GE Ethernet Global Data Communication Module

MVI56-EGD

The Ethernet Global Data (EGD) module can be used to interface many different protocols with EGD devices. The EGD driver supports both the producer/consumer service port (18246) and the command service port (7937) using the UDP protocol over an IP network. The user defines the data to be produced and consumed in a configuration file downloaded to the module.

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Use the inRAx EGD module to connect various field devices using different networks or protocols, and share data between these devices over a wired connection. This is accomplished by exchanging shared common database information with the efficient but powerful Ethernet Global Data protocol.

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Features and Benefits

GE Fanuc Automation and GE Drive Systems developed an Ethernet Global Data, or EGD, exchange for PLC and computer data in 1998. Ethernet Global Data (EGD) offers versatility where a mix of control devices requires cooperation with each other. This involves sharing of information across the applications regardless of device or network type, often at high speed, and with high reliability. High reliability means fewer communication failures and having the ability to detect failures upon occurrence. Particular emphasis is delivered for applications requiring periodic or frequent updates and time synchronization of devices. The protocol supports Unicast, Broadcast and Multicast group messaging. Efficiency is based on the fact each device on the network can produce these types of messages and each device determines which of these messages to consume.

General Specifications

- Single Slot - 1756 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor. Sample ladder file included.
- Configuration data obtained from configuration text file downloaded to module. Sample configuration file included
- Local or remote rack

Hardware Specifications

Specification	Description
Backplane Current Load	800 mA @ 5 V DC 3mA @ 24V DC
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)

Specification	Description
Shock	30g Operational
	50g non-operational
	Vibration: 5 g from 10 to 150 Hz
Relative Humidity	5% to 95% (non-condensing)
LED Indicators	Module Status
	Backplane Transfer Status
	Application Status
	Serial Activity
Application port (Ethernet)	
Ethernet Port (Ethernet modules)	10/100 Base-T
	RJ45 Connector
	Link and activity LED indicators
	Electrical Isolation 1500 V rms at 50 Hz to 60 Hz for 60 s, applied as specified in section 5.3.2 of IEC 60950: 1991
	Ethernet Broadcast Storm Resiliency = less than or equal to 5000 [ARP] frames-per-second and less than or equal to 5 minutes duration
Shipped with Unit	RJ45 to DB-9M cables for each port
	6-foot RS-232 configuration cable
Debug/Configuration port (CFG)	
CFG Port (CFG)	RJ45 (DB-9M with supplied cable)
	RS-232 only
	No hardware handshaking

Functional Specifications

The driver interfaces with a common internal database in the module. This permits the sharing of data across many different networks.

The module supports UDP of service port 7927 (0x1F01) to handle all requests made of the module. The module will only service the requests and generate response messages. It will not generate command requests. The module supports the following functions specified in the EGD protocol:

Code	Description
3	Retrieve Configuration Request
4	Retrieve Configuration Response
7	Summary Request
8	Summary Response
9	Capabilities Request
10	Capabilities Response
15	Statistics Request
16	Statistics Response
18	Command NAK
32	Read Request
33	Read Response
34	Write Request
35	Write Response
36	Masked Write Request
37	Masked Write Response

The producer functionality provided in the EGD protocol is used to transfer portions of the module's database to other EGD nodes on the network. The consumer functionality is used to transfer data from other nodes on the network into the module's database.

The EGD module generates produced data as defined in the user configuration exchange list, from the module's internal database, and is produced at the frequency defined in the exchange list. This data can be broadcast to all nodes or to a specific node on the network.

The EGD module consumes data as defined in the user configuration exchange list. This data is derived from other nodes on the network and is placed in the module's internal database. If a consumer exchange is not received at the specified timeout, the driver will update the status of the exchange. When the driver again receives the exchange, the status will be updated.

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