MB37 Transfer Function
Calculating the Output Voltage of a MB37 Signal Conditioner

The output voltage of a MB37 thermocouple signal conditioner can be calculated by knowing: (a) the thermocouple input voltage at the measurement temperature; (b) the thermocouple input signal at the minimum point of the MB37 module temperature range; and (c) the MB37 gain.

Transfer Equation for MB37

To determine the output voltage from a MB37 module, use the following equation:

$$V_{out} = (\text{TC Output} - V_{zero}) \times \text{GAIN}$$

where,

1. V_{out} is the MB37 module output (in volts).
2. TC Output is the thermocouple output voltage (in mV) at the temperature being measured.
3. V_{zero} is the thermocouple output voltage (in mV) at the minimum temperature span specified for the MB37 module.
4. GAIN is the throughput gain (in V/mV) of the MB37 module.

The Table below provides the thermocouple output voltage at the minimum temperature span of each MB37 module (V_{zero}) and the MB37 gain.

Parameter		MB37-J	MB37-K	MB37-T	MB37-E	MB37-R	MB37-S	MB37-B	MB37-N
Temp °C	Low	-100	-100	-100	0	0	0	0	0
Range	High	760	1350	400	900	1750	1750	1800	1300
Vout V	Low	0	0	0	0	0	0	0	0
Range	High	5	5	5	5	5	5	5	5
Vin mV	Low	-4.632	-3.553	-3.378	0	0	0	0	0
Range	High	49.922	54.125	20.869	68.783	20.878	18.504	13.585	47.502
Vin Span	mV	47.554	57.678	24.247	68.783	20.878	18.504	13.585	47.502
Gain	V/mV	0.105143	0.086688	0.206211	0.072692	0.239486	0.270211	0.368052	0.105258
Vzero	mV	4.632	-3.553	-3.378	0	0	0	0	0