THERMAL
Wire and Cable, LLC

High Temperature Industrial Catalog

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How to Establish Ampacity Ratings for Electrical Wires

Establishing ampacity ratings is an inexact procedure. These tables should only be used as a starting point when determining ratings for any given situation. Values may be lesser or greater than those provided in the table because of the influence of installation method, environment, some conductors, conductor composition and size, ambient temperatures, insulation types, etc.

It is recommended that design engineers desiring accurate ampacity data closely study the 1999 National Electrical Code, Articles 310-15 through 310-84. Additional information can be derived from AIEE, Paper Number 64-660: "The Calculation of the Temperature Rise and Load Capability of Cable Systems" by J.H. Neher and M.H. McGrath. This paper was presented at the AIEE general meeting in Montreal, Quebec, Canada on June 24-28, 1957, and was published in the "AIEE Transactions" Part 3 (power apparatus and systems), Volume 76, October 1957, pp.752-772. The information contained therein is still applicable. The following table is to be used in series to determine a wire's ampacity in a given application. Reference section 6 for examples of applications of these tables.

Quoted WC 73-2000 (R2005) Page 6 ©2005 National Electrical Manufacturers Association.

Base Ampacities

Allowable ampacities of insulated conductors rated 0 through 2000 Volts, 60° to 90°C (140° to 194 °F) not more than three current-carrying conductors in raceway or cable or Earth (directly buried), based on ambient temperatures of 40°C (104°F)

AWG	150ºC [1] BC, TCC	200ºC BC, TCC, SCC or NCC 2% - 10%	250ºC NCC 2% - 10%	250ºC "A" Nickel	450ºC NCC - Class 27	450ºC "A" Nickel
24	6.6	72	8	4	9	4.3
22	9	9.6	10.8	5	12	5.6
20	13	14	15	7	18	8
18	17	18	20	9.4	23	11
16	22	24	26	12	30	14
14	34	36	39	18	45	21
12	43	45	54	25	56	26
10 [2]	55	60	73	34	75	35
8	76	83	93	43	104	49
6	96	110	117	55	138	65
4	120	125	148	69	162	76
3	143	152	166	78	182	85
2	160	171	191	90	210	99
1 [3]	186	197	215	101	236	110
1/0	215	229	244	114	268	126
2/0	251	260	273	128	300	141
3/0	288	297	308	144	338	159
4/0	332	346	361	169	397	186
250	365	385	398	187		
300	414	436	452	212		
350	461	486	503	236		
400	495	522	540	254		
500	563	593	613	288		

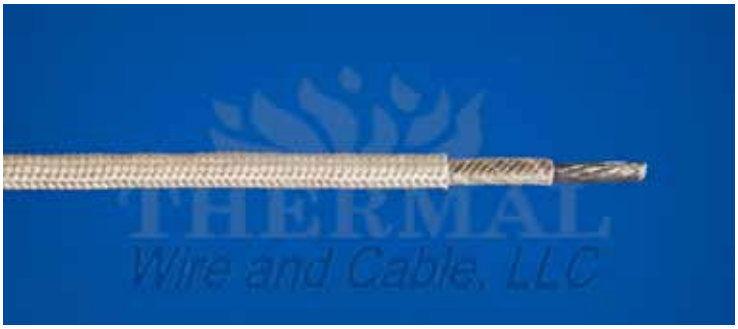
[1] *This column is for reference purposes only*
[2] *14-8 AWG 150 – 150 NCC data is from NEC Table 310-18*
[3] *6-4/0 150-250 NCC date is from NEC Table 310-18*

Single Conductor Wire

Single Conductor Appliance Wires

538°C (1000°F) MGT High Temperature Heavy Duty Lead Wire

600V



Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- Standard lead wire for heater band applications
- Color coding for various sizes, conductor materials etc.
- Insulation: non melting, non burning insulation
- 450°C (842°F) UL/CSA Certified/ 538°C factory rated (1000°F)
- UL® Recognized / CSA Certified lead wire / Pass UL VW-1 Flame Test

Radiation resistant

Applications:

Wiring of ovens or similar high temperature equipment such as commercial cooking equipment, heater bands, blast furnaces, coke ovens and cement kilns, where not subjected to repeated flexing and protected from mechanical abuse, and where the acceptability, including current-carrying capacity has been determined by UL.

Options:

- Multi-conductor versions
- Various colors available* (24 AWG to 500 MCM)
- Solid or stranded Grade A Nickel (Nickel 200) conductor
- Stainless Steel armor
- Special surface print
- Ampacities are per NEMA WC 73-2000 (R 2005)

Item Number	AWG	Number of Strands	Nominal Overall Diameter
538-245107-*	24	7	0.090“
538-225107-*	22	7	0.095”
538-205107-*	20	10	0.101”
538-185107-*	18	16	0.110”
538-165107-*	16	26	0.122”
538-145107-*	14	41	0.140”
538-125107-*	12	65	0.153”
538-105107-*	10	105	0.210”
538-85107-*	8	133	0.248”
538-65107-*	6	133	0.287”
538-45107-*	4	133	0.347”
538-25107-*	2	133	0.460”
538-4/05107-*	4/0	259	0.710”

538°C (1000°F) MGT Small Diameter Lead Wire

600V

Features & Benefits

- Ideal for applications where space is limited
- High dielectric strength insulation system (reduced wall)
- Standard lead wire for heater band applications
- Color coding for various sizes, conductor materials, etc.
- Insulation: non melting, non burning insulation
- 450°C (842°F) UL/CSA Certified/ 538°C factory rated (1000°F)
- UL® Recognized / CSA Certified lead wire / Pass UL VW-1 Flame Test
- Radiation resistant
- Impregnated glass braid jacket

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Wiring of ovens or similar high temperature equipment such as commercial cooking equipment, heater bands, blast furnaces, coke ovens and cement kilns, where not subjected to repeated flexing and protected from mechanical abuse, and where the acceptability, including current-carrying capacity has been determined by UL.

Options:

- Multi-conductor versions
- Various colors available*
- Solid or stranded Grade A Nickel (Nickel 200) conductor
- Stainless Steel armor
- Special surface print

Item Number	AWG	Number of Strands	Nominal Overall Diameter
538-24MGTSD-*	24	7	0.070“
538-22MGTSD	22	7	0.077”
538-20MGTSD	20	10	0.083”
538-18MGTSD	18	16	0.092”
538-16MGTSD	16	26	0.104”
538-14MGTSD	14	41	0.119”
538-12MGTSD	12	65	0.135”
538-10MGTSD	10	105	0.190”
538-8MGTSD	8	133	0.233”
538-6MGTSD	6	133	0.272”
538-4MGTSD	4	133	0.332”
538-2MGTSD	2	133	0.446”

Single Conductor Appliance Wires

450°C (842°F) MTG Flexing Oil Resistant Lead Wire 600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- Built from missle lead wire technology
- High flexibility
- PTFE Barrier system is temperature rated to 550°F
- Oxygen-free nickel coated Copper Non melting insulation
- Fluid and vapor barrier*: Wrapped, Braded and fused PTFE composite tape Jacket material: Glass braid Type R Yarn
- Military Specification available
- UL Recognized 600 Volt UL Subject 758 (450°C) /
- CSA Certified Appliance Wiring Material. UL Listed Version Available
- Stock item

Applications:

Thermal Wire's MTG Flexing cable is expected to perform in the most extreme of applications. Some of which include Fire Zone areas, heating and curing systems, steel mill melt shops, ladle cars, heater bands and where a reliable proven lead wire is required to operate in extreme heat conditions, continuous bending and flexing and appliance applications.

Options:

- Multi-conductor versions
- Various colors available upon request*
- Grade A Nickel (Nickel 200) conductor
- Stainless Steel armor
- ** Standard color is White with Red stripe

Item Number	AWG	Number of Strands	Nominal Overall Diameter
538-24MTG-*	24	19	0.080“
538-22MTG-*	22	19	0.082”
538-20MTG-*	20	26	0.090”
538-18MTG-*	18	16	0.098”
538-16MTG-*	16	26	0.101”
538-14MTG-*	14	41	0.119”
538-12MTG-*	12	65	0.140”
538-10MTG-*	10	105	0.198”
538-8MTG-*	8	133	0.232”
538-6MTG-*	6	133	0.275”
538-4MTG-*	4	133	0.360”
538-2MTG-*	2	133	0.440”
538-1MTG-*	1	259	0.465”
538-1/0MTG-*	1/0	259	0.530“
538-2/0MTG-*	2/0	259	0.575”
538-3/0MTG-*	3/0	259	0.635”
538-4/0MTG-*	4/0	259	0.706”

250°C (482°F) SDT-250 PFA Insulated Lead Wire

600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- Abrasion resistant
- High durability
- OSHA Acceptable
- Glass Free
- Conductor type: Nickel Plated Copper
- PFA insulated
- Inert to nearly all industrial chemicals and solvents
- -196°C to 250°C (482°F) / 600 Volt
- UL 10362 can often replace the UL1180, UL1659, UL1199, and UL1727
- UL/CSA/CE Appliance Wiring Material (AWM)

Applications:

UL 10362 PFA insulated lead wire is used in internal wiring of appliances, igniters, and plastics process equipment.

Options:

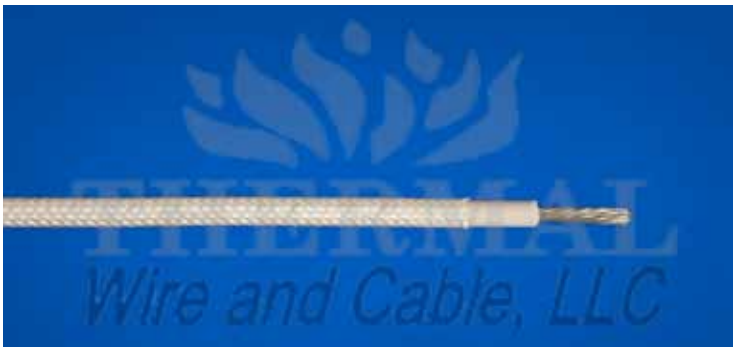
- Multi-conductor versions
- Various colors available*
- Grade A Nickel (Nickel 200) conductor
- Available in 24-4/0 AWG

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-24SDT250	24	7	0.044“
250-22SDT250	22	19	0.050”
250-20SDT250	20	19	0.058”
250-18SDT250	18	19	0.068”
250-16SDT250	16	19	0.074”
250-14SDT250	14	19	0.090”
250-12SDT250	12	37	0.110”
250-10SDT250	10	37	0.135”
250-8SDT250	8	133	0.224”
250-6SDT250	6	133	0.248”
250-4SDT250	4	133	0.318”
250-2SDT250	2	133	0.392”
250-1SDT250	1	259	0.464”
250-1/0SDT250	1/0	259	0.505“
250-2/0SDT250	2/0	259	0.569”
250-3/0SDT250	3/0	259	0.609”
250-4/0SDT250	4/0	259	0.692”

Single Conductor Appliance Wires

250°C (482°F) SRGN Flexible Motor/Apparatus/Fixture Wire

300/600V



Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Primarily used in lighting fixtures, heating elements, motor leads, and internal wiring appliances.

Features & Benefits

- High flexibility
- Abrasion resistant
- Temperature range of -65°C to + 250°C
- Conductor type: Nickel Plated Copper
- Insulation System: Modified Silicone Insulation/Glass Braid
- 250°C (482°F) / 600 Volt
- Meets Class 180 motor lead wire

Options:

- 300V version available
- Fiberglass free (braidless) AWM Style 3254
- Various colors available upon request*

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-203252-*	20	10	0.115”
250-183252-*	18	16	0.123”
250-163252-*	16	26	0.132”
250-143252-*	14	41	0.149”
250-123252-*	12	41	0.149”
250-103252-*	10	105	0.192”

250°C (482°F) TGGT Thin Wall UL 5256 Lead Wire

600V

Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- For use in applications that have limited space available
- Robust insulation system
- Promote fiber bonding
- Stock Item
- Due to its robust construction, TGGT are often used in temperatures and applications well beyond its rating
- Conductor type: Nickel Plated Copper
- Insulation: Fused PTFE Tape / Served Glass Thermal Barrier
- UL/CSA Certified lead wire

Applications:

This type TGGT lead wire is designed for use in household appliances such as ovens, internal wiring of commercial and industrial products and may be in hot spot location for industrial applications.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available upon request*
- Grade A Nickel (Nickel 200) conductor
- Stainless Steel armor

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-245256-*	24	7	0.061”
250-225256-*	22	7	0.063”
250-205256-*	20	10	0.070”
250-185256-*	18	19	0.078”
250-165256-*	16	26	0.092”
250-145256-*	14	41	0.113”
250-125256-*	12	65	0.127”
250-105256-*	10	105	0.155”
250-85256-*	8	133	0.210”
250-65256-*	6	133	0.248”

Single Conductor Appliance Wires

250°C (482°F) TGGT UL 5196 Heavy Duty Lead Wire

600V

Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- Robust insulation system
- Promote fiber bonding
- Stock Item
- Due to its robust construction, TGGT are often used in temperatures and applications well beyond its rating
- Conductor type: Nickel Plated Copper
- Insulation: Fused PTFE Tape / Served Glass Thermal Barrier
- UL/CSA Certified lead wire
- Locked in glass

Applications:

Thermal Wire and Cable's TGGT wire is one of the most popular appliance wires on the market today. It is widely used in extrusion machines, heater bands, wiring of appliances and fixtures, and internal wiring. It has a 25 year successful history.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available upon request*
- Grade A Nickel (Nickel 200) conductor
- Stainless Steel armor
- *Standard stock color is Tan

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-245196-*	24	7	0.088”
250-225196-*	22	7	0.092”
250-205196-*	20	10	0.100”
250-185196-*	18	16	0.110”
250-165196-*	16	26	0.120”
250-145196-*	14	41	0135”
250-125196-*	12	65	0.155”
250-105196-*	10	105	0.180”
250-85196-*	8	133	0.235”
250-65196-*	6	133	0.315”
250-45196-*	4	133	0.373”
250-25196-*	2	133	0.432”
250-15196-*	1	133	0.485”
250-1/05196-*	1/0	259	0.530”
250-2/05196-*	2/0	259	0.600”
250-3/05196-*	3/0	259	0.660”
250-4/05196-*	4/0	259	0.725”
250-2505196-*	250 MCM	259	0.773”
250-3505196-*	350 MCM	259	0.886”
250-5005196-*	500 MCM	259	1.04”

250°C (482°F) UL 1727 PFA Flouropolymer Insulated Appliance Wire

600V

Features & Benefits

- Ideally suited for commercial cooking equipment
- Heat and oil resistant
- Fiberglass Free
- Bright colors aid in positive identification
- -196°C to 250°C (482°F) / 600 Volt
- This product can often replace the UL1180, UL1659, UL1199
- UL/CSA/CE Appliance Wiring Material (AWM)

Characteristics:

CHEMICAL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Typical applications include internal wiring of motors, booster melting systems, electric heaters, appliances, thermocouples, gas igniters, electrical and electronic components and other products that require a temperature rating up to 250°C.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available*
- Grade A Nickel (Nickel 200) conductor

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-241727-*	24	7	0.058”
250-221727-*	22	7	0.073”
250-201727-*	20	19	0.083”
250-181727-*	18	19	0.094”
250-161727-*	16	19	0.101”
250-141727-*	14	19	0.113”
250-121727-*	12	19	0.135”
250-101727-*	10	37	0.148”
250-81727-*	8	133	0.235”
250-61727-*	6	133	0.273”

Single Conductor Appliance Wires

200°C (392°F) SRG Silicone Rubber/Glass Braid Motor Lead Wire

600V

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- High flexibility
- Primary insulation of this cable is a modified silicone rubber augmented with a glass braid treated with a heat and moisture resisting finish
- UL Recognized / CSA Certified
- When burned, silicone rubber leaves a non-conductive silicone dioxide ash, which is an excellent dielectric that permits continued operation of the cable
- Inexpensive flexible lead wire

Applications:

These single conductor cables are designed for installation as hazardous location motor lead cable, overhead crane power cable, glass plant wiring, melt shop wiring, slag and teeming ladle cars wiring or other applications that require long service life in extreme heat and flexing conditions. Thermal Wire and Cable's SRG cables are suitable for continuous operation at 200° C.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available upon request*
- Solid or Stranded Grade A Nickel (Nickel 200)

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-183071	18	7	0.120”
200-163071	16	7	0.130”
200-143071	14	7	0.145”
200-123074	12	19	0.165”
200-103075	10	19	0.220”
200-83125	8	54	0.295”
200-63125	6	84	0.325”
200-43135	4	133	0.380”
200-23125	2	133	0.420”
200-13125	1	259	0.560”
200-2/03231	2/0	259	0.605”
200-4/03410	4/0	259	0.780”
200-3/03231	3/0	259	0.715”
200-2503410	250 MCM	427	0.895”
200-3503410	350 MCM	427	1.010”
200-5003410	500 MCM	427	1.175”
200-7503410	750 MCM	703	1.385”
200-1000SRK	1000 MCM	703	1.650”

200°C (392°F) SRK Silikone Rubber/Glass Braid Heavy-Duty Flexible Power Wire 600V

Features & Benefits

- High flexibility
- Primary insulation of this cable is a modified silicone rubber augmented with a glass braid treated with a heat and moisture resisting finish
- UL Recognized / CSA Certified
- When burned, silicone rubber leaves a non-conductive silicone dioxide ash, which is an excellent dielectric that permits continued operation of the cable
- Passes UL VW-1 and MIL-W-16878, IEEE-383
- Inexpensive flexible lead wire

Characteristics:

UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Thermal Wire and Cable LLC SRK cables are suitable for continuous operation at 200°C and short-term exposure to temperatures as high as 675°C. These single conductor cables are designed for installation as hazardous location motor lead cable, overhead crane power cable, glass plant wiring, melt shop wiring, slag and teeming ladle cars wiring or other applications that require long service life in extreme heat and flexing conditions. In addition Thermal Wire and Cable LLC SRK power cables generally gives off lower smoke and less toxic gases when burned than other conventional cables utilizing other insulating material.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available upon request*
- Solid or Stranded Grade A Nickel (Nickel 200)

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-14SRK-*	14	7	0.220”
200-12SRK-*	12	19	0.240”
200-10SRK-*	10	37	0.270”
200-8SRK-*	8	64	0.375”
200-6SRK-*	6	84	0.446”
200-4SRK-*	4	133	0.475”
200-2SRK-*	2	133	0.540”
200-1SRK-*	1	133	0.625”
200-1/0SRK-*	1/0	259	0.670”
200-2/0SRK-*	2/0	259	0.725”
200-3/0SRK-*	3/0	259	0.785”
200-4/0SRK-*	4/0	259	0.849”
200-250SRK-*	250 MCM	427	0.945”
200-350SRK-*	350 MCM	427	1.060”
200-500SRK-*	500 MCM	427	1.215”
200-750SRK-*	750 MCM	703	1.467”

Single Conductor Appliance Wires

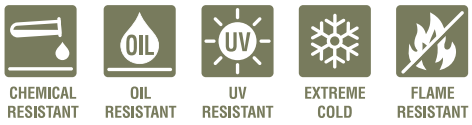
200°C (392°F) UL 10086 Thin Wall Appliance Wire

600V

Features & Benefits

- Bright colors aid in positive identification
- Easy handling: small diameter, smooth, seamless surface
- Excellent chemical and oil resistance
- High durability
- High flexibility
- Glass free
- Costs less than PTFE insulated appliance wire
- The insulation is 100% Tefzel 750, so there is no risk of releasing glass fibers during stripping or in use. Ideal for food processing, ultra-clean operations

Characteristics:



Industry:

Applications:

Tefzel 750® is used for internal wiring (special copolymer of ethylene and tetrafluoroethylene) insulated lead wire, offers a wide service temperature range of –65ºC to +200ºC.

Options:

- Available in long continuous lengths
- Stainless steel armor

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-2410086-*	24	7	0.047”
200-2210086-*	22	7	0.052”
200-2010086-*	20	7	0.060”
200-1810086-*	18	7	0.072”
200-1610086-*	16	7	0.081”
200-1410086-*	14	7	0.096”
200-1210086-*	12	19	0.128”
200-1010086-*	10	19	0.149”

200°C (392°F) UL 1330 FEP Insulated Wire

600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

This product is suited for internal wiring of appliances, immersion in gasoline, gasoline vapor; and 80°C in oil and similar heat producing equipment.

Features & Benefits

- Rated for immersion in gasoline and oil
- Glass free
- Ozone and corrosive resistant
- Self-extinguishing insulating material. Wont propagate flame
- 100% FEP fluoropolymer, so there is no risk of releasing glass fibers during stripping or in use. Ideal for food processing, ultra-clean operations
- Bright colors aid in positive identification
- Easy handling: small diameter, smooth, seamless surface
- UL and CSA listings for 600V and 300V, 200°C service
- Available in long continuous lengths
- Costs less than PTFE

Options:

- Military Specification, Fixture Wire UL 1581

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-181330-*	18	7	0.093”
200-161330-*	16	7	0.103”
200-141330-*	14	7	0.113”
200-121330-*	12	19	0.135”
200-101330-*	10	37	0.163”
200-81330-*	8	64	0.223“
200-61330-*	6	84	0.238”
200-41330-*	4	133	0.325”
200-21330-*	2	133	0.395”

Single Conductor Appliance Wires

150°C (302°F) Motor Lead Wire

600VAC 750VDC

Features & Benefits

- High flexibility
- Glass free
- Insulation is 100% Cross-linked Polyethylene, so there is no risk of releasing glass fibers during stripping or in use. Ideal for food processing, ultra-clean operations
- Economical replacement for silicone rubber/glass braid insulated cable
- May be use immersed in Gasoline up to 30°C
- Bright colors aid in positive identification
- Easy handling: small diameter, smooth, seamless surface
- Excellent chemical and oil resistance
- UL and CSA listings for 600V and 300V, 250°C service

Characteristics:

OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Thermal Wire and Cable's cross-linked polyethylene insulated single conductor wire has a tough abrasion resistant insulation with excellent electrical properties and thermal aging characteristics. It is suitable for use as Appliance Wiring Material (AWM), coil leads and as Class B IEEE 130ºC Class Motor Leads, appliances, electrical heating, lightning, cooking equipment, and ballast.

Options:

- Multi-conductor and shielded pairs versions
- Various colors available upon request

Item Number	AWG	Number of Strands	Nominal Overall Diameter
150-223321-*	22	7	0.095”
150-203321-*	20	10	0.101”
150-183321-*	18	16	0.110”
150-163321-*	16	26	0.130”
150-143321-*	14	41	0.145”
150-123321-*	12	65	0.158”
150-103321-*	10	105	0.197”

150ºC/200°C (392°F) UL 10412/10211 Hermetic Lead Wire

600V

Features & Benefits

- High durability
- Abrasion resistant
- Insulation rated for Hermetic use Tefzel 750
- Replace DMD hermetic motor lead wire
- 150°C/200°C (392°F) / 600 Volt
- Contains no glass. The insulation is 100% Tefzel 750, so there is no risk of releasing glass fibers during stripping or in use. Ideal for food processing, ultra-clean operations.
- Bright colors aid in positive identification
- Easy handling: small diameter, smooth, seamless surface
- UL and CSA listings for 600V and 300V, 250ºC service

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

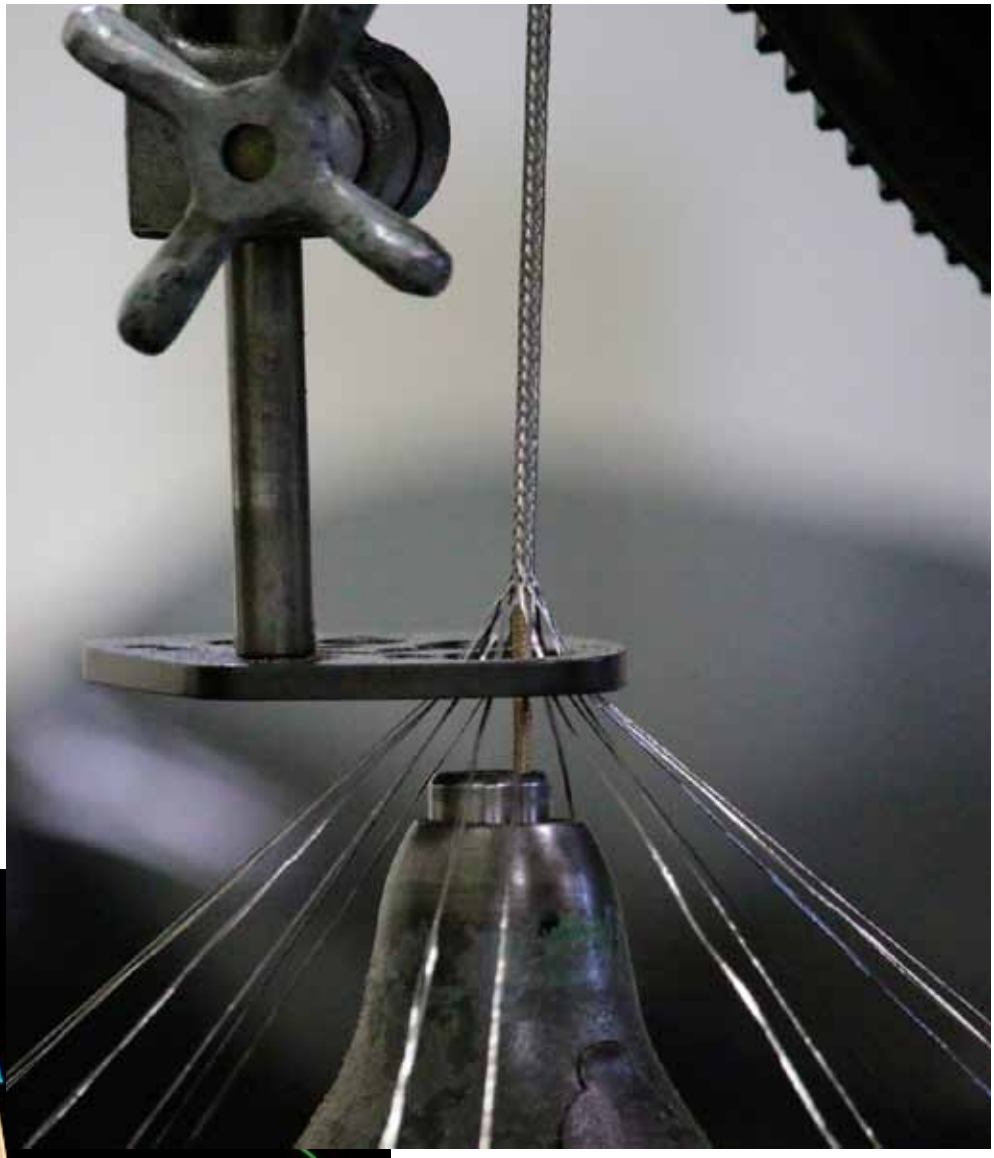
Applications:

This cable is designed for Lead wire within Hermetically Sealed Motors and Internal wiring of Appliances where not subject to mechanical abuse.

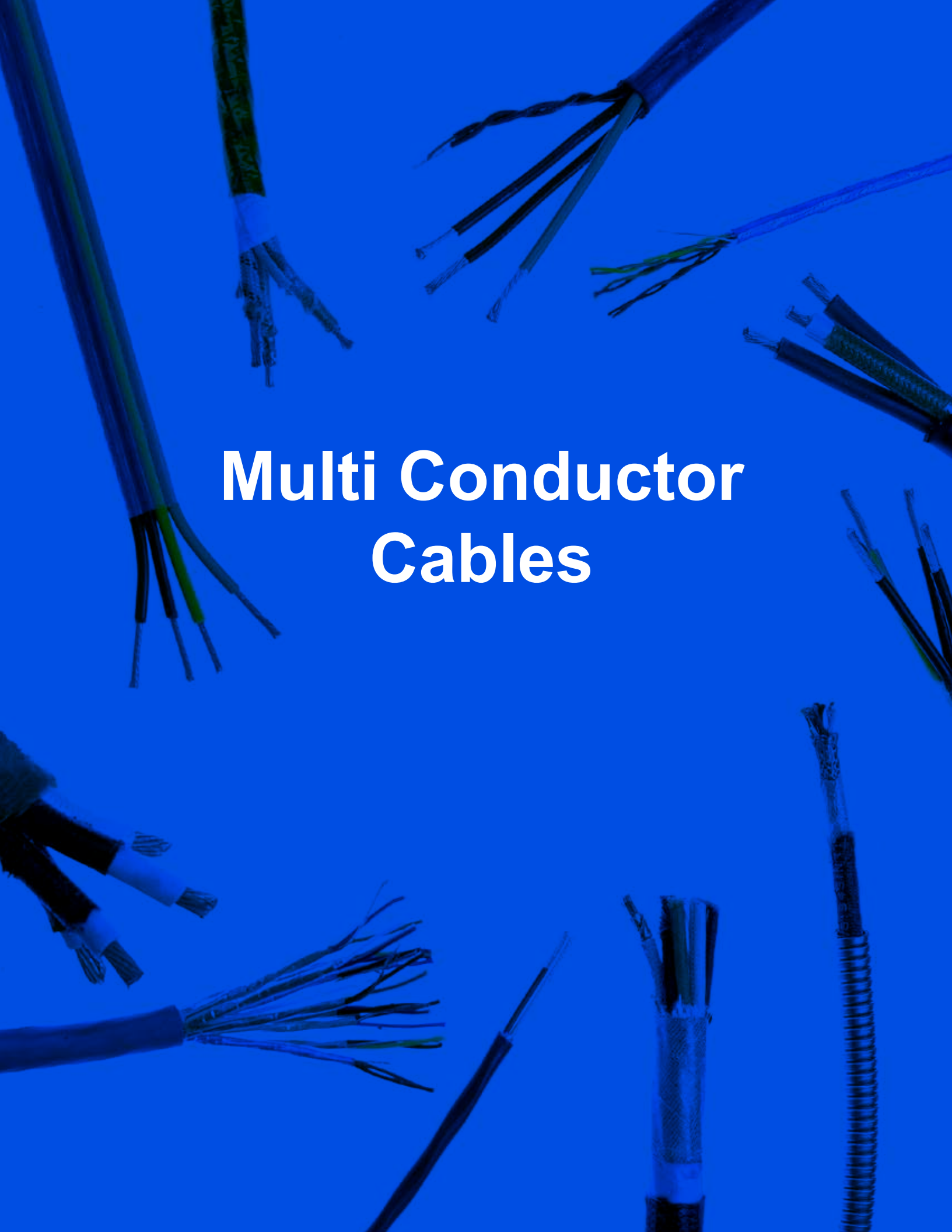
Options:

- Multi-conductor versions
- Various colors available upon request
- Larger sizes available

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-2010211-*	20	n.a.	0.052”
200-1810211-*	18	n.a.	0.064”
200-1610211-*	16	n.a.	0.074”
200-1410211-*	14	n.a.	0.088”
200-1210211-*	12	n.a.	0.108”
200-1010211-*	10	n.a.	0.130”
200-810211-*	8	n.a.	0.200”
200-610211-*	6	n.a.	0.135”
200-410211-*	4	n.a.	0.299”




THERMAL



Multi Conductor Cables

538°C (1000°F) Thermaflame 3000 Multi-Conductor Cable
300V/600V 2800ºF Intermittent

Features & Benefits

- UL listed 450°C
- Cut, strip, and terminate with conventional tools
- Surface printed with AWG/MM²
- Flexible and easy to work with
- Compliant with NFPA 70 (NEC) and Section 800 of the National Electrical Code 2008 Edition Maintain integrity to 2000 °F for 5 minutes @125 VRMS
- Superior electrical properties and high service range
- Color retention when tested 100 days at 350 °C
- Less than 80% PTFE loss @ >25 years, 350 °C
- Wrapped braided and fused PTFE composite tape, layered for high temperature operation and provide moisture impervious and solvent resistant barrier up to 350 °C
- Passes IEC 60332-1, -2 and -3 (Flame Propagation)
- Passes FT-4 (IEEE 383-1974) Vertical Flame Test

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

Thermaflame 3000 is engineered for applications where the cable is expected to perform in extremely demanding environments such as blast furnace instrumentation, curing systems, glass fabrication, plastics manufacturing, industrial overhead cranes, offshore oil rigs, and other applications where a cable is required to perform in temperatures from -320°F through 1000°F. Proprietary mica composite adds unsurpassed electrical properties, such as, high insulation resistance, high dielectric strength and low dissipation factor.

Options:

- Available in shielded pairs, triads or with an overall shield, or with thermocouple alloys. Single conductor Thermaflame 3000 also available to 1000 MCM
- Braided Stainless Steel type 304 jacket
- CLX Armor
- 300 Volt version
- Available in 28AWG to 500MCM, to 50 Conductor, or as a composite cable, with various other elements

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
538-18TFLM	1	18	0.160”
538-2C18TFLM	2	18	0.275”
538-3C18TFLM	3	18	0.316”
538-5C18TFLM	5	18	0.380”
538-7C18TFLM	7	18	0.440”
538-9C18TFLM	9	18	0.520”
538-16TFLM	1	16	0.170”
538-2C16TFLM	2	16	0.320”
538-3C16TFLM	3	16	0.340”
538-6C16TFLM	6	16	0.450”
538-7C16TFLM	7	16	0.140”
538-2C16TFLM	2	16	0.470”
538-9C16TFLM	9	16	0.418”
538-14TFLM	1	14	0.190”
538-2C14TFLM	2	14	0.340”
538-3C14TFLM	3	14	0.380”
538-4C14TFLM	4	14	0.410”
538-6C14TFLM	6	14	0.490”
538-12TFLM	1	12	0.208”
538-2C12TFLM	2	12	0.385”
538-3C12TFLM	3	12	0.416”
538-6C12TFLM	6	12	0.550”
538-10TFLM	1	10	0.255”
538-2C10TFLM	2	10	0.465”
538-3C10TFLM	3	10	0.500”
538-6C10TFLM	6	10	0.670”
538-8TFLM	8	8	0.300”
538-6TFLM	6	6	0.345”
538-4TFLM	4	4	0.415”
538-2TFLM	2	2	0.490”

538°C (1000°F) Multi-Conductor Instrumentation / Control Cable

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Applications:

The intended use per UL for these cables is wiring of ovens or similar high-temperature equipment where not subjected to repeated flexing and protected from mechanical abuse and where the acceptability, including current-carrying capacity has been determined by Underwriters Laboratories, Inc. For internal wiring of domestic and commercial ovens and cooling appliances and similar very high temperature environments. Also ideal for use in wiring electric heaters and for lead and equipment wiring in iron and steel mills as well as glass plants and cement kilns.

Features & Benefits

- Maintains extended circuit integrity in flame
- Provides low capacitive losses for critical circuits
- Lowest cost when compared to MTG and Thermaflame 3000
- UL Recognized
- Oil and fluid resistant cable see MTG and Thermaflame 3000

Options:

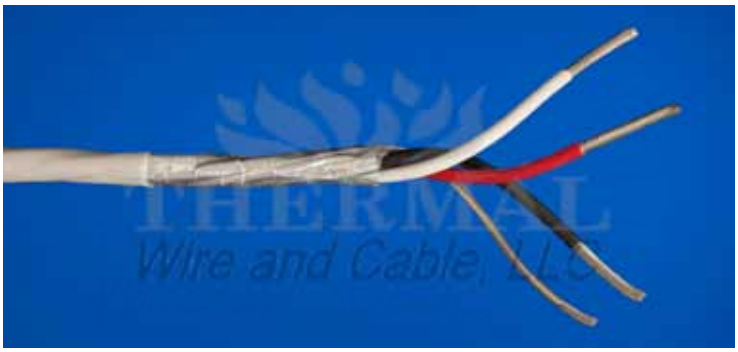
- Solid or Stranded Grade A (Pure Nickel 200)
- Stainless steel over braid or stainless steel interlocked armor available
- Nickel-Plated copper braid shields available for pairs

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
538-2C18MGGB	2	18	0.250”
538-3C18MGGB	3	18	0.262”
538-4C18MGGB	4	18	0.275”
538-5C18MGGB	5	18	0.300”
538-7C18MGGB	7	18	0.330”
538-9C18MGGB	9	18	0.382”
538-12C18MGGB	12	18	0.410”
538-15C18MGGB	15	18	0.440”
538-19C18MGGB	19	18	0.489”
538-2C16MGGB	2	16	0.265”
538-3C16MGGB	3	16	0.285”
538-4C16MGGB	4	16	0.300”
538-5C16MGGB	5	16	0.332”
538-7C16MGGB	7	16	0.380”
538-9C16MGGB	9	16	0.398”
538-12C16MGGB	12	16	0.440”
538-15C16MGGB	15	16	0.470”
538-19C16MGGB	19	16	0.499”
538-2C14MGGB	2	14	0.300”
538-3C14MGGB	3	14	0.320”
538-4C14MGGB	4	14	0.348”
538-5C14MGGB	5	14	0.378”
538-7C14MGGB	7	14	0.421”

Multi Conductor Cables

250°C (482°F) Modified PFA Insulated Shielded Tray Cable (TC)
600V



Features & Benefits

- UL Listed 250°C (482°F)
- Conforms to Article 318 “Cable Trays” and Article 340 “Power and Control Cable Type TC”
- Meets UL Standard 1277 of UL
- Passes 70,000 BTU Flame Test and FT4
- OSHA acceptable
- For use in Class 1 or 2 Division 2 hazardous locations
- Compact design

Characteristics:

Industries:

Applications:

TC is use for installation in trays, wireways, troughs, channels ducts and conduit and designed to supply power motors, or for connection to other power devices.

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional PFA or PVC jacket extrusion over armor
- Available in sizes 18 AWG through 4 AWG in conductor counts from 2 to 100 or pairs, triads or thermocouple alloys

THERMAL Wire and Cable, LLC

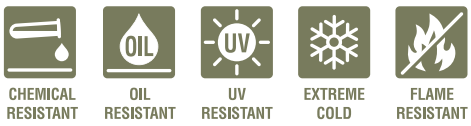
Item Number	AWG	Number of Conductors	Nominal Overall Diameter
250-2C18STC	18	2	0.180”
250-4C18STC	18	4	0.247”
250-7C18STC	18	7	0.297”
250-9C18STC	18	9	0.335”
250-12C18STC	18	12	0.381”
250-4C16STC	16	4	0.276”
250-7C16STC	16	7	0.333”
250-9C16STC	16	9	0.337”
250-12C16STC	16	12	0.428”
250-16C16STC	16	16	0.509”
250-19C16STC	16	19	0.549”
250-2C18STC	18	2	0.180”
250-4C18STC	18	4	0.247”
250-7C18STC	18	7	0.297”
250-9C18STC	18	9	0.335”
250-12C18STC	18	12	0.381”
250-4C16STC	16	4	0.276”
250-7C16STC	16	7	0.333”
250-9C16STC	16	9	0.337”
250-12C16STC	16	12	0.428”
250-16C16STC	16	16	0.509”
250-19C16STC	16	19	0.549”
250-2C14STC	14	2	0.256”
250-3C14STC	14	3	0.273”
250-4C14STC	14	4	0.300”
250-7C14STC	14	7	0.364”
250-9C14STC	14	9	0.431”
250-12C14STC	14	12	0.509”
250-16C14STC	14	16	0.568”
250-19C14STC	14	19	0.600”

250°C (482°F) Modified PFA Insulated Unshielded Tray Cable (TC)
600V

Features & Benefits

- UL Listed 250°C (482°F)
- Conforms to Article 318 “Cable Trays” and Article 340 “Power and Control Cable Type TC”
- Meets UL Standard 1277 of UL
- Passes 70,000 BTU Flame Test and FT4
- OSHA acceptable
- For use in Class 1 or 2 Division 2 hazardous locations
- Fluoropolymer insulation and jacket
- Compact design

Characteristics:



Industries:

Applications:

TC is use for installation in trays, wireways, troughs, channels ducts and conduit and designed to supply power motors, or for connection to other power devices.

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional PFA or PVC jacket extrusion over armor
- Available in sizes 18 AWG through 4 AWG in conductor counts from 2 to 100 or pairs, triads or thermocouple

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
250-2C18TC	18	2	0.180”
250-4C18TC	18	4	0.247”
250-7C18TC	18	7	0.297”
250-9C18TC	18	9	0.335”
250-12C18TC	18	12	0.381”
250-4C16TC	16	4	0.276”
250-7C16TC	16	7	0.333”
250-9C16TC	16	9	0.337”
250-12C16TC	16	12	0.428”
250-16C16TC	16	16	0.509”
250-19C16TC	16	19	0.549”
250-2C14TC	14	2	0.256”
250-3C14TC	14	3	0.273”
250-4C14TC	14	4	0.300”
250-7C14TC	14	7	0.364”
250-9C14TC	14	9	0.431”
250-12C14TC	14	12	0.509”
250-16C14TC	14	16	0.568”
250-19C14TC	14	19	0.600”

250°C (482°F) Sensor and Instrumentation Cable PFA Insulation/Silicone Rubber Jacket 600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

This cable is designed for kilns, commercial cookers, sensors, thermal protection devices, lighting fixtures, plastics melting or similar applications requiring a flexible 250°C cable.

Features & Benefits

- Combines the unique advantages of PFA Fluoropolymer and silicone rubber insulating materials
- Primary Insulation PFA Fluoropolymer for reduced size
- Jacket material: Silicone Rubber enhances cables bend and flex technology
- Fiberglass free construction ideal for commercial cooking appliances
- Round non convoluted design

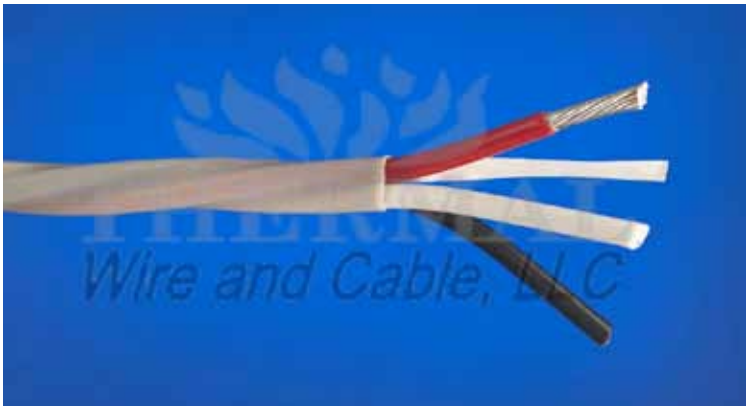
Options:

- Various jacket colors available and color codes are optional
- Available in shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with stainless steel braid, galvanized interlocked armor or aluminum interlocked armor
- 300 volt available for lower cost and reduced overall cable diameter

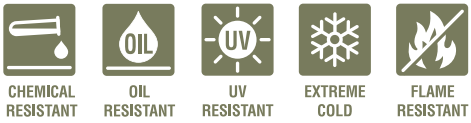
THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
250-2C24PFSR	24	2	0.18”
250-3C24PFSR	24	3	0.20”
250-4C24PFSR	24	4	0.22”
250-6C24PFSR	24	6	0.24”
250-2C22PFSR	22	2	0.19”
250-3C22PFSR	22	3	0.22”
250-4C22PFSR	22	4	0.23”
250-6C22PFSR	22	6	0.27”
250-2C20PFSR	20	2	0.20”
250-3C20PFSR	20	3	0.23”
250-4C20PFSR	20	4	0.25”
250-6C20PFSR	20	6	0.28”
250-2C18PFSR	18	2	0.22”
250-3C18PFSR	18	3	0.25”
250-4C18PFSR	18	4	0.27”
250-6C18PFSR	18	6	0.31”
250-2C16PFSR	16	2	0.25”
250-3C16PFSR	16	3	0.28”
250-4C16PFSR	16	4	0.31”
250-6C16PFSR	16	6	0.36”

250°C, 300V PLTC (Power Limited Tray Cable) UL Listed Unshielded



Characteristics:



Industries:

Features & Benefits

- OSHA acceptable
- UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations
- Fluoropolymer insulation and jacket
- Compact design

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional FEP or PVC jacket extrusion over armor

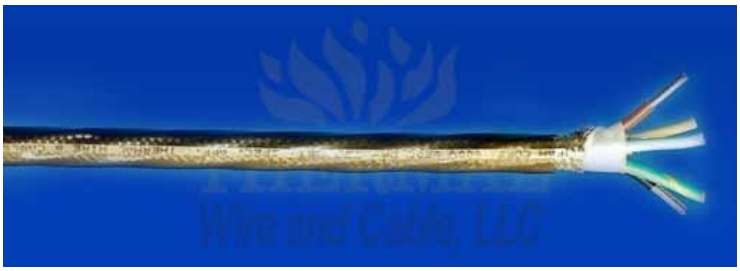
Applications:

Thermal Wire and Cable PLTC Unshielded are designed for use as instrumentation, process control and computer cables in Class II or III Power-Limited Circuits as defined in NEC article 725. They are suitable for installation in wet or dry locations with conductor operating temperature up to 250°C. They may be installed in cable tray, in any raceway, as open runs of cable. UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations. The overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment.

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
250-2C18PLTC	18	2	0.156”
250-3C18PLTC	18	3	0.166”
250-4C18PLTC	18	4	0.184”
250-5C18PLTC	18	5	0.204”
250-6C18PLTC	18	6	0.224”
250-7C18PLTC	18	7	0.225”
250-10C18PLTC	18	10	0.290”
250-12C18PLTC	18	12	0.302”
250-19C18PLTC	18	19	0.365”
250-25C18PLTC	18	25	0.441”
250-2C16PLTC	16	2	0.166”
250-3C16PLTC	16	3	0.177”
250-4C16PLTC	16	4	0.196”
250-6C16PLTC	16	6	0.236”
250-9C16PLTC	16	9	0.316”
250-10C16PLTC	16	10	0.316”
250-12C16PLTC	16	12	0.327”
250-16C16PLTC	16	16	0.367”
250-20C16PLTC	16	20	0.414”
250-25C16PLTC	16	25	0.468”
250-2C14PLTC	14	2	0.202”
250-4C14PLTC	14	4	0.239”
250-2C12PLTC	12	2	0.236”
250-4C12PLTC	12	4	0.284”

Multi Conductor Cables

250°C, 300V Shielded Pairs PLTC (Power Limited Tray Cable) UL Listed



Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

Thermal Wire and Cable PLTC Shielded Pairs are designed for use as instrumentation, process control and computer cables in Class II or III Power-Limited Circuits as defined in NEC article 725. They are suitable for installation in wet or dry locations with conductor operating temperature up to 250°C. They may be installed in cable tray, in any raceway, as open runs of cable. UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations. The overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment.

Features & Benefits

- OSHA acceptable
- UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations
- Compact design
- The overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment

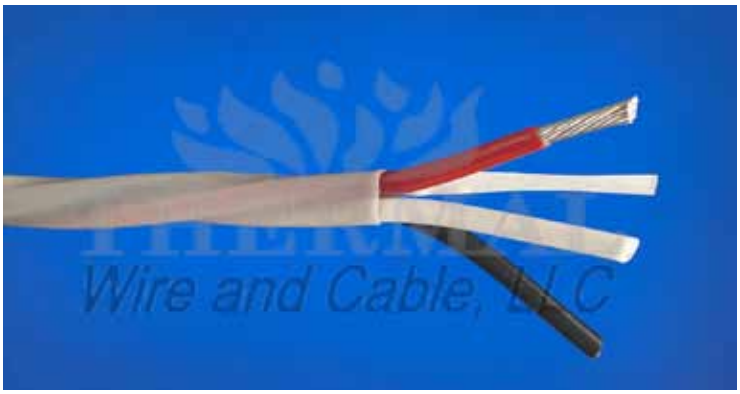
Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional FEP or PVC jacket extrusion over armor

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
250-2S18PLTC	18	2	0.262”
250-3S18PLTC	18	3	0.284”
250-4S18PLTC	18	4	0.314”
250-5S18PLTC	18	5	0.354”
250-6S18PLTC	18	6	0.368”
2508S18PLTC	18	8	0.415”
250-10S18PLTC	18	10	0.476”
250-15S18PLTC	18	15	0.537”
250-20S18PLTC	18	20	0.592”
250-2S16PLTC	16	2	0.283”
250-4S16PLTC	16	4	0.335”
250-9S16PLTC	16	9	0.472”
250-12S16PLTC	16	12	0.530”
250-2S14PLTC	14	2	0.346”
250-3S14PLTC	14	3	0.353”
250-5S14PLTC	14	5	0.471”
250-8S14PLTC	14	8	0.610”
250-10S14PLTC	14	10	0.625”
250-2S12PLTC	12	2	0.412”
250-4S12PLTC	12	4	0.488”

200°C (392ºF) FEP Fluoropolymer Insulated Sensor/Instrumentation/ Control Cable 600V



Features & Benefits

- Fluoropolymer insulation and jacket
- Use in hot corrosive environments
- Excellent dielectric properties
- 30% reduced OD compared to PVC and XLPE or silicone rubber cables
- Costs less than UL TC 200C cables

Characteristics:

Industries:

Applications:

FEP fluoropolymer insulation exhibits excellent high-temperature resistance, non-stick characteristics, weather resistance and low temperature flexibility.
Suitable for use in trays, industrial plants, and other areas where resistance to oils, acids, solvents and fluid are required. Not UL Listed. This cable is manufactured per quality manufacturing practices.

Options:

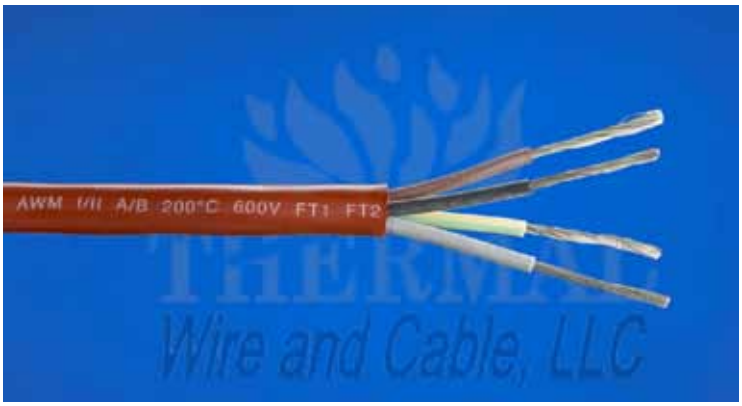
- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Galvanized steel, aluminum armor, stainless steel overbraid, available upon request

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C18XKE	18	2	0.185”
200-4C18XKE	18	4	0.214”
200-7C18XKE	18	7	0.255”
200-9C18XKE	18	9	0.300”
200-12C18XKE	18	12	0.335”
200-2C16XKE	16	2	0.206”
200-4C16XKE	16	4	0.240”
200-7C16XKE	16	7	0.286”
200-9C16XKE	16	9	0.335”
200-12C16XKE	16	12	0.379”
200-19C16XKE	16	19	0.445”
200-2C14XKE	14	2	0.235”
200-3C14XKE	14	3	0.250”
200-4C14XKE	14	4	0.280”
200-7C14XKE	14	7	0.332”
200-9C14XKE	14	9	0.392”
200-12C14XKE	14	12	0.441”

Multi Conductor Cables

200°C (392ºF) Silicone Rubber Multi Conducor Cable 600V



Features & Benefits

- High Flexibility
- Temperature range of -65°C -85°F to +200°C
- Extremely flexible, high temperature cable
- 100% glass free construction
- Inexpensive 200°C cable

Options:

- Stainless Steel wire armor also available
- 300 Volt optional - Available in 20 AWG – 4AWG
- Shielded and unshielded pairs, triads, etc

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

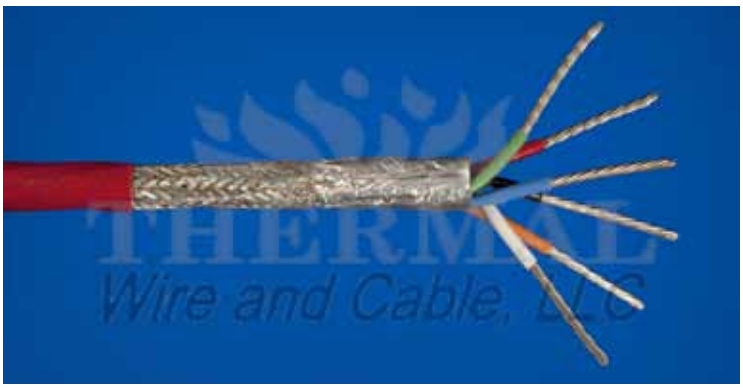
Applications:

Applications include: lighting equipment, rotating machinery, plastics machinery, high-temperature interconnect cable etc. Thermal Wire and Cable Type Sil-V insulated cables offer a wide service temperature range of -65°C -85°F to +200°C. Sil-V insulated cable's resistance to chemicals is excellent and a table is available to determine useful life in oils, bases, hydraulic fluids and solvents. For reduced diameter applications consider the use of REP on single wires. 600V silicone rubber requires 3x insulation level. Its flexible nature provides for easy, economical installations and long service life in extreme flexing applications.

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-3C18SR	18	3	0.33”
200-4C18SR	18	4	0.356”
200-5C18SR	18	5	0.372”
200-7C18SR	18	7	0.42”
200-9C18SR	18	9	0.47”
200-15C18SR	16	15	0.61”
200-19C18SR	18	19	0.661”
200-2C16SR	16	2	0.286”
200-3C16SR	16	3	0.35”
200-4C16SR	16	4	0.38”
200-7C16SR	16	7	0.45”
200-9C16SR	16	9	0.534”
200-15C16SR	16	15	0.654”
200-19C16SR	16	19	0.771”
200-2C14SR	14	2	0.311”
200-3C14SR	14	3	0.383”
200-4C14SR	14	4	0.417”
200-7C14SR	14	7	0.525”
200-9C14SR	14	9	0.586”
200-15C14SR	14	15	0.771”
200-19C14SR	14	19	0.846”
200-2C12SR	12	2	0.344”
200-3C12SR	12	3	0.426”
200-4C12SR	12	4	0.465”

200°C (392ºF) Modified FEP Insulated Shielded Tray Cable (TC) 600V



Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Applications:

Tray Cable are used for installation in trays, wireways, troughs, channels ducts and conduit and aerially where supported by a messenger.

Features & Benefits

- UL Listed
- Meets UL Standard 1277 of UL
- Passes 70,000 BTU Flame Test and FT4
- OSHA acceptable
- Conforms to Article 318 “Cable Trays” and Article 340 “Power and Control Cable Type TC”
- For use in Class 1 or 2 Division 2 hazardous locations
- Fluoropolymer insulation and jacket
- Compact design

Options:

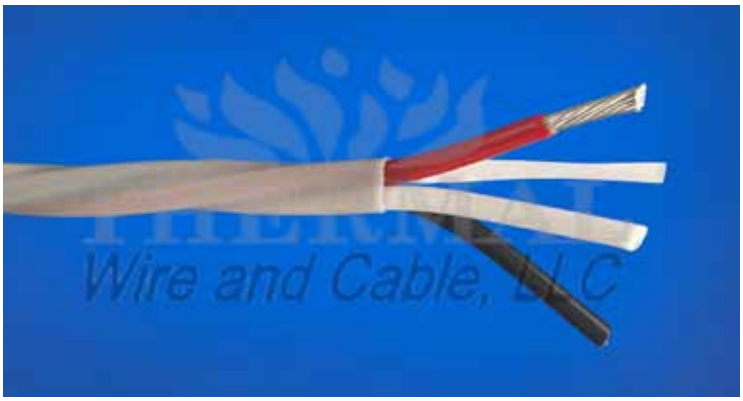
- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional PFA or PVC jacket extrusion over armor
- Available in sizes 18 AWG through 4 AWG in conductor counts from 2 to 100 or pairs, triads or thermocouple alloys

THERMAL Wire and Cable, LLC

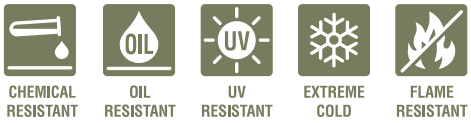
Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C18STC	18	2	0.180”
200-4C18STC	18	4	0.247”
200-7C18STC	18	7	0.297”
200-9C18STC	18	9	0.335”
200-12C18STC	18	12	0.381”
200-2C16STC	16	2	0.200”
200-4C16STC	18	4	0.276”
200-7C16STC	16	7	0.333”
200-9C16STC	16	9	0.337”
200-12C16STC	16	12	0.428”
200-19C16STC	16	19	0.549”
200-2C14STC	14	2	0.256”
200-3C14STC	14	3	0.273”
200-4C14STC	14	4	0.300”
200-7C14STC	14	7	0.364”
200-9C14STC	14	9	0.431”
200-12C14STC	14	12	0.509”
200-16C14STC	14	16	0.568”
200-19C14STC	14	19	0.600”
200-2C12STC	12	2	0.294”
200-3C12STC	12	3	0.314”
200-4C12STC	12	4	0.336”
200-7C12STC	12	7	0.421”
200-2C10STC	10	2	0.336”
200-3C10STC	10	3	0.360”
200-4C10STC	10	4	0.397”
200-2C8STC	8	2	0.492”
200-3C8STC	8	3	0.548”
200-4C8STC	8	4	0.604”
200-2C6STC	6	2	0.596”
200-3C6STC	6	3	0.639”

Multi Conductor Cables

200°C (392ºF) Modified FEP Insulated Unshielded Tray Cable (TC) 600V



Characteristics:



Industries:

Features & Benefits

- UL Listed 200°C (392°F)
- Conforms to Article 318 “Cable Trays” and Article 340 “Power and Control Cable Type TC”
- Meets UL Standard 1277 of UL
- Passes 70,000 BTU Flame Test and FT4
- OSHA acceptable
- For use in Class 1 or 2 Division 2 hazardous locations
- Fluoropolymer insulation and jacket
- Compact design

Applications:

Tray cables may use for installation in trays, wire-ways, troughs, channels ducts and conduit and aerially where supported by a messenger.

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional PFA or PVC jacket extrusion over armor
- Available in sizes 18 AWG through 4 AWG in conductor counts from 2 to 100 or pairs, triads or thermocouple alloys

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C18TC	18	2	0.180”
200-4C18TC	18	4	0.247”
200-7C18TC	18	7	0.297”
200-9C18TC	18	9	0.335”
200-4C16TC	16	4	0.276”
200-7C16TC	16	7	0.333”
200-9C16TC	16	9	0.337”
200-12C18TC	18	12	0.381”
200-12C16TC	16	12	0.428”
200-16C16TC	16	16	0.509”
200-19C16TC	16	19	0.549”
200-37C16TC	16	37	0.840”
200-2C14TC	14	2	0.256”
200-3C14TC	14	3	0.273”
200-4C14TC	14	4	0.300”
200-7C14TC	14	7	0.364”
200-9C14TC	14	9	0.431”
200-12C14TC	14	12	0.509”
200-16C14TC	14	16	0.568”
200-19C14TC	14	19	0.600”
200-2C12TC	12	2	0.294”
200-3C12TC	12	3	0.314”
200-4C12TC	12	4	0.336”
200-7C12TC	12	7	0.421”
200-2C10TC	10	2	0.336”
200-3C10TC	10	3	0.360”
200-4C10TC	10	4	0.397”
200-2C8TC	8	2	0.492”
200-3C8TC	8	3	0.548”
200-4C8TC	8	4	0.604”
200-2C6TC	6	2	0.596”
200-3C6TC	6	3	0.639”
200-3C4TC	4	3	0.823”
200-3C2TC	2	3	1.027”
200-3C1/0TC	1/0	3	1.265”
200-3C2/0TC	2/0	3	1.385”
200-3C4/0TC	3/0	3	1.645”
200-3C250TC	250 MCM	3	1.875”

200°C (392ºF) Sensor and Instrumentation Cable FEP Insulation/Silicone Rubber Jacket 600V

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- UL Recognized per UL 83 and subject 758
- Jacket material: Silicone Rubber enhances cables bend and flex technology
- Combines the unique advantages of FEP Fluoropolymer and silicone rubber insulating materials
- Primary Insulation FEP Fluoropolymer for reduced size
- Fiberglass free construction
- Round; non-convoluted design

Applications:

This cable is designed for kilns, commercial cookers, sensors, thermal protection devices, lighting fixtures, plastics melting or similar applications requiring a flexible 200°C cable.

Options:

- Various jacket colors available and color codes are optional
- Available in shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with stainless steel braid, galvanized interlocked armor or aluminum interlocked armor
- 300 volt available for lower cost and reduced overall cable diameter

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C24XKSR	24	2	0.18”
200-3C24XKSR	24	3	0.20”
200-4C24XKSR	24	4	0.22”
200-6C24XKSR	24	6	0.24”
200-2C22XKSR	22	2	0.19”
200-3C22XKSR	22	3	0.22”
200-4C22XKSR	22	4	0.23”
200-6C22XKSR	22	6	0.27”
200-2C20XKSR	20	2	0.20”
200-3C20XKSR	20	6	0.23”
200-4C20XKSR	20	4	0.25”
200-6C20XKSR	20	6	0.28”
200-2C18XKSR	18	2	0.22”
200-3C18XKSR	18	3	0.25”
200-4C18XKSR	18	4	0.27”

THERMAL
Wire and Cable, LLC

200°C (392ºF) Soaking Pit Multi-Conductor Cable 600V

Features & Benefits

- Proven steel mill design: silicone rubber over tinned copper conductor
- Stainless steel armor protects from sparks and hot metal contact
- Pass VW-1 and the MIL-W-16878 specifications for flammability and will pass the IEEE-383 ribbon burner vertical cable tray flame test with no circuit integrity failures
- Designed and manufactured to provide long life under extreme heat and severe flexing conditions When burned, modified silicone rubber leaves a non-conductive silicone dioxide ash which is an excellent dielectric that permits continued operation of the cable for an indefinite period

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

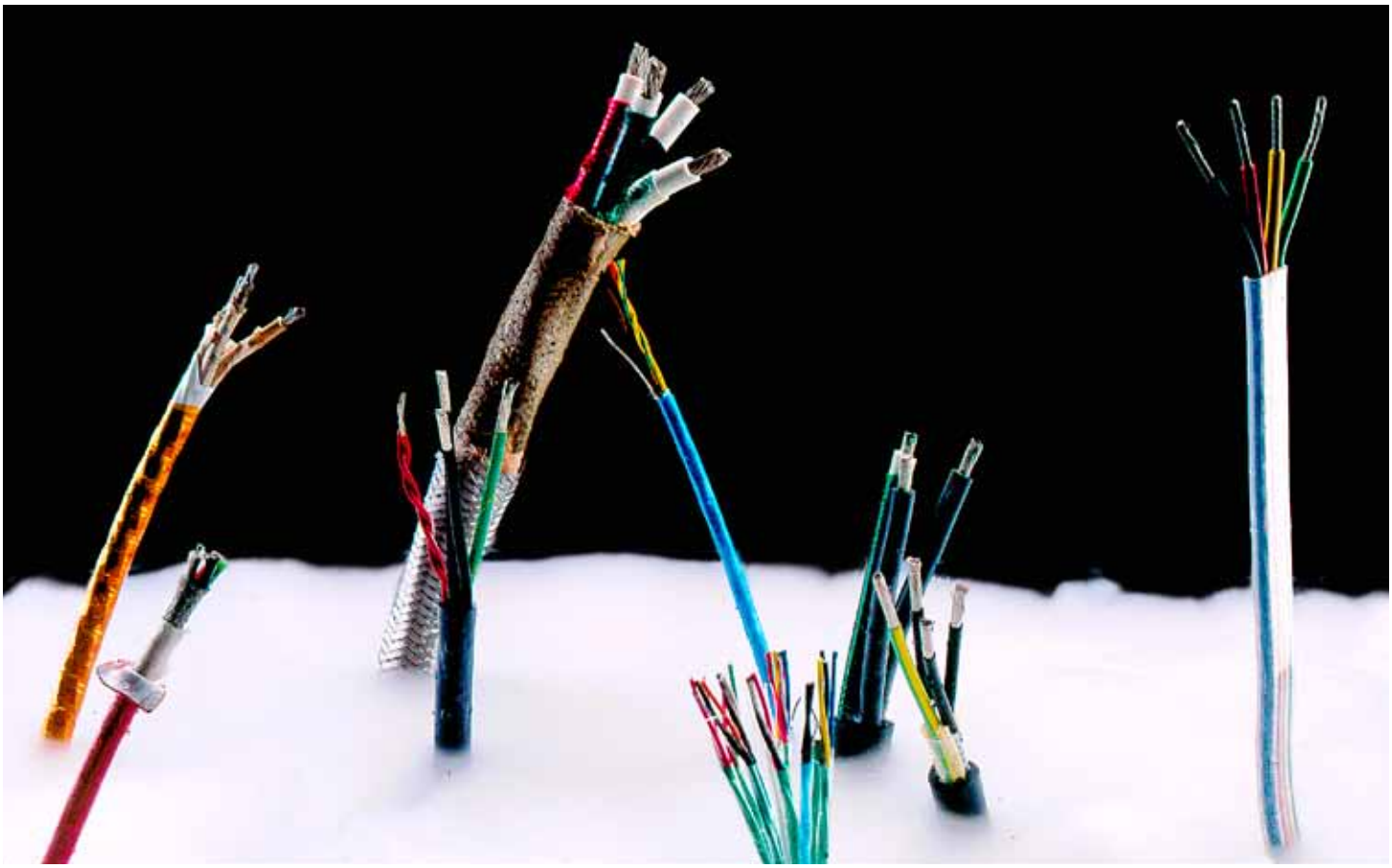
Applications:

TWC Soaking Pit Cables are suitable for continuous operation at 200°C and short-term exposure to temperatures as high as 675°C. Scrap charging machines, soaking pit cranes, ladle transfer cars. #8/4 conductor, #6/4 conductor and #4/4 conductor are most common. When burned, modified silicone rubber leaves a non-conductive silicone dioxide ash which is an excellent dielectric that permits continued operation of the cable for an indefinite period. Furthermore, TWC soaking pit cables are capable of passing the UL vertical flame test, VW-1 and the MIL-W-16878 specifications for flammability and will pass the IEEE-383 ribbon burner vertical cable tray flame test with no circuit integrity failures. In addition, TWC Soaking Pit Cables are specifically designed for extreme steel mill applications.

Options:

- Larger sizes and number of conductors available upon request

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C14SKPT	14	2	0.430”
200-3C14SKPT	14	3	0.455”
200-4C14SKPT	14	4	0.500”
200-2C12SKPT	12	2	0.520”
200-3C12SKPT	12	3	0.555”
200-4C12SKPT	12	4	0.600”
200-2C10SKPT	10	2	0.605”
200-3C10SKPT	10	3	0.635”
200-4C10SKPT	10	4	0.695”
200-2C8SKPT	8	2	0.775”
200-3C8SKPT	8	3	0.860”
200-4C8SKPT	8	4	0.905”
200-2C6SKPT	6	2	0.910”
200-3C6SKPT	6	3	0.960”
200-4C6SKPT	6	4	1.065”
200-2C4SKPT	4	2	0.980”
200-3C4SKPT	4	3	1.030”
200-4C4SKPT	4	4	1.160”
200-2C2SKPT	2	2	1.170”
200-3C2SKPT	2	3	1.250”
200-4C2SKPT	2	4	1.370”



200°C (392ºF) Type SRGK Flame Retardant Instrumentation Cable 600V

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Applications:

These cables are suitable for use in dry locations as instrumentation cables for installation above grade in conduit or in cable trays and in applications where high temperature resistance or flame resistance withy circuit integrity is required. They are especially suited for utility applications in conventional generating stations or industrial applications.

Features & Benefits

- Low cost, widely used 200°C cable
- Insulation: Silicone Rubber. When burned silicone rubber leaves a non-conducting ash
- Retains excellent dielectric qualities so that continued operation is possible to achieve a controlled shutdown
- Excellent mechanical protection to the silicone rubber
- K-Fiber is a fiber similar to Kevlar® is very strong and cut through resistant
- Non-melting insulation system that is temperature

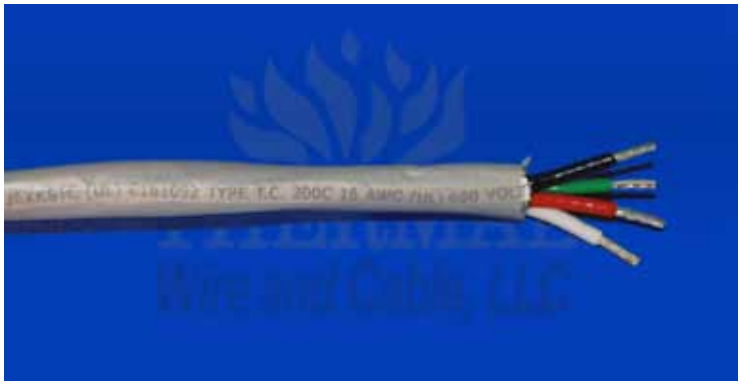
Options:

- Individual shielded pairs versions
- Various phase identification techniques available upon request
- Galvanized steel interlocked armor
- Optional Stainless Steel Braid
- Heavy wall design available
- SRGT (silicone rubber,glass braid, Teflon skin on singles)

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-3C16SRGK	16	3	0.345”
200-4C16SRGK	16	4	0.400”
200-7C16SRGK	16	7	0.475”
200-9C16SRGK	16	9	0.555”
200-12C16SRGK	16	12	0.625”
200-2C14SRGK	14	2	0.375”
200-3C14SRGK	14	3	0.400”
200-4C14SRGK	14	4	0.435”
200-5C14SRGK	14	5	0.480”
200-7C14SRGK	14	7	0.520”
200-9C14SRGK	14	9	0.610”
200-12C14SRGK	14	12	0.690”
200-2C12SRGK	12	2	0.410”
200-3C12SRGK	12	3	0.430”
200-4C12SRGK	12	4	0.475”
200-5C12SRGK	12	5	0.520”
200-7C12SRGK	12	7	0.570”
200-9C12SRGK	12	9	0.670”
200-12C12SRGK	12	12	0.755”
200-2C10SRGK	10	2	0.525”
200-3C10SRGK	10	3	0.555”
200-4C10SRGK	10	4	0.615”
200-5C10SRGK	10	5	0.675”

200°C (392ºF) PLTC (Power Limited Tray Cable UL Listed Unshielded 300V



Characteristics:

Industries:

Features & Benefits

- Fluoropolymer insulation and jacket
- Compact design
- Suitable for installation in wet or dry locations with conductor operating temperature up to 200°C.
- UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations.
- OSHA acceptable

Applications:

Thermal Wire and Cable PLTC Unshielded are designed for use as instrumentation, process control and computer cables in Class II or III Power-Limited Circuits as defined in NEC article 725. They may be installed in cable tray, in any raceway, as open runs of cable. The overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment.

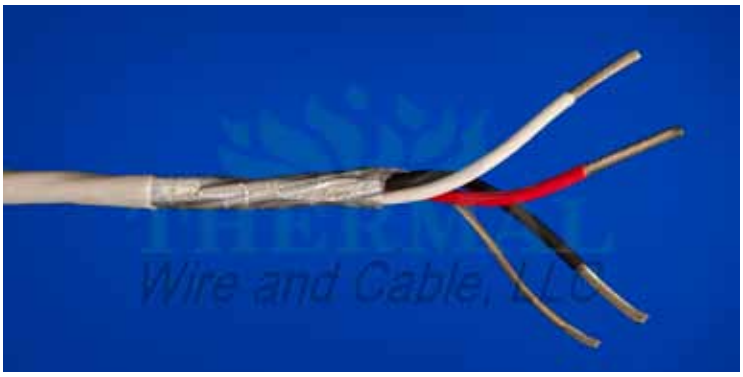
Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional FEP or PVC jacket extrusion over armor

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C18PLTC	18	2	0.156”
200-3C18PLTC	18	3	0.166”
200-4C18PLTC	18	4	0.184”
200-5C18PLTC	18	5	0.204”
200-6C18PLTC	18	6	0.224”
200-7C18PLTC	18	7	0.225”
200-10C18PLTC	18	10	0.290”
200-12C18PLTC	18	12	0.302”
200-19C18PLTC	18	19	0.365”
200-25C18PLTC	18	25	0.441”
200-2C16PLTC	16	2	0.166”
200-3C16PLTC	16	3	0.177”
200-4C16PLTC	16	4	0.196”
200-6C16PLTC	16	6	0.236”
200-9C16PLTC	16	9	0.316”
200-10C16PLTC	16	10	0.316”
200-12C16PLTC	16	12	0.327”
200-16C16PLTC	16	16	0.367”
200-20C16PLTC	16	20	0.414”
200-25C16PLTC	16	25	0.468”
200-2C14PLTC	14	2	0.202”
200-4C14PLTC	14	4	0.239”
200-2C12PLTC	12	2	0.236”
200-4C12PLTC	12	4	0.284”

200°C (392ºF) Shielded PLTC (Power Limited Tray Cable) UL Listed 300V



Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

Thermal Wire and Cable PLTC Unshielded is designed for use as instrumentation, process control and computer cables in Class II or III Power-Limited Circuits as defined in NEC article 725. They are suitable for installation in wet or dry locations with conductor operating temperature up to 200°C. They may be installed in cable tray, in any raceway, as open runs of cable. UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations.

Features & Benefits

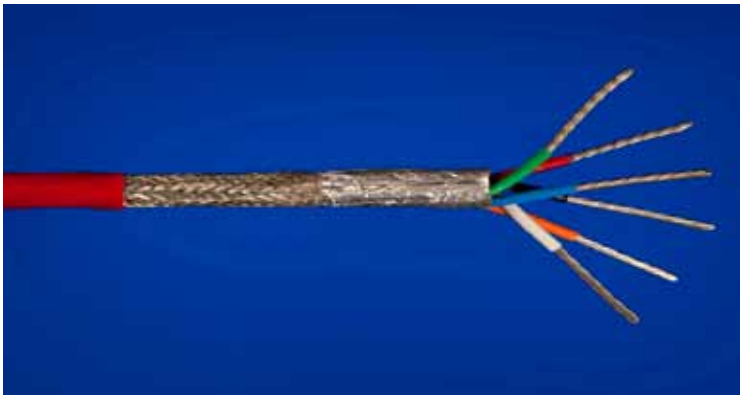
- OSHA acceptable
- Fluoropolymer insulation and jacket
- Compact design
- Overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment
- Low coefficient of friction, non-stick characteristics, weather resistance, low temperature flexibility and reduced diameter

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid
- Optional FEP or PVC jacket extrusion over armor

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-2C18SPLTC	18	2	0.262”
200-3C18SPLTC	18	3	0.284”
200-4C18SPLTC	18	4	0.314”
200-5C18SPLTC	18	5	0.354”
200-6C18SPLTC	18	6	0.368”
200-8C18SPLTC	18	8	0.415”
200-10C18SPLTC	18	10	0.476”
200-15C18SPLTC	18	15	0.537”
200-20C18SPLTC	18	20	0.592”
200-2C16SPLTC	16	2	0.283”
200-4C16SPLTC	16	4	0.335”
200-9C16SPLTC	16	9	0.472”
200-12C16SPLTC	16	12	0.530”
200-2C14SPLTC	14	2	0.346”
200-3C14SPLTC	14	3	0.353”
200-5C14SPLTC	14	5	0.471”
200-8C14SPLTC	14	8	0.610”
200-10C14SPLTC	14	10	0.625”
200-2C12SPLTC	12	2	0.412”
200-4C12SPLTC	12	4	0.488”

200°C (392ºF) Shielded Multi-Conductor Plenum Cable (UL) CL2P/CMP 300V



Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- OSHA acceptable
- Fluoropolymer insulation and jacket
- Compact design
- The overall shield eliminates most of the static interference from the electric field radiating by power cables and other electrical equipment.
- Low coefficient of friction, non-stick characteristics, weather resistance, low temperature flexibility and reduced diameter.

Applications:

Thermal Wire and Cable PLTC shielded is designed for use as instrumentation, process control and computer cables in Class II or III Power-Limited Circuits as defined in NEC article 725. They are suitable for installation in wet or dry locations with conductor operating temperature up to 200°C. They may be installed in cable tray, in any raceway, as open runs of cable. UL Listed Type PLTC is authorized for above usage grade Class I, Division 2 hazardous locations.

Options:

- Shielded pairs, triads, RTDs, overall shield, thermocouple alloys, etc.
- Available with galvanized steel armor, aluminum interlocked armor or stainless steel overbraid

THERMAL Wire and Cable, LLC

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-4C24XKT	24	4	0.146”
200-6C24XKT	24	6	0.167”
200-9C24XKT	24	9	0.190”
200-15C24XKT	24	15	0.229”
200-19C24XKT	24	19	0.242”
200-4C22XKT	22	4	0.161”
200-6C22XKT	22	6	0.185”
200-9C22XKT	22	9	0.211”
200-15C22XKT	22	15	0.259”
200-19C22XKT	22	19	0.272”
200-4C20XKT	20	4	0.182”
200-6C20XKT	20	6	0.212”
200-9C20XKT	20	9	0.242”
200-15C20XKT	20	15	0.297”
200-19C20XKT	20	19	0.312”
200-4C18XKT	18	4	0.207”
200-6C18XKT	18	6	0.243”
200-12C18XKT	18	12	0.313”
200-4C16XKT	16	4	0.228”
200-6C16XKT	16	6	0.270”
200-9C16XKT	16	9	0.313”
200-15C16XKT	16	15	0.389”
200-19C16XKT	16	19	0.409”
200-2C14XKT	14	2	0.272”
200-3C14XKT	14	3	0.288”
200-4C14XKT	14	4	0.315”
200-6C14XKT	14	6	0.381”
200-2C12XKT	12	2	0.318”
200-3C12XKT	12	3	0.337”
200-4C12XKT	12	4	0.374”
200-6C12XKT	12	6	0.450”


THERMAL
Wire And Cable Corp.
PH: 239-430-9473
www.thermalwire.com

Gas Turbine

Gas Turbine Cables

450ºC Gas Turbine Multi-Core Electric Cable 600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- ETL 2000°F circuit integrity test available upon request
- Passes ETL flame propagation test
- UL Listed for 600V 450°C applications per UL Subject 758. CSA Certified Appliance and Apparatus Wire and Cable
- Composite PTFE/Glass/PTFE insulation
- Perform in temperatures from -320°F through 1000°F temperatures continuous or short term exposure to 2000°F
- Standard jacket color is Red

Applications:

Thermal Wire and Cable's insulated Multi Conductor Cables are used in providing energy to gas turbines, blast furnace instrumentation, curing systems, glass fabrication, plastics manufacturing, industrial overhead cranes, offshore oil rigs, etc...

Options:

- #36 AWG - #2 AWG are available
- Available in shielded pairs, triads or with an overall shield
- Optional Shield/Armor

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
538-2C18TFLM	18	2	0.268”
538-3C18TFLM	18	3	0.280”
538-4C18TFLM	18	4	0.316”
538-5C18TFLM	18	5	0.325”
538-7C18TFLM	18	7	0.335”
538-12C18TFLM	18	12	0.430”
538-19C18TFLM	18	19	0.512”
538-2C16TFLM	16	2	0.288”
538-3C16TFLM	16	3	0.305”
538-4C16TFLM	16	4	0.320”
538-7C16TFLM	16	7	0.380”
538-9C16TFLM	16	9	0.418”
538-12C16TFLM	16	12	0.469”
538-19C16TFLM	16	19	0.528”
538-2C14TFLM	14	2	0.320”
538-3C14TFLM	14	3	0.349”
538-4C14TFLM	14	4	0.378”
538-5C14TFLM	14	5	0.402”

450ºC Gas Turbine Single-Core Electric Cable 600V

Features & Benefits

- Passes ETL ANSI/IEEE 383-1974 Standard for Type Test of Class 1E Electric Cables; Field Splices and Connections for Nuclear Power Generating Stations
- UL Listed for 600V 450°C applications
- Unsurpassed electrical properties such as high insulation resistance, high dielectric strength and low dissipation factors
- Provides flexibility required when wrapping even the smallest conductor
- Impervious to moisture up to 260°C
- Highly resistant to radiation
- Composite PTFE/Glass/PTFE insulation
- Flexible stranded, oxygen-free high conductivity pure copper with 27% Nickel-clad coating.

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

Thermal Wire and Cable's insulated Single conductor cables are used in providing energy to gas turbines, blast furnace instrumentation, curing systems, glass fabrication, plastics manufacturing, industrial overhead cranes, offshore oil rigs, etc...

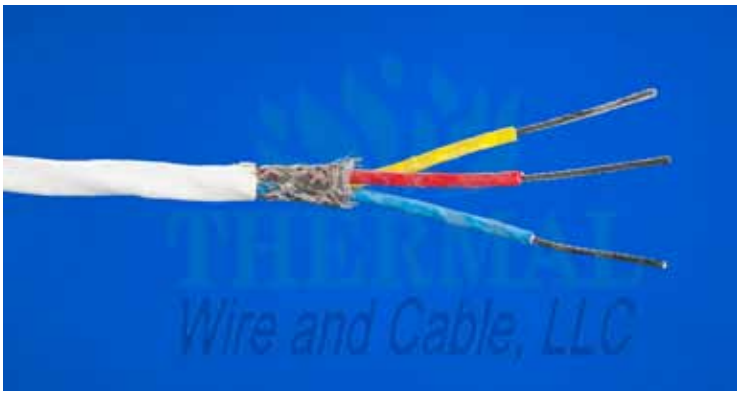
Options:

- #36 AWG - #2 AWG are available
- Available in shielded pairs, triads or with an overall shield
- Optional Shield/Armor
- Extruded Teflon "skin" for reduced coefficient of friction for ease of pulling through conduit Standard jacket color is Red.

Item Number	AWG	Number of Strands	Nominal Overall Diameter
538-20TFLM	20	19	0.075"
538-18TFLM	18	19	0.114"
538-16TFLM	16	19	0.126"
538-14TFLM	14	19	0.139"
538-12TFLM	12	37	0.163"
538-10TFLM	10	37	0.187"
538-8TFLM	8	133	0.252"
538-6TFLM	6	133	0.292"

Gas Turbine Cables

250ºC Gas Turbine Multi-Conductor Shielded Cable 600V



Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- High Vibration/Cut-through resistant
- ASTM D635: Test Method for rate of Burning
- NEC/ NFPA SECTION 505.16 (c) (2) (b)
- 73/23 EEC (600V/250°C) Low Voltage Directive of the European Community
- Conductor: Stranded Silver Plated Copper
- Insulation: PTFE/SPC/PTFE
- UL Recognized/ CSA Certified
- Passes IEEE 383 Flame Test

Applications:

Thermal Wire and Cable's insulated Single or Multi-Core Cables are used in gas turbines and internal wiring of electronic equipment and appliances.

Options:

- Various colors available upon request
- #36 AWG - #2 AWG options are available
- 1000V available upon request
- Optional Shield

Item Number	AWG	Number of Conductors	Number of Strands	Nominal Overall Diameter
200-2C24XESTJ	24	2	19/36	0.132”
200-3C24XESTJ	24	3	19/36	0.138”
200-4C24XESTJ	24	4	19/36	0.149”
200-2C22XESTJ	22	2	19/34	0.144”
200-3C22XESTJ	22	3	19/34	0.148”
200-4C22XESTJ	22	4	19/34	0.161”
200-2C20XESTJ	20	2	19/32	0.160”
200-3C20XESTJ	20	3	19/32	0.169”
200-4C20XESTJ	20	4	19/32	0.184”
200-2C18XESTJ	18	2	19/30	0.182”
200-3C18XESTJ	18	3	19/30	0.191”
200-4C18XESTJ	18	4	19/30	0.209”
200-2C16XESTJ	16	2	19/29	0.204”
200-3C16XESTJ	16	3	19/29	0.213”
200-4C16XESTJ	16	4	19/29	0.234”
200-2C14XESTJ	14	2	19/27	0.230”
200-3C14XESTJ	14	3	19/27	0.245”
200-4C14XESTJ	14	4	19/27	0.270”

250ºC Gas Turbine Single-Conductor Cable 600V

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Enhanced Vibration and Cut Through Resistance
- ASTM D635: Test Method for rate of Burning
- NEC/ NFPA SECTION 505.16 (c) (2) (b)
- 73/23 EEC (600V/250°C) Low Voltage Directive of the European Community
- Conductor: Stranded Nickel Plated Copper
- Insulation: Composite PTFE/ PTFE- Glass Tape/ PTFE Tape
- Voltage Rating: 600V
- UL Recognized/ CSA Certified
- Passes IEEE 383 Flame Test

Applications:

Thermal Wire and Cable's insulated Single or Multi-Core Cables are used in gas turbines and internal wiring of electronic equipment and appliances.

Options:

- Various colors available upon request
- #36 AWG - #2 AWG options are available
- 1000V available upon request
- Optional Shield
- Available in colors

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-2010487-54	20	19	0.075”
250-1810487-9	18	19	0.114”
250-1610487-9	16	19	0.126”
250-1210487-9	14	19	0.139”
250-1410487-9	12	37	0.163”
250-1010487-9	10	37	0.187”
250-810487-9	8	133	0.252”
250-610487-9	6	133	0.292”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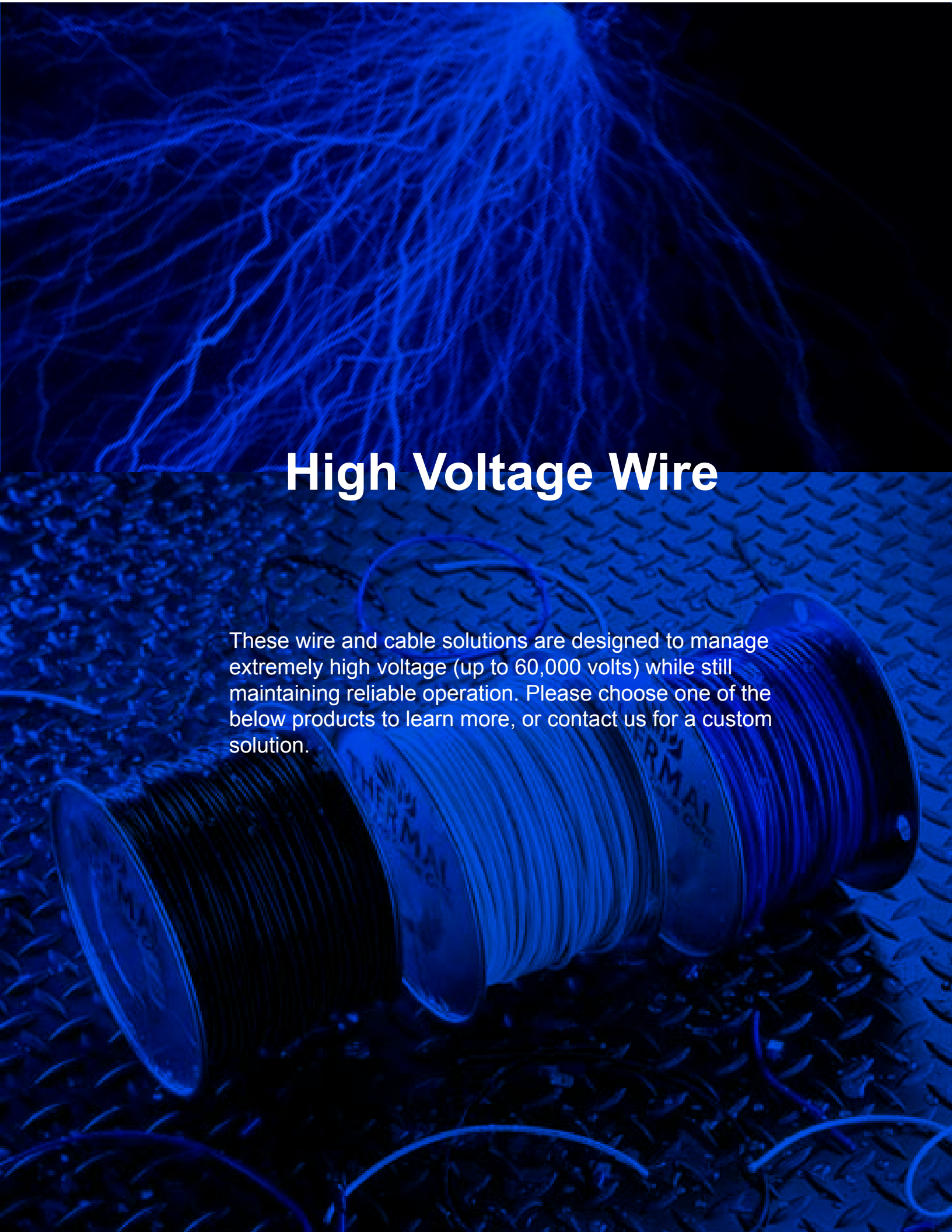


High Voltage Wire

These wire and cable solutions are designed to manage extremely high voltage (up to 60,000 volts) while still maintaining reliable operation. Please choose one of the below products to learn more, or contact us for a custom solution.

High Voltage Wire

450°C (842°F) Thermal Wire CST 450 Flare Stack Cable

up to 25,000VDC Grade III

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Solves tough high voltage electrical wire problems
- The highest temperature rating of all ignition cables
- High flexibility
- Maintains integrity to 2000°F for 5 minutes @ 125 VRMS
- Superior electrical properties and high service range
- Color retention when tested 100 days @ 350°C
- Less than 80% PTFE loss @>25years, 350°C
- Core is continuous temperature rated at 450°C (842°F) non flexing
- Temperature ranges from -60°C through 450°C.
- Standard color is bright yellow for visual identification*

Applications:

CST 450 Grade III Ignition lead wire is designed for flare stacks, blast furnace instrumentation, curing systems, glass fabrication, plastics manufacturing, fuel igniters, and offshore oil rigs.

Options:

- Braided stainless steel type 304 is available if the cable will be likely to experience abnormal physical abuse with additional, optional, Fluoropolymer jacket (rated 200-250°C)
- CST 450 can be cut and terminated on the jobsite
- Cut, strip, and terminate with conventional tools Surface printed with AWG/MM2 for easy identification

Item Number	AWG	Nominal Overall Dioameter
450-22MTS	22	0.225”
450-20MTS	20	0.243”
450-18MTS	18	0.250”
450-16MTS	16	0.257”
450-14MTS	14	0.263”
450-12MTS	12	0.279”
450-10MTS	10	0.347”

THERMAL Wire and Cable, LLC

250°C (482°F) PTFE Insulated High-Voltage Lead Wire 25,000KVDC

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Applications:

PTFE high voltage ignition cable typical applications include, gas ignitor systems for furnaces, and internal wiring for electronic gas ignitor system.

Features & Benefits

- UL Recognized
- Abrasion resistant
- Chemically inert to nearly all industrial chemicals and solvents
- Low coefficient of friction, slipperiest substance known to man
- Suitable for immersion in gasoline
- 100% Fiberglass free (No airborne fibers)
- Designed for high speed cutting and stripping machines
- Conductor: Nickel- Plated Copper

Options:

- Various colors available to aid in positive identification
- Stainless steel braid is available for additional mechanical protection
- Options: Solid or stranded Grade A (Nickel 200) available
- Fiberglass braid or stainless steel braid for increased mechanical
- Larger sizes available upon request.
- Available in 24 AWG through 12 AWG
- PTFE lead wires are 20% smaller in diameter than braided cables allowing more circuits per conduit.
- Chemical etch available for bonding to potting materials.

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-241911-*	24	7	0.077”
250-221911-*	22	7	0.084”
250-201911-*	20	7	0.092”
250-181911-*	18	19	0.101”
250-161911-*	16	19	0.110”
250-141911-*	14	19	0.123”
250-121911-*	12	19	0.143”

High Voltage Wire

250°C (482°F) SR-250 Silicone Rubber High-Voltage Lead Wire
25,000 VDC

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Resistant to corona
- Stock item 20AWG through 14AWG
- Silicone rubber insulation
- Color Red Iron Oxide helps dissipate heat
- Stranded nickel plated copper
- Easy to cut and strip
- Abrasion resistance with added optional treated fiber-ous braid
- ROHS Compliant

Applications:

SR-250 Silicone Rubber High-Voltage Lead Wire is used in gas appliance igniter systems.

Options:

- Available with a 5/64” and 7/64” mil wall silicone
- Available with optional impregnated glass braid,
- FEP or PFA extruded jacket to further protect and allow cable to be easily pulled through conduit
- Optional-treated glass braid covering for phase identification

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-223257-3	22	7	0.186”
250-203257-3	20	10	0.193”
250-183257-3	18	19	0.200”
250-163257-3	16	26	0.215”
250-143257-3	14	41	0.232”
250-123257-3	12	65	0.253”

250°C (482°F) Thermal Wire SRGE Flare Stack Cable

10KVAC 25KVdc Grade II

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Resistant to corona
- Silicone rubber insulation
- Color Red Iron Oxide helps dissipate heat
- Stranded nickel plated copper
- Standard cable for 250°C flare stack applications
- PTFE lead wires are 20% smaller in diameter than braided cables allowing more circuits per conduit
- SRGE extruded outer skin to reduce the coefficient of friction and adds chemical resistant barrier
- Cable is easy to pull through conduit and can be cut and terminated on the jobsite with conventional tools Thermoset dielectric does not melt or flow at elevated temperatures. Built tough for the application it serves

Applications:

SRGE ignition lead wire is commonly used in flare stacks, blast furnace instrumentation, curing systems, glass fabrication, plastics manufacturing, fuel igniters, offshore oil rigs, etc.

Options:

- Temperatures from -60°C through 250°C
- Braided 304 stainless steel jacket or galvanized steel interlocked armor is available overall when the cable will likely experience abnormal physical abuse.
- Stainless steel braids shield/armor available with additional thick jacket of Fluoropolymer jacket for Tray Use.

Item Number	AWG	Number of Strands	Nominal Overall Diameter
250-22SRGE	22	19	0.206”
250-20SRGE	20	19	0.235”
250-18SRGE	18	16	0.240”
250-16SRGE	16	26	0.260”
250-14SRGE	14	41	0.270”
250-12SRGE	12	65	0.290”
250-10SRGE	10	105	0.320”

High Voltage Wire

150°C (302°F) ETFE Insulated High-Voltage Lead Wire 10,000 VAC

Features & Benefits

- UL Recognized
- Abrasion resistant
- Chemically inert to nearly all industrial chemicals and solvents.
- Low coefficient of friction, slippiest substance known to man
- 100% Fiberglass free (No airborne fibers)
- Designed for high speed cutting and stripping machines
- Conductor: Nickel- Plated Copper
- Insulation Material Passes:
  - National Electrical Code (NEC) – Articles 310, 340, 402, 725
  - NEMA – HP-100/HP-100-2; WC-3 (ICEA S-19-81);
  - MIL Specs – MIL-C-17; MIL-W-22759/16-19; MIL-C-27500
  - IEEE – Standards 1, 323, 383-1979
  - NFPA – Standard 258 (Smoke) UL – UL Subject 13, 83, 94

Characteristics:

CHEMICAL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Applications:

Electronic ignition or similar applications in gas ranges or gas or fuel oil burner systems.

Options:

- Various colors available to aid in positive identification
- Stainless steel braid is available for additional mechanical protection
- Larger sizes available upon request.
- Available in 24 AWG through 6 AWG
- PTFE lead wires are 20% smaller in diameter than braided cables allowing more circuits per conduit.
- Chemical etch available for bonding to potting materials.

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
150-2410185-*	7	24	0.086”
150-2210185-*	7	22	0.094”
150-2010185-*	7	20	0.980”
150-1810185-*	7	18	0.108”
150-1610185-*	7	16	0.120”
150-1410185-*	19	14	0.135”
150-1210185-*	19	12	0.168”
150-1010185-*	19	10	0.195”
150-810185-*	19	8	0.270”
150-610185-*	19	6	0.315”

150°C (382F°F) Silicone Rubber High-Voltage Lead Wire

Up to a maximum 60 KVDC

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- High flexibility
- Single conductor, high voltage appliance and electronic ignition wire
- UL Subject 758, Style 3239
- Non- UL styles available
- Flame Test VW-1 rated
- High voltage 5 KVDC to 60 KVDC: customer must specify maximum voltage required. Higher voltage means higher cost
- Resistant to Ozone and corona
- Available with optional shield and protective covering

Applications:

High Voltage Lead wire is designed for use in stoves, heaters, furnaces, dryers, therapeutic devices, televisions, lighting fixtures, motors, or special electronic devices where high voltage applied insulated high voltage lead wire offer a wide service temperature range and outstanding dielectric qualities.

Options:

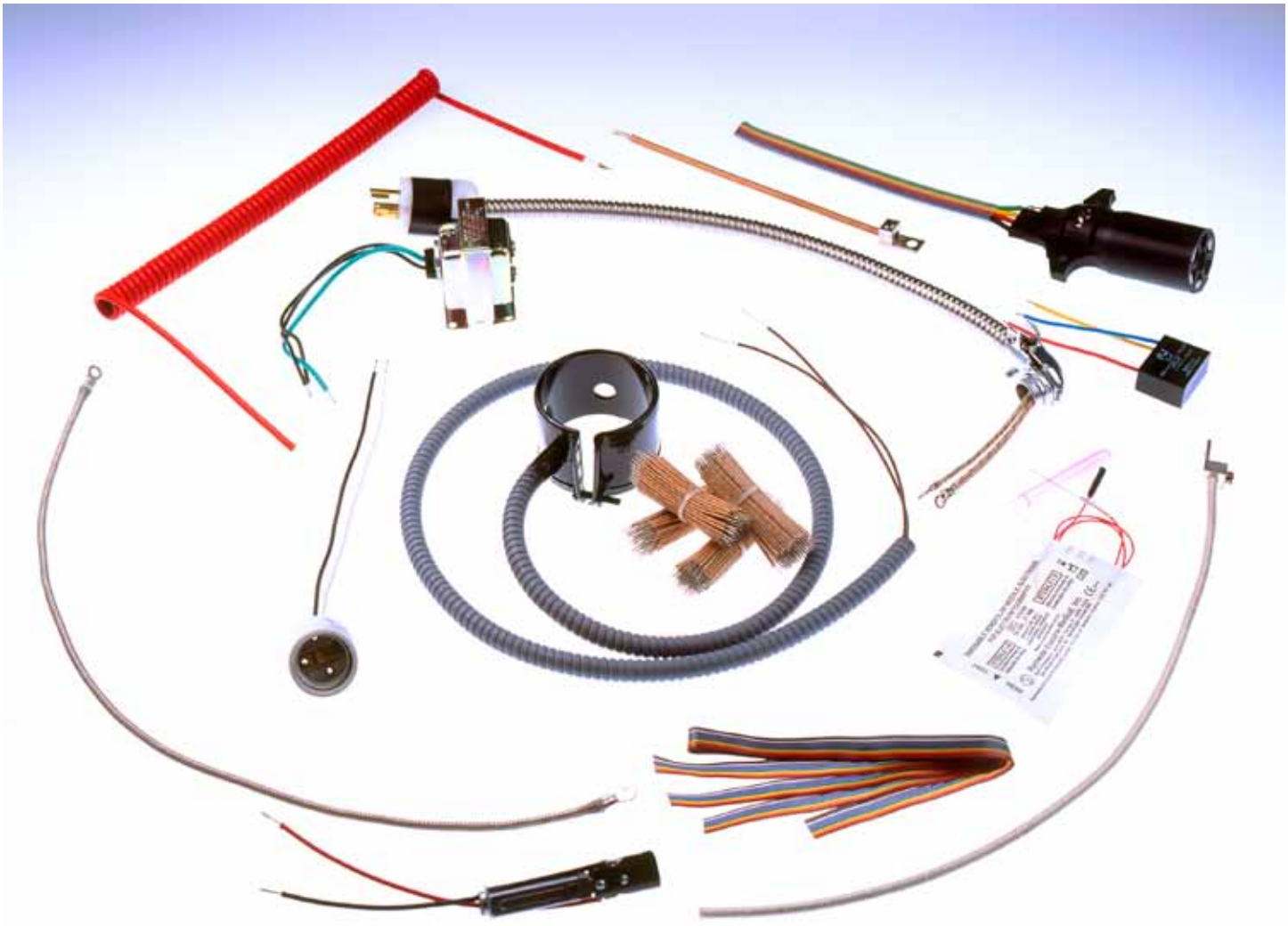
- White is standard color*
- 24AWG through 2AWG
- Various colors available upon request*
- 5KV to 60KV available

Item Number	AWG	KVDC Rating	Nominal Overall Diameter
150-2432395-*	24	5	0.065”
150-2232395-*	22	5	0.072”
150-22323910-*	22	10	0.092”
150-22323915-*	22	15	0.115”
150-22323920-*	22	20	0.135”
150-22323925-*	22	25	0.173”
150-20323915-*	20	15	0.130”
150-20323920-*	20	20	0.155”
150-20323925-*	20	25	0.170”
150-20323930-*	20	30	0.195”
150-18323925-*	18	25	0.170”
150-18323940-*	18	45	0.300”
150-16323920-*	16	20	0.168”
150-16323935-*	16	35	0.273”
150-16323945-*	16	45	0.310”
150-16323960-*	16	50	0.390”
150-14323930-*	14	30	0.265”
150-14323950-*	14	50	0.392”

High Voltage Wire

150°C (382F°F) Silicone Rubber High-Voltage Lead Wire - Contd.

Item Number	AWG	KVDC Rating	Nominal Overall Diameter
150-12323920-*	12	20	0.212”
150-12323930-*	12	30	0.285”
150-12323940-*	12	40	0.342”
150-12323950-*	12	50	0.420”
150-10323915-*	10	15	0.215”
150-10323925-*	10	25	0.270”
150-10323940-*	10	40	0.370”
150-10323950-*	10	50	0.435”
150-810475-*	8	25	0.301”
150-610475-*	6	25	0.342”
150-410475-*	4	25	0.401”
150-210475-*	2	25	0.465”



Specialty Cables

Specialty cables address the unique needs of certain applications. Please review our product listing below to learn more, or contact us for a custom quotation to meet your needs.

1093ºC 600V Vacuum Cable

Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- Designed for extremely high-temperature applications
- This cable goes through a rigorous cleaning process that greatly reduces the potential off-gassing of processing materials employed as manufacturing aids in its production.
- Nextel® 312 is the primary insulation employed as the dielectric and built to voltage specifications typically not exceeding 600V.
- This served material is further augmented with a nickel 200 braid to encapsulate insulating system and greatly affect the abrasion resistance of the cable.
- This cable has to be brought to operating temperature prior to service voltage and electrification to flash off manufacturing aids in the processing of Nextel® fibers and this greatly increases dielectric strength. Procedure available upon request.
- Easy to bend and work with and is terminated with conventional tools.

Applications:

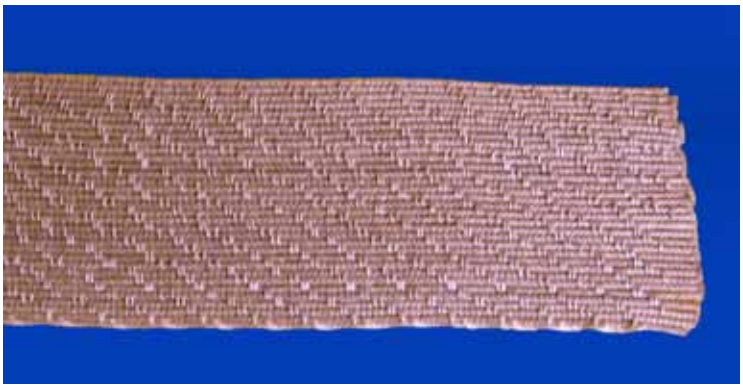
Thermal Wire and Cable 1093ºC 600V Vacuum Cable is designed for a range of Vacuum cable feed through systems and chamber cables and related applications. This cable will perform where all others fail. Please consult 3M website for further processing requirements.

Options:

- Nickel overbraid shield is standard, stainless steel is also available
- Nickel 200 is standard conductor material for 1093°C.

Item Number	AWG	Nominal Overall Dioameter
1093-18	18	0.148”
1093-16	16	0.179”
1093-14	14	0.190”
1093-12	12	0.204”
1093-10	10	0.258”
1093-8	8	0.302”

538°C (842°F) Extreme Heat Ribbon Cable 300V



Features & Benefits

- Highly flexible
- Nickel-Plated Conductors Standard
- Radiation resistant
- Single wires are UL Recognized to 450°C
- Insulation: non melting, non burning insulation
- Low minimum order quantities on pre-made items and quick turnaround times on made to order items

Characteristics:

UV RESISTANT

EXTREME COLD

FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Thermal Wire and Cable offers an extreme heat flat ribbon cable for high temperature applications often found in aerospace and commercial industries. The extreme heat flat ribbon cable offers heat resistance to 450°C, excellent flexibility upon installation, and various configurations to fit your application. Some of the applications where this kind of ribbon cable is often used include: insulation displacement cables, matched impedance cables, thermocouple cable management systems.

Options:

- Various colors combinations
- Various center spacing
- Thermocouple alloys
- Constructions from 2 to 64 conductors in various AWG sizes.

250°C (482°F) PFA High Temperature Ribbon Cable

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

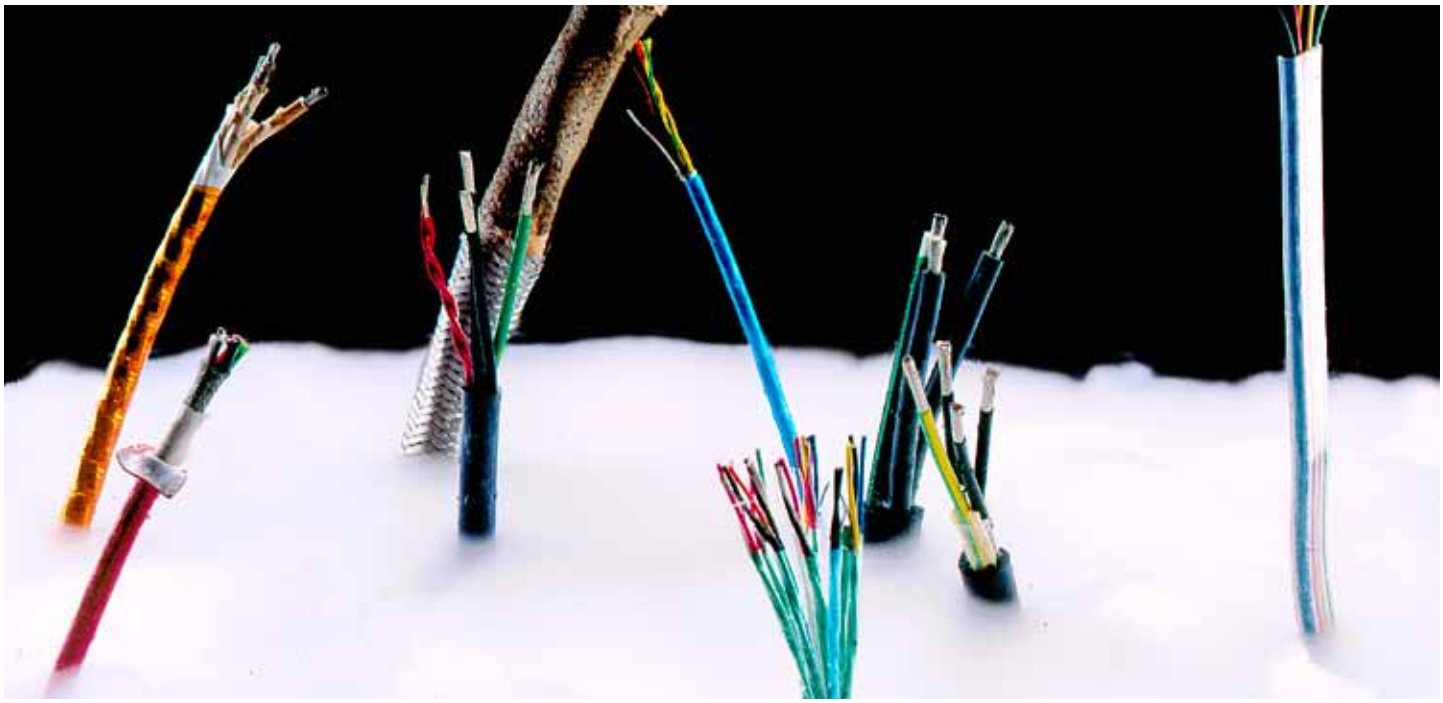
- Premium performance dielectric insulation
- Hi concentricity
- Robust design
- Measured Electrical Characteristics
- Constructions are available from 2 to 64 conductors ANSI and Mil Spec approved
- Low dielectric constant insulations allow for superior signal integrity
- Abrasion and chemical resistant

Applications:

Thermal Wire and Cable offers PFA flat ribbon cable for various applications. Whether it is for mass termination in high temperature applications or fitting a chemical resistant cable into a tight application, the PFA ribbon cable will get the job done.

Options:

- Various colors combinations available upon request
- Various center spacing available
- 2 to 64 AWG available



200°C (392°F) FEP High Temperature Ribbon Cable

Features & Benefits

- Hi-fidelity
- Excellent signal transmission
- Low dielectric constant
- Non- adhesive
- Self-lubricant
- Low water absorption
- Corrosion and adhesion resistant
- Excellent electrical and system performance
- Suitable for single ended and differential applications
- Performs excellent in long multi-drop bus applications
- ANSI approved

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Thermal Wire and Cable, LLC offers FEP flat ribbon cable for various applications: printer heads, robots, internal wiring of electrical equipment included computer and business machines. FEP Flat cables are perfect for all LVD applications. This cable offers major benefits, such as controlled impedance and low crosstalk, which minimize signal reflections and improve signal integrity.

Options:

- Various colors combinations available upon request
- Various center spacing available
- Different conductor materials available
- Number of signals- 2 to 64

200°C (400 °F) 3 Hour Fire Rated Circuit Integrity Cable (CIC)

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Features & Benefits

- High flexibility
- Hydrocarbon fire resistant
- Replaces MI cable
- Moisture resistant
- Chemical resistant
- Meets new IEEE-1717-2012 standards.
- Passes IEEE- 1202/FT4 Flame test
- Passes IEEE-383 Flame test 2000°F for 2 hours at 1000V
- Passes IEEE-383 Flame test 2000F for 3 hours 480V
- 2196- 2 hour Circuit Integrity Fire Test
- UL-1685 Low Smoke Zero Halogen
- UL-1277 TC-ER
- Mil-W-25038 2 hours Fire Rated Test
- US Navy MIL-STD-3020 Class N

Applications:

Thermal Wire and Cable's 3 Hour Fire-rated Circuit Integrity Cable is suitable for the following applications: power and control instrumentation cables, power limited-circuit, fire suppression system, oven, furnaces, emergency lightning, overhead cranes, Control Emergency Shutdown Remote Operated Shut-off valves, Emergency Isolation Valves as found in petrochemical plants and refineries and Emergency Lighting

Options:

- Stainless steel braid armor
- Tray rated TC-ER
- 200C and 250C Pulling Jacket Optional
- Silicone Rubber Outer Jacket for added flex-ibility
- Nickel Platted Copper Electrical Shielding Shielded Pairs

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
200-4C16ITFL	16	4	0.760”
200-4C14ITFL	14	4	0.615”
200-7C14ITFL	14	7	0.735”
200-9C14ITFL	14	9	0.865”
200-12C14ITFL	14	12	0.980”
200-16C14ITFL	14	16	1.100”
200-2C12ITFL	12	2	0.570”
200-3C12ITFL	12	3	0.610”
200-4C12ITFL	12	4	0.660”
200-4C10ITFL	10	4	0.785”

90°C Thermaflame 1000 (continuous 750°C for 90 minutes) - Fire Rated Circuit Integrity Cable (CIC)

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industry:

OEM/ APPLIANCE

Applications:

Thermal Wire and Cable's Fire-rated Circuit Integrity Cable is suitable for the following applications: power and control instrumentation cables, power limited-circuit, fire suppression system, oven, furnaces, emergency lightning, overhead cranes, Control Emergency Shutdown Remote Operated Shut-off valves, Emergency Isolation Valves as found in petrochemical plants and refineries and Emergency Lighting.

Features & Benefits

- High flexibility
- Hydrocarbon fire resistant
- Replaces MI cable
- Moisture resistant
- Chemical resistant
- UL-1685 Low Smoke Zero Halogen
- Passes IEEE-60331 Flame test 750°C for 90 minutes 600V ULTC

Options:

- Nickel Platted Copper Electrical Shielding
- Shielded Pairs
- Colored outer jacket
- Color coded pairs

Item Number	AWG	Number of Conductors	Nominal Overall Diameter
090-2C16CIC-0	16	2	0.389”
090-3C16CIC-0	16	3	0.421”
090-12C16CIC-0	16	12	0.755”
090-2C14CIC	14	2	0.434”
090-7C14CIC-0	14	7	0.639”
090-19C14CIC-0	14	19	1.103”
090-2C12CIC-0	12	2	0.469”
090-5C12CIC-0	12	5	0.638”
090-37C12CIC-0	12	37	1.473”
090-4C10CIC-0	10	4	0.639”

Fire-rated vs. Fire-retardant Cable

Installing the correct tested and certified cable is essential when considering safety issues that involve fire. Whether it's cable operation within a furnace or during a fire emergency, security is always a high priority. These problems often are coupled with maintaining continuously operable electronic communication systems during disastrous events. Given the operative difference in cable rating systems, here are the key essentials:

Flame-retardant Cable: Fire-retardant cable passed small-scale certification to protect against the spread of existing fire and but has not earned the fire-rated certification. This cable is not as powerful as fire-rated/fire-resistive cable.

Fire-rated and Fire-resistive Cable: Fire-rated/fire-resistive cable passed rigorous UL testing and earned standardized certification worldwide. This cable is certified to maintain full operation (circuit integrity) for a specified period within burning structures. Circuit integrity cable (CIC) came into wider focus post-9/11. The U.S. military learned about CIC during the Falklands War in 1982. Our armed forces, as well as many U.S. government buildings and structures, utilize CIC.

Thermal Wire and Cable solves your CIC requirements. TWC's 90-minute cable operates in fire-related conditions from 90°C to 750°C. For large-scale applications, TWC's 3-hour cable provides continuous operation in a fire beginning at 200°C for three hours. Both types of cable are flexible and less costly to install than mineral-insulated cable. TWC provides these cables in various AWG sizes and numbers of conductors. We also offer a custom surface print or marker tape representing your company name.

The 90-minute and 3-hour cables are suitable for a wide variety of applications including emergency isolation valves as found in petrochemical plants and refineries, emergency lighting, ovens, furnaces, overhead cranes, and remote-operated shut-off valves.

How does CIC affect B2B and the typical consumer or end user? To mention a few examples, designers and contractors incorporate CIC into a new building and maintenance plans for healthcare facilities, high-rise office, and resident buildings as well as computer data centers. So next time you enter a building, think about what's behind those walls of integrity.

Thermocouple

Thermocouples are temperature-measuring devices in which two wires of different metals are joined. The potential difference between the wires is a measure of the temperature of something they touch. Please review our thermocouples below for more information, or contact us for a custom solution to meet your needs and exceed your expectations.

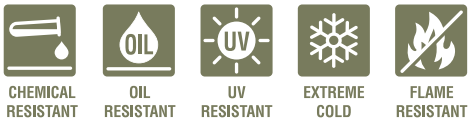
Thermocouple

1260°C (2300 °F) MI Thermocouple Cable

Features & Benefits

- High durability
- Fire rated 2 hours
- Water proof
- UL listed Type MI compliant to electrical code NPFA 70, Article 330
- Moisture resistant
- Resilient to twisting, pulling, bending, and abrasion
- Thermocouple MI cable contain high purity and quality magnesium oxide (MGO)
- Highly compacted to prevent powdering and reduce moisture absorption
- Available sizes: 2 (single), 4 (duplex) or 6 wire (triplex) configurations
- Common calibrations include : J, K, T, E
- Sheath materials available include: Stainless steel 304, 310, 316 or Inconel 600

Characteristics:



Industries:

Applications:

Thermal Wire and Cable, MI Thermocouple Cable may be used for the following applications power generation, fire pumps, emergency feeder, oil and gas, pharmaceutical, Bio Tech, cement, paper and pulp, appliances and furnaces.

Options:

- Vast selection of termination accessories please inquire
- Please inquire as to the maximum length requirement for your application
- Sheath materials available include : Stainless steel 304, 310, 316 or Inconel 600, 825
- Vast selection of termination accessories - please inquire

1204°C (2200 °F) Nextel® Insulated Thermocouple Wire Duplex (Parallel Construction)

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Extremely high-temperature applications
- Easy to bend
- Resistant to most industrial chemicals
- Terminated with conventional tools
- Designed to replace MI cable
- Excellent abrasion resistance when augmented with a Nickel 200 or Stainless steel braid

Options:

- Stainless Steel Type 304 overbraid available

Applications:

Thermal Wire and Cable, Nextel® Insulated thermocouple cables are designed for a range of applications which include: replacement for beaded thermocouples, thermocouple for oven surveys, heat treating or forging, casting of steel or titanium, thermocouple for coke ovens, soaking pits where more flexibility is required compared to mineral insulated products (MI Cable).

Type	Thermocouple Grade	Extension Grade	Conductor Alloys	Temperature Rating	Notes
K/KX			Chromel + Alumel -	-270ºC (454ºF) 1372ºC (2501ºF)	Most popular calibration. Wide temperature range.
J/JX			Iron + Constantan -	-210ºC (346ºF) 1200ºC (2193ºF)	Not recommended for low temperatures.
T/TX			Copper + Constantan -	-270ºC (454ºF) 400ºC (752ºF)	Used in low temperature (cryogenic) applications and where moisture is present.
E/EX			Chromal + Constantan -	-270ºC (454ºF) 1000ºC (1832ºF)	Oxidizing or inert. Limited use in vacuum highest EMF change per degree.
N/NX			Nicrosil + Nisil -	-270ºC (454ºF) 1300ºC (2372ºF)	Alternative to Type Ka but more stable at higher temperatures.
R	none established		Platinum/ 13% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.
S	none established		Platinum/ 10% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.

704°C (1300°F) Fiberglass Insulated Thermocouple Wire (Parallel Construction)

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Continuous use up to 1300°F (482°C)
- Single Exposure up to 1600°F (871°C)
- Good Moisture, Chemical and Abrasion Resistance
- Optional fused PTFE tape under fiberglass jacket enhances moisture resistance to 300°C
- Common calibrations include : J, K, T, E
- Stainless steel and nickel 200 over braid is optional for increased mechanical strength
- Sizes range from 24 to 12 AWG

Applications:

Typical applications include metals production temperature sensors, coke oven batteries, heat treatment aerospace etc. The insulation is treated with a heat fiber and moisture-resisting finish which adds a pigment that promotes files bonding and aids circuit identification.

Options:

- Stainless Steel Type 304 overbraid available
- Available as a multi-pair cable with twisted shielded pair

Type	Thermocouple Grade	Extension Grade	Conductor Alloys	Temperature Rating	Notes
K/KX			Chromel + Alumel -	-270ºC (454ºF) 1372ºC (2501ºF)	Most popular calibration. Wide temperature range.
J/JX			Iron + Constantan -	-210ºC (346ºF) 1200ºC (2193ºF)	Not recommended for low temperatures.
T/TX			Copper + Constantan -	-270ºC (454ºF) 400ºC (752ºF)	Used in low temperature (cryogenic) applications and where moisture is present.
E/EX			Chromal + Constantan -	-270ºC (454ºF) 1000ºC (1832ºF)	Oxidizing or inert. Limited use in vacuum highest EMF change per degree.
N/NX			Nicrosil + Nisil -	-270ºC (454ºF) 1300ºC (2372ºF)	Alternative to Type Ka but more stable at higher temperatures.
R	none established		Platinum/ 13% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.
S	none established		Platinum/ 10% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.

THERMAL Wire and Cable, LLC

482°C (900°F) Fiberglass Insulated Thermocouple Wire (Parallel Construction)

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Continuous use up to 900°F (482°C)
- Single Exposure up to 1000°F (538°C)
- Good Moisture, Chemical and Abrasion Resistance
- Optional fused PTFE tape under fiberglass jacket enhances moisture resistance to 300°C
- Common calibrations include : J, K, T, E
- Stainless steel and nickel 200 over braid is optional for increased mechanical strength
- Sizes range from 24 to 12 AWG

Applications:

Typical applications include metals production temperature sensors, coke oven batteries, heat treatment aerospace etc. The insulation is treated with a heat fiber and moisture-resisting finish which adds a pigment that promotes files bonding and aids circuit identification.

Options:

- Stainless Steel Type 304 overbraid available

  Available as a multi-pair cable with twisted shielded pair

Type	Thermocouple Grade	Extension Grade	Conductor Alloys	Temperature Rating	Notes
K/KX			Chromel + Alumel -	-270ºC (454ºF) 1372ºC (2501ºF)	Most popular calibration. Wide temperature range.
J/JX			Iron + Constantan -	-210ºC (346ºF) 1200ºC (2193ºF)	Not recommended for low temperatures.
T/TX			Copper + Constantan -	-270ºC (454ºF) 400ºC (752ºF)	Used in low temperature (cryogenic) applications and where moisture is present.
E/EX			Chromal + Constantan -	-270ºC (454ºF) 1000ºC (1832ºF)	Oxidizing or inert. Limited use in vacuum highest EMF change per degree.
N/NX			Nicrosil + Nisil -	-270ºC (454ºF) 1300ºC (2372ºF)	Alternative to Type Ka but more stable at higher temperatures.
R	none established		Platinum/ 13% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.
S	none established		Platinum/ 10% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.

Thermocouple

260°C (500°F) PFA Insultated Thermocouple Wire (Parallel Construction)

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK · INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Continuous use up to 500°F (260°C)
- Excellent Chemical Resistance
- Excellent Electrical Properties
- Flame Retardant
- Passes IEEE 383 Flame Test
- Passes VW-1 Flame Test

Applications:

Thermocouple wire commonly used in Temperature Sensors.

Options:

- Stainless Steel Type 304 overbraid available
- Available as a multi-pair cable with twisted shielded pair

Type	Thermocouple Grade	Extension Grade	Conductor Alloys	Temperature Rating	Notes
K/KX			Chromel + Alumel -	-270ºC (454ºF) 1372ºC (2501ºF)	Most popular calibration. Wide temperature range.
J/JX			Iron + Constantan -	-210ºC (346ºF) 1200ºC (2193ºF)	Not recommended for low temperatures.
T/TX			Copper + Constantan -	-270ºC (454ºF) 400ºC (752ºF)	Used in low temperature (cryogenic) applications and where moisture is present.
E/EX			Chromal + Constantan -	-270ºC (454ºF) 1000ºC (1832ºF)	Oxidizing or inert. Limited use in vacuum highest EMF change per degree.
N/NX			Nicrosil + Nisil -	-270ºC (454ºF) 1300ºC (2372ºF)	Alternative to Type Ka but more stable at higher temperatures.
R	none established		Platinum/ 13% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.
S	none established		Platinum/ 10% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.

THERMAL Wire and Cable, LLC

200°C (392°F) FEP Insulated Thermocouple Wire (Parallel Construction)

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

COMBUSTION/ FLARESTACK | INDUSTRIAL | PETRO-CHEM

Features & Benefits

- FDA approved insulation
- Low coefficient of friction eases installation techniques
- Excellent Chemical Resistance
- Excellent Electrical Properties
- Flame Retardant
- Passes IEEE 383 Flame Test

Applications:

Commonly used in Temperature Sensors.

Options:

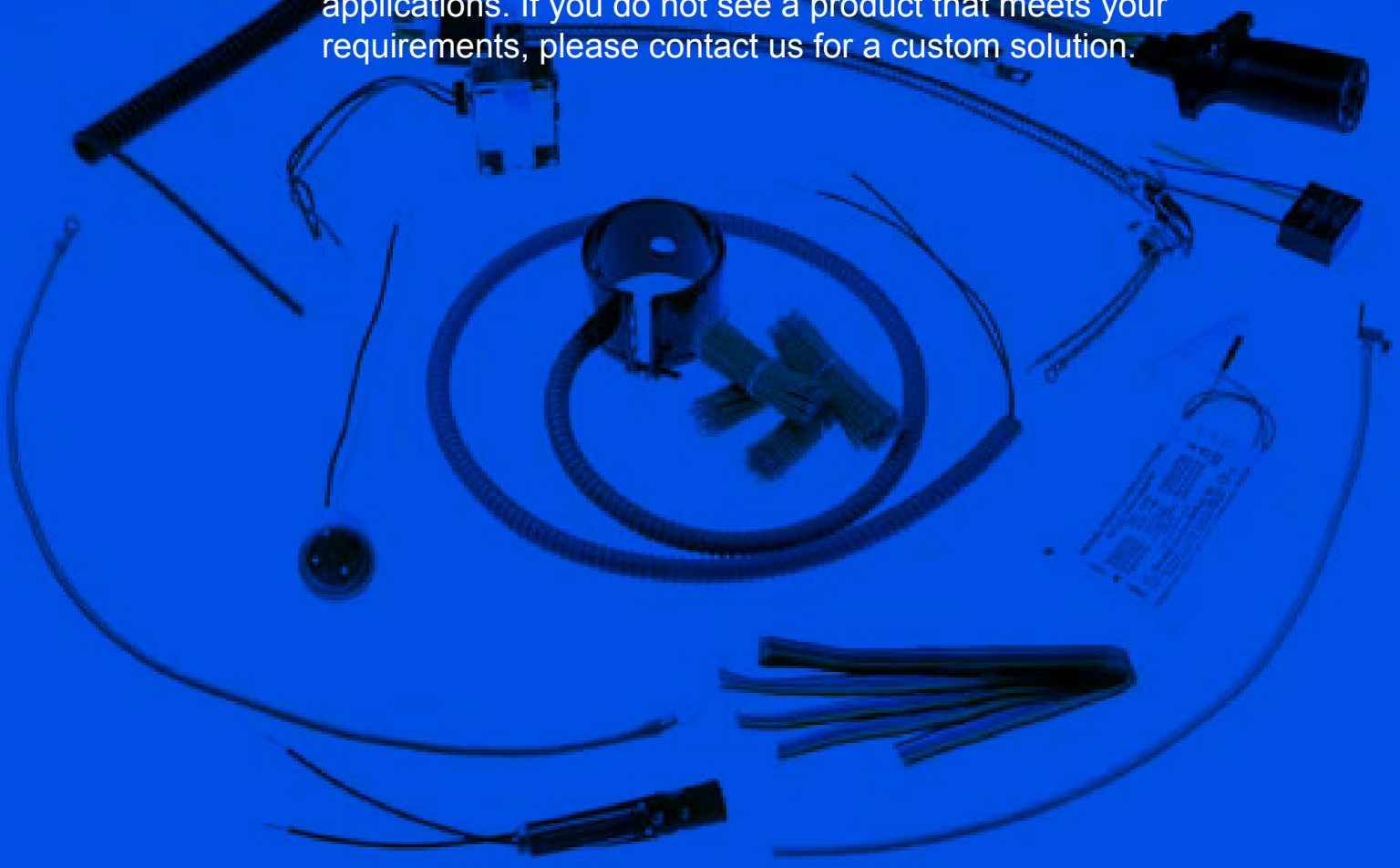
- Stainless Steel Type 304 overbraid available

  Available as a multi-pair cable with twisted shielded pair

Type	Thermocouple Grade	Extension Grade	Conductor Alloys	Temperature Rating	Notes
K/KX			Chromel + Alumel -	-270ºC (454ºF) 1372ºC (2501ºF)	Most popular calibration. Wide temperature range.
J/JX			Iron + Constantan -	-210ºC (346ºF) 1200ºC (2193ºF)	Not recommended for low temperatures.
T/TX			Copper + Constantan -	-270ºC (454ºF) 400ºC (752ºF)	Used in low temperature (cryogenic) applications and where moisture is present.
E/EX			Chromal + Constantan -	-270ºC (454ºF) 1000ºC (1832ºF)	Oxidizing or inert. Limited use in vacuum highest EMF change per degree.
N/NX			Nicrosil + Nisil -	-270ºC (454ºF) 1300ºC (2372ºF)	Alternative to Type Ka but more stable at higher temperatures.
R	none established		Platinum/ 13% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.
S	none established		Platinum/ 10% Rhodium + 100% Platinum -	1768ºC (3214ºF)	Oxidizing or inert. Do not insert in metal tubes. High temperature.

NEC Fixture Wire

Fixture wire is common in many household products. We provide a wide range of wiring solutions in various gauges designed to meet both common and extreme applications. If you do not see a product that meets your requirements, please contact us for a custom solution.



NEC Fixture Wire

250°C (392°F) Type PAF (UL®) Listed Fixture Wire Solid or 7 Strand

600V 18AWG-14AWG

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Fluoropolymer insulation provides for long term, trouble free performance in the most severe conditions
- Meets National Electrical Code (NEC) latest edition
- Meets UL Subject 13 / UL Subject 83 / UL Subject 94
- NEMA HP-100/HP-100-2 WC-5 (ICEA S-61-402) WC-3 (ICEA S-19-81)
- Reduced Fire Hazard
- Passes Verticle IEEE 383 at 210,000/61.5 KW BTU/HR (PVC,PVC-Nylon, XLPE Fail)
- Smaller connectors, smaller conduit
- Chemical resistant insulation

Applications:

PAF Fixture wires may be used for installation in luminaires and similar equipment where enclosed or protected and not subject to bending or twisting in use. It also is utilized to connect luminaires to branch-circuit conductors supplying the luminaires. Fixture wires should not be used as branch-circuit conductors unless permitted elsewhere in the code.

Item Number	AWG	Nominal Overall Dioameter
250-18PAF-*	18	0.088”
250-16PAF-*	16	0.100”
250-14PAF-*	14	0.113”

200°C (392°F) Type PF (UL®) Listed Fixture Wire Solid or 7 Strand

600V 18AWG-14AWG

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Fluoropolymer insulation provides for long term, trouble free performance in the most severe conditions
- Meets National Electrical Code (NEC) latest edition
- Meets UL Subject 13 / UL Subject 83 / UL Subject 94
- NEMA HP-100/HP-100-2 WC-5 (ICEA S-61-402)
  WC-3 (ICEA S-19-81)
- Reduced Fire Hazard
- Smaller connectors, Smaller conduit
- Chemical resistant insulation
- Passes Verticle IEEE 383 at 210,000/61.5 KW BTU/HR (PVC,PVC-Nylon, XLPE Fail)
- OSHA acceptable
- Type PAF are 100% glass-free

Applications:

Fixture wires may be used for installation in luminaires and similar equipment where enclosed or protected and not subject to bending or twisting in use. It also is utilized to connect luminaires to branch-circuit conductors supplying the luminaires. Fixture wires should not be used as branch-circuit conductors unless permitted elsewhere in the code.

Item Number	AWG	Nominal Overall Dioameter
200-18PF-*	18	0.078”
200-16PF-*	16	0.090”
200-14PF-*	14	0.103”

NEC Fixture Wire

200°C (392°F) Type ZHF (UL®) Listed Fixture Wire Solid or 7 Strand

600V 18AWG-14AWG

Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Fluoropolymer insulation provides for long term, trouble free performance in the most severe conditions
- Meets National Electrical Code (NEC) latest edition
- Meets UL Subject 13 / UL Subject 83 / UL Subject 94
- NEMA HP-100/HP-100-2 WC-5 (ICEA S-61-402)
  WC-3 (ICEA S-19-81)
- Reduced Fire Hazard
- Smaller connectors, Smaller conduit
- Chemical resistant insulation
- Passes Verticle IEEE 383 at 210,000/61.5 KW BTU/HR (PVC,PVC-Nylon, XLPE Fail)

Applications:

Thermal Wire and Cable type ZHF Fixture wires are intended to be grounded conductors and may be used as a tap conductor to connect luminaires to branch-circuit conductor, conjunction box or other fitting that is allowed to contain splices. Fixture wire should not be used as branch circuit conductors unless permitted by NEC code elsewhere.

Item Number	AWG	Nominal Overall Dioameter
250-18ZHF-*	18	0.088”
250-16ZHF-*	16	0.100”
250-14ZHF-*	14	0.113”

General Wiring

We stock various models of wires and cables to meet different needs. Please choose a product from the below list to learn more, or contact us for a custom solution.

250°C (482°F) UL PFAH Insulated Power Cable 600V

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Heavy Wall Extra Hard use
- Nickel Plated Copper/PFA
- 20% smaller in diameter than braided cables
- Bright colors aid in positive identification
- -196°C to 250°C (482°F) / 600 Volt
- 2.7X the temperature rating of THHN

Applications:

Typical applications include internal wiring of motors, booster melting systems, and electronic equipment.

Options:

- 300V version available
- Multi-conductor versions
- Various colors available
- Specify AWG

Item Number	AWG	Nominal Overall Dioameter
250-14PFAH-*	14	0.109”
250-12PFAH-*	12	0.126”
250-10PFAH-*	10	0.150”
250-8PFAH-*	8	0.223”
250-6PFAH-*	6	0.264”
250-4PFAH-*	4	0.328”
250-2PFAH-*	2	0.370”
250-1PFAH-*	1	0.472”
250-1/0PFAH-*	1/0	0.518”
250-2/0PFAH-*	2/0	0.571”
250-3/0PFAH-*	3/0	0.579”
250-4/0PFAH-*	4/0	0.695”

200°C (392°F) SA Silicone Ruber/Glass Braid Motor Lead Wire 600V

Features & Benefits

- High flexibility
- Non-melting insulation
- Primary insulation of this cable is a modified silicone rubber augmented with a fiberous braid for additional mechanical protection
- 200°C (392°F) / 600 Volt
- UL Listed
- When burned, silicone rubber leaves a non-conductive silicone dioxide ash, which is an excellent dielectric that permits continued operation of the cable
- Inexpensive

Characteristics:

UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

INDUSTRIAL · PETRO-CHEM

Applications:

They are also designed for installation as hazardous location motor lead cable, overhead crane power cable, glass plant wiring, melt shop wiring, slag and teeming ladle cars wiring or other applications that require long service life in extreme heat and flexing conditions.

Options:

- Various colors available upon request*
- These single conductor cables are UL listed for use in accordance with NEC article 310 (2008 NEC).
- Type SA cables are suitable for continuous operation at 200°C.

Item Number	AWG	Number of Strands	Nominal Overall Diameter
200-14SA-*	14	7	0.215”
200-12SA-*	12	19	0.235”
200-10SA-*	10	37	0.255”
200-8SA-*	8	54	0.375”
200-6SA-*	6	84	0.420”
200-4SA-*	4	133	0.480”
200-2SA-*	2	133	0.545”
200-1SA-*	1	259	0.620”
200-1/0SA-*	1/0	259	0.665”
200-2/0SA-*	2/0	259	0.720”
200-3/0SA-*	3/0	259	0.780”
200-4/0SA-*	4/0	259	0.845”
200-250SA-*	250 MCM	427	0.935”
200-350SA-*	350 MCM	427	1.050”
200-500SA-*	500 MCM	427	1.205”
200-600SA-*	600 MCM	703	1.335”
200-750SA-*	750 MCM	703	1.455”

200°C (392°F) UL FEP Insulated Building Cable 600V

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Hard use
- Tinned Plated Copper/FEP
- 20% smaller in diameter than braided cables
- Bright colors aid in positive identification
- 90°C – Dry and Damp Locations / 200°C – Dry Locations

Options:

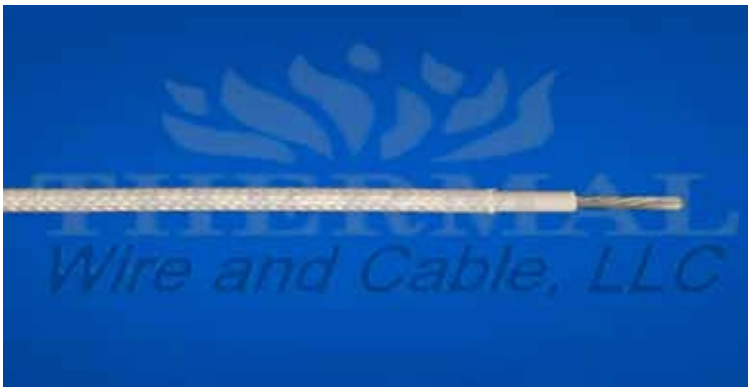
- Multi-conductor versions
- Various colors available

Applications:

UL Listed FEP building wire offers distinct advantages over the frequently specified silicone rubber glass braid (SRML). The reduced size and weight of Teflon® insulated cable allows more circuits per conduit and eases installation in confined spaces. Teflon® insulated cables have outstanding resistance to chemicals, oils and solvents that often cause rapid deterioration of other insulating materials.

Item Number	AWG	Nominal Overall Dioameter
200-14FEP-*	14	0.109”
200-12FEP-*	12	0.126”
200-10FEP-*	10	0.150”
200-8FEP-*	8	0.223”
200-6FEP-*	6	0.264”
200-4FEP-*	4	0.328”
200-3FEP-*	3	0.370”
200-2FEP-*	2	0.397”

200°C (392°F) UL FEPB Insulated Building Cable 600V



Characteristics:

CHEMICAL RESISTANT | OIL RESISTANT | UV RESISTANT | EXTREME COLD | FLAME RESISTANT

Industries:

INDUSTRIAL | PETRO-CHEM

Features & Benefits

- Hard use
- Tinned Plated Copper
- FEP Insulated with Glass braid
- Bright colors aid in positive identification
- 200°C – Dry Locations

Applications:

UL Listed FEPB combines the superior qualities of Teflon® and the abrasion resistant characteristics of a fibrous braid. Thermal Wire and Cable FEPB is smaller in diameter than silicone rubber insulated cables yet retains the cut through, crush and abrasion resistance of braided cables.

Options:

- Multi-conductor versions
- Various colors available

Item Number	AWG	Nominal Overall Dioameter
200-14FEPB-*	14	0.110”
200-12FEPB-*	12	0.130”
200-10FEPB-*	10	0.150”
200-8FEPB-*	8	0.220”
200-6FEPB-*	6	0.230”
200-4FEPB-*	4	0.260”
200-3FEPB-*	3	0.340”
200-2FEPB-*	2	0.380”

150°C (302°F) Type Z (UL®) Listed General Wiring 600V 14AWG-4/0 AWG

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

INDUSTRIAL · PETRO-CHEM

Features & Benefits

- Abrasion resistant
- 100% glass-free and are OSHA acceptable
- High stress crack resistance and also a high flex life
- Meets National Electrical Code (NEC) latest edition
- Meets UL Subject 13 / UL Subject 83 / UL Subject 94
- NEMA HP-100/HP-100-2 WC-5 (ICEA S-61-402) WC-3 (ICEA S-19-81)

  Passes Verticle IEEE 383 at 210,000/61.5 KW BTU/HR (PVC,PVC-Nylon, XLPE Fail)
- Smaller connectors Smaller conduit
- Chemical resistant insulation
- 90°C Dry and Damp Locations 150°C Dry Locations-Special applications

Applications:

Thermal Wire and Cable LLC type Z Tefzel® insulated lead wire and power cables produce very little smoke when burned, is chemically inert to nearly all industrial chemicals and solvents. Tefzel® as a primary insulation couples superior dielectric properties is abrasion resistant, heat resistant and its' durability is second to none. Its' flexible nature and small diameter profile provides for easy, economical installations. Fully pigmented insulation in bright colors aids in positive identification. Compared to other high temperature cables that are augmented with a braid, Tefzel® insulated wire will slide rather than tear, yet its abrasion resistance helps eliminate cut-through and other damage that can occur during installation and use. Type Z conductors for general wiring are 20% smaller in diameter than braided cables allowing more circuits per conduit.

Item Number	AWG	Nominal Overall Dioameter
150-14Z-*	14	0.097”
150-12Z-*	12	0.114”
150-10Z-*	10	0.147”
150-8Z-*	8	0.210”
150-6Z-*	6	0.232”
150-4Z-*	4	0.320”
150-3Z-*	3	0.370”
150-2Z-*	2	0.396”
150-1Z-*	1	0.450”
150-1/0Z-*	1/0	0.516”
150-2/0Z-*	2/0	0.570”
150-3/0Z-*	3/0	0.579”
150-4/0Z-*	4/0	0.690”

150°C (302°F) Type ZW (UL®) Listed General Wiring 600V 14AWG-4/0 AWG

Characteristics:

CHEMICAL RESISTANT · OIL RESISTANT · UV RESISTANT · EXTREME COLD · FLAME RESISTANT

Industries:

INDUSTRIAL · PETRO-CHEM

Features & Benefits

- UL Wet Rated
- Abrasion resistant
- 100% glass-free and are OSHA acceptable
- High stress crack resistance and also a high flex life
- Fluoropolymer insulation provides for long term, trouble free performance in the most severe conditions
- Meets National Electrical Code (NEC) latest edition
- Meets UL Subject 13 / UL Subject 83 / UL Subject 94
- NEMA HP-100/HP-100-2 WC-5 (ICEA S-61-402) WC-3 (ICEA S-19-81)
- Passes Verticle IEEE 383 at 210,000/61.5 KW BTU/HR (PVC,PVC-Nylon, XLPE Fail)
- Smaller connectors Smaller conduit
- Chemical resistant insulation

Applications:

Thermal Wire and Cable ZW high performance wire utilize ethylene tetra Fluoroethylene (ETFE) insulation and are for use per the National Electrical Code for conductors for general wiring and in wet environments. The use of these cables reduce fire hazards n plants, such as petroleum refineries, chemical plants, and steel mill plants, paper mills, processing plants, and nuclear and fossil fuel generating plants. Its small diameter profile provides for easy, economical installations. Fully pigmented insulation in bright colors aids in positive identification.

Compared with other high temperature cables that are augmented with a braid, ZW wire will slide rather than tear, yet its abrasion resistance helps eliminate cut-through and other damage that can occur during installation and use.

Options:

- Insulation Thickness:
  - 14 - 10 AWG = 0.20 mm
  - 8 - 2 AWG = 0.30 mm
  - 1 - 4/0 AWG = 0.45 mm

Item Number	AWG	Nominal Overall Dioameter
150-14ZW-*	14	0.112”
150-12ZW-*	12	0.134”
150-10ZW-*	10	0.147”
150-8ZW-*	8	0.332”
150-6ZW-*	6	0.327”
150-4ZW-*	4	0.232”
150-3ZW-*	3	0.373”
150-2ZW-*	2	0.396”
150-1ZW-*	1	0.471”
150-1/0ZW-*	1/0	0.516”
150-2/0ZW-*	2/0	0.570”
150-3/0ZW-*	3/0	0.621”
150-4/0ZW-*	4/0	0.690”

THERMAL
Wire and Cable, LLC

We provide the right cable for the right job.
Questions? Contact us today!

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