



Racal Instruments™

1260-145A-G

High-Density Switch Matrix Plug-In

The Racal Instruments™ 1260-145 Series plug-ins are high-density switch matrices for the Adapt-a-Switch™ platform. These quickly and easily plug into the front of Racal Instruments™ 1260-100 and 1260-101 Adapt-a-Switch™ carriers or Racal Instruments™ 1256 GPIB/Ethernet and 1256L (LXI Core 2011 Compliant) switching mainframes.

Key Features

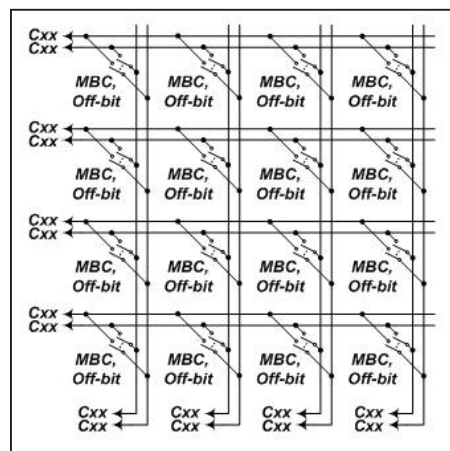
- Seven standard versions with up to 144 crosspoints
- All configurations specified
- Ideal for differential applications
- Plug-in design for rapid expansion and replacement
- Can be used in VXI, GPIB/RS-232, and LXI switching systems
- Analog bus for construction of large matrices
- Relay subassemblies lower spares and repair costs

Product Information

These plug-ins provide the flexibility of high-density matrices while maintaining excellent bandwidth and signal integrity. Seven different versions are available. Each version is separately characterized for performance, eliminating the guesswork involved in using matrix families with “up to...” style specifications.

The 1260-145 Series plug-ins are constructed using tightly integrated 4x4 relay subassemblies that minimize stub lengths for superior electrical performance. These subassemblies can be removed and replaced to return a plug-in to service in under ten minutes in the event of a relay failure.

Careful consideration has been given to board layout to provide superior performance in demanding differential communications applications. Electromechanical relays support bi-directional operation.



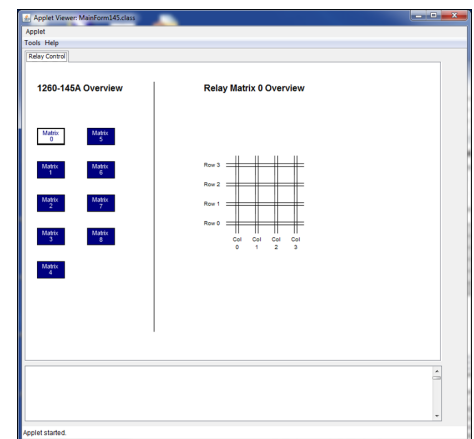
Typical matrix building block

1260-145 Series plug-ins are available in the following two-wire configurations:

- 1260-145A: nine (4x4)
- 1260-145B: three (4x12)
- 1260-145C: two (4x16)
- 1260-145D: one (4x36)
- 1260-145E: two (8x8)
- 1260-145F: one (8x16)
- 1260-145G: one (12x12)

The 1260-145 series plug-ins can be used to construct large matrices from multiple plug-ins without using external loop-back connections. Each plug-in includes provisions for connection to a four-channel, two-wire analog bus on the Adapt-a-Switch™ carrier. The analog bus is easily implemented by installing jumpers on the plug-in motherboard.

The Adapt-a-Switch™ series includes VXI *plug&play* support for frameworks based on Microsoft Win32® application programming interface, including drivers for LabWindows™/CVI and LabVIEW™.



1260-145A-G LXI Web Control

Specifications

Note: The Astronics Test Systems policy is one of continuous development and improvement. Consequently, the equipment may vary in detail from the description and specifications in this publication.

Input

Maximum Switching Voltage

- 60 VDC or 125 VAC

Maximum Switching Current

- 1 ADC or 1 AAC

Maximum Carry Current

- 30 W or 37.5 VA

DC Performance

Path Resistance

- <2 Ω (Initial)

Insulation Resistance

- $10^9 \Omega$

Thermal EMF

- <10 μ V

AC Performance (Into 50 Ω)

1260-145A

Bandwidth (-3 dB)

- >42 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.2 dB
- 10 MHz: 1.0 dB

Isolation

- 300 kHz: >76 dB
- 1 MHz: >62 dB
- 10 MHz: >43 dB

Crosstalk

- 300 kHz: <-81 dB
- 1 MHz: <-69 dB
- 10 MHz: <-49 dB

Capacitance

- Channel-Chassis: <118 pF
- Hi-Lo: <414 pF

AC Performance (Into 50 Ω)

1260-145B

Bandwidth (-3 dB)

- >31 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.1 dB
- 10 MHz: 0.5 dB

Isolation

- 300 kHz: >75 dB
- 1 MHz: >68 dB
- 10 MHz: >52 dB

Crosstalk

- 300 kHz: <-72 dB
- 1 MHz: <-70 dB
- 10 MHz: <-49 dB

Capacitance

- Channel-Chassis: <135 pF
- Hi-Lo: <494 pF

AC Performance (Into 50 Ω)

1260-145C

Bandwidth (-3 dB)

- >24 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.1 dB
- 10 MHz: 0.8 dB

Isolation

- 300 kHz: >77 dB
- 1 MHz: >67 dB
- 10 MHz: >48 dB

Crosstalk

- 300 kHz: <-63 dB
- 1 MHz: <-59 dB
- 10 MHz: <-46 dB

Capacitance

- Channel-Chassis: <173 pF
- Hi-Lo: <640 pF

AC Performance (Into 50 Ω)

1260-145D

Bandwidth (-3 dB)

- >13 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.1 dB
- 10 MHz: 2.0 dB

Isolation

- 300 kHz: >75 dB
- 1 MHz: >67 dB
- 10 MHz: >44 dB

Crosstalk

- 300 kHz: <-75 dB
- 1 MHz: <-68 dB
- 10 MHz: <-42 dB

Capacitance

- Channel-Chassis: <309 pF
- Hi-Lo: <1483 pF

AC Performance (Into 50 Ω)

1260-145E

Bandwidth (-3 dB)

- >27 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.2 dB
- 10 MHz: 0.7 dB

Isolation

- 300 kHz: >74 dB
- 1 MHz: >61 dB
- 10 MHz: >43 dB

Crosstalk

- 300 kHz: <-72 dB
- 1 MHz: <-64 dB
- 10 MHz: <-46 dB

Capacitance

- Channel-Chassis: <169 pF
- Hi-Lo: <636 pF

AC Performance (Into 50 Ω)

1260-145F

Bandwidth (-3 dB)

- >20 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.2 dB
- 10 MHz: 1.2 dB

Isolation

- 300 kHz: >79 dB
- 1 MHz: >66 dB
- 10 MHz: >53 dB

Crosstalk

- 300 kHz: <-77 dB
- 1 MHz: <-62 dB
- 10 MHz: <-44 dB

Capacitance

- Channel-Chassis: <223 pF
- Hi-Lo: <838 pF

AC Performance (Into 50 Ω)

1260-145G

Bandwidth (-3 dB)

- >27 MHz

Insertion Loss

- 300 kHz: 0.1 dB
- 1 MHz: 0.1 dB
- 10 MHz: 0.7 dB

Isolation

- 300 kHz: >74 dB
- 1 MHz: >67 dB
- 10 MHz: >52 dB

Specifications

continued

Crosstalk

- 300 kHz: <-70 dB
- 1 MHz: <-65 dB
- 10 MHz: <-44 dB

Capacitance

- Channel-Chassis: <171 pF
- Open Channel: <624 pF

Plug-In Interface

Power Requirements

- +5 VDC at 150 mA plus 20 mA per energized relay

Environmental

(All environmental conditions designed to meet MIL-PRF-28800F, Class 3)

Temperature

- Operating: 0° C to 55° C
- Storage: -40° C to 75° C

Relative Humidity

- 85% ±5% non-condensing at <30° C

Altitude

- Operating: 10,000 ft
- Non-Operating: 15,000 ft

Shock

- 30 g, 11 ms, ½ sine wave

Vibration

- 0.013 in: (pk-pk), 5 to 55 Hz

Bench Handling

- 4 inch drop at 45°

Emissions

- EN55011A with limits in accordance with EN50081-1

Immunity

- IEC801-2, 3,4 with limits in accordance with EN50082-1

Safety

- EN61010-1

Rated Switch Operations

- Mechanical: 50,000,000 operations
- Electrical: 100,000 operation at 1 A, 30 VDC or 0.3 Amp 125 VAC

MTBF (including relays)

- MIL-217FN2: 33,763 hrs
- Telcordia (Bellcore) 6: 50,660 hrs 157253

MTTR

- <5 min

Switching Time

- <7 ms (includes settling time)

Software

Drivers

- LabVIEW™, LabWindows™/CVI, VXIplug&play support for frameworks based on Microsoft Win32® application programming interface

Web Controls

- When used with a Racal Instruments™ 1256L

Mechanical

Weight

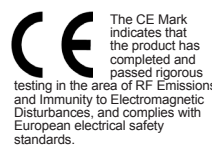
- 9 oz (0.26 kg)

Dimensions

- 4.5" H x 0.75" W x 9.5" D

Cooling

- See 1260-100 cooling data



Ordering Information

Note: When 1260-145A-G modules are used in a VXI mainframe other than a 1256 or 1256L, a Smart Control Module must be installed in the left-most slot of the mainframe. There are two options:

- Option 01: Native command set. For use in previously designed switching systems that used the Option 01.
- Option 01T: SCPI command set. For use in new systems and previously designed systems that used the Option 01T.

407643-001 : Racal Instruments™ 1260-145A

Adapt-a-Switch™ plug-in, 9 each 4x4 matrices

407643-002 : Racal Instruments™ 1260-145B

Adapt-a-Switch™ plug-in, 3 each 4x12 matrices

407643-003 : Racal Instruments™ 1260-145C

Adapt-a-Switch™ plug-in, 2 each 4x16 matrices

407643-004 : Racal Instruments™ 1260-145D

Adapt-a-Switch™ plug-in, 1 each 4x36 matrices

407643-005 : Racal Instruments™ 1260-145E

Adapt-a-Switch™ plug-in, 2 each 8x8 matrices

407643-006 : Racal Instruments™ 1260-145F

Adapt-a-Switch™ plug-in, 1 each 8x16 matrices

407643-007 : Racal Instruments™ 1260-145G

Adapt-a-Switch™ plug-in, 1 each 12x12 matrices

Accessories:

OPT-401901-005 : Racal Instruments™ Option 01, Smart Control Module installed (manual must be ordered separately; see below)

404820-005 : Racal Instruments™ Option 01, Smart Control Module (not installed) with manual

OPT-405108-001 : Racal Instruments™ Option 01T Smart Control Module installed (manual must be ordered separately; see below)

407531-001 : Racal Instruments™ Option 01T Smart Control Module (not installed) with manual

407408-001 : 160-Pin Cable Assembly, 6 ft, 24 AWG

407409-001 : 160-Pin Cable Assembly, 12 ft, 24 AWG

407664 : 160-Pin Connector Kit with Strain Relief

407809-001 : 160-Pin Cable Assembly, 6 ft, 24 AWG

602258-116 : 160-Pin Backshell

602258-900 : Extra 24 Gauge contact

990898 : Insertion Tool

990899 : Extraction Tool

991020 : Crimp Tool



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