Field Bus and Industrial Ethernet Cable
### UNITRONIC® BUS- FIELDBUS CABLES

<table>
<thead>
<tr>
<th>QUICK SELECT CHART</th>
<th>178</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNITRONIC® BUS DeviceNet™ BUS Cables</strong></td>
<td>180</td>
</tr>
<tr>
<td>THICK &amp; THIN</td>
<td>120 Ohm Bus Cable for Static Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS DeviceNet™ BUS FD Cables</strong></td>
<td>182</td>
</tr>
<tr>
<td>THICK &amp; THIN</td>
<td>120 Ohm Bus Cable for Continuous Flex Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS BlueFlex™</strong></td>
<td>184</td>
</tr>
<tr>
<td>BlueFlex™ DH, DH+ and Remote I/O Twinaxial Cable</td>
<td>78 Ohm BUS Cable for Continuous Flexing Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS Genius™</strong></td>
<td>185</td>
</tr>
<tr>
<td>Genius™ I/O Twinaxial Cable</td>
<td>100 Ohm BUS Cable for Continuous Flex Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS- Profibus DP- Stationary</strong></td>
<td>186</td>
</tr>
<tr>
<td>Profibus® DP (SIMATIC NET), FMS and FIP</td>
<td>150 Ohm BUS Cable for Static Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS FD- Profibus DP</strong></td>
<td>188</td>
</tr>
<tr>
<td>Profibus® DP (SIMATIC NET), FMS and FIP</td>
<td>150 Ohm BUS Cable for Continuous Flex Applications</td>
</tr>
<tr>
<td><strong>UNITRONIC® BUS- Profibus PA- Stationary</strong></td>
<td>190</td>
</tr>
<tr>
<td>Profibus® PA Process Automation</td>
<td>100 Ohm BUS Cable for Static Applications</td>
</tr>
</tbody>
</table>

**NEW**

| UNITRONIC® BUS Foundation™ Fieldbus | 191 |
| Fieldbus Cable for Static Installation | 100 Ohm BUS Cable for Static Applications (Process Automation) |

**NEW**

| UNITRONIC® BUS CCL- Static BUS | 192 |
| CC-Link® Fieldbus Cable | 110 Ohm BUS Cable for Stationary Applications |

| UNITRONIC® BUS- CAN BUS Cables | 193 |
| CAN BUS Cable | 120 Ohm BUS Cable for Static and Continuous Flex Applications |
# Field Bus and Industrial Ethernet Cable

<table>
<thead>
<tr>
<th>Product</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>UNITRONIC® BUS- Static &amp; Flexing Cables</td>
<td>194</td>
<td>BUS cable for SUCOnet™, ModulLink™ and VariNet™ Applications</td>
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<tr>
<td></td>
<td></td>
<td>100 Ohm BUS Cable for Static and Continuous Flexing Applications</td>
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<tr>
<td>UNITRONIC® BUS- Interbus™</td>
<td>196</td>
<td>Interbus™ Cable</td>
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<td>100 Ohm BUS Cable for Static &amp; Continuous Flex Applications</td>
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<tr>
<td>UNITRONIC® BUS ASi</td>
<td>198</td>
<td>AS-Interface (ASi) 2 wire BUS cable</td>
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<td></td>
<td></td>
<td>140 Ohm Sensor/Actuator Cable for Static &amp; Flexing Applications</td>
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<tr>
<td>SKINTOP® DIX-ASi</td>
<td>199</td>
<td>Cable Bushings especially for ASi BUS Cables</td>
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<td>PG &amp; Metric</td>
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<td>ETHERLINE® INDUSTRIAL ETHERNET CABLES</td>
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<td>200</td>
<td>2 Pair Industrial Ethernet Cable</td>
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<td>CAT5/ CAT5e Bus Cable for Continuous Flexing Applications</td>
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<td>4 Pair Industrial Ethernet Cable</td>
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<td>ETHERLINE® 4 Pair: CAT6E/ 7</td>
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<td>4 Pair Industrial Ethernet Cable</td>
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<td>CAT6e/ CAT7 Bus Cable for Static Applications</td>
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<td>ETHERLINE® TORSION</td>
<td>203</td>
<td>2 Pair Industrial Ethernet Cable</td>
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<td>CAT5 BUS Cable for Torsion Flexing Applications</td>
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SOFTLINE® TS - 2 Pair 100 Ohm and 140 Ohm Bus Cable for Torsion Flexing Applications
## Quick Select Chart

<table>
<thead>
<tr>
<th>Application</th>
<th>Performance</th>
<th>Character Impedance Ohms @ 1Mhz</th>
<th>Mutual Capacitance pF/ft @ 800 Hz</th>
<th>Peak Working Voltage (Volts)</th>
<th>Conductor Resistance Max per km (Data Pair)</th>
<th>Min Bend Radius (Static) x Diameter</th>
<th>Min Bend Radius (Flexing) x Diameter</th>
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<tr>
<td><strong>UNITRONIC® BUS DeviceNet™</strong></td>
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<td>300</td>
<td>45/180</td>
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<td>12.1</td>
<td>300</td>
<td>45/180</td>
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</table>

* Refer to product page for specific part numbers

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Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
<table>
<thead>
<tr>
<th>Specifications</th>
<th>Construction</th>
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<td>High Temperature (Static) °C</td>
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<tr>
<td>-30</td>
<td>80</td>
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</table>
UNITRONIC® BUS DeviceNet™ BUS CABLES
THICK & THIN
120 Ohm Bus Cable for Static Applications

UNITRONIC® BUS- DeviceNet™ Cables are designed to support the robust demands of today's high speed industrial control environments. DeviceNet™ is a versatile, general purpose Fieldbus designed to satisfy 80% of the most common machine and cell-level wiring requirements. Devices can be powered from the network so wiring is minimized.

Recommended Applications:
Assembly, welding and material handling machines. Single-cable wiring of Multi-input sensor blocks, Smart sensors, pneumatic valves, Barcode readers, Drives and Operator interfaces.

UNITRONIC® DeviceNet™ BUS Cables Construction:
Stranded tinned copper conductors; data conductors are insulated with foam polyethylene; power conductors are insulated with PVC; both pairs are tri-laminated foil shield (100% Coverage); plus have an overall foil wrap and braid (65% coverage); both pairs utilize a common drain wire and have a tinned copper braid; oil resistant PVC or halogen-free outer jacket.

Technical Data:

- Minimum Bending Radius: 10 x cable diameter
- Temperature Range: -20°C to +75°C
- Nominal Voltage: 300V
- Test Voltage: 2000V
- Characteristic Impedance: 120 Ohm
- Nominal Capacitance: 12 pf/ft
- Color Code: Power pair: Red & Black Data pair: Blue & White
- Approvals: UL: CMG CSA: CMG

DeviceNet is a registered trademark of the Open DeviceNet Vendor Association.

Lapp is a member of the Open DeviceNet Vendor Association.
# UNITRONIC® BUS DeviceNet™ BUS CABLES
## THICK & THIN

120 Ohm Bus Cable for Static Applications

### Rate Table:

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>Maximum Length- Main Cable</th>
<th>Maximum Length- Drop Cable</th>
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</thead>
<tbody>
<tr>
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<td>Feet <strong>THICK</strong></td>
<td>Meters</td>
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<td>125 Kbps</td>
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<td>250 Kbps</td>
<td>820</td>
<td>250</td>
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<td>500 Kbps</td>
<td>328</td>
<td>100</td>
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</tbody>
</table>

### UNITRONIC® DEVICENET™ BUS CABLES

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Type</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight lbs/mft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/mft kg/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>4001</td>
<td>Trunk</td>
<td>18/1pr + 15/1pr</td>
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<td>Gray</td>
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<td>4002</td>
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<tr>
<td>2170342*</td>
<td>Trunk</td>
<td>18/1pr + 15/1pr</td>
<td>.480</td>
<td>12.2</td>
<td>Violet</td>
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<td>Drop</td>
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<td>6.9</td>
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<th>Conductor Description</th>
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<td>Violet</td>
<td>46</td>
</tr>
</tbody>
</table>

* PLTC Approved

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UNITRONIC® BUS DeviceNet™ BUS FD CABLES
THICK & THIN
120 Ohm Bus Cable for Continuous Flex Applications

UNITRONIC® BUS- DeviceNet™ Cables are designed to support the robust demands of today's high speed industrial control environments. DeviceNet™ is a versatile, general purpose Fieldbus designed to satisfy 80% of the most common machine and cell-level wiring requirements. Devices can be powered from the network so wiring is minimized.

Recommended Applications:
Assembly, welding and material handling machines. Single-cable wiring of Multi-input sensor blocks, Smart sensors, pneumatic valves, Barcode readers, Drives and Operator interfaces.

UNITRONIC® DeviceNet™ BUS Cables Construction:
Stranded tinned copper conductors; data conductors are insulated with foam polyethylene; power conductors are insulated with PVC; both pairs are individually shielded using tri-laminated foil (100% coverage), plus have an overall foil and braid wrap (65% coverage); both pairs utilize a common drain wire and have a tinned copper braid; oil resistant PVC or PUR outer jacket.

Technical Data:
- Minimum Bending Radius: 10 x cable diameter
- Temperature Range: -20°C to +75°C
- Nominal Voltage: 300V
- Test Voltage: 2000V
- Characteristic Impedance: 120 Ohm
- Nominal Capacitance: 12 pF/ft
- Color Code: Power pair: Red & Black; Data pair: Blue & White
- Approvals:
  - PVC: UL: CMG; CSA: CMG
  - PUR: UL: CMX; CSA: CMX

Application Advantage:
- Tested to over 5 million flex life cycles
- Superior shielding for EMC protection
- Flexible for ease of installation
- Highly abrasion resistant PUR jacket option
- UV and oil resistant PVC or PUR jacket

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## Rate Table:

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>Maximum Length- Main Cable</th>
<th>Maximum Length- Drop Cable</th>
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<tbody>
<tr>
<td></td>
<td>Feet</td>
<td>Meters</td>
</tr>
<tr>
<td>125 Kbps</td>
<td>1640</td>
<td>500</td>
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### UNITRONIC® DEVICENET™ BUS FD CABLES

<table>
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<th>Part Number</th>
<th>Type</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
<th>Approx Weight lbs/ft kg/km</th>
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### PVC Jacketed- UL/CSA (CMG)

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<td>Violet</td>
<td>46 68</td>
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</tbody>
</table>

* PLTC Approved

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UNITRONIC® BUS BlueFlex™
BlueFlex™ DH, DH+ and Remote I/O Twinaxial Cable
78 Ohm BUS Cable for Continuous Flexing Applications

UNITRONIC® BUS BlueFlex™ cables are designed for use in Rockwell/Allen Bradley DH, DH+ and Remote I/O networks. BlueFlex™ is constructed to withstand continuous flex applications where EMC conditions are pervasive.

**Recommended Applications:**

**BlueFlex™ Construction:**
Finely stranded tinned copper conductors; electronic grade flexible TPE insulation; overall tape shield; flexible tinned copper shield (85%); specially formulated flame and oil resistant blue PVC jacket.

**Technical Data:**
- Minimum Bending Radius:
  - static: 5 x cable diameter
  - flexing: 2 x cable diameter
- Temperature Range: -20°C to +80°C
- Nominal Voltage: 300V
- Test Voltage: 3000V
- Characteristic Impedance: 78 Ohm
- Nominal Capacitance: 17 pF/ft
- Color Code: Blue/Natural
- Approvals: UL: AWM 2661

**Availability:**
Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

**Complete the installation with:**
- SKINTOP® Strain Relief: Page 486
- EPIC® Connectors: Page 251
- OLFLEX® Tubing: Page 546
- Cable Assemblies Page 627

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter inches</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/ft/rm kg/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>3649FD</td>
<td>PVC</td>
<td>20/ 1pr</td>
<td>.242</td>
<td>6.15</td>
<td>Blue</td>
<td>33</td>
</tr>
</tbody>
</table>
UNITRONIC® BUS Genius™
Genius™ I/O Twinaxial Cable
100 Ohm BUS Cable for Continuous Flex Applications

UNITRONIC® BUS Genius™ cables are designed for use in GE Fanuc's Genius I/O, Field Control™ and VersaMax® networks. Genius network flexibility allows users to deploy the most efficient combination of high-density and low-density distributed I/O for their application.

Recommended Applications:

UNITRONIC® Genius™ BUS Cables Construction:
Finely stranded tinned copper conductors; TPE insulation; flexible tinned copper serve shield (92%); a specially formulated PUR jacket.

Technical Data:

- Minimum Bending Radius:
  - static: 5 x cable diameter
  - flexing: 10 x cable diameter

- Temperature Range:
  - static: -40°C to +80°C
  - flexing: -20°C to +80°C

- Nominal Voltage: 300V
- Test Voltage: 3000V

- Characteristic Impedance: 100 Ohm
- Nominal Capacitance: 14 pF/ft
- Color Code: White/Brown
- Approvals: UL: AWM 20233

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
<th>Jacket Color</th>
<th>Approx. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>911264</td>
<td>PUR</td>
<td>22/1pr</td>
<td>.258 6.5</td>
<td>17</td>
<td>Violet</td>
<td>37 55</td>
</tr>
</tbody>
</table>

Genius is a registered trademark of GE Fanuc Automation.
UNITRONIC® BUS- Profibus DP- Stationary

UNITRONIC® BUS - Profibus DP cables are designed for field networks requiring fast, cyclic data exchange between controllers and field devices. Automation devices such as PLCs, PCs, HMI devices, sensors or actuators can communicate via this bus system.

Recommended Applications:
Factory, Process and Building Automation field networks.

UNITRONIC® BUS- Profibus® DP- Stationary Construction:
Solid and stranded bare copper conductors; specially designed foil/tinned copper braid shielding; multiple jacketing options for specific applications including PE, Halogen-Free, Quick Connect PVC, TPE and PVC.

Application Advantage:
- High performance EMC shielding
- Designed to profibus user Organization (PNO) standards
- Quick connect option for fast IDC connector termination
- Suitable for RS-422 and RS-485

Technical Data:

- Minimum Bending Radius: 10 x cable diameter
- Temperature Range: -40°C to +80°C
- Nominal Voltage: 250V
- Test Voltage: 1500V
- Characteristic Impedance: 150 Ohm +/- 10 Ohm
- Nominal Capacitance: 9 pf/ft
- Color Code: Red/ Green
- Approvals: UL: - CMG - PLTC - 600V AWM
# UNITRONIC® BUS- Profibus® DP- Stationary

Profibus® DP (SIMATIC NET), FMS and FIP
150 Ohm BUS Cable for Static Applications

## Rate Table: (Maximum Length- One Bus Segment)

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>Feet</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.6 Kbps</td>
<td>3936</td>
<td>1200</td>
</tr>
<tr>
<td>19.2 Kbps</td>
<td>3936</td>
<td>1200</td>
</tr>
<tr>
<td>187.5 Kbps</td>
<td>3280</td>
<td>1000</td>
</tr>
<tr>
<td>500 Kbps</td>
<td>1312</td>
<td>400</td>
</tr>
<tr>
<td>1.5 Mbps</td>
<td>656</td>
<td>200</td>
</tr>
<tr>
<td>12.0 Mbps</td>
<td>328</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>Feet</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Kbps</td>
<td>656</td>
<td>200</td>
</tr>
<tr>
<td>2.5 Kbps</td>
<td>656</td>
<td>200</td>
</tr>
</tbody>
</table>

### Part Number | Jacket | Conductor Description | Nominal Outer Diameter | Copper Weight lbs/ft | Jacket Color | Approx. Weight lbs/ft kg/km |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2170219**</td>
<td>PVC</td>
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<td>.315</td>
<td>8</td>
<td>Violet</td>
<td>38 57</td>
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<tr>
<td>2170233*</td>
<td>PE*</td>
<td>22/1pr</td>
<td>.315</td>
<td>8</td>
<td>Violet</td>
<td>38 57</td>
</tr>
<tr>
<td>2170824</td>
<td>PVC</td>
<td>22/1pr (7/30)</td>
<td>.315</td>
<td>8</td>
<td>Violet</td>
<td>37 55</td>
</tr>
<tr>
<td>2170826</td>
<td>PVC</td>
<td>22/1pr</td>
<td>.315</td>
<td>17</td>
<td>Violet</td>
<td>51 76</td>
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<tr>
<td>2170853</td>
<td>Halogen-Free</td>
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<td>17</td>
<td>Violet</td>
<td>45 67</td>
</tr>
<tr>
<td>2170630*</td>
<td>PVC*</td>
<td>22/1pr (7/30)</td>
<td>.315</td>
<td>8</td>
<td>Violet</td>
<td>47 70</td>
</tr>
</tbody>
</table>

* UL/CSA Pending  
** UL (CMX)
UNITRONIC® BUS FD- Profibus DP
Profibus® DP (SIMATIC NET), FMS and FIP
150 Ohm BUS Cable for Continuous Flex Applications

UNITRONIC® BUS - Profibus DP cables are designed for field networks requiring fast, cyclic data exchange between controllers and field devices. Automation devices such as PLCs, PCs, HMI devices, sensors or actuators can communicate via this bus system.

**Recommended Applications:**
Robotics, Motion Control, Industrial Automation field networks.

**UNITRONIC® BUS FD- Profibus DP:**
Stranded bare copper conductors; specially designed foil/tinned copper braid shielding; multiple jacketing options for specific applications including Quick Connect PVC, Flexible Abrasion and Oil Resistant PUR.

---

**Cable Attributes, See Page 653**

- **Oil Resistance:** OR-01
- **Flame Resistance:** FR-02
- **Motion Type:** CF-01
- **Mechanical Properties:** MP-01

**Availability:**
Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

**Complete the installation with:**
- SKINTOP® Strain Relief: Page 486
- OLFLEX® Tubing: Page 546
- EPIC® Connectors: Page 251
- Cable Assemblies Page 627

---

**Technical Data:**

- **Minimum Bending Radius:**
  - static: 8 x cable diameter
  - flexing: 15 x cable diameter
- **Temperature Range:** -25°C to +75°C
- **Nominal Voltage:**
  - (2170331 & 2170875): 300V, 600V
  - 2170875: Black number conductors
- **Test Voltage:** 2000V
- **Characteristic Impedance:** 150 Ohm +/- 10 Ohms
- **Nominal Capacitance:** 9 pF/ft
- **Color Code:** Red/ Green Pairs
- **Approvals:**
  - UL: - CMG
  - Oil Res I (2170331, 2170875)
  - CSA:
    - FT4 (2170331, 2170875)

---

**Application Advantage:**
- High performance EMC shielding
- Stranding for continuous flex operation
- Designed to profibus user organization (PNO) standards
- Quick connect option for fast IDC connector termination
- Suitable for RS-422 and RS-485
UNITRONIC® BUS FD- Profibus DP
Profibus® DP (SIMATIC NET), FMS and FIP
150 Ohm BUS Cable for Continuous Flex Applications

Rate Table: (Maximum Length- One Bus Segment)

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>PROFIBUS-DP Feet</th>
<th>PROFIBUS-DP Meters</th>
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<tbody>
<tr>
<td>9.6 Kbps</td>
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<tr>
<td>19.2 Kbps</td>
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<td>1200</td>
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<tr>
<td>187.5 Kbps</td>
<td>3280</td>
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<tr>
<td>500 Kbps</td>
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<td>1.5 Mbps</td>
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<td>200</td>
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<tr>
<td>12.0 Mbps</td>
<td>328</td>
<td>100</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Communication Rate</th>
<th>FIP Feet</th>
<th>FIP Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Kbps</td>
<td>656</td>
<td>200</td>
</tr>
<tr>
<td>2.5 Kbps</td>
<td>656</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Maximum Outer Diameter inches</th>
<th>Copper Weight lbs/mft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/mft kg/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2170322*</td>
<td>PVC</td>
<td>22/ 1pr</td>
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<td>2170854</td>
<td>PUR</td>
<td>22/ 1pr</td>
<td>.315</td>
<td>8</td>
<td>Violet</td>
<td>43</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>64</td>
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<tr>
<td>2170332*</td>
<td>PUR</td>
<td>22/ 1pr</td>
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<td>8</td>
<td>Violet</td>
<td>44</td>
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<tr>
<td></td>
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<td></td>
<td>66</td>
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<td>2170331</td>
<td>PVC</td>
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<td>8</td>
<td>Violet</td>
<td>40</td>
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<td>60</td>
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<td>2170875</td>
<td>PVC</td>
<td>22/ 1pr + 16/4c</td>
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<td>11</td>
<td>Violet</td>
<td>104</td>
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<td></td>
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<td>155</td>
</tr>
</tbody>
</table>

* UL/CSA (CMX)
UNITRONIC® BUS - Profibus® PA - Stationary

100 Ohm BUS Cable for Static Applications

UNITRONIC® BUS - Profibus PA cables are designed for process automation applications where intrinsic safety is required. Designed for bus powered devices requiring reliable data transmission.

Recommended Applications:
Process Control device controllers, Flow, Pressure, Temperature device networking

UNITRONIC® BUS Profibus® PA:
Solid bare copper conductor options; Specially designed foil (100%) / tinned copper braid (90%) shielding for maximum EMC protection; Flame retardant and UV resistant PVC cable jacketing in Blue (intrinsically safe) and Black.

Application Advantage:
- High performance EMC shielding
- Designed to Profibus® user organization (PNO) standards
- Quick connect option for fast IDC connector termination
- Intrinsically safe (Blue jacket)
- Flame retardant, UV and oil resistant

Cable Attributes, See Page 653

<table>
<thead>
<tr>
<th>Oil Resistance: OR-01</th>
<th>Flame Resistance: FR-03</th>
<th>Motion Type: FL-01</th>
<th>Mechanical Properties: MP-01</th>
</tr>
</thead>
</table>

Availability:
Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

Complete the installation with:
SKINTOP® Strain Relief: Page 486
EPIC® Connectors: Page 251
OLFLEX® Tubing: Page 546
Cable Assemblies Page 627

Technical Data:
- Minimum Bending Radius: 5 x cable diameter
- Characteristic Impedance: 100 Ohm +/- 20 Ohms
- Temperature Range: -30°C to +80°C
- Nominal Capacitance: 15 pf/ft
- Nominal Voltage: 100V
- Color Code: Red/ Green
- Test Voltage: 1500V
- Approvals: UL: - CMG - PLTC - 600V AWM 20201
- CSA: - CMG
- Minimum Bending Radius: 5 x cable diameter
- Characteristic Impedance: 100 Ohm +/- 20 Ohms
- Temperature Range: -30°C to +80°C
- Nominal Capacitance: 15 pf/ft
- Nominal Voltage: 100V
- Color Code: Red/ Green
- Test Voltage: 1500V
- Approvals: UL: - CMG - PLTC - 600V AWM 20201
- CSA: - CMG
- Minimum Bending Radius: 5 x cable diameter
- Characteristic Impedance: 100 Ohm +/- 20 Ohms
- Temperature Range: -30°C to +80°C
- Nominal Capacitance: 15 pf/ft
- Nominal Voltage: 100V
- Color Code: Red/ Green
- Test Voltage: 1500V
- Approvals: UL: - CMG - PLTC - 600V AWM 20201
- CSA: - CMG

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter inches</th>
<th>Copper Weight lbs/mft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/mft</th>
<th>Approx. Weight kg/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2170834</td>
<td>PVC</td>
<td>18/ 1pr</td>
<td>.291 7.4</td>
<td>30</td>
<td>Blue</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>2170835</td>
<td>PVC</td>
<td>18/ 1pr</td>
<td>.291 7.4</td>
<td>30</td>
<td>Black</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>2170334</td>
<td>PVC</td>
<td>18/ 1pr</td>
<td>.315 8.0</td>
<td>31</td>
<td>Blue</td>
<td>69</td>
<td>103</td>
</tr>
<tr>
<td>2170335</td>
<td>PVC</td>
<td>18/ 1pr</td>
<td>.315 8.0</td>
<td>31</td>
<td>Black</td>
<td>69</td>
<td>103</td>
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<tr>
<td>2170248*</td>
<td>PVC (CCA)</td>
<td>18/ 1pr</td>
<td>.437 11.1</td>
<td>104</td>
<td>Blue</td>
<td>95</td>
<td>141</td>
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</tbody>
</table>

* UL/CSA Pending

Flexible Profibus PA (Static Install)
2170834 PVC 18/ 1pr .291 7.4 30 Blue 50 75
2170835 PVC 18/ 1pr .291 7.4 30 Black 50 75
Quick Connect- Profibus PA (Static Install)
2170334 PVC 18/ 1pr .315 8.0 31 Blue 69 103
2170335 PVC 18/ 1pr .315 8.0 31 Black 69 103
Armored Profibus PA (Static Install)
2170248* PVC (CCA) 18/ 1pr .437 11.1 104 Blue 95 141

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
UNITRONIC® BUS Foundation™ Fieldbus
Fieldbus Cable for Static Installation
100 Ohm BUS Cable for Static Applications (Process Automation)

UNITRONIC® BUS - FOUNDATION™ Fieldbus cables have been specifically designed to meet the hazardous demands of the industrial and process control environment. Using a distributed architecture where the control is in the devices themselves, FOUNDATION™ Fieldbus integrates low-speed sensors and actuators with high-speed controllers and servers in a single system.

Recommended Applications:
PLC and DCS controllers, Transmitters, Mag meters, Vortex meters, analyzers, Valve positioners, Process instrumentation.

UNITRONIC® BUS Foundation™ Fieldbus:
Stranded bare copper conductors; XLPE insulation; foil shielded pair with an overall flexible tinned copper braid shield (90%); (Welded corrugated copper armoring also available); yellow PVC jacket (or blue for intrinsically safe applications).

Technical Data:
- Minimum Bending Radius:
  - static: 15 x cable diameter
- Temperature Range:
  - static: -25°C to +105°C
- Nominal Voltage: 300V
- Test Voltage: 1500V
- Characteristic Impedance: 100 Ohm +/- 20 Ohms
- Nominal Capacitance: 20 pf/ft
- Color Code: Blue, Brown, Green/Yellow
- Approvals: UL: - CMG, - PLTC
  CSA: - FT4

Complete the installation with:
- SKINTOP® Strain Relief: Page
- OLFLEX® Tubing: Page
- EPIC® Connectors: Page
- Cable Assemblies: Page

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Pairs</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter inches</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/ft</th>
<th>Approx. Weight kg/km</th>
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<tbody>
<tr>
<td>3 Core Un-Armored</td>
<td>2170350</td>
<td>1pr/ 1c</td>
<td>18 AWG</td>
<td>.311</td>
<td>7.9</td>
<td>41</td>
<td>Yellow</td>
</tr>
<tr>
<td>3 Core Armored</td>
<td>2170351</td>
<td>1pr/ 1c</td>
<td>18 AWG</td>
<td>.484</td>
<td>12.3</td>
<td>72</td>
<td>Yellow</td>
</tr>
<tr>
<td></td>
<td>2170353</td>
<td>1pr/ 1c</td>
<td>18 AWG</td>
<td>.484</td>
<td>12.3</td>
<td>72</td>
<td>Blue</td>
</tr>
<tr>
<td>2 Core Un-Armored</td>
<td>2170352</td>
<td>1 pr</td>
<td>18 AWG</td>
<td>.311</td>
<td>7.9</td>
<td>36</td>
<td>Yellow</td>
</tr>
</tbody>
</table>
UNITRONIC® BUS CCL- Static BUS
CC-LINK® Fieldbus Cable
110 Ohm BUS Cable for Stationary Applications

UNITRONIC® BUS CCL Fieldbus cables provide high speed, deterministic communication linking a wide range of automation devices over a single cable. CC-Link® Cables can be used in long distance network configurations up to 1.2km (at 156kbps) or longer with the use of a repeater.

Recommended Applications:
Digital & Analog I/O, Temperature Controllers, Variable Frequency Drives, Servo Drives, Valve Manifolds, Operator Interfaces, Robots

UNITRONIC® BUS CC-LINK®, Static Bus Cable:
Stranded tinned copper conductors; a foamed PE insulation; flexible tinned copper braid shield (80%) over an aluminum laminated foil (100%) with a stranded tinned copper drain wire; red PVC jacket.

Application Advantage:
• Signal integrity in high EMC applications
• Flame resistant
• Oil resistant
• Flexible for ease of routing

Technical Data:

- Minimum Bending Radius:
  - static: 15 x cable diameter

- Temperature Range:
  - static: -40°C to +70°C

- Nominal Voltage: 250V

- Test Voltage: 1500V

- Characteristic Impedance: 110 Ohm +/-15 Ohms

- Nominal Capacitance: 18 pF/ft

- Color Code: White, Blue, Yellow

- Approvals: UL: CM, PLTC, CSA: FT4

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
<th>Jacket Color</th>
<th>Approx Weight</th>
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<tbody>
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<td>2170360</td>
<td>PVC</td>
<td>20/3c</td>
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<td>7.7</td>
<td>Red</td>
<td>51</td>
</tr>
</tbody>
</table>
UNITRONIC® BUS CAN BUS Cables

UNITRONIC® BUS - CAN Bus cables are designed to the CAN open and ISO 11898 standard. Cable is well suited for high-speed motion control and feedback loop applications providing high reliability, efficient use of network bandwidth and power available on the network.

Recommended Applications:
Motion control systems, Assembly, Welding and Material handling machines. Single-cable wiring of multi-input sensor blocks, Smart sensors, Pneumatic valves, Barcode readers, Drives and Operator interfaces.

UNITRONIC® BUS CAN Construction:
7-wire stranded twisted pair data cable, polyethylene insulation; conductors are surrounded with a foil wrap and a tinned copper braid shield; violet jacket is PVC.

UNITRONIC® BUS FD P CAN Construction:
Finely stranded twisted pair data cable, polyethylene insulation; conductors are surrounded with a non-wicking textile wrap and a tinned copper braid shield; violet halogen-free PUR jacket.

Technical Data:
- Minimum Bending Radius:
  - static: 8 x cable diameter
  - flexing: 10 x cable diameter
- Temperature Range:
  - static: -30°C to +70°C
  - flexing: -40°C to +75°C
- Nominal Voltage: 250V
- Test Voltage: 1500V

Rate Table:
(ISO 11898 Recommendations)

<table>
<thead>
<tr>
<th>Distance (Meters)</th>
<th>AWG</th>
<th>Max. Rate</th>
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</thead>
<tbody>
<tr>
<td>0 to 40</td>
<td>22</td>
<td>1 Mbps @ 40m</td>
</tr>
<tr>
<td>40 to 300</td>
<td>22, 20</td>
<td>500 kbps @ 100m</td>
</tr>
<tr>
<td>300 to 600</td>
<td>20</td>
<td>100 kbps @ 500m</td>
</tr>
<tr>
<td>600 to 1000</td>
<td>18</td>
<td>50 kbps @ 1 km</td>
</tr>
</tbody>
</table>

Characteristic Impedance: 120 Ohm +/- 15 Ohms
Nominal Capacitance: 17 pF/ft
Color Code: DIN 47100, Chart 7, Page 673
Approvals: UL: CMX
CSA: CMX

Complete the installation with:
SKINTOP® Strain Relief: Page 486
OLFLEX® Tubing: Page 546
EPIC® Connectors: Page 251
Cable Assemblies: Page 627
UNITRONIC® BUS- Static & Flexing Cables
BUS cable for SUConet™, ModulLink™ and VariNet™ Applications
100 Ohm BUS Cable for Static and Continuous Flexing Applications

UNITRONIC® BUS Cables are designed using stranded bare copper conductors (finer stranding for continuous flex cables) with high performance PE insulation to optimize flexing endurance. Superior EMC protection is attained using a flexible tinned copper braid shield (85%). Cables are jacketed with a PVC (static) or halogen-free PUR (flexing).

Application Advantage:
• Signal integrity in static and continuous motion applications
• Flame resistant
• Oil resistant
• Flexible for ease of routing

UNITRONIC® BUS Cables Construction: Flexible Versions
Stranded bare copper conductors; electronic grade flexible polyethylene insulation; paired conductors; tinned copper shield; flame retardant violet PVC jacket.

UNITRONIC® BUS Cables Construction: Continuous Flexing Versions
Finely stranded bare copper conductors; electronic grade flexible polyethylene insulation; paired conductors; non-wicking tape wrap; tinned copper shield; flame retardant violet polyurethane jacket.

Technical Data:
- Minimum Bending Radius:
  - static: 8 x cable diameter
  - flexing: 15 x cable diameter
- Temperature Range:
  - static: -30°C to +70°C
- Nominal Voltage: 250V
- Test Voltage: 1500V
- Characteristic Impedance: 100 - 120 Ohm
- Nominal Capacitance: 18 pF/ft
- Color Code: DIN 47100, Chart 7, Page 673
- Approvals: UL: CMX
- CSA: CMX
**UNITRONIC® BUS- Static & Flexing Cables**

BUS cable for SUCOnet™, ModulLink™ and VariNet™ Applications

100 Ohm BUS Cable for Static and Continuous Flexing Applications

---

**Rate Table: (Maximum Length- One Bus Segment)**

<table>
<thead>
<tr>
<th>Communications Rate</th>
<th>Feet</th>
<th>Meters</th>
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<tbody>
<tr>
<td>9.6 - 93.75 Kbps</td>
<td>3936</td>
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<td>187.5 Kbps</td>
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<td>500 Kbps</td>
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<table>
<thead>
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<th>Part Number</th>
<th>Pairs</th>
<th>Conductor Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/ft kg/km</th>
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<tr>
<td>Static Install</td>
<td>1pr</td>
<td>24 AWG</td>
<td>.224 5.7</td>
<td>12 Violet</td>
<td>25 37</td>
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<tr>
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</tbody>
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---

SUCOnet is a registered trademark of Moeller-Group.
ModulLink is a registered trademark of Weidmuller GmbH & Co.
VariNet is a registered trademark of Pepperl+Fuchs GmbH.
UNITRONIC® BUS- Interbus™

Interbus™ Cable
100 Ohm BUS Cable for Static & Continuous Flex Applications

UNITRONIC® BUS - Interbus™ cables are widely used for field bus wiring of nodes and I/O due to its inherent high speed and maximum diagnostic capabilities. Due to its unique network topology, Interbus networks are self configuring making startup easy and simplifying troubleshooting.

Recommended Applications:
Assembly, welding and material handling machines. Single-cable wiring of multi-input sensor blocks, pneumatic valves, barcode readers, drives and operator interfaces. Also can be used with Sensor Loop and AS-I sub-networks.

UNITRONIC® BUS- Interbus™:
Stranded bare copper conductors; PE insulation; overall flexible tinned copper braid shield (90%); welded corrugated copper armoring also available; PVC or halogen-free PUR jackets.

Application Advantage:
- Oil and UV resistant
- Highly flexible for ease of routing (static cables) or for use in continuous flex applications (flexing cables)
- Certified by INTERBUS-CLUB
- Highly flame resistant (UL-VW1)

Cable Attributes, See Page 653
- Oil Resistance: OR-05
- Flame Resistance: FR-02
- Motion Type: FL-02
- Mechanical Properties: MP-01

Availability:
Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

Complete the installation with:
- SKINTOP® Strain Relief: Page 486
- OLFLEX® Tubing: Page 546
- EPIC® Connectors: Page 251
- Cable Assemblies Page 627
UNITRONIC® BUS- Interbus™
Interbus™ Cable
100 Ohm BUS Cable for Static & Continuous Flex Applications

Technical Data:
- Minimum Bending Radius: 8 x cable diameter
- Temperature Range:
  - static: -40°C to +80°C
  - flexing: -30°C to +70°C
- Nominal Voltage: 250V
- Test Voltage: 1500V
- Characteristic Impedance: 100 Ohm +/- 20 Ohms
- Nominal Capacitance: 18 pF/ft
- Color Code: DIN 47100, Chart 7, Page 673
- 17/3c: Red, Blue, Green/Yellow
- Approvals: UL: CMX, CSA: CMX

50m max bus segment length (INBC)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Conductors</th>
<th>Description</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
<th>Jacket Color</th>
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<tr>
<td></td>
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<td>mm</td>
<td>lbs/ft</td>
<td>lbs/mft</td>
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<td>2170207</td>
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<td></td>
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<td>2170816</td>
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<td></td>
<td>2170818</td>
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<td>Flex INBC (UL/CSA)</td>
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<td>7.9</td>
<td>42</td>
</tr>
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</table>

Interbus is a registered trademark of Phoenix Contact GmbH& Co.
UNITRONIC® BUS ASi
AS-Interface (ASi) 2 wire BUS cable
140 Ohm Sensor/ Actuator Cable for Static & Flexing Applications

UNITRONIC® BUS ASi cables have been designed to link lower level binary devices (sensors/actuators) using a simple, cost effective field network. Many devices can be networked using this 2 wire cable including power requirements.

Recommended Applications:
E-Stop, Device Lockout, Sensors, Actuators, Safety modules, AOPD devices.

UNITRONIC® BUS ASi Cables Construction: TPE Jacket
Finely stranded bare copper conductors; oil resistant Thermoplastic Elastomer outer jacket.

UNITRONIC® BUS ASi Cables Construction: EPDM Rubber Jacket
Finely stranded bare copper conductors; oil resistant, EPDM (rubber) outer jacket.

Application Advantage:
- Flexing withstand of 5 million cycles (TPE parts)
- Cold bend tested
- Oil and flame Resistant
- Quick connect jacket for easy installation

Technical Data:
- Minimum Bending Radius for stationary use: 3 x cable diameter
- Temperature Range: -40°C to +105°C
- Nominal Voltage: 300V
- Test Voltage: 200V
- Nominal Capacitance: Con/ Con: 19pF/ft
- Characteristic Impedance: 70-140 Ohms (@ 167 KHZ)
- Color Code: Blue & Brown
- Approvals: 2170830 & 2170831: UL/CSA
UNITRONIC® BUS ASi
AS-Interface (ASi) 2 wire BUS cable
140 Ohm Sensor/ Actuator Cable for Static & Flexing Applications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Jacket Color</th>
<th>Nominal OD</th>
<th>Copper Weight lbs/mft</th>
<th>Approx. Weight lbs/mft</th>
<th>Approx. Weight kg/km</th>
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<tbody>
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<td>Static Installation</td>
<td></td>
<td>PVC</td>
<td>2 x 16 AWG (Data/Power)</td>
<td>Yellow</td>
<td>.39 x 0.15</td>
<td>10 x 4</td>
<td>29</td>
</tr>
<tr>
<td>2170842</td>
<td></td>
<td>PVC</td>
<td>2 x 16 AWG (30 VDC Power)</td>
<td>Black</td>
<td>.39 x 0.15</td>
<td>10 x 4</td>
<td>29</td>
</tr>
<tr>
<td>Flexible Installation</td>
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<td>EPDM (Rubber)</td>
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<td>.39 x 0.15</td>
<td>10 x 4</td>
<td>29</td>
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<tr>
<td>2170228</td>
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<td>2 x 16 AWG (30 VDC Power)</td>
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<tr>
<td>2170201*</td>
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<td>29</td>
<td>38</td>
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<tr>
<td>2170202*</td>
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<td>38</td>
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<tr>
<td>Continuous Flex Installation</td>
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<td>TPE</td>
<td>2 x 16 AWG (Data/Power)</td>
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<td>.39 x 0.15</td>
<td>10 x 4</td>
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<tr>
<td>2170830</td>
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<td>TPE</td>
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<td>Black</td>
<td>.39 x 0.15</td>
<td>10 x 4</td>
<td>29</td>
</tr>
</tbody>
</table>

* UL/CSA
ASi is a registered trademark of AS-International.
Lapp Group is a member of the AS-International Association.

SKINTOP® DIX-ASi
Cable Bushings especially for ASi BUS Cables
PG & Metric

SKINTOP® DIX-ASi is a special cable bushing for sealing the UNITRONIC® BUS ASi, which is an AS-Interface cable. This bushing can be used with a standard SKINTOP® cable gland.

Technical Data:
- Materials: NBR
- Temperature: -40°C to + 100°C
- Color: RAL 9005
- Seal: IP 54
- IP 68, 5 Bar
  (when optimally occupied)
  (Exceeds NEMA 6/ 6P Pressure rating)

SKINTOP® DIX-ASI: PG Bushings

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<th>Part Number</th>
<th>Thread Type &amp; Size</th>
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SKINTOP® DIX-ASI-M: Metric Bushings

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<th>Thread Type &amp; Size</th>
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<td>53611001</td>
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ETHERLINE® 2 Pair: CAT5/ CAT5e
2 Pair Industrial Ethernet Cable
CAT5/ CAT5e Bus Cable for Static & Continuous Flexing Applications

ETHERLINE® CAT5/ CAT5e Industrial Ethernet cables are designed to provide reliable network communications in the demanding Industrial and Process Control environment where difficult EMC conditions are pervasive. Conforming to the EIA/TIA-568 standard, ETHERLINE® CAT5/ CAT5e Cables support half-duplex high speed communications.

Recommended Applications:
PLC and DCS automation networks, Device and Field Level Networking, ProfiNet®, Ethernet IP and other Industrial Ethernet Networks

ETHERLINE® 2 Pair: CAT5/ CAT5e
Solid and stranded conductor options; FPE insulation with foil and braid shielding; jacketing options include PVC, Halogen-Free FRNC, and PUR.

Oil Resistance: OR-01
Flame Resistance: FR-02
Motion Type: FL-02
Mechanical Properties: MP-01

Cable Attributes, See Page 653

Application Advantage:
- Signal integrity in continuous motion applications
- Flame resistant
- Oil resistant
- Flexible for ease of routing

Technical Data:

Minimum Bending Radius:
- static: 5 x cable diameter
- flexing: 10 x cable diameter

Temperature Range:
- static: -40° to +80°C
- flexing: -20° to +80°C

Nominal Voltage: 125V Peak (Not for Power)

Test Voltage:
cond/cond: 1000V
cond/shield: 500V

Characteristic Impedance: 100 Ohm +/- 15 Ohms
Nominal Capacitance: 17 pF/ft
Color Code: White/Orange & Orange
White/Green & Green
Approvals: UL: CMG (2170893 & 2170494)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Category</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
<th>Jacket Color</th>
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<tr>
<td></td>
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<td>inches</td>
<td>mm</td>
<td>lbs/mft</td>
<td>kg/km</td>
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Halogen-Free: CAT 5e

PROFINET® 22 AWG

2170893
PVC
22/ 2pr
CAT 5
.256
6.5
20
Green
38
56

Outdoor- Direct Burial

2170494
PVC
22/ 2pr
CAT 5e
.307
7.8
20
Green
42
62

2170496
PVC/PE Armored
22/ 2pr
CAT 5
.366
9.3
20
Black
83
124

Halogen-Free: CAT 5

2170283
Zero Halogen
26/ 2pr
CAT 5
.213
5.4
13
Teal
29
43

2170284
PUR
26/ 2pr
CAT 5
.228
5.8
13
Teal
30
45

Continuous Flex- Halogen-Free

2170289
PUR
26/ 2pr
CAT 5
.240
6.1
13
Teal
32
48

PROFINET is a registered trademark of the PNP.

Available:
- Standard put-ups are 328ft, 1640ft, and 3280ft.
- Bulk reels can be cut to length.

Complete the installation with:
- SKINTOP® Strain Relief: Page 486
- EPIC® Connectors: Page 251
- OLFLEX® Tubing: Page 546
- Cable Assemblies Page 633

Minimum Bending Radius:
- static: 5 x cable diameter
- flexing: 10 x cable diameter

Temperature Range:
- static: -40° to +80°C
- flexing: -20° to +80°C

Nominal Voltage: 125V Peak (Not for Power)

Test Voltage: cond/cond: 1000V cond/shield: 500V

Characteristic Impedance: 100 Ohm +/- 15 Ohms
Nominal Capacitance: 17 pF/ft
Color Code: White/Orange & Orange
White/Green & Green
Approvals: UL: CMG (2170893 & 2170494)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Category</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
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<td>inches</td>
<td>mm</td>
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<td>kg/km</td>
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Halogen-Free: CAT 5e

PROFINET® 22 AWG

2170893
PVC
22/ 2pr
CAT 5
.256
6.5
20
Green
38
56

Outdoor- Direct Burial

2170494
PVC
22/ 2pr
CAT 5e
.307
7.8
20
Green
42
62

2170496
PVC/PE Armored
22/ 2pr
CAT 5
.366
9.3
20
Black
83
124

Halogen-Free: CAT 5

2170283
Zero Halogen
26/ 2pr
CAT 5
.213
5.4
13
Teal
29
43

2170284
PUR
26/ 2pr
CAT 5
.228
5.8
13
Teal
30
45

Continuous Flex- Halogen-Free

2170289
PUR
26/ 2pr
CAT 5
.240
6.1
13
Teal
32
48

PROFINET is a registered trademark of the PNP.
ETHERLINE® 4 Pair: CAT5/ CAT5e
4 Pair Industrial Ethernet Cable
CAT5/ CAT5e Bus Cable for Static and Continuous Flex Applications

ETHERLINE® CAT5/ CAT 5e Industrial Ethernet cables are designed to provide reliable network communications in the demanding Industrial and Process Control environment where difficult EMC conditions are pervasive. Conforming to the EIA/TIA-568 standard, Etherline CAT5/ CAT 5e Cables support full duplex high speed communications.

Recommended Applications:
PLC and DCS automation networks, Device and Field Level Networking, ProfiNet®, Ethernet IP and other Industrial Ethernet Networks

ETHERLINE® 4 Pair: CAT5/CAT5e
Solid and stranded conductor options; FPE insulation with foil and braid shielding; jacketing options include PVC, Halogen-Free FRNC, and PUR.

Technical Data:
- Minimum Bending Radius:
  - static: 5 x cable diameter
  - flexing: 10 x cable diameter
- Temperature Range:
  - static: -40°C to +80°C
  - flexing: -20°C to +80°C
- Nominal Voltage: 125V Peak (Not for Power)
- Test Voltage: cond/cond: 1000V
- Complete the installation with:
  - SKINTOP® Strain Relief: Page 486
  - EPIC® Connectors: Page 251
  - OLFLEX® Tubing: Page 546
  - Cable Assemblies Page 633
- Application Advantage:
  - Signal integrity in continuous motion applications
  - Flame resistant
  - Oil resistant
  - Flexible for ease of routing

<table>
<thead>
<tr>
<th>Cable Attributes, See Page 553</th>
<th>Availability:</th>
<th>Complete the installation with:</th>
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<tbody>
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<td>Oil Resistance: OR-01</td>
<td>Flame Resistance: FR-02</td>
<td>Standard put-ups are 164ft, 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.</td>
</tr>
<tr>
<td>Motion Type: FL-02</td>
<td>Mechanical Properties: MP-01</td>
<td>SKINTOP® Strain Relief: Page 486</td>
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<td>EPIC® Connectors: Page 251</td>
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<table>
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<th>Cable Attributes, See Page 553</th>
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<td></td>
<td>SKINTOP® Strain Relief: Page 486</td>
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<tr>
<td></td>
<td></td>
<td>EPIC® Connectors: Page 251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OLFLEX® Tubing: Page 546</td>
</tr>
<tr>
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<td>Cable Assemblies Page 633</td>
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<table>
<thead>
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<th>Technical Data:</th>
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<td>- static: 5 x cable diameter</td>
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<td>SKINTOP® Strain Relief: Page 486</td>
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<tr>
<td>- flexing: 10 x cable diameter</td>
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<td>EPIC® Connectors: Page 251</td>
</tr>
<tr>
<td>Temperature Range:</td>
<td></td>
<td>OLFLEX® Tubing: Page 546</td>
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<tr>
<td>- static: -40°C to +80°C</td>
<td></td>
<td>Cable Assemblies Page 633</td>
</tr>
<tr>
<td>- flexing: -20°C to +80°C</td>
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<td>Nominal Voltage:</td>
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<tr>
<td>125V Peak (Not for Power)</td>
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<table>
<thead>
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<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Category</th>
<th>Nominal Outer Diameter inches</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
<th>Approx. Weight lbs/ft kg/km</th>
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Halogen-Free

Continuous Flex- Halogen-Free

PROFINET is a registered trademark of the PNP.

- Minimum Bending Radius:
- Temperature Range:
- Nominal Voltage:
- Test Voltage:
- Complete the installation with:
  - SKINTOP® Strain Relief: Page 486
  - EPIC® Connectors: Page 251
  - OLFLEX® Tubing: Page 546
  - Cable Assemblies Page 633

- Application Advantage:
  - Signal integrity in continuous motion applications
  - Flame resistant
  - Oil resistant
  - Flexible for ease of routing

- Technical Data:
  - Minimum Bending Radius:
  - Temperature Range:
  - Nominal Voltage:
  - Test Voltage:
  - Complete the installation with:
    - SKINTOP® Strain Relief: Page 486
    - EPIC® Connectors: Page 251
    - OLFLEX® Tubing: Page 546
    - Cable Assemblies Page 633

- Application Advantage:
  - Signal integrity in continuous motion applications
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  - Oil resistant
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- Technical Data:
  - Minimum Bending Radius:
  - Temperature Range:
  - Nominal Voltage:
  - Test Voltage:
  - Complete the installation with:
    - SKINTOP® Strain Relief: Page 486
    - EPIC® Connectors: Page 251
    - OLFLEX® Tubing: Page 546
    - Cable Assemblies Page 633

- Application Advantage:
  - Signal integrity in continuous motion applications
  - Flame resistant
  - Oil resistant
  - Flexible for ease of routing
ETHERLINE® 4 Pair: CAT6e/ CAT7

4 Pair Industrial Ethernet Cable
CAT6e/ CAT7 Bus Cable for Static Applications

ETHERLINE® CAT6e/7 Industrial Ethernet cables are designed to provide highly reliable network communications in the demanding Industrial and Process Control environment where difficult EMC conditions are pervasive. Conforming to the EIA/TIA-568 standard, ETHERLINE® CAT6e/7 Cables support full duplex high speed communications.

Recommended Applications:
PLC and DCS automation networks, Device and Field Level Networking, Profinet®, Ethernet IP and other Industrial Ethernet Networks

ETHERLINE® 4 Pair: CAT6/CAT7
Solid BC Conductors; FPE insulation with foil and braid shielding; jacketing options include PVC, Halogen-Free FRNC, and PUR.

Application Advantage:
• Signal integrity in continuous motion applications
• Flame resistant
• Oil resistant
• Flexible for ease of routing

Technical Data:
- Minimum Bending Radius:
  - static: 5 x cable diameter
  - flexing: 10 x cable diameter
- Temperature Range:
  - static: -40°C to +80°C
  - flexing: -20°C to +80°C
- Nominal Voltage: 125V Peak (Not for Power)
- Test Voltage: cond/cond: 1000V cond/shield: 500V

Characteristic Impedance: 100 Ohm +/- 15 Ohms
Nominal Capacitance: 17 pF/ft
Color Code: Blue & White, Orange & White, Green & White, Brown & White

Complete the installation with:
- SKINTOP® Strain Relief: Page 486
- EPIC® Connectors: Page 251
- OLFLEX® Tubing: Page 546
- Cable Assemblies Page 633

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
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<th>Category</th>
<th>Nominal Outer Diameter inches</th>
<th>Copper Weight lbs/ft</th>
<th>Jacket Color</th>
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<td>22/ 4pr</td>
<td>CAT 6e</td>
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<td>34</td>
<td>Teal</td>
<td>67</td>
</tr>
</tbody>
</table>

PROFINET is a registered trademark of the PNP.
ETHERLINE® TORSION
2 Pair Industrial Ethernet Cable
CAT5 BUS Cable for Torsion Flexing Applications

ETHERLINE® Torsion CAT5 Industrial Ethernet cables are designed to provide reliable network communications in Torsion Flexing applications. Tested to over 1 million flex cycles of 180° (Left/Right) over 1 meter, ETHERLINE® Torsion cables meet the most demanding motion requirements. Cable also conforms to the EIA/TIA-568 standard

Recommended Applications:
PLC automation networks, Device and Field Level Networking, ProfiNet, Ethernet IP and other Industrial Ethernet Networks

ETHERLINE® TORSION:
Finely Stranded Conductors, FPE insulation with foil and braid shielding (85% coverage), Rugged PUR jacket

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Application Advantage:
• Signal integrity in continuous motion applications 1 million cycles +/- 180°
• Flame resistant
• Oil resistant
• Flexible for ease of routing

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Cable Attributes, See Page 653

<table>
<thead>
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<th>Attribute</th>
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<td>Flame Resistance</td>
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<td>Motion Type</td>
<td>T-01</td>
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<td>Mechanical Properties</td>
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</table>

Availability:
Standard put-ups are 328ft, 1640ft, and 3280ft. Bulk reels can be cut to length.

Complete the installation with:
SKINTOP® Strain Relief: Page 486
EPIC® Connectors: Page 251
OLFLEX® Tubing: Page 546
Cable Assemblies Page 633

---

Technical Data:

- Minimum Bending Radius:
  - static: 5 x cable diameter
  - flexing: 10 x cable diameter
- Characteristic Impedance: 100 Ohm +/- 15 Ohms
- Nominal Capacitance: 17 pF/ft
- Temperature Range:
  - static: -40°C to +80°C
  - flexing: -20°C to +80°C
- Color Code: White, Yellow, Blue, Orange
- Approvals: UL: AWM 21161
- Nominal Voltage: 125V Peak (Not for Power)
- Test Voltage: cond/cond: 1000V cond/shield: 500V

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<table>
<thead>
<tr>
<th>Part Number</th>
<th>Jacket</th>
<th>Conductor Description</th>
<th>Category</th>
<th>Nominal Outer Diameter</th>
<th>Copper Weight</th>
<th>Jacket Color</th>
<th>Approx. Weight</th>
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<tr>
<td>2170888</td>
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