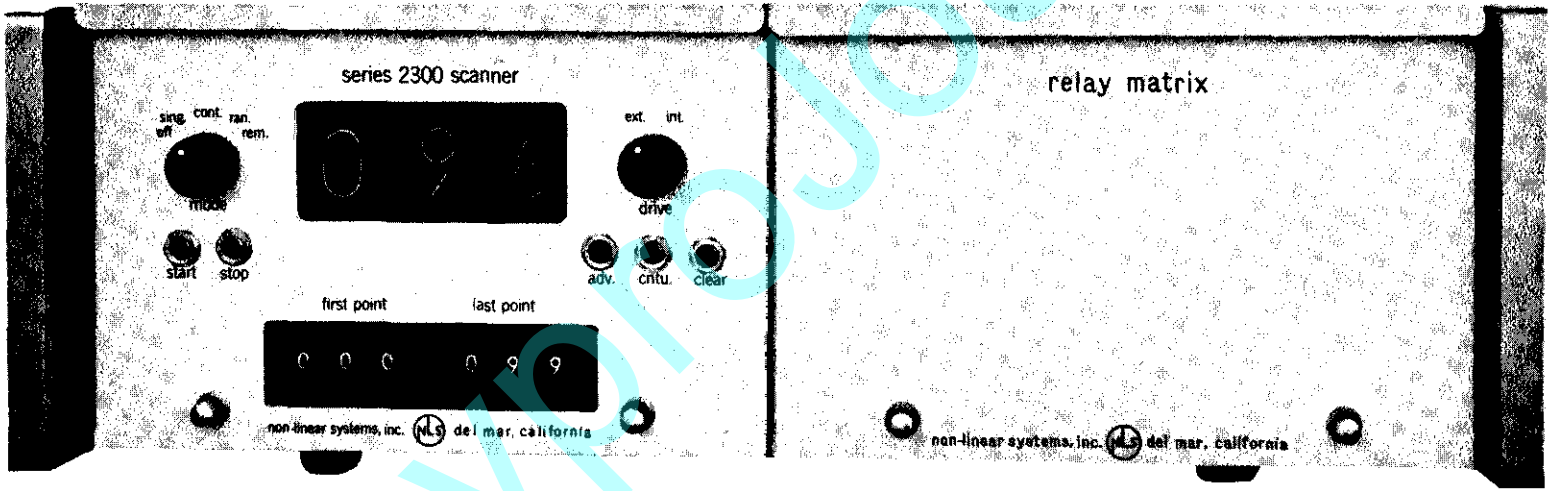
Originator of the Digital Voltmeter

non-linear systems, inc.

DEL MAR (SAN DIEGO), CALIFORNIA



NLS Series 2300 Reed-Relay Input Scanner

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NLS Series 2300 Universal Scanner Control Unit

BULLETIN

non linear systems, inc.
DEL MAR, CALIFORNIA

NLS SERIES 2300 UNIVERSAL INPUT SCANNER

This is a state-of-the-art systems oriented scanner using a hybrid mixture of silicon integrated circuits and silicon discrete circuits to operate high speed relays or a crossbar switch.

A flexible interface has been provided to allow the 2300 scanner to work with other integrated circuit, discrete circuit or electromechanical devices.

The 2300 Scanner consists of a basic logic unit housed in one side of an X-1 package. This logic unit is capable of controlling three different kinds of switch. The type of switch to be used depends upon user requirements, and can usually be housed in the other side of the X-1 package.

UNIQUE FEATURES

High Speed - Up to 400 channels per second.

Fully guarded box-within-a-box construction for high common mode rejection.

Full remote control with 40% noise rejection on all control lines.

Switch Choice: (a) James Micro-Scan relays for low level signals.

(b) IBM Reed relays for high level signals.

(c) Crossbar switch for high or low level signals.

Switch Mixture: High level and low level relays can be mixed in groups of 5 channels.

Expandable to 1,000 channels.

Unique STOP-ADVANCE-CONTINUE feature. Scanner can be stopped in any mode and manually advanced channel-by-channel. Push the CONTINUE button and the scanner continues operation without going back to the first point.

Internal clock provided for open loop use.

SPECIFICATIONS

Since the scanner is capable of operating 3 different kinds of switches, the specifications for each type are listed below.

1. a) Low Level 1μV to 10V D.C. at 1 ma max.
   b) James Micro-Scan Relays
   c) 400 Channels/second
   d) Contact Resistance = 25 mΩ
   e) 3 PST relays available
   f) Life = 10^9 operations
   g) Expandable in increments of 5 channels. Maximum of 50 channels in one side of X-1 package. Additional channels up to 1,000 points in auxiliary chassis.

2. a) Medium Level 30μV to 50 VDC or 117 VAC
   b) IBM Reed Relays
   c) 400 Channels/Second
   d) Contact Resistance = 100 mΩ
   e) 2, 4 or 6 pole form A available
   f) Life = 1.5×10^8 operations
   g) Same as (g) above

3. a) High & Low Level - 1 μV to 1 KV
   b) Cunningham Crossbar Switch (600 point)
   c) 50 Channels/second
   d) Contact Resistance = 20 mΩ
   e) Life = 10^8 operations
   f) Expandable in increments of 1 crossbar to a maximum of 5 crossbars

OPERATING MODES

OFF - Power OFF.

SINGLE SCAN - Scanner scans selected channels once and stops.

CONTINUOUS SCAN - Scanner scans selected channels continuously until: (a) Single scan is selected, (b) a stop signal is received or (c) the stop button is pushed.

RANDOM ACCESS - The scanner goes to first point when the START switch is pushed. The ADV switch will advance the scanner channel-by-channel if required. In this mode, the relay contacts stay closed, allowing (e.g.) inputs to be calibrated, etc.

REMOTE - A remote address in BCD form must be presented to the scanner. When a "Remote Address Select" pulse is received, the scanner will go to that position. This is a remote version of Random Access.

CONTROLS

DRIVE - INTERNAL - The internal clock is used to advance the scanner.

EXTERNAL - The scanner is advanced by an input signal.

START - Scanner goes to first point and runs in mode selected.

STOP - Scanner stops on existing channel.

ADV - Causes scanner to advance in sequence by one channel.

CNTU - Continue - Scanner continues after stopping without breaking scan sequence.

CLEAR - Scanner opens all channels and readout is extinguished.

FIRST POINT - Selects first point of group to be scanned.

LAST POINT - Selects last point of group to be scanned.

CLOCK - Internally preset to required frequency.

INTERFACE SIGNALS

ADVANCE: As above.

REMOTE ADDRESS STROBE: -ve going pulse from 0V to -4.5V.

REMOTE ADDRESS (Optional): BCD voltage levels from 0V to -4.5V (1=0V)

CLEAR: -ve going pulse from 0 to -4.5V or form A contact closure.

SELECT C1, SELECT C2: Form A contact closure.

RESET: Goes from 0V to -4.5V when scanner is reset.

CLOSURE COMPLETE: Both (a) +ve going and (b) -ve going 4 MS pulse, from 0V to -4.5V are provided.

FIRST POINT: Both (a) +ve going and (b) -ve going signal from 0V to -4.5V which are present while the scanner is at first point.

LAST POINT: -ve going signal from 0V to -4.5V which is present while the scanner is at last point.

END OF SCAN: A signal which goes from 0V to -4.5V after the scanner has stepped off last point.

CHANNEL I.D.:
(a) BCD voltage levels from 0V to -15V (1 = 0V).
(b) Decimal voltage levels from 0V to -15V (1 = 0V).
(c) As a special option, BCD voltage levels from 0V to -4-1/2V (1 = 0V) can be provided.

DIMENSIONS: 19" wide 19-1/2" Deep 5-1/4" High

POWER: 110/220V 50 to 60 cps.