BF3800D012

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 12VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

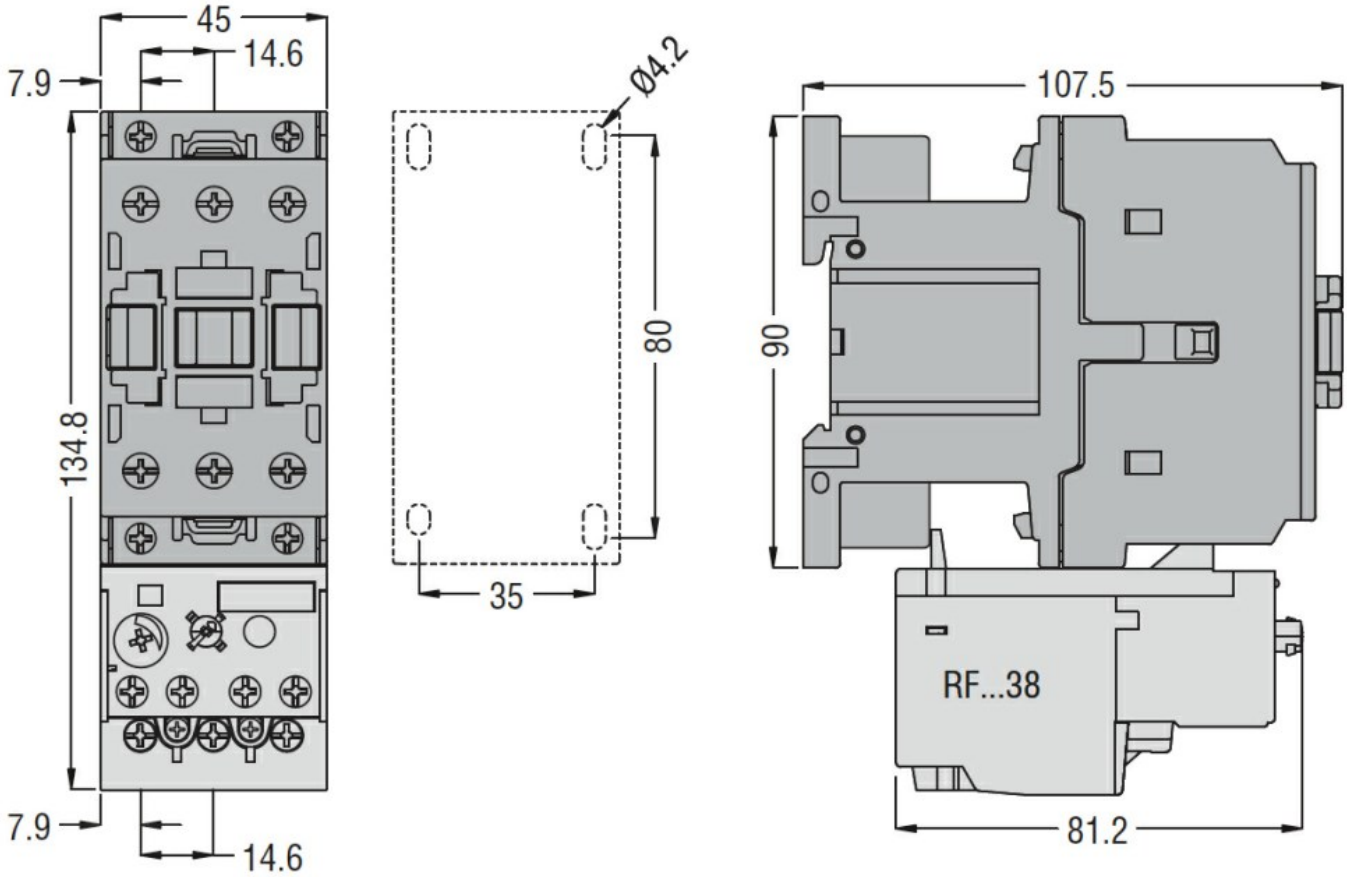
		min	Nm	0.8
		max	Nm	1
		min	Ibin	0.8
		max	Ibin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	560
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	12
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

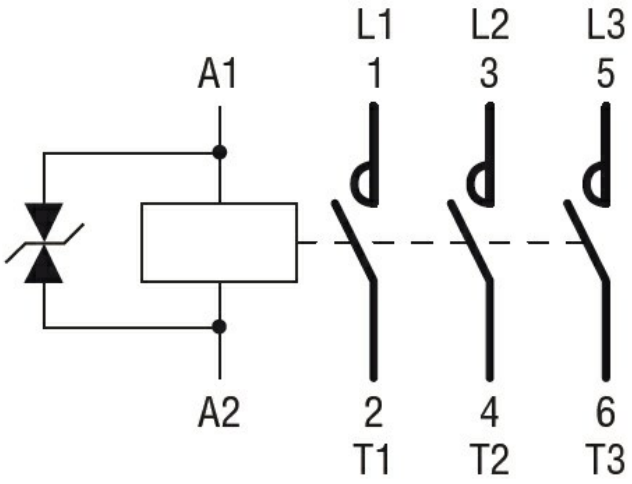
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D024

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 24VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

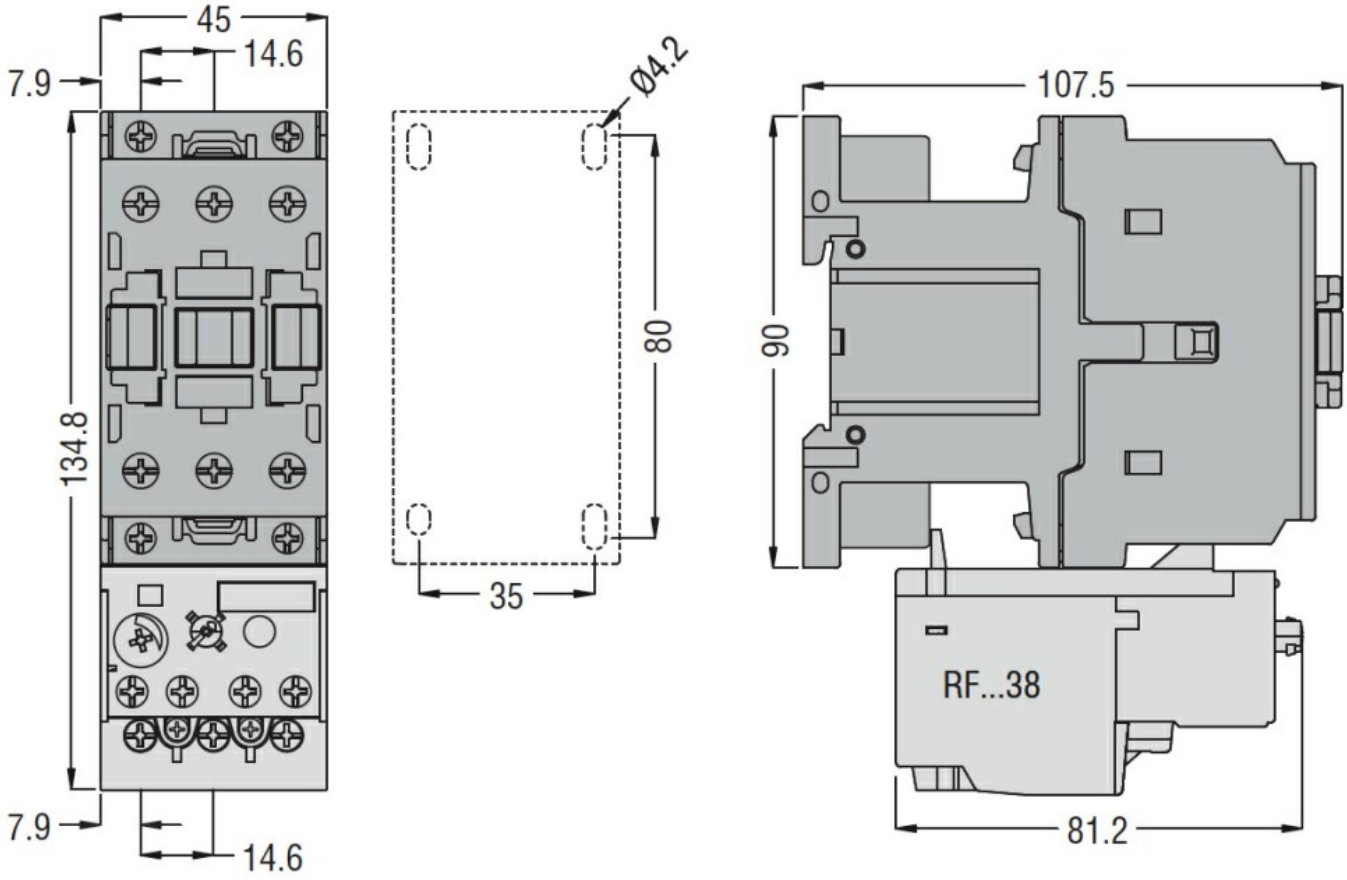
		min	Nm	0.8
		max	Nm	1
		min	Ibin	0.8
		max	Ibin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	554
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	24
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

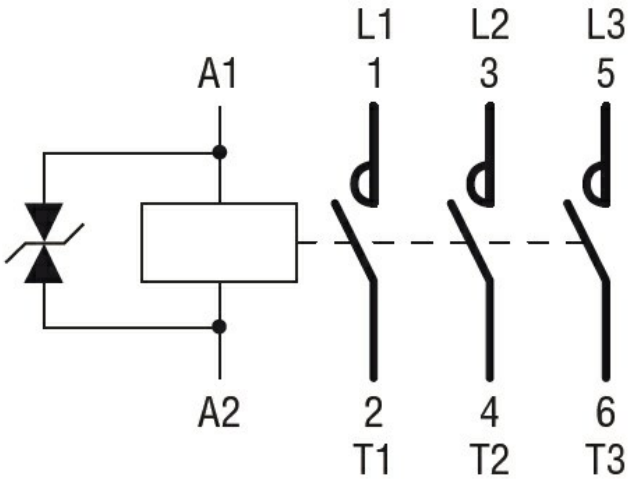
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D048

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 48VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

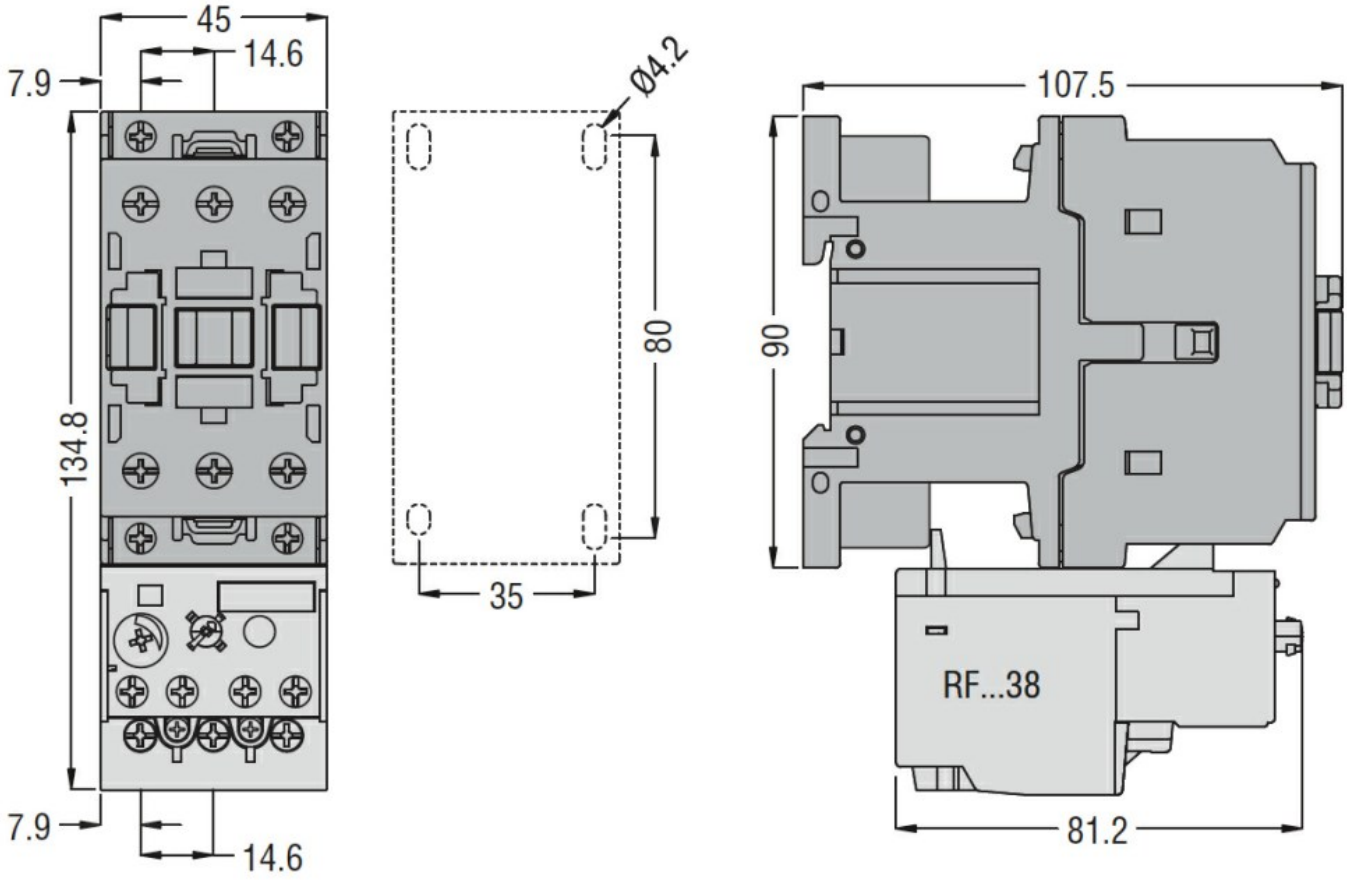
		min	Nm	0.8
		max	Nm	1
		min	lbin	0.8
		max	lbin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	560
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	48
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

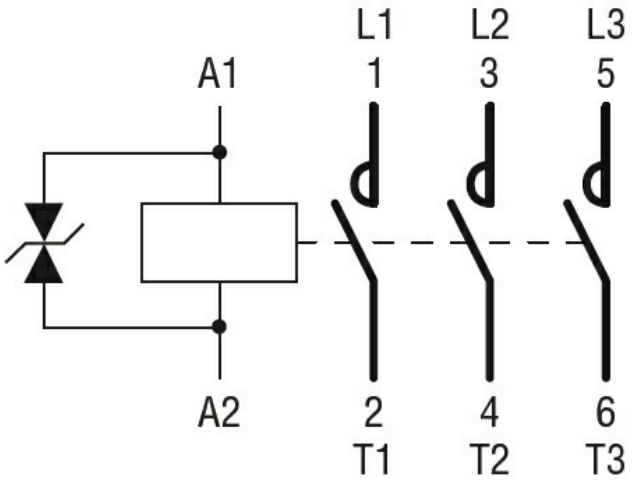
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D060

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 60VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

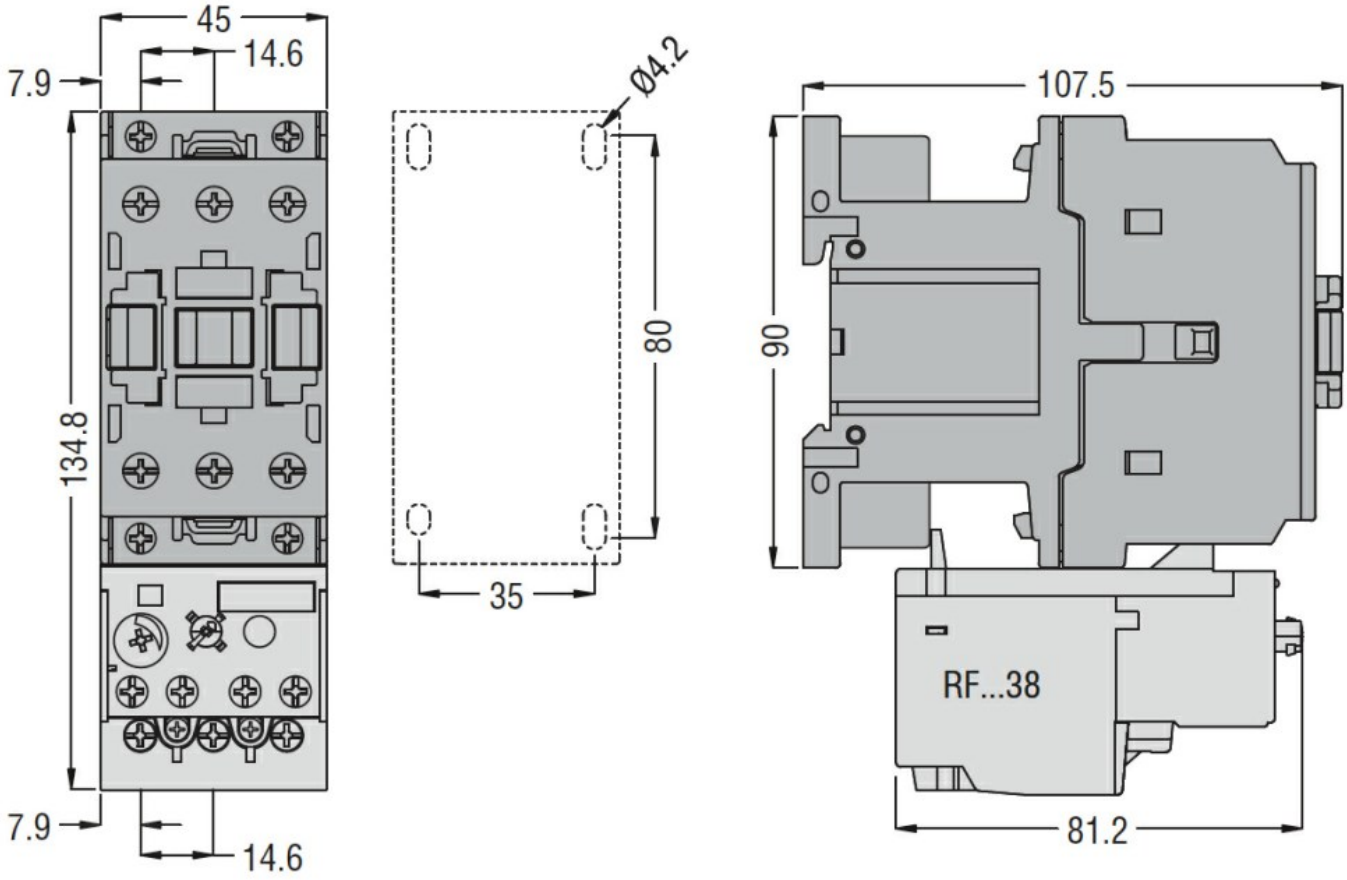
		min	Nm	0.8
		max	Nm	1
		min	lbin	0.8
		max	lbin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	560
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	60
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

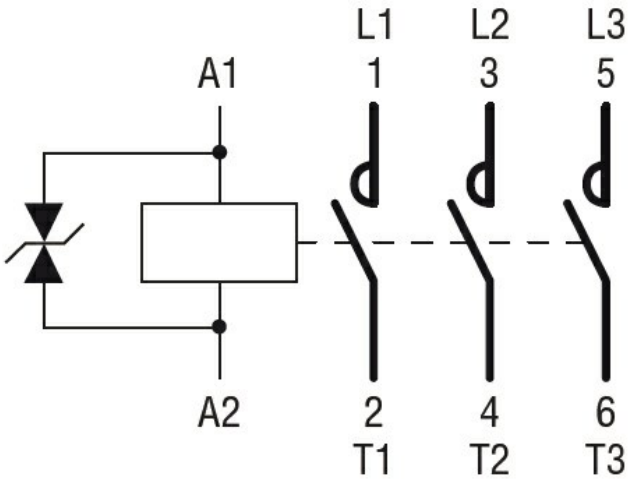
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D110

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 110VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

		min	Nm	0.8
		max	Nm	1
		min	lbin	0.8
		max	lbin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	560
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
AC coil operating				
AC operating voltage				
	of 60Hz coil powered at 60Hz			
		drop-out		
		min	%Us	2.E1
AC average coil consumption at 20°C				
	of 50/60Hz coil powered at 50Hz			
		in-rush	VA	75
		holding	VA	9
	of 50/60Hz coil powered at 60Hz			
		in-rush	VA	70
		holding	VA	7
	of 60Hz coil powered at 60Hz			
		in-rush	VA	75
		holding	VA	9

Dissipation at holding ≤20°C 50Hz				W	2.5
DC coil operating					
DC rated control voltage				V	110
DC operating voltage					
	pick-up				
			min	%Us	70
			max	%Us	125
	drop-out				
			min	%Us	10
			max	%Us	40
Average coil consumption ≤20°C					
			in-rush	W	5.4
			holding	W	5.4
Max cycles frequency					
Mechanical operation				cycles/h	3600
Operating times					
Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					

	High fault			
		Short circuit current	kA	100
		Fuse rating	A	100
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	A	150

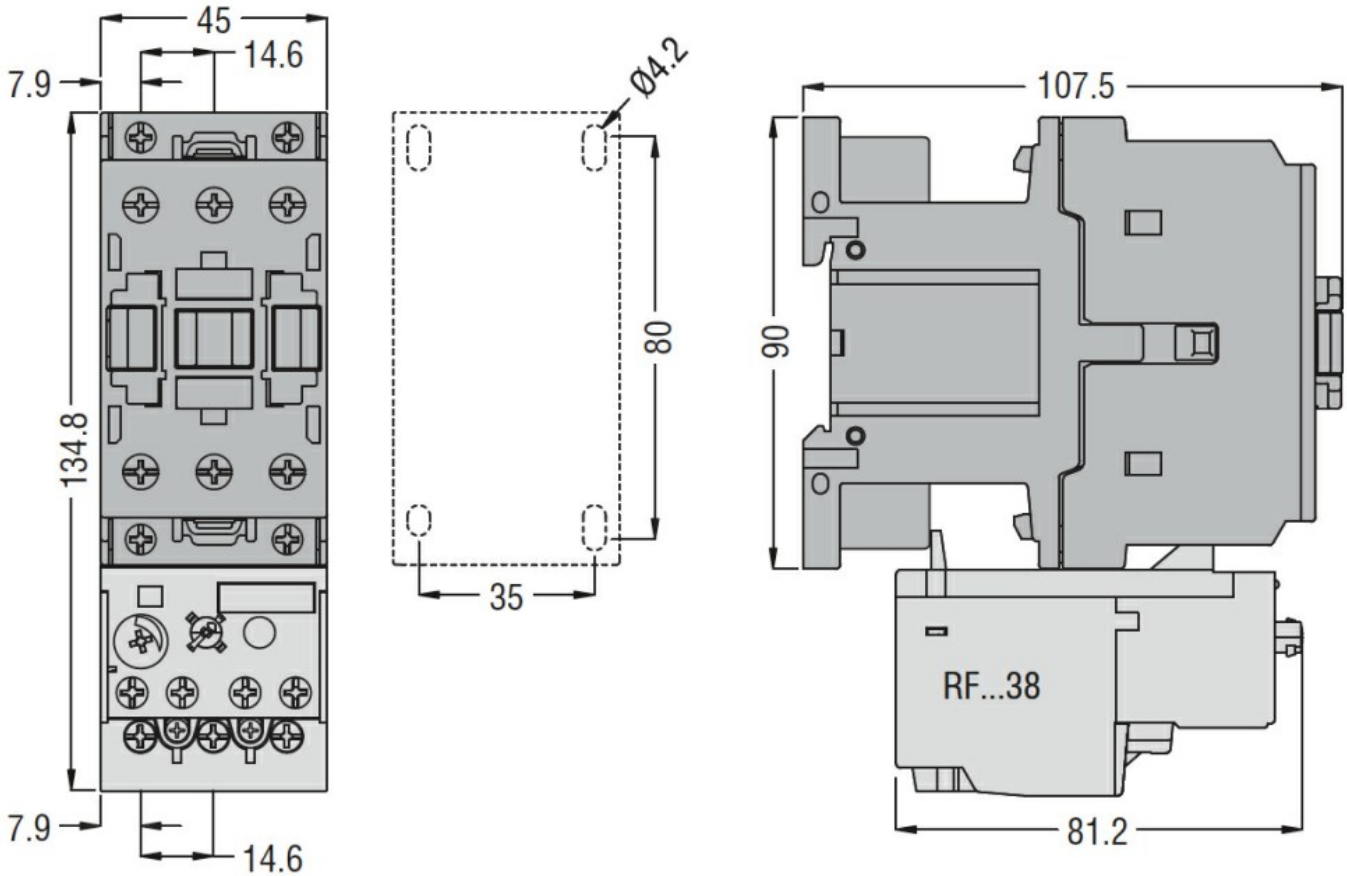
Ambient conditions

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

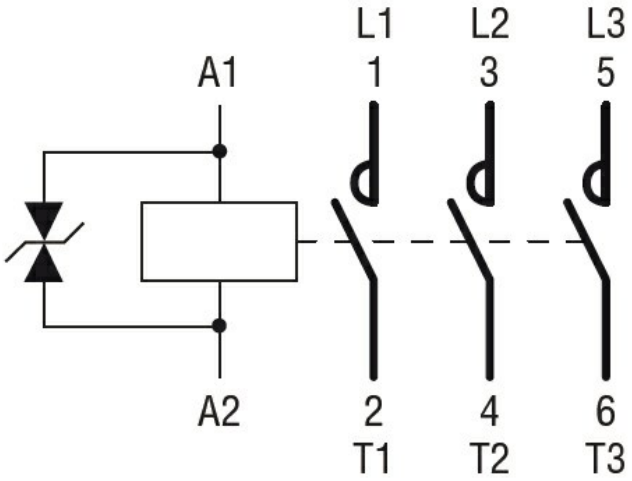
Resistance & Protection

Pollution degree				3

Dimensions [mm (in)]



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
EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D125

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 125VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

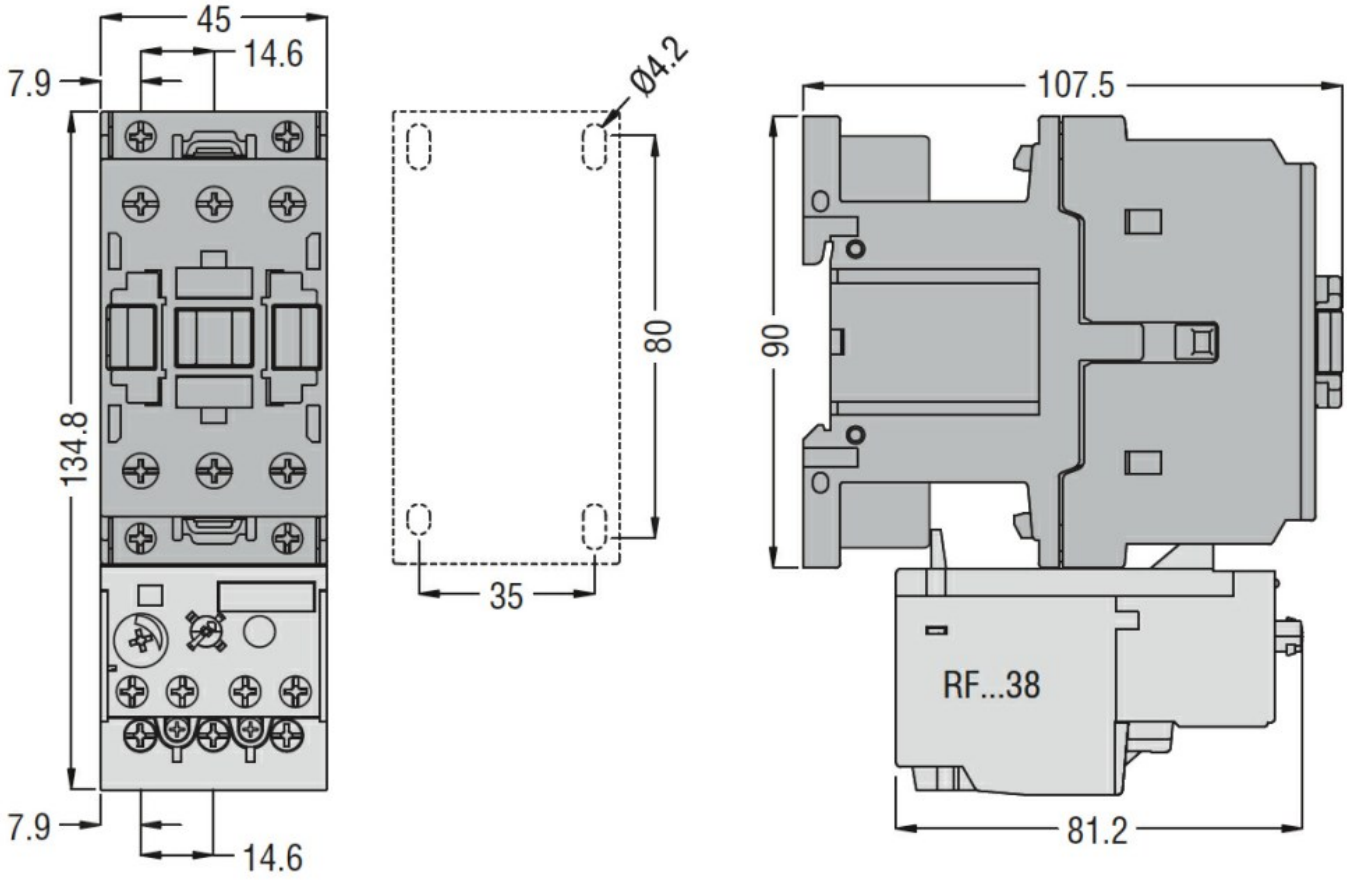
		min	Nm	0.8
		max	Nm	1
		min	lbin	0.8
		max	lbin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	560
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	125
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

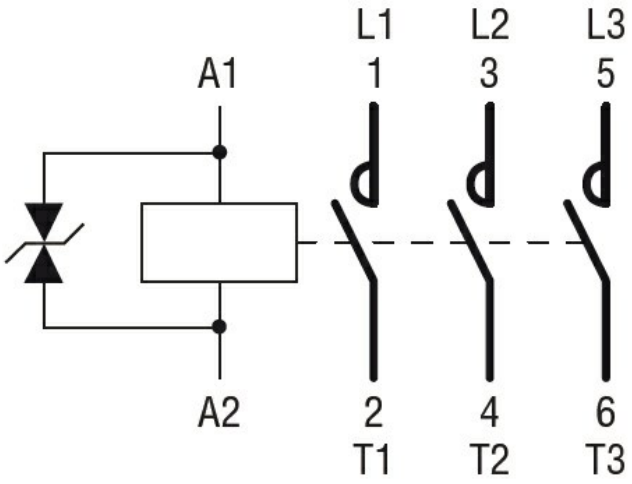
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching

BF3800D220

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 38A, DC COIL, 220VDC

Product designation			Power contactor
Product type designation			BF38
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	56
Operational current Ie			
	AC-1 (≤40°C)	A	56
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	60
	AC-1 (≤55°C)	A	45
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	48
	AC-1 (≤70°C)	A	40
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	42
	AC-3 (≤440V ≤55°C)	A	38
	AC-4 (400V)	A	15.5
Rated operational power AC-3 (T≤55°C)			
	230V	kW	11
	400V	kW	18.5
	415V	kW	18.5
	440V	kW	18.5
	500V	kW	20
	690V	kW	22
Rated operational power AC-1 (T≤40°C)			
	230V	kW	21
	400V	kW	36
	500V	kW	45
	690V	kW	62
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	A	35
	48V	A	30
	75V	A	23
	110V	A	8
	220V	A	–
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	29
	110V	A	32
	220V	A	4
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	36

	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	30
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	A	36
	48V	A	34
	75V	A	33
	110V	A	34
	220V	A	38
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	24
	48V	A	20
	75V	A	17
	110V	A	2,5
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	28
	48V	A	25
	75V	A	22
	110V	A	18
	220V	A	3
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	25
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	32
	48V	A	28
	75V	A	28
	110V	A	23
	220V	A	15
Short-time allowable current for 10s (IEC/EN60947-1)		A	320
Protection fuse			
	gG (IEC)	A	63
	aM (IEC)	A	40
Making capacity (RMS value)		A	380
Breaking capacity at voltage			
	440V	A	304
	500V	A	240
	690V	A	192
Resistance per pole (average value)		mΩ	2
Power dissipation per pole (average value)			
	Ith	W	6
	AC3	W	2.9
Tightening torque for terminals			
	min	Nm	2.5
	max	Nm	3
	min	lbin	1.8
	max	lbin	2.2
Tightening torque for coil terminal			

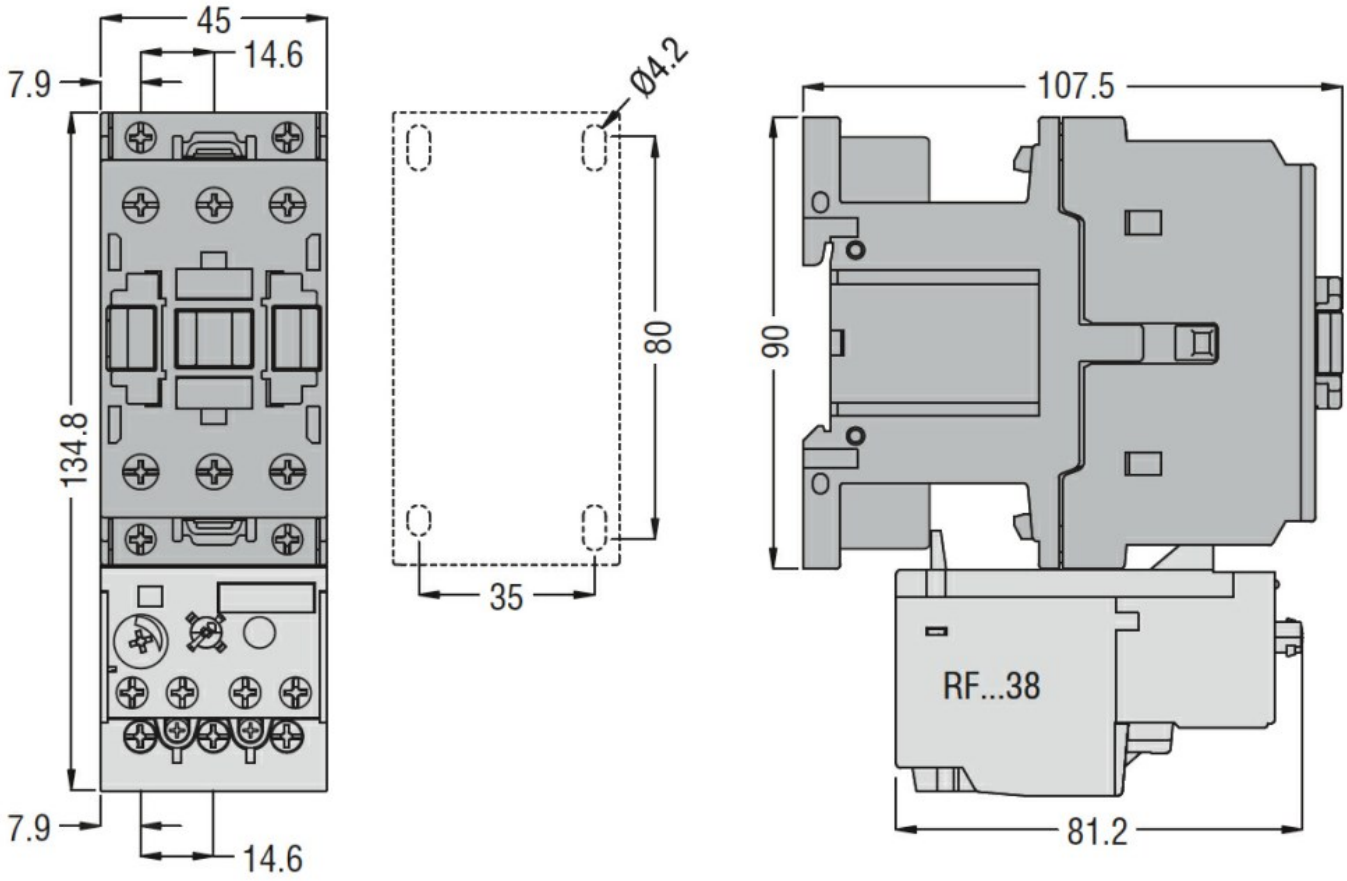
		min	Nm	0.8
		max	Nm	1
		min	lbin	0.8
		max	lbin	0.74
Max number of wires simultaneously connectable			Nr.	2
Conductor section				
	AWG/Kcmil			
		max		6
	Flexible w/o lug conductor section			
		min	mm²	2.5
		max	mm²	16
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	10
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	10
Power terminal protection according to IEC/EN 60529				IP20 when properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	564
Conductor section				
	AWG/kcmil conductor section			
		max		6
Operations				
Mechanical life			cycles	20000000
Electrical life			cycles	1400000
Safety related data				
Performance level B10d according to EN/ISO 13489-1				
		rated load	cycles	1400000
		mechanical load	cycles	20000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
DC coil operating				
DC rated control voltage			V	220
DC operating voltage				
	pick-up			
		min	%Us	70
		max	%Us	125
	drop-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤20°C				
		in-rush	W	5.4
		holding	W	5.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				

Average time for Us control					
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			
			min	ms	5
			max	ms	15
		Closing NC			
			min	ms	9
			max	ms	20
		Opening NC			
			min	ms	9
			max	ms	17
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	40
			at 600V	A	32
Yielded mechanical performance					
	for single-phase AC motor				
			110/120V	HP	3
			230V	HP	7.5
	for three-phase AC motor				
			200/208V	HP	10
			220/230V	HP	15
			460/480V	HP	30
			575/600V	HP	30
General USE					
	Contactor				
			AC current	A	55
Short-circuit protection fuse, 600V					
	High fault				
			Short circuit current	kA	100
			Fuse rating	A	100
			Fuse class		J
	Standard fault				
			Short circuit current	kA	5
			Fuse rating	A	150
Ambient conditions					
Temperature					
	Operating temperature				
			min	°C	-50
			max	°C	70
	Storage temperature				
			min	°C	-60
			max	°C	80
Max altitude				m	3000

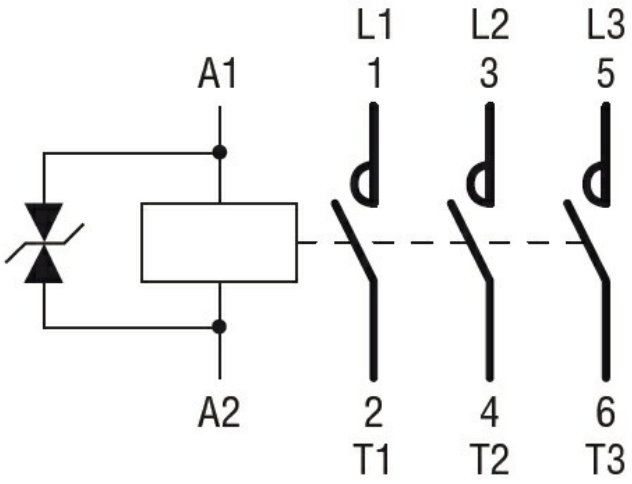
Resistance & Protection

Pollution degree	3

Dimensions [mm (in)]



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
	EAC

ETIM classification

ETIM 8.0	EC000066 - Power contactor, AC switching