

Introducing the New AF2050 Contactor

– a jump to higher ratings

Large Contactors with Electronic Control

Large contactors are used in many different applications and for different utilization categories. ABB is now introducing one step higher ratings with the new **AF2050** especially designed for wind turbine generator control and large generator sets.

The **AF2050** contactor is a 2100 A contactor specially designed for AC-1 application requirements with the same features as the existing Large AF Contactors, AF400-AF1650.

The **AF2050** contactor can be used to provide reliable grid connections even in locations with unstable networks and uncertain load conditions.



- Higher rating, 2100 A up to 1000 V
- Wide coil voltage range, 100-250 VAC/DC
- Direct PLC control possibility
- Coordination with ABB Emax Air Circuit Breaker

Ordering Details

IEC	cUL _{us}	Auxiliary contacts fitted	Catalog number
Rated current	General use		
AC-1	600V		
A	A		state coil voltage
2050	2100	1 1	AF2050-30-11-70
		2 2	AF2050-30-22-70
Description accessories			Catalog number
Main contact set			ZL2050

Note: For coils and mechanical interlocks use AF1650 accessories

Coil voltages and codes

Voltage	Voltage	Code
V - 50/60Hz	V d.c.	
100...250	100...250	7 0

Auxiliary Contacts

Contacts	Catalog number
1N.O. - 1N.C. (inside mount)	CAL18-11
1N.O. - 1N.C. (outside mount)	CAL18-11B
1N.C. (low energy)	CEL18-01
1N.O. (low energy)	CEL18-10



AF2050 3-pole Contactors

Technical Data

General Technical Data

Rated insulation voltage U_i		
according to IEC 60947-4-1	V	1000
according to UL/CSA	V	600

Rated impulse withstand voltage		
$U_{imp.}$	kV	8

Standards		
Devices complying with		
- International standards	IEC 60947-1 / 60947-4-1	
- European standards	EN 60947-1 / 60947-4-1	
- UL	508	

Certifications - Approvals		
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Air temperature close to contactor		
- fitted with thermal O/L relay	°C	-25 to +70
- without thermal O/L relay	°C	-40 to +70
- for storage	°C	-40 to +70

Operating altitude	m	≤3000
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Magnet System Characteristics

Rated control circuit voltage ($U_{cmin}...U_{cmax}$)		
- at 50 Hz	V	100...250
- at 60 Hz	V	100...250
- d.c.	V	100...250

Coil operating limits	$\theta \leq 70$ °C
according to IEC 60947-4-1	0.85 x U_c min...1.1 x U_c max

Drop-out voltage in % of U_c min. level	55 %
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Coil consumption			
Average pull-in value	50 Hz	VA	1900
	60 Hz	VA	1900
	d.c.z.	W	1700
Average holding value	50 Hz	VA/W	48/17
	60 Hz	VA/W	48/17
	d.c.	W	16

Operating time			
A1-A2			
between coil energization and:			
N.O. contact closing	ms	50...80	
N.C. contact opening	ms	50...80	
between coil de-energization and:			
N.O. contact opening	ms	35...55	
N.C. contact closing	ms	35...55	
with PLC			
between coil energization and:			
N.O. contact closing	ms	40...65	
N.C. contact opening	ms	40...65	
between coil de-energization and:			
N.O. contact opening	ms	10 ... 30	
N.C. contact closing	ms	10 ... 30	



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Main Pole - Utilization Characteristics

Rated operational voltage U_e max.	V	1000
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Rated frequency limits	Hz	25 ... 400
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Conventional free-air thermal current I_{th}		
acc. to IEC 60947-4-1,		
open contactors $\theta \leq 40$ °C	A	2050
with bar cross-sectional area	mm²	2000 ¹⁾

Rated operational current I_e/AC-1		
for air temperature close to contactor		
$\theta \leq 40$ °C	A	2050
$\theta \leq 55$ °C	A	1750
$\theta \leq 70$ °C	A	1500
with bar cross-sectional area	mm²	2000 ¹⁾

General use rating, UL			
Amp-rating	600 V	A	2100
with busbar dim.		Inch	4//2½x¼

Max. making capacity	A	10500
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Max. breaking capacity at 440V	A	8400
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Short-circuit protection Product coordination with ABB circuit breaker. Please consult your nearest sales office for more information.

Rated short-time withstand current I_{cw}		
at 40 °C ambient temp., in free air,		
from a cold state 1 s	A	12000
10 s	A	10000
30 s	A	7500
1 min	A	5500
15 min	A	2200

Heat dissipation per pole I_e/AC-1 W	125
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Max. electrical switching frequency	
- for AC-1	cycles/h
	300

Electrical durability		
- for AC-1, 2050 A max.	440 V	50 000 operations
	max. 690 V	50 000 operations
	max. 1000 V	30 000 operations

Mechanical durability	
- number of operating cycles	500 000
- max. mechanical switching frequency	cycles/h
	300

1) Max. connection bar width 100 mm

Dimensions (in mm)

