Apter Power

Installation Instructions

Allen-Bradley 1336/1336VT 1336 PLUS/PLUS II/FORCE/IMPACT Chopper Module

Cat. Nos. 1336 -WA018, WB009 & WC009
-WA070, WB035 & WC035
-WA115, WB110 & WC085

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Chopper Module Characteristics

Drive Voltage (Volts AC)	Turn-On Voltage (Volts DC)	Catalog Number	Chopper Peak Transistor Current Rating (Amps)	Minimum Dynamic Brake Resistance Value (Ohms)
230	375	WA115	400	1.25
		WA070	200	2.3
		WA018	50	9.0
460	750	WB110	400	2.5
		WB035	100	9.0
		WB009	25	37.0
575	935	WC085	400	3.0
		WC035	75	15.5
		WC009	25	46.0

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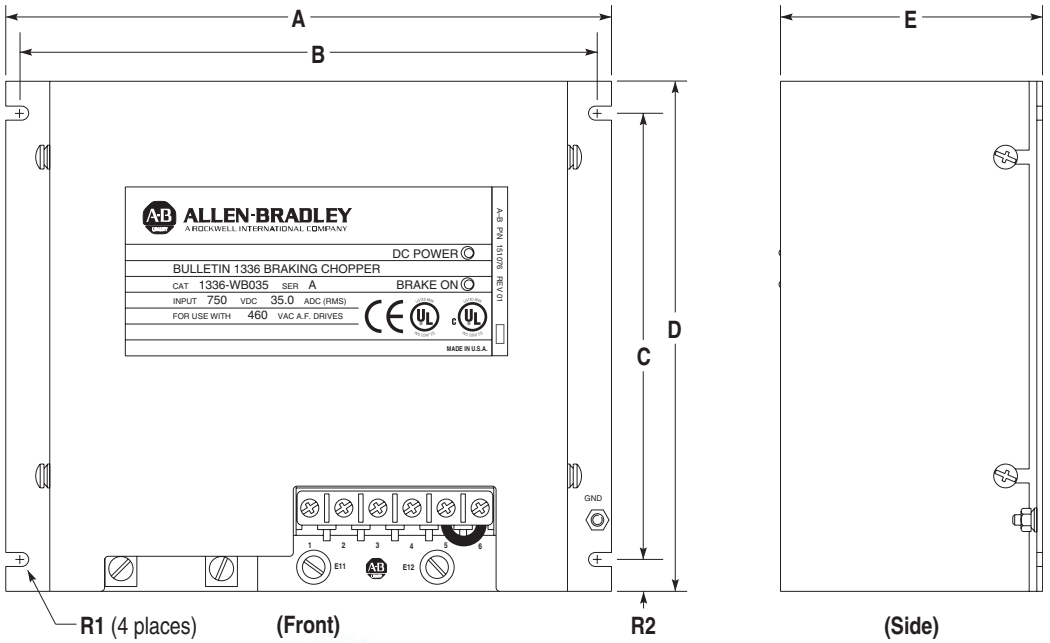
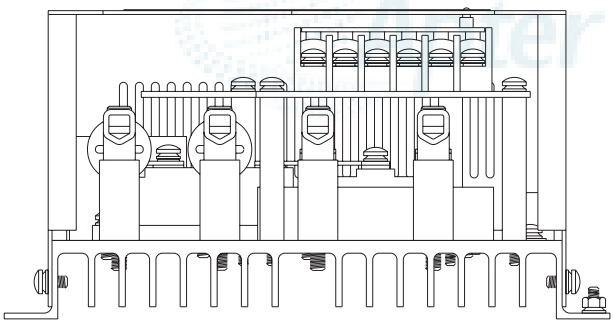
WA070, WB035 and WC035 Dimensions and Weights





(Bottom)

Dimensions and Weights in Millimeters (Inches) and Kilograms (Pounds)

Chopper Module	A	B	C	D	E	R1 Dia.	R2	Weight
WA070 **WB035** **WC035**	241.3 (9.50)	230.1 (9.06)	177.8 (7.00)	203.2 (8.00)	123.4 (4.86)	5.6 (0.22)	12.7 (0.50)	4.08 (9.0)

Specifications

Braking Torque & Duty Cycle	(Refer to pages 5-10)
Input Power	DC power supplied from DC Bus.
Brake Fault Contact	(1) N.C. contact, TTL compatible, closed when power is applied to the brake module, open when a brake fault or loss of power occurs. UL/CSA Rating: 1.0 Amps, 125VAC. 1.0 Amps, 110VAC. 2.0 Amps, 30V DC. CE Certification: Low Voltage EN 60204-1. PREN 50178. Initial Contact Resistance: 100mOhms maximum.
Operating Temperature	Chopper: -10°C to 40°C (14°F to 104°F). Resistors: -10°C to 50°C (14°F to 122°F).
Storage Temperature	Chopper: -40°C to 70°C (-40°F to 158°F). Resistors: -40°C to 70°C (-40°F to 158°F).
Humidity	5% to 95% non-condensing.
Atmosphere	Noncorrosive/nonhazardous dust, vapor or gas.
Altitude Derating	1,000 meters (3,300 feet) maximum without derating.
Enclosure Type	IP00 (Open)
Watts Dissipated [1]	WA018, WB009, WC009:75W at 100% Duty Cycle WA070, WB035, WC035:115W at 100% Duty Cycle WA115, WB110, WC085:190W at 100% Duty Cycle
Minimum Brake Resistance	WA018 = 9.0 Ohms WB009 = 37.0 Ohms WC009 = 46.0 Ohms WA070 = 2.5 Ohms WB035 = 9.0 Ohms WC035 = 15.5 Ohms WA115 = 1.25 Ohms WB110 = 2.5 Ohms WC085 = 3.0 Ohms

[1] Watts Dissipated at 100% (Continuous Duty Cycle) are approximately equal to the average watts dissipated at 20 and 50% Duty Cycles.

Installation Requirements

ATTENTION: Electric Shock can cause injury or death. Remove all power before working on this product.

For all chopper module ratings, DC brake power is supplied from the drive DC Bus.

Hazards of electrical shock exist if accidental contact is made with parts carrying bus voltage. A DC power indicator on the brake enclosures provides visual indication that bus voltage is present. Before proceeding with any installation or troubleshooting activity, allow at least one minute after input power has been removed for the bus circuit to discharge. Bus voltage should be verified by using a voltmeter to measure the voltage between the +DC and -DC terminals on the drive power terminal block. Do not attempt any servicing until the DC power indicating light has extinguished and bus voltage has been verified to be zero volts.

Brake Fault Contact Monitoring

For all brake module ratings a fault contact has been provided to provide a remote output signal. Should a brake fuse fail or the brake thermostat trip, the brake fault contact will open. Interconnection wiring for remote brake monitoring is provided in the Wiring Schemes section.

Brake Fuses

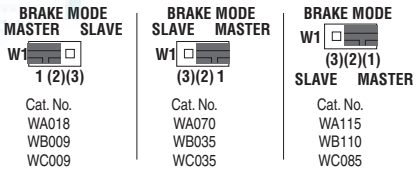
All brake modules are internally fused to protect brake components. When replacing brake fuses, use only the type and size specified below.

Dynamic Brake	Fuse	Fuse Type		Rating
WA018	F1 & F2	Ferraz Shawmut	A60Q or Equivalent	30A, 600V
WB009	F1 & F2		A60Q or Equivalent	15A, 600V
WC009	F1 & F2		A60Q or Equivalent	15A, 600V
WA070	F1 & F2	Ferraz Shawmut	A70QS or Equivalent	125A, 700V
WB035	F1 & F2		A70QS or Equivalent	60A, 700V
WC035	F1 & F2		A70QS or Equivalent	60A, 700V
WA115	F1 & F2	Ferraz Shawmut	A70QS or Equivalent	200A, 700V
WB110	F1 & F2		A70QS or Equivalent	200A, 700V
WC085	F1 & F2		A70QS or Equivalent	200A, 700V

Brake Module Jumper Settings

For the **Mounting Requirements** shown previously as well as the **Wiring Schemes**, there can be only one master brake module to control dynamic braking. When multiple brake modules are used, only one brake module can serve as the master brake to control the remaining slave brake modules.

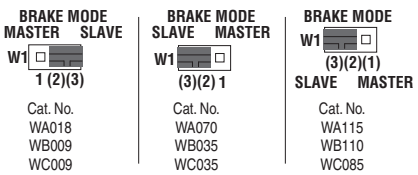
Slave/Master Jumper Set to Master



Master Brake Module Jumper Settings

For the master brake module, leave slave/master jumper W1 factory set to master (jumper positions 1 & 2).

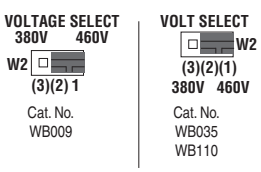
Slave/Master Jumper Set to Slave



Slave Brake Module Jumper Settings

For each slave module, reset jumper W1 to slave (jumper positions 2 & 3).

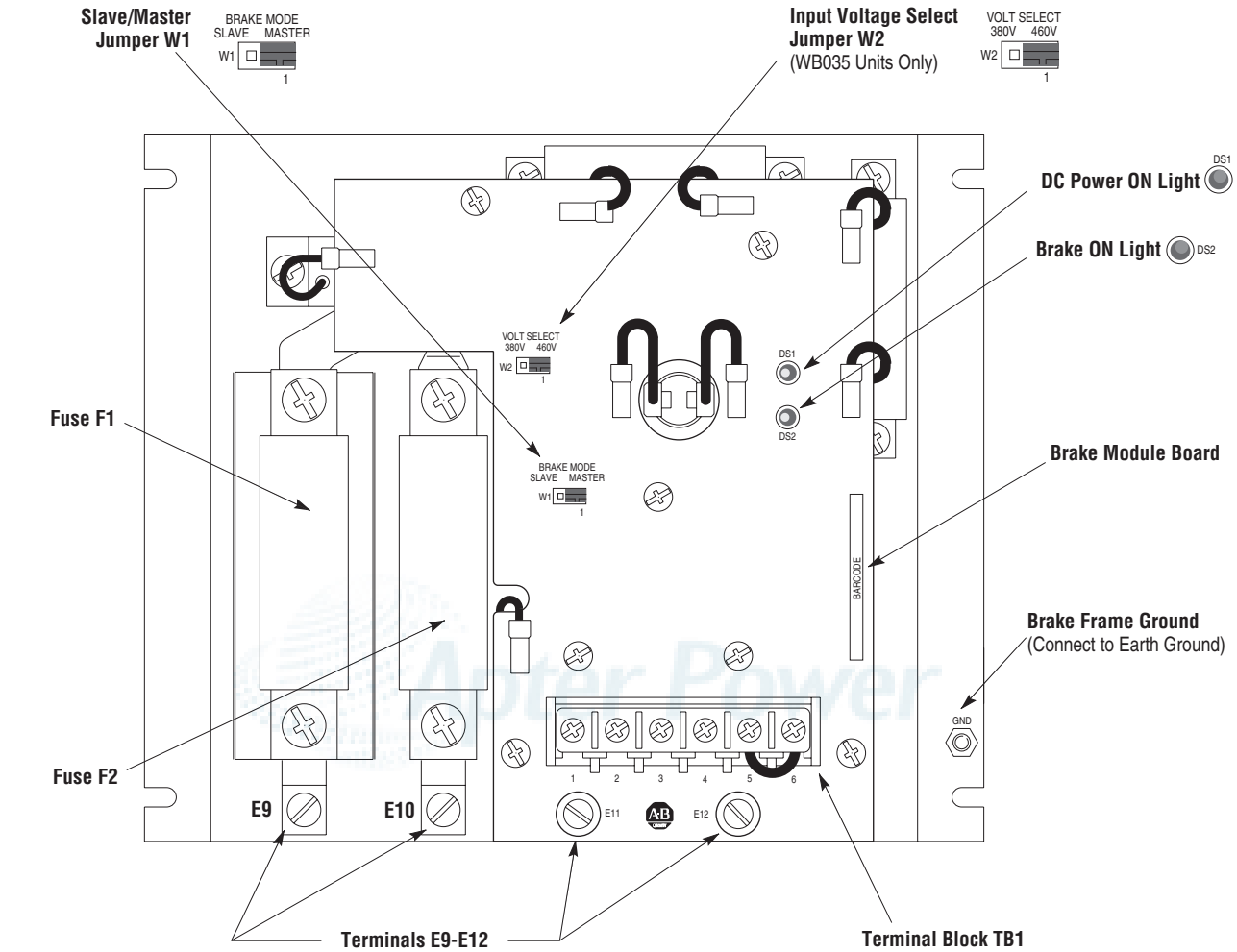
Input Voltage Jumper Set to 460V



Input Voltage Jumper Settings

Set jumper W2 on 460V models to correspond to the nominal drive input voltage. Setting the jumper between positions 1 & 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 & 3 will select an input voltage of 380 volts. **Only models WB009, WB035 & WB110 have input voltage jumpers.**

WA070, WB035 and WC035 Terminal Block, Fuse and Jumper Locations



Terminals E9-E12

Max/Min Wire Size = 33.6 / 2.1 mm² (2 / 14 AWG)

Max Torque = 3.96 N-m (35 lb.-in.) for 5.3-2.1 mm² (10-14 AWG)
4.52 N-m (40 lb.-in.) for 8.4 mm² (8 AWG)
5.09 N-m (45 lb.-in.) for 21.2-13.3 mm² (4-6 AWG)
5.65 N-m (50 lb.-in.) for 33.6 mm² (2 AWG)

Terminal Block TB1

Max/Min Wire Size = 8.4 / 0.8 mm² (8 / 18 AWG)

Max Torque = 1.81 N-m (16 lb.-in.)