

Technical specification

Power ratings

Single-phase, 200 VAC

Inverter model CIMR-VCBA*1	0001	0002	0003	0006	0010	0012	0018*6
Motor output (normal duty) [kW]*2	0.18	0.37	0.75	1.1	2.2	3.0	-
Motor output (heavy duty) [kW]*5	0.1	0.18	0.55	0.75	1.5	2.2	4.0
Rated output current (normal duty) [A]*3	1.2	1.9	3.3	6.0	9.6	12.0	-
Rated output current (heavy duty) [A]*5	0.8	1.6	3.0	5.0	8.0	11.0	17.5
Overload	120% for 60 sec normal duty, 150% for 60 sec heavy duty from inverter rated output current						
Rated output power (normal duty) [kVA]	0.5	0.7	1.3	2.3	3.7	4.6	-
Rated output power (heavy duty) [kVA]	0.3	0.6	1.1	1.9	3.0	4.2	6.7
Max. output voltage	Three-phase 200 to 240V (proportional to input voltage)						
Max. output frequency	400Hz						
Rated input voltage	Single-phase 200 to 240V +10%/-15%						
Rated input frequency	50/60 Hz +/-5%						

Three-phase, 200 VAC

Inverter model CIMR-VC2A	0001	0002	0004	0006	0010	0012	0020	0030	0040	0056	0069
Motor output (normal duty) [kW]*2	0.18	0.37	0.75	1.1	2.2	3.0	5.5	7.5	11.0	15.0	18.5
Motor output (heavy duty) [kW]*5	0.1	0.2	0.4	0.75	1.5	2.2	4.0	5.5	7.5	11.0	15.0
Rated output current (normal duty) [A]*3	1.2	1.9	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0
Rated output current (heavy duty) [A]*5	0.8	1.6	3.0	5.0	8.0	11.0	17.5	25.0	33.0	47.0	60.0
Overload	120% for 60 sec normal duty, 150% for 60 sec heavy duty from inverter rated output current										
Rated output power (normal duty) [kVA]	0.5	0.7	1.3	2.3	3.7	4.6	7.5	11.4	15.2	21.3	26.3
Rated output power (heavy duty) [kVA]	0.3	0.6	1.1	1.9	3.0	4.2	6.7	9.5	12.6	17.9	22.9
Max. output voltage	Three-phase 200 to 240V (proportional to input voltage)										
Max. output frequency	400Hz										
Rated input voltage	Single-phase 200 to 240V +10%/-15%										
Rated input frequency	50/60 Hz +/-5%										

Three-phase, 400 VAC

Inverter model CIMR-VC4A	0001	0002	0004	0005	0007	0009	0011	0018	0023	0031	0038
Motor output (normal duty) [kW]*2	0.37	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11.0	15.0	18.5
Motor output (heavy duty) [kW]*5	0.37	0.55	1.1	1.5	2.2	3.0	4.0	5.5	7.5	11.0	15.0
Rated output current (normal duty) [A]*3	1.2	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23.0	31.0	38.0
Rated output current (heavy duty) [A]*5	1.2	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18.0	24.0	31.0
Overload	120% for 60 sec normal duty, 150% for 60 sec heavy duty from inverter rated output current										
Rated output power (normal duty) [kVA]	0.9	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	23.6	29.0
Rated output power (heavy duty) [kVA]	0.9	1.4	2.6	3.7	4.2	5.5	7.0	11.3	13.7	18.3	23.6
Max. output voltage	Three-phase 380 to 480V (proportional to input voltage)										
Max. output frequency	400Hz										
Rated input voltage	Three-phase 380 to 480V +10%/-15%										
Rated input frequency	50/60 Hz +/-5%										

*1 Drives with a single-phase power supply input have three-phase output. Single-phase motors cannot be used.

*2 The motor capacity (kW) refers to a YASKAWA 4-pole, 60 Hz, 200 V motor. The rated output current of the drive output amps should be equal to or greater than the motor rated current.

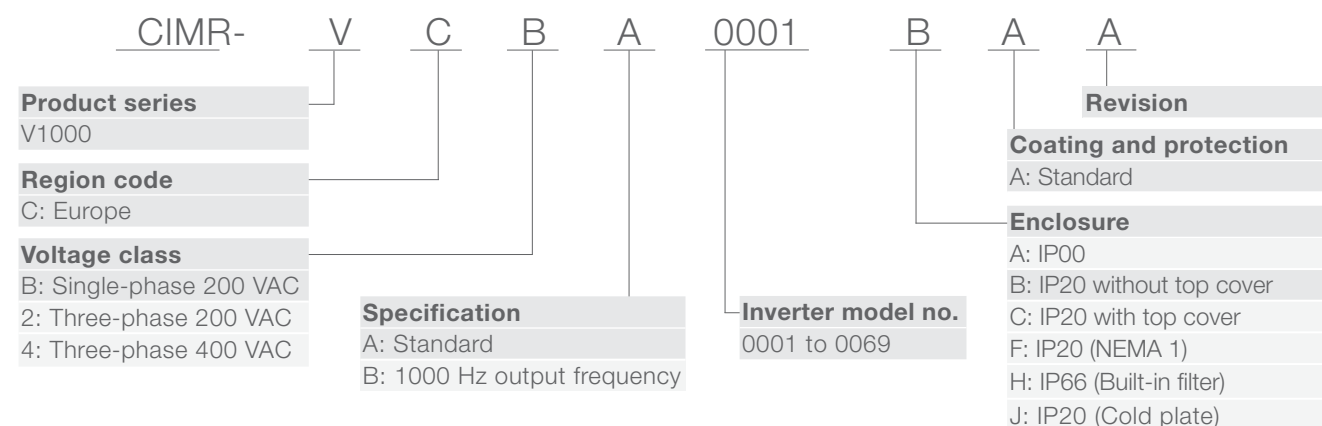
*3 At 2 kHz carrier frequency without derating

*4 At 10 kHz carrier frequency without derating

*5 At 8 kHz carrier frequency without derating

*6 Only heavy duty rating available

Model code



Specifications

Control functions	
Control methods	Open loop vector control (Current vector), V/f control, PM open loop vector control (for SPM and IPM motors)
Frequency control range	0.01 to 400 Hz
Frequency accuracy (Temperature fluctuation)	Digital input: within $\pm 0.01\%$ of the max. output frequency (-10°C to $+50^{\circ}\text{C}$)
	Analog input: within $\pm 0.1\%$ of the max. output frequency ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)
Frequency setting resolution	Digital input: 0.01 Hz
	Analog input: 1/1000 of max. frequency
Starting torque	200 % / 0.5 Hz (assumes heavy duty rating AC motor of 3.7 kW or less using open loop vector control), 50 % / 6 Hz (assumes PM open loop vector control)
Speed control range	1:100 (Open loop vector control), 1:40 (V/f control), 1:10 (PM open loop vector control)
Speed control accuracy	$\pm 0.2\%$ in open loop vector control ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)*1
Speed response	5 Hz in open loop vector ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$) (requires rotational auto-tuning)
Torque limit	Open loop vector control allows separate settings in four quadrants
Accel/Decel time	0.0 to 6,000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
Braking torque	- Short-time decel torque*2: over 150 % for 0.1/0.2 kW motors, over 100 % for 0.4/0.75 kW motors, over 50 % for 1.5 kW motors, over 20 % for 2.2 kW and above motors (overexcitation braking/high-slip braking: approx. 40 %) - Continuous regen. torque: approx. 20 % (approx. 125 % with dynamic braking resistor option*3: 10 % ED, 10 s, internal braking transistor)
V/f characteristics	User-selected programs, V/f preset patterns possible
Main control functions	Momentary power loss ride-thru, Speed search, Overtorque detection, Torque limit, 17-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-tuning (rotational, stationary tuning for resistance between lines), Dwell, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Upper/lower limits for frequency reference, DC injection braking at start and stop, Overexcitation braking, High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS comm. (RS-485/422 max, 115.2 kbps), Fault restart, Application presets, DriveWorksEZ (customized function), Removable terminal block with parameter backup function...
Protection functions	
Motor protection	Motor overheat protection based on output current
Momentary overcurrent protection	Drive stops when output current exceeds 200 % of heavy duty rating
Overload protection	Drive stops after 60 s at 150 % of rated output current (heavy duty rating)*4
Overvoltage protection	200 V class: Stops when DC bus exceeds approx. 410 V
	400 V class: Stops when DC bus exceeds approx. 820 V
Undervoltage protection	Stops when DC bus voltage falls below the following levels: 190 V (3-phase 200 V), 160 V (single-phase 200 V), 380 V (3-phase 400 V), 350 V (3-phase 380 V)
Momentary power loss ride-thru	Stops after approx. 15 ms (default). Parameter settings allow the drive to continue running if power loss lasts for up to approx. 2 s*5
Heatsink overheat protection	Protection by thermistor
Braking resistance overheat protection	Overheat sensor for braking resistor (optional ERF-type, 3 % ED)
Stall prevention	Separate settings allowed during acceleration, and during run. Enable/disable only during deceleration.
Ground fault protection	Protection by electronic circuit*6
Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V
Operating environment	
Area of use	Indoors
Ambient temperature	-10°C to $+50^{\circ}\text{C}$ (open chassis), -10°C to $+40^{\circ}\text{C}$ (NEMA Type 1)
Humidity	95 RH% or less (non-condensing)
Storage temperature	-20°C to $+60^{\circ}\text{C}$
Altitude	1,000 m without derating (output derating of 1 % per 100 m above 1,000 m, max. 3,000 m)
Vibration	10 to 20 Hz (9.8 m/s^2), 20 to 55 Hz (5.9 m/s^2)
Standards	CE, UL, cUL, RoHS
Protective Design	IP20 open-chassis, NEMA Type 1 enclosure, IP66

*1 Speed control accuracy may vary slightly depending on installation conditions or motor used.

*2 Momentary average deceleration torque refers to the deceleration torque from 60 Hz down to 0 Hz. This may vary depending on the motor.

*3 If L3-04 is enabled when using a braking resistor or braking resistor unit, the motor may not stop within the specified deceleration time.

*4 Overload protection may be triggered at lower levels if output frequency is below 6 Hz.

*5 Varies by drive capacity. Drives smaller than 7.5 kW require a separate Momentary Power Loss Recovery Unit to continue operating during a momentary power loss of 2 s.

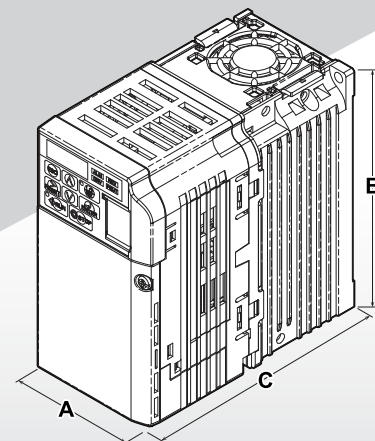
*6 Protection may not be provided under the following conditions as the motor windings are grounded internally during run:

Low resistance to ground from the motor cable or terminal block.

Drive already has a short-circuit when the power is turned on.

Dimensions

All dimensions in mm, weights in kg.



IP20/Open-chassis (without EMC filter)

Single-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
BA0001B	68	128	76	0.6
BA0002B	68	128	76	0.6
BA0003B	68	128	118	1.0
BA0006B	108	128	137.5	1.7
BA0010B	108	128	154	1.8
BA0012B	140	128	163	2.4
BA0018B	170	128	180	3.0

Three-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
2A0001B	68	128	76	0.6
2A0002B	68	128	76	0.6
2A0004B	68	128	108	1.0
2A0006B	68	128	128	1.1
2A0010B	108	128	129	1.7
2A0012B	108	128	137.5	1.7
2A0020B	140	128	143	2.4

Three-phase, 400 VAC

Model CIMR-VC□	A	B	C	kg
4A0001B	108	128	81	1.0
4A0002B	108	128	99	1.2
4A0004B	108	128	137.5	1.7
4A0005B	108	128	154	1.7
4A0007B	108	128	154	1.7
4A0009B	108	128	154	1.7
4A0011B	140	128	143	2.4

IP20/NEMA Type 1 (without EMC filter)

Single-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
BA0001F	68	149.5	76	0.8
BA0002F	68	149.5	76	0.8
BA0003F	68	149.5	118	1.2
BA0006F	108	149.5	137.5	1.9
BA0010F	108	149.5	154	2.0
BA0012F	140	153	163	2.6
BA0018F	170	171	180	3.3

Three-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
2A0001F	68	149.5	76	0.8
2A0002F	68	149.5	76	0.8
2A0004F	68	149.5	108	1.1
2A0006F	68	149.5	128	1.3
2A0010F	108	149.5	129	1.9
2A0012F	108	149.5	137.5	1.9
2A0020F	140	153	143	2.6
2A0030F	140	254	140	3.8
2A0040F	140	254	140	3.8
2A0056F	180	290	163	5.5
2A0069F	220	350	187	9.2

Three-phase, 400 VAC

Model CIMR-VC□	A	B	C	kg
4A0001F	108	149.5	81	1.2
4A0002F	108	149.5	99	1.4
4A0004F	108	149.5	137.5	1.9
4A0005F	108	149.5	154	1.9
4A0007F	108	149.5	154	1.9
4A0009F	108	149.5	154	1.9
4A0011F	140	153	143	2.6
4A0018F	140	254	140	3.8
4A0023F	140	254	140	3.8
4A0031F	180	290	143	5.2
4A0038F	180	290	163	5.5

Cold plate

Single-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
BA0001J	68	128	71	0.6
BA0002J	68	128	71	0.6
BA0003J	68	128	81	0.8
BA0006J	108	128	79.5	1.1
BA0010J	108	128	91	1.1
BA0012J	140	128	98	1.4

Three-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
2A0001J	68	128	71	0.6
2A0002J	68	128	71	0.6
2A0004J	68	128	71	0.7
2A0006J	68	128	71	0.7
2A0008J	108	128	71	1.0
2A0010J	108	128	71	1.0
2A0012J	108	128	79.5	1.0
2A0018J	140	128	78	1.3
2A0020J	140	128	78	1.3
2A0030J	140	260	145	3.2
2A0040J	140	260	145	3.2
2A0056J	180	300	147	4.6
2A0069J	220	350	152	7.0

Three-phase, 400 VAC

Model CIMR-VC□	A	B	C	kg
4A0001J	108	128	71	0.9
4A0002J	108	128	71	0.9
4A0004J	108	128	79.5	1.0
4A0005J	108	128	96	1.0
4A0007J	108	128	96	1.1
4A0009J	108	128	96	1.1
4A0011J	140	128	78	1.3
4A0018J	140	260	145	3.1
4A0023J	140	260	145	3.2
4A0031J	180	300	147	4.3
4A0038J	180	300	147	4.6

IP66

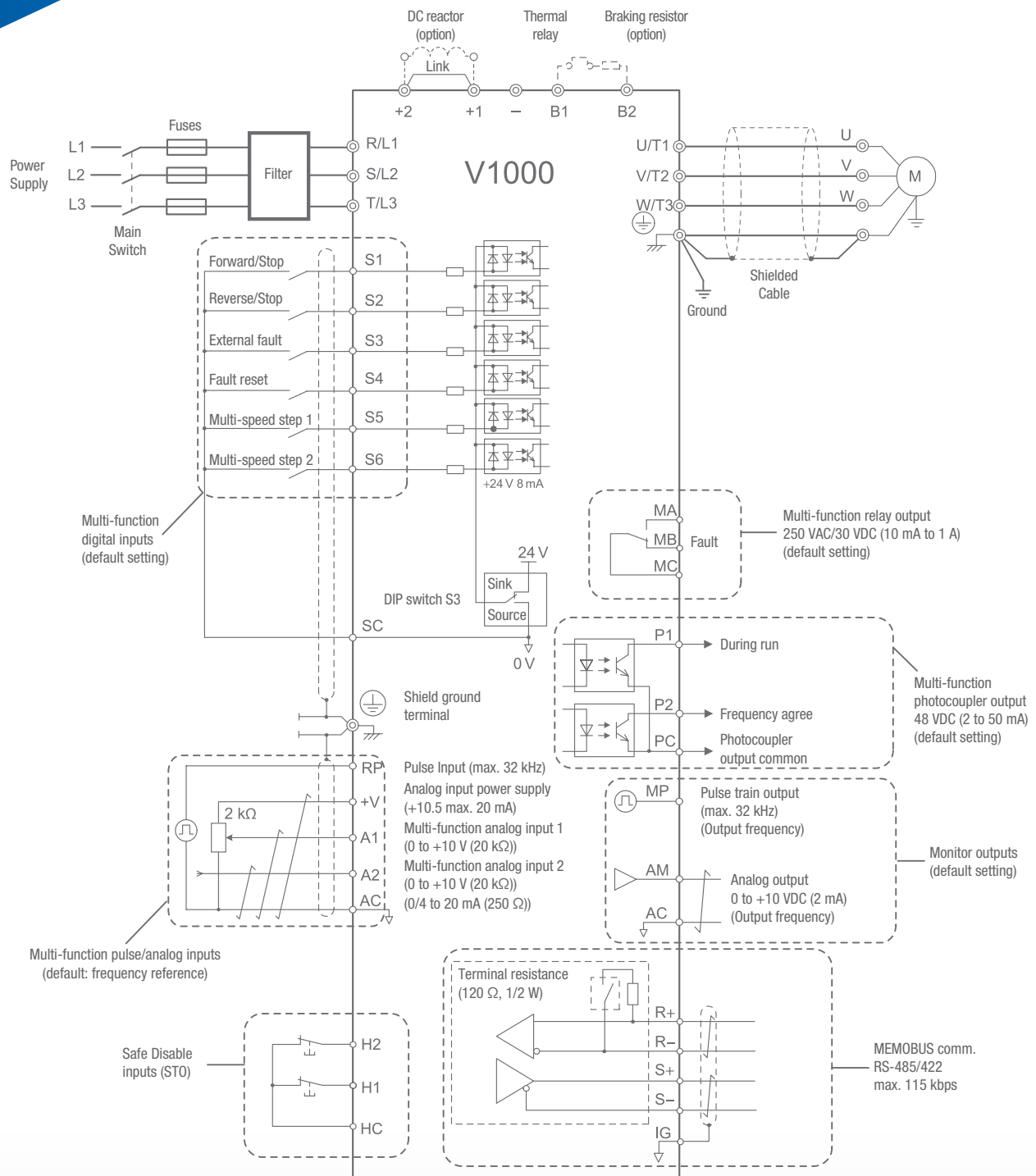
Single-phase, 200 VAC

Model CIMR-VC□	A	B	C	kg
BA0001H	262	340	173.5	4.9
BA0002H	262	340	173.5	4.9
BA0003H	262	340	173.5	5.1
BA0006H	262	340	173.5	5.7
BA0010H	262	340	173.5	5.8
BA0012H	262	340	173.5	6.1

Three-phase, 400 VAC

Model CIMR-VC□	A	B	C	kg
4A0001H	262	340	173.5	5.2
4A0002H	262	340	173.5	5.2
4A0004H	262	340	173.5	5.3
4A0005H	262	340	173.5	5.3
4A0007H	262	340	173.5	5.7
4A0009H	262	340	173.5	5.7
4A0011H	262	340	173.5	6.0
4A0018H	345	500.5	273.5	19.8
4A0023H	345	500.5	273.5	19.9
4A0031H	345	500.5	273.5	21.0
4A0038H	345	500.5	273.5	21.3

Connection diagram



- ⚡ Use twisted pair cables
- 🛡️ Use shielded twisted pair cables
- ⊙ Indicates a main circuit terminal
- Indicates a control circuit terminal