RF COGS

MULTI-FUNCTION MODULE SERIES

Applied Instruments has been manufacturing RF test and measurement equipment since 1986. Since then, the need for performing certain RF functions has surfaced again and again within our product designs. Not long ago, we began to address those needs by designing several basic modules for internal use. Having found them so useful, we've decided to make these robust and flexible modules available to our customers. We believe they may fill a niche for your RF testing requirements as well.

The module detailed in this datasheet can be used alone or connected to additional ones. This includes fully compatible modules in this family that perform various other RF functions. Several are available to choose from.

NOTE: *An interface module is also available that provides the DC power and I^2C signals required to operate and control a group of RF Cog modules. I^2C signals are generated by the Interface Module in response to commands received from a USB or RS-232 device. The software supplied with the Interface Module allows a PC to easily communicate with other RF Cog modules, all of which are individually addressable.*

APPLIED INSTRUMENTS, INC.

RF TEST AND MEASUREMENT

RFC-SW41
SP4T Relay RF Switch Module

The **RFC-SW41** uses highly reliable RF relays to implement a 4 x 1 multiplexer function. It connects a common 75 Ohm RF port to one of four other 75 Ohm ports. The desired port is selected via signals sent to the module over an I^2C bus. Each module is individually addressable and can be used alone or with additional switch modules. It can also be used with other modules in this family which provide other functions like programmable attenuation or amplification.

This device has excellent high-frequency RF characteristics, providing very low insertion loss and excellent isolation. The latching-type relays employed use a minimum of DC power as contrasted with those that require power to maintain their state.

The I^2C signals and DC power connections are made thru a multi-pin connector. There is a second connector wired in parallel with the first which allows all of the modules to be "daisy-chained" together – from one module to the next.

The RF connectors used on the **RFC-SW41** switch module are F-type connectors, widely used in cable TV and video applications.

The modules in this series can be mounted flat to a base plate or vertically into an optional 3U sub-rack (standard 19" rack) along with the controller and other modules.

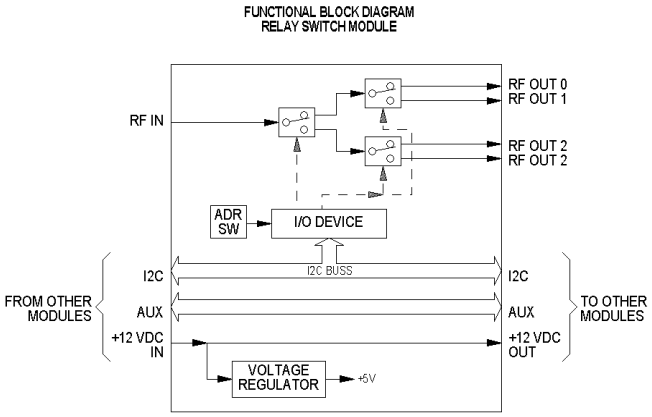
Revised 2012-09-28

FEATURES

- High reliability and repeatable performance
- Provides low insertion loss and high isolation at frequencies in excess of 1 GHz
- Easily controlled by I^2C
- User-settable I^2C addresses via readily accessed DIP switches
- Latching relays minimize power requirements
- Rugged construction
- Versatile mounting options
- 75 Ohm characteristic impedance
- Switch-settable option to select port 1 or to come back up in the previous state on power up
- Readily compatible with other modules in this series enabling a test system to be put together
- I^2C controller available from Applied Instruments allows control via USB or RS-232 from a PC

APPLICATIONS

- Video and cable system switching
- Test equipment
- Antenna selection
- Filter selection



INCLUDED IN THE RFC-SW41 PACKAGE

- User/Data Sheet
- RFC-SW41 Module
- Mounting Hardware
- Cable assembly for control and DC power connections

OPTIONAL ACCESSORIES

- Interface Module (model RFC-INTF)
- Additional cable assemblies (models RFC-CBLxx)
- Additional RF modules from the RF Cogs™ Series
- Sub-rack for mounting into a 19” rack (3U height) (model RFC-RM)

ELECTRICAL SPECIFICATIONS

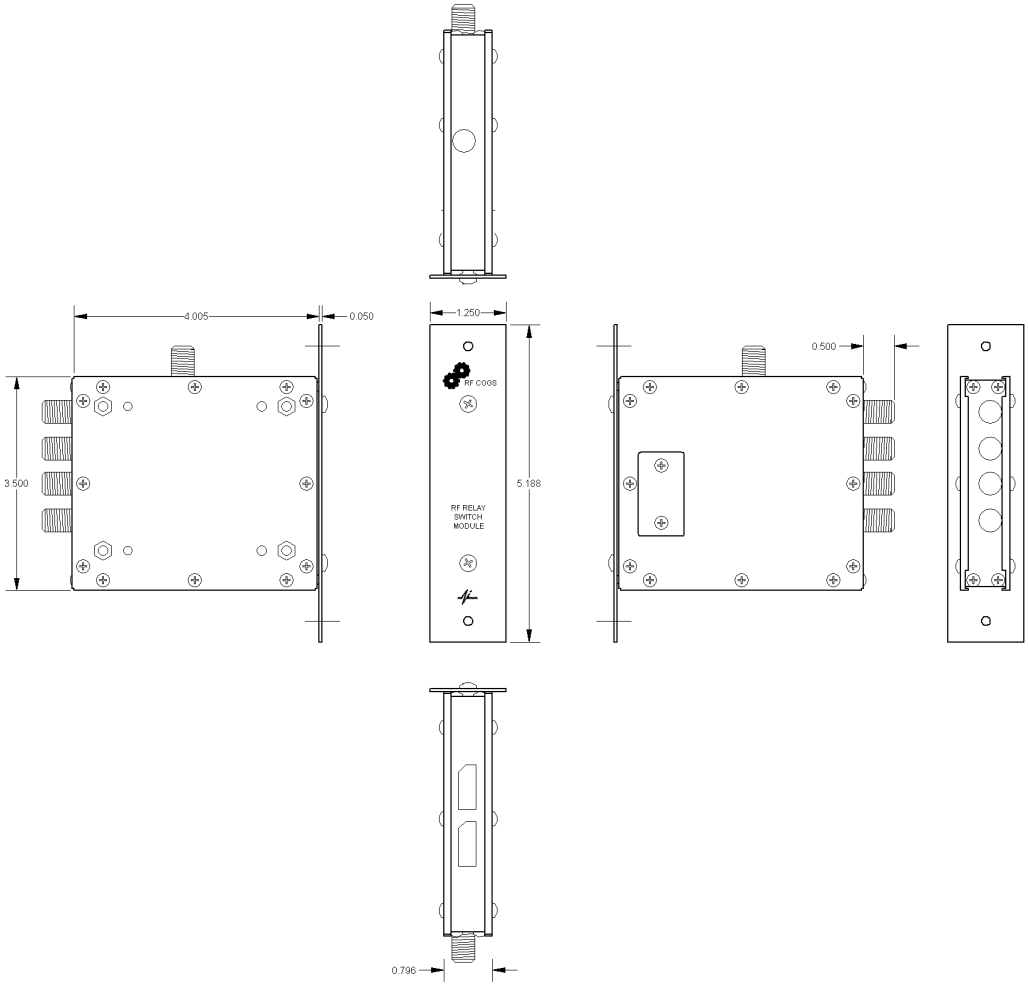
ABSOLUTE MAX RATINGS	15 VDC
RECOMMENDED OPERATING CONDITION	12 VDC
RF CONNECTORS	75 Ohm, F-type
INSERTION LOSS	less than 0.5 dB, DC to 2150 MHz
ISOLATION	greater than 60 dB, DC to 2150 MHz

MECHANICAL SPECIFICATIONS

SIZE	Approximately 4 x 3.5 x 0.8 inches or 102 x 89 x 20 mm (See drawing)
WEIGHT	0.6 lbs. (270g)
FINISH	Black powder coated, nickel
MOUNTING	Sub-rack, end, or bottom using #6-32 screws End or bottom mounting requires removing front panel

ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMP	-20 °C to +60 °C (-4 °F to +140°F)
STORAGE TEMP	-40 °C to +70 °C (-40°F to +158°F)



WARRANTY

Warranted for a period of one year against defects in material and workmanship.

Other products offered by Applied Instruments

Satellite Meters	CATV/Off-Air Meters
CW Test Signal Generators	Noise Power Ratio Test Sets
RF Noise Generators	RF Signal Monitors/Switches

APPLIED INSTRUMENTS, INC.

Focused on providing the best valued test equipment that meets or exceeds customer expectations.

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Applied Instruments takes pride in providing information and technical support to customers when they need it.