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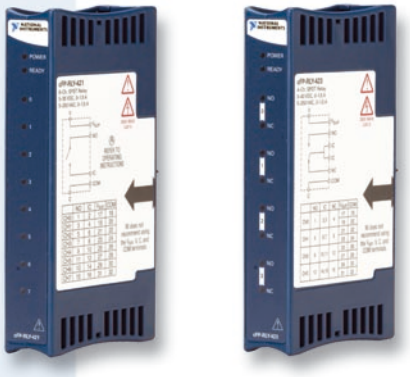
Find the *National Instruments cFP-RLY-421* at our website: ***Click HERE***

Relay Modules for Compact FieldPoint

NI cFP-RLY-421, NI cFP-RLY-423

NEW

- 4 or 8 electromechanical relays
  - 8 form A (SPST), RLY-421
  - 4 form C (SPDT), RLY-423
- Switch 250 VAC, 120 VDC
- Switch 1.5 A, maximum
- 2,300 V_{rms} bank isolation for transient overvoltage protection
- Hot swappable with autoconfiguration
- -40 to 55 °C operating range (cFP-RLY-421)
- -40 to 60 °C operating range (cFP-RLY-423)



Module	Output Channels	Maximum Output Types	Output Current Rating (See Specifications)	Separate Ground Plane per Channel
cFP-RLY-421	8	120 VDC, 250 VAC	1.5 A	✓
cFP-RLY-423	4	120 VDC, 250 VAC	1.5 A	✓

Overview

The National Instruments cFP-RLY-42x devices are versatile relay modules for Compact FieldPoint that can be used to control digital signals ranging from low voltage to 120 VDC and to 250 VAC. These modules are commonly used to control indicator lights, motors, and power circuits. All the modules include onboard diagnostics to ensure trouble-free installation and maintenance. Similar relay modules are available for FieldPoint, see page 572 for more information.

Relay Modules

NI cFP-RLY-42x modules provide built-in module-to-module isolation to protect your Compact FieldPoint system and controller from high voltage levels. Each channel on the RLY-42x uses electrically isolated output relays so that each relay output has a separate ground plane and each channel can be used with a different voltage potential. Thus, you can connect one channel to a 24 VDC and another channel on the same module to a 250 VAC.

All the channels on the relay modules feature LEDs that indicates the output state of each channel. The modules all feature a maximum switching frequency of 10 Hz (20 operations). Overall data throughput depends on software loop speeds and network speeds.

Isolation

The cFP-RLY-42x modules feature optical bank isolation with 2,300 V_{rms} of breakdown isolation. In addition, the modules provide double insulation for up to 250 V_{rms} of operational isolation. Compact FieldPoint can safely be used in applications where hazardous voltages are present with the cFP-CB-1 connector block. These Compact FieldPoint modules do not have channel-to-channel isolation.

Power Requirements

Because the cFP-RLY-42x are high power consumption modules, they could limit the number of I/O modules that you can connect to a single network interface module. Controllers and network interface modules supply up to 9 W to power I/O modules. The RLY-421 requires up to 2.5 W and the RLY-423 requires up to 1.5 W.

Field I/O Connections

Each input channel on the cFP-RLY-421 has two terminals:

1. Relay common terminal (IC)
2. Normally open terminal (NO)

Each channel of the cFP-RLY-423 has three terminals:

1. Normally open terminal (NO)
2. Normally closed terminal (NC)
3. Relay common terminal (IC)

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Relay Modules for Compact FieldPoint

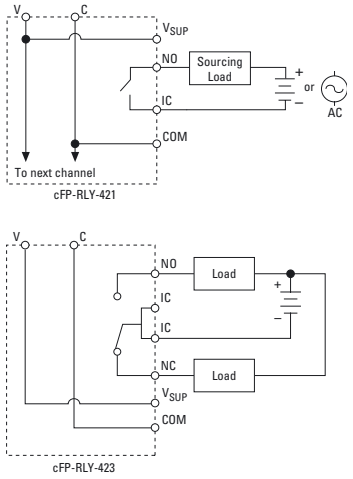


Figure 1. Wiring Schematics for RLY Modules

Ordering Information

NI cFP-RLY-421 777318-421
NI cFP-RLY-423 777318-423

Recommended Compact FieldPoint System Products

NI cFP-2020 777317-2020
NI cFP-BP-4 778617-04
NI cFP-CB-1 778618-01
NI PS-5 Power Supply 778805-90
NI Developer Suite Professional Control Edition.....777906-03

BUY ONLINE!

*Visit **ni.com/info** and enter cfprly421, and/or cfprly423.*

Specifications

Typical for –40 to 60 °C unless otherwise noted.

Relay Characteristics

Number of channels
- cFP-RLY-421 8
- cFP-RLY-423 4

Relay type
- cFP-RLY-421 ..... SPST, normally open, nonlatching
- cFP-RLY-423 ..... SPDT, nonlatching

Maximum switching capacity (resistive load)
- AC ..... 1.5 A at 250 VAC
- DC ..... 1.5 A at 0–35 VDC
- (cFP-RLY-421) ..... 1.5 A at 40 VDC
- (cFP-RLY-423) ..... 1 A at 55 VDC
  0.4 A at 120 VDC

Minimum switching load ..... 10 mA at 5 VDC
Off-state leakage current..... (120 VDC/250 VAC)
- DC ..... 0.12 µA
- 50/60 Hz ..... 8 µA

On resistance (typical)..... 100 mΩ
Expected relay life
- Mechanical ..... 2 x 10^7 operations/s (cFP-RLY-421)
  1 x 10^7 operations/s (cFP-RLY-423)
- Electrical (at 30 cpm)..... 300,000 operations at 1.5 A, 35 VDC
  100,000 operations at 1.5 A, 250 VAC

Operate time
- cFP-RLY-421 ..... <10 ms
- cFP-RLY-423 ..... <10 ms typ, 13 ms max

Release time
- cFP-RLY-421 ..... <10 ms
- cFP-RLY-423 ..... 5 ms typ, 7 ms max

Bounce time
- cFP-RLY-421 ..... 10 ms max
- cFP-RLY-423 ..... 3 ms typ, 6 ms max

Contact material
- cFP-RLY-421 ..... Gold-plated silver cadmium oxide
- cFP-RLY-423 ..... Silver cadmium oxide

Power Requirement (from Network Module)

cFP-RLY-421 ..... 1.95 W
cFP-RLY-423 ..... 1.0 W

Physical Characteristics

LED indicators
- Power (green) ..... Indicates power is on and self-test passed
- Ready (green)..... Indicates module is configured and ready
- <0...7> or <0...3>..... Indicates on/off state of each contact

Dimensions (including terminal base)..... 10.9 by 10.9 by 9.1 cm (4.3 by 4.3 by 3.6 in.)
Weight
- cFP-RLY-421 ..... 136 g (4.8 oz)
- cFP-RLY-423 ..... 156 g (5.5 oz)

Isolation Voltage

Maximum isolation voltage ..... 250 V_{rms}, Installation Category II
Channel-to-channel isolation..... No isolation between channels
Transient overvoltage..... 2,300 V_{rms}

Environmental

FieldPoint modules are intended for indoor use only. For outdoor use, they must be mounted inside a sealed enclosure.

Operating temperature..... -40 to 60 °C
Storage temperature..... -55 to 85 °C
Relative humidity ..... 10 to 90%, noncondensing
Maximum altitude..... 2,000 m; at higher altitudes the isolation voltage ratings must be lowered.
Pollution Degree..... 2

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 3121-1, UL 61010C-1
- CAN/CSA C22.2 No. 1010.1

For UL, hazardous location, and other safety certifications, refer to the product label or to ***ni.com***

Electromagnetic Compatibility

CE, C-Tick, and FCC Part 15 (Class A) Compliant
Emissions..... EN 55011 Class A at 10 m
FCC Part 15A above 1 GHz
Immunity..... EN 61326:1997 +A2:2001, Table 1

For EMC compliance, you must operate this device with shielded cabling.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE Marking, as follows:

Low-Voltage Directive (safety)..... 73/23/EEC
Electromagnetic Compatibility
Directive (EMC)..... 89/336/EEC

Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit ***ni.com/hardref.nsf/*** and search by model number or product line.

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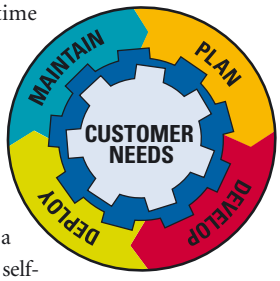
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