

MITSUBISHI

三菱 汎用 インバータ
取扱説明書

TRANSISTORIZED INVERTERS
Instruction Manual

力率改善ACリアクトル

POWER FACTOR IMPROVING AC REACTOR

FR-BAL

Thank you for choosing the Mitsubishi transistorized inverter option.
 This instruction manual gives handling information and precautions for use of this product.
 Incorrect handling might cause an unexpected fault. Before using the equipment, please
 read this manual carefully to use it to its optimum.
 Please forward this manual to the end user.

SAFETY INSTRUCTIONS	
⚠	Carry the product in a correct method according to its weight. Not doing so can cause injury.
⚠	Since the power factor improving AC reactor is precision equipment, do not drop it or subject it to high impact.
⚠	Mount the option on an incombustible surface. Installing it directly on or near a combustible surface could lead to a fire.
⚠	Ensure that the cables are connected to the correct terminals. Otherwise, damage etc. may occur.
⚡	Before starting wiring or inspection, power off the inverter, wait for more than 10 minutes, and check for no residual voltage with a meter etc.
⚡	Any person who is involved in the wiring or inspection should be fully competent to do the work.
⚡	While power is on or for a while after power-off, do not touch the inverter and the power factor improving AC reactor as they may be hot. Touching them can cause you burns.

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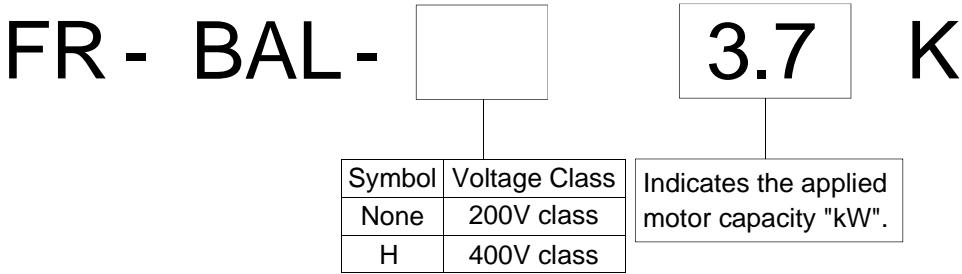
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Designed to increase the form factor of the inverter input current, the power factor improving reactor improves the power factor, decreasing the power supply capacity. It also has the effect of reducing input side harmonic currents.

1. UNPACKING AND PRODUCT CHECKING

Unpack the option unit, and ensure that the product received is as you ordered and it is intact.

Model identification



2. INSTALLATION

For installation inside an enclosure, the ambient temperature of the reactor should not be outside the permissible range (-10°C to +50°C). In addition, as the reactor itself generates heat, leave sufficient clearances around it.

3. SPECIFICATIONS

(1) Improvement effect

Power supply power factor 90% or more (under 100% load)

(2) Operating environment

Ambient temperature	-10 to +50°C	Ambient humidity	90%RH
Vibration	5.9m/s ² or less		
Atmosphere	Free of dust particles, corrosive gases and flammable gases		

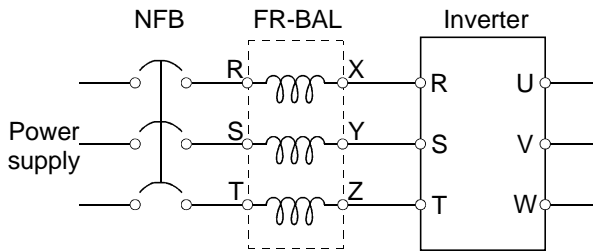
(3) Operating voltage

200V class: 200/200/220V 50/60/60Hz
 400V class: 400/400/440V 50/60/60Hz

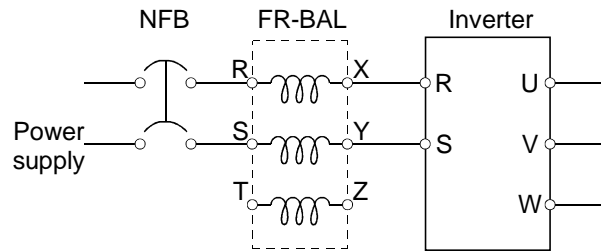
4. CONNECTION METHOD

Connect the option on the input side of the inverter.

● Three-phase power input



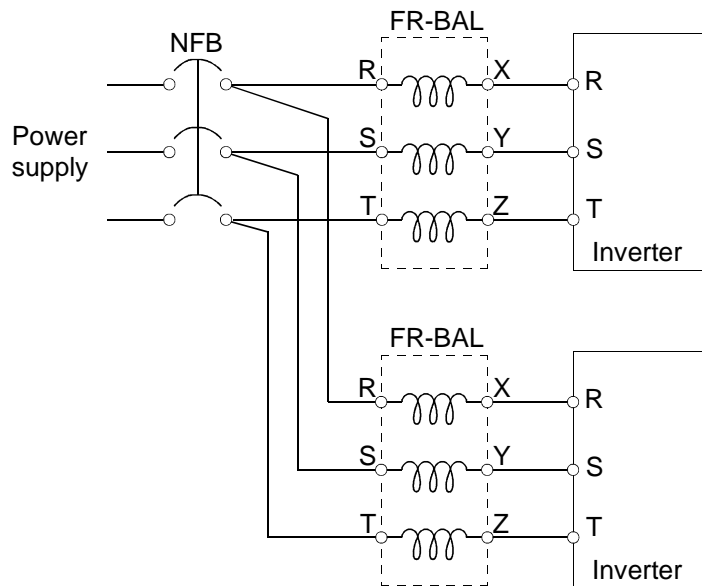
● Single-phase power input



4.1 Instructions

(1) When using the power factor improving reactor with two or more inverters, always connect one power factor improving reactor to each inverter as shown below.

If you use one reactor with two or more inverters, you should run all the inverters to provide a sufficient power factor improving effect.



(2) Choose the option which meets the applied motor capacity. (If the inverter capacity is larger than the motor capacity, also choose the option which meets the motor capacity.)

For single-phase power input, choose the reactor one rank higher than the motor capacity.

(3) Choose 22kW when the motor capacity is 18.5kW.

For a motor of less than 0.4kW, choose the option designed for 0.4kW.

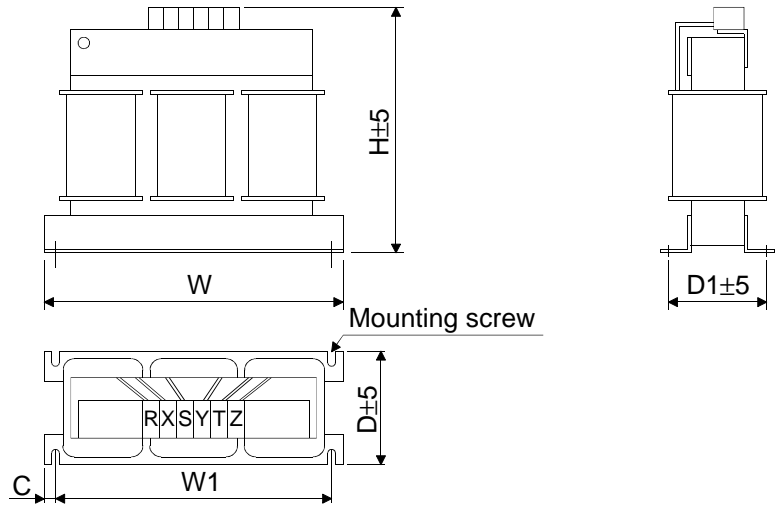
Note that the power factor improving effect will be slightly lower.

(4) When using the power return converter (FR-RC), always install the power factor improving AC reactor on the power supply side for all the inverters.

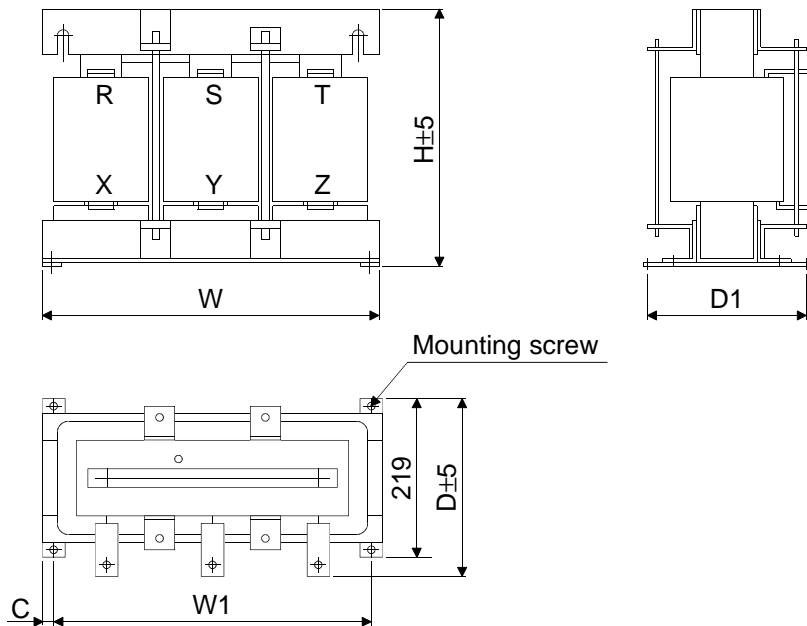
5. OUTLINE DIMENSIONAL DRAWINGS

(1) 200V class

FR-BAL-0.4K to 30K



FR-BAL-37K to 55K

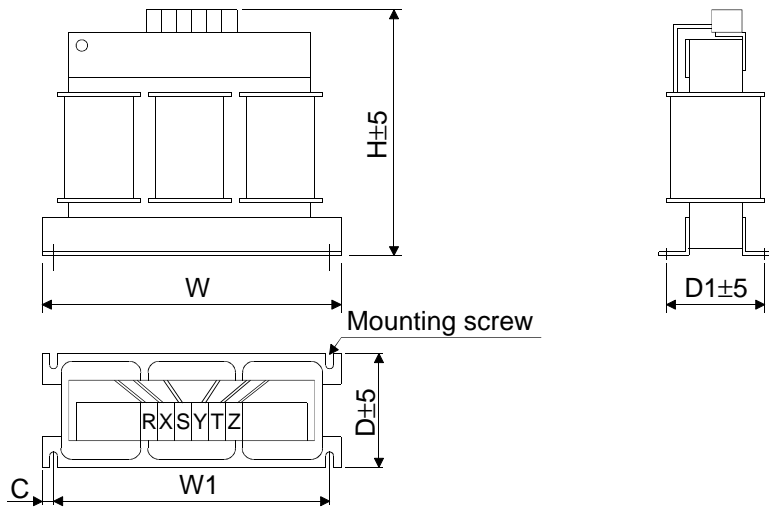


(Unit: mm)

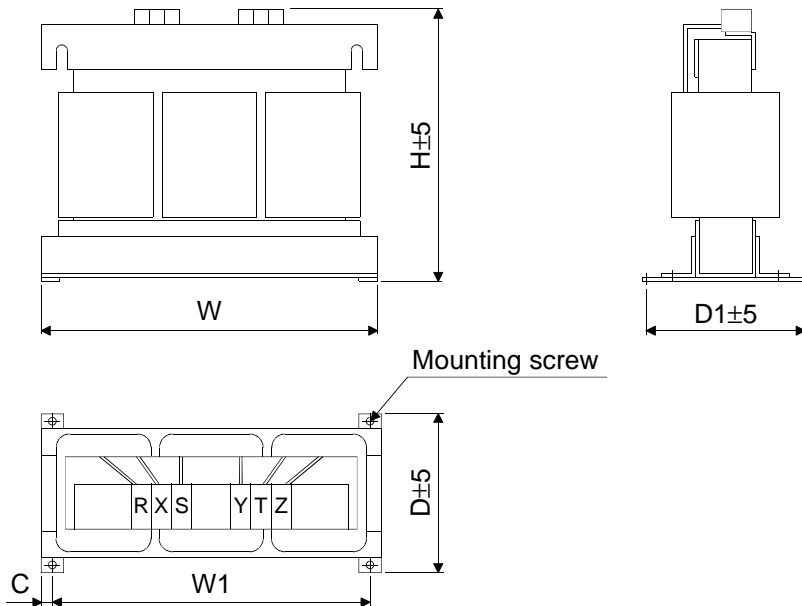
Power Factor Improving AC Reactor	Motor Capacity	W	W1	H	D	D1	C	Mounting Screw Size	Terminal Screw Size	Weight (kg)
FR-BAL-0.4K	0.4kW	135	120	115	59	45	7.5	M4	M3.5	2.0
FR-BAL-0.75K	0.75kW	135	120	115	69	57	7.5	M4	M3.5	2.8
FR-BAL-1.5K	1.5kW	160	145	140	71	55	7.5	M4	M3.5	3.7
FR-BAL-2.2K	2.2kW	160	145	140	91	75	7.5	M4	M3.5	5.6
FR-BAL-3.7K	3.7kW	220	200	192	90	70	10	M5	M4	8.5
FR-BAL-5.5K	5.5kW	220	200	192	96	75	10	M5	M4	9.5
FR-BAL-7.5K	7.5kW	220	200	194	120	100	10	M5	M5	14.5
FR-BAL-11K	11kW	280	255	220	135	100	12.5	M6	M6	19
FR-BAL-15K	15kW	295	270	275	133	110	12.5	M6	M6	27
FR-BAL-22K	22kW	290	240	301	199	170	25	M8	M8	Approx. 35
FR-BAL-30K	30kW	290	240	301	219	190	25	M8	M8	Approx. 43
FR-BAL-37K	37kW	330	270	306	235	190	30	M10	M10	Approx. 50
FR-BAL-45K	45kW	330	270	356	235	190	30	M10	M10	Approx. 60
FR-BAL-55K	55kW	330	270	356	240	190	30	M10	M12	Approx. 70

(2) 400V class

FR-BAL-H0.4K to H30K



FR-BAL-H37K to H55K



(Unit: mm)

Power Factor Improving AC Reactor	Motor Capacity	W	W1	H	D	D1	C	Mounting Screw Size	Terminal Screw Size	Weight (kg)
FR-BAL-H0.4K	0.4kW	135	120	115	59	45	7.5	M4	M3.5	2.1
FR-BAL-H0.75K	0.75kW	160	145	140	71	55	7.5	M4	M3.5	3.7
FR-BAL-H1.5K	1.5kW	160	145	140	87	70	7.5	M4	M3.5	5.3
FR-BAL-H2.2K	2.2kW	160	145	140	91	75	7.5	M4	M3.5	5.9
FR-BAL-H3.7K	3.7kW	220	200	190	90	70	10	M5	M3.5	8.5
FR-BAL-H5.5K	5.5kW	220	200	192	96	75	10	M5	M4	9.5
FR-BAL-H7.5K	7.5kW	220	200	192	120	100	10	M5	M4	14
FR-BAL-H11K	11kW	280	255	226	130	100	12.5	M6	M5	18.5
FR-BAL-H15K	15kW	295	270	244	130	110	12.5	M6	M5	27
FR-BAL-H22K	22kW	290	240	269	199	170	25	M8	M8	Approx. 35
FR-BAL-H30K	30kW	290	240	290	219	190	25	M8	M8	Approx. 43
FR-BAL-H37K	37kW	330	270	304	219	190	30	M10	M8	Approx. 50
FR-BAL-H45K	45kW	330	270	336	219	190	30	M10	M8	Approx. 60
FR-BAL-H55K	55kW	330	270	336	219	190	30	M10	M8	Approx. 70