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63-3-1

FTD-TT-63-95

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TRANSLATION

MULTICHANNEL TELEMETRY DEVICE

By

S. V. Alekseyev

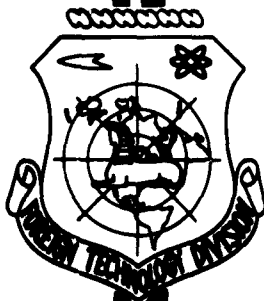
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UNEDITED ROUGH DRAFT TRANSLATION

MULTICHANNEL TELEMETRY DEVICE

BY: S. V. Alekseyev

English Pages: 4

SOURCE: Soviet Patent Nr. 148448 (699474/26), 28 Feb. 1961

(Ref) S/19-62-0-13-17-58

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MULTICHANNEL TELEMETRY DEVICE

S. V. Alekseyev

The familiar multichannel telemetry devices with pulse-amplitude modulation of transmitted pulse signals and synchronous commutation of channels at both the receiving and transmitting stations contain a circuit for producing scaling signals at the transmitting station and a circuit for producing standard signals at the receiving station.

The proposed device has a similar purpose but has the distinguishing characteristic that for an increase of the accuracy of the measurement, the receiving station uses a standard- and scaling-signal comparator (which produces an error signal), an error-signal memory circuit, and an amplitude correction unit which is switched into the memory circuit and corrects the amplitude of the pulses carrying the useful information.

The block diagram of the described device is shown in the drawing

The measurable magnitudes are evaluated by the primary measuring instruments 1-1N, and control pickups 2-2N. Control pickups 2-2N are fed from stabilized power supply 3. The scaling signal from source 3 is fed to the first segment of commutator 4, and the output voltages of pickups 2-2N which are proportional to the values of the measurable

magnitudes are fed to the subsequent segments. Pulse generator 5 provides, through circuit 6 of commutator drive 4, the start-stop movement of its slide 7 and the transmission of the control pulses to pulse-amplitude modulator 8.

During the movement of slide 7 along the segments of the commutator, first the scaling signal and then the signals from the pickups are fed in sequence to the input of modulator 8. As a result, at the output of output amplifier 9 there originates a series of pulses into the communication channel. The first pulse of this series is standardized with respect to amplitude while the subsequent pulses have amplitudes determinable by the values of the measurable magnitudes.

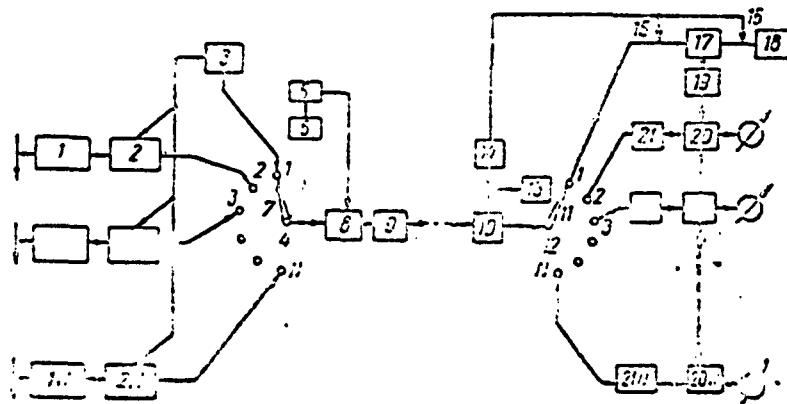
At the receiving station the pulses are amplified in amplifier 10 and are fed to slide 11 of commutator 12, which functions in synchronization with commutator 4, to unit 13 of the commutator drive, and to relay 14 of the scaling pulse. When the first pulse (scaling) of the series enters slide 11, it triggers relay 14 and closes, for the time of its duration, contacts 15 and 16 which switch the first segment of the commutator and the standard signal source 18 to comparator 17. Comparison of the scaling and standard signal amplitudes takes place in unit 17 and an error signal is generated. This signal is retained in memory unit 19 for the time of the transfer of all the pulses carrying useful information (for the time of the working cycle) and enters units 20-20N of the amplitude correction channels. The amplitude correction channels correct the amplitude of the pulses carrying the useful information. This correction occurs at the output of the pulse-amplitude demodulators 21-21N in accordance with the damping of the scaling signal in the communication channel.

The introduction of this correction allows us to increase, to a considerable extent, the accuracy of measurements in the described

equipment.

Object of the Invention

A multichannel telemetry device with pulse-amplitude modulation of the transmitted pulse signals and with synchronized commutation channels at the receiving and transmitting stations containing a circuit for producing scaling signals at the transmitting station, and a circuit for producing standard signals at the receiving station has the distinguishing characteristic that with the aim of increasing the accuracy of measurements, a standard- and scaling-signal comparator which generates an error signal, a memory circuit for this signal, and an amplitude correction unit which when switched into the memory circuit corrects the pulse amplitudes carrying the useful information, have been used at the receiving station.



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