



# Tech Info Library

## SCSI: Cable Specifications

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- To include complete cable specifications

TOPIC -----

I need SCSI cable specifications, including the wire type, gauge, and required shielding.

DISCUSSION -----

Here they are:

SCSI Cable

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Cable Construction

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38 conductors (19 twisted pairs) cable together. Each Pair shall consist of 2 single - 26 AWG insulated conductors twisted together with 4-8 twists/foot.

DC Resistance

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29 ohms per 1000ft. @ 20 degrees C (each conductor).

Voltage Rating

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30 VRMS

Dielectric Withstanding Voltage Between Shields

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500 Volts DC for 3 seconds

Capacitance (@ 1 KHz)

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- Between conductors of the same pair - 16 pf/ft Max.
- Between 1 conductor and all others tied to shield - 60 pf/ft

Attenuation

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6 db per 1000 ft Max @ 1.5 MHz

#### Characteristic Impedance

-----  
105 ohms at 1.5 MHz

#### Shielding

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Braid - 36 AWG copper with 90% min. coverage with 40-degree braid angle  
Foil - Aluminum/Mylar 0.0254/0.00889mm, spirally wrapped with  
25% overlap

#### SCSI Terminator

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The following information describes the connections inside the SCSI terminator,  
Apple part number 590-0348.

Each of the pins listed is connected straight through the connector (for  
example, 1 to 1, 2 to 2, and so on). In addition, each of the signal pins is  
connected through a resistor network to terminator power.

#### Example:

Pin 26 (DB0) is connected to pin 26. It is also connected to pin 1 (DB0 GND,  
its corresponding ground) through a 330-ohm resistor and to a common line,  
which terminates in pin 38 (terminator power), through a 220-ohm resistor.  
Similar connections occur for each signal pin.

Pin 38 (TERMPWR) is connected to the common line proceeding from the 220-ohm  
resistors. Pin 11 (DIFFSENS) is connected straight through only.

Here are the connections used in the SCSI terminator:

- Connect the following pins straight through to the same pin at the other end  
of the connector:

1 through 9, 11, 16, 18 through 34, 38, 41, 43 through 50

- Connect the first pin of each of the following pairs to a 330-ohm resistor,  
then to the second pin of the pair, then to a 220-ohm resistor, then to the  
terminator line (TERMPWR) as shown below.

1 -- 26			
2 -- 27			
3 -- 28			
4 -- 29			
5 -- 30	TERMPWR	DB1/ (example)	GROUND
6 -- 31		pin 1-9,16,18-25	
7 -- 32			
8 -- 33			
9 -- 34			
16 -- 41			

18 -- 43	-----/\ /\ /\ /\ /\-----	-----/\ /\ /\ /\ /\-----
19 -- 44		
20 -- 45	220-ohm	330-ohm
21 -- 46	resistor	resistor
22 -- 47		
23 -- 48		
24 -- 49		
25 -- 50		

- Connect pin 38 to the common terminator line (TERMPWR).  
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