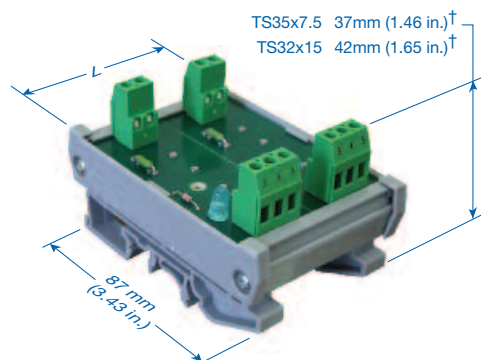


Interfaces

Isolated I/O Opto Carrier, 35 or 32 DIN Rail



I/O Isolated

Mount standard opto coupler input/output (I/O) modules in a high density arrangement for logic output to field devices, or for input of field data to the controller. I/O modules optically isolate ICs and PLCs from damaging field voltage spikes and line noise, while controlling up to 3 Amp field current with less than 20mA logic current. Altech I/O Module Carriers can accept up to 16 industry standard 0.6 in. (15.24mm) I/O modules in any combination: Input, Output, AC or DC from most manufacturers.

- Screw-Cage Clamp Connection
- Integral Sockets, Retaining Nut
- Field Voltage Rating: 280V AC/DC^a
- LED Indication, Fuse Protection
- DIN Rail Mount, Panel Mount Available

Custom designs can be accommodated!

Low current LED with dropping resistor for high resistance pull-up and low logic sink/source current requirements.

Technical Information

Fuse Rating5A/125C AC^b
 Wire Range0.5-4 mm² / 22-12 AWG
 Torque0.5-4 Nm / 4 lbs-in.
 Stripping Length ...8 mm

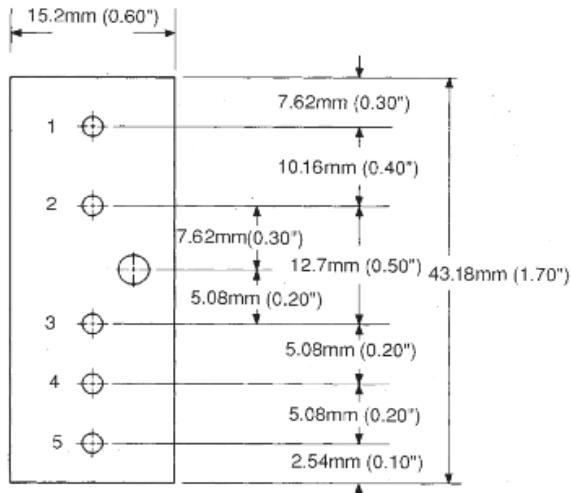
Part Number	Type	Position	Logic Voltage	LED	Module Length (L) in mm (in)
8954.0/B	I/O I-1B	1 Position	5V DC	Green	34.5 (1.36)
8954.0/E	I/O I-1E	1 Position	15V DC	Yellow	34.5 (1.36)
8954.0/G	I/O I-1G	1 Position	24V DC	Red	34.5 (1.36)
8955.0/B	I/O I-2B	2 Position	5V DC	Green	57.8 (2.28)
8955.0/E	I/O I-2E	2 Position	15V DC	Yellow	57.8 (2.28)
8955.0/G	I/O I-2G	2 Position	24V DC	Red	57.8 (2.28)
8956.0/B	I/O I-4B	4 Position	5V DC	Green	114 (4.49)
8956.0/E	I/O I-4E	4 Position	15V DC	Yellow	114 (4.49)
8956.0/G	I/O I-4G	4 Position	24V DC	Red	114 (4.49)
8957.0/B	I/O I-8B	8 Position	5V DC	Green	226 (8.90)
8957.0/E	I/O I-8E	8 Position	15V DC	Yellow	226 (8.90)
8957.0/G	I/O I-8G	8 Position	24V DC	Red	226 (8.90)

^a Fuse rating limits field side rating.
 - PCB Traces, Field Side: 10A/300V
 - PCB Traces, Logic Side: 1A with 6A Bus
 - Terminal Blocks: 15A/300V

[†] Dimension is to top board, add height of relay to determine clearance.

^b 3A/250V fuse available, please consult Altech.

Standard Pinout



Standard Pinout

The I/O Module pin utilization information listed below is intended for use only as a guide. For specific applications, please use only the module manufacturer's published specifications.

Pins 1 & 2: Field Connections

- AC Output to field load, inductive up to 3.5A at nominal 24V AC, 120V AC or 240V AC. AC hot to either pin, field load on other pin.
- DC Output to field load (inductive OK with commutating diode). Some modules polarized with pin #1 positive (+). Standard output voltages 60V DC (5-60), 200V DC (10-200).
- AC Input of field data to the logic, 10mA max at nominal 24V AC (18-36), 120V AC (90-140) and 240V AC (90-280). Field signal to either pin.
- DC Input of field data to the logic, some modules dual rated AC/DC, other nominal 5-28V DC (min. 4, max. 32), and nominal 12-48V DC (min. 10, max. 60). Some modules polarized with pin #1 (+).

Pin 3: VCC Logic Power

- Standard modules are available in three nominal logic voltages: 5V DC (normally min. 3 to max. 6), 15V DC (12 to 18) and 24V DC (20 to 30).

Pin 4: Logic Signal

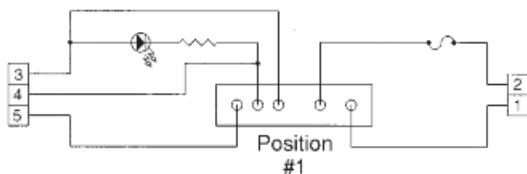
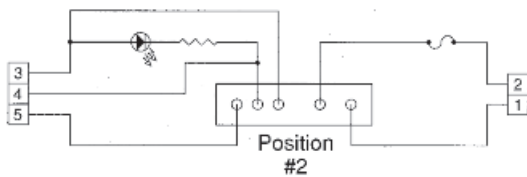
- Output - Logic ground (sink) on pin #4 closes output circuit (pin #1 to pin #2 normally open, shorts with sink on input pin #4). A few positive-logic modules are available.
- Input - Field signal to pins #1 and #2 gives 20-25mA sink at pin #4 (to pin #5).

Pin 5: Logic Ground

- On input modules only (no pin #5 on output modules).

I/O Isolated Positions

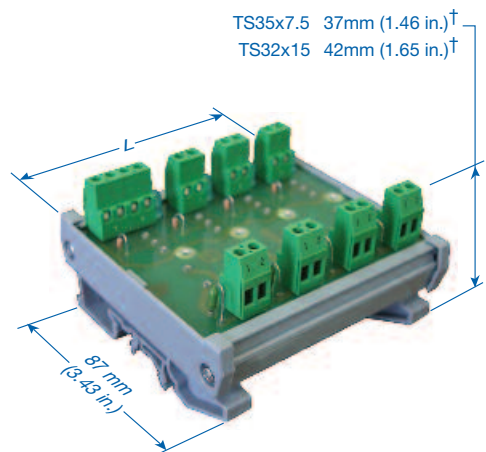
↑ Repeats ↑



I/O-1 Isolated Positions

Interfaces

Bussed I/O Opto Carrier, 35 or 32 DIN Rail



I/O Bussed

Mount standard opto coupler input/output (I/O) modules in a high density arrangement for logic output to field devices, or for input of field data to the controller. I/O modules optically isolate ICs and PLCs from damaging field voltage spikes and line noise, while controlling up to 3 Amp field current with less than 20mA logic current. Altech I/O Module Carriers can accept up to 16 industry standard 0.6 in. (15.24mm) I/O modules in any combination: Input, Output, AC or DC from most manufacturers.

- Screw-Cage Clamp Connection
- Integral Sockets, Retaining Nut
- Field Voltage Rating: 280V AC/DC^a
- LED Indication, Fuse Protection
- DIN Rail Mount, Panel Mount Available

Custom designs can be accommodated!

Logic status LED which uses the I/O module impedance as its dropping resistor.

Technical Information

Fuse Rating5A/125C AC^b
 Wire Range0.5-4 mm² / 22-12 AWG
 Torque0.5-4 Nm / 4 lbs-in.
 Stripping Length ...8 mm

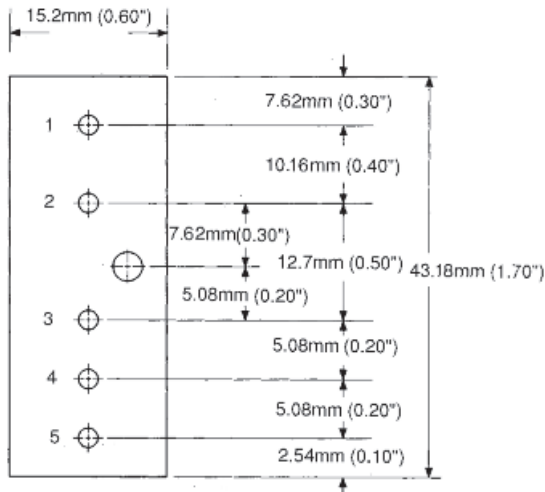
Part Number	Type	Position	Logic Voltage	LED	Module Length (L) in mm (in)
8956.0	I/O B-4	4 Position	5 to 24V DC	Green	114 (4.49)
8959.0	I/O B-8	8 Position	5 to 24V DC	Green	183 (7.20)
8861.0	I/O B-16	16 Position	5 to 24V DC	Green	363 (14.30)

^a Fuse rating limits field side rating.
 - PCB Traces, Field Side: 10A/300V
 - PCB Traces, Logic Side: 1A with 6A Bus
 - Terminal Blocks: 15A/300V

[†] Dimension is to top board, add height of relay to determine clearance.

^b 3A/250V fuse available, please consult Altech.

Standard Pinout



Standard Pinout

The I/O Module pin utilization information listed below is intended for use only as a guide. For specific applications, please use only the module manufacturer's published specifications.

Pins 1 & 2: Field Connections

- AC Output to field load, inductive up to 3.5A at nominal 24V AC, 120V AC or 240V AC. AC hot to either pin, field load on other pin.
- DC Output to field load (inductive OK with commutating diode). Some modules polarized with pin #1 positive (+). Standard output voltages 60V DC (5-60), 200V DC (10-200).
- AC Input of field data to the logic, 10mA max at nominal 24V AC (18-36), 120V AC (90-140) and 240V AC (90-280). Field signal to either pin.
- DC Input of field data to the logic, some modules dual rated AC/DC, other nominal 5-28V DC (min. 4, max. 32), and nominal 12-48V DC (min. 10, max. 60). Some modules polarized with pin #1 (+).

Pin 3: VCC Logic Power

- Standard modules are available in three nominal logic voltages: 5V DC (normally min. 3 to max. 6), 15V DC (12 to 18) and 24V DC (20 to 30).

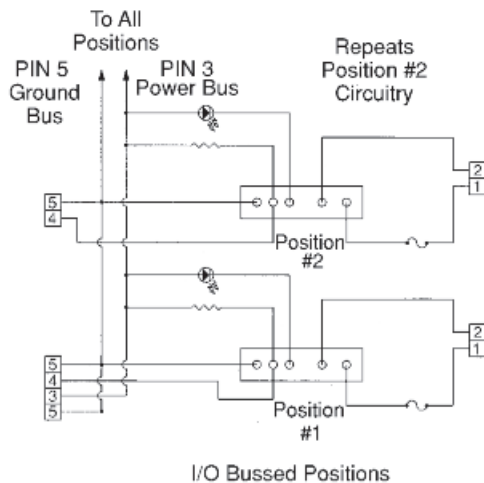
Pin 4: Logic Signal

- Output - Logic ground (sink) on pin #4 closes output circuit (pin #1 to pin #2 normally open, shorts with sink on input pin #4). A few positive-logic modules are available.
- Input - Field signal to pins #1 and #2 gives 20-25mA sink at pin #4 (to pin #5).

Pin 5: Logic Ground

- On input modules only (no pin #5 on output modules).

I/O Bussed Positions



PCB Mounting Tracks

Narrow & Wide Mounting Track Extrusion and Components

Mount standard or custom printed circuit boards in Mounting Tracks which can be conveniently DIN rail or panel mounted in your control panel or cabinet. These are the same tracks used for Altech interface modules. We now make them available to you to house and protect your custom boards, etc. Tracks are easily cut to size or can be ordered pre-cut to specific lengths. They are easily assembled from standard components and snap onto 35mm DIN rail or can be panel mounted.

Each track has two sets of printed circuit board guides to accept two alternate board widths.

End Sections hold printed circuit boards securely in place and keep out foreign objects.

MOUNTING

When mounting extrusions on DIN rail, order two or more DIN Rail mounting feet. These feet slide into grooves on the extrusion. Then attach two DIN Rail Mount End Sections with help of EPS screws.

To panel mount, order two Panel Mount End Sections (and EPS screws), each with an integral mounting flange with a 6 x 8mm (.24 x .32 in.) hole slot.

If desired, tracks can be direct mounted using double sided tape. Order two DIN rail mount end sections (and EPS screws).

- Standard Lengths: 1m (3'-3") or 2m (6'-6")
- Track Material: PVC
- Temperature Limit:
Short Term - 80°C (176°F)
Continuous - 70°C (158°F)
- End Section, Foot Material: Polyamide
- Preassembled, Precut Lengths Available
- Tracks Accept Standard MT2 Marking Tags

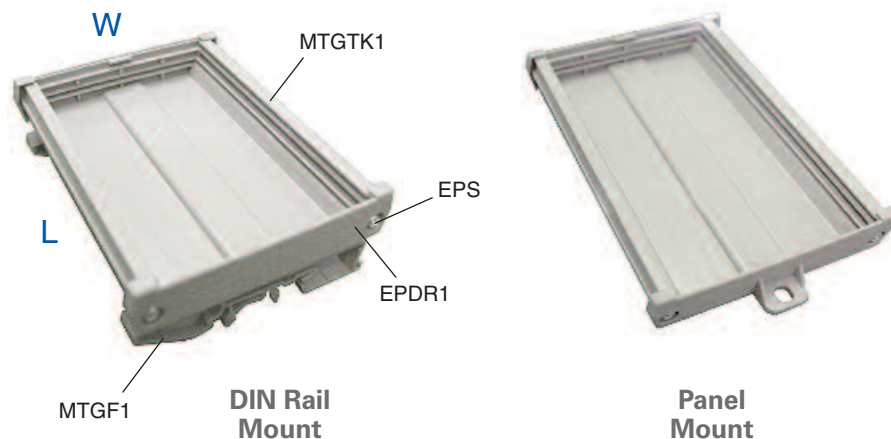
Sizing Information

Printed Circuit Board Width	
Track Type	High Guide (HG)
MTGTK1	73 ± 1mm (2.9 ± 0.05 in.)

Mounting Track Extrusion "Cut-to-Size" Formula
Extrusion Length = Printed Circuit Board Length - 4.5mm (.175 in.)

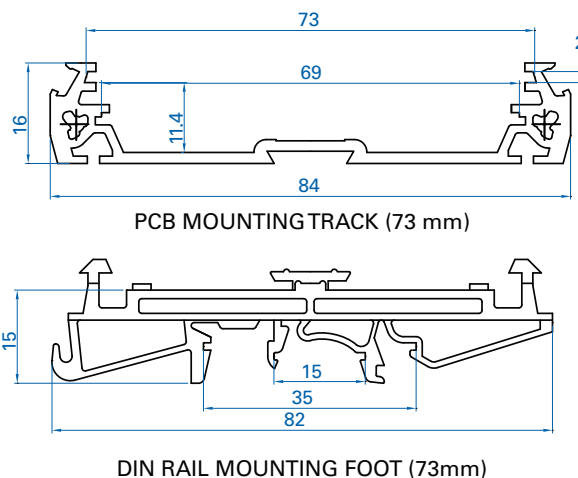
* Green color available on request.
Contact Altech for more information.

For PC Board Widths 73mm (2.9 in.)



	Part Number	Std. Pk.	
Mounting Track	1 meter, grey	MTGTK1/1M	5
	2 meter, grey	MTGTK1	5
	1 meter, green*	MTGTK1/1M/G	5
	2 meter, green*	MTGTK1/G	5
Accessories			
DIN Rail Mount End Section, grey	EPDR1	100	
	EPDR1/G	100	
DIN Rail Mounting Foot, grey	MTGF1	100	
	MTGF1/G	100	
Panel Mount End Section, grey	EPDP1	100	
	EPDP1/G	100	
DIN Rail / Panel Mount End Section Screws #4x1/2", Phillips Pan head (2 required per end section)	EPS	200	
Marking Tags	MT2	100	

Narrow Mounting Track

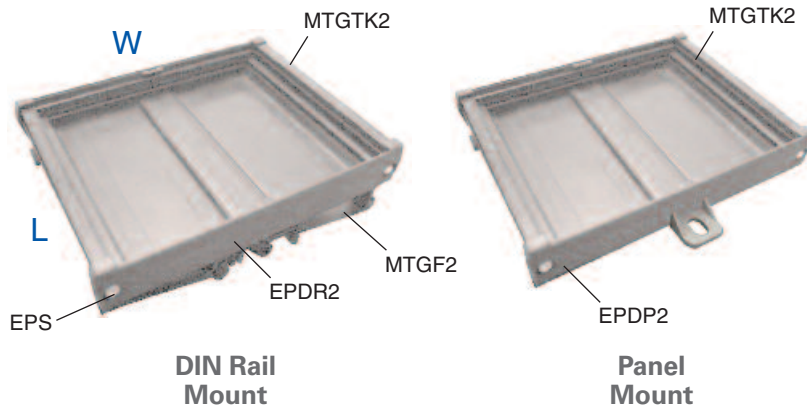


PCB Mounting Tracks

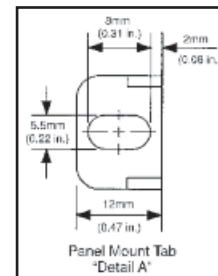
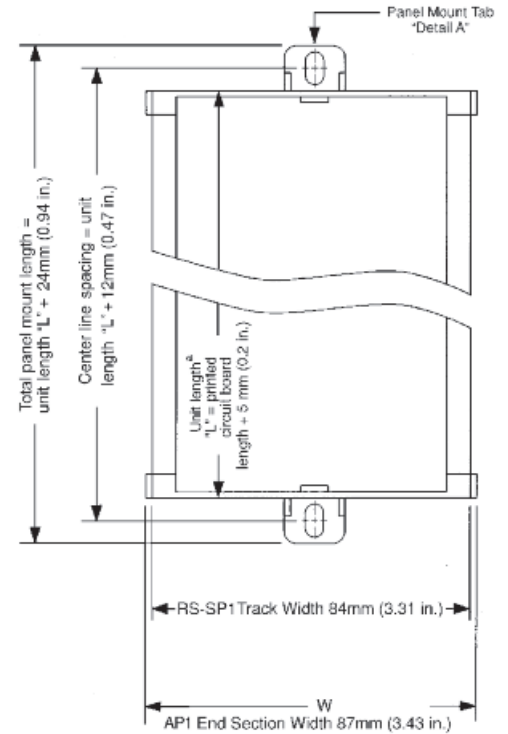
Narrow & Wide Mounting Track Extrusion and Components



For PC Board Widths 110mm (4.9 in.)



Panel Mount Details



- Mounting Track**
- 1 meter, grey
 - 2 meter, grey
 - 1 meter, green*
 - 2 meter, green*

Part Number	Std. Pk.
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Accessories

DIN Rail Mount End Section, grey	EPDR2	100
DIN Rail Mount End Section, green*	EPDR2/G	100

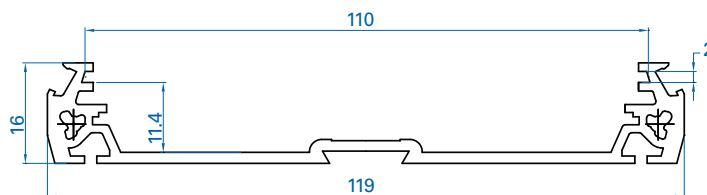
DIN Rail Mounting Foot, grey	MTGF2	100
DIN Rail Mounting Foot, green*	MTGF2/G	100

Panel Mount End Section, grey	EPDP2	100
Panel Mount End Section, green*	EPDP2/G	100

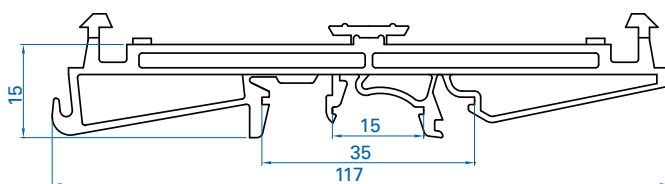
DIN Rail / Panel Mount End Section Screws #4x1/2", Phillips Pan head (2 required per end section)	EPS	200
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Marking Tags	MT2	100
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Wide Mounting Track



PCB MOUNTING TRACK (110 mm)



DIN RAIL MOUNTING FOOT (110mm)

Sizing Information

Printed Circuit Board Width

Track Type	High Guide (HG)
MTGTK2	110 ± 1mm (4.3 ± 0.05 in.)

Mounting Track Extrusion "Cut-to-Size" Formula

Extrusion Length = Printed Circuit Board Length - 4.5mm (.175 in.)

*Also applies for DIN Rail Mount Unit