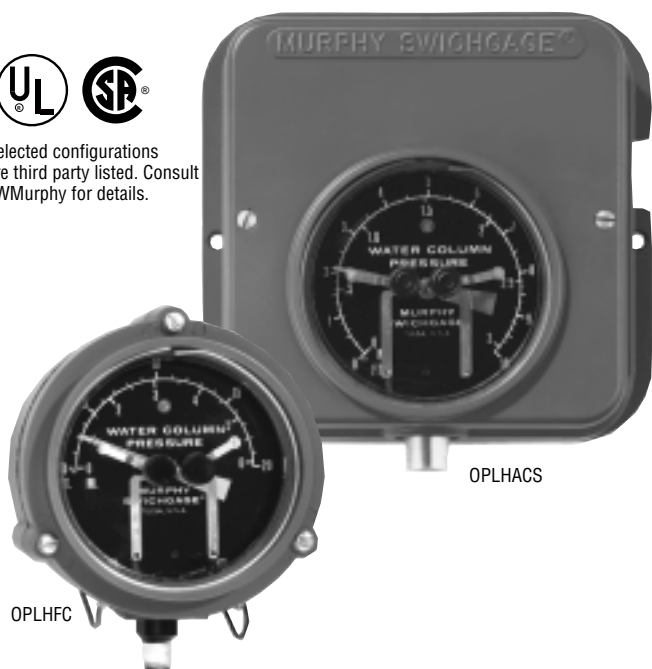


# 4-1/2 in. (114 mm) Dial Level SWITCHGAGE®



Selected configurations  
are third party listed. Consult  
FWMurphy for details.



## OPLH / OPLHAS Series

- Combination Level Indicating Gage and Critical Level Limit Switch
- High and Low Level Limit Contacts Are Visible and Adjustable
- Designed to Start and Stop Pumps to Maintain Specific Levels
- Indication only MURPHYGAGE® Available
- Latching Control Relay Versions Available

### Description

The OPLHC/OPLHAS Series Level SWITCHGAGE®s are combination level indicating gages with adjustable low and high limit switches. Limit switches can be wired directly to electric pilot circuits to operate alarms, shutdown or start/stop pumps to maintain predetermined levels.

Surface mount or panel mount enclosure is available for both model series. All models feature a 4-1/2 in. (114 mm) dial for easy viewing. Adjustable limit switches are accessible from front of the SWITCHGAGE®.

Specialized models are available for specific applications involving engines or electric motors.

**OPLHC/OPLHACS Series SWITCHGAGE®** include 2-adjustable, pilot duty, pointer type contacts. Contacts have self-cleaning motion to enhance electrical continuity. Models are available with a rugged bourdon-tube or 316 stainless steel bellows sensing element for greater accuracy and sensitivity in lower ranges.

A “freeze-proof” sensor of 316 stainless steel with Buna-N rolling diaphragm, is available. The “freeze-proof” sensor (OPLHAFP) inserts approx., 2 in. (52 mm) inside a tank.

### OPLHBP/OPLHABPS and OPLHAFPBP

Internal latching control relays are available to provide ON/OFF automation for electric motor applications.

**OPLHC and OPLHACS series** are available in indication only MURPHYGAGE® models (OPLHAGS). See Page 2 to determine the model for your application.

### Applications

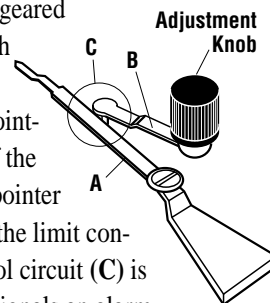
- Saltwater Disposal Systems
- Waterflood Systems
- Diesel Day Tanks
- Oil Storage Tanks

### Basic Operation

The OPLHC/OPLHACS series operate from static head pressure. Pressure is transmitted to

the process connection of the SWITCHGAGE®.

From here the pressure flexes the bourdon tube or operates the 316 stainless steel bellows (depending on which model you have). The bourdon tube/bellows operates the stainless steel rotary geared movement which in turn operates the indicating pointer on the face of the dial. When the pointer (A) closes with the limit contact (B), a control circuit (C) is completed and signals an alarm and/or shutdown or starts/stops a pump.



### Warranty

A two-year limited warranty on materials and workmanship is given with this FWMurphy product. Details are available on request and are packed with each unit.

# Specifications

## OPLH / OPLHA Series

	OPLHC	OPLHFC	OPLHCE	OPLHACS	OPLHACFP	OPLHACES	OPLHRP	OPLHABPS	OPLHBPE	OPLHABPES	OPLHG	OPLHFG	OPLHAGS	OPLHAGES	OPLHAFCS	OPLHAFGS
<b>Enclosure Type (die cast aluminum)</b>																
• Surface mount, square case	•			•			•	•			•		•			
• Panel mount, round case		•									•			•	•	
• Panel mount, square case			•		•			•	•				•			
<b>Limit Switch Ratings</b>																
• Pointer Contacts: SPDT center off; 2 A, 30 VDC, 1 A, 125 VAC.	•	•	•	•	•	•	•	•	•	•				•		
<b>Latching Control Relay</b>																
• SPDT, 10 A @ 120 VAC (standard)							•	•	•	•						
• DPDT, 12 VDC (Optional)							•	•	•	•						
• DPDT, 24 VAC (Optional)							•	•	•	•						
• DPDT, 24 VDC (Optional)							•	•	•	•						
<b>Sensing Element</b>																
• Bourdon Tube, Bronze/Brass (standard)	•	•	•				•		•		•	•				
• Bellows, 316 Stainless Steel (standard)				•		•		•		•			•	•	•	•
• Freeze-proof Sensor, 316 St. Steel w/Buna-N diaphragm					•											
<b>Process Connections</b>																
• 1/4 NPT Male	•	•	•				•		•		•	•				
• 1/4 NPT Female				•		•		•		•			•	•	•	•
• 2 NPT Male					•											
<b>Geared Movement: 300 series stainless steel.</b>	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>Accuracy (standard calibration is for water)</b>																
• ±2% first/last quarters of scale, 1% middle half scale. <sup>(1)</sup>	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•
• 3% full scale.					•											
<b>OPTIONS AVAILABLE (specify when ordering)</b>																
• Environment sealed for isolation from the elements (ES). <sup>(2)</sup>		•									•				•	•
• Explosion-proof case; Class I, Div. 2, Groups C & D (EX)	•			•			•	•								
• Explosion-proof less case; internal gage mechanism without case (EL)	•			•			•	•								
• Less case; internal gage mechanism without case (LC)	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•
• Tickler contact (TA)				•	•	•									•	
<b>RANGES AVAILABLE (specify when ordering)</b>																
• 0–5 ft. (0–1.5 m) dual scale dial				•		•		•		•			•	•	•	•
• 0–10 ft. (0–3 m) dual scale dial				•		•		•		•			•	•	•	•
• 0–20 ft. (0–6 m) dual scale dial	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
• 0–30 ft. (0–9 m) dual scale dial	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
• 0–60 ft. (0–18 m) dual scale dial	•	•	•		•		•		•		•	•				
• 0–120 ft. single scale dial	•	•	•				•		•		•	•				
• 0–3.6 metres single scale dial				•		•		•		•			•	•	•	•
• 0–4 metres single scale dial				•		•		•		•			•	•	•	•
• 0–6 metres single scale dial				•	•	•		•		•			•	•	•	•
• 0–9 metres single scale dial	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

<sup>(1)</sup> Bourdon tube (OPLHC) models in the 20 ft. (6 m) range have an accuracy of 3% full scale.

<sup>(2)</sup> ES option available for the 20 ft. (6 m) range models and above.

### NOTES:

- Options may not be available in combination. Consult factory.
- Over range is not to exceed 10% FS above full range.
- Calibration is for water. Specify for other liquids.
- Add **TOTAL** height of liquid above the pressure connection to determine correct range (dial scale).  
For elevated tanks subtract the tank elevation from gage reading to determine actual tank level.

### Shipping Dimensions

**Item Dimensions:** 16 x 11 x 5-1/2 in. (406 x 279 x 140 mm).

Explosion-proof models: 12 x 12 x 9 in. (305 x 305 x 229 mm).

### Shipping Weights

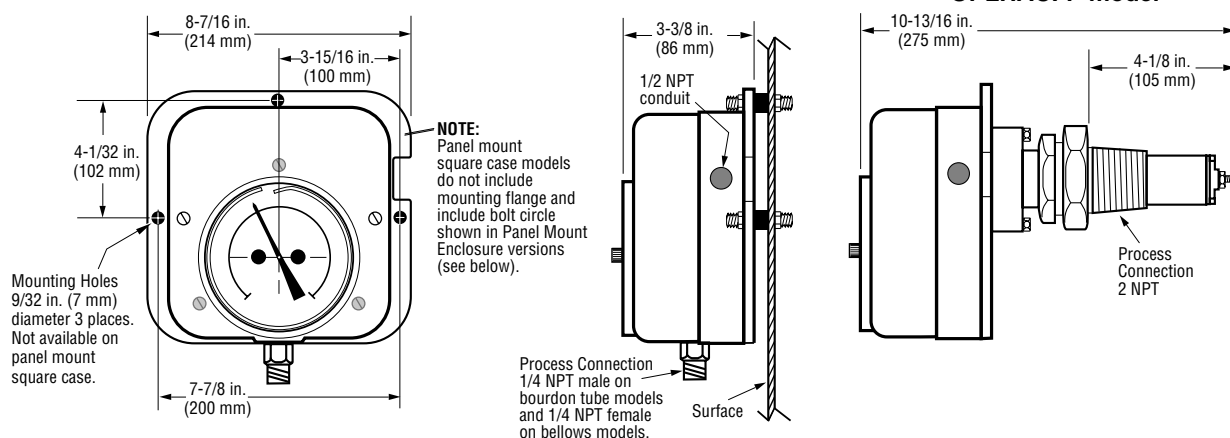
**Item Weight:** 8 lb. (3.6 kg) approximately.

Explosion-proof models: 22 lb. (10 kg) approximately.

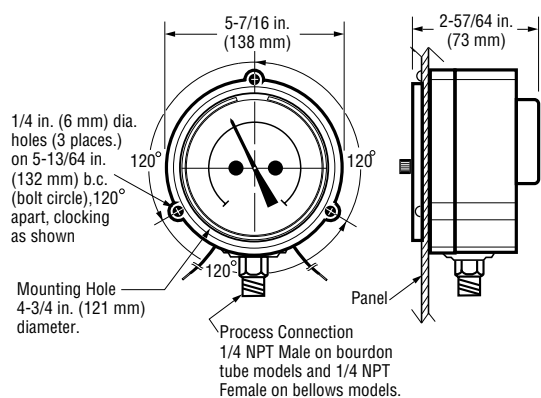
## Dimensions

### Surface / Panel Mount Enclosure (Square Case)

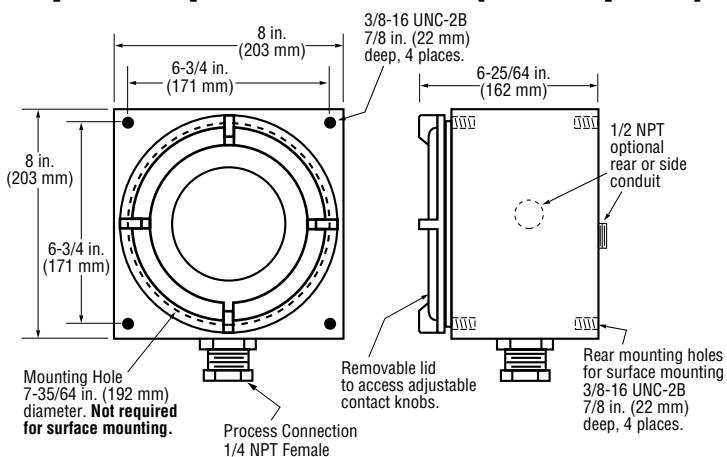
#### OPLHACFP model



### Panel Mount Enclosure (Round Case)

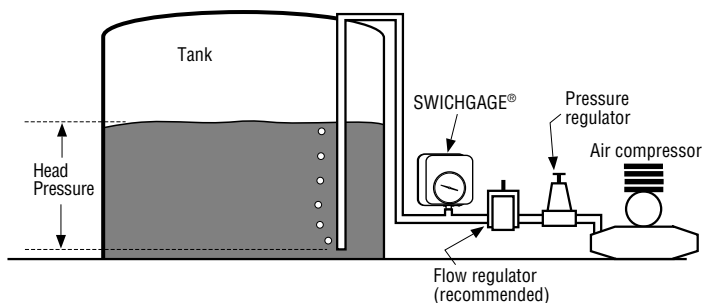


### Explosion-proof Enclosure ("EX" Option)

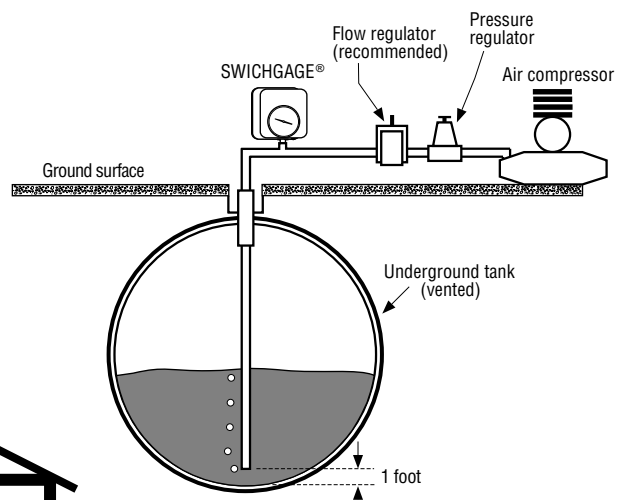


## Typical Applications

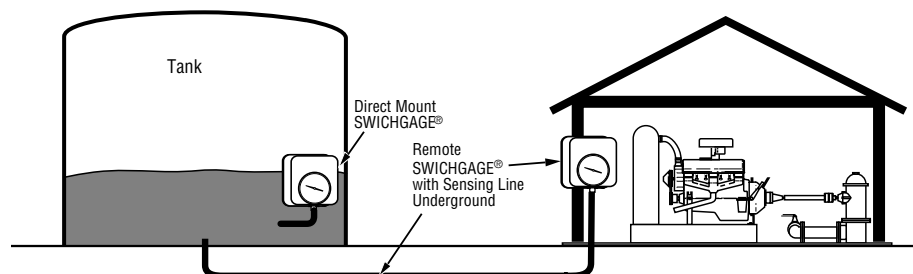
### Above Ground Tank



### Below Ground Tank

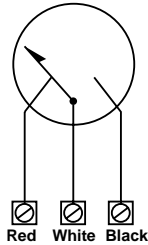


### Direct and Remote Tank



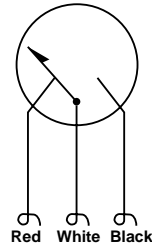
## Internal Wiring

### OPLHC, OPLHACS, and OPLHAFP Series

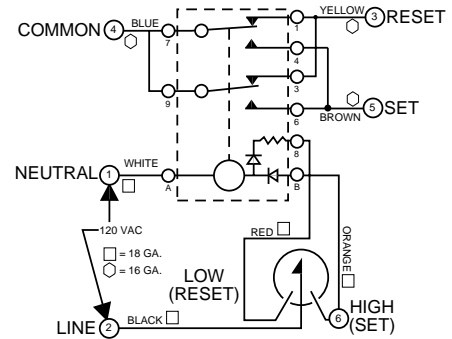


**Contact Ratings:** SPDT center off;  
2 A, 30 VDC, 1 A, 125 VAC pilot duty.

### OPLHCE, OPLHFC, OPLHACES and OPLHAFCS Series



### OPLHBP, OPLHAFBP and OPLHABPS Series



**Contact Ratings:** SPDT dry relay contacts,  
10 A, 125 VAC.

## How to Order

Specify model number. **NOTE:** No designator is required for **Standard** configurations. Also, list options in alphabetical order (A to Z). Place a dash (–) between each option. See example below.

### OPLHBP – 2 – 30 – TA

#### Base Part Numbers

OPLHG	OPLHFC
OPLHC	OPLHCE
OPLHBP	OPLHABPS
OPLHAGS	OPLHBPE
OPLHACS	OPLHAGES
OPLHABPS	OPLHACES
OPLHACFP	OPLHAFCS
OPLHAFBP	OPLHAFGS
OPLHFG	

#### Options (see Specifications on page 2 for availability)

ES = Environmentally sealed  
EX = Explosion-proof  
EL = (EXLC) Explosion-proof less case  
LC = Less case  
TA = (TCA) Tickler contact

#### Latching Control Relay Voltage (applies to "BP" models only)

Blank = 120 VAC  
2 = 12 VDC  
3 = 24 VAC  
4 = 24 VDC

#### Range/Scale (specify in feet)\*

	Bellows	Tube
05 = 0-5 ft.	X	
10 = 0-10 ft.	X	
20 = 0-20 ft.	X	X
30 = 0-30 ft.	X	X
60 = 0-60 ft.		X
120 = 0-120 ft.		X

\*Standard calibration is for water—specify for other.



**FWMurphy**

P.O. Box 470248

Tulsa, Oklahoma 74147 USA

(918) 627-3550

fax (918) 664-6146

e-mail sales@fwmurphy.com

www.fwmurphy.com



#### CONTROL SYSTEMS & SERVICES DIVISION

P.O. Box 1819; Rosenberg, Texas 77471; USA

(281) 342-0297 fax (281) 341-6006

e-mail sales@fwmurphy.com

#### MURPHY DE MEXICO, S.A. DE C.V.

Bld. Antonio Rocha Cordero 300, Fracción del Agua

San Luis Potosí, S.L.P.; México 78384

+52-48-206264 fax +52-48-206336

e-mail ventasmex@murphymex.com.mx

#### FRANK W. MURPHY, LTD.

Church Rd.; Laverstock, Salisbury SP1 1QZ; U.K.

+44 1722 410055 fax +44 1722 410088

e-mail sales@fwmurphy.co.uk

www.fwmurphy.co.uk

#### For Service in French:

Pour service en français:

+44 1722 410697 fax +44 1722 410088

e-mail france@fwmurphy.co.uk

www.fwmurphy.co.uk/francais.htm

#### MURPHY SWITCH OF CALIFORNIA

41343 12th Street West

Palmdale, California 93551-1442; USA

(661) 272-4700 fax (661) 947-7570

e-mail sales@murphyswitch.com

www.murphyswitch.com

#### MACQUARRIE CORPORATION

1620 Hume Highway;

Campbellfield, Vic 3061; Australia

+61 3 9358-5555 fax +61 3 9358-5558

e-mail murphy@macquarrie.com.au

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