

# Product Data Sheets

**C.87/8 Series**

**C.87/0 Series**

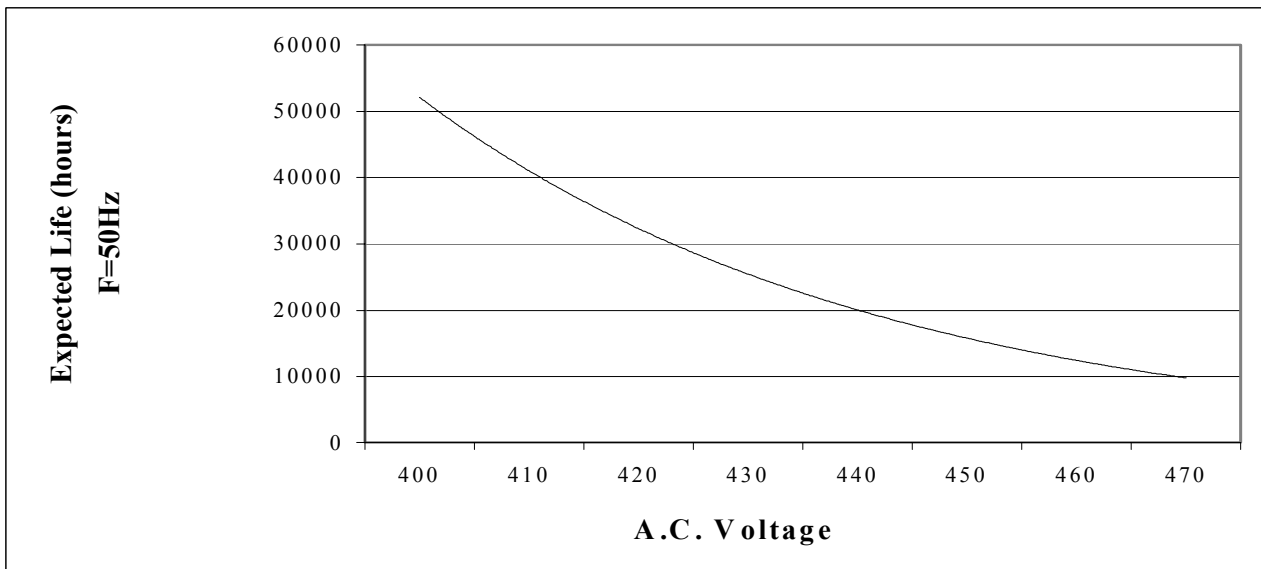
**TYPICAL APPLICATIONS:** the capacitor is used in series to the start-winding of the single-phase electric motor, allowing its starting and increasing the torque during work. Main application fields: low power electric motors compressors. The choice of capacitor depends on expected life length and the mechanical connection of the user.



**PRODUCT MARKING : TYPE A (STANDARD)**

EXAMPLE

 ARCOTRONICS	<b>C.87.8AF1 MKP</b> 6 $\mu$ F $\pm$ 5 %
420V~ 30000h/CLASS A 470V~ 10000h/CLASS B	
-25/85/21	 EN 60252
P2	



GENERAL DATA	SIZES TABLES	FAST-ON	BIPOLAR CABLE	DRAWINGS
<b>41</b>	<b>42</b>	<b>46</b>	<b>48</b>	<b>57</b>

## General technical data

Reference standards	IEC 252: 1993    EN 60252: 1994    CEI EN 60252: 1994
Approval EN 60 252	VDE Testing and Certification Institute
UL810 Recognised Component Mark	<b>Approved up 500 Vac (diameter <math>\geq</math> 30 mm)</b> Standard Marking: 450 Vac 60 Hz. -25/+70 °C. Please contact us for other kind of marking
CSA CAN/CSA – C22.2 n.14-95 CSA Std. C22.2 No 190 - M1985	600V – Diameters 50 – 55 – 60 mm 240V – Diameters 30 – 35 – 40 – 45 mm
Type of working:	Continuous
Operating class:	<b>CLASS B – 10.000 hours, 470 Volt a.c.</b> <b>CLASS A – 30.000 hours, 420 Volt a.c.</b>
Operating Min. / Max. Temperature:	- 25 / 85 °C
Rated Voltage Vn (a.c.):	500 Volt a.c.
Rated Frequency (Hz)	50 - 60 Hz
Voltage rise/fall time (max):	20 Volt / $\mu$ s
Maximum Permissible Voltage:	1.10 x Rated Voltage
Maximum Permissible Current:	1.30 x Rated Current
Dissipation factor, Tg $\delta$ :	20 x 10 <sup>-4</sup> at 20°C, 50 Hz
Safety class:	P2
Maximum altitude:	2000 m
Capacitance Tolerance (standard):	$\pm$ 5 %
Mounting:	Any position
Case:	Aluminium
Disk:	Thermoplastic Polymer V0 (UL94)
Filling Resin:	Polyurethane
Dielectric:	Polypropylene
Plates:	Self-healing metal layer
Voltage Test terminal to terminal:	2 Vn for 2 s
Voltage Test terminal to case	2.000 Volt for 2 s
Leakage – Clearance in air between parts under voltage:	$\geq$ 5mm
Leakage – Clearance in air between parts under voltage and accessible metal parts:	$\geq$ 6mm
Vibration test:	IEC 68-2-6
Max Tightening torque:	5 Nm (M8) – 10 Nm (M12)


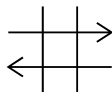
Rated Cap.		Rated Current	Max dv/dt	FAST-ON			BIPOLAR CABLE			Element weight FAST-ON
				Diameter	Height	Pack.	Diameter	Height	Pack.	
$\mu\text{F}$		A	V / $\mu\text{S}$	mm	mm	pcs	mm	mm	pcs	g
1.0		0.15	20	30	48	115	30	70	36	36
1.5		0.22	20	30	48	115	30	70	36	36
2.0		0.29	20	30	48	115	30	70	36	36
2.5		0.37	20	30	48	115	30	70	36	36
3.0		0.44	20	30	48	115	30	70	36	36
3.15		0.47	20	30	48	115	30	70	36	36
3.5		0.52	20	35	48	86	35	70	36	49
4.0		0.59	20	35	48	86	35	70	36	49
4.5		0.66	20	35	48	86	35	70	36	49
5.0		0.74	20	35	48	86	35	70	36	49
6.0		0.88	20	30	78	115	30	100	36	58
7.0		1.03	20	30	78	115	30	100	36	58
8.0		1.18	20	30	78	115	30	100	36	58
10.0		1.47	20	35	78	86	35	100	36	79
12.0		1.77	20	35	78	86	35	100	36	79
12.5		1.84	20	35	78	86	35	100	36	79
14.0		2.07	20	40	78	62	40	100	25	103
16.0		2.36	20	40	78	62	40	100	25	103
18.0		2.66	20	45	78	50	45	100	25	130
20.0		2.95	20	45	78	50	45	100	25	130
22.0		3.25	20	45	78	50	45	100	25	130
25.0		3.69	20	45	98	50	45	120	25	165
30.0		4.43	20	45	98	50	45	120	25	165
31.5		4.65	20	45	133	50	45	120	25	165
35.0		5.16	20	45	133	50	45	155	25	222
40.0		5.90	20	45	133	50	45	155	25	222
45.0		6.64	20	50	133	40	50	155	16	274
50.0	⊗	7.38	20	50	133	40	50	155	16	274
55.0	⊗	8.12	20	50	133	40	50	155	16	274
60.0	⊗	8.85	20	50	133	40	50	155	16	274

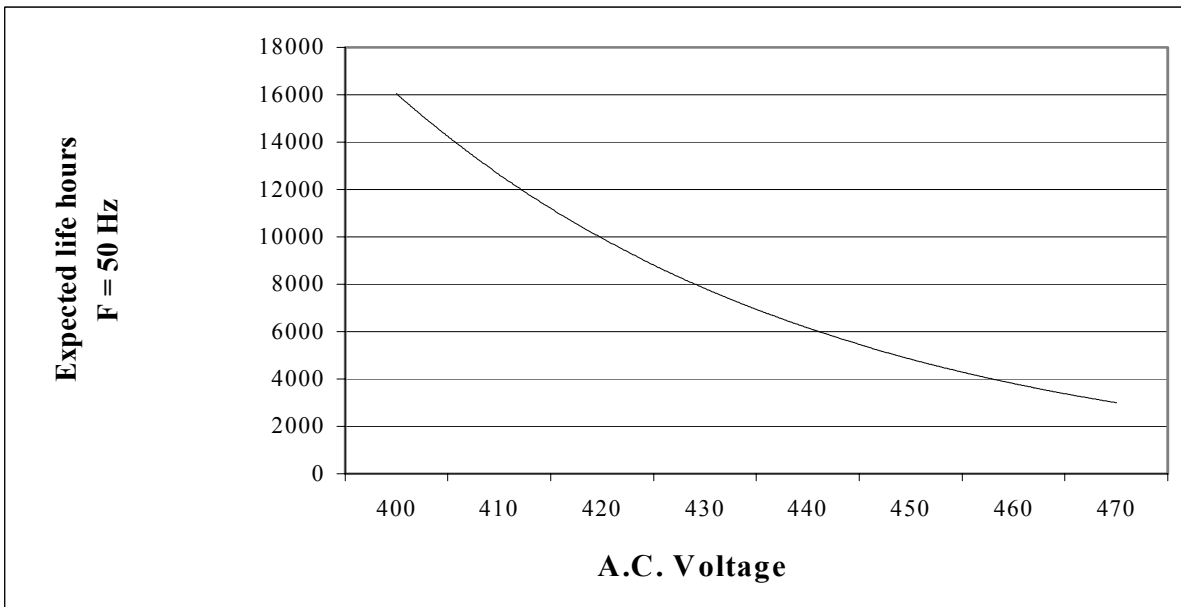
⊗ Capacitor produced according EN60252 standard with Arcotronics self-certification

**TYPICAL APPLICATION:** the capacitor is used in series to the start-winding of the single-phase electric motor, allowing its starting and increasing the torque during work. Main application fields: low power electric motors, compressors. The choice of the capacitor depends on expected life length and the mechanical connection of the user.

**PRODUCT MARKING: TYPE C - EXAMPLE**



A	C.87.0CF1 MKP
	5 $\mu$ F $\pm$ 5 %
ARCOTRONICS	
420V~ 10000h/CLASS B	
470V~ 3000h/CLASS C	
-25/85/21	
P2	
CE	5
	 



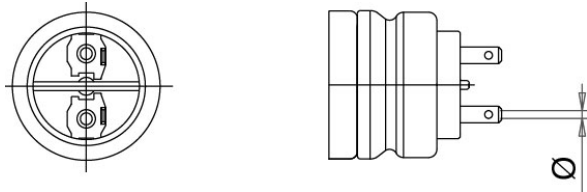
GENERAL DATA	SIZES TABLES	FAST-ON	BIPOLAR CABLE	DRAWINGS
44	45	46	48	57

## General technical data:

Reference standards	IEC 252: 1993    EN 60252: 1994
EN60252 approval	VDE Testing and Certification Institute
UL810 Recognised Component Mark	Approved up 500 Vac (diameter $\geq$ 30 mm) Standard Marking: 250 Vac 60 Hz. -25/+70 °C. Please contact us for other kind of marking
Great Wall Approval (China)	Approved
CSA CAN/CSA – C22.2 n.14-95 CSA Std. C22.2 No 190 - M1985	Vac max 600V – Diameters 50 – 55 - 60 mm Vac max 240V – Diameters 30 – 35 – 40 – 45 mm
Operating class:	<b>CLASS B - 10.000 H , 420 Volt a.c.</b> <b>CLASS C - 3.000 H , 470 Volt a.c.</b>
Type of working:	Continuous
Operating Min. / Max Temperature:	- 25 / 85 °C
Storage:	- 40 / 90 °C
Rated Voltage Vn (a.c.):	500 Volt a.c.
Rated Frequency (Hz)	50 - 60 Hz
Voltage rise/fall time (max):	15 Volt / $\mu$ s
Maximum Permissible Voltage:	1.10 x Rated Voltage
Maximum Permissible Current:	1.30 x Rated Current
Dissipation factor Tg $\delta$ :	$20 \times 10^{-4}$ at 20°C, 50 Hz
Safety class:	P2
Maximum altitude:	2000 m
Capacitance tolerance (standard):	$\pm 5 \%$
Mounting:	Any position
Case:	Aluminium
Disk:	Thermoplastic polymer V2 (UL94)
Filling resin:	Polyurethane
Dielectric:	Polypropylene
Plates:	Self-healing metal layer
Voltage Test Terminal to terminal:	2 Vn for 2 s
Voltage Test Terminal to case:	2000 Volt for 2 s
Leakage – Clearance in air between parts under voltage:	$\geq 5$ mm
Leakage – Clearance in air between parts under voltage and accessible metal parts:	$\geq 6$ mm
Max Tightening torque:	5 Nm (M8) – 10 Nm (M12)

Rated Cap. μF	Rated Current A	Max dv/dt V/μs	FAST-ON			BIPOLAR CABLE			Weight g
			Diameter mm	Height mm	Pack. pcs	Diameter mm	Height mm	Pack. pcs	
1.0	0.15	15	30	48	115	30	70	36	36
1.5	0.22	15	30	48	115	30	70	36	36
2.0	0.29	15	30	48	115	30	70	36	36
2.5	0.37	15	30	48	115	30	70	36	36
3.0	0.44	15	30	48	115	30	70	36	36
3,15	0.47	15	30	48	115	30	70	36	36
3.5	0.52	15	30	48	115	30	70	36	36
4.0	0.59	15	30	48	115	30	70	36	36
4.5	0.66	15	30	48	115	30	70	36	36
5.0	0.74	15	35	48	86	35	70	36	49
6.0	0.88	15	35	48	86	35	70	36	49
7.0	1.03	15	35	48	86	35	70	36	49
8.0	1.18	15	30	78	115	30	100	36	58
10.0	1.47	15	30	78	115	30	100	36	58
12.0	1.77	15	35	78	86	35	100	36	79
12.5	1.84	15	35	78	86	35	100	36	79
14.0	2.07	15	35	78	86	35	100	36	79
16.0	2.36	15	35	78	86	35	100	36	79
18.0	2.66	15	40	78	62	40	100	25	103
20.0	2.95	15	40	78	62	40	100	25	103
22.0	3.25	15	40	78	62	40	100	25	103
25.0	3.69	15	45	78	50	45	100	25	130
30.0	4.43	15	45	78	50	45	100	25	130
31.5	4.65	15	45	98	50	45	100	25	165
35.0	5.16	15	45	98	50	45	120	25	165
40.0	5.90	15	45	98	50	45	120	25	165
45.0	6.64	15	45	133	50	45	155	25	222
50.0	7.38	15	50	133	40	50	155	16	274
55.0	8.12	15	50	133	40	50	155	16	274
60.0	8.85	15	50	133	40	50	155	16	274
65.0	9.60	15	55	133	32	55	155	16	332
70.0	10.30	15	55	133	32	55	155	16	332
75.0	11.00	15	60	133	28	60	155	16	395
80.0	11.80	15	60	133	28	60	155	16	395

**C.87. SERIES Fast-on 2.8mm with Hole**

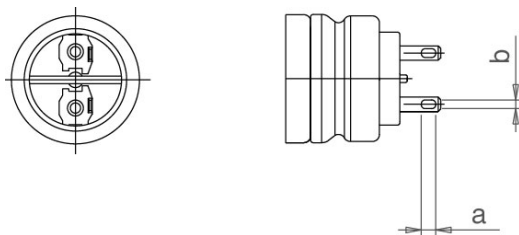


TYPE OF TERMINAL	FAST-ON 2.8 WITH HOLE
Execution:	Standard
Protection degree	IP00
Wire material	Steel tinned by electrolysis
Length	2.8 mm
Thickness	0.8 mm
Diameter hole	1.3
Standard	DIN46244
Bolt M8	To diameter (ϕ) 45mm included
Bolt M12	Over diameter (ϕ) 45mm

Metal bolt execution (ϕ) ≤ 45mm	C	8	7	-	-	<b>F</b>	<b>1</b>	-	-	-	-	A	A	-	-
Metal bolt execution (ϕ) > 45mm	C	8	7	-	-	<b>G</b>	<b>1</b>	-	-	-	-	A	A	-	-

Basic execution	C	8	7	-	-	<b>E</b>	<b>1</b>	-	-	-	-	A	A	-	-
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**C.87. SERIES Fast-on 2.8 mm with Slot**



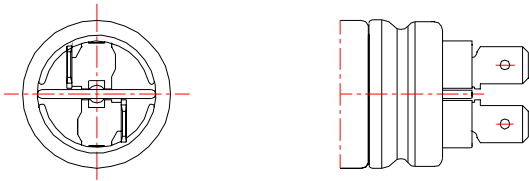
TYPE OF TERMINAL	FAST ON 2.8 WITH SLOT (SOLDERING TERMINAL)
Execution:	On request
Protection degree	IP00
Wire material	Steel tinned by electrolysis
Length	2.8 mm
Thickness	0.8 mm
Slot a x b	2.8 x 1.7
Standard	DIN46244
Bolt M8	To diameter (ϕ) 45mm included
Bolt M12	Over diameter (ϕ) 45mm

Metal bolt execution (ϕ) ≤ 45mm	C	8	7	-	-	<b>F</b>	<b>4</b>	-	-	-	-	A	A	-	-
Metal bolt execution (ϕ) > 45mm	C	8	7	-	-	<b>G</b>	<b>4</b>	-	-	-	-	A	A	-	-

Basic execution	C	8	7	-	-	<b>E</b>	<b>4</b>	-	-	-	-	A	A	-	-
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**C.87. SERIES Single Fast-on 6.3 mm**

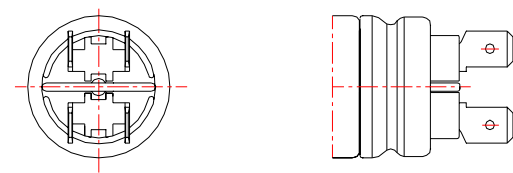


TYPE OF TERMINAL	FAST-ON 6.3 (SINGLE)
Execution:	Standard
Protection degree	IP00
Wire material	Steel tinned by electricity
Terminal	Fast-on
Length	6.3 mm
Thickness	0.8 mm
Standard	DIN46244
Bolt M8	To diameter ( $\phi$ ) 45mm included
Bolt M12	Over diameter ( $\phi$ ) 45mm

Metal bolt execution ( $\phi$ ) $\leq$ 45mm	C	8	7	-	-	<b>F</b>	<b>2</b>	-	-	-	-	A	A	-	-
Metal bolt execution ( $\phi$ ) $>$ 45mm	C	8	7	-	-	<b>G</b>	<b>2</b>	-	-	-	-	A	A	-	-

Basic execution	C	8	7	-	-	<b>E</b>	<b>2</b>	-	-	-	-	A	A	-	-
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**C.87. SERIES Double Fast-on 6.3 mm**

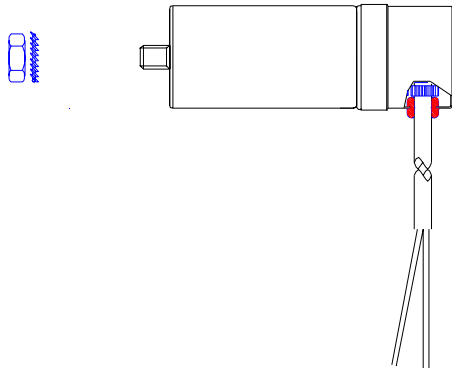


TYPE OF TERMINAL	FAST ON 6.3 (DOUBLE)
Execution:	Standard
Protection degree	IP00
Wire material	Steel tinned by electricity
Terminal	Fast on
Length	6.3 mm
Thickness	0.8 mm
Standard	DIN46244
Bolt M8	To diameter ( $\phi$ ) 45mm included
Bolt M12	Over diameter ( $\phi$ ) 45mm

Metal bolt execution ( $\phi$ ) $\leq$ 45mm	C	8	7	-	-	<b>F</b>	<b>3</b>	-	-	-	-	A	A	-	-
Metal bolt execution ( $\phi$ ) $>$ 45mm	C	8	7	-	-	<b>G</b>	<b>3</b>	-	-	-	-	A	A	-	-

Basic execution	C	8	7	-	-	<b>E</b>	<b>3</b>	-	-	-	-	A	A	-	-
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**C.87. SERIES Bipolar Cable Standard**



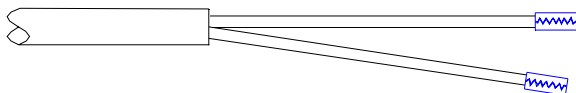
<b>TYPE</b>	<b>FLEXIBLE BIPOLAR CABLE FOR HIGH TEMPERATURE</b>
Execution:	Standard
Protection degree	IP55
Cable	PVC (Polyvinyl chloride)
Designation	H05V2V2-F
Standard	CEI 20 – 20
Operating temperature	90 °C
Conductor	Flexible soft copper wire
Insulating	Polyvinyl chloride TI3
Sleeve	Polyvinyl chloride TM3
Conductor colour	Blue / Brown
Cable unsheathing	40 mm
Cable stripping	8 mm
Finishing	Tinning
Bolt M8 (F)	To diameter (φ) 45mm included
Bolt M12 (G)	Over diameter (φ) 45mm

Metal bolt execution	C	8	7	-	-	F/G		-	-	-	-			-	-
Total length															
L = 150 mm						F/G	F					L	D		
L = 150 mm						F/G	F					L	E		
L = 250 mm						F/G	F					L	F		
L = 300 mm						F/G	F					L	G		
L = 350 mm						F/G	F					L	H		
L = 400 mm						F/G	F					L	I		

No metal bolt execution	C	8	7	-	-	E		-	-	-	-			-	-
Total length															
L = 150 mm						E	F					L	D		
L = 150 mm						E	F					L	E		
L = 250 mm						E	F					L	F		
L = 300 mm						E	F					L	G		
L = 350 mm						E	F					L	H		
L = 400 mm						E	F					L	I		

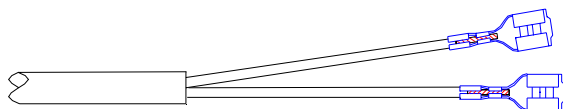
**Special Executions.** For applications requiring a specific termination, Arcotronics can supply a full range of capacitors with a bipolar cable provided with terminals. The material used (Brass – Cu Zn) provided with tinning (Gal Sn) defines connection quality and reliability also in case of high temperatures (155°C).

**C.87. SERIES Bipolar Cable Pin Terminals**



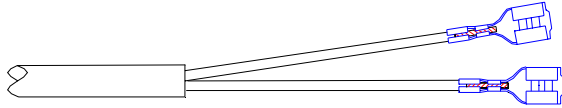
<b>TYPE</b>	<b>BIPOLAR CABLE WITH PIN TERMINAL</b>													
<b>Execution:</b>	<b>Special</b>													
Point material	Cu Zn gal Sn													
Material thickness	0.25 mm													
Terminal length	7 mm													
Standard version S = 300mm														
Metal bolt execution (φ) ≤ 45mm	C	8	7	-	-	F	J	-	-	-	-	-	-	-
Metal bolt execution (φ) > 45mm	C	8	7	-	-	G	J	-	-	-	-	-	-	-
Basic execution	C	8	7	-	-	E	J	-	-	-	-	-	-	-

**C.87. SERIES Bipolar Cable Straight Fast-on 6.3 mm**



<b>TYPE</b>	<b>BIPOLAR CABLE WITH STRAIGHT FAST-ON 6.3</b>													
<b>Execution:</b>	<b>Special</b>													
Fast – on material	Cu Zn gal Sn													
Material thickness	0.42 mm													
Terminal length	19.3 mm													
Standard version S = 300mm														
Metal bolt execution (φ) ≤ 45mm	C	8	7	-	-	F	H	-	-	-	-	-	-	-
Metal bolt execution (φ) > 45mm	C	8	7	-	-	G	H	-	-	-	-	-	-	-
Basic execution	C	8	7	-	-	E	H	-	-	-	-	-	-	-

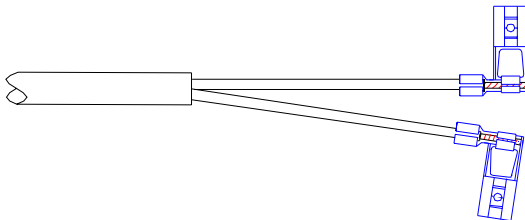
**C.87. SERIES Bipolar Cable Straight Female Fast-on 4.8 mm**



<b>TYPE</b>	<b>BIPOLAR CABLE WITH STRAIGHT FEMALE FAST-ON 4.8</b>												
<b>Execution:</b>	<b>Special</b>												
Fast-on material	Cu Zn gal Sn												
Material thickness	0.35 mm												
Terminal length	15.6 mm												

<b>Standard version S = 300mm</b>														
Metal bolt execution ( $\phi$ ) $\leq$ 45mm	C	8	7	-	-	F	G	-	-	-	-	-	-	-
Metal bolt execution ( $\phi$ ) $>$ 45mm	C	8	7	-	-	G	G	-	-	-	-	-	-	-
Basic execution	C	8	7	-	-	E	G	-	-	-	-	-	-	-

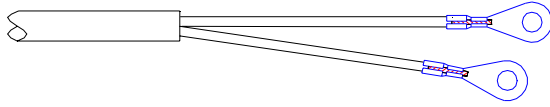
**C.87. SERIES Bipolar Cable Flag Female Fast-on 4.8 mm**



<b>TYPE</b>	<b>BIPOLAR CABLE WITH FEMALE FLAG FAST-ON 4.8</b>												
<b>Execution:</b>	<b>Special</b>												
Fast-on material	Cu Zn gal Sn												
Material thickness	0.35 mm												
Terminal length	12.5 mm												

<b>Standard version S = 300mm</b>														
Metal bolt execution ( $\phi$ ) $\leq$ 45mm	C	8	7	-	-	F	L	-	-	-	-	-	-	-
Metal bolt execution ( $\phi$ ) $>$ 45mm	C	8	7	-	-	G	L	-	-	-	-	-	-	-
Basic execution	C	8	7	-	-	E	L	-	-	-	-	-	-	-

C.87. SERIES Bipolar Cable Ring Terminal M4



<b>TYPE</b>	<b>BIPOLAR CABLE WITH RING TERMINAL M4</b>
<b>Execution:</b>	<b>Special</b>
Terminal material	Cu Zn gal Sn
Material thickness	0.40 mm
Ring diameter	4 mm

<b>Standard version S = 300mm</b>															
Metal bolt execution ( $\phi$ ) $\leq$ 45mm	C	8	7	-	-	<b>F</b>	<b>I</b>	-	-	-	-	A	A	-	-
Metal bolt execution ( $\phi$ ) $>$ 45mm	C	8	7	-	-	<b>G</b>	<b>I</b>	-	-	-	-	A	A	-	-
Basic execution	C	8	7	-	-	<b>E</b>	<b>I</b>	-	-	-	-	A	A	-	-

**C.87 SERIES – OPTIONS**

Rated Cap.  μF	C.87/8				C.87/0			
	Standard dimensions		Options		Standard dimensions		Options	
	DxH mm	Package pcs	DxH mm	Package pcs	DxH mm	Package pcs	DxH mm	Package pcs
1.0	30x48	115	25x48	162	30x48	115	25x48	162
1.5	30x48	115	25x48	162	30x48	115	25x48	162
2.0	30x48	115	25x48	162	30x48	115	25x48	162
2.5	30x48	115	25x48	162	30x48	115	25x48	162
3.0	30x48	115	25x48	162	30x48	115	25x60	162
3.15	30x48	115			30x48	115		
3.5	35x48	86	30x60	115	30x48	115	25x60	162
4.0	35x48	86	30x60	115	30x48	115	25x60	162
4.5	35x48	86	30x60	115	30x48	115	25x78	162
5.0	35x48	86	30x60	115	35x48	86	25x78	162
6.0	30x78	115	35x60	86	35x48	86	25x78	162
7.0	30x78	115	35x60	86	35x48	86	30x78	115
8.0	30x78	115	35x60	86	30x78	115	35x60	86
10.0	35x78	86			30x78	115	35x60	86
12.0	35x78	86			35x78	86		
12.5	35x78	86			35x78	86		
14.0	40x78	62	35x98	86	35x78	86		
16.0	40x78	62	35x98	86	35x78	86		
18.0	45x78	50	40x98	62	40x78	62		
20.0	45x78	50	40x98	62	40x78	62		
22.0	45x78	50	40x98	62	40x78	62		
25.0	45x98	50			45x78	50	40x98	62
30.0	45x98	50			45x78	50	40x98	62
31.5	45x133	50			45x98	50		
35.0	45x133	50	50x98	40	45x98	50		
36.0	45x133	50	50x98	40	45x98	50		
40.0	45x133	50		40	45x98	50		
45.0	50x133	40	55x98	32	45x133	50	55x98	32
50.0	50x133	40	60x98	28	50x133	40	60x98	28
55.0	50x133	40	60x98	28	50x133	40	60x98	28
60.0	50x133	40	60x98	28	50x133	40	60x98	28
65.0					55x133	32		
70.0					55x133	32		
75.0					60x133	28		
80.0					60x133	28		