Title: CASTING MACHINE HAVING A WIRELESS COMMUNICATION SYSTEM

Abstract: The present invention is a casting machine (10) comprising a main panel (11) where a master PLC (111) is provided and formed by pluralities of casting kits (20) provided side by side and each comprising a slave PLC (21), characterized by comprising a wireless communication system (30) provided between the casting kits (20) and the main panel (11) and which transfers the requests, entered through the main panel (11), to the slave PLCs (21) through said master PLC (111) in a manner providing separate communication with each related casting kit (20).

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CASTING MACHINE HAVING A WIRELESS COMMUNICATION SYSTEM

TECHNICAL FIELD

The present invention relates to a casting machine comprising pluralities of casting kits where products like washbasin, water-closet, etc. are prepared and which realizes production control and adjustment by means of a wireless communication system.

PRIOR ART

In casting machines used in production of products like water-closet, washbasin, etc. consisting of pluralities of casting kits provided side by side, the adjustment and operation and control of the machine include a system in itself. The firm operation of this system provides the machine to be operated in a controlled manner. Therefore, casting kits provided in the casting machine shall be connected to the control unit of the casting machine one by one.

The casting machine has a main PLC within its own body. Each casing kit provided in the machine has its own PLC. Each casting kit has its own motor driver, sensors and switches. The movement of each casting kit is realized as a result of communication with the main PLC. All of these communication processes are realized by means of cables through panels, where PLCs of casting kits are provided, to the main panel where the main PLC is provided.

In a communication system arranged in this manner, there are pluralities of cables entering into the main panel. The movements of the casting kits lead to moving of these cables during the processes. This leads to deformations and breakages resulting from repetitive movements in the cables and this makes maintenance processes difficult and leads to extra maintenance and repair costs. Moreover, the related labor durations and costs also increase.

As a result, because of all of the abovementioned problems, an improvement is required in the related technical field.
BRIEF DESCRIPTION OF THE INVENTION

The present invention relates to a casting machine having a wireless communication system, for eliminating the above mentioned disadvantages and for bringing new advantages to the related technical field.

The main object of the present invention is to provide a casting machine having a wireless communication system whose maintenance and repair costs are reduced in order to provide communication of the casting kits with the main PLC of the casting machine in a separate manner.

Another object of the present invention is to provide a casting machine having a wireless communication system where the labor durations and costs, which are required for maintenance and repair, are reduced.

Another object of the present invention is to provide a casting machine where communication of the casting kits separately with the main PLC of the casting machine is accelerated.

In order to realize all of the abovementioned objects and the objects which are to be deducted from the detailed description below, the present invention is a casting machine comprising a main panel where a master PLC is provided and formed by pluralities of casting kits provided side by side and each comprising a slave PLC. Accordingly, said casting machine is characterized by comprising a wireless communication system provided between the casting kits and the main panel and which transfers the requests, entered through the main panel, to the slave PLCs through said master PLC in a manner providing separate communication with each related casting kit.

In a preferred embodiment of the present invention, said wireless communication system comprises a main communication unit connected to the master PLC through the main panel.

In another preferred embodiment of the present invention, said wireless communication system comprises a kit communication unit connected to the slave PLCs of each casting kit.

In another preferred embodiment of the present invention, said wireless communication system operates based on WiFi protocol.
BRIEF DESCRIPTION OF THE FIGURES

In Figure 1, the schematic view of the casting machine having wireless communication system is given.

REFERENCE NUMBERS

10 Casting Machine
   11 Main Panel
   111 Master PLC
20 Casting Kit
   21 Panel
      211 Slave PLC
      212 Motor Driver
15 22 Motor
23 Switch
24 Sensor
30 Wireless Communication System
   31 Main Communication Unit
20 32 Kit Communication Unit

DETAILED DESCRIPTION OF THE INVENTION

In this detailed description, the subject matter casting machine (10) having wireless communication system (30) is explained with references to examples without forming any restrictive effect only in order to make the subject more understandable.

In Figure 1, the schematic view of the casting machine (10) and of the related wireless communication system (30) is given. The casting machine (10) consists of pluralities of casting kits (20) basically provided side by side. The casting kits (20) are placed to a main carcass on the casting machine (10) and the main control of the machine is realized through a main panel (11) provided on the casting machine (10). There is a master PLC (111) connected to the casting kits (20) inside the main panel (11). Each of the casting kits (20) comprises a panel (21). Inside said panel (21), there is a slave PLC (211) and a motor driver (212) connected to said slave PLC (211). Said motor driver (212) is connected to a motor (22). The slave PLC (211) is connected to the switch (23) and to the sensors (24).
The wireless communication system (30) provides connection of the main panel (11) to each casting kit (20) separately. Thus, the master PLC (11) is connected to each slave PLC (21) separately. In order to provide this connection, the main panel (11) is connected to a main communication unit (31) and the panels are connected to one each kit communication units (32). By means of said main communication unit (31), the kit communication units (32) provide communication with each other by means of WiFi protocol. This communication is realized through IP addresses of master PLC (11) and slave PLCs (21) in a wireless manner. Each slave PLC (21) and the master PLC (11) have unique IP addresses which are different from each other. The commands which provide communication are directly sent from the master PLC (11) to the IP address of the related slave PLC (21).

In the wireless communication system (30) which operates in this manner, all casting kits (20) can be operated in a separate manner in the direction of the requests entered through the main panel (11) and all casting kits (20) can be adjusted and controlled in a separate manner. Thus, in different casting kits (20), different products can be obtained. After the requests are entered through the main panel (11) for operating the casting kits (20), the master PLC (11) transfers data from the main communication unit (31) to the kit communication unit (32) of the related casting kit (20) through the WiFi protocol in accordance with the IP address of the slave PLC (21) which is desired to be operated. The transferred data activates the motor (22) connected to the motor driver (21) by the slave PLC (21) and moreover, the transferred data activates the required switch (23) and sensors (24) and provides the casting kit (20) to be operated.

By using the wireless communication system (30), the communication between the master PLC (11) and the slave PLCs (21) is provided by means of the main communication unit (31) and the kit communications units (32) without needing cable usage. This eliminates the cable network extending from each casting kit (20) to the main panel (11) of the casting machine (10). Thus, the maintenance and repair processes related to the deformations, which may occur in the cables as a result of the movement of the casting kits (20), are eliminated. The costs which occur in relation can be minimized and moreover, the labor costs and the labor durations are reduced.

The protection scope of the present invention is set forth in the annexed Claims and cannot be restricted to the illustrative disclosures given above, under the detailed description. It is because a person skilled in the relevant art can obviously produce similar embodiments under the light of the foregoing disclosures, without departing from the main principles of the present invention.
CLAIMS

1. A casting machine (10) comprising a main panel (11) where a master PLC (111) is provided and formed by pluralities of casting kits (20) provided side by side and each comprising a slave PLC (211). characterized by comprising a wireless communication system (30) provided between the casting kits (20) and the main panel (11) and which transfers the requests, entered through the main panel (11), to the slave PLCs (211) through said master PLC (111) in a manner providing separate communication with each related casting kit (20).

2. A casting machine (10) according to claim 1, wherein said wireless communication system (30) comprises a main communication unit (31) connected to the master PLC (111) through the main panel (11).

3. A casting machine (10) according to claim 1, wherein said wireless communication system (30) comprises a kit communication unit (32) connected to the slave PLCs (211) of each casting kit (20).

4. A casting machine (10) according to claim 1, wherein said wireless communication system (30) operates based on WiFi protocol.