Cable Data

Contents

Introduction

The tables in the following pages give dimensional data on typical cable constructions to enable selection of the correct accessory.

However, it must be stressed that this can only be used as a general guide – cable constructions can vary considerably in different territories and networks.

The types and number of layers of screen, the arrangement and material of conductor and the general thickness of respective layers will all affect the dimensions of the cable.

Therefore, the final selection of accessory should be based on the actual cables to be sure of correct selection.

The main information which is needed when selecting accessories:

Øcond = overall diameter of conductor

This is needed to ensure any connector or lug will correctly fit – the tables are based on typical Class 2 stranded conductors – but variations such as solid conductor or water-blocking materials can influence the dimensions. (Normally the cable cross sectional area is quoted rather than the conductor diameter).

Øins = overall diameter of insulation

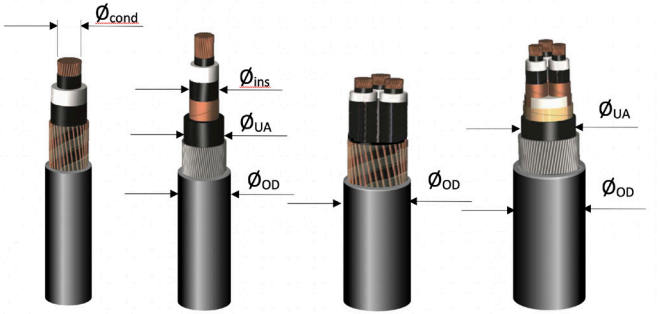
This is very important in medium voltage systems (>3.6kV), as the accessory needs to be a very tight fit around the critical parts at the insulation screen cut. The information in the tables is based on cables with insulation thickness based on CENELEC HD620.A3, however it should be noted that there are regional variations in insulation wall thickness and also some manufacturer's tolerance can affect the actual values – therefore it is wise to measure on actual cable as a final check.

ØUA = diameter under Armour

When making a good connection from cable armours , it is necessary to use a support ring under the armour and therefore the diameter which the support collar needs to fit over is important.

ØOD = overall cable diameter

The overall diameter of cables can dictate if tubing's or other materials can be used without problems with clearances.



Single Core with wire screen (Unarmoured)

Single Core with tape screen and armour screen

Three Core with wire screen (Unarmoured)

Three Core with tape screen and armour screen

0.6/1 (1.2) kV IEC 60502-1 Part 1

	 Single Core Armoured		 Two Core Armoured		 Three Core Armoured		 Four Core Armoured	
Conductor Cross Section mm²	Ø UA mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø UA mm	Ø OD mm
2.5	-	-	8.5	13.6	9.1	14.1	10.0	15.0
4	-	-	9.7	11.6	10.4	15.3	11.5	16.4
6	-	-	10.7	12.6	11.5	16.6	12.7	18.7
10	-	-	12.7	18.0	13.7	19.5	15.1	21.1
16	-	-	14.5	20.0	15.5	21.2	17.2	22.9
25	-	-	18.4	24.1	20.1	26.7	22.3	28.9
35	-	-	21.3	28.0	22.8	29.6	25.3	32.1
50	-	-	19.0	25.8	21.7	28.5	25.0	32.0
70	14.7	20.0	22.0	29.0	25.2	32.2	29.5	37.7
95	16.3	21.6	25.1	33.1	28.8	37.0	33.3	41.7
120	17.9	23.2	27.9	36.1	32.0	40.4	37.5	47.1
150	19.8	25.8	30.9	39.3	35.9	45.5	41.6	51.4
185	22.0	28.0	34.9	44.7	40.0	49.8	46.4	56.6
240	24.5	30.5	39.0	59.0	44.9	55.1	52.6	63.0
300	27.3	33.5	43.3	53.5	49.8	60.2	58.0	68.8
400	30.2	37.4	48.4	59.0	55.4	66.6	64.8	78.1
500	33.3	40.7	-	-		-	-	-
630	37.3	44.9	-	-	-	-	-	-
800	45.8	54.8	-	-	-	-	-	-
1000	49.2	58.4	-	-	-	-	-	-

1.9/3.3 (3.6) kV IEC 60502-1 Part 1

	 Single Core Armoured		 Three Core Armoured	
Conductor Cross Section mm²	Ø UA mm	Ø OD mm	Ø UA mm	Ø OD mm
16	-	-	22.1	29.0
25	-	-	25.4	32.2
35	-	-	28.0	35.0
50	12.7	17.5	26.7	34.7
70	14.7	20.2	29.8	38.0
95	16.6	22.3	33.0	41.4
120	18.5	24.2	36.1	45.7
150	20.8	27.4	38.7	48.5
185	23.2	30.0	41.9	51.9
240	26.0	32.8	46.7	56.9
300	28.6	35.6	50.8	61.2
400	32.4	40.4	55.8	66.6
500	36.0	44.2	-	-
630	40.4	48.8	-	-
800	45.6	55.4	-	-
1000	50.6	60.6	-	-

3.6/6 (7.2) kV / 3.8/6.6 (7.2) kV CENELEC HD620 A3

2.5-3.2mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured		Three Core Unarmoured	Three Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	14.4	20.0	18.9	25.7	40.5	38.8	49.0
70	9.9	15.9	22.0	20.7	27.5	44.0	42.5	52.5
95	11.6	17.6	23.7	22.4	29.4	48.0	46.2	56.5
120	13	19	25.5	23.9	30.9	51.0	49.6	60.0
150	14.5	20.5	26.8	25.2	32.4	54.5	53.0	63.5
185	16.1	22.1	28.8	27.0	35.0	58.0	56.0	67.0
240	18.4	24.4	31.2	29.4	37.6	64.0	61.4	73.0
300	20.6	26.6	34.2	32.4	40.8	70.0	68.0	81.0
400	23.7	29.7	37.7	35.5	44.1	78.0	75.1	89.0
500	26.6	32.6	41.3	39.0	49.0	-	-	-
630	29.8	35.8	44.9	42.6	52.8	-	-	-
800	33.6	39.6	49.0	45.0	56.0	-	-	-
1000	37.6	43.6	52.8	49.9	60.0	-	-	-

6/10 (12) kV / 6.35/11 (12) kV CENELEC HD620 A3

3.4mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured		Three Core Unarmoured	Three Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	17.0	23.7	24.7	27.7	41.6	39.1	53.1
70	9.9	18.8	25.7	26.7	29.7	45.6	43.1	57.1
95	11.6	20.5	27.4	28.4	31.4	49.7	47.2	61.2
120	13.0	22.0	29.2	30.1	33.1	53.5	51.0	65.0
150	14.5	23.3	30.5	32.4	35.4	56.5	54.0	68.0
185	16.1	25.1	32.5	34.2	37.2	60.8	58.3	72.3
240	18.4	27.3	34.9	36.8	39.8	66.0	63.0	79.0
300	20.6	29.6	37.2	39.3	42.3	71.5	68.5	84.5
400	23.7	32.3	40.1	42.2	45.2	77.9	74.9	90.9
500	26.6	35.2	43.2	46.5	49.5	-	-	-
630	29.8	38.6	46.9	50.3	53.3	-	-	-
800	33.6	37.9	45.9	48.1	51.1	-	-	-
1000	37.6	41.9	50.1	52.5	55.5	-	-	-

8.7/15 (17.5) kV CENELEC HD620 A3

4.5mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured		Three Core Unarmoured	Three Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	18.2	27.5	28.7	33	50.9	48.2	59.0
70	9.9	19.7	29	30.2	35	55.0	52.1	62.9
95	11.6	21.4	31	32.2	37	59.0	56.0	67.0
120	13	22.8	32.5	33.7	39	62.4	59.4	70.6
150	14.5	24.3	34	35.2	41	65.4	62.2	73.6
185	16.1	25.9	35.5	36.7	42	69.5	66.3	79.4
240	18.4	28.2	38	39.2	45	74.6	71.2	84.7
300	20.6	30.4	40.5	41.7	47	80.1	76.4	90.1
400	23.7	33.5	44	45.2	52	86.3	82.4	96.7
500	26.6	36.4	47.4	48.6	57	-	-	-
630	29.8	39.6	50.2	51.4	59	-	-	-
800	33.6	43.4	54.2	55.4	66	-	-	-
1000	37.6	47.4	58.4	59.6	71	-	-	-

12/20 (24) kV / 12.7/22 (24) kV CENELEC HD620 A3

5.5mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured		Three Core Unarmoured	Three Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	21.6	27.4	27.8	35	59	56.2	67
70	9.9	23.4	28.8	30.8	38	63	60.2	71
95	11.6	25.1	30.6	32.8	40	67	64.2	75
120	13	26.6	32.5	33.8	41	70	67.6	80
150	14.5	27.9	34	35.8	43	74	72.2	83
185	16.1	31.9	35.5	37.8	45	78	77.2	88
240	18.4	34.2	37.3	39.4	47	84	80.8	94
300	20.6	36.9	39.7	43.4	51	89	85.8	99
400	23.7	39.8	42.2	46.4	54	95	92.8	106
500	26.6	43.2	45.6	49.4	57	-	-	-
630	29.8	45.8	48.5	53.4	61	-	-	-
800	33.6	50	53.2	60.4	68	-	-	-
1000	37.6	54.1	57.3	65.4	73	-	-	-

18/30 (36) kV / 19/33 (36) kV CENELEC HD620 A3

8.0mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured		Three Core Unarmoured	Three Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	25.4	34	33.5	42	74	66.7	81
70	9.9	26.9	36	34.5	43	78	70.7	85
95	11.6	28.6	38	36.5	45	82	74.7	89
120	13	30	40	38.5	47	85	78.7	93
150	14.5	31.5	41	41.5	50	89	81.7	96
185	16.1	33.1	43	43.5	52	93	85.7	100
240	18.4	35.4	46	45.5	54	98	91.7	106
300	20.6	37.6	48	48.5	57	104	97.7	112
400	23.7	40.7	51	51.5	60	111	103.7	118
500	26.6	43.6	54	54.5	63	-	-	-
630	29.8	46.8	58	58.5	67	-	-	-
800	33.6	50.6	65	65.5	74	-	-	-
1000	37.6	54.6	70	70.5	79	-	-	-

20.8/36 (42) kV CENELEC HD620 A3

8.8mm nominal insulation thickness			Single Core Unarmoured	Single Core Armoured	
Conductor Cross Section mm²	Ø cond mm	Ø ins mm	Ø OD mm	Ø UA mm	Ø OD mm
50	8.4	26.4	35.6	34.8	43.8
70	9.9	27.9	37.6	35.8	44.8
95	11.6	29.6	39.6	37.8	46.8
120	13	31	41.6	39.8	48.8
150	14.5	32.5	42.6	42.8	51.8
185	16.1	34.1	44.6	44.8	53.8
240	18.4	36.4	47.6	45.8	55.8
300	20.6	38.6	49.6	48.8	58.8
400	23.7	41.7	52.6	51.8	61.8
500	26.6	44.6	55.6	54.8	64.8
630	29.8	47.8	59.6	58.8	68.8
800	33.6	51.6	66.6	65.8	75.8
1000	37.6	55.6	71.6	70.8	80.8