



## INSTALLATION GUIDE

### OMNITERM TTB Model C2465B

The OMNITERM TTB dual Trip Amplifier operates off 24Vdc power, accepts up to 0-10V or 0-20mA input and provides two independent Trip Relay outputs.

The Input can be either a voltage or current input depending upon how the unit is connected, without any additional order requirements or custom configuration.

A fully isolated input circuit allows the input to be connected to any existing voltage or current loop without affecting the isolation of that loop.

When used in a 0-20/4-20mA input loop, the very low input resistance allows this module to be added to an existing current loop with little effect on loop impedance.

The trip settings may be set to within 1% using the monitor points provided on the front of the unit. This feature allows the trip points to be adjusted while the unit is installed without requiring the input signal to be varied.

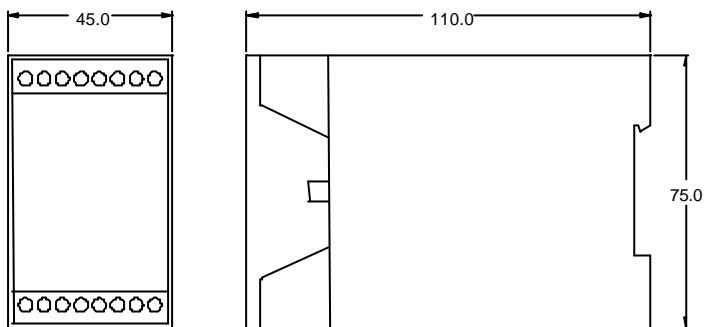
The high power change-over relay contacts allow up to 250Vac circuits to be switched directly.

The Omniterm TTB also incorporates a fail-safe wire break detection. When the unit is operated with normally energised output relays, then the relays will de-energise if the input current falls below approximately 1mA, or input voltage drops below approximately 0.5V.

## FEATURES

- Two Independent Trip Relay Outputs
- 250Vac (30Vdc) 5Amp contact rating
- 0-20mA and 0-10V Inputs
- Monitor points for easy adjustment
- DIN Rail or surface mounting
- Change-over contacts on both relays





## Product Specifications

Unless otherwise stated, all specifications refer to Model C2465B

### Input

#### Voltage Input (applied to terminals 14+ and 16-)

Input Range	0.5 -12 Vdc maximum
Input Impedance	> 1 Mohm

#### Current Input (applied to terminals 14+ and 16-)

Input Range	0 – 25mA maximum
Input Range	65 ohms max (equivalent)

### Isolation

Input Isolation	Tested to 1500Vac Input to Power Supply
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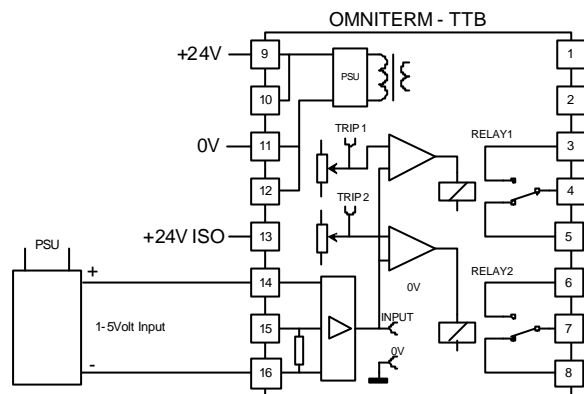
### Trip Relays

Number of Relays	2 (One per trip point)
High or Low setting	DIP switch settable to be energized above or below the setpoint.
Contact Configuration	SPDT (Form C ) per trip relay
Contact Rating	250Vac 30Vdc 5Amps (600VA max)
Contact Isolation Test/Operating Voltage	1500Vac Isolation 250Vac operating
Response Time	< 20ms for input change 10-90%

### Setpoints

Number of Setpoints	2 ( One for each Relay)
Settable Range	2 to 21 mA for current inputs 0.5 to 10.5V for voltage inputs
Repeatability	< 0.1%
Monitor Point Accuracy	< 1 %
Deadband	Approx 1 %





**Example 3: TTB Input from an independent 1-5V source**

Temperature Drift	< 10ppm of span/ °C
Fail-safe Wire Break Feature	If the trip relays are set to "Normally Energised" , then the output relays will de-energise if the input falls below the fail-safe threshold.
Fail-safe Wire Break Threshold	< 1 mA for current inputs < 0.5 Volts for voltage inputs

### Indicator LED's

Power On LED	Green LED on while unit is powered
Trip Indicator LED's	Two Red LED's (one per trip) DIP Switch settable to be ON above or below the setpoint.

### Power Supply

Supply Voltage	24V – 15% / +25% (20-30Vdc)
Current Consumption	130mA max. at 30Vdc

### Environmental Conditions

Operating/Storage Temperature	- 10°C – 60°C (+14°F – 140°F)
Storage Temperature	-25° - 85°C (-13°F – 185°F)

### Compliance with Standards

Safety	EN 60950:1995
Emissions	EN 55011;EN50081-2:1994 Grp I, Cl A; EN50082-2
Immunity – ESD & RF Fields	IEC 61000-4-2:1995, Lvl 3; IEC 61000-4-3:1995, Lvl 3
Immunity – Fast Transients	IEC 61000-4-4:1995: 2 kV - DC power; 1 kV - I/O lines
Insulation	Basic Insulation between isolated circuits per IEC60950
Insulation Test Voltage	Input/Output/Supply 100% tested to 2500Vac
Functional Safety to IEC 61508	Suitable for use in SIL1 applications.. See Separate Reliability Datasheet RDC2465.

### Mechanical

Dimensions (W x H x D)	45mm x 75mm x 110mm
Mounting	DIN Rail EN5022-35 or screws to vertical surface
Housing	Shock resistant ABS
Flammability	UL94-HB (housing) UL94-V0 (terminals)
Terminal/ Wire Size	0.14 – 2.5mm <sup>2</sup> stranded
Weight	Unpacked 160g approx.; Packed 200g approx.



CONFIGURATION INSTRUCTIONS

The unit can be configured before or after installation. Configuration is performed using a digital voltmeter (DVM) and a trimming flat-blade 2mm screwdriver, using the monitor sockets in the front of the module.

To configure Omniterm TTB, ensure that the unit is powered. In the workshop, apply 24Vdc to terminals 9(+) or 10(+) and 11(-) or 12(-).

Connect a multimeter set to Volts to Test points on the front panel marked '0V' and 'Mon1' to set Trip1 level. The measured voltage is in the range 0-10V for the signal range 0-100%.

Connect a multimeter set to Volts to Test points on the front panel marked '0V' and 'Mon2' to set Trip2 level. The measured voltage is in the range 0-10V for the signal range 0-100%.

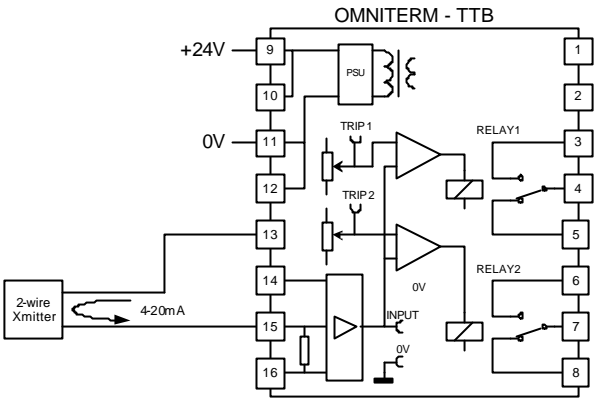
User settable "DIP" switches (accessible on the side of the unit) allow configuration of high/low set-points, and the state of the LED's (on/off above the set-point).

The input signal may be monitored without interfering with the system wiring using the Input monitor points marked '0V' and 'Input' (when used with 0/4-20mA inputs, the monitor point reads 0/2-10Volts).

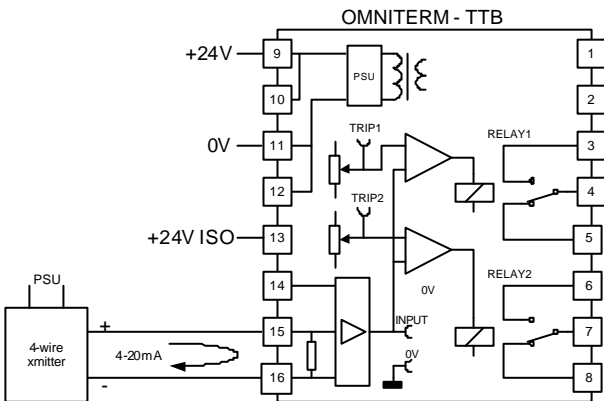
TRIP OUTPUT OPTION SETTINGS

<div><div><div>1234</div><div>ON</div></div><div>Output Settings</div><div>DIP switch located on side of module</div></div>	DIP switch	1	2	3	4
	Function	Trip 1 Relay	Trip 1 LED	Trip 2 Relay	Trip 2 LED
	OFF (up)	Energised above setpoint	ON above setpoint	Energised above setpoint	ON above setpoint
	ON (down)	Energised below setpoint	ON below setpoint	Energised below setpoint	ON below setpoint

APPLICATION EXAMPLES



Example 1: TTB Input from a two-wire current transmitter



Example 2: TTB Input from an independent 4-20mA current loop

