

Action Instruments

Product Guide



...setting the standard

Eurotherm® Flexible Solutions

Eurotherm: a company that understands signal conditioning and isolating

For over 35 years Eurotherm has built an international reputation for developing premium quality "fit for purpose" products and solutions. The Eurotherm brands (Action Instruments, Barber-Colman, Chessell, Continental and Eurotherm) have long been recognised as the leaders in the industrial automation market.

Action Instruments provides the signal conditioning industry the highest quality, most innovative solutions to remote signal conditioning and isolation applications. Action defined the standard for accuracy and reliability and our focus on technological innovation continues to raise that standard. The people behind the Action Instruments brand are devoted to understanding your needs and overcoming obstacles to the collection and transmission of industrial automation process signals.

Easy Solutions to Tough Problems

Every Action product is designed for easy installation, operation and maintenance. Whether you are amplifying or splitting signals, conditioning sensor outputs, isolating grounding problems, or adding more drive to current loops, Action's complete product selection provides simple, convenient solutions to any analog signal conditioning need.

High Performance and Proven Reliability

Reliable signal processing under harsh conditions. That's what Action's products deliver. Nearly three decades of proven success can assure you of our adherence to the highest quality standards and the best in manufacturing techniques.

Real World Ruggedness

Action products are in tune with the industrial environment - the real world of hard-hats, forklifts, and EMI/RFI - they are ruggedised to survive the extremes of vibration, shock, temperature and humidity that are common to the manufacturing arena.

Action's Personal Commitment to Your Success

We know how tough it is on the plant floor and we realise that every application has different requirements. That's why Action's solutions are tailored to your problems.

Best Engineering Support in the Industry

Experienced, knowledgeable and friendly engineers are available throughout the world to answer your questions.

Think Reliable, Think Smart, Think Action

Our goal is to be your exclusive supplier for industrial measurement and control products. What can we offer you?

Plenty.

What do Action Products Do?

Isolation



A ground loop can occur if more than one ground connection is made to a single control signal. Because grounds are seldom at the same potential, an unwanted current will be generated and interfere with the control signal. Signal isolators break the ground loop current path and maintain the integrity of the measurement.

Signal Conversion



Industrial applications use a wide array of sensors to measure temperature, flow, length, speed, frequency, etc. These signals may then need to be converted into a form usable by the instrumentation to which they are connected. Any sensor signal (thermocouple, RTD, DC voltage, DC current, AC voltage, frequency, resistance, etc.) can be converted to any standard process signal.

Noise Filtering



Isolators incorporate low pass filters that eliminate high frequency EMI/RFI and unwanted signals from power lines, generators and motors.

Linearisation



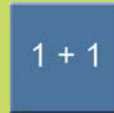
Many sensors output a signal that is not linearly related to the engineering value being measured. For example, a thermocouple used to measure temperature has a nonlinear millivolt output. A thermocouple input signal isolator translates this to a standard, robust linear signal such as 4 to 20mA.

Limit Alarms



Limit alarm units take in a process signal and compare it to one or more setpoints. They then provide an output signal, usually a relay contact, when the signal crosses the setpoint.

Math



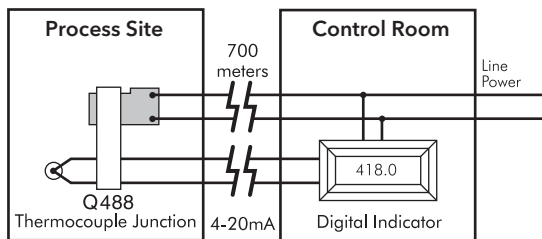
Isolators that can perform addition, subtraction, multiplication, division, square root, and averaging.

What is Signal Conditioning?

Signal conditioners are electronic instruments used in factory or machine automation. They can amplify, convert, boost, transform, buffer, filter, alarm and isolate process control signals. There seems to be no limit to the variety of things control engineers want to do with control signals. Signal conditioners are known by many names: converters, transducers, isolators, transmitters, and black boxes. Conventionally, most signal conditioners and isolators fall into two categories based on the number of wires required for power and signal.

Four-wire Transmitters

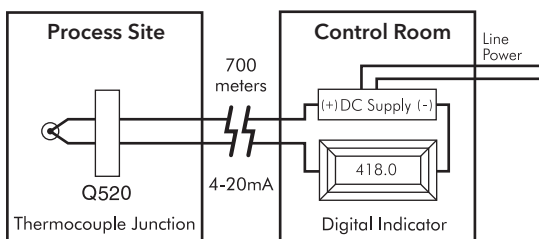
A four-wire transmitter has two wires for power and two wires for the signal output. A four-wire transmitter can be either AC or DC powered. Four-wire transmitters provide a powered output, either a voltage signal (e.g., 0-10V, 1-5V); a current signal (e.g., 4-20mA, 10-50mA); or in some cases a relay (e.g., solid state or contact closure). Four-wire transmitters require a power supply - they do not use power from the input or output signal lines. The power supply allows four-wire transmitters to power their output signal. Because of this, they are often used to boost signal strength for retransmission.



Four-wire Transmitter

Two-wire Transmitters

A two-wire transmitter is powered by the same two wires that carry the output signal. A two-wire transmitter is always DC powered and the output can only be a current signal, typically 4-20mA, or sometimes 10-50mA. The two-wire transmitter is considered a field device and requires very little power (milliwatts). It is therefore appropriate for hazardous (explosive) environments, such as chemical refineries and pharmaceutical plants. The low DC power requirement, which ranges from 10-48VDC at currents as low as 4mA, reduces the chances of an electrical spark causing ignition of flammable vapours or dust. Additionally, two-wire transmitters save on wire costs since both the signal and power are on the same wires. Locating a two-wire transmitter as far as 2000 feet from the control room is possible and at half the wiring cost of a four-wire transmitter. It is important to note that two-wire transmitters can be isolated or non-isolated. Many low cost



Two-wire Transmitter

two-wire transmitters are not isolated, which makes it important to ensure that the input sensor is not grounded. All of Action's two-wire transmitters are fully isolated. Members of this group include the TransPak™ series and most of the Q5xx products.



WV408 Ultra SlimPak II

Limit Alarms

Limit alarms are considered a four-wire transmitter since they have two wires for power and at least two wires for the relay signal output. Limit alarms are similar to a thermostat. On your thermostat at home you may have the temperature set to a cozy 72°F or 23°C. If the room temperature falls below that "setpoint" the heater will turn on. This is an example of on/off control. A limit alarm performs the same function. It has a setpoint which is compared to a process signal. If the temperature gets too high, the limit alarm is used to alert an operator or shut down the process. Other applications include limit alarms that can also act as backup for a control system to perform a controlled shutdown process in order to prevent damage or other hazards.

Digital Indicators




Digital indicators (or panel meters) will also accept direct sensor inputs. For the most part, AC powered indicators can be considered a four-wire transmitter if they are configured with an analog or relay output. Indicators are most commonly used to display process variables, however some have secondary functions, such as a 4-20mA transmitter output, limit alarm, or relay contact closure output.



VisiPak V408,
1/8 DIN Rail Mount Indicator

Product Selection Guide

| Input Type | Ultra SlimPak™ II | | Ultra SlimPak™ | |
|------------------------|--|-------------------------------|------------------|---------------------|
| | Limit Alarms | Signal Conditioners | Limit Alarms | Signal Conditioners |
| DC Volts DC Current | WV108 | WV408 | G108 | G408 |
| RTD | WV118 | WV418 | G118 | G418 |
| Thermocouple | WV128 | WV428 | G128 | G428 |
| Potentiometer | | WV438 | | G438 |
| Strain Gauge | | WV448 | | G448 |
| AC Volts AC Current | WV168 | WV468 | G168 | G468 |
| Frequency | | WV478 | | G478 |
| Accessories | Configuration Tools available | Configuration Tools available | | |
| 24VDC Power Supplies | WV905 | WV905 | H910 H915 | H910 H915 |
| Other | Ethernet Connectivity PC and Button Setup Removable Connectors | | Fixed Connectors | |

| ActionIQ™ | | | TransPak™ | VisiPak™ |
|---|---|--|--|---|
|  | | |  |  |
| AC Limit Alarms and Signal Conditioners | DC Limit Alarms and Signal Conditioners | Loop Powered 2/3 Wire Transmitters & Signal Conditioners | 2 Wire Transmitters | Digital Displays |
| Q106 Q403, Q406 | Q108 Q404, Q408 Q498 | Q500 Q501 | T280, T287 | V108, V116, V132, V408 |
| Q116 Q486 | Q488 | Q510 | T713 T280, T287 | V108, V116, V132, V408 |
| Q126 Q486 | Q488 | Q425 Q520 | T280, T287 | V108, V116, V132, V408 |
| Q436 | Q438 | | T287 | V408 |
| Q446 | Q448 | | | V408 |
| Q466 | Q468 | | | |
| Q476 | Q478 Q498 | | | |
| IQRL-2xxx required for AC power distribution. Config Tools available | IQRL-Dxxx for DC power distribution. Config Tools available | | T287 requires C680-0001 Software and Adapter | |
| | Wide Ranging Input Math Capability | | Intrinsic Safety Models | Intrinsic Safety Models |

Ultra SlimPak™ II

DIN Rail Mount Signal Conditioners, Isolators, Alarms, & Power Supplies



The Ultra SlimPak II Series can function as traditional stand-alone limit alarms and isolators, or they can simultaneously be connected to your company's intranet to monitor your signals via a standard browser when coupled with the optional WVC16 interface unit.

- Ethernet Connectivity to Most Client Software
- Built In Web Browser with Email and Logging Capability
- PC or Button Setup and Calibration
- Smart Power Technology Automatically Adjusts Power
- High Density Modules
- Reduced Wiring with Jumpers Transferring Power from Module to Module
- Removable Connectors
- Fast Response and High Accuracy
- In-Process Calibration

SPECIFICATIONS

| | |
|---------------------|--|
| Isolation: | 1800VDC or peak AC between input, output and power |
| Operating Humidity: | 15 to 95% @ 45°C |
| Temperature Range | Operating: 0 to 60°C Storage: -20 to 85°C |
| Power Consumption: | 1.5W typical, 2.5W max. |
| Supply Range: | 9 to 30VDC |
| Agency Approvals: | UL; CSA; CE; |
| (WV408/428 only): | Class 1, Div 2, Gp A, B, C, D to 60°C ambient |

ORDERING INFORMATION

| Part Number | Function | Input | Input Span (Field Configurable) | Housing Width | Output (Field Configurable) |
|-------------|--------------------------|------------------------|---|---------------|--|
| WW408 | Isolator | DC Volts DC Current | +/-150mV, +/-1.5V, +/-15V, +/-150V +/-2.5mA, +/-25mA | 12.7mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW108 | Limit Alarm | | +/-20mV, +/-200mV, +/-2V, +/-20V, +/-200V +/-10mA, +/-100mA | 17.5mm | Alarm (Dual SPDT Relay) |
| WW418 | Isolator | 2, 3 & 4 Wire RTD | Platinum RTD: -200 to 600°C Copper RTD: -200 to 260°C (95%adjustment in any range) | 17.5mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW118 | Limit Alarm | | | 17.5mm | Alarm (Dual SPDT Relay) |
| WW428 | Isolator | Thermocouple | Type B: 75 to 1800°C Type C: 0 to 2315°C (428 only) Type E: -200 to 1000°C Type J -210 to 760°C Type K: -200 to 1370°C Type N: -200 to 1300°C (428 only) Type R/S: 0 to 1760°C Type T: -200 to 390°C (95%adjustment in any range) | 12.7mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW128 | Limit Alarm | | | 17.5mm | Alarm (Dual SPDT Relay) |
| WW438 | Isolator | Potentiometer | 100 ohms to 100k ohms | 12.7mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW448 | Isolator | Strain Gauge | +/-5mV to +/-200mV Excitation: 1-10VDC @ 120mA | 17.5mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW468 | Isolator | AC Volts AC Current | 50mV AC to 250VAC 20mA AC to 100mA AC | 12.7mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW168 | Limit Alarm | | | 17.5mm | Alarm (Dual SPDT Relay) |
| WW478 | Isolator | Frequency | 2Hz to 10kHz | 12.7mm | DC Voltage (0-10V) DC Current (0-20mA, 4-20mA) (95%adjustment in any range) |
| WW905 | Power Supply | AC Power DC Power | 85 to 265VAC, 50 to 60Hz 120 to 300VDC | 22.5mm | 24VDC @ 500mA |
| WVC16 | Communications Interface | DC Power | | 22.5mm | Config summary/editing; diagnostics; alarm setup/ status; e-mail; process variable viewing; data logging |

Ultra SlimPak™

DIN Rail Mount Signal Conditioners, Isolators, & Alarms



Ultra SlimPaks are high density, DIN Rail mount, setpoint limit alarm and isolating signal conditioner modules. All Ultra SlimPak modules utilise Action's advanced, ASIC-based design for field configurable input and output flexibility.

- Field Configurable
- Wide Ranging
- High Density DIN Rail Mount
- ASIC Based Design for Maximum Reliability

SPECIFICATIONS

| | |
|---------------------|--|
| Isolation: | 1800VDC between input, output and power (except G438) |
| Operating Humidity: | 15 to 95% @ 45°C |
| Temperature Range | Operating: 0 to 55°C Storage: -25 to 70°C |
| Power Consumption: | 1.5W typical, 2.5W max. |
| Supply Range: | 9 to 30VDC (except G448 is 18 to 30VDC) |
| Agency Approvals: | UL; CSA; CE |

ORDERING INFORMATION

| Part Number | Function | Input | Input Span (Field Configurable) | Housing Width | Output (Field Configurable) |
|-------------|--------------|------------------------|---|-------------------------|--|
| G408 | Isolator | DC Volts DC Current | 10mV to 100V 1mA to 100mA | 12.6mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G408-1001 | | | | | DC Voltage (-5 to +5V, -10 to +10V) |
| G108 | Limit Alarm | | 10mV to 200V 1mA to 100mA | 17.5mm | Alarm (Dual SPDT Relay) |
| G418 | Isolator | 3 Wire RTD | Platinum: 100, 500, 1000 Ohm with 16 ranges from -200 to 600°C down to -18 to 50°C | 17.5mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G118 | Limit Alarm | | Copper: 10, 25, 100 Ohm with 9 ranges from -200 to 260°C down to -18 to 50°C (50% adjustment in any range) | 17.5mm | Alarm (Dual SPDT Relay) |
| G428 | Isolator | Thermocouple | Type B: 500 to 1820°C Type E: -150 to 1000°C Type J: -200 to 750°C Type K: -200 to 1370°C Type R/S: 50 to 1760°C Type T: -150 to 400°C | 12.6mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G128 | Limit Alarm | | 17.5mm | Alarm (Dual SPDT Relay) | |
| G438 | Isolator | Potentiometer | 100 ohms to 100k ohms | 12.6mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G448 | Isolator | Strain Gauge | 0 to 200mV +/-5mV to +/-200mV Excitation: 1-10VDC @ 120 mA | 17.5mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G468 | Isolator | AC Volts AC Current | 50mV AC to 250VAC 50mA AC to 100mA AC | 12.6mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| G168 | Limit Alarm | | 50mV AC to 250VAC 50mA AC to 100mA AC | 17.5mm | Alarm (Dual SPDT Relay) |
| G478 | Isolator | Frequency | 2Hz to 10kHz | 12.6mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| WV905 | Power Supply | AC Power | 100 to 240VAC, 50 to 60Hz | 22.5mm | 24VDC @ 500mA |

ActionI/Q™

DIN Rail Mount Signal Conditioners, Isolators, & Alarms



- Multi-channel Conditioners
- Two-Wire Transmitters
- SnapLoc Terminal Blocks
- Removable Connectors
- Interlocking Modules
- Optional I/Q Rail Power Bus
- PC Based Setup
- Math Modules

SPECIFICATIONS

| | |
|---------------------|--|
| Isolation: | 1800VDC or peak AC between input, output and power |
| Operating Humidity: | 15 to 95% @ 45°C |
| Temperature Range | |
| Operating: | 0 to 55°C |
| Storage: | -25 to 70°C |
| Power Consumption: | 2.5W max. |
| Supply Range: | 85 to 265VAC (Qxx6, Qxx3); 9 to 30VDC (Qxx8 except Q448); 18 to 30VDC (Q448); 10.8 to 26.8VDC (Q404); 12 to 35VDC (Q501, Q510, Q520); 6VDC min. (Q500) |
| Agency Approvals: | UL; CSA; CE |

The ActionI/Q Series of signal conditioners have wide ranging field configurable inputs and outputs. These DC, RTD, T/C, potentiometer, bridge/strain gauge, AC and frequency input devices incorporate TouchCal™ technology, which simplifies calibration and allows more than 90% adjustment of zero and span.

ORDERING INFORMATION (AC Powered, 4-Wire)

| Part Number | Function | Input | Input Span (Field Configurable) | Housing Width | Output (Field Configurable) |
|---|-------------|--|--|---------------|--|
| Q106 | Limit Alarm | DC Volts DC Current | +/-10mV to +/-200V +/-1mA to +/-100mA | 22.3mm | Alarm (Dual SPDT Relay) 24VDC, 20mA max. Excitation Supply |
| Q116 | Limit Alarm | 3 Wire RTD | Pt100, Pt500, Pt1000: -50 to 850°C Cu10, Cu100: -200 to 260°C Ni120: -30 to 320°C NiFe604: -200 to 240°C | 22.3mm | Alarm (Dual SPDT Relay) |
| Q126 | Limit Alarm | Thermocouple | Type B: 0 to 1820°C Type C: 0 to 2320°C Type E: -270 to 1000°C Type J: -210 to 760°C Type K: -270 to 1372°C Type N: -200 to 1300°C Type R: 0 to 1760°C Type S: 0 to 1750°C Type T: -270 to 390°C | 22.3mm | Alarm (Dual SPDT Relay) |
| Q403-1L08 Q403-1L09 Q403-1L28 Q403-2L00 | Isolators | DC Volts DC Volts DC Volts DC Current (2 Ch) | 0 to 10V 0 to 10V -10 to 10V 4 to 20mA | 22.3mm | 4 to 20mA DC 0 to 10VDC -10 to 10VDC 4 to 20mA DC |
| Q406-A000 Q406-A001 Q406-A002 Q406-A003 Q406-A004 | Isolators | DC VI (1 Ch) DC VI (1 Ch, 24VDC Excitation) DC VI (1 Ch In; 2 Out) DC VI (1 Ch In; 2 Out, 24VDC Excitation) DC VI (2 Ch) | +/-10mV to +/-100V +/-1mA to +/-100mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) (0-20mA n/a on dual outputs) |
| Q436 | Isolato | Potentiometer | 100 ohms to 100k ohms | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q446 | Isolato | Strain Gauge | 0 to 10mV up to 0 to 200mV +/-5mV up to +/-200mV (50% adjustment any range) Excitation: 1-10VDC @ 120 mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q466 | Isolato | AC Volts AC Current | 50mV to 300V 5mA to 100mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q476 | Isolato | Frequency | 2Hz to 10kHz, 150mVp to 150Vrms | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q486 | Isolato | Universal (includes 2, 3 & 4 Wire RTD) | (See thermocouple types above) Pt100, Pt200, Pt500, Pt1000: -200 to 850°C Cu-9.035: -40 to 260°C Ni120: -80 to 320°C +/-90mV +/-900mV 0 to 4000 ohms | 22.3mm | DC Voltage (0-10V) DC Current (0-20mA) |

ORDERING INFORMATION (DC Powered, 2-Wire)

| Part Number | Function | Input | Input Span | Housing Width | Output |
|-------------------------------------|----------------------------------|---|---|---------------|-----------------|
| Q500-1B00 Q500-2B00 Q500-4B00 | Input Loop Powered Transmitters | DC Current (1 Ch) DC Current (2 Ch) DC Current (4 Ch) | 0(4) to 20mA | 22.3mm | 0(4) to 20mA DC |
| Q501-1Bxx Q501-2Bxx | Output Loop Powered Transmitters | DC VI (1 Ch) DC VI (2 Ch) | 0 to 1mA, 0 to 20mA, 4 to 20mA 0 to 50mV, 0 to 100mV, 0 to 500mV 0 to 1V, 0 to 5V, 1 to 5V, 0 to 10V, 0 to 100V +/- 10V | 22.3mm | 4 to 20mA DC |
| Q510-0Bxx Q510-4Bxx | Output Loop Powered Transmitters | RTD (2 Ch) RTD (4 Ch) | Pt100: 0 to 100°C, 0 to 150°C, 0 to 200°C, 0 to 250°C, 0 to 500°C 0 to 200°F, 0 to 300°F, 0 to 400°F, 0 to 500°F, 0 to 1000°F | 22.3mm | 4 to 20mA DC |
| Q520-0Bxx | Output Loop Powered Transmitter | Thermocouple (2Ch) | Type J 0 to 500°F, 0 to 1000°F, 0 to 500°C Type K: 0 to 500°F, 0 to 2000°F, 0 to 1000°C Type T: 0 to 500°F, 0 to 250°C | 22.3mm | 4 to 20mA DC |

ORDERING INFORMATION (DC Powered, 4-Wire)

| Part Number | Function | Input | Input Span (Field Configurable) | Housing Width | Output (Field Configurable) |
|--|-------------|---|--|---------------|---|
| Q108 | Limit Alarm | DC Volts DC Current | +/- 10mV to +/- 200V +/- 1mA to +/- 100mA | 22.3mm | Alarm (Dual SPDT Relay) |
| Q404-2L08 Q404-2L09 Q404-2L28 Q404-3L00 Q404-3L01 Q404-4L00 | Isolators | DC Volts (2 Ch) DC Volts (2 Ch) DC Volts (2 Ch) DC Current (1 Ch, 24 VDC Excitation) DC Current (1 Ch, 24 VDC Excitation) DC Current (1 Ch In; 2 Ch Out) | 0 to 10V 0 to 10V -10 to 10V 4 to 20mA 4 to 20mA 4 to 20mA | 22.3mm | 4 to 20mA DC 0 to 10VDC -10 to 10VDC 4 to 20mA DC 0 to 10VDC 4 to 20mA DC |
| Q408-A000 Q408-A004 | Isolator | DC VI (1 Ch) DC VI (2 Ch) | 10mV to 100V 1mA to 100mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) (0-20mA on A000 only) |
| Q438 | Isolato | Potentiometer | 100 ohms to 100k ohms | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q448 | Isolato | Strain Gauge | 0 to 200mV +/- 5mV to +/- 200mV Excitation: 1-10VDC @ 120 mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q468 | Isolato | AC Volts AC Current | 100mV to 300V 10mA to 100mA | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q478 | Isolato | Frequency | 2Hz to 10kHz, 150mVp to 150Vrms | 22.3mm | DC Voltage (0-5V, 0-10V) DC Current (0-1mA, 0-20mA, 4-20mA) |
| Q488 | Isolato | Universal (includes 2, 3 & 4 Wire RTD) | Type B: 0 to 1820°C Type C: 0 to 2320°C Type E: -270 to 1000°C Type J: -210 to 760°C Type K: -270 to 1372°C Type N: -200 to 1300°C Type R: 0 to 1760°C Type S: 0 to 1750°C Type T: -270 to 390°C Pt100, Pt200, Pt500, Pt1000: -200 to 850°C Cu-9.035: -40 to 260°C Ni120: -80 to 320°C +/- 90mV +/- 900mV 0 to 4000 ohms | 22.3mm | DC Voltage (0-10V) DC Current (0-20mA) |
| Q498* | Isolato | DC VI (2 Ch, Isolated) Frequency Discrete (to 18V) Math Functions | +/- 150mV, +/- 1.5V, +/- 15V, +/- 150V +/- 2.5mA, +/- 25mA 2Hz to 10kHz, 150mVp to 150Vrms Add, Subtract, Multiply, Divide, Square Root | 22.3mm | DC Voltage (0-10V, +/- 10V) DC Current (0-20mA) Frequency (0 to 10kHz) Discrete (to 18V) |
| Q425-0B01 Q425-0B03 (both 3-Wire) | Transmitter | Thermocouple | Type J 0 to 500°F Type J 0 to 500°C | 22.3mm | DC Voltage (0-10V) |

* The Q498 is a DC powered, DIN rail mount, DC input signal conditioner. The unit is fully isolated to 1800V between input, output and power. Two isolated analog inputs each accept either a DC voltage or current. One analog output delivers either DC bipolar voltage or unipolar current. The Q498 also has a separate frequency input channel and a frequency output, as well as a discrete input and output channel.

The Q498 can perform single or double input math calculations on the input values. The available operators are Addition, Subtraction, Multiplication, Division, Square Root and Average. Process control functions include Hi/Lo Select, Rate of Change Limiter, and Track & Hold. The frequency input can also have the math functions applied. A 25-point Linearisation function is available for Channel 1 Analog input only. All output math and process control functions require C698-0000 software.

TransPak™ T280

Isolating 2-Wire Transmitter for Pt100 RTD, Thermocouple, & mV



- Miniature, Thermal-Head Mounted
- 1000VDC Input to Output Isolation
- Cost Effective Fixed Inputs
- Eliminates Ground Loops
- Hinged Cover Protects Potentiometers
- Embedded Terminals

SPECIFICATIONS

| | |
|------------------------|---------------------------------|
| Input Types | |
| Thermocouple: | B, E, J, K, L, N, R, S, T |
| RTD: | Pt-100, 2-wire or 3-wire |
| mV: | 100mV max. |
| Input Span | |
| Thermocouple: | 5mV min. span |
| RTD: | 20°C min. 500°C max. |
| mV: | 5mV min. span |
| Adjustability: | ±15% for both zero & span |
| Output Span: | 4-20mA, limiting @ <28mA |
| Isolation: | 1000VDC |
| Supply Voltage: | 10 to 40VDC, polarity protected |
| Operating Temperature: | -20 to +70°C |
| Agency Approvals: | CE |

ORDERING INFORMATION

| | |
|-----------------------------|---|
| Specify: | |
| T280-1xxx-C (F): | for RTD Input |
| T280-2xxx- [tc type] C (F): | for thermocouple Input |
| T280-3xxx: | for mV Input |
| Accessories: | |
| T25H-0000: | Headmount enclosure - 1/2 NPT for thermowell and conduit. |
| AP9046: | ActionPak 24/40VDC, 65mA Loop Power Supply |

TransPak™ T287

Programmable Isolating Universal Input 2-Wire Transmitter



- PC Based User Friendly Configuration
- 2000VDC Input to Output Isolation
- Universal Input Reduces Inventory
- Custom Linearisation for Special T/C Types and Math
- Single or Dual Inputs
- DIN Rail Mounting Adapter Included

SPECIFICATIONS

| | |
|-------------------|---|
| Input Types | |
| Thermocouples: | Most standard types & all special types using customer defined tables & polynomials |
| RTD: | 2-, 3- & 4-wire, Pt-100, Ni-110, Ni-120 and other RTDs. Includes Callandar-Van-Dusen adaptation and custom sensors Linearisation with user defined tables and polynomials |
| DC mV: | -10 to 100mV |
| Potentiometers: | 0 to 20k Ohms |
| Resistance: | 0 to 400 Ohms |
| Infrared: | |
| Minimum Range: | 2mV |
| Output: | 4-20mA |
| Supply Voltage: | 9-40VDC @ no load, polarity protected |
| Operating Temp: | -40 to 85°C |
| Isolation: | 2000VDC, input to output |
| Calibration: | Unit includes all calibration parameters, performs periodic zero and span self-test, and auto calibration |
| Agency Approvals: | CE |

ORDERING INFORMATION

| | |
|---------------------|---|
| Specify: | |
| 1. Model: | T287-0000 |
| 2. Model: | C680-0001 Isolated Communications Adapter, Configuration and Calibration Software, and User's Guide |
| Accessories: | |
| T25H-0000: | Headmount enclosure - 1/2 NPT for thermowell and conduit |
| AP9046: | ActionPak 24/40VDC, 65mA Loop Power Supply |
| C680-0002: | Zero/Span Trimmer |

VisiPak™ V108, V116 & V132 Temperature/Process Indicators



- Field Configurable Input for Thermocouple, RTD, mV and mA
- 3 Field Configurable Alarm Setpoints with 1 or 2 Alarm Outputs
- Bright Green 4-Digit (9999) LED Display, Programmable for Engineering Units
- Combination Alarm Functions, Alarm Blocking and Programmable Latching/Non-Latching
- IP65 Front Panel with Tactile Configuration Buttons
- Standard Power Supply 85 to 264VAC, 48 to 62Hz or Optional 20 to 29VDC/VAC (n/a on V108)

ORDERING INFORMATION

Specify:

| | |
|-------------|--|
| V108-ALGNVH | 1/8 DIN, Green LED Display, 85-264 VAC PS |
| V108-ALRDVH | 1/8 DIN, Red LED Display, 85-264 VAC PS |
| V116-ALVH | 1/16 DIN, Green LED Display, 85-264 VAC PS |
| V116-ALVL | 1/16 DIN, Green LED Display, 20-29VDC/VAC PS |
| V132-ALVH | 1/32 DIN, Green LED Display, 85-264 VAC PS |
| V132-ALVL | 1/32 DIN, Green LED Display, 20-29VDC/VAC PS |

Accessories:

| | |
|----------|-------------------------------------|
| SUB2-1V1 | 0 to 10V Input Adapter |
| SUB2-1R7 | External Relay (V116 and V132 only) |

(All units ship with mounting brackets, a 2.49 ohm shunt resistor, and a user manual.)

VisiPak™ V408 Universal Temperature/Pressure/ Process Indicators



- Universal Field Configurable Input for Thermocouple, RTD, mV and mA, Bridge, and 0 to 10V Signals
- Modular Design Provides 3 Option Slots plus 1 Optional Modbus Communications Slot
- Option Modules for 2nd Input, DC Retran, Sensor Excitation, 3 Digital Inputs/Outputs, and Relays
- 4 Field Configurable Setpoints Support Combination Alarm Functions, Rate of Change, Deviation Alarms, Alarm Blocking and Latching/Non-Latching
- IP65 Front Panel with Plug In from Front Design for Quick Replacement
- Standard Power Supply 85 to 264VAC, 48 to 62Hz or Optional 20 to 29VDC/VAC

ORDERING INFORMATION

Specify:

| | |
|-------------|---|
| V408-ALGNVH | 1/8 DIN, Green LED Display, 85-264 VAC PS |
| V408-ALGNVL | 1/8 DIN, Green LED Display, 20-29VDC/VAC PS |
| V408-ALRDVH | 1/8 DIN, Red LED Display, 85-264 VAC PS |
| V408-ALRDVL | 1/8 DIN, Red LED Display, 20-29VDC/VAC PS |

Accessories:

| | |
|----------|-----------------------------|
| SUB2K-D5 | 2nd Input |
| SUB2K-D6 | DC Retran |
| SUB2K-R4 | Form C Relay |
| SUB2K-TK | Triple Contact Input |
| SUB2K-TL | Triple Logic Input |
| SUB2K-TP | Triple Logic Output |
| SUB2K-RR | Dual Relay |
| SUB2K-LR | Logic Relay |
| SUB2K-A2 | 232 Communications |
| SUB2K-F2 | 422 Communications |
| SUB2K-Y2 | 485 Communications |
| SUB2K-MS | 24VDC, 20mA Excitation |
| SUB2K-G3 | 5VDC Transducer Excitation |
| SUB2K-G5 | 10VDC Transducer Excitation |

(All units ship with mounting brackets, a 2.49 ohm shunt resistor, and a user manual.)

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www.eurotherm.com

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