SIGNAL CONDITIONING

OMNITERM

'B' Series

Reliable Signal Conditioning Solutions
with reduced Total Cost of Ownership

Omniflex
AUTOMATION PRODUCTS

O U T L I N E

Corporate Overview

a name synonymous with quality

OMNIFLEX has been designing and manufacturing electronic products and systems for the automation and control industry since 1965.

Through our world-wide partner network, we specialise in providing solutions to industry in the fields of Remote I/O, RTUs, Data Acquisition, Alarm and Events management, and Process Signal Conditioning Systems.

More than 3 decades of experience in innovating products and systems such as these have resulted in a refined range of products and solutions being relied upon every hour of every day by major corporations round the world.

Omniterm

The successful OMNITERM range of DIN Rail mount signal conditioning modules have been proven in service over many years.

This latest OMNITERM 'B' Series range provides another step forward in the advance of technology by employing state-of-the-art electronics know-how to provide a range of products that will significantly reduce your total cost of ownership through ease-of-use combined with reduced configuration, installation, commissioning and re-calibration times.

An investment in products that carry such a large responsibility requires confidence in our track record and the continued expansion of some of the world's giant industries using OMNIFLEX technology is sufficient testimony to this support.

Don't ask us – ask our loyal customer base.

www.omniflex.com

your link to low TCO solutions in signal conditioning.

OVERVIEW

Product Summary

OMNIFLEX offers a wide range of signal conditioning capability in a surprisingly small range of products. This is the direct result of the attention paid to lowering the cost of ownership of your signal conditioning.

At a quick glance, most signal conditioning modules look the same. But if you are going to choose a product range you need to consider these factors:

- Installation Costs
- Spares Stock Holding
- Re-calibration Costs
- Reliability
- Plant Safety

Each of these factors has been taken into account in the design of the OMNITERM 'B' series range.

Select a solution from the following product groupings to meet your performance and budget requirements:

Loop Isolators

The elimination of ground loops in your analogue 4-20mA signal loops is the key to reliable and accurate measurements. There are OMNITERM products can solve these system problems, whether you just need to isolate a transmitter from its power source, or whether you need to split the loop into two for the addition of data acquisition or monitoring.

Signal Transmitters

The latest "sigma/delta" conversion technology combined with full software configurability makes these OMNITERM products the most accurate and versatile in their class.

Inputs:

- Thermocouples
- Resistance (RTD's)
- milliVolts
- Frequency
- dc voltage
- dc current
- ac voltage
- ac current

Outputs:

- dc Voltage (bipolar)
- dc Current (bipolar)
- Pulses
-

- *Reduced Stock-holding*
- *Minimum calibration*
- *High reliability*
- *Ease of use*

Limit Alarms / Trip Amplifiers

A range of alarm modules are available from simple limit alarms with manually adjustable set-points to software configurable units capable of rate-of-change alarming direct from the sensor input.

Computation

These modules are designed to solve those tricky special functions required in certain processes, where the sensors require to be conditioned according to a more complex mathematical formula.

Available functions include deviation, addition, subtraction, multiplication, linearization, rate-of-change, peak, valley, ratio, track-and-hold, etc.

Power Supplies

The **POWERTERM** range of instrument power supplies are designed as the ideal power source for many instrument applications, whether you just require reliable 12 or 24Vdc instrument power, battery backed up uninterruptible dc power, or dc power from more difficult sources such as high voltage dc battery banks.

Modbus Modules

The Modbus serial protocol provides a very convenient and low cost method of getting plant signals into your SCADA or PLC system. This OMNITERM range of Modbus Modules provides an easy to use interface for remote data gathering of a few plant signals.

Current Loop Isolators

LPI
Model C2063

Single Loop-Powered Isolator

Application

Use the LPI loop powered isolator to remove ground loops in 4-20mA current loops where power is unavailable and there is sufficient spare volt drop in the loop to accommodate the insertion loss.

Benefits

- Extremely low insertion loss (2.5V typical) avoids loop overload.
- No field calibration means lowest installation and commissioning costs.
- Load independence allows use in two-wire transmitter loops
- Unique loop break protection for use with RTU's and PLC's that may get unplugged.
- Operates over 0-50mA which allows loop errors and plant overload conditions to be properly detected.

LPD
Model C2462

Dual Loop Powered Isolator

Application

Use the LPD dual loop powered isolator remove ground loops in multiple 4-20mA current loops where space is at a premium. Incorporating the equivalent of two LPI's in a single 22.5mm housing, the LPD is useful where power is unavailable and there is sufficient spare volt drop in the loop to accommodate the insertion loss.

Benefits

- Extremely low insertion loss (2.5V typical) avoids loop overload.
- No field calibration means lowest installation and commissioning costs.
- Load independence allows use in two-wire transmitter loops
- Operates over 0-50mA which allows loop errors and plant overload conditions to be properly detected.

LPR
Model C2463

Current Loop Repeater

Application

Use the LPR Loop powered repeater to increase 4-20mA loop drive capability or add instruments to an existing current loop where 24V power is available.

Benefits

- Low insertion loss means that the LPR will not overload the existing loop regardless of the load connected to the output.
- 1kohm load drive capability available on the repeated current signal allows additional instruments to be added to an existing loop.
- Isolation of the repeated current loop allows grounded instruments to be added to the loop without the worry of creating ground loops.

LPS
Model C2464

Current Loop Splitter

Application

Use the LPS Loop powered splitter to create two independently isolated current loops from a single input loop. The LPS is identical to the LPR, but has two outputs instead of one.

Benefits

- Low insertion loss means that the LPS will not overload the existing loop regardless of the load connected to the outputs.
- 1kohm load drive capability available on each of the repeated current signals allows additional instruments to be added to each loop without affecting the input.
- Individual isolation of each repeated current loop allows grounded instruments to be added without the worry of creating ground loops.

Signal Transmitters

T X B

Model C2401

DIN rail mount configurable universal 4-wire Transmitter

Application

Use the TXB for all your dc signal conditioning needs. This instrument uses easy software configurability without the need for any calibration to set most input and output temperature, voltage and current ranges.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- No field calibration means lowest ranging and installation costs.
- Bipolar inputs and outputs mean even wider range of applications.
- Software configuration means range setting is done in minutes, and configuration can be stored for effective asset management.
- Three port isolation means ground loop problems are eliminated.

T W T

Model C2406

DIN rail mount configurable temperature input 2-wire Transmitter.

Application

Use the TWT for all your two-wire temperature signal conditioning needs. This instrument uses easy software configurability without the need for any calibration to set all thermocouple and resistance bulb types to any input range.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- No field calibration means lowest ranging, installation and commissioning costs.
- Isolated input eliminates ground loops.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.
- Supports any temperature sensor calibration curve.

T W A

Model C2405

DIN rail mount configurable ac current/voltage 2-wire Transmitter

Application

Use the TWA module to monitor ac current loads and ac voltage supplies. This instrument uses easy software configurability without the need for any calibration to set input range of ac current up to 5Amps ac, or any ac voltage up to 300Vac

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- No field calibration means lowest ranging, installation and commissioning costs.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.
- Loop powered avoids the need for independent 24Vdc in electrical panels.

T H Z

Model C2403

DIN rail mount configurable frequency input 4-wire Transmitter

Application

Use the THZ for all your frequency signal conditioning needs. This instrument uses easy software configurability without the need for any calibration to set most input and output ranges. This unit accepts a variety of frequency inputs such as 'namur' proximity switches, dry contacts and tacho signals, and produces a dc current or voltage proportional to the input frequency.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.

Limit Alarms / Trip Amplifiers

TTB

Model C2465

DIN rail mount hardware adjustable dual alarm/trip relay

Application

Use the TTB to monitor a 0-20mA (4-20mA) or 0-10V (1-5V) signal and output two high or low alarm/trips via form C Relay contact.

Benefits

- All settings are user configurable allowing only one unit type to be kept on the shelf.
- Differential input allows the TTB to be inserted anywhere in a current loop, and avoid voltage ground loop problems.
- Low current loop insertion loss means little additional burden when inserted into existing loops.
- Form C output contacts rated for 250Vac 5A means the TTB can be used in the widest range of applications.
- Monitor points allow the setpoints to be set using a multimeter without interfere-ing with the input signal.

TTP

Model C2468

DIN rail mount universal input software settable dual alarm/trip relay.

Application

Use the TTP to monitor any dc instrumentation signal and output two high or low alarm/trips via form C Relay contacts. This instrument uses easy software configurability without the need for any calibration to set most input temperature, voltage and current ranges.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- No field calibration means lowest ranging, installation and commissioning costs.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.
- Form C output contacts rated for 250Vac 5A means the TTB can be used in the widest range of applications.

TTT

Model C2467

DIN rail mount universal input software settable combined dual alarm/trip relay with retransmit.

Application

The TTT is a universal input signal transmitter and dual limit alarm relay combining all the features of the TTP and TXB models.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- No field calibration means lowest ranging, installation and commissioning costs.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.
- Both retransmit and limit alarm outputs on the same module reduces panel space and wiring.

THT

Model C2469

DIN rail mount frequency input software settable combined dual alarm/trip relay with retransmit.

Application

The THT is a frequency input signal transmitter and dual limit alarm relay combining all the features of the TTP and THZ modules. This unit accepts a variety of frequency inputs such as 'namur' proximity switches, dry contacts and tacho signals, and produces a dc current or voltage proportional to the input frequency as well as two high or low alarm/trips via form C Relay contact.

Benefits

- Reduce stock-holding by only needing to hold one type in stock.
- Software configuration means range setting can be done in minutes, and configuration can be stored for effective asset management.

Special Functions

TFX

Model C2404

DIN rail mount maths computation module

Application

Use the TFX to perform specialised analogue computation on 4-20mA and 1-5V instrument signals.

Benefits

- Software configuration means setting is done in minutes, and configuration can be stored for effective asset management.
- All digital design means highest accuracy calculations over the full range.
- No field calibration means lowest ranging and installation costs.
- Standard special functions include average, deviation, subtraction, addition, multiplication, ratio, linearization, rate-of-change, min, max, track-and-hold, peak and valley.
- Bipolar isolated current or voltage output means widest range of applications.

PAF

Model C2440

AC power supply module

Application

Use the PAF to power a system of Omniterm modules when 24Vdc is not available.

Benefits

- The same compact 22.5mm housing allows the PAF to mounted on the same DIN rail as other modules without consuming a significant amount of space.
- Universal 85-264Vac/dc input allows its use with most high voltage sources.
- High efficiency switch-mode design provides lowest power consumption and consequently heat rise in the panel.

Power Supplies

PTK Series

DIN rail mount Instrument Power Supplies

Application

The POWERTERM PTK range of DIN rail mount dc power supplies is specifically designed for industrial instrumentation applications.

Use of carefully selected long-life components and conservative design parameters ensure increased reliability even in harsh conditions.

Convenient DIN rail mounting and plug-in terminals on some models make these power supplies ideal for powering instrument panels.

Low profile format can allows mounting in shallow housings.

Some models are also available as dc/dc converters for sub-station and telecoms applications.

Benefits

- Universal 85-264Vac/dc inputs on all models with CE certification
- dc/dc converter options available
- Removable terminal blocks on some models for easy system maintenance
- Enclosed housings with protected terminals for safe mounting in serviceable areas.
- 50 000 hour design rating for maximum reliability

POWERTERM Series

PRODUCTS

DC Instrument Backup Supplies

PTC Series

DIN rail mount combined instrument power supplies/battery chargers for 12 or 24Vdc systems

Application

The POWERTERM PTC series PSU/Charger range offers a complete solution for small battery-backed dc instrument power systems such as RTU's and remote instrument panels.

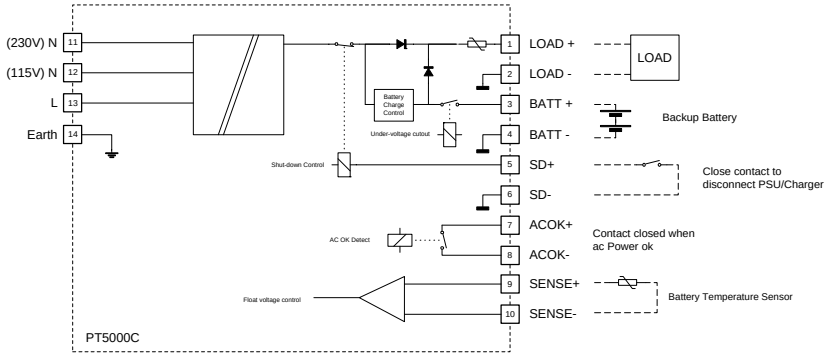
Supply 12Vdc or 24Vdc systems with continuous power during ac line interruptions without the need for inverters or mains UPS's.

These units provide a complete solution in a single compact package. Add up all of the functions, and try to find a lower cost, more space efficient solution.

Available to suit loads from 0.5A up to 4 Amps.

Benefits

- Dual-mode battery charger circuit optimised for sealed lead acid (SLA) batteries.
- Under-voltage cut-out relay included to protect batteries from deep discharge during prolonged power outage.
- Independently current limited battery charging for optimum battery life
- Overload protection to protect wiring against shorts across the battery supply.
- Temperature sensing for optimum battery float voltage.
- Integrated AC OK monitor relay contact output
- Charger shutdown input for automatic battery sensing.
- Independent battery and load terminals for ease of installation and maintenance.
- Universal 85-264Vac inputs on all models with CE certification
- Removable terminal blocks for easy system maintenance
- Enclosed housings with protected terminals for safe mounting in serviceable areas.
- 50 000 hour design rating for maximum reliability



Modbus Interface Modules

MIR

Model C2302

DIN rail mount Modbus 16 channel Digital Input Module (Ribbon Header)

Application

Use the MIR module as a general purpose digital input module from any Modbus network. 20 Way Ribbon Header input is compatible with many Omniflex products.

Benefits

- Simple switch settings for Modbus Slave operation provides ultimate simplicity.
- Fully isolated comms port (RS232/485) gives best noise immunity.
- Use as Modbus Master to communicate with other Modbus Slaves or to move data from one Modbus Slave to another.
- Also compatible with Omni16C alarm annunciators for providing repeat alarms.

MIT

Model C2303

DIN rail mount Modbus 16 channel Digital Input Module (Terminals)

Application

Use the MIT module as a general purpose digital input module to any Modbus network. Screw terminals are provided from open collector transistor outputs

Benefits

- Simple switch settings for Modbus Slave operation provides ultimate simplicity.
- Fully isolated comms port (RS232/485) gives best noise immunity.
- Use as Modbus Master to comm-unicate with other Modbus Slaves or to move data from one Modbus Slave to another.
- Also compatible with Omni16C alarm annunciators for providing repeat alarms.

MOR

Model C2304

DIN rail mount Modbus 16 channel Digital Output Module (Ribbon Header)

Application

Use the MOR module as a general purpose digital output module from any Modbus network. 20 Way Ribbon Header output is compatible with many Omniflex products.

Benefits

- Simple switch settings for Modbus Slave operation provides ultimate simplicity.
- Fully isolated comms port (RS232/485) gives best noise immunity.
- Use as Modbus Master to communicate with other Modbus Slaves or to move data from one Modbus Slave to another.
- Also compatible with Omni16C alarm annunciators for providing repeat alarms.

MOT

Model C2305

DIN rail mount Modbus 16 channel Digital Output Module (Terminals)

Application

Use the MOT module as a general purpose digital output module from any Modbus network. Screw terminals are provided from open collector transistor outputs

Benefits

- Simple switch settings for Modbus Slave operation provides ultimate simplicity.
- Fully isolated comms port (RS232/485) gives best noise immunity.
- Use as Modbus Master to communicate with other Modbus Slaves or to move data from one Modbus Slave to another.
- Also compatible with Omni16C alarm annunciators for providing repeat alarms.

SOLUTION

AUTOMATION PRODUCTS

The Total Solution

Other solutions from OMNIFLEX include:

MAXIFLEX PROCESS AUTOMATION CONTROLLERS

A universal communications gateway, remote I/O and control solution for industrial data integration needs.

- Connect different manufacturer's equipment.
- High Isolation Analogue and Digital Inputs and Outputs
- Optional IEC61131 PLC Control
- Real-time alarm/event management
- Industrial Networking up to 10km on existing cables
- Ethernet. HART, Modbus etc. fieldbus support
- Seamless Inter-networking for wider area solutions
- Integrated datalogging and multiplexing

OMNI16 ALARM ANNUNCIATORS

A range of safety certified field-proven alarm annunciators for all your critical alarm needs

- Field Proven – 30 years of experience in handling critical alarms
- High Reliability redundant Alarm displays
- Certified to IEC61508 for safety related alarm functions
- SCADA, DCS and PLC compatible
- Serial communications options

Solutions by Design