

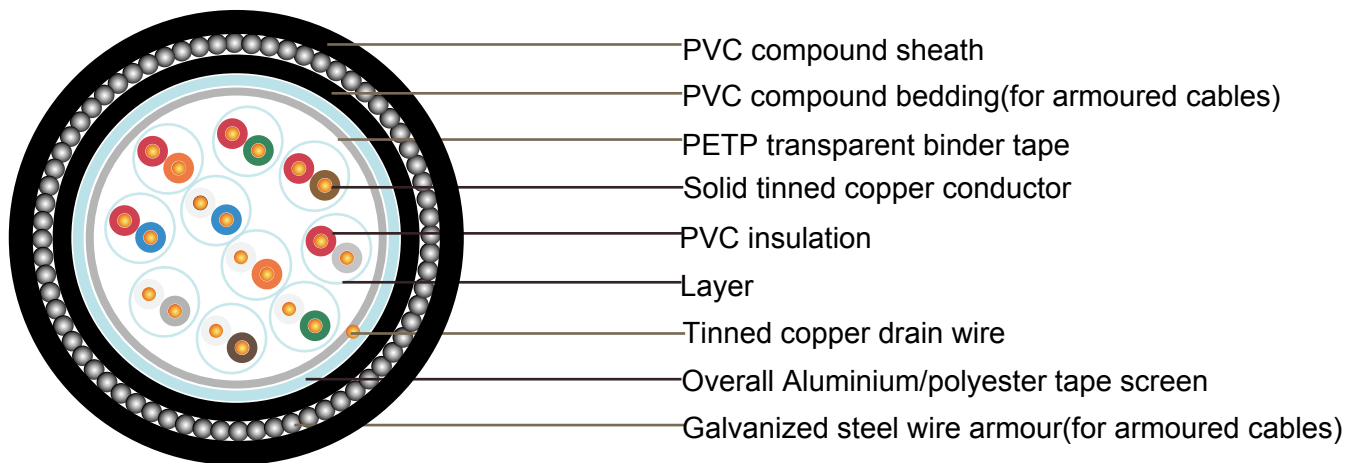


### Multipair instrument cables ESI 09-6 Issue 6

#### Application

These light current control cables are intended primarily for use with control, indication and alarm equipment for switchgear and similar power apparatus in power stations and substations where the nominal voltage does not exceed 150V d.c. or 110V a.c. The cables are also suitable for telemetry applications where large conductor size are required. An optional collective aluminum tape screen can be provided. In case if the installation environment is prone to flooding or prolonged period of dampness, PE insulation should be considered as an alternative to PVC.

#### Construction



<b>Conductor</b>	Solid tinned annealed copper, sizes: 1/0.8mm(0.5mm <sup>2</sup> ) to BS6360
<b>Insulation</b>	PVC (polyvinyl chloride) type 2 to BS7655
<b>Pairing</b>	Two insulated conductors uniformly twisted together with a lay not exceeding 100mm
<b>Colour code</b>	See technical information
<b>Binder tape</b>	PETP transparent tape
<b>Collective screen</b>	Aluminum/polyester tape is applied over the laid up pairs metallic side down in contact with a longitudinal 1/0.5mm to 1/0.8mm tinned copper drain wire
<b>Bedding (for armoured cables)</b>	PVC (polyvinyl chloride) to type TM 1 or 6 to BS EN 50363-4-1
<b>Armouring (for armoured cables)</b>	Galvanized steel wire armour
<b>Outer sheath</b>	Black PVC (polyvinyl chloride) to type TM 1 or 6 to BS EN 50363-4-1



### Electrical Properties

Maximum conductor temperature: + 70°C

Minimum bending radius: 6 x overall diameter

Minimum ambient temperature: - 20°C after installation and only when cable is in a fixed position

<b>Voltage rating</b>	150V d.c. or 110V a.c.
<b>Test voltage</b>	2Kv r.m.s. between conductors, 5Kv r.m.s. between all conductors and armor
<b>Maximum conductor resistance(loop)</b>	73.6Ohm/km at 20 °C
<b>Minimum insulation resistance</b>	80MOhm/km at 20 °C
<b>Maximum mutual capacitance</b>	150Nf/km at 1 KHz
<b>Flame retardancy</b>	BS 4066 part 1(IEC 60332-1) or BS 4066 part 3(IEC 60332-3)

### Parameter

unarmoured

Number of pairs	Nominal diameter of conductor	Nominal Conductor Cross-Sectional Area	Insulation thickness	Sheath thickness (Min)	Overall diameter	Cable weight
	mm	mm <sup>2</sup>	mm	mm	mm	Kg/Km
2	0.8	0.5	0.3	0.8	5.1	40
5	0.8	0.5	0.3	1	8.5	100
10	0.8	0.5	0.3	1.1	10.9	170
20	0.8	0.5	0.3	1.2	14.4	280
40	0.8	0.5	0.3	1.4	22.9	600
60	0.8	0.5	0.3	1.6	25.9	880
100	0.8	0.5	0.3	1.9	32.6	1440
200	0.8	0.5	0.3	2.2	46	2780



armoured

Number of pairs	Nominal diameter of conductor	Insulation thickness	Bedding thickness	Diameter of armour wire	Sheath thickness	Overall diameter	Cable weight
	mm						
2	0.8	0.3	0.8	0.9	1.3	9.5	200
5	0.8	0.3	1	0.9	1.4	13.1	290
10	0.8	0.3	1.1	1.25	1.5	16.4	540
20	0.8	0.3	1.2	1.25	1.6	20.1	770
40	0.8	0.3	1.4	1.6	1.8	29.7	1430
60	0.8	0.3	1.6	1.6	2	33.1	1900
100	0.8	0.3	1.9	2	2.2	41	3010
200	0.8	0.3	2.2	2.2	2.5	56	5660

Number of pairs	Nominal diameter of conductor	Insulation thickness	Bedding thickness	Diameter of armour wire	Diameter of steel tape	Sheath thickness	Overall diameter	Cable weight
	mm							
2	0.8	0.3	1.5	0.9	-	1.9	12.1	300
5	0.8	0.3	1.5	0.9	-	2	15.3	450
10	0.8	0.3	1.5	1.25	-	2.2	18.6	730
20	0.8	0.3	1.5	-	0.5	2.4	21.8	930
40	0.8	0.3	2	-	0.5	2.8	31.7	1570
60	0.8	0.3	2.6	-	0.5	3.1	36.1	2120
100	0.8	0.3	2.6	-	0.5	3.1	42.2	2850
200	0.8	0.3	3	-	0.5	3.8	57.2	4860