

TECHNICAL BRIEF

DLS SERIES CHARGERS / CONVERTERS: Recommended Wire Gauges and Lengths



For proper operation and performance of the IOTA DLS Series charger and converter, refer to the chart below for recommended wire gauge and lengths for connection between the DLS unit and the battery or load. The values represented in the chart allow for a **2% voltage drop** along the wire, which is determined to be a safe operating range for DLS and DLS/IQ4 applications.

Please note:

- Length values are for copper wire. For aluminum or copper-clad aluminum wire, lengths must be reduced.
- Values listed here are for normal room temperature (77°F or 25°C). For increased temperatures, lengths must be reduced accordingly. (For reference, at 140°F or 60°C, lengths need to be reduced by 15%)

TOTAL LENGTH (ONE-WAY) DISTANCE TO LOAD - ft (m)

	WIRE GAUGE								
	#14	#12	#10	#8	#6	#4	#2	#0	#000
DLS-15	3½ (1.07)	5½ (1.68)	9 (2.74)	14½ (4.42)	23 (7.01)	36 (10.97)	57 (17.37)	91 (27.74)	144½ (44.04)
DLS-30	1½ (.46)	2½ (.76)	4½ (1.37)	7 (2.13)	11½ (3.51)	18 (5.49)	28½ (8.69)	45½ (13.87)	72 (21.95)
DLS-45	1 (.3)	1½ (.46)	3 (.91)	4½ (1.37)	7½ (2.29)	12 (3.66)	19 (5.79)	30 (9.14)	48 (14.63)
DLS-55		1½ (.46)	2½ (.76)	3½ (1.07)	6 (1.83)	10 (3.05)	15½ (4.72)	25 (7.62)	40 (12.19)
DLS-75		1 (.3)	1½ (.46)	2½ (.76)	4½ (1.37)	7 (2.13)	11 (3.35)	17½ (5.33)	28 (8.53)
DLS-90			1½ (.46)	2 (.61)	3½ (1.07)	6 (1.83)	9½ (2.9)	15 (4.57)	24 (7.32)
DLS-27-15	7 (2.13)	11 (3.35)	18 (5.49)	28½ (8.69)	45½ (13.87)	73 (22.25)	116 (35.36)	184½ (56.24)	293 (89.31)
DLS-27-25	4 (1.22)	6½ (1.98)	10 (3.05)	17 (5.18)	27½ (8.38)	43½ (13.26)	69 (21.03)	110 (33.53)	174½ (53.19)
DLS-27-40	2½ (.76)	4 (1.22)	6½ (1.98)	10½ (3.2)	17 (5.18)	27 (8.23)	42½ (12.95)	68 (20.73)	108½ (33.07)

For 48V applications, or for any other questions, contact our Technical Services Department at 1-800-866-4682.