APPLICATION NOTE

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Product Family: WinPLC

Number: AN-WPLC-003

Subject: Modbus register mappings for the WInPLC

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Revision:

The following table represents the **Modbus** register mappings for **WinPLCs**.

NOTE that '**Modbus** Point Number' is 1-based, and '**Modbus** Address is 0-based

Modbus Object	Modbus Point Number	ModbusAddress	Think & Do / Studio Data Type	Logical ID / Index
COIL	000001-004096	000000-004095	OUTPUT	O-0 to O-4095
COIL	004097-008192	004096-008191	FLAG	F-0 to F-4095
INPUT	100001-104096	100000-104095	INPUT	I-0 to I-4095
HOLDING REGISTER	400001-402048	400000-402047	COUNTER	C-0 to C-2047
HOLDING REGISTER	402049-404096	402048-404095	FLOAT*	FP-0 to FP-1023
HOLDING REGISTER	404097-406144	404096-406143	NUMBER*	N-0 to N-1023

* NUMBERs and FLOATs use double word addressing with **Modbus** addresses. Therefore,
To address N-O you will use **Modbus** addresses 404097 & 404098.
To address FP-0 you will use **Modbus** address 402049 & 402050.

At customer requests, Entivity added more mapping registers in Entivity Studio v7.2+ & Live! v5.5+
The previous mappings will remain in place for compatibility purposes and for use with AutomationDirect's C-More operator interface products. However, to provide for continuous mapping, the above tags are also mapped in another, expanded address range as explained below.

Modbus Object	Modbus Point Number	ModbusAddress	Think & Do / Entivity Data Type	Logical ID / Index	Nature of Change
COIL	000001-004096	000000-004095	OUTPUT	O-0 to O-4095	none
COIL	004097-014096	004096-014095	FLAG	F-0 to F-9999	added 5904 Flags
INPUT	100001-106144	100000-106143	INPUT	I-0 to I-6143	added 2048 Inputs
HOLDING REGISTER	410001-420000	410000-419999	COUNTER	C-0 to C-9999	added 7592 Counters
HOLDING REGISTER	420001-440000	420000-439999	FLOAT*	FP-0 to FP-9999	added 8976 Floats
HOLDING REGISTER	440001-460000	440000-459999	NUMBER*	N-0 to N-9999	added 8976 Numbers

* NUMBERs and FLOATs use double word addressing with **Modbus** addresses. Therefore, to address N-0 you will use **Modbus** addresses 440001 & 440002. To address FP-0 you will use **Modbus** address 420001 & 420002.

OCCASIONALLY someone would like to change the **Modbus** Address of the **WinPLC**. For those requiring to do so, the process is documented below:

The **Modbus** Slave address and delayed response time are specified in spare System Data Items Spare1 and Spare2. To prevent unintentional enabling of the slave address and delayed response, the upper word of the system data item must be set to 0x4d42 which just happens to be 'MB' (**ModBus**).

The allowable range of slave addresses are 1 - 247, so to enable the slave address Spare1 should contain 0x4d420001 through 0x4d4d00f7. Any other values in Spare1 will disable address checking and the **Modbus** slave will respond to any address. **The Modbus slave will always respond to slave address zero, the broadcast address**.

The delayed response time specified in Spare2 tells the slave driver how long to wait, in milliseconds, before responding to a command. As with Spare1, the upper word of Spare2 must be set to 0x4d42, the lower word contains the delay time, 1 - 0xffff (1 - 65535ms)

Technical Assistance: If you have questions regarding this Application Note, please contact us at 770-844-4200 for further assistance.