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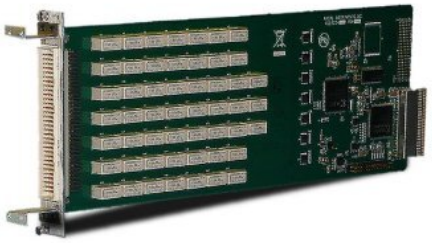
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Racal Instruments™ 1170

52-Channel 2 A SPDT Form C Switch Plug-In

The Racal Instruments™ 1170 52-Channel SPDT plug-in card is engineered for high reliability and provides a versatile switching module for the 1800 series LXI Source/Measure Switch System.

Key Features

- **Long life operation with one million cycles at half-rated load (30 VDC/1 A)**
- **Versatile Form C switching for custom applications**
- **Ideal for general purpose switching up to 48 MHz**
- **300 VAC/VDC switching up to 2 A**
- **Supports Lab-Windows™/CVI, LabVIEW™, ActivATE™, and other popular test platforms**
- **Made in the USA**

Product Information

Engineered for high reliability and long life

The 1170 Switch Plug-in is engineered for longer life and increased system uptime with a lifetime rating twice that of typical switch plug-ins. The module features long-armature relays with bifurcated contacts constructed of a silver-nickel alloy with gold plating. Each channel is rated for 200,000 cycles at a full rated load of 60 W or 125 VA and 1,000,000 cycles at half of the rated load (30 VDC/1 A).

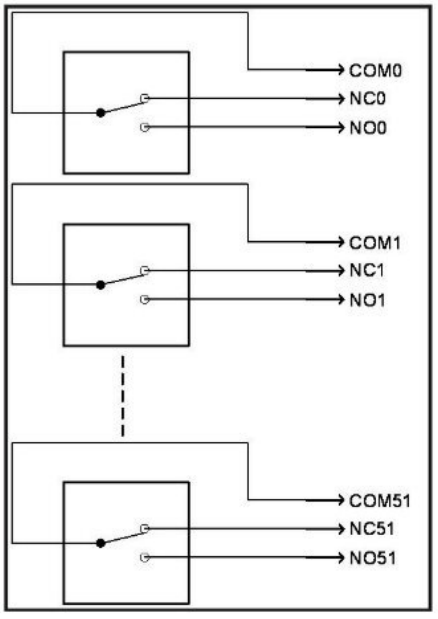
Versatile Form C switching

The 1170 Form C (SPDT) switch module is used to switch signals up to 2 A, including power lines, loads, relay control lines, and other signals. The 1170 plug-in fully supports the 1800 Series Source/Measure Switch System's path-level switching.

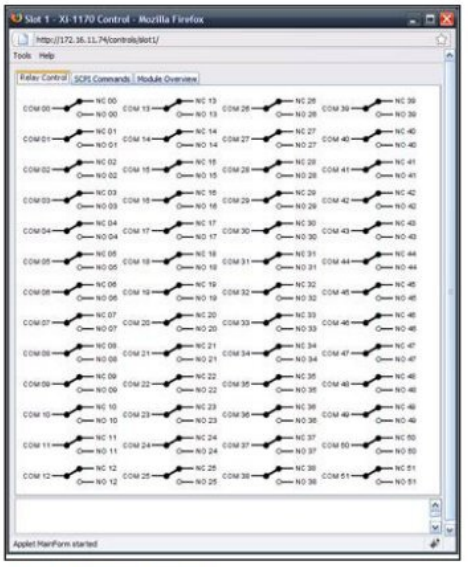
Multiple channels can be defined as a single path for simultaneous switching or when constructing custom switch configurations using the 1170's versatile SPDT relays.

Designed for easy integration

The 1170 plugs into an 1800 series mainframe, which includes USB-2, LXI, Ethernet, and GPIB connectivity for quick and easy connection to your host controller. Software drivers are included for popular test environments. Drivers based on the Microsoft Visual Studio® and .NET frameworks are provided for the ActivATE™ Test Platform development system. IVI-COM drivers are provided for NI's LabVIEW™ or Microsoft's Visual C++® development systems. IVI-C drivers are provided for NI's LabWindows™/CVI development system.



1170 Block Diagram



1170 LXI Web Control

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Specifications

Note: The EADS North America Test and Services 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
- 300 VDC or 300 VAC

Maximum Switching Current
- 2 ADC/AC

Maximum Switching Power
- 60 W, 125 VA

DC Performance

Path Resistance
- <325 mΩ (Initial)

Insulation Resistance
- >10^9 Ω

Thermal EMF
- <10 µV (< 3 µV typ)

AC Performance

(into 50 Ω)

Bandwidth (-3 dB)
- 48 MHz

Insertion Loss
- 1 KHz: <0.1 dB
- 1 MHz: <0.1 dB
- 10 MHz: <0.2 dB
- 48 MHz: <3 dB

Isolation
- 100 KHz: >70 dB
- 1 MHz: >50 dB
- 10 MHz: >35 dB
- 48 MHz: >10 dB

Crosstalk
- 100 KHz: <-75 dB
- 1 MHz: <-55 dB
- 10 MHz: <-40 dB
- 48 MHz: <-12 dB

Capacitance
- Channel-Chassis: <120 pF
- Open Channel: <10 pF

Interface

Front Panel I/O Interface Connector
- 160 pin DIN connector

Power Requirements
- +5 VDC at 100 mA
- +3.3 VDC at 1 A
- +5 VDC at 30 mA per energized relay

Software

Operating System
- Runs on RedHat Linux to ensure full compliance with LXI and emerging network protocols

Native Language
- SCPI & SCPI scripting

Driver Support
- IVI (C and COM), LabVIEW™

Test Executive/GUI
- ActivATE™ (optional)

Web Page
- Accessed via LXI bus

Environmental

Temperature
- Operating: 0° C to 50° C
- Storage: -40° C to 71° C

Relative Humidity
- 80% RH at 40° C

Emissions/Immunity
- EN61326: 2006 Class B

Safety
- EN61010-1: 2001
- Pollution degree 1: 300 V
- Pollution degree 2: 250 V
- Not for connection directly to mains power

Material Handling
- RoHS

Switching Time
- <10 ms (includes settling time)

Rated Switch Operations
- Mechanical: 1 X 10^8
- Electrical: 200,000 @ 300 V_{rms}/ 0.416 A - 125 VA

MTBF (MIL-STD-217FN2)
- 272,527 hrs

MTTR
- <5 min

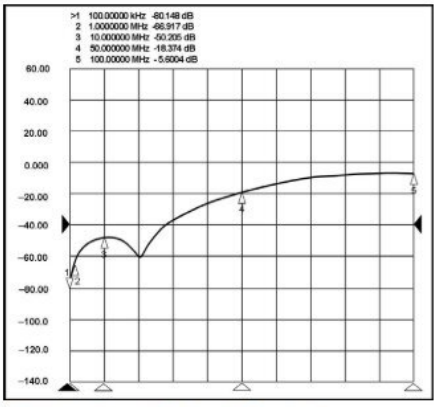
Relay Operations Counter
- Running total of operations stored in on-board non-volatile memory

Mechanical

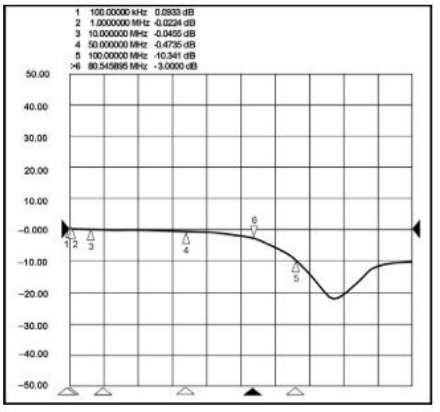
Dimensions
- 4.26" H x 0.75" W x 11.82" D

Weight
- 10.7 oz (0.3 kg)

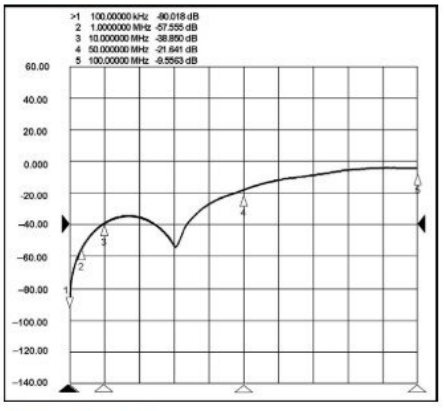
Typical Channel



Typical Adjacent Channel Crosstalk



Typical Insertion Loss



Typical Isolation

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

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Ordering Information

405322 : Racal Instruments™ 1170

52-Channel 2 A SPDT Form C Switch Plug-In

Accessories:

408191 : 160-pin cable assembly, 6 ft.

408192 : 160-pin connector kit with backshell and pins

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