

Chapter 5

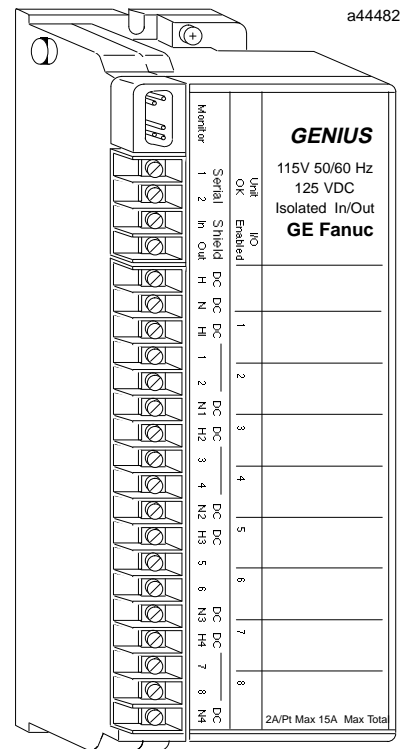
115 VAC/125 VDC Isolated I/O Blocks

115 VAC/125 VDC Isolated Genius I/O blocks have four isolated groups of two I/O circuits, each rated to operate at a nominal 115 volts AC or 125 volts DC.

- **115VAC/125VDC 8 Circuit Isolated I/O Blocks** (IC660BBS102 and BBS100). These blocks report a Failed Switch diagnostic if any output's commanded state is not the same as the actual state of the block's own internal switch.
- **115 VAC/125VDC Isolated I/O Blocks without Failed Switch Diagnostic** (IC660BBS103 and BBS101). For applications where field wiring such as manual switches will be wired in parallel with block outputs. These blocks ignore differences between an output's commanded state and the actual state of the block's internal switch.

Isolation is rated to withstand 250 VAC/VDC continuous between any group and ground or between any two groups. Transient rating is 2000V peak for 10 sec.

Control power for the block is tapped off the input/output device voltages wired to the terminals. The block has terminals for a separate power source for the internal electronics. The block power supply can be independently either AC or DC. The block need not be powered in the same manner as the circuits.



Features

Configurable features of these blocks include:

- AC/DC circuit voltage
- Output Pulse Test capability
- Selectable Input Filter Time from 10mS to 100mS
- Output power up defaults
- Output Hold Last State or default
- CPU Redundancy type
- Bus Switching Module control

Electronic fusing is built into each circuit used as an output. The circuit is shut down 5 μ S after a short occurs. It can be easily restarted from a Hand-held Monitor or from the CPU. The blocks perform these additional diagnostic checks:

- Overtemperature Open Wire for tristate inputs.
- Detection of loss of I/O power on pairs of circuits
- Overload Detection and Shutdown
- No-Load Detection

Specifications

Block Type: 115VAC/125VDCIsolatedI/OBlock: Terminal Assembly Only: Electronics Assembly Only: 115VAC/125VDCIsolatedI/OBlock, No Failed Switch: Terminal Assembly Only: Electronics Assembly Only:	8 ckt isolated input/output in 4 isolated pairs IC660BBS102, replaces IC660BBS100 IC660TSS100 IC660EBS100 IC660BBS103, replaces IC660BBS101 IC660TSS100 IC660EBS101	
Size (height x width x depth): Weight: LED's (I/O Block): LED's (each circuit): Block to Block Isolation: Heat Dissipation:	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" x (10.00cm) 4 lbs. (1.8 kg) Unit OK, I/O Enabled On logic side of switch 1500 V 16.8W max. with 8 inputs on, 45.6W max. with 8 outputs at 2 amps	
Operating Temperature Storage Temperature Humidity Vibration	-0 to +60C (32 to +140F) -40 C (-40 to +212F) 5% to 95% (non-condensing) 5-10 Hz 0.2" (5.08mm) displacement, 10-200 Hz at 1G	
Required control power (block only):	8 Watts maximum	
Operating voltage (four sources): Frequency/ripple: Power supply dropout time:	<u>93-132 VAC</u> 47-63 Hz 1 cycle	<u>105-132 VDC</u> 10% max. ripple 10mS
Input Characteristics: Non-tristate input, OFF state: Minimum voltage across input device (IN to H) Maximum leakage through input device Non-tristate input, ON state: Maximum voltage across input device (IN to H) Maximum switch current threshold Tristate input: OFF, acceptable voltage across input device (IN to H) ON, maximum voltage across input device (IN to H) Input load network: Resistor to N Capacitor to H: for blocks BBS100 and BBS101 Capacitor to H: for blocks BBS102 and BBS103 Input processing time (typical) Selectable input filter times Input diagnostics	For AC 60 VRMS 1 mA 20 VRMS 6 mA RMS 16 VRMS-40 VRMS 4 VRMS 13K ohms .22 µf .1 µf 2mS + filter	For DC 70 VDC 2 mA 35 VDC 5 mA 16 VDC-35 VDC 3.5 VDC 13K ohms .22 µf .1 µf 0.8mS + filter
Output Characteristics: Output current (steady state) Maximum inrush current Output Leakage: Current at 0 volt output: for blocks BBS102 and 103 Current at 0 volt output: for blocks BBS100 and 101 Voltage at open output: for blocks BBS102 and 103 Voltage at open output: for blocks BBS100 and 101 Output switch (OFF to ON/ON to OFF) Rated switching frequency at maximum inrush Turn-on delay (maximum) Voltage drop (at 2 amps) Voltage drop (at 20 amps inrush) Minimum load (No Load disabled) Resistive: for blocks BBS102 and BBS103 Resistive: for blocks BBS100 and BBS101 Inductive: for blocks BBS102 and BBS103 Inductive: for blocks BBS100 and BBS101 No Load enabled threshold Maximum block output current Fusing Output diagnostics	For AC 2 amps 25 amps (2 cycles) 7 mA 13mA 65 volts 95 volts Zero crossing Once per second 0.5 Hz + 1mS 2.5 volts 10 volts	For DC 2 amps resistive 9 (1 amp inductive*) 25 amps (10mS peak) 2 mA 2 mA 40 volts 40 volts --- Once per second 1mS 2.5 volts 10 volts
	15 amps at 35 C, 7.5 amps at 60C Internal electronic short circuit trip. 100ms(AC), 10ms (DC) long time trip Short Circuit, Overload, No Load, Overtemp., Loss of I/O Power. Also, for blocks BBS100 and BBS 102 only: Failed Switch	

* DC inductive load rating is 2 amps with external flyback diode or other coil suppression.