



— MODEL — **131-CP**

# Electronic Interface Control Valve



- Ideal for loading or process control applications
- Simple Proven Design
- Multi-Function Capability
- Hydraulic Override Features Available
- Easy to Maintain

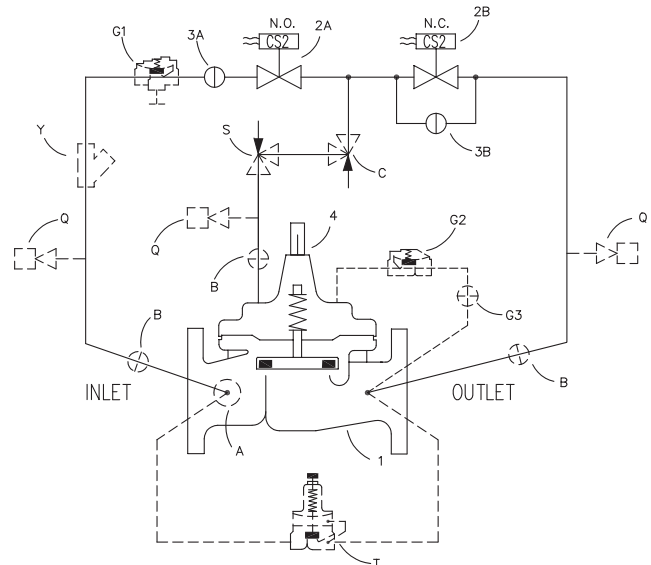
The Model 131-CP Electronic Interface Control Valve is designed for applications where remote electronic control is required. It is a hydraulically operated, pilot controlled, diaphragm actuated control valve. These valves are regularly used to provide process control, flow control, and / or pressure control in two-stage loading, bypass, pressure sustaining, or pressure reducing applications. The valve is equipped with two direct-acting two-way solenoids. Upon actuation by a Cla-Val Electronic Controller or other PLC, the solenoid pilot controls either add or relieve line pressure to / from the cover chamber of the valve, causing it to close or open. The 131-CP valve is a fail-safe valve equipped with a manual bypass feature and can also incorporate hydraulic override features.

## Schematic Diagram

Item	Description
1	100-34 Hytrol (Reverse Flow)
2A	CS2 Solenoid Control (NO)
2B	CS2 Solenoid Control (NC)
3A	CK2 Cock (Solenoid Bypass)
3B	CK2 Cock (Solenoid Bypass) Lockable
4	X101 Valve Position Indicator X105L Switch Assembly

## Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)
G	Check Feature with Cock
Q	Quick Connect Assembly
S	CV Flow Control (Opening)
T	55F Thermal Relief Control
Y	X43 "Y" Strainer



## Specifications

### Sizes

Globe: 1 1/2" - 16" flanged  
Angle: 2" - 16" flanged

### End Details

Flanged:

Cast Aluminum, 150 ANSI B16.1  
Cast Bronze, 150 & 300 ANSI B16.24  
Ductile Iron, 150 & 300 ANSI B16.42  
Cast Steel, 150 & 300 ANSI B16.5

### Temperature Range

Light Petroleum Product -40° to +140°F

### Pressure Ratings

150 class 175-PSI Max.  
150 class 275-PSI Max.  
250 class 300-PSI Max.  
300 class 400-PSI Max.

### Material

Body & cover:  
Cast Aluminum 356-T6  
Cast Bronze ASTM B62  
Ductile Iron ASTM A-536  
Cast Stainless Steel 303  
Cast Steel ASTM A216-WCB

### Valve trim:

Bronze ASTM B61  
Stainless Steel 303

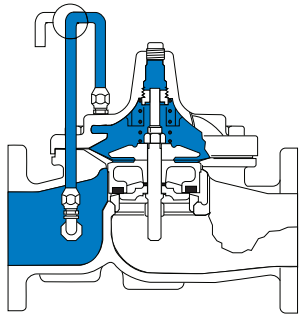
### Rubber parts:

Buna-N® Synthetic Rubber  
Viton

### Other Materials

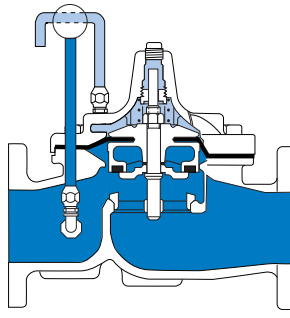
Available on Special Order

## Principle of Operation



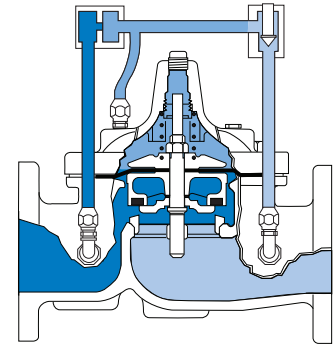
### Tight Closing Operation

When pressure from the valve inlet (or an equivalent independent operating pressure) is applied to the diaphragm chamber, the valve closes drip-tight.



### Full Open Operation

When pressure in the diaphragm chamber is relieved to zone of lower pressure under the valve. Flow in either direction is permitted.



### Modulating Action

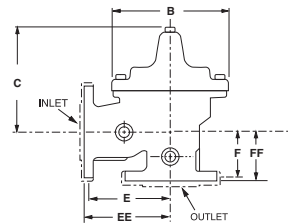
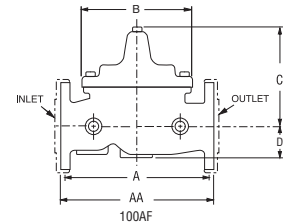
The valve modulates when diaphragm chamber pressure is held at an intermediate point between inlet and discharge pressure changes, the pressure above the diaphragm is varied allowing the valve to modulate and compensate for the changes.

SIZE	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
A 125 & 150 ANSI	8.50	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38
AA 250 & 300 ANSI	9.00	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50
B DIAMETER	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50
C MAX.	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00
D	1.12	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50
E 125 & 150 ANSI	4.75	5.00	6.00	6.00	7.50	10.00	12.75	14.88	17.00	19.50	20.81
EE 250 & 150 ANSI	5.00	5.88	6.38	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62
F 125 & 150 ANSI	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	
FF 250 & 300 ANSI	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	

C<sub>v</sub> Factor

VALVE SIZE	1 1/2	2	2 1/2	3	4	6	8	10	12
100-34 GLOBE PATTERN	26	49	80	107	200	440	771	1151	1600
100-34 ANGLE PATTERN	30	62	100	137					

C<sub>v</sub> factor is defined as the number of gallons per minute of water at 60°F that will flow with a 1 psi pressure differential across the valve.



## Purchase Specifications

### Pilot Control System

The 131-CP hydraulic control valve pilot system shall consist of dual solenoids which alternately apply or relieve pressure to the diaphragm chamber to position the main valve. The closing solenoid (inlet) shall be normally open (energized to close) while the opening solenoid (outlet) shall be normally closed (energized to open). A manual system to bypass the solenoids shall also be provided. Optional pilot system features shall include (A) Flow Clean Strainer, (B) CK2 Isolation Ball Valves, (C) CV Closing Speed Control, (G) Check Feature, (Q) Quick Connect Assembly, (S) CV Opening Speed Control, (T) 55F Thermal Pressure Relief Control, (Y) X43 "Y" Strainer.

### Main Valve

The valve shall be hydraulically operated, single diaphragm-actuated, globe or angle pattern. It shall contain a resilient, synthetic disc with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm consists of nylon fabric bonded with synthetic rubber and shall not be used as the seating surface. The valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment, provided the valve is installed and used in accordance with all applicable instructions. Electrical components shall have a one-year warranty.



E-131-CP (R-12/2017)

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## Specify When Ordering

1. Size
2. Model 131-CP Globe or Angle
3. Pressure Class
4. Temperature and fluid to be handled
5. Static and flowing line pressure
6. Operating fluid and pressure (if other than line pressure)
7. Body and trim materials
8. End details