Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Littelfuse®

Expertise Applied | Answers Delivered

CIRCUIT
PROTECTION
SOLUTIONS FOR
AUTOMOTIVE
APPLICATIONS

Transportation

Automotive • Commercial Vehicle Products (CVP)

Power Distribution Centers

FLEC™ FLEXIBLE ELECTRICAL CENTER

Specifications

Input Terminals:	(3) M8 or 3/8" input studs rated up to 100A each (*total input current dependent on customer-provided load matrix)
Output Terminals:	(38) 1.5mm blades (for 15A fuse) (38) 2.8mm blades (for 25A fuse)
Termination:	Uses Delphi GT series terminals and connectors (sealed)
Input Stud Torque:	12-18Nm
Mounting Torque:	6-8Nm
Materials:	UL94V-0 Thermoplastic with RoHS-compliant PCB; High-temp silicone cover gasket and stud caps; Plated-Cu terminals
Operating Temperature Range:	-40°C to 85°C
Ingress Protection Rating:	IP67

Description

The Flexible Electrical Center (FLEC™) is a configurable power distribution module for the heavy transportation (OTB) market. It accommodates circuit protection components in a compact, sealed footprint. Your custom electrical schematic is programmed into the FLEC™ to create a simple "plug-and-play" system.

Each program is reviewed by Littelfuse for proper ratings, thermal loading, and application. The FLEC™ mates to an industry standard connection system to provide a robust solution for heavy duty environments.

Contact Littelfuse for further information on FLEC™.

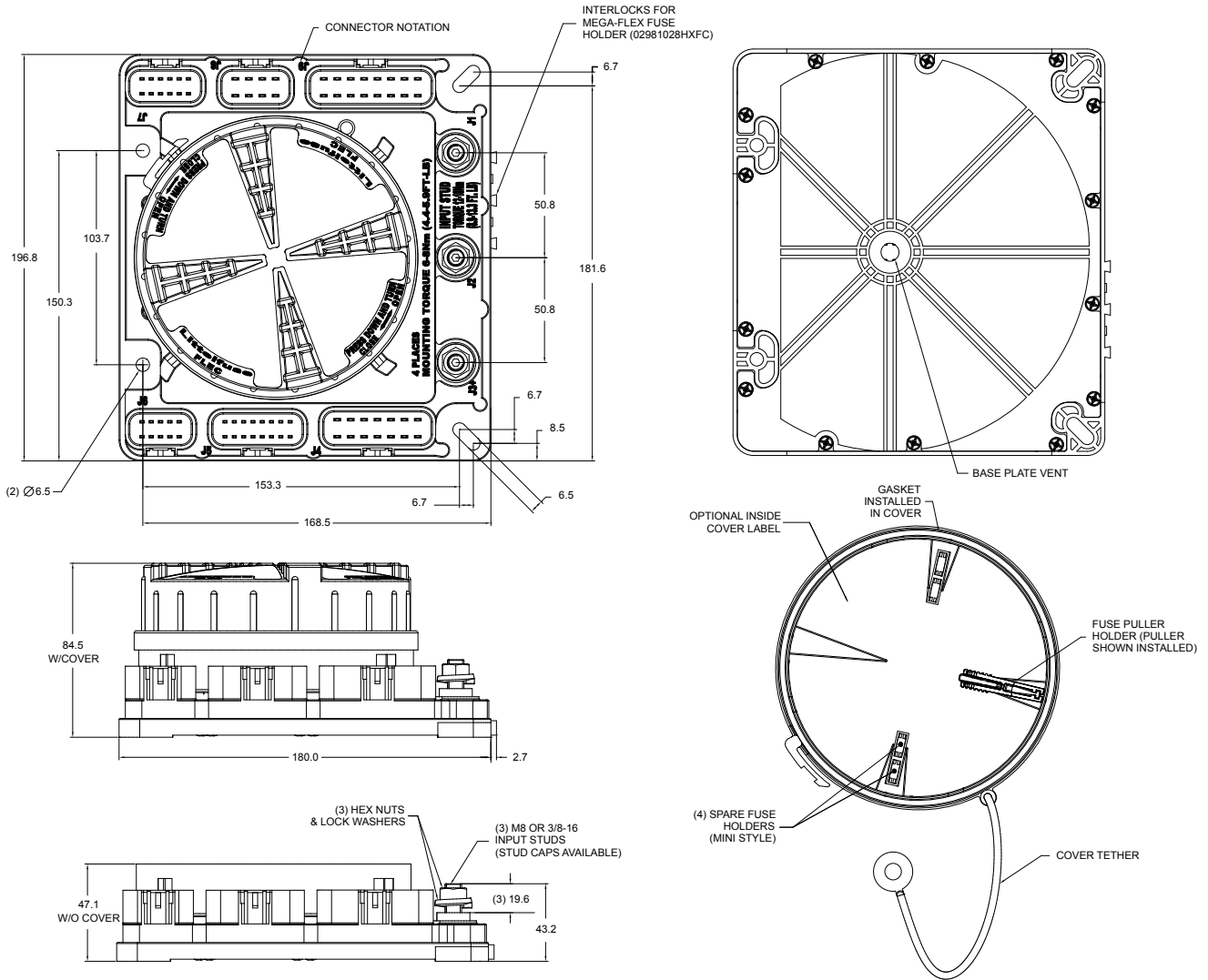## Features and Benefits

Cover:	Twist-on cover design allows for single-hand installation and removal
PCB:	Multi-layer board allows for custom circuit configurations
Base:	Includes vent for pressure equalization
High Component Density:	Accepts multiple component footprints (i.e. MINI®, JCASE®, PCB-mount, etc.) in one package; PCB-mount components can be installed directly to PCB (i.e. diodes, resistors, relays) for space and cost savings
InputProtection:	MEGA® fuse can be installed across M8 input studs to protect multiple circuits in FLEC™; Additional MEGA-FLEX holder can be interlocked to FLEC™ for added fuse protection
Accessories:	Fuse puller included in cover Input stud caps provided (red and black) Spare MINI® fuse positions available in cover Cover tether included

FLEC™ FLEXIBLE ELECTRICAL CENTER

RoHS

Dimensions

Dimensions in mm

CONNECTOR NOTATION

INTERLOCKS FOR MEGA-FLEX FUSE HOLDER (02981028HXFC)

6.7

50.8

181.6

50.8

196.8

103.7

150.3

6.7

8.5

(2) ∅6.5

153.3

6.7

6.5

168.5

84.5 W/COVER

180.0

2.7

47.1 W/O COVER

(3) HEX NUTS & LOCK WASHERS

(3) M8 OR 3/8-16 INPUT STUDS (STUD CAPS AVAILABLE)

(3) 19.6

43.2

BASE PLATE VENT

GASKET INSTALLED IN COVER

OPTIONAL INSIDE COVER LABEL

FUSE PULLER HOLDER (PULLER SHOWN INSTALLED)

(4) SPARE FUSE HOLDERS (MINI STYLE)

COVER TETHER

HWB60-SEALED HARD-WIRED MODULES (MINI STYLE)

Specifications

Max Fuse Size:	30A
# of Cavities:	60
Compatible Relay Types:	280 footprint micro & mini
Mounting Torque:	6-8Nm using M6 bolts and hardware
Materials:	UL 94V-0 glass-filled thermoplastic with silicone gasket
Labels:	Module & cover options
Accessories:	Spare fuse and fuse puller holder; Cover tether; TPA
Mating Terminals and Seals:	Delphi Metri-Pack 280 Sealed Female
Wire Sizes:	0.35 - 5.0mm^2
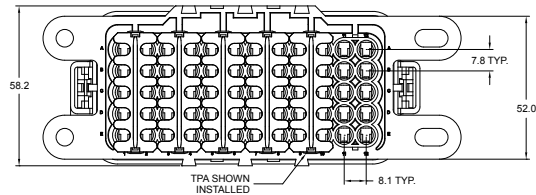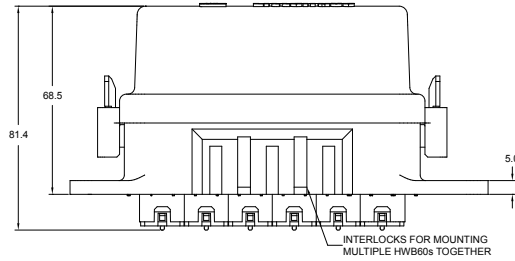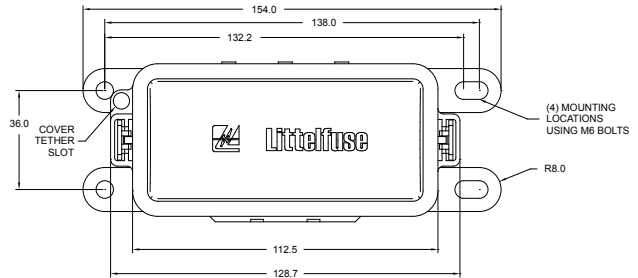
Description

The HWB60 is a hard-wired module for use with 280 style components (i.e. mini-fuses, relays, diodes, resistors, etc.) It features 60 cavities creating a high density fuse module with a compact footprint. Without internal bussing, it allows the flexibility of custom circuitry by the end user. Wires simply plug into the back of the module using sealed Delphi Metri-Pack Series 280 tanged terminals.

Sealing in the cover and around the wires allow for use in extreme environments. Dovetail features on the sides of unit allow the user to stack multiple HWB60's together to increase their circuit protection package. These same dovetails can also be used to attach an add-on component that holds a fuse puller and spare fuses. Cover tethers and TPAs (terminal position assurance locks) are also available.

Alternative component footprints may be available. Contact Littelfuse for more information.

Dimensions

Dimensions in mm (subject to change)

Ratings

Part Number	Description
PDM21001LXM	Complete Assembly (Base, Cover, Gasket, and 6 TPAs shipped bulk)
868-163	Base
873-029	Cover
901-315	Gasket
883-083	TPA

Bussed Power Distribution Modules

5 POSITION BLOCK FUSE HOLDER

## for ATO® Style Blade Fuse

RoHS

Description

Use with ATO® fuses up to 15A. Available in 5 pole unit with removable clear protective cover. Available in side or bottom positioned ¼" Q.C. terminal configurations. Unit with bottom Q.C. terminals includes detachable side mounting brackets.

Ordering Information

Part Number	Package Size
03500417TXN	10
03500417Z	120
03500418TXN	10
03500418Z	180
03500419TXN	10
03500419Z	150
03500420TXN	10
03500420Z	250

Dimensions
Dimensions in mm
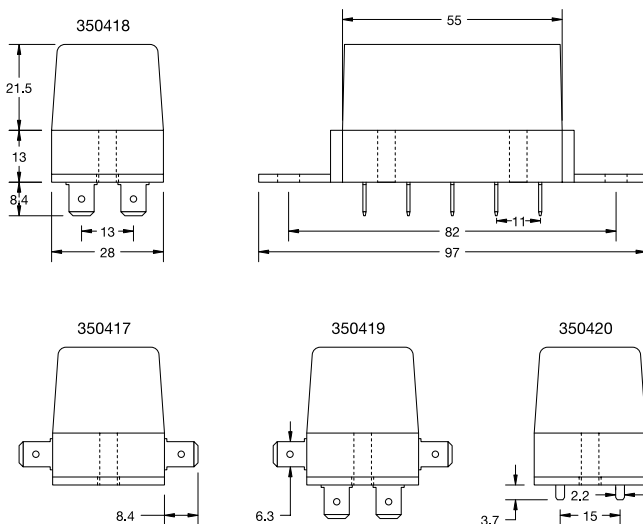
Ratings

Part Number	Description	Fuse Rating
03500418_	ATO® block 5 positions, vertical contacts	15 A
03500419_	ATO® block 5 positions, horizontal + vertical contacts	15 A
03500420_	ATO® block 5 positions, P.C. Board contacts	15 A
03500417_	ATO® block 5 positions, horizontal contacts	15 A

Corresponding fuse links see Section "Blade Fuses."
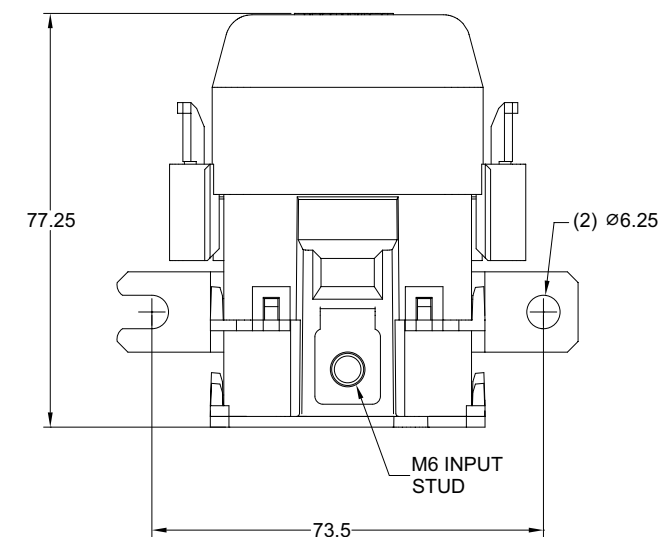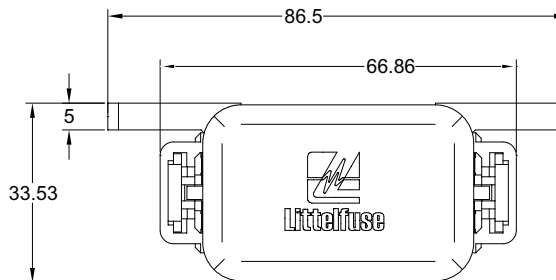
2+2 MINI® FUSE & JCASE® HOLDER

RoHS

Specifications

Mounting Torque:	6-8Nm
Input Stud Torque:	6-8Nm
Materials: Body & Cover:	UL 94V-0 Thermoplastic
Stud:	Zinc-plated steel
Bus Bar:	Tin-plated copper
Gasket:	Silicone
Mating Terminals & Seals Series:	
JCASE®:	Delphi Ducon 6.3 Sealed Male
MINI®:	Delphi Metri-Pack 280 Sealed Female

Dimensions
Dimensions in mm
(Subject to change)

Description

The 2+2 MINI® Fuse & JCASE® Holder accommodates two MINI® fuses and two JCASE® fuses. The use of these fuse types provides an amperage range of 2-60A in a compact package. The four fuses are bussed internally to the main input power stud. This allows the user to reduce wiring by making one input connection to power four fuse circuits.

The 2+2 holder is a sealed module enabling it to be used in heavy duty environments. A stud cap is provided to protect input stud area from accidental shorts. TPAs are also included to provide secondary locking of each wire terminal.

Ratings

Part Number	Description
BPDMA104HXF1	Assembly (base, cover & gasket assembled; hardware, and TPAs shipped bulk)

Junction Blocks

HIGH CURRENT SINGLE STUD FEED-THRU

RoHS

Specifications

Rating:	400A
Locknut Torque:	54.2 Nm
Body Mounting Nut Torque:	13.6 Nm
Materials:	Body-Nylon 66 (120˚C)
	Contact - Copper 110
	Studs - Zinc-plated steel
	Locknut - Zinc-plated steel
	Body nut - Nylon 66
	Stud caps - PVC
Operating Temperature Range:	-40˚C - 125˚C

Description

Our 3/8″ pass-thru stud has a high electrical rating and low resistance due to a large cross-sectional contact area. It also uses highly conductive materials to outperform the competition.

This pass-thru stud boasts high installation torque values to allow the use of large cable sizes for high current applications. Stud caps are included to protect from accidental shorts.

The pass-thru stud is available with red or black body and stud cap to help color-code circuits in the vehicle. A plastic body locknut ensures quick and easy firewall-mount installation without the need for additional hardware.
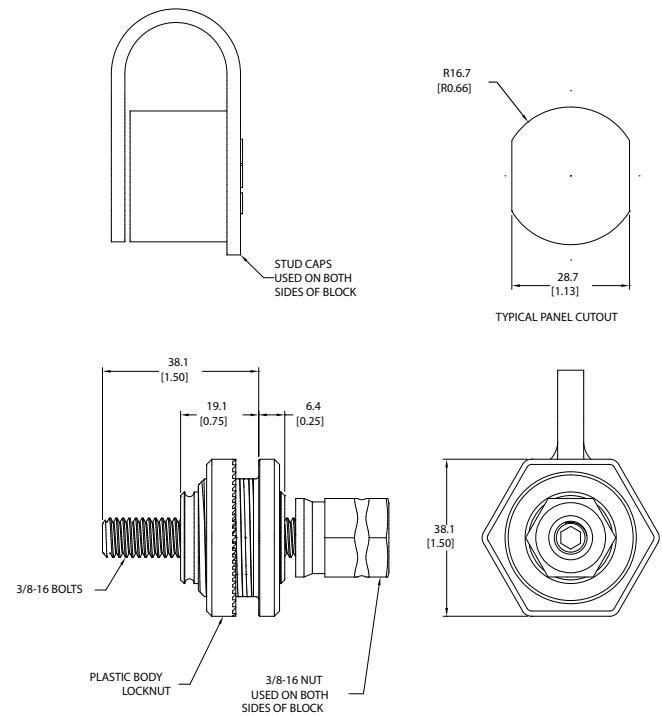
Dimensions
Dimensions in mm

STUD CAPS
USED ON BOTH
SIDES OF BLOCK

R16.7
[R0.66]

28.7
[1.13]

TYPICAL PANEL CUTOUT

38.1
[1.50]

19.1
[0.75]

6.4
[0.25]

3/8-16 BOLTS

PLASTIC BODY
LOCKNUT

3/8-16 NUT
USED ON BOTH
SIDES OF BLOCK

38.1
[1.50]

Ratings

Part Number	Color
JBPT0001Z	Red
JBPT0002Z	Black

SINGLE STUD JUNCTION BLOCKS (FEED-THRU & NON-FEED-THRU)

RoHS

Specifications

Materials:	Body: UL 94V-0 Thermoplastic
	Stud: Stainless steel
	Conductive Core: Plated copper
Hardware:	Lockwashers and nuts available;
	Protective stud caps available (red or
	black to match body color)
Thread Sizes:	Various available options
Operating Temperature Range:	-40°C - 125°C

Description

Junction Blocks are used as electrical connection points for the distribution of power or ground. These blocks can simplify cabling & architectures, and serve as convenient power tap points. Feed-thru versions enable firewall-mount applications and help reduce wiring costs and overall space required for cable routing.

Junction blocks are available in various thread sizes and lengths. Lock washers and nuts are included with each block. Stud caps are also available for protection from accidental shorts.

Contact Littelfuse for more sizes not shown.

SINGLE STUD JUNCTION BLOCKS (FEED-THRU & NON-FEED-THRU)
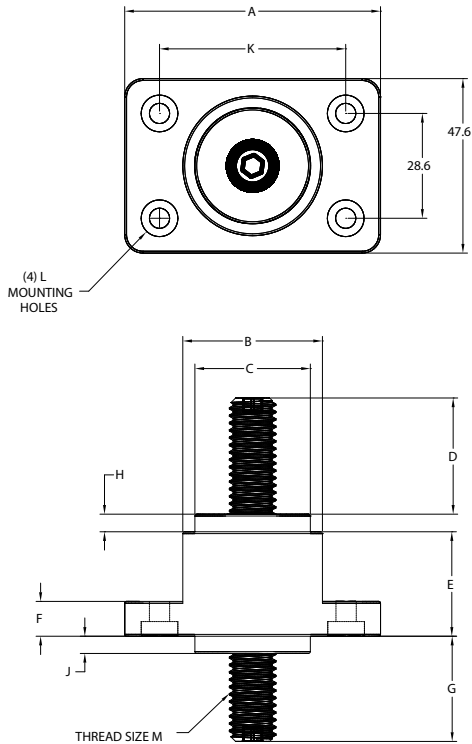
RoHS

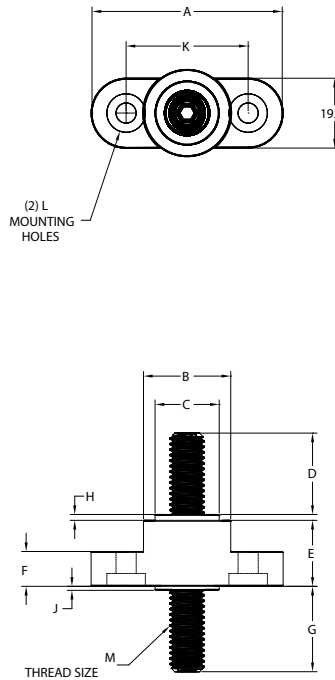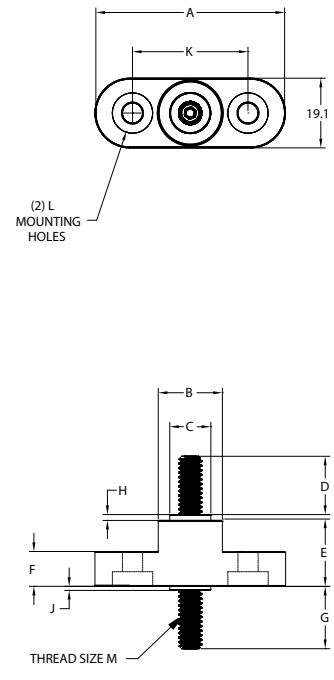## Dimensions

Dimensions in mm

FIGURE 1

FIGURE 2

FIGURE 3

PART NUMBER	FIGURE	A	B	C	D	E	F	G	H	J	K	L	M	COLOR
JBPT2P01ZXR	1	69.8	38.1	31.7	31.7	28.6	9.5	28.6	4.8	4.8	50.8	ø5.6 hole with ø11.2 C'bore x 4.1deep	½-13	RED
JBPT2N02ZXB	1	69.8	36.6	31.7	38.1	28.6	9.5	NONE	4.8	NONE	50.8	ø5.6	½-13	BLACK
JBPT2N03ZXB	1	69.8	36.3	31.7	38.1	28.6	9.5	NONE	4.8	NONE	50.8	ø5.6	5/16-18	BLACK
JBPT3P01ZXB	2	52.4	23.8	17.5	22.2	17.5	7.9	23.8	1.6	1.6	33.3	ø5.6 hole with ø10.4 C'bore x 3.6 deep	3/8-16	BLACK
JBPT3P02ZXB	2	52.4	22.2	15.9	15.9	28.6	7.9	23.8	1.6	1.6	33.3	ø5.6 hole with ø10.4 C'bore x 3.6 deep	3/8-16	BLACK
JBPT3N03ZXB	2	54.0	24.9	15.9	22.2	17.5	7.9	NONE	1.6	NONE	34.9	ø5.6 hole with ø9.4 C'bore x 3.6 deep	3/8-16	BLACK
JBPT3N03ZXR	2	54.0	24.9	15.9	22.2	17.5	7.9	NONE	1.6	NONE	34.9	ø5.6 hole with ø9.4 C'bore x 3.6 deep	3/8-16	RED
JBPT4P01ZXB	3	52.4	17.5	11.2	15.9	17.5	7.9	17.5	1.6	1.6	33.3	ø5.6 hole with ø10.4 C'bore x 3.6 deep	¼-20	BLACK

POWR-BLOK™ Modules

POWR-BLOK™ MODULES

Description

The Littelfuse POWR-BLOKS™ system gives you unlimited flexibility to design electrical distribution systems. It's a totally modular way to build your own junction box. POWR-BLOKS are perfect for applications where space or vehicle function demand a tailor made approach. The Littelfuse POWR-BLOKS can be modified, re-sized, reconfigured or added to at any time.
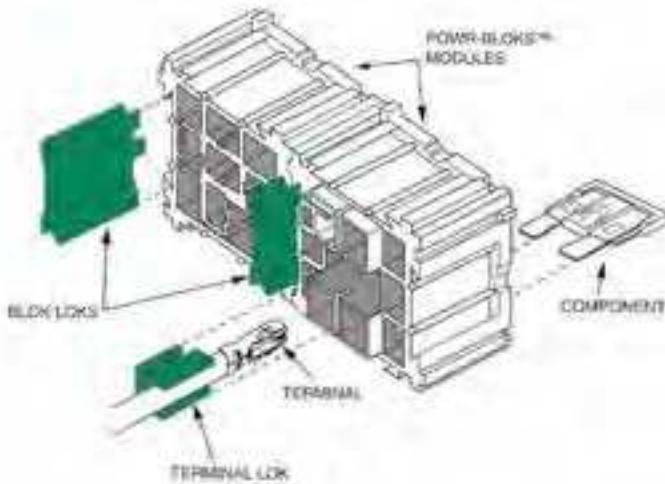
Mechanical Strength for Any Application

POWR-BLOKS modules are molded from glass reinforced nylon for dimensional stability, excellent rigidity, high and low temperature resistance and tensile strength:

Specifications

Test	POWR-BLOKS™ Standard
Voltage Rating	48VDC
Temperature range	-40°C to +125°C
Durability	Minimum 50 cycles of engagement/ disengagement
Drop	1.22 meters onto wooden platform
Thermal Shock	5 Cycles from -40°C to +125°C
Mechanical Shock	50g in each of 3 mutually perpendicular axis
Fluid Compatibility	Gasoline, diesel fuel, motor oil, antifreeze, brake fluid, ATF

*Max. Current Indication

The information listed as Max. current indication is to be used as a guideline only. The maximum allowable rating of the fuses used depends on design criteria such as maximum current, nominal current the duration for which the circuits are energized, as well as external factors as ambient temperature. All modules should therefore be tested as an assembly, and users should make their own evaluation to determine the suitability of the product for their specific applications.

How to use the Littelfuse POWR-BLOKS system

1. Identify the electrical system parameters
   - Space availability and requirements
   - Circuit protection components
   - Relay and flasher components
   - Components for special needs

2. Select the Littelfuse POWR-BLOKS components. Lay out the electrical panel as designed. Then determine the appropriate type and quantity of POWR-BLOKS modules, BLOCK LOKS and TERMINAL LOKS you need.

3. Build the panel by row. POWR-BLOKS can be assembled without special tools. Assemble the block from the rear by placing all modules face down on a flat surface. POWR-BLOKS should be designed by row, either going across or up and down.

4. Use BLOK LOKS to interconnect modules. BLOK LOKS are used to connect and stack POWR-BLOKS modules. Press together a row of modules and insert green BLOK LOKS until they snap into place. Repeat this procedure to interlock all assembled rows.

5. Add mounting modules. Once a POWR-BLOKS panel is assembled, add mounting modules that are most suitable for your application. Mounting options include surface mounting legs, a side mounting bracket and a mounting module with three different sized spacers.

6. Plug in terminated wiring. Wire your POWR-BLOKS panel and plug in the terminated wires, then insert the optional matching TERMINAL LOKS devices. Littelfuse TERMINAL LOKS are designed to fit special POWR-BLOKS modules and inserted in the same manner as BLOK LOKS.

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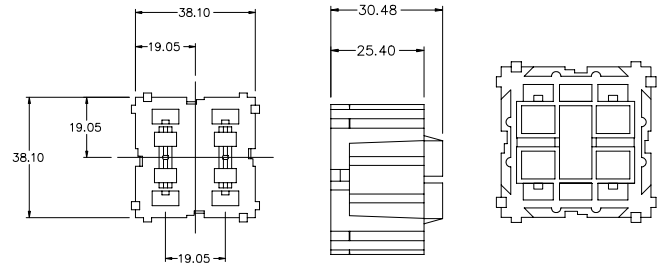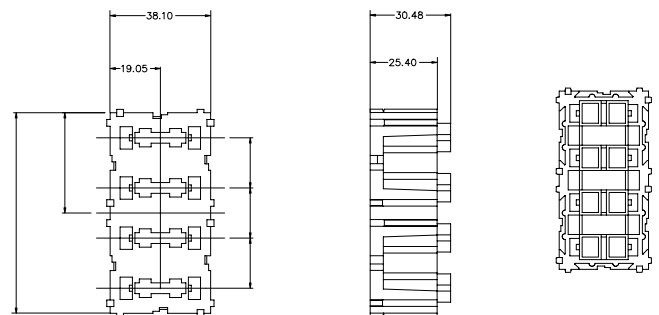
Fuse Modules

2-POSITION ATO® STYLE FUSE AND CIRCUIT BREAKER MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540501Z (40 pcs.)	60A	Type 1 or 7	Type 4, 5 or 6

4-POSITION ATO® STYLE FUSE AND CIRCUIT BREAKER MODULE
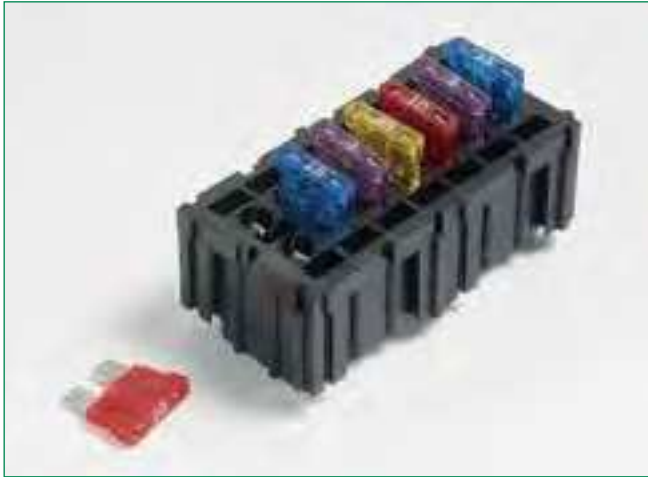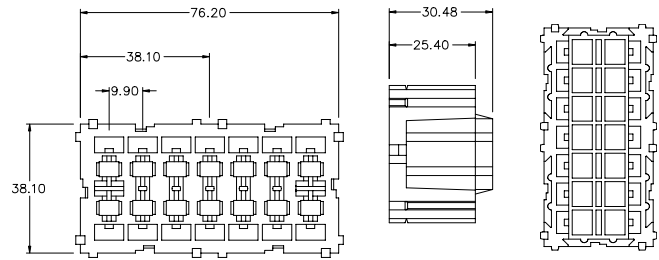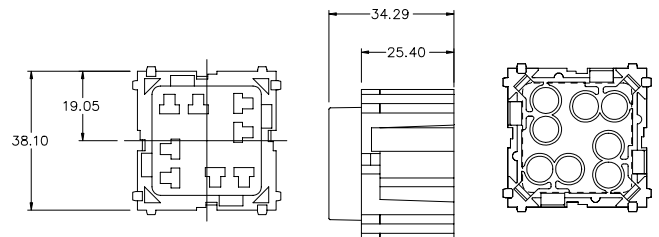
RoHS

Dimensions
Dimensions in mm

Ratings

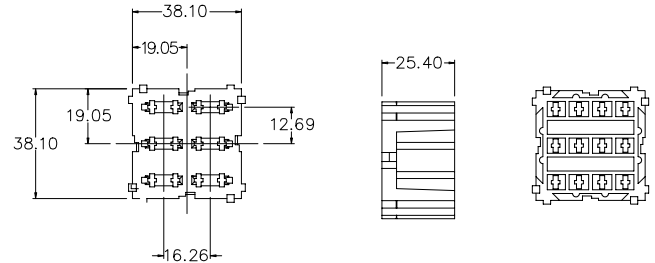| Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540502Z (20 pcs.)	120A	Type 1 or 7	Type 4, 5, 6 or 7

7-POSITION ATO® STYLE FUSE AND CIRCUIT BREAKER MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

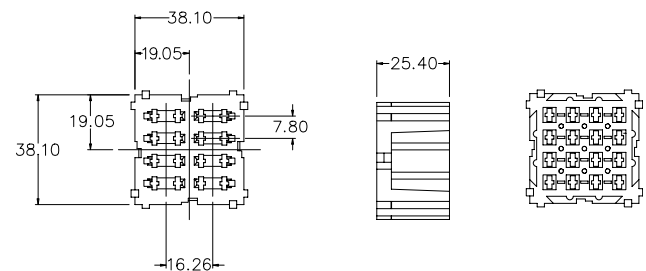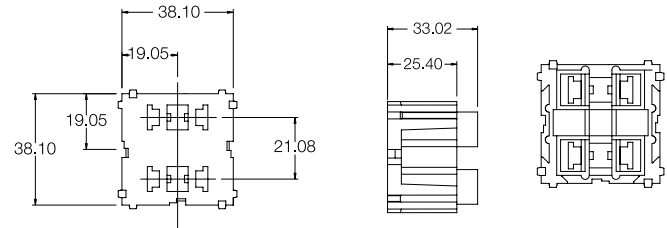| Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540503Z (20 pcs.)	120A	Type 1 or 7	Type 4 or 5

4-POSITION MINI® STYLE FUSE MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540532Z (40 pcs.)	60A	Type 6	–

6-POSITION MINI® STYLE FUSE MODULE

RoHS

Dimensions
Dimensions in mm

38.10
19.05
19.05
38.10
12.69
16.26
25.40

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540543Z (40 pcs.)	60A	Type 8	–

8-POSITION MINI® STYLE FUSE MODULE

RoHS

Dimensions
Dimensions in mm

38.10
19.05
19.05
38.10
7.80
16.26
25.40

Ratings

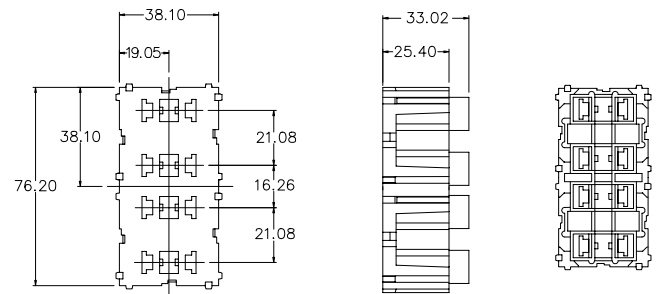| Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540544Z (40 pcs.)	60A	Type 8	–

2-POSITION MAXI™ STYLE FUSE MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540549Z (40 pcs.)	80A	Type 2	Type 8

4-POSITION MAXI™ STYLE FUSE MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540505Z (20 pcs.)	160A	Type 2	Type 8

Relay Modules

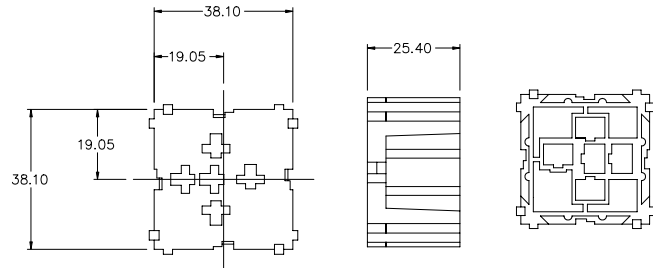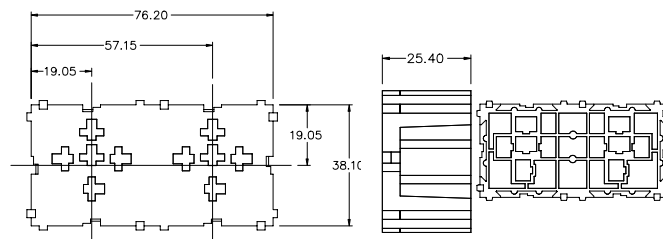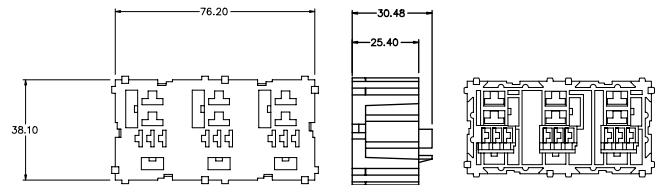# 1-POSITION ISO RELAY MODULE

Alternative for: 3 pin flasher module

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Remarks	Terminals (see according section)	Terminal Loks (see according section)
03540506Z (40 pcs.)	–	Type 3	Type 1

2-POSITION ISO RELAY MODULE

Alternative for: 3 pin flasher module

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Remarks	Terminals (see according section)	Terminal Loks (see according section)
03540536Z (20 pcs.)	–	Type 3	Type 1

Littelfuse®
Expertise Applied | Answers Delivered

3-POSITION MICRO RELAY MODULE

RoHS

Dimensions
Dimensions in mm

76.20 / 30.48 / 25.40 / 38.10

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540507Z (20 pcs.)	Coil and normally closed contacts	Type 5	Type 3
03540507Z (20 pcs.)	Normally open contacts	Type 3	Type 2

1-POSITION 9 PIN RELAY MODULE

RoHS

Dimensions
Dimensions in mm

38.10 / 19.05 / 19.05 / 38.10 / 25.40

Ratings

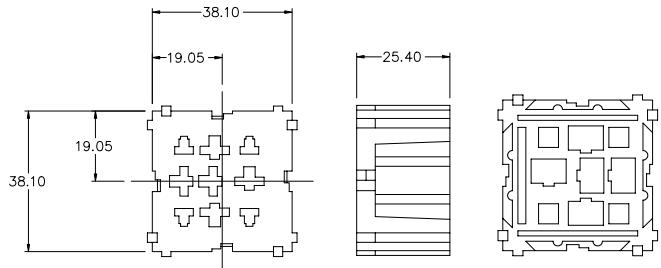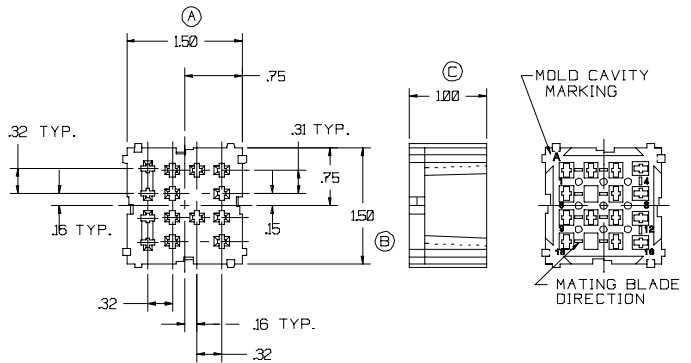| Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540542Z (40 pcs.)	5 "Inner" pins	Type 3	Type 1
03540542Z (40 pcs.)	4 "Outer" pins	Type 6	–

2-POSITION 280 MICRO RELAY + 2 POSITION MINI® STYLE FUSE

RoHS

Dimensions
Dimensions in mm

Ratings

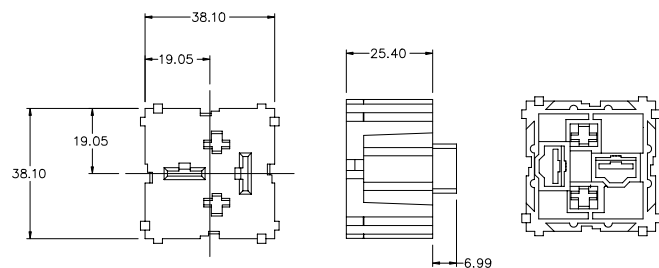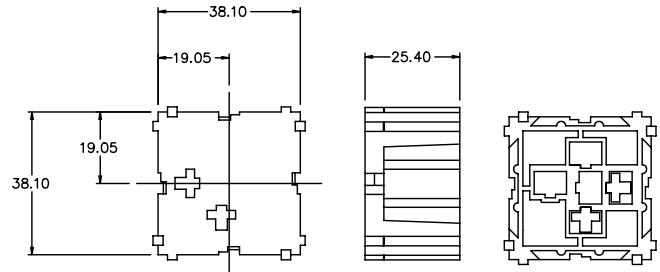| Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540551Z (40 pcs.)	Max. current indication 30A	Type 8	–

1-POSITION POWER RELAY MODULE

RoHS

Dimensions
Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540535Z (40 pcs.)	Coil	Type 3	Type 1
03540535Z (40 pcs.)	Contacts	Type 4	–

Expertise Applied | Answers Delivered

2-PIN FLASHER MODULE

RoHS

Dimensions

Dimensions in mm

Ratings

Part Number	Max. Current Indication	Terminals (see according section)	Terminal Loks (see according section)
03540508Z (40 pcs.)	–	Type 3	Type 1

Specialty Modules