OMNITERM TTB Dual Trip Amplifier

Model C2465B - 24Vdc powered, 4-20mA or 0-10Vinput, Dual Trip Amplifier.

DATASHEET

- Two Independent Trip Relay Outputs
- 250Vac (30Vdc) 5Amp contact rating
- 0-20mA and 0-10V Inputs
- 24Vdc powered
- Monitor points for easy adjustment
- DIN Rail or surface mounting
- Normally Energised/De-energised relays
- Change-over contacts on both relays
- Fail-safe Wire Break detection

OVERVIEW

The OMNITERM TTB dual Trip Amplifier is designed for the widest range of applications in a single off-the-shelf product.

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

The OMNITERM TTB's 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. This allows the TTB module to be connected to any existing loop, without fear of common mode problems.

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.

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 point provided on the front of the unit. (When used with 0/4-20mA inputs, the monitor point reads 0/2-10Volts).

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. This protects machinery from wire breaks by causing a trip if the input goes low as a result of a wire break.

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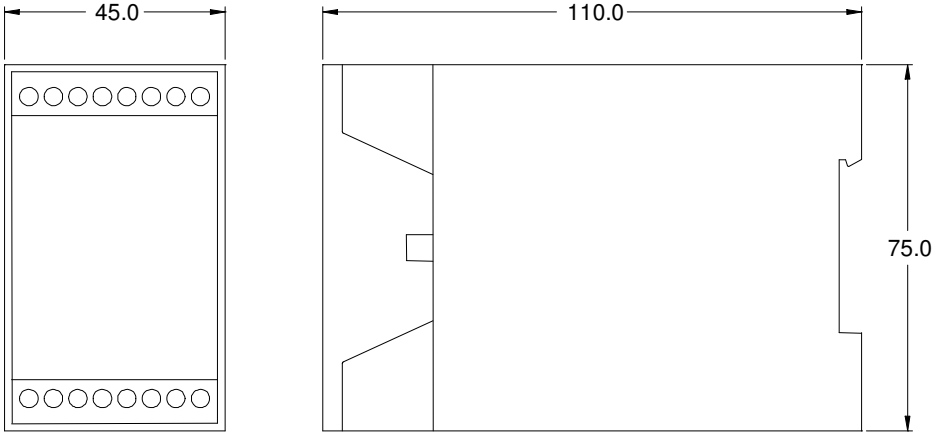
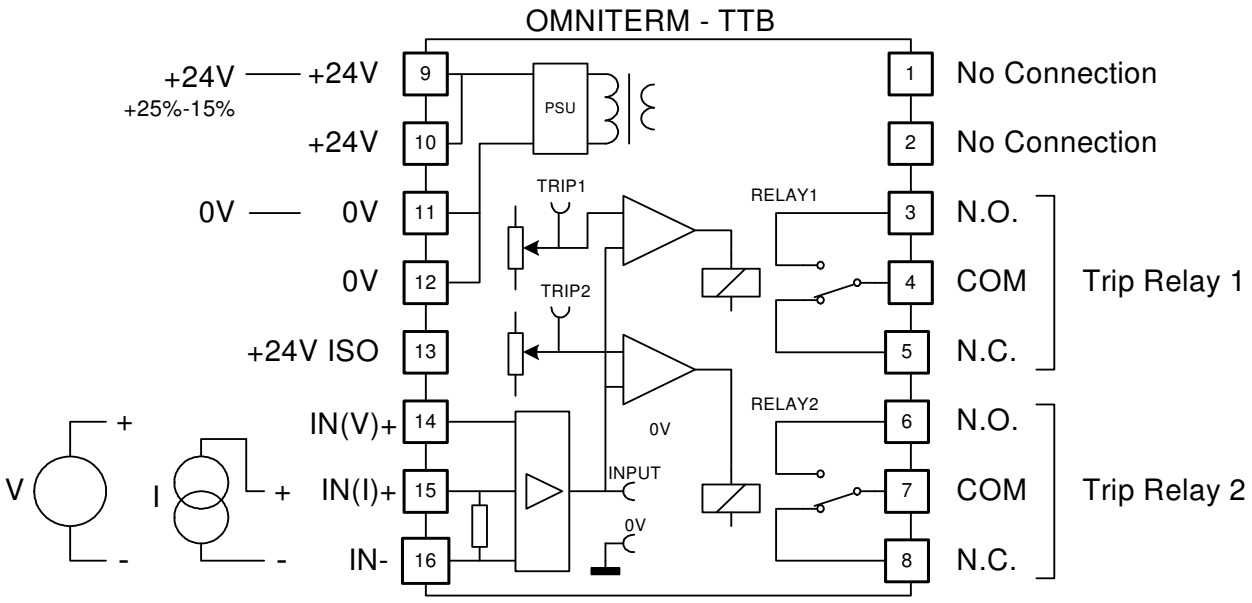
Mechanical Details



Electrical Connections



(Relay contacts shown with relays de-energised)

TRIP OUTPUT OPTION SETTINGS

	DIP switch	1	2	3	4
1 2 3 4 ON Output Settings DIP switch located on side of module	**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

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Specifications

Input

VOLTAGE INPUT (applied to terminals 14+ and 16-)	
Input Range	0.5-12Vdc maximum
Input Impedance	>1Mohm
CURRENT INPUT (applied to terminals 15+ and 16-)	
Input Range	0-25mA maximum
Input Impedance	65 ohms max (equivalent)
ISOLATION	
Input Isolation	Tested to 1500Vac Input to Power Supply

Trip Relays

Number of relays	2 (One per trip point)
High or Low setting	DIP switch settable to be energised 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 21mA for current inputs 0.5 to 10.5Volts for voltage inputs
Repeatability	<0.1%
Monitor point accuracy	<1%
Deadband	Approx. 1%
Temperature Drift	< 100ppm 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	< 1mA for current inputs < 0.5Volts 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	24 Volts –15% / +25% (20-30Vdc)
Current Consumption	130mA max. at 30Vdc

Environmental Conditions

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

Compliance with Standards

Safety	EN 60950:1995
Emissions	EN 55011 EN50081-2:1994 Group I, Class A EN50082-2
Immunity – ESD	IEC 61000-4-2:1995, level 3
Immunity – RF Fields	IEC 61000-4-3:1995, level 3
Immunity – Fast Transients	IEC 61000-4-4:1995 2 kV – DC power port 1 kV – input/output lines
Insulation	Basic Insulation between isolated circuits per IEC60950
Insulation Test Voltage	Contacts/Supply 100% tested to 1500Vac
Function Safety to IEC61508	Suitable for USE in SIL1 applications. See Seperate Reliability Datasheet RDC2465

Mechanical

Width	45mm
Height	75mm
Depth	110mm
Mounting	Snaps on to DIN rail EN50022-35 Or screws to vertical surface
Housing	Shock resistant ABS
Flammability	UL94-HB (Housing) UL94-V0 (Terminals)
Terminal/wire size	0.14 – 2.5mm^2 stranded

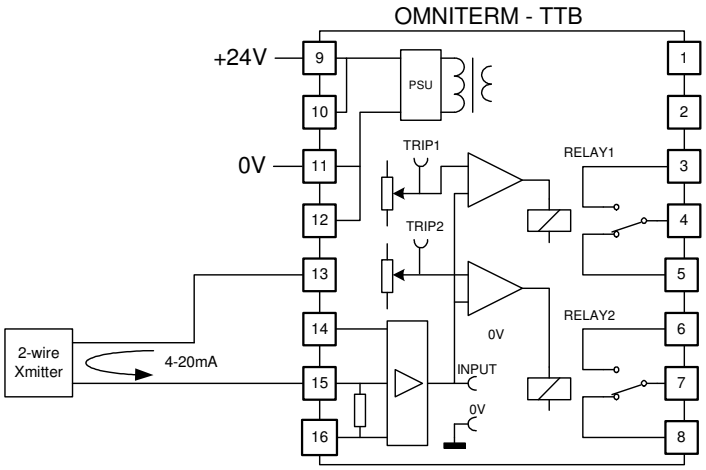
Weight

Unpacked	160gm approx.
Packed	200gm approx.

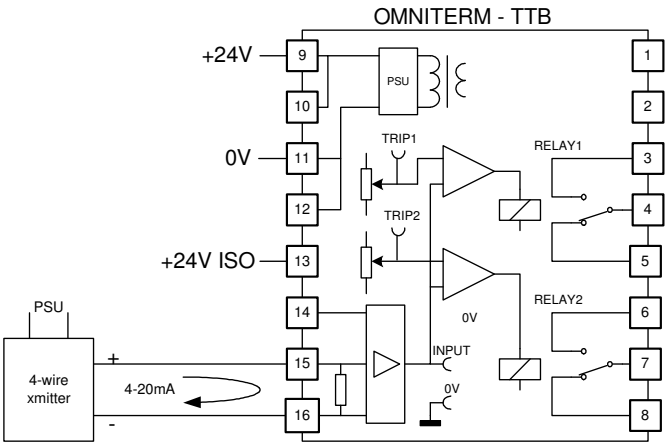
Ordering Information

ORDER CODE	DESCRIPTION
C2465B	Omniterm TTB Dual Trip Amplifier

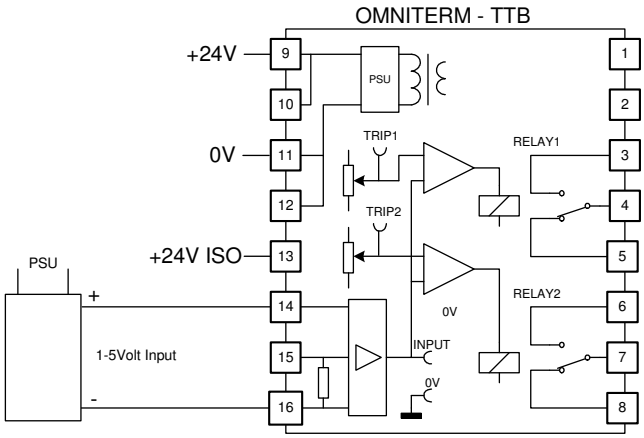
Application Examples



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



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



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