

# ENATS\* 09-6 Issue 7

Multipair PVC Insulated and Sheathed - Collective Screen, 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. All armoured cables (generation) must be provided with a collective screen.

## Specification

- In accordance with ENATS 09-6 Issue 7 Table E.3C (These cables were formerly covered by GDGD200).
- **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.
- **Collective Screen:** 2 pair cables - tinned copper drain wire under and in contact with aluminium tape. 5 pair cables and above - tinned copper drain wire under and in contact with laminate backed aluminium tape (metallic side down), the backing ensuring adhesion to the PVC inner sheath.
- **Inner Sheath:** PVC inner sheath Type TM.1 or 6 to BS EN 50363-4-1.
- Mild galvanised steel wires to BS EN10257-1 (Cables up to 10PR only).
- **Outer Sheath:** Grey 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.

N.B. Cables of 20 pair and above have DSTA (Double Steel Tape Armour).

Control & Instrumentation Cables  
**ENATS\* 09-6 Issue 7**

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Anixter Number	Number of Pairs	Nominal Cond Area	Nominal Cond Stranding	Insulation Thickness	Nominal Diameter Under Armour	Armour Wire Diameter/Tape Thickness	Nominal O/D	Approx Cable Weight	Minimum Bending Radius (fixed bend)
		mm <sup>2</sup>	#/mm	mm	mm	mm	mm	kg/km	mm
A11CY-P002F-09	2P(Q)	0.50	1/0.8	0.30	6.50	0.90	12.10	300.00	100.00
A11CY-P005F-09	5P	0.50	1/0.8	0.30	9.50	0.90	15.30	450.00	130.00
A11CY-P010F-09	10P	0.50	1/0.8	0.30	11.70	1.25	18.60	730.00	150.00
A11CY-P020F-09	20P	0.50	1/0.8	0.30	15.00	0.5*	21.80	930.00	180.00
A11CY-P040F-09	40P	0.50	1/0.8	0.30	24.10	0.5*	31.70	1570.00	260.00
A11CY-P060F-09	60P	0.50	1/0.8	0.30	27.90	0.5*	36.10	2120.00	290.00
A11CY-P100F-09	100P	0.50	1/0.8	0.30	34.00	0.5*	42.20	2850.00	340.00
A11CY-P200F-09	200P	0.50	1/0.8	0.30	47.60	0.5*	57.20	4860.00	460.00

\* Refers to thickness of steel tape on DSTA cables. For SWA version of DSTA armoured cables please use suffix -SWA e.g. A11CY-P020F-SWA N.B. (Q) = Quad  
 For further technical information refer to page 4:50.

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

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# 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

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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 $\mu$ H for 500m of cable @1kHz.

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