

Optional Inputs for DTA137

Please note

Input options that use terminal 8 prevent terminal 8 from being used as a contact connection. Vibration and strain-gauge are in separate documents

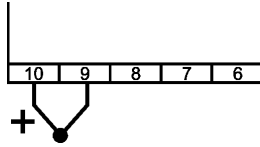
OPTION 01: Thermocouple Input

Thermocouple types can be E, J, K, N, R, S and T. Automatic cold junction compensation is standard. On request the circuit can be configured for up-or-down scale burn-out.

T/C input spans:

Input impedance:

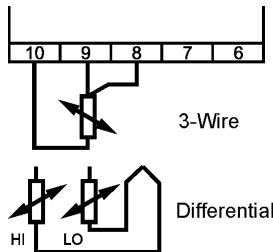
Cold junction compensation:



4mV up to 80mV
> 1M Ω
0.02% per $^{\circ}\text{C}$ C/J change, over ambient range of 0 – 60 $^{\circ}\text{C}$ with input range 100 $^{\circ}\text{C}$

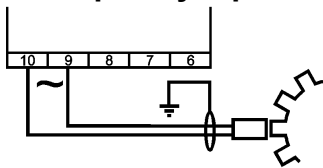
OPTION 02: RTD Input

The standard RTD Pt100 however any user specified type can be accommodated as long as there is no substantial non-linearity. The RTD should be wired in 3-wire fashion to avoid errors caused by lead resistance. 2-wire connection can be used with short lead length. Sensor excitation current is as low as 0.6mA preventing self-heating of the sensor. Lead breakage will cause the output to increase to maximum (30mA).



Combined linearity and drift error: 0.5% of span
Temperature effect: 0.01 % per $^{\circ}\text{C}$
Input span: 7.8 Ω up to 290.3 Ω (20 $^{\circ}\text{C}$...850 $^{\circ}\text{C}$ Pt100)
10 $^{\circ}\text{C}$ range is also available with reduced accuracy

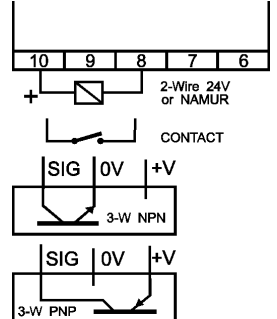
OPTION 03: Frequency Input



Calibration range: 0 - 10Hz...0 - 3kHz
Input type: Sine, Triangle, Pulse, Square
200mVpp min (70mV rms). 22Vpp max.
Input impedance: 1.5k Ω typical.
Linearity & repeatability: 0.2% of range
Temperature effect: 0.012% / $^{\circ}\text{C}$

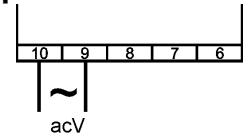
OPTION 04: DC Pulse Input

Pulses input from proximity sensors, contacts or open collector devices. An auxiliary supply of 8Vdc or 24Vdc is available at terminal 8.



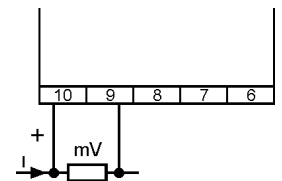
Calibration range: 0 - 10Hz...0 - 3kHz
Input type: NAMUR, contact, 3-W NPN, 3-W PNP.
Auxiliary supply: 8V (NAMUR / contact) 24V (3-W proximity switch)
Input impedance: 1.5k Ω typical
Linearity & repeatability: 0.2% of range
Temperature effect: 0.012% / $^{\circ}\text{C}$

Option 05, AC Voltage Input



Input range: 10mV up to 500Vac
Input impedance: 12k Ω for 10mV input > 1M Ω for 500V input.
Linearity and drift error < 0.5% of range

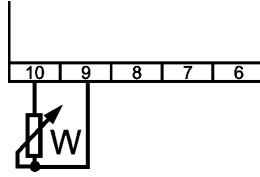
Option 06, mV / Bipolar Input



Input range bipolar: $\pm 0.5\text{mV}$ to $\pm 2\text{kV}$
Input range unipolar: 0-1mV up to 2kV. It may be more cost effective to use an alternate unipolar range for signal spans above 100mV.
Input impedance: > 1M Ω (100M Ω optional).
Offset: up to 500% of range (int. adjustment).
Linearity and drift error: < 0.2% of range.

OPTION 07: Resistance Input

The resistance or slide wire receives a load independent current. This current is configured for two basic ranges: 4mA or 40mA. Final adjustment is carried out by a 15-turn internal trim potentiometer to suit the resistance sensor.



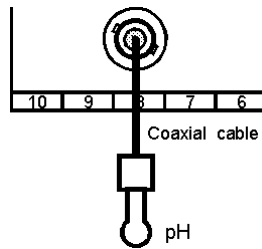
Input span: 2Ω up to 5kΩ (reverse action on request)
 Combined linearity and drift error: 0.5% of input range.

OPTION 08: Customised Response

Extra filtering is added to the input circuits as specified.

OPTION 09: pH / Orp Electrode Input

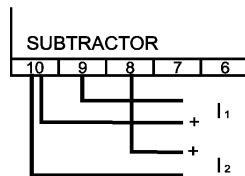
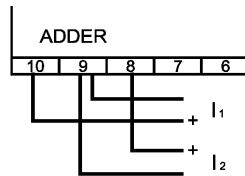
Accepts a wide variety of electrochemical sensors as input - pH, Redox (ORP) or selective-ion, specify the input range.



Input impedance: $2.5 \times 10^{10}\Omega$
 Combined linearity and drift error: 0.5% of range

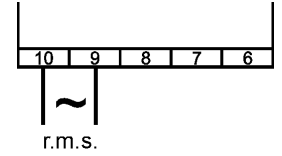
OPTION 10: Adder Or Subtractor

For applications with two DC current signals are required to be added or subtracted. The two signals must be identical (i.e. 2 x 4 – 20mA) and have no common ground.



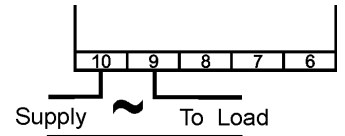
ADDER: Output = $(I_1 + I_2) / 2$
 SUBTRACTOR: Output = $I_1 - I_2$
 Input loads: $I_1 = 50\Omega$
 $I_2 = 50\Omega + 0.7V$

Option 12: True rms.



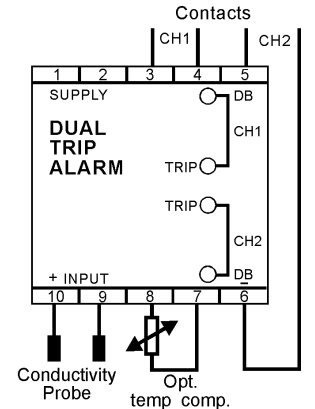
Input range: 10mV up to 500Vac
 10mA up to 250mAac via shunt
 Input impedance: 12kΩ for 10mV input
 > 1MΩ for 500V input
 Offset: up to 200% of range
 Linearity and drift error: < 0.5% of range

Option 13 - AC Current



Input range: 0.5 up to 10A
 Input impedance: 0.008Ω at 5A.
 Input output isolation: 2kV rms by internal CT.
 Linearity and drift error: < 0.5% of range.

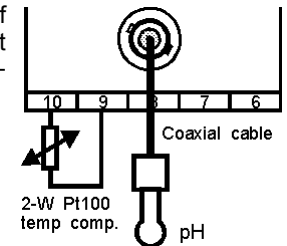
Option 14: Conductivity



Input range: 50μS/cm to 100mS/cm (k=1).
 Temperature compensation: 10k NTC, (Other Specify.)

OPTION 18: pH / Orp Electrode Input

Accepts a wide variety of electrochemical sensors as input - pH, Redox (ORP) or selective-ion, specify the input range.



Input impedance: $2.5 \times 10^{10}\Omega$
 Combined linearity and drift error: 0.5% of range
 Temperature compensation: 2-wire Pt100.

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