To comply with European EMC directive certain installation precautions are necessary:

- **Over-temperature protection:** If over-temperature protection is required the, condensation is likely, include a thermostatically controlled heater in the enclosure.
- **Conductive pollution:** Where it is recommended that the power supply to the system is fused appropriately to protect overcurrent protection in close proximity (1 meter) to the unit, in easy reach of the operator and marked as the protective Earth connection is ALWAYS fitted first and disconnected last. Wiring MUST be installed in an enclosure.
- **Over-voltage protection:** The installation must include a power isolating switch or circuit breaker. This should be (BS7671), and USA, NEC Class 1 wiring methods. Only use copper conductors for protective Earth connection, which will comply with all local wiring regulations, i.e. UK, the latest IEE wiring regulations and USA, SELV Class 1 and Class 2 wiring methods.

**Installation Safety Requirements**

Various symbols used on the instrument are described below:

- **Functional ground:** (ground-earth terminal)
- **Protective earth terminal**

**INSTALLATION CATEGORY AND POLLUTION DEGREE**

This unit has the degree of pollution as defined by the IEC 664-1 installation category 3 and pollution degree 2. These are defined as follows:

- **Installation category 3:** The rated impulse voltage for equipment on nominal 250 V ac is 2500 V.
- **Pollution degree 2:** Normally, only non-conductive pollution occurs. However, a conductivity caused by condensation must be expected.

**PERSONNEL**

Installation MUST only be carried out by qualified personnel.

**ENCLOSURE OF LIVE PARTS**

To prevent hazards or fatal touching parts that may be electrically live, the unit must be installed in an enclosure.

**WIRING**

It is important to connect the unit in accordance with the data on the sheet, ensuring the protective Earth connection is ALWAYS fitted first and disconnected last. Wiring MUST comply with all local wiring regulations, i.e. UK, the latest IEE wiring regulations (BS7671), and USA, NEC Class 1 wiring methods. Only use copper conductors for connections. Terminal marked (*T*) should be crimped for 0.5 mm² connections.

**POWER SUPPLY SPECIFICATION**

The unit has no servicable parts. Contact the supplier for repair.

**General**

This unit is intended for Industrial Temperature and Process Control applications, within the requirements of the European Directives on Safety and EMC.

**WARNING**

The Safety and EMC protection provided can be seriously impaired, if the unit is not used in accordance specified. If damage is not repaired the unit will not ensure the safety and EMC of the installation.

**Caution:**

- Electrostatic discharge always observe all electrostatic precautions before handling the unit.
- **Cleaning:**
  - Use isopropyl alcohol to clean labels. Laser labels will become lifeless of water or water based solutions will be used. Use a sticky solution to clean other exterior surfaces.
  - ROHS

**Notes**

- The terminal are isolated from the Digital I/O. If using shielded cables, only ground one end to avoid ground loop currents.
- Caution: When using 2-wire PRT, the resistance of each wire in a 3-wire PRT must be the same.
- Operating range between 0V to 10V or 0V to 2V.
- A link MUST be fitted between V+ and V- if using a 2-wire PRT. The resistance of each wire in a 3-wire PRT must be the same.
- Operating range between 0 to 20mA or 4 to 20mA.
- A link MUST be fitted between V+ and V- if using a 2-wire PRT. The resistance of each wire in a 3-wire PRT must be the same.
- Operating range between 0 to 20mA or 4 to 20mA.
- Use appropriate compensating cable when configuring and extending a Thermocouple input.

**Features**

- Advanced supervisory programmer with storage of up to 80 programs for the 2604 and 60 programs for the 2704.
- Application specific controllers (including Handheld), i.e. Vacuum Furnace, Carbon Potential, Induction, Boiler (TDS) and Metro Process.
- A wide variety of configurable inputs, including thermocouples, Pt100 resistance thermometers (RTh) and high level pulse inputs.
- Loop configuration as P, PI, PID or material valve position, with ‘on’ control in single, cascade, override and ratio control.
- PID control outputs can be relay, logic, triac or dc with matched valve position output being relay true or logic.
- Auto-Tuning and PID gain scheduling to simplify commissioning.

**For more information, visit the website at:**

www.eurotherm.com

**MANUFACTURING ADDRESS**

U.K. Woffington
Telephone (44) 01903 253858
Fax (44) 01903 253853
Web: www.eurotherm.com

Note. Copyright Eurotherm Limited 2007

Material Overhauling Factory: Quality Manager

---

**Installation and Wiring Instructions**

**What is the 2604/2704?**

These instruments are modular, fully configurable, high accuracy, high stability temperature and process controllers, available in a single, dual or tri-loop format. Each unit is supplied as a specific hardware configuration, e.g. five ‘slots’ that contain specific plug in modules, identified by a hardware code printed on the label on the enclosed CD (Part No. LA029175) or via the website.

**UNPACKING AND STORAGE**

If on receipt, the packaging or unit are damaged, do NOT install, but contact the supplier. If using stored before use, protect from humidity and dust in an ambient temperature range of 0ºC to 70ºC.

**Caution:**

- Do not connect power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.

**UNPACKING AND STORAGE**

If on receipt, the packaging or unit are damaged, do NOT install, but contact the supplier. If using stored before use, protect from humidity and dust in an ambient temperature range of 0ºC to 70ºC.

**Caution:**

- Do not connect power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.
- Do not apply power supply to the unit until all connections have been made.

---

**Notes**

- Refer to the Engineering Handbook for Operation and Configuration details, available on the enclosed CD (Part No. LA029175) or via the website.
**Plug-in I/O Modules**

Use 4-terminal I/O modules at Module 1, 3, 4, 5, and 6 only, except where stated.

### OUTPUT TYPES

- **Single-Relay Module (SRM)**
- **Two-Relay Module (TRM)**
- **Three-Relay Module (TRM)**
- **Dual-Relay Module (DRM)**
- **Dual-Relay Module (DRM)**
- **Triple-Relay Module (TRM)**
- **Contactless Transducer Power Supply Output (TPS)**

### Inputs

- **Digital Input (DI)**
- **Analog Input (AI)**
- **Transmitter (TX)**
- **Transmitter (TX)**

#### Environmental Requirements

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity (Relative - RH)</td>
<td>5% RH</td>
</tr>
</tbody>
</table>

#### Connections

- **Power Supply Outputs**: 18Vdc, @ 8mA max, per channel.
- **Output Signals**: 4-20mA or 0-20mA or Voltage (0V to 10V or 0V to 5V).
- **Binary Output**: 100Ω or 220Ω.
- **Transmitter**: >28KΩ.
- **Cables**: 32 communicating instruments.
- **Connector Headers**: 3-wire or 5-wire.

#### Wiring

- **Digital Input**: EIA232/EIA485 3-wire or 5-wire.
- **Analog Input**: EIA232/EIA485 3-wire.
- **Transmitter (TX)**
- **Transmitter (TX)**

**Communications - Modbus**

Protocol is Modbus RTU, EIA232, EIA485 3-wire or 5-wire.

**Applications**

- **Modbus**: via the HA to HF and JA to JF terminal connections. Units MUST be connected in a daisy-chain method using twisted pair cable.
- **Configurations**: EIA232, EIA485 3-wire, EIA485 5-wire.

**Characteristics**

- **Terminal Designations**: DeviceNet®, DeviceNet™, DeviceNet®.
- **Protocols**: Modbus RTU, DeviceNet®.
- **Frequency (Hz)**: 3 to 30.
- **Accuracy (°C)**

### INPUTS

These support both PV (PV): Module positions 3 and 6, and Analog Input (AM) Modules, any position can use Module position 3.

**Temperature**

- **Range**: -40°C to 80°C
- **Accuracy**: ±0.75°C

**Voltage**

- **Range**: 0V to 20V
- **Accuracy**: ±0.75V

### TERMINATION RESISTOR

A 12Ω Terminating Resistor MUST be fitted across the Receiver signals (Rx+) and (Rx-) at each end of a maximum 5m terminal connector.

**Communications - DeviceNet®**

Protocol is DeviceNet® interfacing each module to have a unique address on the DeviceNet® network and must be set to the same Baud Rate.

#### CAN Chip Legend

- **V:** Preferred DeviceNet® network power positive terminal.
- **A:** Preferred DeviceNet® network power negative terminal.
- **HA:** DeviceNet® network power positive terminal.
- **HC:** DeviceNet® network power negative terminal.

#### WIRING

- **View A**: Last End Node
- **View B**: Start End Node

**THERMISTOR**

A 22Ω Terminating Resistor MUST be fitted across the Receiver signals (Rx+) and (Rx-) at each end of a maximum 5m terminal connector.

** communion - Modbus**

Protocol is Modbus RTU, EIA232, EIA485 3-wire or 5-wire.

**Applications**

- **Modbus**: via the HA to HF and JA to JF terminal connections. Units MUST be connected in a daisy-chain method using twisted pair cable.

**Characteristics**

- **Terminal Designations**: DeviceNet®, DeviceNet™, DeviceNet®.
- **Protocols**: Modbus RTU, DeviceNet®.
- **Frequency (Hz)**: 3 to 30.
- **Accuracy (°C)**

### INPUTS

These support both PV (PV): Module positions 3 and 6, and Analog Input (AM) Modules, any position can use Module position 3.

**Temperature**

- **Range**: -40°C to 80°C
- **Accuracy**: ±0.75°C

**Voltage**

- **Range**: 0V to 20V
- **Accuracy**: ±0.75V

### TERMINATION RESISTOR

A 12Ω Terminating Resistor MUST be fitted across the Receiver signals (Rx+) and (Rx-) at each end of a maximum 5m terminal connector.