

FEATURES

- Compact size
- Low cost
- Easy to use
- High stability
- Adjustable temperature
- Low power consumption

APPLICATIONS

- Temperature control of TE cooled IR detectors
- OEM Applications

SPECIFICATION

Parameter	Units	Typical Value	Conditions, Remarks
Temperature stability	K	±0.01	$T_{det}=230K$, $T_a=0$ to $40^{\circ}C$
Settling time of the set detector temperature	s s	60 300	2-stage TEC, $T_{det}=230K$ 3-stage TEC, $T_{det}=205K$
Power supply voltage V_{sup}	V V	2.6 to 5.5 4.0 to 5.5	for 2-stage TEC for 3-stage TEC
Maximum TEC output current I_{tec}	A A	1.2 $0.4^{1)}$ - $2.0^{1)}$	for 2-stage TEC for 3-stage TEC
Maximum TEC output voltage V_{tec}	V	3.6	
Dimensions	mm	70 x 45 x 19	width x depth x height
Mass	g	35	

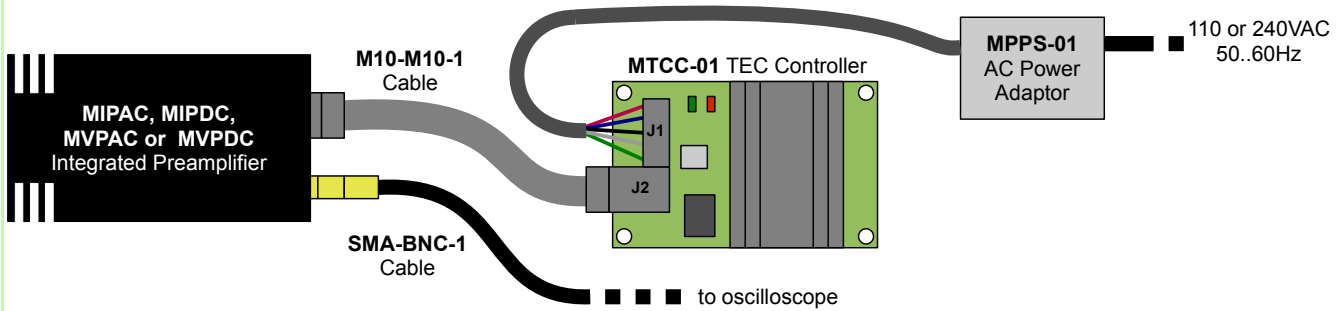
Electrical characteristics @ $T_a=20^{\circ}C$, $V_{dd}=5V$

¹⁾ depending on TEC version

DESCRIPTION

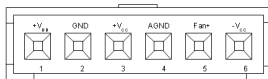
The MTCC-01 miniature TEC controller is designed to control temperature of 2- or 3-stage TE cooled IR detectors. MTCC-01 can be used with the Integrated Detector / Preamplifier Module MIPAC, MIPDC series. The controller offers variable adjustment of temperature from 205 to 255K.

EXAMPLE WIRING DIAGRAM



POWER SUPPLY CONNECTORS

Pin configuration of power connector (J1):



Pin	Symbol	Function
1	+V _{dd}	TEC controller power supply
2	TGND ¹⁾	TEC controller power ground
3	+V _{sup} ^{2) 3)}	Power supply input (+)
4	GND ^{1) 3)}	Power ground
5	N.C.	Not Connected
6	-V _{sup} ^{2) 3)}	Power supply input (-)

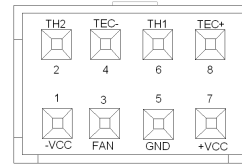
¹⁾ TGND and GND should be connected together in power adaptor.

²⁾ See preamplifier specification for details.

³⁾ Only for preamplifier module supply, not required for proper controller operation.

For more details about TEC cooling see IR Detectors Catalog.
WARNING: Do not connect TEC- to GND nor to another signal!

Pin configuration of preamplifier connector (J2):

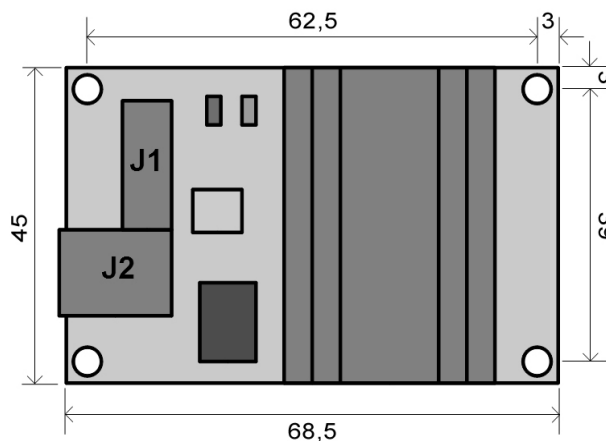


Pin	Symbol	Function
1	-V _{sup}	Power supply output (-)
3	GND	Power ground
5	GND	Power ground
7	+V _{sup}	Power supply output (+)

Pin	Symbol	Function
2	TH2 ¹⁾	Thermistor input
4	TEC-	TEC supply output (-)
6	TH1 ¹⁾	Thermistor input
8	TEC+	TEC supply output (+)

¹⁾ Thermistor polarity without significance.

DIMENSIONS [mm]


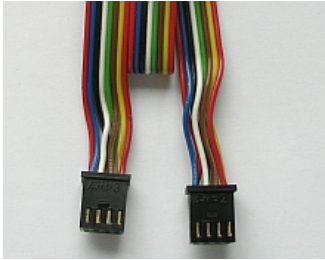
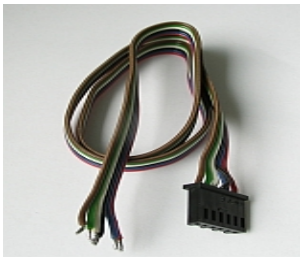



SETTINGS

Unit				Function
1	2	3	4	
X	X	X	ON	2-stage TEC, max. $I_{\text{tec}}=1.2\text{A}$
X	X	X	OFF	3-stage TEC, max. $I_{\text{tec}}=2.0\text{A}$
OFF	OFF	OFF	X	Max. TEC current No temperature control
OFF	OFF	ON	X	$T_{\text{det}}=230\text{K}$
OFF	ON	OFF	X	$T_{\text{det}}=220\text{K}$
OFF	ON	ON	X	$T_{\text{det}}=240\text{K}$
ON	OFF	OFF	X	$T_{\text{det}}=220$ to 240K , adjustable
ON	OFF	ON	X	$T_{\text{det}}=240$ to 250K , adjustable
ON	ON	OFF	X	$T_{\text{det}}=232$ to 245K , adjustable
ON	ON	ON	X	$T_{\text{det}}=245$ to 255K , adjustable

Achievable detector temperature depends on detector type, detector biasing, ambient temperature, heat sink etc.

ACCESSORIES

BNC-SMA	AMP 2x4 – AMP 2x4	AMP 2x4 - POWER	AMP 2x4 - DB9
			

Signal output cable

TEC & Supply cable for
MTCC-01 controller

Power supply cable for
MTCC-01 controller

TEC & Supply cable for
STCC-04 controller

MPPS-01



Linear AC power supply