OMNITERM TWT Universal Input Two Wire Transmitter
Model C2406A Universal Input two-wire transmitter.

FEATURES
- TC/RB/mV/VC universal input in one product
- Powered from 4-20mA Loop
- Input Isolation to 2500Vac
- Wide operating voltage (9 – 33Volts)
- Software configurable
- Sensor linearisation standard

OVERVIEW
The OMNITERM TWT Universal two-wire transmitter is designed for the widest range of signal conditioning applications in a single off-the-shelf product, using advanced state-of-the-art digital measurement techniques, combined with extremely user friendly software configurability.

The input will accommodate most thermocouple and resistance bulb types (linearised to temperature), as well as voltages and currents (both linear and square root) from 1mV minimum to 10Vdc maximum input span.

The TWT module draws its power from the 4-20mA output loop.

Full input isolation to 2500Vac ensures trouble-free accurate measurement in the most demanding applications.

Mount the TWT close to the point of measurement for most accurate operation.

Combined with the free Omniset configuration software package, this product provides extremely low life-cycle costs by reducing spares stock-holding requirements, and reducing specialist technical expertise required for field support, on site module replacement and field configuration. This new holistic approach to instrumentation asset management ensures reliable performance and minimal down-time.

Using advanced sigma-Delta A/D technology combined with sophisticated digital filtering techniques, the TWT offers 16 bit measurement resolution with increased dynamic range, tailored for noisy plant environments.

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

Typical Application Circuit

Mechanical Details
SPECIFICATIONS

### Input

| Measurement Types and Ranges |  
|-------------------------------|---|
| **Thermocouples (TC Input Ranges covered)** |  
| Type B (Pt30Rh-Pt6Rh) | -400 to -1820 °C (400 °C min. span*)  
| Type E (NiCr-CuNi) | -150 to 1000 °C (80 °C min. span*)  
| Type J (Fe-CuNi) | -210 to 1200 °C (100 °C min. span*)  
| Type K (NiCr-NiAl) | -270 to 1372 °C (100 °C min. span*)  
| Type N (NiCrSi-NiSiMg) | 0 to 1300 °C (175 °C min. span*)  
| Type P (Pt13Rh-Pt) | -50 to 1676 °C (500 °C min. span*)  
| Type S (Pt10Rh-Pt) | -50 to 1676 °C (500 °C min. span*)  
| Type T (Cu-CuNi) | -270 to 400 °C (100 °C min. span*)  
| Type W (WW2/Re) | 100 to 2500 °C (1000 °C min. span*)  
| Type W5 (W5/Re/WW2/Re) | 0 to 2320 °C (300 °C min. span*)  
| Type W3 (W3/Re/WW2/Re) | 0 to 2500 °C (300 °C min. span*)  
| **Resistance Thermometers (RB Input Ranges)** |  
| Model C2406A-0 | 2 or 3 wire connection  
| Measuring Current | 100µA nominal  
| Lead Resistance | ≤ 100 ohms per lead  
| Pt100 (IEC60751/DIN43760) | -200 to 850 °C (50 °C min. span)  
| Pt500 | -200 to 380 °C (50 °C min. span)  
| Pt1000 (model C2406A-3) | -200 to 630 °C (50 °C min. span)  
| Ni100 (DIN43760) | -60 to 250 °C (50 °C min. span)  
| Ni120 | -80 to 320 °C (50 °C min. span)  
| Cu10 (model C2406A-4) | -100 to 260 °C (150 °C min. span)  
| **Potentiometer/Slidewire (Model C2406A-5)** |  
| Model C2406A-5 | 3 wire connection  
| Excitation | 50mV nominal  
| Potentiometer Resistance | 500 ohms min; 10kOhms max  
| Minimum Span | 10%  
| Maximum Zero | 90%  
| **Volts (V Input Ranges)** |  
| Model C2406A-0 | -1 to +10V (min. span 0.1V)  
| Model C2406A-2 | -10 to +60V (min. span 1V)  
| **Millivolts (mV Input Ranges)** |  
| Millivolts | -10 to 100mV (min. span 1mV)  
| **Current (I Input Ranges)** |  
| Current (requires 250Ω 1/4W shunt resistor) | -4 to 40mA (0.4mA min. span)  
| **Current (use on Voltage Input Range with external Resistor)** |  
| Current (use external load resistor of R_L ohms) | \( \frac{V_{input}}{I_{input}} = \frac{R_L}{R_M} \) Max. Range = -1/R_L – 10/R_L (0.1/R_L Amps min. span)  

### Output

| Specification |  
|---------------|---|
| **Output Current Range** | 3.5-23mA maximum  
| **Minimum Supply Voltage** | 9Vdc across terminals 7 and 8  
| **Maximum Supply Voltage** | 33Vdc across terminals 7 and 8  
| **Recommended Maximum Load Resistance** | 100 ohms with 12Vdc supply min.  
| 250 ohms with 15Vdc supply min.  
| 500 ohms with 20Vdc supply min.  
| 700 ohms with 24Vdc supply min.  
| 1000 ohms with 30Vdc supply min.  
| **Accuracy** |  
| Initial Error | <0.1%  
| Non-linearity | <0.1%  
| Temperature Drift | <150ppm/°C  
| **TC Linearisation Error** (types B, E, J, K, N, T) | <0.25 °C or 0.1% of reading (whichever is greater)  
| <0.5 °C below –100 °C  
| **TC Linearisation Error** (types W, S, W3, W5) | <2.0 °C  
| **TC Linearisation Error** (type W) | <2.5 °C  
| **Selectable Computation Functions** |  
| 1. Signal Inversion |  
| 2. Square Root |  
| **Configuration** |  
| Input Type & Range | Field selectable via programming port on front of unit with the aid of a PC and free Omniset configuration software.  
| **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  
| Immunity – ESD | IEC 61000-4-2:1995, level 3  
| Immunity – RF Fields | IEC 61000-4-3:1995, level 3  
| Fast Transients | 1 kV – input/output lines  
| Insulation | Basic Insulation per IEC950  
| Insulation Test Voltage | Input/Output 100% tested to 2500Vac  
| **Mechanical** |  
| Width | 22.5mm  
| Height | 75mm  
| Depth | 110mm  
| Mounting | Snaps on to DIN rail EN50022-35  
| Housing | Shock resistant ABS  
| Flammability | UL94-HB (Housing)  
| Terminal/wire size | 0.14 – 2.5mm² stranded  

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[http://www.omniflex.com](http://www.omniflex.com)
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Model C2406A Universal Input two-wire transmitter.

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<th>Weight</th>
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<tr>
<td>Packed</td>
<td>160gm approx.</td>
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<tr>
<td>Unpacked</td>
<td>130gm approx.</td>
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### Ordering Information

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<th>ORDER CODE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>C2406A-0</td>
<td>Omniterm TWT Universal Two-Wire Transmitter – Standard model</td>
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<tr>
<td>C2406A-2</td>
<td>Omniterm TWT Two-Wire Transmitter with Hi Voltage Input Range (-10 to 60Vdc)</td>
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<tr>
<td>C2406A-3</td>
<td>Omniterm TWT Two-Wire Transmitter with low current excitation for Pt1000 etc.</td>
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<tr>
<td>C2406A-4</td>
<td>Omniterm TWT Two-Wire Transmitter with high current excitation for Cu10 etc.</td>
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<tr>
<td>C2406A-5</td>
<td>Omniterm TWT Two-Wire Transmitter with 3 wire potentiometer/slide-wire input</td>
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### ACCESSORIES

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<tr>
<th>CODE</th>
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<tr>
<td>C1168A</td>
<td>Omniflex Miniature Jack Programming Cable.</td>
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