PGD Single Unit Controller Kits

Bard Manufacturing Company's PLC controlled units can be controlled using the PGD display and the logic pre-programmed in the unit. The PGD can be used to operate a single MULTI-TEC®, FUSION-TEC®, or MEGA-TEC® unit. All of the needed components to operate a single PLC controlled unit are available in kits. Each kit includes a PGD display that is installed inside the area being conditioned along with a enclosure and needed wiring.

Bard SINCE 1914

/////// PGD DISPLAY KIT PART NUMBERS

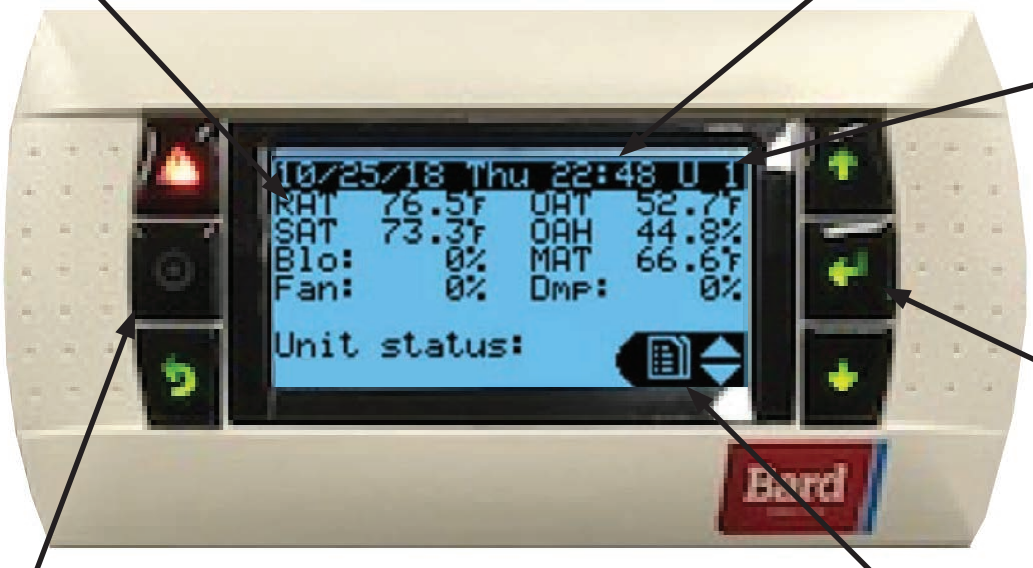
The PGD display kits contain the components needed to operate a single MEGA-TEC, MULTI-TEC, or FUSION-TEC Wall Mount. By connecting the display to the unit, unit setup and alarm display can be achieved inside the climate controlled area.

BARD PART NO.	PART NAME	DESCRIPTION
8620-306	PGD Display Kit	The PGD Display kit includes the PGD display, an enclosure box, and 25ft (7.62M) of cable with phone jack connectors to connect the display to the unit. Room temperature is monitored through the use of the return sensor.
8620-307	PGD Display Kit with Remote Temperature Sensor	The PGD Display kit includes the PGD display, a enclosure box, and 25ft (7.62M) of cable with phone jack connectors to connect the display to the unit. It also contains a remote mount 10k type 2 sensor in a plastic enclosure. Room temperature is monitored using the wall mounted remote sensor instead of a return air sensor. Wire for the remote mounted sensor is field supplied 22ga to 18ga copper conductors.

/////// PGD FEATURES AND MAIN DISPLAY

Unit Operation Information:
The fiollowing information is supplied through the PGD display:
RAT: Return air sensor or room tempreature.
SAT: Supply Air Temperature.
OAT: Outdoor Air Temperature.
OAH: Outdoor Air Humidity.
MAT: Mixed Air Temperature.
Blo: Blower Operation Percentage.
Fan: Outdoor Fan Percentage.
Dmp: Cooling or Heating Demand Percentage.
Unit Status: Current unit operation.

Time and Date:
The display shows the time and date. The month/day/year format is configurable in the unit software as well as daylight savings time. Time and date stamps are used in alarm logging.



Backlit Display:
The controller includes a large 132 x 64 pixel graphic backlit display. An intuitive menu system provides settings, zone conditions, and alarms.

Illuminated Interface buttons:
6 button interface allows for easy setup and menu selection.

Unit Setup and Diagnostics:
Unit setup features and diagnostics can be accessed using the Menu Key. See unit manual for additional instructions on unit setup and diagnostic features.

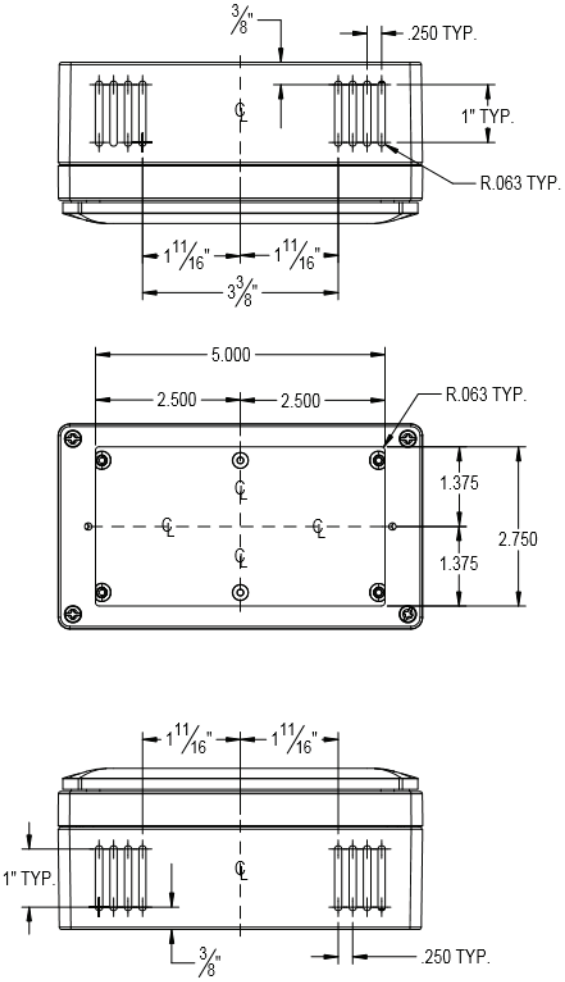
Setpoints, Additional Information and Alarm Logs:
Heating and cooling setpoints can be configured using the PGD. See unit manual for temperature settings in the unit. Unit model and serial number can be viewed from the display. Alarm logs for the unit can be displayed through the use of the PGD.

/////// PGD UNIT SOFTWARE FEATURES

FEATURE	DESCRIPTION
Standard Cooling Mode	Standard Cooling mode provides sensible cooling capacity to lower the room temperature, and also provides latent capacity to reduce moisture content in the air. Standard Cooling mode is used exclusively when the unit is operated with the PGD display kit. Hi Sensible and Balanced Climate modes require the use of the LC6000 controller. Default standard cooling setpoint is 77°F.
Free Cooling Mode (Optional)	Free Cooling mode uses an optional economizer to take advantage of cooler temperature outdoor conditions to provide cooling in the zone. When the economizer is operational, total energy use of the unit during cooling is reduced significantly. Settings are provided to limit economizer use to outdoor conditions the user deems are most productive. Sensors for outdoor temperature, humidity, and dust are provided for monitoring outdoor conditions. Economizer use also provides emergency cooling mode. Default economizer operation is temp/humidity settings of 70°F, 80%RH. Default dewpoint setting is 55°F if used instead of %RH. Unit can be set to dry bulb economizer operation only.
Heating Mode (Optional)	Heating mode uses optional 2 stage electric heat to warm the zone being conditioned when needed. By installing properly sized electric heat options, a zone can be heated when equipment or other heat sources inside the area are not producing enough heating capacity to overcome cold outdoor conditions. Default heating setpoint is 60°F.
Emergency Cooling Mode	Emergency cooling provides a way to use economizer ventilation air for cooling, along with all available units in compressor cooling mode when excessive heat is present in the area. Optional economizers must be present in the unit for outdoor air to be used for emergency cooling. Emergency cooling mode operates when the hi temperature setting is reached. The default hi temperature setting is 95°F. This feature may be user disabled in the MULTI-TEC and MEGA-TEC products.
Emergency Off Mode	Wired NO/NC* contact inputs are provided on the unit PLC board for connection to field supplied equipment. During an emergency off input event, a command to shut off unit operation is sent to the unit PLC board. **It is important to follow all guidelines, codes, and requirements of smoke/fire suppression systems including the need to break power to the unit and close economizer dampers within a certain time period.** Additional relays, wiring, or field supplied accessories may need to be added to the units and equipment to achieve all requirements for the use of a smoke/fire suppression system.
Alarm Logging	The unit logs alarms that occur in the unit for diagnostic and maintenance purposes. Alarm logs can be displayed on the PGD display, or can be downloaded from the unit PLC to a computer using a MicroUSB cable.
Software Updates	The unit software can be upgraded by using a computer and connecting to the unit PLC board with a MicroUSB cable. Progress is monitored using the PGD display. Software updates are accessible from the Bard website: www.bardhvac.com.
Self Test Operation	Unit startup commissioning and diagnostic troubleshooting features include a self test that is available through the PGD display. During the self test, staged cooling operation can be energized for an adjustable time period. Economizer damper operation can be observed and verified, along with electric heat operation. Indoor and outdoor fan operation can also be verified.
Model and Serial Number	The unit software saves the unit model and serial number on the PGD display. Model number nomenclature of the unit is used by the PGD to identify the features available in the unit. (M & E not available)
Continuous Fan Mode	The unit must run in continuous fan mode if kit part #8620-306 is used. This is to ensure airflow is provided to the return air sensor to monitor room temperature. Kit part #8620-307 does not require continuous fan mode. This is because the air temperature sensor is remote mounted inside the area to be conditioned. A future software update will be required to disable continuous fan operation.

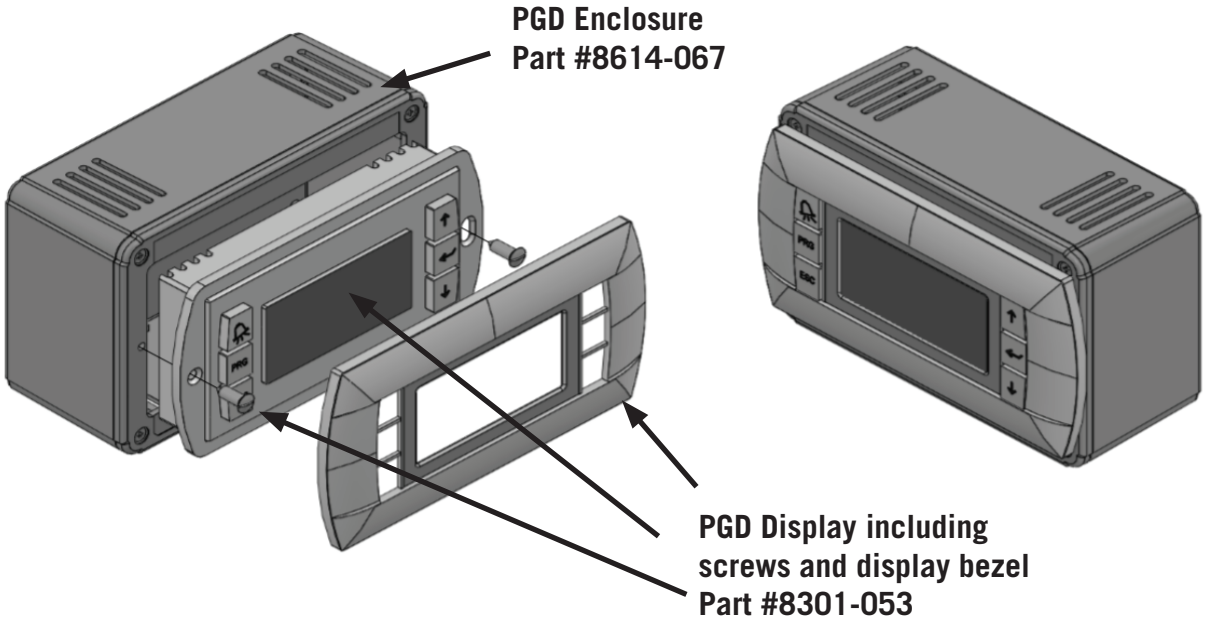
Note: The PGD unit control kits do not have indoor humidity control and cannot be used with electric or mechanical reheat dehumidification. The LC6000 must be used for indoor humidity control features.

/////// ENCLOSURE DIMENSIONS



Note: Box design requires holes for wiring and mounting to be field drilled. Polycarbonate plastic box construction allows for easy hole drilling where needed.

/////// ENCLOSURE INDIVIDUAL COMPONENTS (INCLUDED WITH ALL KITS)

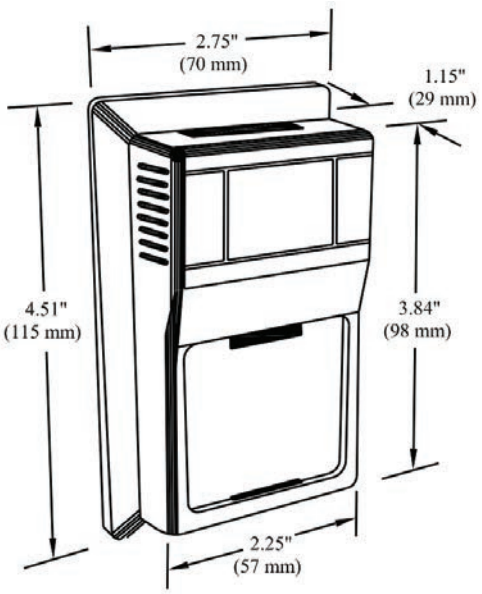


/////// MISCELLANEOUS COMPONENTS

BARD PART NO.	PART NAME	DESCRIPTION
8611-257	25ft (7.62M) PGD cable	A 25ft cable is provided with all kits to connect the PGD display to the unit. Each end of the cable uses a J10 telephone connector. 25ft is the maximum suggested cable length. The end can be removed or the cable shortened if the proper crimping tools for a J10 connector are used.
8403-062	Remote Temperature Sensor.	A Remote 10k type 2 temperature sensor is provided with kit #8620-307 for use inside the room. 22ga. to 18ga. copper conductor wire must be provided to connect the sensor to the PLC board inside the Wall Mount Unit. Bard recommends a maximum wire distance of 35ft (10.6M).
8611-256	PGD Cable and Connector	Optional 310 telephone connector that can be used to field fabricate a PGD cable. It can also be used to replace a connector if necessary. A special tool is required to crimp the J10 connector and is field supplied.

/////// 8403-062 REMOTE TEMPERATURE SENSOR (8620-307 KIT ONLY)

SPECIFICATION	DESCRIPTION
Sensor Output	10K Ohms @ 77°F (25°C) Type 2
Accuracy (0-70F)	± -0.36°F (-.2°C)
Stability	± -0.23°F (-.13°C)
Operating Range	-40°F (-40°C) to 302°F (150°C)



/////// TEMPERATURE SENSOR 8403-062 CONNECTIVITY (KIT #8620-307 ONLY)

UNIT	WIRE COLOR	TEMP. SENSOR CONNECTION	UNIT CONNECTION
MEGA-TEC	BLACK	"+" TERMINAL	B1 TERMINAL ON UNIT PLC BOARD
MEGA-TEC	BLACK/GREEN	"-" TERMINAL	GND TERMINAL ON UNIT PLC BOARD
MULTI-TEC	BLACK/RED	"+" TERMINAL	B1 TERMINAL ON UNIT PLC BOARD
MULTI-TEC	BLACK	"-" TERMINAL	GND TERMINAL ON UNIT PLC BOARD
FUSION-TEC	BLACK	"+" TERMINAL	B3 TERMINAL ON UNIT PLC BOARD
FUSION-TEC	BLACK/GREEN	"-" TERMINAL	TERMINAL 16 ON UNIT TERMINAL STRIP

/////// UNIT CONNECTIVITY

MEGA-TEC, MULTI-TEC, or FUSION-TEC Unit.

Communication wire for PGD. 25ft. cable with J10 connectors on both ends.

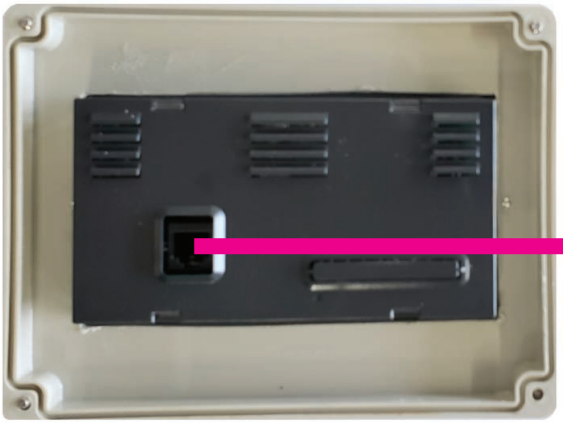
PGD Display

Temperature Sensor

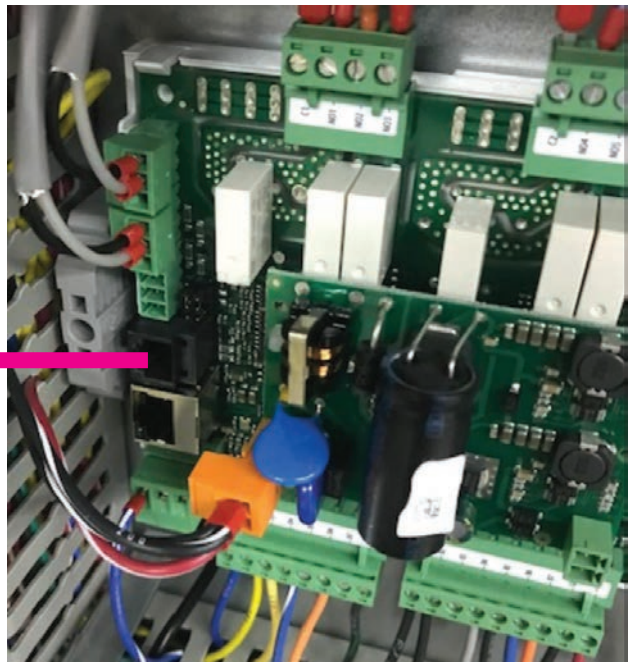
2 - wire connection to remote temperature sensor. (included in kit part #8620-307 only). Wire is field supplied 22ga. to 18ga. copper conductors and has a 35' max length.

/////// PGD TO UNIT CONNECTIVITY

25ft. wire with J10 telephone connectors



Back of PGD Display



PLC Board in Unit

Job Information: **Contact information may be used to follow up with customers and also review if questions arise about the commissioning and system checkout. Please fill out all data that is applicable.**	
Job Visit Date:	Customer Name:
Job Name:	HVAC Installer:
Job Address:	Site Technician:
Job City/State:	Rep/Distributor:

Zone Information: **Record the following information based on the setup blueprints/job specifications:**					
Zone:	**Cooling Set point**	**Heating Set point**	**Free cooling Temperature**	**Free cooling Hum. RH%**	**Free cooling Dew point**
Zone 1					

Inputs Connected to Controller: **Record the following information:**			
Digital Input Configuration	**Wired in unit to PLC?**	**Contact Direction**	**Config. (Enabled)**
Smoke Alarm			

Unit Information: **Record the following information located on serial plate, PGD information, and blueprints:**		
Unit Model #	**Unit Serial #**	**Unit Software Version**

Unit Data: **Record the following PGD information and Amp Clamp/Meter readings:**								
Unit Amps	**Unit Voltage**	**24VAC on 208V tap?**	**Phasing Correct?**	**Sensors Accurate?**	**Blower Amps**	**Comp. Amps**	**Cond. Fan Amps**	**Hi/Lo Pressures (transducer only)**

Unit Data: **Record the following PGD information:**				
Superheat	**Subcooling**	**Outdoor Air Temperature**	**Indoor Air Temperature**	**Return Air Temperature**

/////// INSTALLER NOTES:

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Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.