

Programmable Switch / Scanner

EA007



- 8 Programmable Relays
- 2 x High Current 20Amp Channels
- 2 x High Voltage 1kV Channels
- 4 x Signal Level Channels
- Requires 2000 Series Calibrator
- Works with Virtual Front Panel or ProCal Calibration Software
- Fully programmable for use in ATE Test stations

Automated Switching - eliminates lead changing

Bring an end to lead changing with this programmable switching unit. Connects directly to the 2000 Series calibrator's feature connector to bring automated switching capabilities to your calibration workstation.

Incorporates two 9 Way 'D' type connections for control input and through connection to additional scanner units. This provides the facility to 'daisy-chain' units and provide multiple channels for any task.



Connections

Channels 1-4

High performance low thermal switching (less than 1uV) for low level signals. 4-pole switching is provided, making these channels ideal for 4-wire applications including resistance measurements. Utilising a 25 Way 'D' type connector, multiple wiring looms can be easily interchanged for different configurations.

Channels 5-6

Channels 5 and 6 incorporate low thermal 4mm terminals for use in voltage switching up to 1kV, allowing either socket or bare wire connection end for maximum flexibility.

Channels 7-8

Channels 7 and 7 also use 4mm terminals for use in current switching up to 20A, again allowing either socket or bare wire end connection.

Front Panel Display

The front panel incorporates a 'power on' LED indicator. Each channel also displays its status (on/off) via an LED indicator (one per channel).

Control Interface

Full remote control of these scanner units is made in conjunction with the ProCal Calibration software or any RS232 capable program. A simple control language provides control of one or more scanner units to allow channels to be easily configured (with ProCal, channels can be set on a test by test basis to provide **ATE** testing).

Specifications - See extended specifications for full details

CH1-4 : 4xDPDT Signal Switching @ 250V / 2A • **CH5-6** : 2xSPST @ 1000V / 200mA • **CH7-8** : 2xSPST @ 100V / 20A

ⓘ Important Note : The scanner unit must be connected to a 2000 series calibrator - it cannot be used as a stand-alone unit.



Programmable Switch / Scanner - Operation

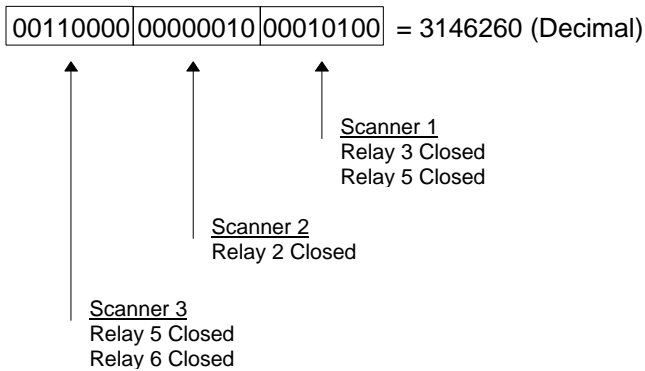
The scanner unit uses a simple binary coding to determine which channels are switched on or off, and which scanner unit is being set (in a multi-scanner, or 'daisy-chained' set up)

Using **24 Bit binary**, work out the relay combination where relay 1 on scanner 1 is the least significant bit - then convert this to decimal.

Example

The following example is for a set up using 3 scanner units, setting relays on all three of these units :

Relays 3 & 5 closed on Scanner 1, relay 2 closed on Scanner 2 and relays 5 & 6 closed on Scanner 3



To set the scanner(s) up using the decimal command, simply add a lower case 'p' to the start of the command, and send a carriage return (ASCII character 13) to terminate the string, for example

p3146260<CR>

Where <CR> is a carriage return (ASCII character 13)

① **Note** : To turn of all channels (relays) of all scanner units send the command p0<CR>



Programmable Switch / Scanner Option

Requires 2000 Series Calibrator and PC control

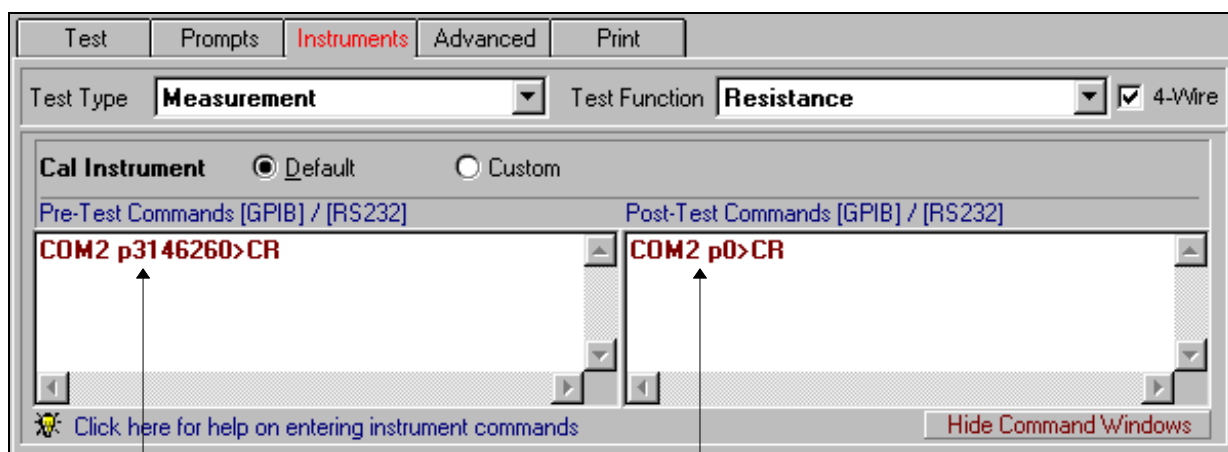
Command List (individual channels)

Listed below, for reference are the *individual* relay commands - for *combinations* of relays, the binary to decimal conversion method detailed previously is required.

Scanner Unit	Relay	Command
1	1	p1
1	2	p2
1	3	p4
1	4	p8
1	5	p16
1	6	p32
1	7	p64
1	8	p128
2	1	p256
2	2	p512
2	3	p1024
2	4	p2048
2	5	p4096
2	6	p8192
2	7	p16384
2	8	p32768
3	1	p65536
3	2	p131072
3	3	p262144
3	4	p524288
3	5	p1048576
3	6	p2097152
3	7	p4194304
3	8	p8388608
all off		p0

Sending scanner commands using ProCal

Pre-programmed (procedure based) control using the ProCal Calibration software can be achieved - this allows a pre-set channel configuration to be set on a test-by-test basis, which is ideal for automated lead switching or use in creating an automated test equipment (ATE) set up. Within a ProCal procedure, use the **pre-test** and **post-test** command boxes (under the Instruments tab) to enter scanner configuration commands, as shown below :



Pre-Test Command sets scanner channels to on

Post-Test Command resets scanner channels to off

① **TIP** : Any RS232 capable program can be used to control the scanner unit (e.g. Windows Hyper terminal)





Programmable Switch / Scanner Option

Requires 2000 Series Calibrator and PC control

Programmable Switch / Scanner - Specifications

High Voltage Switching

Relays	2 x N/O SPST
Max DC Volts	1000V
Max AC Volts	1000V
Max Current	20mAmps AC/DC
Connection	4mm low thermal safety sockets

High Current Switching

Relays	2 x N/O SPST
Max DC Volts	100V
Max AC Volts	100V
Max Current	20Amps AC/DC
Connection	4mm terminal posts

Signal Switching

Relays	4 x DPDT
Max DC Volts	250V AC/DC
Max Current	2Amps AC/DC
Connection	25 Way 'D' type connector

General

Power	14V D.C.
Interface	Feature connection to 2000 Series calibrator 1x I/P Connection (9 Way 'D' type) 1x O/P Connection (9 Way 'D' type)
Indicators	1x Power indicator 8x Channel indicators
Connections	Channels 1-4 (signal) : 25 Way 'D' type connector Channels 5 & 6 (Voltage) : 4mm Low thermal Safety Sockets Channels 7 & 8 (Current) : 4mm Terminal Posts

