

# Grounding and bonding

## Grounding and bonding products



Cat. no. 10109

- Material: malleable iron
- Standard finish: zinc plated
- For use with aluminum and steel cable tray



Cable tray ground clamp

	Cat. no.	Cable	Description
 Cat. no. 10105	10105	Copper or aluminum	Cable for single conductors #4 solid to 2/0 str.
	10109	Copper or aluminum	Cable for single conductors 2/0 solid to 4/0 str.



- Bolt has square shank to prevent turning and allow clamp to be tightened with one wrench
- Material: copper alloy
- Standard finish: tin-plated for aluminum cable tray
- Castings are of high-strength, corrosion-resistant copper alloy



Blackburn® ground clamp

Figure 1	Figure 2	Cat. no.	Conductor range (AWG)		Figure
			Min.	Max.	
		GTC13P	#4 sol.	2/0 str.	1
		GTC14P	2/0 str.	250 kcmil	1
		GTC23P	#4 sol.	2/0 str.	2
		GTC24P	2/0 str.	250 kcmil	2

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- Material: tin-plated high strength 6061-T6 aluminum alloy
- These grounding connectors are dual rated for aluminum and copper conductors
- The open face design allows the installer to quickly lay in the grounding conductor as a jumper

#### Blackburn lay-in lug



Cat. no.	Conductor range (AWG)		(in.)	Stud size (mm <sup>2</sup> )
	Min.	Max.		
LL306	#6 solid	3/0 str.	0.33	8.38
LL2506	#6 str.	250 kcmil	0.33	8.38



- Custom braids are available
- Material: copper
- Standard finish: tin-plated

#### Bonding jumpers



Cat. no.	Bonding amp capacity (A)	Single bolt hole (in.)	Description
FBD12-1*	600	7/16	12 in. flat flexible braid
FBD16-1*	600	7/16	16 in. flat flexible braid
FBD18-1*	600	7/16	18 in. flat flexible braid
FBD24-1*	600	7/16	24 in. flat flexible braid
FBD30-1*	600	7/16	30 in. flat flexible braid
FBD36-1*	600	7/16	36 in. flat flexible braid
FBE12-1*	1200	9/16	12 in. flat flexible braid
FBE16-1*	1200	9/16	16 in. flat flexible braid
FBE18-1*	1200	9/16	18 in. flat flexible braid
FBE24-1*	1200	9/16	24 in. flat flexible braid
FBE30-1*	1200	9/16	30 in. flat flexible braid
FBE36-1*	1200	9/16	36 in. flat flexible braid
FBG12-1*	2000	9/16	12 in. flat flexible braid
FBG16-1*	2000	9/16	16 in. flat flexible braid
FBG18-1*	2000	9/16	18 in. flat flexible braid
FBG24-1*	2000	9/16	24 in. flat flexible braid
FBG30-1*	2000	9/16	30 in. flat flexible braid
FBG36-1*	2000	9/16	36 in. flat flexible braid

\* CSA Certified and UL Listed for grounding and bonding equipment.

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#### Blackburn cable tray ground clamp



Cat. no.	Cable	Description
CTG250	Al or Cu	For parallel or tapping applications, #2 solid to 250 kcmil

Table 1 (NEC Table 392.7 (B))

#### Metal area requirements for cable trays used as equipment grounding conductors

Maximum fuse ampere rating, circuit breaker ampere trip setting, or circuit breaker protective relay ampere trip setting for ground fault protection of any cable circuit in the cable tray system	Minimum cross-sectional area of metal* in square inches	
	Steel cable trays	Aluminum cable trays
60	0.20	0.20
100	0.40	0.20
200	0.70	0.20
400	1.00	0.40
600	1.50**	0.40
1000	–	0.60
1200	–	1.00
1600	–	1.50
2000	–	2.00**

For SI units: one square inch = 645 square millimeters.

\* Total cross-sectional area of both side rails for ladder or trough-type cable trays; or the minimum cross-sectional area of metal in channel-type cable trays or cable trays of one-piece construction.

\*\* Steel cable trays shall not be used as equipment grounding conductors for circuits with ground-fault protection above 600 A. Aluminum cable trays shall not be used as equipment grounding conductors for circuits with ground-fault protection above 2000 A. For larger ampere ratings, an additional grounding conductor must be used.

For more information on grounding and bonding cable tray, refer to NEMA VE 2 cable tray installation guidelines.

Table 2 (Based on NEC Table 250-95 and CEC Table 16)

#### Minimum size equipment grounding Conductors for grounding and bonding raceway and equipment

Rating or setting of automatic overcurrent device in circuit ahead of equipment, conduit, etc. Not exceeding (amperes)	Copper wire no.	Size (AWG)
		Aluminum or copper-clad aluminum wire no.*
15	14	12
20	12	10
30	10	8
40	10	8
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250 kcmil
1600	4/0	350 kcmil
2000	250 kcmil	400 kcmil
2500	350 kcmil	600 kcmil
3000	400 kcmil	600 kcmil
4000	500 kcmil	800 kcmil
5000	700 kcmil	1,200 kcmil

\* See installation restrictions in NEC Section 250-92(a).