



OMNITERM THT Frequency Input Trip & Transmitter

Models C2469B Frequency Input Dual Alarm/Trip Module with Transmitter Output.

DATASHEET

- Accept Pulses from contacts, NPN, PNP or 'N' type proximity Switch Inputs
- Two Independent Alarm/Trip Relay Outputs
- 2A / 30Vdc contact rating
- 0-20mA / 0-±10V / 0-±10mA universal output
- 24Vdc powered
- Three port isolation to 1500Vac
- Software configurable



Features

- DIN Rail or surface mountable
- Narrow 45mm module width
- 20 - 30V dc powered.
- 1500Vac Isolation Input/Output/Power Supply
- Output overload Indicator
- User friendly configuration software
- Wide operating temperature range
- Crystal controlled accuracy
- Special function options included as standard
- Designed to meet IEC 61508 SIL1 criteria.

OVERVIEW

The OMNITERM THT Frequency input Dual Trip Module with additional Transmitter Output accepts a periodic or pulse wave-form signal such as from a proximity detector used to detect rotational speed, and provides two speed alarms/trips as well as an analogue output signal relative to frequency. This module uses advanced state-of-the-art digital measurement techniques, combined with extremely user friendly software configurability for best ease of use without factory required setup when ordering. The input will accommodate pulses from dry contacts, open collector transistor outputs (NPN or PNP) and Namur standard 'N' type proximity sensors.

This module has both Analogue transmitter output as well as two alarm/trip relay contacts.

The analogue output can be configured for unipolar or bipolar outputs of current or voltage from ±1mA to ±10mA; 0-20mA; or ±1V to ±10V.

Full isolation (input/output/power supply) to 1500Vac ensures trouble-free accurate measurement.

This product provides extremely low life-cycle costs by reducing spares stock-holding requirements, and

reducing specialist technical expertise required for field support, module replacement and field configuration. This new holistic approach to instrumentation asset management ensures reliable performance and minimal down-time.

Using sophisticated digital filtering techniques, the THT offers 16 bit frequency measurement.

CONFIGURATION MANAGEMENT

The powerful but intuitive configuration software ensures the maximum instrument flexibility with reliable configuration management to ensure all instruments on the plant are always correctly configured to the design requirements specification.

HIGH RELIABILITY

This product has been designed with high reliability applications in mind. The output stage has built in overload indication to detect overloaded output circuits – whether from a wire break or just excess resistance in the line.

This product has been designed to meet the criteria of IEC61508 for SIL1 applications.

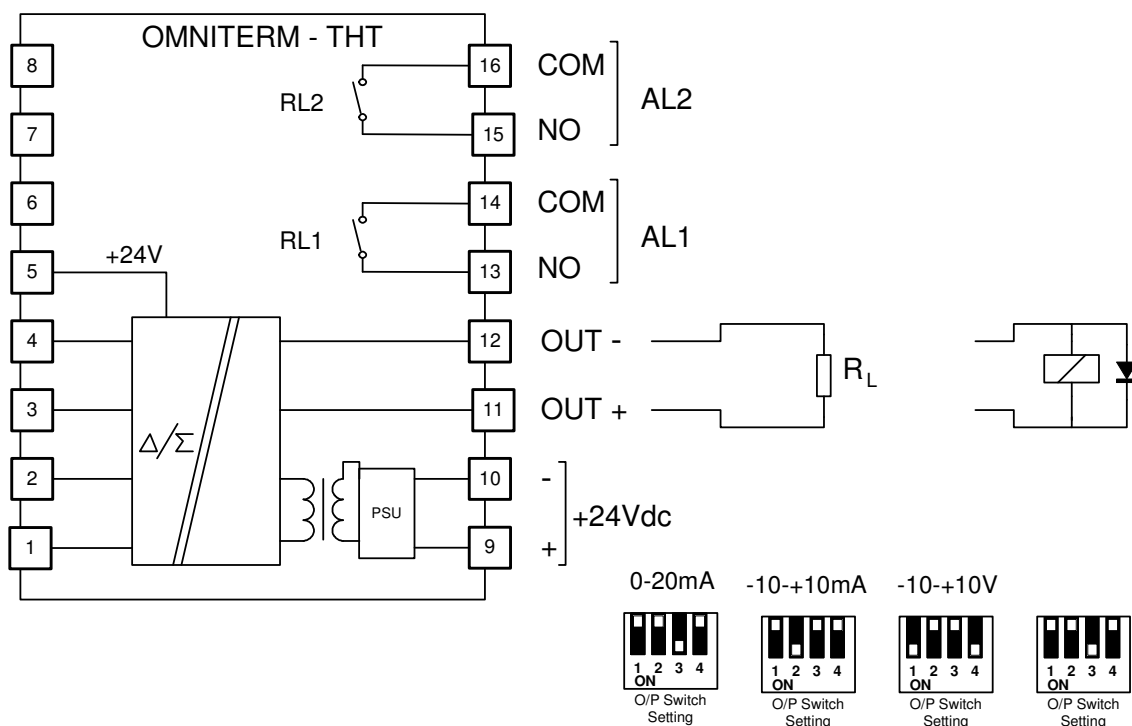
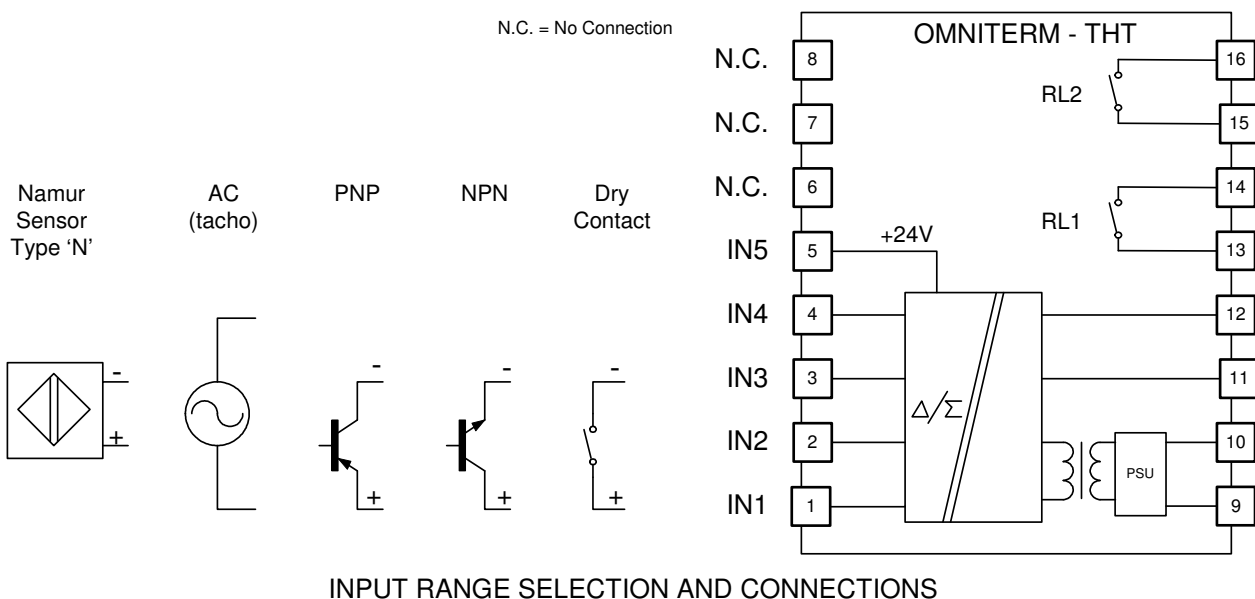




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Electrical Connections

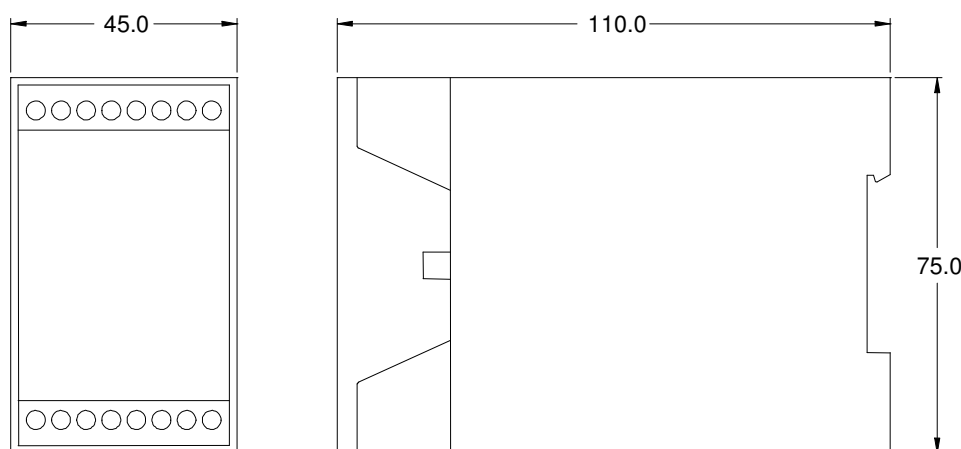




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Mechanical Details



Specifications

Input

Number of Inputs	1
Frequency Range and resolution (Software Configurable)	SLOW: 0.00 – 320.00 Hz MEDIUM: 0.0 – 3,200.0 Hz FAST: 0 – 32,000 Hz

Contact Input (including NPN and PNP connections)

Open Circuit Voltage	8 Volts typical
Short Circuit Current	1 mA typical
Input Impedance	10 kOhm nominal

AC Signal Input

Input Impedance	5kOhms
Minimum Signal Level	0.5Vrms (1.4V pk-pk)
Maximum Signal Level	21Vrms (60Volts pk-pk)

Namur (Type 'N') Proximity Sensor Input

Open Circuit Voltage	8 Volts typical
Short Circuit Current	8 mA typical
Input Impedance	1 kOhm nominal

Analogue Output

Output Types and Ranges

VOLTAGE

Output Voltage Max. Range	-10 – +10V max (min span 1V)
Load Resistance	≥1kOhm

UNIPOLAR CURRENT

Output Current Max. Range	0 – 20 mA (min span 1mA)
Load Resistance	≤1kOhm

BIPOLAR CURRENT

Output Current Max. Range	-10 – +10 mA (min span 1mA)
Load Resistance	≤1kOhm

PULSE

Pulse Rates available	Low Range: 100-1000 pulses/hr (pulse output width 500ms) High Range: 1000-10000 pulses/hr (pulse output width 60ms)
Transistor switched output	20V min; 30V max. designed to operate with a 24V relay or equivalent.
Load Resistance	≥ 860 ohms

Accuracy

Initial Error	<0.1%
Non-linearity	<0.1%
Temperature Drift	< 150ppm/°C

Selectable Computation Functions

1. Signal Inversion
2. Integration output pulses instead of analogue output

Alarm/Trip Relay contacts

Number of relays	2 (One per alarm/trip point)
High or Low setting	Configurable to be energised above or below the setpoint.
Rate-of-Change Alarms	Fast (per second) Slow (per minute)
Contact type	SPST (Form A) per relay
Contact Rating	2A 30Vdc ; 0.5A 250Vac
Contact Isolation	1500Vac Isolation
Test/Operating Voltage	250Vac operating.
Response Time	<20ms for input change 10-90%

Alarm/Trip Setpoints

Number of setpoints	2 (One for each Relay)
Settable Range	Full span of the instrument
Repeatability	<0.1%
Deadband	Settable 0.1 to 100%%



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Indicator LED's

OK LED (Green)

ON Steady	Unit is powered and operating correctly
Single Flash every second	Input Fault.
Double Flash every second	Analogue Output Fault
Triple Flash every second	Configuration Fault.

AL1 and AL2 Alarm/Trip indicator LED's (Red)

AL1 ON Steady	ON when relay RL1 is energised.
AL2 ON Steady	ON when relay RL2 is energised.

Alarm Contact Outputs

Quantity	2
Type	Form A
Source	From AL1 & AL2 Alarm setpoints
Terminal/wire size	0.14 – 2.5mm ² stranded

Power Supply

Supply Voltage	24 Volts –15% / +25% (20-30Vdc)
Current Consumption	80mA plus output current

Configuration

Output Type	Field selectable via 4 way DIP switch (Accessed from bottom of module)
Range	Field selectable via programming port on front of unit with the aid of a PC and configuration software package.

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 IEC950
Insulation Test Voltage	Input/Output/Supply 100% tested to 1500Vac
Functional Safety to IEC61508	Suitable for use in SIL1 Applications. See separate Reliability Datasheet RDC2469

Mechanical

Width	45mm
Height	75mm
Depth	110mm
Mounting	Snap 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	170gm approx.
Packed	210gm approx.

Ordering Information

ORDER CODE	DESCRIPTION
C2469B-0	Omniterm THT Dual Trip & Transmitter
ACCESSORIES	
C1168	Omniflex Miniature Jack Programming Cable.