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CONDITIONS FOR SELECTING SPECIAL OUTPUT GROUPS OF LOGIC DEVICES TO BE USED IN CALCULATION CONTROL

The author of the article determines a complete set of special output groups of automation devices and computer tools, which must be considered when organizing the calculation control. Special groups of outputs are formed on the condition that certain error types are excluded. Functional descriptions have been introduced that are used to determine what error types can occur in any output group. The author demonstrates that the complete output group is based on the division of errors into unidirectional, symmetrical, and asymmetrical. In this case, special groups of outputs are divided into independent and dependent, and the latter are further divided into unidirectionally, symmetrically and (or) asymmetrically independent outputs, or outputs that cannot be classified into special groups (fully-dependent outputs). The results obtained in the research make it possible to organize technical means of calculations control, with due account for the specific structure of automation devices and computer tools, including the use of computer-aided design tools.

Keywords: logical device; concurrent error-detection circuit; calculations control by a logical device; error detection at device outputs; unidirectional errors; symmetrical errors; asymmetric errors; functionally independent device outputs groups.

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