



Power contactor
BF50

Product designation

Product type designation

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 ≤ 15ms with 1 poles in series

≤24V	A	30
48V	A	25
75V	A	22
110V	A	3
220V	A	–

IEC max current I_e 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

IEC max current I_e 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

IEC max current I_e 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

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)

mΩ	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	lbin	2.95
max	lbin	3.69

Tightening torque for coil terminal

min	Nm	0.8
max	Nm	1
min	lbft	0.8
max	lbft	0.74

Max number of wires simultaneously connectable

nr.	2
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Conductor section

Flexible w/o lug conductor section

min	mm ²	1.5
max	mm ²	35

Flexible c/w lug conductor section

	min	mm ²	1.5
	max	mm ²	35
Power terminal protection according to IEC/EN 60529			IP20 front
Mechanical features			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	1240
Operations			
Mechanical life		cycles	15000000
Electrical life		cycles	1400000
Safety related data			
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
AC coil operating			
Rated AC voltage at 50/60Hz		V	230
AC operating voltage			
of 50/60Hz coil powered at 50Hz			
pick-up	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 operating voltage at 20°C			
of 50/60Hz coil powered at 50Hz			
	in-rush	VA	210
	holding	VA	15
of 50/60Hz coil powered at 60Hz			
	in-rush	VA	195
	holding	VA	13
of 60Hz coil powered at 60Hz			
	in-rush	VA	210
	holding	VA	15
Dissipation at holding ≤20°C 50Hz		W	5
Max cycles frequency			
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
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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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Ambient conditions

Temperature

Operating temperature

min	°C	-50
max	°C	70

Storage temperature

min	°C	-60
max	°C	80

Max altitude

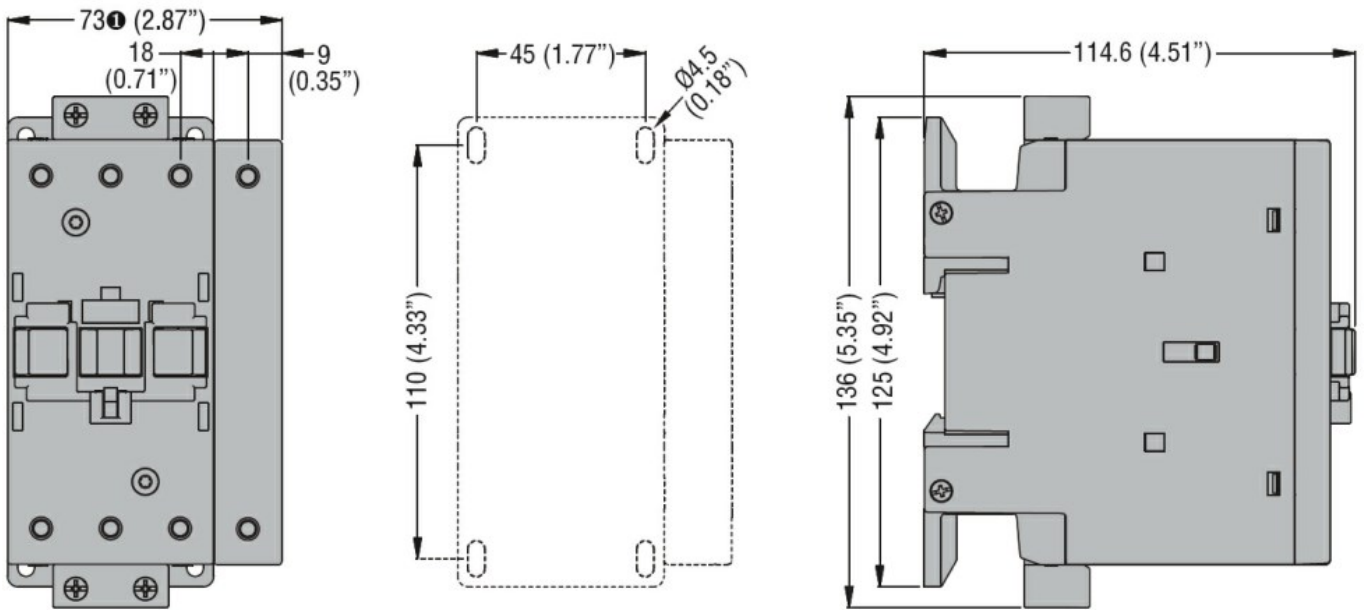
m	3000
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Resistance & Protection

Pollution degree

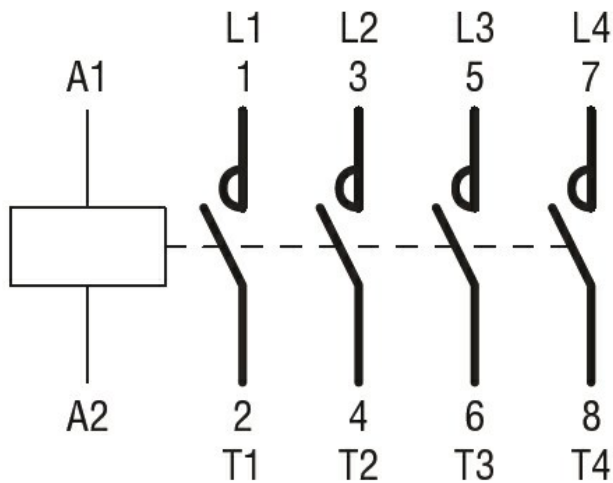
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Dimensions



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 60947-1
IEC/EN 60947-4-1
UL 60947-1
UL 60947-4-1

Certificates

CCC
cULus

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching