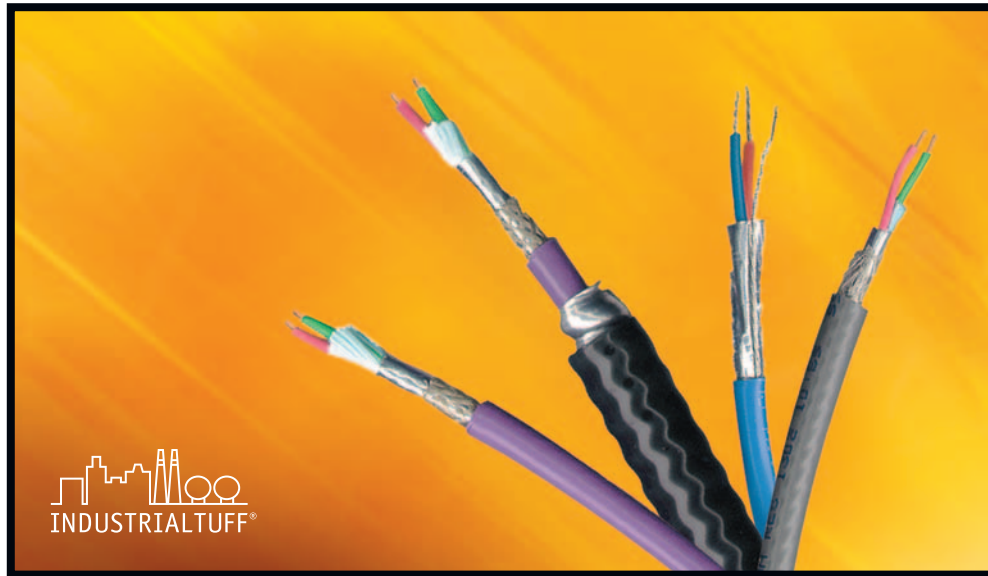


NP 242

PROFIBUS

New PROFIBUS cables now available in a stranded design for additional flexibility as well as a continuously corrugated aluminum armor product for additional protection in very harsh environments.



Belden® DataBus® Cables For PROFIBUS Applications

About PROFIBUS

PROFIBUS is one of the largest open industrial fieldbuses in the world. As with most fieldbus systems, PROFIBUS can reduce operating costs, increase productivity, decrease time to market for new products, and improve product quality. And unlike standard 4–20mA controls, PROFIBUS can support up to 32 devices per segment — up to a total of 126 devices, depending on total system current.

PROFIBUS Features

Using shielded twisted pair cable, the PROFIBUS topologies utilized in the industrial environment include the following configurations: line, tree and star (and combinations of these topologies). The network can support up to 126 nodes by using repeaters, but the number of repeaters is limited to nine. Standard connections are made through use of a 9-pin D-Subminiature connector. Transmission speeds are selectable starting at 9.6kbs.

PROFIBUS has been developed on the International Standards Organization OSI (Open Systems Interconnect) seven-layer model. Access to the bus is defined in the second layer of the OSI model, allowing PROFIBUS the option of multiple masters on a single twisted pair cable.

PROFIBUS Applications

The PROFIBUS protocol applies to all applications, but it may be combined with industry-specific application profiles and relevant transmission technology to meet differing factory floor requirements.

Application-specific profiles include the following:

- PROFIBUS DP — optimized for factory automation
- PROFIBUS PA — optimized for process automation
- PROFIsafe — PROFIBUS for safety-related systems
- PROFIdrive — PROFIBUS for motion control

Belden DataBus Cables for PROFIBUS

Belden has developed three DataBus cables for PROFIBUS DP that are in accordance with the PROFIBUS specifications. Product No. 3079A is a 150-ohm twinax (twisted pair) cable that matches the impedance of the factory automation system, allowing for maximum signal transmission. The cable incorporates an overall Beldfoil® shield plus a 65% tinned copper braid for maximum shielding effectiveness. It also carries a UL NEC Type PLTC listing to achieve maximum installation versatility. New 3079E is a stranded cable that provides additional flexibility during installation and in use. And 183079A is a continuously corrugated aluminum armored product designed to withstand very harsh environments.

Belden also offers Product No. 3076F, a cable made to the ISA/SP-50 Type A fieldbus specifications for PROFIBUS PA application. It is an 18 AWG stranded, foil shielded, twisted pair cable with an intrinsically safe, blue PVC jacket.

As always with Belden industrial cables, there are special jacket compounds, coloring, and armoring options to fit your exact application requirements.



DataBus® PROFIBUS DP/PA Cable

Description	Part No.	UL NEC/ C(UL) CEC Type	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Shielding Materials Nom. DCR	Nominal OD		Nom. Imp. (Ω)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation		
			Ft.	m	Lbs.	kg			Inch	mm			pF/Ft.	pF/m	MHz	dB/100 Ft.	dB/100m


PROFIBUS DP • 22 AWG Solid Bare Copper • Beldfoil® (100% Coverage) + TC Braid Shield (65% Coverage)

FHDPE Insulation • Chrome or Purple PVC Jacket (Color Code: Red, Green)[illegible]

UL AWM 20201 (600V)
Siemens Sinec L2 cable


PROFIBUS DP • 22 AWG Stranded (7x30) Bare Copper Conductors • Beldfoil (100% Coverage) + TC Braid Shield (65% Coverage)

FRFPE Insulation • Chrome or Purple PVC Jacket (Color Code: Red, Green)

Hi-Flex	3079E	NEC:	1000	304.8	44.0	20.0	(2) 22 AWG	Beldfoil	.315	8.00	150	78%	8.5	27.9	.2	.34	1.12
300V 75°C		PLTC CMG	1640	500.0	73.8	33.5	Stranded (7X30)	+ 65% TC Braid							4.0	.81	2.66
		CEC: CMG FT4	3280	1000.0	144.3	65.5	Bare Copper 16.0Ω/M' 52.5Ω/km	Shield (100%) Coverage) 3.9Ω/M' 12.8Ω/km							16.0	1.64	5.4

PROFIBUS DP • 22 AWG Solid Bare Copper • Beldfoil (100% Coverage) + TC Braid Shield (65% Coverage)

Continuously Corrugated AL Armor • FRFPE Insulation • PVC Inner and Purple PVC Sunlight-resistant Outer Jacket

Continuous Armor 300V 60°C 	183079A NEC: PLTC CMG CEC: CMG FT4	2000†	609.6	394.0	178.7	(2) 22 AWG (solid) .026" Bare Copper 16.0Ω/M' 52.5Ω/km	Beldfoil + 65% TC Braid Shield (100% Coverage) 3.9Ω/M' 12.8Ω/km	.587	14.91	150	78%	8.5	29.5	.2 4.0 16.0 100.0 300.0	.27 .67 1.37 3.75 6.52	.9 2.2 4.5 12.3 21.4
		Inner jacket:														
		Overall:														
		Color Code: Red, Green														

A detailed cross-sectional diagram of a cable joint. On the left, a cable with a central core and multiple outer strands is shown. The joint is formed by a braided sleeve that encloses the cable. The sleeve is secured by a series of overlapping bands or wires, creating a complex, woven structure. The diagram illustrates the mechanical connection between the cable and the joint, highlighting the internal components and the external protective layers.


† Final put-up length may vary $\pm 10\%$ from length shown.

PROFIBUS PA • 18 AWG Stranded (7x26) TC • Beldfoil (100% Shield Coverage) • Tinned Copper Drain Wire

Polyolefin Insulation • Intrinsically Safe Blue PVC Jacket (Color Code: Blue, Orange)

Type A	3076F	NEC:	1000	304.8	37.0	16.8	(2) 18 AWG (7x26) .048"	100% Beldfoil Shield	.253	6.43	100 @ .66%	24.0	78.7	.039	.08	.26
300V 105°C (31.25 KBits/sec)	PLTC CM ITC	CEC: CM					Tinned Copper 7.3Ω/M' 24.0Ω/km	7.5Ω/M' 24.6Ω/km			31.25 KHz					
 Shorting Fold											123076F — Aluminum Interlocked Armor 133076F — Steel Interlocked Armor CPE and LSOH Jacket Optional					

(31.25 KBits/sec)



Shorting Fold

AL = Aluminum • DCR = DC Resistance • FHDPE = Foamed High-Density Polyethylene • FREPE = Flame Retardant Foam Polyethylene • FRNC = Flame Retardant Non-Corrosive • TC = Tinned Copper