

Specifications

Common specifications

Model number VZA□		Specifications
Control functions	Control methods	Sine wave PWM (V/f control, sensorless current vector control)
	Output frequency range	0.1..400 Hz
	Frequency tolerance	Digital set value: ±0.01% (-10..+50 °C)
		Analogue set value: ±0.1% (25 ±10 °C)
	Resolution of frequency set value	Digital set value: 0.01 Hz (<100 Hz), 0.1 Hz (>100 Hz)
		Analogue set value: 1/1000 of maximum frequency
	Resolution of output frequency	0.01 Hz
	Overload capability	Heavy duty use: 150% rated output current for one minute Normal duty use: 120% rated output current for one minute
	Frequency set value	0..10 V (20 kΩ), 4..20 mA (250 Ω), 0..20 mA (250 Ω) Pulse train input, frequency setting value (selectable)
	Braking torque (short term peak torque)	Short-term average deceleration torque: 150% (up 1.5 kW), 100% (for 1.5 kW), 50% (for 2.2 kW), 20% (for bigger size) Continuous regenerative torque: Approx 20% (125% with optional braking resistor, 10%ED, 10 s, braking transistor built in)
V/f Characteristics	Possible to program any V/f pattern	
Functionality	Inputs signals	Seven of the following input signals are selectable: Forward/reverse run (3-wire sequence), fault reset, external fault (NO/NC contact input), multi-step speed operation, Jog command, accel/decel time select, external baseblock, speed search command, UP/DOWN command, accel/decel hold command, LOCAL/REMOTE selection, communication/control circuit terminal selection, emergency stop fault, emergency stop alarm, self test
	Output signals	Following output signals are selectable (NO/NC contact output, 2 photo-coupler outputs): Fault, running, zero speed, speed agree, frequency detection (output frequency ≤ = ≥ set value), during overtorque detection, minor error, during baseblock, operation mode, inverter run ready, during fault retry, during undervoltage detection, reverse running, during speed search, data output through communication.
	Standard functions	Open-loop vector control, full-range automatic torque boost, slip compensation, 17-step speed operation (max.), restart after momentary power loss, DC injection braking current at stop/start (50% of inverter rated current, 0.5 sec, or less), frequency reference bias/gain, MEMOBUS communications (RS-485/422, max. 115K bps), fault retry, speed search, frequency upper/lower limit setting, overtorque detection, frequency jump, accel/decel time switch, accel/decel prohibited, S-curve accel/decel, PID control, energy-saving control, constant copy.
	Analogue inputs	2 analogue inputs, 0..10 V, 4..20 mA, 0..20 mA
	Braking/acceleration times	0.01..6000 s
	Display	Optionally frequency, current or set value Error and status LED
Protection functions	Motor overload protection	Electronic thermal overload relay
	Instantaneous overcurrent	Motor coasts to a stop at approx. 250% of inverter rated current
	Overload	Heavy Duty: Motor coasts to a stop after 1 minute at 150% of inverter rated output current Normal Duty: Motor coasts to a stop after 1 minute at 120% of inverter rated output current
	Overvoltage	Motor coasts to a stop if DC bus voltage exceed 410 V (double for 400 V class)
	Undervoltage	Stops when DC bus voltage is approx. 190 V or less (double for 400 V class) (approx. 150 V or less for single-phase series)
	Momentary power loss	Following items are selectable: not provided (stop if power loss is 15 ms or longer), continuous operation if power loss is approx. 0.5 s or shorter, continuous operation
	Cooling fin overheat	Protected by thermistor
	Stall prevention level	Stall prevention during acceleration/deceleration and constant speed operation
	Ground fault	Protected by electronic circuit (operation level is approx. 250% of rated output current)
Power charge indication	Indicates until the main circuit voltage reaches 50 V.	
Ambient conditions	Degree of protection	IP20, NEMA1
	Cooling	Cooling fan is provided for 200 V, 0.75 kW (1HP) (3/single-phase) 400 V, 1.5 kW (2HP) (3-phase), others are self-cooling
	Ambient humidity	95% RH or less (without condensation)
	Storage temperature	-20 °C..+60 °C (short-term temperature during transportation)
	Installation	Indoor (no corrosive gas, dust, etc.)
	Installation height	Max. 1000 m
Vibration	Up to 9.8 m/s ² at 10 to less than 20 Hz, Up to 6.37 m/s ² at 20 to 50 Hz	

Dimensions

IP20 type

Figure 1

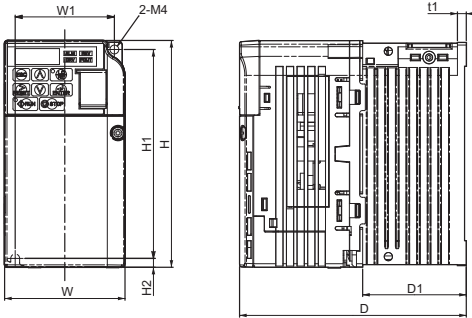
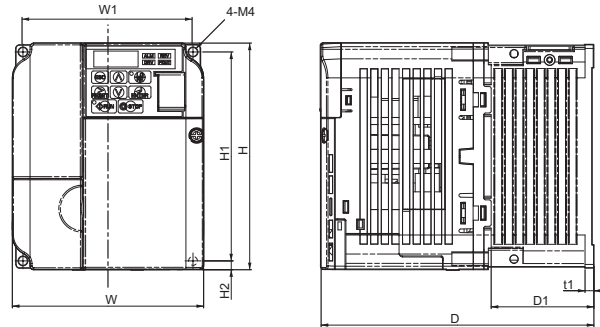


Figure 2



Voltage class	Max. applicable motor output kW	Inverter model VZA□	Figure	Dimensions in mm										Weight kg			
				W1	H1	W	H	D	t1	H2	D1	H3	H4				
Single-phase 200 V	0.12	B0P1	1	56	118	68	128	76	3	5	6.5	-	-	0.6			
	0.25	B0P2						108			38.5			0.7			
	0.55	B0P4						137.5			58			1.0			
	1.1	B0P7	2	96	108	140	154	5	163	65	-	-	1.7				
	1.5	B1P5											170	180	2.4		
	2.2	B2P2											180	180	3.0		
Three-phase 200 V	0.12	20P1	1	56	118	68	128	76	3	5	6.5	-	-	0.6			
	0.25	20P2						108			38.5			0.6			
	0.55	20P4						128			58			0.9			
	1.1	20P7	2	96	108	140	129	5	137.5	65	-	-	1.1				
	1.5	21P5											143	58	1.3		
	2.2	22P2											143	65	1.4		
	4.0	24P0	3	128	140	254	140	-	6	55	13	6.2	2.1				
	5.5	25P5											7	78	15	3.8	
	7.5	27P5											8	75	15	3.8	
	11	2011	3	192	336	220	358	187	-	7	78	15	7.2	9.2			
	15	2015												15	6	3.8	
														15	6	5.5	
Three-phase 400 V	0.37	40P2	2	96	118	108	128	81	5	5	10	-	-	0.8			
	0.55	40P4						99			28			1.0			
	1.1	40P7						137.5			58			1.4			
	1.5	41P5	2	128	140	143	143	5	65	-	-	-	-	1.5			
	2.2	42P2												143	65	1.5	
	3.0	43P0												143	65	1.5	
	4.0	44P0	3	128	140	254	140	-	6	55	13	6	6.2	2.1			
	5.5	45P5												8	75	15	3.8
	7.5	47P5												8	75	15	3.8
	11	4011	3	160	284	180	290	143	-	8	75	15	6	5.2			
	15	4015												163	6	5.5	
														163	6	5.5	

V1000 + Option board (Communication and 24 VDC power supply)

