

# Appendix E

## Translating PLC CPU Reference Addresses to Modbus Register Addresses for the IC693CMM321

The Modbus/TCP protocol defines operations on a set of reference tables (Register, Input Register, Input Discrete, and Coil); these Modbus tables differ from the PLC reference tables within the PLC CPU (%I, %AI, %Q, %AQ, %M, and %R). To implement the Modbus/TCP protocol, the IC693CMM321 maps each of the Modbus tables into one or more PLC CPU tables (see Table below). The IC693CMM321 makes no distinction between the Register and Input Register tables.

IC693CMM321 Internal Tables	Modbus Register Table (4xxxx)	Modbus Input Register Table (3xxxx)	Modbus Input Discrete Table (1xxxx)	Modbus Coil Table (0xxxx)
%I1 – 4096 (bits)	1 – 256 (16-bit words)	1 – 256 (16-bit words)	1 – 4096 (bits)	---
%AI1 – 16384 (16-bit words)	257 – 16640 (16-bit words)	257 – 16640 (16-bit words)	---	---
%Q1 – 4096 (bits)	16641 – 16896 (16-bit words)	16641 – 16896 (16-bit words)	---	1 – 4096 (bits)
%AQ1 – 12288 (16-bit words)	16897 – 29184 (16-bit words)	16897 – 29184 (16-bit words)	---	---
%R1 – 32640 (16-bit words)	29185 – 61824 (16-bit words)	29185 – 61824 (16-bit words)	---	---
%M1 – 4096 (bits)	61825 – 62080 (16-bit words)	61825 – 62080 (16-bit words)	---	---
Mapping Code (16-bit word)	65535 (16-bit word)	65535 (16-bit word)	---	---

**Table E-1 - Modbus Register / IC693CMM321 Reference Table Translation**

**Note:** The Mapping Code is a read-only address. A client may read this address to determine the mapping in use without knowing what type of device this is. The IC693CMM321 will return a 1 when this register is read, indicating that the above mapping in is use.