

PIILIX-Design

**DATASHEET
EGT-AMP v2**



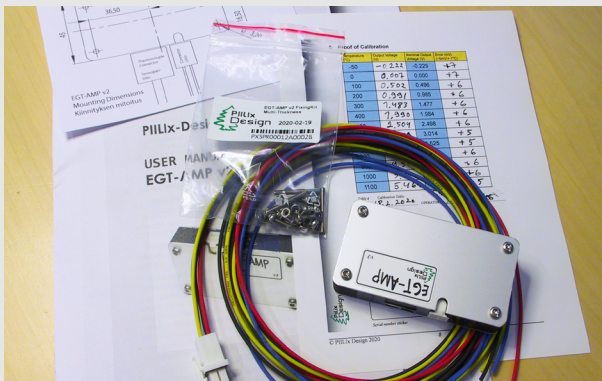
GENERAL

EGT-AMP v2 is a Precision Cold Junction Compensated Thermocouple Amplifier for K-Type thermocouple sensors. It has been designed to be used for Exhaust Gas Temperature measurement on automotive environment but can be used in many more applications including laboratory use.

EGT-AMP v2 needs stable 12Vdc nominal supply voltage from external source. It is designed for 0-1000°C input range which generates 0-5V output range. EGT-AMP v2 can be used over full K-type specified temperature range (-270 - +1370°C), but some limitations may apply with extreme temperature and ground-offset combinations (Table 1).

EGT-AMP v2 output stage is differential and it can adopt to a small grounding potential errors up to $\pm 1.5V$.

EGT-AMP v2 can be used with any K-type thermocouple sensor having electrically floating measuring wires.



TECHNICAL SPECIFICATION

- Type of thermocouple: K (Alumel/Cromel), non-grounded
- Thermocouple connector: Miniature, K-type
- Internal gain: 121 x
- Output voltage function: 0°C=0V, 1000°C=4,994V (32°F = 0V, 2012°F=4,994V)
- Operational supply voltage: 8.5-16Vdc
- Current consumption: ~30mA (no load, supply voltage = 14V, 1000°C input)
- Polarity protection: -16Vdc continuous, -45V, t < 20ms
- Supply voltage transient: +40V, t < 20ms
- Supply voltage transient: 600W power max, 10/1000µs pulse
- Internal fuse protection: 2 x F2A (Non-serviceable)
- Operational temperature range: -40 - +85°C (-40 - +185°F)
- Cold junction compensation: -30 - +85°C (-22 - +185°F)
- Measurement accuracy: ±3°C (±5,5°F)
- Cold junction compensation accuracy: ±5°C (±9°F)
- Dimensions (W x D x H): 85.0 x 45.0 x 20.0mm (3.35 x 1.77 x 0.79 inch)
- Environmental protection (IP-class): IP57 (not applicable to TC-connector)
- Weight (unit only): 90g (3.17oz)
- Mating 4-pole connector, body: TE-Connector 794805-1
- Mating 4-pole connector, socket pin: TE-Connector 1-770988-0
- Mating 4-pole connector, wire seal: TE-Connector 794758-1
- Mating 4-pole connector, interface seal: TE-Connector 794772-4

Ground offset (V)	Min. temperature (C°/F°)	Max. temperature (C°/F°)
-1.5	-55 / -67	+1370 / +2498
0.0	-270 / -454	+1370 / +2498
+1.5	-270 / -454	+1280 / +2336
Calculation: $-1.75V < U_{in} \times 121 + \text{Offset} < 7.75V$		

Table-1 Input / offset limitations

SCOPE OF DELIVERY

- 1 pc EGT-AMP v2 Amplifier, part.no PXPRD00003Axxxxx*
- 1 pc Wire Harness, Length = 2.0 m (6ft), part.no PXSPR00003Axxxxx*
- 1 pc Stainless Steel Multi-Thickness Fixing Kit, part.no PXSPR00012Axxxxx*
- 1 pc Printed Fixing Pattern Jig (A6 size)
- 1 pc User Manual, English version
- 1 pc Calibration Test Document

* xxxxx = serial number

FOR DETAILED INFO, PLEASE DOWNLOAD USER MANUAL

https://www.piiLix-design.fi/manuals/EGT-AMP-v2_USER_MANUAL_EN.pdf