

1085 No-Bleed Level Control

Application

The WellMark Pneumatic Level Control is used to maintain a pre-selected fluid level in a vessel. When the rising level compares with the pre-selected level:

1. The displacer's movement actuates the control's pneumatic pilot valve;
2. The pneumatic pilot valve directs operating pressure to a control valve;
3. Operating pressure opens and closes or throttles the control valve as necessary to maintain the pre-selected fluid level.

Other controls have these operational characteristics, however none share all the following WellMark standard features.

Features

- Economical
- Compact
- Stainless Steel Trunnion Bearings
- 5000 psi Working Pressure
- Weatherproof Case
- Choice of Vessel Connection
- Horizontal or Vertical Displacer
- Pneumatic or Electric Level Switch
- Extreme Versatility
 - a. Direct Acting or Reverse Acting
 - b. Right or Left-Hand Mount
 - c. Throttling or Snap Acting
 - d. Pressure Gauges: Readable from Any Angle

Specifications

Connections

Vessel	(See Determining the Model Number)
Pilot	1/4" NPT
Electric	1/2" Conduit
Working Pressure	5,000 psi Maximum
Pilot Pressure	20-30 psi (Gauges limiting factor, 75 psi Max. Pilot Pressure)
Temperature	-30°F to +212°F (Available to 400°F)

Material

Body	Carbon Steel
Displacer	PVC (Other Materials Available)
Pilot & Box	Anodized Aluminum
Internal Parts	Stainless Steel



(Right Hand Mount as Shown)

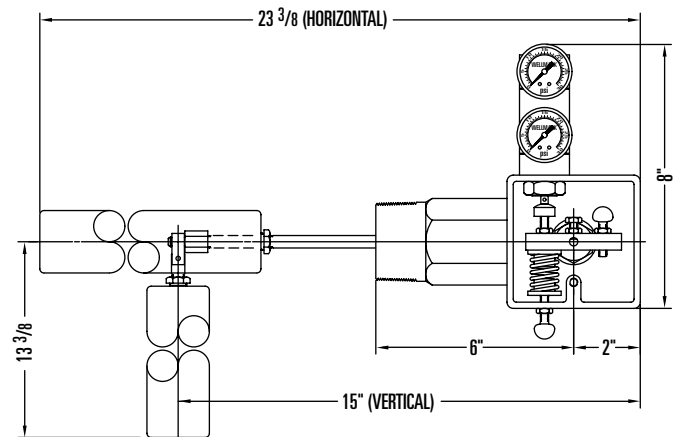


Explosion Proof

Electric Switch, SPDT, UL and CSA Listed: "L96" 15 amps, 125, 250, or 480 VAC; 1/8 HP-125 VAC, 1/4 HP-250 VAC, 1/2 amp-125 VDC, 1/4 amp-250 VDC

Electric Model Available (Simply substitute electric switch for pneumatic pilot).

Dimensional Data



WARNING

If gas supply is flammable or noxious, this product must be located in a well ventilated non-hazardous area or sealed and vented to a non-hazardous area.

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Determining the Model Number

Example given: Standard Model 852STLHD - Series 1085 No-Bleed, 2" Screwed Body, Throttle Pilot, Left Hand Mounting, Horizontal Displacer & Direct Acting Control.

MODEL 85 2S T L H D

85 • Series 1085

15S • 1 1/2" Screwed

2S • 2" Screwed

2F • 2" Flanged

3F • 3" Flanged

4F • 4" Flanged

4G • 4" Grooved

4U • 4" Union

4US • 4" Union w/S.G.

Note: Other options available, specify

S • Snap Pilot

T • Throttle

E • Electric (SPDT)

Connection

Pilot

Control
Action

D • Direct
R • Reverse

Displacer
Style

H • Horizontal
V • Vertical

Mounting

L • Left
R • Right

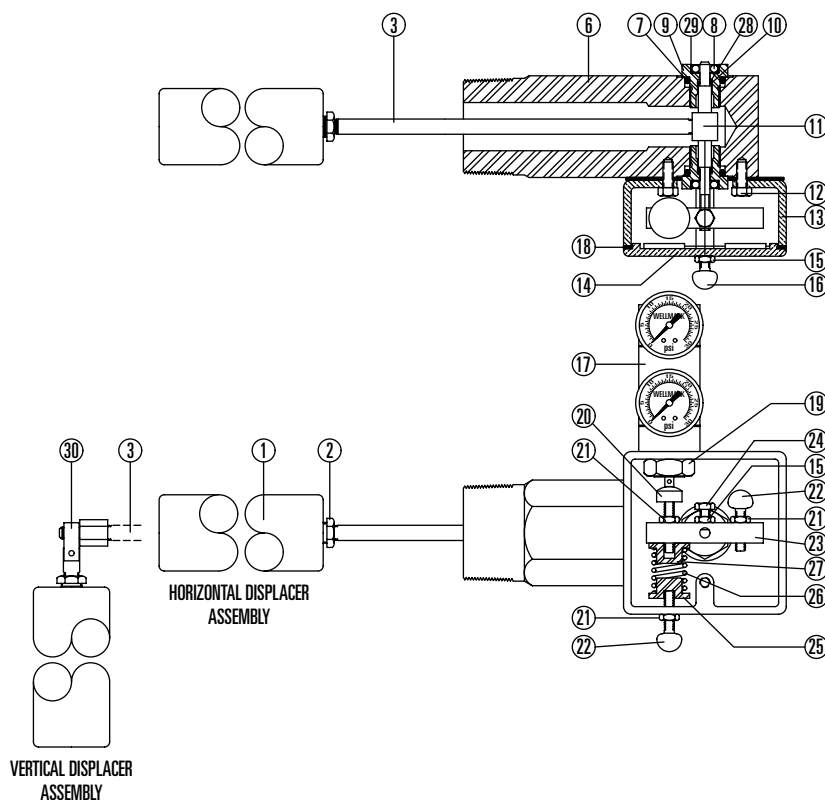
Additional Ordering Information

LG • Add LG to end of model number for LevelGlas option.

Parts List

Item	Description	Qty.	Part No.
1	DISPLACER, PVC	1	05012-3561
2	BUSHING, STAINLESS STEEL	1	06000-5105
3	HORIZONTAL ARM, S.S.	1	06000-1534
	VERTICAL ARM, S.S.	1	05011-9296
6	BODY, STEEL	1	05011-4560
7*	O-RING, VITON®	2	05000-1155
8	BEARING, S.S.	1	06000-7552
9	BEARING RETAINER, 316 S.S.	1	05012-9389
10*	O-RING, VITON®	2	05000-0769
11	TRUNNION, 316 S.S.	1	20269R
12	CAP SCREW, S.S.	1	05000-5578
13	CONTROL BOX, ALUMINUM	1	30137
14	COVER, ALUMINUM	1	30139
15	JAM NUT, STAINLESS STEEL	2	10007
16	THUMB SCREW, S.S.	1	10274
17	PILOT, SNAP ACTING	1	20284
	PILOT, THROTTLE	1	20283
	ELECTRIC SWITCH W/ADAPTER	1	21108
18	GASKET, NEOPRENE	1	10022
19	JAM NUT, S.S.	1	10273
20	ADJUSTMENT SCREW ASSY.	1	20273
21	JAM NUT, S.S.	3	10271
22	THUMB SCREW, S.S.	2	10275
23	TRUNNION BAR, S.S.	1	20280
24	CAP SCREW, S.S.	1	10002
25	SPRING KEEPER, LOWER, S.S.	1	20272B
26	SPRING, STAINLESS STEEL	1	10017
27	SPRING KEEPER, UPPER, S.S.	1	20272A
28*	BACK UP RING, TEFLON®	2	06000-1179
29	TOLERANCE RING, S.S.	2	06000-7560
30	V.D. ADAPTER, 316 S.S.	1	06500-4350

*Recommended Spare Parts



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Operation

General:

The pneumatic pilot, which controls signal to the end-device, whether snap-acting or throttling, is activated by the upward movement of the spring balance trunnion assembly as fluid rises around the displacer.

Pilot:

The same pilot, other than for the inner valve, is used for both snap-acting or throttling service. Field conversion from one to the other is easy and can be quickly completed by simply replacing the inner valve with one of the other mode.

Snap-Acting:

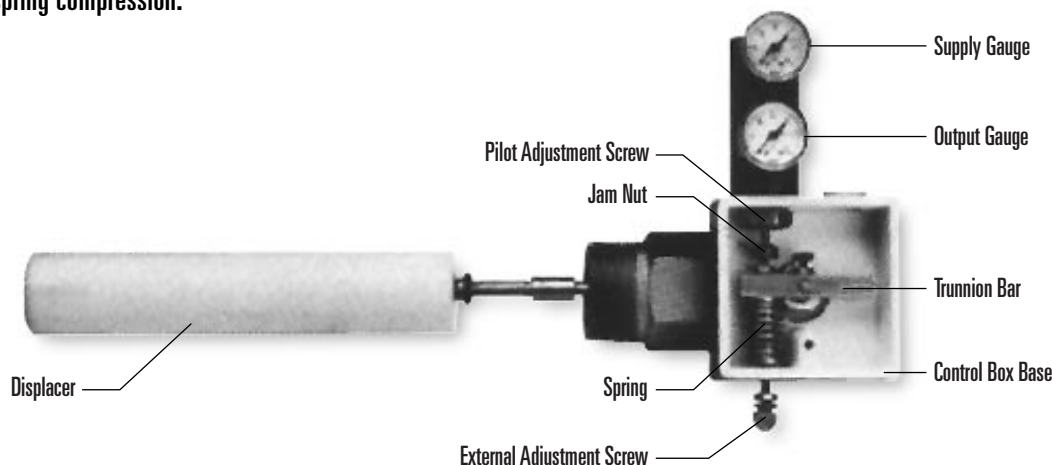
When the trunnion bar of the control exerts force on the lower seat, output to exhaust is blocked. Further force then lifts the inner valve off the upper seat with a snap-action, sending full supply to output, energizing the diaphragm motor valve or other end-device. With reverse movement of the trunnion bar, the lower seat falls, allowing the inner valve to reseat, blocking supply to output. Further reverse movement reopens output to exhaust, allowing the supply gas to exhaust (bleed) off the diaphragm motor valve or other end device.

Throttling:

The throttle pilot works in the same manner as the snap-acting pilot except that a balanced system is created so that a continuous modulating action is maintained. The output pressure is proportional to the amount of force transmitted to the lower seat by the trunnion bar with the rise and fall of vessel fluid.

Fluid Level Adjustment

To adjust the level of fluid, compress the spring with the external adjustment screw until the counter-balance of the displacer is achieved (visually detected when the trunnion bar is parallel with the control box base, or it can be checked by rocking the trunnion bar). With the trunnion bar parallel, turn the pilot adjustment screw counter-clockwise until the full output is obtained--full output being defined as "output gauge reading the same as input or supply gauge reading." Then, turn the pilot adjustment screw clockwise approximately one-half turn until the output gauge reads zero and tighten the jam nut. To lower fluid level, increase the spring compression. To raise the fluid level, decrease the spring compression.



Liquid to Liquid Interface Adjustment

For liquid to liquid interface adjustment, let the upper fluid rise until the displacer is completely submerged; at the same time, slowly reduce the spring tension so as not to transmit any trunnion bar force to the pilot. After the displacer is submerged in upper fluid, increase the spring tension slowly until an output signal is obtained; then, back-off the spring tension again, slowly, until the output gauge reads zero. The control is now ready to operate in the lower fluid.