

PROFINET Balanced 2 pair Cables

4 pair Cable Type	Application Type A	Application Type B	Application Type C
Design	4 pair Data Cable	4 pair Data Cable	4 pair Data Cable
Cable Installation Type	Stationary, no movement after installation	Flexible, occasional movement or vibration	Special Applications (e.g. highly flexible, permanent movement, vibration or torsion)
System Concept:			
Cable Marking (at least)	"PROFINET Type A 4 pair CATx"	"PROFINET Type B 4 pair CATx"	"PROFINET Type C 4 pair CATx"
Minimum Conductor Diameter or Cross Section	AWG 23/1 ≥0,546mm	AWG23/7 ≥0,254mm ²	≤AWG 24/ ≥0,485mm for solid conductors ≥0,201mm ² for stranded conductors
Outer Cable Diameter	5,5 ...9,0 mm		Application specific
Wire Diameter	1,0 mm to 1,6 mm		Application specific
Colour (Outer Sheath)	Green RAL6018		Application
Wire Identification (colours)	4 pair White/(Orange), Orange White/(Green), Green White/(Blue), Blue White/(Brown), Brown Ring or stripe marking on the white wire is optional		
Number of Wires	8		
Cable Design	4 pairs		
Shielding Design Type	Aluminium Foil + Copper Braiding	Application	
Which Plug for which Cable Type	RJ45 (IP 20 or IP 65/67) / M12		
Transmission Performance Requirements:			
Relevant Standard	ISO/IEC 11801 Edition 2.0, IEC 61156-1, IEC 61156-5 (minimum Category 5)	ISO/IEC 11801 Edition 2.0, IEC 61156-1, IEC 61156-6 (minimum Category 5)	
Delay Skew:	≤20ns/100m		
Coupling attenuation	≥ 80 dB at 30 MHz to 100 MHz Segregation class d acc. EN 50174-2		
Ambient Conditions:			
Tensile performance of the cable	50 N		
Crush test of the cable	3000 N	3000 N	Application
Pollution Degree Shock Vibration Operating Temperature Range	see Table 6-1 "Outside enclosure"		

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Type C for Special Application:
Min. Insertion loss of Patchcable

PROFINET Design Guideline:

Type A cables are designed for fixed installations. This cable type is not subject to any motion after being installed.

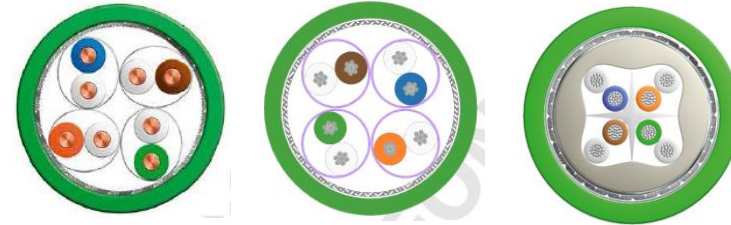
Type B cables are designed for flexible installations. This cable type allows for occasional motion or vibrations.

Type C cables are designed for special applications (e.g. for continuous movement of the cable after being installed). This includes e.g. applications such as trailing chains or festoons.

Table 11.3-1: Balanced 4 pair Cable Specification

PROFINET Balanced 4 pair Cables

4 pair Cable Type	Application Type A	Application Type B	Application Type C
Design	4 pair Data Cable	4 pair Data Cable	4 pair Data Cable
Cable Installation Type	Stationary, no movement after installation	Flexible, occasional movement or vibration	Special Applications (e.g. highly flexible, permanent movement, vibration or torsion)
System Concept:			
Cable Marking (at least)	"PROFINET Type A 4 pair CATx"	"PROFINET Type B 4 pair CATx"	"PROFINET Type C 4 pair CATx"
Minimum Conductor Diameter or Cross Section	AWG 23/1 ≥0,546mm	AWG23/7 ≥0,254mm ²	≤AWG 24/.. ≥0,485mm for solid conductors ≥0,201mm ² for stranded conductors
Outer Cable Diameter	5,5 ...9,0 mm		Application specific
Wire Diameter	1,0 mm to 1,6 mm		Application specific
Colour (Outer Sheath)	Green RAL6018		Application
Wire Identification (colours)	White/(Orange), Orange White/(Green), Green White/(Blue), Blue White/(Brown), Brown Ring or stripe marking on the white wire is optional		
4 pair			
Number of Wires	8		
Cable Design	4 pairs		
Shielding Design Type	Aluminium Foil + Copper Braiding	Application	
Which Plug for which Cable Type	RJ45 (IP 20 or IP 65/67) / M12 4pair		
Transmission Performance Requirements:			
Relevant Standard	ISO/IEC 11801 Edition 2.0, IEC 61156-1, IEC 61156-5 (min. Category 5)		ISO/IEC 11801 Edition 2.0, IEC 61156-1, IEC 61156-6 (min. Category 5)
Delay Skew:	≤20ns/100m between Pair Orange and Pair Green		
Coupling attenuation	≥ 80 dB at 30 MHz to 100 MHz segregation class d EN 50174-2		
Ambient Conditions:			
Tensile performance of the cable	50 N		
Crush test of the cable	2000 N	2000N	Application
Pollution Degree Shock Vibration Operating Temperature Range	see Table 6-1 "Outside enclosure"		



Type C for Special Application:
Min. Insertion loss of Patchcable

PROFINET Design Guideline:

Type A cables are designed for fixed installations. This cable type is not subject to any motion after being installed.

Type B cables are designed for flexible installations. This cable type allows for occasional motion or vibrations.

Type C cables are designed for special applications (e.g. for continuous movement of the cable after being installed). This includes e.g. applications such as trailing chains or festoons.

Note: AWG dimensions are given for information only; normative dimensions of conductor sizes are given in metric size, i.e. in mm for the diameter of solid conductors and mm² for the cross section of stranded conductors.

Table 11.3-1: Balanced 4 pair Cable Specification