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EMPOWERING PROCESS MANAGEMENT

FIBER GLASS INSULATED & SHEATHED THERMOCOUPLE WIRE:

FIBER GLASS INSULATION *is ideal for general application requiring moderate abrasion, moisture resistance & high temperature resistance. Designed for high temperature application in metal industries, forgings, aluminum, plastic processing equipments etc.*

APPLICATIONS	PRODUCT FEATURES
• *Manufacturing of Temperature Sensors*	• *Continuous use up to 500 °C*
• *Furnaces & Ovens*	• *Single exposure up to 650 °C*
• *Plastic Processing Equipments*	• *Good Thermal Durability & Strength*
• *Heat Treatment*	• *Flame Retardant*
• *Thermocouple Circuits*	• *Superior Abrasion Resistance*
• *Various Processing Industries*	• *Better flexibility*

PRODUCT SPECIFICTIONS:	
Conductor	*Solid or stranded thermocouple extension grade wires from 12 AWG to 22 AWG (2.44mm to 0.63mm)*
Core Insulation	*Braided Fiber Glass with high temperature impregnation **
Construction	*Parallel Conductors*
No. of Pair	*1*
Outer Sheath	*Braided Fiber Glass with high temperature impregnation **
SS JACKET	*Outside SS Metal braided*
Color Coding	*Confirms to ANSI MC 96.1 (International Color Codes available), Refer Table*

- *Impregnation maintained up to **200 °C**. Option for supply of wire without impregnation for continuous operation at elevated temperature.*
- *Other sizes in SWG and also different construction in other stranded sizes are available on request*
- *Optional construction of twisted conductors.*
- *Duplex construction are also available*
- *Optional Color coding: IEC 60584 – 3, BS 1843, DIN 13711, JIS C 1610 – 1981, NFC 42334 as per requirement*

TYPE OF TC	Metal Alloy + ve leg	Metal Alloy – ve leg	Thermal Tolerance
J	*Fe*	*Cu Ni*	*ASTM E 230 – ANSI MC 96.1 & IEC EN 60584 - 2*
K	*Ni Cr*	*Ni Al*	*ASTM E 230 – ANSI MC 96.1 & IEC EN 60584-2*
T	*Cu*	*Cu Ni*	*ASTM E 230 – ANSI MC 96.1 & IEC EN 60584- 2*
E	*Ni Cr*	*Cu Ni*	*ASTM E 230 – ANSI MC 96.1 & IEC EN 60584 - 2*
N	*Ni Cr Si*	*Ni Si*	*ASTM E 230 – ANSI MC 96.1 & IEC EN 60584 - 2*

- *Thermocouple wires are normally supplied to meet tolerance above 0 °C. If material is reqd. to meet tolerance below 0 °C, the purchaser should clarify the same in Purchase Order. Special selection of material is reqd.*
- *Initial calibration & Tolerance suggested, its requirement should be discussed well in advance before placing the order.*
- ***R & S** extension wires are also manufactured with copper as positive and different nickel alloys respective for R & S.*
- ***B** Type extension wire is manufactured with Copper as positive & negative for transition below 100 °C*

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TYPE OF CABLE	Wire Size AWG	Type of Wire	Type K	Type J	Type T	Type N	Type E
FIBER GLASS BRAID	7 * 32	Stranded	Kt-7*32 FF	Jt-7*32FF	Tt-7*32FF	Nt-7*32FF	Et-7*32FF
	24	Solid	Kt-24 FF	Jt-24FF	Tt-24FF		
	22	Solid	Kt-22 FF	Jt-22FF			
	20	Solid	Kt-20 FF	Jt-20FF			
	18	Solid	Kt-18 FF	Jt-18FF			
	16	Solid	Kt-16 FF	Jt-16FF			
	14	Solid	Kt-14 FF	Jt-14FF			
	12	Solid	Kt-12 FF	Jt-12FF			
FIBER GLASS BRAID WITH OUTSIDE SS METAL SHIELD	7 * 32	Stranded	Kt-7*32 FFS	Jt-7*32FFS	Tt-7*32FFS	Nt-7*32FFS	Et-7*32FF
	24	Solid	Kt-24 FFS	Jt-24FFS	Tt-24FFS		
	22	Solid	Kt-22 FF S	Jt-22FFS			
	20	Solid	Kt-20 FFS	Jt-20FFS			
	18	Solid	Kt-18 FFS	Jt-18FFS			
	16	Solid	Kt-16 FFS	Jt-16FFS			
	14	Solid	Kt-14 FFS	Jt-14FFS			
	12	Solid	Kt-12 FFS	Jt-12FFS			

- *FF – INSULATION & JACKET OF FIBER GLASS BRAID*
- *FFS – INSULATION & JACKET OF FIBER GLASS BRAID with Outside SS METAL BRAID*
- *Duplex construction are suffix with D i.e. KtD ___*
- *Extension & Compensating Grade Wire are suffix with e & c respectively*

Initial Calibration Tolerances as per ASTM E230 and ANSI MC96.1

Tolerance-Reference Junction 0°C (32 °F)

Thermocouple Designation	Temperature Range °C (°F)	Standard Grade Limits ° C (°F) whichever is greater	Special Grade Limits °C(°F) Whichever is greater
Thermocouple Grade Wires			
Jt	0 (32) to 750 (1382)	±2.2 (4.0) or ±0.75%	±1.1 (2.0) or 0.4%
Kt	0 (32) to 1250 (2282) -200 (-328) to 0 (32)	±2.2 (4.0) or ±0.75% ±2.2 (4.0) or ±2%	±1.1 (2.0) or 0.4% -----
Tt	0 (32) to 350 (662) -200 (-328) to 0 (32)	±1.0 (1.8) or ±0.75% ±1.0 (1.8) or ±1.5%	±0.5 (1.0) or 0.4% -----
Et	0 (32) to 900 (1652) -200 (-328) to 0 (32)	±1.7 (3.0) or ±0.5% ±1.7 (3.0) or ±1%	±1.0 (1.8) or 0.4% -----
Nt	0 (32) to 1300 (2372) -270(-454) to 0 (32)	±2.2 (4.0) or ±0.75% ±2.2 (4.0) or ±2%	±1.1 (2.0) or 0.4% -----
Extension / Compensating Grade Wires			
Jx	0 (32) to 200 (400)	±2.2 (4.0)	
Kx or Kc	0 (32) to 200 (400)	±2.2 (4.0)	
Tx	32 (0) to 100 (212)	±1.0 (1.8)	
Ex	0 (32) to 200 (400)	±1.7 (3.1)	
Nx or Nc	0 (32) to 200 (400)	±2.2 (4.0)	
Rc or Sc or Bc	0 (32) to 200 (400)	±5.0 (9.0)	

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