GUARDIAN AGM Retrofit Kit

23” Rack-Mount DC Power System Upgrade
-48VDC @ 400A (375A N+1)

INDUSTRIES & APPLICATIONS

Telecom | Cable | Utilities | Government | Industrial

RoHS

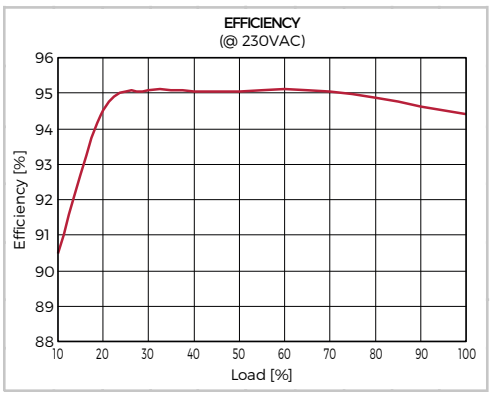
KEY FEATURES

- Replaces Power Section for Legacy C&D AGM Systems
- >96% Efficiency Rectifiers
- 400A (375A N+1) Capacity
- Remote Monitoring & Control
- Field Replaceable Controller
- Ethernet Comm. with SNMPv3
- 3 LED Alarm/Status Indicators
- 10 Form-C Relay Alarms
- LCD Display/Touchpad
- Easy Installation

SAFETY COMPLIANCE

CAN/CSA C22.2 No 62368-1:2014
UL 62368-1:2014
EN 62368-1:2014/A11:2017

THREE YEAR WARRANTY



DESCRIPTION

The Guardian AGM Retrofit Kit is a 5RU high 23” rack-mounted, DC power system with alarm panel providing a bulk output of -48VDC. The kit includes a 3RU panel containg two rectifier/ controller power shelves incorporating up to 7 Guardian family high efficiency hot-swap rectifier modules along with an ACX Advanced system controller. A maximum total current of 400A (375A N+1) is available. The rectifiers are internally fan cooled with speed control which is a function of load and temperature, keeping acoustic noise to a minimum. A 2RU alarm panel provides the alarm functions described below and the kit is completed with rear support shelf, LVD contactor by-pass bus bar and mounting hardware.

The ACX Advanced controller monitors system parameters, controls rectifier output, and provides alarms for system failures. The controller is hot-pluggable for easy field replacement in case of failure. There are 2 LED alarm indicators which indicate failures, (RED) Alarm and (YELLOW) Message. A third green LED indicates the controller is working properly. As standard ten form-C relay outputs provide the alarms for remote use. Two digital inputs and outputs are also provided as well as an SD card with sufficient capacity for more than 20 years data logging.

The system can be programmed by means of a remote PC web page display. Communication is by Ethernet LAN with SNMPv3 including alarm trapping. It also has provision for temperature compensated charging of an external battery using a supplied TC probe. An LCD Display/Touchpad is included for local metering, status, and setup.

The Guardian AGM Retrofit Kit is compatible with UNIPOWER’s free PowCom™ software which offers local and remote management through an advanced Windows GUI.

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SYSTEM SPECIFICATION & CAPABILITY GUIDE

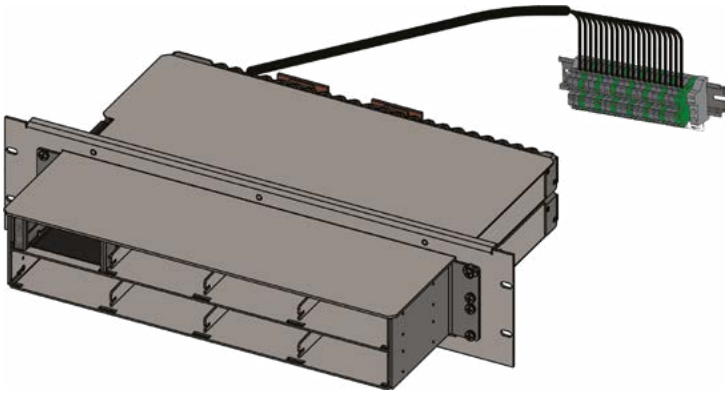
SYSTEM DESIGNATION	GUARDIAN AGM RETROFIT KIT - 385-6300-RFK2	
OUTPUT		
System Voltage	-48VDC nominal | 53.5VDC float (factory default, user adjustable via controller)	
Maximum Capacity	Load	400A (375A N+1)
No. Rectifier Slots	7	
DC CONNECTIONS		
Bus Bars & Lugs	Kit includes hardware to connect to existing AGM installation	
INPUT		
Voltage (rectifier module)	1-phase 180-275VAC	
AC Supply Configurations	1-phase 230/240VAC (L-N-PE) 2-phase 240VAC (L1-L2-PE) 3-phase (3-wire Wye) - 190/200/216/208/220/240VAC (L1-L2-PE / L2-L3-PE / L3-L1-PE) 3-phase (4-wire Delta) - 200/210/220/230/240VAC (L1-N-PE / L2-N-PE / L3-N-PE)	
Frequency	47-63Hz	
Maximum Input Current	see rectifier module capacity table below	
Rectifier Power Factor	>0.98 (typical)	
AC CONNECTIONS		
Terminals Blocks	L/N or L1/L2 per rectifier position - accepting wire gauge 24-10AWG	
MONITORING & CONTROL (ACX Advanced Controller)		
Alarm Relays	10	
Local Interface	4 x 20 LCD, 4-key menu, USB / RS232, microSD card slot for data logging	
Remote Interface	Ethernet / Modem using PowCom™ software package Ethernet port allows monitoring and control over a TCP/IP network. Web browser support + SNMPv3	
LED Indications	Green - System ON; Yellow - Message(s); Red LED - Alarm(s)	
External Digital I/O	2 x Inputs, 2 x Outputs (Open Collector)	
BATTERY MANAGEMENT		
Symmetry Inputs	6 or 12 (can be redefined as analog inputs up to 100VDC)	
Temperature Compensated Charging	Optional: Programmable via system controller	
COMPLIANCE		
EMC	EN 300 386; EN61000-6-3 (Emission); EN61000-6-2 (Immunity)	
Safety	CAN/CSA C22.2 No 62368-1:2014; UL 62368-1:2014; EN 62368-1:2014/A11:2017	
ENVIRONMENTAL		
Operating Temperature	-40°C to +65°C, derated above +55°C (see manual and rectifier datasheets)	
Storage Temperature	-40°C to +85°C	

RECTIFIER MODULE CAPACITIES

RECTIFIER MODULES						
MODEL NUMBER	EFFICIENCY[1]	INPUT VOLTAGE[2]	INPUT CURRENT[2]	OUTPUT POWER	OUTPUT CURRENT	
					Vnom	Vfloat[3]
FMPe30.48J	96.2% peak	180-275VAC	17.5A	3000W	62.5A	56.1A

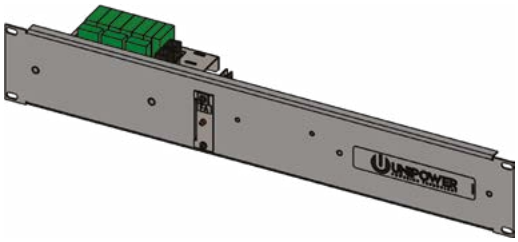
Notes:
1. When operating at 230VAC.
2. Input currents shown are expected maximums at 180VAC.
3. Factory set to 53.5V. Adjustable via system controller.

KIT COMPONENTS



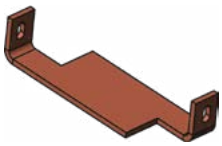
Guardian Power Module

Fixing Kit

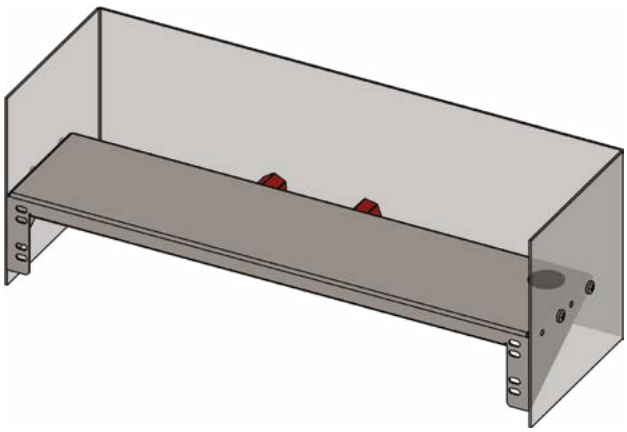


Guardian Alarm Panel

ACX Controller



Contactor By-Pass Bus Bar



Guardian Power Module Rear Support

Notes:

1) The system must be powered down before the retro-fit kit can be installed.
2) The LVD contactor will be replaced by the By-Pass Bus Bar.
3) An up-stream 20A circuit breaker is required.
4) See the ACX Controller Manual for controller functions.

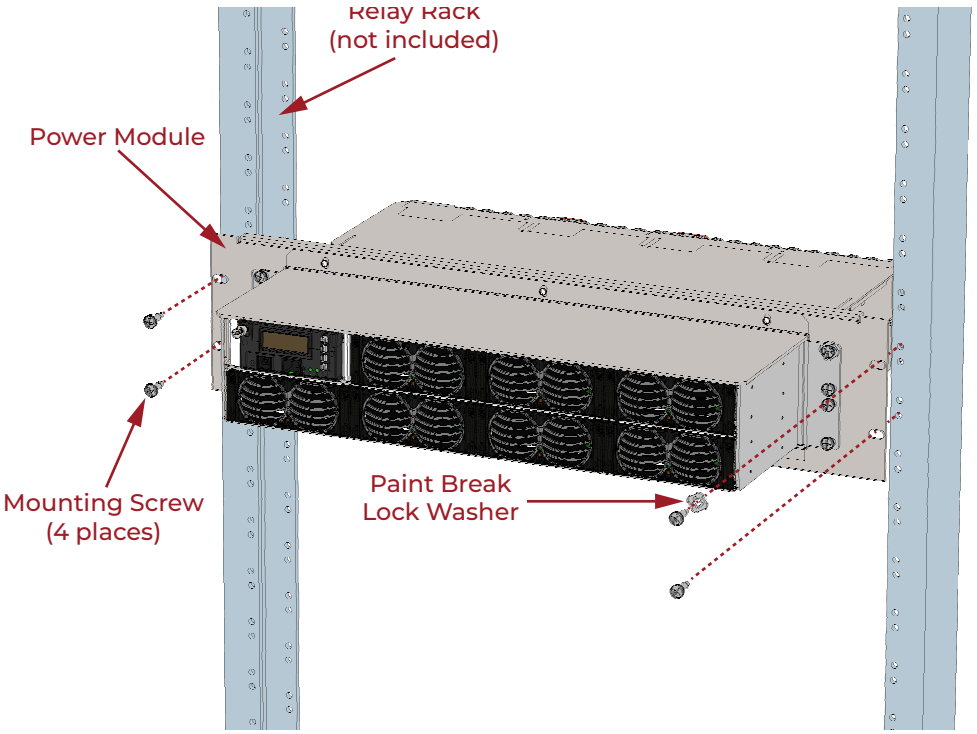
ORDERING GUIDE

OUTPUT RATING	MAX. # RECTIFIERS	KIT PART NUMBER
400A (375A N+1)	7	385-6300-RFK2

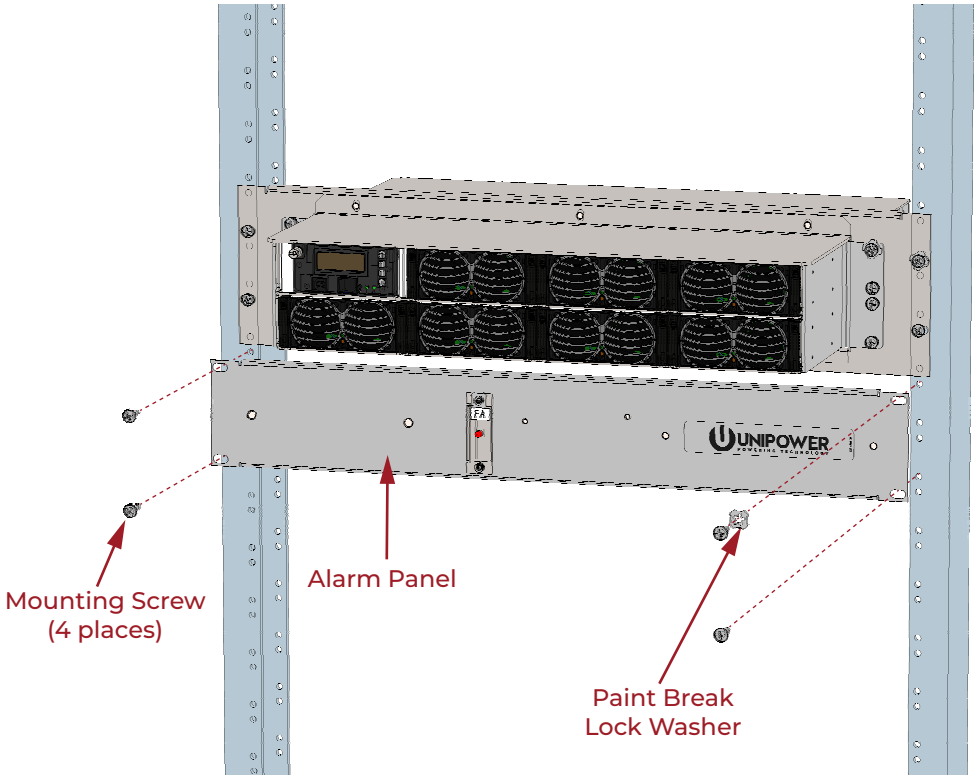
MODULE POWER	RECTIFIER MODEL #	QUANTITY (one type only)
3000W	FMPe30.48J	
BLANK	XGB-01-G	

INSTALLATION GUIDE

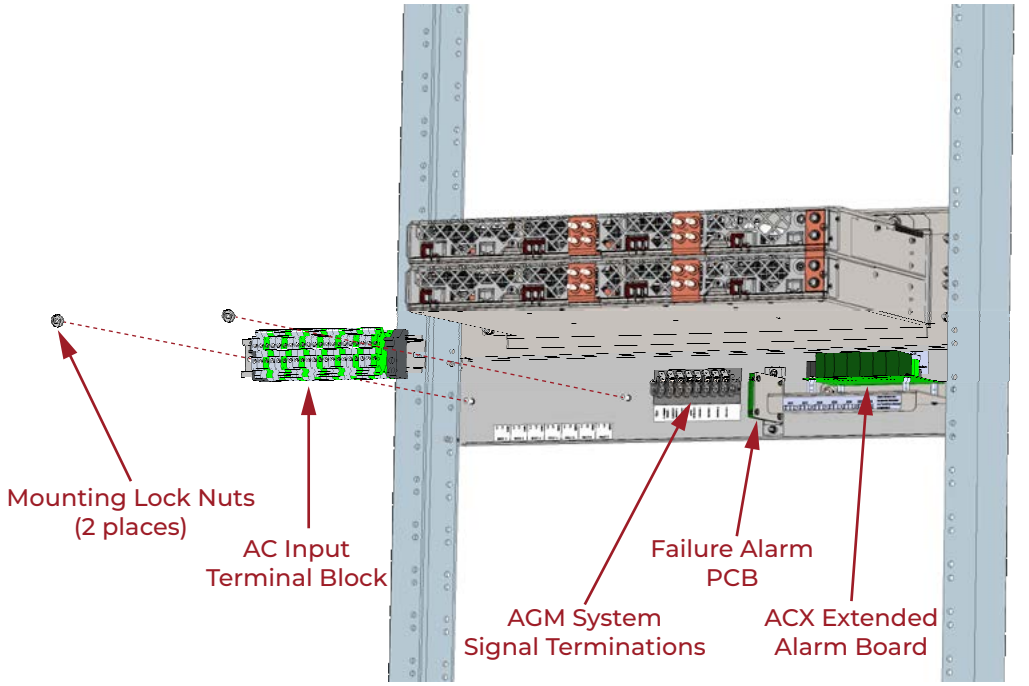
Detail A



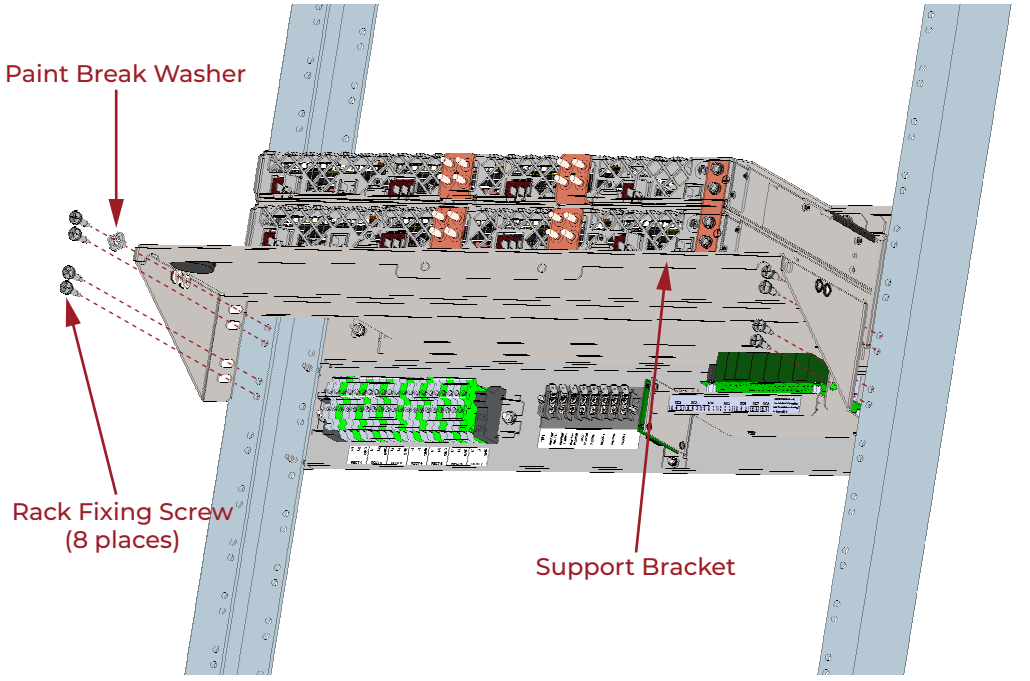
Detail B



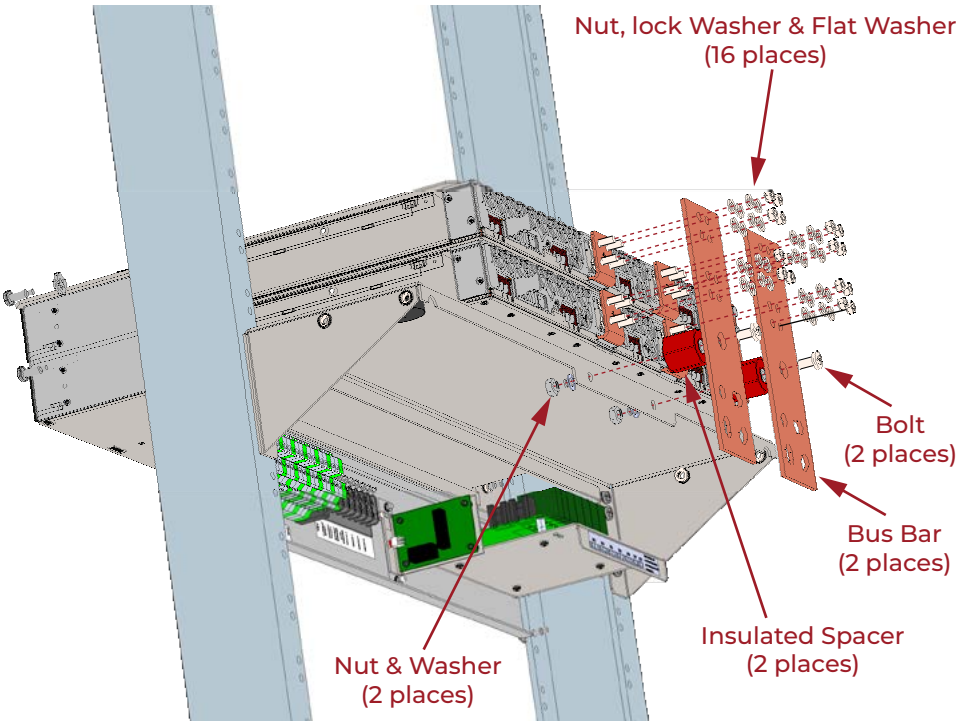
Detail C



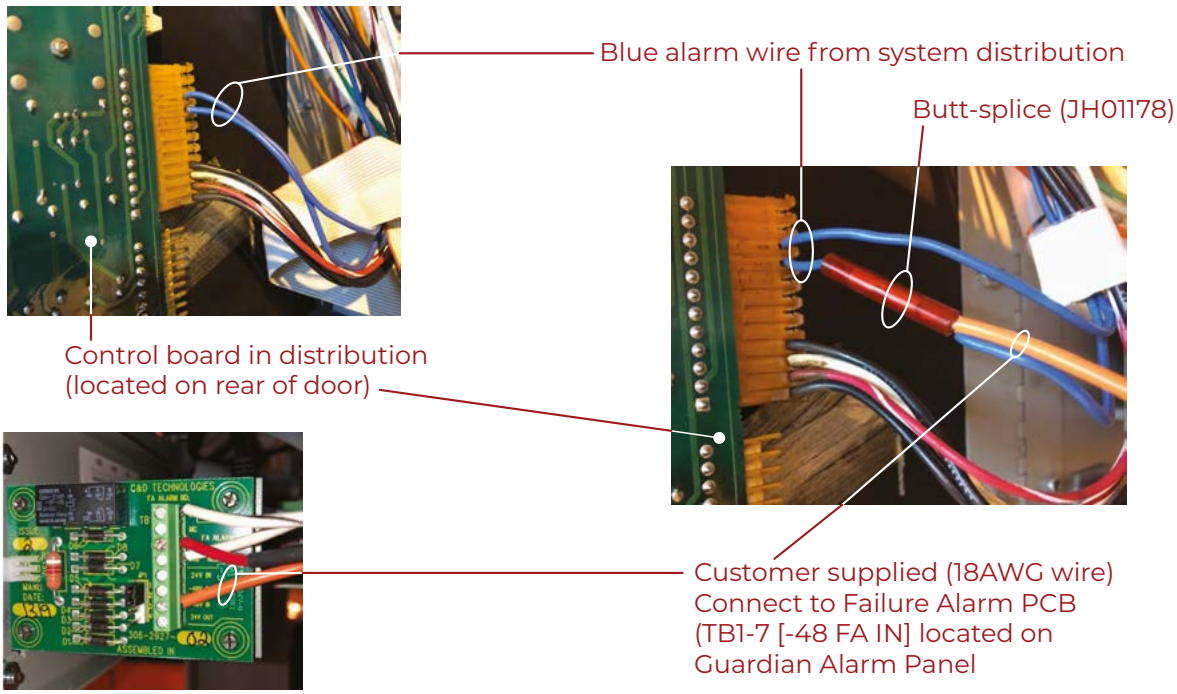
Detail D



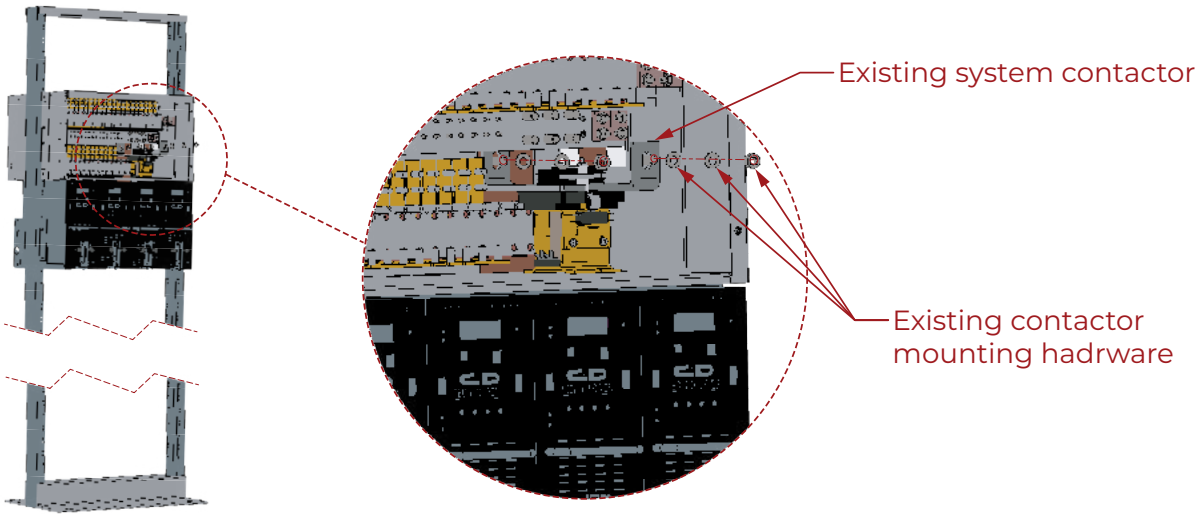
Detail E



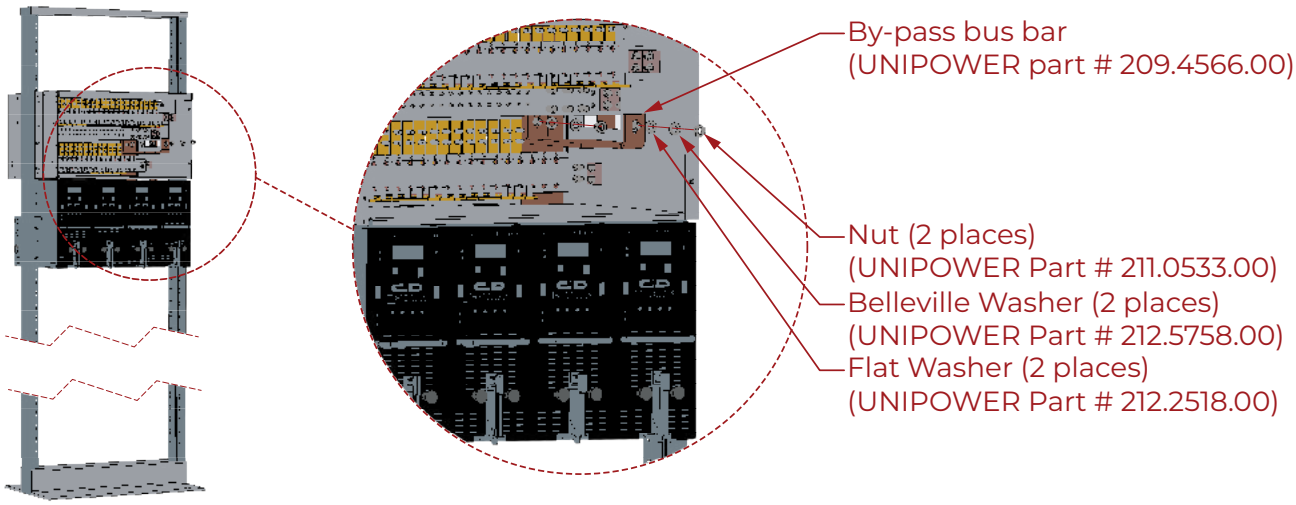
Detail F



Detail G



Detail H



Installation notes:

1) Mount the Guardian Power Module and Alarm Panel to the rack using rack screws (210.1896.05) and paint break lockwashers (212.0504.00) - Detail A & B.
2) Route the AC wire bundle over the top of the rear brace near the conduit knockout.
3) Mount the AC Terminal block to the rear of the alarm panel using the existing hardware - Detail C.
4) Mount the support bracket to the rear of the rack, aligning with the Bus Bar holes in the Guardian Power Module using screws (210.1896.05) and paint break lockwasher (212.0504.00 - Detail D.

   Use screws (210.9008.00) to mount the Bus Bars to the glastic standoffs - Detail E.
5) Cut and butt-splice one blue alarm wire with customer supplied (18AWG wire [color may vary]). Connect to failure alarm PCB (Terminal TB1-7 [-48 FA IN]) - Detail F.
6) Open the door of the AGM Distribution Unit and remove the contactor and contactor hardware detail F.

   Replace the contactor with the contactor by-pass bus bar (209.4566.00) and mounting hardware; 3/8-16 flat washer (212.2518.00), 3/8-16 Bellvillle washer (212.5758.00) and 3/8-16 nut (211.0533.00) - detail G.
7) Sleeve off and secure the wire previously attached to the contactor.
8) When all connections have been made fit the supplied Perspex safety cover over the rear of the system.

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