LEGACY CHILLERS

Legacy Chillers, Inc.

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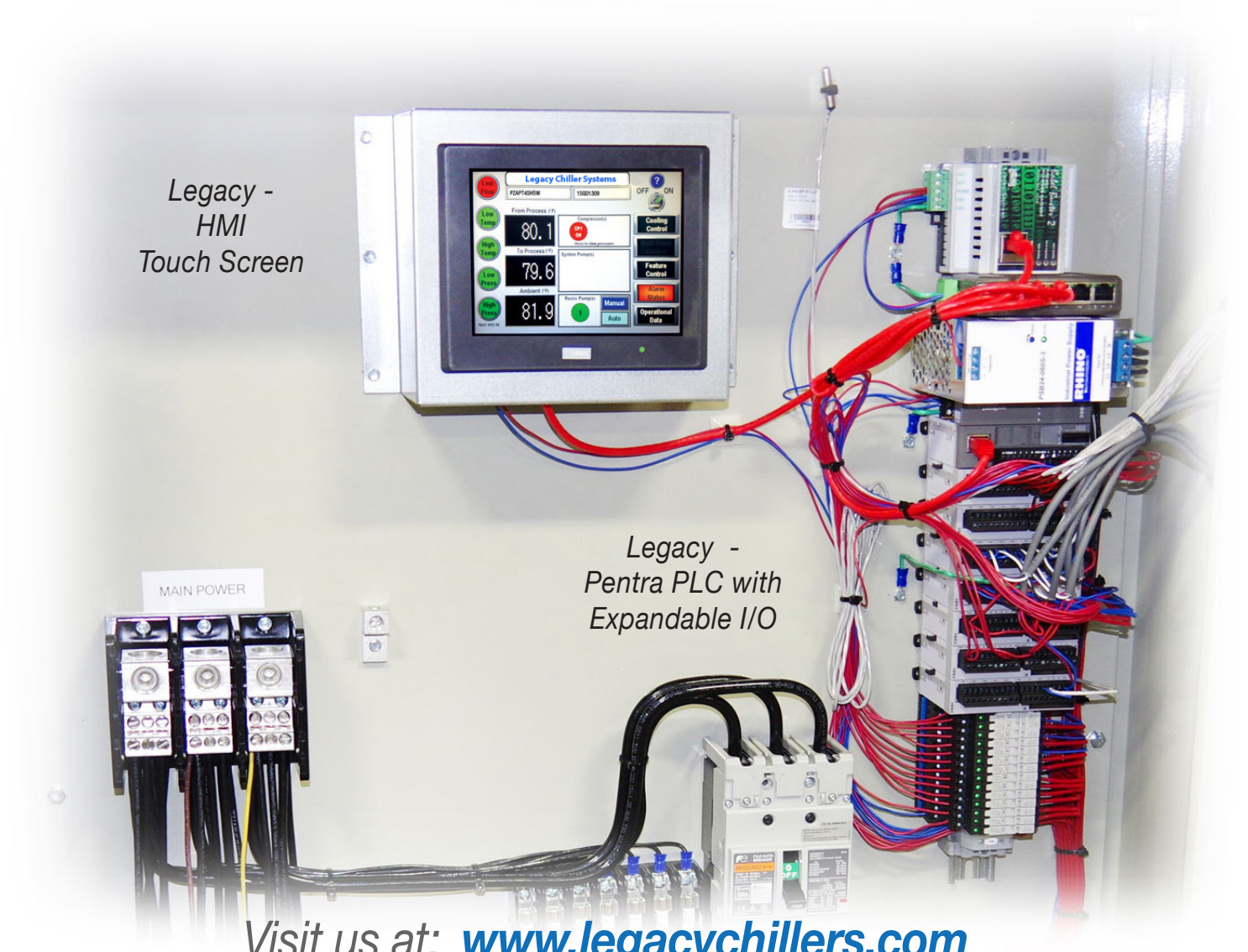
PLC / HMI

Modbus (Slave) Addressing



Legacy - HMI Touch Screen

Legacy - Pentra PLC with Expandable I/O

Visit us at: ***www.legacychillers.com***
and ***www.legacy-chillers.com***

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 Pentra PLC and IDEC touch screen HMI is possible using MODBUS communication protocol (only) over a TCP Ethernet network or serial (RTU) provided the Pentra 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.
- Building automation systems (BAS) must point at the Pentra PLC and be capable of controlling MODBUS Slave devices over a TCP (Ethernet) or serial (RTU) network.
- Legacy 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 Pentra PLC take full responsibility for their actions. Pentra 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 catastrophic damage to the process chiller, connected load, general property damage and personal injury even death**.

LEGACY CHILLERS

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	000009	01 Read Coil Status	Bit
Run Status	Compressor TWO run status	000025	01 Read Coil Status	Bit
Run Status	System Pump ONE run status	000004	01 Read Coil Status	Bit
Run Status	System Pump TWO run status	000033	01 Read Coil Status	Bit
Run Status	Recirc Pump run status	000005	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.

Modbus - Network Address Table *(Continued on back...)*

Modbus - Network Address Table (Continued)

TYPE	DESCRIPTION	MODBUS ADDRESS	*MODBUS COMMAND	DATA FORMAT
System Pump MAN/AUTO control	Sets system pump ONE and TWO for MANUAL CONTROL	001041	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
System Pump MAN/AUTO control	Sets system pump ONE and TWO for AUTO CONTROL	001042	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
System Pump #1 ON/OFF	Sets SYSTEM PUMP 1 to on or off. MAN/AUTO must be set to MAN	001022	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
System Pump #2 ON/OFF	Sets SYSTEM PUMP 2 to on or off. MAN/AUTO must be set to MAN	001023	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
Recirc Pump MAN/ AUTO control	Sets Recirc pump for MANUAL CONTROL	001043	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
Recirc Pump MAN/ AUTO control	Sets Recirc pump for AUTO CONTROL	001044	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
Recirc Pump ON/ OFF	Sets Recirc pump to on or off. MAN/AUTO must be set to MAN	001021	01 Read Coil Status 05 Force Single Coil	Bit 1=on / 0=off
Compressor 1 - HP-PSI	CP1 - HIGH Pressure Transducer PSI - (Read only)	401209	03 Read Holding Register	32-Bit Float
Compressor 1 - LP-PSI	CP1 - LOW Pressure Transducer PSI - (Read only)	401217	03 Read Holding Register	32-Bit Float
Compressor 2 - HP-PSI	CP2 - HIGH Pressure Transducer PSI - (Read only)	401213	03 Read Holding Register	32-Bit Float
Compressor 2 - LP-PSI	CP2 - LOW Pressure Transducer PSI - (Read only)	401221	03 Read Holding Register	32-Bit Float

* 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.