



Varispeed F7

Catalog No.
KAE-S616-55



The Varispeed F7, a current vector inverter, has every conceivable advanced function to upgrade the performance and energy savings of your machine with outstanding cost performance.

Features

- Optimum drives for a diverse range of applications from fans and pumps to general-purpose industrial machines.
- High-torque drives with excellent vector control with PG.
- Optimum characteristics for your application by selecting characteristics for variable torque (VT) or constant torque (CT).

Model Designation

CIMR – F7 A 2 0P4

Inverter
Varispeed F7
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

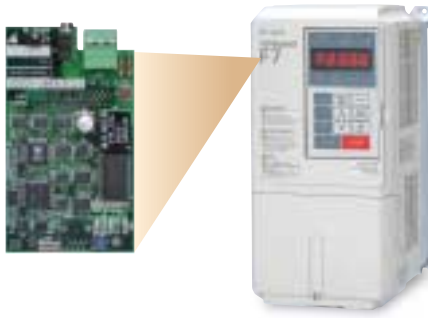
Item	Description	
Power Supply	200 V (three-phase)	400 V (three-phase)
Motor Output Range	0.4 to 110 kW	0.4 to 300 kW
Control Method*1	Sine wave PWM [V/f, vector with PG, open loop vector (switched by parameter)]	
Frequency Control Range*1	CT mode : 0.01 to 300 Hz, VT mode : 0.01 to 400 Hz	
Overload Capacity	CT mode : 150 % rated output current for 1 min., VT mode : 120 % rated output current for 1 min.	
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, torque limit, momentary power loss restart, speed search, etc.	
Harmonic Wave Prevention	DC reactor: Optional for inverters less than 18.5kW; provided for inverters of 22kW or more.	
MECHATROLINK (Optional card: SI-T*2)		
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*3)		
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*3)		
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*3)		
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*3)		
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*3)		
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: Specifications are available for inverters of Spec E or later.

*2: Requires the exclusive software for the SI-T installed in the inverter. As a standard feature, inverters of Spec E or later support the exclusive software for the SI-T. If using the SI-T communication card, an optional card for monitoring cannot be installed in the inverter.

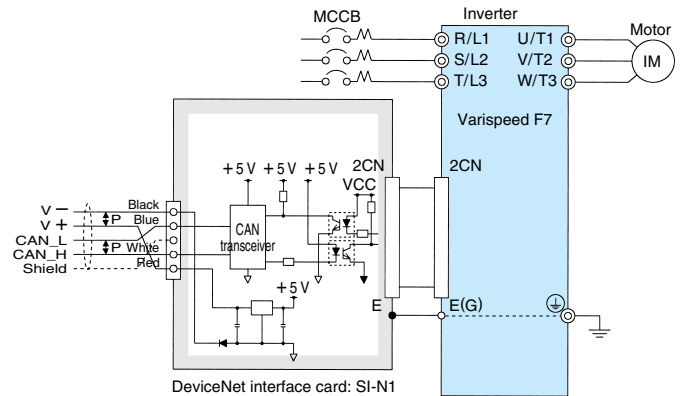
*3: The inverter supports only standard software.

Models for Optional Cards



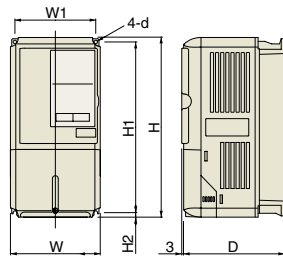
- MECHATROLINK : SI-T
- DeviceNet : SI-N1
- CC-Link : SI-C
- PROFIBUS-DP : SI-P1
- LONWORKS : SI-J
- CANopen : SI-S1

Connection Diagram with DeviceNet Interface Card

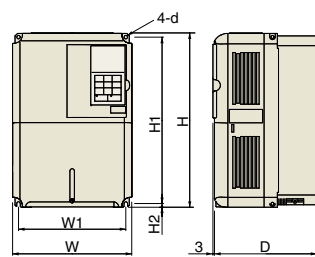


Dimensions Units: mm Note: Open-chassis inverters are shown in drawings.

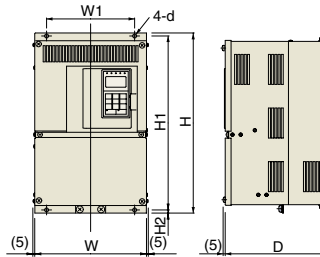
Drawing 1



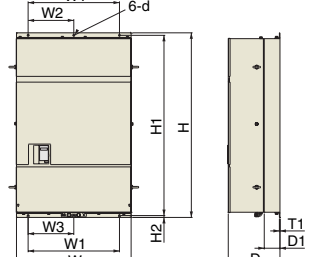
Drawing 2



Drawing 3



Drawing 4



Voltage	Max. Applicable Motor Output kW	Inverter Model CIMR-F7A	DWG	Open-chassis Type (IP00) in mm*1,*2						Approx. Mass kg	Enclosed Type (NEMA1) in mm*2								Approx. Mass kg	d*3
				W	H	D	W1	H1	H2		W	H	D	W1	H1	H2	H3*4			
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		140	280	177	126	266	7	4	140	280	177	126	266	7	—	4	M5	
	1.5	21P5		200	300	197	186	285	8	6	200	300	197	186	285	8	0	6	M6	
	2.2	22P2		240	350	207	216	335	7.5	11	240	350	207	216	335	7.5	0	11	M6	
	3.7	23P7	2	250	400	258	195	385	7.5	21	254	535	258	195	385	7.5	135	24	M6	
	5.5	25P5		275	450	258	220	435	7.5	24	279	615	258	220	435	7.5	165	27	M6	
	7.5	27P5		375	600	298	250	575	12.5	57	380	809	298	250	575	12.5	209	62	M10	
	11	2011		450	725	348	325	700	12.5	86	453	1027	348	325	700	12.5	302	94	M10	
	15	2015	3	500	850	358	370	820	15	108	504	1243	358	370	820	15	393	95	M12	
	18.5	2018		575	885	378	445	855	15	150	Not available								M12	
	22	2022																		
	30	2030																		
	37	2037																		
	45	2045																		
	55	2055																		
	75	2075																		
90	2090																			
110	2110																			
400 V Class (3-phase)	0.4	40P4	1	140	280	157	126	266	7	3	140	280	157	126	266	7	—	3	M5	
	0.75	40P7		140	280	177	126	266	7	4	140	280	177	126	266	7	—	4	M5	
	1.5	41P5		200	300	197	186	285	8	6	200	300	197	186	285	8	—	6	M6	
	2.2	42P2		240	350	207	216	335	7.5	10	240	350	207	216	335	7.5	—	10	M6	
	3.7	43P7	2	275	450	258	220	435	7.5	21	279	535	258	220	435	7.5	85	24	M6	
	5.5	45P5		325	550	283	260	535	7.5	36	329	715	283	260	535	7.5	85	40	M6	
	7.5	47P5		450	725	348	325	700	12.5	88	453	1027	348	325	700	12.5	302	96	M10	
	11	4011		500	850	358	370	820	15	102	504	1243	358	370	820	15	393	122	M12	
	15	4015	3	575	916	378	445	855	45.8	160	579	1324	378	445	855	45.8	408	130	M12	
	18.5	4018		710	1305	415	540	1270	15	260	Not available								M12	
	22	4022		916	1475	415	730	1440	15	405	Not available								M12	
	30	4030																		
	37	4037	4																	
	45	4045																		
	55	4055																		
	75	4075																		
	90	4090																		
	110	4110																		
	132	4132																		
	160	4160																		
185	4185																			
220	4220																			
300	4300																			

*1: If using open-chassis inverters of 18.5 kW or less in the 200V or 400V class, remove the top and the bottom covers.

*2: Inverters of 18.5 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 F7 catalog for the dimensions of the enclosed inverters.