

DISTRIBUTED CONTROL SYSTEMABSTRACT

A distributed control system including a control station that takes charge of control operation, and a remote input/output device that is connected to the control station through a remote input/output bus. In a normal state, cyclic scan transmission is carried out by using the remote input/output bus so that input/output data handled by the control station and input/output data on the remote input/output device side are maintained equivalently. The control station is provided with a continuation transmission service means that first performs transmission for urgent output only and then performs normal cyclic scan transmission service after the completion of the transmission for urgent output, an initialization start transmission service means that first performs cyclic scan transmission for input only, and an interruption duration measuring means that measures a period of transmission interruption duration of the remote input/output bus. When the result of measurement made by the interruption duration measuring means is shorter than a predetermined time, the continuation transmission service means is activated, whereas, when the result of measurement by the interruption duration measuring means is longer than the predetermined

time, the initialization start transmission service means is activated. Thus, when the power supply recovers from a power failure, for example, the system can recover from the transmission interruption state rapidly and shift to the normal process control operation promptly.

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