GE Genius I-O Series Service Manual

IC660EPM100

1. Description

This is only the Electronic Assembly - the Terminal Block (IC660TBM100) is sold seperatly or see the IC660BPM100 for a complete assembly.

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**Genius I-O**
Manufacturer	**Emerson Automation / GE Fanuc (formerly)**
Manufacturer	**GE Fanuc (Former); Emerson Automation (Current)**
Part	**Number IC660EPM100**
Series	**Genius I/O Block**
Part	**Number IC660EPM100**
Product	**Description Power TRAC Block Electronic Assembly**
Product	**Description Electronics Assembly**
Product	**Description Genius PowerTrac Electronics Assembly**
Voltage	**Rating 115/230 Volts AC**
Compatible	**Block I/O IC660BPM100 PowerTRAC Block**
Compatible	**I/O Block Module IC660BPM100 PowerTrac I/O Block**
Compatible	**Block IC660BPM100**
LED	**indicators Unit OK; I/O enabled**
Communication	**Genius I/O**
Operating	**Temperature 0 to +60 Degree Celsius (+32F to +140 Degree Fahrenheit)**
Communication	**Interface Hand-Held monitor interface**
Communication	**Distance Up to 7500 feet**
Storage	**Temperature -40 degrees C - 125 degrees C (-40degrees to +212degrees F) AB124**
Internal	**circuitries Signal conditioning, Multiplexer, Analog to Digital Converter (ADC), processor, buffer circuit, communication**
Power	

3. Product Information

This is only the Electronic Assembly - the Terminal Block (IC660TBM100) is sold seperatly or see the IC660BPM100 for a complete assembly.

IC660EPM100 is a Genius Power Track Block that used in different types of industrial and power monitoring applications. The IC660EPM100 power block automatically provides the operator with displays on a Genius handheld monitor. The IC660EPM100 power supply accepts either 115/230 VAC or 125 VDC inputs. Its software can be configured by the host or via the handheld monitor (HHM).A

IC660EPM100 monitors current and voltage inputs and stores digitized waveform values for each input. IC660EPM100 calculates kilowatt hours, current, active power, RMS voltage, reactive power, and power factor from the digitized waveform values. Calculated data is then automatically sent by the IC660EPM100 to a host PLC or computer approximately two times per second. The Genius HHM can also display the same data, either locally or from any connection point on the bus.

The IC660EPM100 can couple with a delta configured 3-phase power system or with a single phase power system. IC660EPM100 accepts voltage inputs from 1-3 potential transformers and current inputs from up to three line current transformers, plus a neutral current transformer. The IC660EPM100 can be installed on a Genius bus up to 7500 feet from the host computer or PLC. It can be used in stand-alone applications without a host.

IC660EPM100 has a terminal assembly and an electronics assembly. The terminal assembly is where all fixed wiring is attached. The electronics assembly can be inserted or removed without disturbing configuration of the block. Inputs from transformers, both current and potential, are wired to the terminal assembly. The terminal assembly is mounted permanently. LEDs on the front of the electronics assembly indicate the status of the block and the communications bus. This location is also home to a convenient connector for the HHM. The IC660EPM100 is a PowerTrac Block Electronics Module that is part of the Genius I/O series, formerly by GE Fanuc now under Emerson Automation. This module is used with the PowerTrac terminal base to form the PowerTrac block with catalog number IC660BPM100. This electronics assembly lay be used as a replacement to an existing electronics assembly without dismantling the existing I/O termination. Technical specifications for IC660EPM100

Brand GE Fanuc

Series Genius I-O

Manufacturer Emerson Automation / GE Fanuc (formerly)

Manufacturer GE Fanuc (Former); Emerson Automation (Current)

Part Number IC660EPM100

Series Genius I/O Block

Part Number IC660EPM100

Product Description Power TRAC Block Electronic Assembly

Product Description Electronics Assembly

Product Description Genius PowerTrac Electronics Assembly

Voltage Rating 115/230 Volts AC

Compatible Block I/O IC660BPM100 PowerTRAC Block

Compatible I/O Block Module IC660BPM100 PowerTrac I/O Block

Compatible Block IC660BPM100

LED indicators Unit OK; I/O enabled

Communication Genius I/O

Operating Temperature 0 to +60 Degree Celsius (+32F to +140 Degree Fahrenheit)

Communication Interface Hand-Held monitor interface

Communication Distance Up to 7500 feet

Storage Temperature -40 degrees C - 125 degrees C (-40degrees to +212degrees F) AB124

Internal circuitries Signal conditioning, Multiplexer, Analog to Digital Converter (ADC), processor, buffer circuit, communication

Power supply 115/230 VAC or 125 VDC

Relative Humidity 5% to 95%, non-condensing

Humidity 5% to 95% (non-condensing)

Weight 1 Pound

Operating shock 5 G, 10 ms duration per MIL–STD 810C, method 516.2

LED Indicators: Unit OK; Communications OK

Vibration 1.0 G 10–200Hz

Functionalities: Voltage: Phase to phase (wye and delta) / Phase to neutral (wye system) Current: Per phase and neutral Active Power: Per phase Reactive Power: Per phase Power Factor: Effective system PF

Mounting Snaps onto terminal base assembly

Update Rate: 2 / second for calculated values and status data

Mounting accessory #12 screws; Star washers

Removal and Insertion under Power Not supported

Product Lifecycle Discontinued Description

The IC660EPM100 is an electronics assembly that is part of the PowerTrac I/O Block module. This electronics assembly is a compatible replacement to an existing electronics assembly of the same I/O Block, enabling easy replacement of a failed module without disrupting the existing I/O connections. This electronics assembly hosts the module’s power circuitry, signal conditioning, isolation, and protection circuits. This electronics assembly provides the module’s power metering functionalities such as individual phase measurement of voltage, reactive power, and current including neutral for current; Reactive power; Effective System Power Factor; Total system KWH; System Frequency; Low, Normal, and High block ambient temperature status; Total harmonic power content per phase. This module is designed with input circuitries to accommodate 115 VAC/230VAC nominal voltage, a voltage range of 90–265VAC, along with a frequency of 47–63 Hz; 125 VDC nominal voltage at a voltage range of 100–150VDC at 35VA max. This electronics assembly is keyed to the terminal base for proper installation. The electronic assembly is aligned to the terminal base by means of the shoulder screw as a guide. The electronics assembly is gently pushed down to attach the module. If resistance is felt, do not force the electronics assembly instead, ensure realignment to the terminal base, inspect receptacle and connector pins. Once the

electronic assembly is connected, secure the unit to the terminal base to form the single PowerTrac block. The electronics assembly is essentially the unit that communicates to the CPU. Compatible CPUs are IC697CPU731G or later; IC697CPU771E or later; all versions of IC697CPUxxx; IC600 series PLC CPU: rev. 105 or later; IC600 PLUS series PLC CPU rev. 110 or later; IC655 series PLC CPU rev. 4.0 or later.

The GE Fanuc IC660EPM100 Electronics Assembly belongs to the Genius I/O series of power TRAC block modules. It accepts 115 to 230 Volts AC input power. It is compatible for use with the GE IC660BPM100 Genius Power Track Block for various power monitoring applications. This electronics assembly is the microprocessor-based intelligent component of the power block system which performs arithmetic and logical operation to store and process input wave signals. The IC660EPM100 Electronics Assembly can be easily inserted and installed in the block without interfering with the block's field wiring. A Genius I/O hand-held monitor can be used to configure this electronics assembly module. When installing the I/O block, it is recommended to install it with the electronics assembly removed or to install the block first and then install the assembly to the block. The IC660EPM100 Electronics Assembly has the main electronics circuitry in the block which is responsible for communication. It can use voltage and current inputs from transformers. The configuration software package can be used with the hand-held monitor to configure the block and its assemblies. It also has a 125 Volts DC voltage rating and a 5 Amps current rating. The standard data rate of the assembly is 153.6 Kb and the extended rate is also 153.6 Kb. It establishes the handshaking protocol for communication by sending 16 bits of status data and 36 bytes of calculated data. The IC660EPM100 Electronics Assembly also offers overcurrent transient detection facilities by storing 128 sampled values for each input. Its design ensures easy installation and configuration. In order to install the assembly accurately, align the assembly by using the shoulder screws on the side of the terminal assembly, and push the electronic assembly firmly and quickly into the slot of the power TRAC block.