

Accessory Frame Bracket | QMAFB

For mounting module level electronics to standard module frames



Works with:

Rail-Free System | Rooftop Racking Systems

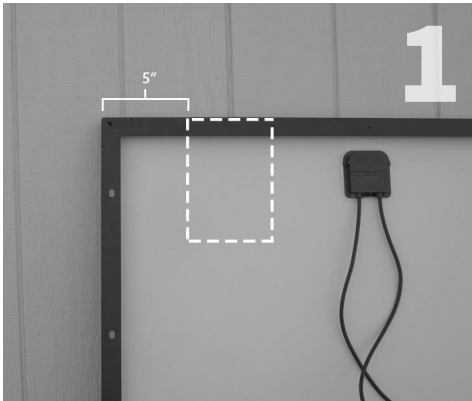
Ground Mounted Systems | Ballasted Systems

Quick Mount PV®
RESPECT THE ROOF

Accessory Frame Bracket | QMAFB

Installation Instructions

Installation Tools Required: PV wire clips, 1/2" socket and torque wrench.



In a standard landscape or portrait array, the Accessory Frame Bracket should be installed at least 5 inches from the edge of the module and at least 1 inch in from the edge of the module junction box.



With the cap screw threaded into the bracket, slide the cap screw into the slot on the module level electronic mounting bracket with the bracket behind the module level electronic mounting bracket.



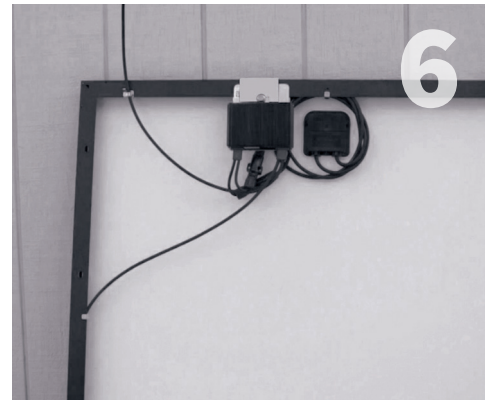
Slide this assembly onto the module frame with the bracket behind the module frame, the module level electronic mounting bracket in front of the module frame.



Place the frame clamp over the edge of the module frame, and in front of the module level electronic mounting bracket. Slide the assembly up and to the left to engage cap screw into frame clamp slot.



Tighten the cap screw with a half-inch socket and torque wrench to a torque of 15 foot-pounds.

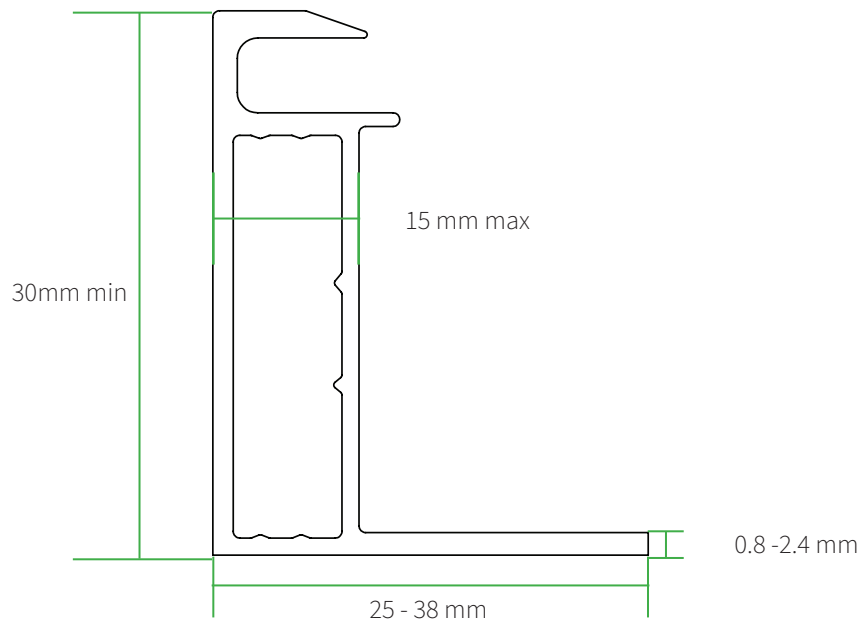


Neatly coil the wires and clip to module frame.

UL2703 Compliance Requirements

Tested and/or Evaluated PV Modules and Module Level Power Electronics (MLPE) for use with the Accessory Frame Bracket are included in subsequent pages.

In addition, please verify that all listed modules have a minimum frame cross section (long or short) that fits the following dimensional requirements:



List of UL Tested and/or Evaluated PV Modules

The Accessory Frame Bracket (AFB) is a UL 2703 Recognized product used to mount and electrically bond module level power electronics (MLPE) that have been tested and/or evaluated for use in combination with UL 1703 or UL 61730 Listed Modules and with the included instructions. Unless otherwise noted, “xxx” refers to the module power rating and both black and silver frames are included in the certification. Review module and 3rd party manufacturer’s documentation for compatibility and compliance with warranty terms and conditions

Manufacturer	Model Number
Adani	Adani modules with 35 and 40mm frames ASX-Y-ZZ-xxx Where “X” can be M or P, “Y” can be 6 or 7, and “ZZ” can be blank, PERC, B-PERC, or AB-PERC
Amerisolar	Amerisolar modules with 35, 40 and 50 mm frames AS-bYxxxZ Where “b” can be 5 or 6; “Y” can be M, P, M27, P27, M30, or P30; and “Z” can be blank, W or WB
Aptos Solar	Aptos modules with 35 and 40 mm frames DNA-yy-zz23-xxx Where “yy” can be 120 or 144; and “zz” can be MF or BF
Astronergy Solar	Astronergy modules with 30, 35, 40, and 45 mm frames aaSMbbyyC/zz-xxx Where “aa” can be CH or A; “bb” can be 60, 66, or 72; “yy” can be blank, 10 or 12; “C” can be M, P, M(BL), M-HC, M(BL)-HC, P-HC, M(DG), or M(DGT); and “zz” can be blank, HV, F-B, or F-BH
ASUN	ASUN modules with 35 and 40 mm frames ASUN-xxx-YYZZ-aa Where “YY” can be 60 or 72; “ZZ” can be M, or MH5; and “aa” can be blank or BB
Auxin	Auxin modules with 40 mm frames AXN6y6zAxxx Where “y” can be M or P; “z” can be 08, 09, 10, 11, or 12; and “A” can be F or T
Axitec	Axitec Modules with 35 and 40 mm frames AC-xxxY/aaZZb Where “Y” can be M, P or MH; “aa” can be blank, 125- or 156-; “ZZ” can be 54, 60, 72, 120, or 144; “b” can be S, X, V, XV, or MX
Boviet	Boviet modules with 35 and 40mm frames BVM66aaYY-xxxBB Where “aa” can be 9, 10 or 12; “YY” is M or P; and “BB” can be blank or L
BYD	BYD modules with 35 mm frames BYDxxxAY-ZZ Where “A” can be M6, P6, MH or PH; “Y” can be C or K; and “ZZ” can be 30 or 36

Manufacturer**Model Number**

Canadian Solar	Canadian Solar modules with 30, 35 and 40 mm frames CSbY-xxxZ Where "b" can be 1, 3 or 6; "Y" can be H, K, P, U, V, W, or X; and "Z" can be M, P, MS, PX, M-SD, P-AG, P-SD, MB-AG, PB-AG, MS-AG, or MS-SD
CertainTeed	CertainTeed modules with 35 and 40 frames CTxxxYZZ-AA Where "Y" can be M, P, or HC; "ZZ" can be 00,01, 10, or 11; and "AA" can be 01, 02, 03, or 04
CSUN	Csun modules with 35 and 40 mm frames YYxx-zzAbb Where "YY" is CSUN or SST; "zz" is blank, 60, or 72; and "A" is blank, P or M; "bb" is blank, BB, BW, or ROOF
Dehui	Dehui modules with 35 and 40mm frames DH-MYYZ-xxx Where "YY" can be 760, 772, 860, 872; and "Z" can be B or W
Ecosolargy	Ecosolargy modules with 35, 40, and 50 mm frames ECOxxxYzzA-bbD Where "Y" can be A, H, S, or T; "zz" can be 125 or 156; "A" can be M or P; "bb" can be 60 or 72; and "D" can be blank or B
ET Solar	ET Solar modules with 35, 40, and 50 mm frames ET-Y6ZZxxxAA Where "Y" can be P, L, or M; "ZZ" can be 60 or 72; and "AA" can be WB, WW, BB, WBG, WWG, WBAC, WBCO, WWCO, WWBCO or BBAC
Flex	Flex modules with 35, 40, and 50 mm frames FXS-xxxYY-ZZ; Where "YY" can be BB or BC; and "ZZ" can be MAA1B, MAA1W, MAB1W, SAA1B, SAA1W, SAC1B, SAC1W, SAD1W, SBA1B, SBA1W, SBC1B, or SBC1W
GCL	GCL modules with 35 mm and 40 mm frames GCL-ab/YY xxx Where "a" can be M or P; "b" can be 3 or 6; and "YY" can be 60, 72, 72H, or 72DH
GigaWatt Solar	Gigawatt modules with 40 mm frames GWxxxYY Where "YY" can be either PB or MB
Hansol	Hansol modules with 35 and 40 frames HSxxxYY-zz Where "YY" can be PB, PD, PE, TB, TD, UB, UD, or UE; and "zz" can be AH2, AN1, AN3, AN4, HV1, or JH2

Manufacturer

Model Number

Hanwha Solar	Hanwha Solar modules with 40, 45, and 50 mm frames HSLaaP6-YY-1-xxxZ Where "aa" can be either 60 or 72; "YY" can be PA or PB; and "Z" can be blank or B
Hanwha Q CELLS	Hanwha Q CELLS Modules with 32, 35, 40, and 42mm frames aaYY-ZZ-xxx where "aa" can be Q. or B.; "YY" can be PLUS, PRO, PEAK, LINE PRO, LINE PLUS, PLUS DUO or PEAK DUO; and "ZZ" can be G3, G3.1, G4, G4.1, L-G2, L-G2.3, L-G3, L-G3.1, L-G3y, L-G4, L-G4.2, L-G4y, LG4.2/TAA, BFR-G3, BLK-G3, BFR-G3.1, BLK-G3.1, BFR-G4, BFR-G4.1, BFR G4.3, BLK-G4.1, G4/SC, G4.1/SC, G4.1/TAA, G4.1/MAX, BFR G4.1/TAA, BFR G4.1/MAX, BLK G4.1/TAA, BLK G4.1/SC, EC-G4.4, G5, G5/SC, G5/TS, BLK-G5, BLK-G5/SC, BLK-G5/TS, L-G5, L-G5.1, L-G5.2, L-G5.2/H, L-G5.3, G6, G6/SC, G6/TS, G6+, BLK-G6, L-G6, L-G6.1, L-G6.2, L-G6.3, G7, BLK-G6+, BLK-G6+/AC, BLK-G6+/SC, BLK-G6/TS, G6+/TS, BLK-G6+/TS, BLK-G7, G7.2, G8, BLK-G8, G8+, BLK-G8+ L-G7, L-G7.1, L-G7.2, L-G7.3, L-G8, L-G8.1, L-G8.2, L-G8.3, L-G8.3/BFF, ML-G9, BLK ML-G9, ML-G9+, BLK ML-G9+, XL-G9.2 or XL-G9.3
Heliene	Heliene modules with 40 mm frames YYZZxxxA Where "YY" can be 36, 60, 72, or 96; "ZZ" can be M, P, or MBLK; and "A" can be blank, HomePV, or Bifacial
HT-SAAE	HT-SAAE modules with 35 and 40 mm frames HTyy-156Z-xxx Where "yy" can be 60 or 72, "Z" can be M, P, M-C, P-C, M(S), M(VS), M(V), P(V), M(V)-C, P(V)-C
Hyundai	Hyundai modules with 33, 35, 40 and 50 mm frames HiY-SxxxZZ Where "Y" can be A, D, M or S; and "ZZ" can be HG, HI, KI, MI, MF, MG, RI, RG, RG(BF), RG(BK), SG, TI, or TG
Itek	Itek Modules with 40 and 50 mm frames IT-xxx-YY Where "YY" can be blank, HE, or SE, or SE72
JA Solar	JA Solar modules with 30, 35, 40 and 45 mm frames JAAyyzz-bbww-xxx/aa Where "yy" can be M, P, M6 or P6; "zz" can be blank, (K), (L), (R), (V), (BK), (FA), (TG), (FA)(R), (L)(BK), (L)(TG), (R)(BK), (R)(TG), (V)(BK), (BK)(TG), or (L)(BK)(TG); "bb" can be 48, 60, or 72; "ww" can be D09, S01, S02, S03, S06, S09, S10, or S12; and "aa" can be BP, MP, SI, SC, PR, 3BB, 4BB, 4BB/RE, 5BB

Manufacturer**Model Number**

Jinko	Jinko modules with 35 and 40 mm frames JKMYxxxZZ-aa Where "Y" can either be blank or S; "ZZ" can be M, P, or PP; and "aa" can be blank, 60, 60B, 60H, 60L, 60BL, 60HL, 60HB, 60HBL, 6HBL-EP, 60-J4, 60B-J4, 60B-EP, 60(Plus), 60-V, 60-MX, 72, 72B, 72-J4, 72B-J4, 72(Plus), 72-V, 72H-V, 72L-V, 72HL-V, 72-MX, 72H-BDVP, 72HL-TV, or 72HL-V-MX3
Kyocera	Kyocera Modules with 46mm frames KYxxxZZ-AA Where "Y" can be D or U; "ZZ" can be blank, GX, or SX; and "AA" can be LPU, LFU, UPU, LPS, LPB, LFB, LFBS, LFB2, LPB2, 3AC, 3BC, 3FC, 4AC, 4BC, 4FC, 4UC, 5AC, 5BC, 5FC, 5UC, 6BC, 6FC, 8BC, 6MCA, or 6MPA
LG	LG modules with 35, 40, and 46 mm frames LGxxxYaZ-bb Where "Y" can be A, E, N, Q, S; "a" can be 1 or 2; "Z" can be C, K, T, or W; and "bb" can be A3, A5, B3, G3, G4, J5, K4, L5, N5, or V5
Longi	Longi modules with 30, 35 and 40 mm frames LRa-YYZZ-xxxM Where "a" can be 4 or 6; "YY" can be blank, 60 or 72; and "ZZ" can be blank, BK, BP, HV, PB, PE, PH, HBD, HIB, HIH, HPB, HPH, or HIBD
Mission Solar	Mission Solar modules with 33 and 40 mm frames MSEbbxxxZZaa Where "bb" can be blank or 60A; "ZZ" can be blank, MM, SE, SO, SQ, SR, or TS; and "aa" can be blank, 1J, 4J, 4S, 5K, 5T, 60, 6J, 6S, 6W, 8K, 8T, or 9S
Mitsubishi	Mitsubishi modules with 46 mm frames PV-MYYxxxZZ Where "YY" can be LE or JE; and "ZZ" can be either HD, HD2, or FB
Motech	IM and XS series modules with 40, 45, and 50 mm frames
Next Energy Alliance	Next Energy Alliance modules with 35 and 40mm frames yyNEA-xxxZZ where "yy" can be blank or US; "ZZ" can be M, MB or M-60
Neo Solar Power	Neo Solar Power modules with 35 mm frames D6YxxxZZaa Where "Y" can be M or P; "ZZ" can be B3A, B4A, E3A, E4A, H3A, H4A; and "aa" can be blank, (TF), ME or ME (TF)
Panasonic	Panasonic modules with 35 and 40 mm frames VBHNxxxYYzzA Where "YY" can be either KA, RA, SA or ZA; "zz" can be either 01, 02, 03, 04, 06, 06B, 11, 11B, 15, 15B, 16, 16B, 17, or 18; and "A" can be blank E, G or N

Manufacturer**Model Number**

Peimar	Peimar modules with 40 mm frames SbxxxYzz Where "b" can be G, M or P; "Y" can be M or P; and "zz" can be blank, (BF), or (FB)
Philadelphia Solar	Philadelphia modules with 35 and 40 mm frames PS-YzzAA-xxx Where "Y" can be M or P; "zz" can be 60 or 72; and "AA" can be blank or (BF)
Phono Solar	Phono Solar modules with 35, 40, and 45 mm frames PSxxxY-ZZ/A Where "Y" can be M, M1, MH, or M1H or P; "ZZ" can be 20 or 24; and "A" can be F, T, U, or TH
Recom	Recom modules with 35 and 40 mm frames RCM-xxx-6yy Where "yy" can be MA, MB, ME or MF
REC Solar	REC modules with 30, 38 and 45 mm frames RECxxxYZZ Where "YY" can be AA, M, NP, PE, PE72, TP, TP2, TP2M, TP2SM, TP2S, TP3M; and "ZZ" can be blank, Black, BLK, BLK2, SLV, or 72
Renesola	ReneSola modules with 35, 40 and 50 mm frames AAxxxY-ZZ Where "AA" can be SPM(SLP) or JC; "Y" can be blank, F, M or S; and "ZZ" can be blank, Ab, Ab-b, Abh, Abh-b, Abv, Abv-b, Bb, Bb-b, Bbh, Bbh-b, Bbv, Bbv-b, Db, Db-b, or 24/Bb
Renogy	Renogy Modules with 40 and 50 mm frames RNG-xxxY Where "xxx" is the module power rating; and "Y" can be D or P
Risen	Risen Modules with 35 and 40 mm frames RSMyy-6-xxxZZ Where "yy" can be 60, 72, 120, 132 or 144; and "ZZ" can be M, P
S-Energy	S-Energy modules with 40 frames SNxxxY-ZZ Where "Y" can be M or P; and "ZZ" can be 10, or 15
Seraphim Energy Group	Seraphim modules with 35 and 40 mm frames SEG-aYY-xxxZZ Where "a" can be blank, 6 or B; "YY" can be blank, MA, MB, PA, or PB; and "ZZ" can be blank, BB, BG, BW, HV, WB, WW, BMB, BMB-HV
Seraphim USA	Seraphim modules with 40 and 50 mm frames SRP-xxx-6YY-ZZ Where "xxx" is the module power rating; and "YY" can be MA, MB, PA, PB, QA-XX-XX, and QB-XX-XX; ZZ is blank, BB or HV

Manufacturer**Model Number**

Sharp	Sharp modules with 35 and 40 mm frames NUYYxxx Where "YY" can be SA or SC
Silfab	Silfab Modules with 38 mm frames SYY-Z-xxxAb Where "YY" can be IL, SA, LA, SG or LG; "Z" can be blank, M, P, or X; "A" can be blank, B, H, M, N; and "b" can be A, L, G, or T
Solaria	Solaria modules with 40 mm frames PowerXT xxxY-ZZ Where "Y" can be R or C; and "ZZ" can be AC, BD, BX, BY, PD, PM, PM-AC, PX, PZ, WX or WZ
Solarcity (Tesla)	Solarcity modules with 40 mm frames SCxxxYY Where "YY" can be blank, B1 or B2
SolarTech	SolarTech modules with 42 mm frames STU-xxxYY Where "YY" can be PERC or HJT
SolarWorld AG	SolarWorld Sunmodule Plus, Protect, Bisun, XL, Bisun XL, may be followed by mono, poly, duo, black, bk, or clear; modules with 31, 33 or 46 mm frames SW-xxx
SolarWorld Americas	SolarWorld Sunmodule Plus, Protect, Bisun, XL, Bisun XL, may be followed by mono, poly, duo, black, bk, or clear; modules with 33 mm frames SWA-xxx
Sonali	Sonali Modules with 40 mm frames SSxxx
Stion	Stion Thin film modules with 35 mm frames STO-xxx or STO-xxxA
SunEdison	SunEdison Modules with 35, 40 & 50 mm frames SE-YxxxZABCDE Where "Y" can be B, F, H, P, R, or Z; "Z" can be 0 or 4; "A" can be B,C,D,E,H,I,J,K,L,M, or N ; "B" can be B or W; "C" can be A or C; "D" can be 3, 7, 8, or 9; and "E" can be 0, 1 or 2
Suniva	Suniva modules with 35, 38, 40, 46, and 50 mm frames OPTxxx-AA-B-YYY-Z MVXxxx-AA-B-YYY-Z Where "AA" is either 60 or 72; "B" is either 4 or 5; "YYY" is either 100,101,700,1B0, or 1B1; and "Z" is blank or B
Sunpower	Sunpower standard (G3 or G4) or InvisiMount (G5) 40 and 46 mm frames SPR-Zb-xxx-YY Where "Z" is either A, E, P or X; "b" can be blank, 17, 18, 19, 20, 21, or 22; and "YY" can be blank, BLK, COM, C-AC, D-AC, E-AC, G-AC, BLK-C-AC, or BLK-D-AC

Manufacturer**Model Number**

Sunspark	Sunspark modules with 40 mm frames SYY-xxxZ Where “YY” can be MX or ST; and “Z” can be M, MB, P or W
Suntech	Suntech Modules with 35, 40 and 50mm frames STPxxxy-zz/aa Where “y” is blank or S; and “zz” can be 20, 24; and “aa” can be Vd, Vem, Vfw, Wdb, Wde or Wd
Talesun	Talesun modules with 35 and 40 frames TP6yZZaaxxx-b Where “yy” can be blank, F or H; “ZZ” can be 60 or 72; “aa” can be M or P; and “b” can be blank, B, T, or (H)
Trina	Trina Modules with 30, 35, 40 and 46mm frames TSM-xxxYZZ Where “YY” can be DD05, DD06, DD14, DE14, DE15, DEG15, PA05, PC05, PD05, PD06, PA14, PC14, PD14, PE14, or PE15 ; and “ZZ” can be blank, .05, .08, .10, .18, .08D, .18D, 0.82, .002, .00S, 05S, 08S, A, A.05, A.08, A.10, A.18, A(II), A.05(II), A.08(II), A.082(II), A.10(II), A.18(II), H, H(II), H.05(II), H.08(II), HC.20(II), HC.20(II), M, M(II), M.05(II), MC.20(II)
URE	URE modules with 35 mm frames DyZxxxHaa Where “y” can be 6 or 7; “Z” can be K or M; and “aa” can be H3A, H4A, or H8A
Vikram	Vikram solar modules with 40 mm frames VSyy.ZZ.AAA.bb Where “yy” can be M, P, MBB, MH, MS, MHBB, or PBB; “ZZ” can be 60 or 72; “AAA” is the module power rating; and “bb” can be 03.04 or 05
VSUN	VSUN modules with 35 and 40 mm frames VSUNxxx-YYz-aa Where “YY” can be 60, 72, 120, or 144; “z” can be M, P, MH, PH, or BMH; and “aa” can be blank, BB, or DG
Waaree	Waaree modules with 40mm frames WSyy-xxx where “yy” can be blank, or M
Winaico	Winaico modules with 35 and 40 mm frames Wsy-xxxZa Where “y” can be either P or T; “Z” can be either M, P, or MX; and “a” can be blank or 6
Yingli	Panda, YGE, YGE-U, and YLM series modules with 35, 40, and 50 mm frames
ZNShine	ZNShine Modules with 30, 35, and 40mm frames ZXy6-ZZaa-xxx/b Where “y” can be M or P; “ZZ” can be blank, H, HLD, HLDD, LD, LDD, NH, NHLDD or NHLDD; “aa” can be 60, 72, 120 or 144; and “b” can be M or P

Tested and/or Evaluated Module Level Power Electronics for use with the Accessory Frame Bracket

Approved Module Level Power Electronics
SolarEdge
P300, P320, P340, P370, P400, P405, P485, P505, P600, P700, P730, P800p, P800s, P850, P860
Enphase
M250-72, 250-60, M215-60, C250-72, S230, S280, IQ 6, IQ 6+, IQ IQ7, IQ 7A, IQ 7+, IQ 7X, Q Aggregator

Bonding Information

The Accessory Frame Bracket (AFB) is a UL 2703 Recognized product used to mount and electrically bond module level power electronics (MLPE) that have been evaluated for use in combination with UL 1703 Listed Modules, as listed in the above sections, and installed per the provided instructions.

The Accessory Frame Bracket and bonding pins are rated for multiple use and are location independent.

Bonding Method: The AFB electrically bonds the MLPE to the module frame with bonding pins that pierce both module frame and MLPE brackets coatings when the serrated bracket attachment bolts are torqued to 15 ft-lbs. The system is to be installed in accordance with the latest National Electrical Code, ANSI/NFPA 70. Any local electrical codes must be adhered in addition to the national electrical codes. System maximum series fuse rating shall not exceed 25 Amps.

Miscellaneous Information

Fire Rating:

Use of Accessory Frame Bracket will not affect Fire Rating of the racking system.

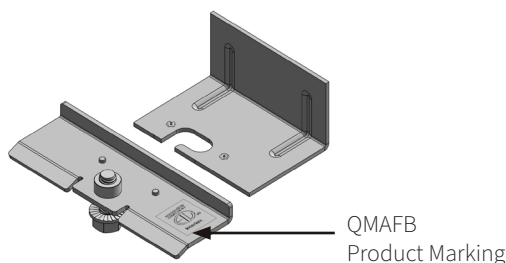
Periodic Re-inspections:

If re-inspections yields loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replacement immediately.

Fuse Rating:

Maximum Series Fuse Rating = 25A

Product Marking





UL STD 2703

BI 7.2.3-37_1



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