HE693RTU940-02
Documentation Supplement

The HE693RTU940 (RTU940) is an RTU slave module for the Series 90-30 PLC. The RTU940 features a built-in telephone modem, and it allows an RTU host to read/write data from/to the Series 90-30 PLC. Under normal conditions, an RTU host will dial the number of the RTU slave, poll the slave after the connection is established, then hang up.

An additional feature of the RTU940 is "report by exception" capability. This feature allows the RTU940 slave module to dial a predetermined telephone number (typically an RTU master module from Horner Electric) and establish a connection with an RTU host. The dial sequence is started by the assertion of a %Q bit assigned to the RTU940. Following the establishment of the connection, the RTU host resumes its status as system master, polling the slave, and hanging up.

The HE693RTU940-02 option adds additional support for an alternate "report by exception" procedure. In this procedure, the RTU940 slave module dials an RTU host, establishes a connection, AND sends out a special "cryout" message. This cryout message consists of the following:

Byte 0: Slave ID (01H to F7H)
Byte 1: 3EH
Byte 2: 00H
Byte 3: 00H
Byte 4: 00H
Byte 5: CRC High Byte
Byte 6: CRC Low Byte

The CRC is two bytes long for binary mode and one byte long for ASCII mode.

In order to trigger this alternate "report by exception" procedure, two extra characters are added to the end of the dial string. These two characters consist of **:1** (: = 3AH, 1 = 31H). The dial string is set starting in the %R register specified in the module configuration (see pages 10 & 11 in the RTU manual). Each register in the dial string contains two characters. To dial the number 9,6394275 using the STANDARD report by exception procedure, assuming %R1 is the start of the dial string, the following data values would be set in the slave PLC:

%R6	**%R5**	**%R4**	**%R3**	**%R2**	**%R1**	
0000H	0035H	3732H	3439H	3336H	2C39H	**HEX**
	5	7 2	4 9	3 6	, 9	**ASCII**

Using the alternate "report by exception" procedure, the following values would be set:

%R6	**%R5**	**%R4**	**%R3**	**%R2**	**%R1**	
0031H	3A35H	3732H	3439H	3336H	2C39H	**HEX**
1	: 5	7 2	4 9	3 6	, 9	**ASCII**

Note that the "9" (39H) at the beginning of the dial strings would be used to access an outside line (if applicable), and the "," (2CH) that follows is a two second pause.