



ControlLogix Receives TÜV Certification for Use in SIL 2 Applications

Today's manufacturers are faced with meeting new and emerging safety standards and regulations combined with competitive pressure to reduce costs and increase productivity. These manufacturers require safe, reliable systems to safeguard people, property, the environment, and reputations. Safety Integrity Level (SIL) 2 certification of ControlLogix products by TÜV makes it simpler, easier, and less expensive for these manufacturers to meet growing standards compliance requirements worldwide.

What Is SIL 2 Certification All About?

A SIL is a numeric designator assigned to a safety system that indicates that system's ability to perform its safety function. The SIL 2 TYPE certification of ControlLogix products by TÜV, an internationally-recognized and accredited test laboratory certification center, assures the suitability of ControlLogix products for use in up to a SIL 2 safety application.



TÜV certification is based primarily on compliance with IEC 61508 "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems" requirements. It also includes a number of application-independent standards, DIN V 19250 and VDE 0801, application-dependent standards, prEN 50156 for ESD applications, DIN EN 54 for fire and gas application, and environmental and electrical safety standards, IEC 61131-2, EN 50178, EN 50081-2, and EN 61000-2:2000. Rockwell Automation has obtained a TYPE approval and certification from TÜV.



Reliability by Design

Unlike other manufacturers, in obtaining Safety Integrity Level (SIL) 2 certification for its ControlLogix family, Rockwell Automation did not need to create a special line of products to meet stringent SIL 2 requirements. Sophisticated diagnostics and high levels of reliability are standard design in ControlLogix processors, I/O modules, and communication products. It's that same, standard design that readily provides the reliability needed to achieve SIL 2 certification.

Standard Design Yields Exceptional Savings

Achieving a SIL 2 Safety Integrity Level for systems using standard, off-the-shelf ControlLogix products requires no additional training and ensures that spares are readily available. That's why many major petroleum companies today use ControlLogix, saving more than 80% of the cost of other solutions.

Independent analyses have confirmed Safe Failure Fractions for the processors at well over 95%. Diagnostic I/O, including outputs that pulse test to verify that outputs are working, provide pre-emptive warnings of potential issues before they become reality. These I/O modules also provide field-side testing for shorts, opens, and broken wires.

Analysis of field data confirms reliability metrics including high Mean Time Between Failures (MTBF). For example, ControlLogix components for a sample 24V dc safety loop can result in MTBFs of more than a million hours or 100 years! This same field data, when used to estimate a Probability of Failure on Demand (PFD) yields values of 10^{-6} . Such performance sets a new standard for reliability and availability – increasing safety, productivity, and profits while reducing down time, nuisance trips, and lifecycle costs for all customers.

Profile

**Rockwell
Automation**

Certified ControlLogix Products

The following ControlLogix products are certified for use in SIL 2 applications.

Product Selection

| Category | Catalog Number | Description | Series | Firmware Revision |
|-----------------------|--------------------|--|---|-------------------|
| Controllers | 1756-L55M13 | Logix processor w/ 1.5Mb memory | A | 10.27 11.32 |
| | 1756-L55M16 | ControlLogix 5555 Controller w/ 7.5Mb memory | A | 10.27 11.32 |
| Communication Modules | 1756-CNB / -CNBR | ControlNet Communication Modules | D | 5.27 5.38 |
| | 1756-DHRI0 | DH+/RIO Bridge / Scanner Module | C | 5.3 |
| | 1756-ENBT | Ethernet Communication Module | A | 1.33 |
| Digital I/O Modules | 1756-IA16I | 120vac Isolated Input Module | A | 2.2 |
| | 1756-IA8D | 120vac Diagnostic Input Modules | A | 2.6 |
| | 1756-IB16D | 24vdc Diagnostic Input Module | A | 2.6 |
| | 1756-IB16I | 24vdc Isolated Input Modules | A | 2.2 |
| | 1756-IB32 | DC Input - 32pt | B | 3.5 |
| | 1756-OA16I | 120vac Isolated Output Module | A | 2.1 |
| | 1756-OA8D | 120vac Diagnostic Output Module | A | 2.4 |
| | 1756-OB16D | 24vdc Diagnostic Output Module | A | 2.3 |
| | 1756-OB16I | 24vdc Isolated Output Module | A | 2.1 |
| | 1756-OB32 | DC Output - 32pt | A | 2.4 |
| | 1756-OB8EI | 24vdc Isolated Output Module | A | 2.3 |
| | 1756-OW16I | N.O. Isolated Relay Output - 16Pt | A | 2.1 |
| | 1756-0X8I | Isolated Relay Output Module | A | 2.1 |
| | Analog I/O Modules | 1756-IF16 | Single-ended Analog Input Module - 16pt | A |
| 1756-IF6I | | Isolated Analog Input Module - 6pt | A | 1.9 |
| 1756-IF8 | | Analog Input Module | A | 1.5 |
| 1756-IR6I | | RTD Input Module | A | 1.9 |
| 1756-IT6I | | Thermocouple Input Module | A | 1.9 |
| 1756-IT6I2 | | Enhanced Thermocouple Input Module | A | 1.11 |
| 1756-OF6CI | | Isolated Analog Output Module- Current - 6pt | A | 1.9 |
| 1756-OF6VI | | Isolated Analog Output Module- Voltage - 6pt | A | 1.9 |
| 1756-OF8 | | Analog Output Module | A | 1.5 |
| System Components | | 1756-A4, A7, A10, A13 and A17 | ControlLogix Chassis | B |
| | 1756-PA75 | 120vac Standard Power Supply | A | N/A |
| | 1756-PA75R | 120vac Redundant Power Supply | A | N/A |
| | 1756-PB75 | 24vdc Standard Power Supply | A | N/A |
| | 1756-PB75R | 24vdc Redundant Power Supply | A | N/A |
| | 1756-PSCA | Power Supply Chassis Adapter | A | N/A |
| | 1756-PSCA2 | Redundant Power Supply Chassis Adapter | A | N/A |

Typical SIL 2 ControlLogix applications include:

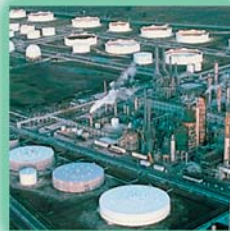
- emergency shutdown systems
- fire and gas
- spill prevention
- flow control
- compressor control
- tank farms
- oil rigs
- pipelines
- processing
- drilling
- chemical
- energy management
- refining
- waste water treatment

Typical industries served include:

- petroleum
- chemical
- pharmaceutical
- power generation
- semiconductor

Rockwell Automation also provides a variety of other safety solutions from safety sensors to SIL 3, category 4 Safety PLC processors as well complete systems and services. Contact your local sales representative or distributor for more information.

For information on how to apply these products in a SIL 2 application, refer to the ControlLogix Safety Reference Manual, publication 1756-RM001, available at <http://www.theautomationbookstore.com>



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