PECO CONTROL SYSTEMS

T8168B-2 BACnet™ Controller

0-10 VDC / Three Wire Floating / ON-OFF

BACnet™ is a trademark of ASHRAE

Precision Digital Outputs

The PECO T8168B-2 BACnet™ Communicating Thermostat provides heating and cooling control of fan coil, conventional HVAC and proportional systems.

Easy single set point technology provides simple accurate control of temperature settings.

System Configurations

Designed to meet a variety of configuration needs.

Temperature

- 2 Heat/ 2 Cool ON/OFF
- 1 Heat/ 1 Cool TWF
- 1 Heat/ 1 Cool 0-10 VDC

Fan

- One 0-10 VDC Fan
- Up to Three 24 VAC Fan Speeds

Applications

Highly versatile control for a variety of applications.

- Fan Coil
- Conventional HVAC
- Proportional Control

The T8168 includes an easily configurable service menu to allow fast system set up of requirements to limit operation, match user preferences or meet local codes.

BACnet™ Data Link

- BACNet™ IP (Annex J)
- MS/TP (Clause 9)

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KEY BENEFITS

- Remote, Local or Averaged Temperature Sensing
- Control for Relays, Valves and Dampers
- Non-Programmable or Programmable Operation
- Keypad Lock out with PIN
- Seasonal Summer-Winter Change Over for Fan Coils
- Fan Coil 2-Pipe/4-Pipe Settings
- Multiple Fault Notifications
- Door Open Shut Down
- Occupancy based Fan Selection
- Holiday Scheduling
- NO/NC Heat W1 configuration

Protocol Implementation Conformance Statement

BACnet Standardized Device Profile (Annex L):

☒ BACnet Application Specific Controller (B-ASC)

BACnet Interoperability Building Blocks Supported (Annex K):

- Data Sharing – ReadProperty - B (DS-RP-B)
- Data Sharing – ReadPropertyMultiple – B (DS-RPM-B)
- Data Sharing – WriteProperty – B (DS-WP-B)
- Data Sharing – WritePropertyMultiple – B (DS-WPM-B)
- Data Sharing – Change of Value – B (DS-COV-B)
- Data Sharing – Change of Value Property - B (DS-COVP-B)
- Device Management – Dynamic Device Binding - B (DM-DDB-B)
- Device Management – Dynamic Object Binding – B (DM-DOB-B)
- Device Management – Device Communication Control – B (DM-DCC-B)
- Device Management – Reinitialize Device – B (DM-RD-B)
- Network Management - BBMD Configuration - B (NM-BBMDC-B)

Segmentation Capability:

☐ Able to transmit segmented messages Window Size N/A
☐ Able to receive segmented messages Window Size N/A

Standard Object Types Supported:

Object-Type	Creatable	Deletable	Optional Properties Supported
Analog-value	0	0	None
Binary Value	0	0	None
Device	0	0	None

BACnet Data Link Layer Options:

☒ BACnet IP, (Annex J)
☒ MS/TP master (Clause 9)
☐ Master ☒ Slave
☐ Non-isolated transceiver ☐ Isolated transceiver
☐ Local 47K ohms bias resistors ☒ None ☐ Other: _____
Transceiver unit loading: ☐ 1 ☐ ½ ☐ ¼ ☐ ⅛
Data rates: ☒ 9600 ☒ 19200 ☒ 38400 ☐ 57600 ☐ 76800 ☐ 115200

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) ☒ Yes ☐ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
☐ Annex H, BACnet Tunneling Router over IP

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☒ ISO 10646 (UTF-8) ☐ IBM/Microsoft DBCS ☐ ISO 8859-1
☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS X 0208

Stand Alone Operation

T8168B-2 will operate without any connection to BACnet™. This thermostat has keypad lock out for secure operation.

BACnet™ IP

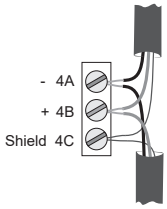
BACnet™ Connecting the T8168B-2 with local WI-Fi

- The T8168B-2 will go into AP mode Immediately on power up.
- Once in AP mode it will broadcast a Wi-Fi SSID with a unique ID.
- Make the connection to the network starting with T8168.
- If previously connected, it will reconnect automatically.
- Full instructions at PECOcontrolsystems.com

MS/TP

Wired BACnet™ Connections/ MS-TP Configurable

Wiring: 22 AWG stranded wire in a shielded cable, properly grounded



Wiring

Terminal	Description	
24 VAC-1	24 VAC 1 (UNSWITCHED)	
24 VAC-2	24 VAC 2	
24 VAC-2	24 VAC 2	
Y1	COOL 1	COOL Open (TWF)
W1	HEAT 1	HEAT Open (TWF)
Y2	COOL 2 or FAN 3 (MED)	COOL Close (TWF)
W2	HEAT 2	HEAT Close (TWF)
G	FAN 1 (HI)	
G1	FAN LO or DAMPER Configurable	
YD	0-10VDC COOL (4-20mA)	
WD	0-10VDC HEAT (4-20mA)	
GD	0-10VDC FAN (4-20mA)	
S1	REMOTE SENSOR, FAULT DETECTION	
S2	PIPE SENSOR	
SC	DC /SENSOR COMMON	
4A	RS485A	
4B	RS485B	
4C	RS485 COMMON	

*TWF = Three Wire Floating valve operation

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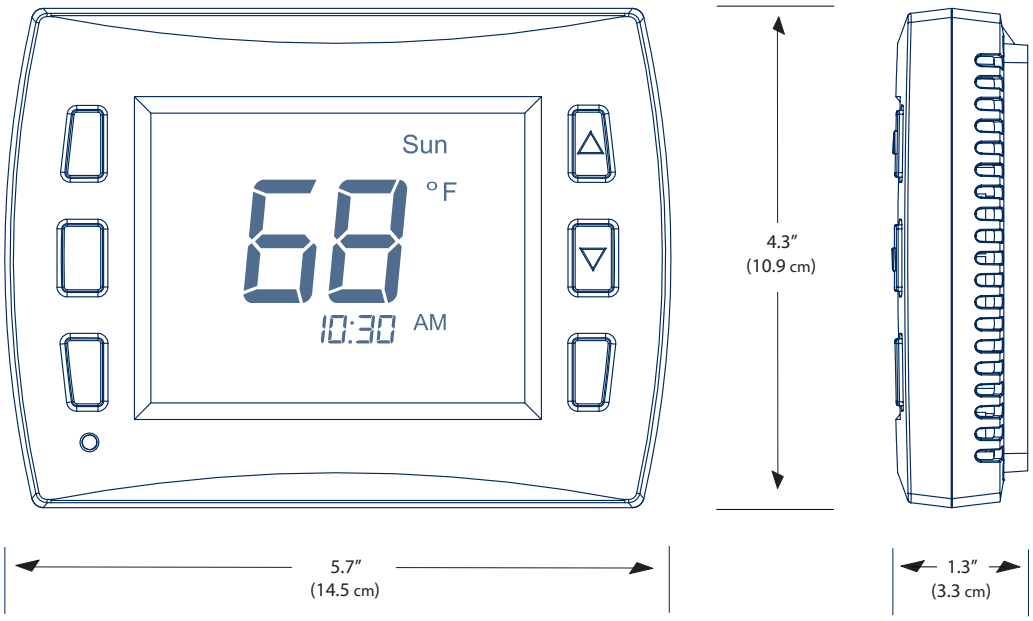

Model	Part No.	Description
T8168B-2	73857	Performance PRO Proportional Controller Wi-Fi and BACnet™
Remote Sensor	68671	Temperature Probe for Return Air or Pipe Sensor
SP155-017	69308	Indoor Wall Mounted Remote Sensor

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Get Started Today

For additional details, please contact PECO Control Systems.

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PRODUCT SPECIFICATIONS

Output Ratings

Outputs: Y1, Y2, W1, W2, G, G1
24 VAC (20-30 VAC); 50/60 Hz
10 VA
Outputs: WD, GD, YD
0-10 VDC: Loads must be 1.2K ohms minimum
4-20 mA: Loads must be 600 ohms maximum

Technical Data

- Temperature Control Range: 50° to 90° F (10° to 32° C)
- Differential: 1° F (0.5°C)
- Input Power: 24 VAC (20-30 VAC) 50/60 Hz (+/- 10%)
- Operating Temperature: 0° to 120°F (-18° to 49°C)
- Operating Humidity: 5% to 95% RH, non-condensing
- Physical Dimensions: 4.3″ H x 5.7″ W x 1.3″D
- Terminal Connections: 14-24 AWG stranded or solid wire
- Proportional Output Band Width: 2°F (1°C)
- Proportional Stroke Time Default: 2 Minutes (Configurable)

The PECO® Performance PRO™ T8168 APPLICATIONS INCLUDE fan coil, PTAC and Conventional system with a single, multi speed or 0-10 VDC Fan.