INTEGRATED CONTROL PANEL OF COMMERCIAL CENTRALIZED HOT WATER SYSTEM

Cabinet

- ✓ All welded construction
- ✓ 1.5mm thickness, electro-galvanized sheet metal
- ✓ Epoxy oven baked powder paint, light grey colour (RAL 7035), optional colours available
- ✓ Choice of Indoor (single door, IPX4) or outdoor (double door, IP54) enclosure
- ✓ All system components such as equipment controller, digital temperature display, external temperature controller, voltmeter, ammeter, power meter, BTU meter can be surface mounted
- ✓ Overall dimensions of control panel can be customized to match HW system

Power Supply

- ✓ 230V/1Ph/50Hz and 400V/3Ph/50Hz (60Hz available)
- ✓ Caters to a range of mains incoming electrical current

Outdoor Enclosure Panel (Double Door, IP54)

Indoor Enclosure Panel
(Single Door, IPX4)

Internal View

Standard Features

- ✓ Electrical wiring with new cable colour coded according to Singapore Standard CP5:1998 to align with International Standards - BS 7671 and IEC 60446
- ✓ Earth leakage current protection
- ✓ Mains inline fuse protection
- ✓ Overload protection for motor equipment e.g circulating pump
- ✓ Standard phase and power failure protection for high main incoming power design
- ✓ Standard power meter, voltmeter and ammeter for high main incoming power design
- ✓ Reliable electrical components brand used e.g Schneider, ABB, Omron
- ✓ Terminal block labelling for easy wiring identification
- ✓ Equipment controller or external temperature controller for heating equipment operating sequence
- ✓ Standard digital temperature display of hot water supply to the building and hot water return from building for monitoring purpose
- ✓ Standard On/Off, Trip indication for every individual equipment
- ✓ Auto/On/Off/Manual/BMS selector switch according to the project requirement
- ✓ Organised and clear electrical wiring diagram to be provided for every individual control panel
- ✓ Control for wide range of commercial HW system - heat pump system, gas-fired heating system, solar thermal system, drain-back system, hybrid system (combination of equipment with different heating source)

Option for Control Sequence and Design Concept

- ✓ Programmable settings such as Programmable Relay or Programmable Logic Control (PLC) for more advance system control sequence
  - ➢ Duty and standby working mode (Lead-Lag) for multiple units of heating equipment, circulating pump etc
    - ▪ Alternative working hours to balance life-span of equipment
    - ▪ Timer control to avoid wasting of energy during non-working days, holidays etc
  - ➢ Auto switch over function to standby equipment when duty equipment is detected fail / trip
  - ➢ Auto switch back function to the duty equipment once the failed equipment has been remedied
  - ➢ Time delay for multiple sets of circulating pumps operation to avoid heating equipment from overheating and to optimize the performance of the system
- ✓ Building Management System (BMS) through digital I/O and analog I/O for monitoring status, hot water temperature reading and execute the command to the system
- ✓ Two-stages temperature controlled for standby equipment to operate simultaneously with duty equipment to overcome peak demand without use of electric heating booster
- ✓ Relay status from system to other remote location such as guardhouse, FCC room
- ✓ Variable Speed Drive (VSD), temperature and flow control for circulating pump operating sequence
- ✓ Additional power on, call for heat, ignition, energy cut-off, pilot valve, main gas valve status of commercial gas-fired system for monitoring purpose

Remarks:

1. The control panel design is custom built, designed by Rheem specialist in accordance with project requirements

2. The control panel will be tested by Rheem specialist at inhouse testing laboratory before delivery

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