

Molded case circuit breakers and power distribution blocks high short circuit current ratings



Overview

Short circuit current ratings (SCCR) for industrial control panels are now required by UL® 508A, the standard for Industrial Control Panels, and the 2005 National Electrical Code® (NEC®) Articles 409.110 for Industrial Control Panels, 670.3A for Industrial Machinery Electrical Panels, and 440.4B for HVAC equipment.

An unmarked power distribution block is typically assigned a maximum value of 10 kA per Table SB4.1 in UL 508A. This rating limits the overall SCCR the panelbuilder can achieve. By using tested combinations of Eaton's molded case circuit breakers and power distribution blocks, the default rating of 10 kA can be increased to up to 65 kA, depending on the breaker and block used. These UL listed ratings offer the industrial control panelbuilder the small size, reset capability, and add-on accessories of circuit breakers, along with the flexibility of power distribution blocks, without sacrificing the overall short circuit rating for the panel.

The combinations are listed under UL File Number E256146, Vol. 1, Category Control Number QPQS, and can be accessed through UL's Web site. Ratings and sizes are detailed on the following pages. For more information, please visit www.eaton.com/UL508A.

The panelbuilder now has several options when distributing power within a control panel through feeder and branch circuit taps:

- Listed and tested power terminal blocks and molded case circuit breakers with high short circuit current ratings
- Multi-wire terminals mounted on the load end of the circuit breaker (refer to Eaton Application Paper AP01200004E, *Application of Multi-Wire Terminals for Molded Case Circuit Breakers*)
- Multi-equipped molded case circuit breaker terminals (refer to Eaton Application Paper AP01200007E, *Application of Tap Rules to Molded Case Breaker Terminals*)

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**Table 1. Molded Case Circuit Breakers (MCCB) and Power Distribution Blocks (PDB)
Short Circuit Current Ratings (SCCR) for UL 508A Applications with Circuit Breakers**
Power Distribution Block

Power Distribution Block Catalog Number	Description	Power Distribution Block Enclosure Size inches (mm)	Current Rating	Openings per Pole		Line Conductors Cu	Load Conductors Cu	SCCR @ 480V (Load Side)	Eaton Breaker Type	Available Breaker Current Ratings
				Line	Load					
CHDB2203	Feeder listed open PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	#4-#10 #12 #14	18 kA 18 kA 14 kA	EGB 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB2203	Feeder listed open PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	#4-#10 #12 #14	25 kA 22 kA 14 kA	EGE 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB2203	Feeder listed open PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	#4-#10 #12 #14	35 kA 22 kA 14 kA	EGS 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB2203	Feeder listed open PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	#4-#10 #12 #14	65 kA 22 kA 14 kA	EGH 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB2203	Feeder listed open PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	#4-#10 #12 #14	65 kA 22 kA 14 kA	EGC125 ①	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3213	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	175			2/0-#8	#4-#10 #12 #14	18 kA 18 kA 18 kA	EGB 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3213	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	175			2/0-#8	#4-#10 #12 #14	25 kA 22 kA 18 kA	EGE 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3213	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	175			2/0-#8	#4-#10 #12 #14	35 kA 22 kA 18 kA	EGS 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3213	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	175			2/0-#8	#4-#10 #12 #14	65 kA 22 kA 18 kA	EGH 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3213	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	175			2/0-#8	#4-#10 #12 #14	65 kA 22 kA 18 kA	EGC125 ①	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB204F	Feeder listed enclosed PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	2/0-#8	18 kA	EGB 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB204F	Feeder listed enclosed PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	2/0-#8	25 kA	EGE 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB204F	Feeder listed enclosed PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	2/0-#8	35 kA	EGS 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB204F	Feeder listed enclosed PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	2/0-#8	65 kA	EGH 125	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB204F	Feeder listed enclosed PDB	16.00 x 16.00 x 6.75 (406.4 x 406.4 x 171.5)	175			2/0-#8	2/0-#8	65 kA	EGC125 ①	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125
CHDB3233	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	25 kA 25 kA 14 kA	JGE250	70, 90, 100, 125, 150, 175, 200, 225, 250

① This breaker frame is marked current limiting and suitable for use as current limiting per UL 508A SB.4.3.2.

**Table 1. Molded Case Circuit Breakers (MCCB) and Power Distribution Blocks (PDB)
Short Circuit Current Ratings (SCCR) for UL 508A Applications with Circuit Breakers (continued)**

Power Distribution Block

Power Distribution Block Catalog Number	Description	Power Distribution Block Enclosure Size inches (mm)	Current Rating	Openings per Pole		Line Conductors Cu	Load Conductors Cu	SCCR @ 480V (Load Side)	Eaton Breaker Type	Available Breaker Current Ratings
				Line	Load					
CHDB3233	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	35 kA 35 kA 14 kA	JGS250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3233	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	65 kA 42 kA 14 kA	JGH250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3233	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	65 kA 42kA 25 kA	JGC250 ①	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3703	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	25 kA 25 kA 14 kA	JGE250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3703	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	35 kA 35 kA 14 kA	JGS250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3703	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	65 kA 42 kA 14 kA	JGH250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3703	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	65 kA 42kA 25 kA	JGC250 ①	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3713	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	25 kA 25 kA 14 kA	JGE250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3713	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	35 kA 35 kA 14 kA	JGS250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3713	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	50 kA 42 kA 14 kA	JGH250	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB3713	Feeder listed open PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	310			350 kcmil-#4	#4-#6 #8 #10	65 kA 50 kA 25 kA	JGC250 ①	70, 90, 100, 125, 150, 175, 200, 225, 250
CHDB330F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	380			500 kcmil-#3	#2-#8	14 kA	LGE400	250, 300, 350, 400
CHDB330F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	380			500 kcmil-#3	#2-#8	14 kA	LGS400	250, 300, 350, 400
CHDB330F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	380			500 kcmil-#3	#2-#8	14 kA	LGH400	250, 300, 350, 400
CHDB330F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	380			500 kcmil-#3	#2-#8	25 kA	LGC400 ①	250, 300, 350, 400
CHDB377F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	570			(2) 300 kcmil-#2	#4 #6 #8	30 kA 18kA 14 kA	LGE600	250, 300, 350, 400, 500, 600
CHDB377F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	570			(2) 300 kcmil-#2	#4 #6 #8	30kA 18kA 14 kA	LGS600	250, 300, 350, 400, 500, 600
CHDB377F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	570			(2) 300 kcmil-#2	#4 #6 #8	30kA 18kA 14 kA	LGH600	250, 300, 350, 400, 500, 600
CHDB377F	Feeder listed enclosed PDB	24.00 x 20.00 x 6.75 (609.6 x 508.0 x 171.5)	570			(2) 300 kcmil-#2	#4 #6 #8	42kA 35 kA 14 kA	LGC600 ①	250, 300, 350, 400, 500, 600

① This breaker frame is marked current limiting and suitable for use as current limiting per UL 508A SB.4.3.2.

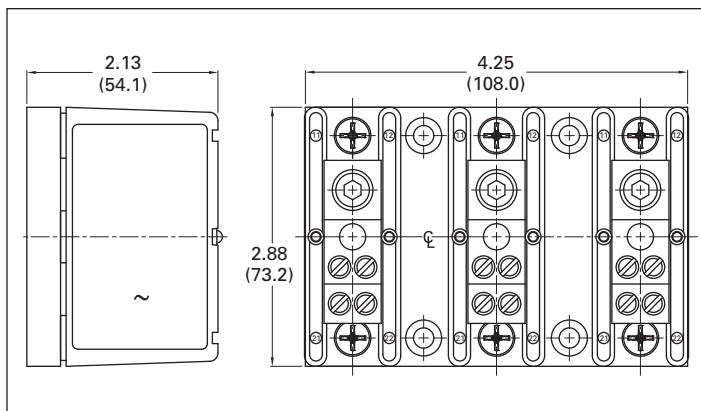


Figure 1. CHDB2203. Dimensions in Inches (mm)

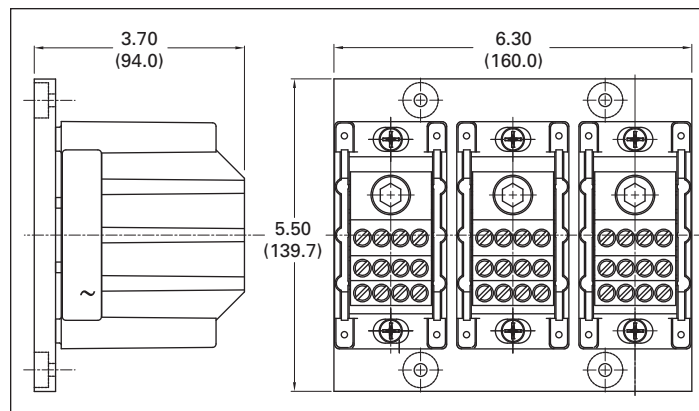


Figure 4. CHDB3703. Dimensions in Inches (mm)

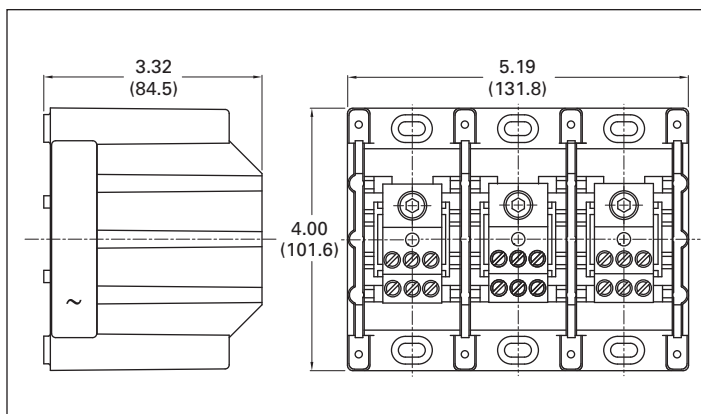


Figure 2. CHDB3213. Dimensions in Inches (mm)

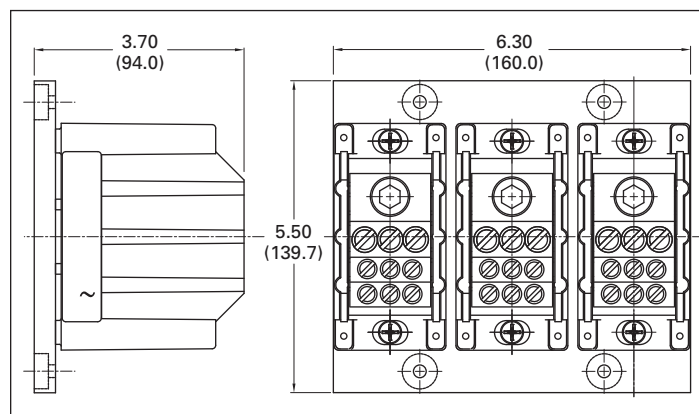


Figure 5. CHDB3713. Dimensions in Inches (mm)

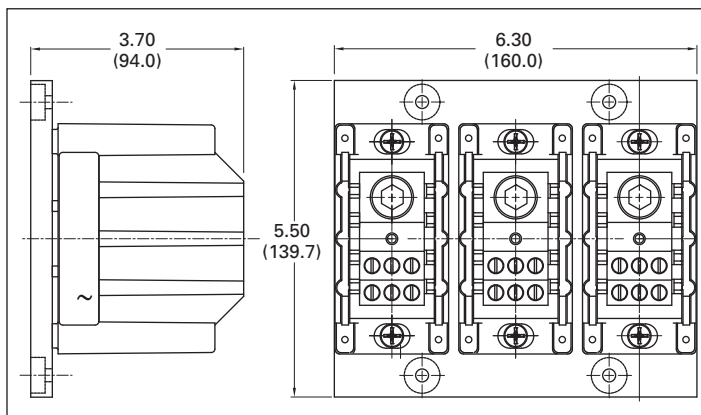


Figure 3. CHDB3233. Dimensions in Inches (mm)

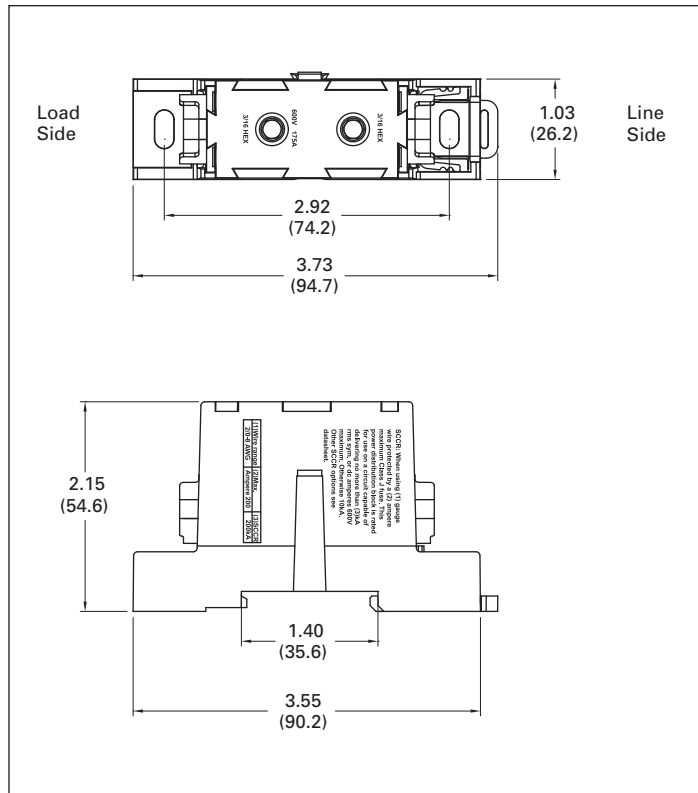


Figure 6. CHDB204F. Dimensions in Inches (mm)

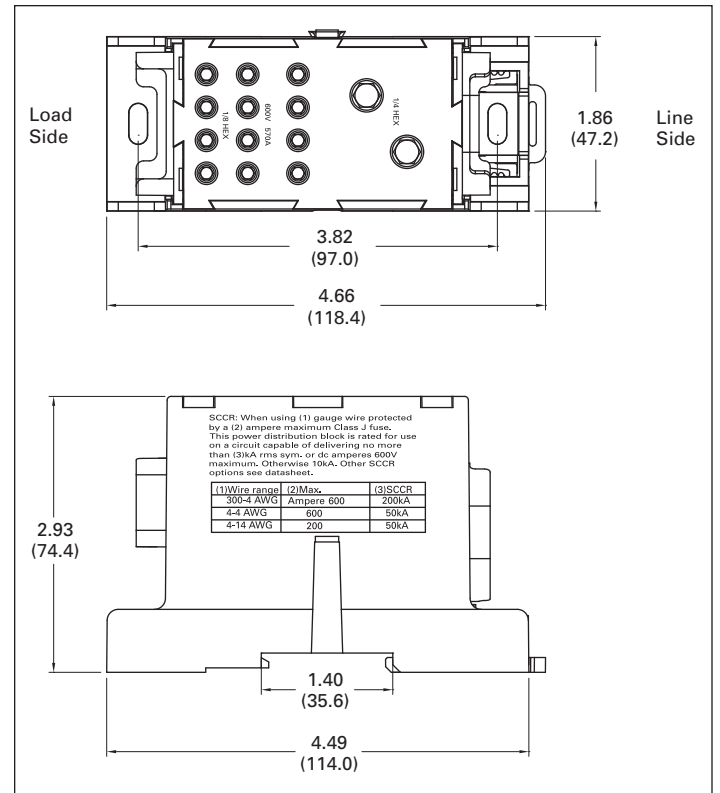


Figure 8. CHDB377F. Dimensions in Inches (mm)

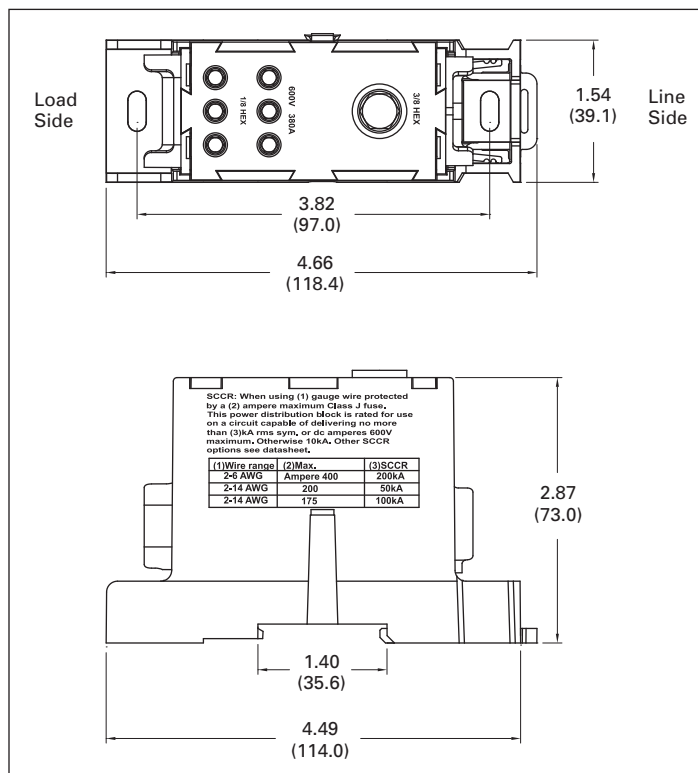


Figure 7. CHDB330F. Dimensions in Inches (mm)

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