1 Order the PDU you require

POWER DISTRIBUTION UNIT - MULTIPLEXED (mVEC) LOADED

Bussmann

UPDATED IP66

The multiplexed Vehicle Electrical Center (mVEC) is a power distribution node on a J1939 network, controlling relays based on information from the central vehicle controller. The mVEC will also return power distribution status information like relay state, failed relay, missing component or blown fuse.

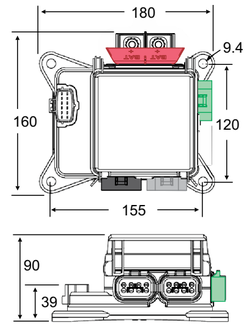
High Power: Each mVEC is rated at 200A, with individual outputs rated up to 30A (max of 32 outputs). 12V and 24V systems are supported.
Flexible: The mVEC is offered in various standard and customized versions. Custom versions are configured to OEM wiring requirements. The mVEC accepts fuses, relays, circuit breakers, resistors, diodes, etc.- based on industry standard 2.8mm footprint.
Cost Effective: An alternative to high current, solid-state power distribution modules and features serviceable components. The mVEC is designed as a slave module, it is controlled by master modules. Standard units below come pre-loaded with relays, fuses and a fuse puller (P/N: 32013BS).
Custom Ordering Options:
- Cover marking: laser etching inside, outside or both.
- Compression limiters on mounting feet.
- Stuffed (with/without) components ie. fuses, relays, diodes,breakers, fuse puller.
- Customised circuit layouts, standard and custom CAN messages.

MVEC
31M Series

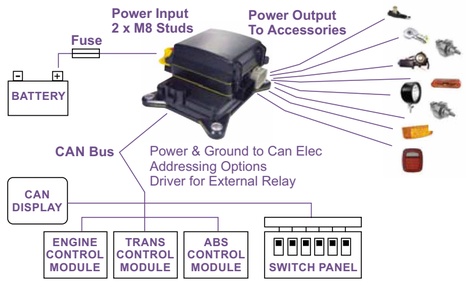
Part Number	MVEC Model and Contents - Factory Installed and Tested.	Matching Output Connector
31M-327-0	MVEC (4 x 12V Ultra Micro Relays & 23 x Mini fuses & Fuse Puller)	Green ■ Black ■ Grey ■
31M-000-2	MVEC (8 x 12V Ultra Micro Relays & 16 x Mini fuses & Fuse Puller)	Black ■ Grey ■
31M-300-0	MVEC (12 x 12V Ultra Micro Relays & 8 x Mini fuses & Fuse Puller)	Black ■ Grey ■
31M-328-0	MVEC (4 x 24V Ultra Micro Relays & 23 x Mini fuses & Fuse Puller)	Green ■ Black ■ Grey ■
31M-329-0	MVEC (8 x 24V Ultra Micro Relays & 16 x Mini fuses & Fuse Puller)	Black ■ Grey ■
31M-330-0	MVEC (12 x 24V Ultra Micro Relays & 8 x Mini fuses & Fuse Puller)	Black ■ Grey ■

Voltage: 12VDC or 24VDC Options..
Rating: 200A max.
Input Studs: 2 x M8, 100A max each.
Fuses: 10A Mini fuses (pre-installed).
Relays: 4 pin ISO 280 Ultra Micro (SPST). 12VDC 20A or 24VDC 10A (pre-installed)
Fuses: 10A Mini fuses (pre-installed).
CAN Connector: AMP SSC 12-position sealed connector.
Output Connectors: up to 4, 100A max each, colour coded & sealed.
Output Connector Terminals: Delphi Metri-Pack 280 Female Sealed (Tanged). Refer below for further details on terminals, seals and cavity plugs.
Output Connector Terminal Rating: 30A max each.
Output Connector Cable Seals & Cavity Plug: Delphi Metri-Pack 280 series.
Operating Temp.: -40 °C to +85 °C.
Fuse Puller: 32013BS (pre-installed).

Notes: Customers must follow the factory guidelines and adhere to installation instructions which include restrictions on mounting orientation. Documentation is available on request. Connectors are not included. Each connector is keyed and only fits into the same colour connector on the unit.



Dimensions in MM



2 Order the connectors & terminals

Connectors are not included with the power distribution unit and must be ordered separately. You will also need to order terminals, cable & cavity seals for each connector. Terminals & seals can be ordered in individual packs or as a kit containing a mix of different sizes. Terminal crimping & removal tools are also available as shown below.

PDU COLOUR CODED CONNECTORS

Prolec

These connectors are designed to fit the Bussmann ssVEC, ssDEV and mVEC power distribution units. They are colour coded and keyed, so each connector will only fit into the corresponding colour connector on the unit.

The terminals that suit these connectors are the Delphi Metri-Pack 280 Female Sealed Tanged terminals and are available in a variety of different cable sizes. They are rated to 30A max and can be fitted with a cable seal. **Terminals and cable seals are not included.** Please refer below to order as seperate parts or in a kit.

Part Number	Description
32006-A22	Black Connector ■
32006-B22	Grey Connector ■
32006-C22	Green Connector ■
32006-TP2	Secondary Lock (TPA)
MVECCCK	CAN Connector Kit- Connector, Terminals, Seals and TPA.

MVECCCK Connector

Secondary Lock secures terminals in the connector.

Secondary Lock fitted to connector.

DELPHI METRI-PACK 280 TERMINALS & SEALS

Prolec

Part Number	Description	Wire (mm)
12084201	Terminal Female (#22 - #20AWG)	0.35 - 0.5mm²
12077411	Terminal Female (#18 - #16AWG)	0.80 - 1.0mm²
12129493	Terminal Female (#14 - #12AWG)	2.0 - 3.0mm²
12077413	Terminal Female (#10AWG)	5.0mm²
15324983	Cable Seal Dark Red	1.70 - 1.29 dia.
15324982	Cable Seal Green	2.85 - 2.03 dia.
15324980	Cable Seal Grey	3.49 - 2.81 dia.
15324981	Cable Seal Blue	4.30 - 3.45 dia.
12010300	Cavity Plug Green	-

ACCESSORIES: Delphi Metri-Pack 280
TERMINALS: TANGED
Female Sealed
Tin Brass / Tin plated

CABLE SEALS:
Silicone

CAVITY PLUG:
Silicone

Pack Size: 10
Note: To ensure the connector is sealed, one cable seal must be fitted to each terminal and cavity plugs are installed where wires are not used.

DELPHI METRI-PACK 280 TERMINAL & SEAL KITS

Prolec

NEW

Part Number	Description
TERMKIT002	170 piece Metri-Pack 280 Tanged Female Terminal & Seal Kit
TERMKIT003	310 piece Metri-Pack 280 Tanged Female Terminal & Seal Kit

TERMKIT002 TERMKIT003

Quantity	Quantity	Part Number	Description	Wire (mm)
10	20	12077411	Terminal Female (#18 - #16AWG)	0.80 - 1.0mm²
40	70	12129493	Terminal Female (#14 - #12AWG)	2.0 - 3.0mm²
20	40	12077413	Terminal Female (#10AWG)	5.0mm²
10	20	15324982	Cable Seal Green	2.85 - 2.03 dia.
40	70	15324980	Cable Seal Grey	3.49 - 2.81 dia.
20	40	15324981	Cable Seal Blue	4.30 - 3.45 dia.
30	50	12010300	Cavity Plug Green	-

TERMINAL CRIMPING TOOL

Delphi / MTA / Prolec

These tools are designed to crimp a terminal onto a stripped end of a electrical cable.

Part Number
CT-P78

Need help using this crimp tool?
Scan the QR code to view instructions.

Scan this QR Code for more information

QR Code: 8001

TERMINAL REMOVAL TOOLS

Delphi Packard

These tools are designed to remove terminals fitted in PDM's, holders or connectors.

Part Number
12094429

Extracts: Delphi GT 150; GT 280; 150 Metri-Pack; 280 Metri-Pack; 280 Tangless & 280 Bus Bar; 630 Pull-To-Seat; Lamp Socket Bases, B-1 & W-3; 800 Metri-Pack Female.
Notes: As used in BPDMA104, 15303, 15401, CFH, PDM21001 and PDM31001 power distribution modules.
Pack Size: 1

3 Order alternative / spare parts

Fuses and relays are included with the power distribution unit as specified. Should you require spares or wish to change the parts supplied with the unit, the following parts can be ordered for use in the matching unit.

ISO 280 ULTRA MICRO RELAYS - 303 SERIES

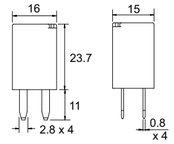
Part Number	Description
3031AHCR112	12V Normally Open 4 pin (SPST)
3031AHCR124	24V Normally Open 4 pin (SPST)

Contact ratings for resistive load

Amp Rating	Protection
20A (14VDC)	½W 1.1KΩ resistor
10A (28VDC)	½W 4.3KΩ resistor

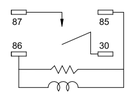
Contact Rating (Motor /Lamp) N/O: 16A (14VDC) / 11.11A 80A
Coil Current: 80mA (12V), 40mA (24V)
Coil Resistance: 150Ω (12V), 600Ω (24V)
Contact Voltage Drop: Typ. 50mV at 10A
Contact Material: Silver Tin Oxide alloy (AgSno)
Operate / Release Time: 10ms max. / 10ms max.
Enclosure: flux tight seal.
Temperature: -40 to + 125°C (no freezing)
Mechanical Life Expectancy: 10 million operations.
Pack Size: 1pc, 10pcs, 100pcs, 500pcs.
Options: Sealed washable enclosure. Diode protection.

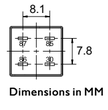
Approval: ELV-2000/53/EC RoHS



3031AHCR1 series

Terminal Size
2.8mm





Dimensions in MM

FUSE & BLADED BREAKER PULLER

Features
- Fuse pullers allow quick and easy removal of a fuse.
- They can also be used to replace a fuse.

The puller is included with the PDU, but spares can be purchased seperately.

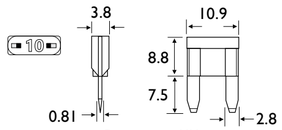
Part Number	Extracts
32013BS	Mini Fuse, Mini Fuse & Mini Breaker

MINI FUSE 32V

Littelfuse / Bussmann
Fast Acting

Part Number	Ampere Rating	Body Colour
MIN002	2A	Grey
MIN003	3A	Violet
MIN004	4A	Pink
MIN005	5A	Tan
MIN07.5	7.5A	Brown
MIN010	10A	Red
MIN015	15A	Blue
MIN020	20A	Yellow
MIN025	25A	Natural
MIN030	30A	Green

I.R.: 1000A at 32VDC
Voltage: 32VDC
Pack Size: 5, 10, 100
Holders: Clips, PCB Blocks, Inline, Add-a-Circuits, Blocks & Power Distribution Modules.
Approvals: ISO 8820 / SAE J2077 / UL 248 SAE RoHS



Dimensions in MM

MINI FUSE INDICATING 32V

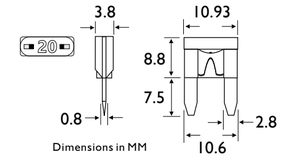
Prolec
Fast Acting

Uses LED technology to indicate a blown fuse. Designed as a drop-in replacement for non-indicating Mini fuse. Same universal colour coding as non-indicating Mini fuses.

Fuse glows when it is blown.

Part Number	AmpereRating	Body Colour
MIND003-32V	3A	Violet
MIND005-32V	5A	Tan
MIND07.5-32V	7.5A	Brown
MIND010-32V	10A	Red
MIND015-32V	15A	Blue
MIND020-32V	20A	Yellow
MIND025-32V	25A	Natural
MIND030-32V	30A	Green

Voltage: refer above
Pack Size: 2, 5, 10, 100
Holders: Clips, PCB Blocks, Inline, Blocks & Power Dist.
Features: Mini fuse with blown fault indicator.
Approvals: RoHS



Dimensions in MM

BLADE FUSE ASSORTMENT KITS

Prolec
Blade Types

Mini Blade Fuse Retail Assortment Pack - 35pcs

NEW

Part Number	Kit Contains
MINI-KIT2	MINI (5pcs): 5A, 7.5A, 15A, 25A, 30A

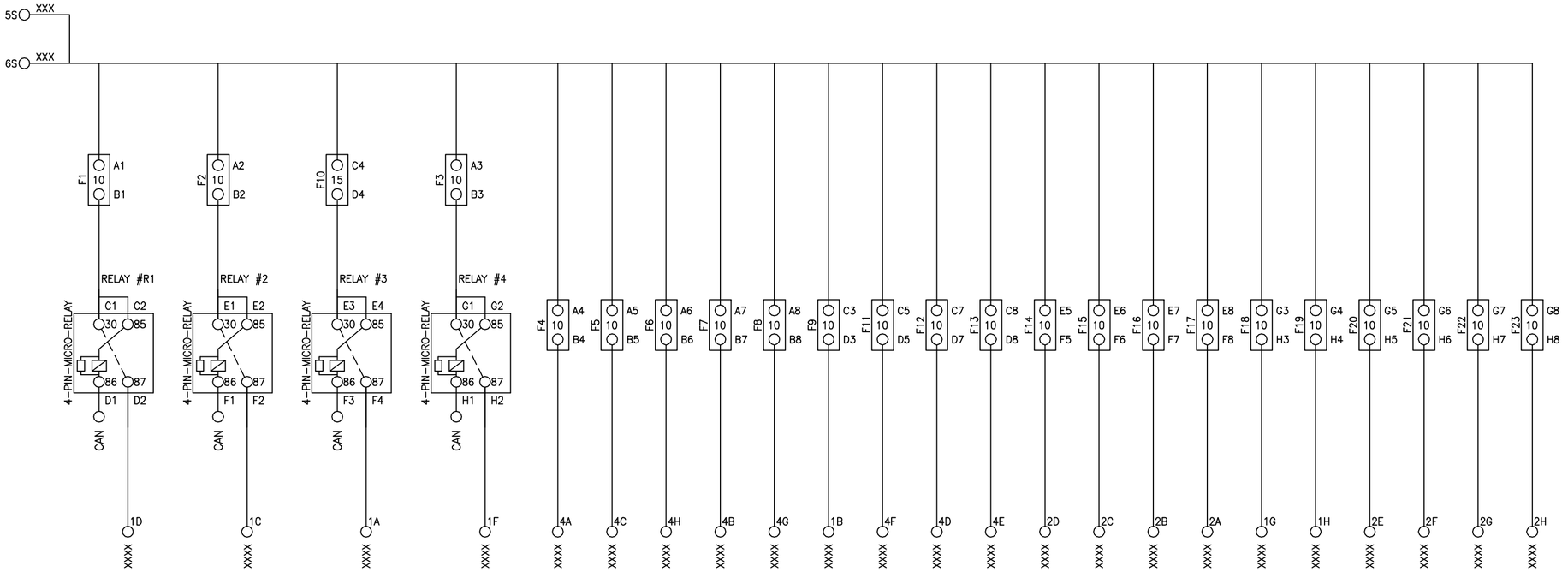
Mini Blade Assortment Fuse Kit - 100pcs

Part Number	Kit Contains
MINI-KIT	MINI (10pcs): 3A, 5A, 7.5A, 15A, 25A, 30A MINI (20pcs): 10A, 20A

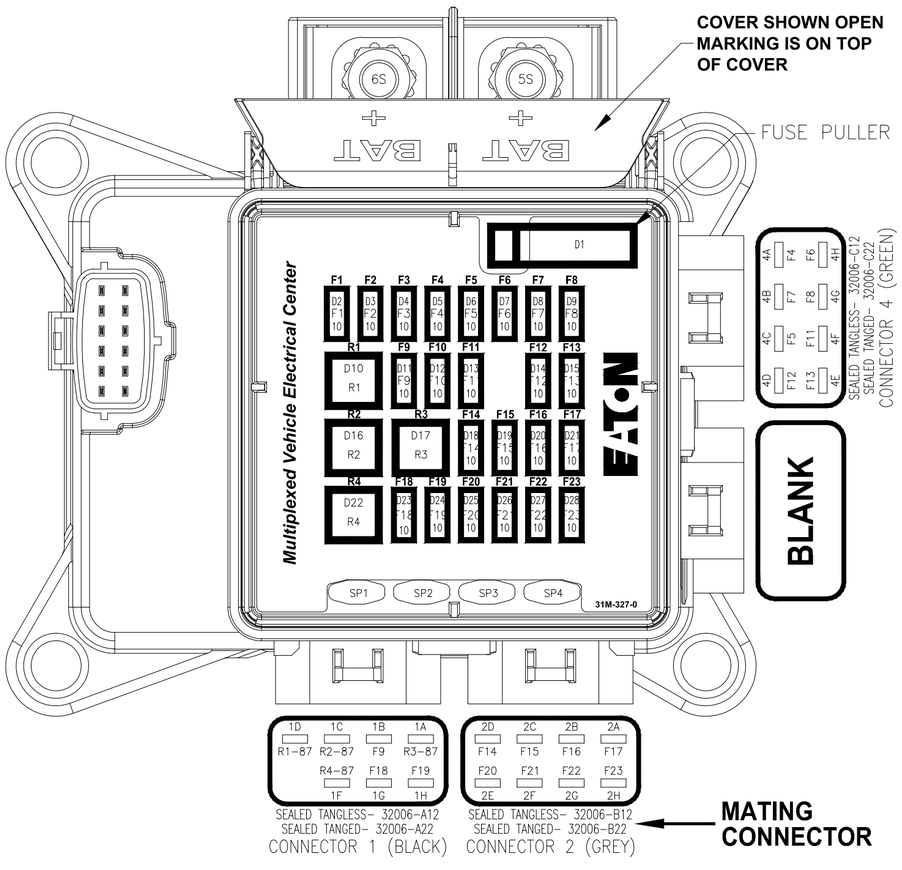
LED Mini Blade Assortment Fuse Kit - 81pc

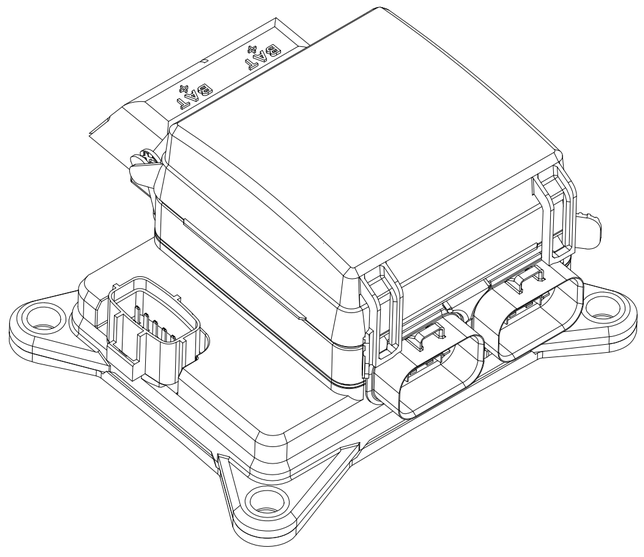
NEW

Part Number	Kit Contains
MIND-KIT	MINI LED (10pcs): 3A, 5A, 7.5A, 10A, MINI LED (10pcs): 15A, 20A, 25A, 30A Fuse Puller (1pc): FP-7AM



DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	XX	FUSE PULLER	32013BS
D2	F1	MINI FUSE	ATM-10UNP-PEC
D3	F2	MINI FUSE	ATM-10UNP-PEC
D4	F3	MINI FUSE	ATM-10UNP-PEC
D5	F4	MINI FUSE	ATM-10UNP-PEC
D6	F5	MINI FUSE	ATM-10UNP-PEC
D7	F6	MINI FUSE	ATM-10UNP-PEC
D8	F7	MINI FUSE	ATM-10UNP-PEC
D9	F8	MINI FUSE	ATM-10UNP-PEC
D10	R1	12V,20A 4-PIN MICRO	B120-7022J
D11	F9	MINI FUSE	ATM-10UNP-PEC
D12	F10	MINI FUSE	ATM-10UNP-PEC
D13	F11	MINI FUSE	ATM-10UNP-PEC
D14	F12	MINI FUSE	ATM-10UNP-PEC
D15	F13	MINI FUSE	ATM-10UNP-PEC
D16	R2	12V,20A 4-PIN MICRO	B120-7022J
D17	R3	12V,20A 4-PIN MICRO	B120-7022J
D18	F14	MINI FUSE	ATM-10UNP-PEC
D19	F15	MINI FUSE	ATM-10UNP-PEC
D20	F16	MINI FUSE	ATM-10UNP-PEC
D21	F17	MINI FUSE	ATM-10UNP-PEC
D22	R4	12V,20A 4-PIN MICRO	B120-7022J
D23	F18	MINI FUSE	ATM-10UNP-PEC
D24	F19	MINI FUSE	ATM-10UNP-PEC
D25	F20	MINI FUSE	ATM-10UNP-PEC
D26	F21	MINI FUSE	ATM-10UNP-PEC
D27	F22	MINI FUSE	ATM-10UNP-PEC
D28	F23	MINI FUSE	ATM-10UNP-PEC

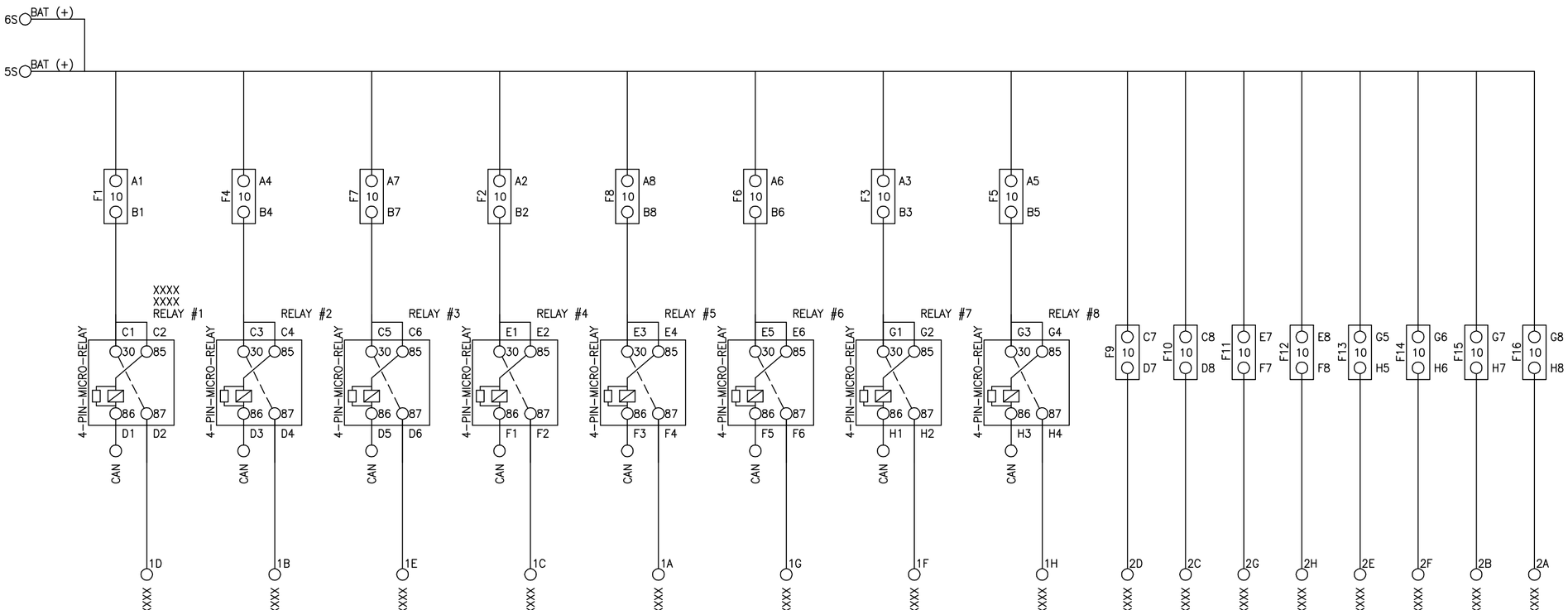




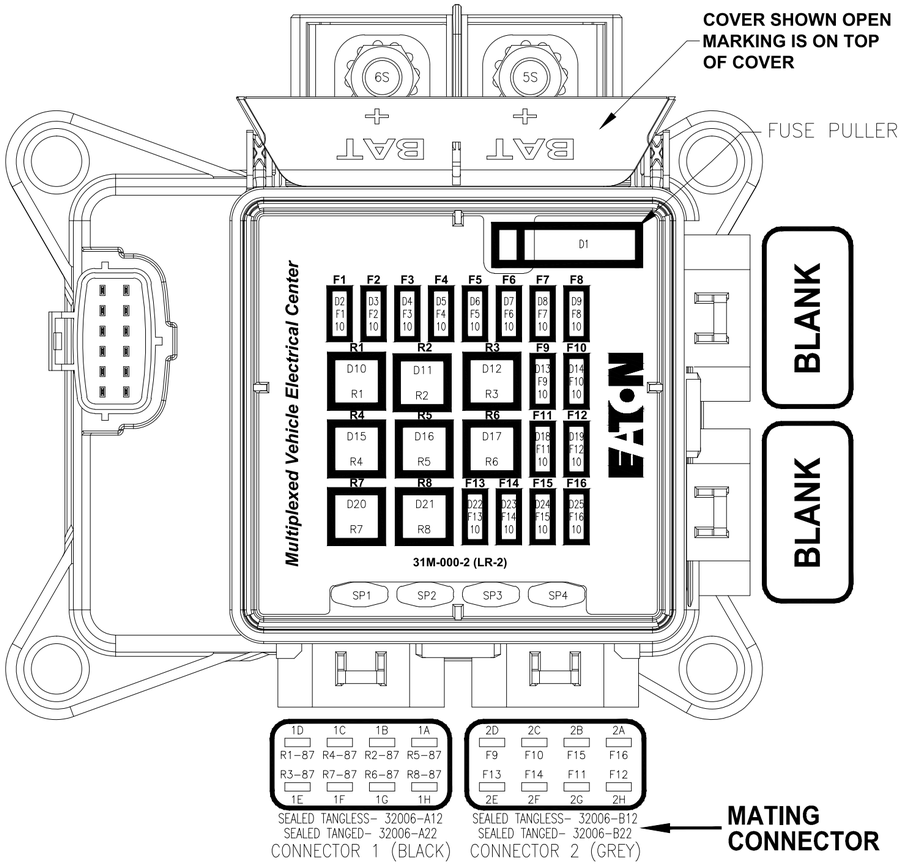
DEVICE TOTALS		
DEVICE	PART #	AMOUNT
FUSE PULLER	32013BS	1
12V,20A 4-PIN MICRO	B120-7022J	4
MINI FUSE	ATM-10UNP-PEC	23

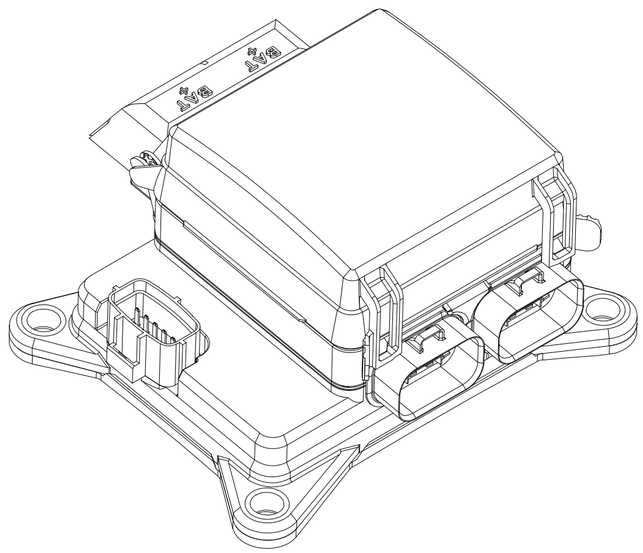
31M-327-0
mVEC Power Distribution Unit

23 x Mini fuses (all 10A), 1 x Fuse Puller,
4 x ISO280 12VDC 20A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.



DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	XX	FUSE PULLER	32013BS
D2	F1	MINI FUSE	ATM-10UNP-PEC
D3	F2	MINI FUSE	ATM-10UNP-PEC
D4	F3	MINI FUSE	ATM-10UNP-PEC
D5	F4	MINI FUSE	ATM-10UNP-PEC
D6	F5	MINI FUSE	ATM-10UNP-PEC
D7	F6	MINI FUSE	ATM-10UNP-PEC
D8	F7	MINI FUSE	ATM-10UNP-PEC
D9	F8	MINI FUSE	ATM-10UNP-PEC
D10	R1	12V,20A 4-PIN MICRO	B120-7022J
D11	R2	12V,20A 4-PIN MICRO	B120-7022J
D12	R3	12V,20A 4-PIN MICRO	B120-7022J
D13	F9	MINI FUSE	ATM-10UNP-PEC
D14	F10	MINI FUSE	ATM-10UNP-PEC
D15	R4	12V,20A 4-PIN MICRO	B120-7022J
D16	R6	12V,20A 4-PIN MICRO	B120-7022J
D17	R6	12V,20A 4-PIN MICRO	B120-7022J
D18	F11	MINI FUSE	ATM-10UNP-PEC
D19	F12	MINI FUSE	ATM-10UNP-PEC
D20	R7	12V,20A 4-PIN MICRO	B120-7022J
D21	R8	12V,20A 4-PIN MICRO	B120-7022J
D22	F13	MINI FUSE	ATM-10UNP-PEC
D23	F14	MINI FUSE	ATM-10UNP-PEC
D24	F15	MINI FUSE	ATM-10UNP-PEC
D25	F16	MINI FUSE	ATM-10UNP-PEC

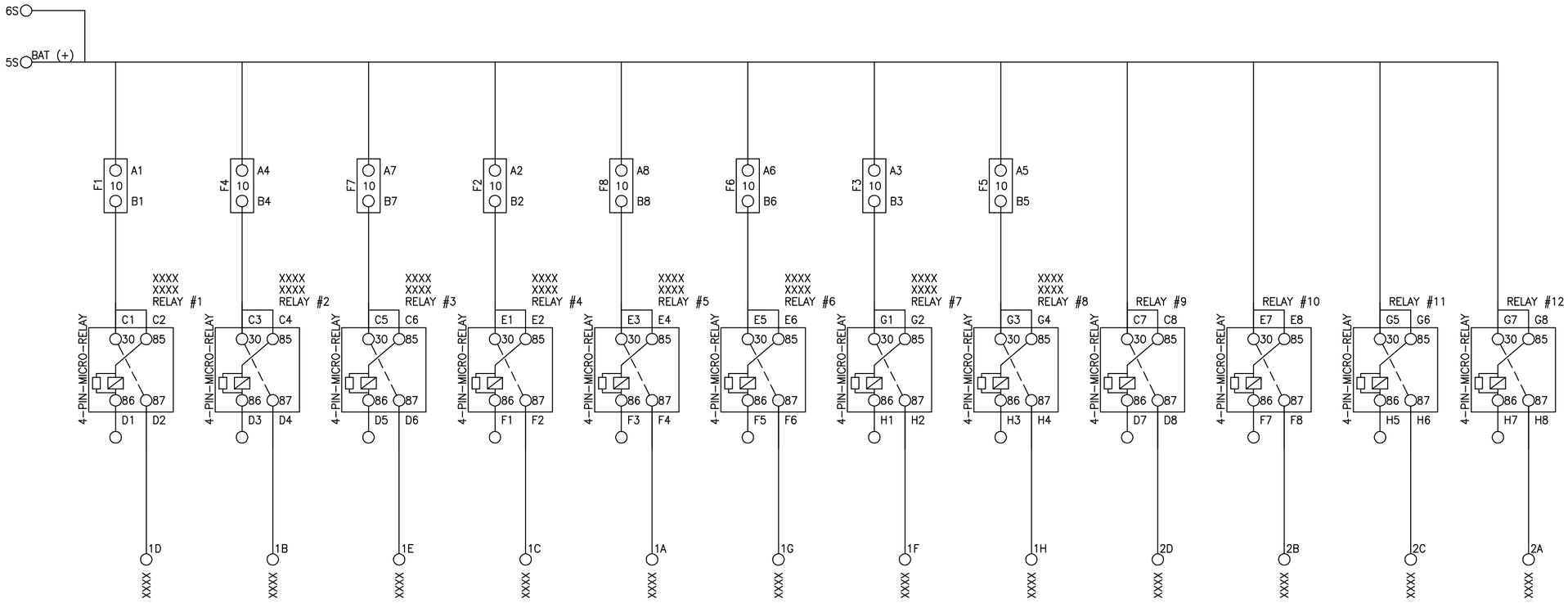


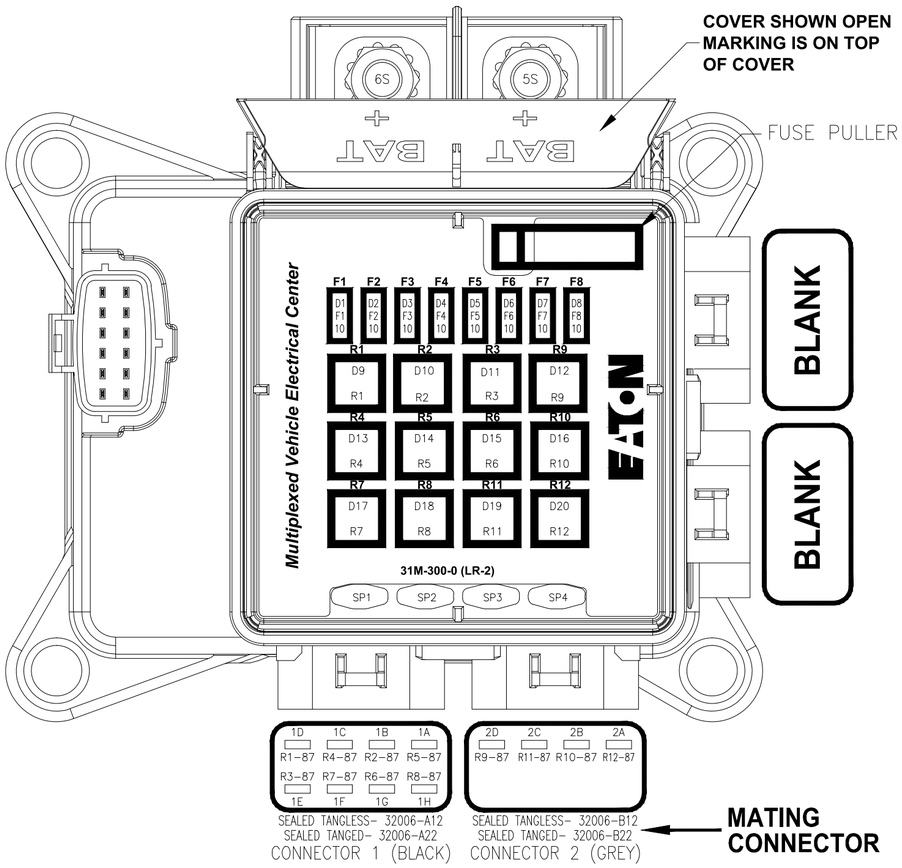


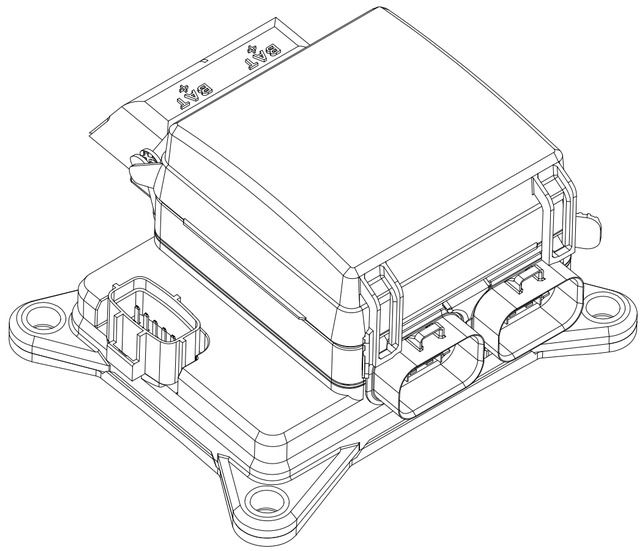
DEVICE TOTALS		
DEVICE	PART #	AMOUNT
FUSE PULLER	32013BS	1
MINI FUSE	ATM-10UNP-PEC	16
12V,20A 4-PIN MICRO	B120-7022J	8

31M-000-2
mVEC Power Distribution Unit

16 x Mini fuses (all 10A), 1 x Fuse Puller,
8 x ISO280 12VDC 20A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.





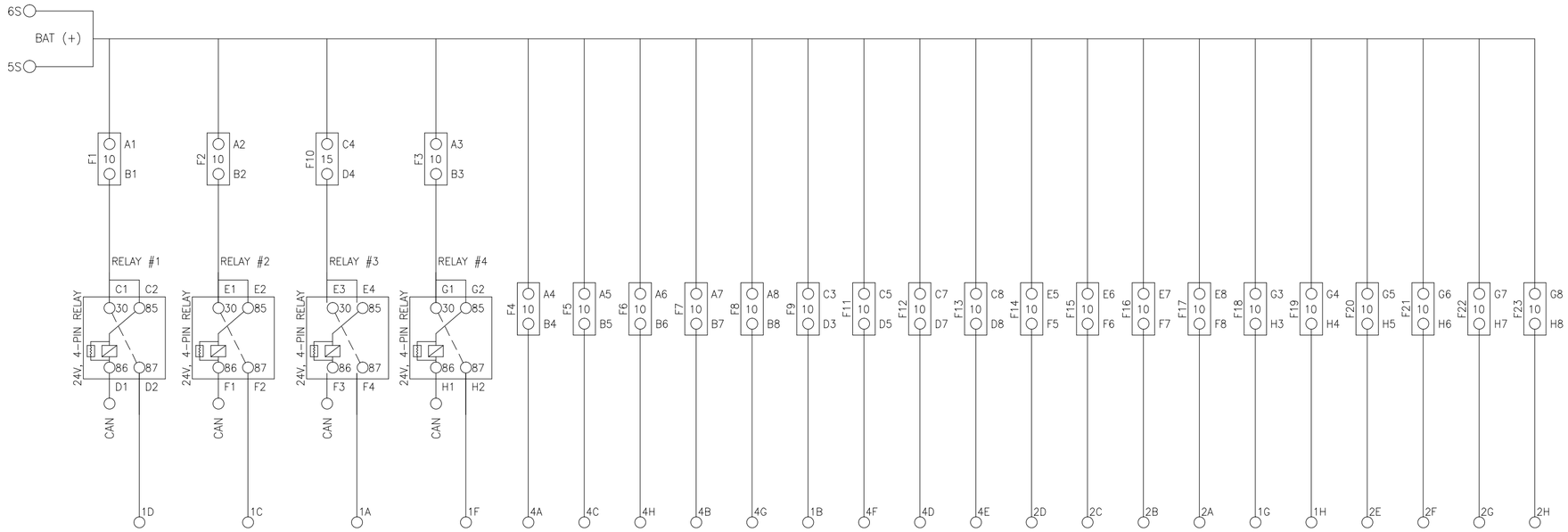


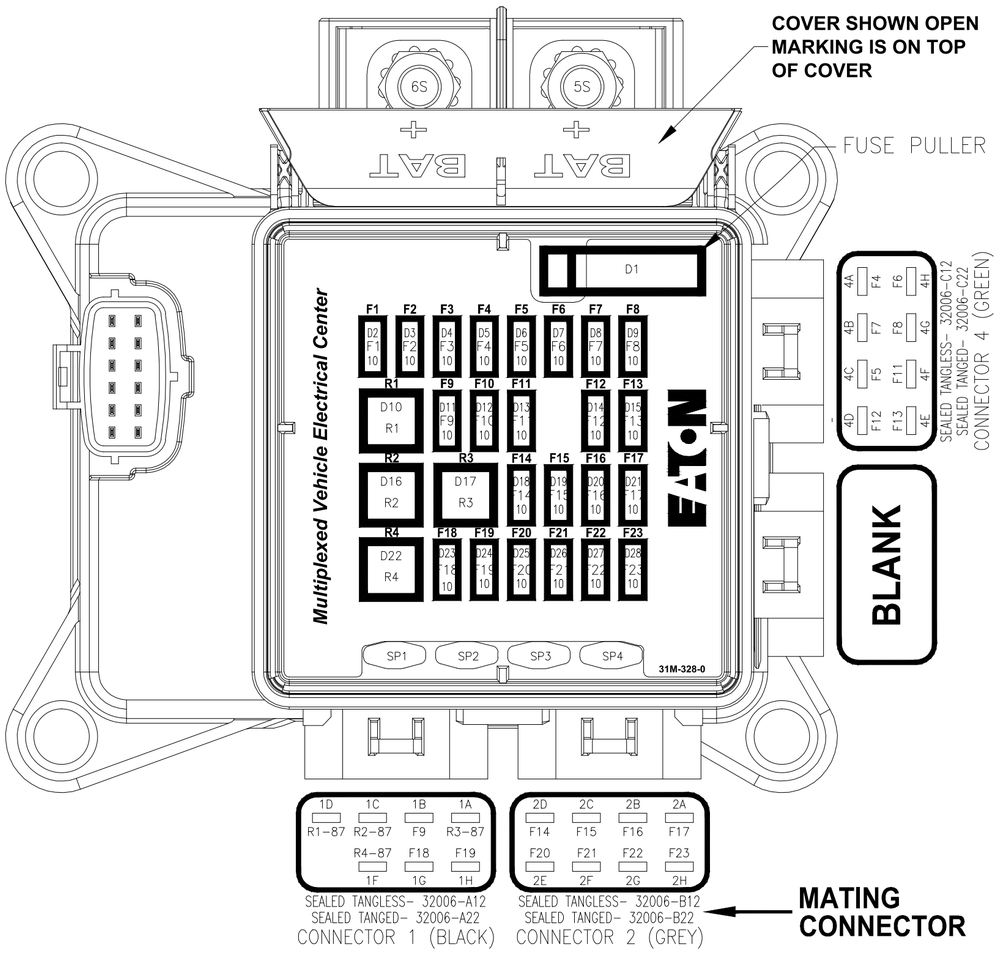
DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	F1	MINI FUSE	ATM-10UNP-PEC
D2	F2	MINI FUSE	ATM-10UNP-PEC
D3	F3	MINI FUSE	ATM-10UNP-PEC
D4	F4	MINI FUSE	ATM-10UNP-PEC
D5	F5	MINI FUSE	ATM-10UNP-PEC
D6	F6	MINI FUSE	ATM-10UNP-PEC
D7	F7	MINI FUSE	ATM-10UNP-PEC
D8	F8	MINI FUSE	ATM-10UNP-PEC
D9	R1	12V,20A 4-PIN MICRO	B120-7022J
D10	R2	12V,20A 4-PIN MICRO	B120-7022J
D11	R3	12V,20A 4-PIN MICRO	B120-7022J
D12	R9	12V,20A 4-PIN MICRO	B120-7022J
D13	R4	12V,20A 4-PIN MICRO	B120-7022J
D14	R5	12V,20A 4-PIN MICRO	B120-7022J
D15	R6	12V,20A 4-PIN MICRO	B120-7022J
D16	R10	12V,20A 4-PIN MICRO	B120-7022J
D17	R7	12V,20A 4-PIN MICRO	B120-7022J
D18	R8	12V,20A 4-PIN MICRO	B120-7022J
D19	R11	12V,20A 4-PIN MICRO	B120-7022J
D20	R12	12V,20A 4-PIN MICRO	B120-7022J

DEVICE TOTALS		
DEVICE	PART #	AMOUNT
MINI FUSE	ATM-10UNP-PEC	8
12V,20A 4-PIN MICRO	B120-7022J	12

31M-300-0
mVEC Power Distribution Unit

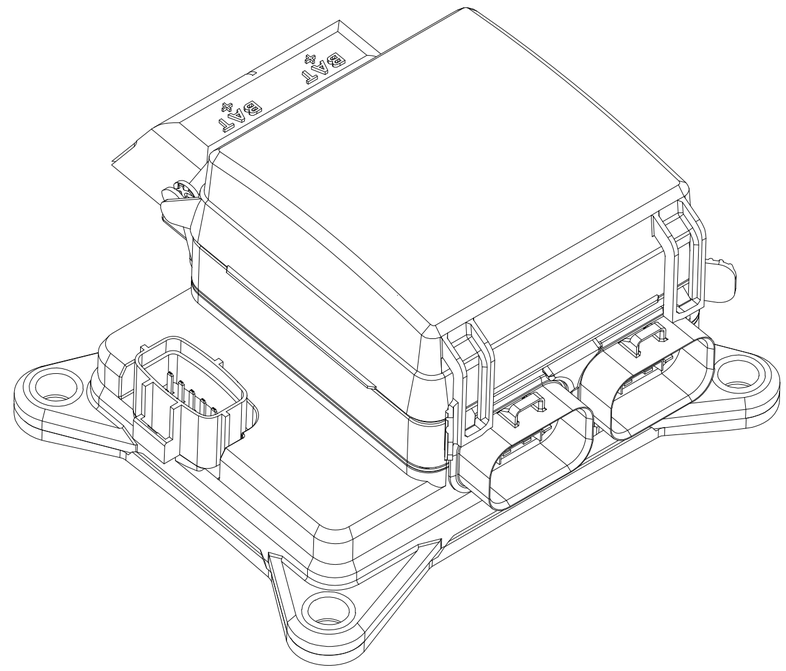
8 x Mini fuses (all 10A), 1 x Fuse Puller,
12 x ISO280 12VDC 20A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.





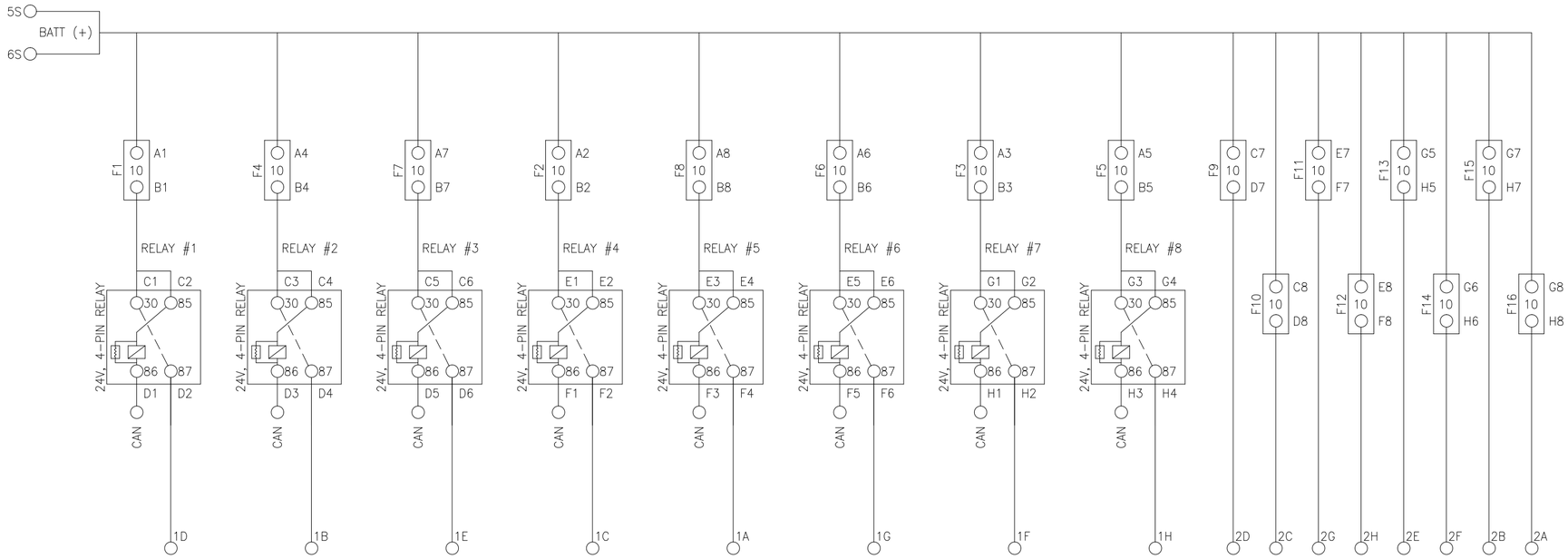
DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	XX	FUSE PULLER	32013BS
D2	F1	MINI FUSE	ATM-10UNP-PEC
D3	F2	MINI FUSE	ATM-10UNP-PEC
D4	F3	MINI FUSE	ATM-10UNP-PEC
D5	F4	MINI FUSE	ATM-10UNP-PEC
D6	F5	MINI FUSE	ATM-10UNP-PEC
D7	F6	MINI FUSE	ATM-10UNP-PEC
D8	F7	MINI FUSE	ATM-10UNP-PEC
D9	F8	MINI FUSE	ATM-10UNP-PEC
D10	R1	24V,15A 4-PIN MICRO	B120-7026J
D11	F9	MINI FUSE	ATM-10UNP-PEC
D12	F10	MINI FUSE	ATM-10UNP-PEC
D13	F11	MINI FUSE	ATM-10UNP-PEC
D14	F12	MINI FUSE	ATM-10UNP-PEC
D15	F13	MINI FUSE	ATM-10UNP-PEC
D16	R2	24V,15A 4-PIN MICRO	B120-7026J
D17	R3	24V,15A 4-PIN MICRO	B120-7026J
D18	F14	MINI FUSE	ATM-10UNP-PEC
D19	F15	MINI FUSE	ATM-10UNP-PEC
D20	F16	MINI FUSE	ATM-10UNP-PEC
D21	F17	MINI FUSE	ATM-10UNP-PEC
D22	R4	24V,15A 4-PIN MICRO	B120-7026J
D23	F18	MINI FUSE	ATM-10UNP-PEC
D24	F19	MINI FUSE	ATM-10UNP-PEC
D25	F20	MINI FUSE	ATM-10UNP-PEC
D26	F21	MINI FUSE	ATM-10UNP-PEC
D27	F22	MINI FUSE	ATM-10UNP-PEC
D28	F23	MINI FUSE	ATM-10UNP-PEC

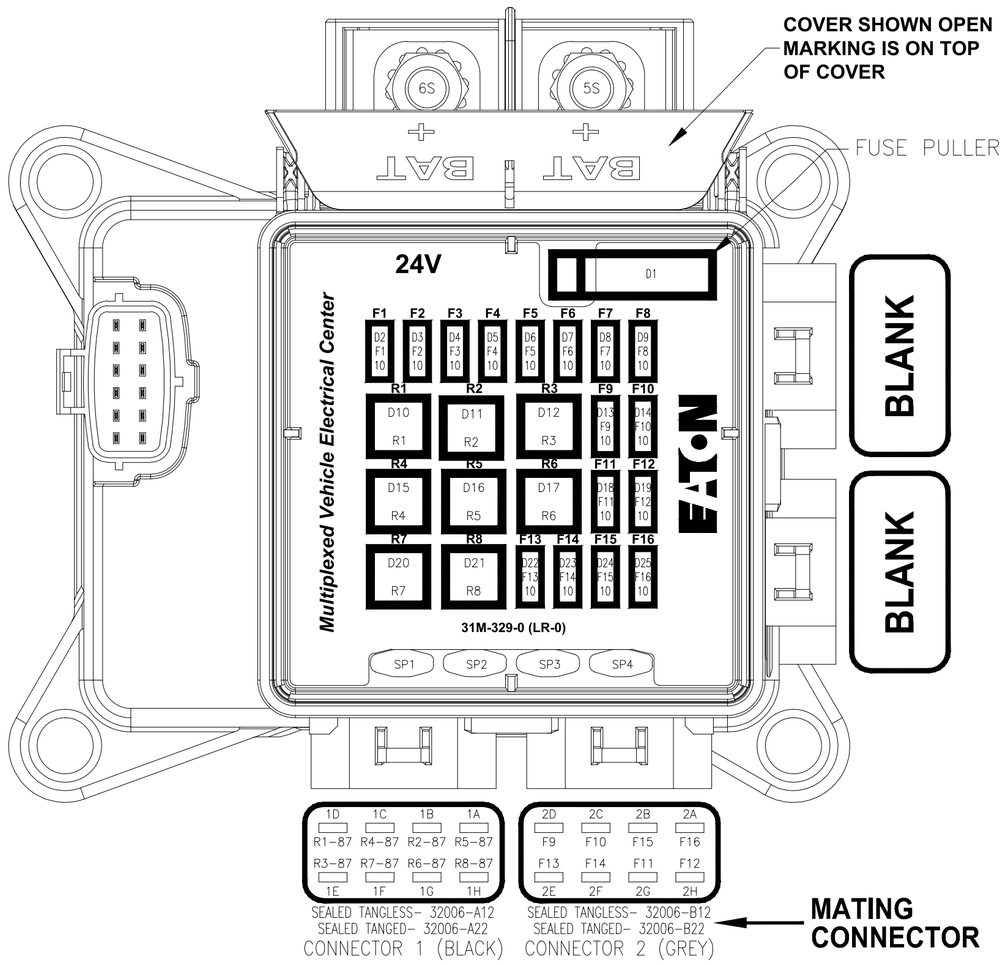
DEVICE TOTALS		
DEVICE	PART #	AMOUNT
FUSE PULLER	32013BS	1
24V,15A 4-PIN MICRO	B120-7026J	4
MINI FUSE	ATM-10UNP-PEC	23



31M-328-0
mVEC Power Distribution Unit

23 x Mini fuses (all 10A), 1 x Fuse Puller,
4 x ISO280 24VDC 15A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.





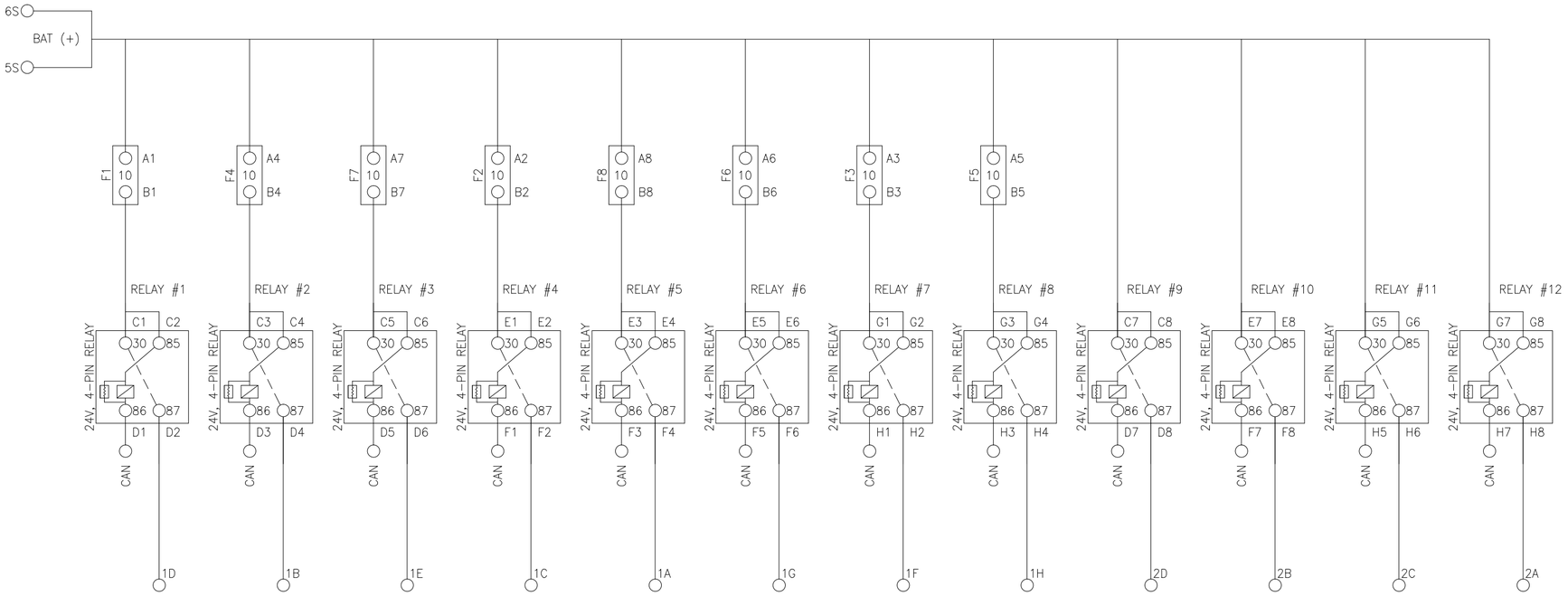
DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	XX	FUSE PULLER	32013BS
D2	F1	MINI FUSE	ATM-10UNP-PEC
D3	F2	MINI FUSE	ATM-10UNP-PEC
D4	F3	MINI FUSE	ATM-10UNP-PEC
D5	F4	MINI FUSE	ATM-10UNP-PEC
D6	F5	MINI FUSE	ATM-10UNP-PEC
D7	F6	MINI FUSE	ATM-10UNP-PEC
D8	F7	MINI FUSE	ATM-10UNP-PEC
D9	F8	MINI FUSE	ATM-10UNP-PEC
D10	R1	24V,15A 4-PIN MICRO	B120-7026J
D11	R2	24V,15A 4-PIN MICRO	B120-7026J
D12	R3	24V,15A 4-PIN MICRO	B120-7026J
D13	F9	MINI FUSE	ATM-10UNP-PEC
D14	F10	MINI FUSE	ATM-10UNP-PEC
D15	R4	24V,15A 4-PIN MICRO	B120-7026J
D16	R6	24V,15A 4-PIN MICRO	B120-7026J
D17	R6	24V,15A 4-PIN MICRO	B120-7026J
D18	F11	MINI FUSE	ATM-10UNP-PEC
D19	F12	MINI FUSE	ATM-10UNP-PEC
D20	R7	24V,15A 4-PIN MICRO	B120-7026J
D21	R8	24V,15A 4-PIN MICRO	B120-7026J
D22	F13	MINI FUSE	ATM-10UNP-PEC
D23	F14	MINI FUSE	ATM-10UNP-PEC
D24	F15	MINI FUSE	ATM-10UNP-PEC
D25	F16	MINI FUSE	ATM-10UNP-PEC

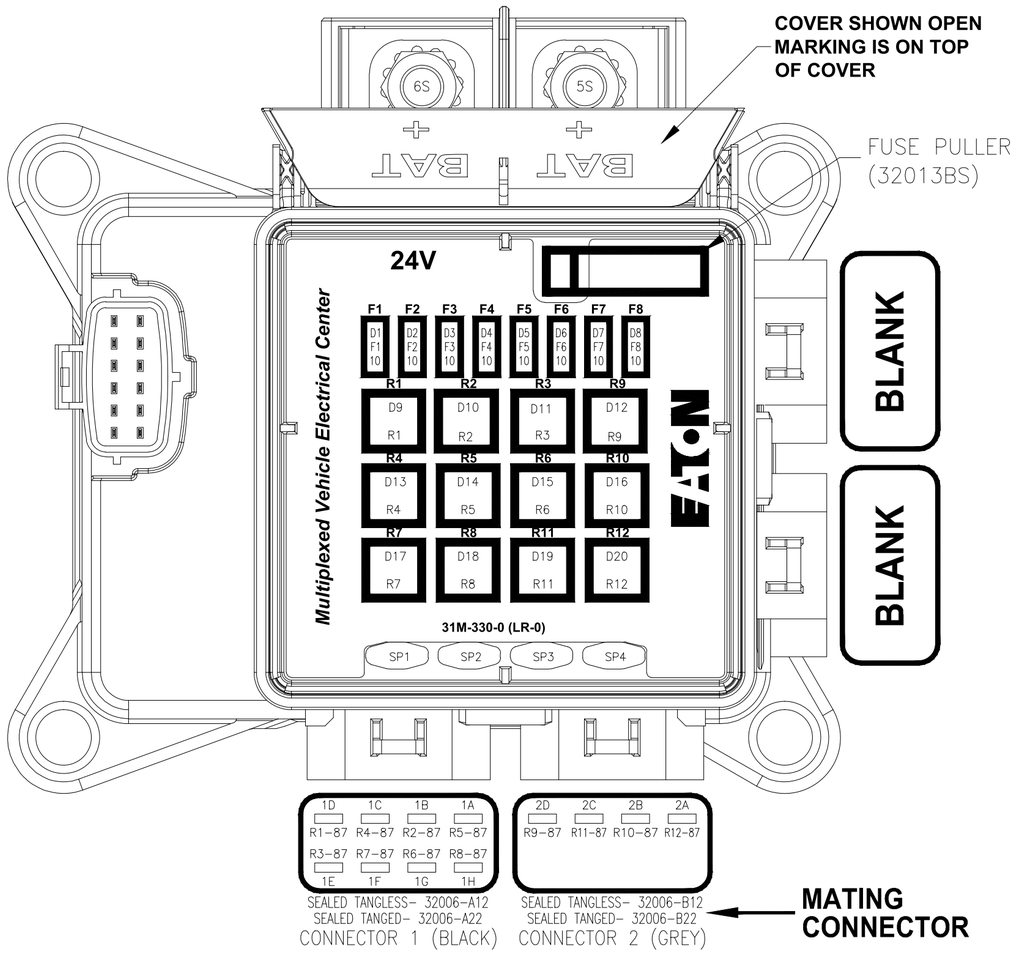
DEVICE TOTALS		
DEVICE	PART #	AMOUNT
FUSE PULLER	32013BS	1
MINI FUSE	ATM-10UNP-PEC	16
24V,15A 4-PIN MICRO	B120-7026J	8

31M-329-0
mVEC Power Distribution Unit

16 x Mini fuses (all 10A), 1 x Fuse Puller,
8 x ISO280 24VDC 15A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.

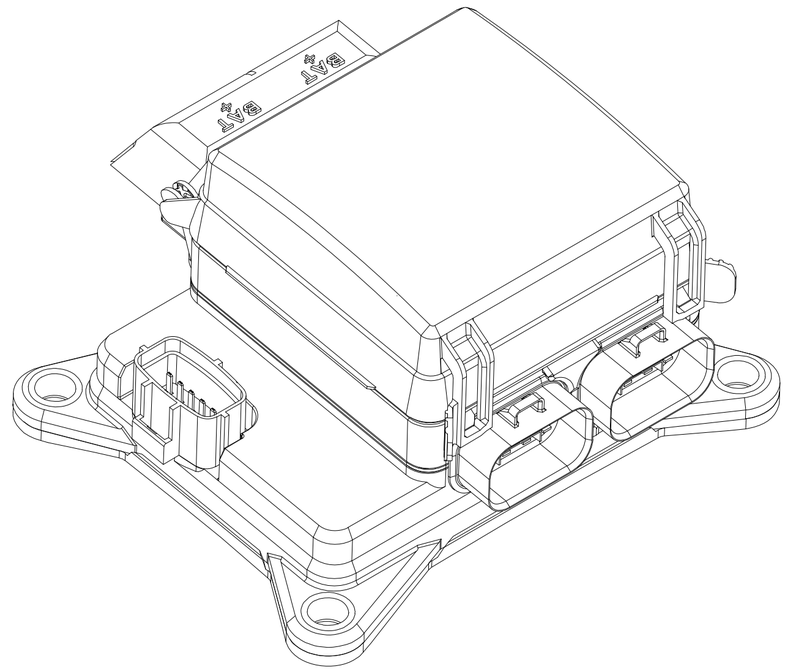
PROLEC
Email: info@prolecproducts.com
Web: www.prolecproducts.com





DEVICE PLACEMENT			
POSITION	REFERENCE	DEVICE	PART #
D1	F1	MINI FUSE	ATM-10UNP-PEC
D2	F2	MINI FUSE	ATM-10UNP-PEC
D3	F3	MINI FUSE	ATM-10UNP-PEC
D4	F4	MINI FUSE	ATM-10UNP-PEC
D5	F5	MINI FUSE	ATM-10UNP-PEC
D6	F6	MINI FUSE	ATM-10UNP-PEC
D7	F7	MINI FUSE	ATM-10UNP-PEC
D8	F8	MINI FUSE	ATM-10UNP-PEC
D9	R1	24V,15A 4-PIN MICRO	B120-7026J
D10	R2	24V,15A 4-PIN MICRO	B120-7026J
D11	R3	24V,15A 4-PIN MICRO	B120-7026J
D12	R9	24V,15A 4-PIN MICRO	B120-7026J
D13	R4	24V,15A 4-PIN MICRO	B120-7026J
D14	R5	24V,15A 4-PIN MICRO	B120-7026J
D15	R6	24V,15A 4-PIN MICRO	B120-7026J
D16	R10	24V,15A 4-PIN MICRO	B120-7026J
D17	R7	24V,15A 4-PIN MICRO	B120-7026J
D18	R8	24V,15A 4-PIN MICRO	B120-7026J
D19	R11	24V,15A 4-PIN MICRO	B120-7026J
D20	R12	24V,15A 4-PIN MICRO	B120-7026J

DEVICE TOTALS		
DEVICE	PART #	AMOUNT
MINI FUSE	ATM-10UNP-PEC	8
24V,15A 4-PIN MICRO	B120-7026J	12



31M-330-0
mVEC Power Distribution Unit

8 x Mini fuses (all 10A), 1 x Fuse Puller,
12 x ISO280 24VDC 15A SPST Ultra Micro Relays
Connectors not included. Output terminals rated 30A max.