



## Description

The **MTCC-01** miniature TEC controller is designed to control temperature of 2- or 3-stage TE cooled IR detectors. MTCC-01 can be used with the Integrated Detector/Preamplifier Module BIP, MIP, SIP and FIP series. The target temperature is factory adjusted in range of 205 to 255K.

### Features

- Compact size
- Low cost
- Easy to use
- High stability
- Low power consumption
- Low noise, due to the linear regulation based on output stage

### Applications

- Temperature control of TE cooled IR detectors
- OEM applications

**WARNING!** The TEC controller is paired in the factory with the detector delivered in the IR set. Swapping controllers may cause malfunction or damage of TEC and detector.

## TEC Controller Specification

Parameter	Unit	Typical Value	Conditions, Remarks
<b>Temperature Stability</b>	K	±0.01	
<b>Settling Time of the Set Detector Temperature</b>	s	60 90	MTCC-01-2TE, $T_{det} = 233\text{ K } (-40\text{ °C})$ MTCC-01-3TE, $T_{det} = 213\text{ K } (-60\text{ °C})$
<b>Power Supply Voltage <math>V_{sup}</math></b>	V	2.6 to 5.5 4.0 to 5.5	MTCC-01-2TE MTCC-01-3TE
<b>Maximum TEC Output Current <math>I_{TEC}</math></b>	A	1.1 0.43	MTCC-01-2TE MTCC-01-3TE
<b>Maximum TEC Output Voltage <math>V_{TEC}</math></b>	V	3.6	
<b>Dimensions</b>	mm×mm×mm	70×45×19	width×height×depth
<b>Weight</b>	g	35	

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

## TEC Controller Code Description

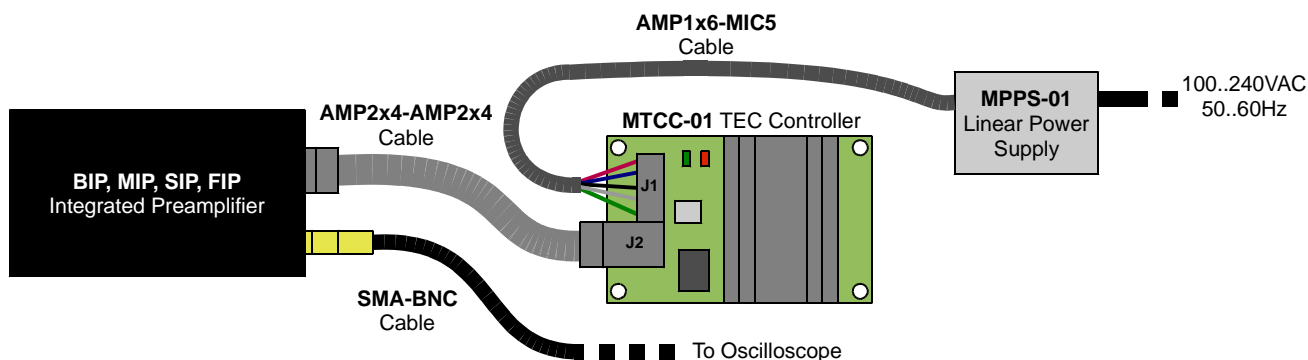
**MTCC-01-P1**

**P1** — number of TE cooler stages:  
2TE – two - stage  
3TE – three - stage

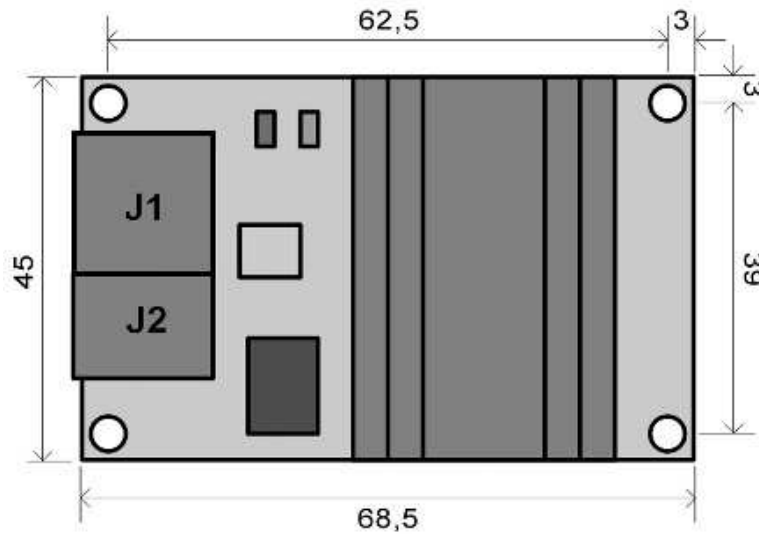
**MTCC-01** — cooler controller series

M - Miniature, T - Thermoelectric, C - Cooler, C - Controller, ver 01

## Example Wiring Diagram

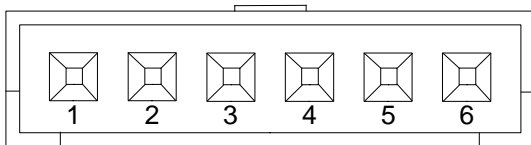


## Physical Dimensions [mm]



## Power Supply and Control Connectors

### AMP1x6 Connector Male (J1)



Pin Number	Symbol	Function
1	TECC+	TEC controller supply input (+)
2	TECC GND <sup>1)</sup>	TEC controller power ground
3	+V <sub>sup</sub> <sup>2), 3)</sup>	power supply input (+)
4	GND <sup>1), 3)</sup>	power ground
5	FAN+/N.C.	FAN(+)/not connected
6	-V <sub>sup</sub> <sup>2), 3)</sup>	power supply input (-)

<sup>1)</sup> TECC GND and GND should be connected together in power adapter

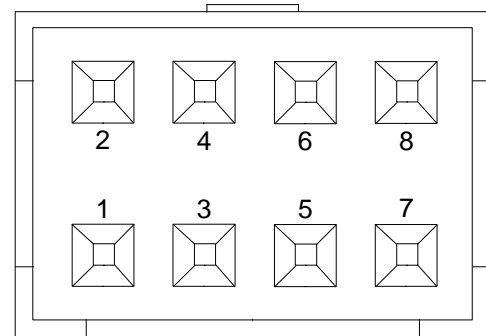
<sup>2)</sup> See preamplifier specification for details

<sup>3)</sup> Only for preamplifier module supply, not required for proper controller operation

For more details about TE cooling see **IR Detectors Catalogue**.

**WARNING!** Do not connect TEC- or TEC+ to any other supply or to GND!







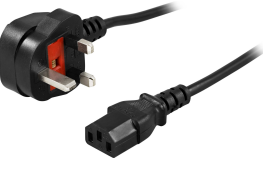

### AMP2x4 Connector Male (J2)



Pin Number	Symbol	Function
1	-V <sub>sup</sub>	power supply output (-)
2	TH2 <sup>1)</sup>	thermistor input (2)
3	FAN+/N.C.	fan supply/not connected
4	TEC-	TEC supply output (-)
5	GND	power ground
6	TH1 <sup>1)</sup>	thermistor input (1)
7	+V <sub>sup</sub>	power supply output (+)
8	TEC+	TEC supply output (+)

<sup>1)</sup> Thermistor polarity without significance

**Recommended Accessories**

MPPS-01	LEMO-AMP2x4	AMP2x4-AMP2x4	AMP1x6-MIC5	AMP1x6-POWER
				
Preamplifier Power Supply	TEC and Supply Cable	TEC and Supply Cable	Power Supply Cable	Power Supply Cable
Power Cable EU		Power Cable UK	Power Cable US	
				
Power Cable		Power Cable	Power Cable	