

Contactors type AF1350-AF1650



AF1350/AF1650 3-pole Contactors



a.c./d.c. Operated - Wide voltage range
Electronic Coil Interface

Application

The AF1350 and 1650 are compact 3-pole contactors designed for AC-1 applications, but can also be used in inductive circuits as by-pass contactors. Typical fields of application: main isolation contactor in windmills and gen-sets, by-pass contactor in softstarter and drive applications.

Description

The AF1350/AF1650 3-pole contactors are of the block type design.

● Main poles and auxiliary contact blocks

- 3 main poles,
- 1 N.O. and 1 N.C. auxiliary contacts (1 contact block fitted on the left hand side).
- 2 N.O. and 2 N.C. auxiliary contacts (1 contact block fitted on each side)

A maximum of 4 auxiliary contact blocks can be fitted on each contactor.

● Electronic control

The contactors are fitted with an electronic interface controlled by a specific integrated circuit developed by ABB.

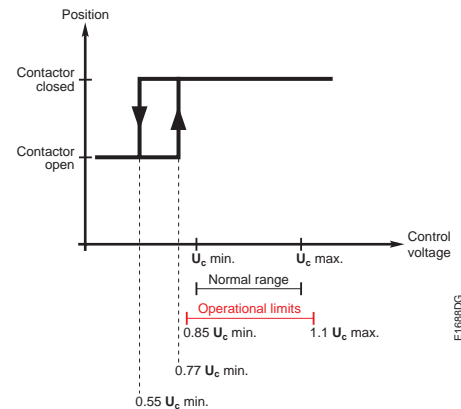
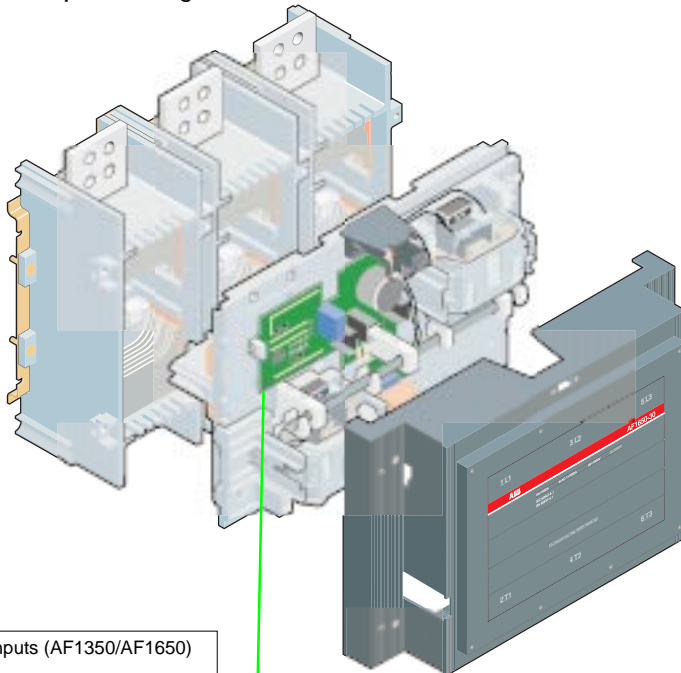
Advantages

- Wide voltage range, 100...250 V a.c. and d.c.
- Can manage large voltage variations
- Reduced power consumption
- Very distinct closing and opening
- Noise free
- Can withstand voltage interruptions or voltage dips in the control supply (≤ 20 ms)

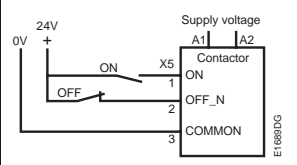
● Control inputs

The AF1350/AF1650 contactors are as standard equipped with low voltage inputs for control, for example by a PLC (☞ see drawing below)

AF1350/AF1650 specific design



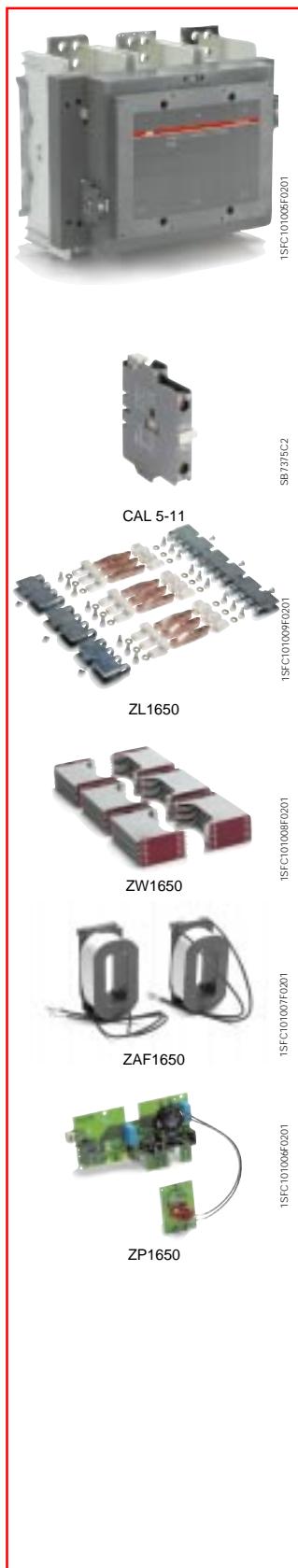
Control inputs (AF1350/AF1650)



Control circuit
with electronic coil
interface.

AF1350/AF1650 3-pole Contactors

Ordering details



Contactor (Terminal screws and fixing screws included)

Rated operational current AC-1 $\theta < 40\text{ }^{\circ}\text{C}$ A	Auxiliary contacts fitted	Type	Order code	Weight kg
				1 piece
1350	1 1	AF1350-30-11	1SFL 65 7001 R7011	34.00
	2 2	AF1350-30-22	1SFL 65 7001 R7022	34.00
1650	1 1	AF1650-30-11	1SFL 67 7001 R7011	35.00
	2 2	AF1650-30-22	1SFL 67 7001 R7022	35.00

Accessories

Auxiliary contact blocks (side mounting)

For contactor type	Contact blocks	Type	Order code	Packing pieces	Weight kg
AF1350, AF1650	1 1	CAL5-11	1ISBN 01 0020 R1011	2	0.050
	1 1	CAL5-11B ¹⁾	1ISBN 01 0420 R3311	2	0.050

¹⁾ CAL5-11B is a block for mounting outside a CAL5-11 block.

Main contact sets

For contactor type	Type	Order code	Packing set	Weight kg
AF1350	ZL1350	1SFN 16 6503 R1000	1	2.500
AF1650	ZL1650	1SFN 16 6703 R1000	1	3.500

Arc chutes/De-ionizing plates

For contactor type	Type	Order code	Packing set	Weight kg
AF1350, AF1650	ZW1650	1SFN 16 6510 R1000	1	4.000

Coils

For contactor type	Type	Order code	Packing set	Weight kg
AF1350, AF1650	ZAF1650	1SFN 15 6570 R7026	1	0.900



Printed circuit-board

For contactor type	Type	Order code	Packing set	Weight kg
AF1350, AF1650	ZP1650	1SFN 16 6521 R1070	1	0.300

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Technical Data

General Technical Data

Contactor type:	AF...	1350	1650
Rated insulation voltage U_i			
according to IEC 60947-4-1	V	1000	
according to UL	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			
			
Air temperature close to contactor			
- in service	°C	-40 to +70	
- storage	°C	-40 to +70	
Operating altitude	m	< 3000	

Magnet System Characteristics

Contactor type:	AF...	1350	1650
Rated control circuit voltage U_c			
- at 50 Hz	V	100 ... 250	
- at 60 Hz	V	100 ... 250	
- d.c.	V	100 ... 250	
Coil operating limits			
according to IEC 60947-4-1		$\theta < 70$ °C	
		0.85 ... 1.1 x U_c	
Drop-out voltage in % of U_c min. level		55 %	
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	

Main Pole - Utilization Characteristics

Contactor type:	AF...	1350	1650
Rated operational voltage U_e max.	V	1000	
Rated frequency limits	Hz	25 ... 400	
Conventional free-air thermal current I_{th}			
acc. to IEC 60947-4-1,			
open contactors $\theta \leq 40$ °C	A	1350	1650
with conductor cross-sectional area	mm ²	2//100x5	3//100x5
Rated operational current I_e/AC-1			
for air temperature close to contactor			
$\theta \leq 40$ °C	A	1350	1650
U_e max. 1000 V			
$\theta \leq 55$ °C	A	1150	1450
$\theta \leq 70$ °C	A	1000	1270
with conductor cross-sectional area	mm ²	2//100x5	3//100x5 ¹⁾
General use rating, UL			
Main contacts			
Nominal current	A	2)	1650
Nominal voltage	V a.c.	2)	600
Auxiliary contacts			
"pilot -duty"		2)	A 600, P 600
Nominal current	A	2)	10
Nominal voltage	V a.c.	2)	600
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	10 000	12 000
10 s	A	8 000	10 000
30 s	A	6 000	7 500
1 min	A	4 500	5 500
15 min	A	1 600	2 200
Heat dissipation per pole I_e /AC-1	W	80	80
Max. electrical switching frequency			
- for AC-1	cycles/h	60	
Electrical durability			
- operating cycles		50 000	
Mechanical durability			
- operating cycles		500 000	
- max. mechanical switching frequency	cycles/h	60	

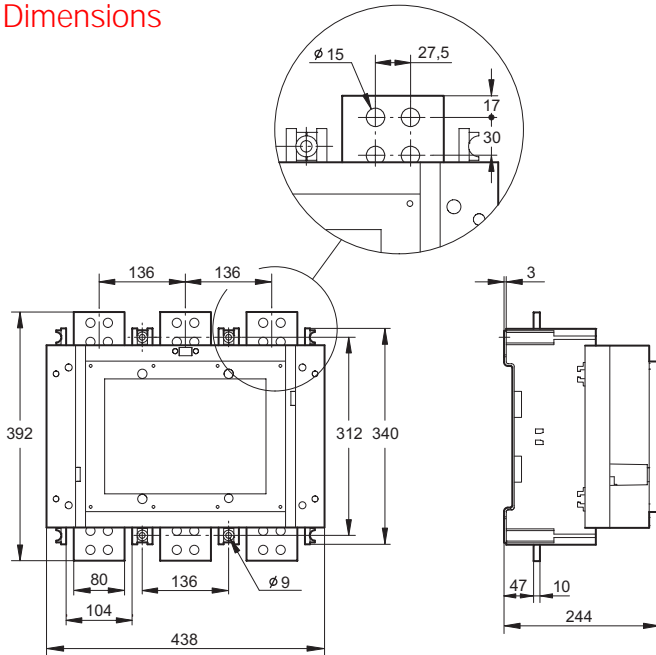
¹⁾ Dimensions of the bars

²⁾ UL-listing pending

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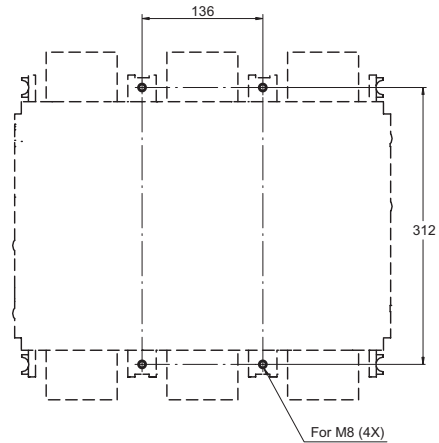
Dimensions, Drilling plan and Diagrams

Dimensions



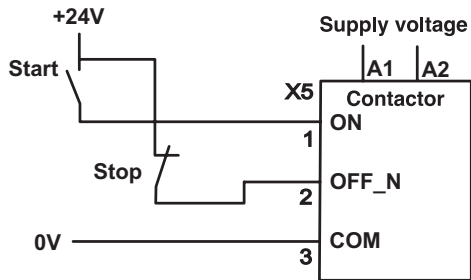
AF1350/AF1650

Drilling plan



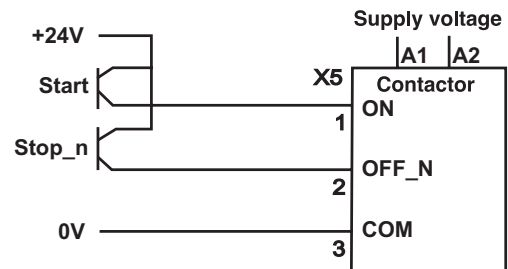
Control with logic control signals

When used with switches the wiring can be done as below.



Note: Emergency stop should disconnect A1 and A2

When used with transistor outputs the wiring can be done as below.



Note: Emergency stop should disconnect A1 and A2

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