

# CENTURY

# CHLOR-SCALE

**SCALE:** **CHLOR-SCALE<sup>®</sup>** FOR TGO TECHNOLOGIES

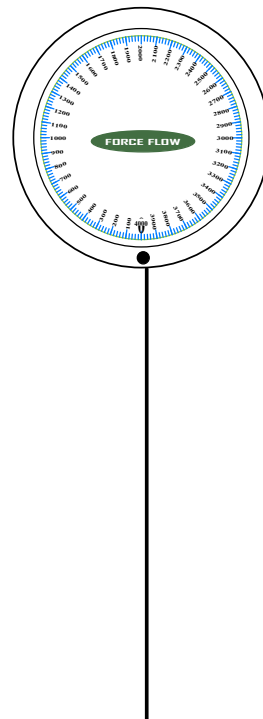
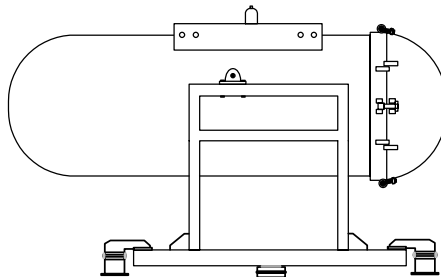
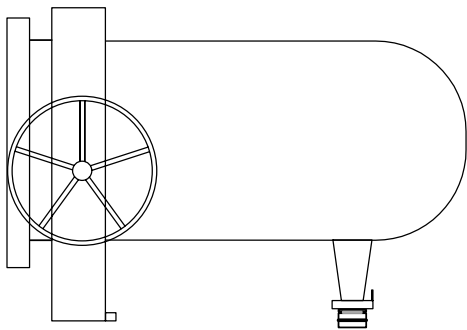
**INDICATOR:** **CENTURY<sup>®</sup>**

**CHLORTAINER  
HYDRAULIC  
1,000 TO 5,000 LB. LOAD CELL SYSTEM**

## INSTALLATION & OPERATION

FACTORY CALIBRATED

S/N \_\_\_\_\_



**FORCE FLOW**

1150-D BURNETT AVE, CONCORD, CA 94520 USA  
1-800-893-6723 FAX: 925-686-6713  
WWW.FORCEFLOW.COM / INFO@FORCEFLOW.COM

REF: T4O&MSTATIONCVR\_TGO.TCW (XOO\_TGO.PDF)

# INCLUDES MODELS:

## HYDRAULIC STATIONARY LOAD CELL SYSTEM with CENTURY DIAL INDICATORS

CAPACITY	MODEL
1,000 lbs.	12D10-TGO
1,500 lbs.	12D15-TGO
5,000 lbs.	12D50-TGO

1150-D BURNETT AVE, CONCORD, CA 94520 USA  
1-800-893-6723 US & CANADA, FAX: 925-686-6713

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REF: T4\O&M\STATHYD\MODEL\_TGO.tcw (X0A\_TGO.pdf)

# INDEX

## CHLOR-SCALE LOAD CELL SYSTEM for TGO TECHNOLOGY CHLORTAINER

### SECTION

#### C.1.000

**YOU  
ARE  
HERE !**

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- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

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- C.1.201 Maintenance Instructions

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- C.2.102 Satellite Transmitter Bulletin
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- C.3.301 Troubleshooting
- C.3.401 Parts List

# INSTALLATION & OPERATION

## STATIONARY TANK HYDRAULIC LOAD CELL SYSTEMS

### Model Numbers

**12D50S - 12D600 (5,000 to 60,000 lb. Capacities)**

**(Metric: 12D25KS - 12D300KS 2,500 kg to 30,000 kg Capacities)**

## I INSTALLATION

The hydraulic load cell system consists of a hydraulic load cell, 20 feet of hose to a 12" diameter, bourdon tube dial calibrated 2:1 to the load cell. Sometimes an optional high or low level pressure switch or a 4-20 MA transmitter is tied into a manifold at the base of the dial indicator.

The tank is installed with pin hinges (furnished by others), or other suitable hinging device, at one end of the tank. At the exact geometric position at the other end of the tank, a pad should be fabricated so that the saddle or legs can rest flat on the top of the load cell.

The tank and hinge should be installed and bolted down. The load cell end of the tank should be jacked up at least 4" to allow the load cell to be installed and bolted down. The tank should then be gently lowered to the load cell. Tie rods or bumper bolts should be installed in an exact horizontal plate so that the load cell end of the tank cannot move more than 1/16" either way due to the wind, etc. The gap between the top plate and cylinder of the load cell should be 5/16" all around. The pointer has been backset to account for the approximate tare weight of the tank. The dial can be rotated slightly to exactly zero the pointer when the tank is empty. This is done by reaching through the hole at the bottom of the dial with a screwdriver and rotating the dial slightly. The dial is mounted at a convenient location. Care should be taken to locate the dial away from direct sunlight. The scale is now ready for weighing.

When high or low pressure switches are furnished, they have been preset at the factory. They can be adjusted by removing the cover if necessary. Wiring is also accomplished by removing the cover. (See instructions under "Optional Accessories" in the back of this manual).

When a 4-20 MA Transmitter is furnished, the wiring and operation instructions are located under "Optional Accessories" in the back of this manual.

## II OPERATION

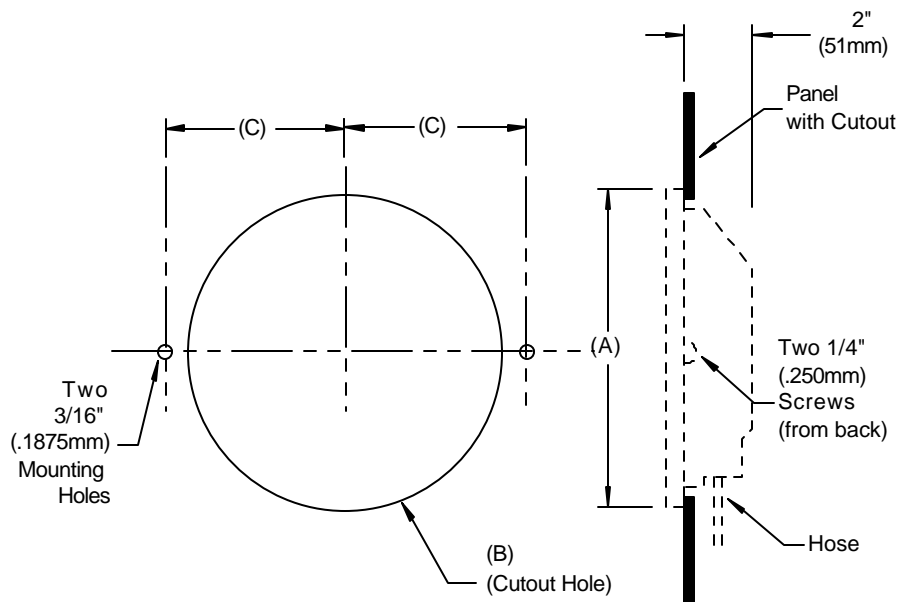
The tank transfers the weight of its contents to the hydraulic load cell. This cell consists of a rolling diaphragm over a cylinder of oil. The pressure signal generated in the oil is transferred by the hydraulic hose to the bourdon tube dial readout. The dial is calibrated 2:1 to the load cell.

Before the oil enters the dial there is a dampening device that prevents shock pressure from entering the dial. In colder weather it may take as long as one minute for the pointer to reach correct zero.

As contents are added to the tank, the high level pressure switch (if supplied) will close giving a signal that the tank is full. The reverse happens when the contents are emptied and the low pressure switch (if supplied) indicates a low level.

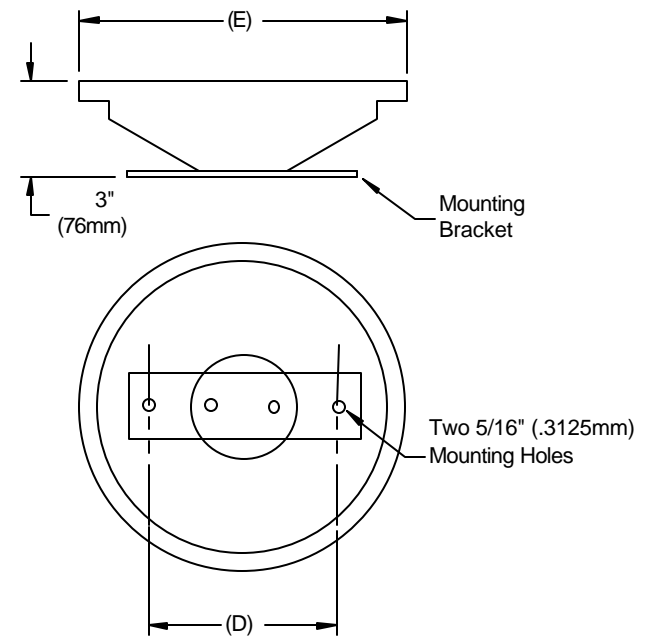
The 4-20 MA transmitter (if supplied), gives an electrical signal proportional to the weight of the tank.

C.1.102



PANEL MOUNTING

DIAL SIZE	(A) O.D.	(B) CUTOUT DIA.	(C) RADIUS TO MOUNTING HOLE
6" (152mm)	8-5/8" (219mm)	7-4/5" (200mm)	4-1/32" (102mm)
8-1/2" (216mm)	11-1/2" (292mm)	10-3/8" (264mm)	5/11/32" (136mm)
12" (305mm)	15" (381mm)	13-13/16" (351mm)	7-3/16" (183mm)
18" (457mm)	21-3/4" (552mm)	20" (508mm)	10-3/8" (264mm)



STANDARD BACK MOUNTING

DIAL SIZE	(D) MOUNTING BRACKET HOLE SPACING	(E) O.D.
6" (152mm)	7-1/2" (191mm)	8-5/8" (219mm)
8-1/2" (216mm)	7-1/2" (191mm)	11-1/2" (292mm)
12" (305mm)	10-1/8" (257mm)	15" (381mm)
18" (457mm)	13-3/4" (349mm)	21-3/4" (552mm)

C.1.107



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REF: T4\DRAWINGS\DIALMNT.dxf (A25.pdf) (WEB: DIALMNT.pdf)

CENTURY HYDRAULIC DIAL MOUNTING  
 6", 8-1/2", 12" & 18" DIAL

Drawn by: SLP  
 Date: 11/15/72  
 Revised: 07/03/98  
 Scale: NONE

Drawing Number

29451

# INDEX

## CHLOR-SCALE LOAD CELL SYSTEM for TGO TECHNOLOGY CHLORTAINER

### SECTION

C.1.000

#### INSTALLATION & OPERATION:

- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

YOU  
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#### MAINTENANCE

- C.1.201 Maintenance Instructions

C.2.000

#### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

#### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

#### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

#### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

C.3.000

#### MISCELLANEOUS

- C.3.301 Troubleshooting
- C.3.401 Parts List

## MAINTENANCE

Maintenance is minimal for the CHLOR-SCALE Stationary Tank Load Cell System.

Should the scale register an apparent gain of weight or appear to have fluctuating readings, it is probably caused by loss of oil in the load cell. There should be a 5/16" gap between the top plate and the cylinder of the load cell. If this gap is less than 1/8" under load, or if the plate is touching the cylinder, it indicates a loss of oil. There is a red dye in the oil and fittings should be checked and any leak corrected.

The best method to refill the system is to use Force Flow's hand pump. Contact factory (1-800-893-6723) to obtain one if needed. Disconnect the dial from the hose at the quick disconnect provided, then plug the pump into the disconnect.

*CAUTION:* To avoid pumping air into the system, refill the oil reservoir after *each* stroke of the plunger as the reservoir is extremely small and 2 strokes without refilling could introduce air into the system. If you are unable to refill because there is too much weight on the cell, you may need to jack up the tank.

## IV SPARE PARTS

The only spare part needed is oil for replacement in the event of accidental loss in the load cell. A one-pint can of RO-5 Oil is furnished with each scale. SAE-5 or SAE-10 weight, non-detergent machine oil may be used in emergency if filling is done only at the load cell plug.

# INDEX

## CHLOR-SCALE LOAD CELL SYSTEM for TGO TECHNOLOGY CHLORTAINER

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

##### MAINTENANCE

- C.1.201 Maintenance Instructions

#### C.2.000

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- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

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- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.301 Troubleshooting
- C.3.401 Parts List

1. The Transmitter must be wired as follows:

Connect "+" from the power supply to "+" terminal on transmitter; "-" terminal on transmitter to "+" terminal on receiving instrument. (Refer to Figure 2).

2. This unit is designed to accept 1/2" NPT conduit connection for wiring the transmitter in accordance with the NEMA 4X rating.

NOTE: A flexible conduit is recommended for ease of installation and to incorporate a moisture trap prior to hook-up.

3. DO NOT use more than 45 volt DC power supply.

NOTE: For INTRINSICALLY SAFE applications, use no more than 30 VOLTS DC. Consult factory for details.

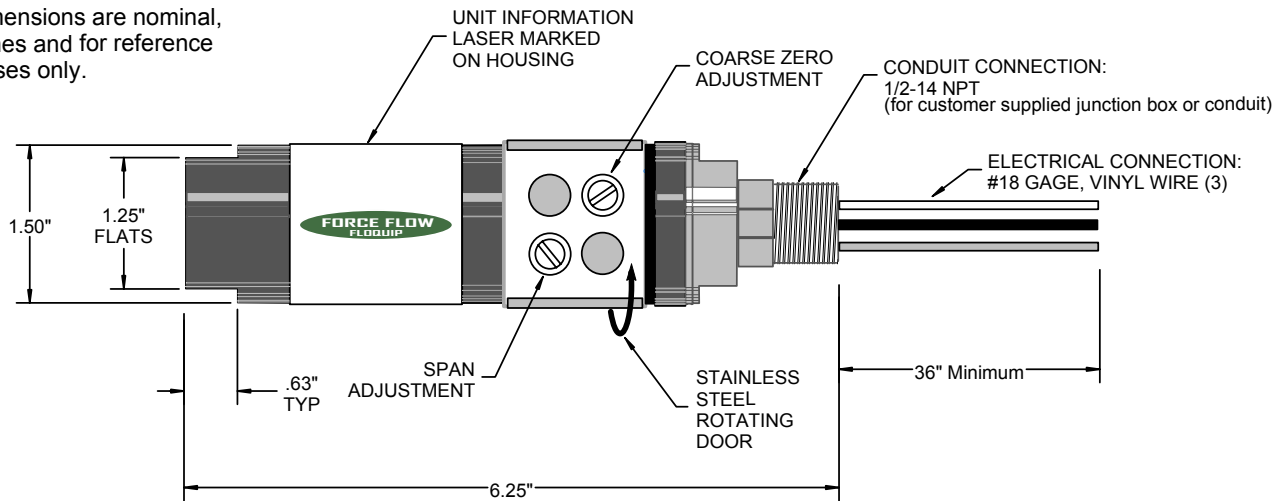
4. The Transmitter has been factory calibrated. DO NOT adjust the ZERO or SPAN setting (Refer to Figure 1)

5. Transmitter is not field repairable. Return to factory if more than routine calibration is required.

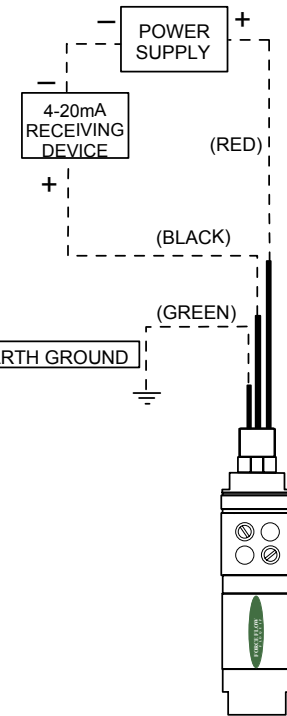
6. When correctly installed this transmitter has a FIVE (5) YEAR WARRANTY from date of shipment.

**WIRING**  
 RED: + Signal  
 BLACK: - Signal  
 GREEN: Case Ground

All dimensions are nominal, in inches and for reference purposes only.



**FIGURE 1**



**FIGURE 2**

For use with ammeter

**C.2.101**



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 1-800-893-6723 US & Canada, Fax: 925-686-6713  
 www.forceflow.com / info@forceflow.com

**WIRING DIAGRAM  
 SATELLITE  
 MODEL MA420V TRANSMITTER**

Drawn by: SLP/MN  
 Date: 01/06/96  
 Revised: 04/08/03  
 Scale: NONE

Drawing Number  
 30263

## PERFORMANCE SPECIFICATIONS

Accuracy +/- 0.25%  
 Linearity +/- 0.25%  
 Repeatability +/- 0.10%

Hysteresis +/- 0.10%  
 Stability +/- 0.50% Typical (six mos.)  
 Response Time <10 m sec @ 63% Full Scale

## PHYSICAL SPECIFICATIONS

Electronic Housing: NEMA 4X  
 Weight: Approximately 2 lbs (0.9 kg)  
 Electrical Connection: 1/2-14NPT or PG 13.5

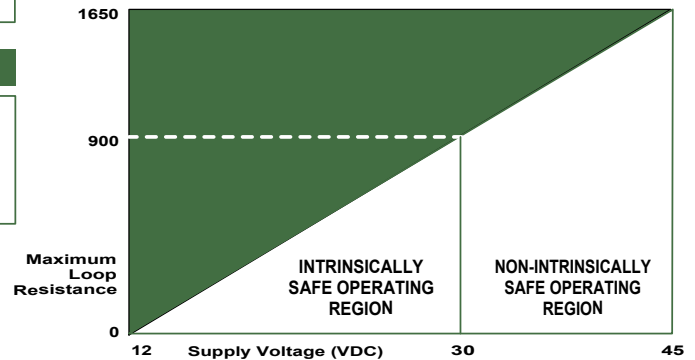
## OPERATING CONDITIONS

**INFLUENCE**      **OPERATING LIMITS**  
 Ambient Temp.    -40 to +80 deg. C (-10 to +170 deg. F)  
 Supply Voltage    9.0 to 40 Vdc  
 Output Load      0 to 1500 ohms @ 40VDC

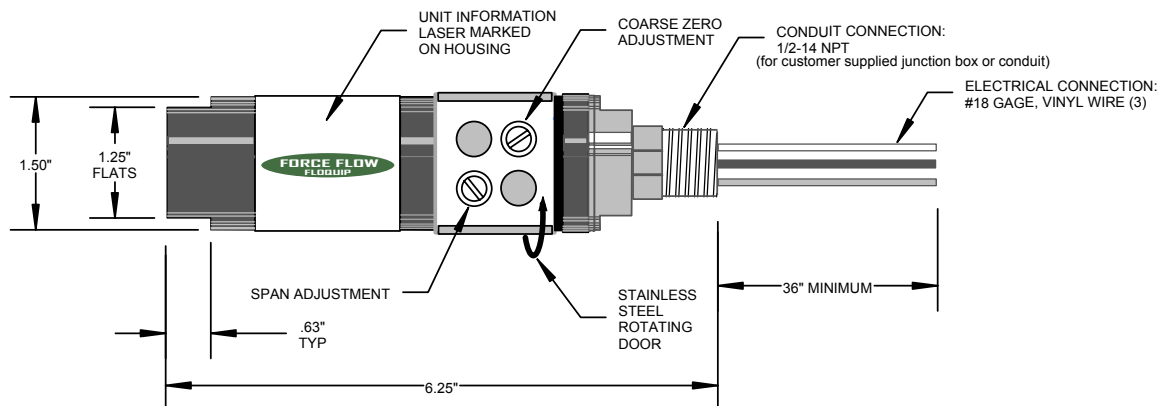
## CERTIFICATION

FM Certified Intrinsically Safe for:  
 Class I, Div. 1, Groups A B C D  
 Class II, Div. 1, Groups E F G  
 Class III, Div. 1 suitable

**Power Supply & Load Limitations  
 Electrical Characteristics**



ALL DIMENSIONS ARE NOMINAL,  
 IN INCHES AND FOR REFERENCE  
 PURPOSES ONLY.



## TYPICAL SPECIFICATIONS

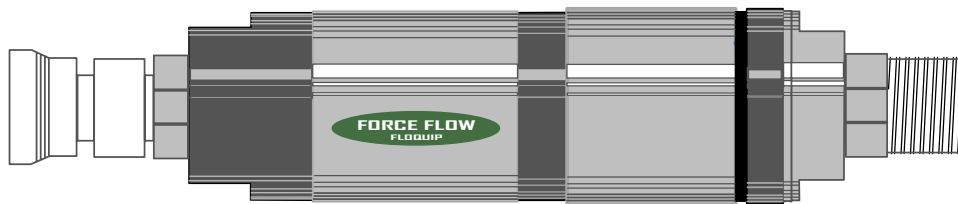
Scale(s) shall be equipped with a transmitter that outputs a 4-20 mA signal which is proportional to the gross weight on the scale.

Transmitter shall be loop-powered by an external source ranging from 12 to 45v dc. Transmitter shall be certified "intrinsically safe" by fm standards when powered by a supply voltage that is less than 30v dc. Transmitter shall include internal rfi protection. Transmitter shall utilize a strain gauge sensing element.

Transmitter shall have an accuracy better than +/- 0.25% full scale. Turn down ratio shall be 3:1. Transmitter shall allow an adjustment range of 50% of span to compensate for varying tare weights. Transmitter shall carry a minimum of a Five (5) Year Factory Warranty. "Limited" Warranties shall be considered unacceptable.

Transmitter shall be SATELLITE Model MA-420 as manufactured by Force Flow Equipment / Floquip, 1150-D Burnett Avenue, Concord, CA 94520 USA.

## 4-20mA Intrinsically Safe Transmitter for Hydraulic Scales



Force Flow / Floquip's SATELLITE Transmitter Model MA-420V measures the pressure of the hydraulic Load Cell System and converts the pressure to a standard 2-wire, 4-20mA analog signal that is proportional to the weight on the scale. The strain gauge sensing technology at the heart of this transmitter provides accurate repeatable and highly reliable performance.

- 0.25% Accuracy
- Compact Rugged Construction
- 3:1 Turndown
- RFI Protection
- Reverse Polarity Protection
- Overrange Protection
- Certified Intrinsically Safe FM
- Five (5) Year Factory Warranty

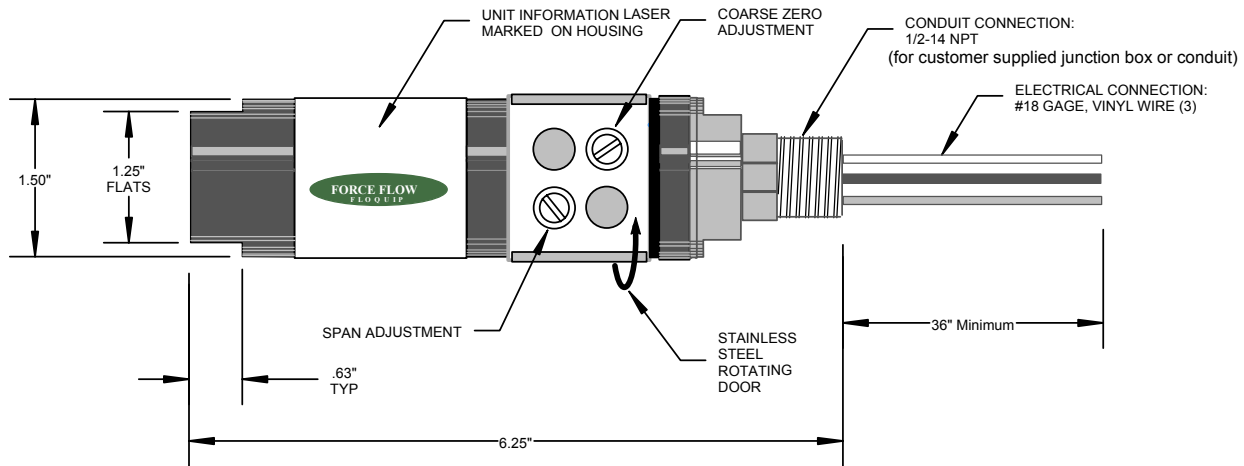
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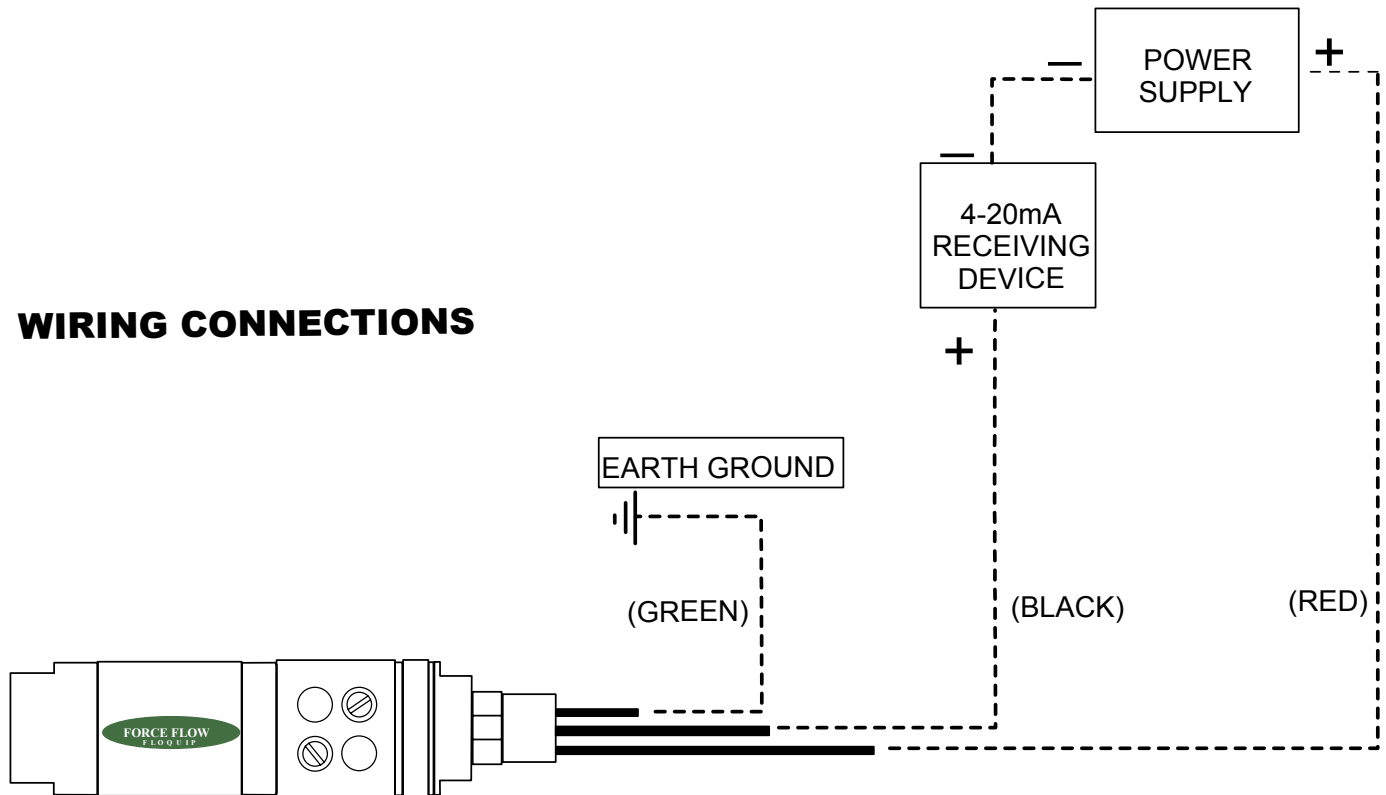
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# DIMENSIONAL DRAWING

All dimensions are nominal, in inches and for reference purposes only.



# WIRING CONNECTIONS



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### 1 WIRE TRANSMITTER TO COMPUTER OR OTHER INTERFACE

Before proceeding to operational steps, be sure transmitter is wired properly as per Section C.2.104.

### 2 SET SPAN VALUES ON COMPUTER OR OTHER INTERFACE

When setting parameters on your computer interface, you must first set the span mode. The following values are used for this CHLOR-SCALE:

MODEL	@ 4 MA	@ 20 MA
12D10-TGO	0 lbs.	1,000 lbs.
12D15-TGO	0 lbs.	1,500 lbs.
12D50-TGO	0 lbs.	5,000 lbs.

### 3 ZERO OFF TANK TARE WEIGHT

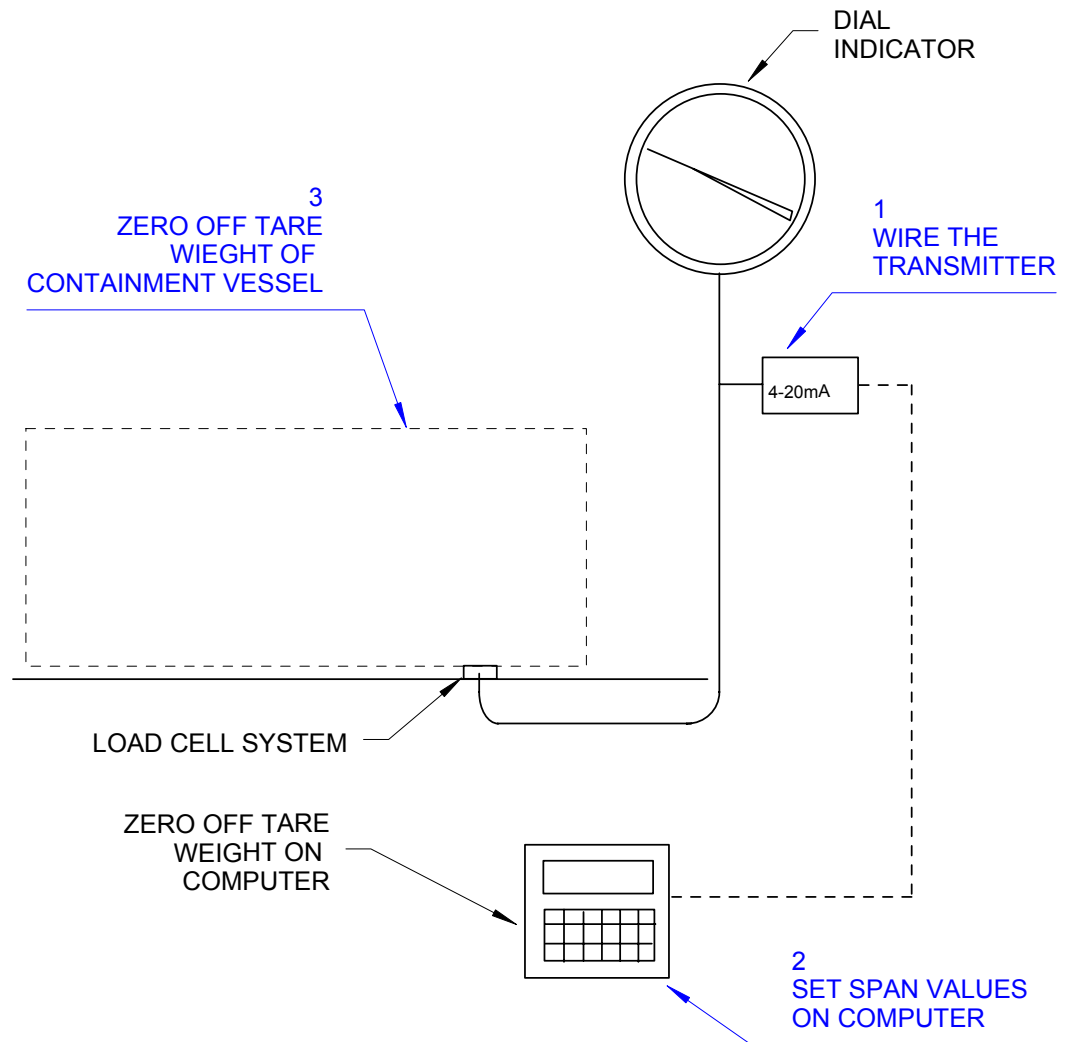
Zero off tare weight of containment vessel. Place empty ChlorTainer on load cell. Turn zero adjust "Null" until your meter reads 4 MA. This will suppress the weight of the ChlorTainer.

DO NOT ADJUST SPAN or calibration will be lost!

### 4 SUBTRACT TARE WEIGHT FROM GROSS READING

To read net contents, write a program to subtract Tank Weight from the Gross Weight. Because tare weights vary, you must key in a new tare weight each time a new ton container is loaded.

## **C.2.105**



**FORCE FLOW**

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REF: T4IO&MISTATHYDITRAN\_TGO.tcw (X60-TGO)

**TGO CHLORTAINER  
COMPUTER SET-UP FOR  
4-20mA TRANSMITTER**

Drawn by: SLP  
Date: 06/01/93  
Revised: 01/31/02  
Scale: NONE

Drawing Number  
**30452**

## CENTURY Indicator with STATIONARY LOAD CELL SYSTEM

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

##### TANK CONNECTIONS

- C.1.131 Tank Connection Recommendations

##### MAINTENANCE

- C.1.201 Maintenance Instructions

#### C.2.000

##### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

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##### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

##### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.301 Troubleshooting
- C.3.311 Load Cell Refilling Instructions
- C.3.401 Parts List

# ACOPIAN Series U

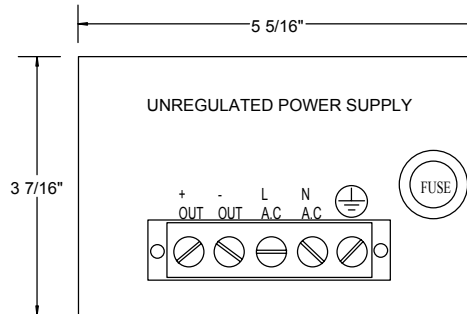
## Optional Accessory

Unregulated Power Supply  
U.L. Recognized

Low-cost DC power suitable for driving loads such as lamps, relays and small motors is provided by Series U Unregulated power supplies. All components are generously derated, insuring a long and trouble free life; built in fusing prevents damage due to prolonged overload or short circuits. They are housed in extruded aluminum cases which can be mounted in any position.

### STANDARD FEATURES:

- Silicon rectifiers
- Capacitive filtering
- Fused input
- May be used in series or parallel
- No derating or heat sinking required
- Completely serviceable.



### SPECIFICATIONS:

Input Voltage: 0-125 VAC, 50-400 Hz, Single Phase

Nominal Output Voltage: 24

Output AMPS: 1.0

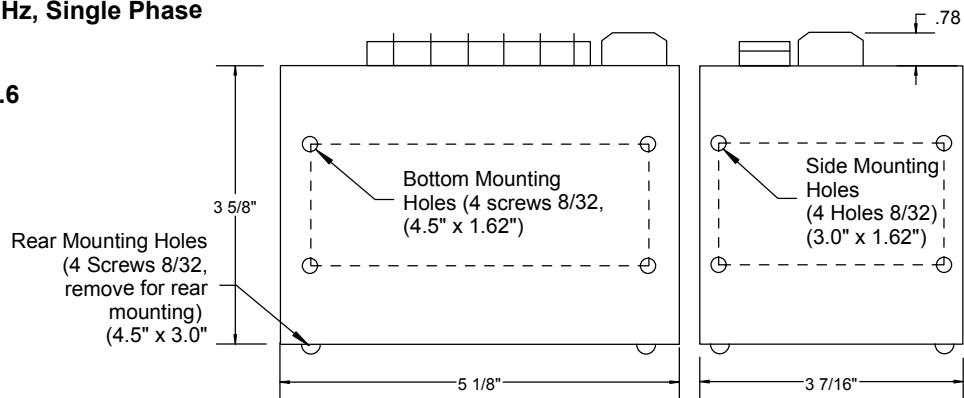
Output Voltage N/L F/L: 26.4 to 21.6

Ripple Volts: 1.7

Model: U24Y100

Size: Y3

Weight: 2 lbs. 8 oz.



**LOAD REGULATION:** Nominal output voltage is based on 115 VAC input, with approximately 50% of rated output current being drawn.

**LINE REGULATION:** With fixed load, output voltage change is proportional to input voltage change.

**OUTPUT VOLTAGE ADJUSTMENT:** An adjustable auto-transformer (not included) may be used to adjust output voltage by varying the AC input voltage to the supply.

**POLARITY:** Output is floating; either positive or negative terminal may be grounded or floated up to 300 V above ground.

**AMBIENT OPERATING TEMPERATURE:** -10 to + 65 degrees C. No derating required.

**STORAGE TEMPERATURE:** -55 to +85 degrees C.

**OPTIONAL 230 VOLT INPUT AVAILABLE:** Consult factory for model number and price.

**C.2.111**  
**X.2.111**  
**SAT.2.111**

REF: T4\O&MACENMSTR\ACOPIAN.tcw (A11.pdf) (WEB: ACOPIAN)  
11/26/02

## CENTURY Indicator with CYLINDER-SCALE & AMMONIA-SCALE

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101-1 Dimensional Drawing CYLINDER-SCALE
- C.1.101-2 Dimensional Drawing AMMONIA-SCALE
- C.1.102 Installation Instructions
- C.1.103 Installation Drawing
- C.1.104 Installation Steps 1 - 4
- C.1.105 Installation Steps 5 - 8

##### INSTALLATION CHECK LIST

- C.1.151 Installation Check List

##### OPERATION:

- C.1.201 Operation & Maintenance Instructions

#### C.2.000

##### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

##### POWER SUPPLY OPTION:

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##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

##### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS:

- C.3.101 Calibration of Scale (Slotted Platforms only)
- C.3.301 Trouble Shooting & Scale Maintenance
- C.3.302 Maintaining Load Cell Piston Gap
- C.3.303 Shimming Load Cell (if necessary)
- C.3.401 Parts List

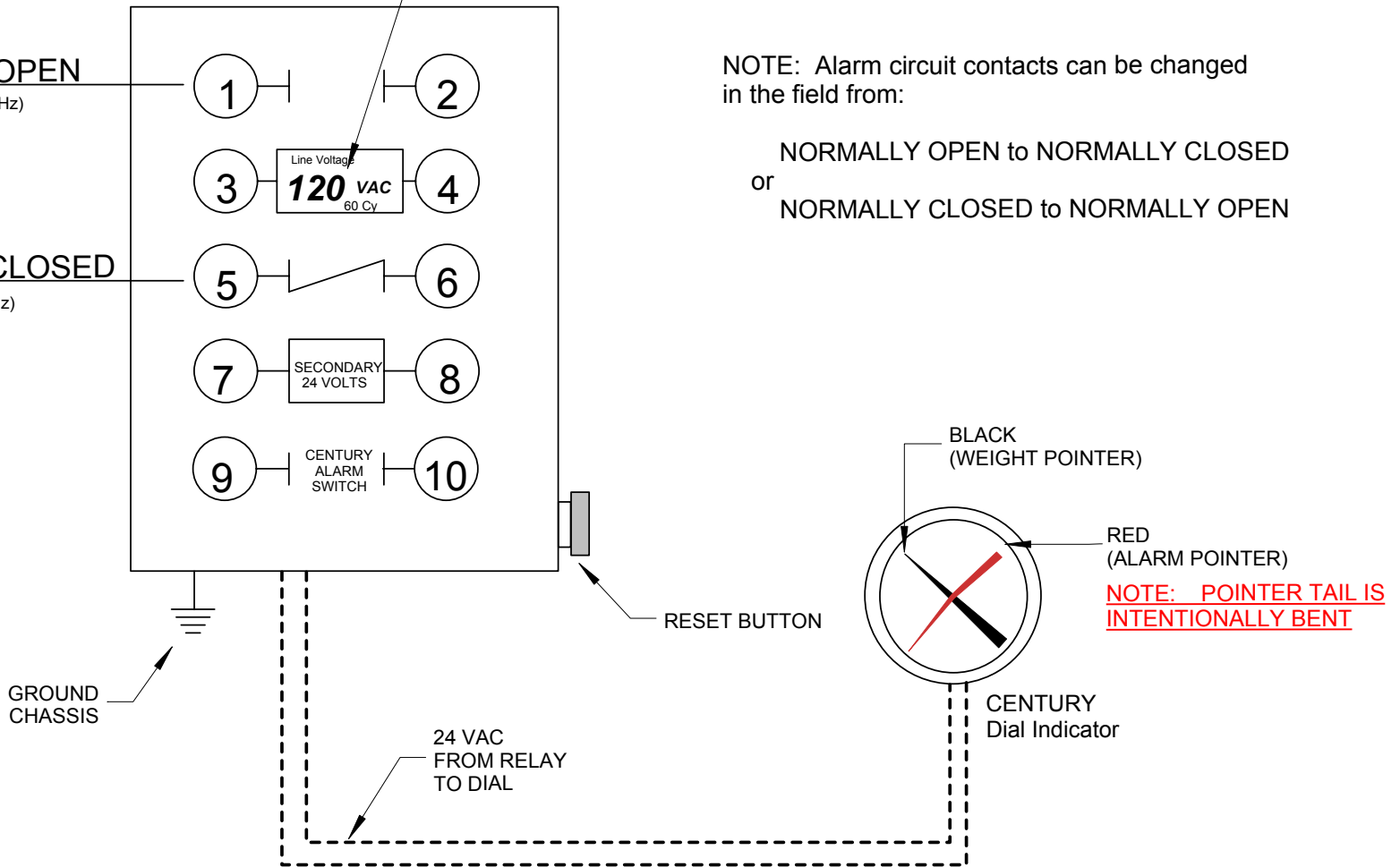
NOTE: Actual LINE VOLTAGE provided is noted between Terminals #3 and #4 in the relay box, i.e. "120 VAC" or "240 VAC".

**Alarm Circuit  
NORMALLY OPEN**

120 Volt (240 Volt/50-60 Hz)  
25 AMP Maximum

**Alarm Circuit  
NORMALLY CLOSED**

120 Volt (240 Volt/50-60 Hz)  
25 AMP Maximum



NOTE: Alarm circuit contacts can be changed in the field from:

NORMALLY OPEN to NORMALLY CLOSED  
or  
NORMALLY CLOSED to NORMALLY OPEN

**C.2.121**



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File: T4\IO\MACCESSRY\RS\_RS150.tcw 11/22/02 (A12.pdf) (WEB: RS5&150.pdf)

**120 or 240 VAC WIRING DIAGRAM**  
**Model RS-5 and RS-150**  
**Adjustable Alarm Reed Switch**

Drawn by: SLP  
Date: 03/15/92  
Revised: 11/22/02  
Scale: NONE

Drawing Number  
**29483**

# MODEL RS-5 & RS-150

## ADJUSTABLE ALARM REED SWITCH with MANUAL RESET RELAY

### I INSTALLATION

Mount the relay box on a convenient surface near the dial. This box is not designed for mounting on the pedestal. Ground the chassis box.

**NOTE:**

**Actual LINE VOLTAGE on terminals #3 and #4 in the relay box.,  
i.e. is "120 VOLT AC" or "240 VOLT AC".**

Attach the appropriate line voltage (SEE ABOVE NOTE) to terminals #3 and #4. Attach alarm circuit to terminals #1 and #2 for NORMALLY OPEN (or #5 and #6 for NORMALLY CLOSED). Make sure this alarm circuit does not draw more than 25 amps at the appropriate line voltage (see above "NOTE") or it will burn out the points.

**Make sure this alarm circuit does not draw more than 25 amps at the  
appropriate line voltage (see above note) or it will burn out the points.**

### II OPERATION

The assembly consists of a magnet mounted on the black scale pointer, a 1/2 amp NORMALLY OPEN reed switch mounted on the adjustable pointer inside the scale dial glass, and a 24 Volt line junctioned from the dial to an electrical box. The box contains a relay, and a manual reset relay button.

Position the adjustable pointer (RED) containing the reed switch near the low chemical level on the scale dial. When the scale pointer (BLACK) coincides with the adjustable pointer (RED), the reed switch closes, completing the 24 Volt relay circuit which in turn closes the dry SPDT relay to trip an alarm or light (furnished by others). The relay is held in and the circuit is kept closed by a normally closed reset button wired in series. The alarm circuit can be shut off by momentarily depressing the reset button when the pointers are NOT coinciding.

### III MAINTNANCE

Maintenance is very minimal. The reed switch and relay are rated at approximately a million cycles. The circuit is dormant until the magnet activates the reed switch. Normal electrical practices should be used to trace any malfunction.

# INDEX

## CHLOR-SCALE LOAD CELL SYSTEM for TGO TECHNOLOGY CHLORTAINER

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

##### MAINTENANCE

- C.1.201 Maintenance Instructions

#### C.2.000

##### 4-20mA TRANSMITTER OPTION:

- C.2.101 4-20mA Transmitter Wiring Diagram
- C.2.102 Satellite Transmitter Bulletin
- C.2.103 4-20mA Transmitter Data & Spec
- C.2.104 4-20mA Transmitter Dimensional Drawing
- C.2.105 Computer Set-Up for 4-20mA Output

##### POWER SUPPLY OPTION:

- C.2.111 Power Supply (24 Volt)

##### RS-5 REED SWITCH OPTION:

- C.2.121 RS-5 Adjustable Reed Switch Wiring Diagram
- C.2.122 RS-5 Installation Instructions

**YOU  
ARE  
HERE !**

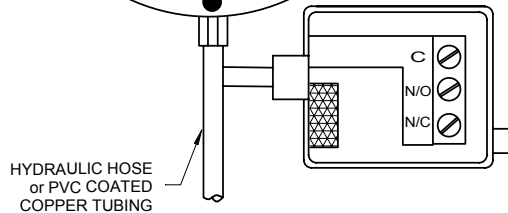
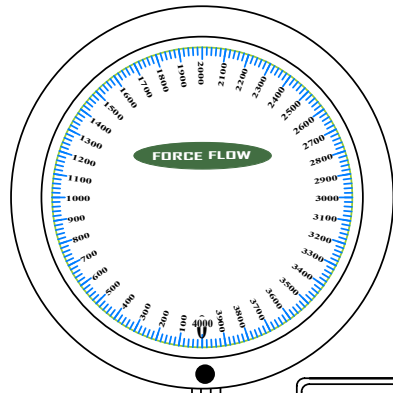
##### PS-10 PRESSURE SWITCH OPTION:

- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

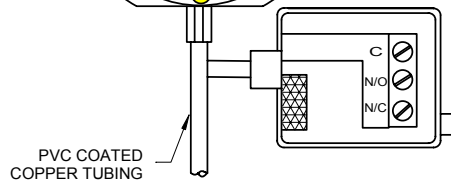
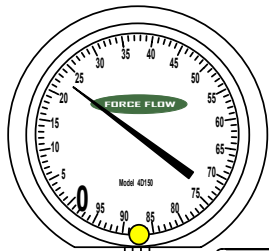
#### C.3.000

##### MISCELLANEOUS

- C.3.301 Troubleshooting
- C.3.401 Parts List

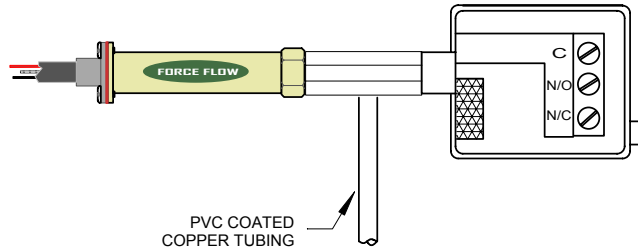


**CENTURY  
Dial Indicator**

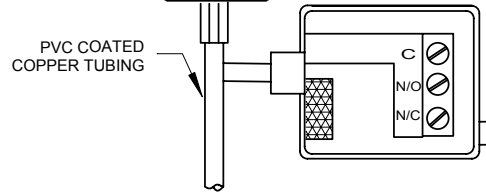
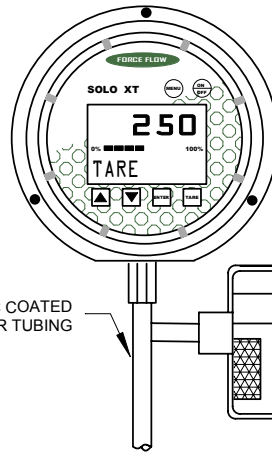


**CENTURY 150  
Dial Indicator**

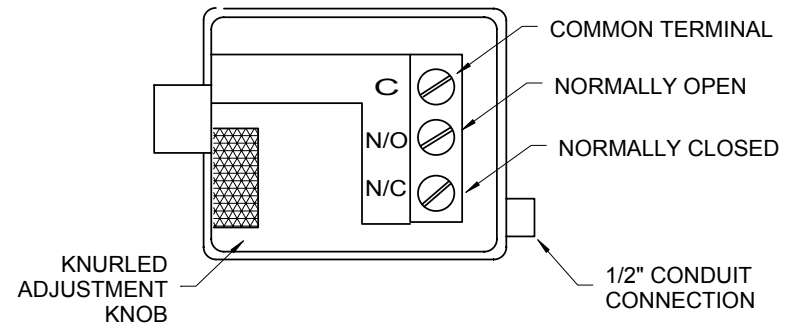
**C.2.131  
X.2.131  
SAT.2.131**



**SATELLITE  
4-20mA Transmitter**



**SOLO XT  
Cross Technology Indicator**



**NOTE:**

Pressure setting adjustments are made by removing pressure switch face plate and turning the knurled knob:  
COUNTERCLOCKWISE to LOWER  
CLOCKWISE to RAISE

**WIRING CONFIGURATION OF SWITCH:**

To wire switch as LOW LEVEL alarm:

- 1) Switch closes on FALLING level = N/C
- 2) Switch opens on FALLING level = N/O

To wire switch as HIGH LEVEL alarm:

- 1) Switch closes on RISING level = N/O
- 2) Switch opens on RISING level = N/C

**TO TEST THE SETTING:**

Remove weight from scale (for descending setting) or apply weight to scale (for ascending setting). Listen for an audible "Click", or use a continuity tester to determine change in switch status.



1150-D Burnett Ave, Concord, CA 94520 USA  
1-800-893-6723 US & Canada, Fax: 925-686-6713  
www.forceflow.com / info@forceflow.com

File: T4\O&M\ACCESSORY\PS10&150.tcw (A14.pdf) (WEB: PS10&150.pdf)  
11/21/02

**PS-10 and PS-150 PRESSURE SWITCH  
10 AMP @ 120 or 240 VOLT AC  
NEMA 4 ENCLOSURE**

Drawn by: SLP  
Date: 01/15/71  
Revised: 11/21/02  
Scale: NONE

Drawing Number  
**29450-  
PS-10**

# INDEX

## CHLOR-SCALE LOAD CELL SYSTEM for TGO TECHNOLOGY CHLORTAINER

### SECTION

#### C.1.000

##### INSTALLATION & OPERATION:

- C.1.101 Drawing of Stationary Scale
- C.1.102 Installation of Stationary Load Cell System
- C.1.107 Dial Mounting Dimensional Drawing

##### MAINTENANCE

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#### C.2.000

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- C.2.122 RS-5 Installation Instructions

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- C.2.131 PS-10 Fixed Pressure Switch Wiring Diagram

#### C.3.000

##### MISCELLANEOUS

- C.3.301 Troubleshooting
- C.3.401 Parts List

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ARE  
HERE !**

# STATIONARY TANK LOAD CELL SYSTEM

## TROUBLE SHOOTING

If you notice inaccurate reading or unwarranted increase or decrease in your readings:

### INACCURATE READINGS:

- How did you determine tare weight of empty tank?. Did you zero dial before filling?
- Tank Saddles should be equal distance from centerline of tank. Load Cell calibration is 2:1.
- Check external piping to see if it restricts load cell movement (add flexible couplings if necessary).
- Does stairs or scaffolding place uneven weight distribution on tank.

### UNWARRANTED INCREASE OR DECREASE:

- Check the tank for binding on the hold down bolts. Enlarge the bolt hole if necessary.
- Check the gap in your load cell periodically. It could be low on fluid and need oil added. (See "Refilling Instructions").
- Check the jam nuts and loosen if restricting movement. Allow 1/8" clearance. The tank should move freely on the load cell.

If you have any questions or need technical assistance, please do not hesitate to call our service department at:

1-800-893-6723 (USA & Canada)

Fax: 925-686-6713

Email: [info@forceflow.com](mailto:info@forceflow.com)

**C.3.301**

# PARTS & ACCESSORIES

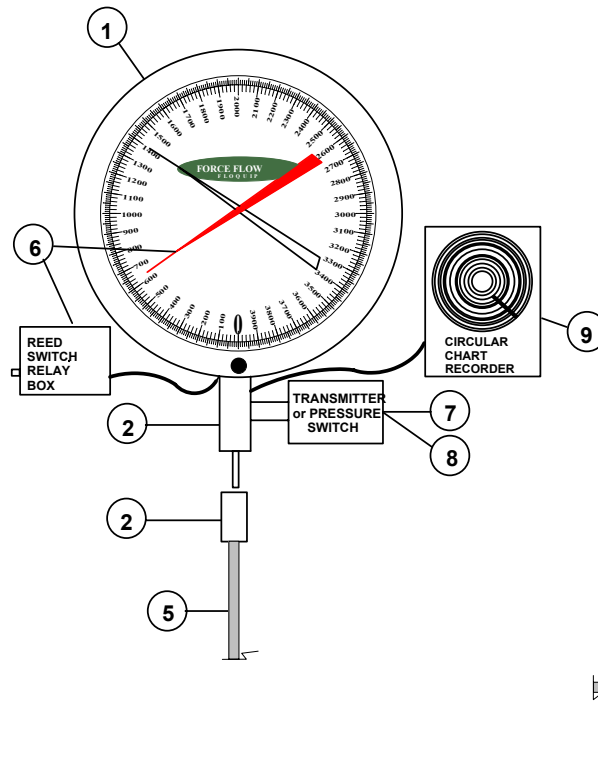
## LOAD CELL SYSTEM

- 1** DIAL:  
 6" Diameter (i.e. Model 6D...)  
 8.5" Diameter (i.e. Model 8D...)  
 12" Diameter (i.e. Model 12D...)  
 18" Diameter (i.e. Model 18D...)
- 2** QUICK DISCONNECT:  
 Male Disconnect only (attached to dial)  
 Female Disconnect only (attached to tubing)

- 3** LOAD CELL:  
 75.58 Load Cell  
 21.64 Load Cell  
 12.56 Load Cell  
 2.66 Load Cell
- 4** DIAPHRAGM REPLACEMENT KIT:  
 75.58 Diaphragm  
 21.64 Diaphragm  
 12.56 Diaphragm  
 2.66 Diaphragm  
 (Consult factory for proper diaphragm)
- 5** TUBING:  
 Hydraulic Hose (per foot)  
 PVC Copper Tubing (per foot)

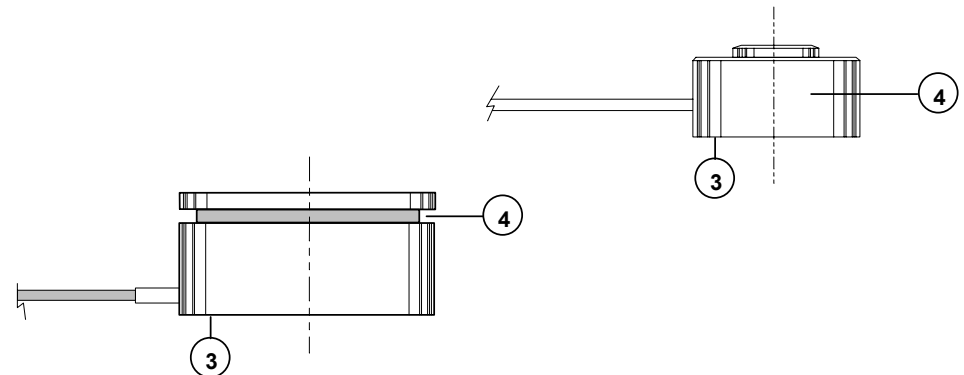
## ACCESSORIES

- 6** RS-5 Reed Switch with Reset Relay Box
- 7** PS-10 Fixed Pressure Switch
- 8** MA-420 Transmitter (24 Volt)  
 Power Supply (110 Volt)
- 9** Circular Chart Recorder  
 1 or 7-day (Windup or Electric)



**CONSULT FACTORY  
 FOR CURRENT PRICES**

1-800-893-6723 or  
 info@forceflow.com



**C.3.401**



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File: T4\DRAWINGS\PARTHTSTN.tcw (A26.pdf) (WEB: PARTHTON.pdf)

**PARTS LIST for BULK TANK  
 HYDRAULIC LOAD CELL SYSTEM  
 with CENTURY DIAL INDICATOR**

Drawn by: SLP  
 Date: 01/05/89  
 Revised: 01/31/02  
 Scale: NONE

Drawing Number  
**30382**