



Koheron TEC200 is a digital temperature controller with the following features:

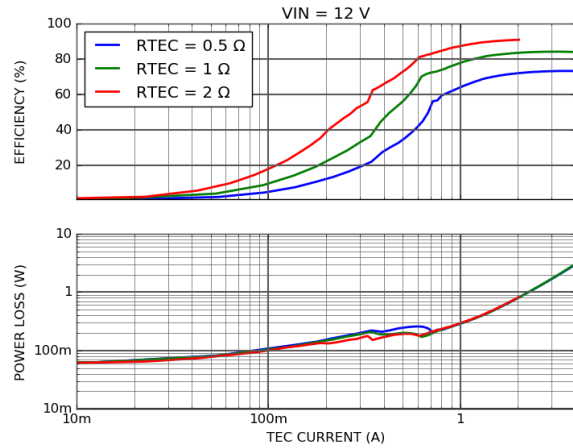
- Up to 8 V / 4 A operation.
- Low output noise ($< 10 \mu\text{V}_{\text{rms}}$ in 0.1 Hz - 10 Hz bandwidth).
- High power efficiency.
- -40 °C to 85 °C operating temperature range.
- On-board monitoring and diagnostics.

Specifications

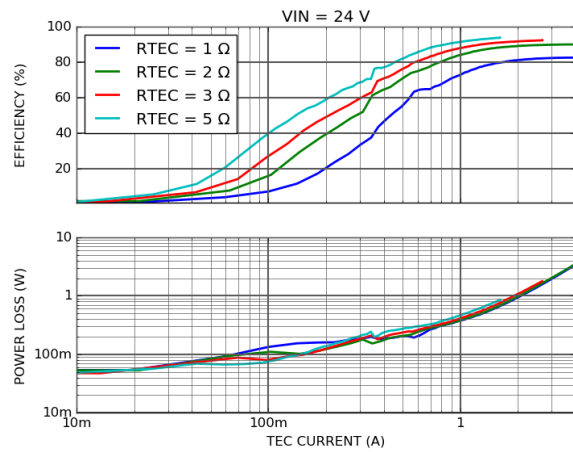
	4V	8V
TEC driver		
TEC current	± 4 A	± 4 A
TEC voltage	± 4 V	± 8 V
Low frequency noise 0.1 Hz - 10 Hz	$5 \mu\text{V}_{\text{rms}}$ (4 V / 4 A)	$10 \mu\text{V}_{\text{rms}}$ (8 V / 4 A)
Wideband noise 10 Hz - 1 MHz	$25 \mu\text{V}_{\text{rms}}$ (4 V / 4 A)	$50 \mu\text{V}_{\text{rms}}$ (8 V / 4 A)
Output voltage ranges	1.25 V / 2.5 V / 4 V	1.5 V / 3 V / 8 V
Thermistor		
Thermistor type	NTC	NTC
Nominal thermistance	10 k Ω	10 k Ω
Sensing temperature coefficient 10 k Ω	100 $\mu\text{K}/^{\circ}\text{C}$	100 $\mu\text{K}/^{\circ}\text{C}$
Power supply		
Input voltage	7 V to 18 V	11 V to 33 V
Input current limit	4 A	4 A
Input power limit	25 W	50 W
Surge voltage 1 s max.	≤ 50 V	≤ 50 V
Quiescent current TEC OFF	4 mA (12 V _{in})	3 mA (24 V _{in})
Other		
Outside dimensions	91 mm x 60 mm x 17 mm	91 mm x 60 mm x 17 mm
Weight	83 g	83 g
Operating temperature	-40 $^{\circ}\text{C}$ to 85 $^{\circ}\text{C}$	-40 $^{\circ}\text{C}$ to 85 $^{\circ}\text{C}$

Power efficiency

Thanks to its hybrid architecture, the TEC200 provides high power efficiency over a wide range of input voltages and loads, while preserving the low noise and precision expected from a linear driver:



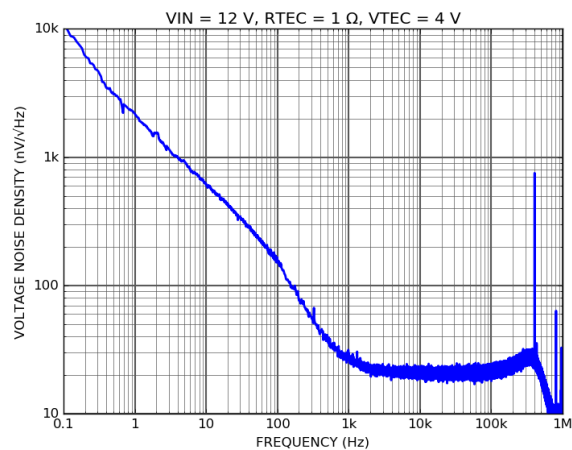
TEC200-4V conversion efficiency versus tec resistance



TEC200-8V conversion efficiency versus tec resistance

Output voltage noise

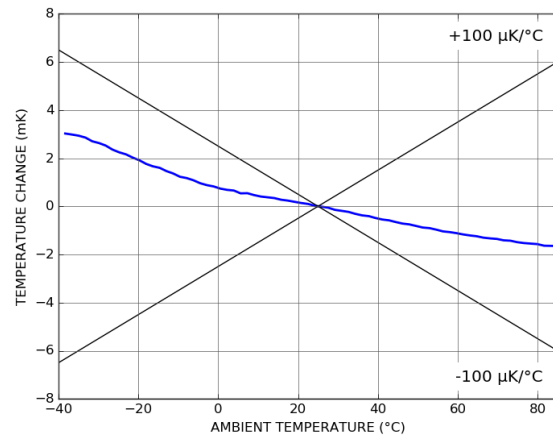
Voltage noise between the TEC+ and TEC- pins measured when driving 4 V / 4 A with a TEC200-4V:



TEC200-4V output voltage noise density

Temperature sensing stability

Temperature sensing variation when measuring a high stability 10 k Ω resistor over the -40 °C to 85 °C operating range:



TEC200 thermistance measurement temperature coefficient

Ordering codes

PRODUCT NUMBER	ATTRIBUTE
TEC200-4V	TEC voltage +/- 4 V
TEC200-8V	TEC voltage +/- 8 V