WEIGHT

Weights for various T2750 hardware configurations are shown below.

Hardware Configuration	Weight
0-module backplane (including controller module) or 4-way backplane	0.7kg (1.54 lb)
4-way backplane (with controller module and 4 × I/O modules)	1.65kg (3.64 lb)
8-way backplane without modules	0.98kg (2.16 lb)
8-way backplane with controller module and 8 × I/O modules	3.1kg (6.83 lb)
16-way backplane without modules	1.6kg (3.53 lb)
16-way backplane with controller module and 16 × I/O modules	5.24kg (11.55 lb)

Manufactoring Address

Eurotherm Limited (Head Office)
Faraday Close
Durrington
Worthing, West Sussex
BN13 3PL   U.K
Tel. (+44) 1903 263333 https://www.eurotherm.com

Eurotherm Automation SAS
6 Chemin des Joncs - CS 20214
Dardilly cedex
Lyon, 69574
France

SD CARD PRECAUTIONS

The SD card is a high capacity (SDHC) card which may not be accessible via older SD card readers. Files and System folders must not be deleted. The card must not be removed from a reader without the correct removal procedure being followed. If these rules are not adhered to, the card may be damaged resulting in an instrument malfunction.

MODULE TASK RATES

Type	Description	Standard (110ms)	Fast (10ms)
AI2	Analogue I/P 2 channels	Yes	No
AI3	Analogue I/P 3 channels	Yes	No
AI4	Analogue I/P 4 channels	Yes	No
AI8	Analogue I/P 8 channels	Yes	Yes*
AO2	Analogue O/P 2 channels	Yes	Yes
DI4	Digital I/P 4 channels (logic)	Yes	Yes
DI8_LG	Digital I/P 8 channels (logic)	Yes	Yes
DI8_CO	Digital I/P 8 channels (contact closure)	Yes	Yes
DI6_MV	Digital I/P 6 channels (ac mains input, 115V RMS)	Yes	No
DI6_HV	Digital I/P 6 channels (ac mains input, 230V RMS)	Yes	No
DI16	Digital I/P 16 channels (logic/contact closure)	Yes	No
DO4_LG	Digital O/P 4 channels (10mA)	Yes	Yes
DO4_24	Digital O/P 4 channels (100mA)	Yes	Yes
DO8	Digital O/P 8 channels	Yes	Yes
DO16	Digital O/P 16 channels	Yes	Yes
RLY4	Relay O/P 4 channels (3 n/o, 1 change over)	Yes	Yes
RLY8	Relay O/P 8 channels (n/o)	Yes	Yes
FI2	Frequency I/P 2 channels	Yes	Yes
ZI	Zirconia I/P 2 channels	Yes	No

*AI8-FmA variant uses fast (10ms) polling rate only; other AI8 variants use standard rate (110ms) only.

China RoHS Compliance - T2750

A12, AI3,AI4,AI8,AO2,DI6,DI8,DI16,DO4,DO8,FI2,RLY4,RLY8,ZI,T2750 IOC,T2750 backplane

部件名称 Part Name	有害物质 - Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal parts	X	O	O	O	O	O
塑料部件 Plastic parts	O	O	O	O	O	O
电子件 Electronic	X	O	O	O	O	O
触点 Contacts	O	O	X	O	O	O
线缆和线缆附件 Cables & cabling accessories	O	O	O	O	O	O

本表格依据SJ/T11364的规定编制。
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

This table is made according to SJ/T 11364.
O: indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.
X: indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572.

Contact Information
Scan for local contacts

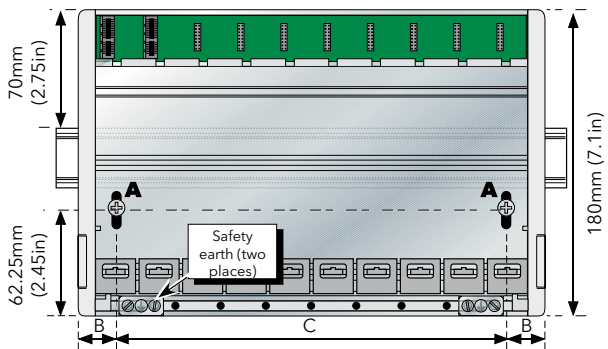https://www.eurotherm.com/contact-us/

⚠ **WARNING: This product can expose you to chemicals including lead and lead compounds which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: https://www.P65Warnings.ca.gov**

Eurotherm.
by Watlow

T2750 Eurotherm PAC
Installation and Wiring Instructions

The T2750 is a modular system which can provide multi-loop PID control, analogue and digital I/O, signal conditioning and computational blocks using a variety of plug-in modules.

The instrument consists of a base unit, into which a number of terminal units are fitted, each of which has an associated module plugged into it. The base unit is fitted with one or two input/output controller (IOC) modules and up to 16 input or output (I/O) modules.

The IOC module contains system configuration and communications support. The integral SD card contains strategy and database information, so if it becomes necessary to replace an IOC, moving the SD card from the old module to the new one allows the new module to be fitted with minimum disturbance to the system.

The terminal units, which are specific to module type provide connectors for the termination of user wiring. The terminal units also provide interconnections between I/O modules and the IOC.

The I/O Modules, which clip into the terminal units, are dedicated to specific analogue or digital, inputs or outputs.

A suitable Power Supply is the DINPSU available as 1.3, 2.1, 5.0, or 10.0 amp units. Refer to the User Guide (HA030047) for power consumption figures.

WATLOW.
Powered by Possibility

MECHANICAL INSTALLATION

Base type	Dimension B	Dimension C	Depth
0-modules	22.5mm (0.8in)	26mm (1.02in)	All base types: 132mm (5.2in) (cover opening clearance: 160mm (6.3in)
4-modules	22.5mm (0.8in)	127.4mm (5.02in)	
8-modules	22.5mm (0.8in)	229mm (9.02in)	
16-modules	22.5mm (0.8in)	432.2mm (17.02in)	

DIN RAIL MOUNTING

Horizontally mounted symmetrical DIN rail to EN50022-35X7 or EN50022-35X15 should be used.

1. Mount the DIN rail horizontally, ensuring that it makes good electrical contact with the enclosure. Use a safety earth strap if necessary.

2. Using a suitable Pozidriv screwdriver, loosen screws ('A' in figure 1) in the base, and allow them, and their associated base retention clips to drop to the bottom of the screw slot.

3. Fit the instrument onto the top edge of the DIN rail, and use the screwdriver, to slide the screws (A) and associated clips upwards, as far as they will go towards the top of the screw slots.

4. Ensuring that the angled edge of the base retaining clips locate behind the bottom edge of the DIN rail, tighten screws 'A'.

DIRECT PANEL MOUNTING

Remove screws ('A') and their associated base retention clips.

1. Hold the base horizontally on the panel and mark the position of the two holes on the panel (for centres, see figure 1, above).

2. Drill two 5.2mm holes in the panel.

3. Using M5 bolts, nuts and washers, secure the base to the panel, ensuring that it makes good electrical contact with the enclosure. Use a safety earth strap if necessary.
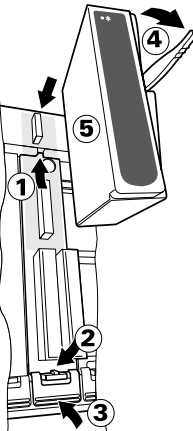
TERMINAL UNITS

1. Locate the lug at the upper edge of the terminal unit into the slot in the base (1).

2. Press on the lower end of the Terminal Unit until it 'clicks' into place. (2)

To remove a terminal unit, press the retention clip (3) to release the Terminal Unit and withdraw it from the slot in the Base Unit.

IO MODULES

1. Open the Retaining lever on the face of the module (4).

2. Insert the module (5), ensuring that it engages with the backplane and terminal unit connectors.

3. Once secure, close the retaining lever.

To remove a module, open the retaining clip and pull the module out of the base unit.

IOC MODULES

To insert the module, press it into place, ensuring that it engages with the backplane and terminal unit connectors. Use a 3mm flat-blade screwdriver to rotate the 1/4 turn fastener clockwise. Use the opposite procedure to remove the module.

INSTALLATION CATEGORY AND POLLUTION DEGREE

This product conforms with UL61010 and BS EN61010 installation category II and pollution degree 2. These are defined as follows:

Installation category II: The rated impulse voltage for equipment on nominal 230V ac mains is 2500V.

Pollution degree 2: Normally, only non-conductive pollution occurs. However, occasionally a temporary conductivity caused by condensation shall be expected.

EQUIPMENT & PERSONNEL PROTECTION

1. The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure.

2. Separate or redundant control paths must be provided for critical control functions.

3. System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.

4. Each implementation of this equipment must be individually and thoroughly tested for proper operation before being placed into service.

PERSONNEL

Installation must be carried out only by qualified personnel.

ENCLOSURE OF LIVE PARTS

To prevent hands or metal tools touching parts that may be electrically live, the unit must be installed in an enclosure.

BLANK TERMINAL UNIT

Base units are supplied to hold, zero, eight (max.) or 16 (max.) modules. If the base unit is not fully populated, a blank terminal unit, Part no. 026373, must be fitted immediately to the right of the last module, in order to maintain IP20 rating.

WIRING

WARNING: LIVE SENSORS

The unit allows operation with temperature sensors connected directly to electrical heating elements. It must be ensured that nobody touches such connections whilst the connections are 'live'. Cables, connectors and switches for connecting 'live' sensors must be mains rated.

The unit must be connected in accordance with the wiring data given in this instruction sheet. Particular care must be taken not to connect AC supplies to low voltage inputs and outputs. Copper conductors must be used for all connections except for thermocouples.

Wiring must comply with all local wiring regulations e.g. IEEE wiring regulations (BS7671) or NEC Class 1 wiring methods.

POWER ISOLATION

The installation must include a power isolating switch or circuit breaker. This device should be in close proximity (<1 metre) to the unit, within easy reach of the operator and marked as the disconnecting device for the instrument.

EARTH LEAKAGE CURRENT

Earth leakage currents of up to 3.5mA may exist due to RFI filtering. This may affect the design of an installation of multiple units protected by Residual Current Device (RCD) or Ground Fault Detector (GFD) circuit breakers.

OVER CURRENT PROTECTION

It is recommended that the dc power supply to the system is fused appropriately to protect the cabling to the unit. The instrument includes a fuse within the IOC module to protect the supply from a fault within the unit. Should this fuse rupture the IOC module must be returned to the supplier for repair.

VOLTAGE RATING

The maximum continuous voltage applied between any of the following terminals must not exceed 300V RMS and dc:

1. DI6 input or RLY4/RLY8 relay output to logic, dc or sensor connections;

2. Any connection to ground

The unit must not be wired to a three-phase supply with an unearthed star connection. Under fault conditions such a supply could rise above 300VRMS or dc with respect to ground and the unit would not be safe.

CONDUCTIVE POLLUTION

Electrically conductive pollution must be excluded from the enclosure in which the unit is mounted. To secure a suitable atmosphere in conditions of conductive pollution, an air filter must be fitted to the air intake of the enclosure. Where condensation is likely, a thermostatically controlled heater should be installed in the enclosure.

INSTALLATION REQUIREMENTS FOR EMC

The earthing strip at the lower edge of the backplane also provides termination facilities for EMC, cable screens, etc.

To ensure compliance with the European EMC directive observe the following precautions.

For either DIN rail or direct panel mounting, the backplane must be in good electrical contact with the grounded metal (aluminium or steel) sheet which is part of the enclosure. If this contact is not possible, connect both ends of the DIN rail or both safety earth connections at the ends of the backplane to the enclosure by two substantial earth braids (10mm x 2mm) not more than 100mm in length.

If these connections are not practical, clip ferrite clamps over the input leads as near the terminal unit connector as possible. Several input pairs may be inserted through a single clamp. Clamps should have a minimum 200Ω impedance at 100MHz. A suitable clamp is Richco MSFC 13K.

For general guidance refer to EMC Installation Guide, Part no. HA025464. If using relay outputs it may be necessary to fit suitable filters depending on the type of load.

This unit should not be wired as part of a dc distribution network.

SYMBOLS

The following symbols may appear on the unit or its labelling.

⚠ Refer to the user guide for instructions.

⏚ Protective conductor terminal (safety earth).

⚠ Precautions against electrostatic discharge must be taken before handling this unit or any electronic component of it.

Ⓡ This unit is RoHS compliant.

♺ For environmental reasons, this product must be recycled before its age exceeds the number of years shown.

Underwriters Laboratories listed mark for the US and Canada.

CE This unit is CE compliant.

RCM. **R**egulatory **C**ompliance **M**ark for Australia and NZ.

⚠ Risk of electric shock.

POWER SUPPLY SPECIFICATION

Supply voltage: 24 Vdc ± 20%.
Reverse polarity protected

Power consumption: 82 W max, per base.

Note: The instrument will be damaged if a supply voltage exceeding 30V is applied.

EARTHING

Safety (protective earth) conductor

The equipment must not be operated without a protective earth conductor first being connected to one of the earth terminals on the base unit. The earth cable should have at least the current rating of the largest power cable used to connect to the unit.

Safety (protective earth) conductor (cont'd)

To connect the protective earth, a copper eyelet should be used with the screw and washer supplied with the base unit, tightened to a torque of 1.2Nm (10.6lbin).

NETWORK SETTINGS (IP ADDRESS AND LIN PROTOCOL NAME AND ADDRESS)

Each LIN instrument must have a LIN protocol name and address, and an IP address in order to be able to fully communicate.

This section describes how to set the IP address and LIN protocol name. The LIN address is set via switch SW1 on the IOC Terminal Unit (refer to the **IOC Terminal Unit Switches and Connectors** section overleaf).

Default Network Settings

When despatched from the factory, the instrument is configured to use DHCP with Link-Local fallback. This is the equivalent to a Windows PC network port being configured to obtain an IP address automatically.

The default LIN protocol name is NET. This is the same LIN protocol name used by default by the LIN port on your Windows PC running Eurotherm PAC software. Use the **LIN Ports Editor** in your PC's Control Panel to modify this.

IP Address Allocation Methods

The T2750 supports the following IP address allocation methods:

DHCP: A DHCP server is required that is configured to respond correctly to the request from the instrument. This configuration depends on the local company network policy.

BOOTP: A BOOTP server is required that is configured to respond correctly to the request from the instrument. This configuration depends on the local company network policy.

Link-Local: Used as a fallback to either DHCP or BOOTP, or it can be used on its own as the only IP Address configuration method. Link-Local always assigns an IP Address in the range 169.254.X.Y.

Manual: This requires the IP Address to be explicitly defined.

EDITING NETWORK SETTINGS

In order to change the network settings it is first necessary to establish communications to the instrument from a PC running Eurotherm PAC software. In order to do this, you must know the current network settings of the T2750 and adjust the PC to match. If this is a new T2750, the settings will be as noted in **Default Network Settings** above. If using the DHCP or Link-Local method of communication, ensure the PC's network port is configured to obtain an IP address automatically.

Connect the T2750 and PC running Eurotherm PAC software to the same network, and then perform the following steps:

1. Run the LIN **Network Explorer** tool located in the Start menu. The connected instruments should display.

2. Expand the tree-view for the instrument to be configured and browse to the instrument's E: drive.

3. Locate the **network.unh** file and drag the file to the PC desktop.

4. Double-click on the **network.unh** file copied to the desktop to launch the **Instrument Options Editor**. Select the appropriate Instrument Type and Version.

5. Select the **IP** tab, and edit the settings accordingly.

6. If you wish to change the default LIN protocol name (from NET), select the **LIN** tab and enter a new name.

7. Click the **Save** button and select **No** to the offer to download the new settings to the instrument.

8. Drag the **network.unh** file from the desktop back to the instrument's E: drive within the **Network Explorer** tool. Overwrite the existing version on the instrument.

Power cycle the T2750 for the changes to take effect. Adjust the PC's network configuration to match the new settings.

RECOVERY FROM AN UNKNOWN IP ADDRESS CONFIGURATION

To recover from an unknown ip address configuration, refer to the section titled, Recovery from an Unknown IP Address Configuration, in the T2750 User's Guide (HA030047).

IOC TERMINAL UNIT SWITCHES AND CONNECTORS

Supply wiring

The following figure shows wiring details for supply and battery wiring and watchdog relays.

These drawings show some connector numbers moved or omitted for clarity

Fuse 4A Type T (each PSU)

Supply validity can be monitored via the P1PwFail and P2PwFail status bits in the LINtools TACTICIAN header block.

'C' terminals commoned   'P1' terminals commoned
'P2' terminals commoned   'P1' Diode OR'd with 'P2'

Note: Power must be applied to both the P1 and P2 terminals by either two separate power supplies (for redundancy), or linked.

Switches

LIN address and LIN option switches are located on the terminal unit for the IOCs as shown in the following figure.

LIN ADDRESS

As an example the figure above shows switch settings for LIN addresses of 7A (primary) and 7B (secondary).

LIN OPTIONS SWITCH

This switch allows the Hot/Cold start, and watchdog retry strategies to be defined. Hot/Cold start settings are shown in table 2 below. Full definitions of 'hot start' and 'cold start' are to be found in section 4 of the user guide HA030047.

Setting the Watchdog retry switch to 'On' means that the instrument will attempt to restart after a watchdog failure. If set to 'Off' then the instrument must be restarted manually.

HS	CS	Definition
Off	Off	Automatically generate a new database at each start up
Off	On	Attempt cold start. Halt if unsuccessful
On	Off	Attempt hot start. Halt if unsuccessful
On	On	Attempt hot start. If unsuccessful, attempt cold start. Halt if unsuccessful

USB Connector (Con 9)

The USB connector is located between the power connectors and the battery / watchdog relay connectors as shown above. USB hardware / Software status LEDs are located at the front of the IOC module.

Modbus connectors (Con 5, Con6)

These are a pair of RJ45 connectors located as shown. The connectors are in parallel to allow simpler daisy chaining. If this is the last instrument on the communications link, a terminator should be fitted to the unused connector. Two links (Con 3 and Con 4) allow the user to select 3-wire or 5-wire EIA 485.

3-wire/5-wire selection

At both Con 3 and Con 4: Link pins 2 and 3 for 5-wire, or link pins 1 and 2 for 3-wire.

Must not be left open

Modbus terminator

120W (x 3)

Moulding colour black

PINOUT

The pinout for the Modbus communications connectors is given in table 3, below.

Pin	3-wire	5-wire
1	B	TxB
2	A	TxA
3	Com	Com
4	NC	NC
5	NC	NC
6	Com	Com
7	NC	RxB
8	NC	RxA

IOC MODULE

Ethernet comms port

This RJ45 connector is located on the underside of the IOC module. Pinout is given in table 4, below. For this instrument, Ethernet communications at 100 Mbps is supported.

Pin	Signal	Pin	Signal
1	Tx+	5	NC
2	Tx-	6	Rx-
3	Rx+	7	NC
4	NC	8	NC

Status LEDs

A number of LEDs are located on the front of the IOC module. Brief details are given below; full details appear in section 3 of the user guide HA030047.

✳	'Power on' indicator	⬚	Duplex/Simplex indicator
✘	Fault indicator	**Primary**	This is the primary module
⏚	Battery status	**Standby**	This is the secondary module
☏	Serial comms status	**USB**	USB activity fault indicators
IP	IP resolution status	🖧	Ethernet speed and activity indicators

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AI2 ANALOGUE INPUT MODULE

Thermocouple mV   Volts, mV (table 1)   mA (see note)   RTD, Potentiometer

Notes:
1. Shunt resistors (5Ω) for the mA option are mounted on the terminal unit.
2. When the InType Volts / mV is configured in an AI_UIO block, the HR_in and LR_in are used to select the most appropriate H/W range (HR_in/LR_in are in the units of the configured InType). Different H/W ranges have different input characteristics & sensor break options. Channel 2 has an extra high impedance range intended for zirconia probes which operates when HR_in/LR_in are in the range 0-1.8V (0-1800mV). Refer to the AI2 section of HA030047 - T2750 Eurotherm PAC Handbook for details.

Channel	Input range		Terminals
1	-150mV/-0.15V	to 150mV/+0.15V	A1(+) & C1
	-10000mV/-10V	to 10000mV/+10V	H1(+) & C1
2	-150mV/-0.15V	to +150mV/+0.15V	A2(+) & C2
	0mV/0V	to +1800mV/1.8V	A2(+) & C2
	-10000mV/-10Vdc	to +10000mV/+10V	A2(+) & C2

AI3 ANALOGUE INPUT MODULE

Notes:
1. Use the C/I terminals for externally powered inputs. Use the P/C terminals when using the module's internal supply.
2. The number of AI3 modules must be restricted such that the overall, steady-state power consumption of the all base modules does not exceed 24 Watts for 8-unit bases or 48W for 16-unit bases.

Ⓣ = 4 to 20mA transmitter

AI4 ANALOGUE INPUT MODULE

Thermocouple i/p   ±150mV i/p   mA i/p

Notes:
1. mV inputs can be converted to mA by placing 5Ω resistors across inputs
2. mA variants have integral 5Ω resistor fitted. Thermocouple or mV inputs will not operate correctly
3. '1-' is internally connected to '2-'; '3-' is internally connected to '4-'

AI8 ANALOGUE INPUT MODULE

Three different terminal unit variants are available for the four different variants of the AI8 module:

AI8-TC: 8 x thermocouple inputs (with cold junction) or 8 x voltage (mV) inputs
AI8-MA / A8-FMA: 8 x current inputs (standard & fast polling rate)
AI8-RT: 4 x platinum resistance thermometer (RTD) inputs

Thermocouple or mV

AI8-TC

---- · basic isolation between channel pairs.

Notes:
1. If thermocouple wiring needs to be extended, use the correct compensating cable and ensure that polarity is followed.
2. If sensor break is enabled (User Manual HA030047), it is not recommended to connect more than one input to a single source (e.g. thermocouple or mV) since this may compromise the measurement and sensor break action.
3. It is not recommended to connect additional instruments to a single input source.

mA / FmA   RTD

AI8-MA   AI8-RT

---- · basic isolation between channel pairs.   ---- · basic isolation between all channels.

Notes:
1. AI8-mA and AI8-FmA terminal units have integral 3.33Ω resistors fitted.
2. The FmA variant is labelled as AI8-FMA

Note:
Channel 4 shown for 2-wire RTD.

AO2 ANALOGUE OUTPUT MODULE

Volts, mA outputs

The standard voltage output range is 0V to 10V with a minimum load resistance (Rv) of 550 Ω. This can be increased to -0.3 V to +10.3 V by increasing the minimum load resistance to 1500 Ω.

For mA outputs, the maximum load resistance (Ri) is 550 Ω.

DI4 DIGITAL I/P MODULE

logic inputs   Contact inputs

To further modules

Notes:
1. Channel 1 shown; other channels similar.
2. Negative logic inputs can be connected by reversing the polarity of the input.
3. All 'C' terminals common.

DI6 DIGITAL I/P MODULE

115 or 230V RMS (as ordered); 47 to 64 Hz

DI8 DIGITAL I/P MODULE

logic inputs   Contact inputs

DI16 DIGITAL I/P MODULE

logic inputs   Contact inputs

Notes:
1. Channel 1 shown; other channels similar
2. 'C' terminals internally connected
3. 'P' terminals internally connected

DO4 DIGITAL O/P MODULE

Digital outputs

Fuse (4A)

Further modules

DO8 DIGITAL O/P MODULE

Digital outputs

Fuse (4A)

Further modules

For each module: Channel 1 shown; other channels similar; 'C' terminals internally connected; '+V' terminals internally connected.

CAUTION

To avoid overheating the connector, the daisy-chain current must not exceed 4 Amps.

DO16 DIGITAL O/P MODULE

Digital outputs

Fuse   Fuse

Choose fuses to suit overall load. Use slow-blow fuses capable of withstanding inrush currents of 30A for 100µS.

Channel 1 shown; other channels similar. 'C' terminals internally connected. ('P' terminals not internally connected).

Note: Any 'plant-side' power supply connected to a DO16 module must be capable of supplying an inrush current of 30A for 100µS.

ZI ZIRCONIA I/P MODULE

Zirconia probe high impedance input

Ch 1   Ch 2

Note:
Ch1: Thermocouple input
Ch2: Zirconia probe input

RLY4 RELAY O/P MODULE

Relay outputs

Fuse holders

Fuses protect terminals B1, B2, B3 and A4.

Relays shown de-energised

RLY8 RELAY O/P MODULE

Relay outputs

Relays 1 and 5 shown; other relays similar.

Basic isolation between all relays.

No internal snubber circuitry fitted.

FI2 FREQUENCY INPUT MODULE

CAUTION

If more than eight FI2 modules are fitted and if these have an average output channel load of more than 5mA each, then an external power supply must be used to power the transducers or the backplane tracking will be damaged.

Magnetic sensor i/p (note 1)   mV inputs (note 2)   mA inputs (notes 3 & 4)   Contact (PNP) or volt-free i/p (notes 5, 6 & 8)   Contact (NPN) or volt-free i/p (notes 5, 7 & 8)

Notes:
1. Set links to Voltage (position C) and the FI2 block 'InType' field to 'Magnetic'. 'Threshold' is internally configured.
2. Set links to Voltage (position C) and FI2 block 'InType' field to 'V'. If using the module supply to power a sensor, set 'PSU' to 8V, 12V, or 24V.
3. Set Links to Current (position B), the FI2 block 'InType' field to 'mA' and select the internal current burden resistor. When the internal burden resistor is selected the transducer must not exceed 12V. The block 'PSU' must be set to the requirements of the transducer, 8V, 12V.
4. The Terminal Unit includes an internal 1KΩ burden resistor. If using an external current burden resistor, connect it between 1+ and C1 (channel 1) or 2+ and C2 (channel 2). Set links to Voltage (position C), and the FI2 block 'InType' field to 'V'. The Threshold must be set to the midpoint between the peak to peak voltage across the burden. The block 'PSU' field must be set to the requirements of the transducer, 8V, 12V, or 24V.
5. Set Links to Contact (position A) and block 'InType' field to 'V'. Set the block PSU according to 8V for minimal temperature rise.
6. Set FI2 block 'Threshold' to 75% of output (V), i.e. 6V, 9V, or 18V.
7. Set FI2 block 'Threshold' to 25% of output (V), i.e. 2V, 3V, or 6V.
8. If using an external barrier, measure the peak-to-peak voltage and choose a midway threshold. Increase PSU setting in order to increase the span of the measured voltage, if required.

All configurations can apply a debounce value of 0 ms (off), 5 ms, 10 ms, 20 ms, or 50 ms, using an algorithm that ensures pulse edges closer together than the set time, are excluded. Debounce should always be 0 (off) for control loops using frequency inputs.

For Voltage (position C) or Current (position B) inputs, the Threshold must be set close to the midpoint of the peak-to-peak values of the input. This ensures good pulse detection, it guards against accidental detection of noise spikes and it ensures best repeatability. To prevent nuisance alarms, it may be necessary to disable the Sensor Break and Sensor Short Circuit detection ('Options.SBreak' and 'Options.SСct' fields in the associated FI_UIO block).

The Sensor Break alarm is set if the Input value falls below 0.05V or 0.05mA. The Sensor Short circuit alarms is set if the Input value rises above 91% of the output supply Volts (Volts or milliamps).

For NAMUR, Current (position B), must be set to 8V output supply, and 'Threshold' to 1.65mA. Sensor Break and Sensor Short circuit detection can be enabled, if required.

In all cases, the shielding of the cable should only be connected at either the encoder or T2750 end; never at both ends.

For further application information, refer to the T2750 User Guide (HA030047).

Link positions

Position A = Contact
Position B = Current
Position C = Voltage

Chan 1 = lower link
Chan 2 = upper link

IO MODULE TERMINATION DETAILS

The module terminals accept wire sizes from 0.20 to 2.5mm² (14 to 24AWG).

The screws should be tightened to 0.4Nm (5.3lbin.) using a 3.5mm flat blade screwdriver.

ISOLATION

---- · Basic insulation. This is defined as the insulation between conductive parts that is necessary only for the proper functioning of the equipment. This does not necessarily provide protection against electric shock.

——— Double Insulation. All I/O modules have double isolation, channel to system, 300V RMS and dc. This is defined as insulation between conductive parts, which provides protection against electric shock.