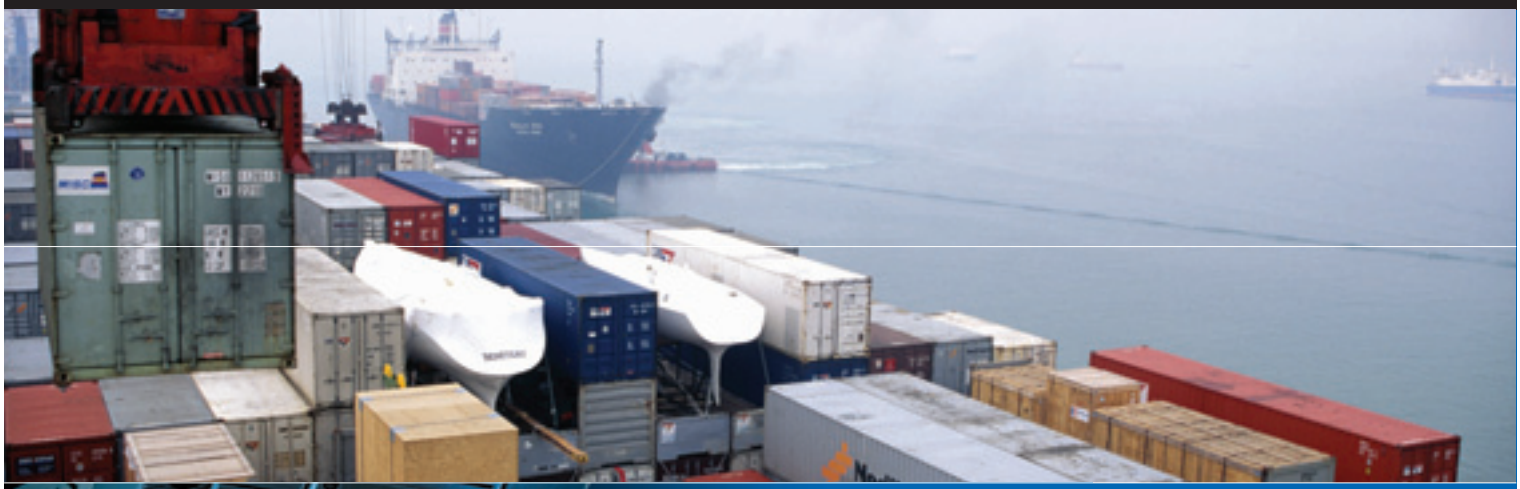
e-Front runners

For Cranes use

Variable Speed AC Drives



FUJI INVERTERS & PWM CONVERTERS

A HIGHLY EFFICIENT AND EFFECTIVE GLOBAL
INVERTER WITH THE FUNCTIONS AND CAPABILITIES FOR ALL YOUR NEEDS.

MEH637a

FRENIC 5000VG7S series, ideal for crane systems

For Crane use

Variable Speed AC Drives

FUJI INVERTERS & PWM CONVERTERS

A HIGHLY EFFICIENT AND EFFECTIVE GLOBAL INVERTER WITH THE FUNCTIONS AND CAPABILITIES FOR ALL YOUR NEEDS.

FRENIC 5000VG7S
Flux Vector Control Inverter

Features

The industry's best control capability

■The multi-drive functions: V/f, Vector, Sensorless

Selectable control type depending on application

- Hoist; Vector control.
- Trolley; Vector control or Sensorless vector control.
- Gantry; V/f control or PG vector control by one PG among several motors.

■High performance: speed response of 100Hz, etc.

■During vector control by the dedicated motor, the inverter realizes the industry-highest control performance itemized below:

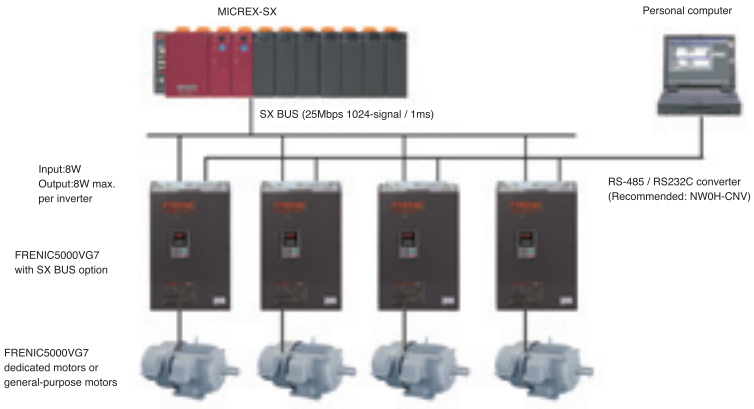
- Speed control accuracy: ±0.005%
- Speed response: 100Hz
- Torque control accuracy (linearity): ±3%

NOTE: Regarding 690V series, consult with Fuji Electric FA.

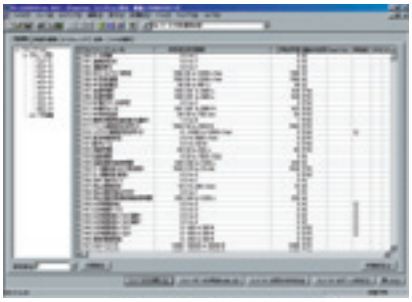
System integration

SX and T-link bus communication functions

SX bus system

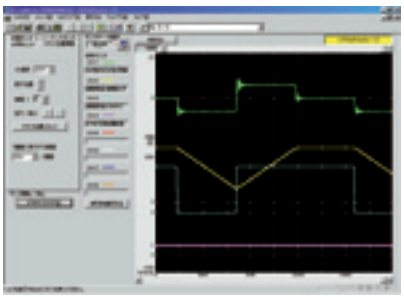


Loader software for PC Windows application



You can set an operational environment easily with the inverter support loader software by connecting to your personal computer over RS-485 interface (max. 38,400bps) built in VG7S.

The loader runs on Windows95/98/2000/xp and NT. Real-time trace and historical trace are incorporated along with an operation monitor and function settings.



Open bus communication with PROFIBUS-DP, DeviceNet

A wide range of capacities and applications

- 400V series: 3.7kW to 630kW: Unit type
  710kW & 800kW: Stack type
- 690V series: 500kW & 630kW: Unit type
  710kW & 800kW: Stack type (Now planning)
- Built-in braking circuit: up to 110kW

A wealth of integrated functions

- Load adaptive control
- Flux field forcing function
- Braking control signal
- The UPAC (optional) is equipped with the user program function. Use of UPAC allows you to partly control the inverter or change the terminal functions.

Global Products

- UL/cUL, CE marking
- Keypad is set of 8 languages.

Europe
EC Directive (CE marking)

North America/Canada
UL and cUL standards

Specifications

400V Series (Unit type)

Type FRN□□□VG7S-4			3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	250	280	315	355	400	500	630
Nominal applied motor [kW]			3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	250	280	315	355	400	500	630
Rated capacity [kVA] (*1)			6.8	10	14	18	24	29	34	45	57	69	85	114	134	160	192	231	287	316	356	396	445	495	563	731	891
Rated current [A]		Continuous	9.0	13.5	18.5	24.5	32.0	39.0	45.0	60.0	75.0	91.0	112	150	176	210	253	304	377	415	468	520	585	650	740	960	1170
		1min	13.5	20.0	27.5	36.5	48.0	58.5	67.5	90.0	113	137	168	225	264	315	360	456	566	623	702	780	878	975	1110	1440	1755
Input ratings	Phase, Voltage, Frequency (*1)		3-phase 380 to 480V, 50Hz/60Hz							3-phase 380 to 440V/50Hz, 380 to 480V/60Hz (*7)																	
	Voltage/frequency variation		Voltage: +10 to -15%, Frequency: +5 to -5%, Voltage unbalance: 2% or less (*2)																								
	Momentary voltage dip capability (*3)		When voltage drops from the rated voltage, the inverter will continue operation if the voltage is more than 310V. If the voltage is less than 310V, the inverter can be operated for 15ms.																								
	Rated current [A] (*6)	with DCR	7.1	10	13.5	19.8	26.8	33.2	39.3	54	67	81	100	134	160	196	232	282	352	385	438	491	552	624	704	880	1104
		without DCR	14.9	21.5	27.9	39.1	50.3	59.9	69.3	86	104	124	150	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Required power supply capacity [kVA] (*4)		5.0	7.0	9.4	14	19	24	28	38	47	57	70	93	111	136	161	196	244	267	304	341	383	432	488	610	765
Braking method/braking torque			Braking resistor discharge control: 150% braking torque, Separately installed braking resistor (option), Separately installed braking unit (option for 132kW or more)																								
Carrier frequency [kHz] (*5)			0.75 to 15											0.75 to 10												0.75 to 5	
Mass [kg]			8	8	8	12.5	12.5	25	25	30	35	40	41	50	72	72	100	100	140	140	150	250	250	300	360	525	525
Enclosure			Up to 15kW: IP20, 18.5kW or over: IP00 (IP20: option)																								
Conditions	Installation location		Indoor use only. Free from corrosive and flammable gases, dusts, and direct sunlight.																								
	Ambient temperature		-10 to +50℃																								
	Ambient humidity		5 to 95%RH (no condensing)																								
	Altitude		3000m or less, with some power derating from 1,001 to 3,000m.																								
	Vibration		Amplitude: 3mm at 2 to 9Hz, 9.8mm/s² at 9 to 20Hz. 2m/s² at 20 to 55Hz (2m/s² at 9 to 55Hz for 90kW or over), 1m/s² at 55 to 200Hz																								
	Storage temperature		-25 to +55℃																								
	Storage humidity		5 to 95%RH																								

*1) Inverter output capacity [kVA] at 440V.
*2) Use a DC REACTOR if the voltage unbalance exceeds 2% (this is the same as for FUJI's conventional models).Voltage unbalance [%] = (Max. voltage [V] - Min. voltage [V])/Three-phase average voltage [V] X 67
*3) Tested at the standard load condition (85% load of nominal applied motor) prescribed by JEMA.
*4) When power-factor correcting DC REACTOR is used. (Optional for 55kW or less model)
*5) The inverter may automatically reduce carrier frequency in accordance with ambient temperature or output current in order to protect itself.
*6) This value is obtained by using a FUJI original calculation method.
*7) When the input voltage is 380 to 398V/50Hz or 380 to 430V/60Hz, a connector inside the inverter must be switched.
* Except for the types described above, there are DC bus connecting types. They have a code such as -4D, -4LC□, -4DCLC at the end of their type name.

400V Series (Stack type)

Type FRN□□□BVG7S-4DC			710	800
Nominal applied motor [kW]			710	800
Rated capacity [kVA] (*1)			1044	1127
Rated current [A]		Continuous	1370	1480
		1min	2055	2220
Input ratings	Main power supply Voltage [V]		DC 513 to 758V (Fuji PWM converter or external rectifier circuit)	
	Control power supply auxiliary input	Phases, Voltage, Frequency	3-phase, 380 to 440V/50Hz (*2) 3-phase, 380 to 480V/60Hz	
		Voltage / frequency variations	Voltage: +10% to -15% (Imbalance rate between phases: 2% or less) Frequency: +5% to -5%	
Carrier frequency [kHz]			2.5 to 5	

*1) Inverter output capacity [kVA] at 440V.
*2) When the input voltage is 380 to 398V/50Hz or 380 to 430V/60Hz, a terminal inside the inverter must be switched.

690V Series (Unit type)

Type FRN□□□VG7S-69			500	630
Nominal applied motor [kW]			500	630
Rated capacity [kVA] (*1)			681	735
Rated current [A]		Continuous	570	615
		1min	855	990
Input ratings	Phases, Voltage, Frequency	Main circuit	3-phase 575 to 690V, 50/60Hz (*2)	
		Control circuit	1-phase 575 to 690V, 50/60Hz, 1.3kVA (*2)	
	Voltage / frequency variation		Voltage: +10 to -15%, Frequency: +5 to -5%, Voltage unbalance: 3% or less (*3)	
	Momentary voltage dip capability		If voltage drops within 2 seconds, automatic restart function is available. If power supply for control circuit (R0/T0) is kept (ex. by UPS), automatic restart function is available against voltage drops over 2 seconds. If "Continuous operation" is selected, the output frequency will be lowered to withstand the load until normal voltage is resumed. (max. 2 seconds)	
	Rated current [A] (*4)		513	646
	Required power supply capacity [kVA] (*5)		613	772
Braking method / braking torque			Braking resistor discharge control: 150% braking torque,Separately installed braking unit and resistor (option).	
Carrier frequency [kHz]			0.75 to 5	
Mass [kg]			525	525
Enclosure			IP00 (IP20: Option)	

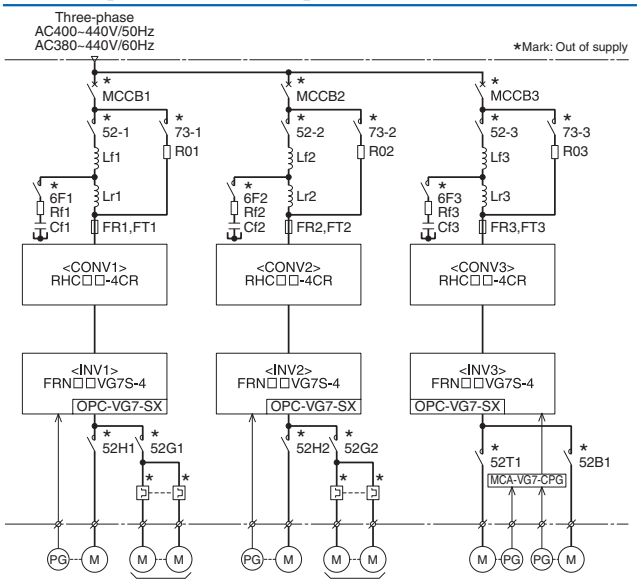
*1) Inverter output capacity [kVA] at 690V.
*2) When the input voltage is 575 to 629V, a connector inside the inverter must be switched.
575 to 629V: U2-V, 630 to 690V: U1-V
*3) Voltage unbalance [%] = (Max. voltage [V] - Min. voltage [V])/Three-phase average voltage [V] × 67
*4) This value is obtained by using a FUJI original calculation method.
*5) When power-factor correcting Fuji original DC REACTOR is used.

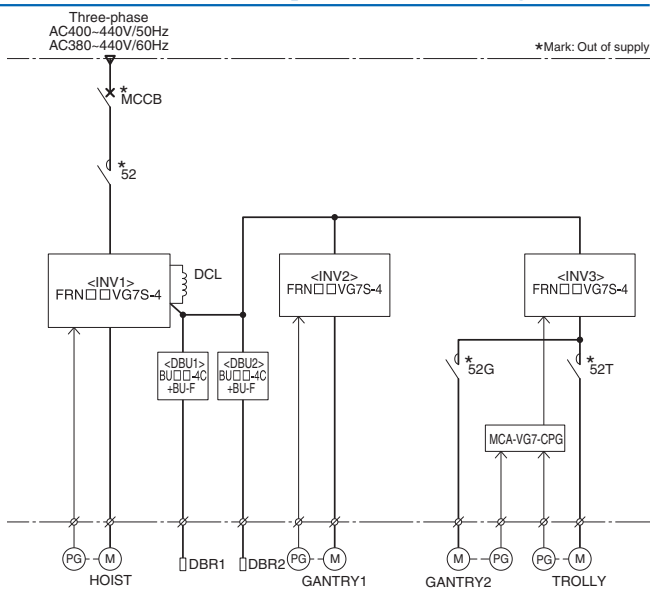
A wide range of capacities and applications

Nominal applied motor [kW]	400V Series Unit type	400V Series Stack type	690V Series Unit type	690V Series Stack type
3.7	FRN3.7VG7S-4			
5.5	FRN5.5VG7S-4			
7.5	FRN7.5VG7S-4			
11	FRN11VG7S-4			
15	FRN15VG7S-4			
18.5	FRN18.5VG7S-4			
22	FRN22VG7S-4			
30	FRN30VG7S-4			
37	FRN37VG7S-4			
45	FRN45VG7S-4			
55	FRN55VG7S-4			
75	FRN75VG7S-4			
90	FRN90VG7S-4			
110	FRN110VG7S-4			
132	FRN132VG7S-4			
160	FRN160VG7S-4			
200	FRN200VG7S-4			
220	FRN220VG7S-4			
250	FRN250VG7S-4			
280	FRN280VG7S-4			
315	FRN315VG7S-4			
355	FRN355VG7S-4			
400	FRN400VG7S-4			
500	FRN500VG7S-4		FRN500VG7S-69	
630	FRN630VG7S-4		FRN630VG7S-69	Now planning
710		FRN710BVG7S-4DC		FRN710BVG7S-69
800		FRN800BVG7S-4DC		FRN800BVG7S-69

★A cubicle type is available on your request.

Example of Quay-Side Crane and Rubber Tire Gantry Crane Diagrams





External Dimensions

Fig. A (Internal mounting type)

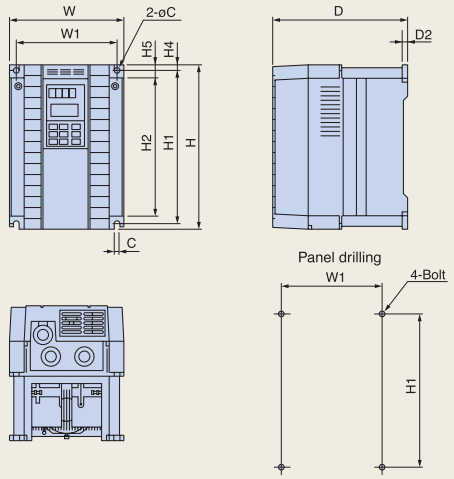
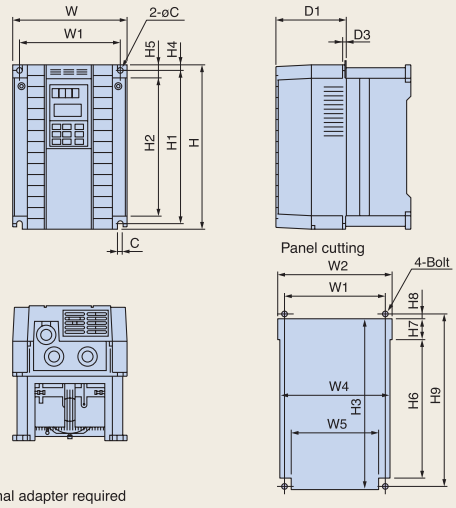


Fig. B (External cooling type)



Note: Optional adapter required

Fig. C (Internal mounting type)

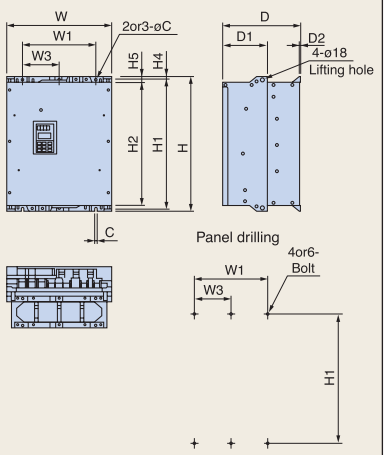
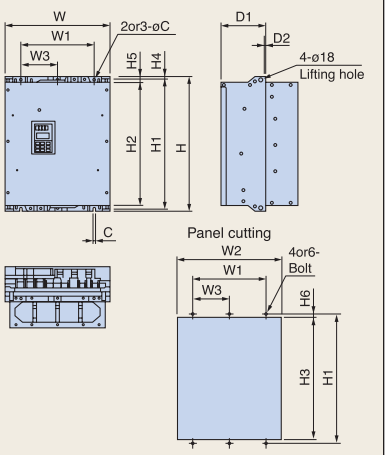


Fig. D (External cooling type)



KEYPAD (Common to all models)

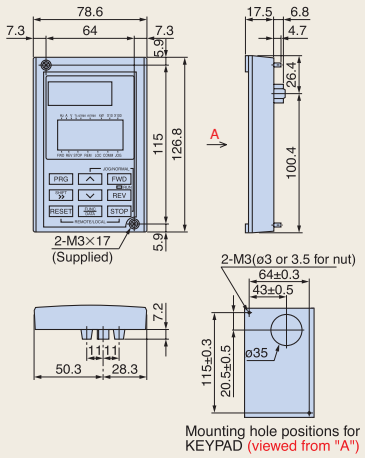
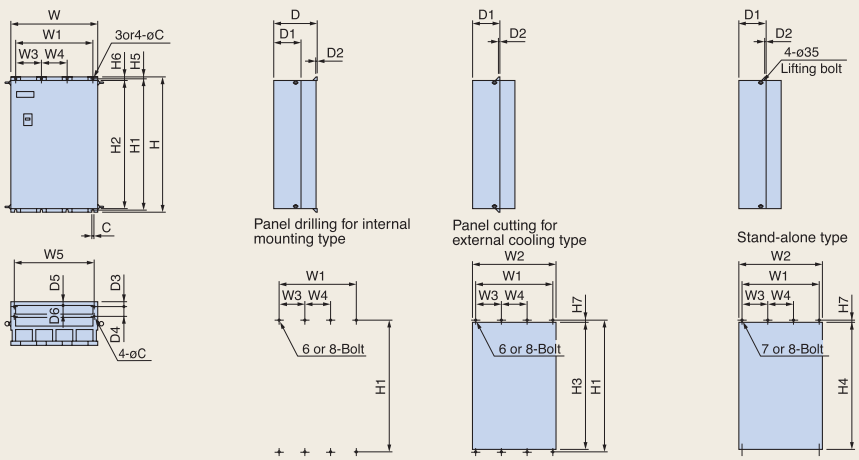


Fig. E (Type common to internal mounting, external cooling, and stand-alone)



External Dimensions

400V Series (Unit type)

Nominal applied motor [kW]	Inverter type	Fig.	Dimensions [mm]																								Approx. mass [kg]
			W	W1	W2	W3	W4	W5	H	H1	H2	H3	H4	H5	H6	H7	H8	H9	D	D1	D2	D3	D4	D5	D6	C	Mtg. bolt	
3.7	FRN3.7VG7S-4	A	205	181	207	–	197	159	300	278	255	314	11	21	253.5	39	8	315	245	125	10	7	–	–	–	10	M8	8
5.5	FRN5.5VG7S-4	•																										
7.5	FRN7.5VG7S-4	B																										
11	FRN11VG7S-4		250	226	252		242	202	380	358	335	394			333.5			395										12.5
15	FRN15VG7S-4																											
18.5	FRN18.5VG7S-4	C	340	240	326	–	–	–	480	460	430	442	12	25	9	–	–	–	255	145	4	–	–	–	–	10	M8	25
22	FRN22VG7S-4	•																										
30	FRN30VG7S-4	D							550	530	500	512																30
37	FRN37VG7S-4		375	275	361														270									35
45	FRN45VG7S-4								675	655	625	637																40
55	FRN55VG7S-4																											41
75	FRN75VG7S-4								740	720	690	702																50
90	FRN90VG7S-4		530	430	510				740	710	675	685	15.5	32.5	12.5				315	175						15	M12	72
110	FRN110VG7S-4																											
132	FRN132VG7S-4								1000	970	935	945							360	220								100
160	FRN160VG7S-4																											
200	FRN200VG7S-4		680	580	660	290																						140
220	FRN220VG7S-4																											
250	FRN250VG7S-4																											150
280	FRN280VG7S-4	E	680	580	660	290	–	610	1400	1370	1330	1340	1335	15.5	35	14.5	–	–	450	285	6.4	50	100	35	115	15	M12	320
315	FRN315G7S-4																											
355	FRN355VG7S-4		880	780	860	260	260	810																				410
400	FRN400VG7S-4																											
500	FRN500VG7S-4		999	900	980	300	300	900	1550	1520	1480	1490	1485						500	313.2		42		–	–			525
630	FRN630VG7S-4																											

NOTE: Since the DC REACTOR for power-factor correction is equipped with inverter unit (supplied for external installation) of 75kW or more as standard, reserve installation space outside of the unit.

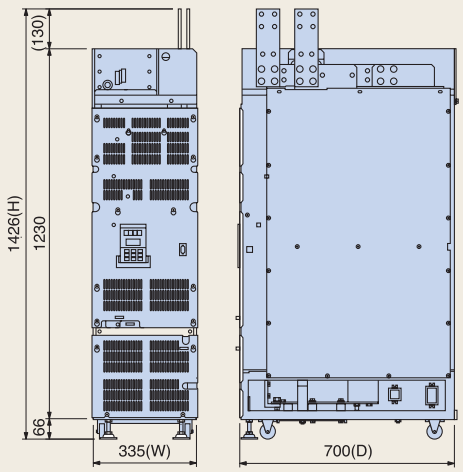
690V Series (Unit type)

Nominal applied motor [kW]	Inverter type	Fig.	Dimensions [mm]																								Approx. mass [kg]
			W	W1	W2	W3	W4	W5	H	H1	H2	H3	H4	H5	H6	H7	H8	H9	D	D1	D2	D3	D4	D5	D6	C	Mtg. bolt	
500	FRN500VG7S-69	E	1000		980	275	300	900	1750	1710	1650	1660	1655	20	50	25	–	–	525	333.2	6	42	100	–	–	15	M12	525
630	FRN630VG7S-69																											

400V Series (Stack type)

Nominal applied motor [kW]	Inverter type
710	FRN710BVG7S-4DC
800	FRN800BVG7S-4DC

* 3 stacks required per inverter.



Approx. mass : 225kg

690V Series (Stack type)

Contact Fuji for details.

RHC series PWM converter

RHC series high power-factor power regenerative PWM converter

Features

Possible to reduce the capacity of electric power facilities

The current having the same phase as the power supply phase voltage is applied under the power-factor control. Therefore, the equipment can be operated with the power-factor being almost "1"
This makes it possible to reduce the power transformer capacity and downsize the other devices compared with the equipment for the standard inverter.

Enhanced braking performance

The energy, regenerated in the equipment which frequently repeats acceleration and deceleration including elevating machines, is entirely returned to the power supply. The regenerated energy can be thus saved. The regenerated current has a sinusoidal waveform, and causes almost no trouble to the power supply system.

Rated continuous regeneration: 100%
Rated regeneration for one minute:150% (CT type)

Upgraded maintenance/protective functions

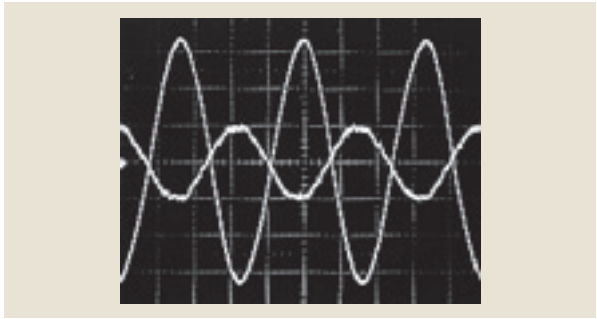
Failure can be easily analyzed with the trace back function (optional).

(1) The past alarms (previous 10 alarms) can be displayed with the 7-segment LED, allowing you to analyze the alarm cause easily and take countermeasures against the alarm.
(2) When the momentary power failure occurs, the converter shut out the gate so that the equipment can be operated continuously after power recovery.
(3) The converter can generate warning signals such as overload, heat sink overheat, end of service life before the converter trips.

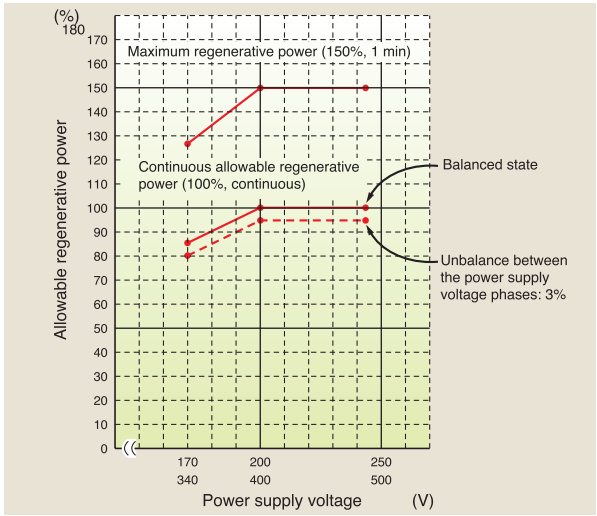
Upgraded support to the network

The converter can be connected to MICREX-SX, F series and CC-Link master device (optional). The standard interface is RS-485.

Example waveform on power supply side during regenerative operation



Allowable characteristics of the RHC converter



North America/Canada

UL and cUL standards

c UL us LISTED

Options / RHC series PWM converter

Standard specifications

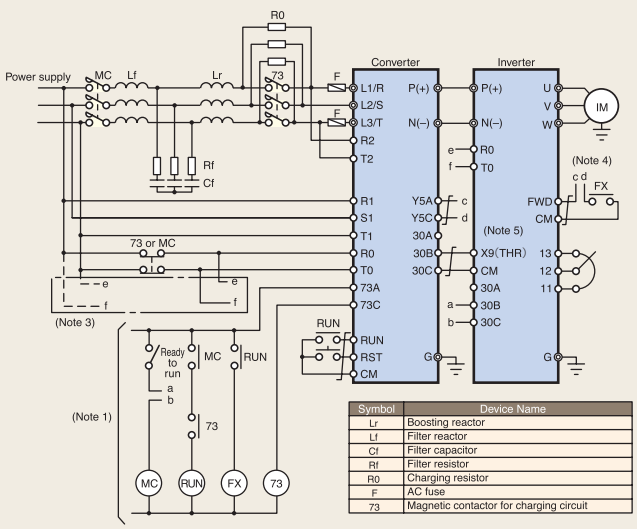
Type (RHC□□□-4C)			400V series																										
			7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	250	280	315	355	400	500	630	710	800
For CT use	Applicable inverter capacity (kW)		7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	250	280	315	355	400	500	630	710	800
	Output	Continuous capacity (kW)	8.8	13	18	22	26	36	44	53	65	88	103	126	150	182	227	247	280	314	353	400	448	560	705	795	896
		Rated overload	150% of continuous rating for 1 minute																								
		Voltage: 400V	640 to 710V DC (Varies depending on the input power supply voltage) (*1)																								
	Required power supply capacity (kVA)		9.5	14	19	24	29	38	47	57	70	93	111	136	161	196	244	267	304	341	383	433	488	610	762	858	967
	Carrier frequency		Standard: 15kHz									Standard: 10kHz													Standard: 6kHz		
Input power supply	Phase, voltage, frequency		Three-phase 3-wire 380 to 440V 50Hz, 380 to 460V 60Hz (*2)																								
	Voltage/Frequency variation		Voltage: +10 to -15%, Frequency: ±5%, Voltage unbalance rate: 3% or less																								
Conditions	Installation location		Indoor use only. Free from corrosive and flammable gases, dusts, and direct sunlight.																								
	Ambient temperature		-10 to +50℃																								
	Ambient humidity		5 to 95%RH (no condensing)																								
	Altitude		3000m or less, with some power derating from 1,001 to 3,000m.																								
	Vibration		Amplitude: 3mm at 2 to 9Hz, 9.8mm/s² at 9 to 20Hz. 2m/s² at 20 to 55Hz (2m/s² at 9 to 55Hz for 90kW or over), 1m/s² at 55 to 200Hz																								
	Storage temperature		-25 to +55℃																								
	Storage humidity		5 to 95%RH																								

(*1) The DC link bus voltage is 640VDC, 680VDC, 700VDC if the power supply voltage is 400V, 440V and 460V, respectively.
(*2) Change the tap inside the converter if the power supply voltage is 380 to 398V/50Hz or 380 to 430V/60Hz. Reduce the capacity if the power supply voltage is less than 400V.

RHC series PWM converter

Basic Wring Diagrams

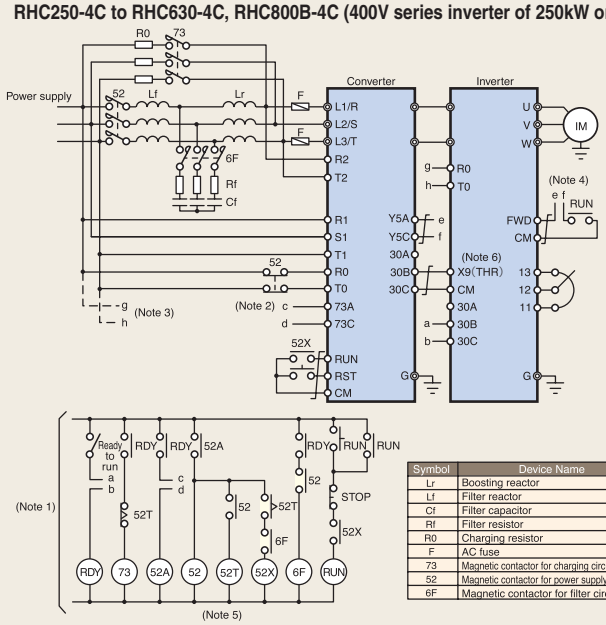
RHC7.5-4C to RHC220-4C (400V series inverter of 220kW or less)



Symbol	Device Name
Lr	Boosting reactor
Lf	Filter reactor
Cf	Filter capacitor
Rf	Filter resistor
R0	Charging resistor
F	AC fuse
73	Magnetic contactor for charging circuit

(Note 1) Connect the step-down transformer to set the voltage of the sequence circuit to lower than 220V.
(Note 2) Connect the auxiliary power input terminal (R0, T0) on the PWM converter to the power supply via the NCcontact of the magnetic contactor (73 or MC) for the charging circuit. If the 73 is SC-05, SC4-0, or SC5-1, use the auxiliary contact unit as the MC's NCcontact or the 73.
(Note 3) If the inverter capacity is 15kW or less connect the auxiliary power input terminals (R0, T0) of the inverter via the NCcontact (73 or MC) of the magnetic contactor for charging circuit. If the inverter capacity is higher than the above-mentioned, connect the inverter without going through the NCcontact (73 or MC).
(Note 4) Establish the sequence so that the PWM converter becomes ready to run before the inverter RUN command is input.
(Note 5) Set any of the terminals X1 to X9 of the inverter for the external alarm (THR).

RHC250-4C to RHC630-4C, RHC800B-4C (400V series inverter of 250kW or more)



Symbol	Device Name
Lr	Boosting reactor
Lf	Filter reactor
Cf	Filter capacitor
Rf	Filter resistor
R0	Charging resistor
F	AC fuse
73	Magnetic contactor for charging circuit
52	Magnetic contactor for power supply circuit
6F	Magnetic contactor for filter circuit

(Note 1) Connect the step-down transformer to set the voltage of the sequence circuit to lower than 220V.
(Note 2) Connect the auxiliary power input terminal (R0, T0) on the PWM converter to the power supply via the NCcontact of the magnetic contactor (52) for power supply circuit. If the 73 is SC-05, SC4-0, or SC5-1, use the auxiliary contact unit as the MC's NCcontact or the 73.
(Note 3) Since the power for the AC fans in the inveter is fed from the R0 and T0 terminals, connect the power supply to the main power supply without going through the NCcontact of the magnetic contactor (52).
(Note 4) Establish the sequence so that the PWM converter becomes ready to run before the inverter RUN command is input.
(Note 5) Set the 52T timer at 1s.
(Note 6) Set any of the terminals X1 to X9 of the inverter for the external alarm (THR).

Equipment List

Voltage	Applicable motor	PWM converter	Boosting reactor (Lr)		Filter reactor (Lf)		Filter capacitor (Cf)		Filter resistor (Rf)		Charging resistor (R0)		Fuse (F)		Charging circui contactor (73)		Power supply contactor (52)		Filter circuit contactor (6F)	
400V series	7.5	RHC7.5-4C	LR4-7.5C	1	LFC4-7.5C	1	CF4-7.5C	1	GRZG80 1.74Ω	3	TK50B 30ΩJ (HF5B0416)	3	CR6L-30/UL	2	SC-05	1	—	—	—	—
	11	RHC11-4C	LR4-15C	1	LFC4-15C	1	CF4-15C	1	GRZG150 0.79Ω	3			CR6L-50/UL	2	SC-4-0	1				
	15	RHC15-4C													SC-5-1	1				
	18.5	RHC18.5-4C	LR4-22C	1	LFC4-22C	1	CF4-22C	1	GRZG200 0.53Ω	3	80W 7.5Ω (HF5C5504)	3			SC-N1	1				
	22	RHC22-4C											CR6L-75/UL	2						
	30	RHC30-4C	LR4-37C	1	LFC4-37C	1	CF4-37C	1	GRZG400 0.38Ω	3			CR6L-100/UL	2	SC-N2	1				
	37	RHC37-4C											CR6L-150/UL	2	SC-N2S	1				
	45	RHC45-4C	LR4-55C	1	LFC4-55C	1	CF4-55C	1	GRZG400 0.26Ω	3					SC-N3	1				
	55	RHC55-4C											CR6L-200/UL	2	SC-N4	1				
	75	RHC75-4C	LR4-75C	1	LFC4-75C	1	CF4-75C	1	GRZG400 0.38Ω	3					SC-N5	1				
	90	RHC90-4C	LR4-110C	1	LFC4-110C	1	CF4-110C	1	GRZG400 0.53Ω (2 parallel circuits)	6			CR6L-300/UL	2	SC-N7	1				
	110	RHC110-4C									GRZG120 2Ω	3			SC-N8	1				
	132	RHC132-4C	LR4-160C	1	LFC4-160C	1	CF4-160C	1	RF4-160C	1			A50P400-4	2						
	160	RHC160-4C											A50P600-4	2	SC-N11	1				
	200	RHC200-4C	LR4-220C	1	LFC4-220C	1	CF4-220C	1	RF4-220C	1	GRZG400 1Ω	3			SC-N12	1				
	220	RHC220-4C											A70QS800-4	2						
	250	RHC250-4C	LR4-280C	1	LFC4-280C	1	CF4-280C	1	RF4-280C	1	GRZG400 1Ω (2 parallel circuits)	6			SC-N3	1	SC-N14	1	SC-N4	1
	280	RHC280-4C																		
	315	RHC315-4C	LR4-315C	1	LFC4-315C	1	CF4-315C	1	RF4-315C	1			A70P1600-4TA	2						
	355	RHC355-4C	LR4-355C	1	LFC4-355C	1	CF4-355C	1	RF4-355C	1										
	400	RHC400-4C	LR4-400C	1	LFC4-400C	1	CF4-400C	1	RF4-400C	1							SC-N16	1		
	500	RHC500-4C	LR4-500C	1	LFC4-500C	1	CF4-500C	1*	RF4-500C	1							SC-N11	3		
	630	RHC630-4C	LR4-630C	1	LFC4-630C	1	CF4-630C	1*	RF4-630C	1			A70P2000-4	2			SC-N12	3	SC-N7	1
	710	RHC710B-4C	LR4-710C	1	LFC4-710C	1	CF4-710C	1*	RF4-710C	1			HF5G2655	2	SC-N4	1			SC-N8	1
	800	RHC800B-4C	LR4-800C	1	LFC4-800C	1	CF4-800C	1*	RF4-800C	1							SC-N14	3		
690V series	500	Consult with Fuji																		
	630																			

* CF4-500C, CF4-630C and CF4-800C consists of two capacitors. Upon each order of CF4-500C, CF4-630C and CF4-800C, two capacitors will be shipped.

RHC series PWM converter

External Dimensions

Fig. A

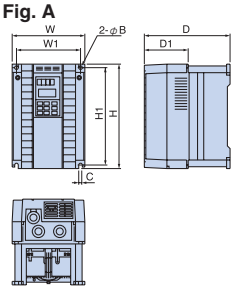


Fig. B

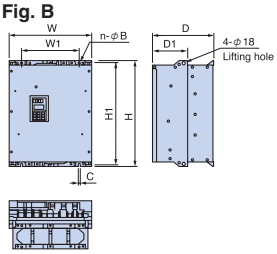


Fig. C

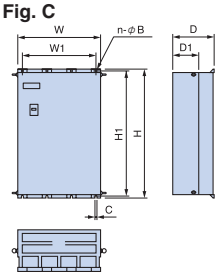
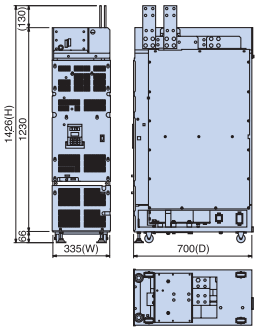


Fig. D

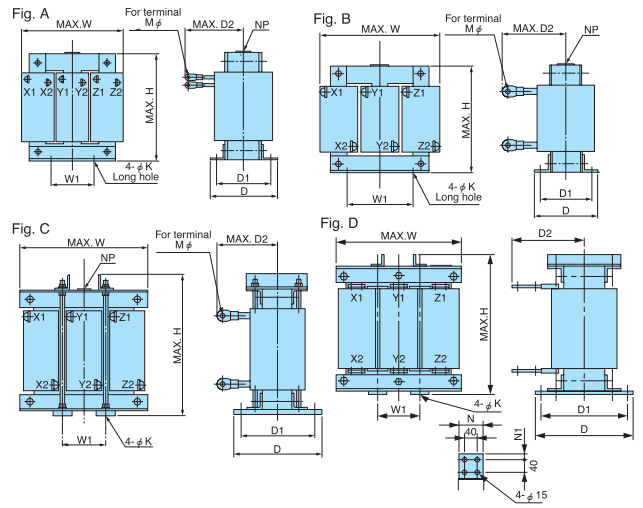


PWM converter type		Fig.	Dimensions [mm]									Mass [kg]
			W	W1	H	H1	D	D1	n	B	C	
400V series	RHC7.5-4C	A	250	226	380	358	245	125	2	10	10	8
	RHC11-4C											
	RHC15-4C											
	RHC18.5-4C	B	340	240	480	460	255	145	2	10	10	24
	RHC22-4C											
	RHC30-4C	B	340	240	550	530	255	145	2	10	10	29
	RHC37-4C	B	375	275	550	530	270	145	2	10	10	34
	RHC45-4C	B	375	275	675	655	270	145	2	10	10	38
	RHC55-4C											
	RHC75-4C	B	375	275	740	720	270	145	2	10	10	48
	RHC90-4C	C	530	430	740	710	315	175	2	15	15	70
	RHC110-4C											
	RHC132-4C	C	530	430	1000	970	360	220	2	15	15	100
	RHC160-4C											
	RHC200-4C	C	680	580	1000	970	360	220	3	15	15	140
	RHC220-4C											
	RHC250-4C											
	RHC280-4C	C	680	580	1400	1370	450	285	3	15	15	320
	RHC315-4C											
	RHC355-4C	C	880	780	1400	1370	450	285	4	15	15	410
	RHC400-4C											
	RHC500-4C	C	999	900	1550	1520	500	313.2	4	15	15	525
	RHC630-4C											
	RHC710B-4C	D*	335	—	1426	—	700	—	—	—	—	225
	RHC800B-4C											
690V series	Consult with Fuji											

* 3 stacks required per inverter.

RHC series PWM converter

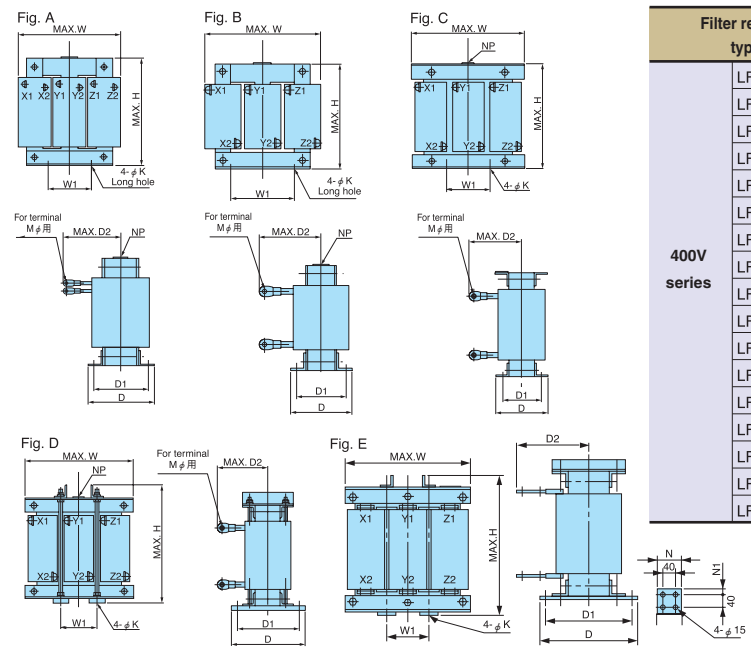
Boosting reactor



Boosting reactor type		Fig.	Dimensions[mm]										Mass [kg]
			W	W1	H	D	D1	D2	K	M	N	N1	
400V series	LR4-7.5C	B	180	75	205	105	85	90	7	M4	—	—	12
	LR4-15C	A	195	75	215	131	110	120	7	M5	—	—	18
	LR4-22C	C	240	80	340	215	180	120	10	M6	—	—	33
	LR4-37C	C	285	95	405	240	205	130	12	M8	—	—	50
	LR4-55C	C	285	95	415	250	215	145	12	M10	—	—	58
	LR4-75C	C	330	110	440	255	220	150	12	M10	—	—	70
	LR4-110C	C	345	115	490	280	245	170	12	M12	—	—	100
	LR4-160C	C	380	125	550	300	260	185	15	M12	—	—	140
	LR4-220C	C	450	150	620	330	290	230	15	M12	—	—	200
	LR4-280C	C	480	160	740	330	290	240	15	M16	—	—	250
	LR4-315C	C	480	160	760	340	300	250	15	M16	—	—	270
	LR4-355C	C	480	160	830	355	315	255	15	M16	—	—	310
	LR4-400C	C	480	160	890	380	330	260	19	M16	—	—	340
	LR4-500C	C	525	175	960	410	360	290	19	M16	—	—	420
	LR4-630C	D	600	200	640	440	390	285	19	—	75	17.5	450
	LR4-710C	D	645	215	730	440	390	295	19	—	100	30	510
	LR4-800C	D	690	230	850	450	400	290	19	—	100	30	600

Note: Contact Fuji for 690V series.

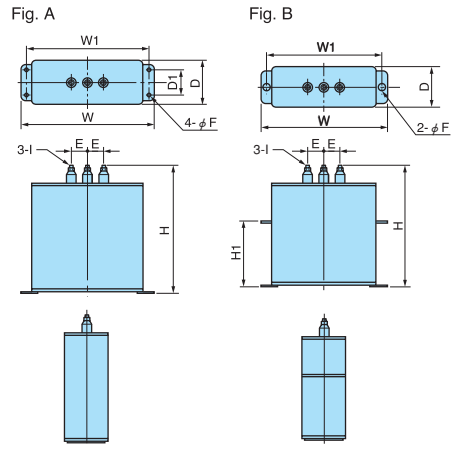
Filter reactor



Filter reactor type		Fig.	Dimensions[mm]										Mass [kg]
			W	W1	H	D	D1	D2	K	M	N	N1	
400V series	LFC4-7.5C	A	125	40	100	85	67	75	6	M4	—	—	2.2
	LFC4-15C	A	125	40	100	93	75	90	6	M5	—	—	2.5
	LFC4-22C	A	125	40	100	93	75	95	6	M6	—	—	3.0
	LFC4-37C	B	150	60	115	108	90	110	6	M8	—	—	5.0
	LFC4-55C	B	175	60	145	110	90	120	6	M10	—	—	8.0
	LFC4-75C	B	195	80	200	113	93	130	7	M10	—	—	12
	LFC4-110C	C	255	85	220	113	90	145	7	M12	—	—	19
	LFC4-160C	C	255	85	245	137	110	150	7	M12	—	—	22
	LFC4-220C	D	300	100	320	210	180	170	10	M12	—	—	35
	LFC4-280C	D	330	110	320	230	195	195	12	M16	—	—	43
	LFC4-315C	D	315	105	365	230	195	200	12	M16	—	—	48
	LFC4-355C	D	315	105	395	235	200	210	12	M16	—	—	53
	LFC4-400C	D	345	115	420	235	200	235	12	M16	—	—	60
	LFC4-500C	D	345	115	480	240	205	240	12	M16	—	—	72
	LFC4-630C	E	435	145	550	295	255	200	15	—	75	17.5	175
	LFC4-710C	E	480	160	570	295	255	215	15	—	100	30	190
	LFC4-800C	E	480	160	600	320	270	220	15	—	100	30	220

Note: Contact Fuji for 690V series.

Filter capacitor



Filter capacitor type		Fig.	Dimensions[mm]									Mass [kg]
			W	W1	H	H1	D	D1	E	F	I	
400V series	CF4-7.5C	A	165	150	135	—	70	40	30	7	M5	1.3
	CF4-15C	A	165	150	215	—	70	40	30	7	M5	2.3
	CF4-22C	A	205	190	185	—	70	40	30	7	M5	2.5
	CF4-37C	A	205	190	205	—	70	40	30	7	M5	2.9
	CF4-55C	A	205	190	245	—	70	40	30	7	M5	3.5
	CF4-75C	A	205	190	205	—	70	40	30	7	M5	2.9
	CF4-110C	A	205	190	245	—	70	40	30	7	M5	3.5
	CF4-160C	A	280	265	260	—	90	55	80	7	M6	6.0
	CF4-220C	B	435	400	310	125	100	—	80	15x20 Long hole	M12	13.0
	CF4-280C	B	435	400	350	165	100	—	80	15x20 Long hole	M12	15.0
	CF4-315C	B	435	400	460	275	100	—	80	15x20 Long hole	M12	20.0
	CF4-355C	B	435	400	520	335	100	—	80	15x20 Long hole	M12	23.0
	CF4-400C	B	435	400	610	425	100	—	80	15x20 Long hole	M12	27.0
	CF4-500C	B	435	400	310	125	100	—	80	15x20 Long hole	M12	13.0
	CF4-630C	B	435	400	460	275	100	—	80	15x20 Long hole	M12	20.0
	CF4-710C	B	435	400	520	335	100	—	80	15x20 Long hole	M12	23.0
	CF4-800C	B	435	400	610	425	100	—	80	15x20 Long hole	M12	27.0

Note1: CF4-500C to CF4-800C shows dimension and mass a piece.
Note2: Contact Fuji for 690V series.

RHC series PWM converter

Filter resistor

Fig. A

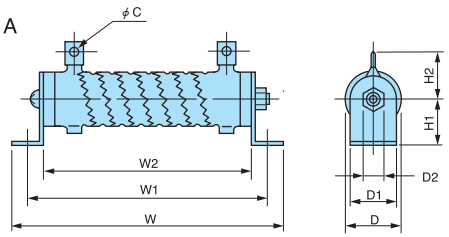
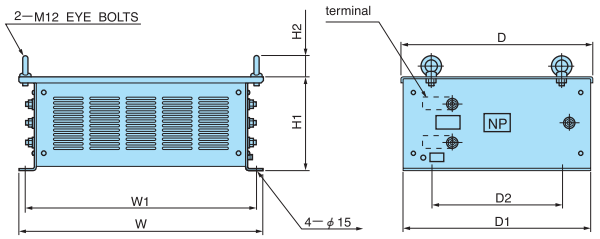


Fig. B



Filter resistor type		Fig.	Dimensions[mm] W	W1	W2	H1	H2	D	D1	D2	C	Mass [kg]	Number
400V series	GRZG80 1.74Ω	A	167	148	115	22	32	33	26	6	5.5	0.19	3
	GRZG150 0.79Ω	A	247	228	195	22	32	33	26	6	5.5	0.30	3
	GRZG200 0.53Ω	A	306	287	254	22	32	33	26	6	5.5	0.35	3
	GRZG400 0.38Ω	A	411	385	330	40	46	47	40	9.5	8.2	0.85	3
	GRZG400 0.26Ω	A	411	385	330	40	46	47	40	9.5	8.2	0.85	3
	GRZG400 0.53Ω	A	411	385	330	40	46	47	40	9.5	8.2	0.85	6
	RF4-160C	B	400	370	—	240	55	470	460	320	—	22	1
	RF4-220C											25	1
	RF4-280C		655	625	—	240	55	470	460	320	—	31	1
	RF4-315C											35	1
	RF4-355C											36	1
	RF4-400C											38	1
	RF4-500C											41	1
	RF4-630C					440		530	520			70	1
	RF4-710C											70	1
	RF4-800C											80	1

Note: Contact Fuji for 690V series.

Charging resistor

Fig. A

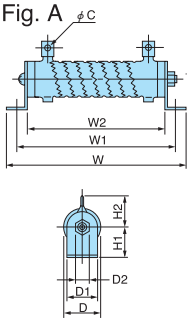


Fig. B

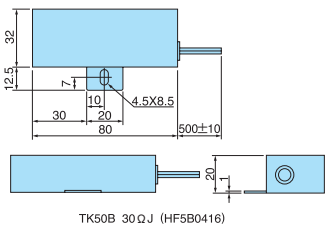
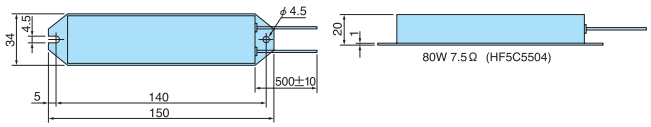


Fig. C



Charge resistance type	Fig.	Dimensions[mm] W	W1	W2	H1	H2	D	D1	D2	C	Mass [g]
GRZG120 2Ω	A	217	198	165	22	32	33	22	6	5.5	250
GRZG400 1Ω	A	411	385	330	40	39	47	40	9.5	5.5	850
TK50B 30ΩJ (HF5B0416)	B	—	—	—	—	—	—	—	—	—	150
80W 7.5Ω (HF5C5504)	C	—	—	—	—	—	—	—	—	—	180

Note: Contact Fuji for 690V series.

Fuse

Fig. A

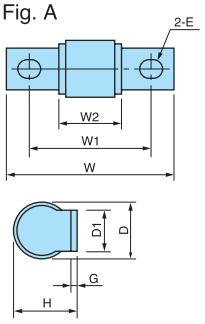


Fig. B

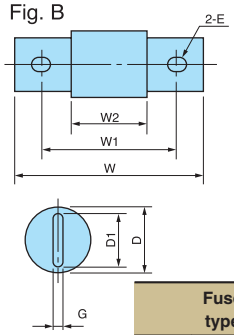


Fig. C

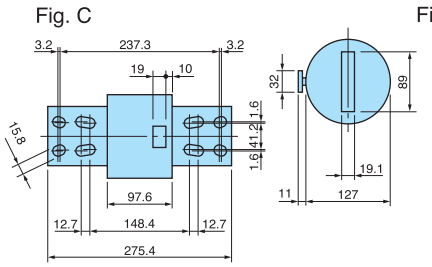
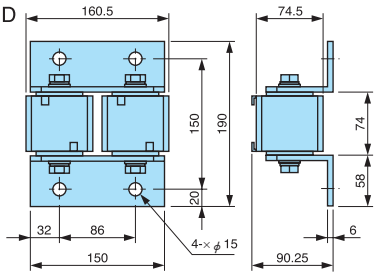


Fig. D

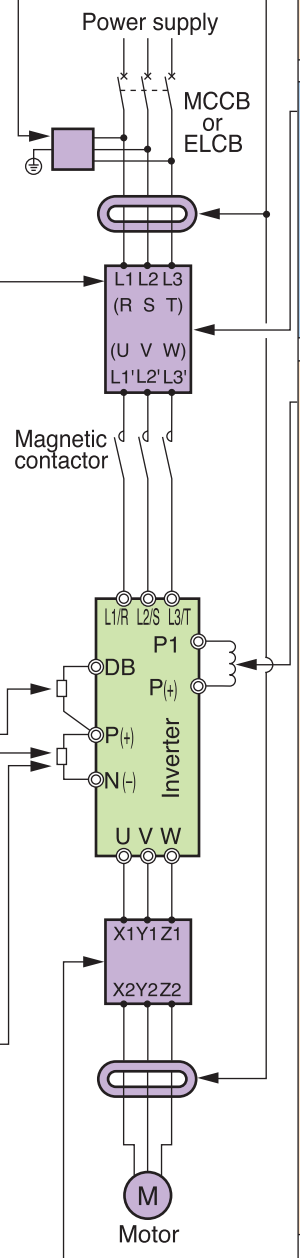


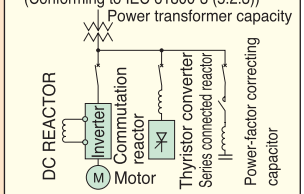
Fuse type		Fig.	Dimensions[mm] W	W1	W2	H	D	D1	G	E	Mass [g]
400V series	CR6L-30/UL	A	76	62	47	18.5	17.5	12	2	6.5x8.5	42
	CR6L-50/UL										
	CR6L-75/UL	A	95	70	40	34	30	25	3.2	11x13	150
	CR6L-100/UL										
	CR6L-150/UL										
	CR6L-200/UL	A	107	82	43	42	37	30	4	11x13	246
	CR6L-300/UL										
	A50P400-4	B	110	78.6	53.1	—	38.1	25.4	6.4	10.3x18.4	300
	A50P600-4	B	113.5	81.75	56.4	—	50.8	38.1	6.4	10.3x18.2	600
	A70QS800-4	B	180.2	129.4	72.2	—	63.5	50.8	9.5	13.5x18.3	1100
	A70P1600-4TA	C	—	—	—	—	—	—	—	—	7400
	A70P2000-4	C	—	—	—	—	—	—	—	—	8000
	HF5G2655	D	—	—	—	—	—	—	—	—	4700

Note: Contact Fuji for 690V series.

Option guides

Name	Main operations/applications
Surge absorber (suppressor)	Absorbs surges and noises generated from inverter to protect magnetic contactors, mini control relays and timers from malfunction.
Arrester	Suppresses induced lightning surges from the power supply to protect entire equipment connected to the power supply.
Surge killer	Absorbs surges and noises coming from outside to protect electronic devices inside the panel from malfunction.
Control option card	Enables more precise operation, control and installation of different I/Os.
Communication option card	Facilitates system construction including PLCs and PCs.
Extension cable for KEYPAD	Used for remote control between an inverter and the KEYPAD.
Braking resistor	Increases braking capability for highly frequent stopping and large moment of inertia.
Braking unit	Used in combination with a braking resistor for units of 132kW or more.
Power regenerative PWM converter, RHC series	Used for suppressing power supply harmonics of inverters. It is also equipped with a power supply regenerative function to drastically increase braking capability and reduce energy consumption. Use in combination with dedicated reactors for the RHC series.
Dedicated filter for the RHC series	Dedicated filter for the RHC series is used. Use in combination with dedicated filter reactors, filter capacitors and filter resistors.



Name	Main operations/applications
EMC-compliant filter	Dedicated filter to comply with the European EMC Directive (Emission).
Ferrite ring for reducing radio noise	Used to reduce radio noise. Inserting it on the power supply side if the cable length between a motor and an inverter is short (roughly 20m or less) or on the output side if the cable length exceeds 20m is recommended.
AC reactor (ACR)	Can be used to correct the power-factor and to normalize the power supply. We recommend more efficient, compact and light DC REACTOR. Use only when you require an especially stable power supply such as a DC bus connection (PN connection operation). Use DC REACTOR (DCR) for reducing harmonic.
DC REACTOR (DCR)	[For power supply normalization] 1. Use if the power transformer capacity is 500kVA or more and exceeds the inverter rated capacity by 10 times. 2. Use if the inverter and a thyristor converter are connected with the same transformer. *Check if the thyristor converter uses a commutation reactor. If not, an AC reactor must be connected to the power supply side. 3. Connect to prevent 0U trip due to opening/closing of the phase-advancing capacitor for the power supply lines. 4. Use if the voltage unbalance exceeds 2%. Voltage unbalance [%] = (Max. voltage [V] - Min. voltage [V]) / Three-phase average voltage [V] × 67[%] (Conforming to IEC 61800-3 (5.2.3))  [For improving the input power-factor and reducing harmonics] - Used to reduce the input harmonic current (correcting power-factor)
Output circuit filter	Connected to the output of an inverter to: • Suppress fluctuations of motor terminal voltage. • Prevent damages to the motor insulation due to surge voltage in 400V series inverter.

Option cards and other options

Category	Name	Type	Specifications
Analog card	Aio extension card	OPC-VG7-AIO	Extension card of Ai: 2 points + Ao 2 points
	Ai extension card	OPC-VG7-AI	Extension card of Ai: 2 points
Digital card (for 8-bit bus)	Di interface card	OPC-VG7-DI	16-bit Di of binary or 4-digit BCD + sign. For setting the speed, torque and the torque current reference.
	Dio extension card	OPC-VG7-DIO	Extension of Di(4 bits) and Do(8 bits) for function selecting. Dio option card for direct landing control. Di × 16 bit + Do × 10 bit
	PG interface extension card	OPC-VG7-PG	+5V line drivers type: Voltage output PGs (A, B and Z-phase signals). Used for detecting motor speed, line speed, position reference and position detection.
	T-link interface card	OPC-VG7-TL	T-link interface card for FUJI MICREX-F series PLC
	High-speed serial card	OPC-VG7-SI	Used for UPAC communication systems, high-speed optical links, and multi-winding motor drive systems.
	RS-485 extension card	OPC-VG7-RS	I/F option card for UPAC communication and RS-485
	PG card for synchronous motor driving	OPC-VG7-PMPG	+5V line drivers type: A, B + magnetic pole position (max. 4 bits).
	CC-Link	OPC-VG7-CCL	
Digital card (for 16-bit bus)	User Programmable Application Card	OPC-VG7-UPAC	Technology card
	SX bus interface card	OPC-VG7-SX	SX bus interface card for FUJI MICREX-SX series PLC
Field bus interface unit	PROFIBUS-DP	OPC-VG7-PDP	
	DeviceNet	OPC-VG7-DEV	
Ethernet I/F Unit	Ethernet I/F	MCA-VG7-ETH	It is able to operate PC loader via Ethernet using this card. This unit can be able to installed in the VG7 Series more than 18.5kW.
Separate installation type	PG signal switch	MCA-VG7-CPG	Switch between PG and NTC signal (2-signal switch)
Loader	Inverter support loader	WPS-VG7-PCL	For Windows

Category	Name	Type	Standard length	Max. length	Specifications
Cable	Extension cable for KEYPAD	CBIII-10R-2S	2m	2m	Connection cable between an inverter and the KEYPAD
		CBIII-10R-1C	1m	5m	
		CBIII-10R-2C	2m	10m	
	Loader cable	NW0H-CNV(converter) /NP4H-CB2 (cable)	2m	2m	Connection cable for a personal computer loader

●Maximum installable number of inverter built-in option cards: four

Category	Maximum installable number	
	Example 1	Example 2
Analog card	1	0
Digital card (for 8-bit bus)	1	2
Digital card (for 16-bit bus)	1	1
Field bus interface unit	1	1
Ethernet I/F unit	1	1

●Restrictions for installing built-in option cards

(1) When you use OPC-VG7-PG for detecting motor speed, the input from the terminals (PA, PB) on the control PC board of the main unit is disabled.
(2) When you install OPC-VG7-PMPG, you should select terminals according to the control method. The terminals (PA, PB) on the control PC board of the main unit are enabled if vector control is selected. The OPC-VG7-PMPG is enabled if vector control (for synchronous motors) is selected.
(3) You cannot use OPC-VG7-TL (T-link interface card) ,OPC-VG7-SX (SX bus interface card) and the field bus interface unit simultaneously. If these are used at the same time, the operation procedure error (Er6) will be issued.
(4) You can select how to use OPC-VG7-DI, OPC-VG7-PG and OPC-VG7-SI with the switch setting on the control PC board. You can install a pair of either OPC-VG7-DI, OPC-VG7-PG or OPC-VG7-SI. If the setting of the switches selecting how to use them are the same, the operation procedure error (Er6) will be issued.

Options

Braking resistor (max. 150% torque, 30%ED/constant-power)

Power supply	Inverter		Braking unit		Braking resistor						
	Nominal Applied Motor [kW]	Inverter type	Type	Q'ty	Type	Ohmic value	Q'ty	Max. braking torque	Discharging capability [kWs]	Repetitive braking (100s or less cycle) Duty cycle	Repetitive braking (100s or less cycle) Average loss [kW]
400V	3.7	FRN3.7VG7S-4	Built-in inverter		DB003V-430SA	96Ω	1	150%	167	30%ED *Note	1.67
	5.5	FRN5.5VG7S-4			DB005V-430SA	64Ω	1		248		2.48
	7.5	FRN7.5VG7S-4			DB007V-430SA	48Ω	1		338		3.38
	11	FRN11VG7S-4			DB011V-430SA	32Ω	1		495		4.95
	15	FRN15VG7S-4			DB015V-430SA	24Ω	1		675		6.75
	18.5	FRN18.5VG7S-4			DB018V-430SA	18Ω	1		833		8.33
	22	FRN22VG7S-4			DB022V-430SA	16Ω	1		990		9.90
	30	FRN30VG7S-4			DB030V-430SA	12Ω	1		1350		13.50
	37	FRN37VG7S-4			DB037V-430SA	9Ω	1		1665		16.65
	45	FRN45VG7S-4			DB045V-430SA	8Ω	1		2025		20.25
	55	FRN55VG7S-4			DB055V-430SA	6.5Ω	1		2475		24.75
	75	FRN75VG7S-4			DB075V-430SA	4.7Ω	1		3375		33.75
	90	FRN90VG7S-4			DB045V-430SA (2P)	4Ω	2		4050		40.50
	110	FRN110VG7S-4			DB055V-430SA (2P)	3.25Ω	2		4950		49.50
	132	FRN132VG7S-4	Consult with Fuji								
	160	FRN160VG7S-4									
	200	FRN200VG7S-4									
	220	FRN220VG7S-4									
	250	FRN250VG7S-4									
	280	FRN280VG7S-4									
	315	FRN315VG7S-4									
	355	FRN355VG7S-4									
	400	FRN400VG7S-4									
	500	FRN500VG7S-4									
	630	FRN630VG7S-4									
	710	FRN710VG7S-4									
	800	FRN800VG7S-4									

Braking resistor (max. 150% torque, 40%ED/constant-power)

Power supply	Inverter		Braking unit		Braking resistor						
	Nominal Applied Motor [kW]	Inverter type	Type	Q'ty	Type	Ohmic value	Q'ty	Max. braking torque	Discharging capability [kWs]	Repetitive braking (100s or less cycle) Duty cycle	Repetitive braking (100s or less cycle) Average loss [kW]
400V	3.7	FRN3.7VG7S-4	Built-in inverter		DB003V-440SA	96Ω	1	150%	222	40%ED *Note	2.22
	5.5	FRN5.5VG7S-4			DB005V-440SA	64Ω	1		330		3.30
	7.5	FRN7.5VG7S-4			DB007V-440SA	48Ω	1		450		4.50
	11	FRN11VG7S-4			DB011V-440SA	32Ω	1		660		6.60
	15	FRN15VG7S-4			DB015V-440SA	24Ω	1		900		9.00
	18.5	FRN18.5VG7S-4			DB018V-440SA	18Ω	1		1110		11.10
	22	FRN22VG7S-4			DB022V-440SA	16Ω	1		1320		13.20
	30	FRN30VG7S-4			DB030V-440SA	12Ω	1		1800		18.00
	37	FRN37VG7S-4			DB037V-440SA	9Ω	1		2220		22.20
	45	FRN45VG7S-4			DB045V-440SA	8Ω	1		2700		27.00
	55	FRN55VG7S-4			DB055V-440SA	6.5Ω	1		3300		33.00
	75	FRN75VG7S-4			DB075V-440SA	4.7Ω	1		4500		45.00
	90	FRN90VG7S-4			DB045V-440SA (2P)	4Ω	2		5400		54.00
	110	FRN110VG7S-4			DB055V-440SA (2P)	3.25Ω	2		6600		66.00
	132	FRN132VG7S-4	Consult with Fuji								
	160	FRN160VG7S-4									
	200	FRN200VG7S-4									
	220	FRN220VG7S-4									
	250	FRN250VG7S-4									
	280	FRN280VG7S-4									
	315	FRN315VG7S-4									
	355	FRN355VG7S-4									
	400	FRN400VG7S-4									
	500	FRN500VG7S-4									
	630	FRN630VG7S-4									
	710	FRN710VG7S-4									
	800	FRN800VG7S-4									

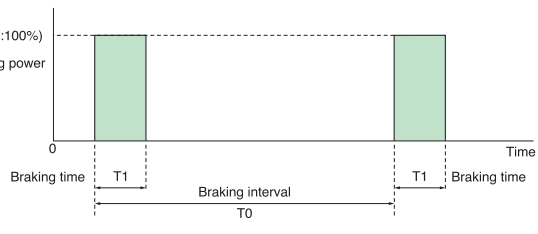
Braking unit + Fan unit (max. 100% torque, 15%ED/constant-power)

Power supply	Type	Max.power [kW]	Min. connected resistance	Max. braking torque	Discharging capability [kWs]	Repetitive braking (100s or less cycle) Duty cycle	Repetitive braking (100s or less cycle) Average loss [kW]
400V	BU220-4C+BU-F	240	1.9Ω	100%	3600	15%ED	36

NOTE:

*The braking time and duty cycle [%ED] are calculated as the constant-power braking as described below.

• Duty cycle %ED = $\frac{T1}{T0} \times 100[\%]$



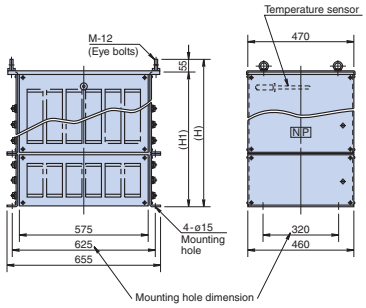
[Selection procedure]

All three conditions listed below must be satisfied simultaneously.

1. The maximum braking torque does not exceed the value shown on the table.
2. The energy discharged in the resistor for each braking (the area shown in the above figure) does not exceed the discharging capability [kWs] on the table.
3. The average loss (energy discharged in the resistor divided by the braking interval) does not exceed the average loss [kW] shown on the table.

Options

Braking resistor



30%ED/constant-power (100s cycle)

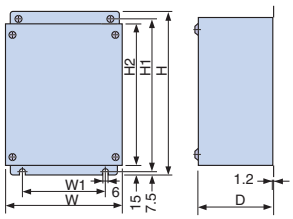
Voltage	Type	Dimensions [mm]		Mass [kg]
		H	H1	
400V series	DB003V-430SA	725	670	60
	DB005V-430SA	525	470	40
	DB007V-430SA			38
	DB011V-430SA			
	DB015V-430SA			41
	DB018V-430SA			50
	DB022V-430SA			60
	DB030V-430SA			63
	DB037V-430SA			80
	DB045V-430SA	725	670	125
	DB055V-430SA	925	870	138
	DB075V-430SA	1125	1070	230

40%ED/constant-power (100s cycle)

Voltage	Type	Dimensions [mm]		Mass [kg]
		H	H1	
400V series	DB003V-440SA	725	670	60
	DB005V-440SA	525	470	40
	DB007V-440SA			38
	DB011V-440SA			
	DB015V-440SA			41
	DB018V-440SA			50
	DB022V-440SA			60
	DB030V-440SA			76
	DB037V-440SA	725	670	110
	DB045V-440SA	925	870	140
	DB055V-440SA	1125	1070	200
	DB075V-440SA *Note	925	870	365

Note: DB075V-440SA is composed of 2 resistors of the list size. Mass shows the total weight.

Braking unit

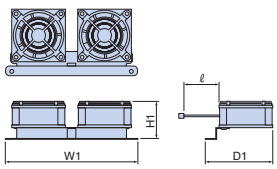


Voltage	Type	Dimensions [mm]						Mass [kg]
		W	W1	H	H1	H2	D	
400V series	BU220-4C	250	150	450	435	420	160	13

Fan for braking unit (BU-F)

●With this option, you can increase the duty cycle [%ED] from 10%ED to 30%ED.

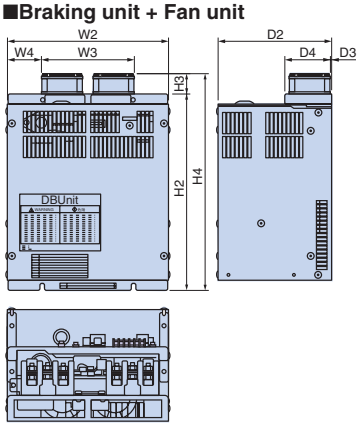
■Fan unit



Fan unit

Type	Dimensions [mm]			
	W1	H1	D1	ℓ (Fan power supply cable)
BU-F	149	44	76	320

■Braking unit + Fan unit



Braking unit + Fan unit

Voltage	Type	Dimensions [mm]								
		W2	W3	W4	H2	H3	H4	D2	D3	D4
400V series	BU220-4C+BU-F	250	135	57.5	450	30	480	160	1.2	64

Options

DC REACTOR (DCR□-□□□)

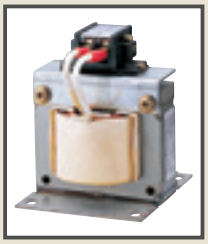


Fig. A

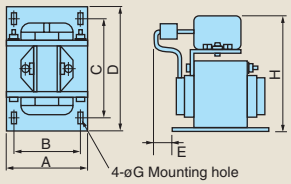


Fig. B

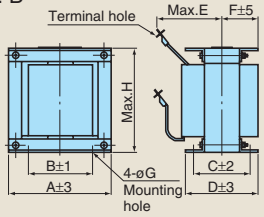


Fig. C

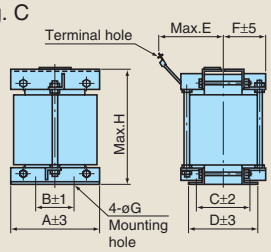


Fig. D

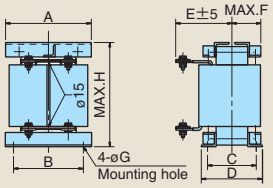
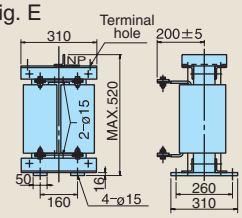


Fig. E

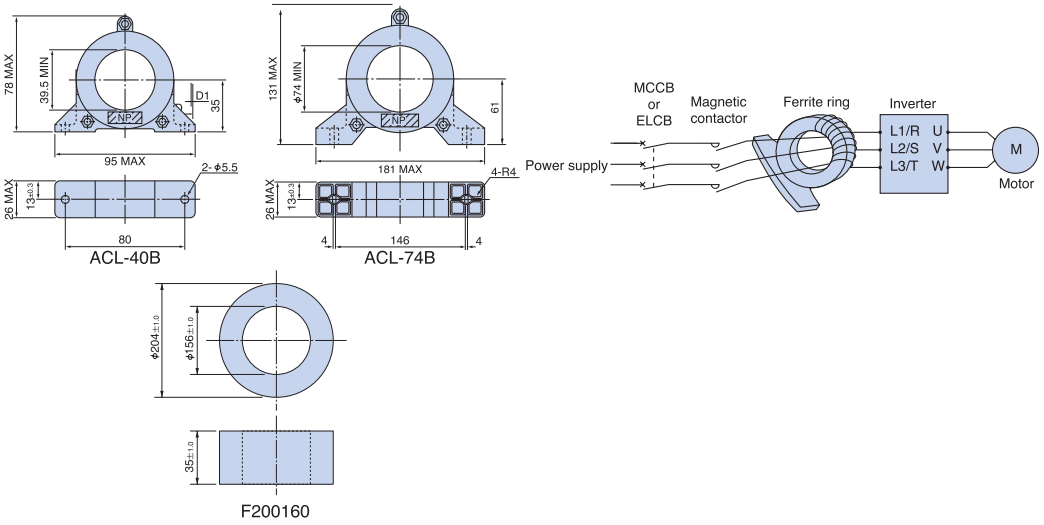


*The DC REACTOR is provided as standard (supplied for external installation) in models of 75kW or more.

Voltage	Nominal applied motor [kW]	Inverter type	REACTOR type	Fig.	Dimensions [mm]									Mass [kg]
					A	B	C	D	E	F	G	H	Terminal size	
400V series	3.7	FRN3.7VG7S-4	DCR4-3.7	A	86	71	80	100	20	—	6 x 9	110	M4	2.6
	5.5	FRN5.5VG7S-4	DCR4-5.5	A	86	71	80	100	20	—	6 x 9	110	M4	2.6
	7.5	FRN7.5VG7S-4	DCR4-7.5	A	111	95	80	100	24	—	7 x 11	130	M5	4.2
	11	FRN11VG7S-4	DCR4-11	A	111	95	80	100	24	—	7 x 11	130	M5	4.3
	15	FRN15VG7S-4	DCR4-15	A	146	124	96	120	15	—	7 x 11	171	M5	5.9
	18.5	FRN18.5VG7S-4	DCR4-18.5	A	146	124	96	120	25	—	7 x 11	171	M6	7.2
	22	FRN22VG7S-4	DCR4-22A	A	146	124	96	120	25	—	7 x 11	171	M6	7.2
	30	FRN30VG7S-4	DCR4-30B	B	152	90	115	157	100	78	8	130	M8	13
	37	FRN37VG7S-4	DCR4-37B	B	171	110	110	150	100	75	8	150	M8	15
	45	FRN45VG7S-4	DCR4-45B	B	171	110	125	165	110	82	8	150	M8	18
	55	FRN55VG7S-4	DCR4-55B	B	171	110	130	170	110	85	8	150	M8	20
	75	FRN75VG7S-4	DCR4-75B	C	190	160	115	151	100	75	10	240	M10	20
	90	FRN90VG7S-4	DCR4-90B	C	190	160	125	161	120	80	10	250	ø12	23
	110	FRN110VG7S-4	DCR4-110B	C	190	160	125	161	120	80	10	250	ø12	25
	132	FRN132VG7S-4	DCR4-132B	C	200	170	135	171	120	85	10	260	ø12	28
	160	FRN160VG7S-4	DCR4-160B	C	210	180	135	171	120	85	12	290	ø12	32
	200	FRN200VG7S-4	DCR4-200B	C	210	180	135	171	140	90	12	295	ø12	35
	220	FRN220VG7S-4	DCR4-220B	C	220	190	135	171	140	90	12	300	ø15	40
	250	FRN250VG7S-4	DCR4-280B	C	220	190	145	181	150	95	12	320	ø15	45
	280	FRN280VG7S-4												
	315	FRN315VG7S-4	DCR4-315B	C	220	190	145	181	150	95	12 x 20	320	ø15	52
	355	FRN355VG7S-4	DCR4-355B	C	220	190	145	181	160	95	12 x 20	320	ø15	55
	400	FRN400VG7S-4	DCR4-400B	C	240	210	145	181	170	95	12 x 20	340	ø15	60
	500	FRN500VG7S-4	DCR4-500B	C	260	225	145	181	185	100	12 x 20	340	ø15	70
	630	FRN630VG7S-4	DCR4-630B	D	300	245	170	211	195	110	12	390	ø15	80
	710	FRN710BVG7S-4	DCR4-710B	D	310	255	170	211	205	115	12	405	ø15	88
	800	FRN800BVG7S-4	DCR4-800B	D	310	255	170	211	200	110	12	450	ø15	95
690V series	500	FRN500VG7S-69	DCR690-630B	E	—	—	—	—	—	—	—	—	—	100
	630	FRN630VG7S-69												

The REACTORS in the blue boxes are provided as standard (separately installed).

Options

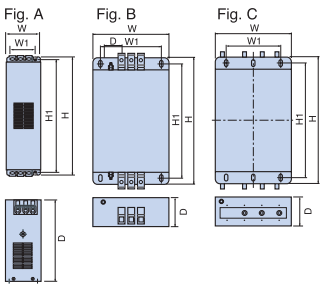
Name (type)	Dimensions
Ferrite ring for reducing radio noise (ACL-40B, ACL-74B, F200160) 	

Recommended wire size

Ferrite ring types for reducing radio noise	Q'ty	No. of turns	Recommended wire size [mm²] *)
ACL-40B	1	4	2.0, 3.5, 5.5
	2	2	8, 14
ACL-74B	1	4	8, 14
	2	2	22, 38, 60, 5.5 × 2, 8 × 2, 14 × 2, 22 × 2
	4	1	100, 150, 200, 250, 325, 38 × 2, 60 × 2, 100 × 2, 150 × 2
F200160	4	1	200 × 2, 250 × 2, 325 × 2

NOTE: *) Use a 600V HIV insulation cable (Allowable temp. 75˚C).

EMC-compliant filter (FS5941, RF3□□□-F11) [400V series]



Inverter type	EMC filter type	Rated voltage [V]	Rated current [A]	Leakage current [mA] Normal	Leakage current [mA] Open phase	Fig.	Dimensions [mm] W	W1	H	H1	D	Mtg. screw
FRN3.7 to 7.5VG7S-4	FS5941-40-47	480	40	25	176	A	70	45	290	275	185	M5
FRN11 to 15VG7S-4	FS5941-60-52		60				80	55	329	314	185	M6
FRN22VG7S-4	FS5941-86-52		86				80	55	329	314	185	M6
FRN30VG7S-4	RF3100-F11		100	0.5	130	B	200	166	435	408	130	M6
FRN37 to 90VG7S-4	RF3180-F11		180				200	166	495	468	160	M6
FRN110 to 132VG7S-4	RF3280-F11		280		270	C	250	170	587	560	205	M6
FRN160 to 220VG7S-4	RF3400-F11		400	1.5			250	170	587	560	205	M6
FRN280 to 315VG7S-4	RF3880-F11		880				364	300	688	648	180	M8

NOTE1: These EMC Filter are not available with RHC converter series.
NOTE2: FRN18.5VG7S-4 is not designed for CE marking. Select FRN22VG7S-4 if CE marking is required.
NOTE3: FRN250VG7S-4 is not designed for CE marking. Select FRN280VG7S-4 if CE marking is required.

Options

Name (type)

Output circuit filter (OFL-□□-4A) [400V series]

Dimensions

●Filter

Fig. A

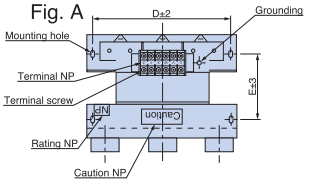


Fig. B

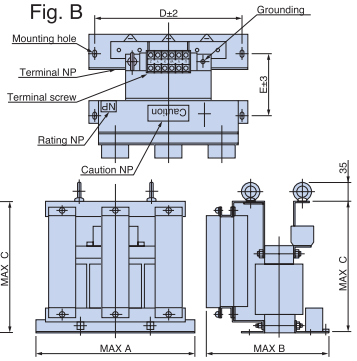


Fig. C

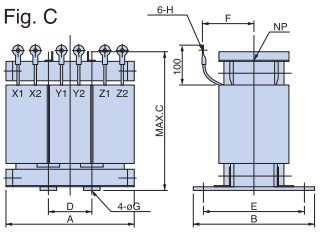


Fig. D

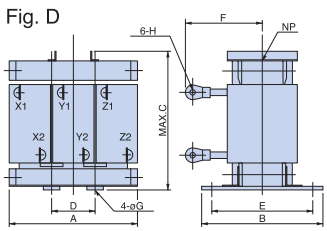
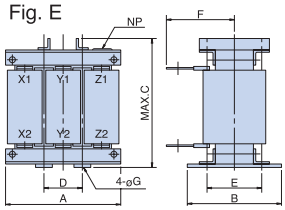


Fig. E



●Resistor/capacitor

The capacitor and resistor for filter OFL-30-4A or larger have to be installed separately (the capacitor and resistor masses are not included in the filter mass on the table below).

Fig. F

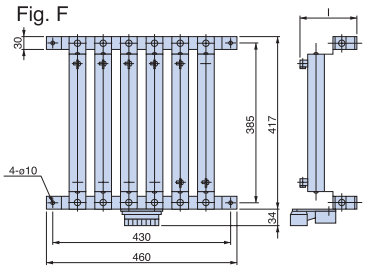
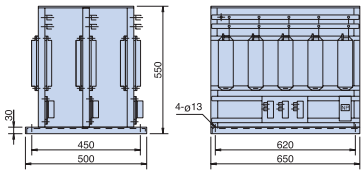


Fig. G



Applicable inverter	Filter type	Fig.	Dimensions [mm] A	B	C	D	E	F	I	Grounding screw	Terminal screw H	Mounting screw G	Approx. mass [kg]
FRN3.7VG7S-4	OFL-3.7-4A	A	220	225	220	200	115	—	—	M4	M4	M5	14
FRN5.5VG7S-4	OFL-7.5-4A		290	290	230	260	160			M5	M5	M6	22
FRN7.5VG7S-4													
FRN11VG7S-4	OFL-15-4A	B	330	275	310	300	145			M6	M6	M8	35
FRN15VG7S-4													
FRN18.5VG7S-4	OFL-22-4A			300	330		170						45
FRN22VG7S-4													
FRN30VG7S-4	OFL-30-4A	Ç F	210	175	210	70	140	90	160	—	6.4	8	12
FRN37VG7S-4	OFL-37-4A		220	190	220	75	150	95					15
FRN45VG7S-4	OFL-45-4A	D · F		195	265	70	155	140			8.4	10	17
FRN55VG7S-4	OFL-55-4A		260	200	275	85	160	150					22
FRN75VG7S-4	OFL-75-4A			210	290		170		233		10.5	12	25
FRN90VG7S-4	OFL-90-4A							155					28
FRN110VG7S-4	OFL-110-4A		300	230	330	100	190	170			13		38
FRN132VG7S-4	OFL-132-4A			240	340		200						42
FRN160VG7S-4	OFL-160-4A							180					48
FRN200VG7S-4	OFL-200-4A		320	270	350	105	220	190	333			15	60
FRN220VG7S-4	OFL-220-4A		340	300	390	115	250						70
FRN250VG7S-4	OFL-280-4A		350		430			200					78
FRN280VG7S-4													
FRN315VG7S-4	OFL-315-4A	E · G	440	275	450	150	230	170	—		15		90
FRN355VG7S-4	OFL-355-4A			290	480		245	175					100
FRN400VG7S-4	OFL-400-4A			295	510		240						110
FRN450VG7S-4	OFL-450-4A			325	470		270	195					125
FRN500VG7S-4	OFL-500-4A			335	500		280	210					145
FRN630VG7S-4	OFL-630-4A	Consult with Fuji											
FRN710VG7S-4	OFL-710-4A												
FRN800VG7S-4	OFL-800-4A												

Fuji Electric FA Components & Systems Co., Ltd.

Mitsui Sumitomo Bank Ningyo-cho Bldg.,
5-7,Nihonbashi Odemma-cho,Chuo-ku,Tokyo 103-0011,Japan
Phone: +81-3-5847-8011 Fax: +81-3-5847-8172
http://www.fujielectric.co.jp/fcs/

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