

THERMOSTATS & CONTROLLERS



PECO FLOATING AND PROPORTIONAL THERMOSTATS T158, T168 SERIES



DESCRIPTION

The **PECO T158 Series** is a microprocessor based floating or two-position low voltage thermostat. The **T168 Series** is a microprocessor-based proportional 4-20 mA or 0-10V thermostat. Both series are designed for fan coil and air handler applications for both two- and four-pipe systems. The processor provides control algorithms for precise stable control under varying capacity and load conditions without the need for field calibration or tuning. These versatile thermostats have options for a variety of high voltage fan and system switching. Models are also available with an unoccupied setback input. Terminations are provided for remote sensors for both air and water temperature.

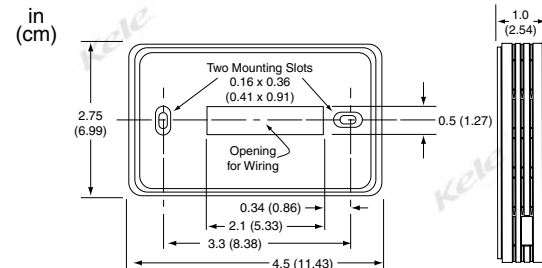


TB-158-100

FEATURES

- **Electronic Proportional plus Integral (PI) control**
- **Two-position, floating, and proportional control models**
- **Remote sensor capability**
- **Optional unoccupied control inputs**
- **Fan and system switching models**
- **°F or °C digital display**
- **Built-in start up diagnostics**
- **Seasonal changeover models**
- **Four selection service menu**

DIMENSIONS



SPECIFICATIONS

	T158	T168
Supply Voltage	20-28 VAC	20-28 VAC
Supply Current	25 mA @ 24 VAC	25 mA @ 24 VAC
Control Type	Two-position or floating	Proportional 4-20 mA, 600Ω load, 0-10 VDC, 1000Ω min
Output Capacity	10 VA @ 24 VAC (Triac)	10 VA @ 24 VAC (Triac), (Heating/Damper/Demand)
Stroke Time	30-300 sec (120 sec default)	30-300 sec (120 sec default)
Temperature Offset	±5°F (0° default)	±5°F (0° default)
Fan Demand Delay	0-10 min. (0 default)	2-10 min. (2 default)
Cooling Minimum Off	30-600 sec (120 sec default)	30-600 sec (120 sec default)
Fan Switching	24 VA @ 24 VAC, 125 VA @ 120 VAC	24 VA @ 24 VAC, 125 VA @ 120 VAC
Setpoint With Setback	50° to 90°F (10° to 32°C)	50° to 90°F (10° to 32°C)
Proportional Band	2°F (1°C)	2°F (1°C)
Heat/Cool Deadband	3°F (1.6°C)	3°F (1.6°C)
Material Of Construction	Flame-retardant PVC, UV stabilized	Flame-retardant PVC, UV stabilized
Color	Cool gray	Cool gray
Display	0.36" (0.9) LCD (°F or °C)	0.36" (0.9) LCD (°F or °C)
Weight	0.28 lb (0.13 Kg)	0.28 lb (0.13 Kg)
Approvals	UL-recognized component File# E50023, CE	UL-recognized component File# E50023, CE
Warranty	5 year	5 year

T168 WIRING

Typical Wiring for Proportional Control

T168 Program Jumpers and Switch Settings

Dip Switch	Off / Switch Open	On / Switch Closed
#1	Not used	Not used
#2	Electric heat (on at setpoint)	Staged heat (on at maximum output plus 1°F)
#3	°C display	°F display
#4	4-20 mA output	0-10 VDC output
#5	Must be "ON"	Normal operation
#6	Setback	Setback
	Heating 60°F (15°C)	Heating 50°F (10°C)
	Cooling 85°F (29°C)	Cooling 90°F (32°C)

Notes: 1. Units have a three-minute warm up.
2. Cycle power after dip switches are changed.

Jumpers

Jumpered	I.D.	Unjumpered
Local sensor	JP1	Remote sensor
Two pipe	JP2	Four pipe
Not used	JP3	Not used
Cooling 0-10 VDC	JP4	Cooling 4-20 mA
Heating 0-10 VDC	JP5	Heating 4-20 mA

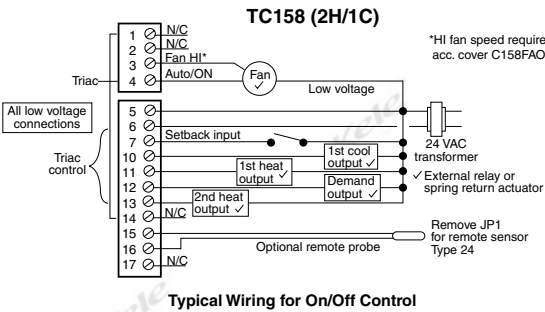
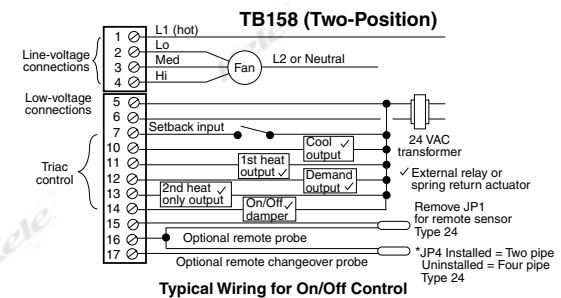
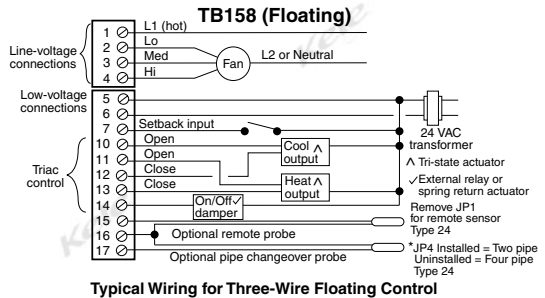
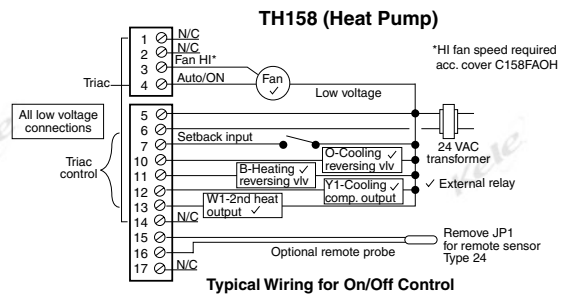
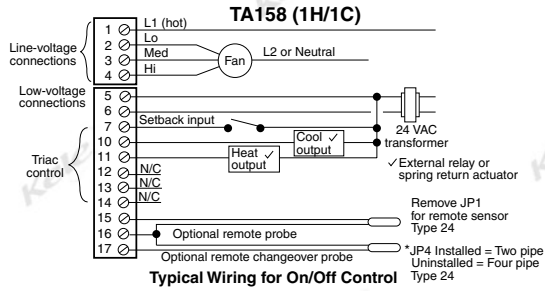
Notes: JP 4 and 5 must both be the same.
Two pipe disables terminal 11.

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T158 WIRING



T158 Program Switch Settings

Dip Switch	Control Function	Off Switch Open	On Switch Closed
1	#1: Heating action	DA (N.O.)**	RA (N.C.)** (only used when #4 is off)
2	#2: Cooling action	RA (N.O.)**	DA (N.C.)** (only used when #5 is off)
3	#3: Temp display	°C	°F
4	#4: Heating signal	ON/OFF	Modulating 3-Wire
5	#5: Cooling signal	ON/OFF	Modulating 3-Wire
6	#6: Unocc setpoints	60/85°F (15/29°C)	50/90°F (10/32°C)

Notes: 1. Units have a three-minute warm up. 2. Cycle power after dip switches are changed.

* If the changeover probe is used on a cold pipe, the control is as shown above on the outputs. If the changeover probe is on a hot pipe, it reverses the action of the cooling output above. Heating is disabled.

** Refers to valve or damper position

N/C = no connection

ORDERING INFORMATION

PART NUMBER		CONTROL OUTPUTS				USER CONTROL			2 PIPE / 4 PIPE	
NEW MODEL	OLD MODEL	PROPORTIONAL 4-20 mA/0-10V	FLOATING TRIAC	ON/OFF TRIAC	HEAT PUMP TRIAC	DAMPER OCC/UNOCC	DEMAND OUTPUT	FAN [^] SWITCHING	SYSTEM MODE SWITCHING	CHANGE OVER PROBE INPUT
TA158-100 [^]	--	--	--	1H/1C	--	--	--	O/H/M/L*	Heating/Cooling/Auto/Off	Yes, 2 or 4 pipe
TB158-100 [^]	ALL TB158	--	1H/1C	[2H]/(1C)***	--	1-Triac	(1-Triac)***	O/H/M/L*	Heating/Cooling/Auto/Off	Yes, 2 or 4 pipe
TC158-100 [^]	--	--	--	2H/1C	--	--	1-Triac	Auto/On**	Heating/Cooling/Auto/Off	No, 4 pipe only
TH158-100 [^]	--	--	--	1H/1C	1O/1B	--	1-Triac	Auto/On**	Heating/Cooling/Auto/Off	No, 4 pipe only
TA168-100 [^]	ALL TA168	--	1H/1C	--	2nd Heating	1-Triac	1-Triac	O/H/M/L*	Heating/Cooling/Auto/Off	Yes, 2 or 4 pipe

[^] Changing the cover on T158 and T168 thermostats may change or eliminate the fan switching (See accessories C158-...). (New models only)
^{*} O/H/M/L = Off/High/Medium/Low, 24-277V fan contacts, Off shuts down the thermostat with no display.
^{**} Auto/On = Fan is automatically on during equipment demand or On always, 24 VAC low-voltage control. No O/H/M/L operation.
^{***} Alternate outputs based on DIP switch [4 heating] and [5 cooling]. Switches 4 and 5 are independent. See TB158 wiring diagrams above depending on switch settings.
Note: All Triac outputs are 24 VAC with 24 VAC potential on disconnected terminals (open circuit condition).

RELATED PRODUCTS

- 65345 Thermostat base plate, 4.75" x 4.75"
- CA158 Thermostat cover for TA158-100 without fan switch
- CA158-FFN Thermostat cover for TA158-100 with fan off/on switch
- CA168 Thermostat cover for TB168-100 with fan switch
- CA168-FFN Thermostat cover for TB168-100 with fan off/on switch
- CB158 Thermostat cover for TB158-100 without fan switch
- CB158-FFN Thermostat cover for TB158-100 with fan off/on switch
- CH158 Thermostat cover for TH158-100 without fan switch
- CH158-FAO Thermostat cover for TH158-100 with fan auto/on switch
- CH158-FHLA Thermostat cover for TH158-100 with fan high/low/auto switch