

Catalog

**SIEMENS**

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Bus cables

Overview

- Bus cable suitable for fieldbus systems according to IEC 61158-2, e.g. PROFIBUS PA and APL (Advanced Physical Layer, 2-WISE)
- High interference immunity thanks to double shielding
- Different variants for various application areas (hazardous, non-hazardous)
- Easy length measurement thanks to printed meter markings

Benefits

- Easy length measurement thanks to printed meter markings
- Complete range of cables for hazardous and non-hazardous areas
- Reduction in number of types and parts thanks to uniform cabling system for PROFIBUS PA and APL (2-WISE) according to IEC TS 60079-47

Application

For the construction of networks according to IEC 61158-2, e.g. PROFIBUS PA or APL (2-WISE), different color-coded cable types according to IEC TS 60079-47 are available for the different types of applications (hazardous, non-hazardous areas).

UL approvals

Different cable variants are offered with appropriate UL approvals for laying in cable bundles and cable racks according to NEC (National Electrical Code) regulations, Article 800/725.

Design

- Shielded, twisted-pair cable with circular cross-section
- Printed meter markings
- FastConnect cable design for use of the FastConnect stripping tool

Cable types

- FC process cable/Ethernet-APL cable GP:
Special bus cable compliant with IEC 61158-2 and IEC TS 60079-47 (2-WISE) for use in hazardous (Ex) and non-hazardous (non-Ex) areas.

Technical specifications

| Article number | 6XV1830-5FH10 | 6XV1830-5EH10 |
|---------------------|---|---|
| product description | Bus cable (2-core), sold by the meter, unassembled | Bus cable (2-core), sold by the meter, unassembled |
| suitability for use | Use in fieldbus systems according to IEC 61158-2 (e.g. PROFIBUS PA) and IEC TS 60079-47 (2-WISE) / for APL (cable type A), suitable for non-Ex applications | Use in fieldbus systems according to IEC 61158-2 (e.g. PROFIBUS PA) and IEC TS 60079-47 (2-WISE) / for APL (cable type A), suitable for Ex applications |
| cable designation | 02YSY (ST) CY 1x2x1.0/2.55-100 | 02YSY (ST) CY 1x2x1.0/2.55-100 |

| | SW OE FR | BL OE FR |
|---|--|--|
| electrical data | | |
| Article number | 6XV1830-5FH10 | 6XV1830-5EH10 |
| product description | Bus cable (2-core), sold by the meter, unassembled | Bus cable (2-core), sold by the meter, unassembled |
| attenuation factor per length | | |
| • at 38.4 kHz maximum | 3 dB/km | 3 dB/km |
| return loss | | |
| • at 3 MHz | 19 dB | 19 dB |
| impedance | | |
| • rated value | 100 Ω | 100 Ω |
| • at 31.25 kHz | 100 Ω | 100 Ω |
| • at 3 MHz ... 20 MHz | 100 Ω | 100 Ω |
| relative symmetrical tolerance | | |
| • of the characteristic impedance at 31.25 kHz | 20 % | 20 % |
| • of the characteristic impedance at 3 MHz ... 20 MHz | 15 % | 15 % |
| loop resistance per length maximum | 44 mΩ/m | 44 mΩ/m |
| shield resistance per length maximum | 6.5 Ω/km | 6.5 Ω/km |
| capacity per length at 1 kHz | 92 pF/m | 92 pF/m |
| inductance per length | 0.65 μH/m | 0.65 μH/m |
| operating voltage | | |
| • RMS value | 80 V | 80 V |
| mechanical data | | |
| number of electrical cores | 2 | 2 |
| design of the shield | Overlapped aluminum-clad foil, sheathed in a braided screen of tinned copper wires | Overlapped aluminum-clad foil, sheathed in a braided screen of tinned copper wires |
| type of electrical connection FastConnect | Yes | Yes |
| outer diameter | | |
| • of inner conductor | 1.05 mm | 1.05 mm |
| • of the wire insulation | 2.55 mm | 2.55 mm |
| • of the inner sheath of the cable | 5.4 mm | 5.4 mm |
| • of cable sheath | 8 mm | 8 mm |
| symmetrical tolerance of the outer diameter of cable sheath | 0.4 mm | 0.4 mm |
| material | | |
| • of the wire insulation | polyethylene (PE) | polyethylene (PE) |
| • of the inner sheath of the cable | PVC | PVC |
| • of cable sheath | PVC | PVC |
| color | | |
| • of the insulation of data wires | red/green | red/green |
| • of cable sheath | Black | blue |
| bending radius | | |
| • with single bend minimum permissible | 40 mm | 40 mm |
| • with multiple bends minimum permissible | 80 mm | 80 mm |
| tensile load maximum | 150 N | 150 N |
| weight per length | 103 kg/km | 103 kg/km |
| ambient conditions | | |
| ambient temperature | | |

| ambient temperature | | |
|--|--|--|
| • during operation | -40 ... +80 °C | -40 ... +80 °C |
| Article number | 6XV1830-5FH10 | 6XV1830-5EH10 |
| product description | Bus cable (2-core), sold by the meter, unassembled | Bus cable (2-core), sold by the meter, unassembled |
| • during storage | -40 ... +80 °C | -40 ... +80 °C |
| • during transport | -40 ... +80 °C | -40 ... +80 °C |
| • during installation | -20 ... +80 °C | -20 ... +80 °C |
| • note | Electrical properties measured at 20 °C, tests according to DIN 47250 part 4 respectively DIN VDE 0472 | Electrical properties measured at 20 °C, tests according to DIN 47250 part 4 respectively DIN VDE 0472 |
| ambient condition for operation | Transfer rate of cable: 31.25 Kbit/s | Transfer rate of cable: 31.25 Kbit/s |
| fire behavior | flame resistant according to IEC 60332-3-24 (Category C) | flame resistant according to IEC 60332-3-24 (Category C) |
| class of burning behaviour according to EN 13501-6 | Eca | Eca |
| chemical resistance | | |
| • to mineral oil | conditional resistance | conditional resistance |
| • to grease | Conditional resistance | Conditional resistance |
| • to water | conditional resistance | conditional resistance |
| radiological resistance to UV radiation | resistant | resistant |
| product features, product functions, product components general | | |
| product feature | | |
| • halogen-free | No | No |
| • silicon-free | Yes | Yes |
| standards, specifications, approvals | | |
| UL/ETL listing 300 V Rating | Yes; c(UL)us, CMG / CL3 / Sun Res | Yes; c(UL)us, CMG / CL3 / Sun Res |
| UL/ETL style 600 V Rating | Yes | Yes |
| certificate of suitability | | |
| • EAC approval | Yes | Yes |
| • CE marking | Yes | Yes |
| • RoHS conformity | Yes | Yes |
| product conformity | | |
| • IEC TS 60079-47 (2-WISE) for APL (cable type A) | Yes | Yes |
| Marine classification association | | |
| • American Bureau of Shipping Europe Ltd. (ABS) | No | No |
| • French marine classification society (BV) | No | No |
| • Det Norske Veritas (DNV) | No | No |
| • Germanische Lloyd (GL) | No | No |
| • Lloyds Register of Shipping (LRS) | No | No |
| • Nippon Kaiji Kyokai (NK) | No | No |
| • Polski Rejestr Statkow (PRS) | No | No |
| reference code | | |
| • according to IEC 81346-2 | WG | WG |
| • according to IEC 81346-2:2019 | WGB | WGB |

More information**Installation instructions****FastConnect**

The FastConnect stripping tool can be used to strip the outer sheath and shield of the FC process/Ethernet APL cable GP C to the required lengths for installation in the SpliTConnect tap in PROFIBUS PA plants.

Thus the use of the FastConnect stripping tool and SpliTConnect tap permits the easy connection of field devices to, for example, the PROFIBUS PA bus system.

Cable routing

During storage, transport and laying of the bus cable, keep both ends sealed with a shrink-on cap.

Comply with the permissible bending radii and traction stress.

Selection Tool:

The TIA Selection Tool is available to assist you in selecting cabling systems for SIMATIC NET at:

<http://www.siemens.com/tst>

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