GE Genius I-O Series Service Manual

IC660BBS102

1. Description

The IC660BBS102 is a 115 VAC / 125 VDC Isolated I/O Block with eight circuits and Failed Switch Diagnostics by GE Fanuc. The IC660BBS102 is reported to continuously withstand 250 VAC/VDC between any group or ground or between any two groups. The block has a transient rating of 2000V peak for 10 seconds. Some configuarble features include AC/DC circuit voltage, defaults for output power-ups, CPU redundancy, a selectable input filter type ranging from 10mS to 100mS, capability for output pulse tes

2. Specifications

Specification	Value
Brand	GE Fanuc
Series	Genius I-O
Manufacturer	Emerson Automation / GE Fanuc (formerly)
Part	Number IC660BBS102
Series	Genius I/O
Product	type I/O block
Part	Number IC660BBS102
Circuits	8
Product	Description Isolated Block I/O
Voltage	rating 115 Volts AC, 125 Volts DC
No.	of Inputs 8
Failed	switch diagnostic Yes
Points	per common 4 groups of 2
Isolation	250 Volts AC
Operating	voltage 93-132 VAC / 105-132 VDC
Weight	4 pounds
Nominal	voltage 115 VAC / 125 VDC
Dimensions	8.8 x 3.3 x 3.9 inches
Communication	protocol Genius Protocol
Peak	heat dissipation 45.6 Watts
Input	Response time AC: 2ms + filter: DC: 0.8ms + filter
Selectable	input filter times AC: 2 A RMS; DC: 2A resistive (1A inductive)
Output	switch (OFF to ON/ON to OFF): Zero crossing
Maximum	switching frequency once per second
Turn-on	delay (maximum) AC: 0.5 Hz + 1ms, DC: 1ms
Block	to Block Isolation 1500V for one minute
LEDs	(I/O Block) Unit OK, I/O Enabled
Size	(HxWxD) 8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm) Descrip

3. Product Information

The IC660BBS102 is a 115 VAC / 125 VDC Isolated I/O Block with eight circuits and Failed Switch Diagnostics by GE Fanuc. The IC660BBS102 is reported to continuously withstand 250 VAC/VDC between any group or ground or between any two groups. The block has a transient rating of 2000V peak for 10 seconds. Some configuarble features include AC/DC circuit voltage, defaults for output power-ups, CPU redundancy, a selectable input filter type ranging from 10mS to 100mS, capability for output pulse test, and module control for bus switching.

The block performs diagnostic tests that detect overload and no overload, I/O power loss on pairs of circuits, over-temperature, and open wire for tristate inputs. As long as terminals 5 and 6 are recieving power, the isolated I/O block should operate. Temperatures in excess of 100°C trigger an OVERTEMPERATURE message and turns off the circuit to protect the internal electronics of the unit. The short circuit level sensor at the switching device protects the output circuits. Outputs are configured to report No-Load conditions for a new block. Genius I/O blocks are considered "open equipment" and must be installed in a protective enclosure, clean and free of airborne contaminants and with adequate cooling airflow. The block can be mounted right side up, or upside down. Leave at least 2 inches of space between blocks. The block’s mounting screws must not be used as the only means of grounding the block.

The IC660BBS102 block is fully compatible with handheld monitor IC660HHM501 and any GE Fanuc bus controller. Blocks numbered IC660CBS100, 1C660BBS100, and IC660BBS101 are backward compatible with previous versions of this Genius I/O block. Terminal assembly model IC66*TSS100E is not compatible with earlier versions of the block. During field wiring, all terminal blocks can accommodate one AWG #12 or two AWG #14 wires. Terminals labeled 1 to 4 can accommodate ring terminals measuring up to 0.27 inches. Recommended torque for all terminals is 6 inches/lb. The IC660BBS102 is a Genius Block I/O. Previously manufactured by GE Fanuc, this module is now under Emerson Automation. It is an 8-channel isolated I/O block in 4 groups of 2 channels each with channels configurable as input and output, independently that accepts 115 VAC / 125 VDC. This block I/O is capable of reporting failed switch diagnostic by comparing the block output command Technical specifications for IC660BBS102

Brand GE Fanuc

Series Genius I-O

Manufacturer Emerson Automation / GE Fanuc (formerly)

Part Number IC660BBS102

Series Genius I/O

Product type I/O block

Part Number IC660BBS102

Circuits 8

Product Description Isolated Block I/O

Voltage rating 115 Volts AC, 125 Volts DC

No. of Inputs 8

Failed switch diagnostic Yes

Points per common 4 groups of 2

Isolation 250 Volts AC

Operating voltage 93-132 VAC / 105-132 VDC

Weight 4 pounds

Nominal voltage 115 VAC / 125 VDC

Dimensions 8.8 x 3.3 x 3.9 inches

Communication protocol Genius Protocol

Peak heat dissipation 45.6 Watts

Input Response time AC: 2ms + filter: DC: 0.8ms + filter

Selectable input filter times AC: 2 A RMS; DC: 2A resistive (1A inductive)

Output switch (OFF to ON/ON to OFF): Zero crossing

Maximum switching frequency once per second

Turn-on delay (maximum) AC: 0.5 Hz + 1ms, DC: 1ms

Block to Block Isolation 1500V for one minute

LEDs (I/O Block) Unit OK, I/O Enabled

Size (HxWxD) 8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm) Description

The IC660BBS102 is a Genius Block I/o that is manufactured by Emerson Automation. This module mainly features Eight (8) circuits in 4 isolated groups of 2 channels each, configurable as input or output that are compatible with 115 VAC and 125 VDC voltages. This Block I/O module supports Genius I/O protocol, that enables the capability of communicating directly over Genius Bus protocol. The IC660BBS102 is capable of detecting failed switch diagnostic implemented by comparing the output command of the module to the state on the built-in internal switch to the block I/O device. This Block I/O supports redundant Processors and capable as well of holding the last state, output pulse test capability and output powerup defaults. The IC660BBS102 also supports accepting restart command from hand-held monitor or from the master controller. It is also equipped with diagnostic capabilities such as Overtemperature Open Wire when configured as tri-state input; Detection of loss of I/O power on pairs of circuits; Overload Detection and Shutdown and No-Load Detection. The IC660BBS102 physically measures 8.83" (22.44cm) x 3.34" (8.48cm) x 3.91" (9.93cm) and weighs approximately 4 lbs. (1.8 kg). It is built with Unit OK and I/O enabled LED status indicators as well as circuit LEDs on logic side of the switch. It is designed for panel mounting and support right side up or upside down orientation. With support for Genius I/O protocol, the IC660BBS102 may be connected in multi-drop or daisy chain topology, where a network of Genius I/O capable devices may be connected as well.

The IC660BBS102 output block is a GE Fanuc Genius I/O output block. There are 8 circuits on the IC660BBS102 output block which are divided into 4 separate groups of 2 circuits each. The groups are isolated and they are rated for both 125 Volts DC and 115 Volts AC voltage. The IC660BBS102 output block replaces the older IC660BBS100 output block model. Both the IC660BBS102 output block and the IC660BBS100 output block report a failed switch diagnostic in the event that an output’s command state does not match the actual state of the internal switch on the I/O block. The IC660BBS102 output block can be operated from either a DC or AC voltage source. For AC voltage, the input range is 93 to 132 Volts AC, and for DC voltage, the input range is 105 to 132 Volts DC. For AC input, the supported frequency range is 47 to 63 Hertz. The isolation on the IC660BBS102 output block between any 2 output groups or between a group and ground is rated at 250 Volts AC. Features of the IC660BBS102 output block include AC or DC circuit voltage, output pulse test capability, CPU

redundancy, and bus switching module control. Electronic fusing is integrated into each output circuit, and an output circuit experiencing a short is shut down within 5 microseconds of the occurrence of the short circuit to protect the block. The IC660BBS102 output block can be restarted from the CPU or from a hand-held monitor. The IC660BBS102 output block weighs 4 pounds and measures 8.8 x 3.3 x 3.9 inches. When all 8 output circuits are on and are drawing 2 Amps of current, the maximum module heat dissipation rating can reach 45.6 Watts.