- 8 General Purpose Reed Relays Per Module
- Very Wide Range: SPDT, DPST, DPDT and 4PST Switching Configurations
- Uses High Reliability Pickering Ruthenium Reed Relays For Maximum Performance
- Screened Versions Available
- D-Type Connectors
- Switch up to 200Volts DC, 2Amps With 50W Max Power
- Front Panel Status LEDs

Not Recommended for New Designs*

***Please contact Pickering for alternative PXI/LXI/USB solutions**

Models 10-110/115/120/125 are general purpose reed relay switching modules, available in a very wide choice of switch types with Changeover and Normally Open contact configurations. Suitable for the construction of switching networks, for slaving up to larger switches, or for operating external devices.

For applications requiring screened relays please look at our 10-120 and 10-125 range of shielded reed relay modules which are suitable for the construction of low noise & crosstalk switching networks.
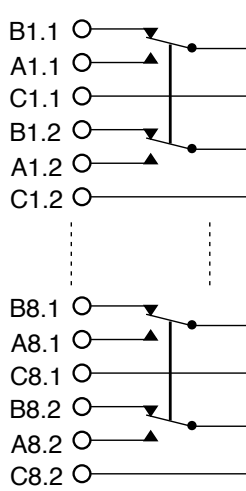
Range Description:

- 10-110   8 x Changeover Reed Relay Module. With SPDT or DPDT configurations.
- 10-115   8 x Normally Open Reed Relay Module. With SPST, DPST or 4PST configurations.
- 10-120   8 x Shielded Changeover Reed Relay Module. SPDT configuration.
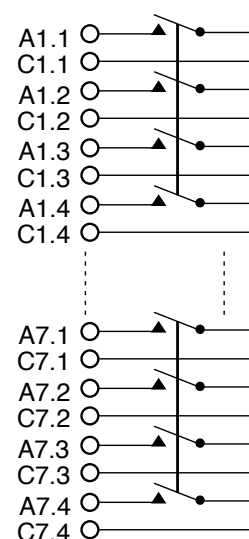- 10-125   8 x Shielded Normally Open Reed Relay Module. With SPST or DPST configurations
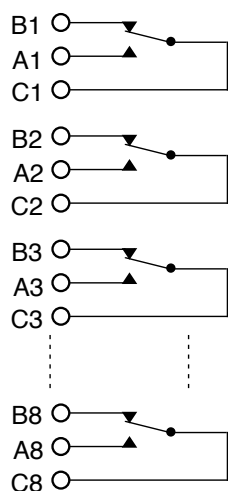
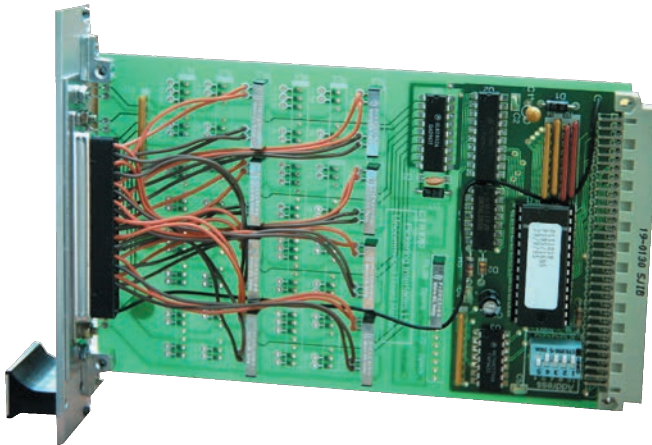**8 x SPDT Reed Relay (Model 10-110-001)**

8 x DPDT Reed Relay (Model 10-110-002)
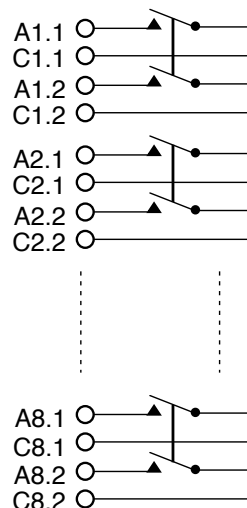
8 x DPST Reed Relay (Model 10-115-002)

7 x 4PST Reed Relay (Model 10-115-004)

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**PCB Layout for the 10-115 Reed Relay Module**

Notes

All reed relay switching modules have the facility for a built–in limiting resistor on each switch. This can be very useful in preventing high current in-rushes which may result in damage to the reed switch. These links are normally shorted, however when ordering you may specify limiting resistors if you wish.

Mercury wetted reed relay modules must always be mounted to within 30° of vertical.

Programming

The 10-110/115/120/125 module is simple to program either by single bit or by word (8 bits).

ARESET a	Clear all outputs on module **a**
CLOSE a,b	Set bit number **b** on module **a**
DELAY t	Force a minimum delay of **t** milliseconds between two instructions
OPEN a,b	Clear bit number **b** on module **a**
RESET	Clear all bits/switches on all modules
VIEW? a[,b]	View status of module **a**, can be viewed at any time either as a word or by bit **b** as a logical value (1 or 0)
WRITE a,w	Send word **w** to module **a**
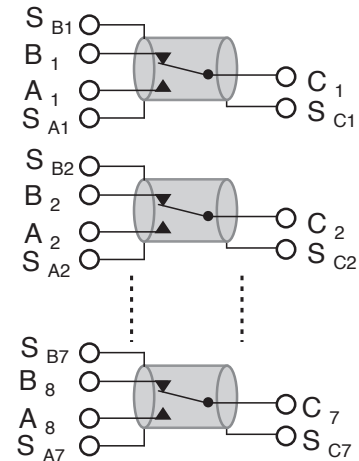
7 x Shielded SPDT Reed Relay (Model 10-120-001)
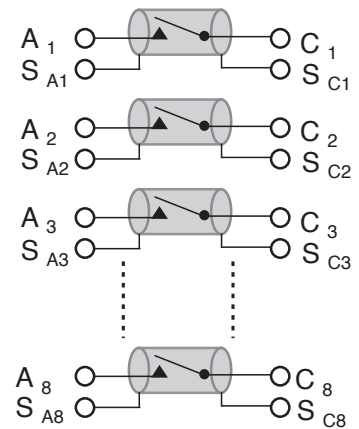
8 x Shielded SPST Reed Relay (Model 10-125-021)
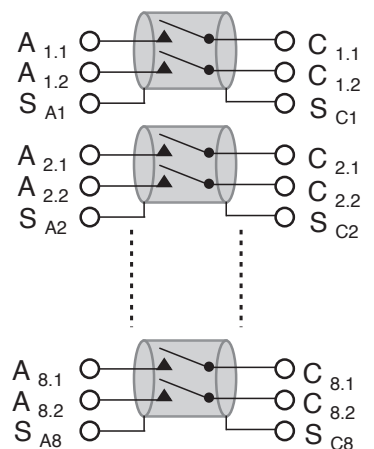
8 x Shielded DPST Reed Relay (Model 10-125-022)

Relay Type

The module is available with Ruthenium reed switches which are the most popular and economical type for general purpose switching (including low level signals). Mercury wetted switches may be available to special order. They are more expensive but exhibit extended life with lower contact resistance and excellent contact resistance stability. A **Spare Reed Relay** is built onto the circuit board to facilitate easy maintenance with minimum downtime.

All reed relays are manufactured by our sister company Pickering Electronics: pickeringrelay.com

Changeover Relay Switching Specification (10-110 and 10-120 Models)

Switch Type:	Ruthenium	Mercury wet‡
Max Standoff Voltage:	200V†	200V†
Max Power:	3W	28W
Max Switch Current:	0.25A	1.0A
Max Carry Current:	1.2A	1.5A
Contact Resistance		
On:	200mΩ	200mΩ
Off:	$>10^9\Omega$	$>10^9\Omega$
Differential Thermal Offset:	<5µV	<10µV
Capacitance:		
Open Switch:	<6pF	<6pF
Switch-Switch:	<3pF	<3pF
Bandwidth (50Ω):	>15MHz	>15MHz
Max Operate Time:	1.5ms	3.0ms
Max Release Time:	0.75ms	1.5ms
Expected Life		
Low power load:	$>1\times10^8$	$>1\times10^9$
Full power load:	$>5\times10^6$	$>1\times10^8$

† Higher voltage standoffs are available.
‡ Mercury wet versions may be available to special order.

Mechanical Characteristics

The General Purpose Reed Relay Module conforms to the 3U height (128mm) Eurocard standard and is housed in a 160mm deep screened plug-in module. Panel width for all versions with standard connectors is 1.2 Inches.

Connectors

Connections to all modules are made via front panel mounted D-type male connectors (37-pin or high density 62-pin), for pin outs please refer to the operating manual.

SPST, DPST, 4PST Relay Switching Specification (10-115 and 10-125 Models)

Switch Type:	Ruthenium	Mercury wet‡
Max Standoff Voltage:	200V†	200V†
Max Power:	20W	50W
Max Switch Current:	0.5A	2.0A
Max Carry Current:	1.0A	4.0A
Contact Resistance		
On:	200mΩ	200mΩ
Off:	$>10^9\Omega$	$>10^9\Omega$
Differential Thermal Offset:	<5µV	<10µV
Capacitance:		
Open Switch:	<6pF	<6pF
Switch-Switch:	<3pF	<3pF
Bandwidth (50Ω):	>15MHz	>15MHz
Max Operate Time:	1.5ms	3.0ms
Max Release Time:	0.75ms	1.5ms
Expected Life		
Low power load:	$>1\times10^8$	$>1\times10^9$
Full power load:	$>1\times10^6$	$>1\times10^8$

† Higher voltage standoffs are available.
‡ Mercury wet versions may be available to special order.

Operating/Storage Conditions

Operating Conditions

Operating Temperature: 0°C to +55°C
Humidity: Up to 95% non-condensing
Altitude: 5000m

Storage and Transport Conditions

Storage Temperature: -20°C to +75°C
Humidity: Up to 95% non-condensing
Altitude: 15000m

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2010, EMC Immunity EN61326-1:2013, Emissions EN55011:2009+A1:2010.

Product Order Codes - Ruthenium Reed

Changeover:	
8xSPDT, 1x37-Pin D-type	**10-110-001**
8xDPDT, 1x62-Pin D-type	**10-110-002**
Normally Open:	
8xDPST, 1x37-Pin D-type	**10-115-022**
7x4PST, 1x62-Pin D-type	**10-115-024**
Shielded Changeover:	
7xSPDT, 1x37-Pin D-type	**10-120-001**
Shielded Normally Open:	
8xSPST, 1x37-Pin D-type	**10-125-021**
8xDPST, 1x62-Pin D-type	**10-125-022**

Mercury Wetted Reed versions may be available to special order.

Product Customization

Pickering System 10 modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

Customization can include:

- Alternative relay types
- Mixture of relay types
- Alternative number of relays
- Different performance specifications

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

37-Pin D-type Socket with Crimp Pins	**10-960-037**
62-Pin D-type Socket with Crimp Pins	**10-960-062**

For other 37-pin connection accessories for the 10-110 series modules please refer to the 90-007D 37-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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