

VFD model	Breaker rated current (A)	Quick fuse (A)	Contactors rated current (A)
GD350A-160G/185P-4	500/500	500/600	400/400
GD350A-185G/200P-4	500/630	600/600	400/500
GD350A-200G/220P-4	630/630	600/700	500/500
GD350A-220G/250P-4	630/700	700/800	500/630
GD350A-250G/280P-4	700/800	800/1000	630/630
GD350A-280G/315P-4	800/1000	1000/1000	630/800
GD350A-315G/355P-4	1000/1000	1000/1000	800/800
GD350A-355G/400P-4	1000/1000	1000/1200	800/1000
GD350A-400G/450P-4	1000/1250	1200/1200	1000/1000
GD350A-450G/500P-4	1250/1250	1200/1400	1000/1000
GD350A-500G-4	1250	1400	1000

Note: The accessory specifications described in the preceding table are ideal values. You can select accessories based on the actual market conditions, but try not to use those with lower values.

D.6 Reactors

When the voltage of the grid is high, the transient large current that flows into the input power circuit may damage rectifier components. You need to configure an AC reactor on the input side, which can also improve the current adjustment coefficient on the input side.

When the distance between the VFD and motor is longer than 50 m, the parasitic capacitance between the long cable and ground may cause large leakage current, and overcurrent protection of the VFD may be frequently triggered. To prevent this from happening and avoid damage to the motor insulator, compensation must be made by adding an output reactor. When a VFD is used to drive multiple motors, take the total length of the motor cables (that is, sum of the lengths of the motor cables) into account. When the total length is longer than 50 m, an output reactor must be added on the output side of the VFD. If the distance between the VFD and motor is 50 m to 100 m, select the reactor according to the following table. If the distance is longer than 100 m, contact INVT's technical support technicians.

DC reactors can be directly connected to the VFD models of 132G/160P or higher and the 660 V series. DC reactors can improve the power factor, avoid damage to bridge rectifiers caused due to large input current of the VFD when large-capacity transformers are connected, and also avoid damage to the rectification circuit caused due to harmonics generated by grid voltage transients or phase-control loads.

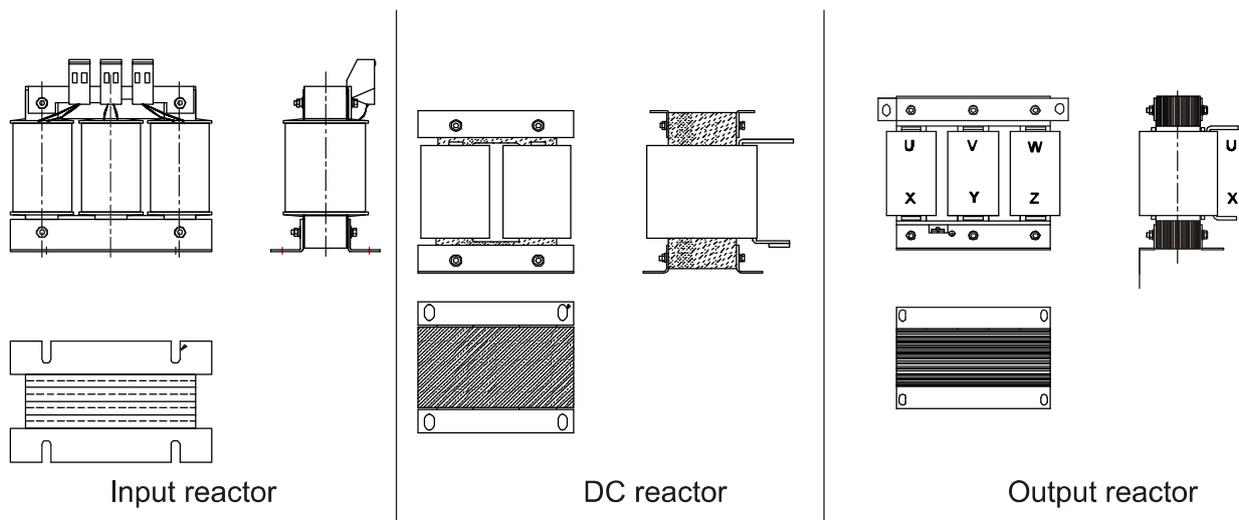


Table D-3 Reactors for AC 3PH 380V(-15%)—440V(+10%)

VFD model	Input reactor		Output reactor	
	G type	P type	G type	P type
GD350A-1R5G/2R2P-4	ACL2-1R5-4	ACL2-2R2-4	OCL2-1R5-4	OCL2-1R5-4
GD350A-2R2G/003P-4	ACL2-2R2-4	ACL2-004-4	OCL2-2R2-4	OCL2-2R2-4
GD350A-004G/5R5P-4	ACL2-004-4	ACL2-5R5-4	OCL2-004-4	OCL2-5R5-4
GD350A-5R5G/7R5P-4	ACL2-5R5-4	ACL2-7R5-4	OCL2-5R5-4	OCL2-7R5-4
GD350A-7R5G/011P-4	ACL2-7R5-4	ACL2-011-4	OCL2-7R5-4	OCL2-011-4
GD350A-011G/015P-4	ACL2-011-4	ACL2-015-4	OCL2-011-4	OCL2-015-4
GD350A-015G/018P-4	ACL2-015-4	ACL2-018-4	OCL2-015-4	OCL2-015-4
GD350A-018G/022P-4	ACL2-018-4	ACL2-018-4	OCL2-018-4	OCL2-018-4
GD350A-022G/030P-4	ACL2-022-4	ACL2-037-4	OCL2-022-4	OCL2-022-4
GD350A-030G/037P-4	ACL2-037-4	ACL2-037-4	OCL2-037-4	OCL2-037-4
GD350A-037G/045P-4	ACL2-037-4	ACL2-045-4	OCL2-037-4	OCL2-037-4
GD350A-045G/055P-4	ACL2-045-4	ACL2-055-4	OCL2-045-4	OCL2-045-4
GD350A-055G/075P-4	ACL2-055-4	ACL2-055-4	OCL2-055-4	OCL2-055-4
GD350A-075G/090P-4	ACL2-075-4	ACL2-075-4	OCL2-075-4	OCL2-075-4
GD350A-090G/110P-4	ACL2-110-4	ACL2-110-4	OCL2-110-4	OCL2-110-4
GD350A-110G/132P-4	ACL2-110-4	ACL2-160-4	OCL2-110-4	OCL2-200-4
GD350A-132G/160P-4	ACL2-160-4	ACL2-160-4	OCL2-200-4	OCL2-200-4
GD350A-160G/185P-4	ACL2-160-4	ACL2-200-4	OCL2-200-4	OCL2-200-4
GD350A-185G/200P-4	ACL2-200-4	ACL2-200-4	OCL2-200-4	OCL2-200-4
GD350A-200G/220P-4	ACL2-200-4	ACL2-280-4	OCL2-200-4	OCL2-280-4
GD350A-220G/250P-4	ACL2-280-4	ACL2-280-4	OCL2-280-4	OCL2-280-4
GD350A-250G/280P-4	ACL2-280-4	ACL2-280-4	OCL2-280-4	OCL2-280-4
GD350A-280G/315P-4	ACL2-280-4	ACL2-350-4	OCL2-280-4	OCL2-350-4

VFD model	Input reactor		Output reactor	
	G type	P type	G type	P type
GD350A-315G/355P-4	ACL2-350-4	ACL2-350-4	OCL2-350-4	OCL2-350-4
GD350A-355G/400P-4	Standard	Standard	OCL2-350-4	OCL2-400-4
GD350A-400G/450P-4	Standard	Standard	OCL2-400-4	OCL2-500-4
GD350A-450G/500P-4	Standard	Standard	OCL2-500-4	OCL2-500-4
GD350A-500G-4	Standard	/	OCL2-500-4	OCL2-500-4

Note:

- The rated input voltage drop of input reactors is 2%.
- The current adjustment coefficient on the input side of the VFD is higher than 90% after a DC reactor is configured.
- The rated output voltage drop of output reactors is 1%.
- The preceding table describes external accessories. You need to specify the ones you choose when purchasing accessories.

D.7 Filters

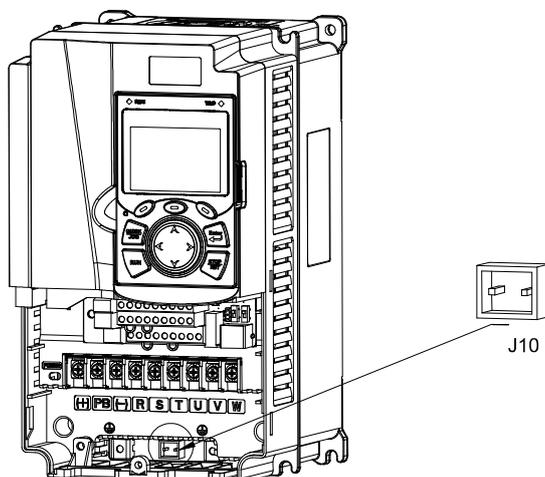
J10 is not connected in factory for VFD models of 110G/132P and lower. Connect the J10 packaged with the manual if the requirements of IEC/EN 61800-3 C3 need to be met;

J10 is connected in factory for VFDs of 132G/160P and higher, all of which meet the requirements of level C3.

Note:

Disconnect J10 in the following situations:

- The EMC filter is applicable to the neutral-grounded grid system. If it is used for the IT grid system (that is, non-neutral grounded grid system), disconnect J10.
- If leakage protection occurs during configuration of a residual-current circuit breaker, disconnect J10.



Note: Do not connect C3 filters in IT power systems.

Interference filters on the input side can reduce the interference of VFDs (when used) on the surrounding devices.

Noise filters on the output side can decrease the radio noise caused by the cables between VFDs and motors and the leakage current of conducting wires.

INVT provides some of the filters for you to choose.

D.7.1 Filter model description

FLT – P 04 045 L – B

A
B
C
D
E
F

Field identifier	Field description
A	FLT: Name of the VFD filter series
B	Filter type P: Power input filter L: Output filter
C	Voltage class 04: AC 3PH 380V(-15%)–440V(+10%) 06: AC 3PH 520V(-15%)–690V(+10%)
D	3-digit code indicating the rated current. For example, 015 indicates 15 A.
E	Filter performance L: General H: High-performance
F	Filter application environment A: Environment Category I (IEC61800-3) category C1 (EN 61800-3) B: Environment Category I (IEC61800-3) category C2 (EN 61800-3) C: Environment Category II (IEC61800-3) category C3 (EN 61800-3)

D.7.2 Filter model selection

Table D–4 AC 3PH 380V(-15%)–440V(+10%)

VFD model	Input filter	Output filter
GD350A-1R5G/2R2P-4	FLT-P04006L-B	FLT-L04006L-B
GD350A-2R2G/003P-4		
GD350A-004G/5R5P-4	FLT-P04016L-B	FLT-L04016L-B
GD350A-5R5G/7R5P-4		
GD350A-7R5G/011P-4	FLT-P04032L-B	FLT-L04032L-B
GD350A-011G/015P-4		

VFD model	Input filter	Output filter
GD350A-015G/018P-4	FLT-P04045L-B	FLT-L04045L-B
GD350A-018G/022P-4		
GD350A-022G/030P-4	FLT-P04065L-B	FLT-L04065L-B
GD350A-030G/037P-4		
GD350A-037G/045P-4	FLT-P04100L-B	FLT-L04100L-B
GD350A-045G/055P-4		
GD350A-055G/075P-4	FLT-P04150L-B	FLT-L04150L-B
GD350A-075G/090P-4		
GD350A-090G/110P-4	FLT-P04240L-B	FLT-L04240L-B
GD350A-110G/132P-4		
GD350A-132G/160P-4		
GD350A-160G/185P-4	FLT-P04400L-B	FLT-L04400L-B
GD350A-185G/200P-4		
GD350A-200G/220P-4		
GD350A-220G/250P-4	FLT-P04600L-B	FLT-L04600L-B
GD350A-250G/280P-4		
GD350A-280G/315P-4		
GD350A-315G/355P-4	FLT-P04800L-B	FLT-L04800L-B
GD350A-355G/400P-4		
GD350A-400G/450P-4		
GD350A-450G/500P-4	FLT-P041000L-B	FLT-L041000L-B
GD350A-500G-4		

Note:

- The input EMI meets the C2 requirements after an input filter is configured.
- The preceding table describes external accessories. You need to specify the ones you choose when purchasing accessories.

D.8 Braking system**D.8.1 Brake component selection**

When the VFD driving a high-inertia load decelerates or needs to decelerate abruptly, the motor runs in the power generation state and transmits the load-carrying energy to the DC circuit of the VFD, causing the bus voltage of the VFD to rise. If the bus voltage exceeds a specific value, the VFD reports an overvoltage fault. To prevent this from happening, you need to configure brake components.



- ◇ The design, installation, commissioning, and operation of the device must be performed by trained and qualified professionals.
- ◇ Follow all the "Warning" instructions during the operation. Otherwise, major