

TVFE9 Series Inverter



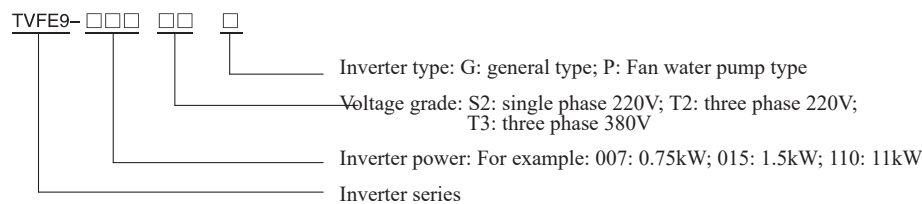
1 Overview

TVFE9 series inverter is a high-performance speed sensorless vector inverter independently developed by our company, featuring with good acceleration and deacceleration dynamic performance, high torque output at low speed (0.5Hz, 1.5 times rated torque), high overload capacity, flexible and convenient operation, PID control of positive and reverse directions, small size, and strong environmental adaptation.

This series of product have strong load characteristics, smooth and reliable operation, programmed operation, PID adjustment, textile swing frequency operation, and water supply sleep functions. The product is widely used in electrical drive and automation control fields such as machine tools, textile, water supply, municipal affairs, foods, cements, plate shears, and plastic machinery.

The product is designed and tested in accordance with the international standard and the user’s use environment shall be strictly simulated for testing.

2 Type Designation



3 Technical Parameters

Item		Technical specification
Input	Voltage	Single-phase 220V (-15%~+15%) Three-phase 380V (-15%~+20%) Voltage unbalance ratio <3%
	Freq.	47~63Hz
Output	Voltage	0 ~ input voltage
	Freq.	0Hz~400Hz
Basic functions	Frequency command	Digital setting: 0.01Hz; Simulation setting: Max. frequency x 0.02%
	Control method	Open-looped vector control (SVC); V/F control
	Starting torque	1Hz/150% (SVC)
	Speed adjusting range	1:100 (SVC)
	Speed stabilizing precision	±0.5% (SVC)
	Torque control precision	SVC: ±0.5% (more than 5Hz)
	Torque boost	Torque increased by 0.0%~20.0%
	V/F curve	Four ways: Linear type; multipoint type; complete V/F separation, incomplete V/F separation
	Acceleration and deceleration curves	Straight line or S curve acceleration and deceleration method; Four types of acceleration and deceleration time; acceleration and deceleration time range: 0.0~3600.0s
	DC braking	DC brake starting frequency: 0.00Hz~20.00Hz; Braking time: 0.0s~60.0s; Braking action current value: 0.0%~100.0%
	Jogging control	Jogging frequency range: 0.00Hz~50.00Hz; Jogging acceleration and deceleration time 0.0s~20.0s
	Simple PLC, multi-speed operation	Realize at most 16 speed segments through the built-in PLC or control terminal
	Built-in PID	To easily realize the process control closed-looped control system
	Auto voltage regulation (AVR)	To keep the constant output voltage when the power grid voltage changes

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Continued

Item		Technical specification
Basic functions	Overvoltage and overcurrent speed out-of-limit control	To limit the current and voltage automatically during operation to prevent frequent trip due to overcurrent or overvoltage
	Torque limiting and control	In the vector control mode, realize the torque control, and limit the torque automatically during operation to prevent frequent trip due to overcurrent.
Communicaiton function	RS485 bus	Modbus RTU, Modbus ASCII
Operation	Operation command	Operating panel given, control terminal given, serial communication interface given. They can be switched over through multiple ways
	Frequency command	Ten frequency commands: digit given, analog voltage given, analog current given, pulse given, serial port given; they can be switched over through multiple ways
	Aux. frequency command	Five aux. frequency commands to realize the auxiliary frequency fine-turning and frequency synthesis flexibly
	Input terminal	Standard: Seven SI terminals, among them X7 supports the high speed pulse input of up to 10kHz Two AI terminals, with 0~10V voltage input supported, among them A12 supports 0~20mA current input
	Output terminal	Standard: One open collector output terminal One relay output terminal Two AO terminals to support 0~10V voltage output, of which AO2 supports 0~20mA current output
Display and keyboard	LED display	To display parameters
	Key lock and function section	To lock some or all keys, define the function ranges of some keys to prevent misoperation
Protection function	Phase loss protection	Output phase loss protection
	Overcurrent protection	Stop the machine when the current exceeds 2.0 times rated current of inverter for protection
	Overvoltage protection	Stop the machine when the DC voltage is too high in main circuit
	Undervoltage protection	Stop the machine when the DC voltage is too low in main circuit
	Overheat protection	Trip the protection function when the rectifier and inverter modules are overheated
	Overload protection	Stop the machine when running under 150% rated current for 60s
Environment	Application site	Indoors, not subject to direct sunlight, no dust, corrosive gas, flammable gas, oil mist, water stam, water dops, or salt.
	Altitude	Below 1,000 meters; derated by 1% per an increase of 100m for 1,000 meters and above; if more than 3000m, please contact the manufacturer.
	Ambient temp.	-10°C~+40°C; when the ambient temperature is 40°C or above, derating is required; derated by 1.5% per an increase of 1°C of ambinet temperature
	Humidity	Less than 90%RH, no condensation
	Vibration	Less than 4.9m/s ² (0.5g)
	Storage temp.	-20°C~+60°C

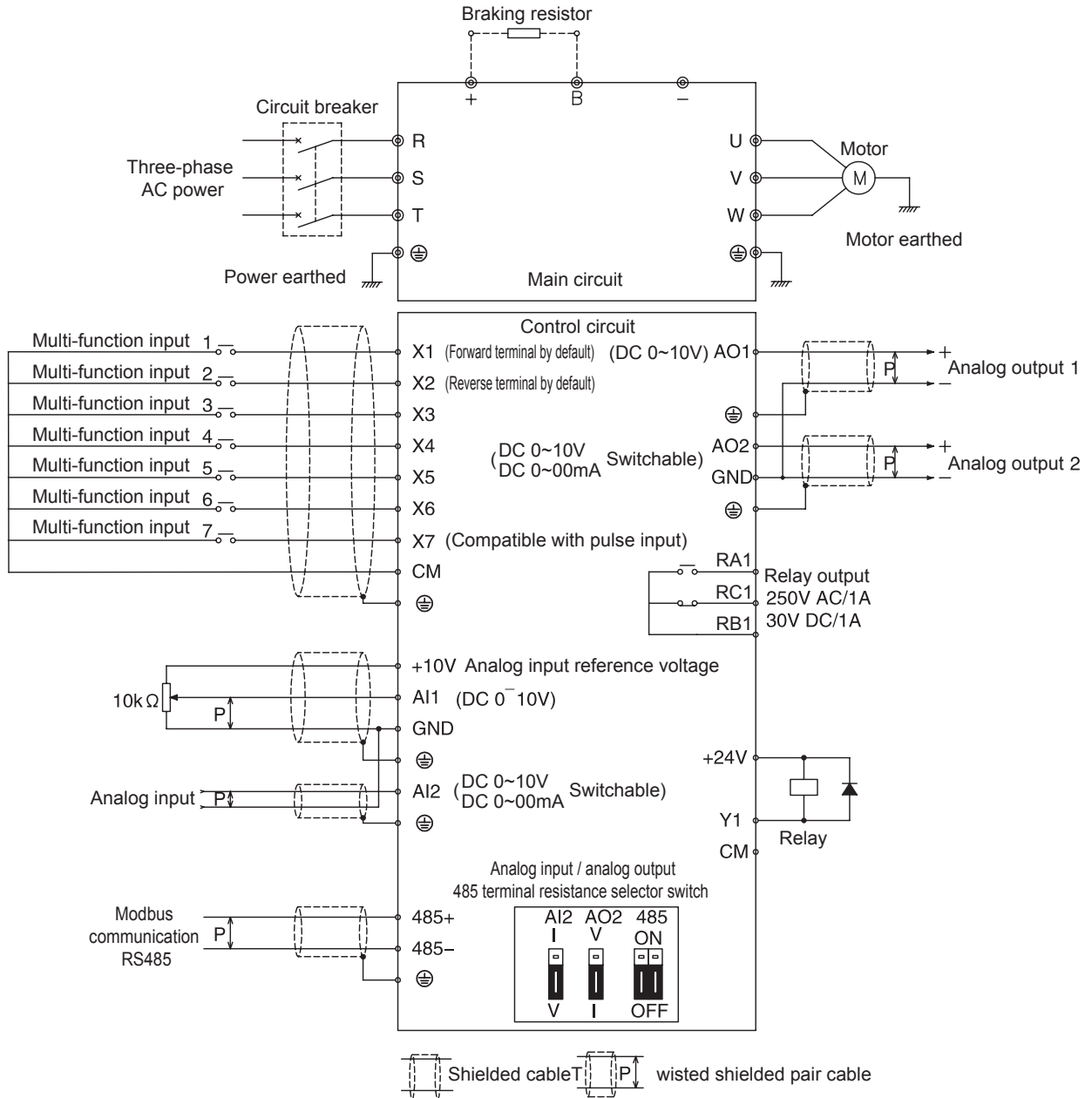
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Inverter model	G mode			P mode		
	Input current/ A	Output current/A	Adapted motor/kW	Input current/ A	Output current/A	Adapted motor/kW
Single-phase power: 220V, 50/60Hz						
TVFE9-2007G	9.2	4.5	0.75	-	-	-
TVFE9-2015G	14.5	7.5	1.5	-	-	-
TVFE9-2022G	23	10	2.2	-	-	-
TVFE9-2040G	35	16	4.0	-	-	-
Three-phase power: 380V, 50/60Hz						
TVFE9-4007G	4.3	2.5	0.75	-	-	-
TVFE9-4015G	5.2	3.8	1.5	-	-	-
TVFE9-4022G	6	5.5	2.2	-	-	-
TVFE9-4040G	10.5	9	3.7	-	-	-
TVFE9-4055P	-	-	-	14	11	5.5
TVFE9-4055G/4075P	15.5	13	5.5	20.5	17	7.5
TVFE9-4075G/4110P	20.5	17	7.5	27.5	22	11
TVFE9-4110G/4150P	27.5	24	11	37.1	30	15
TVFE9-4150G/4185P	37.1	30	15	41.9	36	18.5
TVFE9-4185G/4220P	41.9	39	18.5	49.3	45	22
TVFE9-4220G	49.3	45	22	-	-	-
TVFE9-4300P	-	-	-	65.7	56	30
TVFE9-4300G/4370P	65.7	60	30	80.6	72	37
TVFE9-4370G	80.6	75	37	-	-	-
TVFE9-4450P	-	-	-	96.4	80	45
TVFE9-4450G/4550P	96.4	91	45	117.6	110	55
TVFE9-4550G/4750P	117.6	110	55	166.4	130	75
TVFE9-4750G/4900P	166.4	150	75	184.3	176	90
TVFE9-4900G/41100P	184.3	176	90	226.8	210	110
TVFE9-41100G/41320P	226.8	210	110	268.1	230	132
TVFE9-41320G/41600P	268.1	253	132	321.1	304	160
TVFE9-41600G/41850P	321.1	304	160	368	340	185
TVFE9-41850G/42000P	368	340	185	406.6	380	200
TVFE9-42000G/42200P	406.6	380	200	442.7	420	220
TVFE9-42200G/42500P	442.7	426	220	503	470	250
TVFE9-42500G/42800P	503	470	250	555.9	480	280
TVFE9-42800G/43150P	555.9	520	280	650.7	585	315
TVFE9-43150G	650.7	585	315	-	-	-
TVFE9-43550G/44000P	754.5	650	355	797.6	730	400
TVFE9-44000G	797.6	730	400	-	-	-
TVFE9-44500G	846	830	450	-	-	-
TVFE9-45000G	885	860	500	-	-	-
TVFE9-45600G	990	950	560	-	-	-
TVFE9-46300G	1150	1100	630	-	-	-

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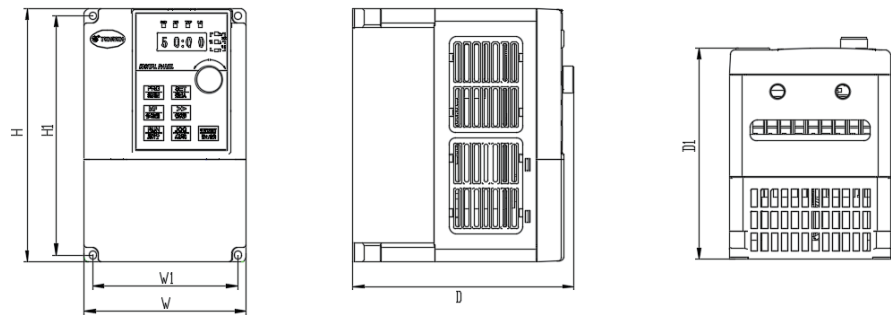
4 Wiring Diagram

4.1 Basic wiring diagram

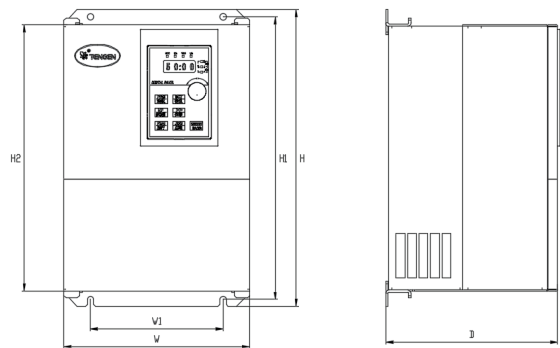


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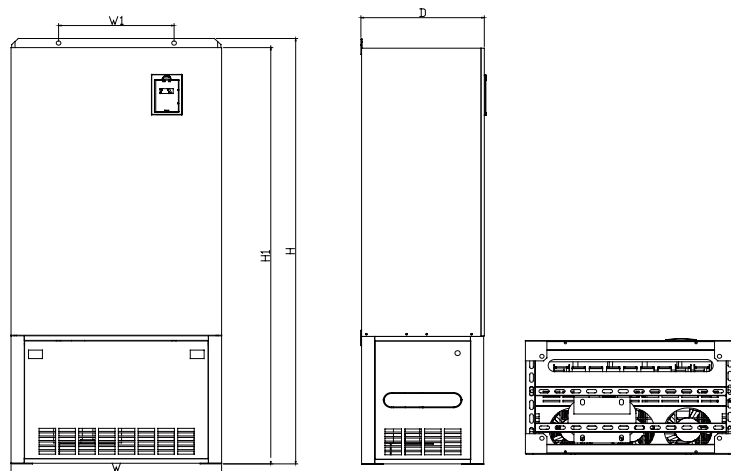
5 Outline and Installation Dimensions



TVFE9-2007G~TVFE9-2040G and TVFE9-4007G~TVFE9-4075G Outline dimension diagram



TVFE9-4110G~TVFE9-41600G Outline dimension diagram



TVFE9-41850G~TVFE9-46300G Outline dimension diagram

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Inverter model	Outline and installation dimensions							
	W	H	D	W1	H1	D1	H2	Mounting hole
Single-phase/three-phase power: 220V, 50/60Hz								
TVFE9-2007G	118.5	185	159	106.5	174.5	150	-	5.5
TVFE9-2015G								
TVFE9-2022G								
TVFE9-2040G	150	258	183.8	136.8	254	175.3	-	5.5
Three-phase power: 380V, 50/60Hz								
TVFE9-4007G	118.5	185	159	106.5	174.5	150	-	5.5
TVFE9-4015G								
TVFE9-4022G								
TVFE9-4040G	118.5	195	169	106.5	184.5	160	-	5.5
TVFE9-4055P								
TVFE9-4055G/4075P								
TVFE9-4075G/4110P	150	258	184	137	254	175	-	5.5
TVFE9-4110G/4150P								
TVFE9-4150G/4185P	210	335	207.5	150	319	194	300	7
TVFE9-4185G/4220P								
TVFE9-4220G	221	382	232.5	160	365.5	219	344	8
TVFE9-4300P	280	480	241.5	200	460	230	440	7
TVFE9-4300G/4370P								
TVFE9-4370G								
TVFE9-4450P	352	585	287.5	220	559	374	538	10
TVFE9-4450G/4550P								
TVFE9-4550G/4750P								
TVFE9-4750G/4900P	384	650	303	300	628	-	-	8
TVFE9-4900G/41100P	485	760	326	325	739	-	-	12
TVFE9-41100G/41320P								
TVFE9-41320G/41600P	533	830	405	325	809	-	780	12
TVFE9-41600G/41850P								
TVFE9-41850G/42000P	638	1402	374	-	1372	-	-	14
TVFE9-42000G/42200P								
TVFE9-42200G/42500P								
TVFE9-42500G/42800P	700	1627	460	-	1592	-	-	14
TVFE9-42800G/43150P								
TVFE9-43150G								
TVFE9-43550G/44000P	800	1772	500	-	1737	-	-	14
TVFE9-44000G								
TVFE9-44500G								
TVFE9-45000G	1200	2000	568	-	-	-	-	14
TVFE9-45600G								
TVFE9-46300G								

Size of hole on the external key tray: 79.5mm*121mm

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6 Application

- 7.1 Fans: boiler fan, roots fan, air exchange fan, and air conditioner fan.
- 7.2 Water pump: submersible pump, vacuum pump, cooling pump, and circulating water pump
- 7.3 Machine tools: lathe, planer, grinder, and engraving machine
- 7.4 Wood working machinery: rotary cutter, and plate cutting machine
- 7.5 Textile machinery: spinning frame, winding machine.
- 7.6 Other machinery: film blowing machine, plastic extruder, block making machine, ball grinding mill, and escalator.

7 Ordering Notice

Please specified the required model and specification according to the model and meaning instructions when ordering:

For example: 4.0KW common inverter: TVFE9-4040G.