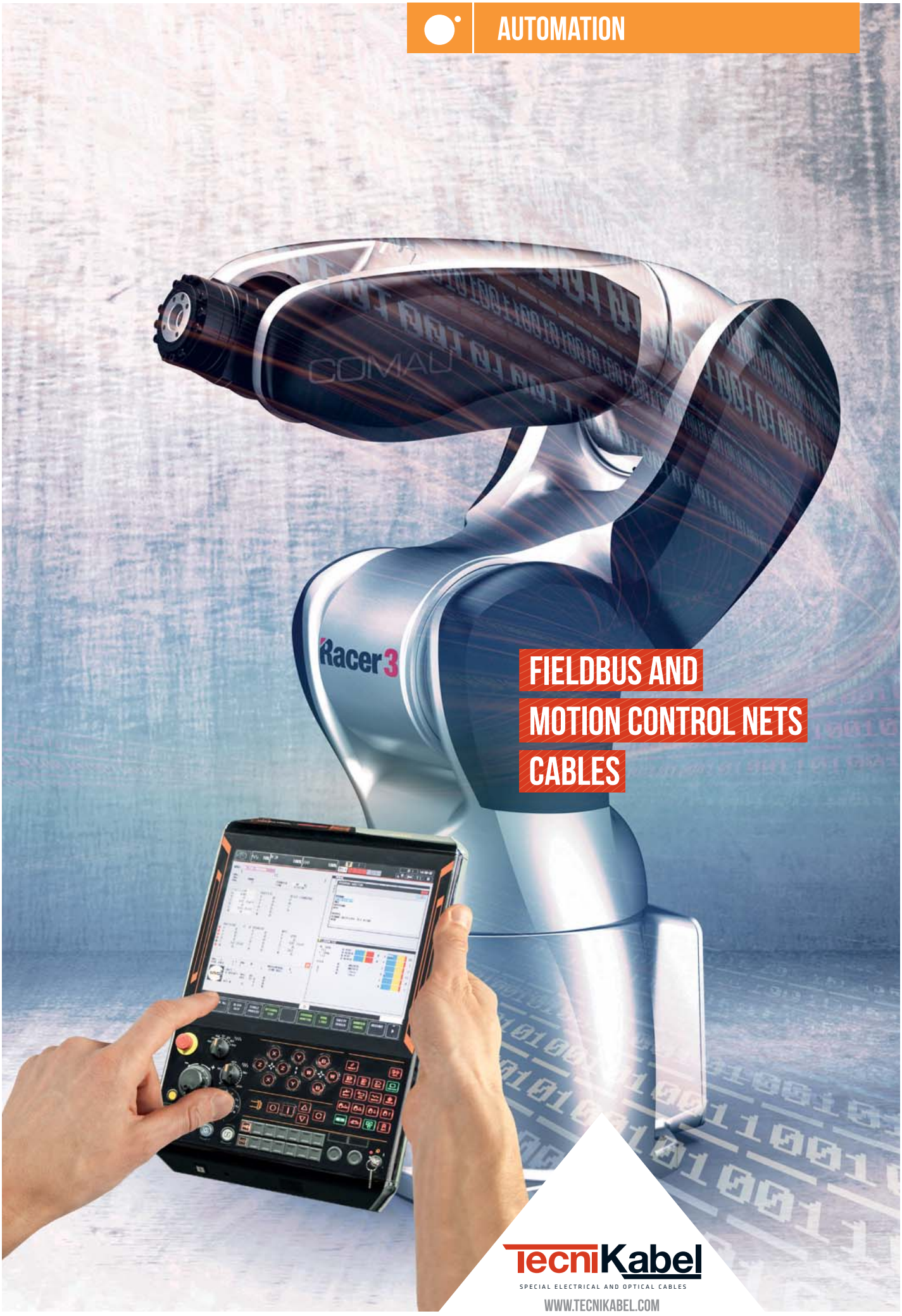



# FIELDBUS AND MOTION CONTROL NETS CABLES

tecniKabel
SPECIAL ELECTRICAL AND OPTICAL CABLES
WWW.TECNIKABEL.COM


SPECIAL ELECTRICAL AND OPTICAL CABLES

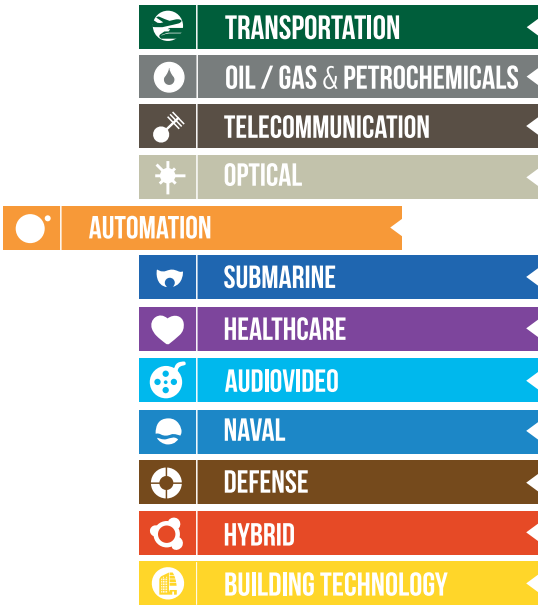

Tecni Kabel

# INTRODUCTION

**Data Transmission Cables**
**Fieldbus and motion control nets**

Movement control is a key factor in a production plant.
For this reason both Fieldbus and Networks play a decisive role in achieving optimum results in complex drives, such as where drives need coordinating with each other.
Fieldbus is a serial communication system used between sensors and actuators or between automatic control devices (PLCs and DCSs).
PROFIBUS is with top performance among Europe's most well-known BUSs while CAN / CANOPEN and MOD BUS and DEVICE NET represent the commercial mid range. INTERBUS and ASI are seldom used in industrial automation.
Lastly, in order to achieve the maximum efficiency in a production system, a continuous flow of comprehensive information to the entire company is required: from the level of automation and motion of the plants to the level up to the company management. This new production system setting is called Industry 4.0.
There are many Industrial Ethernet solutions on the market: Ethernet / IP, Profinet, Modbus TCP / IP, Ethernet Powerlink, EthernCAT.
Cables have been designed and manufactured to guarantee the characteristics of the following standard categories: 5E, 6 and 7. This in order to meet multiple transmission speed requirements.

## PRODUCT LINES



## TECNIKABEL

is focused on constant product innovation to get competitive advantages with endless commitment to research and development.

## PRODUCTION

Updated production Systems, stringent process procedures and expert operators reached the goal to carry out our production efficient and flexible.

In 30 years of activity, we produced more than 26.000 different types of cables.

## FINAL INSPECTIONS

At the end of every production process each cable is checked in its electrical and physical performances for a complete compliance to customer specifications.

## LABORATORY TESTS

We submit our cables to the most severe tests, simulating critical applications. In addition to the tests required by current norms, we invest on new special equipment for additional mechanical and electrical testing, heading to a steady increase of standard performance of our cables.

## MATERIALS RESEARCH AND DEVELOPMENT

Our thirty year experience took us to carry on research of new materials in order to improve performances, costs and fulfill the standards required by our customers.

# QUALITY SYSTEM

Since 1978, constant commitment to Quality has awarded Tecnikabel approval from American and European Authorities, complying with the most demanding international manufacturing and quality standards.











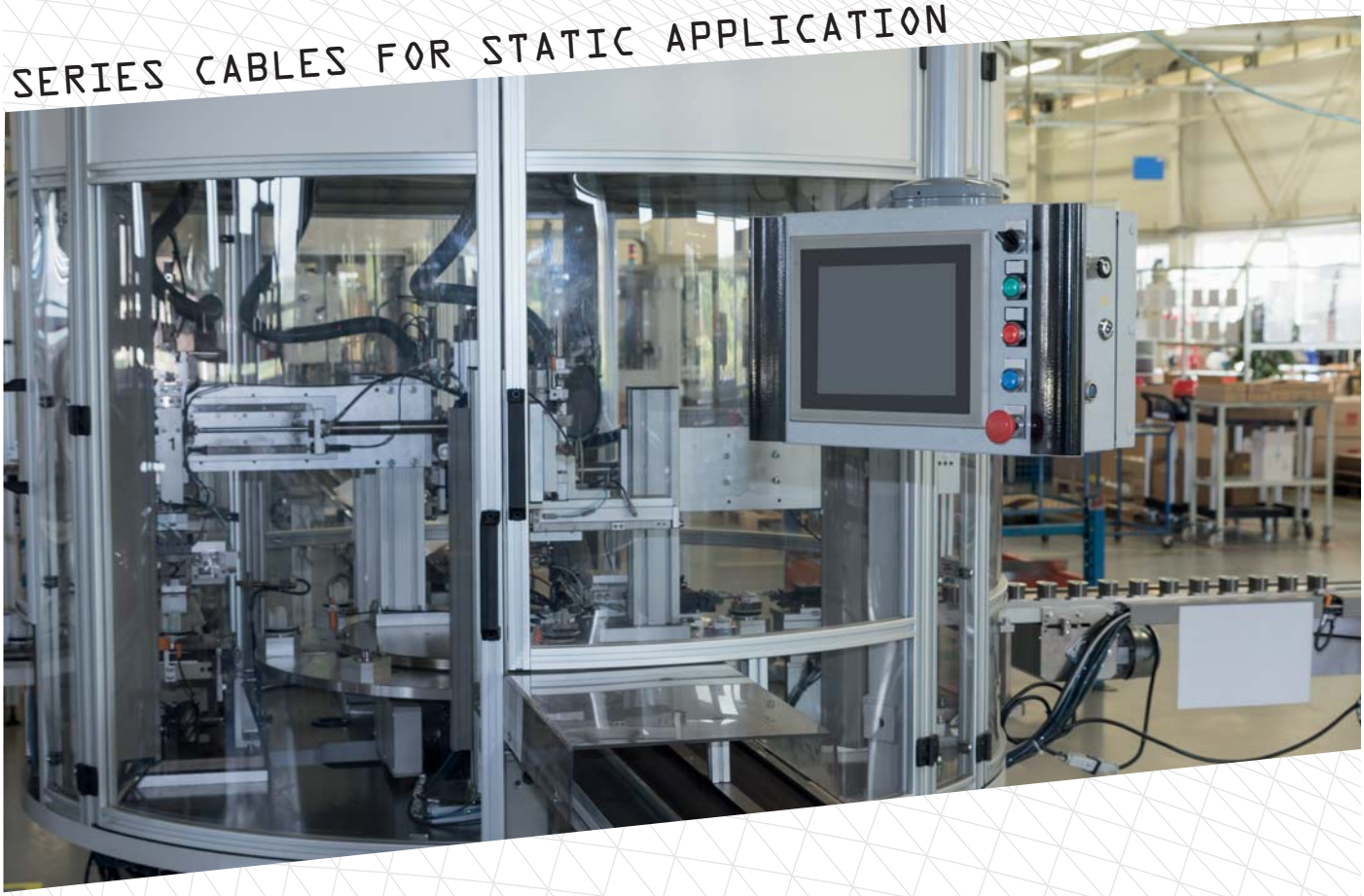




# INDEX

# TK - F100

## SERIES CABLES FOR STATIC APPLICATION



# TK-F100 BUS CABLE – PROFIBUS L2 DP-FIP

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5 or Solid Conductor

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0.25 mm²
≤ 60 Ω/km for section 0.34 mm²

**Characteristic impedance**
150 Ω

**Mutual capacitance**
< 30 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**For section 0,25mm²**
0.3 dB/100 at 9.6 kHz; 0.5 dB/100 at 38.4 kHz;
0.7 dB/100 at 200 kHz; 2.8 dB/100 at 4 MHz;
5.6 dB/100 at 16 MHz; 6.5 dB/100 at 20 MHz
**For section 0,34mm²**
0.3 dB/100 at 9.6 kHz; 0,4 dB/100 at 38.4 kHz;
0.6 dB/100 at 200 kHz; 2,5 dB/100 at 4 MHz;
4.5 dB/100 at 16 MHz; 5,0 dB/100 at 20 MHz

**Transmission speed**
12 Mbit/s with maximum length 200m
0,6 kbit/s with maximum length 1000m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

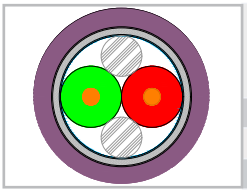
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

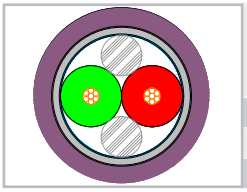
Directive 93/465/CEE

# TK-F100 BUS CABLE – PROFIBUS L2 DP-FIP

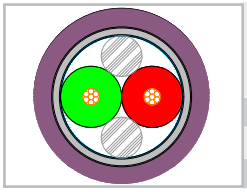
## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKF10027 | (1x2xØ 0.64mm)HH2 | 7.9 | 21 | 67 |
| Colour insulation | 2x0.64: (Red - Green) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKF10023 | (1x2x0.34)HH2 | 7.9 | 21 | 72 |
| Colour insulation | 2x0.34: (Red - Green) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10023 | (1x2x0.25)HH2 | 7.8 | 19 | 66 |
| Colour insulation | 2x0.25: (Red - Green) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 BUS CABLE – CANOPEN – CANBUS

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 60 Ω/km for section 0.34 mm²
≤ 39 Ω/km for section 0.50 mm²

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
1.9 dB/100 at 1 MHz; 3.3 dB/100 at 4 MHz;
5.2 dB/100 at 10 MHz; 6.1 dB/100 at 16 MHz;
7.3 dB/100 at 20 MHz

**Transmission speed**
1000 kbit/s with maximum length 40m
500 kbit/s with maximum length 300m
100 kbit/s with maximum length 600m
50 kbit/s with maximum length 1000m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

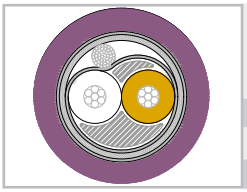
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

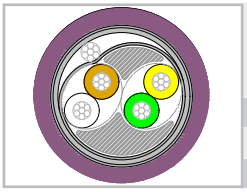
Directive 93/465/CEE

# TK-F100 BUS CABLE – CANOPEN – CANBUS

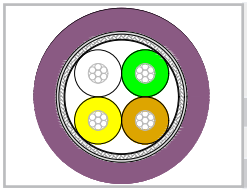
## MAIN FEATURES



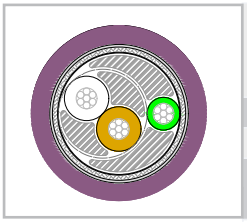
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKF10029 | (2x0.34)H2 | 6 | 22 | 49 |
| Colour insulation | 2x0.34: (White - Brown) | | | |



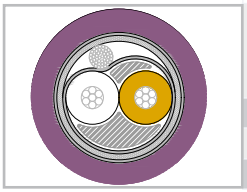
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKF10028 | (2x2x0.34)H2 | 7 | 32 | 70 |
| Colour insulation | 2x2x0.34: (White - Brown) - (Green - Yellow) | | | |



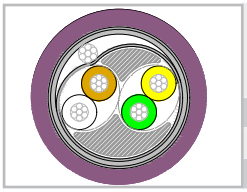
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKF10030 | (1x4x0.34)Q/H2 | 6.8 | 28 | 62 |
| Colour insulation | 1x4x0.34: White - Green - Brown - Yellow | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKF10032 | (2x0,34+1x0.34)H2 | 7 | 28 | 65 |
| Colour insulation | 2x0.34: (White - Brown)<br>1x0.34: Green | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKF10020 | (2x0.50)H2 | 6.8 | 28 | 61 |
| Colour insulation | 2x0.50: (White - Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKF10021 | (2x2x0.50)H2 | 8.8 | 46 | 90 |
| Colour insulation | 2x2x0.50: (White - Brown) - (Green - Yellow) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 BUS CABLE – DEVICENET DROP AND TRUNK

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5

**Insulation**
Foam and Solid Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 92 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22
≤ 24 Ω/km for section AWG18
≤ 12 Ω/km for section AWG15

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**Nominal Attenuation for Drop type**
0.9 dB/100 at 100 kHz; 1.6 dB/100 at 500 kHz; 2.1 dB/100 at 1 MHz
**Nominal Attenuation for Trunk type**
0.4 dB/100 at 100 kHz; 0.8 dB/100 at 500 kHz; 1.3 dB/100 at 1 MHz

**Transmission speed**
500 kbit/s with maximum length 200m
250 kbit/s with maximum length 250m
125 kbit/s with maximum length 500m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

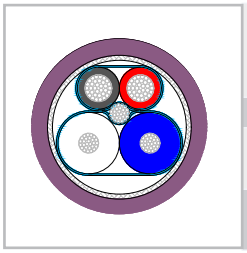
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

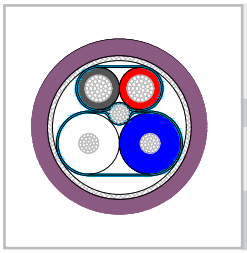
Directive 93/465/CEE

# TK-F100 BUS CABLE – DEVICENET DROP AND TRUNK

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10032 | DROP<br>[(2xAWG24)H+(2xAWG22)H]H2 | 7.2 | 28 | 72 |
| Colour insulation | 2xAWG24 - Data: (Blue - White)<br>2xAWG15 - Power: (Red - Black) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 538TKF10014 | TRUNK<br>[(2xAWG18)H+(2xAWG15)H]H2 | 11 | 91 | 182 |
| Colour insulation | 2xAWG18 - Data: (Blue - White)<br>2xAWG15 - Power: (Red - Black) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 BUS CABLE – INTERBUS

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0,25mm²
≤ 19,5 Ω/km for section 1,00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 250 mΩ/mm nominal

**Nominal attenuation**
1.4 dB/100 at 200 kHz; 2.2 dB/100 at 500 kHz;
3.2 dB/100 at 1 MHz; 6.9 dB/100 at 4 MHz;
12 dB/100 at 10 MHz; 15.5 dB/100 at 16 MHz;
17.2 dB/100 at 20 MHz

**Transmission speed**
500 kbit/s with maximum length 400m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

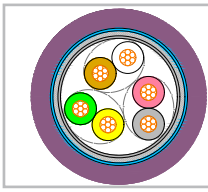
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

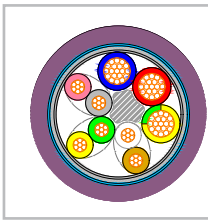
Directive 93/465/CEE

# TK-F100 BUS CABLE – INTERBUS

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKF10032 | (3x2x0.25)H2 | 6.6 | 22 | 53 |
| Colour insulation | 3x2x0.25: (White - Brown) - (Green - Yellow) - (Grey - Pink) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKF10033 | (3x2x0.25+3G1)H2 | 8 | 53 | 92 |
| Colour insulation | 3x2x0.25: (White - Brown) - (Green - Yellow) - (Grey - Pink)<br>3G1 : Blue - Red - Yellow/Green | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5 and Solid Conductor

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.2 dB/100 at 1 MHz; 6 dB/100 at 4 MHz;
9.5 dB/100 at 10 MHz; 12.1 dB/100 at 16 MHz;
13.6 dB/100 at 20 MHz; 17.1 dB/100 at 31,25 MHz;
24.8 dB/100 at 62,5 MHz; 32 dB/100 at 100 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

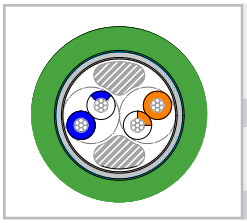
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

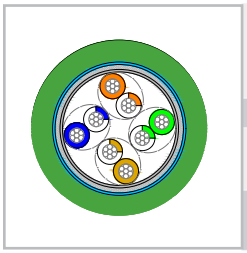
Directive 93/465/CEE

# TK-F100 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

## MAIN FEATURES

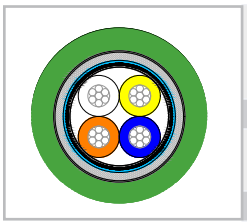


| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10033 | **Ethernet Category 5E** (2x2xAWG24)HH2 | 6.2 | 21 | 50 |
| Colour insulation | 2x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) | | | |

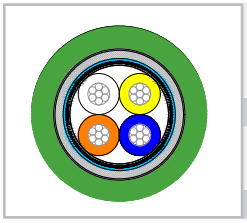


| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10034 | **Ethernet Category 5E** (4x2xAWG24)HH2 | 6.3 | 27 | 52 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKF10003 | **Ethernet Category 5E** (4x2xAWG26)HH2 | 5.5 | 23 | 42 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKF10024 | **Ethercat/Profinet Category 5E** (4xAWG22)HH2 | 6.5 | 31 | 65 |
| Colour insulation | 4xAWG22: White – Yellow – Blue – Orange | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10034 | **Ethercat/Profinet Category 5E** (4xAWG24)HH2 | 5.5 | 22 | 46 |
| Colour insulation | 4xAWG24: White – Yellow – Blue – Orange | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 ETHERNET CATEGORY 6

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31,25 MHz;
23.3 dB/100 at 62,5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155,5 MHz; 43.8 dB/100 at 200MHz;
49.7 dB/100 at 250 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

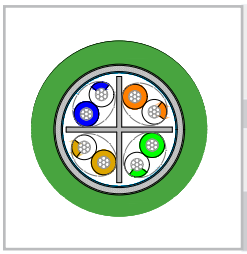
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

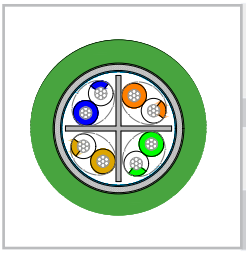
Directive 93/465/CEE

# TK-F100 ETHERNET CATEGORY 6

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10035 | **Ethernet Category 6** (4x2xAWG24)HH2 | 7.8 | 34 | 70 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKF10005 | **Ethernet Category 6** (4x2xAWG26)HH2 | 7.4 | 27 | 63 |
| Colour insulation | 4x2xAWG26: (Blue-White/Blue) - (Orange-White/Orange) (Green-White/Green) - (Brown-White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-F100 ETHERNET CATEGORY 7

## CABLE FOR STATIC APPLICATION
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 5 – IEC 60228 Class 5 – VDE 0295 Class 5

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31,25 MHz;
23.3 dB/100 at 62,5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155,5 MHz; 46.5dB/100 at 250MHz;
67.9 dB/100 at 500 MHz; 75.1 dB/100 at 600 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)

**Minimum bending radius**
5 x Ø (Static Installation)

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

Directive 93/465/CEE

# TK-F100 ETHERNET CATEGORY 7

## MAIN FEATURES

| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKF10036 | **Ethernet Category 7** [4x(2xAWG24)H]HH2 | 9.2 | 42 | 89 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKF10006 | **Ethernet Category 7** [4x(2xAWG26)H]HH2 | 6.4 | 25 | 56 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

## NOTES

# TK - FF200

SERIES CABLES FOR DYNAMIC APPLICATION

# TK-FF200 BUS CABLE – PROFIBUS L2 DP-FIP

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to *DESINA* colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0,25 mm²
≤ 60 Ω/km for section 0,34 mm²

**Characteristic impedance**
150 Ω

**Mutual capacitance**
< 30 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**For section 0,25mm²**
0.3 dB/100 at 9.6 kHz; 0.5 dB/100 at 38.4 kHz;
0.7 dB/100 at 200 kHz; 2.8 dB/100 at 4 MHz;
5.6 dB/100 at 16 MHz; 6.5 dB/100 at 20 MHz
**For section 0,34mm²**
0.3 dB/100 at 9.6 kHz; 0.4 dB/100 at 38.4 kHz;
0.6 dB/100 at 200 kHz; 2.5 dB/100 at 4 MHz;
4.5 dB/100 at 16 MHz; 5.0 dB/100 at 20 MHz

**Transmission speed**
12 Mbit/s with maximum length 200m
0,6 kbit/s with maximum length 1000m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

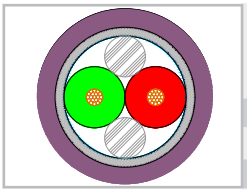
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

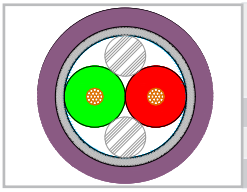
Directive 93/465/CEE

# TK-FF200 BUS CABLE – PROFIBUS L2 DP-FIP

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKFF20023 | (1x2x0.34)HH2 | 7.8 | 21 | 72 |
| Colour insulation | 2x0.34: (Red - Green) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20023 | (1x2x0.25)HH2 | 7.8 | 19 | 66 |
| Colour insulation | 2x0.25: (Red - Green) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 BUS CABLE – CANOPEN – CANBUS

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to *DESINA* colour chart
page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 60 Ω/km for section 0.34 mm²
≤ 39 Ω/km for section 0.50 mm²

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
1.9 dB/100 at 1 MHz; 3.3 dB/100 at 4 MHz;
5.2 dB/100 at 10 MHz; 6.1 dB/100 at 16 MHz;
7.3 dB/100 at 20 MHz

**Transmission speed**
1000 kbit/s with maximum length 40m
500 kbit/s with maximum length 300m
100 kbit/s with maximum length 600m
50 kbit/s with maximum length 1000m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

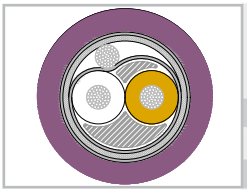
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

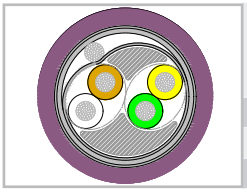
Directive 93/465/CEE

# TK-FF200 BUS CABLE – CANOPEN – CANBUS

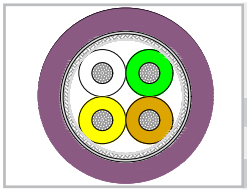
## MAIN FEATURES



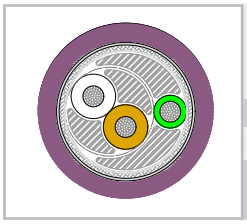
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF20024 | (2x0.34)H2 | 6 | 22 | 49 |
| Colour insulation | 2x0.34: (White - Brown) | | | |



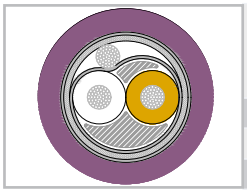
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF20023 | (2x2x0.34)H2 | 7.5 | 34 | 76 |
| Colour insulation | 2x2x0.34: (White - Brown) - (Green - Yellow) | | | |



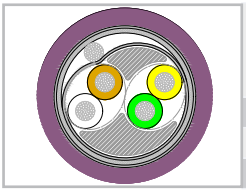
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF20028 | (1x4x0.34)Q/H2 | 6.8 | 28 | 62 |
| Colour insulation | 1x4x0.34: White – Green – Brown – Yellow | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF20032 | (2x0,34+1x0,34)H2 | 7 | 28 | 65 |
| Colour insulation | 2x0.34: (White – Brown)<br>1x0.34: Green | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKFF20017 | (2x0.50)H2 | 6.8 | 28 | 61 |
| Colour insulation | 2x0.50: (White - Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKFF20018 | (2x2x0.50)H2 | 8.8 | 46 | 90 |
| Colour insulation | 2x2x0.50: (White – Brown) – (Green – Yellow) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 BUS CABLE – DEVICENET DROP AND TRUNK

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam and Solid Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 92 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22
≤ 24 Ω/km for section AWG18
≤ 12 Ω/km for section AWG15

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**Nominal Attenuation for Drop type**
0.9 dB/100 at 100 kHz;
1.6 dB/100 at 500 kHz;
2.1 dB/100 at 1 MHz
**Nominal Attenuation for Trunk type**
0.4 dB/100 at 100 kHz;
0.8 dB/100 at 500 kHz;
1.3 dB/100 at 1 MHz

**Transmission speed**
500 kbit/s with maximum length 200m
250 kbit/s with maximum length 250m
125 kbit/s with maximum length 500m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

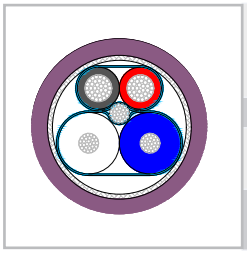
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

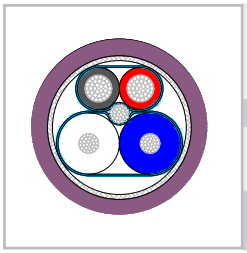
Directive 93/465/CEE

# TK-FF200 BUS CABLE – DEVICENET DROP AND TRUNK

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20024 | **DROP** [(2xAWG24)H+(2xAWG22)H]H2 | 7.2 | 28 | 69 |
| Colour insulation | 2xAWG24 - Data: (Blue – White)<br>2xAWG22 - Power: (Red – Black) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 538TKFF20013 | **TRUNK** [(2xAWG18)H+(2xAWG15)H]H2 | 11 | 95 | 177 |
| Colour insulation | 2xAWG18 - Data: (Blue – White)<br>2xAWG15 - Power: (Red – Black) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 BUS CABLE – INTERBUS

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0,25mm²
≤ 19,5 Ω/km for section 1,00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 250 mΩ/mm nominal

**Nominal attenuation**
1.4 dB/100 at 200 kHz; 2.2 dB/100 at 500 kHz;
3.2 dB/100 at 1 MHz; 6.9 dB/100 at 4 MHz;
12 dB/100 at 10 MHz; 15.5 dB/100 at 16 MHz;
17.2 dB/100 at 20 MHz

**Transmission speed**
500 kbit/s with maximum length 400m

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

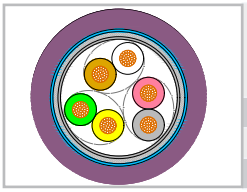
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

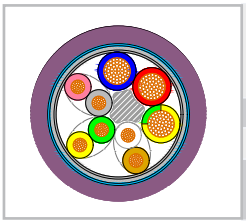
Directive 93/465/CEE

# TK-FF200 BUS CABLE – INTERBUS

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKFF20034 | (3x2x0.25)H2 | 7 | 30 | 63 |
| Colour insulation | 3x2x0.25: (White - Brown) - (Green - Yellow) - (Grey - Pink) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKFF20035 | (3x2x0.25+3G1)H2 | 8.4 | 62 | 104 |
| Colour insulation | 3x2x0.25: (White - Brown) - (Green - Yellow) - (Grey - Pink)<br>3G1 : Blue - Red - Yellow/Green | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.2 dB/100 at 1 MHz; 6 dB/100 at 4 MHz;
9.5 dB/100 at 10 MHz; 12.1 dB/100 at 16 MHz;
13.6 dB/100 at 20 MHz; 17.1 dB/100 at 31,25 MHz;
24.8 dB/100 at 62,5 MHz; 32 dB/100 at 100 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

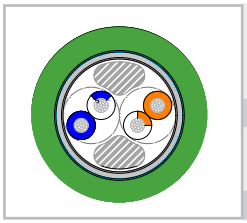
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

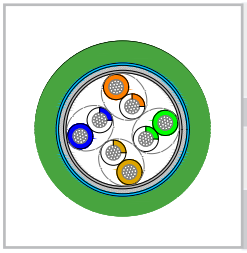
Directive 93/465/CEE

# TK-FF200 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

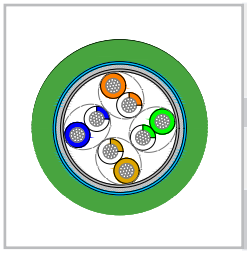
## MAIN FEATURES



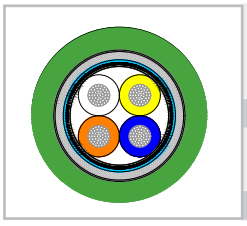
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20025 | **Ethernet Category 5E** (2x2xAWG24)HH2 | 6.3 | 21 | 50 |
| Colour insulation | 2x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) | | | |



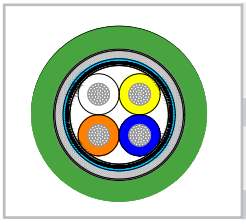
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20026 | **Ethernet Category 5E** (4x2xAWG24)HH2 | 7.2 | 33 | 68 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF20001 | **Ethernet Category 5E** (4x2xAWG26)HH2 | 6.4 | 26 | 53 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKFF20039 | **Ethercat/Profinet Category 5E** (4xAWG22)HH2 | 6.5 | 31 | 65 |
| Colour insulation | 2xAWG22: White - Yellow - Blue - Orange | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20040 | **Ethercat/Profinet Category 5E** (4xAWG24)HH2 | 5.5 | 22 | 46 |
| Colour insulation | 4xAWG24: White - Yellow - Blue - Orange | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 ETHERNET CATEGORY 6

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section 0.25mm²
≤ 89 Ω/km for section 1.00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31.25 MHz;
23.3 dB/100 at 62.5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155.5 MHz; 43.8dB/100 at 200MHz;
49.7 dB/100 at 250 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

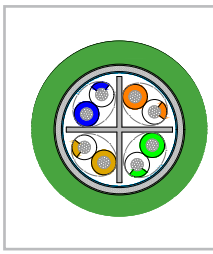
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

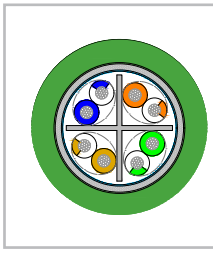
Directive 93/465/CEE

# TK-FF200 ETHERNET CATEGORY 6

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20041 | **Ethernet Category 6** (4x2xAWG24)HH2 | 7.8 | 34 | 70 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF20011 | **Ethernet Category 6** (4x2xAWG26)HH2 | 7.4 | 27 | 63 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF200 ETHERNET CATEGORY 7

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN LOW PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
PVC Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section 0.25mm²
≤ 89 Ω/km for section 1.00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31.25 MHz;
23.3 dB/100 at 62,5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155.5 MHz; 46.5dB/100 at 250MHz;
67.9 dB/100 at 500 MHz; 75.1 dB/100 at 600 MHz

**Temperature range**
- 20°C ÷ + 80°C (Static Installation)
- 5°C ÷ + 80°C (Dynamic Installation)

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
180 m/min

**Maximum acceleration**
10 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 2464 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 2502 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

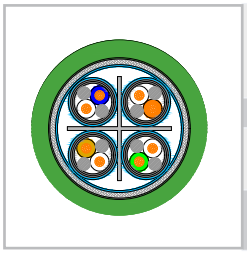
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

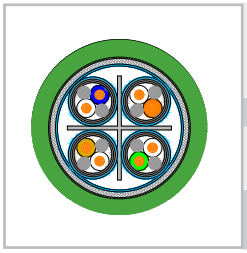
Directive 93/465/CEE

# TK-FF200 ETHERNET CATEGORY 7

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF20042 | **Ethernet Category 7** [4x(2xAWG24)H]HH2 | 10.3 | 42 | 108 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF20012 | **Ethernet Category 7** [4x(2xAWG26)H]HH2 | 9.4 | 32 | 90 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

## NOTES

# TK - FF300

SERIES CABLES FOR HIGH DYNAMIC APPLICATION

# TK-FF300 BUS CABLE – PROFIBUS L2 DP-FIP

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart
page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0.25mm²
≤ 60 Ω/km for section 1.00mm²

**Characteristic impedance**
150 Ω

**Mutual capacitance**
< 30 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**Nominal Attenuation for section 0,25mm²**
0.3 dB/100 at 9.6 kHz; 0.5 dB/100 at 38.4 kHz;
0.7 dB/100 at 200 kHz; 2.8 dB/100 at 4 MHz;
5.6 dB/100 at 16 MHz; 6.5 dB/100 at 20 MHz
**Nominal Attenuation for section 0,34mm²**
0.3 dB/100 at 9.6 kHz; 0.4 dB/100 at 38.4 kHz;
0.6 dB/100 at 200 kHz; 2.5 dB/100 at 4 MHz;
4.5 dB/100 at 16 MHz; 5.0 dB/100 at 20 MHz

**Transmission speed**
12 Mbit/s with maximum length 200m
0,6 kbit/s with maximum length 1000m

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

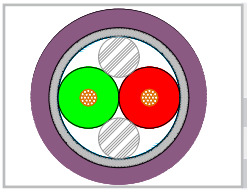
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

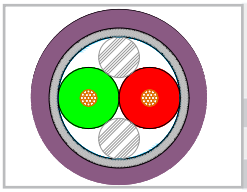
Directive 93/465/CEE

# TK-FF300 BUS CABLE – PROFIBUS L2 DP-FIP

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKFF30023 | (1x2x0.34)HH2 | 8.2 | 34 | 82 |
| Colour insulation | 2x0.34: (Red - Green) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30032 | (1x2x0.25)HH2 | 7.8 | 19 | 66 |
| Colour insulation | 2x0.25: /Red - Green) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 BUS CABLE – CANOPEN – CANBUS

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart
page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 60 Ω/km for section 0,34mm²
≤ 39 Ω/km for section 0,50 mm²

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
1.9 dB/100 at 1 MHz; 3.3 dB/100 at 4 MHz;
5.2 dB/100 at 10 MHz; 6.1 dB/100 at 16 MHz;
7.3 dB/100 at 20 MHz

**Transmission speed**
1000 kbit/s with maximum length 40m
500 kbit/s with maximum length 300m
100 kbit/s with maximum length 600m
50 kbit/s with maximum length 1000m

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

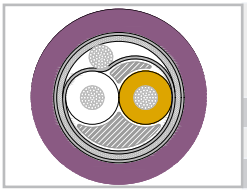
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

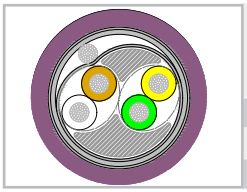
Directive 93/465/CEE

# TK-FF300 BUS CABLE – CANOPEN – CANBUS

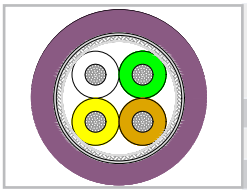
## MAIN FEATURES



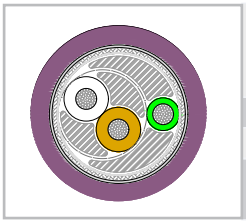
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF30028 | (2x0.34)H2 | 6 | 22 | 48 |
| Colour insulation | 2x0.34: (White - Brown) | | | |



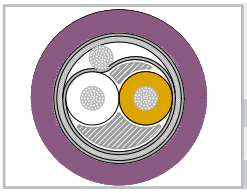
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF30027 | (2x2x0.34)H2 | 7.5 | 34 | 76 |
| Colour insulation | 2x2x0.34: (White - Brown) - (Green - Yellow) | | | |



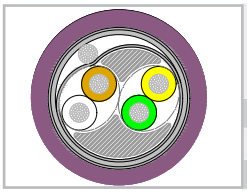
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF30029 | (1x4x0.34)Q/H2 | 6.8 | 28 | 62 |
| Colour insulation | 1x4x0.34: White – Green – Brown – Yellow | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 525TKFF30030 | (2x0,34+1x0.34)H2 | 7 | 28 | 65 |
| Colour insulation | 2x0.34: (White – Brown)<br>1x0.34: Green | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKFF30019 | (2x0.50)H2 | 6.8 | 28 | 61 |
| Colour insulation | 2x0.25: /Red - Green) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 530TKFF30023 | (2x2x0.50)H2 | 8.8 | 46 | 90 |
| Colour insulation | 2x2x0.50: (White – Brown) – (Green – Yellow) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 BUS CABLE – DEVICENET DROP AND TRUNK

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Foam and Solid Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 92 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22
≤ 24 Ω/km for section AWG18
≤ 12 Ω/km for section AWG15

**Characteristic impedance**
120 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
**Nominal Attenuation for Drop type**
0.9 dB/100 at 100 kHz; 1.6 dB/100 at 500 kHz; 2.1 dB/100 at 1 MHz
**Nominal Attenuation for Trunk type**
0.4 dB/100 at 100 kHz; 0.8 dB/100 at 500 kHz; 1.3 dB/100 at 1 MHz

**Transmission speed**
500 kbit/s with maximum length 200m
250 kbit/s with maximum length 250m
125 kbit/s with maximum length 500m

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant with Low Voltage Regulation 67/548/EEC

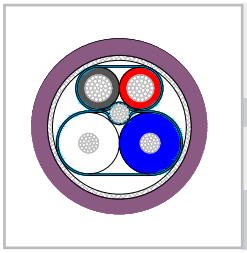
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

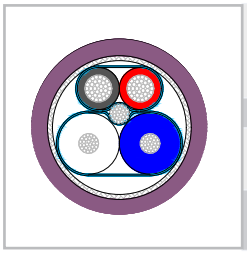
Directive 93/465/CEE

# TK-FF300 BUS CABLE – DEVICENET DROP AND TRUNK

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30033 | **DROP [(2xAWG24)** H+(2xAWG22)H]H2 | 7.2 | 28 | 69 |
| Colour insulation | 2xAWG24 - Data: (Blue – White)<br>2xAWG22 - Power: (Red – Black) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 538TKFF30014 | **TRUNK [(2xAWG18)** H+(2xAWG15)H]H2 | 11 | 95 | 177 |
| Colour insulation | 2xAWG18 - Data: (Blue – White)<br>2xAWG15 - Power: (Red – Black) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 BUS CABLE – INTERBUS

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Tinned Copper Braid Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Violet Ral 4001 according to DESINA colour chart page 54 other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 81 Ω/km for section 0.25mm²
≤ 19.5 Ω/km for section 1.00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
1.4 dB/100 at 200 kHz; 2.2 dB/100 at 500 kHz;
3.2 dB/100 at 1 MHz; 6.9 dB/100 at 4 MHz;
12 dB/100 at 10 MHz; 15.5 dB/100 at 16 MHz;
17.2 dB/100 at 20 MHz

**Transmission speed**
500 kbit/s with maximum length 400m

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

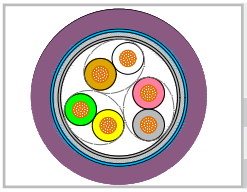
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

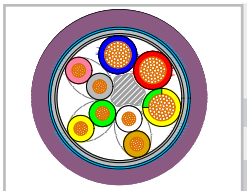
Directive 93/465/CEE

# TK-FF300 BUS CABLE – INTERBUS

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKFF30031 | (3x2x0.25)H2 | 7 | 30 | 63 |
| Colour insulation | 3x2x0.25: (White – Brown) - (Green – Yellow) - (Grey – Pink) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 522TKFF30032 | (3x2x0,25+3G1)H2 | 8.4 | 62 | 104 |
| Colour insulation | 3x2x0.25: (White – Brown) - (Green – Yellow) - (Grey – Pink)<br>3G1 : Blue - Red - Yellow/Green | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24
≤ 59 Ω/km for section AWG22

**Characteristic impedance at 1÷100 MHz**
100 Ω

**Mutual capacitance**
< 60 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.2 dB/100 at 1 MHz; 6 dB/100 at 4 MHz;
9.5 dB/100 at 10 MHz; 12.1 dB/100 at 16 MHz;
13.6 dB/100 at 20 MHz; 17.1 dB/100 at 31.25 MHz;
24.8 dB/100 at 62.5 MHz; 32 dB/100 at 100 MHz

**Temperature range**
- 40°C ÷ + 80°

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

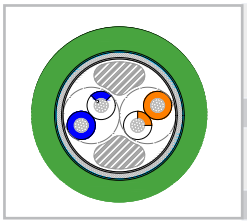
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

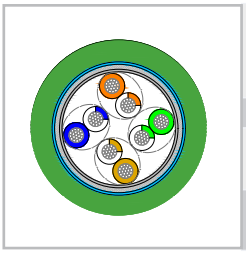
Directive 93/465/CEE

# TK-FF300 ETHERNET – PROFINET/ETHERCAT CATEGORY 5E

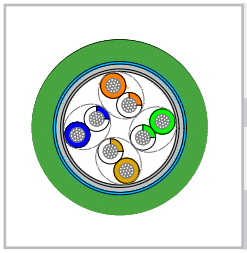
## MAIN FEATURES



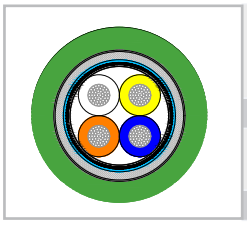
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30034 | **Ethernet Category 5E** (2x2xAWG24)HH2 | 6.3 | 21 | 50 |
| Colour insulation | 2x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) | | | |



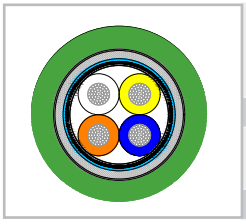
| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30037 | **Ethernet Category 5E** (4x2xAWG24)HH2 | 7.2 | 33 | 68 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF30004 | **Ethernet Category 5E** (4x2xAWG26)HH2 | 6.4 | 26 | 53 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 524TKFF30006 | **Ethercat/Profinet Category 5E** (4xAWG22)HH2 | 6.5 | 31 | 65 |
| Colour insulation | 2xAWG22: White - Yellow - Blue - Orange | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30039 | **Ethercat/Profinet Category 5E** (4xAWG24)HH2 | 5.5 | 22 | 46 |
| Colour insulation | 4xAWG24: White - Yellow - Blue - Orange | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 ETHERNET CATEGORY 6

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section AWG26
≤ 89 Ω/km for section AWG24

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31.25 MHz;
23.3 dB/100 at 62.5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155.5 MHz; 43.8dB/100 at 200MHz;
49.7 dB/100 at 250 MHz

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

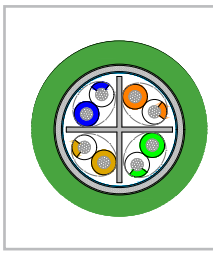
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

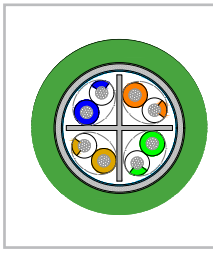
Directive 93/465/CEE

# TK-FF300 ETHERNET CATEGORY 6

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30038 | **Ethernet Category 6** (4x2xAWG24)HH2 | 7.8 | 34 | 70 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF30011 | **Ethernet Category 6** (4x2xAWG26)HH2 | 7.4 | 27 | 63 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

# TK-FF300 ETHERNET CATEGORY 7

## CABLE FOR DYNAMIC APPLICATION ON DRAG CHAIN HIGH PERFORMANCE
## UL/CSA RECOGNIZED 80°C 30V OR 300V (600V ON REQUEST) ACCORDING TO UL758

### CABLE SPECIFICATIONS

**Conductor**
Bare Copper according to
CEI 20-29 Class 6 – IEC 60228 Class 6 – VDE 0295 Class 6

**Insulation**
Polyolefin (UL-CSA Standards)

**Core indentification**
See following table

**Pairs Shield**
Aluminum/Plastic Tape

**Overall Shield**
Aluminum/Plastic Tape and Tinned Copper Braid
Coverage ≥ 85% according to EMC 2014/30/EU ©

**Sheath**
Polyurethane 12Y (UL-CSA Standards)

**Outer jacket colour**
Green Ral 6018, other colours available upon request

### TECHNICAL DATA

**Operating voltage**
30V or 300V (600V on request)

**Test voltage**
1000 V a.c. or 2000 V a.c.

**Electrical resistance**
≤ 139 Ω/km for section 0,25mm²
≤ 89 Ω/km for section 1,00mm²

**Characteristic impedance**
100 Ω

**Mutual capacitance**
< 50 pF/m

**Transfer impedance**
at 10 MHz 20 mΩ/mm nominal

**Nominal attenuation**
3.1 dB/100 at 1 MHz; 5.8 dB/100 at 4 MHz;
9 dB/100 at 10 MHz; 11.4 dB/100 at 16 MHz;
12.8 dB/100 at 20 MHz; 16.1 dB/100 at 31.25 MHz;
23.3 dB/100 at 62.5 MHz; 30 dB/100 at 100 MHz;
38.1 dB/100 at 155.5 MHz; 46.5dB/100 at 250MHz;
67.9 dB/100 at 500 MHz; 75.1 dB/100 at 600 MHz

**Temperature range**
- 40°C ÷ + 80°C

**Minimum bending radius**
5 x Ø (Static Installation)
7.5 x Ø (Dynamic Installation)

**Maximum speed**
300 m/min

**Maximum acceleration**
50 m/s²

**Maximum chain lenght**
15 m (only horizontal)

**Flex life**
6.000.000 cycles

**Torsion**
Please contact our technical support office

### REFERENCE STANDARDS

Cable according to UL758, UL1581 UL Style 20233 80°C 300V – CSA AWM I/II A/B 80°C 300V, or and CSA C22.2 210.2 UL Style 20236 80°C 30V – CSA AWM I/II A/B 80°C 30V.

**Halogen Free**
CEI 20-37 – IEC 60754-1 – EN 50267-2-1

**Water Resistance**
UL 1581 – IEC 60811

EC Directives Product compliant
with Low Voltage Regulation 67/548/EEC

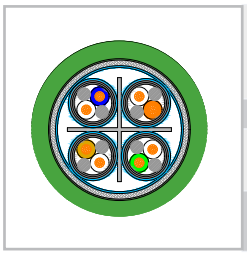
**Hydrocarbons and oil resistance**
UL 1581 – VDE 0472 part 803 A/B
HD 22.10 S1 – CNOMO E.03.40.150N

Directive EMC 2014/30/EU Electromagnetic Compatibility

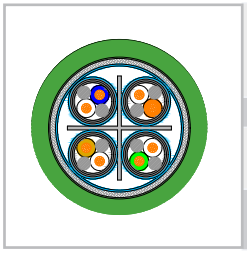
Directive 93/465/CEE

# TK-FF300 ETHERNET CATEGORY 7

## MAIN FEATURES



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 518TKFF30039 | **Ethernet Category 7** [4x(2xAWG24)H]HH2 | 10.3 | 42 | 108 |
| Colour insulation | 4x2xAWG24: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |



| Tecnikabel code | Description | Nominal Ø | Copper weight | Cable weight |
|---|---|---|---|---|
| | | [mm] | [kg/km] | [kg/km] |
| 512TKFF30012 | **Ethernet Category 7** [4x(2xAWG26)H]HH2 | 9.4 | 32 | 90 |
| Colour insulation | 4x2xAWG26: (Blue - White/Blue) - (Orange - White/Orange) (Green - White/Green) - (Brown - White/Brown) | | | |

European Directives **2002/95/CE** (**RoHS** - Reduction of Hazardous Substances) and **2002/96/CE** (**WEEE** – Waste from Electrical and Electronic Equipment)

## Installation Technology in Machine Tools
## COLORS and DESIGN of the FIELD-CABLES

| | | |
|---|---|---|
| **ORANGE** RAL 2003 | **Power cable**: e.g. servo drives, frequency controlled drives application specific design | |
| **GREEN** RAL 6018 | **Measurement cable**: e.g. measuring systems, analogue sensors application specific and case specific design | |
| **VIOLET** RAL 4001 | **Hybrid-fieldbus cable**: e.g. fieldbus systems 2 x optical fibres and 4 x 1.5/2.5 $mm^2$ copper wires | Fibre optic: fieldbus<br>Cu1: +24 V<br>Cu2: 0V to PIN1<br>Cu3: 0V to PIN4<br>Cu4: +24 V switched |
| **YELLOW** RAL 1021 | **Actuator-sensor cable**: e.g. fieldbus systems 4 x 0.34 $mm^2$, prefabricated with two M12 connectors, without LED | 1: 24 V<br>2: signal (digital input)<br>3: 0V<br>4: signal (analogue input or digital output) |
| **BLACK** RAL 9005 | **Power cable**: e.g. three-phase AC motors 5 x 1.5 $mm^2$ or case specific design | |
| **GREY** RAL 7040 | **Control cable**: 24 V technology, e.g. control voltage, power supply multiwire, case specific design | |

The wiring has to be resistant against cooling lubrificants used in industrial applications.

## NOTES

TecniKabel

SPECIAL ELECTRICAL AND OPTICAL CABLES

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