



Allen-Bradley

ControlLogix Sequence of Events Module

**1756-IB16ISOE (24/48V dc),
1756-IH16ISOE (125V dc)**

User Manual

**Rockwell
Automation**

Purpose of This Manual

This manual describes how to use the ControlLogix Sequence of Events module in your ControlLogix application. With this manual, you can learn how to install, configure and troubleshoot the module.

There are two types of ControlLogix Sequence of Events modules, as described in Table Preface.1:

Table Preface.1

Catalog number:	Description:	Availability date:
1756-IB16ISOE	16-point, 10 - 50V dc module	June 2004
1756-IH16ISOE	16-point, 90 - 140V dc module	April 2004

IMPORTANT

The two types of Sequence of Events modules have identical functionality, except for the fact that they operate at different voltage levels. Throughout this manual, we use the term *Sequence of Events module* generically. When you read the term, it refers to both types of modules unless specifically noted.

Who Should Use This Manual

This manual is intended for individuals who program ControlLogix control systems, such as:

- software engineers
- control engineers
- application engineers

To most efficiently use the Sequence of Events module, you should be familiar with:

- ControlLogix™ controllers
- ControlLogix ControlNet™ communication modules
- RSLogix 5000™
- RSNetWorx for ControlNet™

Specifications and Module Block Diagrams

1756-IB16ISOE Specifications

Number of Inputs	16 (Individually isolated)
Module Location	1756 ControlLogix Chassis
Backplane Current	295mA @ 5.1V dc & 2mA @ 24V dc
Backplane Power	1.5W
Maximum Power Dissipation (Module)	5.5W @ 60°C
Thermal Dissipation	17.22 BTU/hr.
On-State Voltage Range	10-55V dc
Nominal Input Voltage	24V dc/48V dc
On-State Current Minimum Nominal Maximum	2.0mA @ 9V dc 4.5mA @ 24-31V dc 5.1mA @ 48-55V dc
Maximum Off-State Current	1.5mA
Maximum Off-State Voltage	5V dc
Maximum Input Impedance	10.8kΩ @ 55V dc
Input Delay Time OFF to ON	Hardware Delay (10μs nominal/20μs maximum) + Firmware Scan (up to 25μs) + Input Filter Time (User selectable time: 0ms to 50ms) + ASIC delay (175μs - FIFO/625μs - CST Per Point)
ON to OFF	Hardware Delay (25μs nominal/50μs maximum) + Firmware Scan (25μs) + Input Filter Time (User selectable time: 0ms to 50ms) + ASIC delay (175μs - FIFO/625μs - CST Per Point)
Timestamp accuracy	100μs
Cyclic Update Time (RPI)	User selectable (250μs minimum/750ms maximum)
Reverse Polarity Protection	Yes
Isolation Voltage Inputs to backplane Input to input	250V continuous 125V continuous
RTB Screw Torque (Cage clamp)	4.4 inch-pounds (0.4Nm) maximum
Module Keying (Backplane)	Software configurable
RTB Keying	User defined mechanical keying
RTB and Housing	36-Position RTB (1756-TBCH or TBS6H) ⁽¹⁾

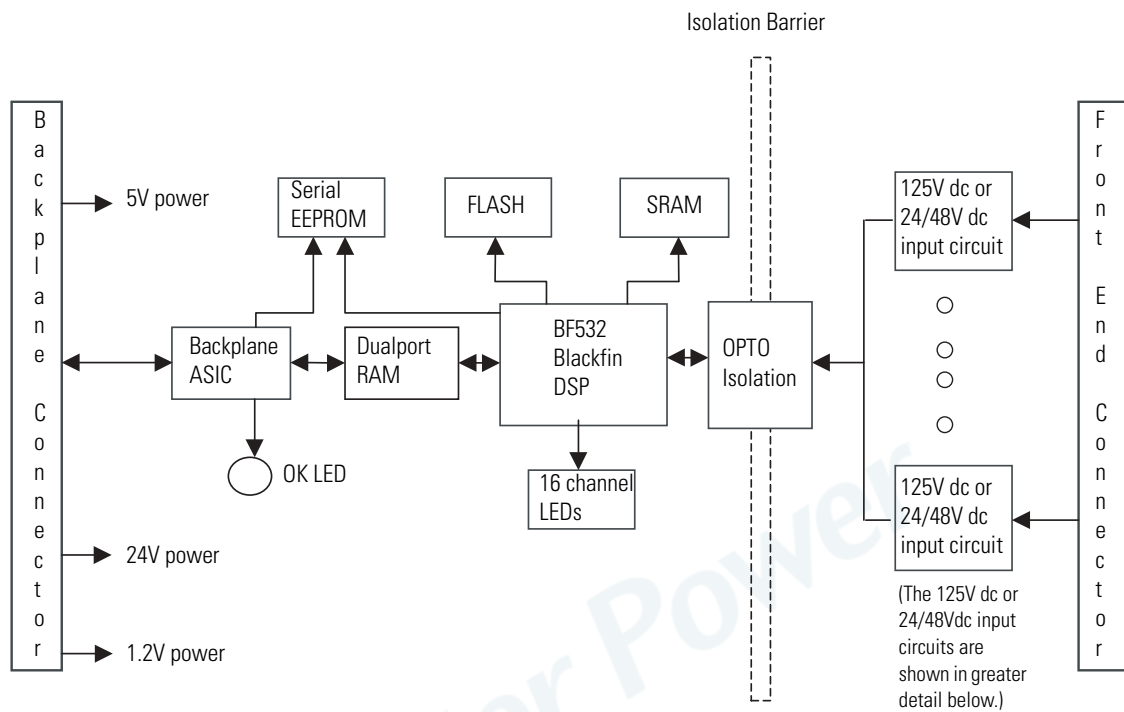
A-2 Specifications and Module Block Diagrams

Conductors	
Wire Size	#22 to #14 AWG (0.324 to 2.08 sq. mm) stranded ⁽¹⁾
Category	3/64 inch (1.2mm) insulation maximum 1 ⁽²⁾
Screwdriver Blade Width for RTB	1/8 inch (3.2mm) maximum
Environmental Conditions	
Operational Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0 to 60°C (32 to 140°F)
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -40 to 85°C (-40 to 185°F)
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5 to 95% non-condensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 2g @ 10-500Hz
Operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30g
Non-operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50g
Emissions	CISPR 11: Group 1, Class A
ESD Immunity	IEC 61000-4-2: 6kV contact discharges 8kV air discharges
Radiated RF Immunity	IEC 61000-4-3: 10V/m with 1kHz sine-wave 80%AM from 80MHz to 1000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900Mhz 10V/m with 200Hz 50% Pulse 100%AM at 1890Mhz

1756-IB16ISOE Module Block Diagram

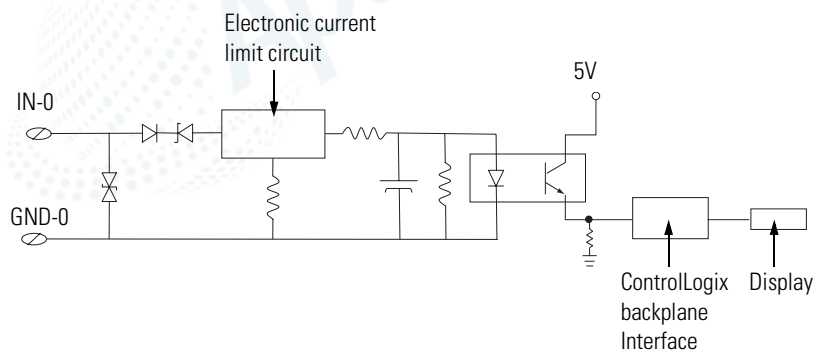
Figure A.1 shows the Sequence of Events module block diagram.

Figure A.1



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24/48Vdc input circuit



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