GE Genius I-O Series Service Manual

IC660BBD020

1. Description

The IC660BBD020 is 24/48 VDC Source I/O, 16 Circuit, 3 Wire Sensor Compatible Block of GE Fanuc series 90-30 PLCs. It is a configurable block that interfaces 3-wire solid state and electromechanical sensors. This block works with 24 or 48 VDC and provides current to output devices only. The IC660BBD020 has 16 discrete circuits. Each of them can be configured as input, tristate input, or output with different parameters and features. It also has advanced diagnostic capabilities. It can detect in

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Genius I/O**
Manufacturer	**Emerson Automation / GE Fanuc (formerly)**
Part	**Number IC660BBD020**
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Description	**Sink I/O block**
Product	**Description Source Block I/O**
Voltage	**24/48 Volts**
No.	**of I/O 16**
Compatibility	**90-30 PLCs**
Points	**per common One group of 16**
Load	**current 2 Amperes**
Operating	**voltage 18-56 VDC**
Input	**Impedance 1.7 ms with filter**
Nominal	**voltage 24VDC / 48 VDC**
Temperature	**0-60 degrees Celsius**
Communication	**protocol Genius Protocol**
Circuit	**16**
Input	**Response time 1.7 msec plus configurable filter**
Output	**response time 1.0 msec**
Filter	**time 5 to 100mS**
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	**IC660BBD020 is a Emerson Automation PLC component. Formerly manufactured by GE Fanuc, the IC660BBD020 is a Genius Block I/O, specifically, a 16-channel Source combination discrete I/O module. This module has the capabilities of a Disc**

3. Product Information

The IC660BBD020 is 24/48 VDC Source I/O, 16 Circuit, 3 Wire Sensor Compatible Block of GE Fanuc series 90-30 PLCs. It is a configurable block that interfaces 3-wire solid state and electromechanical sensors. This block works with 24 or 48 VDC and provides current to output devices only. The IC660BBD020 has 16 discrete circuits. Each of them can be configured as input, tristate input, or output with different parameters and features. It also has advanced diagnostic capabilities. It can detect installation problems or run-time errors. It reports them to the handheld monitor and takes appropriate corrective action. Some of them are short circuit, over temperature, failed switch, open wire, overload, or no load diagnostic.

The IC660BBD020 is compatible with Terminal Assembly IC66*TSD020 version C or later. It is not compatible with any version of IC66*ELD020 or IC66*EBD020 versions A to E Electronics Assemblies. However, these assemblies can get an upgrade to work with IC660BBD020. Any handheld monitor can be used with this block except for IC66*HHM501, which requires some configuration. The IC660BBD020 has some installation restrictions. For example, it must be installed in areas that are clean and free of airborne contaminants and with adequate cooling airflow. It can be mounted right-side up or upside down. Emphasis should be given to grounding due to the block's mounting screws. A reliable ground system using a short wire lead is necessary. The IC660BBD020 is a Genius Block I/O. Previously manufactured by GE Fanuc, this module is now under Emerson Automation. It is a 16-channel Source I/O block with channels configurable as input and output, independently that accepts 24 VDC / 48 VDC input signal and deliver 24 VDC / 48 VDC signals. It is compatible for use with 3-wire sensors, electromechanical relays and other Technical specifications for IC660BBD020

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No. of I/O 16

Compatibility 90-30 PLCs

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Load current 2 Amperes

Operating voltage 18-56 VDC

Input Impedance 1.7 ms with filter

Nominal voltage 24VDC / 48 VDC

Temperature 0-60 degrees Celsius

Communication protocol Genius Protocol

Circuit 16

Input Response time 1.7 msec plus configurable filter

Output response time 1.0 msec

Filter time 5 to 100mS

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 IC660BBD020 is a Emerson Automation PLC component. Formerly manufactured by GE Fanuc, the IC660BBD020 is a Genius Block I/O, specifically, a 16-channel Source combination discrete I/O module. This module has the capabilities of a Discrete input and Discrete output, being able to be configured an input or output independently. It has an added compatibility of being used with 3-wire solid-state and electromechanical sensors. This I/O block comes with 22 connection terminals, accommodating power connection, fields signal wiring and Genius Bus connectivity. The IC660BBD020 accepts input signals with nominal voltage input levels of 24 VDC or 48 VDC and supports source wiring configuration. Additionally, it can generate the same voltage output levels. It also module comes with output pulse test compatibility. Output power up default and output last state hold. It is also provided with software configurable filter time with selection range of 10 ms to 100 ms. It comes with internal diagnostic capabilities such as Electronic short circuit protection, Overtemperature protection, Failed switch detection, Open wire detection for tristate inputs, Overload detection and shutdown and No-load detection. This module has input response time of Input 1.7 msec plus the configured input filter time with range of 5 to 100mS while the output response time is 1.0 msec. The exchanges I/O through the embedded Genius communication interface. This interface allows daisy chaining to another Genius I/O block of any type or being connected directly to the master controller residing on the Genius Bus. Terminating resistors must be connected across serial 1 and serial 2 terminals of the first and last node to close the Genius bus loop.

The IC660BBD020 sink I/O block is a 3-wire sensor compatible device designed by GE Fanuc. The block runs with 16 circuits and it has a voltage rating of 24 / 48 Volts DC. This module is compatible with the GE Series 90-30 PLC systems. It can be programmed and monitored easily with a controller or handheld monitoring device. It can also be connected to a personal computer running the Windows operating system. The current rating for the load of the module is 2 Amps. The IC660BBD020 I/O block has a powerful diagnostics system and it can monitor short circuits, over-temperature, overload, no-load, and failed switch situations. The module can be used to work as an input, output, or a tristate input device. The input filter time can be selected for the module between 10 and 100 milliseconds. The advanced diagnostics system of the block can easily troubleshoot issues and errors during the installation and operation. The GE IC660BBD020 I/O block has an input processing time of 1.7 milliseconds with a filter delay. The input impedance of the block is 5.6 kiloohms for 24 to 48 Volts of voltage and 1.8 kiloohms for 24 Volts of voltageThe I/O block is built with open architecture and it is made for indoor use only. The maximum environmental temperature should not exceed 60 degrees Celsius with proper airflow across the block. The IC660BBD020 I/O block should be kept away from EMC noise and heat-generating devices. The module can be mounted easily in both horizontal and vertical positions. To provide ground integrity, star washers are used. The I/O block is backwards-compatible and it can also be used with older pre-existing PLC systems.