

## High-Density Switch Matrix Plug-In

- ◆ **Seven Standard Versions with up to 144 Crosspoints**
- ◆ **All Configurations Specified**
- ◆ **Ideal for Differential Applications**
- ◆ **Plug-in Design for Rapid Expansion and Replacement**
- ◆ **Analog Bus for Construction of Large Matrices**
- ◆ **Relay Subassemblies Lower Spares and Repair Costs**

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 an Adapt-a-Switch carrier, Racal Instruments 1260-100. Please refer to the 1260-100 data sheet for a complete description of the platform features and specifications.

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.

Racal Instruments 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.

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)

Racal Instruments 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.

Racal Instruments Adapt-a-Switch series includes VXIplug&play support for WIN95/NT frameworks, including drivers for LabWindows/CVI and LabView. Please refer to the option 01T datasheet for additional product features.

# 1260-145 PRODUCT SPECIFICATIONS

## INPUT

### Maximum Switching Voltage

250 VDC or 250 VAC

### Maximum Switching Current

1ADC or 1AAC

### Maximum Carry Current

30W or 37.5VA

## DC PERFORMANCE

### Path Resistance

<2 $\Omega$

### Insulation Resistance

10<sup>9</sup> $\Omega$

### Thermal EMF

<10 $\mu$ V

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145A

#### Bandwidth (-3 dB)

>42MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.2dB

10MHz: 1.0dB

#### Isolation

300kHz: >76dB

1MHz: >62dB

10MHz: >43dB

#### Crosstalk

300kHz: <-81dB

1MHz: <-69dB

10MHz: <-49dB

#### Capacitance

Channel-Chassis: <118pF

Hi-Lo: <414pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145B

#### Bandwidth (-3 dB)

>31MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.1dB

10MHz: 0.5dB

#### Isolation

300kHz: >75dB

1MHz: >68dB

10MHz: >52dB

#### Crosstalk

300kHz: <-72dB

1MHz: <-70dB

10MHz: <-49dB

## Capacitance

Channel-Chassis: <135pF

Hi-Lo: <494pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145C

#### Bandwidth (-3 dB)

>24MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.1dB

10MHz: 0.8dB

#### Isolation

300kHz: >77dB

1MHz: >67dB

10MHz: >48dB

#### Crosstalk

300kHz: <-63dB

1MHz: <-59dB

10MHz: <-46dB

#### Capacitance

Channel-Chassis: <173pF

Hi-Lo: <640pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145D

#### Bandwidth (-3 dB)

>13MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.1dB

10MHz: 2.0dB

#### Isolation

300kHz: >75dB

1MHz: >67dB

10MHz: >44dB

#### Crosstalk

300kHz: <-75dB

1MHz: <-68dB

10MHz: <-42dB

#### Capacitance

Channel-Chassis: <309pF

Hi-Lo: <1483pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145E

#### Bandwidth (-3 dB)

>27MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.2dB

10MHz: 0.7dB

## Isolation

300kHz: >74dB

1MHz: >61dB

10MHz: >43dB

## Crosstalk

300kHz: <-72dB

1MHz: <-64dB

10MHz: <-46dB

## Capacitance

Channel-Chassis: <169pF

Hi-Lo: <636pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145F

#### Bandwidth (-3 dB)

>20MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.2dB

10MHz: 1.2dB

#### Isolation

300kHz: >79dB

1MHz: >66dB

10MHz: >53dB

#### Crosstalk

300kHz: <-77dB

1MHz: <-62dB

10MHz: <-44dB

#### Capacitance

Channel-Chassis: <223pF

Hi-Lo: <838pF

## AC PERFORMANCE (into 50 $\Omega$ )

### 1260-145G

#### Bandwidth (-3 dB)

>27MHz

#### Insertion Loss

300kHz: 0.1dB

1MHz: 0.1dB

10MHz: 0.7dB

#### Isolation

300kHz: >74dB

1MHz: >67dB

10MHz: >52dB

#### Crosstalk

300kHz: <-70dB

1MHz: <-65dB

10MHz: <-44dB

#### Capacitance

Channel-Chassis: <171pF

Open Channel: <624pF



# 1260-145 PRODUCT SPECIFICATIONS

## Adapt-a-Switch™ PLUG-IN INTERFACE DATA

### Cooling

See 1260-100 cooling data

### Power Requirements

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

## ENVIRONMENTAL DATA

### Temperature

Operating: 0 °C to 55 °C

Storage: -40 °C to 75 °C

### Relative Humidity

85% ±5% non-condensing at <30o C

### Altitude

Operating: 10,000 ft.

Non-Operating: 15,000 ft.

### Shock

30g, 11 ms, ½ sine wave

### Vibration

0.013 inch: P-P, 5-55Hz

### Bench Handling

4 inch drop at 45°

## EMC

### Emissions

EN55011A with limits in accordance with EN50081-1

### Immunity

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

### Safety

EN61010-1

## RELIABILITY

### Rated Switch Operations

Mechanical: 50,000,000 operations

Electrical: 100,000 operation at 1 Amp, 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 minutes

### Switching Time

<7ms (includes settling time)

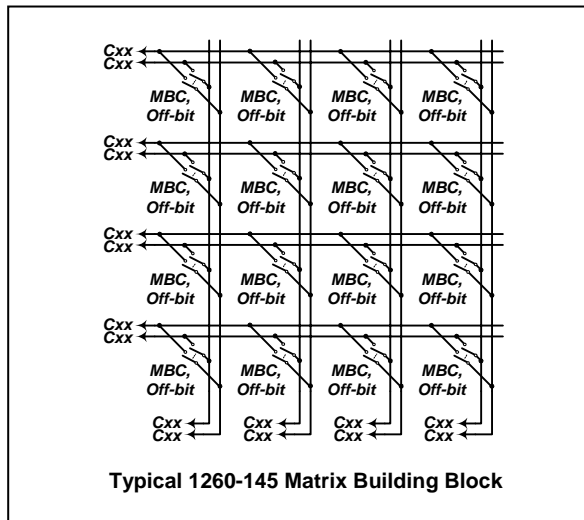
## MECHANICAL

### Weight

9 oz. (0.26kg)

### Dimensions

4.5" H x 0.75" W x 9.5" D



**CE** The CE Mark indicates that the product has completed and passed rigorous testing in the area of RF Emissions, Immunity to Electromagnetic Disturbances and complies with European electrical safety standards.

## ORDERING INFORMATION

### MODEL/DESCRIPTION

Racal Instruments 1260-145A, Adapt-a-Switch plug-in, 9 each 4X4 matrices  
 Racal Instruments 1260-145B, Adapt-a-Switch plug-in, 3 each 4X12 matrices  
 Racal Instruments 1260-145C, Adapt-a-Switch plug-in, 2 each 4X16 matrices  
 Racal Instruments 1260-145D, Adapt-a-Switch plug-in, 1 each 4X36 matrices  
 Racal Instruments 1260-145E, Adapt-a-Switch plug-in, 2 each 8X8 matrices  
 Racal Instruments 1260-145F, Adapt-a-Switch plug-in, 1 each 8X16 matrices  
 Racal Instruments 1260-145G, Adapt-a-Switch plug-in, 1 each 12X12 matrices  
 160-pin Mating Connector Kit  
 160-pin Cable Assembly, 6ft., 24AWG

\*One Option 01T must be ordered with switch system. Please specify the card on which Option 01T will be installed.

Note: Each switch card requires one mating connector

### PART NUMBER

407643-001  
 407643-002  
 407643-003  
 407643-004  
 407643-005  
 407643-006  
 407643-007  
 407664  
 407408-001

The EADS North America Defense Test and Services policy is one of continuous development, consequently the equipment may vary in detail from the description and specification in this publication.



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