



PHUCN601



- ✓ For pH, ORP, Conductivity/Resistivity
- ✓ 1/4 DIN, NEMA 4X (IP66), Polycarbonate Enclosure
- ✓ User-Friendly Design with Interior LCD Menu
- ✓ Easy to Read with Large, Bright LED Display
- ✓ Quick and Easy to Calibrate
- ✓ Reduces Chemical Consumption with Cycle-Timed Relays on Controller
- ✓ Two Control Relays with Third Relay for High/Low Alarm on Controller

The PHUCN600 Series multi-parameter controller is a microprocessor-based controller capable of measuring pH, ORP, or conductivity.

There are two displays on the PHUCN600 Series: a bright LED numeric display with bar graph on the outside front panel, and a 2-line, 16-character LCD display on the inside. The LED readout on the outside panel can be seen several yards away. The distinctive, color-coded bar graph will immediately indicate if you are within the process parameters that you set (green), if the control relays are on (yellow), and if you are in alarm condition (red). This makes diagnosing pump and alarm malfunctions easy. All configuration and control functions are performed on the LCD menu on the inside front panel.

A universal mounting kit is included for surface, panel, and pipe-mount applications. The 1/4 DIN enclosure makes panel-mount cutouts and engineering simple.

Complete and versatile, the PHUTX600 is a 1/4 DIN two-wire transmitter, which can measure conductivity, pH, or ORP. The PHUTX600 comes complete with a universal mounting kit for surface, panel, and pipe-mount applications. The NEMA 4X (IP66) 1/4 DIN enclosure is perfect for stand-alone or panel-mount operation.

PHUCN600 and PHUTX600 Series are packaged in a rugged NEMA 4X (IP66) polycarbonate enclosure, making them ideally suited for heavy-duty applications such as industrial wastewater neutralization, municipal water and wastewater, pulp and paper, and process control.

When the PHUCN600 Series is powered up for the first time, it will display the meter selection screen where the meter type is selected. This meter selection screen will only be displayed when the PHUCN600 Series is powered up for the first time.

After the user selects a meter type, the PHUCN600 Series will remain set to that meter type until it is changed with the meter selection menu function in the Utilities menu.

To return the PHUCN600 Series to its factory settings, the user re-selects the current meter type from the meter selection menu function. This will override all setpoints and return all settings to the factory settings.

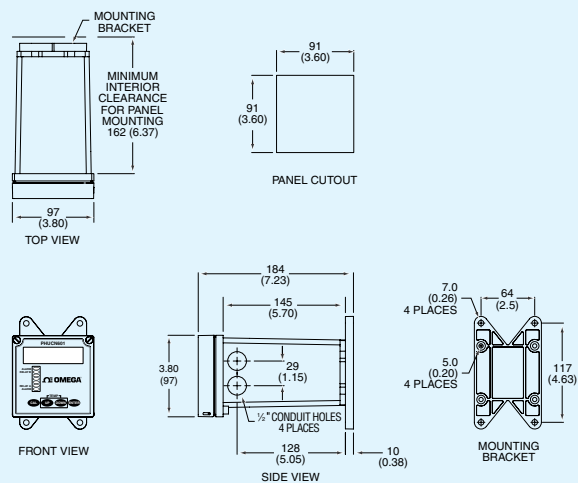
The PHUCN600 Series User's menu has been divided into five main categories:

- Calibration, used to calibrate the PHUCN600 Series with the selected sensor
- Utilities, used to manually control or override the outputs
- Setup, used to configure the PHUCN600 Series' many options
- Diagnostics, used to troubleshoot any problems
- Outputs, used to configure the PHUCN600 Series outputs

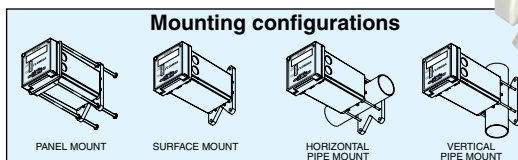
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PHUCN601 Enclosure dimensions: mm (inches)



PHUCN601 inside control panel shown smaller than actual size.



SPECIFICATIONS FOR PHUCN600 AND PHTX600 SERIES

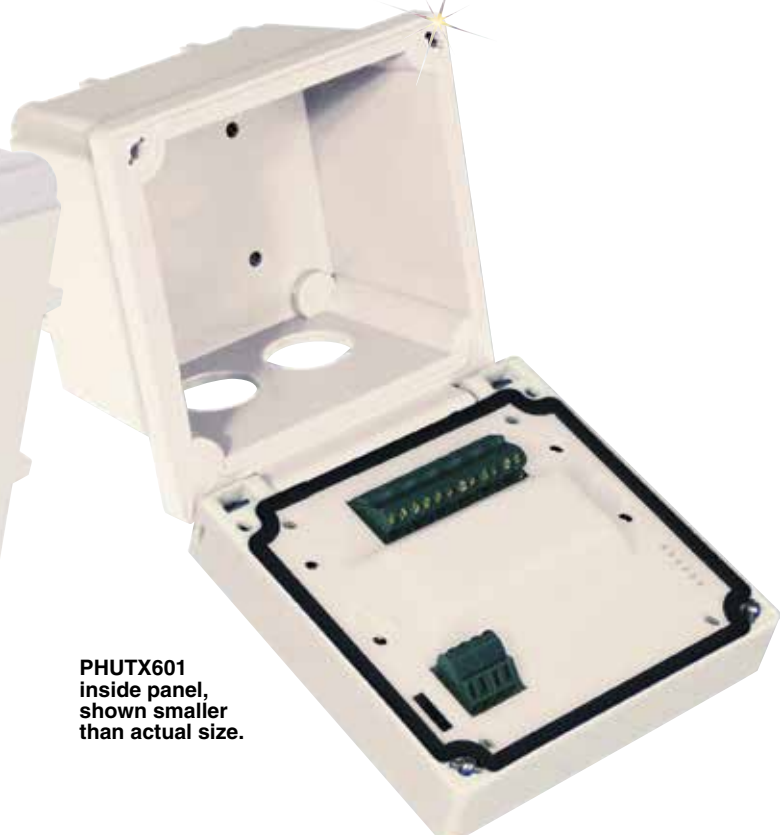
	pH	ORP	Conductivity
Display, PHUCN600/610 Series	Front Panel: 4 x 7 segment 12.7 mm (1/2") LED display, 1 LED indicator online, 7 LED bar graph Inside Panel: 2 x 16 alpha-numeric LCD display		
Display, PHUTX600	2 x 16 alpha numeric LCD display		
Power, PHUCN600/610 Series	120 or 240 Vac 50/60 Hz (less than 12 VA)		
Power, PHUTX600	4 to 20 mA loop-powered 16 to 32 Vdc		
Measuring Range	0.01 to 14.00 pH -5 to 95°C (23 to 203°F)	-1999 to 1999 mV -5 to 95°C (23 to 203°F)	µS/cm: 0 to 2,000, 0 to 20.00, 0 to 200.0, 0 to 2000,mS/cm: 0 to 20.00, 0 to 200.0 MΩ/cm: 0 to 19.99 0 to 100°C (32 to 212°F)
Temperature Compensation	Automatic or manual, -5 to 95°C (23 to 203°F)	Not required	Automatic or manual; User-selectable temperature compensation slope 0.0 to 10.0%/°C. 0 to 100°C (32 to 212°F).
Temperature Units	°C or °F, selectable		
Temperature Sensor	User selectable: 300 Ω NTC thermistor, 3000 Ω NTC thermistor or Pt. 1000 RTD		
Calibration Modes	Auto-calibration Manual calibration Temperature calibration	Manual calibration Temperature calibration	Dry calibration Sample calibration Temperature calibration
Ambient Conditions	-20 to 60°C (-4 to 140°F), 0 to 90% RH (non-condensing)		
Menu Access Front Panel	Auto-calibration Manual calibration Temperature display	Manual calibration Temperature calibration	Dry calibration Sample calibration Temperature calibration
Menu Access Inside Panel	Full Access to all parameters of operations menu		
Sensor to Transmitter Distance	Differential Sensor: 914 m (3000') Combination Sensor: 3.0 m (10')	914 m (3000') 3.0 m (10')	91 mm (300') 3.0 m (10')
Relay Outputs for PHUCN600/610 Series	Two Control Relays: 10 A/NO, 5 A/NC @ 240 Vac or 28 Vdc. Mode: Process control; adjustable parameters: process direction, (rising or falling) on-setpoint, off setpoint, (0 to 100% of full scale), cycle timer (on/off, 0 to 600 seconds), failsafe (on/off). One Alarm Relay: 10 A/NO, 5 A/NC @ 240 Vac or 28 Vdc. Mode: high/low alarm; adjustable parameters: low on/low off setpoint (0 to 100% of full scale, low on must be less than low off), high on/high off setpoint (0 to 100% of full scale, high on must be greater than high off).		
Analog Outputs	4 to 20 mA channel 1 isolated output, range expand 0 to 100% of full scale (min segment 10% of full scale), max load 800 V		



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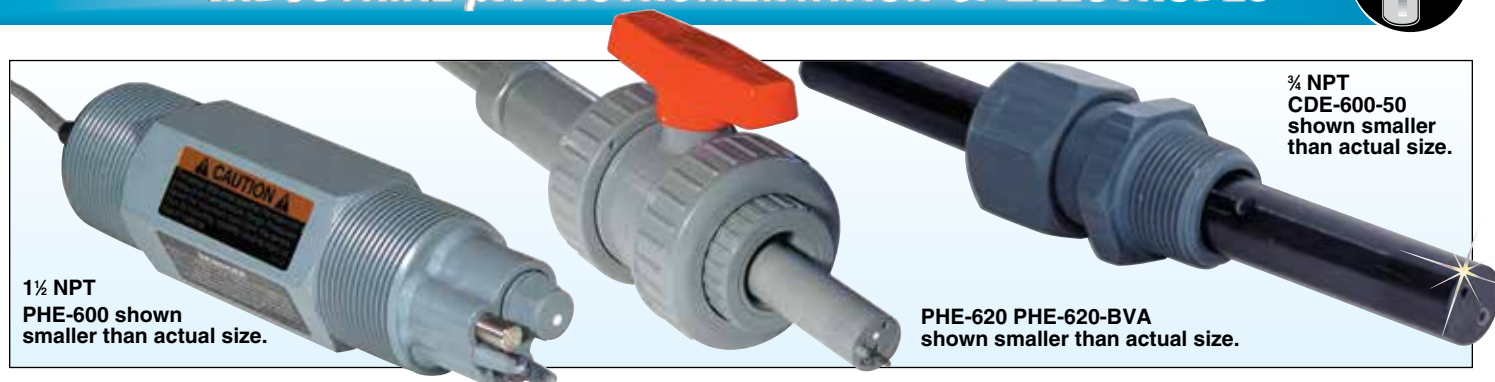
PHUTX601 shown smaller than actual size.



PHUTX601 inside panel, shown smaller than actual size.

SPECIFICATIONS FOR PHUCN600 AND PHTX600 SERIES (Continued)			
	pH	ORP	Conductivity
PHUCN600/610 only	4 to 20 mA channel 2, isolated output, range expand 0 to 100% of full scale (min segment 10% of full scale), max load 800 Ω Can be set to track temperature if sensor is equipped with a temperature sensor		
Memory Backup	All user settings are retained indefinitely in memory (EEPROM)		
Mechanical, PHUCN600/610	Enclosure: NEMA 4X (IP66), ¼ DIN, polycarbonate enclosure with four ½" conduit holes		
Mechanical, PHUTX600	Enclosure: NEMA 4X (IP66), ¼ DIN, polycarbonate enclosure with two ½" conduit holes; universal mounting for surface, pipe and panel mount. Mounting: universal mounting kit for surface, pipe and panel mount is included		
Sensor Input (see measuring range on previous page)	Probe: -600 to 600 mV	Probe: -1999 to 1999 mV	Cell: 0 to 9999 Ω
Manual Test Mode	Temp Sensor: 0 to 9999 Ω	Temp Sensor: 0 to 9999 Ω	Temp Sensor: 0 to 9999 Ω
Manual Relay Override (PHUCN600/610 only)	Relays can be set to on/off/auto to verify correct wiring of auxiliary devices or to manually adjust process		
Output Hold	All outputs are placed on hold when in menu mode		
Calibration Data	Recall data from last calibration, calibration mode, 1st and 2nd accepted buffer value and probe mV output, calibration temperature, calibration slope, and probe efficiency	Recall data from last calibration, calibration buffer accepted value, cell resistance, calibration temperature	
Auto Return	User-selectable auto return if controller is left in menu mode or if relays are left in manual override mode for more than 10 min.		
Display Damping	User can select rate at which controller updates display. Enables display damping of unstable process.		
Net Weight			
PHUCN600/610	1 kg (2.2 lb)		
PHUTX601	0.32 kg (0.71 lb)		

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1½ NPT
PHE-600 shown
smaller than actual size.

PHE-620 PHE-620-BVA
shown smaller than actual size.

¾ NPT
CDE-600-50
shown smaller
than actual size.

To Order

Model No.	Description
PHUTX601	pH/ORP/conductivity transmitter, 16 to 32 Vdc power
PHUCN601	pH/ORP/conductivity controller, 110 Vac power
PHUCN610	pH/ORP/conductivity controller, 220 Vac power
Electrodes with 1½ NPT, 4.6 m (15') 5-conductor shielded cable, ATC: -5 to 95°C (23 to 203°F)	
PHE-600†	1½ NPT differential pH electrode, PPS sensor body, 180 mm (7.1") L, 55 mm (2.14") diameter
ORE-600†	1½ NPT differential ORP electrode, PPS sensor body, 180 mm (7.1") L, 55 mm (2.14") diameter
PHE-600-SB†	Salt bridge kit with PVDF outer junction (3 pack) for PHE/ORE-600 Series
PHE-600-JB	Junction box with integrated terminal strip
PHE-600-C(*)	Interconnect cable for PHE/ORE-600 Series
PHE-600-EP	Electrode protector
Electrodes with 1¼" compression fitting for variable insertion, 4.6 m (15') 5-conductor shielded cable, ATC: -5 to 95°C (23 to 203°F) Wetted materials: CPVC PVDF glass titanium palladium alloy and EPDM (platinum for ORP probe) maximum pressure: 6.9 bar (100 psig)	
PHE-610†	Compression fitting pH electrode for ¾ to 5" variable insertion, 229 mm (9") L, 28 mm (1.125") Diameter
ORE-610†	Compression fitting ORP electrode for ¾ to 5" variable insertion
PHE-620†	Hot tap pH electrode for extended lengths, ¾ to 6" variable insertion for PHE-620-BVA
ORE-620†	Hot tap ORP electrode for extended lengths, ¾ to 6" variable insertion for PHE-620-BVA
PHE-620-BVA	PVC hot tap ball valve assembly
PHE-612-SB†	Salt bridge kit with PVDF outer junction (3 pack) for PHE/ORE-610/620 Series
PHE-610-EP	Electrode protector for PHE/ORE-610/620
Conductivity cells with ¾ MNPT CPVC compression fitting, ATC: 0 to 100°C (32 to 212°F) Wetted materials: graphite, epoxy, EPDM and CPVC; Max press/temp: 50 psi @ 60°C, 100 psi @ 50°C, 150 psi @ 20°C; Cable length: 6 m (20')	
CDE-600-001	0.01 cell constant, 0 to 2 µS/cm and 0 to 19.99 MΩ/cm epoxy low temp conductivity probe
CDE-600-01	0.1 cell constant, 0 to 20 and 0 to 200 µS/cm epoxy low temp conductivity probe
CDE-600-1	1 cell constant, 0 to 2000 µS/cm epoxy low temp conductivity probe
CDE-600-10	10 cell constant, 0 to 20 mS/cm epoxy low temp conductivity probe
CDE-600-50	50 constant, 0 to 200 mS/cm epoxy low temp conductivity probe
Conductivity cells with ¾ MNPT 316 SS compression fitting, ATC: 0 to 100°C (32 to 212°F) Wetted materials: graphite, epoxy, polypropylene and 316 SS; Max press/temp: 250 psi @ 120°C; Cable length: 6 m (20')	
CDE-610-001	0.01 cell constant, 0 to 2 µS/cm and 0 to 19.99 MΩ/cm epoxy high temp conductivity probe
CDE-610-01	0.1 cell constant, 0 to 20 and 0 to 200 µS/cm epoxy high temp conductivity probe
CDE-610-1	1 cell constant, 0 to 2000 µS/cm epoxy high temp conductivity probe
CDE-610-10	10 cell constant, 0 to 20 mS/cm epoxy high temp conductivity probe
CDE-610-50	50 cell constant, 0 to 200 mS/cm epoxy high temp conductivity probe
CDE-600-C(*)	Interconnect cable for CDE-600/610 Series

Comes complete with operator's manual.

* Insert cable length in feet

† Salt bridge kits required for use of pH and ORE sensors sold separately.

Ordering Examples: PHUTX601, pH transmitter, PHE-600, pH electrode.

PHUCN601, pH/ORP/conductivity controller, CDE-600-01, conductivity cell.