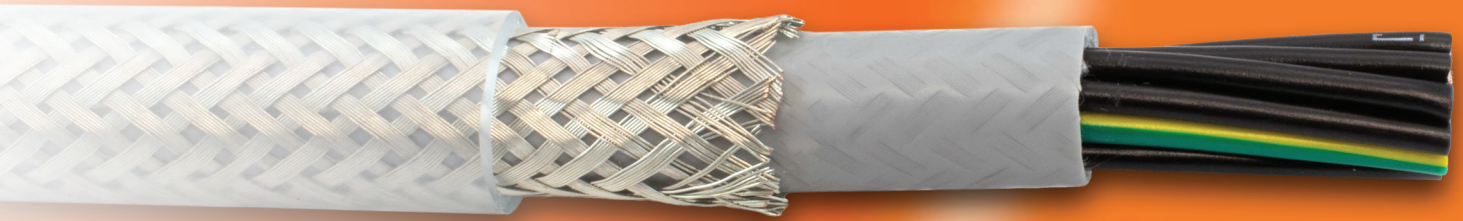


# Pro-Met<sup>®</sup> Industrial Cable



# Pro-Met® Cable

Ultimate Performance in Industrial Environments



### Industry Challenge

Original Equipment Manufacturers are continuously looking to improve the reliability of their machines in increasingly challenging environments. Dependable cables are essential to a well performing system, with flexibility and oil resistance as key priorities.

### Alpha's Solution

Pro-Met is a line of flexible industrial cable impervious to oils and resistant to UV damage. Alpha's uncompromising standards provide consistency and uniformity in every cable.

Compliant with following International standards:

**DIN EN 50525-2-51 (VDE 0285-525-2-51):2012-01**  
**VDE-REG.-Nr.9770**



### Key Features

- Size 0.5 mm<sup>2</sup> - 1.5 mm<sup>2</sup>
- 2 to 12 conductors - Stranded Bare Copper
- 300/500 V Rating
- Grey (RAL 7001) or Transparent Jacket
- Unshielded or Tinned Copper Braid Shield
- Rated up to 1M Flex Cycles

### Industries

- Food & Beverage
- Medical Devices
- Industrial Automation
- Commercial Electronics
- Automotive
- Defense/Aerospace

### Applications

- Precision Control Sensors
- Multi Axis Motion Control
- Control Panels
- Motor Speed Controls
- Machine Cutting Tools
- Temperature Controllers

## Environmental Requirements

	High Temp	Low Temp	UV	Oil/Water/Chemical	Abrasion	Direct Burial	EMI Protection with Braid Shield	Flexible/Flexing
Pro-Met								
	●●○	●●○	●●○	●●○	●●○	NR	●●○	●●○

●●○ = Good; ●●● = Very Good; ●●●● = Excellent; NR = Not Recommended

# Pro-Met® Cable

## Unshielded (YY) PVC Control Cables

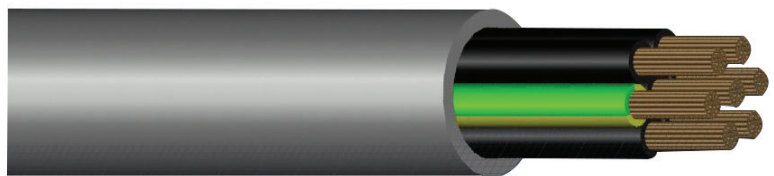
<b>Conductor Material</b>	Stranded bare copper (DIN VDE 0295 Class 5)
<b>Insulation Material &amp; Color</b>	Insulation Material & Color PVC (polyvinyl chloride). Black color with number coding plus 1 green & yellow = with protective conductor. Alpha Color Code KZ
<b>Jacket / Sheath Material</b>	PVC (polyvinyl chloride)
<b>Flame Retardancy</b>	VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2
<b>Voltage Rating (Uo/U)</b>	300 / 500 V
<b>Oil Resistant</b>	DIN EN 50290-2-22 (TM54)
<b>Temperature Range</b>	-30 °C TO +70 °C (Dynamic) -40 °C TO +80 °C (Static)
<b>Bending Radius</b>	10x OD (Dynamic movement) 6 x OD (Fixed installation)
<b>Other Properties</b>	Good UV resistance, chemical resistance & flexibility

### General Reference Standards

- DIN VDE 0295, IEC 60228, BS6360
- DIN EN 50290-2-22, DIN VDE 0207-363-4-1
- DIN VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2
- RoHS & REACH & CE Directives

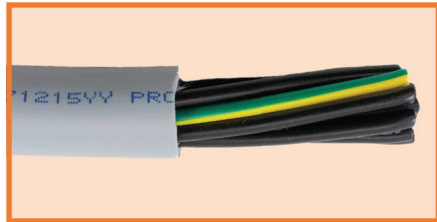
### Pro-Met YY Unshielded PVC Control Cables

UNSHIELDED CABLE WITH (G) PROTECTIVE GROUND



# Pro-Met

## Industrial Performance 300 V Unshielded, Multicore



Grey GE

### Operating Temperature

- -40°C to +80°C (static)
- -30°C to +70°C (dynamic)

### Conductor Color Coding

- Alpha Color Code Chart KZ

### Materials

- Stranded tinned copper conductors
- Premium industrial-grade insulation
- Tinned Copper Braid 80% coverage
- Premium PVC grade

### Features

- DIN EN 50290-2-22 (TM54) Oil Resistance
- Sunlight Resistance
- IEC 60322-1 and -2 flame behavior

### Availability

- 50 m (GE 321)
- 100 m (GE 033)
- 300 m (GE 432)

### FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin (indoor)
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin (outdoor)



### 0.5 mm<sup>2</sup> (21 AWG)

Stranding: 20/0.177  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470025YY	2	4.77	0.188	0.70	0.028
470035YY	3	5.08	0.200	0.65	0.026
470045YY	4	5.60	0.220	0.66	0.026
470055YY	5	6.16	0.243	0.72	0.028
470075YY	7	6.75	0.266	0.66	0.026
470095YY	9	8.51	0.335	0.70	0.028
470125YY	12	9.23	0.363	0.75	0.030

### 0.75 mm<sup>2</sup> (19 AWG)

Stranding: 30/0.177  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470027YY	2	5.23	0.206	0.70	0.028
470037YY	3	5.60	0.220	0.73	0.029
470047YY	4	6.16	0.243	0.80	0.031
470057YY	5	6.78	0.267	0.75	0.030
470077YY	7	7.45	0.293	0.77	0.030
470097YY	9	9.39	0.370	0.85	0.033
470127YY	12	10.2	0.402	0.77	0.030

### 1 mm<sup>2</sup> (17 AWG)

Stranding: 30/0.2  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470021YY	2	5.58	0.220	0.82	0.032
470031YY	3	5.96	0.235	1.00	0.039
470041YY	4	6.58	0.259	0.90	0.035
470051YY	5	7.25	0.285	0.95	0.037
470071YY	7	7.97	0.314	1.05	0.041
470091YY	9	10.05	0.396	0.95	0.037
470121YY	12	10.91	0.430	1.00	0.039

### 1.5 mm<sup>2</sup> (15 AWG)

Stranding: 28/0.25  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470215YY	2	6.18	0.243	0.73	0.029
470315YY	3	6.61	0.260	0.75	0.030
470415YY	4	7.31	0.288	0.80	0.031
470515YY	5	8.07	0.318	0.85	0.033
470715YY	7	8.87	0.349	0.91	0.036
470915YY	9	11.20	0.441	1.08	0.043
471215YY	12	12.17	0.479	1.13	0.044

# Pro-Met® Cable

## Shielded (CY) PVC Control Cables

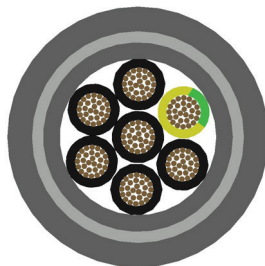
<b>Conductor Material</b>	Stranded bare copper (DIN VDE 0295 Class 5)
<b>Insulation Material &amp; Color</b>	Insulation Material & Color PVC (polyvinyl chloride). A) All black color with number coding = without protective conductor. B) Black color with number coding plus 1 green & yellow = with protective conductor.
<b>Braid Shield Material</b>	Tinned Copper Braid Shield
<b>Jacket / Sheath Material</b>	PVC (polyvinyl chloride)
<b>Flame Retardancy</b>	VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2
<b>Voltage Rating (Uo/U)</b>	300 / 500 V
<b>Oil Resistant</b>	DIN EN 50290-2-22 (TM54)
<b>Temperature Range</b>	-30 °C TO +70 °C (Dynamic) -40 °C TO +80 °C (Static)
<b>Bending Radius</b>	20 x OD (Occasional movement) 6 x OD (Fixed installation)
<b>Other Properties</b>	Good UV resistance, chemical resistance & flexibility

### General Reference Standards

- DIN VDE 0295, IEC 60228, BS6360
- DIN EN 50290-2-22, DIN VDE 0207-363-4-1
- DIN VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2
- RoHS & REACH & CE Directives

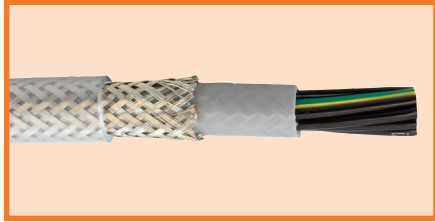
### Pro-Met CY Shielded PVC Control Cables

SHIELDED CABLE WITH (G) PROTECTIVE GROUND

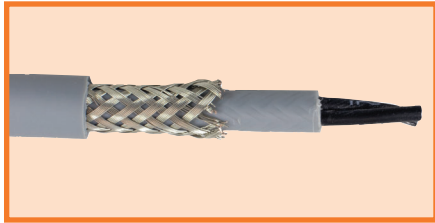


# Pro-Met

## Industrial Performance 300 V Braid Shield, Multicore



Clear CL



Grey GE

### Operating Temperature

- -40°C to +80°C (static)
- -30°C to +70°C (dynamic)

### Conductor Color Coding

- Alpha Color Code Chart KZ

### Materials

- Stranded tinned copper conductors
- Premium industrial-grade PVC insulation
- Tinned Copper Braid Shield, 80% coverage
- Premium PVC jacket

### Features

- DIN EN 50290-2-22 (TM54) Oil Resistance
- Sunlight Resistance
- IEC 60322-1 and -2 flame behavior

### Availability

- 50 m (CL & GE 321)
- 100 m (CL & GE 033)
- 300 m (CL & GE 432)

### FIT® Tubing Recommendations

- FIT-221: General-purpose, cross-linked polyolefin (indoor)
- FIT-321: Medium-wall, adhesive-lined, cross-linked polyolefin (outdoor)

### 0.5 mm<sup>2</sup> (21 AWG)

Stranding: 20/0.177  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470025CY	2	7.10	0.280	0.85	0.033
470035CY	3	7.43	0.293	0.80	0.031
470045CY	4	7.97	0.314	0.85	0.033
470055CY	5	8.54	0.336	0.65	0.026
470075CY	7	9.42	0.371	0.82	0.032
470095CY	9	11.26	0.443	0.85	0.033
470125CY	12	12.00	0.472	0.94	0.037

### 0.75 mm<sup>2</sup> (19 AWG)

Stranding: 30/0.177  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470027CY	2	7.58	0.298	0.85	0.033
470037CY	3	7.95	0.313	0.90	0.035
470047CY	4	8.55	0.337	1.00	0.039
470057CY	5	9.46	0.372	0.90	0.035
470077CY	7	10.15	0.400	0.95	0.037
470097CY	9	12.17	0.479	1.03	0.041
470127CY	12	13.00	0.512	0.95	0.037

### 1 mm<sup>2</sup> (17 AWG)

Stranding: 30/0.2  
Insulation thickness: 0.4 mm (0.016 in)

Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470021CY	2	7.95	0.313	1.00	0.039
470031CY	3	8.34	0.328	1.20	0.047
470041CY	4	9.25	0.364	1.10	0.043
470051CY	5	9.95	0.392	1.13	0.044
470071CY	7	10.69	0.421	1.25	0.049
470091CY	9	12.86	0.506	1.12	0.044
470121CY	12	13.76	0.542	1.20	0.047

### 1.5 mm<sup>2</sup> (15 AWG)

Stranding: 28/0.25  
Insulation thickness: 0.4 mm (0.016 in)

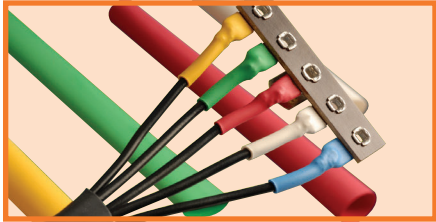
Part Number	Conductors	Nominal Diameter		Jacket Thickness	
		mm	Inch	mm	Inch
470215CY	2	8.83	0.348	0.90	0.035
470315CY	3	9.28	0.365	0.95	0.037
470415CY	4	10.01	0.394	1.00	0.039
470515CY	5	10.79	0.425	1.05	0.041
470715CY	7	11.63	0.458	1.10	0.043
470915CY	9	14.05	0.553	1.27	0.050
471215CY	12	15.06	0.593	1.30	0.051



# Heat-Shrink Tubing

## FIT<sup>®</sup>-221 Heat-Shrink Tubing

2:1 Shrink Ratio, XLPO



**AMS-DTL-23053/5 Class 1**  
(except clear)

**AMS-DTL-23053/5 Class 2**  
(clear)

**UL 224** (except clear)

**CSA 198** (except clear)

- Excellent general-purpose tubing
- Low water absorption
- UV resistant (black only)

### Operating Temperature

- -55°C to +135°C
- -55°C to +125°C (UL, CSA)

### Shrink Temperature

- 90°C min.
- 121°C full recovery

### Material

- Cross-linked polyolefin

### Color

- Black, white, red, yellow, blue, green, clear\*

\*Clear tubing may exhibit some color tint that is the result of the product's chemistry; the tint is variable and can be any color

### Physical Properties

- Tensile strength: 1500 psi (10.34 N/mm<sup>2</sup>)
- Elongation: 200% min
- Longitudinal change: ±5%

- Specific gravity: 1.35 (colors)/1.00 (clear)
- Flame retardant
- Shelf life: 5 years at 18°C to 35°C

### Chemical Properties

- Corrosive effect: none
- Fungus resistance: no growth
- Water absorption: 0.5% max
- Fluid resistance: 1000 psi (6.89 N/mm<sup>2</sup>)
- UV resistant
- Lead free

### Electrical Properties

- 600 V (UL, CSA)
- Dielectric strength: 500 V/mil (197 kV/cm)
- Volume resistivity: 10<sup>14</sup> ohm-cm

### Availability

Spools may contain multiple lengths

## FIT<sup>®</sup>-321 Heat-Shrink Tubing

3:1 Shrink Ratio, Dual-Wall XLPO, Adhesive Lined



**AMS-DTL-23053/4 Class 3**

**UL 224**

**CSA 198**

- Thicker wall for increased durability
- Water-resistant inner permanent-bonding adhesive

### Operating Temperature

- -55°C to +125°C

### Shrink Temperature

- 110°C min.
- 110°C full recovery

### Material

- Dual-wall flexible polyolefin with thick-wall adhesive

### Color

- Black

### Physical Properties

- Tensile strength: 1500 psi (10.34 N/mm<sup>2</sup>)
- Elongation: 250% min
- Longitudinal change: +1%/-15%
- Flame tested
- Shelf life: 3 years at 18°C to 35°C

### Chemical Properties

- Corrosive effect: none
- Fungus resistance: no growth
- Water absorption: 1.0% max
- Fluid resistance: 900 psi (6.20 N/mm<sup>2</sup>)
- UV resistant
- Lead free

### Electrical Properties

- 600 V (UL, CSA)
- Dielectric strength: 300 V/mil (118 kV/cm)
- Volume resistivity: 10<sup>12</sup> ohm-cm

## Cables you trust. Service you deserve.

Every application is critical and cable failure is not an option when the safety of equipment and personnel is paramount. Specify Alpha cable for rugged, reliable performance, since the integrity of your system is only as robust as the products you use.

## Custom cable is standard.

Alpha Wire goes one step further: manufacturing custom cables to meet unique applications—offering specific conductor counts, shielding options, jacket materials, and versatile product designs. Our custom cable orders are often shipped in less than a week, once again giving you products with more convenience and less delay.

## Service and support, second-to-none.

Selecting the correct cable for your critical application is essential to overall system reliability, performance, and safety. So we make it easy for you to select the right Alpha cable for your specific application. Our online resources include a wire and cable selection guide, technical information, full product catalog, and a distributor locator to make it easy to select and get the cable you need. Can't find what you're looking for? Design the cable to your specification. It's easy, just visit **[www.alphawire.com](http://www.alphawire.com)**!

GLOBAL HEADQUARTERS  
711 Lidgerwood Avenue  
Elizabeth, NJ 07207-0711 USA  
Toll Free: 1-800-52 ALPHA  
Tel: 1-908-925-8000  
Fax: 1-908-925-5411  
E-mail: [info@alphawire.com](mailto:info@alphawire.com)

EUROPE  
Saxon House  
1 Downside | Sunbury-on-Thames  
Middlesex | United Kingdom | TW16 6RT  
Tel: +44 1 932 772 422  
E-mail: [europa@alphawire.com](mailto:europa@alphawire.com)

ASIA PACIFIC  
Room 1308 | Baohua Mansion  
No 1211 Changde Road  
Shanghai | China | 200060  
Tel: +86-21-61498201 / 61498205  
Fax: +86-21-61498001  
E-mail: [apac@alphawire.com](mailto:apac@alphawire.com)

