N300

Features

Powerful high torque using advanced sensorless vector control

- High starting torque 0f 200% at 0.5Hz

Powerful operation with advanced sensorless vector control

- High torque of 150% at approximately 0 Hz when applied to a smaller motor by one frame size

100% continuous torque operation within a 1:10 speed range on general-purpose motors

- Inverter motor is not necessary

Powerful operation is possible for two motors at the same time.

- Using sensorless vector control

Drastic reduction of rotational fluctuation at low speed

- More stable and precise operation is possible at low speed range

On-line , Off-line auto-tuning

- Auto-tuning to perform sensorless vector control can now be easily done both on-line and off-line

Various communication protocol

- Devicenet, Profibus(option)

Fan on, off selection

- The cooling fan operates while the inverter is running, and stops when the inverters stops

PID operation

- Helps simplify the system and save initial cost due to unnecessity of PI controller

Deceleration and stop at power failure

- Decelerates and stops the motor using regenerative energy from the motor even though the power is not supplied

P/ PI control selection

- Provides stable control for carrier or trolley operation

Selection and application of necessary functions only

- Programmed for user to select the functions only which he wants

Conformity to Global Standards

- CE marked for Europe

Specifications

200V Class

Item (N300)		055 LF	075 LF	110 LF	150 LF	185 LF	220 LF	300 LF	370 LF	450 LF	550 LF
Applicable Motor(kw)		5.5	7.5	11	15	18.5	22	30	37	45	55
Rated Output Current(A)		24	32	46	64	76	95	121	145	182	220
Rated Input Voltage(kVA)		8.3	11	15.9	22.1	26.3	32.9	41.9	50.2	63	76.2
Braking	Dynamic Braking	Built-in BRD circuit			External dynamic braking unit(option)						
	Minimum Value of Resistor(Ω)	17	17	17	-	-	-	-	-	-	-

Rated Output Current(A)	3-phase 200~240V(±10%) 50Hz/60Hz
Rated Output Voltage(V)	3-phase 200~240V(According to supply voltage)
Control Method	Line to line sine wave PWM
Output Frequency Range	0.1~400Hz
Frequency Accuracy	Digital ±0.01% of maximum frequency, analog ±0.2%(25℃ ±10℃)
Frequency Resolution	Digital setting "0.01Hz, analog setting "Maximum

			frequency/4000(O terminal:12bit/0~+10V, 02 terminal :12bit/-10~+10V)
V/F Characteristics			V/F free setting(30-400Hz of base frequency), Constant torque and reduced torque of V/F control, sensorless vector control
Speed Fluctuation			±0.5%(Sensorless vector control)
Overload Capacity			150%/60sec, 200%/0.5sec
Starting Torque			200%,0.5Hz(Sensorless vector control), 150% at around 0Hz(Sensorless vector control with a motor one size frame down)
DC Braking			Performs at start, under set frequency at deceleration, via an external input(braking force, time and operating frequency)
	Frequency Setting	Operator	Set by up(▲)key down(▼)key
		External Signal	DC 0~+10V, -10~+10V(Input impedance 10Kohm), 4~20mA(Input impedance 100ohm)
		External Port	Set by RS 485
	Forward/ Reverse Start/Stop	Operator	Run / Stop key(Change FW/RV by function command)
		External Signal	RW Run /Stop(NO contact), RV set by terminal assignment(NO/NC selection), 3-wire input possible
		External Port	Set by RS 485
Input Signals	Intelligent Input Terminals		Selection of 8 function from RV(Reverse), CF1-CF4(Multispeed command), JG(Jogging), DB(External DC braking), SET(Second motor constants setting), 2CH(Second accel./decel.), FRS(Free-run-stop), EXT(External trip), USP(Unattended start protection), CS(Change to/from commercial power supply), SFT(software lock), AT(analog input selection), SET3(Third motor constants setting), RS(Reset), STA(3-wire start), STP(s-wire stop), F/R(3-wire fwd./rev.), PID(PID on/off), PID(PID reset), CAS(Control gain setting), UP/DWN(Remote-controlled accel./decel), UDC(Remote-controlled data clearing), OPE(Operator control), SF1-SF7(Multispeed bit command 1-7), OLR(Overload limit change), TL(Torque limit change), TRQ1, TRQ2(Torque limit selection(1),(2)) PPI(P/PI selection), BOK(Brake verification), ORT(Orientation), LA(LAD cancel), PCLR(Positioning deviation reset), STAT(90-degree phase difference permission), NO(NOT selected)
	Thermistor Input		One terminal(PTC characteristics)
Output Signals	Intelligent Monitor Output Terminals		Analog voltage, Analog current, Pulse line output
	Intelligent Output Terminals		Five open collector terminals and one NO-NC combined contact. Selection from : Run(Run signal), FA1(Frequency arrival signal(at the set frequency)), FA2(Frequency arrival signal(at or above the set frequency)). OL(Overload advance notice signal), OD(Output deviation for PID control), AL(Alarm signal), FA3(Frequency arrival signal(only at the set frequency)), OTQ(Over-torque), IP(Instantaneous power failure signal), UV(Under-voltage signal), TRQ(In torque limit), RNT(Operation time over), ONT(Plug in time over), THM(Thermal alarm), BRK(Brake release), BER(Brake error), ZS(Zero speed), Frequency arrival signal (at or above the set frequency(2)), Frequency arrival signal(Only at the set frequency(2)), OL2(Overload advance notice signal(2)), (Terminal 11-13 or 11-14 are automatically configured as AC0-AC2 or AC0 - AC3 when alarm code output is selected at C62.)
Display Monitor			Output frequency, Output current, motor torque, Scaled value of output frequency, Trip history, I/O terminal condition, Input

		power, Output voltage
Other Functions		V/F free-setting(up to 5 points), Frequency upper/lower limit, Frequency jump, Accel./decel. curve selection, Manual torque boost value and frequency adjustment, Analog meter tuning start frequency setting, Carrier frequency setting, Electronic thermal free-setting, External frequency output zero/span reference, External frequency input via start/end, analog input selection, Retry after trip, Restart after instantaneous power failure, Various signal outputs, Reduced voltage start, Overload restriction, Default value setting, Deceleration and stop after power failure, AVR function, Fuzzy accel./decel., Auto-tuning(on-line/off line), High-torque multioperation
Carrier Frequency Range		0.5~15kHz
Protective Functions		Over current protection, Overload protection, Braking resistor overload protection, Over-voltage protection, EEPROM error
Environmental Conditions	Ambient Operating/ Storage Temperature	-10℃~50℃/ -20℃~60℃
	Vibration	5.9㎨(0.6G), 10~55Hz 2.94㎨(0.3G), 10~55Hz
	Location	Less than 1,000m of altitude, indoors(no corrosive gas nor dust)
Color		Grey/Munsell No 8.5 YR 6.2/0.2
Option	Feedback Option	Vector control with sensor
	Digital Input Option	4 Column, BCD, 16bit binary
Other Option		EMI filters, Input/output reactors, DC reactors, Radio noise filters, Braking unit, Braking resistor, LCR filter

400V Class

Item(N300)		055 HF	075 HF	110 HF	150 HF	185 HF	220 HF	300 HF	370 HF	450 HF	550 HF	750 HF	900 HF	1100 HF	1320 HF
Applicable Motor(kW)		5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132
Rated Output Current(A)		12	16	23	32	38	48	58	75	90	110	149	176	217	260
Rated Input Voltage(kVA)		8.3	11	15.9	22.1	26.3	33.2	40.1	51.9	62.3	76.2	103.2	121.9	150.3	180.1
Braking	Dynamic Braking	Built-in BRD circuit		External Dynamic Braking Unit(Option)											
	Minimum Value of Resistor (Ω)	0.85	0.6	0.4	-	-	-	-	-	-	-	-	-	-	-
Rated Output Current(A)		3-phase 380~480V(±10%) 50Hz/60Hz													
Rated Output Voltage(V)		3-phase 380~480V(±10%) 50Hz/60Hz (According to supply voltage)													
Control Method		Line to line sine wave PWM													
Output Frequency Range		0.1~400Hz													
Frequency Accuracy		Digital ±0.01% of maximum frequency, Analog ±0.2%(25℃±10℃)													
Frequency Resolution		Digital setting "0.01Hz, Analog setting "Maximum frequency/4000(O terminal:12bit/0~+10V, 02 terminal :12bit/-10~+10V)													
V/F Characteristics		V/F free setting(30-400Hz of base frequency), Constant torque and reduced torque of V/F control, sensorless vector control													
Speed		±0.5%(Sensorless vector control)													

Fluctuation			
Overload Capacity			150%/60sec, 200%/0.5sec
Starting Torque			180%,0.5Hz
DC Braking			Performs at start, under set frequency at deceleration, via an external input(braking force, time and operating frequency)
	Frequency Setting	Operator	Set by up(▲)key down(▼)key
		External Signal	DC 0~+10V, -10~+10V(Input impedance 10Kohm), 4~20mA(Input impedance 100ohm)
		External Port	RS 485
	Forward/ Reverse Start/ stop	Operator	Run / Stop key(Change FW/RV by function command)
		External Signal	RW RUN/STOP(NO contact), RV set by terminal assignment(NO/NC selection), 3-wire input possible
		External Port	Set by RS 485
Input Signals	Intelligent Input Terminals		Selection of 8 function from RV(Reverse), CF1-CF4(Multispeed command), JG(Jogging), DB(External DC braking), SET(Second motor constants setting), 2CH(Second accel./decel.), FRS(Free-run-stop), EXT(External trip), USP(Unattended start protection), CS(Change to/from commercial power supply), SFT(Software lock), AT(Analog input selection), SET3(Third motor constants setting), RS(Reset), STA(3-wire start), STP(S-wire stop), F/R(3-wire fwd./rev.), PID(PID on/off), PID(PIDreset), CAS(Control gain setting), UP/DWN(Remote-controlled accel./decel), UDC(Remote-controlled data clearing), OPE(Operator control), SF1-SF7(Multispeed bit command 1-7), OLR(Overload limit change), TL(Torque limit change), TRQ1, TRQ2(Torque limit selection(1),(2)) PPI(P/PI selection), BOK(Brake verification), ORT(Orientation), LA(LAD cancel), PCLR(Positioning deviation reset), STAT(90-degree phase difference permission), NO(NOT selected)
	Thermistor Input		One terminal(PTC characteristics)
	Intelligent Monitor Output Terminals		Analog voltage, Analog current, Pulse line output
Output Signals	Intelligent Output Terminals		Five open collector terminals and one NO-NC combined contact. Selection from : Run(Run signal), FA1(Frequency arrival signal(at the set frequency)), FA2(Frequency arrival signal(at or above the set frequency)). OL(Overload advance notice signal), OD(Output deviation for PID control), AL(Alarm signal), FA3(Frequency arrival signal(only at the set frequency)), OTQ(Over-torque), IP(Instantaneous power failure signal), UV(Under-voltage signal), TRQ(In torque limit), RNT(Operation time over), ONT(Plug in time over), THM(Thermal alarm), BRK(Brake release), BER(Brake error), ZS(Zero speed), Frequency arrival signal (at or above the set frequency(2)), Frequency arrival signal(Only at the set frequency(2)), OL2(Overload advance notice signal(2)), (Terminal 11-13 or 11-14 are automatically configured as AC0-AC2 or AC0 - AC3 when alarm code output is selected at C62.)
Display Monitor			Output frequency, Output current, Motor torque, Scaled value of output frequency, Trip history, I/O terminal condition, Input power, Output

		voltage
Other Functions		V/F free-setting(up to 5 points), Frequency upper/lower limit, Frequency jump, Accel./decel curve selection, Manual torque boost value and frequency adjustment, Analog meter tuning start frequency setting, Carrier frequency setting, Electronic thermal free-setting, External frequency output zero/span reference, External frequency input via start/end, analog input selection, Retry after trip, Restart after instantaneous power failure, Various signal outputs, Reduced voltage start, Overload restriction, Default value setting, Deceleration and stop after power failure, AVR function, Fuzzy accel./decel., Auto-tuning(on-line/off line), High-torque multioperation
Carrier Frequency Range		0.5~15kHz
Protective Functions		Over current protection, Overload protection, Braking resistor overload protection, Over-voltage protection, EEPROM error
Environmental Cconditions	Ambient Operating/ Storage Temperature	-10℃~50℃/ -20℃~60℃
	Vibration	2.94㎨(0.3G), 10~55Hz
	Location	Less than 1,000m of altitude, indoors(no corrosive gas nor dust)
Color		Grey/Munsell No 8.5 YR 6.2/0.2
Option	Feedback Option	Vector control with sensor
	Digital Input Option	4 COLUMN BCD, 16bit binary
Other Option		EMI filters, Input/output reactors, DC reactors, Radio noise filters, Braking unit, Braking resistor, LCR filter

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