

INSTALLATION INSTRUCTIONS

INSULATED ALUMINUM POWER BARS - CLEAR AND BLACK

WARNING: FAILURE TO FOLLOW THE INSTALLATION INSTRUCTIONS SHOWN BELOW CAN CAUSE A CONDITION OF SEVERE CONNECTOR OVERHEATING AND RELATED HAZARDS.

"IPB" & "IPBB" TYPE POWER BARS ACCOMODATE FROM TWO TO FOURTEEN CONDUCTORS. "IPBM" & "IPBBM" TYPE POWER BARS ACCOMODATE FROM TWO TO TWELVE CONDUCTORS IN THE FOLLOWING COMBINATIONS:
ALUMINUM TO ALUMINUM
ALUMINUM TO COPPER
COPPER TO COPPER

INSTALLATION PROCEDURE

1. SELECT PROPER IPB, IPBM, IPBB, IPBBM CONNECTOR SIZE AND CONFIGURATION FOR THE CONDUCTOR RANGE TO BE USED.
2. STRIP THE INSULATION TO LENGTH SPECIFIED IN TABLE FOR FULL INSERTION INTO THE CONNECTOR AND TO OBTAIN PROPER SCREW CONTACT. WHEN STRIPPING INSULATION, BE CAREFUL NOT TO NICK THE CONDUCTOR STRANDS. A PROPER INSULATION STRIPPING TOOL OR USE OF A PENCIL SHAVING METHOD IS RECOMMENDED.

WARNING: NICKING OF STRANDS WILL CAUSE A REDUCTION IN CURRENT CARRYING CAPACITY OF THE CONDUCTORS.

WARNING: CONDUCTOR MUST BE STRIPPED IMMEDIATELY PRIOR TO INSTALLATION.

3. CONDUCTOR SURFACE SHOULD BE THOROUGHLY CLEANED BY USE OF A STIFF WIRE BRUSH OR ABRASIVE CLOTH TO ABRABE SURFACE.
4. AFTER CONDUCTORS ARE PROPERLY PREPARED FOR INSTALLATION, INSERT CONDUCTORS INTO CONNECTOR BODY TO A SUFFICIENT DEPTH TO ALLOW FULL CONTACT WITH SET SCREW. THE IPB CLEAR INSULATION WILL ALLOW THE INSTALLER TO VISUALLY VERIFY THAT FULL INSERTION DEPTH HAS BEEN ACHIEVED.
5. SET SCREWS SHALL BE TIGHTENED TO FINAL TORQUE VALUE SHOWN IN TIGHTENING TORQUE TABLE BELOW.

WARNING: FAILURE TO ACHIEVE PROPER TORQUE WILL RESULT IN CONNECTOR AND CONDUCTOR OVERHEATING.

TIGHTENING TORQUE VALUES FOR PENN-UNION INSULATED POWER BAR CONNECTORS			
CATALOG FAMILY	INTERNAL SOCKET SIZE ACROSS FLATS (IN)	TIGHTENING TORQUE (IN•LB)	MINIMUM CONDUCTOR INSULATION STRIP LENGTH (IN)
IPB, IPBM-NA4 IPBB, IPBBM-NA4	1/8	45 (10-14 AWG) 50 (4-8 AWG)	9/16 (±1/16)
IPB, IPBM-NA2/0 IPBB, IPBBM-NA2/0	7/32	180	3/4 (±1/16)
IPB, IPBM-NA250* IPBB, IPBBM-NA250*	5/16	275	1-1/16 (±1/16)
IPB, IPBM-NA350* IPBB, IPBBM-NA350*	5/16	275	1-1/4 (±1/8)
IPB, IPBM-NA600* IPBB, IPBBM-NA600*	3/8	400	1-3/8 (±1/8)
IPB, IPBM-NA750* IPBB, IPBBM-NA750*	3/8	550	1-3/4 (±1/8)
IPB, IPBM-NA1000* IPBB, IPBBM-NA1000*	1/2	600 (UL 486A-B) 800 (ANSI C119.6)	2-5/8 (±1/8)

*SUITABLE FOR USE ON THE LINE SIDE OF SERVICE EQUIPMENT, "SVC"

CONDUCTOR SIZE & STRANDING					
CATALOG FAMILY	CLASS B & C	CLASS G	CLASS H	CLASS I	CLASS K
IPB, IPBM-NA4 IPBB, IPBBM-NA4	4 STR. - 14 SOL.	#6 (49/.0231) - #14 (49/.0092)	#6 (133/.0140) - #9 (133/.0099)	#6 (63/.0201)	#6 (266/.0100) - #9 (133/.0100)
IPB, IPBM-NA2/0 IPBB, IPBBM-NA2/0	2/0 STR. - 14 SOL.	#1 (133/.0251) - #14 (49/.0092)	#1 (259/.0180) - #9 (133/.0099)	#1 (210/.0201) - #6 (63/.0201)	#1 (836/.0100) - #9 (133/.0100)
IPB, IPBM-NA250 IPBB, IPBBM-NA250	250 MCM - 10 SOL.	3/0 (133/.0355) - #10 (49/.0146)	3/0 (259/.0255) - #9 (133/.0099)	3/0 (418/.0201) - #6 (63/.0201)	3/0 (1666/.0100) - #9 (133/.0100)
IPB, IPBM-NA350 IPBB, IPBBM-NA350	350 MCM - 10 SOL.	250 MCM (259/.0311) - #10 (49/.0146)	250 MCM (427/.0242) - #9 (133/.0099)	250 MCM (637/.0201) - #6 (63/.0201)	250 MCM (2499/.0100) - #9 (133/.0100)
IPB, IPBM-NA600 IPBB, IPBBM-NA600	600 MCM - 4 STR.	350 MCM (259/.0368) - #4 (49/.0292)	350 MCM (427/.0286) - #4 (133/.0177)	350 MCM (882/.0201) - #4 (105/.0201)	350 MCM (3458/.0100) - #4 (420/.0100)
IPB, IPBM-NA750 IPBB, IPBBM-NA750	750 MCM - 2 STR.	500 MCM (259/.0439) - #2 (49/.0368)	500 MCM (427/.0342) - #2 (259/.0160)	500 MCM (1225/.0201) - #2 (161/.0201)	500 MCM (5054/.0100) - #2 (665/.0100)
IPB, IPBM-NA1000 IPBB, IPBBM-NA1000	1000 MCM - 1/0 STR.	600 MCM (427/.0375) - #1 (133/.0251)	600 MCM (703/.0292) - #1 (259/.0180)	600 MCM (1470/.0201) - #1 (210/.0201)	600 MCM (5985/.0100) - #1 (836/.0100)
					DIESEL LOCOMOTIVE CABLE (DLO) #6 (61/.0201) - #14 (19/.0142) #1 (225/.0201) - #14 (19/.0142) 3/0 (450/.0201) - #10 (27/.0201) 4/0 (550/.0201) - #10 (27/.0201) 373 MCM (925/.0201) - #4 (105/.0201) 535 MCM (1325/.0201) - #2 (150/.0201) 646 MCM (1600/.0201) - #1 (225/.0201)

PROPER FUNCTIONING OF PENN-UNION CO. LLC. "IPB", "IPBM", "IPBB", "IPBBM" SERIES INSULATED POWER BARS IS CONTINGENT UPON INSTALLATION OF THIS PRODUCT IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND THE ABOVE INSTRUCTIONS. ANY APPLICATION THAT IS NOT IN ACCORDANCE IS CONSIDERED A MISUSE OF THE PRODUCT. READ INSTRUCTIONS CAREFULLY BEFORE MAKING ANY ASSEMBLIES.



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PENN-UNION PARALLEL RATED ALUMINUM PRE-INSULATED POWER BAR CONNECTOR

INSTALLATION INSTRUCTIONS

TYPES: IPB, IPBM, IPBB, IPBBM

UL 486A/B LISTED

CLASS B & C STRANDED COPPER AND ALUMINUM PARALLEL CONDUCTORS ONLY

ALLOWABLE CONFIGURATIONS INCLUDE:

- 2 CONDUCTORS IN PARALLEL WHEN USING A 4 POSITION CONNECTOR
- 3 CONDUCTORS IN PARALLEL WHEN USING A 6 POSITION CONNECTOR
- 4 CONDUCTORS IN PARALLEL WHEN USING A 8, 10, 12 OR 14 POSITION CONNECTOR
- 4 CONDUCTORS IN PARALLEL IS THE MAXIMUM APPROVED FOR USE IN THIS SERIES

MINIMUM CONDUCTOR SIZE FOR PARALLELING APPLICATIONS IS 1/0 AWG

*MAX. CURRENT RATINGS ARE PER UL AND NEC

THE SELECT CONNECTOR/CONDUCTOR CONFIGURATIONS BELOW ARE COMPLIANT WITH UL AND THE NEC WHEN INSTALLED AND OPERATED IN ACCORDANCE WITH THE APPLICATION CRITERIA BELOW



CONDUCTOR RANGE	CLEAR INSULATED IPB (S, D & A) SERIES	CLEAR INSULATED IPBM (S & D) SERIES	BLACK INSULATED IPBB (S, D & A) SERIES	BLACK INSULATED IPBBM (S & D) SERIES	MAX. NUMBER OF CONDUCTORS IN PARALLEL	COPPER CONDUCTOR MAX. AMPS	ALUMINUM CONDUCTOR MAX AMPS
2/0-1/0 AWG	IPB-NA2/0-4	IPBM-NA2/0-4	IPBB-NA2/0-4	IPBBM-NA2/0-4	2	350	270
	IPB-NA2/0-6	IPBM-NA2/0-6	IPBB-NA2/0-6	IPBBM-NA2/0-6	3	525	405
	IPB-NA2/0-8	IPBM-NA2/0-8	IPBB-NA2/0-8	IPBBM-NA2/0-8	4	560	432
	IPB-NA2/0-10	IPBM-NA2/0-10	IPBB-NA2/0-10	IPBBM-NA2/0-10	4	560	432
	IPB-NA2/0-12	IPBM-NA2/0-12	IPBB-NA2/0-12	IPBBM-NA2/0-12	4	560	432
	IPB-NA2/0-14	-	IPBB-NA2/0-14	-	4	560	432
250 MCM-1/0 AWG	IPB-NA250-4	IPBM-NA250-4	IPBB-NA250-4	IPBBM-NA250-4	2	527	410
	IPB-NA250-6	IPBM-NA250-6	IPBB-NA250-6	IPBBM-NA250-6	3	790	615
	IPB-NA250-8	IPBM-NA250-8	IPBB-NA250-8	IPBBM-NA250-8	4	1053	820
	IPB-NA250-10	IPBM-NA250-10	IPBB-NA250-10	IPBBM-NA250-10	4	1053	820
	IPB-NA250-12	IPBM-NA250-12	IPBB-NA250-12	IPBBM-NA250-12	4	1053	820
	IPB-NA250-14	-	IPBB-NA250-14	-	4	1053	820
350 MCM-1/0 AWG	IPB-NA350-4	IPBM-NA350-4	IPBB-NA350-4	IPBBM-NA350-4	2	657	514
	IPB-NA350-6	IPBM-NA350-6	IPBB-NA350-6	IPBBM-NA350-6	3	985	770
	IPB-NA350-8	IPBM-NA350-8	IPBB-NA350-8	IPBBM-NA350-8	4	1314	1028
	IPB-NA350-10	IPBM-NA350-10	IPBB-NA350-10	IPBBM-NA350-10	4	1314	1028
	IPB-NA350-12	IPBM-NA350-12	IPBB-NA350-12	IPBBM-NA350-12	4	1314	1028
	IPB-NA350-14	-	IPBB-NA350-14	-	4	1314	1028
600 MCM-1/0 AWG	IPB-NA600-4	IPBM-NA600-4	IPBB-NA600-4	IPBBM-NA600-4	2	1035	810
	IPB-NA600-6	IPBM-NA600-6	IPBB-NA600-6	IPBBM-NA600-6	3	1554	1215
	IPB-NA600-8	IPBM-NA600-8	IPBB-NA600-8	IPBBM-NA600-8	4	2070	1620
	IPB-NA600-10	IPBM-NA600-10	IPBB-NA600-10	IPBBM-NA600-10	4	2070	1620
	IPB-NA600-12	IPBM-NA600-12	IPBB-NA600-12	IPBBM-NA600-12	4	2070	1620
	IPB-NA600-14	-	IPBB-NA600-14	-	4	2070	1620
750 MCM-1/0 AWG	IPB-NA750-4	IPBM-NA750-4	IPBB-NA750-4	IPBBM-NA750-4	2	1178	930
	IPB-NA750-6	IPBM-NA750-6	IPBB-NA750-6	IPBBM-NA750-6	3	1767	1395
	IPB-NA750-8	IPBM-NA750-8	IPBB-NA750-8	IPBBM-NA750-8	4	2356	1860
	IPB-NA750-10	IPBM-NA750-10	IPBB-NA750-10	IPBBM-NA750-10	4	2356	1860
	IPB-NA750-12	IPBM-NA750-12	IPBB-NA750-12	IPBBM-NA750-12	4	2356	1860
	IPB-NA750-14	-	IPBB-NA750-14	-	4	2356	1860
1000 MCM-1/0 AWG	IPB-NA1000-4	IPBM-NA1000-4	IPBB-NA1000-4	IPBBM-NA1000-4	2	1403	1125
	IPB-NA1000-6	IPBM-NA1000-6	IPBB-NA1000-6	IPBBM-NA1000-6	3	2104	1688
	IPB-NA1000-8	IPBM-NA1000-8	IPBB-NA1000-8	IPBBM-NA1000-8	4	2806	2250
	IPB-NA1000-10	IPBM-NA1000-10	IPBB-NA1000-10	IPBBM-NA1000-10	4	2806	2250
	IPB-NA1000-12	IPBM-NA1000-12	IPBB-NA1000-12	IPBBM-NA1000-12	4	2806	2250
	IPB-NA1000-14	-	IPBB-NA1000-14	-	4	2806	2250

NOTE: FOLLOW ALL STANDARD INSTALLATION INSTRUCTIONS AS PROVIDED FOR THIS PRODUCT SERIES