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PTCC-01 – Programmable "smart" TEC controller

PTCC-01 is the programmable, precision, low noise, thermoelectric cooler controller, intended to operate with VIGO IR detection modules. It is compatible with both classic (MIP, SIP, FIP) and new, programmable PIP preamplifiers.

Available options:

PTCC-01-OEM

- TE C controller with built-in power supply, without housing
- configurable by PC software
- status LED indicator and status/data connector

PTCC-01-BAS

- TEC controller with built-in power supply, encapsulated in a small package
- configurable by PC software
- status LED indicator

PTCC-01-ADV

- TEC controller with built-in power supply, encapsulated in a small package
- configurable by built-in function keys or PC software
- user interface: LCD and buttons

Specification

Parameter	Value
Temperature stability [K]	±0.01 (T_{det}=233K (-40°C), T_{det}=0.1K)
Temperature readout stability [mK]	max 1 (T_{det}=233K (-60°C), T_{det}=0.1K)
Detector temperature settling time [s]	25 (T_{det}=233K (-40°C), T_{det}=0.1K) 45 (T_{det}=233K (-60°C), T_{det}=0.1K) 60 (T_{det}=233K (-80°C), T_{det}=0.1K)
Maximum TEC current [A]	1.2 (2TE) 0.45 (3TE) 0.45 (4TE)
Output voltage range [V]	min 3, max 14.5
Output current of the built-in power supply [mA]	±200 (output voltage: 3…14.5V)
Power supply voltage V_{sup} [V]	min 9, max 16 (wider range available upon request)
Power supply current I_{sup} [mA]	500 (I_{TEC}=0.45A, U_{TEC}=7.5V)
Series resistance of the connecting cable [mΩ]	1000 (total resistance of the wires supplying TEC element)
Storage temperature [°C]	from -20 to +70
Ambient temperature [°C]	from +5 to +45
Relative humidity [%]	from 10 to 90 (from +5°C to +35°C) from 10 to 50 (>+35°C)

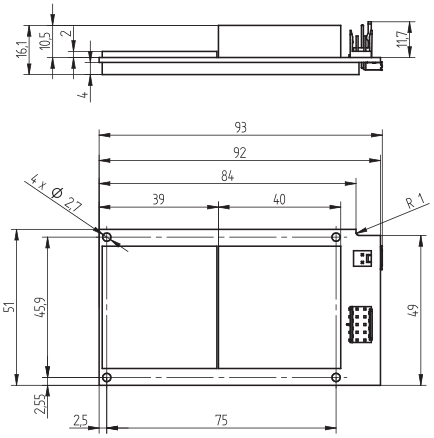
Code description

PTCC-01-BAS

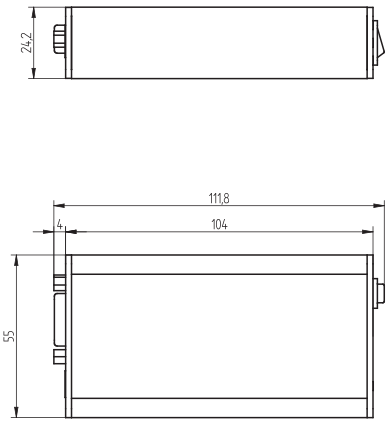
- VIGO thermoelectric cooler controller
- Version:
  - OEM - without package
  - BAS - Basic - with package
  - ADV - Advanced - with package, function buttons and LCD

Dimensions [mm]

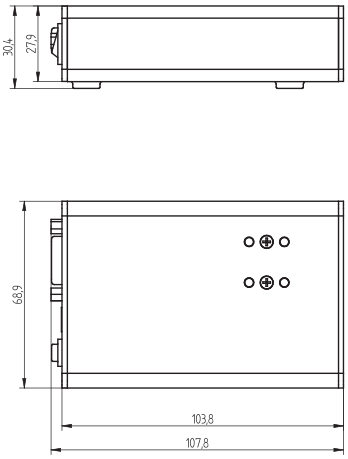
PTCC-01-OEM



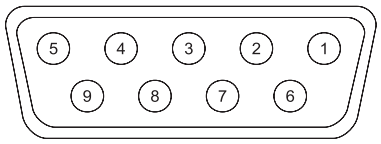
PTCC-01-BAS



PTCC-01-ADV

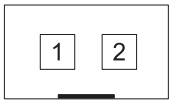


Power supply and control connector (PTCC-01-BAS and PTCC-01-ADV) - DB9 connector female



Pin number	Symbol	Function
1	TEC+	TEC supply output (+)
2	TEC–	TEC supply output (–)
3	GND	power ground
4	TH1	thermistor input (1)
5	TH2	thermistor input (2)
6	$-V_{sup}$	power supply output (–)
7	+5V	FAN and programmable preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	$+V_{sup}$	power supply output (+)
metal cover	GND-SH	shield

Power supply connector (PTCC-01-OEM) - KK2 connector male

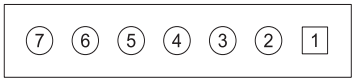


Pin number	Symbol	Function
1	TECC+	TEC controller supply input (+)
2	TECC GND	TEC controller power ground

Control connector (PTCC-01-OEM) - DUBOX2x5 connector male

Pin number	Symbol	Function
1	TEC+	TEC supply output (+)
2	TEC–	TEC supply output (–)
3	GND	power ground
4	TH1	thermistor input (1)
5	TH2	thermistor input (2)
6	$-V_{sup}$	tower supply output (–)
7	+5V	FAN and PIP preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	$+V_{sup}$	power supply output (+)
10	GND-SH	shield

Status/DATA connector (PTCC-01-OEM) - Pin Header 1x7



Pin number	Symbol	Function
1	ERR – LED	error indicator
2	LOCK – LED	temperature control loop lock indicator
3	SUP – LED	module power supply on indicator
4	3.3 V	auxiliary supply
5	TXD	transmitted data (RS-232)
6	GND	common (signal) ground (RS-232)
7	RXD	received data (RS-232)