



Product designation

Power contactor

Product type designation

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 current AC-3 ( $T \leq 55^\circ\text{C}$ )	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 ( $T \leq 40^\circ\text{C}$ )	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 Ie 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
IEC max current Ie 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 Ie 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 Ie 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 Ie 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
Protection fuse			
	gG (IEC)	A	100
	aM (IEC)	A	50
Making capacity (RMS value)		A	500
Breaking capacity at voltage			
	440V	A	400
	500V	A	352
	690V	A	312
Resistance per pole (average value)		mΩ	0.8
Power dissipation per pole (average value)			
	Ith	W	6.5
	AC-3	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	I <sub>bin</sub>	0.8
		max	I <sub>bin</sub>	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section	AWG/Kcmil			
		max		2
Flexible w/o lug conductor section		min	mm <sup>2</sup>	1.5
		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
<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	cycles	1400000
		mechanical load	cycles	15000000
EMC compatibility				yes
<b>AC coil operating</b>				
Rated AC voltage at 60Hz			V	220
AC operating voltage	of 60Hz coil powered at 60Hz pick-up	min	%U <sub>s</sub>	80
		max	%U <sub>s</sub>	110
	drop-out	min	%U <sub>s</sub>	20
		max	%U <sub>s</sub>	55
AC average coil consumption at 20°C	of 60Hz coil powered at 60Hz	in-rush	VA	210
		holding	VA	15
Dissipation at holding ≤20°C 50Hz			W	5
<b>Max cycles frequency</b>				
Mechanical operation			cycles/h	3600
<b>Operating times</b>				
Average time for U <sub>s</sub> 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

Rated operational voltage AC (UL)	V	600
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	

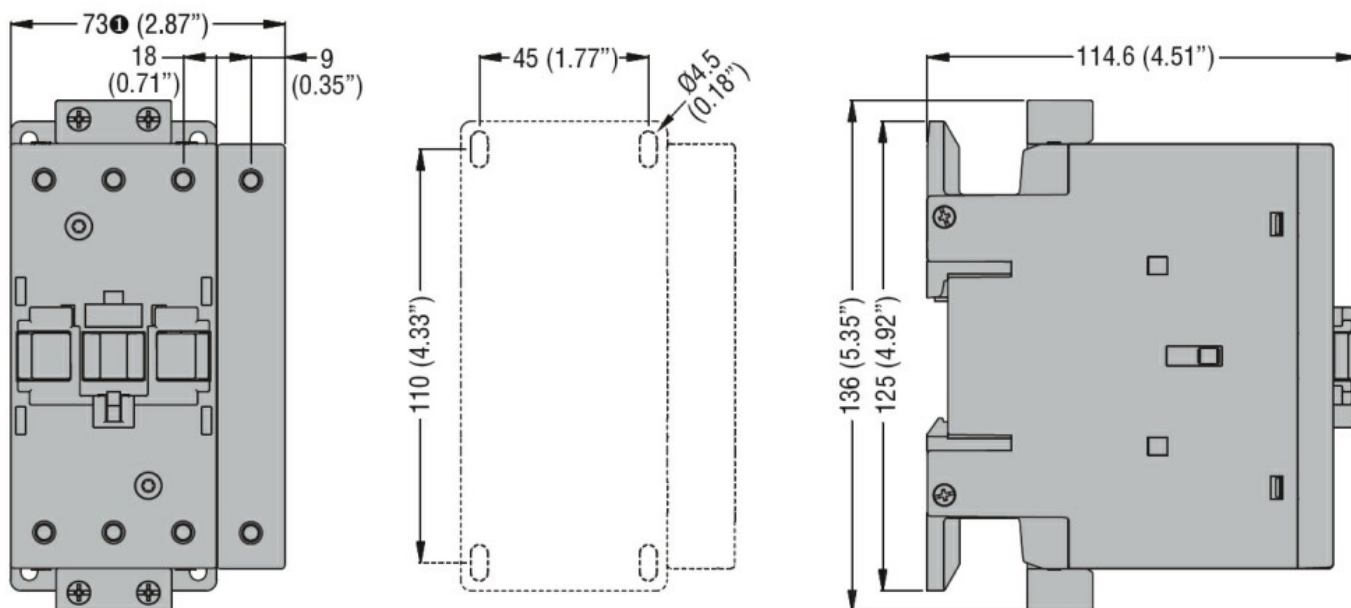
#### Ambient conditions

Temperature			
Operating temperature			
min	°C	-50	
max	°C	70	
Storage temperature			
min	°C	-60	
max	°C	80	
Max altitude	m	3000	

#### Resistance & Protection

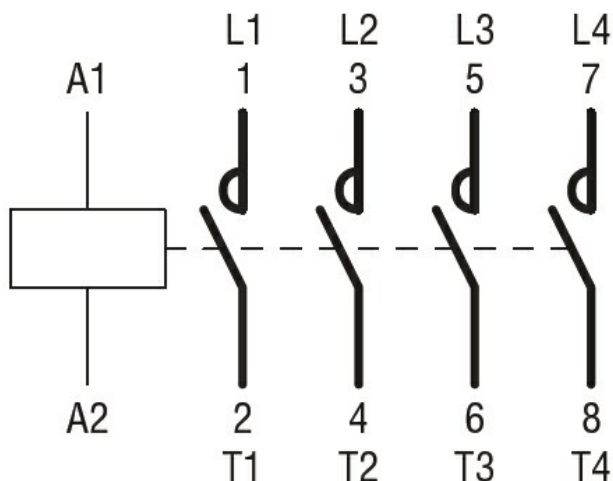
Pollution degree	3
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#### Dimensions



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/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