

E280 Series General Vector AC Drive



E280 is developed on the basis of our E series AC drive which originally launched in 2004. Through field test of more than 1.2 million AC drives and continuous improvement and optimization of four generation products, stability and reliability has become the key character of our E series products.

Typical Applications

- Machine tool
- Textile machinery
- Cable machinery
- Petrochemical processing
- Construction
- Transmission



Features

- Strong torque at low frequency. 200% start torque at 0Hz under VC control, 180% start torque at 0Hz under SVC control.
- Standard 5-digit two-line LED panel display and LCD keypad optional.
- Intuitive real-time monitoring to know nearly hundred kinds of parameters, like usage of electricity, running time, input & output voltage and current, error record etc.
- Built-in several system macro and application macro, and it simplifies parameter setting by micro parameter calling.
- Hundreds of combinations of torque and revolution.
- Programmable 16-segment speed running, independent setting of running time, acceleration & deceleration time and moving direction of each segment.
- Flexible configuration of priorities of frequency or rotate speed setting channels.
- Software virtual I/O function with simple parameter setting, it configures virtual I/O flexibly that reduce external interference and simplify wiring.
- Abundant warning and protection functions.

Functions

Typical Function	Multi-step running	15 frequency / speed running, each running direction, time, acc or dec set independently. 7 process PID set (PID control function cancel or not)
	Built-in PID	Built-in PID controller, able to be used by external equipments.
	Awakening sleep	Built-in PID with simple sleep and awakening function
	MODBUS Communication	Standard MODBUS communication protocol (optional), flexible parameter read-write mapping function
	Dynamic Braking	Acting voltage: 650~760V, braking rate: 50~100%
	General Function	Reset after power stop, recovery with failure, motor parameter dynamic / static self-identification, start enable, running enable, start delay, over-current inhibit, over-voltage / low-voltage inhibit, V/F self-defined curve, analog input wave rectification, power-off test, textile machine disturbance (swing frequency) operation
	Communication Linkage Synchronization	It is easy to achieve synchronous drive for several equipments with free selection based on current, torque, power to reach linkage balance.
	Overload Dynamic Balance	It can achieve multi-equipments overload dynamic balance (not limit to communication linkage) to reach torque motor characteristics.
	Strong Start Torque	For the load with strong inertia, static friction, it can set super strong start torque for certain time.
	Setting Priority	User can select priority sequence for all kinds of frequency / rotate speed setting channels freely which is suitable for kinds of combined applications.
Setting Combination	Hundreds of setting combination of frequency, rotate speed, torque etc.	
Unique Function	Timer	Built-in 3 timers with 5 kinds of clock and 6 kinds of startup trigger modes Several door control signals and working modes, 7 output signals
	Counter	2 inner counter, 3 counting pulse edge selection, 6 start trigger modes, 7 output signals
	Macro Parameter	Application macro: Easy for setting and partial solidifying several usual parameter groups, simple parameter setting for general applications. System macro: Convenient for switching equipment's running mode (ex. Switching with high and low frequency running mode), Self-defined partial parameters
	Parameter Debugging	Adjust any non-stock parameters with one button stock or give up and recovery
Parameter Display	Shield non-use parameter modules automatically, or display revised, stock, changed parameters selectively.	
Protection Function	Running Protection	Over-current protection, over-voltage protection, short circuit protection, inverter over-heat protection, inverter overload protection, motor overload protection, output lack of phase protection
	Equip Abnormal	Current check abnormal, EEPROM storage abnormal, control unit abnormal, motor over-heat, temperature collection loop failure
	Motor Connection	Motor non-connection, motor 3 phase parameter unbalance, parameter identification wrong
	Extension Card	Test and protect extension card compatible or conflict

Specifications

Input and Output	Input Rated Voltage	3AC 380V ±20%;3AC 220V ±20%;		
	Input Frequency	50/60 Hz ±20%		
	Output Voltage	0 V ~ input rated voltage		
	Output Frequency	Low frequency running mode: 0.00~300.00Hz; High frequency running mode: 0.00~400.00Hz;		
	Digital Input	E280-4T0040 and below units (extension unable, optional): Standard built-in 5 digital input (DI) E280-4T0055 and above units (extension available): Standard built-in 6 digital input (DI) Extension to 9, one is for high-speed digital input (extension set optional)		
	Digital Output	E280-4T0040 and below units: Standard built-in 1 digital output (DO) E280-4T0055 and above units: Standard built-in 2 digital input (DO) Be able to extend 1 high-speed DO output (0~100kHz)		
	Pulse Input	0 ~ 100.0kHz pulse input. Connect NPN type OC output (optional)		
	Pulse Output	0 ~ 100.0kHz pulse NPN type OC output (optional)		
	Analog Input	E280-4T0040 and below units (extension unable, optional): Standard built-in: 0 ~ 10V voltage input (Ai1), 0 ~ 20mA current input (AI2); E280-4T0055 and above units (extension available): Standard built-in: 0 ~ 10V voltage input (Ai1), 0 ~ 20mA current input (AI2); Be able to extend 1 AI (-10V~10V dual polarity voltage input);		
	Analog Output	E280-4T0040 and below units (extension unable, optional): Standard built-in: 1 0 ~ 10V analog output signal (0 ~ 20mA current output mode optional) E280-4T0055 and above units (extension available): Standard built-in: 2 0 ~ 10V analog output signal (0 ~ 20mA current output mode optional)		
Contact Output	Standard one set AC 250V/1A normal open, normal contact, able to extend 1-6 sets normal open and normal close contact.			

Control Characteristics	Control Mode	Closed-loop Vector Control	Open-loop Vector Control	V/F Control
	Start Torque	0 Speed 200%	0 Speed 180%	0 Speed 100%
	Speed Adjustment Range	1:1000	1:200	1:100
	Stable Speed Accuracy	±0.02%	±0.02%	±0.5%
	Torque Control Accuracy	±1%	±5%	--
	Torque Responding Time	≤5ms	≤25ms	--
	Frequency Resolution	Low frequency running mode: 0.01Hz;High frequency running mode: 0.1Hz		
	Frequency Accuracy	Low frequency running mode: digital set—0.01Hz, analog set—highest frequency×0.1% High frequency running mode: digital set—0.1Hz, analog set—highest frequency×0.1%		
	Overload Capability	G type: 110%--long term; 150%--90s; 180%--2s; P type: 105%--long term;		
	Carrier Wave Frequency	Three phase voltage vector combined mode: 1.5~10.0kHz; Two phase voltage vector combined mode: 1.5~12.5kHz; (high frequency mode can be 15kHz)		
	Acc. And Dec. Time	0.01~600.00 Sec./0.01~600.00Min.		
	Magnetic Flow Braking	By increasing motor magnetic flow (30~120% available), motor can achieve fast decreasing braking.		
	DC Braking / Band Brake	Initial frequency of DC braking / bank brake: 0.0~upper frequency, braking / bank brake injecting current 0.0~100.0%		
	Start Frequency	0.0~50.0Hz		

Model Table

Voltage class	Model	Code	General load mode ([F0.15] =0)			Load mode for fan and water pump ([F0.15] =1)		
			Rated capacity (KVA)	Rated current (A)	Suitable motor (KW)	Rated capacity (KVA)	Rated current (A)	Suitable motor (KW)
Three phase 220V	E280-2T0022	000M580230022	3.8	10	2.2	--	--	--
	E280-2T0030	000M580230030	5.3	14	3	--	--	--
	E280-2T0040	000M580230040	6.5	17	4	--	--	--
	E280-2T0055	000M580230055	9.5	25	5.5	--	--	--
	E280-2T0075	000M580230075	12.6	33	7.5	--	--	--
	E280-2T0090	000M580230090	14.9	37	9	--	--	--
	E280-2T0110	000M580230110	17.5	46	11	--	--	--
	E280-2T0150	000M580230150	22.9	60	15	--	--	--
	E280-2T0185	000M580230185	28.6	75	18.5	--	--	--
	E280-2T0220	000M580230220	32.4	85	22	--	--	--
	E280-2T0300	000M580230300	41.9	110	30	--	--	--
	E280-2T0370	000M580230370	51.5	135	37	--	--	--
	E280-2T0450	000M580230450	64.8	170	45	--	--	--
	E280-2T0550	000M580230550	78.1	205	55	--	--	--
	E280-2T0750	000M580230750	101	265	75	--	--	--
E280-2T0900	000M580230900	122	320	90	--	--	--	
Three phase 380V	E280-4T0011G/4T0015P	000M580430011	2.0	3.0	1.1	2.4	3.7	1.5
	E280-4T0015G/4T0022P	000M580430015	2.4	3.7	1.5	3.6	5.5	2.2
	E280-4T0022G/4T0030P	000M580430022	3.6	5.5	2.2	4.9	7.5	3.0
	E280-4T0030G/4T0040P	000M580430030	4.9	7.5	3.0	6.3	9.5	4.0
	E280-4T0040G/4T0055P	000M580430040	6.3	9.5	4.0	8.6	13.0	5.5
	E280-4T0055G/4T0075P	000M580430055	8.6	13.0	5.5	11.2	17.0	7.5
	E280-4T0075G/4T0090P	000M580430075	11.2	17.0	7.5	13.8	21	9.0
	E280-4T0090G/4T0110P	000M580430090	13.8	21	9.0	16.5	25	11
	E280-4T0110G/4T0150P	000M580430110	16.5	25	11	21.7	32	15
	E280-4T0150G/4T0185P	000M580430150	21.7	32	15	25.7	37	18.5
	E280-4T0185G/4T0220P	000M580430185	25.7	37	18.5	29.6	45	22
	E280-4T0220G/4T0300P	000M580430220	29.6	45	22	39.5	60	30
	E280-4T0300G/4T0370P	000M580430300	39.5	60	30	49.4	75	37
	E280-4T0370G/4T0450P	000M580430370	49.4	75	37	62.5	95	45
	E280-4T0450G/4T0550P	000M580430450	62.5	95	45	75.7	115	55
	E280-4T0550G/4T0750P	000M580430550	75.7	115	55	98.7	150	75
	E280-4T0750G/4T0900P	000M580430750	98.7	150	75	116	176	90
	E280-4T0900G/4T1100P	000M580430900	116	176	90	138	210	110
	E280-4T1100G/4T1320P	000M580431100	138	210	110	171	260	132
	E280-4T1320G/4T1600P	000M580431320	171	260	132	204	310	160
	E280-4T1600G/4T1850P	000M580431600	204	310	160	237	360	185
	E280-4T1850G/4T2000P	000M580431850	237	360	185	253	385	200
	E280-4T2000G/4T2200P	000M580432000	253	385	200	276	420	220
	E280-4T2200G/4T2500P	000M580432200	276	420	220	313	475	250
E280-4T2500G/4T2800P	000M580432500	313	475	250	352	535	280	
E280-4T2800G/4T3150P	000M580432800	352	535	280	395	600	315	
E280-4T3150G/4T3500P	000M580433150	395	600	315	428	650	350	
E280-4T3500G/4T4000P	000M580433500	428	650	480	480	730	400	
E280-4T4000G/4T4500P	000M580434000	480	720	527	527	800	450	