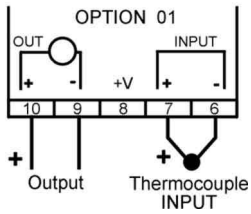
Optional Inputs for DTI135

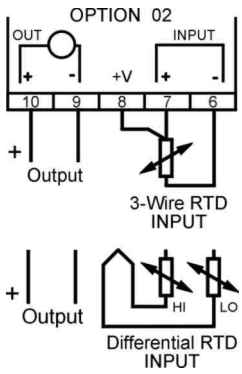
OPTION 01 - Thermocouple Input



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. The output of the isolators follows the thermocouple curve with an accuracy of <0.5% (non linearised).

T/C input spans:	4mV up to 80mV
Input impedance:	>1MΩ
Cold junction compensation:	0.02% per °C C/J change, over ambient range of 0-60°C with input range 100°C
Offset:	500% of range

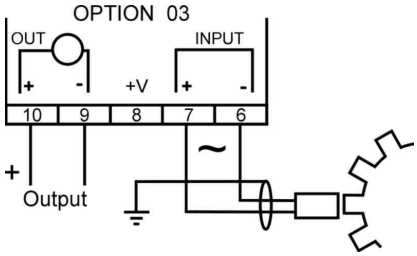
OPTION 02 - RTD Input



The standard RTD is PT100 (100Ω at 0°C), however any user specified type of RTD can be accommodated as long as there is no substantial non-linearity. The isolators have no additional linearisation circuit. The RTD is part of an input bridge circuit and should be wired in 3-wire fashion to avoid errors caused by lead resistance changes. Two wire connection can be used where a short lead length under constant temperature condition will not generate a resistance change. Lead calibration resistors are not required as the front accessible span and zero trimmers can be used for final system calibration. 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).

Linearity and drift error:	0.5% of span
Temperature effect:	0.02% per °C
Input span:	3.9Ω up to 112.0Ω (20°C...300°C Pt100, 10°C range available with reduced accuracy).

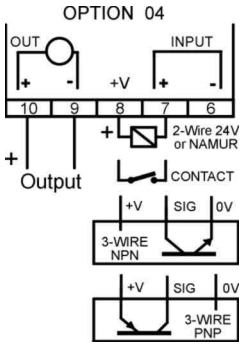
OPTION 03 - Frequency Input



The isolators can be configured for frequency input, accepting most pulse signals down to 0.2Vpp.

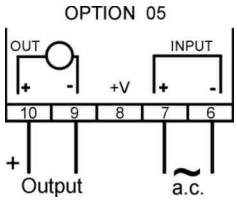
Calibration range:	0 - 10Hz...0 - 3kHz
Input type:	Sine, Triangle, Pulse 200mVpp. (70mV rms) min. 22Vpp. max.
Input impedance:	10kΩ
Linearity & repeatability:	0.2% of range
Temperature effect:	0.02% / °C
Offset:	-50% of range (e.g. 1 - 2kHz input)
Span:	±20%

OPTION 04 - Pulse Input



The isolators can also accept a pulse input from Proximity Sensors or passive devices such as contact or open collector devices.
An auxiliary supply on terminal 8 is 8Vdc for NAMUR and contact or 24Vdc for proximity sensors. All other data is the same as option 03 above.

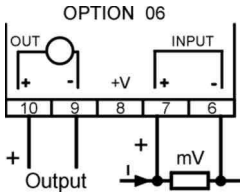
OPTION 05 - AC Input (Sine Wave)



For AC-voltage input uses a precision rectifier circuit.

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 06 - Bipolar (millivolt) Input

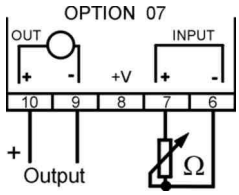


Low level millivolt or bipolar input signals require an additional input conditioning circuit. This circuit provides both a high input impedance and a wide front-end offset.

Input range:	±0.5 up to ±100mV bipolar or unipolar
Input impedance:	>1MΩ (100MΩ optional)
Offset:	up to 500% of range (int. adjustment)
Temperature drift:	Typically 0.02% of span/°C

Where a lower input impedance (approx. 30kΩ) can be tolerated, as with DC current measurements using a low ohm shunt the standard isolators (option 06 not required) can be calibrated down to 50mV full scale input. (Specify external shunt operation).

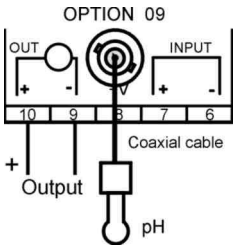
OPTION 07 - Resistance Input



The resistance or slidewire receives a constant load independent current from a current source being part of the isolators. This current source 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)
Linearity and drift error:	0.5% of input range.

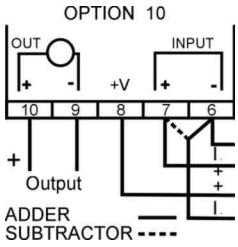
OPTION 09 - pH or ORP Electrode Input



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

Input impedance:	2.5×10^{10} Ω
Linearity and drift error:	0.5% of range

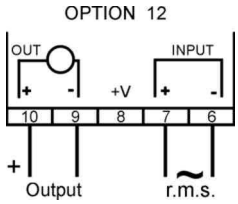
OPTION 10 - Adder or Subtractor Input



For applications where two DC current signals are required to be added or subtracted with isolation to output, the isolators can be fitted with option 10, provided the two signals are identical (i.e. 2 x 4-20mA).

ADDER:	OUTPUT = $(I_1 + I_2) / 2$
SUBTRACTOR:	OUTPUT = $I_1 - I_2$
Input loads:	I_1 = 50Ω
	I_2 = 50Ω + 0.7V

OPTION 12 - True r.m.s. Input (Other than Sine Wave)



Isolators are equipped with a precision rms rectifier circuit.

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. Additional errors of; plus 0.7% for crest factors of 1 to 3. plus 2.5% for crest factor of 5.

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