

**INTERFACES**  
**CONNECTOR-TO-WIRE**  
**Ribbon Cable Module**  
**35 or 32mm DIN Rail**

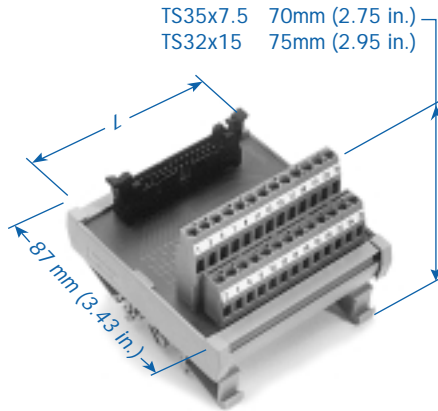
**FBK**  
**Ribbon Cable**

Compact Ribbon Connector Modules provide an interface between multi-wire flat cables outfitted with IDC connectors and discrete wires. Up to 64 conductors can be terminated saving time and eliminating wiring mistakes.

No special wiring or tools are required. Ribbon Cable Interface Modules are typically used in communications, data processing, process control and other industrial applications.

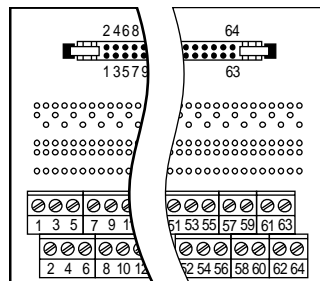
FBK Ribbon Cable Modules are supplied with short strain relief ejector latches (long ejector latches are available), screw-cage clamp terminal blocks and component solder pads for easy insertion of circuit building components. All terminal blocks are individually marked to correspond to the numbers on the header pins.

- Screw-Cage Clamp Connections
- Up to 64 Poles
- 4 to 5 Component Solder Pads Per Line
- .9mm (.035 in.) Component Mtg. Holes
- DIN Rail Mount, Panel Mount Available



Wire Range	Current	Voltage
0.5-4mm <sup>2</sup>		
22-12 AWG	3A	250V AC

Ordering Information	No. of Poles	Type	Cat. No.	Module Length (L) mm (in.)	Std. Pk.
Ribbon Cable Module with Short Ejector Latches	10	FBK10	5720.2	47 (1.85)	1
	14	FBK14	5721.2	47 (1.85)	1
<i>To order long ejector latches, specify Cat. No. with /L suffix. Example: Cat. No. 5727.2/L.</i>	16	FBK16	5722.2	69 (2.72)	1
	20	FBK20	5723.2	69 (2.72)	1
	26	FBK26	5724.2	80 (3.15)	1
	34	FBK34	5725.2	103 (4.06)	1
	40	FBK40	5726.2	114 (4.49)	1
	50	FBK50	5727.2	148 (5.83)	1
	60	FBK60	5728.2	170 (6.68)	1
	64	FBK64	5729.2	170 (6.68)	1



Model FBK64

**INTERFACES**

**Relay Modules and Carriers**

**Isolated Channels**

**35 or 32mm DIN Rail**

Isolated channels (no bus) allow control of each relay by a different logic system, if necessary. Mix sourcing (positive switching, Vcc on/off) and sinking (negative switching, ground on/off) on a single multi-relay module. Provide spare relay channels for future needs without committing to a specific logic power supply, and without committing coil-drive power for more than one relay at a time.

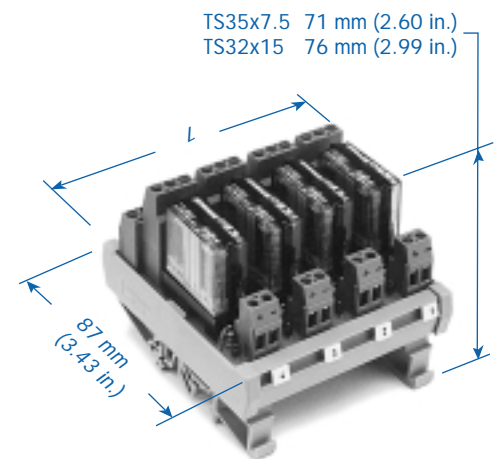
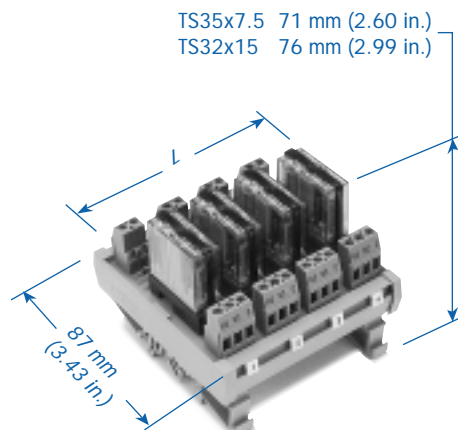
Altech Relay Modules provide high density packaging of miniature general purpose relays with Single Pole Double Throw (Form C) and Double Pole Double Throw (2 Form C) contact configurations and low current AC and DC coils. Load your own relays in our RC Relay Carrier, or order the RM Relay Module complete with relays.

*Call us with your custom module requirements!*

- Screw-Cage Clamp Connections
- LED Coil Voltage Indicator
- Reverse DC Polarity LED Protection
- Surge Suppression with DC Coil
- DIN Rail Mount, Panel Mount Available

**RC1 / RM1  
Single Pole Double Throw**

**RC2 / RM2  
Double Pole Double Throw**

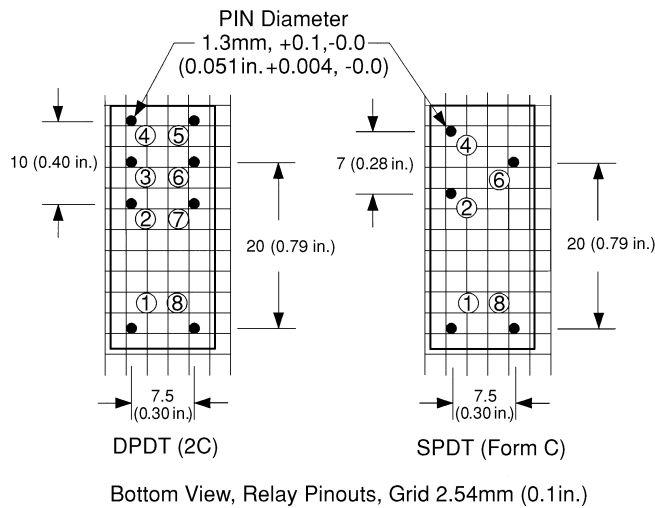


Wire Range	Contact Ratings	
	Current	Voltage
0.5-4mm <sup>2</sup>	8A	250VAC/
22-12 AWG		30VDC

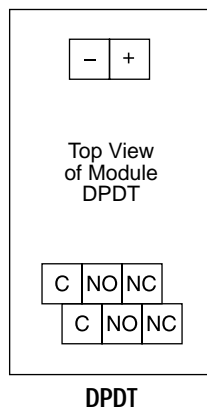
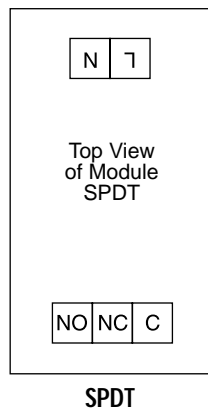
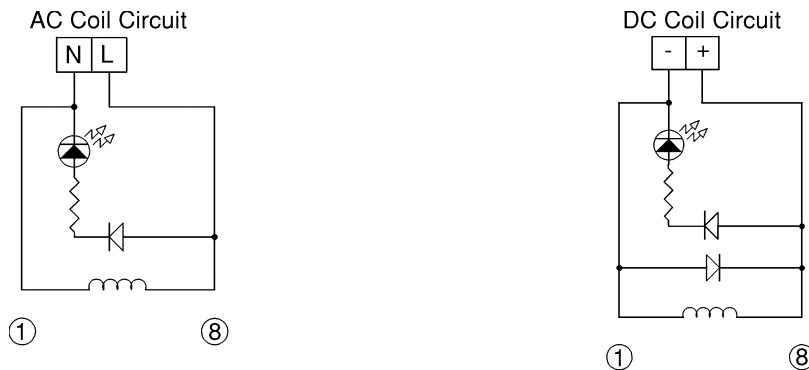
Wire Range	Contact Ratings	
	Current	Voltage
0.5-4mm <sup>2</sup>	6A	250VAC/
22-12 AWG		30VDC

Ordering Information	Module Length (L) mm (in.)	Carrier Only		Module with Relays		Carrier Only		Module with Relays	
		Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
<b>1 Channel, Coil Voltage</b> 12V DC 24V DC 110V AC 220V AC	21 (0.83)	RC1E1	8929.5	RM1E1	8929.2	RC2E1	8945.5	RM2E1	8949.2
		RC1G1	8933.5	RM1G1	8933.2	RC2G1	8951.5	RM2G1	8951.2
		RC1U1	8935.5	RM1U1	8935.2	RC2U1	8953.5	RM2U1	8953.2
		RC1X1	8940.5	RM1X1	8940.2	RC2X1	8954.5	RM2X1	8954.2
<b>2 Channel, Coil Voltage</b> 12V DC 24V DC 110V AC 220V AC	40 (1.57)	RC1E2	8929.6	RM1E2	8929.3	RC2E2	8949.6	RM2E2	8949.3
		RC1G2	8933.6	RM1G2	8933.3	RC2G2	8951.6	RM2G2	8951.3
		RC1U2	8935.6	RM1U2	8935.3	RC2U2	8953.6	RM2U2	8953.3
		RC1X2	8940.6	RM1X2	8940.3	RC2X2	8954.6	RM2X2	8954.3
<b>4 Channel, Coil Voltage</b> 12V DC 24V DC 110V AC 220V AC	79 (3.11)	RC1E4	8931.5	RM1E4	8931.2	RC2E4	8955.5	RM2E4	8955.2
		RC1G4	8941.5	RM1G4	8941.2	RC2G4	8956.5	RM2G4	8956.2
		RC1U4	8942.5	RM1U4	8942.2	RC2U4	8957.5	RM2U4	8957.2
		RC1X4	8943.5	RM1X4	8943.2	RC2X4	8959.5	RM2X4	8959.2
<b>8 Channel, Coil Voltage</b> 12V DC 24V DC 110V AC 220V AC	157 (6.18)	RC1E8	8931.6	RM1E8	8931.3	RC2E8	8955.6	RM2E8	8955.3
		RC1G8	8941.6	RM1G8	8941.3	RC2G8	8956.6	RM2G8	8956.3
		RC1U8	8942.6	RM1U8	8942.3	RC2U8	8957.6	RM2U8	8957.3
		RC1X8	8943.6	RM1X8	8943.3	RC2X8	8959.6	RM2X8	8959.3
<b>16 Channel, Coil Voltage</b> 12V DC 24V DC 110V AC 220V AC	311 (12.24)	RC1E16	8932.5	RM1E16	8932.2	RC2E16	8963.5	RM2E16	8963.2
		RC1G16	8944.5	RM1G16	8944.2	RC2G16	8972.5	RM2G16	8972.2
		RC1U16	8946.5	RM1U16	8946.2	RC2U16	8995.5	RM2U16	8995.2
		RC1X16	8948.5	RM1X16	8948.2	RC2X16	8999.5	RM2X16	8999.2
		Std. Pk.: 1		Std. Pk.: 1		Std. Pk.: 1		Std. Pk.: 1	

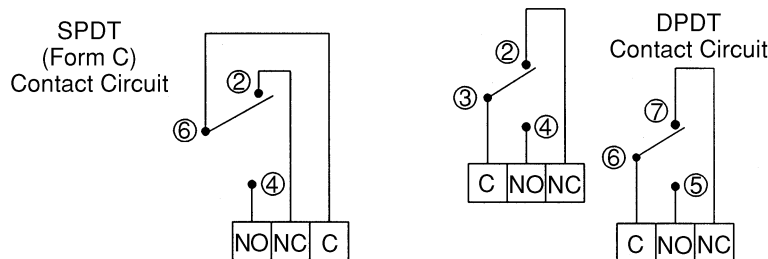
## Relay Pinout



## Coil Circuits



## Contact Circuits



## Contact Specifications

<b>SPDT Composite Rating:</b>	<b>8A</b>
-Relay Socket:	8A
-Terminal Blocks:	15A
-PCB Trace for Contact Circuit	
At 30°C (86°F) temperature rise NC:	12A
Common and NO:	16A
-PCB Trace for Coil Circuit:	6A
At 30°C (86°F) temperature rise	
-Relay Contacts, AgCdO, Minimum Ratings:	
Resistive- At 250VAC and 30VDC:	10A
Inductive - At 250VAC :	7.5A
At 30VDC:	5A
(p.f = 0.4)	
-Rated Minimum Breaking Capacity:	
2,500 VA Resistive, 1,800 VA Inductive	

<b>DPDT Composite Rating:</b>	<b>6A</b>
-Relay Socket:	8A
-Terminal Blocks:	15A
-PCB Trace for Contact Circuit:	6A
At 30°C (86°F) temperature rise:	7A
-PCB Trace for Coil Circuit:	1A
At 30°C (86°F) temperature rise:	2A
-Relay Contacts, AgCdO, Minimum Ratings:	
Resistive- At 250VAC and 30VDC:	8A
Rated at 250VAC	
Max. Breaking Voltage:	440VAC
"Make" Current:	12A
-Rated Minimum Breaking Capacity:	
2,000 VA Resistive	

## Coil Specifications

-Ambient Temperatures:  
40°to +70°C (-40°to +158°F)

Coil Voltage VDC	Operate (pull-in) Max. VDC	Drop Out (Rel.) V Min. VDC	Coil Current mA	Coil Resistance ohms
12	18	8.8	55	220±15%
24	42	17.5	20	1,200±15%
110	132	96.0	8.9	9,000±15%
220	264	192.0	4.1	31,500±15%

Table values are for cold coil at 20°C (68°F) and exclude coil exterior circuit.

**INTERFACES**

**Relay Modules and Carriers  
Busse Channels  
35 or 32mm DIN Rail**

Altech Busse Relay Modules provide high density packaging of miniature general purpose relays with minimal hook-up wiring. Select from busse DC Positive (DC Negative switching), busse DC Negative (DC Positive switching), or busse AC neutral.

Ideal for traditional mechanical relay input/output array between a single logic system and peripheral devices, or between logic systems in a network as well as their peripheral and field devices.

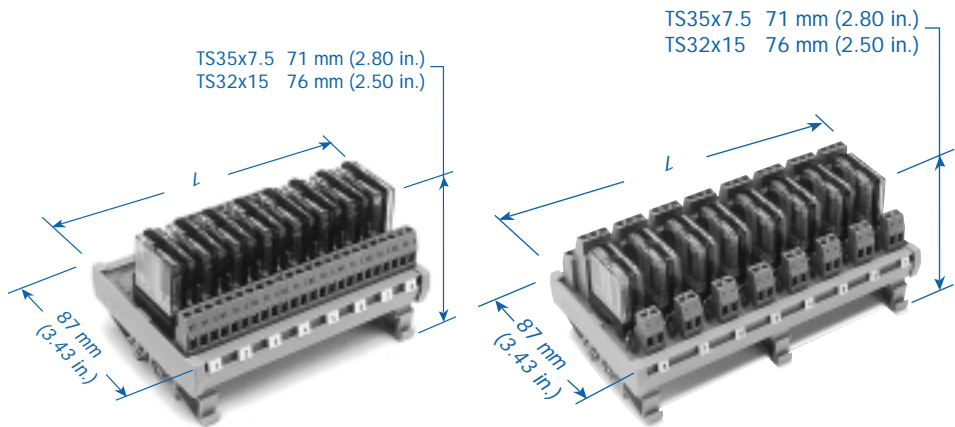
Load your own relays in our RCB Relay Carrier, or order the RMB Relay Module complete with 8 or 16 relays.

*Call us with your custom module requirements!*

- Screw-Cage Clamp Connections
- LED Coil Voltage Indicator
- Reverse DC Polarity LED Protection
- Surge Suppression With DC Coil
- DIN Rail Mount, Panel Mount Available

**RC1 / RM1  
Single Pole Double Throw**

**RC2 / RM2  
Double Pole Double Throw**



Wire Range	Current	Contact Ratings Voltage	Wire Range	Current	Contact Ratings Voltage
0.5-4mm <sup>2</sup>		250VAC/ 30VDC	0.5-4mm <sup>2</sup>		250VAC/ 30VDC
22-12 AWG	8A		22-12 AWG	6A	

Ordering Information	Module Length (L) mm (in.)	Carrier Only		Module with Relays		Carrier Only		Module with Relays	
		Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
<b>8 Channel, Busse DC+</b> 12V DC(E) 24V DC(G)	125 (4.92)	RCB1E8V	8912.5	RMB1E8V	8912.2	RCB2E8V	8923.5	RMB2E8V	8923.2
		RCB1G8V	5494.5	RMB1G8V	5494.2	RCB2E8V	8924.5	RMB2G8V	8924.2
<b>8 Channel, Busse DC-</b> ⊖ 12V DC(E) 24V DC(G)	125 (4.92)	RCB1E8G	8912.6	RMB1E8G	8912.3	RCB2E8G	8923.6	RMB2E8G	8923.3
		RCB1G8G	5492.5	RMB1G8G	5492.2	RCB2G8G	8924.6	RMB2G8G	8924.4
<b>8 Channel, Busse AC (N)</b> 110V AC(U) 220V AC(X)	125 (4.92)	RCB1U8	5502.5	RMB1U8	5502.2	RCB2U8	8925.5	RMB2U8	8925.2
		RCB1X8	8913.6	RMB1X8	8913.3	RCB2X8	8925.6	RMB2X8	8925.3
<b>16 Channel, Busse DC+</b> 12V DC(E) 24VDC(G)	248 (9.76)	RCB1E16V	8914.5	RMB1E16V	8914.2	RCB2E16V	8926.5	RMB2E16V	8926.2
		RCB1G16V	5508.5	RMB1G16V	5508.2	RCB2G16V	8926.6	RMB2G16V	8926.3
<b>16 Channel, Busse DC-</b> ⊖ 12V DC(E) 24V DC(G)	248 (9.76)	RCB1E16G	8921.5	RMB1E16G	8921.2	RCB2E16G	8927.5	RMB2E16G	8927.2
		RCB1G16G	5506.5	RMB1G16G	5506.2	RCB2G16G	8927.6	RMB2G16G	8927.3
<b>16 Channel, Busse AC (N)</b> 110V DC(U) 220V AC(X)	248 (9.76)	RCB1U16	5514.5	RMB1U16	5514.2	RCB2U16	8928.5	RMB2U16	8928.2
		RCB1X16	5514.6	RMB1X16	5514.3	RCB2X16	8928.6	RMB2X16	8928.3

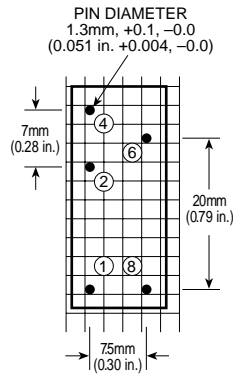
Std. Pk.: 1

Std. Pk.: 1

Std. Pk.: 1

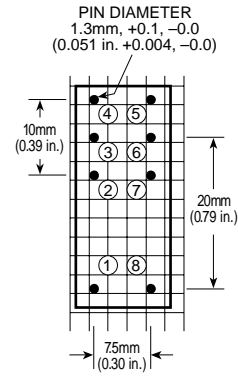
Std. Pk.: 1

## Single Pole Double Throw (SPDT)

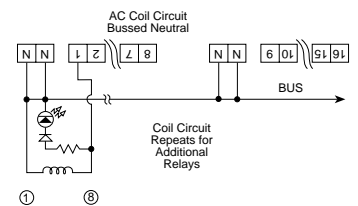
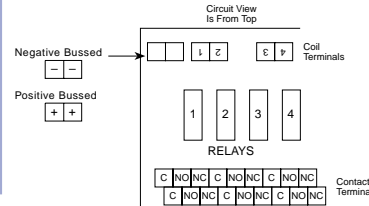
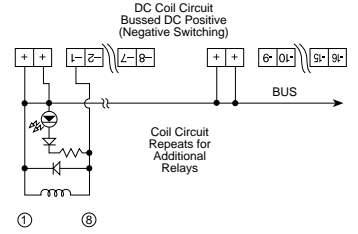
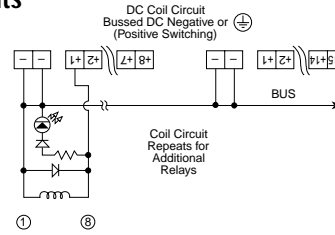
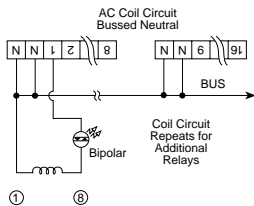
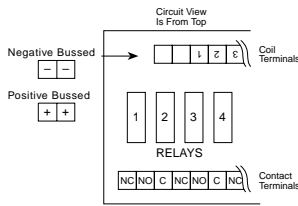
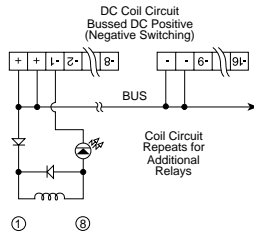
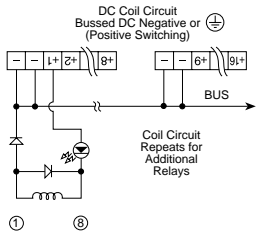


Relay Pinout  
Bottom View

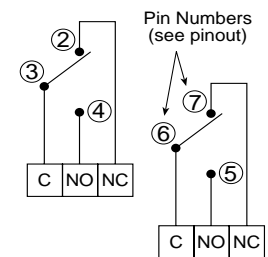
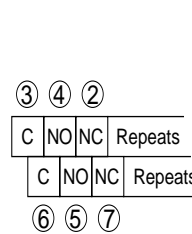
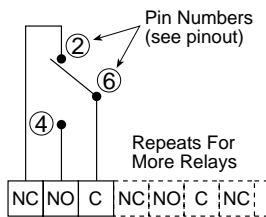
## Double Pole Double Throw (DPDT)



Coil Circuits



## Contact Circuits



### Contact Specifications

#### SPDT Composite Rating:

-Relay Socket:	8A
-Terminal Blocks:	15A
-PCB Trace for Contact Circuit	
At 30°C (86°F) temperature rise:	12A*
-PCB Trace for Coil Circuit	
At 30°C (86°F) temperature rise:	4A
-PCB Trace for Bus	
At 30°C (86°F) temperature rise:	16A

#### -Relay Contacts, AgCdO, Minimum Ratings

Resistive - At 250VAC and 30VDC:	10A
Inductive - At 250VAC:	7.5A
At 30VDC:	5A
(p.f. = 0.4)	

-Minimum Breaking Capacity:  
2,500VA Resistive, 1800 VA Inductive

### Contact Specifications

#### DPDT Composite Rating:

-Relay Socket:	6A
-Terminal Blocks:	15A
-PCB Trace for Contact Circuit:	
At 30°C (86°F) temperature rise:	6A
-PCB Trace for Bus	
At 30°C (86°F) temperature rise:	7A
-PCB Trace for Coil Circuit:	
At 30°C (86°F) temperature rise:	16A
-PCB Trace for Bus	
At 30°C (86°F) temperature rise:	2A

#### -Relay Contacts, AgCdO, Minimum Ratings

Resistive - At 250VAC and 30VDC:	8A
Rated at 250VAC	
Max. Breaking Voltage:	440VAC
"Make" Current:	12A

-Rated Minimum Breaking Capacity:  
2,000 VA Resistive

### Coil Specifications

Ambient Temperatures:  
-40° to +70°C (-40° to +158°F)

Coil Voltage VDC	Operate (pull-in) Max. VDC	Drop Out (Rel.) V Min. VDC	Coil Current mA	Coil Resistance ohms
12	18	8.8	55	220±15%
24	42	17.5	20	1,200±15%
110	132	96.0	8.9	9,000±15%
220	264	192.0	4.1	31,500±15%

Table values are for cold coil at 20°C (68°F) and exclude coil exterior circuit.

\* 12A overall rating, with 12A contact relays soldered directly to printed circuit board (no socket) are available. Please consult Altech.

**INTERFACES**

**Relay Modules - High Current Isolated Channels - 15 Amp 35 or 32mm DIN Rail**

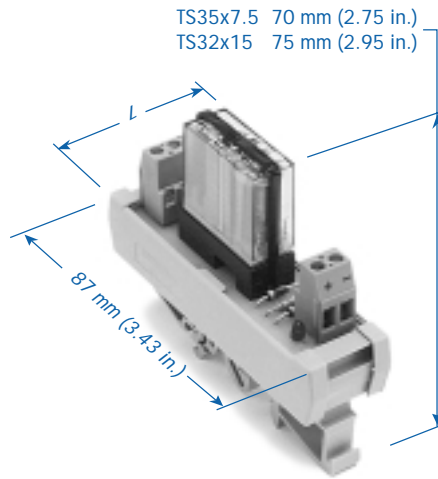
A true high-current rating in a DIN Rail mount miniature relay module. The miniature relays used in the Altech RMH have a SPDT (Form C) 16 Amp continuous current rating, developed from dual 8 Amp contacts that are internally connected in parallel. The relay socket is rated dual 8 Amp. Printed circuit traces are balanced, rated 16 Amp and connect to Altech terminal blocks UL rated 15A/300V.

Typical relay specifications combined with other module component ratings give module ratings suitable for many control applications.

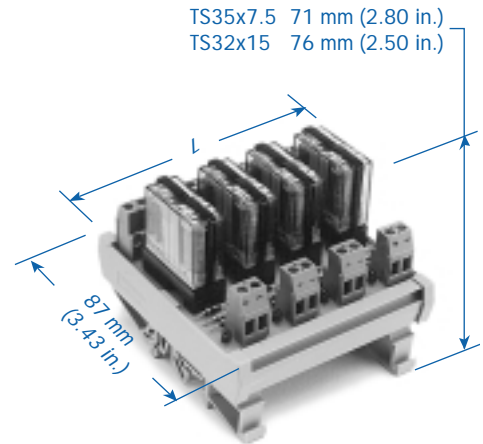
- Resistive: 15A at 250V AC/30V DC
- Inductive: 8A at 250V AC/30V DC
- Tungsten (TV-3): 3A at 120V AC
- Motor: 1/3hp at 120V AC  
1/2hp at 250V AC

- Screw-Cage Clamp Connection
- LED Coil Voltage Indicator
- Reverse DC Polarity LED Protection
- Surge Suppression With DC Coils
- Industry Standard Relays<sup>a</sup>
- DIN Rail Mount, Panel Mount Available

**RMH1- 1 Channel Single Pole Double Throw**



**RMH4 - 4 Channel Single Pole Double Throw**



Wire Range	Contact Ratings	
	Current	Voltage
0.5-4mm <sup>2</sup>	15A	250VAC/30VDC
22-12 AWG		

Wire Range	Contact Ratings	
	Current	Voltage
0.5-4mm <sup>2</sup>	15A	250VAC/30VDC
22-12 AWG		

**Ordering Information**

Relay Module, Coil Voltage	Type	Cat. No.	LED <sup>b</sup> (2mA)	Type	Cat. No.	LED <sup>c</sup> (2mA)
5V DC	RMH1B	8905.2	Yellow	RMH4B	8905.3	Yellow
6V DC	RMH1C	8906.2	Green	RMH4C	8906.3	Green
12V DC	RMH1E	8907.2	Red	RMH4E	8907.3	Red
24V DC	RMH1G	5800.2	Yellow	RMH4G	5800.3	Yellow
48V DC	RMH1J	5802.2	Green	RMH4J	5802.3	Green
60V DC	RMH1K	8908.2	Red	RMH4K	8908.3	Red
110V DC	RMH1M	5803.2	Red	RMH4M	5803.3	Red
6V AC	RMH1N	8909.2	Green	RMH4N	8909.3	Green
12V AC	RMH1R	8910.2	Red	RMH4R	8910.3	Red
24V AC	RMH1S	5801.2	Red	RMH4S	5801.3	Red
50V AC	RMH1T	8911.2	Red	RMH4T	8911.3	Red
110V AC	RMH1U	5804.2	Yellow	RMH4U	5804.3	Yellow
220V AC	RMH1X	5805.2	Green	RMH4X	5805.3	Green
240V AC	RMH1Y	5806.2	Red	RMH4Y	5806.3	Red

Std. Pk.: 1

Std. Pk.: 1

**General Relay Specifications (Typical)**

Mechanical Life:	30 x 10 <sup>6</sup> ops
Max. No. of Switching Cycles at Rated Load:	1200 ops/hr
Operate Time (pick-up):	9ms
Release Time (drop-out):	3ms
Bounce Time:	2ms

Module Length (L) 21mm (0.83 in.)

Module Length (L) 79mm (3.11 in.)

<sup>a</sup> Catalog specifications from several manufacturers of the 16 Amp (dual 8 Amp) relay are available, please consult Altech.

<sup>b</sup> For alternate LED colors, please consult Altech.

<sup>c</sup> For alternate LED colors, please consult Altech.