

ABSTRACT**A THREE-POWER HYBRID ENERGY SAVING SYSTEM OF A RUBBER TYRED
GANTRY CRANE**

A three-power hybrid energy saving system of a rubber-tired gantry crane comprises
5 a system controller (1), a small diesel generator set (2), a unidirectional AC/DC converter (3),
a unidirectional DC/AC inverter power supply (4), a battery set and its management system
(5), an interconnection switch (6), a large diesel generator set (7), and an auxiliary transformer
(8). Electrical equipment mainly includes a hoisting frequency converter (10), a small vehicle
frequency converter (11), a large vehicle frequency converter (9), auxiliary electrical
10 equipment (15) and a control power supply. Output of the small diesel generator set (2) goes
to the unidirectional AC/DC converter (3), and supplies power to the direct current bus after
rectification; the unidirectional DC/AC inverter power supply (4), having an input end
connected in parallel with the direct current bus, has output, which goes after inversion to the
auxiliary transformer (8); the battery set and its management system (5) are connected in
15 parallel with the direct current bus, and the battery set and its management system (5) are
configured to provide operating power to the large vehicle frequency converter (9), the
hoisting frequency converter (10) and the small vehicle frequency converter (11) and
recovers the feedback energy of the system.

Figure 1