

INSTRUMENTATION CABLE: Dataflex Cables 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 & manufacturing of cables with stringent quality control. **Dataflex Cables** 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.



Note:

- I) Manufacturing capacity upto 100 Cores.
- II) Pairs, Triads and Quade with multicores with individual or overall shielding.

Size mm	No. of Strands	No of Cores Description	2 Core		3 Core		4 Core		6 Core		10 Core		20 Core	
			Shielded Unarmd	Shielde Armd	Shielded Unarmd	Shielde Armd	Shielded Unarmd	Shielde Armd	Shielded Unarmd	Shielde Armd	Shielded Unarmd	Shielde Armd	Shielded Unarmd	Shielde 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	0.8	1.3	0.8	1.3	0.8	1.3	0.9	1.4	1.1	1.5	1.2	1.6
		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 mm	...	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	1.6	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

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.

COLOR OF DIELECTRIC:

Core 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 Scheme.

PAIRTRIAD / QUAD:-

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

INDIVIDUAL SHIELDING:-

If required, Individual Shielding may be of Poly Aluminum [Thin Layer of Aluminum Foil bounded to Polyester Film] Tape with Annealed Tinned Copper Drain Wire. It Prevents the shorting of adjacent shield and minimize 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. Training the drain wire reduces galvanic corrosion between drain and shield

LAYING OF PAIRSTRADIAD / 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 provide to bind 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 provide 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 provide 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 requirements of specification.

TYPICALAPPLICATION:-

Dataflex Cables Shielded Amoured/Unarmoured & Instrumentation Cable Specialist

PARAMETERS OF INSTRUMENTATION CABLES:-

1	Conductor	:	Electrolytic copper wire, bare / tinned, solid / stranded / multi stranded
2	Insulation	:	Type A, B compound as per IS.5831 (rated upto 70Deg C to 80 Deg C). Polyethelene, FRLS, Halogen free FRLS
3	Elements	:	Pairs / Triods/Quad either Color coded or number printed or coloured ring marked or dual color extruded.
4	Shield	:	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 Construction.

