Enphase Energy System control cable specification

Applicable region

Europe

Overview

Enphase Energy System with IQ System Controller 3 INT, IQ Battery 5P, and IQ Combiner 2 EU 3P or Communications Kit 2 (if using a standalone IQ Gateway/IQ Gateway Metered) requires the use of control wiring.

Refer to the quick install guides (QIGs) of the respective products on the Enphase documentation center of your region for guidance on control cable stripping, termination onto the header, and the common wiring scenarios.

NOTE: Enphase-Belcom control (CTRL) cable (SKU: CTRL-BL-EU-01) has optimal characteristics and has been validated for optimal system performance. Enphase cannot assure performance when other third-party control cables are used.

NOTE: To ensure optimal system performance, the total length of control wiring across the system cannot exceed 100 meters.

Enphase control cable specifications

The following table lists the Enphase control cable specifications.

Model number	
Reseller	Enphase Energy NL B.V
Enphase Energy SKU (order code)	CTRL-BL-EU-01
Manufacturer	Belcom Cables Ltd.
Manufacturer model number	4302P2254-01
Description	
Control cable for communication between Enphase Energy System components. This cable provides interference-free, high-speed data transmission suitable for control communication. This low capacitance cable has enhanced noise protection providing the highest performance under harsh environments.	

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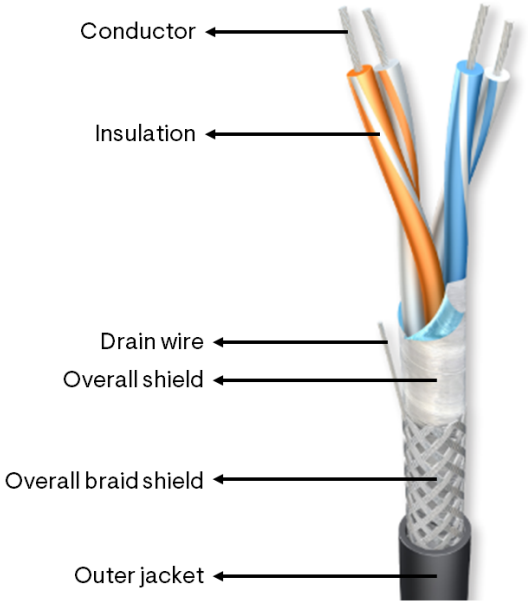
Cable diagram



Mechanical/Material characteristics

Formation	2 × 2 × 0.34 mm² (number × pairs × mm²)
Pair identification	Pair 1: Orange with white stripe and white with orange stripe Pair 2: Blue with white stripe and white with blue stripe
Nominal diameter	8.25 mm ±10%
Weight	108 kg/km
Temperature range	-20°C to 90°C
Conductor	Stranded tinned copper wire (0.34 mm²)
Insulation	Polyethylene (PE)
Overall shield	Overall aluminum/polyester tape
Drain wire	Stranded tinned copper wire
Overall braid shield	Tinned copper wire braid, 65% coverage
Outer Jacket	Flame retardant low smoke zero halogen polyolefin

Material characteristics and certifications provided by Belcom Cables Ltd.:

- UV resistant: in accordance with ISO 4892-2/A
- Flame retardant: in accordance with IEC 60332-1
- Halogen free: in accordance with IEC 60754
- Smoke emission: in accordance with IEC 61034
- Euroclass: Dca,s1,d2,a1

Electrical characteristics

Rated voltage	600 V
Nominal shield DC resistance	4.6 Ω/km
Nominal capacitance (conductor/conductor)	36.1 pF/m

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Nominal capacitance (conductor/conductor/screen)	65.6 pF/m
Maximum conductor DC resistance	53.86 Ω/km
Nominal velocity of propagation	78%
Nominal characteristic impedance	120 Ω
Compliance	
Below are the various directives and standards that the cable complies with. All these listings and certifications are attributed to Belcom Cables Ltd. • CE mark • REACH/SVHC • RoHS • CPR	
Warranty	
1 year from the date of shipment	

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Revision history

Revision	Date	Description
TEN-00017-1.0	July 2024	Initial release.

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