VPFUJI-T90 Series

Advanced Vector Control Inverter

Open loop/closed loop vector control, V/F control (built-in PID) of synchronous and asynchronous motors
- Large torque output, which can ensure smooth starting of motor under heavy load
- Powerful function and outstanding performance, suitable for most general occasions
- Support multiple types of PG cards
- Support instant stop and instant start
- Compact structure, easy to install
- Power range: 220V: 0.4-7.5kW
  380V: 0.4-450kW

Technology Features

	Item	VPFUJI-T90
Basic function	Control Mode	V/F control Sensorless flux vector control (SVC) Close-loop vector control (FVC)(Above 3.7KW)
	Maximum frequency	600Hz
	Carrier frequency	0.5kHz~8kHz The carrier frequency is automatically adjusted based on the load features.
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: Maximum frequency x 0.025%
	Start torque	G Type: 0.5Hz/150%(SVC) P Type: 0.5Hz/100%
	Speed range	1: 100 (SVC)
Basic function	Speed stability accuracy	±0.5%(SVC)
	Overload capacity	G Type: 60s for 150% of the rated current, 3s for 180% of the rated current. P Type: 60s for 120% of the rated current, 3s for 150% of the rated current.
	Torque boost	Auto-boost; Customized boost: 0.1%~30.0%
	V/F Curve	Straight-line V/F curve Multi-point V/F curve N-power V/F curve (1.2-power, 1.4-power, 1.6-power, 1.8-power, square)
	V/F separation	2 types: complete separation; half separation
	Ramp Mode	Straight-line ramp. Four groups of acceleration/deceleration time with the range of 0.00~6500.0s
	DC braking	DC braking frequency: 0.00Hz~Maximum frequency Braking time: 0.0s~36.0s Braking action current value: 0.0%~100.0%
	JOG control	JOG frequency range: 0.00Hz~50.00Hz. JOG acceleration/deceleration time: 0.0s~6500.0s.
	Simple PLC, Multiple preset speeds	It implements up to 16 speeds via the simple PLC function or combination of terminal states
	Onboard PID	It realizes process-controlled closed loop control system easily
	Auto voltage regulation(AVR)	It can keep constant output voltage automatically when the mains voltage changes
	Overvoltage/overcurrent stall control	The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to over voltage/over current
	Rapid current limit	It helps to avoid frequent over current faults of the AC drive.
	Torque limit and control	It can limit the torque automatically and prevent frequent over current tripping during the running process. Torque control can be implemented in the FVC mode.
Individualized functions	High performance	Control of asynchronous motor are implemented through the high-performance current vector control technology
	Rapid dip ride through	The load feedback energy compensates the voltage reduction so that the AC drive can continue to run for a short time
	Support for multiple PG card	Support for differential input PG card,resolver PG card,rotating transformer PG card…
	Rapid current limit	It helps to avoid frequent over current faults of the AC drive.
	Timing control	Timing range: 0.0Min~6500.0Min
	Communication methods	RS - 485
Running	Command source	Operation panel/Control terminals/Serial communication port You can perform switchover between these sources in various ways.
	Frequency source	There are ten frequency sources. Digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. You can perform switchover in various ways.
	Auxiliary frequency source	There are ten auxiliary frequency sources. It can implement fine tuning of auxiliary frequency and frequency synthesis.

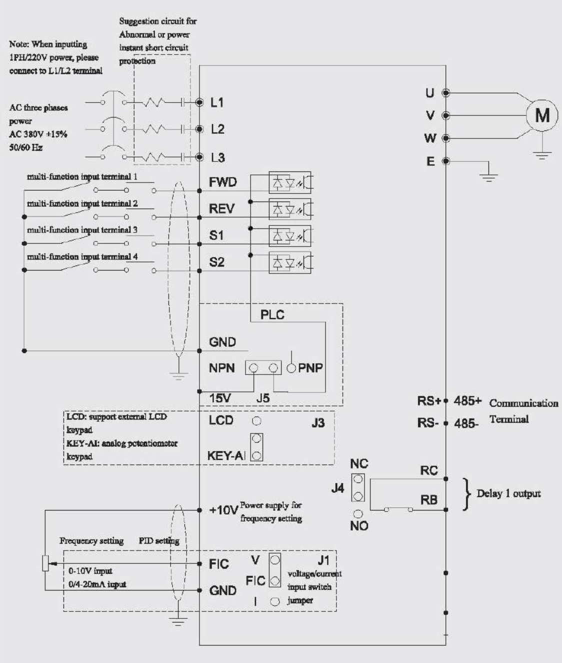
	Item	VPFUJI-T90
Running	Input terminal	Standard: 4 digital input terminals(Below 5.5KW) /6 digital input terminals(Above 7.5KW); 1 analog input terminal(Below 5.5KW)/2 analog input terminals(Above 7.5KW); 1 voltage input (only support for 0~10V, above 7.5KW), 1 voltage input(0~10V) or current input (4~20mA)
	Output terminal	1 High-speed pulse output terminal (Open-collector) (Above 3.7KW) 1 replay output terminal (Below 5.5KW)/2 replay output terminals(Above 7.5KW) 1 analog output terminal(3.7KW~5.5KW)/2 analog output terminal(Above 7.5KW), Support for 4~20mA current output or 0~10V voltage output
Display and operation panel	LED display	It displays the parameters
	Key locking and function selection	It can lock the keys partially or completely and define the function range of some keys so as to prevent mal-function.
	Protection mode	Motor short-circuit detection at power-on, input/output phase loss protection, over current protection, over voltage protection, under voltage protection, overheat protection and overload protection
Environment	Installation location	Indoor, free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapor, drip or salt.
	Altitude	Lower than 1000m
	Ambient temperature	-10°C ~+ 40°C (de-rated if the ambient temperature is between 40°C ~50°C)
	Humidity	Less than 95%RH, without condensing
	Vibration	Less than 5.9m/s2(0.6g)
	Storage temperature	-20°C ~+ 60°C

Selection Guide

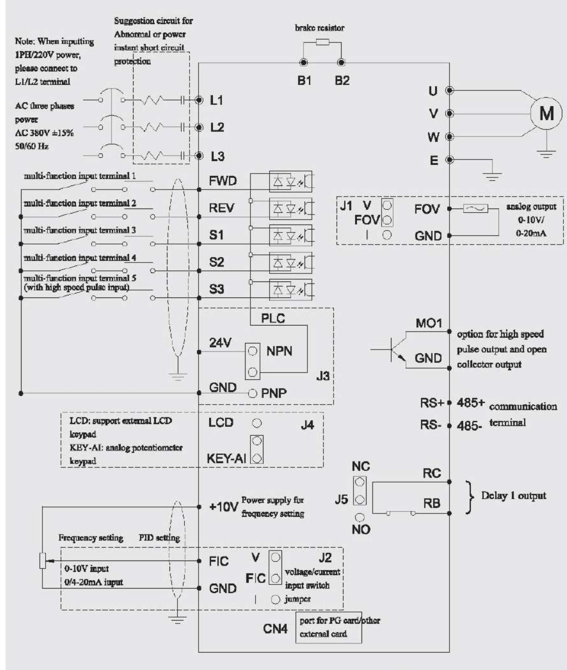
Model	Rated output power(kW)	Rated input current(A)	Rated output current(A)	Motor Power(KW)
Input voltage: 1PH AC220V±15%				
FR0.4GT90-2J	0.4	5.4	2.1	0.4
FR0.75GT90-2J	0.75	7.2	3.8	0.75
FR1.5GT90-2J	1.5	10	7.2	1.5
FR2.2GT90-2J	2.2	16	9	2.2
FR3.7GT90-2J	3.7	17	17	3.7
Input voltage: 3PH AC380V±15%				
FR0.4GT90-4J	0.4	3.4	1.5	0.4
FR0.75GT90-4J	0.75	3.8	2.1	0.75
FR1.5GT90-4J	1.5	5	3.8	1.5
FR2.2GT90-4J	2.2	5.8	5.1	2.2
FR3.7G/5.5PT90-4J	3.7/5.5	10/15	9/13	3.7/5.5
FR5.5G/7.5PT90-4J	5.5/7.5	15/20	13/17	5.5/7.5
FR7.5G/11PT90-4J	7.5/11	20/26	17/25	7.5/11
FR11G/15PT90-4J	11/15	26/35	25/32	11/15
FR15G/18.5PT90-4J	15/18.5	35/38	32/37	15/18.5
FR18.5G/22PT90-4J	18.5/22	38/46	37/45	18.5/22
FR22G/30PT90-4J	22/30	46/62	45/60	22/30
FR30G/37PT90-4J	30/37	62/76	60/75	30/37
FR37G/45PT90-4J	37/45	76/90	75/91	37/45
FR45G/55PT90-4J	45/55	90/105	91/112	45/55
FR55GT90-4J	55	105	112	55
FR75PT90-4J	75	140	150	75
FR75G/90PT90-4J	75/90	140/160	150/176	75/90
FR90G/110PT90-4J	90/110	160/210	176/210	90/110
FR110G/132PT90-4J	110/132	210/240	210/253	110/132
FR132G/160PT90-4J	132/160	240/290	253/304	132/160
FR160G/185PT90-4J	160/185	290/330	304/340	160/185
FR185G/200PT90-4J	185/200	330/370	340/377	185/200
FR200G/220PT90-4J	200/220	370/410	377/426	200/220
FR220G/250PT90-4J	220/250	410/460	426/465	220/250
FR250G/280PT90-4J	250/280	460/500	465/520	250/280
FR280G/315PT90-4J	280/315	500/580	520/585	280/315
FR315G/350PT90-4J	315/350	580/620	585/650	315/350
FR350G/400PT90-4J	350/400	620/670	650/725	350/400
FR400G/450PT90-4J	400/450	670/790	725/820	400/450
FR450G/500PT90-4J	450/500	790/835	820/880	450/500

Wiring Diagram

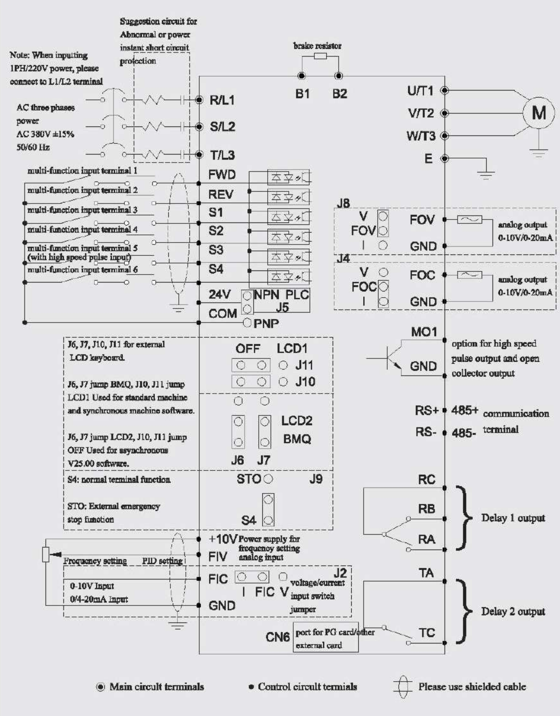
1. 1PH/220V 0.4-2.2kW&3PH/380V 0.4-2.2kW (VF control)



2. 1PH/220V 0.4-3.7kW&3PH/380V 0.4-5.5kW (vector control)

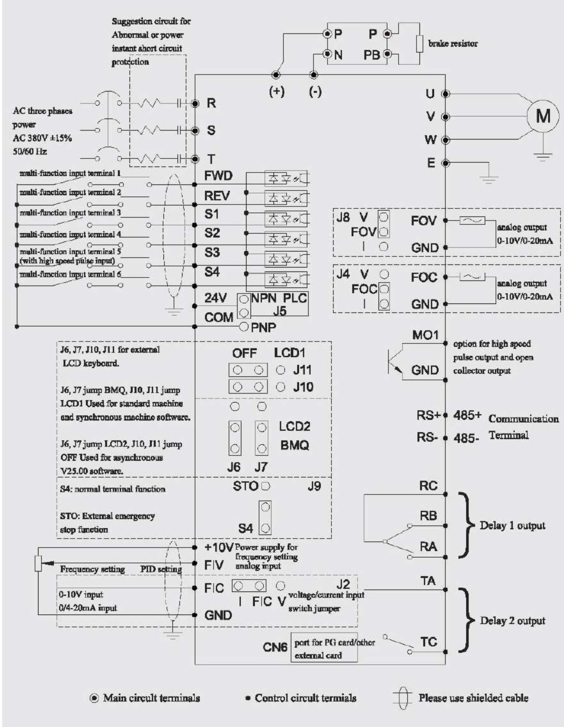


3. 220V/5.5-7.5kW&380V/7.5kW-160kW

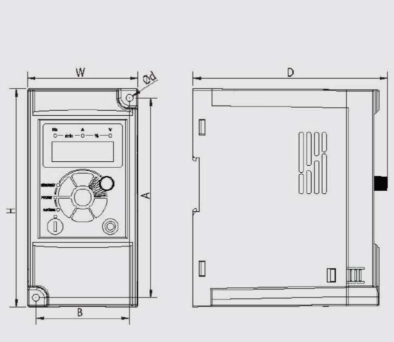
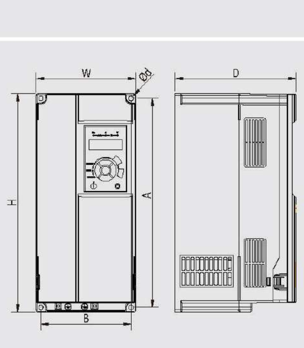


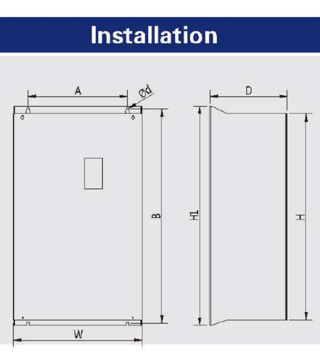
Note: 220V/ 5.5-7.5kw &380V/ 7.5-37kw standard built-in braking unit, 45kW-160kW braking unit optional.

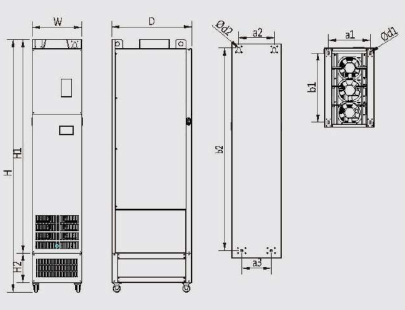
4. 380V/185kW-450kW



Dimension

SIZE	Model	W	H	D	A	B	Φd	Installation
A	FR0.4GT90-2J	72	142	127	130	61	4.5	
	FR0.75GT90-2J							
	FR1.5GT90-2J							
	FR2.2GT90-2J-VF							
	FR0.4GT90-4J							
	FR0.75GT90-4J							
	FR1.5GT90-4J							
	FR2.2GT90-4J							
	FR2.2GT90-2J	85	180	131	167	72	5.5	
	FR3.7GT90-2J							
	FR3.7G/5.5PT90-4J							
	FR5.5G/7.5PT90-4J							
B	FR7.5G/11PT90-4J	106	240	168	230	96	4.5	
	FR11G/15PT90-4J							
	FR15G/18.5PT90-4J	151	332	183	318	137	7	
	FR18.5G/22PT90-4J							
	FR22G/30PT90-4J							
	FR30G/37PT90-4J	217	400	216	385	202	7	
	FR37G/45PT90-4J							

SIZE	Model	W	H	H1	D	A	B	Φd	Installation
C	FR45G/55PT90-4J	300	440	470	240	200	455	9	
	FR55GT90-4J								
	FR75PT90-4J								
	FR75G/90PT90-4J	275	590	630	310	200	612	9	
	FR90G/110PT90-4J								
	FR110G/132PT90-4J								
	FR132G/160PT90-4J	400	675	715	310	320	695	11	
	FR160G/185PT90-4J								

SIZE	Model	Outline dimention (mm)					Installation Size (mm)			Wall–mounted Size (mm)				Installation
		W	H	H1	H2	D	a1	b1	d1	a2	a3	b2	d2	
D	FR185G/200PT90-4J	300	1445	1180	200	500	250	430	14	220	150	1135	13	
	FR200G/220PT90-4J													
	FR220G/250PT90-4J													
	FR250G/280PT90-4J	330	1595	1330	200	545	280	475	14	220	185	1275	13	
	FR280G/315PT90-4J	325	1495	1230	200	545	275	470	14	225	185	1175	14	
	FR315G/350PT90-4J													
	FR350G/400PT90-4J	335	1720	1455	200	545	285	470	14	240	200	1380	14	
	FR400G/450PT90-4J													
	FR450G/500PT90-4J													