For IM drives

General-purpose Inverter with Advanced Vector Control

Varispeed G7

Catalog No.
KAE-S616-60

The Varispeed G7, the first general-purpose inverter in the world, features three-level control method with advanced vector control.

Features

- Three-level control solves many problems of 400V-class inverters: Low surge voltage, low electrical noise, reduced leakage current, low acoustic noise, and protection against electrolytic corrosion of motor bearings caused by high voltages in the shaft.
- With high performance and functionality by current vector control, the Varispeed G7 achieves the powerful and high-precision operation necessary for a diverse range of equipment and machinery.

Model Designation

CIMR – G7 A 2 0P4

Inverter

Varispeed G7 series

Specifications
A : Japanese domestic standards

Voltage Class
2 : Three-phase 200 V
4 : Three-phase 400 V

Max. Applicable Motor Output
(P = decimal point)
0P4 : 0.4kW
to
300 : 300kW

Specifications

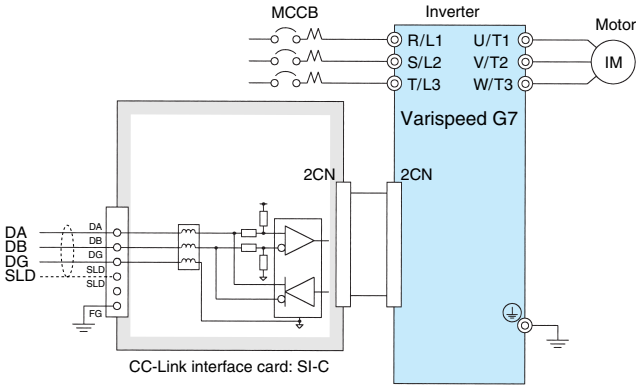
Item	Description	
Power Supply	200 V (three-phase)	400 V (three-phase)
Motor Output Range	0.4 to 110 kW	0.4 to 300 kW
Control Method	Sine wave PWM [V/f, vector with PG, open loop vector (switched by parameter)]	
Frequency Control Range	0.1 to 400 Hz	
Overload Capacity	150% rated output current for 1 minute	
Accel/Decel Time	0.01 to 6000.0 s (Accel/Decel time setting independently)	
Protective Functions	Motor overload protection, instantaneous overcurrent, overload, overvoltage, undervoltage, stall prevention, etc.	
Standard Functions	PID control, energy-saving control, toruque limit, momentary power loss restart, speed search, etc.	
Harmonic Wave Prevention	DC reactor: Optional for inverters less than 15kW; provided for inverters of 18.5kW or more.	
MECHATROLINK (Optional card: SI-T*1)		
Type	MECHATROLINK-Ⅱ	MECHATROLINK-Ⅰ
Baud Rate	10 Mbps	4 Mbps
Network Size	30 nodes	15 nodes
String Size	17 bytes or 32 bytes	17 bytes
DeviceNet (Optional card: SI-N1*2)		
Baud Rate	125 k / 250 k / 500 kbps	
Messages	Group 2 Only, UCMM without connection port, Explicit messages, and polled I/O messages.	
I/O Assembly Instances	4 types of input instances (4 to 8 bytes); 4 types of output instances (4 to 8 bytes); AC drive profile provided	
CC-Link (Optional card: SI-C*2)		
Remote I/Os	32 inputs; 32 outputs	
Remote Registers	4 words for RWr; 4 words for RWw	
No. of Stations	Single station (Remote device station)	
PROFIBUS-DP (Optional card: SI-P1*2)		
Baud Rate	9.6 kbps to 12 Mbps	
Transmission Distance	1200 m / 9.6 kbps to 100 m / 12 Mbps	
String Size	6, 12 or 32 bytes	
LONWORKS (Optional card: SI-J*2)		
Baud Rate	78 kbps	
Standard Network Variable	Variable-speed Motor-drive Function Profile Ver. 1.1 provided	
Functions	Inverter control, monitoring, and setting and referencing of parameters	
CANopen (Optional card: SI-S1*2)		
Transmission Distance and Baud Rate	5000 m / 10 kbps to 25 m / 1 Mbps	
Compliance	DS301 Ver 3.0 / DSP 402 Ver 1.1	
Network Size	127 nodes (for inverter: 1 to 99 nodes)	

*1: Requires the exclusive software for the SI-T installed in the inverter.
*2: The inverter supports only standard software.

Models for Optional Cards

- MECHATROLINK : SI-T
- DeviceNet : SI-N1
- CC-Link : SI-C
- PROFIBUS-DP : SI-P1
- LONWORKS : SI-J
- CANopen : SI-S1

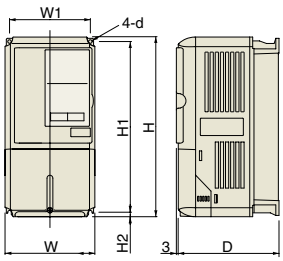
Connection Diagram with CC-Link Interface Card



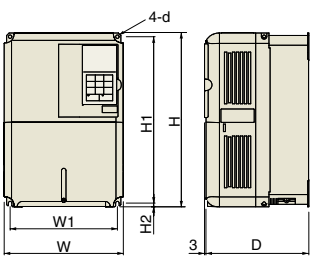
Dimensions Units: mm

Note: Open-chassis inverters are shown in drawings.

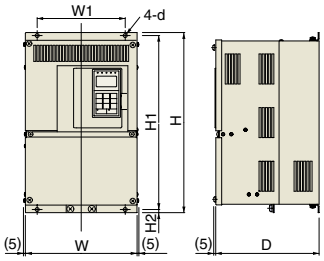
Drawing 1



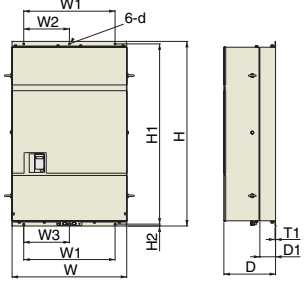
Drawing 2



Drawing 3



Drawing 4



Voltage	Max. Applicable Motor Output kW	Inverter Model CIMR-G7A	DWG	Open-chassis Type (IP00) in mm*1,*2 W	H	D	W1	H1	H2	Approx. Mass kg	Enclosed Type (NEMA1) in mm*2 W	H	D	W1	H1	H2	H3*4	Approx. Mass kg	d*3
200 V Class (3-phase)	0.4	20P4	1	140	280	157	126	266	7	3	140	280	157	126	266	7	—	3	M5
	0.75	20P7																	
	1.5	21P5																	
	2.2	22P2		140	280	177	126	266	7	4	140	280	177	126	266			4	M5
	3.7	23P7																	
	5.5	25P5	2	200	300	197	186	285	8	6	200	300	197	186	285	8	0	6	M6
	7.5	27P5								7								7	
	11	2011		240	350	207	216	335	7.5	11	240	350	207	216	335		0	11	M6
	15	2015										380					30		
	18.5	2018	3	250	400	258	195	385	7.5	21	254	535	258	195	385	7.5	135	24	M6
	22	2022		275	450		220	435	7.5	24	279	615		220	435		165	27	
	30	2030		375	600	298	250	575	12.5	57	380	890	298	250	575	12.5	209	62	M10
	37	2037				328				63			328				302	68	
	45	2045		450	725	348	325	700		86	453	1027	348	325	700			94	
	55	2055								87								95	
	75	2075		500	850	358	370	820	15	108	504	1243	358	370	820	15	393	114	M12
	90	2090		575	885	378	445	855		150	Not available								M12
	110	2110																	
400 V Class (3-phase)	0.4	40P4	1	140	280	157	126	266	7	3.5	140	280	157	126	266	7	—	3.5	M5
	0.75	40P7																	
	1.5	41P5		140	280	177	126	266	7	4.5	140	280	177	126	266			4.5	M5
	2.2	42P2																	
	3.7	43P7																	
	5.5	45P5	2	200	300	197	186	285	8	7	200	300	197	186	285	8	—	7	M6
	7.5	47P5																	
	11	4011		240	350	207	216	335	7.5	10	240	350	207	216	335			10	M6
	15	4015																	
	18.5	4018	3	275	450	258	220	435	7.5	26	279	535	258	220	435	7.5	85	29	M6
	22	4022																	
	30	4030		325	550	283	260	535	7.5	37	329	635	283	260	535			39	M6
	37	4037																	
	45	4045										715					165	40	
	55	4055		450	725	348	325	700	12.5	90	453	1027	348	325	700	12.5	302	98	M10
	75	4075								91								99	
	90	4090		500	850	358	370	820	15	109	504	1243	358	370	820	15	393	127	M12
	110	4110								127								137	
	132	4132		575	916	378	445	855	45.8	165	579	1324	378	445	855	45.8	408	175	
	160	4160								175								185	
	185	4185	4	710	1305	415	540	1270	15	263	Not available								M12
	220	4220								280									
	300	4300		916	1475		730	1440	15	415									

*1: If using open-chassis inverters of 15 kW or less in the 200V or 400V class, remove the top and the bottom covers.
*2: An inverter of 15 kW or less in the 200V or 400V class needs an attachment to externally mount the heatsink. Contact your Yaskawa representative for details.
*3: The mounting hole is the same size for both open-chassis and enclosed inverters.
*4: Refer to the Varispeed G7 catalog for the dimensions of the enclosed inverters.