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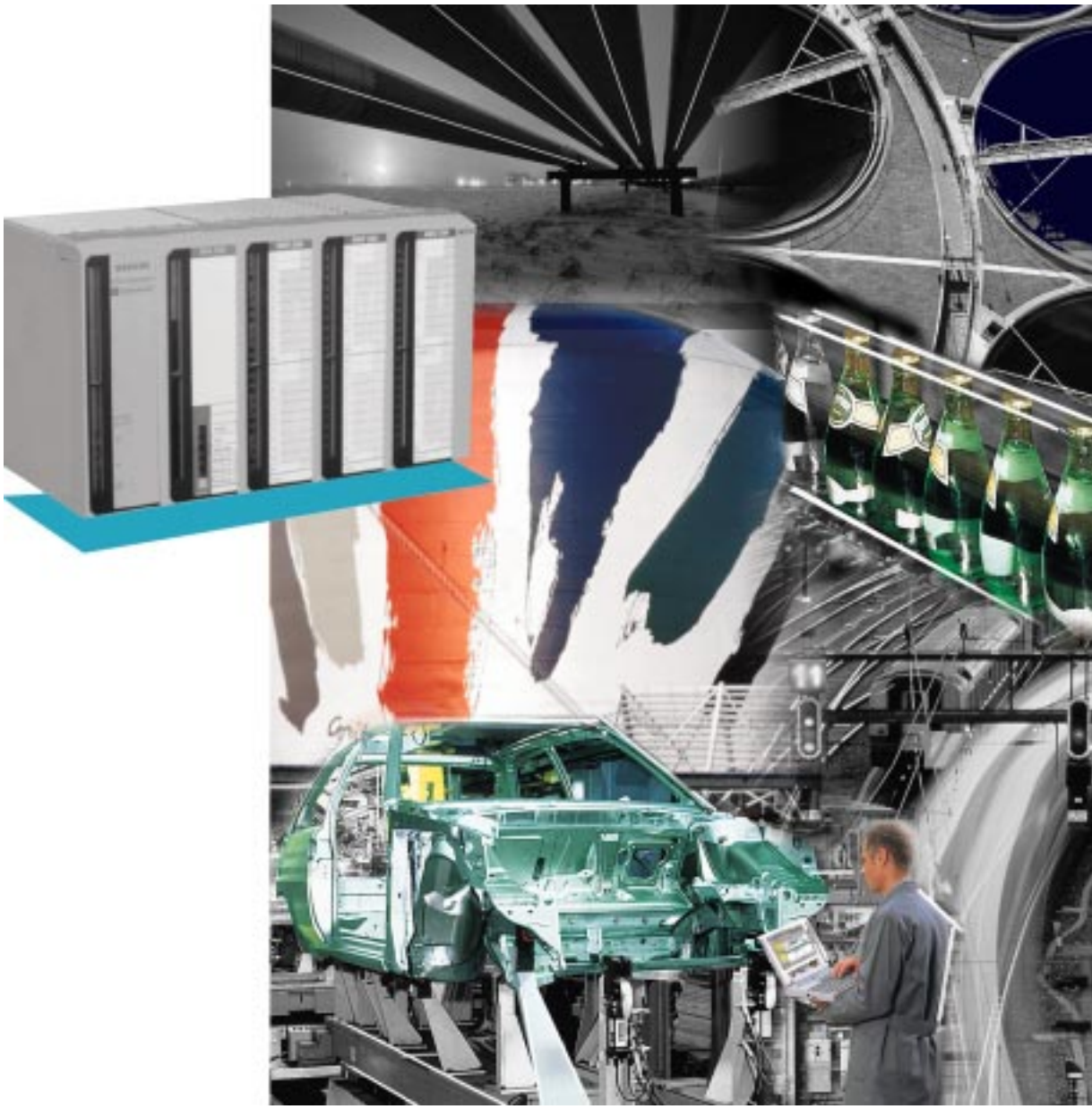
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Control system platform

Modicon TSX Compact

A world of applications



MODICON

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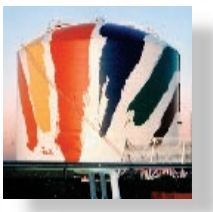




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Modicon TSX Compact

Compatible with the past
Enhanced for the future



Continuing a heritage of Compact reliability

The Modicon TSX Compact has a big advantage over its competitors - its design is based on the reliable, time tested Modicon Compact A/120. With the same small foot print and simple, rugged design that made the Compact the price and performance leader in the industry - plus many added features and improvements - the Modicon TSX Compact is ready to claim its superiority in the world of small, modular PLCs.

Enhanced for the future

The Modicon TSX Compact does not replace the Compact A/120 - it improves upon it. Enhancements to memory, processing speed, I/O, environmental specifications and programming software, as well as the addition of special function blocks and networking options, make the Modicon TSX Compact a more powerful, more versatile solution for a broad range of control and RTU requirements.

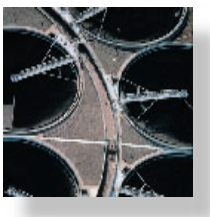
A world of applications

The new features of the TSX Compact truly make it a workhorse, especially in Remote Terminal Unit (RTU) applications. Features such as resistance to extreme temperatures and airborne chemicals, flow calculations, and new networking options all add up to make the Modicon TSX Compact equal to the task in even the most demanding environments anywhere in the world.

The Modicon TSX Compact provides powerful, versatile, and highly compatible solutions for a wide range of applications, such as:

- Auto Insertion
- Bagging
- Compressor and Pump Control
- Conveyors
- Data Acquisition
- Substation Automation
- Energy Management
- Machine Diagnostics
- Mechanical Assembly
- Oilfields and Pipeline Machinery
- Oven Control
- Press Control
- Rail
- Stamping (Small Parts Manufacturing)
- Water and Wastewater
- Winding Machinery





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- Faster processing for more demanding applications
- Simple Windows programming with Concept
- Remote I/O with extensive I/O capacity
- Extended temperature
- Conformal coating
- Enhanced RTU functionality



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Modicon TSX Compact

Big performance in a small package



The best keeps getting better

The Modicon TSX Compact is the right PLC for faster processing speed and increased memory, very high I/O capacity, more reliable operations under even the most extreme temperatures, longer life in exposure to corrosive environments, optional function blocks for specialized applications, and enhanced communications options.

Easy to use program

If Windows® based programming is your standard, the Modicon TSX Compact can be programmed with Modicon Concept® software. And for those already familiar with Modsoft and 984 ladder logic, the Modicon TSX Compact is like working with a trusted friend. This results in program compatibility across Modicon platforms.

Integrated receptacle for credit card-sized EEPROM

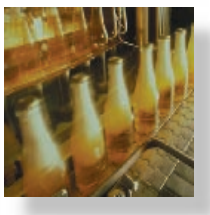
All CPU's come with battery-backed RAM for both the logic program and data storage. Removable memory is available in the form of a 4 meg PCMCIA Flash memory card that downloads the program and the configuration. This device can safely transport programs and data registers, a feature which facilitates quick and safe program changes and duplication without burning in PROMs, and results in reduced downtime and increased productivity.

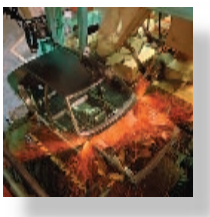
Saves space

The small footprint means less panel or cabinet space, saving money and making enclosure designs more compact.

Built and backed by the creator of the PLC

Resources from around the corner to around the world assure customer-dedicated support – 24 hours a day/ 7 days a week– throughout every phase of design, installation, and ownership of a Modicon TSX Compact.





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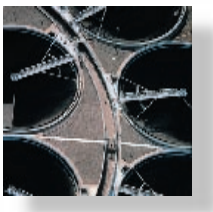


Modicon TSX Compact is now programmed by Concept and compatible with Interbus, just like TSX Quantum and TSX Momentum, making it a simpler and more versatile solution in cross-platform applications.

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Modicon TSX Compact

Compatability and integration



Simple integration of previous Compact and A/120 products

For existing Compact A/120 customers, straightforward, simple integration of networking and programming software makes the transition to the Modicon TSX Compact easy and cost-effective. In addition to the IEC languages supported by Concept, the system features an enhanced 984 instruction set to allow any Modsoft or translated application program to execute within the controller. In fact, a Compact or 984 application program written for existing controllers will run in a TSX Compact without any translations.

Common instruction set with TSX Quantum

Programs written for the Modicon TSX Quantum are compatible with the TSX Compact, significantly reducing application programming when moving between platforms. Applications previously limited to the TSX Quantum can now execute on the TSX Compact platform when its specifications and price/performance make sense.

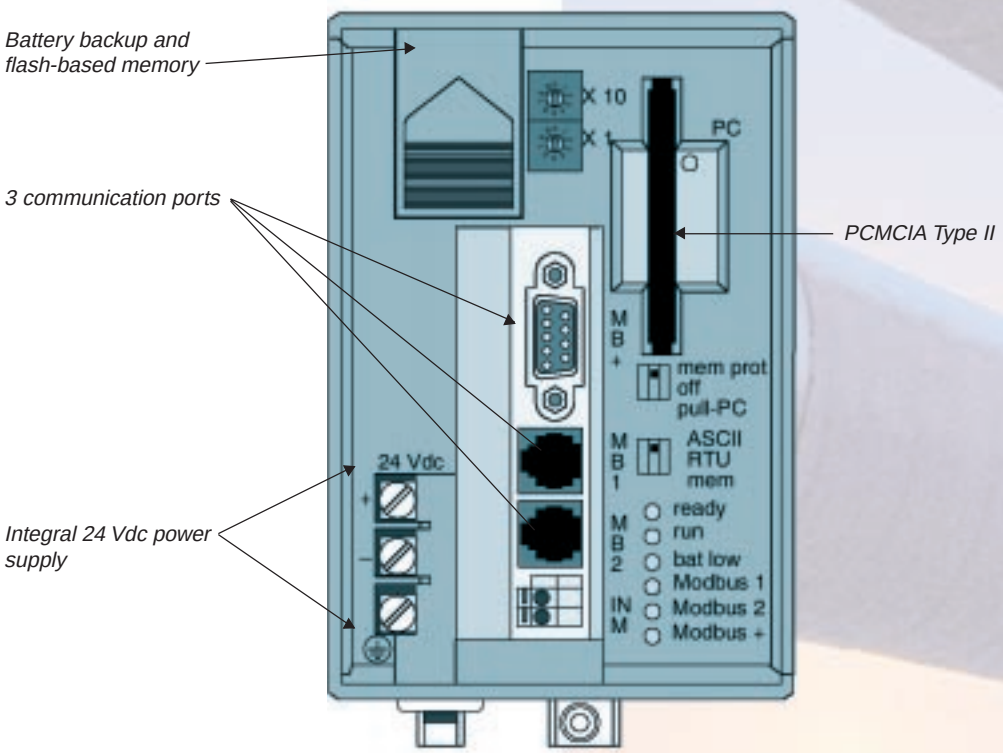
Choose the right I/O for your application

Now supporting remote I/O via InterBus, the TSX Compact supports both Compact and Momentum I/O. Compact I/O is also supported as a slave on TSX Quantum InterBus networks.





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Modicon TSX Compact

Controller summary

	PC-E984-258	PC-E984-265	PC-E984-275	PC-E984-285
Processor/ Clock Speed	386EX/ 25Hz	386EX/ 25Hz	386EX/ 25Hz	386EX/ 25Hz
Memory - Flash/SRAM	1M/ 512k bytes	1M/ 512k bytes	1M/ 512k bytes	1M/ 1M bytes
I/O Word Capacity (in 16 bit words)	256/256	128/128	256/256	512/512
Communications Ports Modbus/Modbus Plus	2/0	2/1	2/1	2/1
PCMCIA Flash	NO	NO	YES	YES
IEC Logic/Data	204k bytes	204k bytes	204k bytes	624k bytes
984 Logic/Data	16k/ 32k	8k/ 16k	16k/ 32k	32k/ 64k
Logic Solve Time Range	0.2 - 0.6 ms/k	0.2 - 0.6 ms/k	0.2 - 0.6 ms/k	0.2 - 0.6 ms/k
Extended Temperature Operation	-40 to +70°C	0 to - 60°C	0 to - 60°C	-40 to +70°C
Conformal Coating	Optional	Optional	Optional	Optional

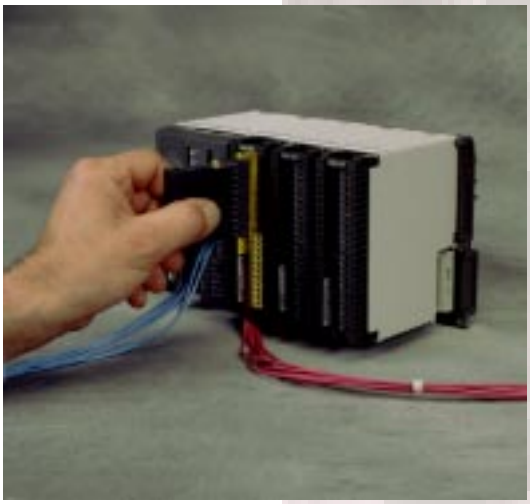






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New I/O Range • -40 to +70°C Operating • Conformal coating option	
Combo Discrete	8 in 24 Vdc/2 out 2 amp 8 in 24 Vdc/2 out 2A relay
Discrete Out	8 point, 2A
Discrete In	16 point, 24 Vdc 16 point, 24…48 Vdc 16 point, 66 to 154 Vdc
Frequency	4 points
Analog Out	2 point, volt, ma
Temperature	4 point Platinum
Analog In	4 point, volt, ma

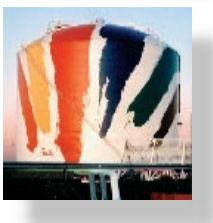


Prewired input/output terminals snap in or out for quick and easy installation with terminal removal tool.

Modicon TSX Compact

I/O options





TSX Compact I/O modules support traditional Compact applications while also providing solutions for expanded new applications.
The new I/O is not only configurable under Concept, but also supports the demanding harsh environment requirements (-40 to +70°C operating) of local process and RTU applications. Even the primary and subracks (AS-HTDA-200 and AS-HDTA-201) are available with conformal coating and in most applications need no special heating and cooling equipment or expensive enclosures. Taken together, these enhancements provide real solutions to real world problems.

I/O Range			
Discrete Input Modules	4 & 8 Inputs	16 Inputs	
DC Inputs	66…154	5 TTL, 12 to 60, 24, 48, 60	
AC Inputs	115…230		
Discrete Output Modules	4 Outputs	8 Outputs	16 Outputs
Relay (voltage/current)	24 to 110 Vdc/2A 24 to 230 Vac/2A	24 to 110 Vdc 2/A 24 to 230 Vac/2A	
Solid State (voltage/current)		24 to 230 Vac/1A	5 to 24 Vdc/0.3A 24 Vdc/0.5A 24 to 230 Vac/0.5A
Analog I/O	4 Point Input- +/-500mv, Pt100 non-isolated 4 Point Input high level, current and voltage, isolated and non-isolated 2, 4 and 8 Point Output, current and voltage, isolated and non-isolated		
Motion	Single Axis Incremental Encoder Single Axis Resolver and Incremental Encoder		
Frequency/ Counter	4 point, 1 kHz, 24 Vdc or 500 kHz 5 Vdc, 2 relay out		
Communications	Interbus Master and Slave interface for TSX Compact I/O modules		

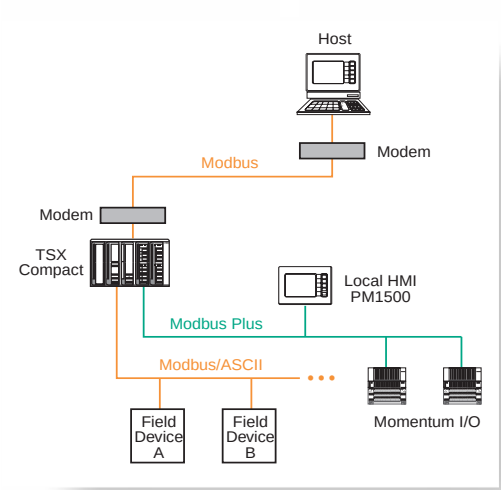
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Modicon TSX Compact

Networking options



Backward and forward compatibility

The key to success for any new or upgraded platform is backward and forward compatibility. The Modicon TSX Compact delivers unparalleled networking connectivity for RTU, local, and remote I/O.

Simple networking integration

Integration of field proven Modbus and Modbus Plus provides simple integration with both Quantum and Sy/Max controllers.

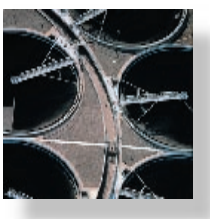
Modbus Plus networking

Simple and easy to program, install, and maintain, and available across the Modicon family, Modbus Plus is the high performance choice for flexible network architectures. Typical applications include control networking and interlocking, data acquisition, program upload/ download, on-line remote programming, connection to operator interfaces, and host computer data collection. Its strength is the ability to control real time control devices like I/O and drives without degraded performance due to loading or traffic.

Two Modbus® interfaces for RTU and point to point applications

Two Modbus ports on every TSX Compact controller delivers dedicated modem communications and local operator interface concurrently at a remote site. Bridging between Modbus and Modbus Plus is done automatically on controllers and Modbus Plus network option modules by configuration to the bridge mode. For Modbus applications greater than 50 feet, connect controllers with up to 247 devices using RS-232 modems over common carrier, such as a phone line, radio or microwave. Third party spread spectrum technology is also available.





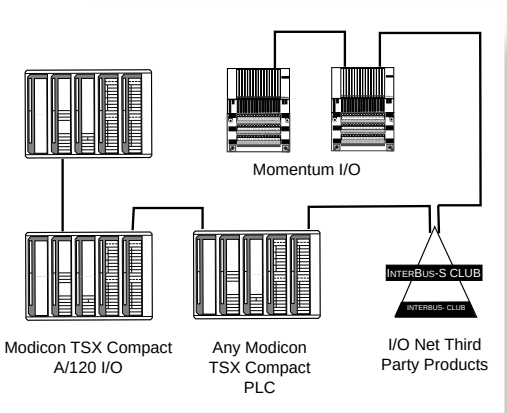
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Modicon TSX Compact

Remote I/O options



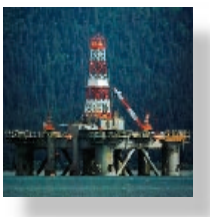
Remote I/O support

Interbus, which enjoys wide third party support with over 300 vendors, is now offered for remote I/O support as master and slave modules. As an I/O fieldbus, it is used heavily in manufacturing and offers a master/ slave topology that permits deterministic I/O servicing over its 13km twisted pair network, and is best suited when talking to groups of I/O rather than bits of data. The number of master modules in the backplane is limited only by CPU I/O capacity, while the slave module supports up to 18 I/O modules.

Interbus I/O network

New modules support remote I/O via Interbus networks – such as BKF201 Master and DEA202 Slave.





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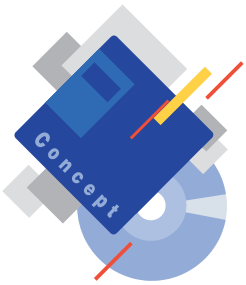


TSX Compact is now fully compatible with Modicon TSX Concept programming software including 984LL.

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Modicon TSX Compact

Programming software



Concept

Concept is a Microsoft® Windows-based programming tool set which provides a single development environment and multiple languages for creating control system programs. Using familiar, standardized editors bundled in a single application, users can create and integrate TSX Compact logic, communications and diagnostics, all within a single application.

Worldwide uniformity

Concept's editors are uniform and easy to use because they comply with Microsoft Windows® graphical user interface and the IEC 1131-3 emerging international standard for programmable logic controllers.

Concept 984 smooth migration

Concept bridges the gap between Concept IEC languages and traditional Modsoft Programming technologies, enabling users to easily migrate to Concept's more productive tools.

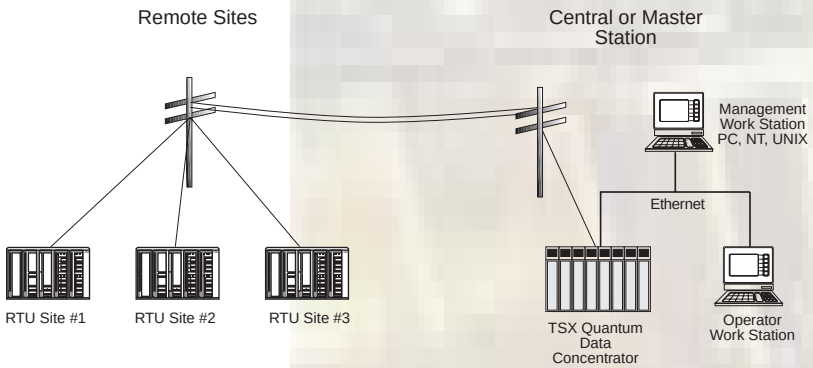
Easy to configure and troubleshoot

All TSX Compact I/O module addressing is software configurable using Modicon Modsoft software. This "I/O Map" means that any I/O module can be installed in any slot reguardless of the module type.





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The new TSX Compact provides for a common programming environment with Quantum resulting in the perfect automation remote-control solution. And with the benefits of Concept at both Master and Remote locations a simple Master station data concentrator and remote site relationship can be employed with any media.

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Modicon TSX Compact

A world class control solution for RTU applications



- Oil & Gas
- Water and Wastewater
- Power
- Infrastructure

Requirements of Todays RTUs

A true RTU must be based upon an industry standard platform with open, secure communications. It must offer data integrity, provide special functions, and operate under extremely difficult environmental conditions. Proprietary RTUs and automation PLCs many times do not meet all these industry requirements, but the Modicon TSX Compact is perfectly suited for the job.

Improved processing power for complex calculations

The Modicon TSX Compact has a new, more powerful processor that allows more complex calculations to be performed with less impact on the logic solve time. This enhances the Compact's functionality, especially when performing multiple tasks, as in flow calculations, communications, and control.

XMIT - Report on Exception

When a situation at an unattended remote site occurs, such as a process alarm or an unauthorized access alarm, it is imperative that the situation be automatically reported to the central station without operator intervention.

Traditional PLCs normally report only when polled by the Master Station, which makes real time remote data management impossible. By simply configuring the Modbus Master Block, "XMIT", the TSX Compact functionally assumes the role of RTU reporting the situation to the Master Station in real time.

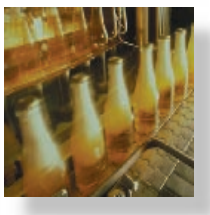
Industries and applications

Oil and gas
For many Oil and Gas applications, the ability to perform accurate fluid flow calculations is critical. The Modicon TSX Compact is available with a built-in, standards-based fluid flow computer loadable, eliminating the need for a specialty Gas Flow Computer. In effect, the TSX Compact is a Gas Flow Computer, RTU and controller all rolled into a standard PLC platform.

Water and wastewater
TSX Compact-based RTUs can be used for lift stations, pump stations, and because of its ability to withstand harsh environments, applications like chlorination control.

Power
In the power industry, TSX Compact can be used as an integral part of distribution management systems for feeder switch and capacitor bank control, as well as for substation automation applications.

Infrastructure
The Compact can be used for remote measurement and automation in rail, airport lighting, CEMS, tunnel and other infrastructure applications.





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