hiprom technologies

1756HP-HTB-D

USER MANUAL

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CHAPTER 1 INTRODUCTION

Hiprom presents the 1756HP-HTB-D (drive) Hitachi interface module. The 1756HP-HTB-D provides an interface between existing Hitachi Drives and new Allen Bradley ControlLogix PLC's.

The module fits directly into any single slot within a ControlLogix System and is configured in RSLogix5000 using the Generic Profile. A Brad Harrison Nano-Change (M8) Receptacle provides a physical connection for the Hitachi signaling.

This document serves to describe the functionality, installation, configuration and use of the module.

CHAPTER 2 MODULE ACCESSORIES

Each 1756HP-HTB-D package includes the following components:

- **1756HP-HTB-D module**
- **2m Patch lead**

CHAPTER 3 MODULE OPERATION

The 1756HP-HTB-D module is designed to operate within the Allen-Bradley ControlLogix PLC system. All power required for the module's operation is derived from the 1756 backplane.

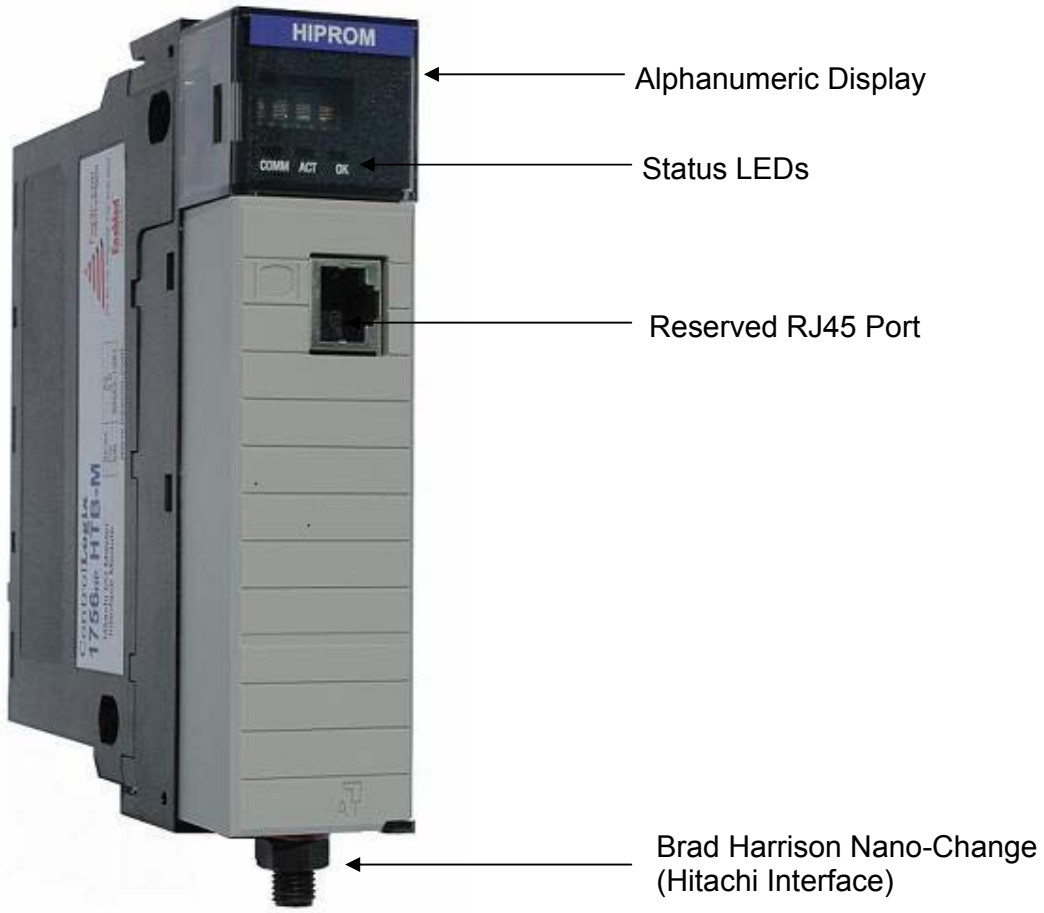

Figure 3.1 : 1756HP-HTB-D Layout

The current status of the module is conveyed to the user by means of the 3 bi-color Status LED's and the alphanumeric LED display. Appendix A details the various states of the LEDs and messages of alphanumeric display.

The following information is available to the user directly across the backplane by means of a scheduled connection:

- Hitachi Drive data
- Diagnostic information regarding communication between the 1756HP-HTB-D module and the Hitachi Drive.

The Brad Harrison Nano-Change Receptacle located on the bottom of the module provides an external connection for the Hitachi interface. The module is supplied with the respective 2m five core patch cable. The table below identifies the various signals of the cable.

Cable Colour	Description
Black	1756HP-HTB-D TxA (Transmit A)
White	1756HP-HTB-D TxB (Transmit B)
Blue	1756HP-HTB-D RxA (Receive A)
Brown	1756HP-HTB-D RxB (Receive B)

CHAPTER 4 INSTALLING THE MODULE

The module is equipped with RIUP (Removal and Insertion Under Power) circuitry enabling the module to be installed or removed from the chassis while power is applied. Once the module has been inserted into the rack the 2m patch cable may be attached.

CHAPTER 5 CONFIGURING THE MODULE

A direct connection between the controller and the 1756HP-HTB-D module is required to transfer drive data to and from the module.

5.1. Establishing the Direct Connection

This section describes the procedures required to configure the 1756HP-HTB-D module within the ControlLogix system. Each 1756HP-HTB-D module must be owned by a single ControlLogix controller.

The 1756 Generic Module is used in RSLogix5000 to configure the module. The configuration of the module is detailed in the table below.

Data Format			
CommFormat	Data – DINT		
Connection parameters			
Description	Instance	Size	
Input	1	32 (32 Bit)	
Output	2	32 (32 Bit)	
Configuration	4	0 (8 Bit)	
RPI			
Min	5 msec	Max	750.0 msec

Table 5.1 : 1756HP-HTB-D connection parameters.

The steps required to add a new 1756HP-HTB-D module are detailed below.

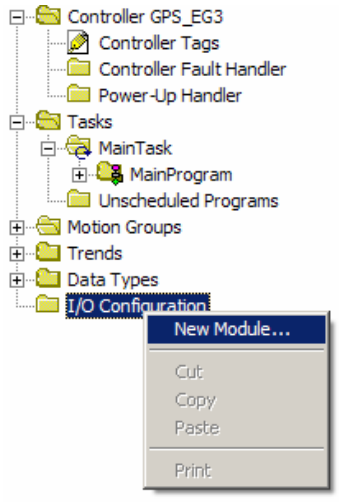

Figure 5.1 : Right-click on I/O Configuration and select New Module

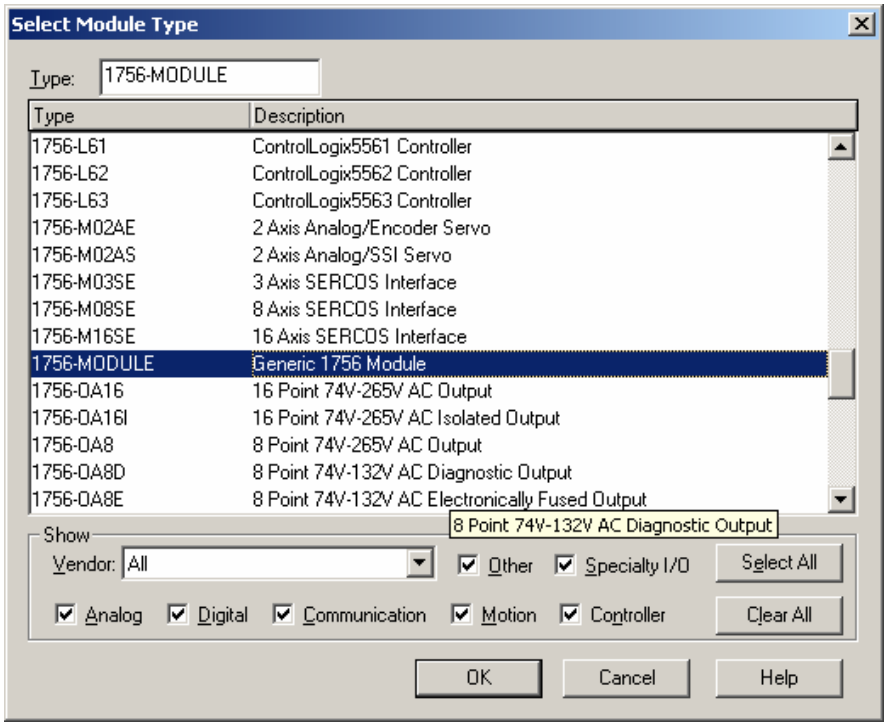

Figure 5.2: Select Generic 1756 Module (1756-MODULE)

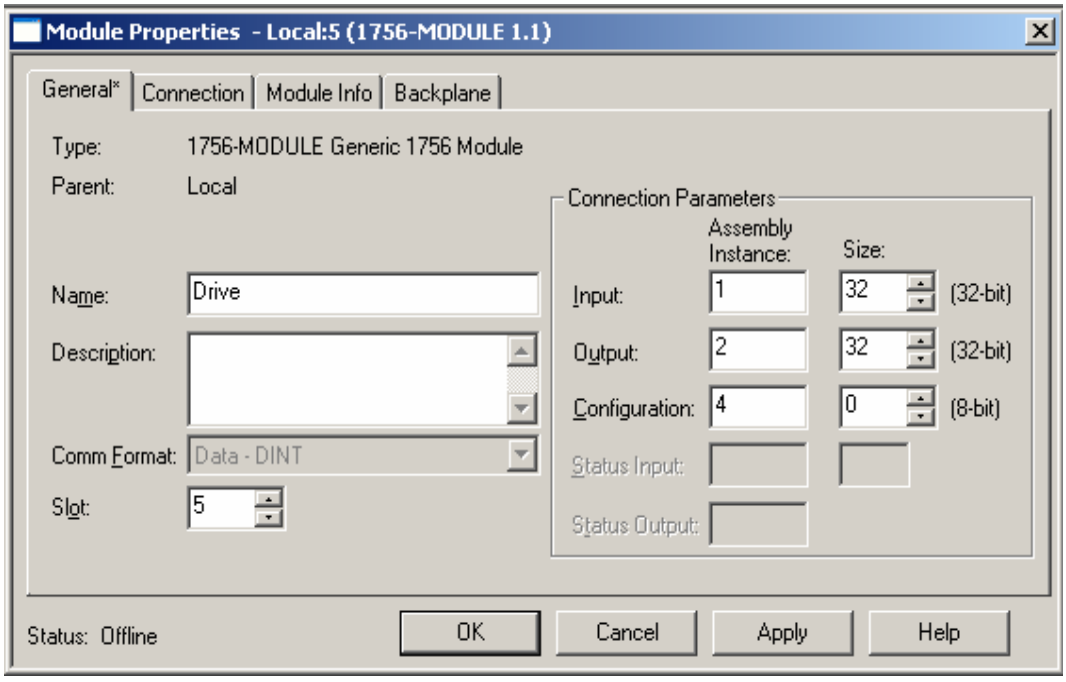

Figure 5.3: Configure module's parameters

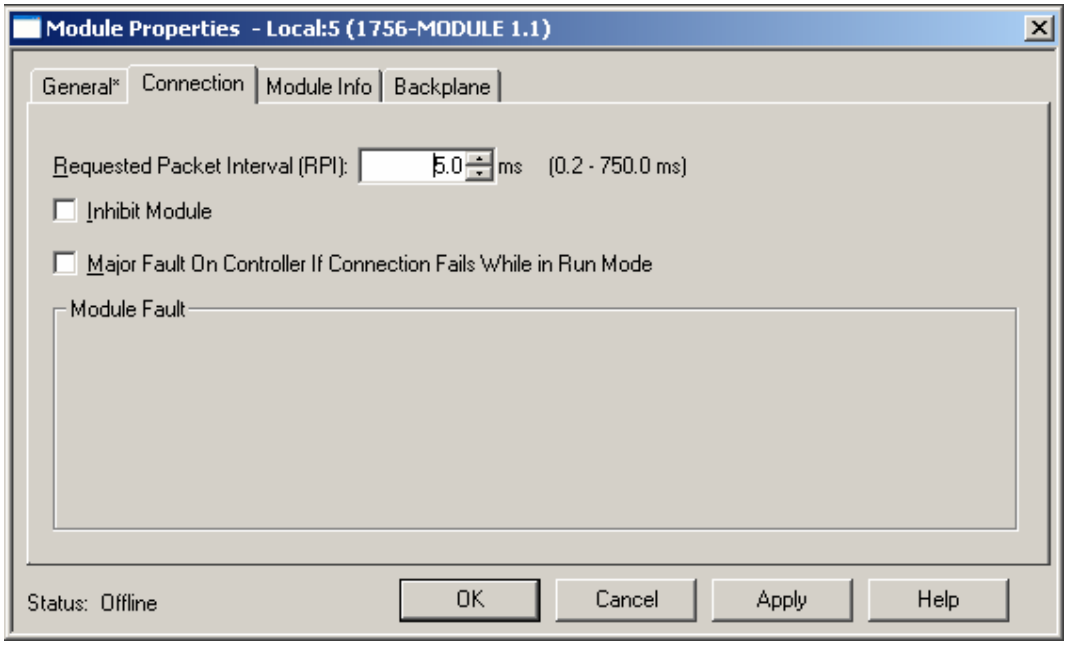

Figure 5.4: Configure module's RPI (Requested Packet Interval)

The connection between the controller and 1756HP-HTB-D will fail if:

- The specified size of the Input, Output, or Configuration size is incorrect
- The assembly instance of the input, Output and Configuration is incorrect
- An RPI that does not fall within the specified range

CHAPTER 6 I/O ADDRESS MAP

The input and output image of the 1756HP-HTB-D module is defined in the following sections.

6.1. Input Image

WORD	Description	
0	TranCount	ModuleStatus
1	Input Data	
2..16	Reserved data	

Figure 6.1 : Connected Input Image

6.2. Input Image Description

Field/Value	Description	Location	Type
ModuleStatus	**Indicates that the module is receiving data correctly from the Hitachi Drive.** 0x00FF = Module is functioning and receiving data from the Hitachi drive correctly.	**Local:s:I.Data[0].0..15**	INT
TransCount	**Indicates the number of successful packets the module has received from the Hitachi drive within a one second time span** Ideally the module should receive 208 (0x00d0) packets in a second.	**Local:s:I.Data[0].16..31**	INT
Input Data	**Hitachi Data** This word contains the most recent 32 bit data the module has received from the Hitachi drive. Note that the data will not change if the module is not receiving correct packets from the Hitachi Drive.	**Local:s:I.Data[1]**	DINT

Warning:
It is important to ensure that the diagnostic status information is used in the PLC logic in order to detect possible module or network failure. Failing to do so could result in possible equipment damage or personal injury. The logic must ensure that the Module status word is 0x00FF (255) and that a reliable TransCount is displayed.

6.3. Output Image

Words 0

WORD	Description
0	Output Data

Only the first word *Local:s:O.Data[0]* of the output image is used. This is the 32 bit data word that will be written from the module to the Hitachi drive.

Field	Description	Location	Type
Output Data	Input data to be written to a Hitachi Drive.	**Local:s:O.Data[0]**	DINT

APPENDIX A MODULESTATUS

The following sections describe the status indicators of the module :

Status LEDs

LED	DESCRIPTION	STATUS	MEANING
OK	Module Status	Solid Red	Initialization or Watch Dog Fault
		Flashing Red	Major Fault
		Flashing Green	Minor Fault
		Green	Module operating correctly
ACT	Transmit	Green	1756HP-HTB-D is transmitting data to the Hitachi Drive
COM	Receive	Solid Green	Module is receiving high number of data packets from the Hitachi Drive
		Solid Red	Module is not receiving data from the Hitachi drive

6.4. Status Display

Init	**Initialization of Module** The module is initialized only on power-up.
Frn	**Firmware Revision** The firmware revision number is displayed on power-up.
0→XX	Displays the first byte of the 32 bit data word being transmitted to the Hitachi Drive. Where XX = data.
1→XX	Displays the second byte of the 32 bit data word being transmitted to the Hitachi Drive. Where XX = data.
2→XX	Displays the third byte of the 32 bit data word being transmitted to the Hitachi Drive. Where XX = data.
3→XX	Displays the fourth byte of the 32 bit data word being transmitted to the Hitachi Drive. Where XX = data.
0←XX	Displays the first byte of the 32 bit data word being received from the Hitachi Drive. Where XX = data.
1←XX	Displays the second byte of the 32 bit data word being received from the Hitachi Drive. Where XX = data.
2←XX	Displays the third byte of the 32 bit data word being received from the Hitachi Drive. Where XX = data.
3←XX	Displays the fourth byte of the 32 bit data word being received from the Hitachi Drive. Where XX = data.

APPENDIX B RECOMMENDED DATA STRUCTURES

This Appendix provides a description of recommended data structures that can be used for both the input and output image.

Name	DataType	Style
Module_Status	INT	Decimal
TransCount	INT	Decimal
Data	DINT	Decimal

Table D.1: Slave Module Input Image Word Structure

Name	DataType	Style
Data	DINT	Decimal

Table D.2: Slave Module Output Image Word Structure

APPENDIX C SPECIFICATIONS

Parameter	Specification
General	
Module Location	Any Slot
Electrical	
Backplane Current	515mA @ 5.1V
	3mA @ 24V
Schedules Connection Parameters	
RPI	5ms to 750ms