

# ESI\* 09-6 Issue 5

Multipair PVC Insulated and Sheathed - Armoured



## 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. Suitable for use on circuits where the nominal voltage does not exceed 150V d.c. or 110V a.c. Suitable for direct buried applications. May be provided with optional collective screen.

## Specifications

- In accordance with ESI 09-6 Issue 5.
- **Conductors:** Solid (Class 1) tinned copper conductors to BS EN 60228.
- **Insulation:** PVC insulation Type 2 to BS7655.
- **Pair Identification:** See colour code chart 3 on page 4:40.
- **Binder Tape:** p.e.t.p. tape of suitable overlap.
- **OPTIONAL Collective Screen:** tinned copper drain wire under and in contact with aluminium/p.e.t.p. laminated tape applied metallic side down.
- **Inner Sheath:** PVC inner sheath Type TM.1 or 6 to BS EN 50363-4-1.
- Mild galvanised steel wires to BS EN10257-1.
- **Outer Sheath:** Black PVC outer sheath Type TM.1 or 6 to BS EN 50363-4-1. In addition, the PVC outer sheath displays following characteristics:  
Minimum oxygen index: 30%.  
Maximum HCL Emission @ 800°C: 15%.
- Flame retardant to BS EN 60332-3-24 & IEC60332-3-24 Category C (NMV1.5).
- **Voltage Rating:** 150V d.c./110V a.c.
- **Temperature Rating:** 70°C maximum conductor operating temperature.

Anixter Number	Number of Pairs/ Triple	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal Diameter Under Armour	Armour Wire Diameter	Nominal O/D	Approx Cable Weight	Minimum Bending Radius (fixed bend)
		mm <sup>2</sup>	#/mm	mm	mm	mm	mm	kg/km	mm
<b>UNSCREENED CABLES</b>									
A11EE-P002F	2P(Q)	0.64	1/0.9	0.30	5.70	0.90	10.10	200.00	70.00
A11EE-P005F	5P	0.64	1/0.9	0.30	9.40	0.90	14.10	370.00	90.00
A11EE-P010F	10P	0.64	1/0.9	0.30	13.00	1.25	18.60	610.00	120.00
A11EE-P020F	20P	0.64	1/0.9	0.30	16.80	1.25	22.70	930.00	140.00
A11EE-P030F	30P	0.64	1/0.9	0.30	19.90	1.60	26.70	1390.00	170.00
A11EE-P050F	50P	0.64	1/0.9	0.30	25.40	1.60	32.60	1940.00	200.00
A11EE-P100F	100P	0.64	1/0.9	0.30	35.50	2.00	44.10	3700.00	270.00
<b>SCREENED CABLES</b>									
A11FF-P002F	2P(Q)	0.64	1/0.9	0.30	6.20	0.90	10.60	220.00	90.00
A11FF-P005F	5P	0.64	1/0.9	0.30	9.90	0.90	14.60	380.00	120.00
A11FF-P010F	10P	0.64	1/0.9	0.30	13.50	1.25	19.10	630.00	160.00
A11FF-P020F	20P	0.64	1/0.9	0.30	17.30	1.25	23.20	955.00	190.00
A11FF-P030F	30P	0.64	1/0.9	0.30	20.40	1.60	27.20	1415.00	220.00
A11FF-P050F	50P	0.64	1/0.9	0.30	25.90	1.60	33.10	2000.00	270.00
A11FF-P100F	100P	0.64	1/0.9	0.30	36.00	2.00	44.60	3750.00	360.00

(Q) = Quad

15, 25, 40 and 75 pair cables of the above type are also covered in ESI 09-6 Issue 5.

Details are available upon request.

For further technical information refer to page 4:40

\* ESI standards are now covered under ENATS (Energy Network Association Technical Specification). Standard number remains same, i.e. ENATS 09-6.

# Technical Information for ESI\* 09-6 Issue 5

## PAIR IDENTIFICATION

Pairs will be identified as follows:

2 pair (quad) cables - Blue, Orange, Green, Brown (in order of rotation)

5 pair cables - Pairs 1 to 5 inclusive

10 pair cables - Pairs 1 to 10 inclusive

15 pair cables - Pairs 1 to 15 inclusive

20 pair cables - Pairs 1 to 20 inclusive

25 pair cables - Pairs 1 to 25 inclusive

30 pair cables - Pairs 1 to 30 inclusive

40 pair cables - Pairs 1 to 40 inclusive

50 pair cables - Pairs 1 to 50 inclusive

\*75 pair cables - Pairs 1 to 50 plus 1 to 25 inclusive

\*100 pair cables - Pairs 1 to 50 plus 1 to 50 inclusive

\*Alternative colour schemes are acceptable for the 75 and 100 pair.

## COLOUR CODE CHART 3

Pair Number	Wire	Pair Number	Wire	Pair Number	Wire
1	Black/Blue	18	Brown/White	35	Red/Orange
2	Black/Orange	19	Brown/Grey	36	Red/Yellow
3	Black/Green	20	Grey/White	37	Red/Brown
4	Black/Brown	21	Black/White	38	Red/Violet
5	Black/Grey	22	Black/Red	39	Grey/Yellow
6	Blue/White	23	Black/Yellow	40	Grey/Violet
7	Blue/Orange	24	Black/Violet	41	Orange/Yellow
8	Blue/Green	25	White/Red	42	Orange/Violet
9	Blue/Brown	26	White/Yellow	43	Yellow/Brown
10	Blue/Grey	27	White/Violet	44	Yellow/Violet
11	Orange/White	28	Blue/Red	45	Brown/Violet
12	Orange/Green	29	Blue/Yellow	46	Turquoise/Black
13	Orange/Brown	30	Blue/Violet	47	Turquoise/Blue
14	Orange/Grey	31	Green/Red	48	Turquoise/Red
15	Green/White	32	Green/Yellow	49	Turquoise/Orange
16	Green/Brown	33	Green/Violet	50	Turquoise/Yellow
17	Green/Grey	34	Red/Grey		

# Technical Information for ESI\* 09-6 Issue 5

1  
2  
3  
4  
5  
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## ELECTRICAL CHARACTERISTICS

### Conductor Resistance

Maximum d.c. conductor resistance @ 20°C (LOOP) 59.34 ohms/km.

### Insulation Resistance

Minimum insulation resistance 80 Mohms/km.

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