

2 Controlflex® “CY” Type

PVC Insulated, Screened Flexible Cable 300/500V 70°C



6 Application

7 These flexible cables are designed for industrial control and instrumentation circuits and interconnections between mobile and fixed equipment. Incorporates a collective tinned copper wire braid screen for electrical protection. Cables are not recommended for applications where cable is likely to be subjected to repetitive flexing and/or twisting e.g. robotics, reeling drum, cranes etc. Details on dynamic types available on request.

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9 Specifications

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- Generally in accordance with BS6500 and VDE0250.
 - **Conductors:** Flexible (Class 5) copper conductors to BS EN 60228, plain.
 - **Insulation:** PVC insulation TI.2 to BS EN 50363-3, Type YI.2 to DIN VDE 0207 Pt 4.
 - **Core Identification:** Cores will be number printed, in a contrasting colour, on black PVC insulation. All cables of three core and above will incorporate a green/yellow earth core in the outer layer.
 - **Binder Tape:** p.e.t.p. tape.
 - Tinned copper wire braid. Minimum coverage 70%.
 - Grey PVC sheath Type TM.2 to BS EN 50363-4-1, Type YM.2 to DIN VDE 0207 Pt 5.RAL 7000.
 - Flame retardant to BS EN 60332-1-2 & IEC 60332-1
 - **Voltage Rating:** 300/500V.
 - **Temperature Rating:** 70°C maximum conductor operating temperature.
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14 Add suffix - KL to part number for cables up to 3 core having coloured cores, or - HKL for 4 and 5 core cables as follows: e.g. A4AN-C003-KL or A4AN-C005-HKL

15 2 core - blue, brown

16 3 core - green/yellow, blue, brown

17 4 core - green/yellow, brown, black, grey

18 5 core - green/yellow, brown, black, grey, blue

19 For further technical information refer to the end of the section.

For Low Smoke Halogen versions refer to page 3:18.

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Anixter Number	Number of Cores	Nominal Conductor Size	Nominal Number and Size of Wires	Nominal O/D	Approx Cable Weight
		mm ²	#/mm	mm	kg/km
A4AK-C002	2	0.5	16/0.20	5.4	45
A4AK-C003	3	0.5	16/0.20	5.8	53
A4AK-C004	4	0.5	16/0.20	6.3	63
A4AK-C005	5	0.5	16/0.20	6.7	76
A4AK-C007	7	0.5	16/0.20	7.3	107
A4AK-C010	10	0.5	16/0.20	8.5	120
A4AK-C012	12	0.5	16/0.20	9.2	140
A4AK-C018	18	0.5	16/0.20	10.2	179
A4AK-C020	20	0.5	16/0.20	11.2	200
A4AK-C025	25	0.5	16/0.20	13.3	256
A4AL-C002	2	0.75	24/0.20	6.0	54
A4AL-C003	3	0.75	24/0.20	6.3	65
A4AL-C004	4	0.75	24/0.20	6.8	77
A4AL-C005	5	0.75	24/0.20	7.3	91
A4AL-C006	6	0.75	24/0.20	7.8	102
A4AL-C007	7	0.75	24/0.20	7.8	115
A4AL-C010	10	0.75	24/0.20	9.6	150
A4AL-C012	12	0.75	24/0.20	10.1	177
A4AL-C018	18	0.75	24/0.20	11.6	250
A4AL-C020	20	0.75	24/0.20	14.1	294
A4AL-C025	25	0.75	24/0.20	13.9	326
A4AL-C032	32	0.75	24/0.20	15.6	406
A4AL-C040	40	0.75	24/0.20	17.0	540
A4AM-C002	2	1	32/0.20	6.2	60
A4AM-C003	3	1	32/0.20	6.5	73
A4AM-C004	4	1	32/0.20	7.0	89
A4AM-C005	5	1	32/0.20	7.6	105
A4AM-C007	7	1	32/0.20	8.4	139
A4AM-C010	10	1	32/0.20	9.7	165
A4AM-C012	12	1	32/0.20	10.4	207
A4AM-C015	15	1	32/0.20	11.4	250
A4AM-C018	18	1	32/0.20	12.4	295
A4AM-C025	25	1	32/0.20	14.9	384
A4AM-C030	30	1	32/0.20	16.0	480
A4AM-C032	32	1	32/0.20	16.6	510

Continued overleaf . . .

Controlflex® “CY” Type

PVC Insulated, Screened Flexible Cable 300/500V 70°C (continued)

Anixter Number	Number of Cores	Nominal Conductor Size	Nominal Number and Size of Wires	Nominal O/D	Approx Cable Weight
		mm ²	#/mm	mm	kg/km
A4AN-C002	2	1.5	30/0.25	6.8	70
A4AN-C003	3	1.5	30/0.25	7.2	90
A4AN-C004	4	1.5	30/0.25	7.8	108
A4AN-C005	5	1.5	30/0.25	8.4	125
A4AN-C007	7	1.5	30/0.25	9.3	160
A4AN-C010	10	1.5	30/0.25	10.5	220
A4AN-C012	12	1.5	30/0.25	11.8	279
A4AN-C018	18	1.5	30/0.25	14.0	350
A4AN-C020	20	1.5	30/0.25	15.0	395
A4AN-C025	25	1.5	30/0.25	16.9	530
A4AN-C030	30	1.5	30/0.25	18.0	680
A4AN-C032	32	1.5	30/0.25	18.9	720
A4AO-C002	2	2.5	50/0.25	8.0	104
A4AO-C003	3	2.5	50/0.25	8.6	140
A4AO-C004	4	2.5	50/0.25	9.4	173
A4AO-C005	5	2.5	50/0.25	10.0	206
A4AO-C007	7	2.5	50/0.25	10.8	267
A4AO-C012	12	2.5	50/0.25	14.6	432
A4AOA-C004	4	4	56/0.30	11.1	236
A4AOA-C005	5	4	56/0.30	12.1	288
A4AOB-C004	4	6	84/0.30	12.8	339
A4AOB-C005	5	6	84/0.30	14.2	416
A4AOC-C004	4	10	80/0.40	16.1	502
A4AOC-C005	5	10	80/0.40	17.6	625

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Anixter Number	Number of Cores	Nominal Conductor Size	Nominal Number and Size of Wires	Nominal O/D	Approx Cable Weight
		mm ²	#/mm	mm	kg/km
A4A0D-C004	4	16	126/0.40	19.2	771
A4A0D-C005	5	16	126/0.40	21.2	980
A4A0E-C004	4	25	196/0.40	20.2	1420
A4A0E-C005	5	25	196/0.40	35.7	3490
A4A0F-C004	4	35	276/0.40	39.1	4100
A4A0F-C005	5	35	276/0.40	42.7	4950

Add suffix - KL to part number for cables up to three core having coloured cores or -HKL for four and five core cables as follows: e.g. A4AN-C003-KL or A4AN-C005-HKL.

2 core - blue, brown

3 core - green/yellow, blue, brown

4 core - green/yellow, brown, black, grey

5 core - green/yellow, brown, black, grey, blue

For F2 compliant meeting NBN C30-004 (IEC60332-3-24 Cat. C) add suffix -F2 e.g. A4AN-C002-F2

For further technical information, refer to end of section.

For Low Smoke Zero Halogen versions up to and including five core refer to page 3.18

Technical Information for Controlflex®

CURRENT RATINGS

30°C ambient air temperature

Nominal Conductor Area	Current Ratings	
	Single Phase a.c. or d.c.	Three Phase a.c.
mm ²	A	A
0.5	3	3
0.75	6	6
1.0	10	10
1.5	16	16
2.5	25	20
4.0	32	25
6.0	51	43
10	70	60
16	94	80
25	119	101
35	148	126
50	180	153
70	232	196
95	282	238

The above ratings are based on cable in FREE air, in an ambient air temperature of 30°C. For ambient air temperatures other than 30°C the following rating factors should be applied:

Ratings for cables up to and including 4mm² are based on 60°C conductor operating temperature with 6mm² and above based on 70°C operating temperature.

Cables up to and including 4mm² (Assuming 60°C conductor temperature)

Ambient air temp °C	35	40	45	50	55
Rating factor	0.91	0.82	0.71	0.58	0.41

Cables 6mm² and above (Assuming 70°C conductor temperature)

Ambient air temp °C	35	40	45	50	55	60
Rating factor	0.94	0.87	0.79	0.71	0.61	0.50

Technical Information for Controlflex®

VOLTAGE DROP

60°C* conductor operating temperature

Nominal Conductor Area	Voltage Drop					
	Single Phase a.c. or d.c.			Three Phase a.c.		
mm ²	mV/A/m			mV/A/m		
0.5	93			80		
0.75	62			54		
1.0	46			40		
1.5	32			27		
2.5	19			16		
4.0	12			10		
6.0	7.3			6.4		
10	4.4			3.8		
16	2.8			2.4		
	r	x	z	r	x	z
25	1.75	0.170	1.75	1.50	0.145	1.50
35	1.25	0.165	1.25	1.10	0.145	1.10
50	0.93	0.165	0.94	0.80	0.140	0.81
70	0.63	0.160	0.65	0.55	0.140	0.57
95	0.47	0.155	0.50	0.41	0.135	0.43

Since cables may be used at conductor operating temperatures up to 80°C, the current ratings may be increased by the following factors:

Cable up to and including 4mm² x 1.25 cables above 6mm² x 1.10.

Ambient temperature correction factors for cables operating at 80°C conductor temperatures should be applied as follows.

Ambient air temp °C	35	40	45	50	55	60
Rating factor	0.95	0.89	0.84	0.77	0.71	0.63

For cables where four or more cores are loaded, the following rating factors should be applied:

No. of cores loaded	4	5	6	7	10	12	14	19	24	27	30	37
Rating factor	0.78	0.72	0.67	0.63	0.56	0.53	0.51	0.45	0.42	0.40	0.39	0.36

These factors need not be applied if the number of cores loaded does not exceed the square root of the total number of cores in the cable.