

## Conductance Actuated – Probe Type

### Series LPC-2000 General Purpose Liquid Level Controls

- Industrial and commercial level sensing and pump control of cooling towers, tanks, water fountains, condensate units, and others.
- Digital technology utilizing a micro-controller
- Field selectable control unit allows for single or multi-level sensing
- Directly switches a 1 HP motor
- 1 to 3 operating modes:
  - Low Level Alarm
  - High Level Alarm
  - Pump-On/Off
- Compact size
- Time delay feature prevents process disturbances from water level surges
- One control unit for many applications makes selection and stocking easy
- Panel mounting capability for easy installation

#### Specifications

##### Control Unit:

NEMA 1 Enclosure, UL listed  
 NEMA 4X Enclosure, UL listed  
 Ambient Temperature 120°F (49°C)  
 Power Consumption 4 VA  
 Probe Sensitivity 60,000 ohms

##### Series-RS High Pressure Remote Sensor:

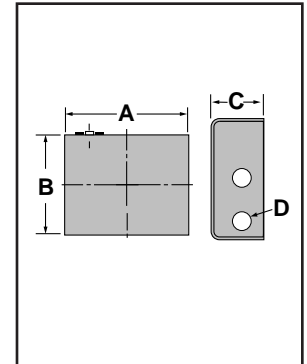
NEMA 1 Enclosure  
 Maximum Temperature 406°F (208°C)  
 Maximum Pressure 250 psig (17.6 kg/cm)

##### Series-AS Ambient Remote Sensor:

NEMA 1 Enclosure  
 Maximum Temperature 120°F (49°C)  
 Maximum Pressure 0 psig

#### Control Unit

Model Number	Part Number	Description	Weight lbs. (kg)
LPC-2000	176217	Control unit	2.7 (1.2)
LPC-2000W	176270	LPC w/NEMA 4X	2.7 (1.2)
LPC-2000E	176271	LPC w/220 VAC Input	2.7 (1.2)
LPC-2000EW	176272	LPC w/NEMA 4X & 220 VAC Input	2.7 (1.2)



**Dimensions, in. (mm)  
Control Unit**

Model	A	B	C	D
LPC-2000	6 <sup>3</sup> / <sub>8</sub> (162)	5 <sup>1</sup> / <sub>8</sub> (130)	2 <sup>9</sup> / <sub>16</sub> (65)	7 <sup>7</sup> / <sub>8</sub> (22)

#### Electrical Ratings

Supply Voltage	Probe Voltage	Contact Ratings @ 120 VAC			
		FLA	LRA	Alarm	HP
120 VAC 50/60 Hz	12 VAC	16	96	360 VA	1
220 VAC 50/60 Hz	12 VAC				

#### Ordering Information

##### How To Order

1. Order control unit LPC-2000.
2. Select and order an appropriate remote sensor, based on the number of levels to be sensed.
3. Order the number of probes necessary (1 to 5), in the appropriate lengths, as required for your application.

## Conductance Actuated – Probe Type

### Series LPC-2000 (continued) General Purpose Liquid Level Controls

#### Remote Sensors

Model	A	B	C
RS-1-BR-1	1 (25) NPT	1 <sup>11</sup> / <sub>16</sub> (43)	½ (15) NPT
RS-2-BR-1	2 (50) NPT	2 <sup>1</sup> / <sub>2</sub> (59.5)	½ (15) NPT
RS-3-BR-1	2 ½ (65) NPT	2 <sup>15</sup> / <sub>32</sub> (63)	½ (15) NPT
AS-5S	ISO7-R02	3 <sup>5</sup> / <sub>8</sub> (92)	1 <sup>1</sup> / <sub>2</sub> (26)

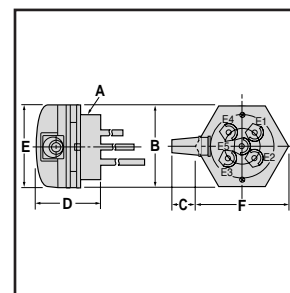
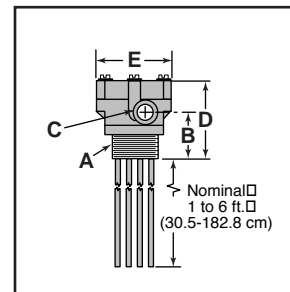
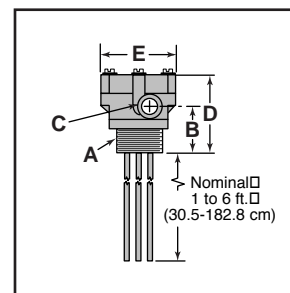
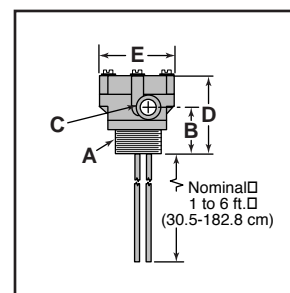
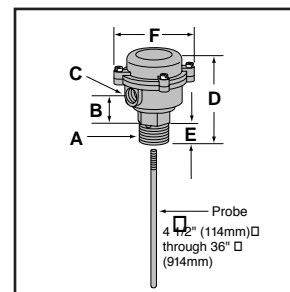
Model	D	E	F
RS-1-BR-1	4 <sup>9</sup> / <sub>16</sub> (116)	1 <sup>1</sup> / <sub>4</sub> (32)	3 <sup>1</sup> / <sub>4</sub> (83)
RS-2-BR-1	3 <sup>7</sup> / <sub>8</sub> (98)	4 (102)	–
RS-3-BR-1	3 <sup>7</sup> / <sub>8</sub> (98)	4 (102)	–
RS-4-BR-1	4 (102)	4 (102)	–
RS-5-BR-1	4 (102)	4 (102)	–
AS-5S	2 <sup>3</sup> / <sub>8</sub> (60)	3 <sup>5</sup> / <sub>32</sub> (80)	3 <sup>5</sup> / <sub>32</sub> (80)

#### High Pressure Remote Sensors and Probes

Model Number	Part Number	Description	Weight lbs. (kg)
RS-1-BR-1	179524	Remote sensor; 1 level	1.7 (.8)
RS-2-BR-1	179525	Remote sensor; 2 levels	3.3 (1.5)
RS-3-BR-1	179526	Remote sensor; 3 levels	3.3 (1.5)
RS-4-BR-1	179527	Remote sensor; 4 levels	4.0 (1.8)
RS-5-BR-1	179528	Remote sensor; 4 levels for non-metallic tanks	4.3 (1.95)
G-2-SS	179156	24" (610mm) SS Ground Probe	1.0 (.5)
G-3-SS	179157	36" (914mm) SS Ground Probe	1.5 (.7)
G-4-SS	179158	48" (1219mm) SS Ground Probe	2.0 (.9)
G-5-SS	179159	60" (1524mm) SS Ground Probe	2.5 (1.1)
G-6-SS	179160	72" (1829mm) SS Ground Probe	3.0 (1.4)
P-1/3-SS	176208	4 <sup>1</sup> / <sub>2</sub> " (114mm) Probe	0.5 (.23)
P-1-SS	179530	12" (305mm) SS Probe	0.5 (.23)
P-2-SS	179535	24" (610mm) SS Probe w/Teflon®	1.0 (.5)
P-3-SS	179540	36" (914mm) SS Probe w/Teflon®	1.5 (.7)
P-4-SS	179545	48" (1219mm) SS Probe w/Teflon®	2.0 (.9)
P-5-SS	179550	60" (1524mm) SS Probe w/Teflon®	2.5 (1.1)
P-6-SS	179555	72" (1829mm) SS Probe w/Teflon®	3.0 (1.4)

#### Ambient Pressure Remote Sensors and Probes

Model Number	Part Number	Description	Weight lbs. (kg)
AS-5S	176230	Remote sensor; 4 levels for all tanks	.5 (.23)
AP-3-SS-J	176231	39" (991mm) SS Ambient Probe	1.0 (.5)

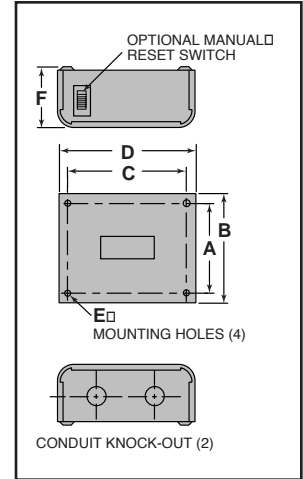


LIQUID LEVEL CONTROLS

## Conductance Actuated – Probe Type (continued)

### Series PCH & PCL General Purpose Liquid Level Controls

- For sophisticated multi-level control in tanks, boilers and hydronic systems
- Electronic circuitry with remote conductance probe level sensing:
  - Series PCH probe sensitivity - 4,000 ohms at 120 VAC for boiler water and most common liquid
  - Series PCL probe sensitivity - 60,000 ohms at 28 VAC for commercial distilled water and solutions
- Teflon® coated probes provide protection from false signals [available on 24 - 72" (610 - 1829mm) probes]
- No blow down required
- Current limiting device provided
- Probe lengths 12 - 72" (305 - 1829mm) in 12" (2.5cm) increments
- Remote sensors accommodate 1 - 3 probes
- Control enclosures are NEMA 1 rated and remote sensors are NEMA 4 rated
- Optional features
  - Manual reset switch
  - Alternate pump switch
  - 28 Volt probe – Series PCL; 120 Volt probe – Series PCH
- Maximum ambient temperature 120°F (49°C)
- Maximum water temperature 406°F (208°C)
- Maximum pressure 250 psig (17.6 kg/cm<sup>2</sup>)



### Electrical Ratings

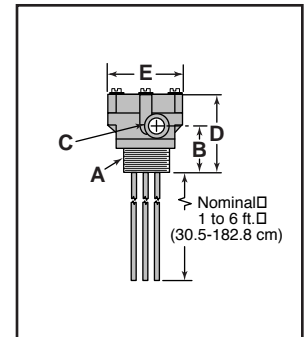
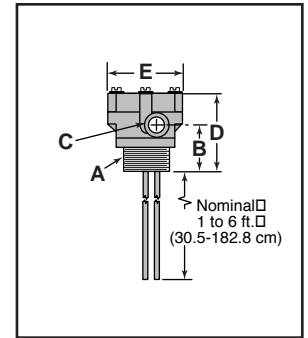
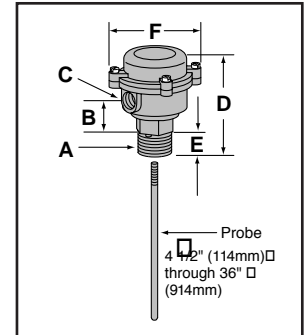
Voltage	Motor Switch Rating (Amperes)		Pilot Duty
	Full Load	Locked Rotor	
120 VAC	7.4	44.4	360 VA at 120 or 240 VAC
240 VAC	3.7	22.2	

### Dimensions, in. (mm)

Control Unit	A	B	C	D	E	F
1 & 2 level	4 <sup>3</sup> / <sub>16</sub> (106)	5 <sup>1</sup> / <sub>8</sub> (130)	5 <sup>1</sup> / <sub>2</sub> (140)	6 <sup>5</sup> / <sub>8</sub> (168)	5 <sup>5</sup> / <sub>32</sub> (4)	2 <sup>3</sup> / <sub>4</sub> (70)

## Conductance Actuated – Probe Type

### Series PCH & PCL (continued) General Purpose Liquid Level Controls



### Dimensions, in. (mm)

Remote Sensor	A	B	C	D	E	F
1 Probe	1 (25) NPT	1 $\frac{1}{16}$ (43)	$\frac{1}{2}$ (15) NPT	4 $\frac{9}{16}$ (116)	1 $\frac{1}{4}$ (32)	3 $\frac{1}{4}$ (83)
2 or 3 Probes	2 (50) NPT	2 $\frac{11}{32}$ (59.5)	$\frac{1}{2}$ (15) NPT	3 $\frac{7}{8}$ (98)	4 (102)	—

## Conductance Actuated – Probe Type (continued)

### Series PCH & PCL

#### Operation

Basically, the control reports the liquid level of the boiler or tank whenever it makes or breaks contact with the pre-positioned probes. The controls have SPDT switch action to provide stop and go operation at every set point. The remote sensors, which thread into the top of the boiler or tank, are available with 1, 2 or 3 probes of varying lengths that can easily be cut to desired set points.

#### How to Select

1. Determine the level of sensitivity required.
2. Determine the type of switch action required.
3. Determine the nature of what needs to be controlled so that you can choose the model that best suits your needs. Refer to the Ordering Information chart to preview the available models and features.

SERVICE	Open Circuit Probe Voltage	CONTROLS		No. of Electrodes	SENSORS	PROBES	SPACER	GROUND PROBES
		Automatic Reset Model No.	Manual Reset Model No.		Model No.	No. & Length		No. & Length
<b>1 Level Control</b> Low or High Level Cut-off and/or Signal	125V	PCH-G-A-1 PCH-G-A-IK*	PCH-G-M-1. PCH-G-M-IK*	1	RS-1-BR-1	P-1-SS P-2-SS P-3-SS P-4-SS P-5-SS P-6-SS	Not Used	P-1-SS P-2-SS P-3-SS P-4-SS P-5-SS P-6-SS
	28V	PCL-G-A-1	PCL-G-M-1					
<b>2 Level Control</b> Differential Control	125V	PCH-G-A-2		2	RS-2-BR-1	P-1-SS P-2-SS P-3-SS P-4-SS P-5-SS P-6-SS	SPACER S-4 Use when 2 or more probes are greater than 3 feet long	P-1-SS P-2-SS P-3-SS P-4-SS P-5-SS P-6-SS
	28V	PCL-G-A-2						

\*120 and 240 Volt Switch Ratings

The table above shows the combinations of Controls, Sensors, and Probes available for each type of service. Select Control according to anticipated use, Probe voltage, and the type of reset desired. The Sensor should be selected according to the number of Probes required. The Probes are ordered separately according to length needed. The Control, Sensor and each Probe must be specified separately, using the appropriate catalog numbers.

## Series PCH & PCL (continued) General Purpose Liquid Level Controls

### Ordering Information

Control, remote sensor and probe(s) must be ordered separately. Order Spacer S-4 when 2 or more probes greater than 36" (914mm) will be used.

#### Controls

Model Number	Part Number	Description	Weight lbs. (kg)
PCH-G-A-1	179120	Control; 1 level w/125V for probe	2.7 (1.2)
PCH-G-A-1K	179121	Control; 1 level w/120/240V for probe	2.7 (1.2)
PCH-G-A-2	179150	Control; 2 levels w/125V for probe	2.7 (1.2)
PCH-G-M-1	179130	PCH-G-A-1 w/manual reset	2.7 (1.2)
PCH-G-M-1K	179131	Control; 1 level w/120/240V for probe and manual reset	2.7 (1.2)
PCL-G-A-1	179100	Control; 1 levels w/28V for probe	2.7 (1.2)
PCL-G-A-2	179140	Control; 2 levels w/28V for probe	2.7 (1.2)
PCL-G-M-1	179110	PCL-G-A-1 w/manual reset	3.0 (1.4)

#### Probes

Model Number	Part Number	Description	Weight lbs. (kg)
G-2-SS	179156	24" (610mm) Ground Probe	1.0 (.5)
G-3-SS	179157	36" (914mm) Ground Probe	1.5 (.7)
G-4-SS	179158	48" (1219mm) Ground Probe	2.0 (.9)
G-5-SS	179159	60" (1524mm) Ground Probe	2.5 (1.1)
G-6-SS	179160	72" (1829mm) Ground Probe	3.0 (1.4)
P-1/3 SS	176208	4 1/2" (114mm) Probe	0.5 (.23)
P-1-SS	179530	12" (305mm) Probe	0.5 (.23)
P-2-SS	176208	24" (610mm) Probe w/Teflon®	1.0 (.5)
P-3-SS	179540	36" (914mm) Probe w/Teflon®	1.5 (.7)
P-4-SS	179545	48" (1219mm) Probe w/Teflon®	2.0 (.9)
P-5-SS	179550	60" (1524mm) Probe w/Teflon®	2.5 (1.1)
P-6-SS	179555	72" (1829mm) Probe w/Teflon®	3.0 (1.4)

#### Remote Sensors

Model Number	Part Number	Description	Weight lbs. (kg)
RS-1-BR-1	179524	Remote Sensor; 1 level	1.7 (.8)
RS-2-BR-1	179525	Remote Sensor; 2 levels	3.3 (1.5)
RS-3-BR-1	179526	Remote Sensor; 3 levels	3.3 (1.5)
RS-1-LP	176203	Remote Sensor	3.0 (1.4)

#### Accessories

Model Number	Part Number	Description	Weight lbs. (kg)
S-4	179529	Spacer	3.0 (1.4)