

# APPLICATION NOTE #7



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## Application Note 7: Utilizing the MODBUS Protocol Software

Entertron Industries, Inc. has completed a MODBUS RTU compatible serial communication protocol for it's SK1600-R-SA, Smart-PAK, Smart-PAK Plus and Elite 2000 controllers. This new protocol will allow us to be utilized on any MODBUS network as well as with any interface that is specified into the system.

The PLC's MODBUS address is set in one of the internal registers (TC243) in the system. This means that from within your Ladder Logic Program you can easily setup and modify your MODBUS Address.

MODBUS Address Register: TC243 - Address 27 and 47 are forbidden with unpredictable results if utilized.

The Entertron protocol supports the following MODBUS commands:

COMMAND	ENTERTRON ADDRESS	MODBUS ADDRESS
Read Coils	RLY1-RLY149	000001-000149
Read Inputs	IN1-INxx xx represents max input of PLC system in use	100001-1000xx xx represents max input of PLC system in use
Read Holding Registers	TC1-TC250 **	400001-400250
Read Input Registers	TC1-TC250 **	300001-300250
Force Coil	RLY1-RLY149	000001-000149
Force Register	TC1-TC250	300001-300250
Retrieve Exception Station	Returns status of Relays 11-17 and a STOP/RUN bit.. ON for Stopped, OFF for running	No Address Used

The communication for the MODBUS port is set to 8 data bits, 2 stop bit, no parity and 9600 baud. The PLC is set to ignore any parity that is received on the bus allowing it to function in both an EVEN and and ODD parity bus configuration. The Entertron Monitor program must be used with Even parity for PLC control and monitor functions to operate properly.

\*\* The Entertron systems only have one bank of registers for user information therefore the information accessed from a Read Holding or Read Input Register is the same.

**Ordering your PLC with the New MODBUS** software will give you full MODBUS compatibility as well as the transparent MASTER/SLAVE capability. To Order the MODBUS capability order Part#: V4.MODBUS as a separate item with your PLC order.

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