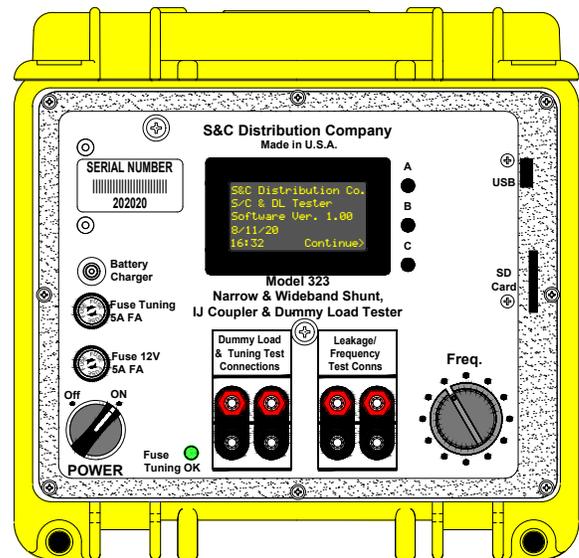




MODEL 323 SHUNT, COUPLER AND DUMMY LOAD TESTER

(May 14, 2021)

- IDENTIFY CENTER FREQUENCIES OF SHUNTS, COUPLERS AND RELATED TRANSMITTERS
- DETERMINE TERMINATION AND SIGNAL THRU-PUT CAPACITIES OF SHUNTS
- WITH DATA FROM TESTER, RULE OUT SHUNTS AS SOURCES OF TAIL RING
- ADJUST TUNABLE COUPLERS AND SHUNTS PRIOR TO INSTALLATION
- TEST SHUNTS FOR DC LEAKAGE
- DUMMY LOAD TEST IDENTIFIES AND REPORTS DISTANCE EQUIVALENT
- FREQUENCY COUNTER REPORTS TRANSMITTER OUTPUT FREQUENCY
- FREQUENCY RANGE: 10HZ TO 5120HZ
- WILL RECORD SHUNT TUNING TESTS. OTHER DATA CAN BE INPUT WITH MINI-KEYBOARD
- FOR FIELD USE
- OPERATES ON RECHARGEABLE, 12VDC, 1.2AH LEAD ACID BATTERY



GENERAL

The widespread use of motion sensing and constant warning time track circuits has resulted in the proliferation of wide and narrow band shunts, IJ couplers and dummy loads. Many times the circuits are overlapped, resulting in ever-increasing problems of tuning and frequency conflict. The troubleshooter needs to know the complete range of characteristics of the shunts, couplers and dummy loads with which he is dealing, when attempting to identify the source of circuit malfunctions. Problems can be caused by shunts and couplers not directly associated with the circuits experiencing problems, including overlapped DC track circuits. Incorrect or surge damaged dummy loads can

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contribute to circuit malfunctions, including short warning. Increasingly, approach circuits need to be understood as “networks“ requiring additional data to analyze problems fully.

Where dummy loads are used, there is a need to identify the intended distance equivalent of a particular dummy load. This information is quickly provided by the Model 323. To test dummy loads, connect the 323 leads to the terminals marked: "Dummy Load & Tuning Test".

A tool such as the S&C Model 323 Shunt Coupler and Dummy Load Tester is necessary to obtain the data that will help determine the source of track circuit problems. This device permits the signalman to know the frequencies, tuning characteristics, attenuation, thru-put capacities, leakage characteristics and distance equivalents of each device in the approach “network”, empowering him to relatively quickly determine the source of the problem.

Tuned Shunt and Dummy Load Simulators are included in the Kit to enable the user to periodically confirm the calibration of his Tester. These recent developments are long overdue, in the case of the Shunt Simulator, and provide effective ways to confirm that the Tester is working correctly.

APPLICATION

This highly portable device permits the maintainer to bridge or terminate signals into the shunts, couplers and dummy loads under test. It can be moved to the area of the track where the devices are in service, maximizing effectiveness, minimizing time required to perform the tests and ensuring that unnecessary movement of the device under test does not change the condition causing the problem (egg: water moving away from a point where it is causing problems in shunts or couplers.)

“Scan Shunt” Function automatically sweeps full range (10Hz to 5120Hz) for tuning points of a narrowband shunt. "B Scan" determines center frequency and termination level of the shunt under test. Graphic display pictorially shows frequency curve and tuning points allowing the user to check loading effect of shunt under test on overlapped frequencies.

Leakage Test determines the resistance of the shunt to DC leakage. This leakage will cause current usage of DC track circuits (eg. Electro-Code (r)) to rise unnecessarily to the point where a very leaky shunt will shunt down a DC track circuit. Leakage status for a shunt is reported when it reaches minimum resistance acceptable. Two shunt leakage capacities can be tested selectively: narrowband and wideband.

Dummy Load Test quickly reports feet of track represented by a dummy load. No tool in a normal maintainer's tool kit is capable of determining the foot value of an unmarked or surge damaged dummy load. This information is now readily available with the 323.

Transmitter Frequency Test feature of the 323 allows the maintainer to know the frequency that is being fed to the termination shunts. Not enough attention is given to the transmitter frequency. Proper design requires that the Shunts should be tuned 1% lower than the frequency of the transmitter. The 323 Tester enables the maintainer to know if the relationship between the transmitter and the shunts is correct or not.

Separate inputs for Dummy Load & Tuning and Leakage & Frequency Meter Tests reduce potential for resistance in switch contacts to adversely affect test results.

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Unit comes complete with a pocket in the lid for storing the plastic-paged, Pocket Manual, ACHC Sun Shields (to improve readability of the display in bright sunlight) and the Meter Leads. Both the 323-100 Tuned Shunt Simulator and the Dummy Load Simulator are also included. The Charger furnished is our 324-46 Universal Charger which provides a maintenance charge after the battery is fully charged. A large carry bag is also furnished to carry the Tester, both Simulators, Battery Charger, and other accessories.

SPECIFICATIONS

Attenuation Test - 10 Hz to 5120 Hz

Leakage Test - (Internal Resistance of Device under test) 1 Ohm to 2,000,000 Ohms

Dummy Load Test - Values of foot measurements: Maximum: 6,000 Ft. Minimum: 50 Ft

Frequency Meter:

Meter Impedance: 1 Megohm

Meter Accuracy - +/- 3%, +/- one digit

Output Impedance - 0.75 ohms

Voltage Tolerated: 20VDC, 25VAC Maximum

Data Field Character Count For Keyboard Entry: 1 line of 21 characters

Operating Battery: One each 12VDC, 1.2AH Lead Acid Rechargeable

Low Battery Indicator: Power LED turns off at approximately 10VDC on battery
Screen displays: "LOW BATTERY"

Physical: Dimensions: 9.75" X 10.75" X 5" with case closed.

Weight: Approx. 5#

Environmental: -4 deg. F to +140 deg. F

Leads: 6 ft. lg., rubber insulation, with HD Claw Clips, one red & one black dual lead

WARRANTY - Limited one year, by S&C Distribution Company, on parts and labor.

ORDERING INFORMATION

Description	Part No.
323 Shunt Coupler Tester Kit w/Leads, Universal Charger, Tuned Shunt & Leakage Simulator, Dummy Load Simulator, Sun Shields, Pocket Plate and large, HD Carry Bag	323-2
Above, incl. Mini-Keyboard, SD to USB Adapter, etc. to enable recording of tests	323-1000
Kit, to add recording capability to 323, incl. Mini-Keyboard, etc.	322-101
ACCESSORIES	
Mini, ASCII Keyboard for data entry	331-5-19
SD Card, 8GB	1010-15
Adapter, SD Card to USB-2, for computers w/o SD Card reader	1010-18
In-Vehicle Charging Adapter	324-12

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REPLACEMENT PARTS	
Tuned Shunt and Leakage Simulator	323-100
Dummy Load Simulator	323-515
Lead Set, 6 ft., HD Clips	323-15
110/220 VAC to 12VDC, 1.2A Universal Charger	324-46XX
ACHC Sun Shield, Pair	322-18
HC Pocket Plate w/mtg. Screws	322-20
HD Carry Bag For Tester, etc.	506ONBZB

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