

Microprocessors expand talking detector's capacity

Servo Corp. has a new version of the SERVOTALK system, introduced in 1977 to provide direct wayside to train crew warning of hot bearings or other hazardous conditions detected on a passing train. It replaces the eight-alarm capacity of the Series 2500 Train Inspection Reporter with memory and vocabulary capabilities allowing the new unit (correspondingly renamed a "Train Inspection Message Center") to challenge the imagination of railroads specifying their read-out requirements with its ability to accept inputs from up to eight detectors and transmit individually identified information from up to 90 alarms per train. Microprocessor technology not only eliminates the moving parts of the magnetic drum message storage unit but results in a more compact (5¼" high, for standard 19" equipment rack) unit selling at a lower price.

Two separate microprocessors are involved in providing the unit's expanded capabilities. One is a vocabulary unit programmed (using the latest information-compression technology) with all the individual words likely to be needed to cover any detection reporting situation—numbers, initials, defect classes, conditions—in digitized form. The second, its read-only memory programmed by Servo to railroad specification to match the suite of detectors at wayside locations, can retrieve the necessary words by sending eight-bit addresses to its mate.

Converted to audio, the message is available as a standard 600 ohm source to drive a radio transmitter notifying the train crew of the results of the inspection in appropriate format—railroad, location, system operation verification, and any combination of type and location (axle or car count) of defects detected. The Servotalk unit is typically set up to accept inputs (contact closures, from Servo or other manufacturer's detectors) from 10 hot bearing, 10 dragging equipment, 10 high/wide and 60 hot wheel alarms per train. Often the result of overlooked handbrake or retainer errors, hot wheel detections are likely to occur in bunches.

Parallel output via phone line to the dispatcher or other remote locations is available, in audio message as well as ASCII digital format for recording. The radio message can be repeated up to four times; the remote message is put on line only once, but it remains in memory until the next train passes the location and can be recalled by the dispatcher if required.

Units programmed to a railroad's requirements are not restricted to a specific site, however; switches on one of the four printed circuit cards comprising the system are used to select milepost number, track and direction designating the individual location.

A companion unit, filling an expressed need for a permanent record of detections, is the SERVOPRINT readout. Available in either relay-rack or desk-top models, the thermal printer duplicates exactly the audio message put on the air



by the SERVOTALK unit. Like the message generator, it is designed to operate over the -40 to +160° F. temperature range; its only moving part is the paper drive. In its present version, only alarm-level events are recorded, no analog recording capability being included.

Other flexibilities are built into the system:

—The SERVOTALK unit is available without the voice card, for use with printer (local, remote, or both) output only.

—Content of message transmitted to the dispatcher may vary from that put on the air; "warm journal" indications, for example, may be recorded centrally for observation while "hot bearing" and other priority alarms are transmitted immediately to the train crew.

Input includes surge suppression and battery standby compatibility. The SERVOTALK vocabulary function and processing technology are also part of Servo's new TRIM (Train Inspection Management) system options.

Write in 981 on Reader Service Card