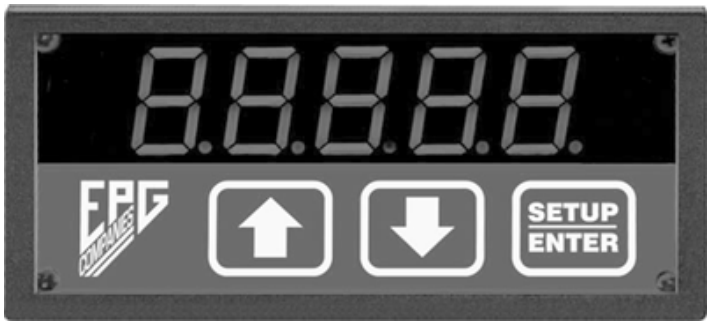
# CHS Series LevelMaster™ Level Meter

# Operations & Configuration Manual

## For Models:

**CHS1000**
**CHS1100**
**CHS1200**

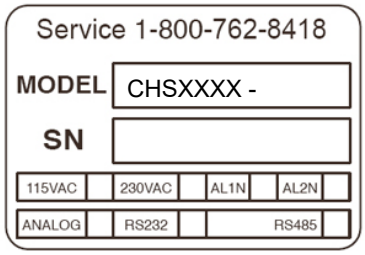



**EPG Companies Inc.**
**19900 County Road 81**
**Maple Grove, MN 55311**
**800-443-7426 * www.epgco.com**
**Tech Support * 800-762-8418**

© 2018 EPG Companies Inc.

## INDEX


| | |
|---|---|
| Introduction | 2 |
| Connections | 3 |
| Run Mode | 4 |
| Configuration Procedure | 4 |
| Meter Setup Mode | 5 |
| Meter Operations Mode | 6 |
| Meter Scaling Setup | 7 |
| +AO & +RS232 Options | 8/9 |
| Configuration Guide | 10 |
| Meter Settings | 11 |
| Replacement Guide | 13 |


## INTRODUCTION

The feature-rich CHS Series Indicating controller is the heart of the EPG Level Master System. The level is determined by detecting changes in hydrostatic pressure using a submerged stainless steel pressure transducer. The EPG Level Indicating Controller 'reads' the corresponding analog current and uses one or two of the three internal relays to turn on and off pumps. Pump control can be either in pump up or pump down modes with either one or two pumps controlled. The relays can also be used as alarms outputs and can be fully configured for failsafe operation.

The base Model **CHS1000** includes features previously listed. In addition to those features, the **CHS1100** and **CHS1200** provide even more output, input, and communication options.

The **CHS1100** adds an analog output (a re-transmitted, powered 4-20mA), an internal, 24VDC transmitter power supply and digital inputs (used for pump disable or monitoring pump on/off status & run time).

The **CHS1200** adds RS-232/485 Communications Ports (Modbus). The supply power for each model can be 24VDC, 120VAC or 240VAC. The CHS Series standard configuration is in inches, but can be field configured to any other units required.

### 1.0 Installation

The power requirements for the meter are listed on the label located on the top of the case. Use only the power indicated. The label also indicates any optional installed hardware that may be installed. The pre-set factory configuration of the meter is also listed. The settings of the meter and the alarms can be changed in the field however prior to unattended operation, it is good practice to confirm all parameters via the display (see configuration guide at end of this document).

### 1.1 Mounting

The CHS Series mounts in a standard horizontal 1/8 DIN panel opening. The case mounted "ears" attach to the side of the meter case after it is inserted in the panel. The installation screws supplied with the meter can then be tightened to secure the meter.

DIMENSIONS: Face: 3.75" (95mm) X 1-7/8" (46mm)
Depth (back of Panel): 4.5" (114mm)
Panel Cutout: 3.5" (90mm) X 1- 11/16" (43 mm).

### 1.2 Connections

The rear of the meter may have up to three terminal strips. The main 14 terminal strip (J1) is the standard. If options are present then two shorter terminal strips (J2 & J3) will be present and physically located above J1.

### J1 (CHS1000, CHS1100, and CHS1200)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | N | G | C | K1 | K1 | K2 | K2 | K3 | K3 | +24 | S+ | S- | C |

1 - VAC Hot / DC+
2 - VAC Neutral / DC-
3 – Ground
4 – Common
5 – Pump Relay #1
6 - Pump Relay # 1
7 – Alarm Relay #1
8 – Alarm Relay #1
9 – Alarm Relay #2
10 – Alarm Relay #2
11 - +24VDC @ 100mA
12 – SIGNAL I/P sinking(+)
13 - SIGNAL I/P sinking (-)
14 – Common
*SEE NOTES BELOW RE: Inputs*

### J2 (CHS1100 and CHS1200 only)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| C | P2 | P1 | C | HOA2 | HOA1 | -A/O | +A/O |

1 - Common (Pulse return)
2 – RUN / Pulse I/P# 2 (5-50VDC)
3 – RUN / Pulse I/P#1 (5-50VDC)
4 – Common (HOA return)
5 – Float/HOA switch I/P Disable #2
6 – Float/HOA switch I/P Disable #1
7 – Re-transmitted level 4-20mA (-)
8 – Re-transmitted level 4-20mA (+)

### J3 (CHS1200 only)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| -RS485 | +RS485 | C | RS232 CTS | RS232 RTS | RS232 TX | RS232 RX |

1 – RS-485 (-)
2 – RS-485 (+)
3 – SIG common
4 – RS-232 RTS (see Note 2)
5 – RS-232 RTS (see Note 2)
6 – RS-232 TX data
7 – RS-232 RX data

NOTES:
All relays Form A rated 5A @ 120 VAC
Use Terminals 12 (+) and 13 (-) for sinking inputs (i.e. 2 wire transmitters)
Use terminals 13(+) and 14(-) for sourcing inputs (i.e. 4 wire transmitters)
For RS-485 or for quick turn-around RS-232, jumper RTS and CTS.
For external modem use, connect RTS and CTS to the modem. The modem provides the CTS delays as needed.

## RUN MODE

### 2.0 Levels and Alarms

During normal operation the meter will display the real time process level in the units (inches, centimeters etc) in which the level transducer and the CHS1200 were calibrated during setup. During normal operation the display indicates the process level. If the meter is in alarm or a pump is on, every 15 seconds the display will toggle to briefly indicate this status (i.e. AlHi, P etc.). Pressing the UP and DOWN arrows simultaneously will cause the METER TYPE to be displayed.

### 2.1 Min / Max

During normal operation pressing either the UP or DOWN arrows will cause the most recent minimum or maximum process level values recorded by the meter since the last active meter reset. An Active Reset is performed by simultaneously pressing the UP arrow (max reset) or DOWN arrow (Min reset) and the SETUP/ENTER key together.

### 2.2 LED Indicators

There are three LED's located vertically on the left side of the display that indicate the meter's real time operating status.
The TOP LED flashes in alarm if the communications option board is present and the communication has failed. A small LED to the left of this LED flashes if the option is installed and the meter is communicating.
The MIDDLE LED is non-operational and reserved for future use.
The BOTTOM LED is ON if either a local or remote pump lockout is enabled.

### 2.3 Real Time Digital Input Status

Press the SETUP/ENTER key momentarily. The display will read ZERO. Enter a Setup Code value of 2 by pressing the UP arrow twice and press the SETUP/ENTER key. The display will show 'd????'. Each '?' will be either a 1 (on) or 0 (off) with each digit representing the status of a local digital inputs. The meter will continue to monitor and control the pumps while this operation is performed.

## CONFIGURATION PROCEDURE

The meter when first plugged in will quickly perform a startup routine confirming the operation of all the LED segments. It will then display the current input value. If there is no input and the meter was setup at EPG, (EPG standard configuration is for a 0-5PSIG input with 4-20mA output) the meter will display –34.6. In order to change any set points or internal values, one must enter the respective SETUP MODE as defined in the Configuration Guide on page 10 of this manual. To enter a SETUP MODE (25, 35, 45) simply firmly press the SETUP/ENTER key momentarily. Upon release the meter's display will indicate ZERO. Using the UP/DOWN arrow keys, increment this value to the desired entry code (25, 35, or 45) and press the SETUP/ENTER key. The meter will automatically step to the next menu item. The meter will display the next menu item briefly and then either wait for an entry or toggle to show the current value. Use the UP/DOWN keys to set the required value.
Pressing the SETUP/ENTER key will enter this value into the meter's internal memory and increment the display to the next menu item.

**** Keyboard inactivity for more than three minutes will cause the meter to exit the setup mode and return to the run mode.***

**METER SETUP MODE (CODE 45 – configure first)**

### 3.0 METER TYPE

The meter can be configured for 6 different pump control actions as follows:

| # | CODE | EQUIPMENT | ACTION | ALARM #1 | ALARM #2 |
|---|---|---|---|---|---|
| 1 | SdHL | Single Pump | Pump Down | Hi | Lo |
| 2 | SdHH | Single Pump | Pump Down | Hi | Hi Hi |
| 3 | ddH | Dual Pump | Pump Down | Hi | P2 On/Off |
| 4 | SuHL | Single Pump | Pump Up | Hi | Lo |
| 5 | SuHH | Single Pump | Pump Up | Hi | Hi Hi |
| 6 | DuH | Dual Pump | PumpUp | Hi | P2 On/Off |

NOTES:

1. Control mode types 1, 2, & 3 may also be referred to as emptying or pump out and modes 4, 5 & 6 may be referred to as filling or pump in.
2. The alarm relays are ALL Normally Open (fail safe) and can be field configured as Normally Open or Normally Closed (see 3.4 & 3.5 below).

### 3.1 20mA CALIBRATION

The meter is delivered from EPG pre-calibrated. Under normal operation this setting should NEVER be adjusted. If re-calibration is required consult your EPG representative.

### 3.2 MODBUS ADDRESS (*Addr = 1- 240*)

Use the UP/DOWN arrow keys to enter the desired Modbus address and press the SETUP/ENTER key. This is only active if this option is installed

### 3.3 MODBUS Serial Baud Rate

The communication transfer rate can be toggled between 1200 Baud (bd-12) and 9600 Baud (bd-96) using the UP/DOWN arrows. This is only active if the option is installed.

### 3.4 2nd Alarm Contact Configuration (terminals 9 & 10)

Use the UP/DOWN arrows to toggle between Normally Open & Normally Closed relay configuration for relay #2 associated with the second alarm of Single Pump Systems or the Pump 2 function of dual pump system.

### 3.5 1st Alarm Contact Configuration (terminals 7 & 8)

Use the UP/DOWN arrows to toggle between Normally Open & Normally Closed relay configuration for the relay associated with the HI alarm.

**METER OPERATIONS MODE (CODE 35 – sets alarm & pump control points)**

### 4.0 Menu Items Overview (described below) for METER TYPE

| Step # | SdHL | SdHH | ddH | SuHL | Suhh | duH |
|---|---|---|---|---|---|---|
| **1** | PrHi | PrHi | PrHi | PrHi | PrHi | PrHi |
| **2** | PrLo | PrLo | PrLo | PrLo | PrLo | PrLo |
| **3** | AlHi | AlHi | PrHi2 | AlHi | AlHi | PrHi2 |
| **4** | HyHi | HyHi | PrLo2 | HyHi | HyHi | PrLo2 |
| **5** | AlLo | AlHi2 | AlHi | AlLo | AlHi2 | AlHi |
| **6** | HyLo | HyHi2 | HyHi | HyLo | HyHi2 | HyHi |

### 4.1 PrHI (Relay #1 – terminal strip J1 #5 & 6)

This is the upper on or off set point for the main pump control and is adjusted using the UP/DOWN arrow keys.

### 4.2 PrLo

This is the lower set point for the main pump control and is adjusted using the UP/DOWN arrow keys.

### 4.3a AlHi (Relay#2 – terminal strip J1 #7 & 8)

Use the UP/DOWN arrow keys to adjust the Hi Alarm. ***OR***

### 4.3b PrHi2

This is the upper on or off set point for the secondary pump in a lead/lag control situation. It is adjusted using the UP/DOWN arrow keys.

### 4.4a HyHi

The High alarm hysteresis determines the value by which the process must deviate from the alarm set point before the relay returns to its normal state. ***OR***

### 4.4b PrLo2

This is the lower on or off setpoint for the secondary pump control and is adjusted using the UP/ DOWN arrow keys.

### 4.5a AlLo (Relay#3 – terminal strip J1 #9 & 10)

Use the UP/DOWN arrow keys to set a lower alarm limit for a single pump system.

***OR***

### 4.5b AlHi2 / AlHi

Use the UP/DOWN arrow keys to adjust the Hi/Hi or Hi Alarm for single or dual pump systems. 4.6 HyLo or HyHi (Same as 4.4a above)

## METER SCALING SETUP (Setup Code 25 - scales display)

### 5.0 DECIMAL POINT

Using the UP / DOWN arrow keys the decimal point can be moved to the left or the right providing the resolution required for the application.
NOTE: Moving the decimal point to the far right will cause it to be “hidden”.

### 5.1 SCALING FACTOR

It is necessary to cause the display counts (0-2000) to read in actual engineering units. . This is done using a Scaling Factor and a Scaling Offset Factor.
Using the factory standard level transducer as an example (0 – 5 PSI two-wire transducer scaled in inches with an output of 4 – 20mA’s) these factors are calculated as follows.

Scaling Factor = Desired Reading Range / Max. Display Count

Therefore: The URL (5 PSIG) converted to inches is 138.55” (5 X 27.71” H2O per 1 PSI)
Because the transducer is “zero based” (0-138.55”) and the current output is “live” (4-20), 25% or (1/4) of the URL value must be added: 138.55 / 4 = 34.64 + 138.55 = 173.19 or ~173.2

Remove the decimal point for calculation: 1732 / 2000 = .866 **>> The scaling factor is: .866**

### 5.2 SCALING OFFSET

It is now necessary to perform an offset or to suppress the above range to Zero. The factory default for the 0-5 PSIG transducer with a 4-20mA Output is –34.6
The standard equation for doing this is: The negative value of (Suppressed Range (4mA) / Active Range (16mA)) * Desired Units Full Scale

- (4 / 16) * 138.55 = **-34.6 >> The offset factor is: -34.6**

### TROUBLESHOOTING TIPS

1. Pressing the UP/ DOWN arrows simultaneously will cause the meter to display its current configuration and alarm type.
2. Confirm power to all devices and equipment
3. Check configuration of meter (including decimal point location)

## OPTIONS

### DIGITAL INPUTS & ANALOG OUTPUT (+AO option / CHS1100 & CHS1200 only)

### 6.0 Pump Run Status (terminal strip J2 #1,2 & 3)

There are two local digital inputs that can be used to monitor pump operation or other conditions. Internally generated 'bits' in the Digital Input Register reflect the inputs' current state. These inputs also have associated internal registers that:

a) count the number of pump starts &
b) accumulate a "runtime" in tenths of hours

These two inputs (terminals 2 & 3) also share a common return (term.#1) and are polarity insensitive. In addition there are internal registers that accumulate the number of starts and the runtime based on the meter's own pump relay outputs. All this information can only be accessed by using the RS-232/485 communications port.

### 6.1 Lockout Inputs (terminal strip J2 #4, 5 & 6)

There are two local digital inputs that can be used to disable the pump control operation. They may be used with floats or other "backup" limit / lockout conditions. They may also be used to sense the run / off / auto conditions from an HOA switch.
The connections are not polarity sensitive and share a common return (term#4).

***NOTE: These disable terminals DO NOT replace standard lock out procedures used when performing maintenance on equipment. Proper safety procedures should always be observed when working on or around all electrical equipment.***

### 6.2 Analog Output (terminal strip J2 #7 & 8)

An analog output (4-20mA) proportional to the level input is re-transmitted from terminals 7 & 8 of the J2 option board. If the input loop is open (0 mA) then the re-transmitted output will read Zero and not 4mA.

### 6.3 Remote Lockout (communications option required)

Register DOREG1 can be written to from the Modbus Master. Bit 0 set to 1 will inhibit pumping until reset. This bit is similar to local Lockout inputs in preventing the pump output from activating. Any Lockout condition is indicated by the Lower Status LED at the left side of the display.
NOTE: The periodic status message showing "P" indicating the level is such that the pump would normally be required to run will continue to flash despite an active Lockout that prevents the pump relay from actually energizing.

**COMMUNICATIONS OPTION (+RS232 option / CHS1200 only)**

## 7.0 MODBUS ADDRESS

The Modbus address can be set to any address between 1 and 240

## 7.1 REGISTER DATA (mapping)

| Modbus Address | Modbus Reg | Description | Offset |
|---|---|---|---|
| 40001 | DIREG0 | DIGITALINS | 0 |
| 40002 | RAIL | RAWS AI | 1 |
| 40003 | AIH | ANALOG IN | 2 |
| 40004 | CYC0H | STARTS EXT1 | 3 |
| 40005 | CYC1H | STARTS EXT2 | 4 |
| 40006 | CYC2H | STRTS INTNL PMP CALL | 5 |
| 40007 | CYC3H | STRTS INTNL PMP CALL | 6 |
| 40008 | RUNT0H | DURATION EXT 1 | 7 |
| 40009 | RUNT1H | DURATION EXT 2 | 8 |
| 40010 | RUNT2H | DUR INTNL PMP CALL | 9 |
| 40011 | RUNT3H | DUR INTNL PMP2 CALL | 10 |
| 40012 | MAXH | MAXIMUM | 11 |
| 40013 | MINH | MINIMUM | 12 |
| 40014 | DOREG0 | Internal Digital Outputs | 13 |
| 40015 | DOREG1 | Remote Lockout (s) | 14 |

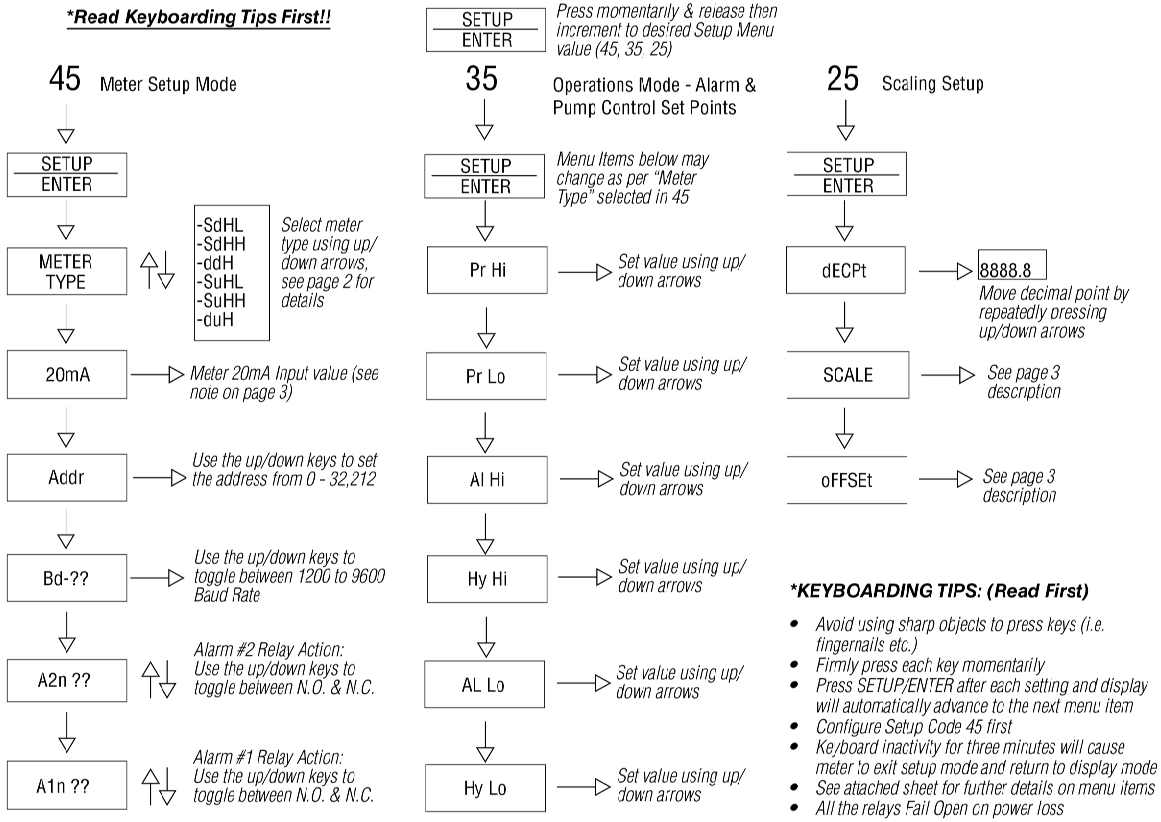
## 7.2 DETAILS

The AIH (40003) register contains the scaled analog level as displayed on the meter. Note that the decimal point is implied as this is an integer register.
The DIREGo (40001) contains:

© 2018 EPG Companies Inc.








## CHS Series Configuration Guide

## METER SETTINGS

LevelMaster™ Model CHS Series Meter

Panel S/N: _____

Meter S/N: _____

Meter Designation: _____

Meter Type: _____

Meter Relay 1 Function: _____ Relay 1 Contacts: _____

Meter Relay 2 Function: _____ Relay 2 Contacts: _____

Meter Relay 3 Function: _____ Relay 3 Contacts: _____

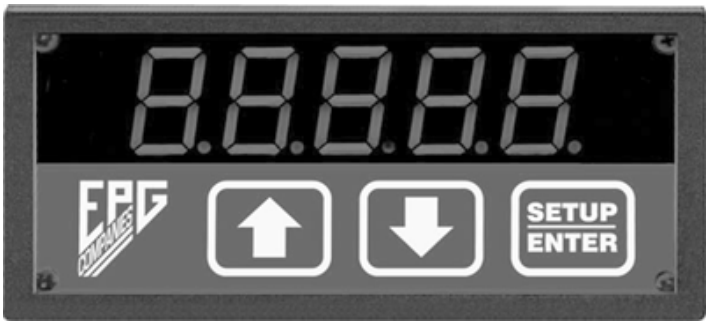
### Operating Parameters –

| PARAMETER | UNITS | OPERATION |
|---|---|---|
| DECPt | 888.8 | Sets meter display decimal point. |
| SCALE | .866 | Sets meter scale to read in inches (5 psi pressure transducer). |
| oFFSE | -34.6 | Sets meter display for input = 0 ma (5 psi pressure transducer). |
| PrHi | _____ | Relay 1 (K1) turns on when meter displays = _____ |
| PrLo | _____ | Relay 1 (K1) turns off when meter displays = _____ |
| ALHi | _____ | Relay 2 (K2) turns on when meter displays = _____ |
| HYHi | _____ | Relay 2 (K2) turns off when display drops _____ below R2 Level |
| ALHi2 | _____ | Relay 3 (K3) turns on when meter displays = _____ |
| HYHi2 | _____ | Relay 3 (K3) turns off when display drops _____ below R3 Level |

# CHS Series LevelMaster™ Meter Replacement Guide

## For Models:

**CHS1000**
**CHS1100**
**CHS1200**




**EPG Companies Inc.**
**19900 County Road 81**
**Maple Grove, MN 55311**
**800-443-7426 * www.epgco.com**
**Tech Support * 800-762-8418**

© 2018 EPG Companies Inc.

# WIRING INSTRUCTIONS

**PURPOSE:**
Provide instructions to replace old style LevelMaster™ Model 2551 Meter with new Model CHS Series (CHS1000, CHS1100, and CHS1200). The meter connector and terminal numbers have changed. See the attached diagrams showing the old and new meters connected to old style and new style intrinsically safe barriers.

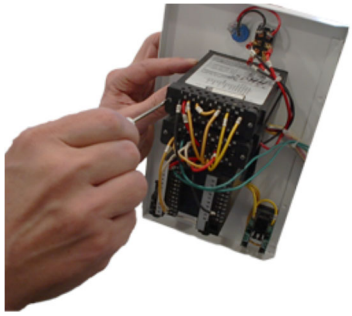
**CAUTION – THE REPLACEMENT METER MUST BE PROGRAMMED TO SITE SPECIFIC PARAMETERS TO PREVENT EQUIPMENT FAILURE AND TO MEET SITE PERMIT REQUIREMENTS.**

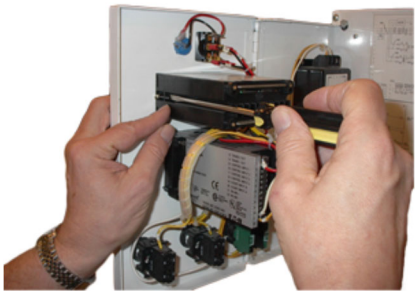
**PROCEDURE:**
1. Turn the power off on the Control Panel.
2. Unscrew and remove upper connector from back of meter and mark as J2.
3. Unscrew and remove lower connector from back of meter and mark as J1.
4. Remove old meter – pop off front plastic display cover and turn the two retaining screws to disengage the retaining arms. Remove meter through front of panel door.
5. Note: If there is a weatherproof plastic cover over the display, it must be reinstalled with the new meter.
6. Install new meter. Insert meter through opening in panel. NOTE: If weatherproof cover is used, insert new meter through metal bracket for the weatherproof cover and then through opening in panel. Attach retaining clips to both sides of meter. Note – The slot end of the retaining clip screw must face towards the rear of the meter. To attach retaining clip, grasp meter on top and bottom. Slide retaining clip into the rear set of notches on the side of the meter. Be sure the clip is flat against the side of meter case, then seat the clip by pulling towards rear of meter. Install the second retaining clip on the other side of the meter in the same way. Tighten the screws to hold the meter in place.
7. Install new meter connector on the new meter.

**Power Wiring:**
8. Move wire (yellow or red) from old connector J1 terminal #A to new meter connector J1 terminal #1.
9. Move wire (white) from old connector J1 terminal #E to new meter connector J1 terminal #2.
10. Move wire (green) from old connector J1 terminal #C to new meter connector J1 terminal #3

**4-20mA Loop Wiring:**
11. Remove and discard wire (purple or red) between old connector J2 terminal #2 and connector J1 terminal #H.
12. Move wire from old connector J2 terminal #1 to new meter connector J1 terminal #13.
13. Move wire from old connector J1 terminal #M to new meter connector J1 terminal #12.

⚠ Important - Be aware of terminal block orientation when making connections as the terminal blocks may be reverse entry.





# WIRING INSTRUCTIONS (cont.)

### Relay Output Wiring:

Note: some control panel designs do not use all of the relays.

### Relay K1

14. Move one wire from old connector J2 terminal #5 to new meter connector J1 terminal #5.
15. Move one wire from old connector J2 terminal #3 (or #4) to new meter connector J1 terminal #6.

### Relay K2

16. Move one wire from old connector J2 terminal #15 to new meter connector J1 terminal #7.
17. Move one wire from old connector J2 terminal #12 (or #13) to new meter connector J1 terminal #8.

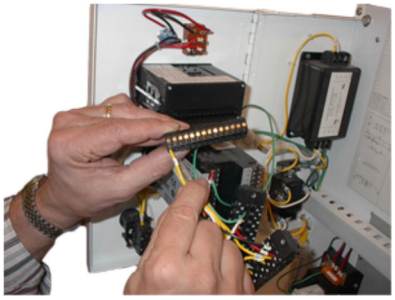
### Relay K3

18. Move one wire from old connector J2 terminal #10 to new meter connector J1 terminal #9.
19. Move one wire from old connector J2 terminal #9 (or #8) to new meter connector J1 terminal #10.

Contact EPG Companies if more than two terminals are used on a meter relay output or if there are any remaining wires on the old meter connectors.

**NOTE:**
The new meter is programmed from the factory to duplicate a particular type of level meter i.e. SdHL, SdHH, ddH, SuHL, SuHH or DuH. There are a few control panel applications where the type of relay output contacts (N/O or N/C) will have to be reprogrammed. Contact EPG for instructions on reprogramming the relay outputs.

20. Review all wiring modifications and verify against the meter wire diagram. Make sure all of the electrical wiring has been properly installed and tightened.
21. Cleanup any debris or old wires, and remove from inside the control panel.
22. Turn the power on to the control panel.
23. Use program code “45” to verify the new meter is the correct replacement model; SdHL, SdHH, ddH, SuHL, SuHH or DuH. If necessary, refer to the “CHS Series Operations and Configuration Manual” for details on modifying this setting.
24. The meter has been setup at the factory for the type (SdHL, SdHH, ddH, SuHL, SuHH or DuH) and pre-programmed for a 4-20 mA, 5-psi pressure transducer. Where 0 inches equals 4 mA and 138.4 inches equals 20 mA. If the input-sensing loop is open, the meter will read –34.6. If the level sensor wires are reversed, the meter will display a value much higher than 138 inches (i.e. 150 inches).
25. The new meter is programmed the same as the 2551: Program code “25” is used to change the scaling factors and program code “35” is used to change the relay set points.
26. Use program code “35” to program the meter’s Relay 1 (pump), Relay 2 (alarm 1) and Relay 3 (alarm 2) set points for the site specific parameters.
27. Record meter settings on enclosed sheet.
28. The field replacement is now complete.



# TROUBLESHOOTING

| TROUBLESHOOTING | | |
|---|---|---|
| No Display | No power is getting to meter. | Check input power to meter |
| Display = 143 (level) or greater (5 psi transducer). | The meter 4—20mA sensor loop has a problem (short). | Check the wiring from the meter to the sensor |
| | Sensor is wired backwards. | Reverse red and black wires |
| Display = -34.6 (level) | There is an open condition in the 4—20mA loop. | Check the loop and fix any problem |
| Display = incorrect value | Meter could be calibrated wrong. | Confirm meter calibration parameters to make sure they match the pressure (level) sensor. |

# METER SETTINGS

**METER SETTINGS**

LevelMaster™ Model CHS Series Meter

Panel S/N: _____

Meter S/N: _____

Meter Designation: _____

Meter Type: _____

Meter Relay 1 Function: _____ Relay 1 Contacts: _____

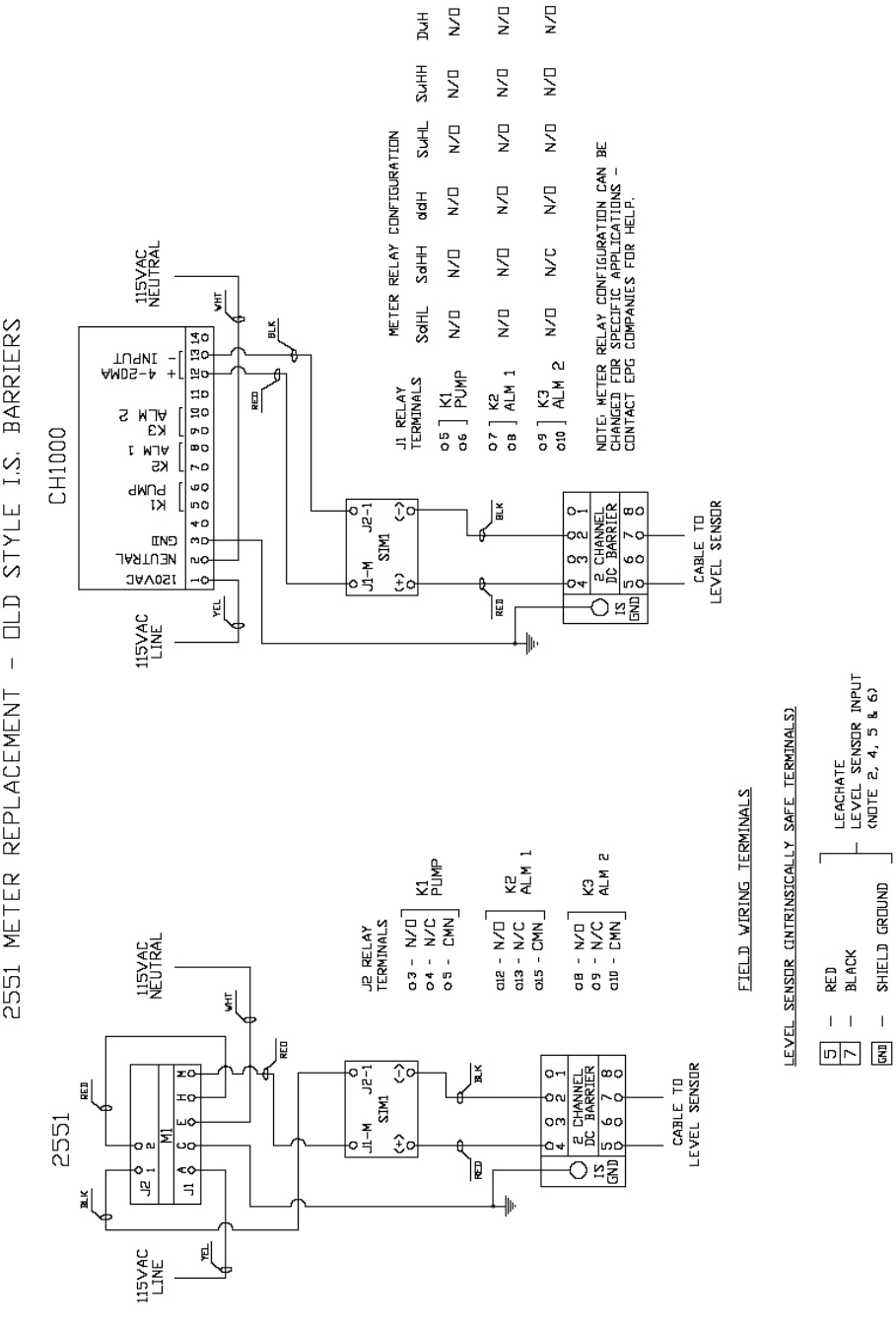
Meter Relay 2 Function: _____ Relay 2 Contacts: _____

Meter Relay 3 Function: _____ Relay 3 Contacts: _____

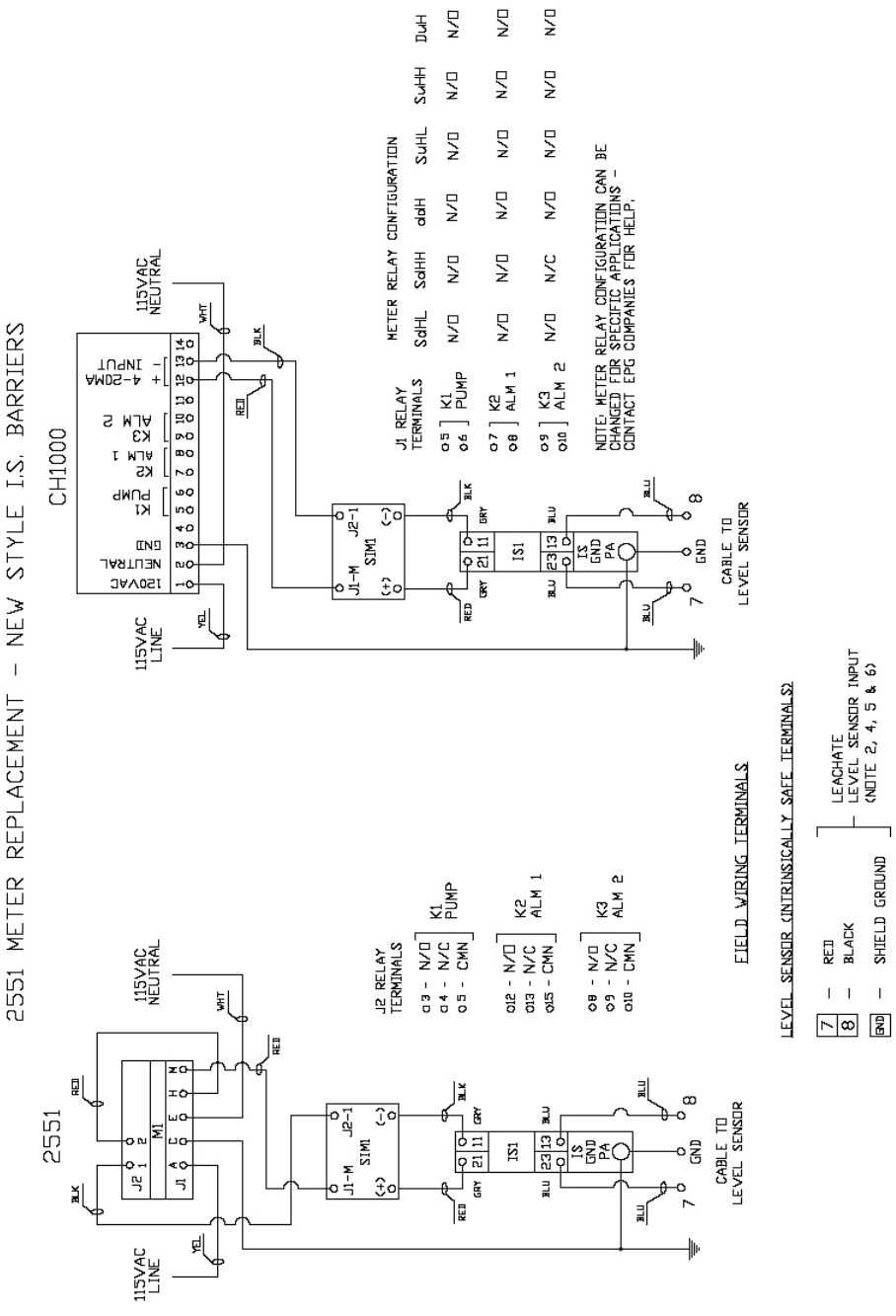
**OPERATING PARAMETERS –**

| PARAM-ETER | UNITS | OPERATION |
|---|---|---|
| DECPt | 888.8 | Sets meter display decimal point. |
| SCALE | .8656 | Sets meter scale to read in inches (5 psi pressure transducer). |
| oFFSE | -34.6 | Sets meter display for input = 0 mA (5 psi pressure transducer). |
| PrHi | _____ | Relay 1 (K1) turns on when meter displays = _____ |
| PrLo | _____ | Relay 1 (K1) turns off when meter displays = _____ |
| ALHi | _____ | Relay 2 (K2) turns on when meter displays = _____ |
| HYHi | _____ | Relay 2 (K2) turns off when display drops _____ below R2 Level |
| ALHi2 | _____ | Relay 3 (K3) turns on when meter displays = _____ |
| HYHi2 | _____ | Relay 3 (K3) turns off when display drops _____ below R3 Level |

# OLD STYLE I.S. BARRIER



# NEW STYLE I.S. BARRIER



**EPG Companies Inc.**
**19900 County Road 81**
**Maple Grove, MN 55311**
**800-443-7426 * www.epgco.com**
**Tech Support * 800-762-8418**

© 2018 EPG Companies Inc.