

ENATS* 09-6 Issue 7

Multipair PVC Insulated and Sheathed - Armoured, Un-screened



Application

These light current control cables are 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.

Specification

- In accordance with ENATS 09-6 Issue 7 Table E.3B.
- **Conductors:** Solid (Class 1) plain copper conductors to BS EN 60228.
- **Insulation:** PVC insulation Type 2 to BS7655.
- **Pair Identification:** See colour code chart 4 on page 4:50.
- **Binder Tape:** p.e.t.p. tape of suitable overlap.
- **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.

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

Control & Instrumentation Cables
ENATS* 09-6 Issue 7

Multipair PVC Insulated & Sheathed - Armoured, Non-screened

| Anixter Number | Number of Pairs | 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 ² | #/mm | mm | mm | mm | mm | kg/km | mm |
| A11BP-P002F | 2P(Q) | 0.50 | 1/0.8 | 0.30 | 5.1 | 0.9 | 9.5 | 200 | 60 |
| A11BP-P005F | 5P | 0.50 | 1/0.8 | 0.30 | 8.5 | 0.9 | 13.1 | 290 | 80 |
| A11BP-P010F | 10P | 0.50 | 1/0.8 | 0.30 | 10.9 | 1.25 | 16.4 | 540 | 100 |
| A11BP-P020F | 20P | 0.50 | 1/0.8 | 0.30 | 14.4 | 1.25 | 20.1 | 770 | 130 |
| A11BP-P040F | 40P | 0.50 | 1/0.8 | 0.30 | 22.9 | 1.6 | 29.7 | 1430 | 180 |
| A11BP-P060F | 60P | 0.50 | 1/0.8 | 0.30 | 25.9 | 1.6 | 33.1 | 1900 | 200 |
| A11BP-P100F | 100P | 0.50 | 1/0.8 | 0.30 | 32.6 | 2.0 | 41.0 | 3010 | 250 |
| A11BP-P200F | 200P | 0.50 | 1/0.8 | 0.30 | 46.0 | 2.0 | 56.0 | 5660 | 340 |

(Q) = Quad

For further technical information refer to page 4:50.

Non-armoured versions also available.

Details upon request.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

Technical Information for ENATS* 09-6 Issue 7

PAIR IDENTIFICATION

Pairs will be identified as given in colour code chart 4 below:

COLOUR CODE CHART 4

| Pair Number | Colour | |
|-------------|--------|--------|
| | Wire a | Wire b |
| 1 | White | Blue |
| 2 | White | Orange |
| 3 | White | Green |
| 4 | White | Brown |
| 5 | White | Grey |
| 6 | Red | Blue |
| 7 | Red | Orange |
| 8 | Red | Green |
| 9 | Red | Brown |
| 10 | Red | Grey |
| 11 | Black | Blue |
| 12 | Black | Orange |
| 13 | Black | Green |
| 14 | Black | Brown |
| 15 | Black | Grey |
| 16 | Yellow | Blue |
| 17 | Yellow | Orange |
| 18 | Yellow | Green |
| 19 | Yellow | Brown |
| 20 | Yellow | Grey |

2 pair cables are laid up in quad formation in order of rotation: white, red, blue, orange.

Cables having 40 pairs and above are laid up in 20 pair units, each individual 20 pair unit having pair identification as per colour code chart 4. Each unit shall be identified by a numbered tape applied directly on to the unit binder tapes or by a separate longitudinal tape applied under a clear unit binder tape. The numbers shall run from 1 upwards in units of 1.

Technical Information for ENATS* 09-6 Issue 7

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19**ELECTRICAL CHARACTERISTICS****Conductor Resistance**

Maximum d.c. conductor resistance @ 20°C (LOOP) 73.6 ohms/km.

Insulation Resistance

Minimum insulation resistance @ 20°C 80 Mohms/km (PVC), 1500 Mohms/km (PE).

Mutual Capacitance

Maximum mutual capacitance 150nF/km (@ 1kHz) PVC insulation, 75nF/km (@ 1kHz) PE insulation.

Capacitance Unbalance

Maximum capacitance unbalance:

2 pair 800pF for 500m of cable @ 1kHz.

above 2 pair 400pF for 500m of cable @ 1kHz.

Mutual Inductance

Maximum mutual inductance 915 μ H for 500m of cable @1kHz.

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