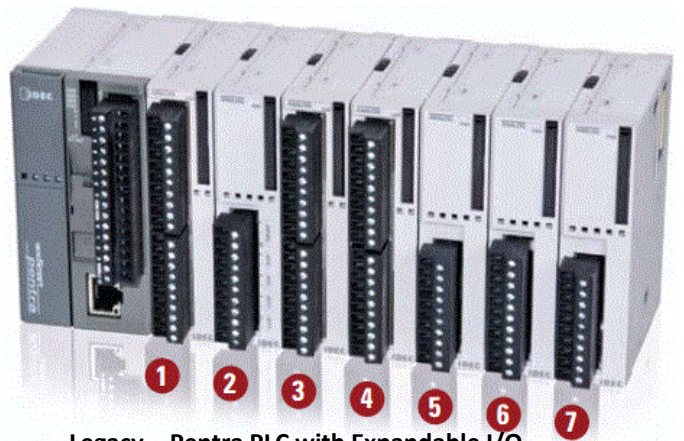




PLC / HMI Modbus (Slave) Addressing



Legacy - HMI touch screen with built in web-



Legacy - Pentra PLC with Expandable I/O

Legacy Chiller Systems, Inc.
www.legacychillers.com
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IMPORTANT READ BEFORE STARTING WORK

- EQUIPMENT MUST BE INSTALLED BY QUALIFIED PERSONNEL IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- REMOTE (EXTERNAL) DATA COMMUNICATION WITH LEGACY PROCESS CHILLERS EQUIPPED WITH THE IDEC PENRA PLC AND IDEC TOUCH SCREEN HMI IS POSSIBLE USING MODBUS COMMUNICATION PROTOCOL (ONLY) OVER A TCP ETHERNET NETWORK OR SERIAL (RTU) PROVIDED THE PENRA PLC IS EQUIPPED WITH AN OPTIONAL SERIAL INTERFACE CARD.
- IN THE CASE OF ETHERNET COMMUNICATIONS, AN OPTIONAL MOXA ETHERNET SWITCH MUST BE INSTALLED IN THE CHILLER OR FIELD MOUNTED. THIS SWITCH WILL PROVIDE AN ADDITIONAL NETWORK PORT MAKING REMOTE COMMUNICATIONS POSSIBLE.
- THERE ARE A VARIETY OF WAYS TO CONNECT LEGACY PLC / HMI EQUIPPED CHILLERS TO A LOCAL NETWORK. IN MANY CASES, A SPECIAL STATIC IP (MATCHING THE BUILDING NETWORK SUBNET) MUST BE INSTALLED BY THE FACTORY TO MAKE REMOTE COMMUNICATIONS POSSIBLE. FOR MORE INFORMATION ON IP ADDRESSING AND NETWORK COMMUNICATION OPTIONS, CONSULT THE LEGACY CHILLER SYSTEMS KNOWLEDGE BASE.
- BUILDING AUTOMATION SYSTEMS (BAS) MUST POINT AT THE PENRA PLC AND BE CAPABLE OF CONTROLLING MODBUS SLAVE DEVICES OVER A TCP (ETHERNET) OR SERIAL (RTU) NETWORK.
- LEGACY CHILLER SYSTEMS DOES NOT PROVIDE NETWORK SUPPORT AS PART OF ITS STANDARD LIMITED MANUFACTURERS WARRANTY. NETWORK SUPPORT IS AVAILABLE AS A FEE BASED SERVICE UPON REQUEST.
- USERS ATTEMPTING MODBUS COMMUNICATION WITH THE PENRA PLC TAKE FULL RESPONSIBILITY FOR THEIR ACTIONS. PENRA IS SET TO SLAVE MODE MEANING USER HAS THE ABILITY TO READ OR WRITE TO ANY ONE OF THE ADDRESSES PROVIDED. ERRORS WRITING TO A PLC CAN CAUSE CATASTROPIC DAMAGE TO THE PROCESS CHILLER, CONNECTED LOAD, GENERAL PROPERTY DAMAGE AND PERSONAL INJURY EVEN DEATH.

Modbus - Network Address Table



TYPE	DESCRIPTION	MODBUS ADDRESS	*Modbus Command	DATA FORMAT
Alarm Status	CP-1 High Pressure Alarm	001009	01 Read Coil Status	Bit
Alarm Status	CP-1 Low Pressure Alarm	001011	01 Read Coil Status	Bit
Alarm Status	CP-2 High Pressure Alarm	001010	01 Read Coil Status	Bit
Alarm Status	CP-2 Low Pressure Alarm	001012	01 Read Coil Status	Bit
Alarm Status	CP- 1 Protection module	001119	01 Read Coil Status	Bit
Alarm Status	CP- 2 Protection module	001120	01 Read Coil Status	Bit
Alarm Status	System Pump 1 Flow Alarm	001069	01 Read Coil Status	Bit
Alarm Status	System Pump 2 Flow Alarm	001070	01 Read Coil Status	Bit
Alarm Status	Recirc Pump Flow Alarm	001015	01 Read Coil Status	Bit
Alarm Status	Tank Low Level Indicator	001016	01 Read Coil Status	Bit
Alarm Status	Fluid High Temp Alarm	001017	01 Read Coil Status	Bit
Alarm Status	Fluid Low Temp Alarm	001018	01 Read Coil Status	Bit
Setpoint	CP-1 Temperature Setpoint	401201:401202	03 Read Holding Register 06 Preset Single Register	32-Bit Float
Setpoint	CP-1 Differential Temperature Setpoint	401205:401206	03 Read Holding Register 06 Preset Single Register	32-Bit Float
Setpoint	CP-2 Temperature Setpoint	401203:401204	03 Read Holding Register 06 Preset Single Register	32-Bit Float
Setpoint	CP-2 Differential Temperature Setpoint	401207:401208	03 Read Holding Register 06 Preset Single Register	32-Bit Float
Analog Value	Ambient Temp (F)	401047:401048	03 Read Holding Register	32-Bit Float
Analog Value	TO Process Temperature (F)	401051:401052	03 Read Holding Register	32-Bit Float
Analog Value	FROM Process Temperature (F)	401049:401050	03 Read Holding Register	32-Bit Float
Run Status	Compressor ONE run status	000003	01 Read Coil Status	Bit
Run Status	Compressor TWO run status	000027	01 Read Coil Status	Bit
Run Status	System Pump ONE run status	000002	01 Read Coil Status	Bit
Run Status	System Pump TWO run status	000036	01 Read Coil Status	Bit
Run Status	Recirc Pump run status	000025	01 Read Coil Status	Bit
Run Status	Chiller Run Status Master Switch	001003	01 Read Coil Status 05 Force Single Coil	Bit

* As a Modbus slave, all PLC data registers are set up for full read/write access. In the table above, we have provided a column indicating "Read/Write" as a recommendation only. Great care must be taken by user when access data registers in the above table. Incorrect settings can result in equipment damage, property damage, personal injury even death. Please proceed with extreme caution.

Designed and Manufactured in the USA

Do to Legacy Chiller Systems constant product development efforts, design changes can be made at any time without notice.



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