,7,9 watertight Explosion Proof available

Voltages:

110, 220, -50Hz Ac

24, 120, 240, 480 - 60Hz AC

6, 12, 24, 120, 240 - DC

Others available

Max. operating pressure differential:

200 psi*

Coil:

Insulation molded Class	F
Watts AC	6
AC Volt Amps Inrush	30
AC Volt Amps Holding	16
Watts DC	10.6

Manual operator available.

*Supplied unless otherwise specified

When Ordering, Please Specify

1. Catalog No. 131-66 or No. 631-66
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Trim Material
7. Electrical Specifications
8. Desired Options
9. When Vertically Installed