

HEC™

BALTRON

WIRES & CABLES

FOR INDUSTRIAL USE

BALTRON SCREENED CABLES



INSTRUMENTATION CABLES

Instrumentation Cables are specially designed to transmit signals without any external interference. They are used in Data Acquisition Systems, connection to Instruments, Computer Networking, PA Systems, Digital / Analog Control/Measuring & Communication Systems.

Construction	: Cores, pairs, triads or quads
Voltage Grade	: Up to 1100V
Conductor	: Electrolytic grade copper Bare / Tinned Solid / Stranded / Flexible Conductors
Range	: 0.5 / 0.75 / 1.0 / 1.5 / 2.5 Sq mm up to 48 Pair
Primary Insulation	: General purpose PVC / Heat Resistance PVC / LDPE / XLPE / PTFE / Fibre Glass / FEP / Silicone Rubber
Screening	: Individual and / or Overall with following options - - Aluminium Mylar / Copper Tape with Tinned Copper Drainwire or - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Inner Sheath	: PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF
Armouring	: GI round Wire / Flat strip or Wire Braiding
Outer Sheath	: PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF
Rip Cord	: For easy removal of sheath
Standards	: BS-5308 Part - 1 & 2, BS-7655, IEC - 189 (1 & 2), VDE-0815 & 0816 and BS EN 50288
Additional Features	: Communication pairs, Bi-colour extrusion.

TECHNICAL DATA

Conductor Resistance 20°C Ohms / Km	Conductor Size mm ²	0.5	0.75	1.0	1.5	2.5
	Maximum Resistance	39.0	26.0	19.5	13.3	7.98
Capacitance nf/Km	Between Conductors	Less than 250 nf / km				
	Between Conductors & Screen	Less than 400 nf / km				
Inductance mH / Km		Less than 1.0				
L/R Ratio µH/Ohm	Conductor Size mm ²	0.5	0.75	1.0	1.5	2.5
	LR	<25	<25	<25	<40	<40
Insulation Resistance at 20°C M ohm-Km	PVC	More than 100				
	PVC	More than 5000				
Electrostatic noise rejection ratio		More than 76.0 db				

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THERMOCOUPLE EXTENSION / COMPENSATING CABLE

- Construction** : Single or Multiple Pairs
- Voltage Grade** : Up to 1100 V
- Cable Code** : Kx, Kx(A), Tx, Jx, Ex, Sx / Rx, Bx, Nx, Ux, Wx
- Range** : 16 AWG / 18 AWG / 20 AWG up to 48 Pairs
- Primary Insulation** : General purpose PVC / Heat Resistance PVC / LDPE / XLPE / PTFE / Fibre Glass / FEP / Silicone Rubber
- Screening** : Individual and / or Overall with following options -
- Aluminium Mylar / Copper Tape with Tinned Copper Drain wire or
 - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
- Inner Sheath** : PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF / PTFE / Fibre Glass
- Rip Cord** : For easy removal of sheath
- Standards** : ANSI:MC-96, 1 IS -8784, DIN, BS & IEC 584-3

Note : Other conductor sizes and insulation materials on request.

TECHNICAL DATA

CABLE CODE		Kx	Kx(A)	Tx	Jx	Ex	Sx/Rx
CABLE TYPE		EXT.	COMP	EXT.	EXT.	EXT.	COMP
CONDUCTOR	+ve leg	Chromel	Copper	Copper	Iron		Copper
	-ve leg	Alumel	Constantan	Constantan	Constantan	Constantan	Copper Alloy
Suitable for Thermocouple Type		Kx	Kx(A)	Tx	Jx	Ex	Sx/Rx
Conductor Combination		Chromel	Chromel	Chromel	Iron	Chromel	Platinum 10/13% Rhodium Platinum
		Alumel	Alumel	Constantan	Constantan	Constantan	
Temperature range °C of measuring junction		0 to +1100	☆	-185 to +300	+20 to +700	0 to +800	0 to +1500/0 to +1600
Applicable Standard for Output of Thermocouple conductors		BS4937 Part 4 ANSI/MC 96.1 type K DIN 43710 NF C 42-321 JISC 1602	☆	BS4937 Part 5 ANSI/MC 96.1 type T NF C 42-321 JISC 1602	BS4937 Part 3 ANSI/MC 96.1 type J NF C 42-321 JISC 1602	BS4937 Part 6 ANSI/MC 96.1 type E NF C 42-321 JISC 1602	BS4937 Part 6 ANSI/MC 96.1 type S, R, NF C 42-321 JISC 1602
COLOUR CODING							
Approximate generated 100°C EMF change per °C mV/C at 500°C		42		46	46	68	8/8
		43		-	56	81	9/10
<p>Notes : ☆Used for interconnecting Type 'K' thermocouple and instrumentation as an alternative type 'k' material. Only used where the interconnection temperature is in the range 0°C to +80°C</p> <p>We can also offer NX , UX and WX Cable Kx(A) - also known as Vx</p>							



INDIVIDUAL AND OVERALL SHIELDED

INSTRUMENTATION CABLE PER BS 5308 PART 1 TYPE 1

Application : For cable tray installation in intrinsically safe environment.
For transmission of analog or digital signals designed for process control.

Standard : BS 5308 Part 1

CONSTRUCTION

Conductor : Stranded annealed bare copper complying with BS 5308 Part 1

Insulation : Polyethylene complying with BS 6234 Type 03 with a radial thickness pairs of 0.6 mm

Pairs : Two cores are twisted into pairs in nominal lays of 50 to 60 mm

Colour Code : Black / white with successive numbers, or per colour code confirming to BS 5308 Part 1

Individual : Each pair is individually shielded

Shielding : with a polyster / aluminium (AL/PET) foil, aluminium side facing inwards; 125% coverage

Pair drain Wire : 0.5 mm tinned copper

Cabling : The pairs are cabled into a cable core

Overall : Shielded with a polyster / aluminum

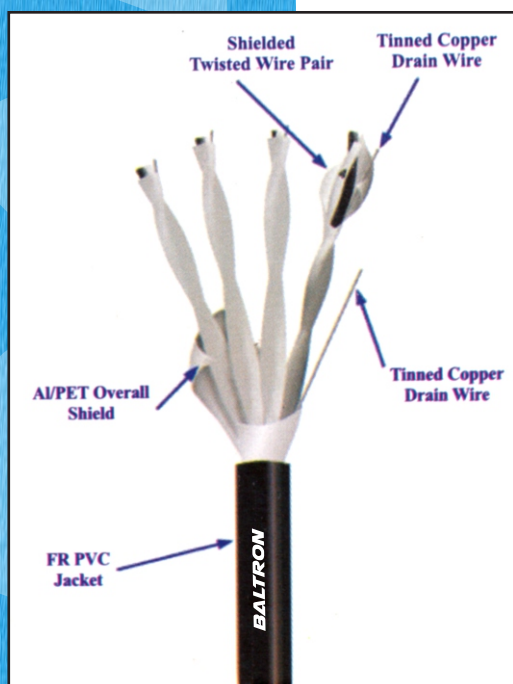
Shielding : (AL/PET) foil, aluminum side facing inwards. 100% coverage.

Pair drain Wire : 0.5 mm tinned copper

Outer Jacket : Black FR PVC complying with BS 6746 Type 6

ELECTRICAL PROPERTIES

- **Max DC Resistance @ 20°C**
0.5 mm² - 39.7 Ohm / km
0.75 mm² - 26.5 Ohm / km
1.0 mm² - 18.5 Ohm / km
1.5 mm² - 12.3 Ohm / km
- **Mutual capacitance**
@25° C/1kHz
- **Dielectric Strength :**
Insulation - 2000 Vdc / 1 min.
Between conductors
sheath - 5000 Vdc / 1 min
- **Marking**



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“BALTRON” a wide variety of cables suitable for process instrumentation. In the projects related to power generation & distribution, chemical & fertilizer industries and various other types of engineering industries, the process instrumentation plays a vital role in measurement, supervision and control of the process. Introduction of microprocessor based / computerised instrumentation has demanded stringent quality requirements along with special electrical parameters for instrumentation cables. Very low level electrical signals pass between measuring end and display units/controllers which are situated far off. These low level signals are prone to external noise pickups and heavy silenuation during transmission.

All this means that the cables to be used for instrumentation should be designed and manufactured very carefully, “BALTRON with its meticulous efforts in maintaining quality, stringent in process control during manufacture and the knowledge of cable designing, is proud to say that it is capable of supplying instrumentation cables meeting any Indian/International standard or a specific requirement desired by project authority.

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