



Product designation  
Product type designation

Power contactor  
BF50

**Contact characteristics**

Number of poles	Nr.	4
Rated insulation voltage $U_i$ IEC/EN	V	1000
Rated impulse withstand voltage $U_{imp}$	kV	8
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current $I_{th}$	A	90
Operational current $I_e$	AC-1 ( $\leq 40^\circ\text{C}$ )	A 90
	AC-1 ( $\leq 55^\circ\text{C}$ )	A 75
	AC-1 ( $\leq 70^\circ\text{C}$ )	A 65
	AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ )	A 50
	AC-4 (400V)	A 28
Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )	230V	kW 34
	400V	kW 59
	500V	kW 74
	690V	kW 102
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	$\leq 24\text{V}$	A 45
	48V	A 40
	75V	A 40
	110V	A 8
	220V	A –
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series	$\leq 24\text{V}$	A 60
	48V	A 60
	75V	A 60
	110V	A 50
	220V	A 7
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series	$\leq 24\text{V}$	A 60
	48V	A 60
	75V	A 60
	110V	A 55
	220V	A 75
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series	$\leq 24\text{V}$	A 60
	48V	A 60
	75V	A 60
	110V	A 60
	220V	A 90

IEC max current  $I_e$  in DC3-DC5 with  $L/R \leq 15\text{ms}$  with 1 poles in series

$\leq 24\text{V}$	A	30
48V	A	25
75V	A	22
110V	A	3
220V	A	–

IEC max current  $I_e$  in DC3-DC5 with  $L/R \leq 15\text{ms}$  with 2 poles in series

$\leq 24\text{V}$	A	35
48V	A	35
75V	A	30
110V	A	25
220V	A	5

IEC max current  $I_e$  in DC3-DC5 with  $L/R \leq 15\text{ms}$  with 3 poles in series

$\leq 24\text{V}$	A	50
48V	A	50
75V	A	45
110V	A	30
220V	A	40

IEC max current  $I_e$  in DC3-DC5 with  $L/R \leq 15\text{ms}$  with 4 poles in series

$\leq 24\text{V}$	A	55
48V	A	55
75V	A	55
110V	A	45
220V	A	50

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

Making capacity (RMS value)

A	500
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Breaking capacity at voltage

440V	A	400
500V	A	352
690V	A	312

Resistance per pole (average value)

m $\Omega$	0.8
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Power dissipation per pole (average value)

$I_{th}$	W	6.5
AC3	W	2

Tightening torque for terminals

min	Nm	4
max	Nm	5
min	Ibin	2.95
max	Ibin	3.69

Tightening torque for coil terminal

min	Nm	0.8
max	Nm	1
min	Ibin	0.8
max	Ibin	0.74

Max number of wires simultaneously connectable

Nr.	2
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Conductor section

AWG/Kcmil

max	2
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Flexible w/o lug conductor section

min	mm <sup>2</sup>	1.5
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	max	mm <sup>2</sup>	35
Flexible c/w lug conductor section	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
Power terminal protection according to IEC/EN 60529			IP20 front
<b>Mechanical features</b>			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	1240
Conductor section	AWG/kcmil conductor section		
	max		2
<b>Operations</b>			
Mechanical life		cycles	15000000
Electrical life		cycles	1400000
<b>Safety related data</b>			
Performance level B10d according to EN/ISO 13489-1	rated load mechanical load	cycles	1400000
		cycles	15000000
Mirror contacts according to IEC/EN 60947-4-1			yes
EMC compatibility			yes
<b>AC coil operating</b>			
Rated AC voltage at 50/60Hz		V	230
AC operating voltage	of 50/60Hz coil powered at 50Hz		
	pick-up		
	min	%Us	80
	max	%Us	110
	drop-out		
	min	%Us	20
	max	%Us	55
	of 50/60Hz coil powered at 60Hz		
	pick-up		
	min	%Us	85
	max	%Us	110
	drop-out		
	min	%Us	40
	max	%Us	55
AC average coil consumption at 20°C	of 50/60Hz coil powered at 50Hz		
	in-rush holding	VA	210
		VA	15
	of 50/60Hz coil powered at 60Hz		
	in-rush holding	VA	195
		VA	13
	of 60Hz coil powered at 60Hz		
	in-rush holding	VA	210
		VA	15
Dissipation at holding ≤20°C 50Hz		W	5
<b>Max cycles frequency</b>			
Mechanical operation		cycles/h	3600

**Operating times**

Average time for Us control

in AC

Closing NO

min	ms	12
max	ms	28

Opening NO

min	ms	8
max	ms	22

in DC

Closing NO

min	ms	40
max	ms	85

Opening NO

min	ms	20
max	ms	55

**UL technical data**

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
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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	-50
max	°C	70

Storage temperature

min	°C	-60
max	°C	80

Max altitude

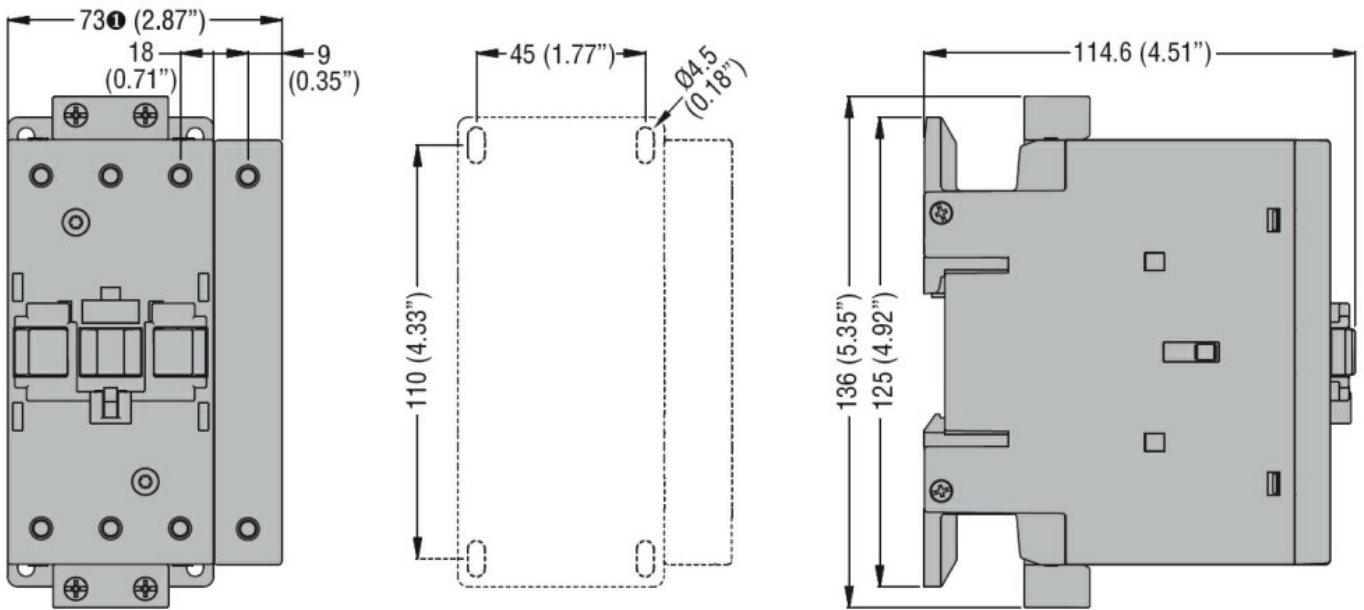
m	3000
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**Resistance & Protection**

Pollution degree

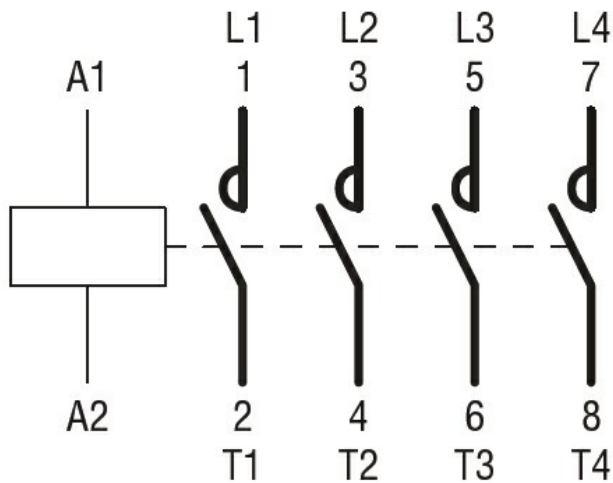
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**Dimensions [mm (in)]**



① BF80T2 82mm/3.23"

### 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