

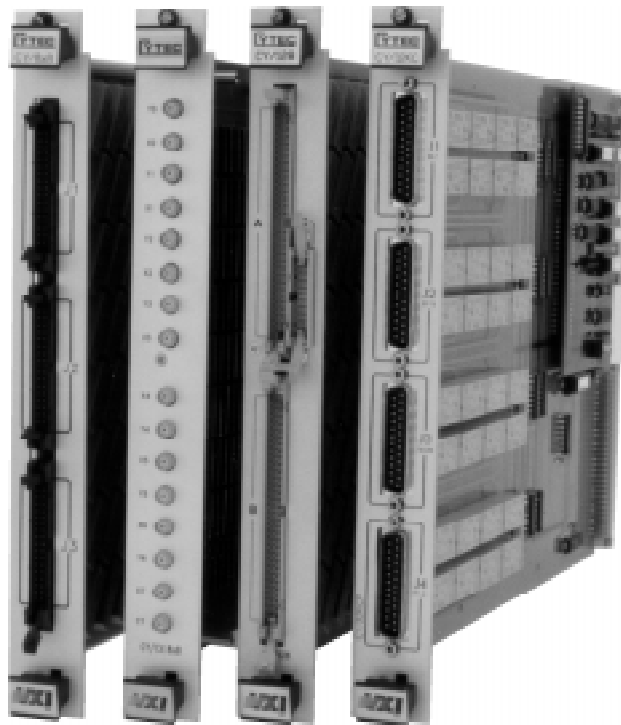


SWITCHING SYSTEMS

LOW COST SOLUTIONS FROM THE SWITCHING SPECIALISTS.

- MATRICES • MULTIPLEXERS • POWER RELAYS
- COAXIAL MATRICES • CUSTOM MODULES.

**Full
Assortment of
C Size VXI
Switch Modules**



**B Size
Modules and
VME Modules
also available**

Member of the



Alliance

**FOR TECHNICAL ASSISTANCE or a
FULL PRODUCT CATALOG,
CONTACT**

**1-800-346-3117 or
www.cytec-ate.com or
sales@cytec-ate.com**

YTEC CORP.

2555 Baird Road, Penfield, New York 14526

CY SERIES VXI C-SIZE SWITCH MODULES

The CY Series are low cost C-Size VXI Bus Switch Modules that utilize both Message and Register based operation. Available modules include Multiplexers, Matrices, Microwave Switches, Individual Form A and Form C Relays, Driver Modules, 50 Ohm Coaxial, Solid State and ECL Matrices.

FEATURES INCLUDE:

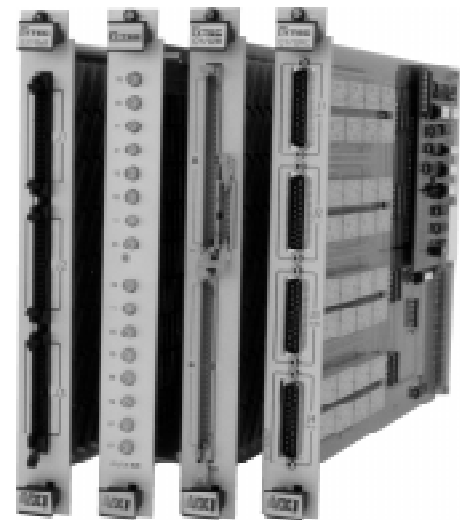
- FULL FIVE YEAR WARRANTY
- STATUS of individual relays monitored at the relay drives.
- HIGH RELIABILITY Type S Standard and Type M Mercury Wetted Reed Relays with a guaranteed life of 100 million operations.
- LOW THERMAL Relays with offsets less than 1 μ volt.
- MICROWAVE Switches with a Bandpass of DC to 18 GHz; 26 GHz optionally available.
- HIGH FREQUENCY 50 ohm impedance 8x8 Coaxial Matrix with 200 MHz bandpass.
- HIGH POWER Switch Modules with 32 Form C Armature Relays with 150 W or 2000 VA rating.
- MULTIPLEXERS with up to 128 switch points.
- HIGH DENSITY BIDIRECTIONAL MATRICES up to 16x8 or 62x2 configurations.
- "K" MODULES with 64 individual Form A or Form C relays.
- SOLID STATE 48x48 Matrices.
- ECL 16x16 Differential Pair Matrix.
- BUFFER Amplifier Modules with unity gain for impedance matching.
- DIFFERENTIAL INSTRUMENTATION Amplifiers with preset gains.
- DRIVER MODULES with individual current sourcing or sinking drives.

SOFTWARE

Drivers and/or sample programs are available in the most common programming languages. Please consult our expert Sales Engineers.



Member of the VXI Plug and Play Alliance..



GENERAL SPECIFICATIONS

VXI Revision	1.4
Logical Address	Per DIP Switch Setting
Radiated Emissions	Per VXI Specification
Conducted Emissions	Per VXI Specification

ENVIRONMENTAL

Operating Temperature	0° to 55°C
Storage Temperature	-25° to 80°C
Humidity	Less than 95% RH no condensation to 30°C
Cooling	<10°C rise w/air flow 1.5 L/sec & dP = 0.04 mm H ₂ O

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications. However, Microwave switches are warranted for 1 year.

CY SERIES RELAY SPECIFICATIONS

- **Type S** - Standard Dry Reed Relays.
- **Type M** - Mercury Wetted Reed Relays.
- **Type LT** - Low Thermal Reed Relays.
- **Type P** - Armature Power Relays.
- **Type A** - Instrumentation Level Signal Armature Relays.

Relays have the following guaranteed lifetimes when operated within the specified operating parameters.

Relay Type	S	M	LT	P	A
Min. Life - Mechanical	10 ⁸	10 ⁸	10 ⁸	10 ⁷	10 ⁸
Min. Life - Full Load*	10 ⁸	10 ⁸	10 ⁸	2x10 ⁵	2x10 ⁵
Contact Rating VA	10	50	10	2000	30
Switch Voltage	200V	500V	100V	380V	110V
Max. Switch Current	0.5A	2.0A	0.2A	8A	1.0A
Max. Carry Current	1.0A	2.0A	1.0A	10A	1.0A
Breakdown Voltage	400V	1000V	200V	1000V	750V
Operate Time	<1ms	<2ms	<1ms	<15ms	<3ms
DC Isolation - Ohms	10 ¹¹	10 ¹¹	10 ¹²	10 ⁹	10 ⁹

*Load is purely resistive

CY SERIES MODEL OVERVIEW

CYTEC currently offers the following Models/Configurations: Relay Modules (Note: All Relay Modules are bidirectional.)

- **CY/128** - These are built with 64 two-pole reed relays. Internal Pin Jumpers permit a variety of user-defined configurations, ranging from eight individual 8x1 two-pole multiplexers to one 128x1 single pole mux.
- **CY/8x8** - This 8 Input/8 Output Matrix Switch Module is available with either single or two pole reed relays.
- **CY/16x8** - This is a 16 Input/8 Output Matrix that is built with Type A armature relays and is used for switching instrumentation level signals.
- **CY/64x2** - This holds 128 single pole reed relays arranged as eight individual 8x2 matrices. Many other configurations are possible, including the "standard" 64x2.
- **CY/64K** - This provides 64 individual Form A (NO) Reed Relays.
- **CY/64KC** - This supplies 64 separate Form C (NO/COM/NC) Type A Instrumentation Armature Relays.
- **CY/32KCP** - This is built with 32 Individual Form C Type P Power Relays for high power/current applications.
- **CY/CX** - This is a 50 ohm impedance 8x8 matrix which is designed to switch RF signals. Bandpass (-3dB) is 200 MHz.
- **CY/G and CY/M** - These switch microwave signals (DC-18 GHz). These one, two or three slots modules are built to the user's specifications and hold the CXR/1G and CXM Series Switch Modules.

Solid State Modules

- **CY/48x48** - This 48x48 single pole matrix designed to switch ±5 volt signals. Bandpass is DC to 1 MHz, and path on resistance is 60 ohms.
- **CY/16x16ECL** - This provides a 16x16 nonblocking matrix for switching Differential ECL up to 1.2GBPS.
- **CY/IO-48** - This holds 48 unity gain impedance matching buffer amplifiers.
- **CY/INST-48** - This holds 48 precision differential input op amps. These have high input and low output impedances and make an ideal buffer into the CY/48x48 Solid State VXI Matrix.

MICROWAVE RELAYS

These **CY/G** and **CY/M** Modules are available as individual relays or as multiplexers or wired in a variety of different configurations including matrices. Please contact our Sales Department for information.

AD DATA SWITCH MODULES

CYTEC Corp is offering support, repair, service and replacement of AD Data VXI Modules.

- **230114-111** - Single pole, Standard Reed Relays. 64 SPST Switches; 64 Discrete Switches, 0.5 amp.
- **230114-112** - Single pole, Mercury Relays, 64 SPST Switches; 64 Discrete Switches, 2.0 amp.
- **230115-111** - Single pole, Standard Reed Relays, 64x1 Multiplexer Switch 0.5 amp.
- **230115-112** - Single pole, Mercury Relays, 64x1 Multiplexer Switch 2.0 amp.
- **230115-121** - Double pole, Standard Reed Relays, 64x1 Multiplexer Switch 0.5 amp.
- **230115-122** - Double pole, Mercury Relays, 64x1 Multiplexer Switch 2.0 amp.
- **230115-123** - Double pole, Low Thermal Relays, 64x1 Multiplexer Switch.
- **230116-111** - Single pole, Standard Reed Relays, 16x4 Matrix Switch 0.5 amp.
- **230116-112** - Single pole, Mercury Relays, 16x4 Matrix Switch 2.0 amp.
- **230116-121** - Double pole, Standard Reed Relays, 16x4 Matrix Switch 0.5 amp.
- **230116-122** - Double pole, Mercury Relays, 16x4 Matrix Switch 2.0 amp.
- **230126-123** - Double pole, Low Thermal Relays, 16x4 Matrix Switch 0.5 amp.
- **230117-111** - Single pole, Standard Reed Relays, Registered based 96 (1x1) Switch Module 0.5 amp.
- **230117-112** - Single pole, Mercury Relays, Registered based 96 (1x1) Switch Module 2.0 amp.
- **230118-111** - Single pole, Standard Reed Relays, Registered based 24 (4x1x1) Switch Module 0.5 amp.
- **230118-112** - Single pole, Mercury Relays, Registered based 24 (4x1x1) Switch Module 2.0 amp.
- **230119-111** - Single pole, Standard Reed Relays, 6 (1x4) Coaxial 1 Gigahertz Switch Module.
- **230120-115** - Single pole, Armature Relays, 20 SPST 10 amp, Register-based Power Switch Module.
- **230120-125** - Double pole, Armature Relays, 20 SPST or 10 DPST 10 amp, Register-based Power Switch Module.
- **230122-111** - Single pole, Standard Reed Relays, Registered based 12 (4x1) and 48(1x1) Switch Module 0.5 amp.
- **230122-112** - Single pole, Mercury Relays, Registered based ARINC 608A 2 (4x1x1) and 48(1x1) Form A 2A Switch Module.
- **230131-123** - Double pole, Low Thermal Relays, Registered based ARINC 608A Form A Resource Distributor Switch Module.
- **230132-123** - Double pole, Low Thermal Relays, Registered based ARINC 608A 2 (16x4) 4 wire/channel Form A Bus Matrix Input Switch Module.

CY/128 MULTIPLEXER VXI C-SIZE SWITCH MODULE

The CY/128 is a bidirectional reed relay multiplexer and is used in general purpose switching applications. The module is designed with flexibility in mind, and a variety of different configurations are available. This allows the users to choose the configuration which most closely matches their requirements. All CYTEC VXI Modules use both Message and Register based operation.

DETAILED DESCRIPTION

The CY/128 Multiplexer holds eight individual 8x1 two-pole multiplexers and four single pole submultiplexer relays. Pin jumpers can be installed to interconnect the individual multiplexers, allowing the following configurations to be created:

- **Eight - 8x1** Two-Pole Multiplexers
- **Four - 16x1** Two-Pole Multiplexers
- **Two - 32x1** Two-Pole Multiplexers
- **One - 64x1** Two-Pole Multiplexer
- **One - 128x1** Single Wire Multiplexer using two Submultiplexer Relays
- **Two - 64x1** Single Wire Muxes using four Submux Relays
- **One - 32x1** Four Wire Multiplexer
- **One - 16x1** Eight Wire Multiplexer
- **One - 8x1** Sixteen Wire Multiplexer
-

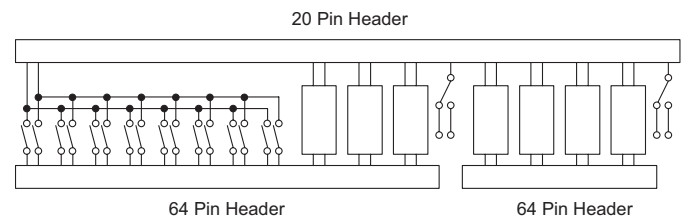
Any number of relays can be energized at one time, and the status of all relays may be read at any time.

AVAILABLE MODELS

- **CY/128-S** with Type S Standard Dry Reed Relays
- **CY/128-M** with Type M Mercury Wetted Reed Relays
- **CY/128-LT** with Low Thermal Offset Reeds

CONNECTORS

- Two 64 Pin Headers (128 Individual "Inputs")
- One 20 Pin Header (Eight Multiplexer and four Submux "Outputs")



GENERAL SPECIFICATIONS

Power	+5 Volts	less than 1.0 Amp
	+12 Volts	20 mA per energized relay
Bandpass (8x1)		DC to 80 MHz (-3dB)
Insertion Loss		less than 0.2dB at 10 MHz
Isolation/Crosstalk		100 kHz - 80dB
		1 MHz - 60dB
		10 MHz - 40dB
DC Isolation		Greater than 10 ¹⁰ ohms

REED RELAY SPECIFICATIONS

- **Type S** - Standard Dry Reed Relays.
- **Type M** - Mercury Wetted Reed Relays.
- **Type LT** - Low Thermal Reed Relays.

	Type S	Type M	Type LT
Contact Rating	10VA	50VA	10VA
Max. Switch Voltage	200V	500V	100V
Max. Switch Current	0.5A	2.0A	0.2A
Breakdown Voltage	400V	1000V	200V
Operate Time, less than	1ms	2ms	1ms
DC Isolation - Ohms	10 ¹¹	10 ¹¹	10 ¹²

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications.



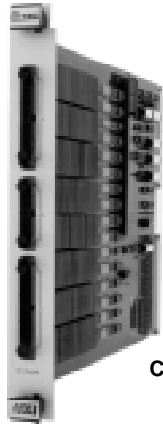
Member of the VXI Plug and Play Alliance..

CY/64x2 SINGLE POLE MATRIX VXI C-SIZE SWITCH MODULE

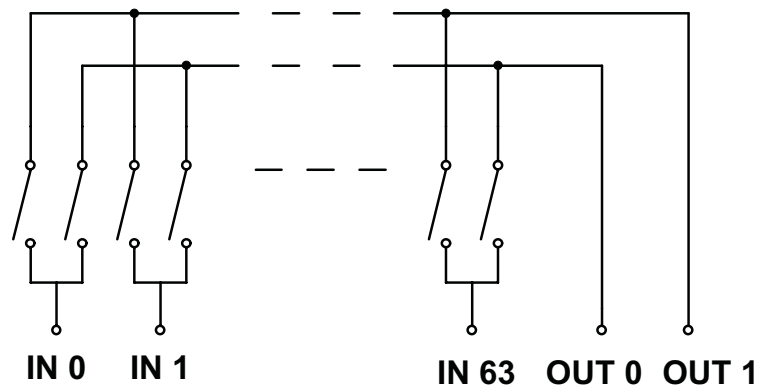
The CY/64x2 is a bidirectional reed relay matrix and is designed for general purpose switching applications. The module can be configured in a variety of different ways. The users can specify the configuration which most closely matches their requirements. All CYTEC VXI Modules use both Message and Register based operation.

DETAILED DESCRIPTION

The CY/64x2 Matrix contains 128 single pole reed relays arranged as eight banks of 8x2 matrices. These banks may be used individually or combined via internal pin jumpers to form larger Nx2 matrices. External wiring added by the user provides many other configurations, such as two 16x4 matrices or a single 32x4. Any number of relays may be closed simultaneously, and the status of all relays may be read at any time.



CY/64x2-S



AVAILABLE MODELS

- CY/64x2-S with Type S Standard Dry Reed Relays.
- CY/64x2-M with Type M Mercury Weed Reed Relays.

CONNECTORS

- Two 34 Pin Headers (128 Individual "Inputs")
- One 20 Pin Header (16 total "Outputs" - one from each of eight 8x2 matrices.)

RELAY SPECIFICATIONS

	Type S	Type M
Contact Rating	10VA	50VA
Max. Switch Voltage	200V	500V
Max. Switch Current	0.5A	2.0A
Max. Carry Current	1.0A	2.0A
Breakdown Voltage	400V	1000V
Operate Time, less than	1ms	2ms
DC Isolation - Ohms	10 ¹²	10 ¹²

SPECIFICATIONS

POWER	+5 Volts, less than 1.2 Amp +12 Volts, 25 mA per relay
BANDPASS	DC to 50 MHz (-3dB) - One 8x2 Bank
ISOLATION/CROSSTALK	<-50 dB at 10 MHz

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications.



Member of the VXI Plug and Play Alliance..

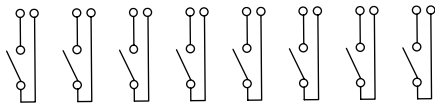
CY/64K & CY/64KC

VXI C-SIZE INDIVIDUAL RELAY SWITCH MODULES

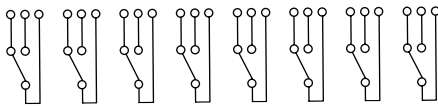
Each of these VXI Switch Modules provides 64 individual switch points. The CY/64K supplies 64 Form A reed relays, while the CY/64KC furnishes 64 Form C general purpose armature relays. Any number or relays may be closed simultaneously and relay status may be read at any time. All CYTEC products utilize both Register and Message based operation.

DETAILED DESCRIPTION

- **CY/64K** holds 64 separate single pole Form C Type S Standard or Type M Mercury reed relays. Each contact set is individually wired to 34 pin front panel connectors.
- **CY/64KC** is built with 64 individual high sensitivity, low thermal offset single pole Form C Type A armature relays for switching instrumentation level signals. The Normally Open, Normally Closed and Common contacts of all relays are wired out to 50 pin header connectors. Thermal Offsets are less than five microvolts.



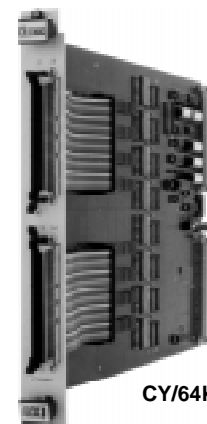
Form A Relays - CY/64K



Form C Relays - CY/64KC



CY/64K



CY/64KC

AVAILABLE MODELS

- **CY/64K-S** - Form A Type S Standard Reed Relays
- **CY/64K-M** - Form A Type M Mercury Reed Relays
- **CY/64KC** - Form C Type A Armature Relays

CONNECTORS

- **CY/64K** - Four 34 Pin Header Connectors
- **CY/64KC** - Four 50 Pin Header Connectors



Member of the VXI Plug and Play Alliance..

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications.

SPECIFICATIONS

POWER	+5 Volts, less than 1.2 Amp
CY/64/K	+12V, 15 mA per energ. relay
CY/64/KC	+12V, 20 mA per energ. relay
BANDPASS	DC to 40 MHz (-3dB)
INSERTION LOSS	less than 0.1 dB at 1 MHz
ISOLATION/CROSSTALK	less than -40 dB at 1 MHz

RELAY SPECIFICATIONS

	Type S	Type M	Type A
Contact Rating	10VA	50VA	30VA
Max. Switch Voltage	200V	500V	110V
Max. Switch Current	0.5A	2.0A	1.0A
Max. Carry Current	1.0A	2.0A	1.0A
Breakdown Voltage	0.5A	2.0A	1.0A
Operate Time, less than	1ms	2ms	3ms
Lifetime, Mechanical	10 ⁸	10 ⁸	10 ⁸
Lifetime, Full Load	10 ⁸	10 ⁸	2x10 ⁵

CY/64DRV RELAY/SOLENOID DRIVER MODULE CY/32KCP FORM C POWER SWITCH MODULE

CYTEC's CY/64DRV VXI C-Size Driver Module is built with 64 individually addressable current sourcing or sinking drives and is designed to power external loads such as relays or solenoids. The CY/32KCP has 32 Form C Power Relays that can switch up to 8 A of current and 150 watts DC or 2000 watts AC.

CY/64 DRV C-SIZE DRIVER MODULE

This module has 64 individually controlled drives and is built with either current sourcing or sinking ICs. These modules are typically used to drive solenoids or relays located external to the VXI Module. Each drive channel is an open collector and has integral diode suppression. The drives can be wired to the VXI Chassis' internal power supply busses or to an external source.

The **CY/64DRV** is configured via an internal DIP Switch to furnish one of eight different operational modes, supplying either 64 randomly controllable drives, one of four different multiplexing modes or one of three different group switch types. The use of any mode is determined by the switching application. Drive status (on/off) can be verified by the controlling computer at any time.

AVAILABLE MODELS

- **CY/64DRV-SNK** 64 Channel Current Sinking Driver
- **CY/64DRV-SRC** 64 Channel Current Sourcing Driver

CONNECTORS

- Internal 14 Pin Headers - wired out to external loads

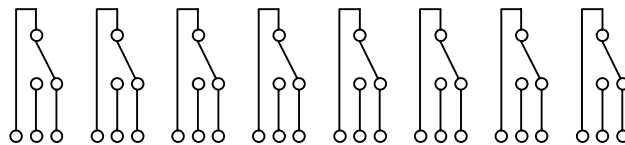
CY/64DRV SPECIFICATIONS

Control Power +5 Volts, 2.1 A Max.
 +12 Volts, 0.2A Max.
 (not including relay driver)

Drive Power	Source	Sink
Max. Voltage	80 VDC	50 VDC
Max. Current per Driver	350 mA	400 mA
Max. Current per IC Package	1 Amp	1 Amp

CY/32KCP POWER SWITCH MODULE

This module is built with 32 individually controllable Form C Armature type Power Relays. The Normally Open, Normally Closed and Common contacts of each relay are individually wired out to three separate pins on a "D" style connector as shown below. Any number of relays may be closed simultaneously, and the status of all relays may be read at any time by the controlling computer.



25 Pin D sub Connector

AVAILABLE MODELS

- **CY/32KCP-** 32 Form C Power Relays Switch Module

CONNECTORS

- Four 25 Pin D subs

CY/32KCP SPECIFICATIONS

Power +5 V, 1.2 Amp. Max.
 +12 V, 25 mA per ener. relay

TYPE P RELAY RATINGS

Switching Power 2000VA, 150W
Switching Voltage 380VAC
Switching Current 8 Amp.
Breakdown Voltage 1200 VRMS
Operate Time 10 mSec. Max.
Mechanical Life 10⁷ Operations

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years.



Member of the VXI Plug and Play Alliance..

CY/CX COAXIAL MATRIX VXI C-SIZE SWITCH MODULE

The CY/CX Module is a high frequency 50 ohm impedance coaxial matrix with bandpass of DC to 200 MHz.

The matrix is bidirectional and non-blocking, switching any one input to one output with coaxial dry reed relays which are rated at 10VA.

Standard input and output connectors are SMA with SMBs optionally available.

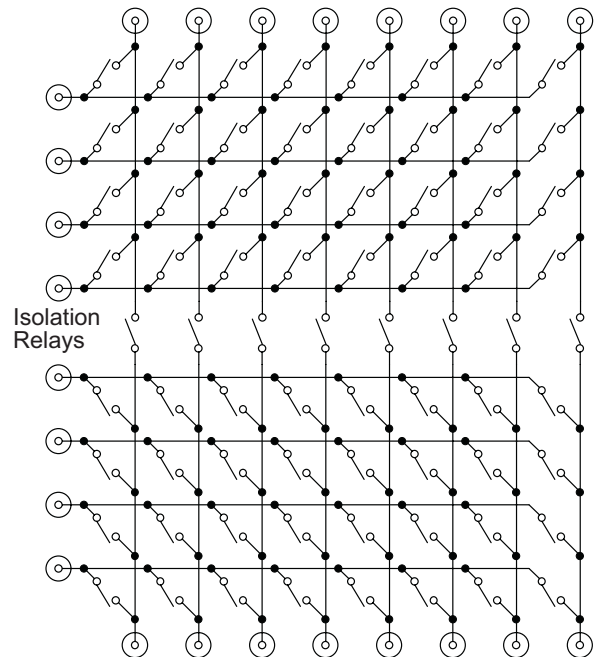
MATRIX CONFIGURATIONS

The basic module has two separate 8x4 matrices which can be supplied as either one 8x8 or one 16x4 matrix.

CY/CX-2(8x4) - This has two individual 8x4 matrices as shown in Fig. 1. Each matrix has a bandpass from DC to 200 MHz (-3dB) with crosstalk of -40dB at 100 MHz.

CY/CX-8x8 - The two 8x4 matrices are interconnected by isolation relays shown in Fig. 1 to form an 8x8 matrix. The relays also serve to reduce stub length and maintain bandpass from DC to 170 MHz with crosstalk of -40dB at 100 MHz.

CY/CX-16x4 - The two 8x4 matrices are interconnected by additional isolation relays to form a 16x4 matrix. The relays also serve to reduce stub length and maintain bandpass from DC to 170 MHz with crosstalk of -40dB at 100 MHz.



REED RELAY SPECIFICATIONS

	Type S
Contact Rating	10VA
Maximum Switching Voltage	200V
Maximum Switching Current	0.5A
Breakdown Voltage	400V
Operate Time, less than	1ms
DC Isolation - ohm	10 ¹²
Capacitance across reeds	0.1pF

GENERAL SPECIFICATIONS

Power	+5 Volts	less than 1.2 Amp
	+12 Volts	20 mA per energized relay

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications.

CY/8x8 REED RELAY MATRIX

VXI C-SIZE GENERAL PURPOSE SWITCH MODULE

The CY/8x8 is a general purpose, bidirectional reed relay matrix. It is a true non-blocking matrix, and each input can be connected to one, many or all outputs concurrently. All CYTEC VXI Modules utilize both Message and Register based operation.

DETAILED DESCRIPTION

The CY/8x8 supplies two individual 8x4 matrices. These can be interconnect externally by the user to provide one 8x8 or one 16x4 matrix. This VXI Switch Module is built with 64 Reed Relays and is available in either single or two pole versions, and with Type S Standard or Type M Mercury reeds. It is also available as a two pole matrix with Type LT Low Thermal reeds. Any number of relays can be energized concurrently, and the status of all relays may be read at any time.

AVAILABLE MODELS

- **CY/8x8-1S** - Single Pole Type S Standard Reed Relays
- **CY/8x8-1M** - Single Pole Type M Mercury Wetted Reeds
- **CY/8x8-2S** - Two Pole Type S Standard Reeds
- **CY/8x8-2M** - Two Pole Type M Mercury Wetted Reeds
- **CY/8x8-LT** - Two Pole Low Thermal Reed Relays

CONNECTORS

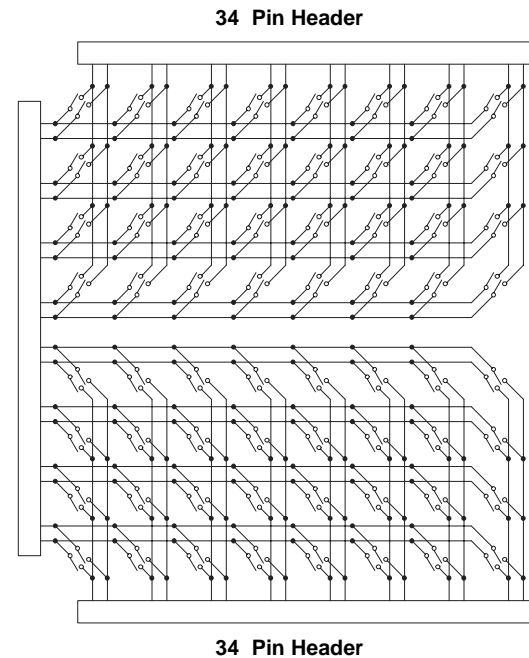
- Three 34 Pin Headers

REED RELAY SPECIFICATIONS

- **Type S** - Standard Dry Reed Relays.
- **Type M** - Mercury Wetted Reed Relays.*
- **Type LT** - Low Thermal Reed Relays.

	Type S	Type M	Type LT
Contact Rating	10VA	50VA	10VA
Max. Switch Voltage	200V	500V	100V
Max. Switch Current	0.5A	2.0A	0.2A
Breakdown Voltage	400V	1000V	200V
Operate Time, less than	1ms	2ms	1ms
DC Isolation - Ohms	10 ¹¹	10 ¹¹	10 ¹²

* Must be operated in vertical position



GENERAL SPECIFICATIONS

Power	+5 Volts	less than 1.0 Amp
	+12 Volts	20 mA per energized relay
Bandpass		DC to 80 MHz (-3dB)
Insertion Loss		less than 0.2 dB at 10 MHz
Isolation/Crosstalk		100 kHz - 80 dB
		1 MHz - 60 dB
		10 MHz - 40 dB
DC Isolation		Greater than 10 ¹⁰ ohms

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Reed relays are guaranteed for 100 million operations when used within their published specifications.



Member of the VXI Plug and Play Alliance..

CY/16x8 ARMATURE RELAY MATRIX VXI C-SIZE GENERAL PURPOSE SWITCH MODULE

The CY/16x8 is a two pole, bidirectional armature relay matrix that is used to switch instrumentation level signals. It is a true non-blocking unit, and each input can simultaneously be connected to one, many or all outputs. All CYTEC VXI Switch Modules utilize both Message and Register based operation.

DETAILED DESCRIPTION

The CY/16x8 is built with 128 two pole Type A Armature Relays and is designed to be used for switching instrumentation level signals. The relays are organized as sixteen rows in the Y direction and eight columns in the X direction. All switching paths are two wires with integral grounds located between all path pairs. Status checking of any input reports all connected outputs, and any number of relays can be energized at one time.

CONNECTORS

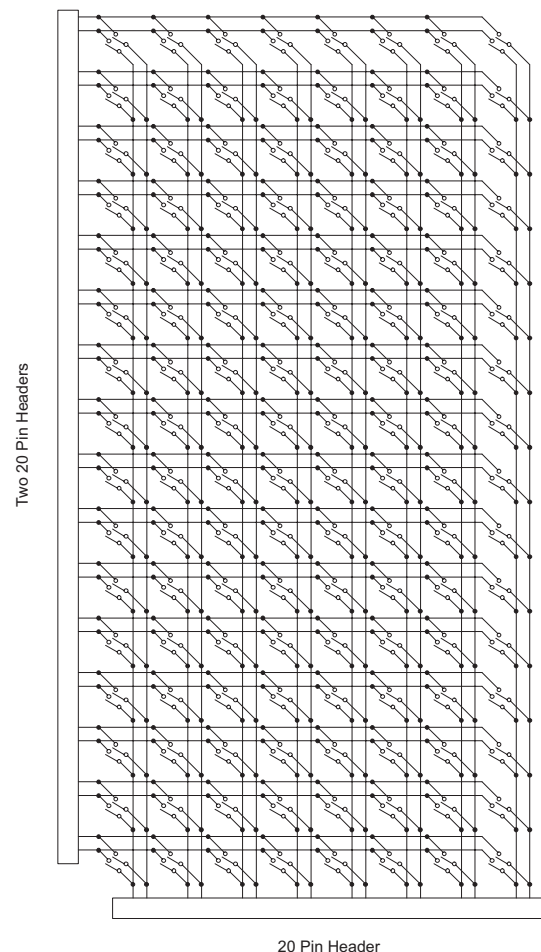
- Three 20 Pin Headers

TYPE A ARMATURE RELAY SPECIFICATIONS

	Type A
Contact Rating	30W, 62.5VA
Maximum Switched Voltage	110VDC, 125VAC
Maximum Switched Current	1.0A
Breakdown Voltage	750Vrms
Operate Time	2msec
Release Time	1msec
Lifetime, Resistive Load	
Mechanical	10 ⁸ Operations
1A, 30VDC	2x10 ⁵ Operations
0.5A, 125VAC	10 ⁵ Operations
Contact Resistance	50 milliohm max.
DC Isolation - Ohms	10 ⁹

SPECIFICATIONS

Power	+5 Volts	less than 1.2 Amp
	+12 Volts	25 mA per energ. relay
Bandpass		DC to 50 MHz (-3dB)
Insertion Loss		less than 0.2dB at 10 MHz
Isolation/Crosstalk		less than -50dB at 10 MHz



WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years.



Member of the VXI Plug and Play Alliance.

CY/G AND CY/M C-SIZE VXI MICROWAVE SWITCH MODULES

The CY/G and CY/M Series of Microwave Switch Modules have user defined configurations and are used to switch RF Signals. Bandpasses of approximately 1.0, 18 and 26 GHz can be provided, and characteristic impedances of either 50 or 75 ohms are available.

MICROWAVE SWITCH MODULES

These Modules are one or two slot wide C-Size VXI Switch Modules which are built in accordance with the end users needs. Two basic series are available: The **CY/G Switch Modules** that furnish a bandpass of about 1 GHz, and the **CY/M Switch Modules** that typically have a bandpass of 18 GHz, with 26 GHz optionally available.

CY/G 1 GHZ VXI SWITCH MODULES

The **CY/G** VXI Switch Modules are assembled using the CXR/2x1-1G, CXR/4x1-1G, CXR/8x1-1G, and CXR/4x2-1G Gigahertz Switch Cards. These cards provide a bandpass of approximately DC to 1 Gigahertz. Multiple cards can be placed in one VXI module, with the number of cards typically limited only by the available VXI panel area.

CY/M 18 OR 26 GHZ VXI SWITCH MODULES

The **CY/M** VXI Switch Modules are used for switching microwave signals. These are one or two slots wide and are built with either the CXM/2x1 A/B Switches or the CXM/Nx1 Rotary Microwave Switches. A bandpass of DC to 18 GHz is standard, with DC to 26 GHz optionally available. As an example, six CXM/6x1 Switches can be fitted into a single two-slot VXI Switch Module.

AVAILABLE MODELS

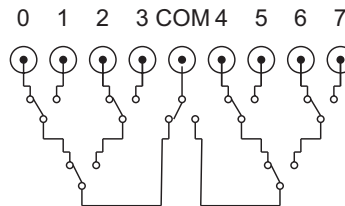
- **CY/G** One Gigahertz VXI Switch Modules
- **CY/M** Microwave VXI Switch Modules

CONNECTORS

- **SMA** recommended because of limited panel space.
- Consult factory for other options.

PRICING:

These Modules are designed so that they can be assembled using a selection of Microwave relays to meet the customer's specification. Call our Technical Sales for pricing of your specific requirement.



CXR/8x1-1G - Typical of a GHz Switch used in CY/G VXI Switch Modules.

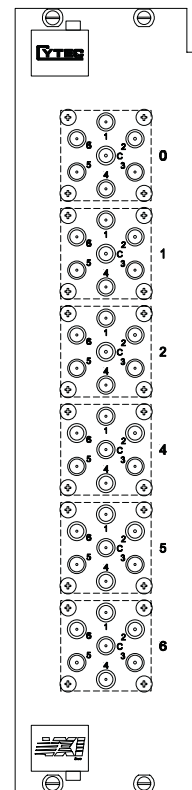
SPECIFICATIONS

Power

- +5 Volts, 2.1 A Max.
- +12 Volts, 0.2A Max.

Relay Drive Power

Dependent on type of Microwave relays required.



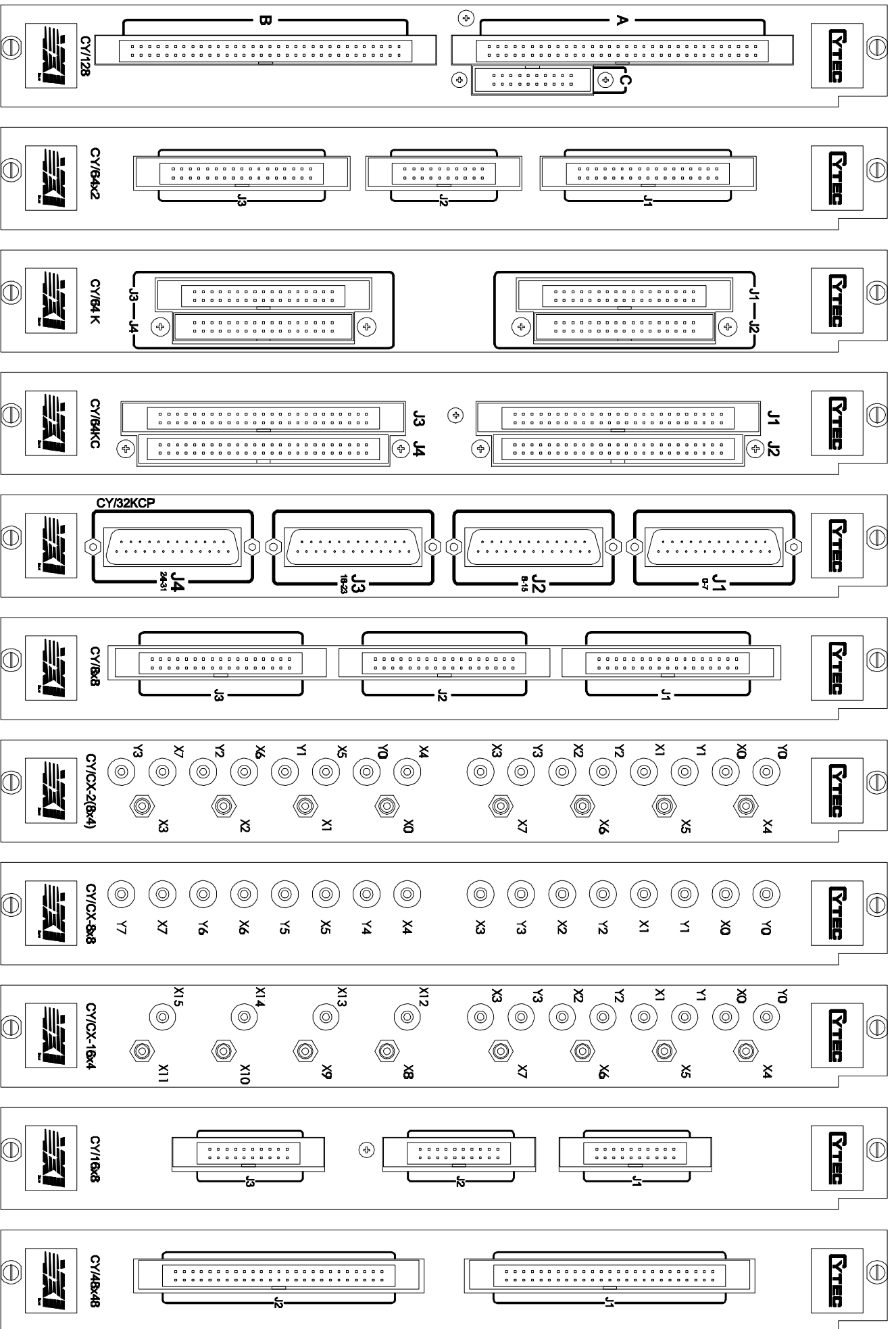
Six CXM/6x1 Relay Module

WARRANTY

CYTEC Corp. warrants that all products are free from defects in workmanship and materials for a period of 5 years. Microwave relays are warranted for one year.



Member of the VXI Plug and Play Alliance.



For additional details contact Cyttec technical sales at 1-800-346-3117 or www.cyttec-ate.com or sales@cytec-ate.com

VM SERIES VME AND VXI SWITCH MODULES

The VM Series of Switch Modules are available as either VME size 6U Modules or VXI size B Modules and include Multiplexers, Matrices, Discrete Relays and Coaxial Matrices.

FEATURES INCLUDE:

- VXI Rev. 1.4 Register based operation.
- Status and Control Registers.
- Simple BYTE read and write for parallel access to relays.
- Status readback from relay coils.
- Reed relays include Standard, Low Thermal and Mercury.
- Armature relays are available for high power switching.
- Solid State matrices for Video switching.
- Microwave Switch Modules with bandpass up to 18 GHz.
- Software support including program examples and drivers.



VM/8-4x1 MULTIPLEXERS

This module has 32 two pole relays arranged as eight separate 4x1 multiplexers as shown in Fig.1. The 32 pairs of inputs are brought out to two 34 pin header connectors and the 8 pairs of outputs with the submultiplex relay are brought out to a 20 pin header connector.

The multiplexers are available with either Type S, M or LT relays and can be supplied in the following configurations.

Multiplexers	Multipole
8 - 4x1 two pole	4 - 4x1 four pole
4 - 8x1 two pole	2 - 4x1 eight pole
2 - 16x1 two pole	1 - 4x1 sixteen pole
1 - 32x1 two pole	
1 - 64x1 single pole using submultiplexer	

Bandpass of each 4x1 Mux exceeds 200 MHz which is reduced when combined in the larger Multiplexers.

Isolation is 40dB at 10 MHz with 50 ohm terminations.

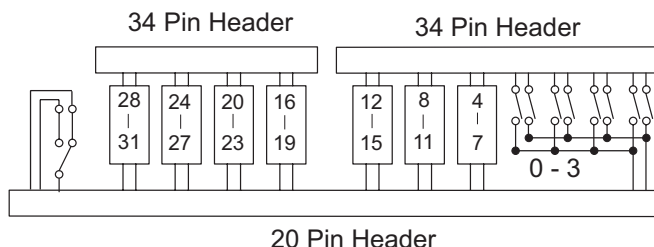


Fig.1

VM/32K DISCRETE RELAYS

This module has 32 single pole single throw reed relays with all contacts wired out separately to two 34 pin Header connectors as shown in Fig.2.

It is available with either Type S or Type M reed relays.

Insertion Loss is less than 0.1dB at 1 MHz.

Crosstalk is less than 60dB at 200 KHz.

DC Isolation is greater than 10^{10} ohms.

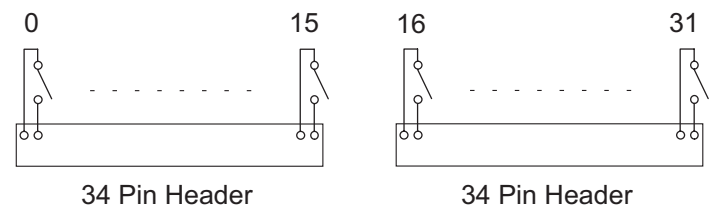


Fig.2

VM/24DRV RELAY DRIVER MODULE

This module has 24 open collector relay drive circuits with diode suppression and current drive capability of 1.8 amp DC. Relay power source can be from the +5 volt or +12 volt supplies on the VME or VXI Chassis backplane or from an external source of up to +50 volts.

There are four driver channels per driver IC with a maximum package dissipation of 3.8 watts at 25°C.

The drives can be wired to relays mounted on a blank area of the circuit board or to three 20 pin connectors on the back panel.

VM/8x4 MATRIX SWITCH MODULE

This module has two 4x4 two wire matrices with Inputs and Outputs brought out to 16 pin Header connectors as shown in Fig. 3. The two matrices can be combined as one 8x4 matrix.

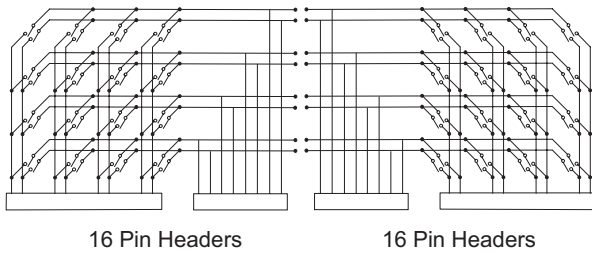


Fig. 3

The module is available with either Type S, M or LT relays.
Bandpass is DC to 100 MHz (-3dB).
Crosstalk is less than 60dB at 1 MHz.

VM/8x8-CX COAXIAL MATRIX

This module uses single pole Type S coaxial reed relays in two 4x8 matrix configurations with 50 ohm impedance as shown in Fig. 5. The isolation relays form an 8x8 matrix in a way that shortens stub length, increases bandpass and reduces crosstalk. This module is also offered as one 4x8 matrix or one 4x4 matrix.

The input and output connectors are SMA or SMB.

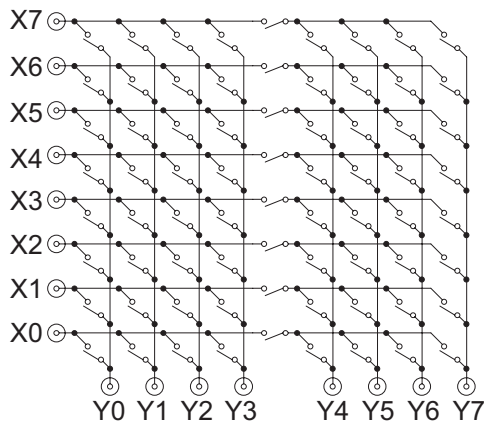


Fig. 5

Bandpass is DC to 200 MHz (-3dB)
Crosstalk is less than 60dB at 1 MHz.
Insertion Loss is less than 0.2dB at 10 MHz.
VSWR at 10 MHz is 1.07.

VM/V8X8 VIDEO MATRIX

This module is a solid state 8x8 non-blocking matrix as shown in Fig. 5 with full fanout so that any input can be connected to 8 outputs. Signal impedance is 75 ohms and input and output connectors are SMA.

Gain - Unity **Impedance** - 75 ohms
Bandpass: 1 input to 1 output - 90 MHz (-3dB)
 1 input to full fanout - 70 MHz (-3dB)

Crosstalk -60dB at 10 MHz
Max Input Signal - ±5 volt
Max Output Signal - ±1.5 volt

VM/24KCP POWER RELAYS

This module has 24 single pole double throw armature type power relays wired out in groups of 8 relays to 25 pin D type connectors shown in Fig. 4.

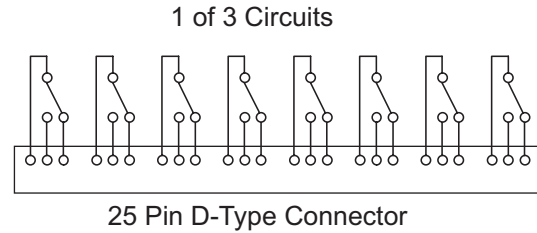


Fig. 4

Mechanical life is 10 million operations. Electrical life is 100,000 operations if operated within the following ratings:

Contact Rating AC -2000VA
Contact Rating DC -150W
Maximum Switch Voltage - 380VAC
Maximum. Switch Current - 8 amp
Breakdown Voltage - 1000V RMS
Operate Time - 10msec

VM/MW MICROWAVE MODULE

Modules can be supplied with microwave relays for bandpass from DC to 18 GHz.

Up to three 2x1 relays can be mounted on a single width slot. Other relays are available from 3x1 up to 6x1 multiplexers and are mounted on double or triple slot width depending on the specific requirement.

The relays are available with Fail Safe, Latching or Terminated mode of operation.

Call and discuss your specific application with our Sales Engineers.

REED RELAY SPECIFICATIONS

- **Type S** - Standard Dry Reed Relays.
- **Type M** - Mercury Wetted Reed Relays.
- **Type LT** - Low Thermal Reed Relays.

All relays have a guaranteed life of 100 million operations if operated within the following ratings:

	Type S	Type M	Type LT
Contact Rating	10VA	50VA	10VA
Max. Switch Voltage	200V	500V	100V
Max. Switch Current	0.5A	2.0A	0.2A
Breakdown Voltage	400V	1000V	200V
DC Isolation	10 ¹⁰ ohms	10 ¹⁰ ohms	10 ¹² ohms
Operate Time, less than	1ms	2ms	1ms

OPERATING SPECIFICATIONS

OPERATING TEMPERATURE: 0° C to 55° C

STORAGE TEMPERATURE: -25° C to 80° C

HUMIDITY: less than 95% RH

POWER: +5 Volt - less than 1.5A.

+12 Volt - less than 20mas per reed relay or armature relay.

For Microwave relays, consult our Sales Engineers.

WARRANTY

CYTEC Corp warrants that all products are free from defects in Materials and Workmanship for a period of 5 years, except Microwave Relays which are warranted for 1 year only.

PC-B/PCI SERIES MODULES

The PC-B Series Modules plug into PC/AT/XT Compatible ISA Bus slots. The PCI Modules plug into PCI slots. Both are available as either Switch Modules or Driver Modules. The modules can be controlled either by direct hardware port access or by installable Device Drivers. PCI Modules come with Plug and Play device drivers. Software support is available for the most common program languages. The modules also have a special Status feedback feature which enables the computer to confirm that the correct selections have been made by checking the relay drive. This can be used to self test the modules or as a diagnostic tool.



INTERFACE MODULE



SWITCH MODULE

PC-B SERIES SWITCH MODULES

Each Module has 16 high reliability reed relays with operate times less than 2 msec and guaranteed for 100 million operations. Relay options offered are Standard Dry Reed, Mercury Reeds for high current and Low Offset Reeds for microvolt signal levels.

The Signal Input connector in each module is a 37 pin male D type connector and mates are available for Ribbon Cable wiring or for individual Crimp Pin wiring. External screw terminal blocks are optionally available.

All modules have Status feedback and LEDs associated with each relay for visual indication of the relays energized.

Power Requirement ± 5 volt < 0.2 Amp

± 12 volt < 20 mas per relay energized.

PC-B/MUX 16 SWITCH MODULE

This module has 16 two pole relays as shown in Fig. 1 with selection of any one of 16 inputs to one output and Break before Make Switching. Only one relay may be selected at any time.

Bandpass -- With 50 ohm terminations, the bandpass is flat to within 1 dB from DC to 10 MHz and is within 3 dB up to 70 MHz.

Isolation between Inputs to Outputs across unused channels with 50 ohm terminations is as follows:

10 kHz - 90 dB 100 kHz - 70 dB 1 MHz - 50 dB

Relays can be supplied with Type S, Type M, Type MG, or Type LT contacts. Type M versions must be operated in a vertical position.

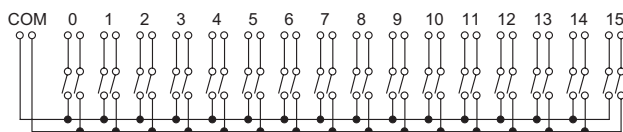


Fig. 1

PC-B/K16 SWITCH MODULE

This module has 16 single pole discrete Form A relays as shown in Fig. 2. Any number of the relays may be latched simultaneously. Relays may be wired externally in any required configuration.

Bandpass -- With 50 terminations, the bandpass is from DC to 30 MHz.

Isolation -- With 50 terminations, the isolation between channels is as follows:

10 kHz - 90 dB 100 kHz - 70 dB 1 MHz - 50 dB

Relays can be supplied with Type S, Type M Relays or Type MG contacts. Type M versions must be operated in a vertical position.

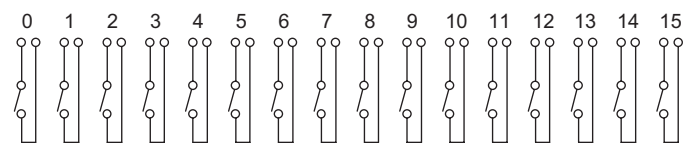


Fig. 2

PC-B/2(8x1) SWITCH MODULE

The PC-B/2 (8x1) Switch Module is a general purpose module which can be used in either Matrix or Multiplexer applications. It has 16 two pole relays configured as two separate 8x1 two wire Multiplexers as shown in Fig. 3 which can be jumpered as one 16x1 two wire Multiplexer.

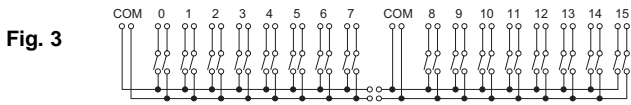


Fig. 3

PC-B/30x1 SWITCH MODULE

By using one Form C relay to submultiplex the 16x1 mux, the module can be used as a 30x1 single pole Mux as shown in Fig. 4.

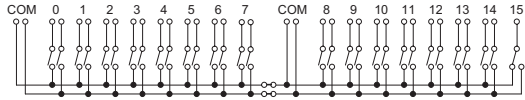


Fig. 4

Bandpass

With 50 ohm terminations, the bandpass is from DC to 30 MHz.

Isolation

With 50 ohm terminations, the isolation between channels is:
10 kHz - 90 dB 100 kHz - 70 dB 1 MHz - 50 dB

Relays can be supplied with Type S, Type M or Type LT contacts. Type M versions must be operated in a vertical position.

RELAY SPECIFICATIONS

Type S - Standard relays for Instrumentation Level Signals.

Type M - Mercury relays for high current switching.

Type MG - Mercury Amalgam Non-Position Sensitive Relays.

Type LT - Low Thermal relays with less than 1 microvolt offset. Switches are guaranteed for 100,000 operations if used within the following specifications:

	Type S & LT	Type M	Type MG
Contact Rating	10 VA	50 VA	30 VA
Switching Voltage	200 V	500 V	350 V
Switching Current	0.5 A	1.0 A	0.75 A
Breakdown Voltage	300 V	1000 V	1000 V
Carry Current	1.0 A	2.0 A	2.0 A
Operate Time	<1Ms	<2Ms	<2Ms

PC-B DRIVER MODULES

There are two basic types of Modules: the PC-B/24 Relay Driver Module, and the IF-PC TTL Compatible Input/Output Module. Both Modules are half slot size and have 37 pin female D type connectors. Mates are available for ribbon cable or crimp pin type wiring.

PC-B/24 DRIVER MODULE

This Module has 24 separate relay drivers which can be used to select and control CYTEC Switch Modules or any other types of relays.

The 24 Relay drivers are in three groups of eight high voltage, high current Darlington's with open collector outputs and integral suppression diodes. **Any number of these drivers can be selected at any time and the Status of the drivers selected can be verified by the computer.**

Each driver can operate on different voltages up to a maximum of 50 volts and current up to 500 mas, with a maximum of 1500 mas within any group of 8 drivers.

ENVIRONMENT

Operating Temperature: 0° to 55° C.

Storage Temperature: - 20° to 70° C.

Humidity: Less than 95% RH, no condensation to 30° C.

PCI BUS INTERNAL PC MODULES

PCI/32DRV DRIVER MODULE

32 channel plug and play relay driver module allows control of up to 32 relays, solenoids or other loads. Open collector darlington current sinks or sources deliver up to .35 amps of current per channel with a max of .5 amps per group of 8 drives. Uses +12 volts from computer or up to 50 volt external source.

PCI/2(8X1)-2S SWITCH MODULE

This Module is functionally equivalent to the PC-B/2(8x1) Module but plugs into the PCI Bus and uses Armature (Type A) relays.

Plug and Play switch module has two separate 8x1 two pole multiplexers which may be jumpered to form one 16x1 two pole mux as shown in Fig. 5.

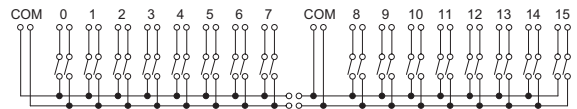


Fig. 5

A submultiplexer relay may be used to provide a 30x1 single wire mux as shown in Fig. 6.

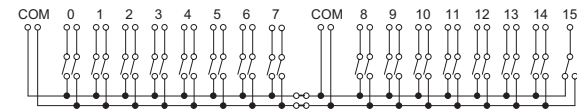


Fig. 6

RELAY SPECIFICATIONS

	Type A
Contact Rating VA	30
Switching Voltage DC	110V
Switching Current DC	1.0A
Carrying Current DC	1.0A
Breakdown Voltage DC	750V
Operate Time MSec	3

IF-PC MODULE

This is a half slot size module and has TTL compatible outputs and inputs suitable for selecting up to 8,192 relays and checking Status of the relays in any of the CYTEC Series of Switch Matrices.

The relays can be Latched or Unlatched in the Matrix or Multiplex Mode, or an entire matrix can be cleared. Status of all relays can be verified and displayed on the Computer Monitor. Power requirements are dependent on the system size and can be supplied with the Matrix chassis.

**FOR TECHNICAL ASSISTANCE,
CONTACT 1-800-346-3117 or
WWW.CYTEC-ATE.COM**