

Standard Specifications

200V class – 0P7L~045L

Item		Specifications													
System		200V series													
Type (VT240S-□□□□□)		0P7L	1P5L	2P2L	4P0L	5P5L	7P5L	011L	015L	018L	022L	030L	037L	045L	
Equipment rating	Normal duty	Rated capacity (kVA) (Note 1)	1.7	2.8	3.8	5.5	8.3	11	16	21	26	30	41	51	60
		Max. continuous rated current (A) (Note 2)	5.0	8.0	11	16	24	33	46	61	76	88	118	146	174
		Max. applicable motor (kW) (Note 3)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45
		Carrier frequency (Note 4)	1~15kHz (Default: Soft sound 4kHz)												
		Overload current rating	120% for 1min, 140% for 2.5s												
	Heavy duty	Rated capacity (kVA) (Note 1)	1.0	1.7	2.8	3.8	5.5	8.3	11	16	21	26	30	41	51
		Max. continuous rated current (A) (Note 2)	3.0	5.0	8.0	11	16	24	33	46	61	76	88	118	146
		Max. applicable motor (kW) (Note 3)	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37
		Carrier frequency (Note 4)	1~15kHz (Default: Soft sound 4kHz)												
		Overload current rating	150% for 1min, 175% for 2.5s												
Power supply	Rated input voltage / Frequency	200~240V±10% 50 or 60Hz±5%						200~230V±10% 50 or 60Hz±5%							
Output	Rated output voltage (Note 5)(Note 6)	200~240V (Max.)						200~230V (Max.)							
Main circuit option	Output frequency range	0.1~440Hz													
	EMI filter	Built-in (option)						External (option)							
	DC reactor	External (option)						Built-in (option)							
	Dynamic braking circuit	Built-in (standard)						External (option)							
	Dynamic braking resistor	Built-in (option)						External (option)							
Construction	Installation system	Wall-mounted (standard)						Wall-mounted (standard) Free-standing (option)							
	Protective enclosure	IP20						IP00 (standard), IP20 (option)							
	Cooling method	Self-cooled	Forced air cooling												
	Color of coating	Munsell N4.0													
Operating environment		Indoor, Operating ambient temperature: -10~50°C (Note 7), Relative humidity: 95% RH or less (no dew condensation), Altitude: 1000m or less, Vibration: 4.9m/s ² or less, Freedom from corrosive or explosive gases, steam, dust, oil mist, or cotton lint.													

400V class – 0P7H~055H

Item		Specifications															
System		400V Series															
Type (VT240S-□□□□□)		0P7H	1P5H	2P2H	4P0H	5P5H	7P5H	011H	015H	018HE	022HE	030HE	037HE	045H	055H		
Equipment rating	Normal duty	Rated capacity (kVA) (Note 1)	1.7	2.5	3.8	6.0	9.0	12	16	21	26	30	42	51	60	75	
		Max. continuous rated current (A) (Note 2)	2.5	3.6	5.5	8.6	13	17	23	31	37	44	60	73	87	108	
		Max. applicable motor (kW) (Note 3)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	
		Carrier frequency (Note 4)	1~15kHz (Default: Soft sound 4kHz)														
		Overload current rating	120% for 1min, 140% for 2.5s														
	Heavy duty	Rated capacity (kVA) (Note 1)	1.0	1.7	2.5	3.8	6.0	9.0	12	16	21	26	30	42	51	60	
		Max. continuous rated current (A) (Note 2)	1.5	2.5	3.6	5.5	8.6	13	17	23	31	37	44	60	73	87	
		Max. applicable motor (kW) (Note 3)	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
		Carrier frequency (Note 4)	1~15kHz (Default: Soft sound 4kHz)														
		Overload current rating	150% for 1min, 175% for 2.5s														
Power supply	Rated input voltage / Frequency	380~480V±10% 50 or 60Hz±5%															
Output	Rated output voltage (Note 5)(Note 6)	380~480V (Max.)															
Main circuit option	Output frequency range	0.1~440Hz															
	EMI filter	Built-in (option)										External (option)					
	DC reactor	External (option)										Built-in (option)					
	Dynamic braking circuit	Built-in (standard)										External (option)					
	Dynamic braking resistor	Built-in (option)										External (option)					
Construction	Installation system	Wall-mounted (standard)										Wall-mounted (standard) Free-standing (option)					
	Protective enclosure	IP20										IP00 (standard), IP20 (option)					
	Cooling method	Self-cooled	Forced air cooling														
	Color of coating	Munsell N4.0															
Operating environment		Indoor, Operating ambient temperature: -10~50°C (Note 7), Relative humidity: 95% RH or less (no dew condensation), Altitude: 1000m or less, Vibration: 4.9m/s ² or less, Freedom from corrosive or explosive gases, steam, dust, oil mist, or cotton lint.															

200V class – 055L~090L, 400V class – 075H~475H

Item		Specifications																		
System		200V Series						400V Series												
Type (VT240S-□□□□□)		055L	075L	090L	075H	090H	110H	132H	160H	200H	250H	315H	400H	475H						
Equipment rating	Normal duty	Rated capacity (kVA) (Note 1)	73	99	114	102	124	148	173	222	297	360	409	513	603					
		Max. continuous rated current (A) (Note 2)	211	286	328	147	179	214	249	321	428	519	590	740	870					
		Max. applicable motor (kW) (Note 3)	55	75	90	75	90	110	132	160	200	250	315	400	475					
		Carrier frequency (Note 4)	1~8kHz (Default: Soft sound 4kHz)																	
		Overload current rating	120% for 1min, 140% for 2.5s																	
	Heavy duty	Rated capacity (kVA) (Note 1)	60	73	99	75	102	124	148	173	222	297	360	409	513					
		Max. continuous rated current (A) (Note 2)	174	211	286	108	147	179	214	249	321	428	519	590	740					
		Max. applicable motor (kW) (Note 3)	45	55	75	55	75	90	110	132	160	200	250	315	400					
		Carrier frequency (Note 4)	1~8kHz (Default: Soft sound 4kHz)																	
		Overload current rating	150% for 1min, 175% for 2.5s																	
Power supply	Rated input voltage / Frequency	200~230V±10% 50 or 60Hz±5%						380~480V±10% 50 or 60Hz±5%												
Output	Rated output voltage (Note 5)(Note 6)	200~230V (Max.)						380~480V (Max.)												
Main circuit option	Output frequency range	0.1~440Hz																		
	EMI filter	External (option)																		
	DC reactor	Built-in (option)			External (option)	Built-in (option)						External (option)								
	Dynamic braking circuit	External (option)																		
	Dynamic braking resistor	External (option)																		
Construction	Installation system	Wall-mounted (standard), Free-standing (option)																		
	Protective enclosure	IP00 (standard), IP20 (optional)																		
	Cooling method	Forced air cooled																		
	Color of coating	Munsell N4.0																		
Operating environment		Indoor, Operating ambient temperature: -10~50°C, Relative humidity: 95% RH or less (no dew condensation), Altitude: 1000m or less, Vibration: 4.9m/s ² or less, Freedom from corrosive or explosive gases, steam, dust, oil mist, or cotton lint.																		

Notes:

- The rated capacity (kVA) is the capacity output when the output voltage is 200V for the 200V class and 400V for the 400V class.
- Total rms values inclusive of harmonics are indicated here.
- Values are applicable to Meiden standard 4-pole square cage-rotor type induction motors.
- When a standard overload is set and the unit operation exceeds 4kHz, or when a heavy overload is set and the unit operation exceeds the values specified below, it is necessary to reduce the maximum continuous rated current.
 - 0P7L~011L / 0P7H~011H 10kHz · 015L~018L / 015H~030H 8kHz
 - 022L~030L / 037H~045H 6kHz · 037L~090L / 055H~475H 4kHz
- No output voltage is obtainable exceeding the input voltage. (The upper limit of rms output voltage is DC voltage/1.37.)
- For sensorless vector control mode, vector control with sensor, PM control with sensor and sensorless PM control mode, the rated output voltages are specified below.
 - 200V class: 160V/ 180V/ 190V for the input voltages of 200V/ 220V/ 240V, respectively.
 - 400V class: 300V/ 320V/ 360V/ 380V for the input voltages of 380V/ 400V/ 440V/ 480V, respectively.
- Derating may be required for the types below if the ambient temperature exceeds 40°C with the standard overload setting. Please inquire.
 - 5P5L, 011L, 5P5H (with noise filter), 015H

VT240S—2P2H B F 2 10N X

Input voltage and applicable motor capacity.

Main-circuit Option 1.

A: Standard (no options, 200Vclass, 400Vclass: 5P5H and below, 045H)

B: With a dynamic braking resistor.
(200V class: 011L and below, 400V class: 5P5H and below)

D: DC input

E: Standard 2 (no options, 400Vclass: 7P5H~037H)

V: Standard 2; with dynamic braking resistance (400Vclass: 7P5H~015H)

Main-circuit Option 2.

O: Standard (no options)

F: With a built-in EMI filter.
(200V class: 5P5L and below, 400V class: 030H and below)

R: With DC reactors.
(200V class: 022L~075L, 400V class: 045H~132H)

Indicates the STO identifier.
X: without STO
Y: with STO

An optional control printed-circuit board.
For more details, refer to the relevant page (P17) on optional printed-circuit boards.
[000] if no optional PCB are attached.

Operation panel selection.

0: Nil

1: Multi-language LCD type

2: LED type

3: Chinese-language LCD type (V24-OP3)

4: High-resolution LCD type (V24-OP1A)

Control Specifications

	V/f control (Constant torque, reduced torque)	Sensorless vector control	Vector control with sensor (Note 1)	PM motor control with sensor (Note 2)	Sensorless PM motor control (Note 4)		
Frequency control	Control method	All digital control Sine wave approximation PWM					
	Carrier frequency	Mono-sound mode: 1~15kHz (0.1kHz increments) Soft sound mode: Average frequency 2.1~5.0kHz Frequency modulation method (3 tone modulation, 4 tone modulation)			In mono-sound mode (Selected from 4kHz, 6kHz, 8kHz)		
	Output frequency resolution	0.01Hz					
	Frequency setting resolution	0.01Hz (digital) 0.03% (analog) in respect to maximum frequency					
	Frequency accuracy	±0.01% (digital) at 25±10°C ±0.1% (analog) at 25±10°C					
Control specifications	Voltage / frequency characteristics	Any setting in 3~440Hz range V/f point setting possible among 5 points	Any setting in the range of 150~9999min ⁻¹ (Max. 180Hz)	Any setting in the range of 150~9999min ⁻¹ (Max. 210Hz)	Any setting in 3~200Hz range		
	Torque boost	Manual auto-select enabled	—				
	Max. torque boost	Max. torque output of applied motor is generated by automatic tuning	—				
	Automatic tuning	Automatic measurement of motor constants Automatic measurement of various parameters Basic method, which does not rotate motor and extended method, which rotates motor are available.		Encoder phase adjustment Detection of magnetic pole position	Automatic measurement of motor constants (with revolutions)		
	Starting frequency	Setting enabled in 0.1~60.0Hz					
	Starting torque	200% and above (Note 3) ·Meiden standard motor applied ·At 150% of rated current ·Reach time: Approx. 3s	—		About 50% ·When PM motor for Meiden sensorless control is applied ·At 150% of rated current		
	Acceleration / Deceleration time	0.01~60,000s Acceleration / deceleration time × 2, Inching only × 1, Program ramp × 8			0.5~60000.0s Acceleration / deceleration time × 2, Inching only × 1, Program ramp × 8		
	Acceleration / Deceleration mode	Linear / Character S selection					
	Operation method	3-mode selection enabled ·Forward run / Reverse run ·Run stop / Forward run/Reverse run ·Forward run pulse / Reverse run pulse / Stop					
	Stop method	Deceleration stop and coast to stop : selective in respect to run, emergency stop and inching.					
	DC braking	Braking start frequency: Arbitrary setting in 0.1~60.0Hz Braking voltage: Arbitrary setting in 0.1~20.0Hz	Braking start speed: Arbitrary setting in 0.00~50.00% Braking current: Arbitrary setting in 50~150%			—	
		Braking time	Arbitrary setting in 0.0~20.0s				
	Output frequency	0.1~440Hz	0.1~180Hz	0.1~210Hz	0.1~200Hz		
ASR	Control range	—	1:100	1:1000	1:100	1:5	
	Constant output range	Up to 1:7 for simple ASR control (Note 1)	Up to 1:2	Up to 1:4	Up to 1:1.5		
	Control accuracy (At Fmax≥50Hz)	±0.01 for simple ASR control (Note 1)	±0.5%	±0.01%		±0.1%	
	Control response	—	5Hz	30Hz	—		

Notes

1. An optional printed circuit board is needed for speed detection.
2. The values are applicable to Meiden standard PM motors. An optional printed circuit board is needed for speed detection.
3. The values can change according to motor capacity, rated voltage, and rated frequency. Almost 150% when 45kW is exceeded.
4. This product is designed on the assumption that it is used for energy conservation of fans and pumps and that it is combined with PM motors for Meiden sensorless control. For more details, please inquire.

	V/f control (Constant torque, reduced torque)	Sensorless vector control	Vector control with sensor (Note 1)	PM motor control with sensor (Note 2)	Sensorless PM motor control (Note 4)	
Setup	Multi-stage frequency setting	8-stage, acceleration / deceleration changeable, 5-bit non-encode mode				
	Interlocked ratio setting	In remote setup mode: y = Ax + B + C y : result of computation x : computation input A : 0.000~±10.000 B : 0.00~±440.00Hz C : aux. Input With output upper/lower limits	In remote setup mode: y = Ax + B + C y : result of computation x : computation input A : 0.000~±10.000 B : 0~±9999min ⁻¹ C : aux. Input With output upper/lower limits		In remote setup mode: y = Ax + B + C y : result of computation x : computation input A : 0.000~±10.000 B : 0.00~±440.00Hz C : aux. Input With output upper/lower limits	
	Frequency jump	Setting enabled in 3 positions Width variable in 0.0 ~ 10Hz.	—		Setting enabled in 3 positions Width variable in 0.0 ~ 10Hz.	
	Slip compensation	Operation/non-operation selectable; Slip compensation gain: 0.0 ~ 20.0%	—			
	Auto-run function	10-step Auto-run function Sync / Async enabled				
Interruptive PLC function	Arithmetic and logic calculations, large-small comparison, LPF computation, etc. are enabled for sequence and analog I/O. Program capacity: 16 commands × 20 banks Max., Computing period: 2ms/bank					
Others	Safe torque off (STO) Motor overheating protection PID control Pickup Auto-start Momentary sag restart	Reverse run stop Traverse pattern Momentary sag deceleration control Multi-pump Spinning frame	Pickup operation (including auto-start and momentary sag restart), traverse pattern, and spinning frame are prohibited.			
Control I/O	Operation panel	Local/remote changeover, local command for forward/reverse run, reference, update, and copying of all parameter options, and installation outside the unit (extension cable 3m Max. for optional) are possible.				
	LCD type	Display: 16 characters (8 Chinese characters) × 2 lines Status display LED: 4 points Operation: Operation with Knob + Set key				
	LED type	Display: 7-segment LED × 5 digits + Code Status:unit display LED: 7 points Operation: Operation with ▲▼ key + Set key				
	Sequence input	Programmable: 7 points Sink/Source changeable, One point out of seven and a pulse train input are used in common.				
Sequence output	Relay 1c contact: 1 point (programmable), relay 1a contact (programmable), open collector: 3 points (programmable), One point out of three and a pulse train output are used in common. Contents of programmable control are speed detection, spare charge end, reverse run, speed attained, local operation current attained, speed attained, acceleration/deceleration, error codes, etc. These are selectable.					
Frequency setting	Voltage input (0~10V/ 0~5V/ 1~5V) or current input (4~20mA/ 0~20mA): 2 points Voltage input (0~±10V/ 0~±5V/ 1~5V): 1 point (Used for interlocked ratio operation or PID feedback) Pulse train input (10kHz Max.): 1 point					
Meter output	Voltage output (0~10V) or current input (4~20mA): 2 points (programmable) Changeable to output frequency, output voltage, output current, DC voltage, and others. Pulse train output (10kHz Max.): 1 point Changeable to output frequency, motor speed, and others.					
Serial interface	Communication protocol: Modbus-RTU or VT240S Series leased communication (Meiden standard serial) Connection: RS485 2-wire system, Transmission distance: total accumulated distance 150m and less, Transmission system: Asynchronous half-duplex communication, Baud rate: Selected from 1200/2400/4800/9600/14400/19200/38400bps, No. of stations: 32 stations Max., Error detection: Sum check, parity, framing					
Protection	Precaution	Overcurrent limit (Current limit level changeable in 3 steps by a sequence input), overvoltage limit, undervoltage limit, overload prediction, auto-reduction of carrier frequency (selectable) in the case of overload (cooling fin overheating).				
	Tripping	Overcurrent, overvoltage, undervoltage, IGBT error, lack of phase (I/O), motor overload (operation level changeable), inverter overload, cooling fin temperature rise, ground fault, and others plus self-diagnosis				
	Fault history	Storage of 4 past records: Contents of storage: primary and secondary factors, output frequency, current, DC voltage shortly before tripping, M-detect fault, accumulated electrification time, accumulated operation time				
	Overload durability	Standard overload setting: 120% - 1min, 140% - 2.5s (reduced to 60% - 1 min during 1Hz to 0.1Hz) inverse time characteristic Heavy overload setting: 150% - 1min, 175% - 2.5s (reduced to 75% - 1 min during 1Hz to 0.1Hz) inverse time characteristic				
	Retry	Arbitrary setting of 0 ~ 10 times				