PECO CONTROL SYSTEMS

Replacing the T168 and T158 with the

T8168 Proportional Controller

The default configuration for theT8168 is for Three Wire Floating (TWF) and 0-10 VDC heat and cool outputs. The TWF outputs can be reconfigured for ON/OFF operation. The default Fan operation is 2-speed, user selectable. Please refer to the installation instructions for the full list of capabilities.

This document discusses replacement of:
TA158-100 1 Heat/ 1 Cool On-Off
TB158-100 1 Heat/1 Cool Three-Wire Floating Control
TA168-100 1 Heat/ 1Cool 0-10 VDC Control with Aux Heat

T8168 Terminal Connections

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 MED	COOL Close (TWF)
W2	HEAT 2	HEAT Close (TWF)
G	FAN 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

Key Service Menu Configuration:

The following Service Menus should be considered.

100 = Programmable or Non-Programmable

110 = System Type

112 = System Fan Type (ON/OFF or 0-10 VDC)

135 = W1 Heat Output NO or NC

170 = Remote Sensor Input

171 = Fan Coil Pipe Sensor Operation

375 = System Flush Operation

380 = Dead Band

480 = Minimum Off Time.

Fan Operation

Fan operation is service menu configurable for 24VAC ON/ OFF, 0-10VDC multi-speed or 0-10VDC Proportional.

*The T8168 does not have line voltage capability for fan. You may need to use relays for fan speed when replacing the T158 or T168

Terminal Designations by Model for ON-OFF and Three Wire Floating Control

	ON/OFF Operation		
	T8168	TA158	TA168
	Terminals		
24 VAC 1 Unswitched	24 VAC1	5	5
24 VAC 2	24VAC 2	6	6
Heat stage 1 ON/OFF	W1	11	13
Heat stage 2 ON/OFF	W2	--	13 (staged)
Cool stage 1 ON/OFF	Y1	10	--
Cool stage 2 ON/OFF	Y2	--	--
Fan MED	Y2 if Available	5	5
Fan HI	G	4	4
Fan LO	G1	6	6
Damper	G1 if Available	--	14
0-10 VDC FAN	GD	--	--
0-10 VDC Cool (Main Output)	YD	--	10
0-10 VDC Heat (Secondary Output)	WD	--	11
Remote Sensor	S1	15	15
Setback		7	7
Fault Detection	S1 w/ no remote probe	--	--
Pipe Sensor	S2	17	17
Sensor Common	SC	16	16

	TWF Operation	
	T8168	TB158
	Terminals	
24 VAC 1 Unswitched	24 VAC1	5
24 VAC 2	24 VAC2	6
Heat Open TWF	W1	11
Heat Close TWF	W2	13
Cool Open TWF	Y1	10
Cool Close TWF	Y2	12
Fan MED	Y2 if Available	5
Fan HI	G	4
Fan LO	G1	6
Damper	G1 if Available	14
0-10 VDC FAN	GD	--
0-10 VDC Cool (Main Output)	YD	--
0-10 VDC Heat (Secondary Output)	WD	--
Remote Sensor	S1	15
Setback		7
Fault Detection	S1 w/ no remote probe	--
Pipe Sensor	17	17
Sensor Common	16	16

Key Model Differences:

Overall Size
T8168 = 5.7" x 4.2"
T158/T168 = 4.5" x 2.8"

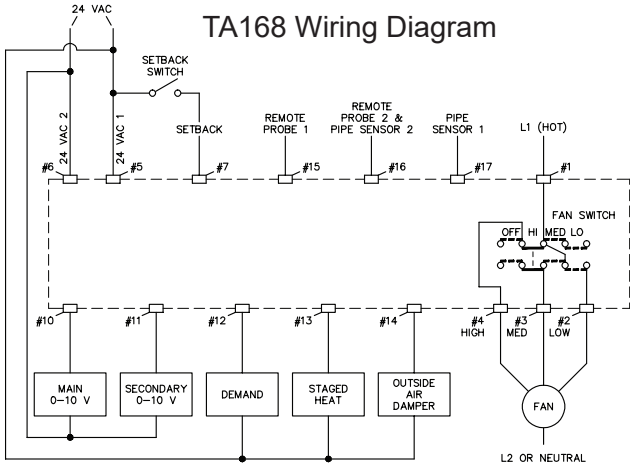
Fan Operation
The T8168 fan can be controlled by user for continuous or cycled operation for either ON-OFF or 0-10 VDC Fan Output. When configured for 0-10 VDC fan operation G1 is available for a damper operation.

There is no line voltage capability on the T8168. You will need relays to support switching if your fan is currently set up at line voltage.

Added Capabilities

- Configurable for Programmable Scheduling
- Second Stage Cool -ON/OFF operation
- 0-10 VDC Fan
- Fault Detection
- Keypad Lock Out
- NO/NC W1 Heat Configuration

TA168 Wiring Diagram



TB158 Wiring Diagram