

## 2 Controlflex® “YY” Type

PVC Insulated Flexible Cable 300/500V 70°C



### 4 Application

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7 These flexible cables are designed for industrial control and instrumentation circuits and interconnections between mobile and fixed equipment. 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.

### 8 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.
  - Grey PVC sheath Type TM.2 to BS EN 50363-4-1, Type YM.2 to DIN VDE 0207 Pt 5.
  - 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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12 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. A4AE-C003-KL or A4AE-C005-HKL

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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 Zero Halogen versions, refer to page 3:16.

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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 <sup>2</sup>	#/mm	mm	kg/km
A4AC-C002	2	0.5	16/0.20	4.7	32
A4AC-C003	3	0.5	16/0.20	5.1	39
A4AC-C004	4	0.5	16/0.20	5.4	46
A4AC-C005	5	0.5	16/0.20	6.2	57
A4AC-C007	7	0.5	16/0.20	6.6	70
A4AC-C010	10	0.5	16/0.20	8.4	97
A4AC-C012	12	0.5	16/0.20	8.6	110
A4AC-C018	18	0.5	16/0.20	10.1	160
A4AC-C020	20	0.5	16/0.20	11.4	188
A4AC-C025	25	0.5	16/0.20	12.5	219
A4AC-C030	30	0.5	16/0.20	13.2	264
A4AD-C002	2	0.75	24/0.20	5.1	39
A4AD-C003	3	0.75	24/0.20	5.4	50
A4AD-C004	4	0.75	24/0.20	5.9	60
A4AD-C005	5	0.75	24/0.20	6.7	72
A4AD-C006	6	0.75	24/0.20	6.9	81
A4AD-C007	7	0.75	24/0.20	7.1	90
A4AD-C008	8	0.75	24/0.20	7.4	100
A4AD-C010	10	0.75	24/0.20	9.1	124
A4AD-C012	12	0.75	24/0.20	9.4	146
A4AD-C018	18	0.75	24/0.20	11.1	211
A4AD-C020	20	0.75	24/0.20	12.4	254
A4AD-C025	25	0.75	24/0.20	13.4	289
A4AD-C032	32	0.75	24/0.20	14.9	380
A4AD-C042	42	0.75	24/0.20	16.0	461
A4AD-C050	50	0.75	24/0.20	18.1	559
A4AE-C002	2	1	32/0.20	5.3	49
A4AE-C003	3	1	32/0.20	5.6	60
A4AE-C004	4	1	32/0.20	6.5	69
A4AE-C005	5	1	32/0.20	6.7	83
A4AE-C007	7	1	32/0.20	7.5	104
A4AE-C010	10	1	32/0.20	9.9	161
A4AE-C012	12	1	32/0.20	9.9	174
A4AE-C018	18	1	32/0.20	11.7	252
A4AE-C020	20	1	32/0.20	13.1	305
A4AE-C025	25	1	32/0.20	14.3	346
A4AE-C034	34	1	32/0.20	16.3	477

Continued overleaf . . .

## Controlflex® “YY” Type

PVC Insulated 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 <sup>2</sup>	#/mm	mm	kg/km
A4AE-C050	50	1	32/0.20	19.1	682
A4AE-C042	42	1	32/0.20	17.9	578
A4AF-C002	2	1.5	30/0.25	6.2	61
A4AF-C003	3	1.5	30/0.25	6.5	79
A4AF-C004	4	1.5	30/0.25	7.4	92
A4AF-C005	5	1.5	30/0.25	7.9	109
A4AF-C007	7	1.5	30/0.25	9.0	147
A4AF-C008	8	1.5	30/0.25	9.5	169
A4AF-C010	10	1.5	30/0.25	11.3	210
A4AF-C012	12	1.5	30/0.25	11.6	237
A4AF-C014	14	1.5	30/0.25	12.0	271
A4AF-C018	18	1.5	30/0.25	13.7	347
A4AF-C020	20	1.5	30/0.25	14.9	403
A4AF-C025	25	1.5	30/0.25	16.9	490
A4AF-C032	32	1.5	30/0.25	18.1	606
A4AF-C034	34	1.5	30/0.25	18.8	642
A4AF-C042	42	1.5	30/0.25	20.5	798
A4AF-C050	50	1.5	30/0.25	22.2	926
A4AF-C061	61	1.5	30/0.25	23.7	1119
A4AG-C002	2	2.5	50/0.25	7.3	92
A4AG-C003	3	2.5	50/0.25	7.7	119
A4AG-C004	4	2.5	50/0.25	8.5	148
A4AG-C005	5	2.5	50/0.25	9.7	180
A4AG-C007	7	2.5	50/0.25	10.1	232
A4AG-C012	12	2.5	50/0.25	13.9	377
A4AG-C015	15	2.5	50/0.25	16.0	500
A4AG-C018	18	2.5	50/0.25	17.1	575
A4AG-C020	20	2.5	50/0.25	18.3	650
A4AG-C025	25	2.5	50/0.25	20.7	786
A4BC-C003	3	4	56/0.30	9.3	176
A4BC-C004	4	4	56/0.30	10.2	219
A4BC-C005	5	4	56/0.30	11.6	269
A4BC-C007	7	4	56/0.30	12.8	356

## Controlflex® “YY” Type

PVC Insulated 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 <sup>2</sup>	#/mm	mm	kg/km
A4AGA-C004	4	6	84/0.30	12.3	323
A4AGA-C005	5	6	84/0.30	13.5	391
A4AGA-C007	7	6	84/0.30	14.9	519
A4AGB-C004	4	10	80/0.40	15.0	513
A4AGB-C005	5	10	80/0.40	17.1	650
A4AGC-C004	4	16	126/0.40	19.2	884
A4AGC-C005	5	16	126/0.40	21.3	1012
A4AGD-C004	4	25	196/0.40	23.0	1252
A4AGD-C005	5	25	196/0.40	25.8	1548
A4AGE-C004	4	35	276/0.40	26.7	1658
A4AGE-C005	5	35	276/0.40	29.5	2029
A4AGF-C004	4	50	396/0.40	31.5	2360
A4AGF-C005	5	50	396/0.40	34.7	2920
A4AGG-C004	4	70	360/0.50	35.7	3201
A4AGG-C005	5	70	360/0.50	40.0	4011
A4AGH-C004	4	95	475/0.50	41.1	4259
A4AGH-C005	5	95	475/0.50	45.6	5292

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. A4AD-C003-KL or A4AD-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 (IEC 60332-3-24 Cat. C) add suffix -F2 e.g. A4AF-C002-F2.

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

For Low Smoke Zero Halogen versions up to and including five core refer to page 3:16.

# 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 <sup>2</sup>	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 4mm<sup>2</sup> are based on 60°C conductor operating temperature with 6mm<sup>2</sup> and above based on 70°C operating temperature.

### Cables up to and including 4mm<sup>2</sup> (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 6mm<sup>2</sup> 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 <sup>2</sup>	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 4mm<sup>2</sup> x 1.25 cables above 6mm<sup>2</sup> 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.