

Mechanical and Electrical Automation and Safety Technology: A Comprehensive Analysis

Wang Lei
Shandong Institute of Commerce and Technology
Shandong Jinan 250103
China

Abstract: With the rapid development of China's modern science and technology, China's electronic automation technology has been better applied. It is of great value to efficiently promote the improvement of China's mechanical and electrical automation technology. The author discusses the implementation of mechanical and electrical automation technology and pre control mode, and simply explores and discusses the development of electrical automation and its application in mechanical facilities. This paper studies mechanical and electrical automation technology and control, and briefly explores and expounds the development status of electrical automation and its application in mechanical equipment. It is committed to continuously improving the reliability of relevant facilities and promoting the improvement of mechanical and electrical automation level in China.

Keywords: Mechanical and Electrical Automation; Safety Technology

1. INTRODUCTION

With the acceleration of China's construction and the substantial improvement of production efficiency, stability and safety have been guaranteed. The mechanical model also began to change with the trend, which played a huge role in industrial development and national prosperity. Mechanical facilities are transitioning to intelligence, specialization and economization, and automation technology is also gradually transitioning to diversification and integration.

It also drives the use of new technologies. The contemporary network industry is closely connected with automation technology. In the production process of coal mine, the driving of mining equipment is mainly electric traction, and the motor of mining equipment is a horizontal device. With the development and progress of modern science and technology, the production scale of motor is growing, and its capacity and power are also increasing.

(1) In such an advanced environment of science and technology, the AC traction mode of motor operation is more and more used in mining equipment, which effectively improves the operating efficiency of equipment, reduces the time and energy required by professionals to maintain equipment, and effectively improves the production efficiency of enterprises.

(2) Reduce the cost of the whole machine and promote the development of modern mechanical design in China. Develop advanced and reliable hardware facilities, and use various creative methods and means to reduce the contradiction between enterprise objectives and production efficiency. The localization of excellent software is of great significance to optimize the working environment and reduce operating costs.

(3) The application of this technology in the iron and steel production process can well promote the needs of relevant detection work in industrial production, to ensure the smooth development of product production, and also can improve the

high quality of enterprise production. According to the current situation that the rapid development of social economy requires high product quality, it is very important to adopt scientific and advanced methods to implement complete and systematic management.

2. THE PROPOSED METHODOLOGY

2.1 Development Level of Mechanical and Electrical Automation Technology

Generally, in the process of automobile production, it is required to use the on-site electrical control system to effectively apply to the entire painting workshop. The main work includes: first, effective control of electrophoresis control. Operators should strengthen the treatment of paint layer and surface in the production process. Generally, the process flow includes inspection → flushing → pre degreasing → degreasing → water washing → re washing → surface conditioning → phosphating → water washing → water washing again → water washing for the third time. This is the goal and basic requirement for enterprises to conduct mining and production; Secondly, before construction, designers need to plan and install the mechanical equipment according to the actual needs of the enterprise, and then arrange professional personnel to control the equipment. The work content of this part of personnel is to regulate the equipment according to the actual needs of the enterprise, so as to ensure the efficiency and safety of production operations.

In order to ensure production efficiency and safety, each link should carefully analyze the established model in a timely manner. At the same time of motor driving, artificial intelligence technology is used. Let the motor be presented in the form of horizontal layout and increase the installed capacity, so as to provide guarantee for mechanical and electrical automation technology and control work. In the production process of electronic products, relevant hardware equipment and instruments need to be used to complete the production process. Of course, for equipment with different

hardware, in order to ensure the stability and accuracy of production and meet the needs of production, the production content of various industries is very complex, and casting production is also required.

2.2 Safety Analysis of Mechanical and Electrical Automation Technology and Control Application

In terms of Profibus, Interbus and other field buses and distributed management and control, the field bus completes the task through some automation systems and intelligent devices. At this stage, distributed management and control is to associate I/O facilities, field modules and PLC bus, so as to take output and input devices as execution equipment and detection equipment. After the debugging personnel have completed the troubleshooting work according to the above principles, they should check the parts of electrical equipment that often have failures. Because there are many failures in these parts, and there are many ways to solve these problems, it will not take too much time for the debugging personnel, but also increase their experience to ensure the debugging quality of electrical equipment.

At present, electrical automation is developing towards diversification, and margin design and maintainability design have become particularly important. Many enterprises use computers to monitor the working conditions, so as to continuously improve the working efficiency. In mechanical and electrical automation, it meets the basic requirements of high degree of automation. In the electromechanical integration technology with high reliability and high power, it should be selected according to the specific situation of the region. The booster station operation of the power plant uses the past unimportant operation. The problem can be solved by pressing keys, which will restrict the electrical automation control system greatly, and finally lead to the failure to give full play to the best effect of its automation.

3. CONCLUSION

To sum up, with the increasingly fierce competition in the automobile market in recent years, strengthening the effective application of electrical automation technology can greatly enhance its market competitiveness, continuously meet the requirements and standards of social users, and better play the application advantages of electrical automation technology in the automobile manufacturing field. Most coal enterprises are in a situation of supply exceeding demand. To improve production efficiency, Most enterprises have introduced foreign advanced automatic debugging technology to improve production efficiency and production quantity. Although the science and technology of our country are making continuous progress, the development of automatic regulation technology of electrical equipment is relatively weak. Therefore, we must strengthen the research in this field.

4. REFERENCES

- [1] Zhao Jinshui, Li Hu, Chen Xiao Research on Mechanical and Electrical Automation Technology and Control [J] Security Technology, 2021 (012): 000
- [2] Zhang Xiaofen, Song Jie Research on Mechanical and Electrical Automation Technology and Control [J] Commodity and quality, 2020
- [3] Gao Wei Research on Mechanical and Electrical Automation Technology and Control [J] two thousand and twenty-one
- [4] Hu Mengqian, Zhang Xiaona Research and Application of Digital Control Technology for Electrical and Mechanical Equipment -- Review of Mechanical and Electrical Control and Automation [J] Mechanical Design, 2020
- [5] Wu Qiong Research on artificial intelligent control technology for mechanical and electrical automation of water supply equipment [J] Shihezi Science and Technology, 2022 (003): 000
- [6] Zou Ge Research on automatic debugging technology and application of mechanical and electrical equipment [J] Technical Innovation of Electric Power Engineering, 2022, 3 (4): 15-17
- [7] Zhang Kunpeng Research on mechanical and electrical automatic control technology based on water supply equipment [J] Science and Wealth, 2020
- [8] Tang Zhenning Research on automatic debugging technology of mechanical and electrical equipment [J] China Equipment Engineering, 2020 (4): 2
- [9] Zhou Shun Research on Electrical Automation Control System of Textile Machinery [J] Textile Report, 2020 (1): 3
- [10] Cao Xinxin Standards, Booster of Intelligent Manufacturing -- Interview with Ouyang Jinsong, Director of the Institute of Comprehensive Technology and Economics of Machinery Industry Instruments [J] 2021(2019-19):24-25.
- [11] Fan Weiya Research on automatic control of stereo parking garage based on PLC Tianjin Vocational and Technical Normal University, 2020
- [12] Song Guangqin Research and Design of Control System for Complete Set of Open Width Washing and Boiling Equipment [D] Shandong University, 2020
- [13] Sun Shujie A detection device for electrical automation equipment: CN112304371A [P] two thousand and twenty-one.