■Standard specifications VF-AS1

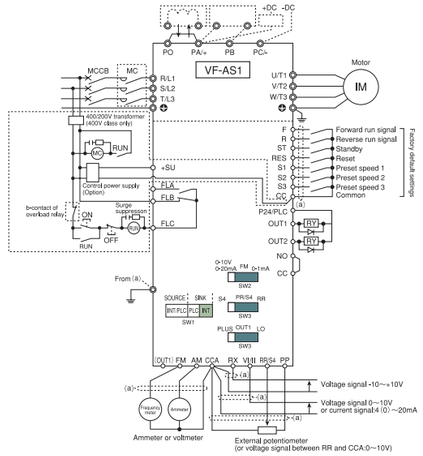
Item			Specification																								
Applicable Motor (kW)			0.4	0.75	1.5	2.2	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	280	355	400	500
Machine type	Input voltage class	Model	VFAS1																								
	3-phase 200 V class	VFAS1--	2004PL	2007PL	2015PL	2022PL	2037PL	2055PL	2075PL	2110PM	2150PM	2185PM	2220PM	2300PM	2370PM	2450PM	2550P	2750P	—	—	—	—	—	—	—	—	—	—
	3-phase 400 V class	VFAS1-	–	4007PL	4015PL	4022PL	4037PL	4055PL	4075PL	4110PL	4150PL	4185PL	4220PL	4300PL	4370PL	4450PL	4550PL	4750PL	4900PC	4110KPC	4132KPC	4160KPC	4200KPC	4220KPC	4280KPC	4355KPC	4400KPC	4500KPC
Rating	Capacity (KVA))		1.1	1.8	3.0/3.1	4.2/4.4	6.7/8.0	10/11	13	21	25	29/31	34/37	46/50	55/60	67/72	84/88	109/122	136	164	197	239	295	325	419	511	578	717
	Output current (A)	3-phase 200 V class	3	4.8	8	11	17.5	27.5	33	54	66	75	88	120	144	176	221	285	—	—	—	—	—	—	—	—	—	—
		3-phase 400 V class	—	2.3	4.1	5.8	10.5	14.3	17.6	27.7	33	41	48	66	79	94	116	160	179	215	259	314	387	427	550	671	759	941
Power Supply	Voltage/frequency		200 V class: 3-phase 200 to 240 V, 50/60 Hz, 400 V class: 3-phase 380 to 480 V, 50/60 Hz																								
	Tolerance		Voltage +10%, -15% (±10% during continuous 100% load) Frequency ±5%																								
Rated output voltage			200V class : 3 phase 200 to 240V , 400V class : 3 phase 380 to 480V (The maximum output voltage is same as the input source voltage.)																								
Output frequency range			0.01 to 500 Hz (Default setting 0.01 to 80.0 Hz),For 0.4 to 37kW,1000Hz is possible with special modifications																								
Overload current rating			150%-60 seconds, 165%-2 seconds (Anti-time limit characteristic)																								
Dynamic breaking circuit			0.4 to 160 kW: built-in dynamic breaking circuit, 200 kW or more: External option																								
Dynamic breaking resistor			External option																								
Main functions			Parameter setup quick mode, learning function, programmable I/O terminal block, multi-PID control, hoisting function, break sequence function, My function																								
Ambient temperature/Relative humidity			-10 to 60°C (current decreases when over 50°C)/5 to 95% (no condensation or steam allowed)																								
Protective method			200 V class 0.4 to 45 kW, 400 class 0.75 to 75 kW: IP20, 200 V class 55 to 75 kW, 400 class 90 to 500 kW IP00																								
Cooling method			Forced air cooling																								
Built-in filter			200 V class 0.4 to 1.5 kW, 400 V class 0.75 to 4.0 kW: EN55011 class A, EN61800-3 category C2 compliant (built-in EMI noise filter) 200 V class 2.2 to 7.5 kW, 400 V class 5.5 to 500 kW: EN55011 class A, EN61800-3 category C3 compliant (built-in EMI noise filter) 200 V class 11 to 45 kW: basic noise filter																								
Built-in reactor			200 V class 11 to 45 kW, 400V class 18.5 to 75 kW: Built-in DC reactor 200 V class 55 to 75 kW, 400V class 90 to 500 kW: Attached DC reactor																								

■Exterior dimensions and weight

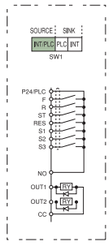
Input voltage Class	Applicable motor (kW)	Inverter model	Dimensions (mm) Note 1			Approximate Weight (kg) Note 1
			Width	Height	Depth	
3-phase 200 V	0.4	VFAS1-2004PL	130	230	152	3
	0.75	VFAS1-2007PL	130	230	152	3
	1.5	VFAS1-2015PL	130	230	152	3
	2.2	VFAS1-2022PL	155	260	164	4
	4.0	VFAS1-2037PL	155	260	164	4
	5.5	VFAS1-2055PL	175	295	164	5.5
	7.5	VFAS1-2075PL	210	295	191	7
	11	VFAS1-2110PM	230	400	191	9
	15	VFAS1-2150PM	230	400	191	9
	18.5	VFAS1-2185PM	240	420	212	30
	22	VFAS1-2220PM	240	420	212	30
	30	VFAS1-2300PM	320	550	242	37
	37	VFAS1-2370PM	320	550	242	37
	45	VFAS1-2450PM	320	550	242	37
	55	VFAS1-2550P	310(320)	680(920)	370	59(91)
	75	VFAS1-2750P	350(360)	782(1022)	370	72(106)
3-phase 400 V	0.75	VFAS1-4007PL	130	230	152	3
	1.5	VFAS1-4015PL	130	230	152	3
	2.2	VFAS1-4022PL	130	230	152	3
	4.0	VFAS1-4037PL	155	260	164	4
	5.5	VFAS1-4055PL	175	295	164	5.5
	7.5	VFAS1-4075PL	175	295	164	5.5
	11	VFAS1-4110PL	210	295	191	7
	15	VFAS1-4150PL	230	400	191	9
	18.5	VFAS1-4185PL	230	400	191	9
	22	VFAS1-4220PL	240	420	212	19
	30	VFAS1-4300PL	240	550	242	26
	37	VFAS1-4370PL	240	550	242	26
	45	VFAS1-4450PL	320	630	290	44
	55	VFAS1-4550PL	320	630	290	44
	75	VFAS1-4750PL	320	630	290	44
	90	VFAS1-4900PC	310(320)	680(920)	370	60(92)
	110	VFAS1-4110KPC	350(360)	782(1022)	370	74(108)
	132	VFAS1-4132KPC	330(340)	950(1190)	370	80(116)
	160	VFAS1-4160KPC	430(440)	950(1190)	370	110(164)
	200	VFAS1-4200KPC	585(595)	950(1190)	370	140(199)
	220	VFAS1-4220KPC	585(595)	950(1190)	370	140(207)
	280	VFAS1-4280KPC	585(595)	950(1190)	370	140(207)
	355	VFAS1-4355KPC	880(890)	1150(1390)	370	225(314)
	400	VFAS1-4400KPC	880(890)	1150(1390)	370	225(337)
	500	VFAS1-4500KPC	1110(1120)	1150(1390)	370	300(433)

Note 1: Value in ( ) includes attached DC reactor

■Standard connection diagram : Sink logic (common : CC)



■Standard connection diagram : Source logic (common : P24)



To users of our inverters : Our inverters are designed to control the speeds of three-phase induction motors for general industry.

⚠ Precautions

* Read the instruction manual before installing or operating the inverter unit and store it in a safe place for reference.
* When using our inverters for equipment such as nuclear power control, aviation and space flight control, traffic, and safety, and there is a risk that any failure or malfunction of the inverter could directly endanger human life or cause injury, please contact our headquarters, branch, or office printed on the front and back covers of this catalogue. Special precautions must be taken and such applications must be studied carefully.
* When using our inverters for critical equipment, even though the inverters are manufactured under strict quality control always fit your equipment with safety devices to prevent serious accident or loss should the inverter fail (such as issuing an inverter failure signal).
* Do not use our inverters for any load other than three-phase induction motors.
* None of Toshiba, its subsidiaries, affiliates or agents, shall be liable for any physical damages, including, without limitation, malfunction, anomaly, breakdown or any other problem that may occur to any apparatus in which the Toshiba inverter is incorporated or to any equipment that is used in combination with the Toshiba inverter. Nor shall Toshiba, its subsidiaries, affiliates or agents be liable for any compensatory damages resulting from such utilization, including compensation for special, indirect, incidental, consequential, punitive or exemplary damages, or for loss of profit, income or data, even if the user has been advised or apprised of the likelihood of the occurrence of such loss or damages.

For further information, please contact your nearest Toshiba Representative or International Operations-Producer Goods.
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TOSHIBA

Transistor Inverter

Flexible for you

I need the most suitable inverter for my application, which has low noise, low harmonics, minimal parameter setting, high torque and control. We meet all your requirements with VF-AS1. It has outstanding performance, including high torque, fast response, high accuracy and excellent environmental compatibility with easy operation. The VF-AS1 is an advanced inverter evolved to satisfy all your needs in one comprehensive product.

High-performance Inverter **TOSVERT™**

VF-AS1

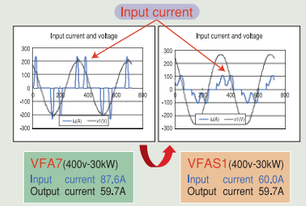
Voltage Class	Applicable Motor Output (kW)																								
	0.4	0.75	1.5	2.2	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	220	280	355	400	500
3-phase 200 V																									
3-phase 400 V																									

Up to 5.5kW,3-phase 200V class can be applied to 1-phase input power supply by using 1 size-up rating.

For your electronic products that might interfere with peripheral devices!

The integrated noise filter*1 and reactor*2 drastically reduce high-frequency noise and harmonics generated by the inverter to improve the power factor.
This makes the inverter ideal for your electronic applications such as washing machines, treadmill, showcase refrigerators for stores, medical equipment, and stage equipment where attention must be paid to peripheral devices.

The effect of built-in reactor



For simple machinery with only a few parameters setting!

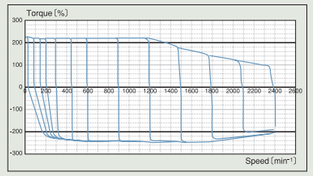
In the Quick mode, pressing the EASY key displays only eight basic parameters, thus facilitating parameter selection and setup.
In addition, you can customize and display maximum of 32 target from all kinds of parameters to suit your specific setup requirements.
This makes the inverter ideal for simple operations such as drilling machines, handling machines, conveyors, semiconductor production equipment, cutting machines, and woodworking machinery.

Quick mode (EASY)	
Title	Function
AU4	Parameter setting macro function
Pt	V/F control mode selection
FH	Maximum frequency
ACC	Accelertion time 1
dEC	Deceleration time 1
tHr	Motor overload protection level 1
FM	FM terminal meter selection
PSEL	Parameter display selection

For machinery that requires high torque and a large capacity!

This inverter accelerates instantly from low speeds at a starting torque of 0.3 Hz - 200%*3
Excellent performance of the regenerative mode as well as that of the motoring mode has been achieved by applying the smart vector control technology developed by Toshiba originally.
Wide capacity range up to 500 kW for a 400 V class inverter.
This makes it ideals for cranes, mining machinery, refrigerator, presses, compressers, crushing machine and other machinery that require a high torque and large capacity.

Outstanding torque characteristics



For system devices requiring flexibility!

The My function allows you to program logic operations and internal data operations as you desire so that you can customize the inverter to match your system or machine.
This also achieves high-precision, high-speed torque control with or without sensors.
RS485 (TOSHIBA/Modbus protocol) communications is equipped as standard, and DeviceNet*4, Profibus, and CC-Link fieldbuses are also supported as options.
The PCM001Z communications software allows you to edit, monitor, and trace parameter data on a PC easily.
This makes the inverter ideal for paper and film lines, printing machines, presses, coilers/uncoilers and other systems that require flexibility.

Complies with major world standards (CE marking, UL, CSA)

ISO 9001:
This inverter series is manufactured at the works, which has received the international quality assurance standard ISO 9001 certification.

The works producing this inverter series is registered as an environment management system factory specified by ISO 14001.

*1. 200 V class models, 0.4 to 7.5 kW : EMI noise filter (complies with the European EMC Directive) built-in standard.
200 V class models, 11 to 45 kW : Basic noise filter (not complies with the European EMC Directive) built-in standard.
400 V class models, 0.75 to 75 kW: EMI noise filter (complies with the European EMC Directive) built-in standard.
400 V class models, 90 to 500 kW : EMI noise filter (complies with the European EMC Directive) built-in standard.
*2. 200 V class models, 11 to 45 kW : DC reactor built-in standard
55 to 75 kW : DC reactor attached.
400 V class models, 18.5 to 75 kW: DC reactor built-in standard
90 to 500 kW : DC reactor attached.
*3 When a TOSHIBA standard 3-phase, 200 V - 2.2 kW 4-pole motor is driven,
(Specifications may differ according to voltage and model.)
*4 DeviceNet is a registered trademarks of ODVA (Open DeviceNet Vendor Association).
*5. Photos of machinery are for illustrative purposes only.