

[ Standard Specifications for VZ7000 Drives ]

Models of Drive			UVZ										
			7007	7022	7055	701A	701E	702B	703Z	704E	706Z		
Input	Power circuit (Note 1)		DC 460-750V										
	Power for control circuit		AC 85-264V single phase, or DC 120-370V/0.7-1.4A										
Output	Standard Type	Rated current	Arms	22	56	140	265	336	530	672	1008	1344	
		Max. current (1 min.)	Arms	33	84	210	398	504	795	1008	1512	2016	
		Max. current (3 seconds)	Arms	44	112	280	530	672	1060	1344	2016	2688	
	Low Noise Type	Carrier frequency	KHz	4									
		Rated current	Arms	15.4	39.2	98	185.5	235.2	371	470	706	941	
		Max. current (1 min.)	Arms	23.1	58.8	147	278	353	557	706	1058	1411	
		Max. current (3 seconds)	Arms	30.8	78.4	196	371	490.4	742	940	1412	1882	
Carrier frequency	KHz	8											
Control method		—	All digital vector control with sine wave PWM method using IPM.										
Speed control	Speed control range		—	1:2000 (analog reference), 1:8000 (digital reference)									
	Speed variation	Load variation	%	±0.0125 (load: 0-100%)									
		Input voltage variation	%	±0.0125									
		Ambient temperature variation	%	±0.1 (analog reference), and ±0.0125 (digital reference)									
	Speed control response		rad/sec	1256									
Acceleration and deceleration functions		—	0.01-120 seconds linear acceleration and deceleration, S-shaped acceleration and deceleration										
Control signals	Reference input	—	Three input for analog reference (DC 0to ±5V max, input resistance: 10K ohms)										
	Monitor output	—	Two output for analog monitor (DC 0to ±5V max, output resistance: 940 ohms)										
	Sequence input	—	Eight input for contact signals (DC 12-24V, input resistance: 2.2K ohms)										
	Sequence output	—	Four output for contact signals (DC 12-24V, 50mA)										
	Encoder input	KHz	200										
Motor temperature sensor		—	NTC thermistor B constant 3570 (at 100 degree C, 3K ohms)										
Communication functions		—	IEC61491 , EN61491 SERCOS interface. Selectable 2, 4, 8, and 16 Mbps. Various references, Sequence signals, Monitor, Error data or the like										
		—	RS232C (Modbus protocol), Selectable 9600 and 19200 bps. Various references, Sequence signals, Monitor, Error data or the like										
Countermeasures for instantaneous power failure		—											
Protection functions		—	Protection for overcurrent, overload, overspeed, low voltage, overheated drives, overheated motors, abnormal encoders, errors on communication circuits, and ground fault. (Note 2)										
Cooling method		—	Forced air cooling (use DC brushless motor fan)										
Environment	Operation site		—	Inside the control cabinet (no existence for oil mist, metallic powders, dusts, foreign floating particles, corrosive gas, flammable gas, or any unsafe gas)									
	Ambient temperature	degC	Normal use: -10 to +55, Storage: -40 to +65										
	Ambient humidity	%	5-95 (No condensation)										
	Elevation	meter	1000 meters or lower										
	Vibration-resistant property	G	1 G or less at 25 Hz										
Shock-resistant property		G	2G or less										

Note 1: The drives do not detect any abnormality within this input voltage range. If this input voltage is too low, derating adjustment may be necessary for drive capacity.

Note 2: The external ground fault detecting element should be connected, and original power source for AC input should be grounded too..

⚠ Attention for safer handling and operation of the drives: Please read the instruction manuals for the drives prior to their operation.



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VZ7000 DIGITAL AC SERVO DRIVE

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400V Class: 1.5-600kW

200V Class: 0.75-300kW



UL/cUL/CE



# VZ 7000 DIGITAL AC SERVO DRIVE

## VZ7000 series digital AC servo drives at the highest level in the drive industry

The VZ7000 series drives having know-how and experience built up with the production of our VZ3000/BL3000 series servo drives are digital AC servo drives with the highest level of the latest technology in the drive industry. The VZ7000 series drives provide the most suitable solution for servo application and multi-axes synchronous application.



### Features for VZ7000 Digital AC Servo Drive

#### Wide Range of power

Applicable to a wide range of motor power from 1.5 kW to 600 kW.

#### High speed/High accuracy

Realize high speed frequency response of 1256 rad/sec or more by using high speed DSP and also improve stability at low speed by using high resolution encoders (1,000,000 pulses/rev).

#### Applicable to high speed synchronous communication

Perform high speed synchronous communication between the digital servo drive and the servo controller by using the SERCOS communication which conforms to the international standard IEC/EN61491 for digital communication.

#### Miniaturization and Space-Saving

Shrink the volume (of the drive) into 70% of conventional drives. Realize space-saving for the mounting space by employing the zero-stacking structure (firmly sticking structure).

#### Safety design

Design pays special attention to protective functions of each power element, built-in DC bus fuses, and independence of the control power from the power circuit.

#### Independent power supply to control circuits

Power of the control circuits is independent from the power of the power circuit. Thus, setting of parameters and display of the monitor can be confirmed when shutting off the power of the power circuit.

#### Isolation for regulator sections

Isolate all of regulator sections from external input signals. Therefore, reduction of noise levels and safety for the regulator sections are much improved.

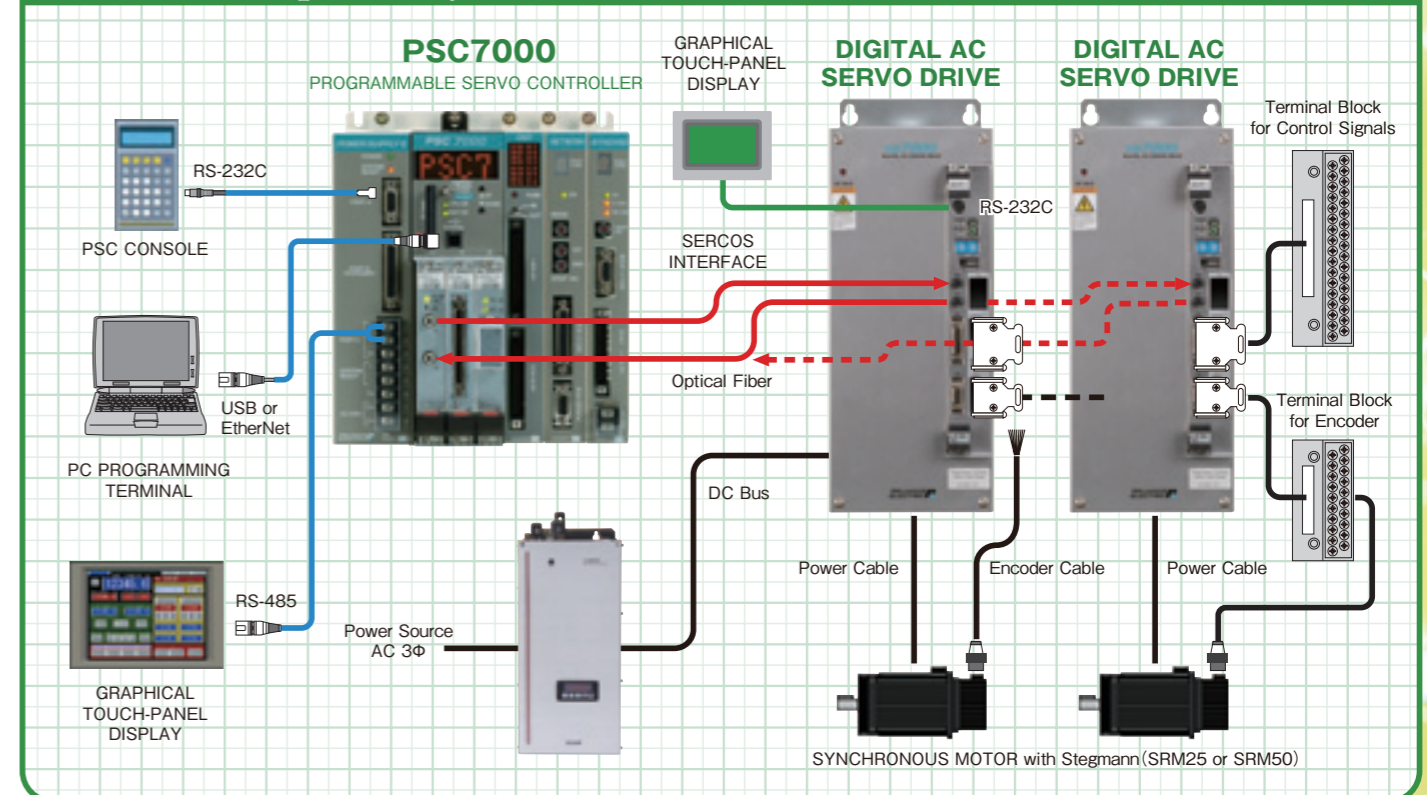
#### Numerous feedback options

Applicable to various feedback sensors such as high resolution encoders (1,000,000p/rev), serial absolute encoders, and incremental encoders.

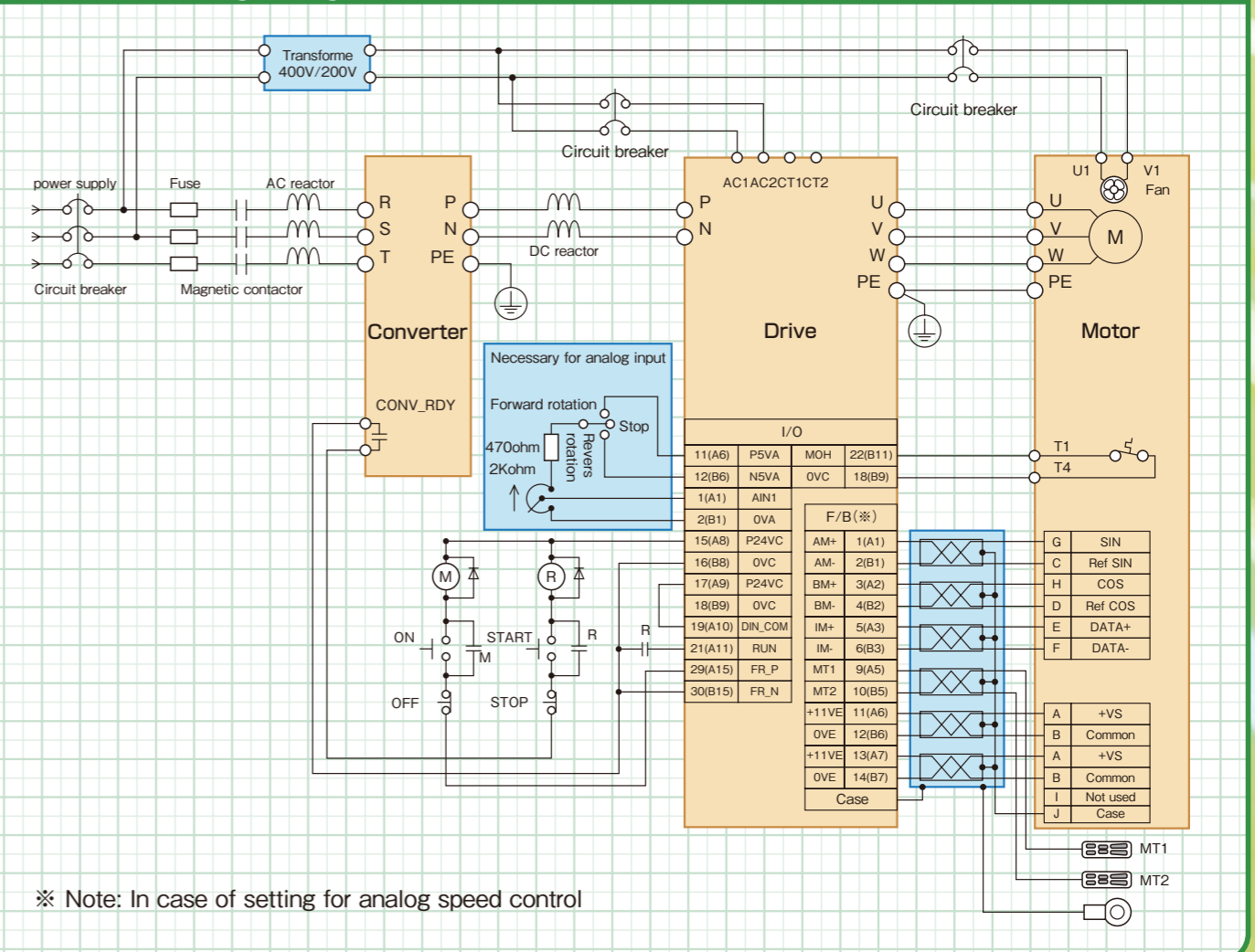
#### Applicable to various field networks

Applicable to DeviceNet, CC-Link, and ControlNet  
Applicable to overseas codes and standards  
Conform to UL, cUL, and CE codes as standard models

### One example of system formation



### Basic wiring diagram



※ Note: In case of setting for analog speed control