



DeviceNet™ Cables

NP 159

Belden introduces the first two CL1, 600v shielded round cables in the market, 7896A and 7897A.

DeviceNet™ is a low-cost communications link to connect industrial devices to a network without the expense of hardwiring and traditional “homerun” cabling practices. The basic benefits are increased device-level diagnostics, direct connectivity, and overall improved communication. DeviceNet is an open network standard that addresses all kinds of field devices. It allows interchangeability of simple devices and total direct connectivity of larger, more complex communication links.

Features of Network

The network can support up to 64 nodes and the network end-to-end distance is variable, based on the network speed. At 125 Kbps, the maximum network distance is up to 500m. At the highest speed, 500 Kbps, the maximum network distance is up to 100m. The bus topology is a trunkline-dropline linear bus. DeviceNet utilizes device data and power conductors from the same cable, such as the Belden 3082A. This basic trunkline-dropline is composed of a twisted pair data pair bus and a twisted power pair bus. “Thick”, “Thin”, “Mid”, or “Flat” cable can be used for either trunks or drops, dependent only on the system speed and overall end-to-end distance.

A feature unique to DeviceNet is the ability to add a power tap at any point with a maximum power pair ampacity of 8 amps, allowing redundant power supplies.

Belden Cables for DeviceNet

The 300V Class 2 and the new 600V Class 1 rated Belden DeviceNet cables provide a maximum level of physical layer

versatility on the factory floor. There are multiple options offered for optimal performance in most industrial applications.

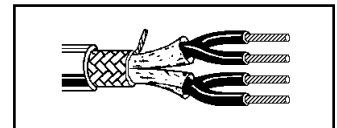
The standard cable is a cost-effective heavy-duty industrial PVC jacketed construction. Other standard constructions include a “Thick” and “Thin” cable with an industrial CPE jacket for the extremely harsh factory floor environment.

As an innovator in cable technology, Belden introduces five new products to the DeviceNet family: the “Mid” version of the DeviceNet cable, two “Flat” constructions, a “Thin” unshielded CL1, and the two first CL1, 600V shielded round DeviceNet cables on the market.

Be sure to contact Belden about other DeviceNet cabling options, as more innovative solutions become available.

Features and Benefits

- Data & Power in one cable
- Reduced Cable and installation costs
- Twisted and Shielded for noise immunity (round versions)
- Easier connectivity (flat versions)
- Fully compliant with ODVA specs



7896A and 7897A DeviceNet Class 1, 600 V Shielded Round

The two new Class 1, 600V, shielded round cables provide a maximum level of physical layer versatility on the factory floor.

Belden 7896A and 7897A allow end-users to put more power on the network and realize more installation flexibility through more robust rating. The cable is designed for cable tray use and can occupy the same tray or conduit as 600-Volt power cables. In DeviceNet applications, all cable would have to be rated for Class 1 applications if the power supply and connected equipment are Class 1 rated.

There are multiple industrial applications for the cable in all manufacturing facilities. This cable is flexible and space efficient, providing for a more economical solution than traditional wiring methods.

On the network that can support up to 64 nodes with an end-to-end varied distance based on the network speed, Belden 7896A and 7897A can be used for either trunk or drops.

Communications Rate	Trunk Length	
	7896A	7897A
125 Kbps	420 m.	500 m.
250 Kbps	200 m.	250 m.
500 Kbps	75 m.	100 m.

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Specifications

Trade No. UL NEC C(UL) CEC Type	Standard Lengths ft.	AWG (stranding) dia. Inches Max DCR	Insulation material (color code)	Nominal O.D. inches	Nom Impedance (ohms)	Nom. Vel. of Prop.	Nominal Capacitance	Test Frequency (MHZ)	Maximum Attenuation dB/100ft
3082A NEC CMG PLTC CEC CMG Thick CL2	2,000	1 pr - #15 TC (19 x #28)	Power pair PVC/Nylon (black/red)	0.475	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.13 0.25 0.36
	1,000	3.6 ohm/M'	Data pair Foam PE (blue/white)						
3082F NEC CMG PLTC CEC CMG Thick CL2 Flex	2,000	1 pr - #15 TC (65 x #33)	Power pair PVC/Nylon (black/red)	0.475	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.13 0.25 0.36
	1,000	3.6 ohm/M'	Data pair Foam PE (blue/white)						
3082K NEC CL2 CMG PLTC CEC CMG Flat CL2	1,378	4 - #16 TC (19 x #29)	Power pair PVC (black/red)	0.760 x 0.210	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.13 0.25 0.40
	656	4.9 ohm/M'	Data pair Foam PE (blue/white)						
3082KP NEC TC Power	1,378	4 - #16 TC (19 x #29)	4 power conductors PVC	0.760 x 0.210					
	656	4.9 ohm/M'							
3083A NEC CMG PLTC CEC CMG Thick CL2 CPE	2,000	1 pr - #15 TC (19 x #28)	Power pair PVC/Nylon (black/red)	0.475	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.13 0.25 0.36
	1,000	3.6 ohm/M'	Data pair Foam PE (blue/white)						
3084F NEC CMG CL2 CEC CMG Thin CL2	2,000	1 pr - #22 TC (154 x #44)	Power pair PVC/Nylon (black/red)	0.280	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.29 0.50 0.70
	1,000	19.0 ohm/M'	Data pair Foam PE (blue/white)						
3084A, 3085A NEC CMG CL2 CEC CMG Thin CL2	2,000	1 pr - #22 TC (19 x #34)	Power pair PVC/Nylon (black/red)	0.280	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.29 0.50 0.70
	1,000	19.0 ohm/M'	Data pair Foam PE (blue/white)						
7895A NEC CMG PLTC CEC CMG Mid CL2	1,000	1 pr - #20 TC (19 x #32)	Power pair PVC (black/red)	0.378	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.29 0.50 0.70
	500	3.2 ohm/M'	Data pair Foam PE (blue/white)						
7896A NEC Type TC 600V Thick CL1	2,000	1 pr - # 16 (19 x #29)	Power pair PVC/Nylon (black/red)	0.502	120	Data pair 64%	14.7 pF/ft	0.125 0.5 1	0.13 0.25 0.40
	1,000	4.5 ohm/M'	Data pair FR Polypropylene (blue/white)						
7897A NEC Type TC 600V High Velocity Thick CL1	2,000	1 pr - # 15 (19 x #29)	Power pair PVC/Nylon (black/red)	0.440	120	Data pair 75%	12.0 pF/ft	0.125 0.5 1	0.13 0.25 0.40
	1,000	3.6 ohm/M'	Data pair Foam Dielectric (blue/white)						
7900A NEC Type TC 600V Unshielded Thin CL1	2,000	1 pr - # 16 (19 x #29)	Power pair PVC/Nylon (black/red)	0.430	120	Data pair 64%	14.7 pF/ft	0.125 0.5 1	0.13 0.25 0.40
	1,000	4.5 ohm/M'	Data pair FR Polypropylene (blue/white)						

For More Information:

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