

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)																		
	300V 75°C	<b>3079A</b>	NEC:	1000	304.8	56.0	25.4	(2) 22 AWG	Beldfoil	.315	8.00	150	78%	8.5	29.5	.2	.27	.9
			PLTC CMG	2000	609.6	112.0	50.8	(solid)	+ 65%							4.0	.67	2.2
			CEC:	3600	1097.6	201.6	91.4	.026"	TC Braid							16.0	1.37	4.5
			CMG FT4					Bare	Shield	123079A — Aluminum Interlocked Armor						100.0	3.75	12.3
							Copper	(100% Coverage)	133079A — Steel Interlocked Armor						300.0	6.52	21.4	
							16.0Ω/M'	3.9Ω/M'	YR45047 — CPE Jacketed Version									
							52.5Ω/km	12.8Ω/km	YR44731 — LSOH (FRNC) Jacketed Version									
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	<b>3079E</b>	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	+ 65%							4.0	.81	2.66
			CEC:	3280	1000.0	144.3	65.5	(7X30)	TC Braid							16.0	1.64	5.4
			CMG FT4					Bare	Shield									
							Copper	(100% Coverage)										
							16.0Ω/M'	3.9Ω/M'										
							52.5Ω/km	12.8Ω/km										

### 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	<b>183079A</b>	NEC:	2000†	609.6	394.0	178.7	(2) 22 AWG	Beldfoil	.587	14.91	150	78%	8.5	29.5	.2	.27	.9
	Armor		PLTC CMG					(solid)	+ 65%							4.0	.67	2.2
	300V 60°C		CEC:					.026"	TC Braid	Inner jacket:						16.0	1.37	4.5
			CMG FT4					Bare	Shield	.315 8.00						100.0	3.75	12.3
							Copper	(100% Coverage)	Overall:	.587 14.91					300.0	6.52	21.4	
							16.0Ω/M'	3.9Ω/M'										
							52.5Ω/km	12.8Ω/km										
										Color Code: Red, Green								

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

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