RTU Slave Communication Module
Product Specifications and Installation Data

1 INTRODUCTION

The HE697RTM701 port can be configured as a Modbus Slave in the similar fashion as that of a Modbus Master (HE697RTM700) when using a Communication Request. The two ports on RTM701 are independent of each other, and each one can be setup as either a Modbus Master or a Slave that is independent of the other port. However, the parameters in the COM_REQ block are different.

2 PARAMETERS

The COM_REQ for the Modbus Slave needs to be in the following format.

Table 1 - COM_REQ Data Format for SLAVE

Address	Description		Address	Description
address	Data Block Length (7)		address + 7	Station Address (1-247)
address + 1	No Wait (0)		address + 8	Port Baud Rate
address + 2	Status Pointer Type		address + 9	Port Parameter Word
address + 3	Status Pointer Offset		address + 10	Reserved (0)
address + 4	Idle Timeout (0)		address + 11	Reserved (0)
address + 5	Maximum Comm Time (0)		address + 12	Reserved (0)
address + 6	RTM Mode			

COM_REQ Notes

1. The Data Block length in case of Slave Configuration is 7 as compared to 11 in case of Master configuration.
2. For Slave Configuration, the High Order Bit in RTM Mode Lower Byte is set. For example, when using DIRECT mode and as Slave, the RTM Mode is Hexadecimal 0081 or decimal 129. In case of Master, the High Order Bit is reset.
3. Station Address is the Slave address 1-247.
4. Port Baud Rate is same as in case of Master.
5. Port Parameter Word is also same as in case of Master, except that Interactive Bit is ignored and should be set to a 0.

3 SUPPORTED MODBUS COMMANDS

Table 2 - Supported Modbus Commands					
Code	**Meaning**	**I/O**	**Unit**	**Min**	**Max**
1	Read Coil Status	I	Bit	1	2000
2	Read Input Status	I	Bit	1	2000
3	Read Holding Registers	I	Word	1	125
4	Read Input Registers	I	Word	1	125
5	Force Single Coil	O	Bit	1	1
6	Preset Single Register	O	Word	1	1
7	Read Exception Status	I	Bit	8	8
15	Force Multiple Coils	O	Bit	1	2000
16	Preset Multiple Registers	O	Word	1	125
65	Return Slave ID	I	Bit	8	8

Code 7: Modbus Command Read Exception Status (7) returns the status of the slave. Following is the format of status byte:

7	6	5	4	3	2	1	0
X	X	X	X	I/O FLT	PLC FLT	X	RUN

RUN – Indicates CPU is in Run mode.
PLC FLT – Indicates PLC has CPU faults in fault table.
I/O FLT - Indicates PLC has I/O faults in fault table.

4 I/O MAP FOR PLC/MODBUS:

Table 3 - Discrete Data Access			
Modbus Command Supported	**PLC Reference (Decimal)**		**Modbus Reference (Hex)**
Read Input Status (2)	%I	1-4096	0-FFF
Read Coil Status (1)	%Q	1-2048	0-7FF
Force Single Coil (5)	%M	1-4096	1000-1FFF
Force Multiple Coils (15)	%T	1-1296	2200-270F

Table 4 - Analog Data Access			
Modbus Command Supported	**PLC Reference (Decimal)**		**Modbus Reference (Hex)**
Read Analog Input (4)	%AI	1-4096	0-FFF
Read Holding Register (3)	%R	1-8192	0-1FFF
Preset Single Register (6)	%AQ	1-1296	2200-270F
Preset Multiple Registers (16)			