



Product designation  
Product type designation

Power contactor  
BF50

**Contact characteristics**

Number of poles	Nr.	3
Rated insulation voltage U <sub>i</sub> IEC/EN	V	1000
Rated impulse withstand voltage U <sub>imp</sub>	kV	8
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current I <sub>th</sub>	A	90
Operational current I <sub>e</sub>	AC-1 (≤40°C)	A 90
	AC-1 (≤55°C)	A 75
	AC-1 (≤70°C)	A 65
	AC-3 (≤440V ≤55°C)	A 50
	AC-4 (400V)	A 28
Rated operational power AC-3 (T≤55°C)	230V	kW 15
	400V	kW 22
	415V	kW 30
	440V	kW 30
	500V	kW 30
	690V	kW 37
	1000V	kW 22
Rated operational current AC-3 (T≤55°C)	230V	A 50
	400V	A 50
	415V	A 50
	440V	A 50
	500V	A 44
	690V	A 39
	1000V	A 23
Rated operational power AC-1 (T≤40°C)	230V	kW 34
	400V	kW 59
	500V	kW 74
	690V	kW 102
IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 1 poles in series	≤24V	A 45
	48V	A 40
	75V	A 40
	110V	A 8
	220V	A –
IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 2 poles in series	≤24V	A 60

	48V	A	60
	75V	A	60
	110V	A	50
	220V	A	7
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IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 3 poles in series	≤24V	A	60
	48V	A	60
	75V	A	60
	110V	A	55
	220V	A	75
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IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 4 poles in series	≤24V	A	60
	48V	A	60
	75V	A	60
	110V	A	60
	220V	A	90
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series	≤24V	A	30
	48V	A	25
	75V	A	22
	110V	A	3
	220V	A	–
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	≤24V	A	35
	48V	A	35
	75V	A	30
	110V	A	25
	220V	A	5
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	≤24V	A	50
	48V	A	50
	75V	A	45
	110V	A	30
	220V	A	40
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	≤24V	A	55
	48V	A	55
	75V	A	55
	110V	A	45
	220V	A	50
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Short-time allowable current for 10s (IEC/EN60947-1)		A	400
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Protection fuse	gG (IEC)	A	100
	aM (IEC)	A	50
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Making capacity (RMS value)		A	500
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Breaking capacity at voltage	440V	A	400
	500V	A	352
	690V	A	312
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Resistance per pole (average value)		mΩ	0.8
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Power dissipation per pole (average value)	I <sub>th</sub>	W	6.5
	AC-3	W	2
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Tightening torque for terminals			

	min	Nm	4
	max	Nm	5
	min	Ibin	2.95
	max	Ibin	3.69
<b>Tightening torque for coil terminal</b>			
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8
	max	Ibin	0.74
<b>Max number of wires simultaneously connectable</b>			Nr. 2
<b>Conductor section</b>			
AWG/Kcmil			
	max		2
<b>Flexible w/o lug conductor section</b>			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
<b>Flexible c/w lug conductor section</b>			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
<b>Power terminal protection according to IEC/EN 60529</b>			IP20 front
<b>Mechanical features</b>			
<b>Operating position</b>			
	normal allowable		Vertical plan ±30°
<b>Fixing</b>			Screw / DIN rail 35mm
<b>Weight</b>			g 1060
<b>Conductor section</b>			
AWG/kcmil conductor section			
	max		2
<b>Operations</b>			
<b>Mechanical life</b>		cycles	15000000
<b>Electrical life</b>		cycles	1400000
<b>Safety related data</b>			
<b>Performance level B10d according to EN/ISO 13489-1</b>			
	rated load	cycles	1400000
	mechanical load	cycles	15000000
<b>Mirror contacts according to IEC/EN 60947-4-1</b>			yes
<b>EMC compatibility</b>			yes
<b>AC coil operating</b>			
<b>Rated AC voltage at 50/60Hz, 60Hz</b>			
	min	V	60
	max	V	110
<b>AC operating voltage</b>			
of 50/60Hz coil powered at 50Hz			
pick-up			
	min	%Us	80 Us min
	max	%Us	110 Us max
drop-out			
	max	%Us	≤70 Us min
of 50/60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80 Us min

		max	%Us	110 Us max
	drop-out	max	%Us	≤70 Us min
AC average coil consumption at 20°C				
	of 50/60Hz coil powered at 50Hz	in-rush	VA	35...120
		holding	VA	1.5...3.7
	of 50/60Hz coil powered at 60Hz	in-rush	VA	35...120
		holding	VA	1.5...3.7
Dissipation at holding ≤20°C 50Hz			W	1...2.5
<b>DC coil operating</b>				
DC rated control voltage				
		min	V	60
		max	V	110
DC operating voltage				
	pick-up	min	%Us	80 Us min
		max	%Us	110 Us max
	drop-out	max	%Us	≤70 Us min
Average coil consumption ≤20°C				
		in-rush	W	23...68
		holding	W	1.2...1,9
<b>Max cycles frequency</b>				
Mechanical operation			cycles/h	1500
<b>Operating times</b>				
Average time for Us control				
	in AC			
		Closing NO	min	ms
			max	ms
		Opening NO	min	ms
			max	ms
	in DC			
		Closing NO	min	ms
			max	ms
		Opening NO	min	ms
			max	ms
<b>UL technical data</b>				
Full-load current (FLA) for three-phase AC motor				
		at 480V	A	52
		at 600V	A	41
Yielded mechanical performance				
	for single-phase AC motor	110/120V	HP	5
		230V	HP	10
	for three-phase AC motor	200/208V	HP	15
		220/230V	HP	20
		460/480V	HP	40

		575/600V	HP	40
General USE	Contactor			
		AC current	A	90
Short-circuit protection fuse, 600V	High fault	Short circuit current	kA	100
		Fuse rating	A	150
		Fuse class		J
	Standard fault	Short circuit current	kA	5
		Fuse rating	A	150
		Fuse class		RK5

**Ambient conditions**

Temperature

Operating temperature

min	°C	-40
max	°C	70

Storage temperature

min	°C	-50
max	°C	80

Max altitude

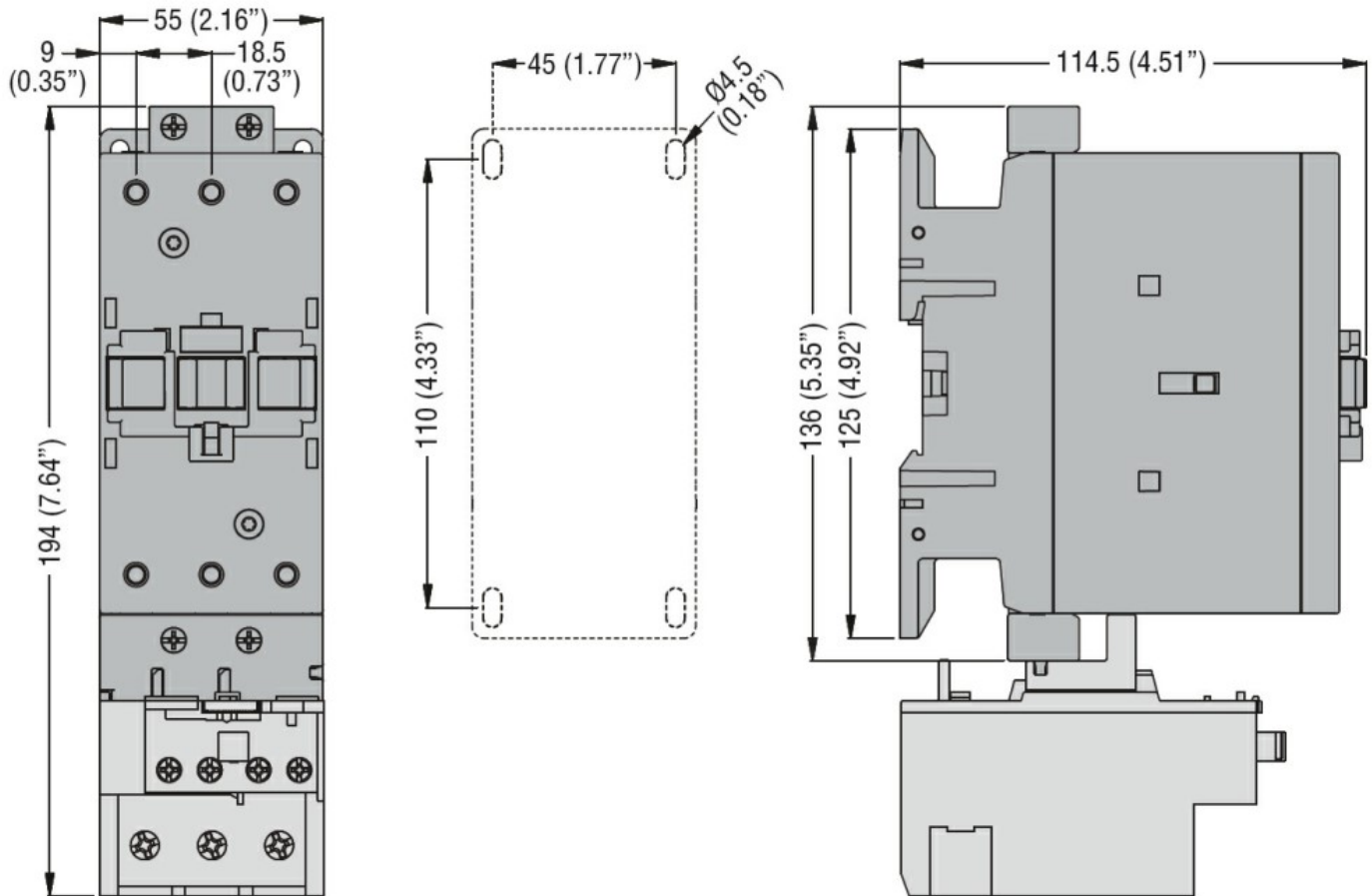
m	3000
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**Resistance & Protection**

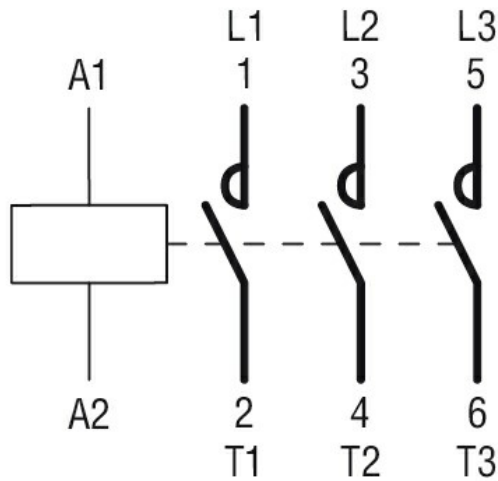
Pollution degree

3

**Dimensions**



**Wiring diagrams**



### Certifications and compliance

#### Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN/BS 60947-1

IEC/EN/BS 60947-4-1

UL 60947-1

UL 60947-4-1

#### Certificates

CCC

cULus

### ETIM classification

ETIM 8.0

EC000066 -  
 Power contactor,  
 AC switching