GE Genius I-O Series Service Manual

IC660BBD025

1. Description

The IC660BBD025 is a 5/12/24 VDC 32-Circuit Sink I/O Block. This block is an intelligent, configurable module that interfaces the controller to devices that send or receive binary signals. IC660BBD025 works with both 2-wire and 3-wire proximity switches, as well as other input devices. It is important to note that if the user plans to provide current to field output devices rather than receive current, a Source Block IC660BBD024 is recommended.

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Genius I-O**
Manufacturer	**GE Fanuc / Emerson Automation**
Part	**Number IC660BBD025**
Series	**Genius I/O**
Description	**Sink I/O Block**
Product	**Description 32 Circuit Block I/O Module**
Compatible	**Series Series 90-30**
No.	**of circuits 32 I/O circuits**
Voltage	**5/12/24 Volts DC**
Input	**signal voltage 5 / 12 24 / VDC TTL**
Points	**32**
Input	**processing time 1.4 ms**
Load	**current 0.5 Amperes**
Output	**Current 0.5 Amperes per circuit**
TTL	**+5 Volts**
maximum	**inrush current 4 Amperes up to 10 ms**
Block	**to block isolation 850 Volts**
Output	**diagnostics Failed Switch**
Heat	**dissipation 11 Watts for 8 inputs, 18 Watts for 32 inputs**
Compatible	**Electronics assembly IC660EBD025**
Dimension(h*w*d)	**8.83 x 3.58 x 4.7 inches**
Compatible	**terminal base assembly IC660TBD025**
Operating	**Temperature 0 Degree to 60 Degree Celsius**
Storage	**temperature of -40 Degree Celsius to 100 Degree Celsius**
Humidity	**5-95% non-condensing**
Product	**lifecycle discontinued Description**
The	**IC660BBD025 is a Block I/O from the Genius I/O Block series.**

3. Product Information

The IC660BBD025 is a 5/12/24 VDC 32-Circuit Sink I/O Block. This block is an intelligent, configurable module that interfaces the controller to devices that send or receive binary signals. IC660BBD025 works with both 2-wire and 3-wire proximity switches, as well as other input devices. It is important to note that if the user plans to provide current to field output devices rather than receive current, a Source Block IC660BBD024 is recommended.

Source and Sink block versions each operate with direct current (12 to 24 volts). IC660BBD025 is also +5 volt TTL (transistor-transistor logic) compatible. The block's 32 circuits can be configured as input, output, or output with feedback. In output configurations, block architecture protects driver circuits against short circuits caused by wiring errors. Configurable features of the IC660BBD025 include Output Pulse Test capability, Input Filter Time, CPU Redundancy type, Output Hold behavior, and its readiness for use as a Bus Switching Module control.

Block terminals 5 through 46 are for connecting field devices. The user should wire the block power disconnects so that block power and input power can be removed at the same time. Simultaneous power removal ensures that the block will not power up unexpectedly when multiple inputs are activated.

IC660BBD025 ships with block diagnostics that monitor output and check actual switch state against expected or commanded switch state. The block handles a steady-state load of 0.5 Amps when operating normally. Block behavior and circuits are configured using a handheld monitor. The monitor can also be used with LEDs on the chassis of the block itself to check operating status at a glance.

When installing the block, it is crucial to use a protective case and choose a place with no airborne contaminants. Adequate cooling and air flow are essential. Ground screws must connect to a reliable grounding system. To properly disconnect block power, circuit power must be disconnected. The IC660BBD025 is a Genius Block I/O module that is formerly produced by GE Fanuc Automation now under Emerson Automation. This module features thirty-Two (32) sinking I/O circuits configurable as input or output. Input circuits are designed to accept nominal input signal voltages of 5 / 12 / 24 VDC TTL signals at an input current processing time of 1.4 ms. Output circuits are designed to Technical specifications for

IC660BBD025

Brand GE Fanuc

Series Genius I-O

Manufacturer GE Fanuc / Emerson Automation

Part Number IC660BBD025

Series Genius I/O

Description Sink I/O Block

Product Description 32 Circuit Block I/O Module

Compatible Series Series 90-30

No. of circuits 32 I/O circuits

Voltage 5/12/24 Volts DC

Input signal voltage 5 / 12 24 / VDC TTL

Points 32

Input processing time 1.4 ms

Load current 0.5 Amperes

Output Current 0.5 Amperes per circuit

TTL +5 Volts

maximum inrush current 4 Amperes up to 10 ms

Block to block isolation 850 Volts

Output diagnostics Failed Switch

Heat dissipation 11 Watts for 8 inputs, 18 Watts for 32 inputs

Compatible Electronics assembly IC660EBD025

Dimension(h*w*d) 8.83 x 3.58 x 4.7 inches

Compatible terminal base assembly IC660TBD025

Operating Temperature 0 Degree to 60 Degree Celsius

Storage temperature of -40 Degree Celsius to 100 Degree Celsius

Humidity 5-95% non-condensing

Product lifecycle discontinued Description

The IC660BBD025 is a Block I/O from the Genius I/O Block series. This device is mainly used to implement distributed I/O architecture as the IC660BBD025 is a fully-functional Genius I/O node that comes with Thirty-Two (32) I/O circuits, a built-in Genius communication terminal, and an integrated Hand Held Monitor (HHM) port. The IC660BBD025 is formerly produced by GE Fanuc Automation however, the product series and other automation devices have been acquired by Emerson Automation. This module supports remote installation, near the machine or process being controlled as the IC660BBD025 is capable of communicating with the controller up to 7500 feet away. It can be directly integrated with Series 90-30, Series 90-70 controllers, and other controllers that support the communication protocol as well as Genius Bus Controllers, Interface module, and 3rd party devices. The input circuits of this module accept 10 to 30 VDC range for 12/24 V nominal supply; 4.9 to 5.3 VDC voltage range for 5 V nominal supply in sink configuration only. Input circuits have selectable filter times of 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60, 70, 80, 90, or 100ms and input processing time of 1.4 ms. The output circuits are rated 0.5 Amperes each with a maximum inrush current of 4 Amperes up to 10 ms. The total output current of this module is 16 Amperes with an individual output delay of 0.5 ms. Status LED indicators are provided with the IC660BBD025 such as Module OK and I/O Enabled. This module also comes with resettable self-protecting circuits and advanced diagnostics.

The GE Fanuc Genius I-O IC660BBD025 I/O block is a sink I/O block. It comes with a voltage rating of 5, 12, or 24 Volts DC. It also comes with 32 I/O points. The load current rating of the block is 0.5 Amps. The I/O block can interface with different input devices, switches, and field devices. The IC660BBD025 I/O sink block can be easily configured and it can be used as an input or an output device. The front side of the block is equipped with different ports and LED indicators. A monitor port is available on the top of the block that can be used to connect with a programmable controller or monitoring device. Below the monitoring port, Serial Port 1 and Serial Port 2 are available along with the Shield In Port and the Shield Out Port. The GE Fanuc IC660BBD025 I/O Block comes with the I/O Enabled LED and the Unit OK LED to alert the operators when the whole unit and the I/O are both in proper running condition. The 32 I/O points present on the front of the block all have an LED that illuminates when a specific I/O point is used. The I/O block has been certified with the UL standard

and other industrial standards. The IC660BBD025 I/O block is manufactured with built-in protection features that include the overtemperature, overload, and short circuit protection. This Genius I/O block is fully compatible with +5 Volts transistor logic (TTL). This block is compact and it has dimensions of 8.83 inches in height, 3.58 inches in width, and 4.7 inches in depth. It can dissipate 11 Watts heat with just 8 inputs and 18 Watts with all 32 points. The block-to-block isolation is 850 Volts.