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WORLDWIDE

Big Benefits to System Integrators with Maxiflex Process Automation Suite

New from Omniflex is the Process Automation Suite providing an easy to use, cost effective and expandable process control system.

Integrated Control Software utilizing IEC61131 standard software with Data acquisition, Telemetry, Remote I/O systems and the ability to incorporate existing hardware systems makes this Maxiflex Suite a System Integrators dream. The Process Automation Suite positions Maxiflex fully into the Process Control Applications Arena where users can use standard programming languages that they are comfortable with.

Wide choice of programming languages

- Ladder,
- Function Block,
- Flow Chart,
- Sequential Function Chart,
- Structured Text,
- Instruction List.

Modular, "Buy only what you need"

The Process Automation Suite being a modular system comprises the following elements:

1. IEC 61131 Control Strategy Programming Environment with a Windows based PC Workbench.
2. The Maxiflex Process Automation Controller and associated I/O Hardware Platform.
3. The Maxiflex Flexible Networking Environment and Networking hierarchy.
4. The Maxiflex Remote I/O Systems capability.
5. Under the bonnet Data Acquisition and Telemetry functionality.
6. Integrated Alarm and Events Services (Date and Time Stamp Queue).
7. OPC servers for a variety of Network Protocols including Ethernet.

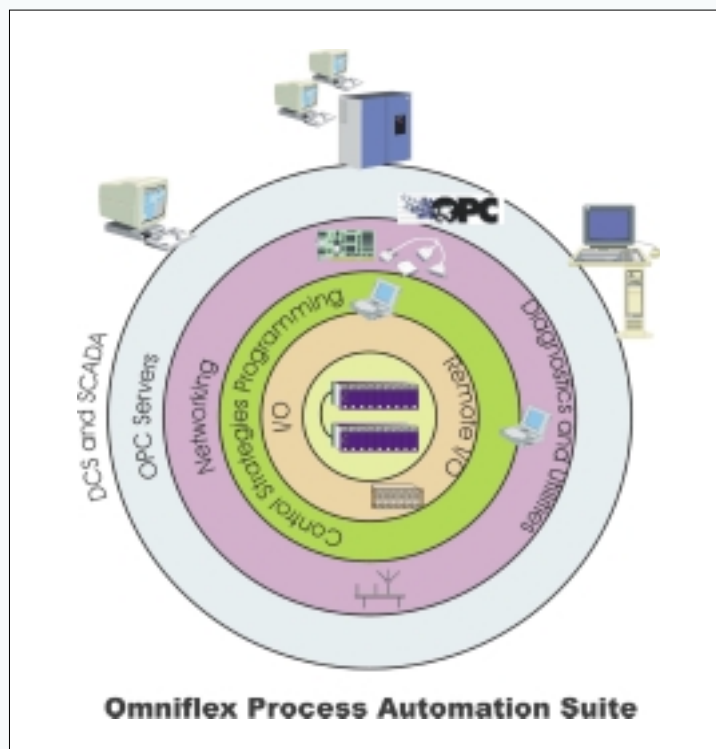
Flexible Integrated Applications and Services

Process Control Applications invariably involve the following functionality for effective implementation.

- Interlock Controls
- Analogue Signal Processing
- Control Algorithms - PID with Auto-tune
- Network Communications
- Alarm and Events Monitoring
- Date and Time Stamping at source for Sequence of Events monitoring. The ability to service Windows based SCADA systems.

Built-in special features

The Process Automation Suite embraces all these elements providing a flexible and an extremely adaptable platform. Many "under the bonnet" features like date and time stamped events, Telemetry, Auto I/O Scanning are standard offerings.



ISO 9001 2000

Omniflex has re-affirmed its on-going commitment to quality and quality systems by upgrading its quality systems to ISO 9001 2000 compliance with all Omniflex offices being assessed under the current standard.





Conet Explorer

Conet Explorer is the latest Software development from Omniflex and comprises a suite of software tools and utilities for Windows® platforms and Omniflex products. On-going development will see new applications being added all the time.

Conet Explorer has the following products included:

OMNISET – A configuration environment for Omniflex Products.

DITVIEW – Data Interchange Table (DIT) Viewer/Editor.

EZIEDIT – Interactive Editor environment for writing programs.

EZITERM – Terminal Mode facility to interact with Omniflex CPUs.

EZIFORTH – Programming Language for Omniflex Products.

A communications server is at the heart of the Conet Explorer Suite connecting Windows® to Omniflex Devices via the PC serial connection or via a Conet Port installed on the PC. This server supports the following protocols:

• Conet via Conet Port Only

• Conet/s via RS232 Port

• Modbus Via RS232 Port

• Conet/e via Ethernet Port

• Modbus TCP via Ethernet Port

One of the breakthroughs is that this server allows us, in conjunction with Maxiflex CPUs, to access Conet Networks via other ports on the CPU. The PC Notebook can now access a Conet network via the Maxiflex Programming port or via the Serial Ports on the CPU without the need for a PC Conet Interface Card. Access to the Conet Network Data is full due to its ISO OSI compliant model with presentation layer access.

New generation Omniflex products will use the Explorer Suite Tools or simply the Omniset Configuration Utility for product ranging and set-up.

Maxiflex in Control!

P3 Series Process Automation Controllers

The Latest generation of Maxiflex CPU "The P3" now places Maxiflex in the forefront of Process Automation applications.

Flexible Network Communications Options.

The Maxiflex P3 CPU provides a number of Network Communication variants:

- Conet/e Ethernet Media
- Conet/c Copper Based cable networks
- Conet/m Wireless Radio Based Networks
- Modbus RS485 Networks

These Network variants allow Maxiflex to function in any number of applications and environments relative to the Networking requirements.

Flexible Programming Environment - IEC 61131 Control Strategy Programming

A Full Windows based graphical programming package called the "Application Workbench" provides the P3 CPU's user with a flexible easy to use Control Strategy Programming Platform. The IEC61131 Programmers Workbench is a licensed software package for a PC using a Hardware Key based on the user required maximum number of I/O that the CPU will control.

World Class Integrated Graphical Programming Environment

The Application Workbench is a complete programming environment used to develop complex control algorithms. It fully supports six automation languages: the five IEC 61131-3 languages plus Flow Chart. This flexibility enables developers to choose the language that best suits their knowledge, style and application. The Workbench provides tools for editing, debugging, code generation, documentation, library management, archiving, on-line monitoring, off-line simulation and on-line changes.

The Application Workbench uses the IEC61131 industrial standard PLC programming methodology for designing powerful applications without requiring the programmer to know complex, high-level computer languages. Designed to make it easier and faster to write applications, the Workbench imposes a simple but structured methodology and catches syntactic errors during program writing. The result is a much more

robust application code in the shortest possible development time.

The programming languages supported by the P3 CPUs are:

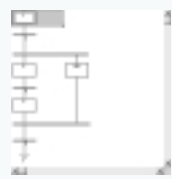
- SFC – Sequential Function Charts
- FC – Flow Charting
- FBD – Function Blocks
- LD – Graphical Ladder Diagram
- ST – Structured Text
- IL – Instruction List

Program Structure on the Application Workbench



A set of Library Functions pertaining to Maxiflex Product and a growing Process Control library including custom PID algorithms are available to programmers. The P3 Platform CPU and existing Maxiflex I/O modules round out the offering.

Sequence Function Chart (SFC)



Sequential Function Chart (SFC), the core language of the IEC 61131-3 standard, divides the process cycle into a number of well-defined steps, separated by transitions. The other languages are used to describe the actions performed within the steps and the logical conditions for the transitions. Parallel processes can easily be described using SFC.

Function Block Diagram (FB)



Function Block Diagram (FBD) is a graphical language that allows the user to build complex procedures by taking existing function blocks from the library, and wiring them together on screen.

Ladder Diagram

The Ladder Diagram (LD) is one



of the most familiar methods of representing

logical equations and simple actions, particularly in the United States. Contacts represent input arguments and coils represent output results. The Workbench's Quick LD editor provides the best compromise between high-level graphic capabilities and easy-to-use

keyboard driven programming. LD and FBD programming can be mixed in the same chart.

Structured Text (ST)

Structured Text (ST) is a high level structured language with a syntax similar to Pascal but more intuitive to the automation engineer. This language is primarily used to implement complex procedures that cannot be easily expressed with graphical languages (e.g. IF / THEN / ELSE, FOR, WHILE...). The ST editor guides the user to the correct syntax and punctuation. To further facilitate and speed development, highly useful validation and programmer assistance facilities are included.

Instruction List (IL)

The Application Workbench also includes Instruction List (IL), a low-level Boolean language similar to the simple textual PLC languages that are programmed at the register level.

Flow Chart (FC)

Recognising that virtually every

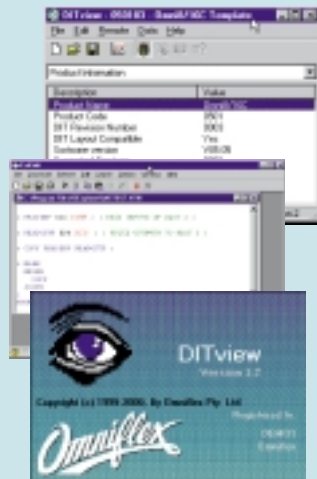


engineer graduating from college today has programmed in Flow Chart, the Workbench fully supports graphical Flow Chart

programming. The Flow Chart is an easy to read decision diagram where actions are organised in a graphic flow. Binary decisions are used to control the flow. The Flow Chart Editor has full support for connectors and sub-programs. Actions and tests can be programmed in LD, ST or IL. The graphical editor allows each symbol to be re-sized independently, and automatically arranges the chart during development. The Level 2 code is displayed in a resizable editor window.

Function Blocks (FB)

In addition to the IEC 61131-3 languages and Flow Chart, the ISaGRAF Application Workbench includes a library with more than 60 ready-to-use blocks. Users can enlarge this library by writing functions and function blocks in LD/FBD/ST/IL languages. The enhanced Library Manager is completed with import/export commands between the library and applications, so that new developed functions can easily be stored in library, and are directly ready for future applications.



Use Ethernet for your Plant Communication Backbone

Ethernet has become the de facto standard of communications within the modern plant environment.

Ethernet Backbones now often run right through the plant, connecting both the Engineering/Control system and the commercial systems. This has allowed the Industrial Network to become media independent and share the bandwidth available on a plantwide network infrastructure.

Get your I/O connected to Ethernet

The Ethernet port included on the P3e and T2e CPUs comes equipped with three protocol options as standard:

Modbus/TCP can be selected to interconnect MAXIFLEX systems over Ethernet to SCADA software equipped with Modbus/TCP drivers.

This protocol option conforms to Class 0 of the Modbus/TCP conformance classification.

Conet/e. can be used to com-

municate between devices supporting the Conet/e protocol, providing all the facilities of the CONET network. Conet/e is used over TCP/IP Ethernet networks. This protocol encapsulates all of the standard CONET message types in packets for transmission over Ethernet.

Modbus ASCII Slave can be selected for easy interconnection of MAXIFLEX I/O to third party systems that support Modbus Master protocol, using virtual serial port driver software. This allows, for example, conventional SCADA packages equipped with a conventional Modbus driver to communicate over Ethernet with the P3e CPU using Serial Port Redirector software loaded on the SCADA PC.

Future developments are planned to include Ethernet IP or Industrial Ethernet as it is commonly known.

INSTRUMENT POWER!

THE POWERTERM SERIES

AC mains to DC and DC to DC converters
AC mains to DC with Integral Battery Charger



The Powerterm Series....

Full-featured surge protected universal AC/DC mains input, DC-regulated outputs, industrial grade instrument power supplies and uninterruptable power supplies with 50 000 hrs design life, conformance to international specifications, DIN rail mounting. More options than ever before! Over 30 years of industrial electronics design experience proves it.

Conet goes PCI

The new standard PCI Bus architecture in PCs has required changes to the PC Conet Interface card with most PCs now supplied without the conventional EISA Bus any longer and only the PCI Bus. Conet/c now has support for both BUS architectures. The PC/Conet Interface card plugs into any PCI slot in the PC and allows it to be configured as an active node on the "Conet" Local Area Network. The benefit is that on-card intelligence handles token-passing transmission, reception and network management, permitting fast data transfer between the PC and other Conet nodes on the network. This puts the Conet Network inside the PC as opposed to mounting hardware external to the PC. The C6193 card can be interrupt driven or polled via the application software. The PC can thus be used as a host computer on the network for data acquisition and control functions exploiting the low-cost, high computing power and all the available software PCs used in this role. A SCADA system can thus be an integral part of the Conet Network. OPC Servers now provide easy connection of OPC compliant PC based software to the CONET network without the need to develop drivers for each and every software application.

Conet/c Interface

Conet/c is the Omniflex-designed low cost, industrial, token passing Local Area Network which operates on a standard twisted pair over distances of up to 10 km (6 miles). It features high voltage protection and noise immunity on the transmission line which is transformer isolated to 1500Vac at every node (station).

Up to 127 nodes may be connected on each Conet network giving a total data acquisition capability of several thousand points. Total acquisition time is determined by the number of I/O in the system.

Error recovery and data security is provided by sophisticated software algorithms with 16-bit CRC (Cyclic Redundancy Checksums) and automatic re-try routines on the CONET network.

Say Good Bye to Network Drivers

Omniflex has adopted the OLE for Process Control (OPC) technology for Windows Operating Systems. All Omniflex Network Technologies will now have OPC servers eliminating the network drivers required for every application package used with an Omniflex Network. It's simply a case that OPC compliant software will now communicate through an Omniflex OPC server for any of the Omniflex Network protocols we use.

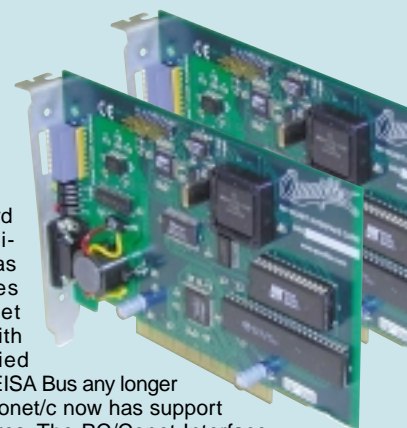
OPC is touted as the Windows solution to common interfaces for PC applications and Field Hardware, the OPC eliminates the need to develop a Driver for each PC based application that needs to interface to plant hardware via a network.

The SCADA system or any other PC application supporting OPC now becomes a client of the OPC server. The field devices are connected to the OPC server via their Network Communications and Data is thus accessible through the OPC server by any of the PC clients.

In principle if the Hardware can communicate with the OPC Server and the PC Software application is OPC compliant then communications can be established from the Field to PC via the Windows OPC server. What does this give us? Dynamic Data Exchange (DDE) between the two systems. Generic servers like Modbus can also be used with other devices supporting Modbus Protocol.

Omniflex has developed OPC servers supporting each of the Physical Network Ports/ Network Protocols that its products use:

- Conet/c
 - Conet/s Serial RS232/485
 - Modbus Serial RS232/485
 - Ethernet Modbus TCP
 - Ethernet Conet/e
 - Ethernet IP (Coming Soon)
- Watch for latest developments



Cut Your Signal Conditioning Inventory – Omniterm Universal Transmitter

Calling on 30 Years of transmitter design, Omniflex has come up with a winner here. The OMNITERM TXB Universal four-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 accommodates most thermocouple and resistance bulb types, as well as voltages and currents from 1mV minimum to 10Vdc maximum input span.

An extended range up to 60Vdc input is also available. The Output can be configured for unipolar or bipolar outputs of current or voltage from 1mA to +20mA or 1V to 10V. Full isolation (input/output/power supply) to 150Vac ensures trouble-free accurate measurement under the harshest plant conditions. This product provides extremely low life-cycle costs by reducing spares stock-holding requirements, and reducing specialist technical expertise required for field support and calibration, module replacement and field configuration. This new holistic approach to instrumentation asset management ensures reliable performance and minimal down-time. The TXB offers 0,01% resolution with

increased dynamic range, tailored for noisy plant environments.



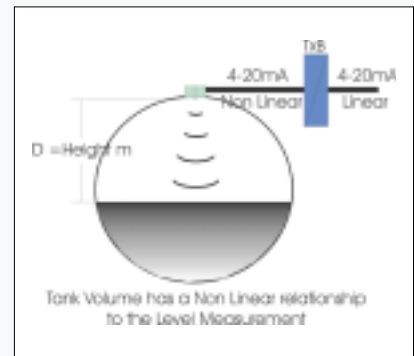
CONFIGURATION MANAGEMENT

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. Watch for details of this release.

HIGH RELIABILITY

This product has been designed with high reliability applications in mind. The output stage has built in overload indication to detect overloaded output circuits – whether from a wire break or just excess resistance in the line. Omniterm TxB has been designed to meet the criteria of IEC61508 for SIL1 applications allowing for integration into safety systems.

Linearized Tank Volume from Level Measurement



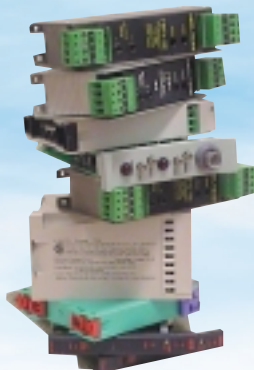
A classic instrumentation challenge easily solved by the new Omniterm Universal Transmitter. Using Level measurement techniques the volume in the cylindrical tank is to be determined. This is however a non linear function which results in errors if the level measurement is not linearized. A special configuration file is available from Omniflex to deal with this application. The user simply calculates a set of look up values corresponding to points on the incoming signal scale. Once applied to the configuration file this is downloaded to the TxB.

Just one of the many applications TxB is likely to be found solving.

Reduce Your Plant Inventory Now!

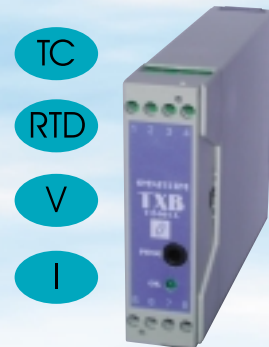
Too Much Signal Conditioning Inventory?

From This ...



- Reduce Spares Inventory
- One product does all
- Universal Input
- Universal Output
- Full 3-port Isolation
- Din Rail Mount
- Configuration via Windows

To This ...



- TC
- RTD
- V
- I

The OMNITERM TXB – Universal Signal Transmitter



Solutions by Design

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Solutions by Design