

Energy-saving optimized control system and method for chiller plant room

Abstract

5 An energy-saving optimized control system for a chiller plant room comprises an industry
control computer (1), a flow sensor (4), a temperature sensor (5), an outdoor temperature and
humidity sensor (6), a three-phase active power transmitter (7), a water pump variable speed
driver (9) and a cooling tower fan variable speed driver (10), which are respectively connected
with a programmable controller (2), wherein the programmable controller (2) communicates
10 with the industrial control computer (1) through an industrial Ethernet; and an RS485
communication interface module (3) is connected with chillers and communicates with the
industrial control computer (1) through a ModBus protocol. An energy-saving optimized control
method for a chiller plant room is also provided. By establishing a mathematical model of the
relationship between the energy consumption and operation parameters of each equipment in
the refrigeration plant room and combining the real-time cooling loads and weather parameters,
15 the operating state of each equipment is adjusted so as to reach the lowest operating energy
consumption of the whole chiller plant room under the premise of meeting the cooling loads.

(Figure 2)