

AUTOMATION AT THE RAILWAY STATIONS OF UZBEKISTAN AND TELEMECHANICS RELAY THE EXPERIENCE OF USING SYSTEMS ANALYTICAL ANALYSIS

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ANNOTATION

The article provides that electromagnetic relays with second-class reliability are very problematic to continue using in control systems, a number of their disadvantages include the large size of high energy consumption, wear and tear, as well as the possibility of causing failures in railway automation and telemechanics systems. In addition electromagnetic relays are replaced by the importance of using programmable logic controllers (PLCs) that meet modern world industrial standards—that is, their economic efficiency, the presence of such capabilities as monitoring, archiving.

Key words: railway transport, electromagnetic relay, PLC, electrical centralization (EM), microprocessor centralization CBI.

Today, among the transport industries, rail transport is important in the transportation of large quantities and large volumes of goods. Automation and telemexalika systems, which organize the transportation process in rail transport, are manan and physically outdated, halakit the transportation process for stable growth and cannot perform high loading. Therefore, the Railways of Uzbekistan today should develop in parallel on two main lines: the modernization of existing lines and the construction of new lines, in which, in both cases, the transition to a new generation of automation and telemechanics systems remains one of the prerequisites for construction.

In the near future, it is planned to completely replace electrical centralization systems (EM in the next place) with modern microprocessor centralization (CBI in the next place) systems, which are superior to existing relay EM Systems in use by several times the functional capacity. One of the main ones of this possibility is constant and continuous archiving, in which all commands carried out by the station watchman and warnings about existing system failures are automatically stored on the main servers.

The railway will be seen at the stations on the scale of the directorates directly involved in the process in the analysis of the breakdown distribution (table 1) of the devices organizing the transportation process in 2021-2023.

Distribution of device breakdowns along Uzbekistan's railways in 2021-2023

Table 1

Naming	Number of layoffs by year		
	2021	2022	2023
SMB and contact department	135	122	127
Road department	91	67	78
Electr supply department	67	53	64

Transportation organize reach department	18	11	24
Locomotive Department	137	239	188
Others	84	76	96

Based on the above table, it is possible to draw the following conclusion: in this case, a large part of the failures at the stations coincide with the signaling centralization lockdown (SMB in the next place) and the communications department, as well as the locomotive administration. This statistics is due to the obsolescence of EM Systems and hardware, as well as the fact that some of them have already expired. This condition will definitely interfere with the continuous Organization of the transportation process and cause the process to slow down.

The development of technical and technological tools, the improvement of the element base the creation of a new generation of electrical centering devices based on microprocessor technology is one of the pressing issues today, and the local presence of these systems is especially important.

Replacing the NM2P and NM2AP electromagnetic blocks, which control the dual manhole switches combined in the Block Mesh relay centering system, with industrial controllers with microprocessors, provides some displacement in the field. Of course, the introduction of modern technical means requires certain financial costs, but their dominant aspects ensure sustainable development in the field. If we continue to work on the current old systems that are currently in operation, then the small problems of today will increase in size and it is possible that in the future it will bring several times larger financial costs.

Conclusion

It should be noted that today, the development of microprocessor blocks based on modern microprocessor devices is required in order to exclude mechanical elements in traffic light control blocks, as well as ensure energy and resource efficiency, reduce the cost of servicing devices, as well as increase the competitiveness of production localization, railway automation and telemechanics devices..

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