Tricon and Tricon CX

High-integrity + high-availability system

The Tricon™ high-integrity/high-availability system meets the needs of safety and critical control applications in oil and gas, power, refining, chemicals, pharmaceutical, and biotech industries. It is based on industry-leading TMR technology, is easy to operate and maintain, and provides a higher value of ownership.

A compact, secure choice to ensure operational integrity

Triconex®

by Schneider Electric

Tricon Features

SAFE • AVAILABLE • SECURE

Schneider Electric™ is the only automation company with the experience and track record in safety and critical control with more than 30 years of safety system experience. It is also the only automation company with more than 13,000 safety systems installed in more than 80 countries and operating for more than 1 billion hours.

KEY BENEFITS:

- Maximizing process/plant uptime, productivity, and yield
- Increased reliability, availability, performance, and profitability
- Lowers investment and life cycle costs
- Complies with international standards
- Meets safety targets
- Mitigates environmental impact
- Assists you in avoiding penalties or fines for noncompliance
- Enables you to achieve competitive advantage in your markets

Managing operational risks with confidence

The Tricon fail-safe and fault-tolerant controller is used extensively in high-hazard industries where safe operations are critical and reliable operation is paramount. In particular, the Tricon system is the only commercial off-the-shelf controller approved by the Nuclear Regulatory Commission for Nuclear 1E applications.

Our safety and critical control solutions are supported by a dedicated team of TÜV-certified Functional Safety Experts and Engineers, deployed globally, ensuring that expertise is always available where and when required.

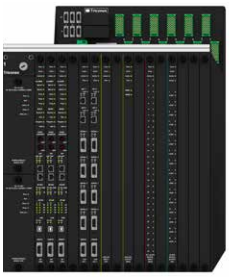
A powerful, scalable design with assurance of continuous operation, the Tricon system complies with international standards such as IEC61508 and fulfills the requirements for applications such as Emergency Shutdown (ESD), Fire and Gas Protection (F&G), Burner Management (BMS), High Integrity Pressure Protection (HIPPS), and Turbo Machinery Control (TMC). The redundant high-availability architecture provides a flexible, robust, reliable, and powerful solution that is ideal for clients looking to achieve environmental and safety excellence.

Schneider Electric 35 rue Joseph Monier 92500 Rueil Malmaison - France www.schneider-electric.com

April 2015

Tricon
Key capabilities

- TÜV-certified for SIL3 applications to international standard IEC61508
- High-availability architecture for continuous operation
- Fault-tolerant architecture for continuous operation even under fault conditions
- Choice of form factors
- Online module replacement ensures continuous operation and plant availability
- Online upgrade without process interruption
- Direct Integration with Foxboro® Evo process automation system
- Easily integrated with all major distributed control systems
- ISA Secure EDSA Level 1 right out of the box
- Works in both centralized and distributed applications
- HART protocol pass through to Asset Management Systems
- Fast program cycle time from 10 mS
- 1 mS SOE Digital Input
- Choice of termination options — Direct and ETP
- Expertise available from our TÜV-certified Functional Safety Experts and Engineers
- Continually current technology
- Comprehensive family of I/O modules



Tricon

Applications

- Emergency Shutdown (ESD)
- Burner Management Systems (BMS)
- Fire and Gas Systems (F&G)
- High Integrity Pressure Protection systems (HIPPS)
- Turbo Machinery Controls (TMC)
- Control of critical applications

Operating principals

- **Fail Safe — De-energize to trip**
- **Energize to trip**
- **Safe, available, secure**

Communications

- SIL3 Peer to Peer (254 Nodes)
- OPC DA and A&E (embedded server)
- Modbus TCP/IP Master and Slave
- Modbus Serial Master and Slave
- TSAA
- Copper and Fiber Optic
- ISA Secure EDSA Level 1

Certification

IEC 61508	NFPA 8502
DIN V 1925	EMC Directive 89/336/EEC
DIN V VDE 0801	ATEX 94/9/EC
EN 54	SEMI S2
NFPA 72	Canadian Standards
DIN V VDE 0116	Association (CSA)
NFPA 8501	Factory Mutual Research (FM)
	Marine Certification (BV)

Operating conditions

Operating Temperature:
32 to 140 °F (0 to 60 °C) ambient

Storage Temperature:
-40 to 167 °F (-40 to 75 °C)

Relative Humidity:
5 to 95% non-condensing

Tricon Specifications

Tricon

MODEL	DIGITAL I/O
3501E/T	115 Vac/Vdc Digital Input
3502E	48 Vac/Vdc Digital Input
3503E	24 Vac/Vdc Digital Input
3504E	24/48 Vdc Digital Input
3505E	24 Vdc Digital Input
3564	24 Vdc Digital Input (simplex)
3506X	24 Vdc Supervised Digital Input
3511	Pulse Input
3506X	24 Vdc Supervised Digital Input
3515	Pulse Totalizer
3601E/T	115 Vac Digital Output
3603B/E/T	120 Vdc Digital Output
3604E	24 Vdc Digital Output
3607E	48 Vdc Digital Output
3611E	115 Vac Digital Output
3617E	48 Vdc Supervised Digital Output
3623E/T	120 Vdc Digital Output
3624	24 Vdc Supervised Digital Output
3625	24 Vdc Digital Output
3664	24 Vdc Digital Output (Dual)
3626X	24 Vdc Supervised Digital Output
3674	24 Vdc Digital Output (Dual)
3636R/T	Relay Output

MODEL	ANALOG I/O
3701	0-10 Vdc Analog Input
3722X	0-5 Vdc Analog Input
3723X	0-5 Vdc Analog Input + Hart
3703E	0-5, 0-10 Vdc Analog Input
3704E	0-5, 0-10 Vdc (HD) Analog Input
3706A	Thermocouple Analog Input
3708E	Thermocouple Analog Input
3720	0-5 Vdc Analog Input
3721	0 to 5 or –5 to +5 Vdc Analog Input
3805E/H	4-20 mA Analog Output
3806E	4-20 mA and 20-320 mA Analog Output
3807	-60 to +60 mA Bipolar Analog Output
3825X	0-20 mA Analog Output
3901X	24 Vdc Supervised Universal I/O

MODEL	COMMUNICATIONS
4355X	TCM Module
4610X	UCM Module
4351B	TCM Module (Copper)
4352B	TCM Module (Fiber)
4610	UCM Module