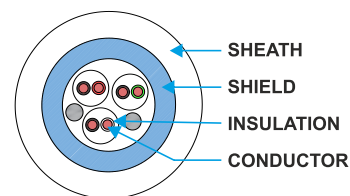




# Instrumentation Cable

Multi Pair Overall - Shield Unarmoured Cables



## Application

Instrumentation cables are used in diverse applications for control, monitoring, communication, data and voice transmission signals and process control circuits in industrial applications such as oil, gas, petrochemical industry, fertilizers, cement, steel plants, etc.

## Construction

- Conductor : Plain or tin plated copper, class-1 solid, class-2 stranded, class-5 flexible as per IS : 8130, BS : 6360, IEC : 60228)
- Insulation : PVC-70°C / HR-85°C / 105°C, BS 5308 or polyethylene to BS 6234
- Pair / Triad identification : Identifications can be done by numbered polyester tape applied over each Pair / Triad or by number printing on a core of each Pair / Triad
- Overall screen : Multiple Pair / Triad laid up together and shielded with aluminium-mylar tape along with tinned copper drain wire. Longitudinal shielding of copper tape can also be provided
- Outer sheath : Extruded PVC / FR / FRLS / LSZH sheathed

## Properties

- Halogen free
- Excellent fire resistance
- No smoke and fume generation
- Low gas emission
- Good mechanical tensile strength & elongation

## Technical Parameter

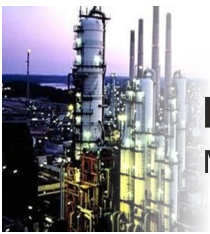
Parameter	Unit	Conductor Size				
		0.5mm <sup>2</sup> 1/0.8 mm	0.5mm <sup>2</sup> 16/0.2 mm	0.75mm <sup>2</sup> 24/0.2 mm	1.0mm <sup>2</sup> 1/1.13 mm	1.5mm <sup>2</sup> 7/0.53 mm
Insulation Thickness	mm	0.50	0.50	0.50	0.50	0.60
Conductor (Bare) resistance	Ω/Km (max.)	36	39	26	18.1	12.1
Insulation resistance	MΩ x Km	> 36.7	> 36.7	> 36.7	> 36.7	> 36.7
Mutual capacitance (c to c)	pF/m (max.)	250	250	250	250	250
Mutual capacitance (c to s)	pF/m (max.)	450	450	450	450	450
Inductance/resistance ratio (L/R)	μH/Ω (max.)	25	25	25	25	40



## Multipair Instrumentation Cables (unarmoured) - BS 5308 Part 1 Type 1-Collectively Screened

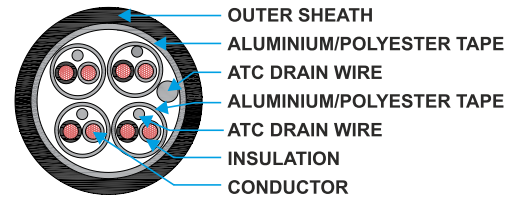
Part code	Conductor	Number of Pairs	Nominal Overall Diameter (mm)	Approx. Weight (kg/km)
0301T010005	16/0.2mm (0.5mm <sup>2</sup> )	1	6.4	60
0301T020005		2	7.3	80
0301T050005		5	12.5	200
0301T100005		10	16.6	340
0301T200005		20	21.7	570
0301T300005		30	26.3	790
0301T010007	24/0.2mm (0.75mm <sup>2</sup> )	1	6.7	75
0301T020007		2	7.7	100
0301T050007		5	13.7	250
0301T100007		10	18.1	450
0301T200007		20	23.9	800
0301T300007		30	28.9	1130
0301T010010S	1/1.13mm (1.0mm <sup>2</sup> )	1	6.8	85
0301T020010S		2	7.8	115
0301T050010S		5	13.7	290
0301T100010S		10	17.8	500
0301T200010S		20	23.8	950
0301T300010S		30	28.4	1330
0301T010015	7/0.53mm (1.5mm <sup>2</sup> )	1	7.7	100
0301T020015		2	9.1	150
0301T050015		5	15.8	360
0301T100015		10	21.0	670
0301T200015		20	27.9	1230
0301T300015		30	33.7	1720

Solid conductor on request



# Instrumentation Cable

Multi Pair Individual & Overall Shielded Unarmoured



0302 - Instrumentation Cables

## Application

Instrumentation cables are used in diverse applications for control, monitoring, communication, data and voice transmissions signals, and process control circuit in industrial applications such as oil, gas, petrochemical industry, fertilizers, cement, steel plant etc.

## Characteristics

- Signal protection between pairs.
- Good electromagnetic protection from external influences.
- Excellent electrical, thermal & physical properties.
- Flame / Fire retardant- highly recommended in areas with high explosion & fire risks.
- Excellent mechanical protection during laying, installation & service.
- Optional class-5 conductor provides extra flexibility

## Properties

- Halogen free
- Excellent fire resistance
- No smoke and fume generation
- Low gas emission
- Good mechanical tensile strength & elongation

## Construction

- Conductor : Plain or tin plated copper, class-1 solid, class-2 stranded, class-5 flexible as per IS : 8130, BS : 6360, IEC : 60228).
- Insulation : PVC-70°C/HR-85°C /105°C., BS 5308 or polyethylene to BS 6234.
- Individual screen : Twisted pair or triad are individually shielded with aluminium-mylar tape along with tin copper drain wire. longitudinal. shielding of copper tape can also be provided as per customer specific requirements.
- Pair/Triad identification: Identifications can be done by numbered polyester tape applied over each Pair / Triad or by number printing on core of each Pair/triad.
- Overall screen : Multi Pair / Triad are laid up together and are shielded with aluminium-mylar tape along with tin copper drain wire longitudinal. Shielding of copper tape can also be provided.
- Outer sheath : Extruded PVC / FR / FRLS / LSZH sheathed

## Technical Parameter

Parameter	Unit	Conductor Size				
		0.5mm <sup>2</sup> 1/0.8 mm	0.5mm <sup>2</sup> 16/0.2 mm	0.75mm <sup>2</sup> 24/0.2 mm	1.0mm <sup>2</sup> 1/1.13 mm	1.5mm <sup>2</sup> 7/0.53 mm
Insulation Thickness	mm	0.50	0.50	0.50	0.50	0.60
Conductor (Bare) resistance	Ω/Km (max.)	36	39	26	18.1	12.1
Insulation resistance	MΩ x Km	> 36.7	> 36.7	> 36.7	> 36.7	> 36.7
Mutual capacitance (c to c)	pF/m (max.)	250	250	250	250	250
Mutual capacitance (c to s)	pF/m (max.)	450	450	450	450	450
Inductance/resistance ratio (L/R)	μH/Ω (max.)	25	25	25	25	40



## Multipair Instrumentation Cables (unarmoured) To BS 5308 Part 1 Type 1-Individual Pair And Collectively Screened

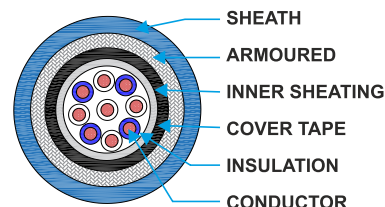
Part code	Conductor	Number of Pairs	Nominal Overall Diameter (mm)	Approx. Weight (kg/km)
0302T020005S	1/0.8mm (0.5mm <sup>2</sup> )	2	9.7	100
0302T050005S		5	12.9	190
0302T100005S		10	17.7	320
0302T200005S		20	22.9	570
0302T300005S		30	27.3	820
0302T020005	16/0.2mm (0.5mm <sup>2</sup> )	2	11.4	160
0302T050005		5	14.6	250
0302T100005		10	20.5	480
0302T200005		20	26.7	780
0302T300005		30	31.7	1100
0302T020007	24/0.2mm (0.75mm <sup>2</sup> )	2	12.2	190
0302T050007		5	15.7	270
0302T100007		10	21.8	550
0302T200007		20	28.5	960
0302T300007		30	33.7	1320
0302T020010S	1/1.13mm (1.0mm <sup>2</sup> )	2	12.2	190
0302T050010S		5	15.6	270
0302T100010S		10	22.0	480
0302T200010S		20	29.2	910
0302T300010S		30	34.8	1320
0302T020015	7/0.53mm (1.5mm <sup>2</sup> )	2	13.7	250
0302T050015		5	17.8	400
0302T100015		10	25.2	800
0302T200015		20	33.8	1400
0302T300015		30	40.0	2040

Note: S=Solid



# Instrumentation Cable

## Multi Pair Overall-Shield Armoured



### Application

Instrumentation cables are used in diverse applications for control, monitoring, communication, data and voice transmissions signals, and process control circuit in industrial applications such as oil, gas, petrochemical industry, fertilizers, cement, steel plant etc.

### Characteristics

- Signal protection between pairs.
- Good electromagnetic protection from external influences.
- Excellent electrical, thermal & physical properties.
- Flame / Fire retardant- highly recommended in areas with high explosion & fire risks.
- Excellent mechanical protection during laying, installation & service.
- Optional class-5 conductor provides extra flexibility

### Properties

- Halogen free
- Excellent fire resistance
- No smoke and fume generation
- Low gas emission
- Good mechanical tensile strength & elongation

### Construction

- Conductor : Plain or tin plated copper, class-1 solid, class-2 stranded, class-5 flexible as per IS : 8130, BS 6360, IEC : 60228).
- Insulation : PVC-70°C/HR-85°C /105°C., BS 5308 or polyethylene to BS 6234.
- Pair / Triad identification: Identifications can be done by numbered polyester tape applied over each Pair/Triad or by number printing on core of each Pair / Triad.
- Overall screen : Multi Pair / Triad are laid up together and are shielded with aluminium-mylar tape along with tin copper drain wire longitudinal. Shielding of copper tape can also be provided.
- Inner sheath : Extruded PVC / LSZH inner sheath applied.
- Armour : Galvanized steel wire or strip are applied spirally over inner sheath as a mechanical protection.
- Outer sheath : Extruded PVC / FR / FRLS / LSZH sheathed (IEC 60502-1)



0303 - Instrumentation Cables

### Multipair Instrumentation Cables (Armoured) To BS 5308 Part 1 Type 2-Collectively Screened

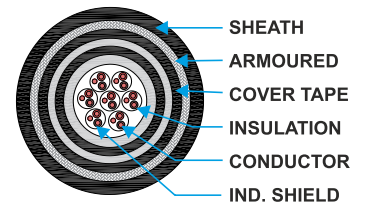
Part code	Conductor	Number of Pairs	Nominal Dia Under Armour (mm)	Nominal Overall Dia (mm)	Armour Wire Dia (mm)	Approx Weight (kg/km)
0303T010005S	1/0.8mm (0.5mm <sup>2</sup> )	1	5.3	10.1	0.9	225
0303T020005S		2	6.1	10.9	0.9	250
0303T050005S		5	10.6	15.6	0.9	430
0303T100005S		10	14.0	20.1	1.25	730
0303T200005S		20	18.4	25.4	1.6	1200
0303T300005S		30	22.0	29.2	1.6	1500
0303T010005	16/0.2mm (0.5mm <sup>2</sup> )	1	4.5	10.8	0.9	250
0303T020005		2	6.9	11.7	0.9	300
0303T050005		5	9.9	17.3	0.9	560
0303T100005		10	16.2	22.3	1.25	970
0303T200005		20	22.3	28.5	1.6	1640
0303T300005		30	32.9	33.3	1.6	2110
0303T010007	24/0.2mm (0.75mm <sup>2</sup> )	1	6.3	11.1	0.9	280
0303T020007		2	7.3	12.3	0.9	330
0303T050007		5	13.3	19.2	1.25	750
0303T100007		10	17.7	24.7	1.6	1260
0303T200007		20	23.5	30.7	1.6	1890
0303T300007		30	28.5	36.9	1.6	2440
0303T010010S	1/1.13mm (1.0mm <sup>2</sup> )	1	6.4	11.2	0.9	290
0303T020010S		2	7.4	12.4	0.9	345
0303T050010S		5	13.2	19.1	1.25	790
0303T100010S		10	17.4	23.7	1.25	1310
0303T200010S		20	23.3	30.6	1.6	2040
0303T300010S		30	28.0	35.6	1.6	2640
0303T010015	7/0.53mm (1.5mm <sup>2</sup> )	1	7.3	12.3	0.9	330
0303T020015		2	13.3	13.7	0.9	420
0303T050015		5	21.1	21.5	1.25	940
0303T100015		10	27.4	27.8	1.6	1050
0303T200015		20	27.5	35.1	1.6	2400
0303T300015		30	27.8	41.9	1.6	3120

Note: S=Solid



# Instrumentation Cable

Multi Pair Individual & Overall-Shielded Armoured.



0304 - Instrumentation Cables

## Application

Instrumentation cables are used for diverse applications within industrial process manufacturing plants for control, monitoring, communication, data and voice transmission signals and process control circuits in industrial applications such as oil, gas, petrochemical industry, fertilizers, cement, steel plants, etc.

## Properties

- Halogen free
- Excellent fire resistance
- No smoke and fume generation
- Low gas emission
- Good mechanical tensile strength & elongation

## Technical Parameter

Parameter	Unit	Conductor Size				
		0.5mm <sup>2</sup> 1/0.8 mm	0.5mm <sup>2</sup> 16/0.2 mm	0.75mm <sup>2</sup> 24/0.2 mm	1.0mm <sup>2</sup> 1/1.13 mm	1.5mm <sup>2</sup> 7/0.53 mm
Insulation Thickness	mm	0.50	0.50	0.50	0.50	0.60
Conductor (Bare) resistance	Ω/Km (max.)	36	39	26	18.1	12.1
Insulation resistance	MΩ x Km	> 36.7	> 36.7	> 36.7	> 36.7	> 36.7
Mutual capacitance (c to c)	pF/m (max.)	250	250	250	250	250
Mutual capacitance (c to s)	pF/m (max.)	450	450	450	450	450
Inductance/resistance ratio (L/R)	μH/Ω (max.)	25	25	25	25	40

## Construction

- Conductor : Plain or tin plated copper, class-1 solid, class-2 stranded, class-5 flexible as per IS : 8130, BS 6360, IEC : 60228)
- Insulation : PVC-70°C/HR-85°C /105°C., BS 5308 or polyethylene to BS 6234
- Individual screen : Twisted Pair or Triad are individually shielded with aluminium-mylar tape along with tin copper drain wire. longitudinal. Shielding of copper tape can also be provided as per customer specific requirements
- Pair / Triad identification: Identifications can be done by numbered polyester tape applied over each Pair / Triad or by number printing on core of each Pair / triad
- Overall screen : Multi Pair / Triad are laid up together and are shielded with aluminium-mylar tape along with tin copper drain wire longitudinal. Shielding of copper tape can also be provided
- Inner sheath : Extruded PVC / LSZH inner sheath applied
- Armour : Galvanized steel wire or strip are applied spirally over inner sheath as a mechanical protection.
- Outer sheath : Extruded PVC / FR / FRLS / LSZH Sheathed

## Characteristics

- Signal protection between pairs.
- Good electromagnetic protection from external influences.
- Excellent electrical, thermal & physical properties.
- Flame / Fire retardant- highly recommended in areas with high explosion & fire risks.
- Excellent mechanical protection during laying, installation & service.
- Optional class-5 conductor provides extra flexibility



## Multipair Instrumentation Cables (Armoured) To BS 5308 Part 1 type 2-Individual Pair And Collectively Screened

Part code	Conductor	Number of Pairs	Nominal Dia Under Armour (mm)	Nominal Overall Dia (mm)	Armour Wire Dia (mm)	Approx Weight (kg/km)
0304T020005S	1/0.8mm (0.5mm <sup>2</sup> )	2	10.1	14.3	0.9	411
0304T050005S		5	13.5	18.4	1.25	686
0304T100005S		10	18.3	23.6	1.25	1037
0304T200005S		20	23.5	29.7	1.6	1664
0304T300005S		30	27.9	34.3	1.6	2136
0304T020005	16/0.2mm (0.5mm <sup>2</sup> )	2	12.0	15.8	0.9	460
0304T050005		5	15.2	20.1	1.25	760
0304T100005		10	21.1	27.0	1.6	1300
0304T200005		20	27.3	33.3	1.6	1870
0304T300005		30	32.3	39.6	2.0	2620
0304T020007	24/0.2mm (0.75mm <sup>2</sup> )	2	12.8	16.8	0.9	500
0304T050007		5	16.2	21.1	1.25	920
0304T100007		10	22.6	28.6	1.6	1610
0304T200007		20	29.8	37.0	2.0	2420
0304T020010S	1/1.13mm (1.0mm <sup>2</sup> )	2	12.8	17.0	0.9	515
0304T050010S		5	16.2	21.3	1.25	950
0304T100010S		10	22.6	28.8	1.6	1670
0304T200010S		20	29.8	37.2	2.0	2540
0304T020015	7/0.53mm (1.5mm <sup>2</sup> )	2	14.7	19.5	1.25	730
0304T050015		5	18.4	24.5	1.6	1180
0304T100015		10	26.5	32.3	1.6	1820
0304T200015		20	28.0	41.3	2.0	3030

Note: 1 S=solid  
Note: 2 Bare Copper On request