

Product designation				Power contactor
Product type designation				BF12
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			28
Operational current Ie	AC-1 (≤40°C)	A	28	
	AC-1 (≤55°C)	A	23	
	AC-1 (≤70°C)	A	20	
	AC-3 (≤440V ≤55°C)	A	12	
	AC-4 (400V)	A	7.9	
Rated operational power AC-3 (T≤55°C)	230V	kW	3.2	
	400V	kW	5.7	
	415V	kW	6.2	
	440V	kW	5.5	
	500V	kW	5	
	690V	kW	5	
Rated operational power AC-1 (T≤40°C)	230V	kW	10	
	400V	kW	18	
	500V	kW	23	
	690V	kW	32	
IEC max current Ie in DC1 with L/R ≤ 1ms with 1 poles in series	≤24V	A	17	
	48V	A	15	
	75V	A	13	
	110V	A	6	
	220V	A	–	
IEC max current Ie in DC1 with L/R ≤ 1ms with 2 poles in series	≤24V	A	20	
	48V	A	20	
	75V	A	18	
	110V	A	13	
	220V	A	1	
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series	≤24V	A	22	
	48V	A	22	
	75V	A	20	
	110V	A	16	
	220V	A	11	
IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series	≤24V	A	20	
	48V	A	20	
	75V	A	20	
	110V	A	16	
	220V	A	12	
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series				

	≤24V	A	12
	48V	A	11
	75V	A	10
	110V	A	2
	220V	A	–
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IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	≤24V	A	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
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IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	≤24V	A	18
	48V	A	18
	75V	A	15
	110V	A	12
	220V	A	6
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IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	≤24V	A	15
	48V	A	15
	75V	A	15
	110V	A	16
	220V	A	7
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Short-time allowable current for 10s (IEC/EN60947-1)		A	150
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Protection fuse			
	gG (IEC)	A	32
	aM (IEC)	A	12
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Making capacity (RMS value)		A	120
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Breaking capacity at voltage			
	440V	A	96
	500V	A	96
	690V	A	94
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Resistance per pole (average value)		mΩ	2.5
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Power dissipation per pole (average value)			
	I _{th}	W	2
	AC3	W	0.4
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Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	I _{bin}	1.1
	max	I _{bin}	1.5
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Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	I _{bin}	Prodotti finiti
	max	I _{bin}	Prodotti finiti
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Max number of wires simultaneously connectable		Nr.	2
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Conductor section			
	Flexible w/o lug conductor section		
	min	mm ²	1
	max	mm ²	6
	Flexible c/w lug conductor section		
	min	mm ²	1

	max	mm ²	4
Flexible with insulated spade lug conductor section	min	mm ²	1
	max	mm ²	4
Power terminal protection according to IEC/EN 60529			IP20 when wired
Mechanical features			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	362
Auxiliary contact characteristics			
Type of contact			1 NO
Thermal current I _{th}		A	10
IEC/EN 60947-5-1 designation			A600 - P600
Operating current AC15	230V	A	3
	400V	A	1.9
	500V	A	1.4
Operating current DC12	110V	A	5.7
Operating current DC13	24V	A	5.7
	48V	A	2.9
	60V	A	2.3
	110V	A	1.25
	125V	A	1.1
	220V	A	0.55
	600V	A	0.2
Operations			
Mechanical life		cycles	20000000
Electrical life		cycles	2000000
Safety related data			
Performance level B10d according to EN/ISO 13489-1	rated load	cycles	2000000
	mechanical load	cycles	20000000
Mirror contacts according to IEC/EN 60947-4-1			Yes
EMC compatibility			Yes
Rated AC voltage at 60Hz		V	230
AC coil operating			
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up	min	%Us	80
	max	%Us	110
drop-out	min	%Us	20
	max	%Us	55
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	6.5

of 60Hz coil powered at 60Hz

in-rush	VA	75
holding	VA	9

Dissipation at holding $\leq 20^{\circ}\text{C}$ 50Hz

W	2.5
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Max cycles frequency

Mechanical operation

cycles/h	3600
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Operating times

Average time for Us control

in AC

Closing NO

min	ms	8
max	ms	24

Opening NO

min	ms	10
max	ms	20

Closing NC

min	ms	14
max	ms	28

Opening NC

min	ms	7
max	ms	18

UL technical data

Full-load current (FLA) for three-phase AC motor

at 480V	A	11
at 600V	A	11

Yielded mechanical performance

for single-phase AC motor

110/120V	HP	1
230V	HP	2

for three-phase AC motor

200/208V	HP	5
220/230V	HP	5
460/480V	HP	7.5
575/600V	HP	10

General USE

Contactor

AC current	A	28
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Auxiliary contacts

AC voltage	V	600
AC current	A	10
DC voltage	V	250
DC current	A	1

Short-circuit protection fuse, 600V

High fault

Short circuit current	kA	100
Fuse rating	A	30
Fuse class	J	

Standard fault

Short circuit current	kA	5
Fuse rating	A	70

Contact rating of auxiliary contacts according to UL

A600 - P600

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

3

Dimensions

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

EAC

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching