TECHNO FLEX®

C A B L E S

IS-694

IS-1554 (PART-1)

Instrumentation Cable

INSTRUMENTATION CABLE : ***Techno flex*** Instrumentation cable offers total interference free data transfer in measuring, process-control & security systems. Instrumentation process in any industry is a very important factor for controlling various parameters during process. Microprocessor based control devices demand very low noise level & attenuation of signals in the cable. This calls for careful designing & manufacturing of cables with stringent quality control. ***Techno flex*** never compromise to use the high class of Mylar / Alluminium Tape / Polyester Tape & ATC Drain Wire that ensures smooth communication of very Low level signal from transmitter to control room & also effectively Cut the cross communication & noise.

Size mm²	No. of Strands	No of Cores Description	2 Core		3 Core		4 Core		6 Core		10 Core		20 Core	
			Shielded Unarmd	Shielded Armd	Shielded Unarmd	Shielded Armd	Shielded Unarmd	Shielded Armd	Shielded Unarmd	Shielded Armd	Shielded Unarmd	Shielded Armd	Shielded Unarmd	Shielded Armd
0.5	16/0.2	Insulation Thickness mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Inner Sheath Thickness mm	0.5	0.8	0.5	0.8	0.5	0.8	0.9	0.9	0.9	1.1	1.1	1.2
		Armoured Wire Dia mm	---	0.9	---	0.9	---	0.9	---	0.9	---	0.9	---	4x0.8
		Outer Sheath Thickness mm	0.80	1.30	0.80	1.30	0.80	1.30	0.90	1.40	1.10	1.50	1.20	1.60
		Overall Dia (approx.) mm	7.0	10.4	7.3	10.7	7.9	11.3	10.1	12.9	12.7	15.7	16.1	18.7
0.75	24/0.2	Insulation Thickness mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Inner Sheath Thickness mm	0.5	0.8	0.5	0.8	0.5	0.9	0.9	0.9	0.9	1.1	1.1	1.2
		Armoured Wire Dia mm	---	0.9	---	0.9	---	0.9	---	0.9	---	0.9	---	4x0.8
		Outer Sheath Thickness mm	0.8	1.3	0.8	1.3	0.9	1.4	0.9	1.4	1.1	1.5	1.2	1.6
		Overall Dia (approx.) mm	7.3	10.7	7.7	11.1	8.3	11.9	10.7	13.5	13.5	16.5	17.2	19.8
1.0	32/0.2	Insulation Thickness mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Inner Sheath Thickness mm	0.5	0.8	0.5	0.8	0.5	0.8	0.9	0.9	0.9	1.1	1.1	1.2
		Armoured Wire Dia	---	0.9	---	0.9	---	0.9	---	0.9	---	4x0.8	---	4x0.8
		Outer Sheath Thickness mm	0.8	1.3	0.8	1.3	0.8	1.4	0.9	1.4	1.1	1.5	1.2	1.6
		Overall Dia (approx.) mm	7.8	11.2	8.2	11.6	8.9	12.5	11.4	14.2	14.4	17.2	18.9	21.5
1.5	22/0.3	Insulation Thickness mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Inner Sheath Thickness mm	0.5	0.8	0.5	0.9	0.5	0.9	0.9	1.1	0.9	1.2	1.1	1.3
		Armoured Wire Dia mm	---	0.9	---	0.9	---	0.9	---	0.9	---	4x0.8	---	4x0.8
		Outer Sheath Thickness mm	0.8	1.4	0.9	1.4	0.9	1.4	1.1	1.4	1.2	1.6	1.3	1.7
		Overall Dia (approx.) mm	8.3	11.9	8.9	12.5	9.7	13.3	12.5	15.3	15.5	18.5	19.9	22.7

NOTE : i) Manufacturing capacity upto 100 cores.
ii) Pairs, Triades and Quade with multicores with individual or overall shielding.

Techno Flex Cables **Shielded Armoured / Unarmoured & Instrumentation Cable Specialist**

TECHNO FLEX®
CABLES

IS-694
IS-1554 (PART-1)

CONDUCTOR

Annealed bare / uniform coated with Tinned / Silver Plated, High Conductivity, and Electrolytic Grade Solid / Stranded / Flexible Conductor.

INSULATION

Conductor are insulated with General Purpose PE / HR / FRLS / LSZH / PVC Compound / or any other dielectric material as per customers specification.

COLOUR OF DIELECTRIC :

Cores are identified with different type of color scheme as per requirement as below:-

i) As per IS:1554[Pt-I]:88, 694:90.
ii) As Per IEC, ITD or number Printing.
iii) As Per Customers Schem.e.

PAIRTRIAD / QUAD :-

Two / Three / Four cores are uniformly twisted together to form a Pair / Triad / Quad with maximum lay length 80 mm/as per requirement of customer. The lay shall be so chosen as to minimize cross talk in the cable.

INDIVIDUAL SHIELDING :-

If required, Individual Shielding may be of Poly Aluminum [Thin Layer of Aluminum Foil bonded to Polyester Film] Tape with Annealed Tinned Copper Drain Wire. It prevents the shorting of adjacent shield and minimizes the cross talk and ground loops. A Tinned Copper drain Wire is installed to provide continuous contact with the shield and allow to connection to ground. Tinning the drain wire reduces galvanic corrosion between drain and shield.

LAYING OF PAIRSTRIAD / QUAD. :-

Pair / Triad / Quad are laid up with suitable lay. The outer most layers are right hand lay and successive layers are laid up with opposite lay. Then, a Melinex Tape is provided to bind up laid up Pair / Triad / Quad.

OVERALL SHIELDING :-

If required, Overall Shielding may be of Annealed Tinned Copper Braiding / Poly Aluminum (Thin Layer of Aluminum Foil bonded to Polyester Film) Tape with Annealed Tinned Copper Drain Wire. Braiding ATC Shield has high tensile Strength and provides better coverage in flexing application. They are easier to terminate. This provides effective shielding; cross talk and noise are kept to an absolute minimum.

INNER SHEATH :-

The laid up pair/triad/quad after shielding are provided with an inner sheath, which may be either Extruded Inner Sheath or wrap with PVC Tape.

ARMOURING :-

It is applied over inner Sheath. It may consist of galvanized Round Steel wires or galvanized Flat Steel Strips.

OUTER SHEATH :-

It is applied over Armouring in case of Armoured Cable or over Inner Sheath in case of Unarmoured Cable. The Color of Sheath is Black / Blue / Red / Gray. The Sheath material may be General Purpose/HR / FRLS / LSZH PVC Compound as per requirement of specification.

TYPICAL APPLICATION :-

For Connection of Instruments, Process Control Systems, Computers, Data Transmission etc.

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CABLES

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IS-1554 (PART-1)

Parametres of Instrumentation Cables :-

1.	Conductor	:	Electrolytic copper wire, Bare / tinned, solid / stranded / multi stranded
2.	Insulation	:	Type A, B, C compound as per IS. 5831 (rated upto 70°c to 85°c). Polyethelene, FRLS, Halogen free FRLS.
3.	Elements	:	Pairs/Triods/Quade either colour coded or number printed or coloured ring marked or dual colour extruded
4.	Shields	:	Aluminium tape & polyester tape with drain wire as a individual or overall shielding alternately with ATC braiding Screened as specified.
5.	Element laying	:	Concentric formation or unit or group formation as per applicable
6.	Armouring	:	G. I. round wire/strip.
7.	Sheathing	:	Grade ST -1 or ST -2 grade (HR, FRLS, Halogen Free FRLS as per I.S. 5831, compounds
8.	Specification	:	B. S. 5308 (Pt- 1)/ I. S. 694/ I.S. 1554 (Part -1) and tailor made.

Typical Instrumentation Cable Construcation