

# Level Controls for Scrubbers

## Model L1200

Float Operated Electric



## L1200 Series

Patents 3970099, 4505288, 4573489

- BUOYGLAS™ Float Operates to 0.5 Specific Gravity
- Stainless Steel Models Meet NACE Requirements and Carry Canadian Registration Numbers
- Models Rated for 2000 psi (13.8 MPa) [138 bar] Vessels
- Models Listed for Class I, Division 1 Locations

## Model L1200N

Float Operated Pneumatic



## L1100 and L1200 Series Level Switches

These float operated level switches are available in electric and pneumatic models. They are primarily designed for high level applications but models are available for low level. Electric models are listed for Class I, Division 1, Groups C & D hazardous locations. Models are available in all stainless steel to NACE standard MR-01-75 for direct exposure to H<sub>2</sub>S service. These level switches have screw-in connections for direct installation or an optional external float chamber is available for the L1200 series high pressure versions. The high pressure versions of both L1100 and L1200 series are rated for 2000 psi (13.8 MPa) [138 bar] operating pressure. See the specifications sections of this bulletin for further details.

*NOTE: All stainless steel versions of L1100, L1200, L1200N, L1200NDVO, and L1200NDVOR series carry Canadian Registration Number OF1476.2.*

## Model L1200NDVOR

Float Operated Pneumatic with Dump Valve Operator, Pressure Regulator and Gage

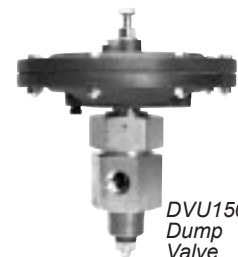


## Application: L1100 and L1200 Series

Designed primarily for gas compressor scrubber level. Low pressure models can be used anywhere level switching of a non-pressurized vessel is required. Electric models are typically used for high level shutdown of the engine or electric motor, while pneumatic models operate vessel dump valves such as Murphy DV-series. Models designed for low level switching have been used for fuel, lube oil, hydraulic oil, etc.

## DV Series Dump Valves

The DVU150, DVU175, DVU2105/2115/2120 are pneumatically controlled dump valves. These valves open and close automatically by pneumatic control from an L1200NDVO or similar dump valve operator. Diaphragm actuated, the DV series valves operate at 30-70 psi (207-483 kPa) [2.07-4.83 bar] with up to 2000 psi (13.7 MPa) [137 bar] vessel pressure. A pop up button indicates valve open/closed.



DVU150  
Dump  
Valve

Primarily engineered for compressor scrubbers, these valves can be applied to any liquids dumping job that is compatible with the valves materials, pressure limit and flow rates.

## Model L1200NDVO

Float Operated Pneumatic with Dump Valve Operator



## SLS02 MURPHYMATIC® Scrubber System

A complete MURPHYMATIC® system for automatic level control of condensate in scrubbers, including periodic dumping and high level shutdown, is available as a complete package from Murphy. All wetted metal parts are electroless nickel plated or stainless steel. The SLS02 scrubber system includes:

*(Includes L1200, L1200NDVOR, and DVU valve)*

- SLS02A: Includes DVU150 valve
- SLS02C: Includes DVU175 valve
- SLS02BA: Includes DVU2105 valve
- SLS02BB: Includes DVU2115 valve
- SLS02BC: Includes DVU2120 valve
- LR: Less Regulator option

\*\*Products covered by this bulletin comply with EMC Council directive 89/336/EEC regarding electromagnetic compatibility except as noted.

Specifications	L1100	L1111	L1200	L1200N	L1200NDVO	L1200NDVOR
<b>Body</b>						
• Standard: Electroless Nickel plated steel	X <sup>A</sup>	X <sup>A</sup>	X <sup>B</sup>	X <sup>B</sup>	X <sup>B</sup>	X <sup>B</sup>
• Optional: 316 Stainless Steel †	X <sup>A</sup>	X <sup>A</sup>	X <sup>B</sup>	X <sup>B</sup>	X <sup>B</sup>	X <sup>B</sup>
<b>Pressure Rating</b>						
• 15 psi (103 kPa) [1.03 bar] Polyethylene Float						
• 1500 psi (10.3 MPa) [103.42 bar] Stainless Float	X	X	X	X	X	X
• 2000 psi (13.8 MPa) [138 bar] BUOYGLAS™ Float	X	X	X	X	X	X
<b>Temperature Rating</b>						
• Standard: -20/175°F (-29/79°C)						
• Standard: -20/300°F (-29/149°C)	X	X	X	X	X	X
• Optional: -20/400°F (-29/204°C)*	X		X	X	X	X
<b>Specific Gravity</b>						
• Standard: 0.5 with BUOYGLAS™ float	X	X	X	X	X	X
• Optional: 0.65 with 304 Stainless Steel †	X		X	X	X	X
• Standard 0.73 Polyethylene Float						
<b>Electrical</b>						
• Standard SPDT: 5 A @ 125/480 VAC (see p. 3 for full ratings)	X	X	X			
• Optional DPDT: 10 A @ 250 VAC (see p. 3 for full ratings)	X	X	X			
Wire: 18 AWG x 36 in. (1.0 mm <sup>2</sup> x 914 mm)	X	X	X			
O-Rings: Viton	X	X	X	X	X	X
Valve: Two-way snap-action vent type						
• 1/8 in. (3 mm) orifice w/Viton "A" seat				X	X	X
• 1/8 NPT inlet; 1/4 NPT outlet						
• 30-70 psi (207-483 kPa) [2.07-4.83 bar] operating pressure						
Dump Valve Operator: Operates Murphy DV Series dump valves or similar.					X	X
Pressure Regulator/Filter and Murphy 20BPG: 0-75 psi (0-517 kPa) [0-5.17 bar] pressure gauge. Maximum input 300 psi (2.07 MPa) [20.68 bar].						X
Operation: H=For high level, L=For low level	H	L	H	H	H	H

<sup>A</sup> = 1-1/2 NPT    <sup>B</sup> = 2 NPT    † Meets NACE standard MR-01-75 for direct exposure to HS service.

\* Not available with DPDT snap-switch.

## SLS02 Scrubber System

Patent No. 4505288

- High Level Shutdown •
- High Level Dump Valve •
- High Level Dump Valve Operator •



**High Liquid Level Shutdown Switch (L1200)**  
Patent No. 3970099

**MURPHY NU-MATIC™ Dump Valve (DVU150/175/2105/2115/2120)**

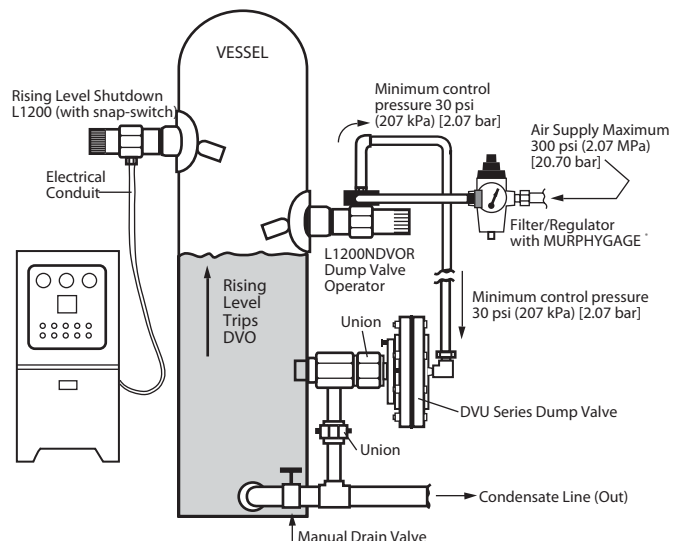
**MURPHY NU-MATIC™ Dump Valve Operator (L1200NDVOR)**  
Patent No. 3970099

## SLS02 System Operation

As condensate rises in the scrubber, the float on the L1200NDVOR rises and trips its pneumatic valve. The valve opens allowing pressure to enter the dump valve pilot chamber. Once the pressure enters the pilot chamber it forces the diaphragm and valve stem forward thus opening the valve seat and releasing condensate through the valve stem and out the drain. As the condensate level drops, the L1200N pneumatic valve closes to shut off the pressure to the dump valve causing it to close.

If for any reason the condensate continues to rise beyond normal dump levels, the L1200 operates the alarm and/or shuts down the equipment.

The MURPHYGAGE® and Filter/Regulator on the L1200NDVOR helps keep the control pressure clean and dry. It also allows operator to adjust pressure to recommended level.



## Dimensions

### L1100 and L1200

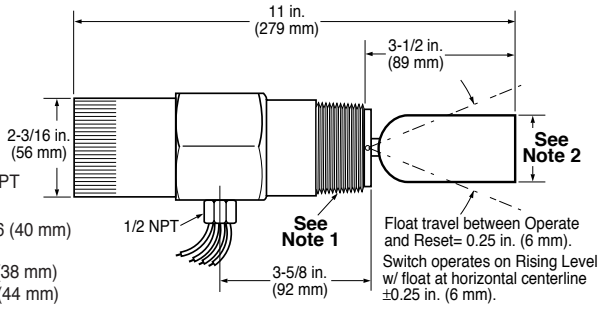
**Note 1:**

L1100: 1-1/2 NPT  
L1200: 2 NPT

**Note 2:** 1-9/16 (40 mm)

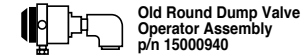
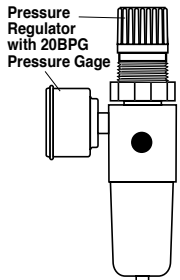
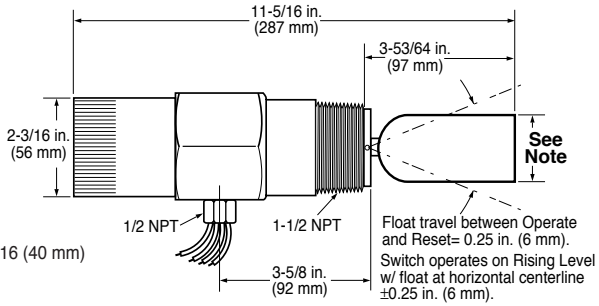
SF option:

L1100: 1-1/2 (38 mm)  
L1200: 1-3/4 (44 mm)

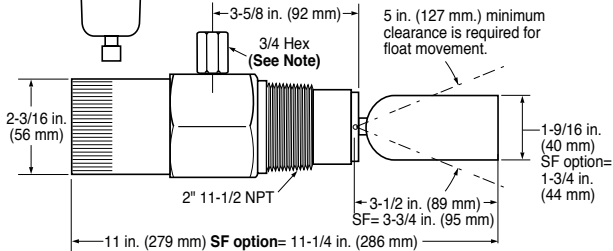


### L1111

**Note:** 1-9/16 (40 mm)



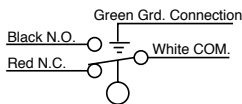
### L1200N, L1200NDVO and L1200NDVOR with Dump Valve Operator, Pressure Regulator and Gage



**Note:** For use only with Old Round Dump Valve Operator Assembly (15000940).

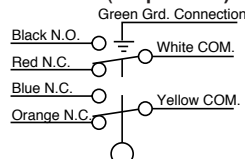
## Wiring

### SPDT (snap-switch)



**Switch Rating:** 5 A @ 125-250- 480 VAC  
1/2 A @ 125 VDC  
1/4 A @ 250 VDC  
2A @ 6-30 VDC Resistive  
1A @ 6-30 VDC Inductive

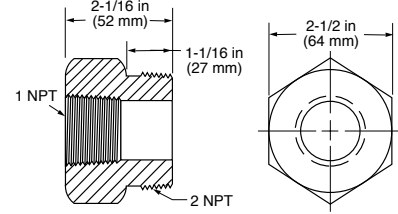
### DPDT (snap-switch)



**Switch Rating:** 10 A @ 125-250 VAC  
1/2 A @ 125 VDC  
1/4 A @ 250 VDC  
10 A @ 6-24 VDC Inductive/Resistive

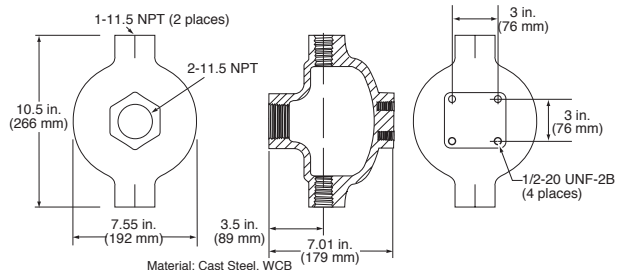
## Accessories

### Adaptor Bushing 55050617 for DVU150 and DVU175



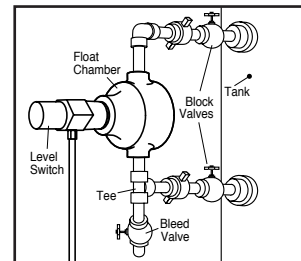
Material: 2-1/2 Hex bar stock C.R.S

### Float Chamber 15051098



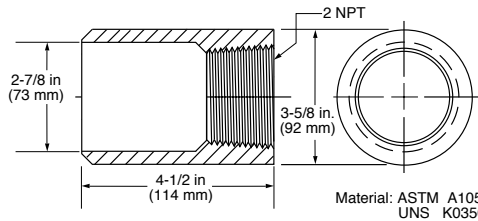
Material: Cast Steel, WCB  
Operating Pressure: 2000 psi (13.8 MPa) [138 bar]  
Operating Temperature: 400°F (204°C)

### Typical L1200/L1200N Float Chamber Installation



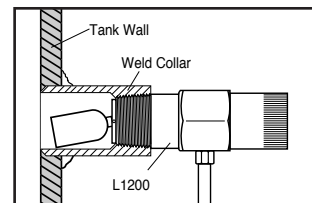
### Weld Collar 15050375

(use with L1200 only)



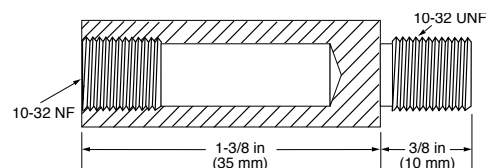
Material: ASTM A105-2  
UNS K03504

### Typical L1200 Weld Collar Installation



Operating Pressure: 2000 psi (13.8 MPa) [138 bar]  
Operating Temperature: 400°F (204°C)

### Float Shaft Extension 15000892



Material: AISI 304, UNS-S30400

**NOTE:** The extension is used with the L1100 and L1200 **only**. One extension is supplied with each unit. Use of additional extensions is not recommended as they reduce the ability of the unit to operate for the stated specific gravity.

# How to Order

## L1100 and L1200 Series

Build a complete model number using the diagram below. See example. See Specifications Chart on page 2 for standard and optional features.

### Example model number

**L1100 -**

Options
D = DPDT
K = KALREZ Seals
SF = Stainless Steel Float
400 = 400°F (204°C) Service**

Base Models	
L1100*	L1100SS
L1111	L1111SS
L1200*	L1200SS*
L1200N*	L1200NSS*
L1200NDVO*	L1200NSSDVO*
L1200NDVOR*	L1200NSSDVOR*

\* Stainless steel models carry Canadian Registration Number OF1476.2.

\*\* Not available with DPDT snap-switch.

## Complete SLS02 Systems

### Specify

**SLS02A:** Includes DVU150 valve

**SLS02C:** Includes DVU175 valve

**SLS02BA:** Includes DVU2105 valve

**SLS02BB:** Includes DVU2115 valve

**SLS02BC:** Includes DVU2120 valve

-LR: Less Regulator option

### Accessories (order by part number designation)

**15050375:** Weld collar

**15000892:** Float shaft extension

**55050617:** DVU150/DVU175 adaptor bushing 2 NPT-M to 1 NPT-F

**15051098:** External Float Chamber

## Warranty

A limited warranty on materials and workmanship is given with this FWMurphy product.

A copy of the warranty may be viewed or printed by going to

[www.fwmurphy.com/warranty.asp](http://www.fwmurphy.com/warranty.asp).

## Replacement Parts (order by part number designation)

### L1100/L1200

15000893: BUOYGLAS™ float

15000894: Stainless Steel float for L1200

15000937: Stainless Steel float for L1100

15000124: SPDT snap-switch assembly

15010213: L1100 counter balance assembly

15010214: L1200 counter balance assembly

### L1200N

15050420: Cam spring return

15050421: Cam

15000893: BUOYGLAS™ float

15000894: Stainless steel float for L1200N

15050453: Valve stem

15010189: Counter balance assembly

### L1200NDVO and L1200NDVOR

55050621: Regulator only

05706499: 20BPG-D-75 psi (0-517 kPa) [0-5.17 bar]

15010216: DVOA assembly (New rectangular style)

15000940: DVO assembly (Old round style)

00003341: Filter for regulator

00003340: Regulator diaphragm kit

## Shipping Weights

L1100: 6 lb. (2.7 kg).

L1111: 5 lb. 11 oz. (2.5 kg).

L1200: 6 lb. 6 oz. (2.8 kg).

L1200N: 5 lb. 5 oz. (2.4 kg).

L1200NDVO: 5 lb. 14 oz. (2.6 kg).

L1200NDVOR: 6 lb. 10 oz. (3 kg).

SLS02: 19 lb. 6 oz. (8.7 kg).

## Shipping Dimensions

L1100: 14 x 5 x 3-1/2 in. (356 x 127 x 89 mm).

L1111: 14 x 5 x 3-1/2 in. (356 x 127 x 89 mm).

L1200: 14 x 5 x 3-1/2 in. (356 x 127 x 89 mm).

L1200N: 14 x 5 x 3-1/2 in. (356 x 127 x 89 mm).

L1200NDVO: 14 x 5 x 3-1/2 in. (356 x 127 x 89 mm).

SLS02: 15 x 15 x 12 in. (381 x 381 x 305 mm).

**MURPHY**

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