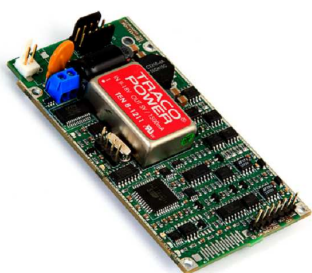


# PTCC-01

# PROGRAMMABLE "SMART" TEC CONTROLLER



**PTCC-01-OEM**



**PTCC-01-BAS**



**PTCC-01-ADV**

## Description

**PTCC-01** is the programmable, precision, low noise, thermoelectric cooler controller series, designed to operate with VIGO IR detection modules. It is compatible with both classic (BIP, MIP, SIP, FIP) and new, programmable PIP preamplifiers, integrated with IR detectors. Available options:

### PTCC-01-OEM

- TEC controller and preamplifier power supply without housing
- Configurable by PC software available on web page
- Status LED indicator and status/data connector

### PTCC-01-BAS

- TEC controller and preamplifier power supply encapsulated in a small size enclosure
- Configurable by PC software available on web page
- Status LED indicator

### PTCC-01-ADV

- TEC controller and preamplifier power supply encapsulated in a small size enclosure
- Configurable by build-in function keys or PC software available on web page
- Status indicator LCD

## Features

- Low cost
- Easy to use
- Very small size
- Low power consumption
- High stability and precision
- Dedicated for operation with preamplifiers integrated with with 2-, 3-, and 4-stage TE cooled detectors
- Compatible with every variant of programmable preamplifier PIP; user can swap the modules and controllers
- Modern architecture with digitally performed PID temperature control
- Current / voltage / temperature monitor available with PC program
- Overcurrent, overvoltage and overheating protection
- Split grounds and filtering for EMC improvement
- Firmware upgrade option available
- Provides proper detector cooling
- Preamplifier supply included

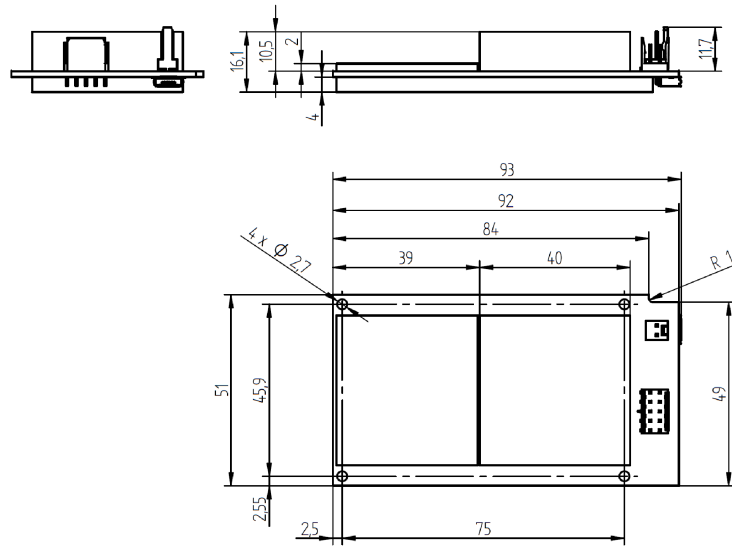
## TEC Controller Specification

Parameter	Unit	Value			Conditions, Remarks
		Min	Typ	Max	
Temperature Stability	K		±0.01		$T_{det} = 233 \text{ K } (-40 \text{ }^\circ\text{C})$
Temperature Readout Stability	mK			1	$T_{det} = 213 \text{ K } (-60 \text{ }^\circ\text{C})$
Detector Temperature Settling Time	s		25 45 60		$T_{det} = 233 \text{ K } (-40 \text{ }^\circ\text{C}), \Delta T_{det} = 0.1 \text{ K}$ $T_{det} = 213 \text{ K } (-60 \text{ }^\circ\text{C}), \Delta T_{det} = 0.1 \text{ K}$ $T_{det} = 193 \text{ K } (-80 \text{ }^\circ\text{C}), \Delta T_{det} = 0.1 \text{ K}$
Maximum TEC Current	A		1.2 0.45 0.45		2TE 3TE 4TE
Output Voltage Range	V	3		14.5	
Output Current of The Built-In Power Supply	mA		±200		output voltage: 3...14.5 V
Power Supply Voltage $V_{sup}$	V	9		16	wider range available on demand
Power Supply Current $I_{sup}$	mA		500		$I_{TEC} = 0.45 \text{ A}, U_{TEC} = 7.5 \text{ V}$
Series Resistance of The Connecting Cable	mΩ		1000		total resistance of the wires supplying TEC element
Dimensions	mm×mm×mm		51×17.3×93 55×24.2×111.8 68.9×30.4×107.8		width×height×depth - PTCC-01-OEM width×height×depth - PTCC-01-BAS width×height×depth - PTCC-01-ADV
Weight	g		51 155 190		PTCC-01-OEM PTCC-01-BAS PTCC-01-ADV
Storage Temperature	°C	-20		+70	
Ambient Temperature	°C	+5		+45	
Relative Humidity	%	10		90	from +5 °C to +35 °C > +35 °C
		10		50	

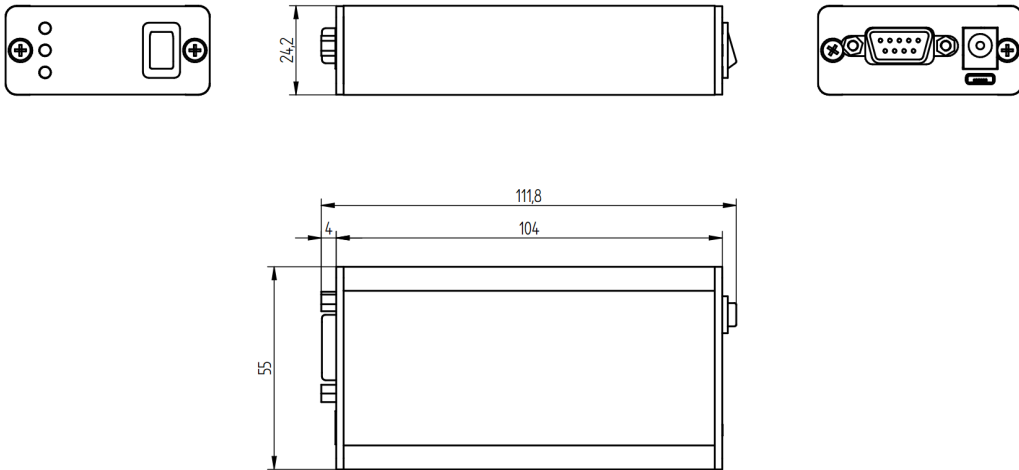
Electrical characteristics @  $T_a = 20 \text{ }^\circ\text{C}$

Physical Dimensions [mm]

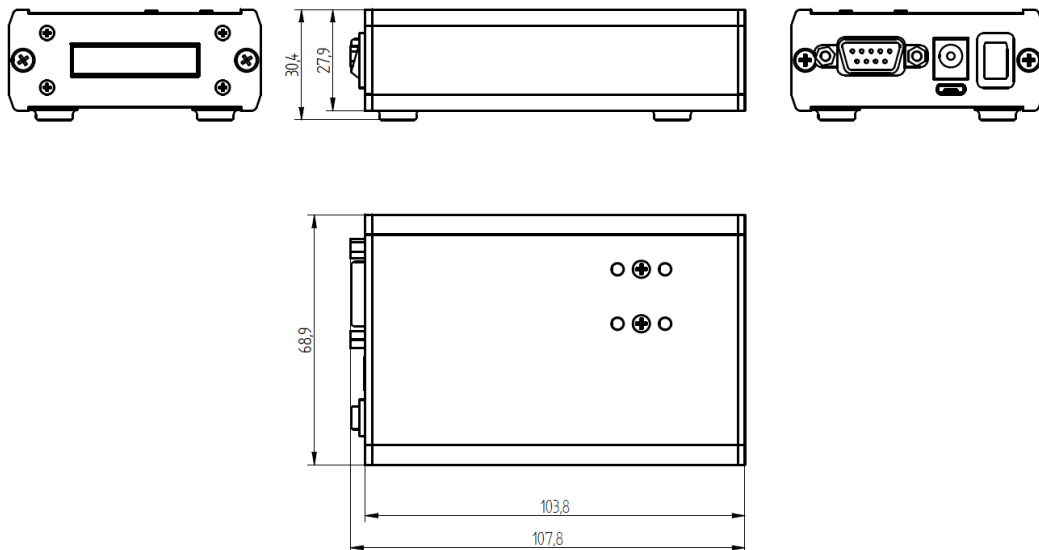
PTCC-01-OEM



PTCC-01-BAS



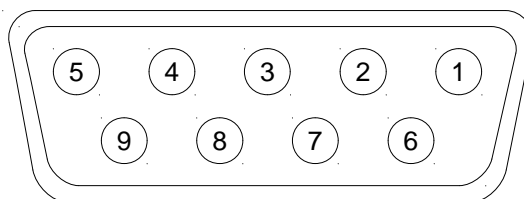
PTCC-01-ADV



## Power Supply and Control Connector (PTCC-01-BAS and PTCC-01-ADV)

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 <sub>sup</sub>	power supply output (-)
7	+5V	FAN and programmable preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	+V <sub>sup</sub>	power supply output (+)
metal cover	GND-SH	shield

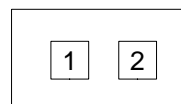
### DB9 Connector Female



## Power Supply and Control Connectors (PTCC-01-OEM)

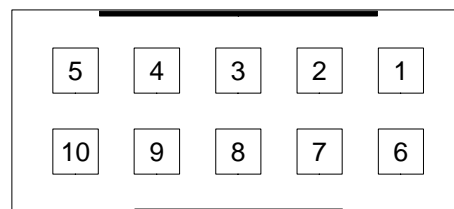
Pin Number	Symbol	Function
1	TECC+	TEC controller supply input (+)
2	TECC GND	TEC controller power ground

### KK2 Connector Male



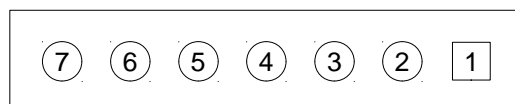
Pin Number	Symbol	Function
1	TEC+	TEC supply output (+)
2	TEC-	TEC supply output (-)
3	GND	power ground
4	TH1	thermistor input (1)
5	TH2	thermistor input (2)
6	-V <sub>sup</sub>	tower supply output (-)
7	+5V	FAN and PIP preamp internal logic auxiliary supply
8	DATA	bidirectional data port
9	+V <sub>sup</sub>	power supply output (+)
10	GND-SH	shield

### DUBOX2x5 Connector Male




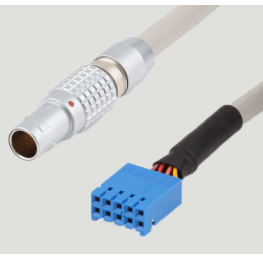
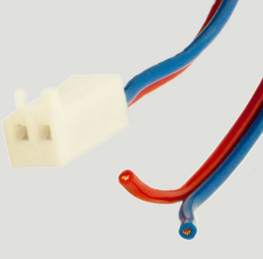




## Status / DATA Connector (PTCC-01-OEM)

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)



**Recommended Accessories**

AMP2x4-DB9	AMP2x4-DUBOX2x5	LEMO-DB9	LEMO-DUBOX2x5	KK2-POWER
				
TEC and Supply Cable	TEC and Supply Cable	TEC and Supply Cable	TEC and Supply Cable	Power Supply Cable
<b>USB: TypeA-MicroB</b>		<b>AC Adaptor</b>		
				
Cable for PC Connection		Power Supply Adaptor		