

Series 31000 Vehicle Electrical Center



Power distribution

VEC

Series 31000



Series 31000 Vehicle Electrical Centers

The Eaton Controls and Power Conversion Single Vehicle Electrical Center (VEC) is a widely used transportation industry power distribution module. The VEC uses patented programmable 3D matrix technologies that can be easily modified to accommodate changes to an electrical system. These can be customized for each specific electrical system, but require no tooling for implementation.

The VEC accepts automotive components including fuses, relays, circuit breakers, diodes, and other devices that have 2.8mm wide terminals on 8.1mm centerline spacing (please see VEC Electrical Components for additional available components offered by Eaton). The compact size of the VEC (about 4"x4") provide for high component density. VECs provide either 8.0mm bladed inputs or M8/M6 stud inputs. The VEC can accommodate up to two input connectors - four bladed inputs or two studs - and four output connectors with up to eight outputs each (32 total). Some designs may limit the number of connectors available for use.

The VEC is ideal for distributed main power as well as auxiliary "add-on" applications. Current VEC applications include Class 3-8 trucks, buses, chassis and RV, Con-Ag equipment, marine specialty vehicles, and automotive power distribution systems.

The customizable designs of the VEC enable them to incorporate many different devices and multiple design variations. Splices in the harness can also be eliminated by internally programming them into the grid matrix. The inputs (connector or stud) and outputs (connector) of the VEC are color-coded and keyed, and provide quick installation. This makes the module easy to service. The largest benefit of these modules are the reduced lead times and zero tooling cost.

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Specifications

Input Terminal Rating: 8.0mm blade terminals (60A max per terminal); M8/M6 input studs (100A max per terminal). 200A max total for VEC

Output Terminal Rating: 2.8mm blade terminals (30A max per terminal).

Output Connector Rating: 100A max per connector

Materials: Housing and connector cavities: thermoplastic
Internal power grid: tin-plated copper

Operating Temperature Ratings: -40°F (-40°C) to 260°F (125°C)

Ingress Protection: IP55

Mounting Torque Rating: 24 in-lbs (2.7N•m) max.

Termination: Delphi Packard Metri-Pack® 280 Series terminals (sealed/unsealed & tanged/tangless) or AMP® terminals.* Delphi Packard 280 Series cavity plugs are installed where wires are not used.* Accepts #10-22 AWG wire sizes.

Options

Cover: Vented (VEC), Solid domed cover with gasket or no cover.

Cover Marking: Laser etching inside, outside, or both

Input Style: 8.0mm blade terminals or studs (M8/M6).

Mounting: External feet with mounting holes or internal mounting holes.

Components: Fuse, breaker, relay, etc. installation to be specified by customer.

Severe Service: Added environmental protection available (see ssVEC for more information). Consult factory.

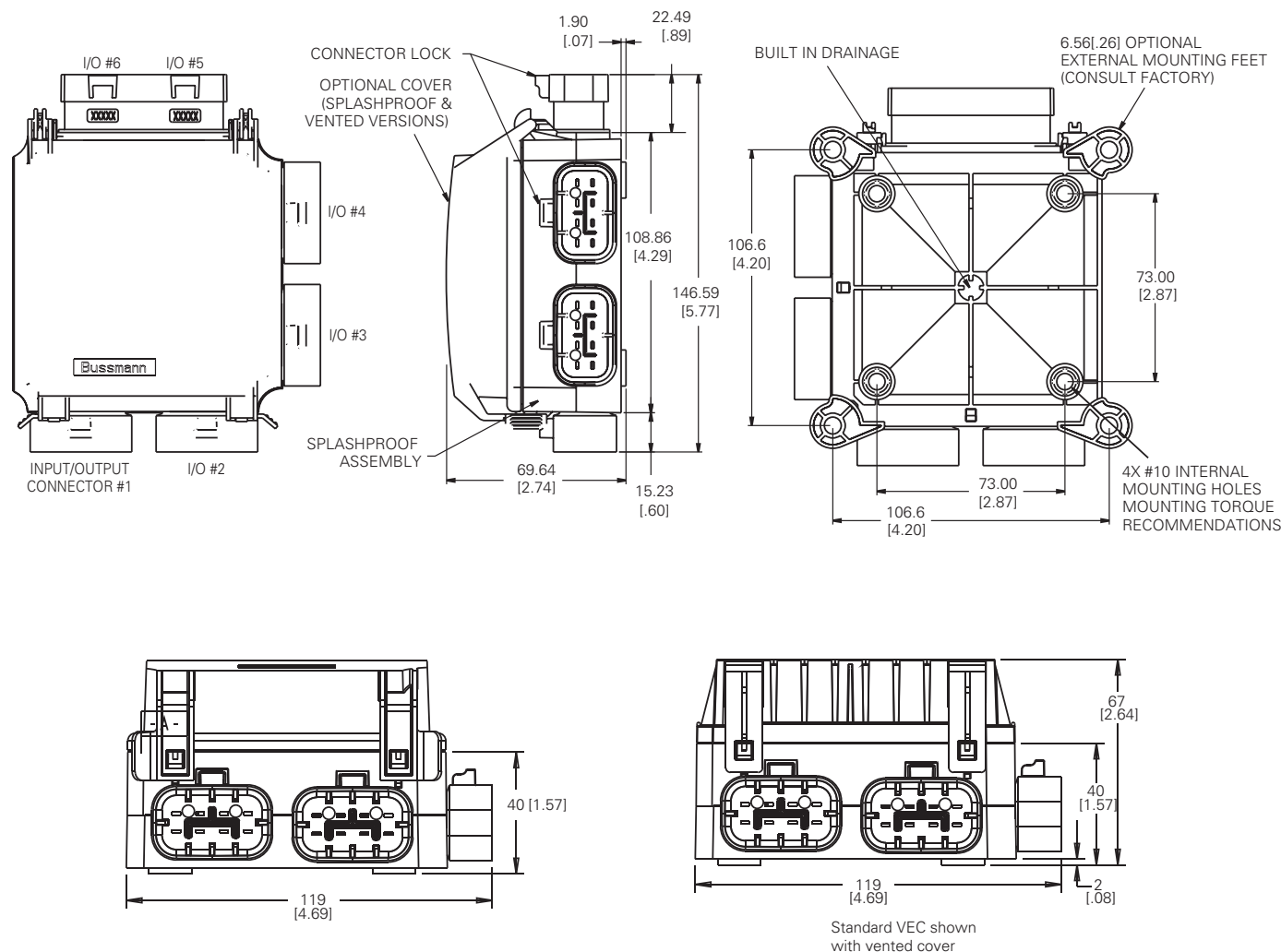
Fuse/breaker Extraction Tool: Series 3200

Insertion/Extraction tool available

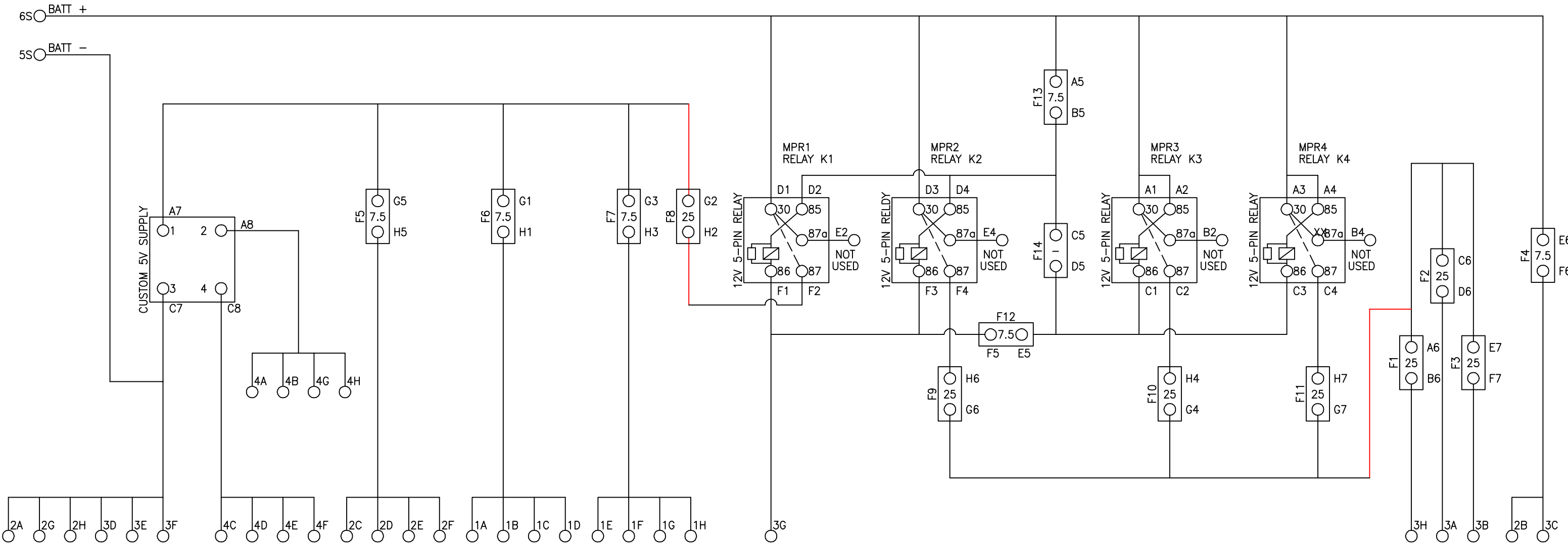
*Electrical terminals, cable seals & cavity plugs are NOT supplied by Eaton.

Each design is customer specific. Consult your sales rep today for your application.

Dimensions - mm(in)



PART # 31S-388-0		SHEET 1 OF 9	
CUST NATIONAL INSTRUMENTS			
TITLE MODULE PROGRAMMING SHEET			
REV	REVISIONS	DATE	APPR
0	RELEASE TO PROD. ECO-101037, AL	04-14-16	
0	CONNECTED G2 TO A7,G1,G3,G5 & REMOVED G2 CONNECTION FROM A6, C6... -101037, AL	05-11-16	



CONNECTOR 6

CONNECTOR 5

PART # 31S-388-0

SHEET 8 OF 9

CUST NATIONAL INSTRUMENTS

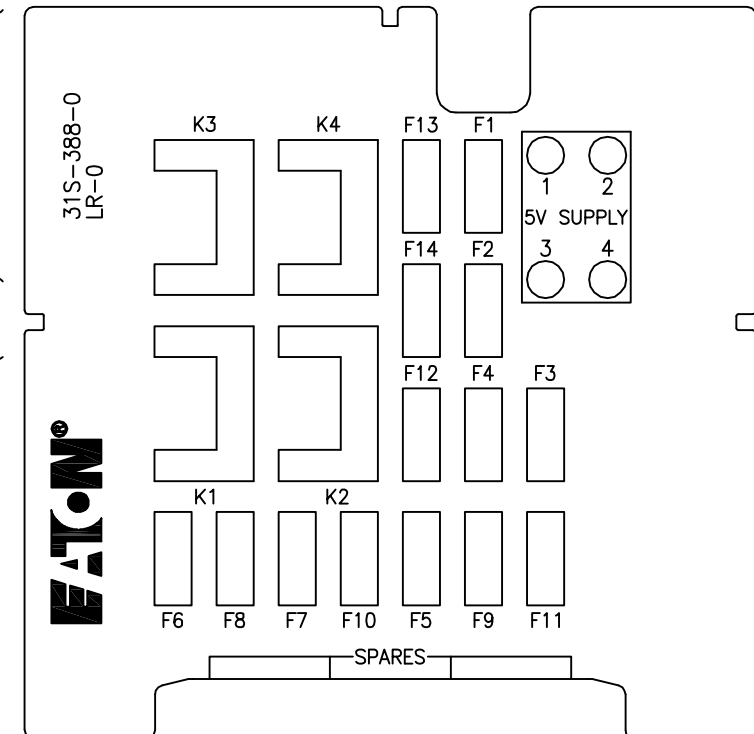
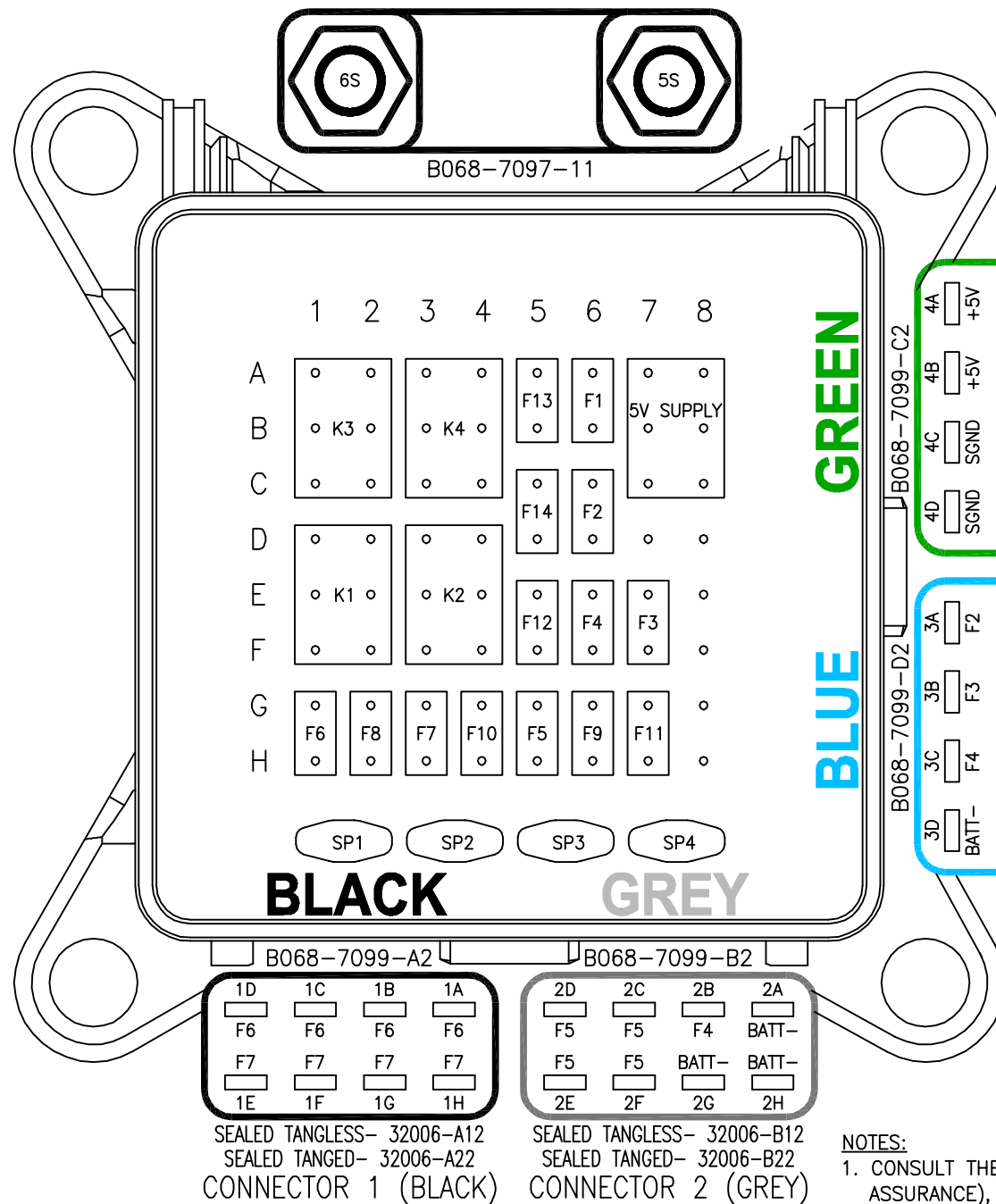
TITLE COMPONENT ORIENTATION / LABEL PC J

REV REVISIONS

DATE APPR

1 REFER TO SHEET 1

05-11-16



NOTES:

1. CONSULT THE FACTORY FOR PART NUMBERS FOR TPA'S (TERMINAL POSITIVE ASSURANCE), CPA'S (CONNECTOR POSITIVE ASSURANCE), RECOMMENDED TERMINALS ETC.

DEVICE PLACEMENT

POSITION	REFERENCE	DEVICE	PART #
D1	K3	12V,35A 5-PIN MICRO	B120-7016J
D2	K4	12V,35A 5-PIN MICRO	B120-7016J
D3	F13	MINI FUSE	ATM-7-1-2UNP-PEC
D4	F1	MINI FUSE	ATM-25UNP-PEC
D5	F14	MINI FUSE	-
D6	F2	MINI FUSE	ATM-25UNP-PEC
D7	K1	12V,35A 5-PIN MICRO	B120-7016J
D8	K2	12V,35A 5-PIN MICRO	B120-7016J
D9	F12	MINI FUSE	ATM-7-1-2UNP-PEC
D10	F4	MINI FUSE	ATM-7-1-2UNP-PEC
D11	F3	MINI FUSE	ATM-25UNP-PEC
D12	F6	MINI FUSE	ATM-7-1-2UNP-PEC
D13	F8	MINI FUSE	ATM-25UNP-PEC
D14	F7	MINI FUSE	ATM-7-1-2UNP-PEC
D15	F10	MINI FUSE	ATM-25UNP-PEC
D16	F5	MINI FUSE	ATM-7-1-2UNP-PEC
D17	F9	MINI FUSE	ATM-25UNP-PEC
D18	F11	MINI FUSE	ATM-25UNP-PEC

SPARE DEVICE PLACEMENT

POSITION	DEVICE	PART #
SP1	MINI FUSE	ATM-7-1-2UNP-PEC
SP2	MINI FUSE	ATM-7-1-2UNP-PEC
SP3	MINI FUSE	ATM-25UNP-PEC
SP4	MINI FUSE	ATM-25UNP-PEC

DEVICE TOTALS

DEVICE	PART #	AMOUNT
12V,35A 5-PIN MICRO	B120-7016J	4
MINI FUSE	ATM-7-1-2UNP-PEC	8
MINI FUSE	ATM-25UNP-PEC	9

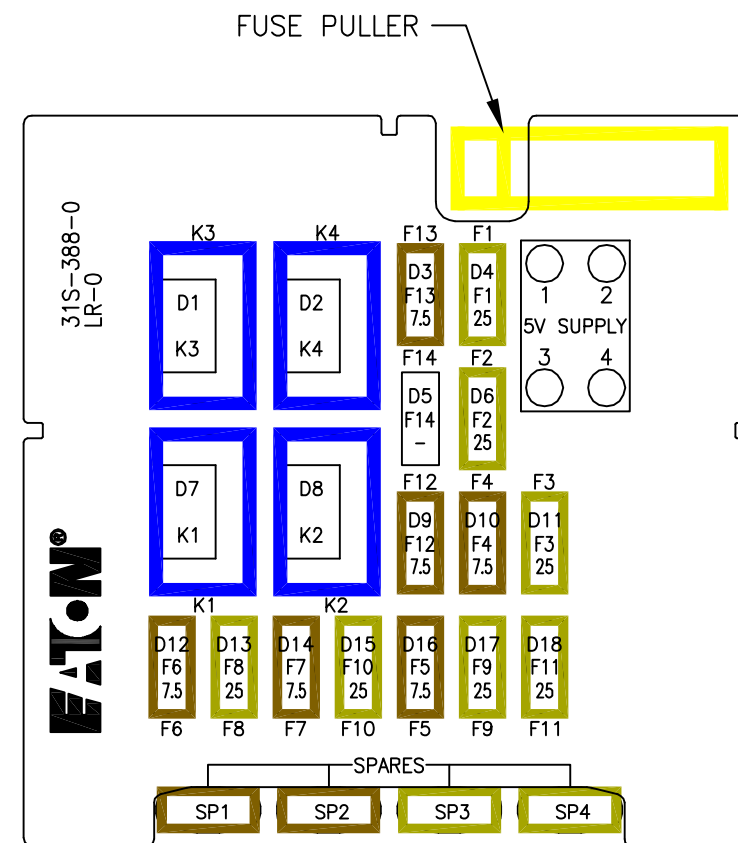
PART # 31S-388-0

SHEET 9 OF 9

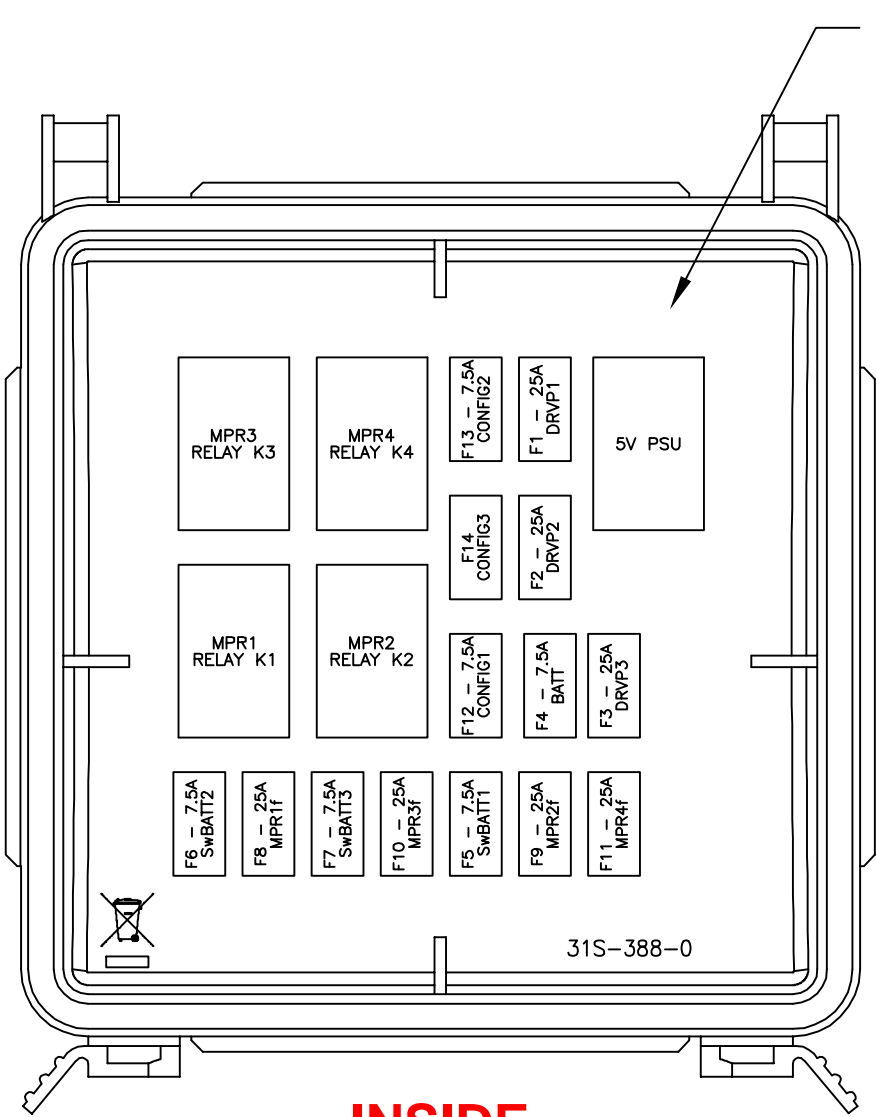
CUST NATIONAL INSTRUMENTS

TITLE COMPONENT ORIENTATION / LABEL PC J

REV	REVISIONS	DATE	APPR
1	REFER TO SHEET 1	05-11-16	



PART # B180-1S388-0			SHEET 1 OF 9		
CUST NATIONAL INSTRUMENTS					
TITLE ssVEC LASER ETCH SPEC - INSIDE/OUTSIDE				PC J	
REV	REVISIONS			DATE	APPR
0	RELEASE TO PROD. ECO-101037, AL			04-14-16	



INSIDE



OUTSIDE

- NOTES:
1. THIS DRAWING SPECIFIES GRAPHICS LAYOUT. REFER TO B173-9999-SS (LASER ETCH SPECIFICATION) FOR DIMENSIONS, FONTS AND SYMBOL.
 2. THIS FILE TO BE CONVERT TO A .vlm FILE FOR THE LASER ETCH MACHINE.