

Sigma

Universal Chiller System

SIGMA is the innovative solution for any chiller in which we have condensed more than 30 years of experience with different manufacturers in air conditioning, refrigeration, and process cooling.

It is a modular system composed of:

- Fully scalable HW Controller based on Flex architecture;
- HMI 5", 7", or 10" (Opera products) with web-based graphical interface;
- FW for chiller control, flexible and completely configurable;
- FW sequencer for the management of up to 16 chillers and pumps groups;

To simplify the configuration of the chiller FW controller, an SW PC tool is provided for a step-by-step procedure that, according to the selected configuration, generates:

- The configuration file for SIGMA
- Ordering code list for Flex HW modules
- I/O list and mapping, useful for the wiring diagram

Enabling	Type	Channel	
ON OFF	Analog input	TAE	Delete
ON OFF	Analog output	CP1 Fan Speed	Delete
ON OFF	Status	CIRC1 FAN1	Delete
ON OFF	Analog input	LWT	Delete
ON OFF	Digital input	EVAP.PUMP2 CIRCUIT BREAKER	Delete

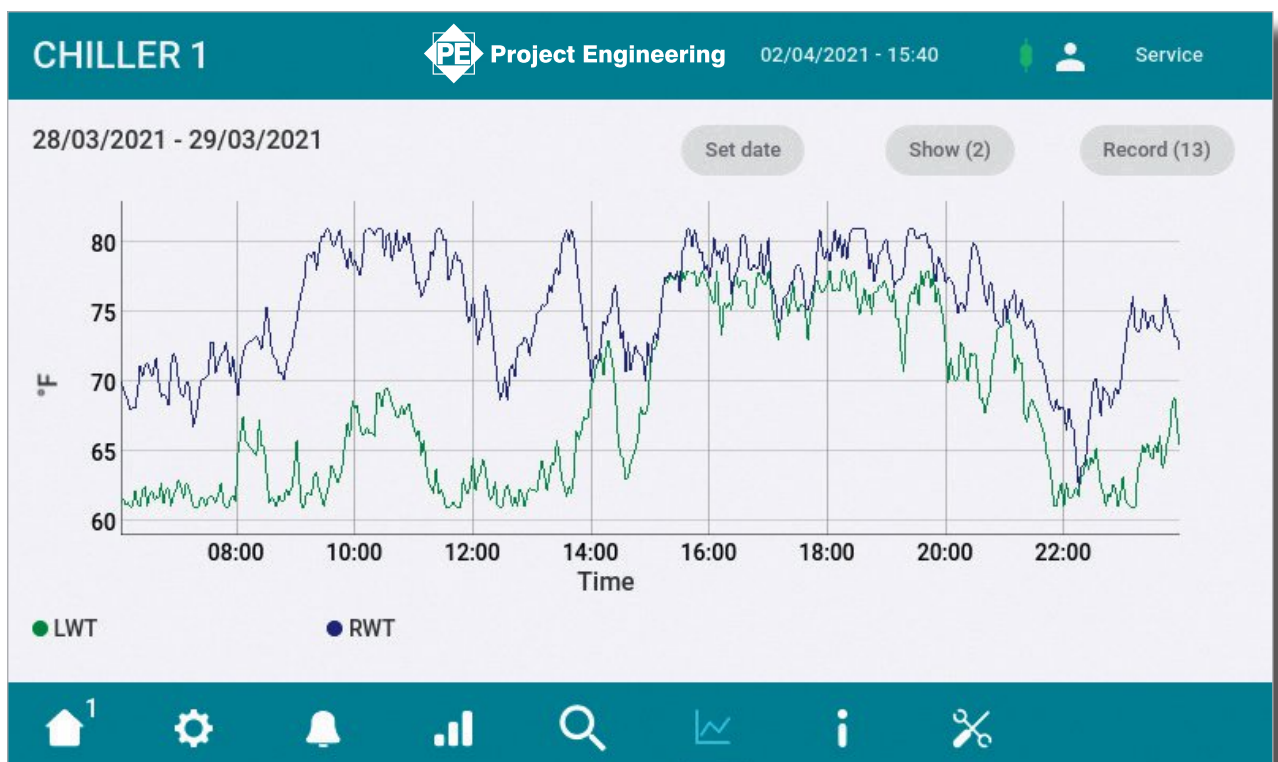
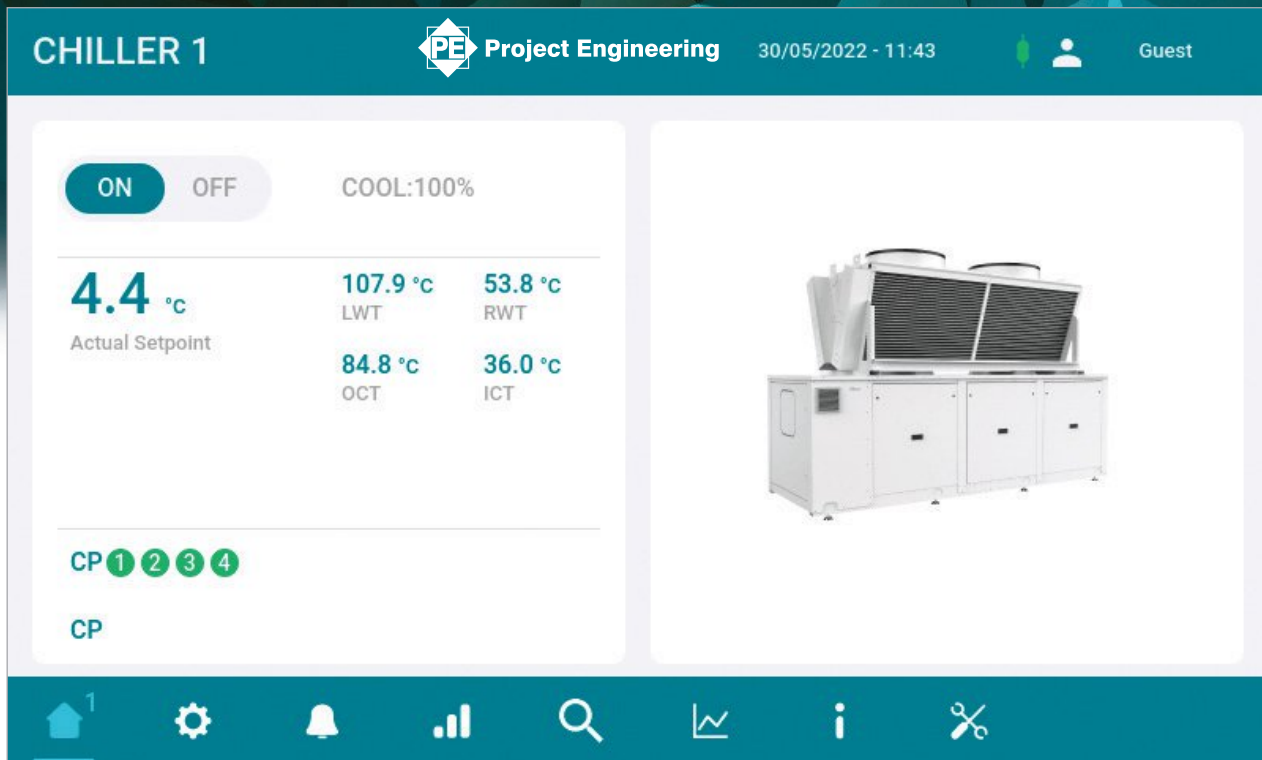
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CHILLER FW application features:

- Up to 8 Screw/Reciprocating/Scroll compressors with different refrigerant circuit configurations
- The unit capacity is controlled locally by LWT/RWT water temperature or by remote sequencer
- Pump station management
- Compatibility with a wide range of EEV Electronic Expansion Valves (for example SPORLAN, DANFOSS, ALCO, CAREL)
- Condensation control (step control or continuous control through 0-10V analog output)
- Evaporator flow rate control
- Unit energy consumption monitoring through Power Line Analyzer
- Connection to IoT Industry 4.0 remote assistance through Gateway
- RS485 or Ethernet connection to the main communication protocols (MODBUS® by default and BACnet®, LON, PROFIBUS, and others through appropriate external devices)
- Support of PE web-based graphical interface installed on open frame or boxed PE HMIs (Opera)

SEQUENCER FW application features:

- Remote Chiller management with up to 16 units connected:
 - Up to 8 Serial Linked Units connected via serial bus RS485;
 - Up to 8 Digital Linked Units activated by digital output;
- Process Pumps Group control activated by digital output;
- Circulating Pumps Group control activated by digital output;
- Water Accumulator control;
- Freecooling Group control with Dry Cooler, fans, and 3-way valve.



Flexible

Configurable

Customisable

Innovative

Reliable

Easy

Application

Designed for chillers and heat pumps with reciprocating, screw, or scroll compressor, it is suitable for many applications like:

Air conditioning, process cooling, refrigeration, temperature control technology, system for oenology, and many others.

