

A & A ALLOYS

AN ISO 9001:2015 CERTIFIED



WHAT WE ARE

A&A Alloys has been established since year 2003 at Ambala City, HARYANA. we are specialized manufacturer, supplier & distributor of all types of Electrical cables (LT Control & Power cables, Lead wires, Automotive wires, Heat resistance cables etc.), Instrumentation cables (Thermocouple cables, RTD cables, Signal cables, High temperatures cables, Network & Communication cables etc.), Lighting element & filament wires, Temperature sensors, Heaters and their accessories. Beyond these above solutions we are also in designing & manufacturing of electroplating plant such as Silver plated copper, Nickel plated copper & Tin plated copper conductors.

From our constant determination to deliver the quality, service and technical expertise we are providing our solutions to wide range of companies across broad spectrum of industries.

OUR SERVICES

We have a team of technical engineers on hand to answer any of our product related queries, from specifications & design enquiries. We can assist at pre-quotation stage by providing our customers with accurate product information and suitability of our product in their working environment, making sure the product selected is delivering the excellent performance they require.

If a bespoke product is required we can assist with the design, manufacturing, testing and approval process to achieve particular specifications.

Develop and maintain a customer relationship based on open communication, mutual trust and respect. Offer a fast and friendly service to all of our clients with providing high quality of products & services.

OUR VALUE ADDED GOALS

- | Technical assist for product
- | Customer service and support
- | Continued Quality Improvements
- | Leadership and Professional Growth
- | Innovation and Resource Managers
- | Customization Services
- | Competitive prices quality products and services

WHY A & A ALLOYS

As the industry has developed, we have developed, introduced new ranges and new technology to keep up with the growing demand from our customers worldwide.

QUALITY POLICY

“A & A ALLOYS” is always committed to maintaining consistent quality in our product with meeting all quality assurance tests of various national & international standards. It is committed to timely and successful completion of job to the entire customer satisfaction. We are committed to quality, Hence all our products and processes reflect our ongoing commitment to attaining the highest quality standards & Customer satisfaction. Customer satisfaction means the retention of assurance in “A & A ALLOYS” as a trusted and valued supplier.

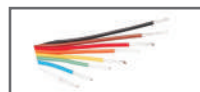




Thermocouple Cables



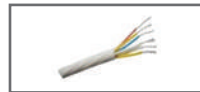
High Temperature Cables



PTFE Lead wires



Silicon Lead wires



Multicore PTFE Unshielded Cables



Multipair PTFE shielded Cables



Automotive Wires & Cables



Multicore Automotive Cables



Ignition Cables



Instrumentation Signal Cables



LT Power Cables



Halogen free Cables



High temperature Sleeves



Linear Heat Sensing (LHS) Cable



Load cell Cables



Solar Cables



Thermocouple Sensors



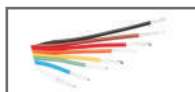
High Vacuum Polyimide wire



RTD Cables



Heat Resistance Cables



FEP Lead wires



Heater wires



Multicore PTFE Shielded Cables



Multipair PTFE Unshielded Cables



Wiring Harness



Battery Cables



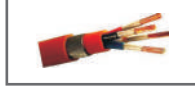
Fibre Glass Wires



LT Control Cables



Appliance Wires & Cables



Fire Resist Cables



Customized Cables



Accessories of Thermocouple & RTD



Trailing Cables



EPR Insulated Cables



RTD Sensors



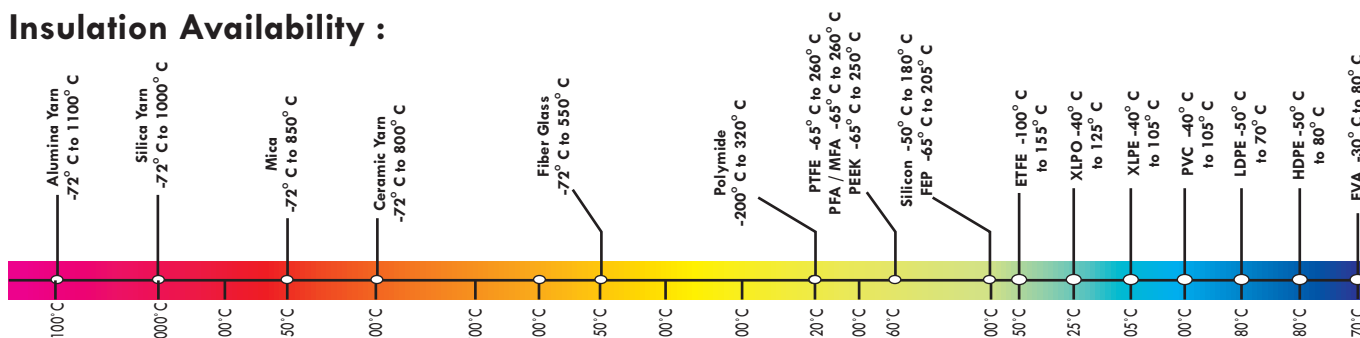
Electroplated conductor & Plant (SPC/NPC/TPC)



HIGH TEMPERATURE CABLES

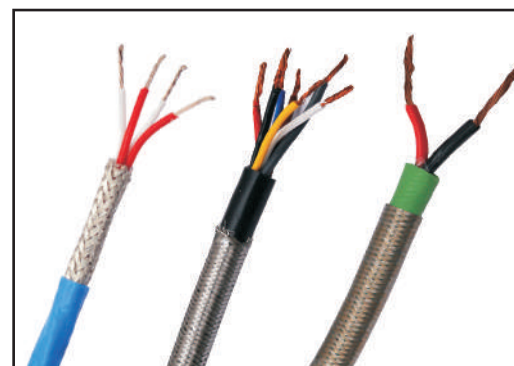
Choosing the right high temperature cable for high-heat environments, reduces unnecessary replacements and avoids downtime. We offer a variety of products with woven glass-braid jackets, ceramic yarn, alumina yarn and fluoropolymer insulation to handle continuous temperatures upto 1100°C. High temperature products from A&A ALLOYS include instrumentation & control cables, thermocouple extension cables, heat resistance power cables and variety of high temperature sleeves.

Insulation Availability :



Special Features :

- | Excellent Thermal stability
- | Outstanding Dielectric Strength
- | Multicore / Multipair option available
- | Superb chemical Resistance to acids, base & oxidizing agents
- | Flame Retardant / Fire Resist
- | Excellent Mechanical strength
- | Voltage Grade selectivity



Thermocouple & Extension Cables :

Thermocouple cables are available in thermocouple grade, extension grade & compensating grade. Extension & compensating cable is recommended for use in connecting thermocouples to the sensing or control equipment. Whereas thermocouple wire is used to measure the temperature directly.

Type	Conductor Used	Measuring & Ambient temperature	Used for
Thermocouple Cables	Use same conductor element as of original thermocouple (Class 1 accuracy)	Both Measuring & Ambient Up to thermocouple highest range	Used as a flexible thermocouple up to 1200 Deg C.
Extension Cables	Use same element as of thermocouple with lower accuracy	Measuring : Up to 900 °C with best accuracy Ambient : Up to 200 °C	Used to extend the signal from sensor to remote measuring instruments.
Compensating Cables	Made of different alloys which have similar thermo power characteristics as of thermocouple over a limited temperature.	Measuring : Up to 900 °C Ambient : Up to 100 °C	Cheapest solution to extend a signal from sensor to remote measuring instruments over a limited temperature range.

Special Features :































- | Standard/ Special accuracy as per IEC 60584.3 & ASTM E230/77 Single Pair/Multi Pair
- | Better selectivity of conductors as per your applications
- | Insulation range up to 1200 Deg C as per your application

A&A ALLOYS also provides special **Flexible Thermocouple** with male-female miniature connector having special accuracy as per IEC 60584.3, used for critical application to direct temperature measurement in the field of calibration & testing.





COLOR CODE AND ACCURACY CHART OF THERMOCOUPLE EXTENSION CABLES

TYPE	Thermocouple/Extension/ Compensating Type Cable			Conductor Material		IEC 584.3		ANSI MC 96.1/ASTM E230/77		Cable Ambient Temperature Range	Measuring Junction		
	Thermocouple (T)	Extension (X)	Compensating (C)	(+) leg	(-) leg	Color	Tolerance		Color			Tolerance	
							Class 1	Class 2				Class 1	Class 2
K	KT			Chromel	Alumel		$\pm 1.5^{\circ}\text{C}$ or 0.4 % of Temp.			$\pm 1.1^{\circ}\text{C}$ or 0.4 % of Temp.	-	0°C or 1100°C	1100°C
		KX		Chromel	Alumel		-	$\pm 2.5^{\circ}\text{C}$ or 0.75 % of Temp.		-	$\pm 2.2^{\circ}\text{C}$ or 0.75 % of Temp.	-25°C or 200°C	900°C
			KCA	Iron	Constantan		-	$\pm -2.5^{\circ}\text{C}$		-	$\pm +2.2^{\circ}\text{C}$	0°C or 150°C	900°C
			KCB	Copper	Constantan		-	$\pm +2.5^{\circ}\text{C}$		-	$\pm +2.2^{\circ}\text{C}$	0°C or 100°C	900°C
T	TT			Copper	Constantan		$\pm 0.5^{\circ}\text{C}$ or 0.4 % of Temp.	-		$\pm 0.5^{\circ}\text{C}$ or 0.4 % of Temp.	-	-25°C or 350°C	350°C
		TX		Copper	Constantan		-	$\pm 1.0^{\circ}\text{C}$ or 0.4 % of Temp.		-	$\pm 1.0^{\circ}\text{C}$ or 0.4 % of Temp.	-25°C or 100°C	300°C
J	JT			Iron	Constantan		$\pm 1.5^{\circ}\text{C}$ or 0.4 % of Temp.	-		$\pm 1.1^{\circ}\text{C}$ or 0.4 % of Temp.	-	-20°C or 700°C	700°C
		JX		Iron	Constantan		-	$\pm 2.5^{\circ}\text{C}$ or 0.75 % of Temp.		-	$\pm 2.2^{\circ}\text{C}$ or 0.75 % of Temp.	-25°C or 200°C	500°C
E	ET			Chromel	Constantan		$\pm 1.5^{\circ}\text{C}$ or 0.4 % of Temp.	-		$\pm 1.1^{\circ}\text{C}$ or 0.4 % of Temp.	-	0°C or 800°C	800°C
		EX		Chromel	Constantan		-	$\pm 2.5^{\circ}\text{C}$ or 0.75 % of Temp.		-	$\pm 1.7^{\circ}\text{C}$ or 0.75 % of Temp.	-25°C or 200°C	500°C
N	NT			Nicrosil	Nisil		$\pm 1.5^{\circ}\text{C}$ or 0.4 % of Temp.	-		$\pm 1.1^{\circ}\text{C}$ or 0.4 % of Temp.	-	0°C or 1100°C	1100°C
		NX		Nicrosil	Nisil		-	$\pm 2.5^{\circ}\text{C}$ or 0.75 % of Temp.		-	$\pm 2.2^{\circ}\text{C}$ or 0.75 % of Temp.	-25°C or 200°C	900°C
R/S			RCA / SCA	Copper	Copper Alloy		-	$\pm +2.5^{\circ}\text{C}$		-		0°C or 100°C	1000°C
			RCB/SCB	Copper	Copper Alloy		-	$\pm +2.5^{\circ}\text{C}$		-	$\pm +5.0^{\circ}\text{C}$	0°C or 200°C	1000°C
B			BC	Copper	Copper		-	-		-		-	-

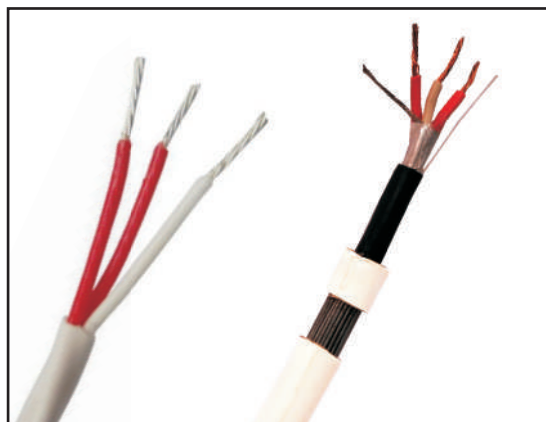
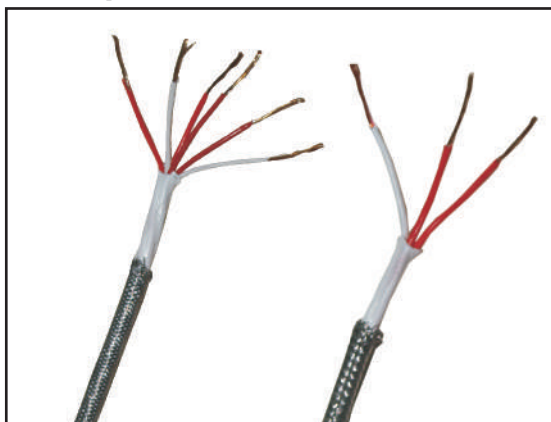
RTD Cables :

We offer wide range of RTD extension cables, generally copper instrumentation cables are used to interconnecting RTD sensors with your process instrumentation. Resistance in all wires in RTD cable remain almost same to get the best results. RTD cables are available in single or multi traid with variety of insulation PVC, PTFE, PFA, Silicon, Fiber glass etc.

Special Features :

- | Available with 2, 3,4,6,8 core / Multi-Traid specifications
- | Available with Solid / Flexible Bare Copper, Silver Plated Copper & Nickel Plated Copper Conductors
- | Better selectivity of insulation range
- | Voltage Grade selectivity 300V/600V/1100 V

Consecutively Design :



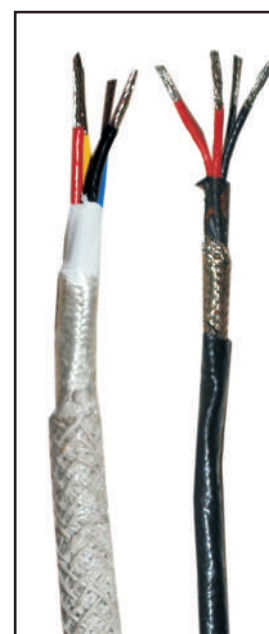


HEAT RESISTANCE CABLES (HR CABLES)

We offer wide variety of heat resistance power cable manufactured with combination of multiple insulations such as PTFE, FEP, Silicon, fiber glass, mica heat barrier tape, ceramic fiber and many more. We also provide solution of **Water Resist HR Cable**, mainly used in kiln application in Steel industry, where higher insulation resistance is require under water environment. Water resist cable can designed only up to maximum temperature 600 °C. Heat resistance cables are mainly used in glass, steel & Iron, Cement, Rolling mill & Ceramic factories.

HR CABLES CATEGORY WITH SPECIAL CHARACTERISTICS

A&A Special Design for	Special Features	Applications	Design	Remarks
(Sensoflex 1100) 1100 °C	1) Used to measure temperature directly as flexible thermocouple sensor up to 1100 °C 2)Excellent Heat Resistance (EHR) 3)Flame Retardant (FR) 4) Halogen Free (HF) 5)Lower diameter(LD) 6)Good corosion resistance (CR) 7) Good chemical resistance (CHR)	Calibration of industrial furnaces, Testing laboratories etc	Conductor : Thermocouple Grade Original conductor Insulation : High temperature yarn /High temperature yarn	1) For fixed installation only. 2) Not Water resistance 3) Lower dielectric strength 4) Recommended for single time use only over max temperature range 1100 °C.
(Sensoflex 800) 800 °C	1) Used to measure temperature directly as flexible thermocouple sensor up to 800 °C 2)Excellent Heat Resistance (EHR) 3)Flame Retardant (FR) 4) Halogen Free (HF) 5)Lower diameter(LD) 6)Good corosion resistance (CR) 7) Good chemical resistance (CHR)	Calibration of industrial furnaces, Testing laboratories etc	Conductor : Thermocouple Grade Original conductor Insulation : High temperature silica yarn /High temperature silica yarn	1) For fixed installation only. 2) For use in dry condition 3) Lower dielectric strength 4)Recommended for single time use only over max temperature range 800 °C
(Chemosens 800) 800 °C	1) This wire having excellent chemial resistance used to measure temperature directly as flexible thermocouple sensor up to 800 °C 2)Excellent Heat Resistance (EHR) 3)Flame Retardant (FR) 4) Halogen Free (HF) 5)Good Insulation resistance 6)Good corosion resistance	Calibration of industrial furnaces, Testing laboratories etc	Conductor : Thermocouple Grade Original conductor Insulation : Fiber glass & Asbestos lapping with PTFE colored Impregnated	1) For fixed installation only. 2) For use in dry condition 3) Lower dielectric strength 4)Recommended for single time use only over max temperature range 800 °C
(Heatflexo 800) 800 °C	1)Excellent Heat Resistance (EHR) up to 800 °C 2)Flexible 3)Flame Retardant (FR) 4) Halogen Free (HF) 5)Moisture resistance(MR) 6)Good Insulation resistance 7)Good dielectric strength 8) Good chemical resistance	1)Blast furnaces & Coking plants 2)Refineries 3)Glassworks 4)Aluminum & Steel Works	Conductor : NPC 27% Insulation : 6 times mica tape/ Double Silica Yarn Overall 6 times mica/Overall Silica yarn Braiding	1) Able to withstand temporary contact with molten metal or glass 2) For use in dry condition 3) Very short time use up to 1200 °C 4) For fixed Installation only
(Heatflexo 600) 600 °C	1)Excellent Heat Resistance (EHR) up to 600 °C 2) Flexible 3)Flame Retardant (FR) 4) Halogen Free (HF) 5)Moisture resistance(MR) 6)Good Insulation resistance up to 10 Mohm/Km 7)Good dielectric strength 8)Good mechanical strength 9)Good corosion resistance	1)Blast furnaces & Coking plants 2)Refineries 3)Glassworks 4)Aluminum & Steel Works	NPC (1.27 Micron) 6 times mica tape/Double Fiber Glass/Overall 6 times mica/Overall Fiber glass Braiding	1)Able to withstand temporary contact with molten metal or glass 2) For use in dry condition 3) Very short time use up to 900 °C 4) For fixed Installation only
(Heat Chem 600) 600 °C (Water Resistance)	1)Excellent Heat Resistance (EHR) upto 600 °C with excellent chemical resistance 2)Flame Retardant (FR) 3) Halogen Free (HF) 4)Water resistance 5)Excellent Insulation resistance 6)Excellent dielectric strength 7)Superb mechanical strength 8)Good corosion resistance	Used as power cable in high temperature environment in Iron & sponge industries such as 1)Rotary kiln, 2)Boiler 3)Blast furnaces etc	NPC (1.27 Micron) Kapton/Mica/Double PTFE/ Fiber Glass/Inner PTFE/Mica tape /Fiber Glass/Asbestos Braiding /SS Braiding	1) Able to withstand temporary contact with molten metal or glass 2) Excellent insulation resistance with outdoor application
(Powerflexo 600) 600 °C (Water Resistance)	1)Excellent Heat Resistance (EHR) up to 600 °C 2)Flame Retardant (FR) 3) Halogen Free (HF) 4)Water resistance 5)Excellent Insulation resistance 6)Excellent dielectric strength 7)Superb mechanical strength 8)Good corosion resistance	Used as power cable in high temperature environment in Iron & sponge industries such as 1)Rotary kiln, 2)Boiler 3)Blast furnaces etc	NPC (1.27 Micron) Kapton/Mica/Double PTFE /Fiber Glass/Inner PTFE/Mica tape/Fiber Glass /SS Braiding	1) Able to withstand temporary contact with molten metal or glass 2) Excellent insulation resistance with outdoor application
(Powerflexo 500) 500 °C (Water Resistance)	1)Excellent Heat Resistance (EHR) upto 500 °C 2)Flame Retardant (FR) 3) Halogen Free (HF) 4)Water resistance 5)Excellent Insulation resistance 6)Excellent dielectric strength 7)Superb mechanical strength 8)Good corosion resistance	Used as power cable in high temperature environment in Iron & sponge industries such as 1)Rotary kiln, 2)Boiler 3)Blast furnaces etc	Annealed Bare Copper Kapton/Extra thick PTFE layer/ Kapton/Inner Teflon /Mica/Fiber Glass/SS Braiding	1) Able to withstand temporary contact with molten metal or glass 2) Excellent insulation resistance with outdoor application

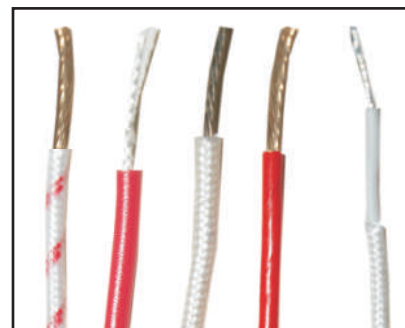




LEAD WIRES/HOOK UP WIRES (PTFE, FEP, SILICON, POLYIMIDE, FIBER GLASS)

We offer variety of standard and custom PTFE insulated hook up wires as per military standard JSS5 51034 & MIL-W-16878. PTFE wires are available with Silver plated copper, Nickel plated copper & Bare copper. Beyond PTFE hook up wires we also offer FEP, Fiber glass, Polyimide insulated wires for Defense, Nuclear, Aerospace & other applications.

Type	ET	E	EE
Voltage Grade	250 V	600 V	1000 V
Tested Voltage	1000 VAC	2000 VAC	3000 VAC



Special Features

- | Available with Solid / Multistrand
- | Available with Copper, NPC, TPC, SPC & Pure Nickel Conductors
- | Shielded / Unshielded
- | Better selectivity of insulation range up to 800 Deg C as per your application
- | Voltage Grade selectivity 250V/600V/1100 V.

PTFE LEAD WIRES AS PER JSS 51034/MIL-W-16878

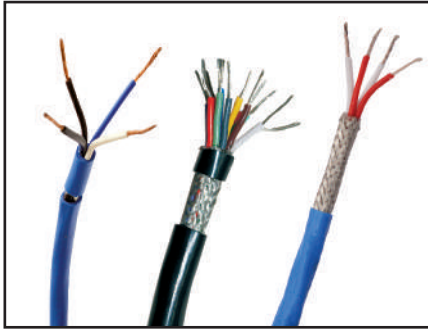
Size	Number of Strands/ Dia of each Strand	NOS X Strands	Cross Sectional Area	ET 250 V		E 600 V		EE 1000 V		Max Resistance at 20°C (Ω/KM)	Currant Rating (Amps)	Approx. WEIGHT (Kg/Km)
				OD of Wire		OD of Wire		OD of Wire				
AWG	AWG	Nos/mm	mm ²	MIN. (mm)	MAX. (mm)	MIN. (mm)	MAX. (mm)	MIN. (mm)	MAX. (m)			
32	7/40	7/0.08	0.25	0.5	0.59	0.66	0.87	0.91	1.11	567	0.7	2.29
30	1/30	1/0.25	0.25	0.5	0.59	0.66	0.87	0.91	1.11	354	1	2.41
30	7/38	7/0.10	0.31	0.56	0.65	0.72	0.93	0.97	1.17	330	1	2.64
28	1/28	7/0.32	0.32	0.57	0.66	0.73	0.94	0.98	1.18	223	2.1	2.90
28	7/36	7/0.13	0.38	0.63	0.72	0.79	1	1.04	1.24	209	2.1	3.19
26	1/26	1/0.40	0.4	0.65	0.74	0.81	1.02	1.06	1.26	140	3	3.53
26	7/34	7/0.16	0.48	0.73	0.82	0.89	1.1	1.14	1.34	132	3	3.90
26	19/38	19/0.10	0.51	0.76	0.85	0.92	1.13	1.17	1.37	125	3	4.07
24	1/24	1/0.51	0.51	0.76	0.85	0.92	1.13	1.17	1.37	87	4	4.56
24	7/32	7/0.20	0.61	0.86	0.95	1.02	1.23	1.27	1.47	82	4	4.99
24	19/36	19/0.13	0.64	0.89	0.98	1.05	1.26	1.3	1.5	79	4	5.37
22	1/22	1/0.64	0.64	0.89	0.98	1.05	1.26	1.3	1.5	55	7.3	6.00
22	7/30	7/0.25	0.76	1.01	1.1	1.17	1.38	1.42	1.62	52	7.3	6.54
22	19/34	19/0.16	0.81	1.06	1.15	1.22	1.43	1.47	1.67	49	7.3	7.04
20	1/20	1/0.81	0.81	1.06	1.15	1.22	1.43	1.47	1.67	34	11	8.23
20	7/28	7/0.32	0.97	1.22	1.31	1.38	1.59	1.63	1.83	32	11	9.12
20	19/32	19/0.20	1.02	1.27	1.36	1.43	1.64	1.68	1.88	30	11	9.57
18	7/26	7/0.40	1.22			1.63	1.92	1.86	2.08	20	16	12.70
18	19/30	19/0.25	1.27			1.68	1.97	1.93	2.13	18	16	13.32
16	19/29	19/0.29	1.45			1.86	2.15	2.11	2.45	14	22	17.87
15	19/28	19/0.32	1.6			2.01	2.3	2.26	2.6	12	26	20.84
14	19/27	19/0.36	1.83			2.24	2.53	2.49	2.83	9	32	25.26
13	19/26	19/0.40	2			2.41	2.7	2.66	3	7	35	29.92
12	19/25	19/04.45	2.31			2.72	3.01	2.97	3.31	5	41	36.67
12	37/23	37/0.32	2.26			2.67	2.96	2.92	3.26	6	41	36.09
11	19/24	19/0.50	2.5			2.91	3.2	3.16	3.5	4	45	43.70
10	19/22	19/0.65	3.35			3.76	4.05	4.01	4.35	2	55	69.73
10	37/26	37/0.4	2.82			3.23	3.52	3.46	3.82	3	50	53.05
8	133/29	133/0.29	4.29					4.95	5.29	2	75	95.22
6	133/27	133/0.36	5.8					6.46	6.8	1	100	143.10



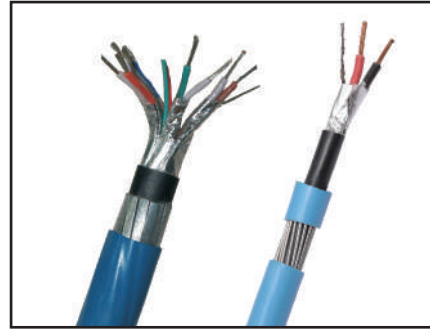
CONTROL & INSTRUMENTATION CABLES

We offer wide range of control & instrumentation cables in multicore, multipair & multitraid designs. Control cables are used for encoder/resolvers, flow meters, pressure meters, programmable limit switches, programmable controllers, load cell monitors and much more. Instrumentation cables are used in data acquisition systems, computer networking, PA systems, digital control / measuring & communication systems.

Control Cables



Instrumentation Cables



Special Features :

- | Flame retardant / Fire proof
- | Halogen free special cable
- | Options for insulation range up to 400 Deg C as per your application
- | Shielded / Unshielded control cables
- | Armoured / Unarmoured
- | Available customized design according to customer application.
- | Voltage Grade selectivity 300V/600V/1100 V

POWER CABLES

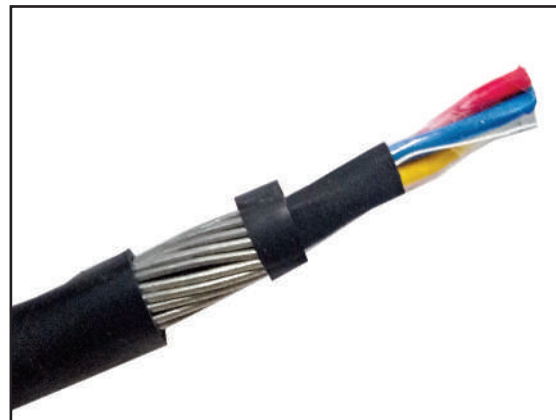
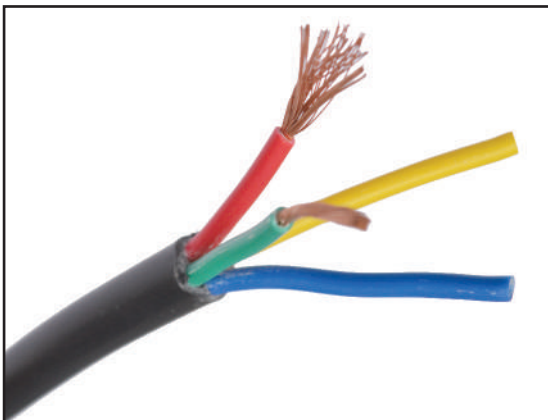
We offer a wide range of PVC & XLPE insulated Armoured and Unarmoured Power Cables. Power cables are used in connection of power supply in power plant, residential, commercial & industrial units. These are mainly confirming to IS 1554, IS 7098 & IEC 60502-1 standard.

Unarmoured type power cables are used for electrical power, lighting & Internal wiring, these are mainly confirming to IS 694, IEC 60227 standards.

High temperature option is also available in power cable with PTFE, FEP, Silicon & Fiber glass insulation.

Special Features :

- | Available with Single / Multicores
- | Available with Solid / Flexible Bare Copper & Tin Plated Copper Conductors
- | Armoured/Unarmoured
- | Options for insulation range up to 600 Deg C as per your application
- | Voltage Grade selectivity up to 1100 V.



AUTOMOTIVE WIRES

A&A Alloys offers wide range of automotive wires including primary automotive wires & battery cables. Automotive primary wires are used at normal voltage for general wiring needs. Automotive primary wires mainly comes with two categories PVC and Cross-Linked. Cross-linked automotive wire can withstand much higher temperatures than PVC automotive wire

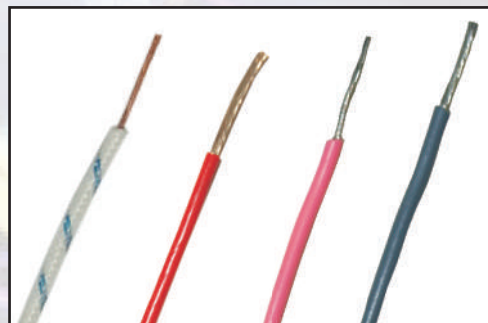
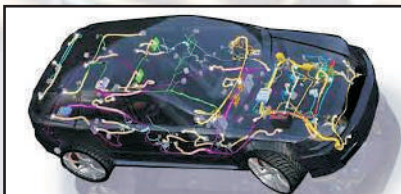
PRIMARY AUTOMOTIVE WIRES

PVC Automotive wires

- GPT Used for general circuit wiring and rated to 80 °C
- TWP Lead-free, thin wall automotive wire rated to 105 °C
- HDT Heavy wall automotive wiring rated to 80 °C

Cross Linked automotive wires

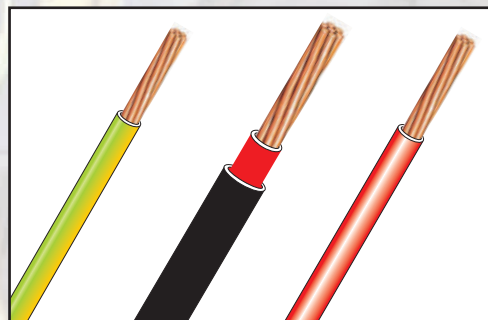
- GXL Thin wall, most common type, works with most standard automotive connectors, rated to 125 °C
- SXL Standard wall, rated to 125 °C
- TXL Extra thin wall, best for applications that require minimal size and weight, rated to 125 °C



BATTERY CABLES

Battery cable is large automotive cable. Automotive battery cables are available in a range of sizes. Like automotive primary wires Battery cables also come with PVC & cross linking insulations.

Battery cables are also available with Silicon rubber insulation to meet the extra flexibility & higher temperature range.



Special Features :

- | The insulation of the wire makes them long-lasting, electrically stable, resistance to abrasion, grease, moisture & dirt.
- | The wire functions across temperatures of -30° C to 200° C.
- | The wire can be used to wire electrical systems with a voltage range of 12 V to 24 V.
- | A variety of color and striping options are available.
- | The wire performs exceptionally well even in high vibration applications.

Applications :

In High & Low Voltage Automotive applications such as :

- | Battery Cables
- | Car Speakers
- | Breaks
- | Relays
- | Fuse Blocks
- | Off Road Vehicle

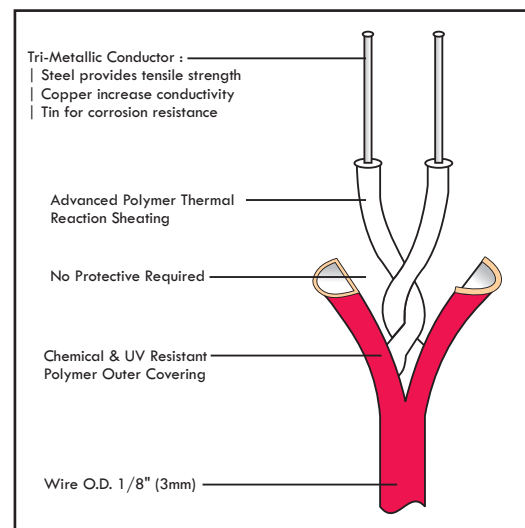


LHS (LINEAR HEAT SENSING) CABLES

Linear heat sensing cable is designed to detect the fire conditions in critical applications across industries. LHS Cable consist two twisted cores of very low conductor resistance tri-metallic conductors, insulated & sheathed with advance thermal polymers. These advance thermal polymers have characteristics to breakdown at fixed temperature, results in allowing twisted conductors to make a contact and initiate an alarm in fire system. Selection of LHS cable for fastest alarm response is determined from maximum ambient temperature of the hazardous area or equipment to be protected.

Applications :

- | | |
|------------------------------------|-----------------|
| Switchgear | Elevator shafts |
| Tunnels | Cooling towers |
| Bridges | Conveyors |
| Cable spreading rooms | Cable trays |
| Terminal rooms | Generators |
| Floating roof tanks | Parking decks |
| Aircraft Hangers | Engine bays |
| In-rack freezer and cooler storage | In-cabinet |
| Alarm and trouble resound | Motors |



Special Features :

- | Easy to install and low maintenance
- | Economical, reliable and durable detection
- | Minimal false alarms
- | Detect heat anywhere along the entire length of cable
- | Provides hazard coverage at every point on the cable for maximum protection
- | Available for various fixed temperature (68°C/78°C/88°C/105°C/150°C/230°C).

Alarm temperature range	68°C	78°C	88°C	105°C
Ambient temperature	Up to 45°C	Up to 55°C	Up to 65°C	Up to 80°C
Used for	Digital Sensing			
Application	Indoor/Outdoor			
Conductor Material	Tri-metallic conductor (SS+Tin+Copper)			
Conductor dia	0.91 to 0.98 mm			
Type of Insulation	Advance thermal polymer			
Type of sheath	Advance thermal polymer			
External diameter	3.35 mm	3.35 mm	3.35 mm	3.35 mm
Color	Red	Yellow	Light Green	Dark Green
Conductor Resistance@20°c	100 Ohms/Km			
Capacitance	88 to 150 pF/mtr			
Inductance	540-1050 H/mtr			
Insulation rating	1000 Megaohms/Km			

EPR INSULATED CABLES

We are providing EPR Insulated fire resist cable, trailing cables & customized cables. Trailing cables are used for high mechanical stress, especially in applications with frequent winding and unwinding with simultaneous tensile and torsion stress. These cables are frequently used in building machinery, conveyors, lifting systems and cranes with almost every industry segment like Steel Mills, Cement plants, Docks, Power Plants, Automobile Industries & Refineries and Petrochemicals.

Beyond These EPR Insulated Cables we are also providing Neoprene Rubber Cable & TRS Insulated Cables. Types of Cables provided from these above insulations :

| Fire Resist Cables | Trailing Cables | Power Cables
| Thermocouple compensating Cables | Composite Cables

Special Features :

- | | |
|---|--------------------|
| High tensile strength | Flexible |
| Comply to IS 9968 & international standard | Chemical resistant |
| Durable | Fine finish |
| Water resistance | |
| Max conductor temperature 90°C for continues use & 250°C for short term use | |



WELDING CABLES

Welding cable is used to provide the connection between welding apparatus and welding tool. We provide high performance flexible welding cables manufactured in accordance with various international standards such as BS638 Part 4, BS EN/IEC 60332, BS EN 50525-2-81 & many more. Our welding cables are designed to carry high currents under tough conditions & capable to withstand at higher temperature.



RUBBER HOSE PIPE

We manufacture Rubber hose pipes, used to transport liquid, material & gases under pressure in diversity of applications such as agriculture, Mining, Construction, Civil Engineering, Manufacturing, Food processing, Oil refineries, Chemical plants etc. We provide these hoses in various types of rubbers like Neoprene Rubber Hoses, Natural Rubber Hoses, EPDM Rubber Hoses, Nitrile Rubber Hoses, Silicone Rubber Hoses, Viton Rubber Hoses, SBR Rubber Hoses etc.

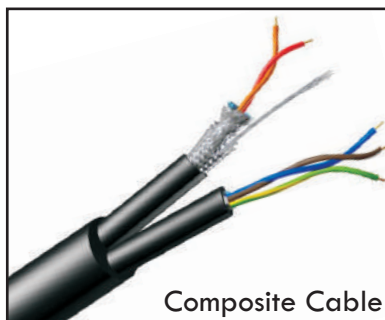
We are the manufacturing unit of

- | | |
|-----------------------|----------------------------------|
| Rubber Hoses | Nitrile |
| Neoprene | Hoses |
| EPDM & Natural Rubber | All Typees of Hosees in Silicone |



OTHER CABLES & SLEEVES

- | RS-485 & Modbus Cables
- | Composite Cables
- | Heat Tracer Cables
- | HVCR Cables
- | PTFE Sleeves
- | Fiber Glass Sleeves



THERMOCOUPLE SENSORS

We offer thermocouple that are widely used in Various industries as temperature sensing element. A wide range of temperature from -50°C to 1600°C are available. All standard element sizes are available with weather proof and explosion proof heads. Insulation is provided by means of mineral insulation of ceramics beads with grounded or underground junction.

Base Metal Thermocouple :
 Type : K, T, J, E, N, R, S
 Protection Sheath Material : Seamless SS316, SS310, HRS 446,
 Nickel Hastalloy, Ceramic,
 Silicon Carbide, Titanium, Monel Etc.
 Configurations : Simplex, Duplex, Multi Point



Base Metal Thermocouple :
 Type : K, T, J, E, N, R, S
 Protection Sheath Material : Ceramic (KER-710) 610, Silicon
 Carbide, Inconel Etc.
 Configurations : Simplex, Duplex, Multi Point
 Length : As per requirement.

SPECIAL THERMOCOUPLE

- | Miniature Thermocouple with minimum 0.25 mm dia.
- | Squeezed Thermocouple with small tip dia.
- | Tri-Level Thermocouple.
- | Coated Thermocouple (Ceramic, Tungsten Carbide, PTFE, Steatite etc.
- | High Temperature ceramic spout limit.
- | Special Sensors as per ASTM-E235.
- | W/WR Suitable upto 2300°C



GLASS THERMOCOUPLE

- | Fore-Hearth Thermocouple
- | Distributors Thermocouple
- | Furnace Bottom Thermocouple
- | Furnace Crown Thermocouple
- | Refiner Thermocouple
- | Spout Bowl Thermocouple
- | Annealing Lehr Thermocouple
- | Stack/Flue Gas Thermocouple
- | Tin Bath Thermocouple
- | Glass Level Probes
- | Compensating Cables
- | Quick Disconnecting Connectors
- | Pressure Probes

REFERENCE TABLE FOR THERMOCOUPLE

Thermocouple Reference Data (ITS 90) mV v/s Temperature

TYPE		"I" Cu-CuNi	"J" Fe-CiNi	"K" NiCr-NiAl	"N" NiCr-NiAl	"S" PtRh-10%-Pt	"R" PtRh 13%-Pt	"B" PtRh 13% Pt	"E" NiCr-CuNi
Tolerances	Standard	$\pm 1^{\circ}\text{C}$ or $\pm 0.75\%$	$\pm 2.2^{\circ}\text{C}$ or $\pm 0.75\%$	$\pm 2.2^{\circ}\text{C}$ or $\pm 0.75\%$	$\pm 2.2^{\circ}\text{C}$ or $\pm 0.75\%$	$\pm 1.5^{\circ}\text{C}$ or $\pm 0.25\%$	$\pm 1.5^{\circ}\text{C}$ or $\pm 0.25\%$	$\pm 0.5\%$	$\pm 1.7^{\circ}\text{C}$ or $\pm 0.5\%$
	Special	$\pm 0.5^{\circ}\text{C}$ or $\pm 0.04\%$	$\pm 1.1^{\circ}\text{C}$ or $\pm 0.04\%$	$\pm 1.1^{\circ}\text{C}$ or $\pm 0.04\%$	$\pm 1.1^{\circ}\text{C}$ or $\pm 0.04\%$	$\pm 0.6^{\circ}\text{C}$ or $\pm 0.1\%$	$\pm 0.6^{\circ}\text{C}$ or $\pm 0.1\%$	800°C	$\pm 1^{\circ}\text{C}$ or $\pm 0.4\%$
TEMPERATURE °C	-100	-3.379	-4633	-3.554	-2,407	-	-	-	-5,237
	0	0	2	0	0	0	0	0	0
	100	4,279	5,269	4,096	2,774	0,646	0,646	0,033	6,319
	200	9,288	10,799	8,138	5,913	1,441	1,469	0,178	13,421
	300	14,862	16,327	12,209	9,341	2,323	2,401	0,431	21,036
	400	20,872	21,484	16,397	12,974	4,233	3,408	0,787	28,946
	500	-	27,393	20,613	16,748	5,239	4,471	1,242	37,005
	600	-	33,102	24,129	20,613	6,275	5,583	1,792	45,093
	700	-	39,132	33,275	24,527	7,345	6,743	2,431	53,112
	800	-	45,494	37,326	28,455	8,499	9,950	3,154	61,017
	900	-	-	41,276	32,371	9,587	9,205	3,957	76,373
	1000	-	-	45,119	36,256	10,757	10,506	4,834	
	1100	-	-	48,838	40,087	11,951	11,850	5,780	
	1200	-	-	50,644	43,846	12,554	13,228	6,786	
	1300	-	-	52,410	45,694	13,159	13,926	7,311	
	1400	-	-	-	47,513	14,373	14,629	7,848	
	1500	-	-	-	-	15,582	16,040	8,956	
	1600	-	-	-	-	-	17,451	10,099	
	1700	-	-	-	-	-	-	11,263	
	1800	-	-	-	-	-	-	12,433	

RESISTANCE TEMPERATURE DETECTOR

As the name implies RTD's are sensors used to measure temperature by correlating the resistance of the RTD element with temperature. These are the most precise type of sensors in the range 200°C to 600°C. Basic sensing element platinum coil having resistance 100 ohms at 0°C. The insulation is provided by means of ceramic beads, Teflon sheath or Mineral Insulation (MGO). Assembly is provided as Simplex, Duplex or Triplex with 2,3,4 or 6 wire configuration and die cast Aluminium weather proof or explosion proof heads.

MINERAL INSULATION RTD's

Type : PT-100, 200, 500, 1000; Copper : 50, 53 etc.
 Element Size (MI) : Wire Wound Ceramic encapsulated
 Wire Wound Glass encapsulated
 Thin Film Ceramic encapsulated
 Connection : 2, 3, 4, 8 Wire
 Accuracy : Classs A,B1/2 ,1/3,1/5,1/10 din
 Protection Sheath : SS304, SS316 , SS310 , Inconel, Hastalloy, Monel etc.



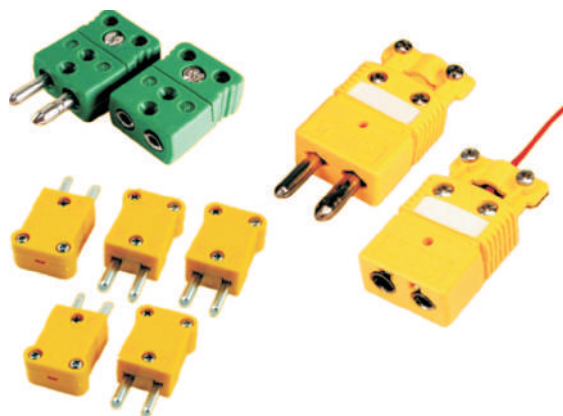
SPECIAL RTD

- | Slide Shoe RTD's
- | Vibration proof RTD's for DG Sets
- | Motor and transformer winding temperature RTD's
- | Handheld and probe in various design
- | RTD's with Thermowells
- | Strap on RTD's for Nuclear
- | High Temperature RTD's upto 1/10 DIN
- | Semi Standard PRTs

For connecting Thermocouple and RTD's with measuring equipment.

CONNECTORS

- | Plug and Jack compensated Connectors for Thermocouples.
- | K, J, R, S, B, T, E Types.
- | Standard, Miniature, Panel mounted, Simplex, Duplex.
- | Material, Special PVC and Ceramic Thermocouples compensated Standard MI.



CONNECTION HEADS

- | | | |
|-------------|---|--------------------------------------|
| Material | : | Dia Coast Aluminium, SS |
| Protection | : | Weather Proof or explosion Proof |
| Cable Entry | : | Single/Double 1/2" NPT/BSP, 1/4" ET. |

THERMOWELLS

A wide range of thermowell for almost temperature sensing requirement in high & low temperature, High pressure, High Velocity corrosive and abrasive media.

These are available as desired from bar stock or fabricated from tubes/pipes with threaded or flanged connection. The shank being straight or tapered as per requirement.



MOUNTINGS

S.S. or Cast aluminium flange for adjustable immersion lengths. Screwed connected of 1/4", 3/8", 1/2", 5/8" or 3/4" BSP or NPT etc. and also compression fittings as per requirement.

Weld on high pressure flange upto 100Kg/Sqr.cm or more pressured in large no. of custom built design.



ELECTROPLATED COPPER CONDUCTORS

We are manufacturing electroplate copper wire with coating of Silver, Nickel & Tin to provide a conductive, corrosion resistant & solderable surface. Plating thickness is obtained as per various ASTM standards or individual customer requirements. We can manufacture plated wire from size 38 AWG (0.102mm) to 12 AWG (1.63 mm).

Product	Norms	Plating Specification
Silver Plated Copper	ASTM B298	1 Micron to 10 Micron
Nickel Plated Copper	ASTM B355	2%, 6%, 10 % & 27% nickel of total weight
Tin Plated Copper	ASTM B33	1.5 Micron to 21 Micron

NICKEL PLATED COPPER (NPC 27 % & OTHERS)

Nickel plating is provided on copper wire to enhancing the corrosion resistance properties, durability & stability at extremes of temperature. We provide special NPC 27% (by weight) to meet significant protection over extreme temperature up to 750° C.

Applications :

- | Application with high thermal & chemical demands
- | Wires used in Heater applications
- | High frequency applications
- | Aerospace | Military | Litz Wire



SILVER PLATED COPPER

Silver plating over copper conductor provide excellent conductivity, corrosion resistant property and bright & shiny surface. Due to these extraordinary characteristics it is favorable choice to use over high frequency applications.

Applications :

- | PTFE Lead wire for control panel wiring | Textile wire
- | Aerospace | Microcables
- | Defense | Military wires
- | High frequency applications | Medical Sector



TIN PLATED COPPER

We are manufacturing Tin plated copper wire from both technique electroplating as well as hot dip. Due to its excellent solderability properties & corrosion resistant it is widely used in wire harnessing & crimping applications. Tin plated copper wire prevent environmental driven corrosion hence it is very much suitable for signal & instrumentation cables.

Applications :

- | Control & Instrumentation cables | Battery Cables
- | Lead wire for wire crimping | Solar Cables
- | Automotive wires

Solid Round Wire : from 38 AWG to 14 AWG

Stranded multiple Wires :

from AWG 30 to 12 AWG

(generally in 7,19,37,61 stranded style)



**BEYOND THESE ELECTROPLATED CONDUCTORS
WE ARE ALSO PROVIDING COMPLETE
ELECTROPLATING PLANT & IT'S TECHNOLOGY
FOR SPC, NPC, TPC CONDUCTORS.**



A & A ALLOYS

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