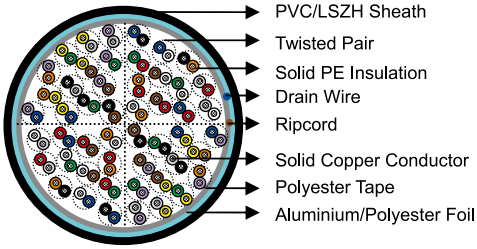
PE Insulated ISDN Primary Access Air Core Cables

APPLICATION

The cables are designed for digital communications where 120Ω impedance are required during copper interconnection. They are used as primary access for ISDN services inside buildings between network termination equipment and subscriber termination equipment (G703 E1/T1 systems 2.048 or 1.544 Mbps).

STANDARDS

• ER.f5.101



CONSTRUCTION

- **Conductors:** Solid annealed bare copper sized 0.4/0.5mm as per ASTM B-3/class 1 of IEC 60228.
- **Insulation:** Solid polyethylene as per ASTM D 1248/IEC 60708.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lays to minimize crosstalk.
- **Cable Core Assembly:** The pairs are cabled together in layers of 12, 13 & 25 pair unit to form the cable core. Units are identified by colour coded binders.
- **Core Wrapping:** One or more non-hygroscopic polyester tapes are helically or longitudinally laid with an overlap.
- **Screen:** Aluminium/Polyester tape is applied longitudinally with an overlap.
- **Sheath:** PVC or LSZH compound.
- **Ripcord:** Nylon ripcord may be placed parallel to the cores to facilitate sheath removal.
- **Armour (optional):** Corrugated steel tape armour.
- **Additional Outer Sheath:** PVC (for NYY Cables); PE (for Armoured Cables); LSZH.
- **Drain Wire:** Solid tinned copper 0.5mm drain wire may be laid longitudinally under the screen.

ELECTRICAL PROPERTIES

Conductor Diameter	mm	0.4	0.5
Conductor Gauge Size	AWG	26	24
Conductor Size	mm^2	0.126	0.196
Maximum Conductor Resistance @20°C	Ω/km	143	91
Minimum Insulation Resistance @500V DC	MΩ·km	10000	8000
Maximum Resistance Unbalance	%	2	2
Maximum Average Mutual Capacitance @1000Hz	nF/km	46	46
Maximum Capacitance Unbalance @1KHz pair-to-pair	pF/500m	45	45
Impedance @200KHz	Ω	120 +/- 24	120 +/- 24
Impedance @1000KHz	Ω	120 +/- 12	120 +/- 12
Maximum Average Attenuation @51KHz	dB/km	8.9	6.5
Maximum Average Attenuation @128KHz	dB/km	9.86	7.2
Maximum Average Attenuation @256KHz	dB/km	12.6	9.5
Maximum Average Attenuation @512KHz	dB/km	15.6	12.5

(Continued from previous page)

Maximum Average Attenuation @768KHz	dB/km	19.5	15.5
Maximum Average Attenuation @1024KHz	dB/km	24.6	19.0
Maximum Average Attenuation @1280KHz	dB/km	27	21
Maximum Average Attenuation @1536KHz	dB/km	27.8	22.2
Maximum Average Attenuation @1792KHz	dB/km	30	24
Maximum Average Attenuation @2048KHz	dB/km	32.8	26.3
Minimum NEXT pair-to-pair @1000KHz	dB	62	62
Dielectric Strength Conductor to Conductor 3secs	V DC	500	500
Nominal Insulation Thickness	mm	0.3	0.35
Nominal Insulated Conductor Diameter	mm	1.0	1.2

MECHANICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C – +70°C

Temperature range during installation (mobile state): -20°C – +50°C

Minimum bending radius: 10 x Overall Diameter

COLOUR CODE

Standard colour code is per BT CW 110J given in Colour Code Chart.

DIMENSIONS AND WEIGHT

Cable Code	Number of Pairs	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
120Ω Twinaxial cable				
0.4mm Conductor, 1.0mm Insulated Wire				
TX101-2Y(St)Y1P04-ISDN-P	1	0.3	3.0	10.5
0.5mm Conductor, 1.5mm Insulated Wire				
TX101-2Y(St)Y1P05-ISDN-P	1	0.7	4.5	18.0
Multipair 120Ω cable				
0.5mm Conductor, 1.2mm Insulated Wire, PVC Sheathed Indoor Cable				
TP101-2Y(St)Y2P05-ISDN-P	2	1.0	7.0	31
TP101-2Y(St)Y4P05-ISDN-P	4	1.0	8.2	57
TP101-2Y(St)Y8P05-ISDN-P	8	1.0	10.0	86
TP101-2Y(St)Y12P05-ISDN-P	12	1.0	10.5	113
TP101-2Y(St)Y16P05-ISDN-P	16	1.0	11.8	142
TP101-2Y(St)Y18P05-ISDN-P	18	1.0	12.5	152
TP101-2Y(St)Y20P05-ISDN-P	20	1.0	13.2	157
TP101-2Y(St)Y24P05-ISDN-P	24	1.0	13.5	191
TP101-2Y(St)Y28P05-ISDN-P	28	1.0	14.0	219
TP101-2Y(St)Y32P05-ISDN-P	32	1.0	16.5	260
TP101-2Y(St)Y50P05-ISDN-P	50	1.2	19.2	370
TP101-2Y(St)Y75P05-ISDN-P	75	1.2	23.2	530
TP101-2Y(St)Y100P05-ISDN-P	100	1.2	26.5	720
0.4mm Conductor, 1.0mm Insulated Wire, PVC Sheathed Indoor Cable				
TP101-2Y(St)Y4P04-ISDN-P	4	0.7	6.4	38
0.5mm Conductor, 1.2mm Insulated Wire, LSZH Sheathed Indoor Cable				
TP101-2Y(St)H8P05-ISDN-P	8	1.0	10.0	87
TP101-2Y(St)H16P05-ISDN-P	16	1.0	12.0	132
TP101-2Y(St)H32P05-ISDN-P	32	1.0	16.0	260
0.5mm Conductor, 1.2mm Insulated Wire, PVC Double Sheathed (NYY) Outdoor Cable				
TP101-2Y(St)YY4P05-ISDN-P	4	1.0+1.2	10.0	105
TP101-2Y(St)YY8P05-ISDN-P	8	1.0+1.2	11.6	145
TP101-2Y(St)YY16P05-ISDN-P	16	1.0+0.6	13.0	170
TP101-2Y(St)YY32P05-ISDN-P	32	1.0+1.3	18.5	325
0.5mm Conductor, 1.2mm Insulated Wire, PVC Inner Sheathed, Corrugated Steel Armour, PE Sheathed, Outdoor Cable				
TP101-2Y(St)Y(STA)2Y16P05-ISDN-P	16	1.0+1.2	17.0	310