



# E2100

## FREQUENCY INVERTER

0.2kW-400kW/0.3HP-540HP

cUL/UL Certification valid for 0.4kW-185kW/0.5HP-245HP

2 YEARS  
WARRANTY

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# E2100

0.2 kW - 400 kW / 0.3HP - 540HP

## FREQUENCY INVERTER

### HIGHLIGHTS

High-tech motor control based on advanced DSP-technology - V/Hz, SVC - Sensorless Vector control, CLVC - Closed Loop Vector control and PMSM - permanent magnet synchronous motor control

Intelligent AUTOTUNING functions for easy setup

Compact size to save panel space, modular, rugged construction, built for a worldwide market

Flexible inverter control, high resolution analog inputs, free mapping for all I/O channels

MODBUS-RS485 ready. CANbus for master/slave mode

Universal parameter set for all kind of industrial applications, including integrated PID controller routines, automatic carrier frequency and V/Hz curve adjustment for advanced torque control

Eura DV software for inverter control, programming and troubleshooting

Parameter duplication stick including USB to RS-485 converter

EMC filter (C3 class) integrated. Standard brake chopper in the drive

Approved and certified for worldwide standards, by an independent organization



## Naming Rule

### Model naming rule

**E2100 - 0007 S2**

S1:1-Phase 110~120VAC  
 S2:1-Phase 220~240VAC  
 T2:3-Phase 220~240VAC  
 T3:3-Phase 380~480VAC  
 T5:3-Phase 575VAC

Motor power

Mark	0007	0015	0022	.....
Motor power(kW)	0.75	1.5	2.2	.....

Product series

### Function naming rule

**E2 U5 F15AF03 B1 R3**

Filter	R3	C3 level filter
Braking type	B1	Dynamic braking
Keypad	AF03	AF English no potentiometer LED keypad
Communication	F15	Modbus+CAN
Certificate	U5	UL+cUL+CE
Structure code	E2	E2 structure

#### Remarks:

- For 3-phase 460V, 30kw and below - braking unit is standard.  
 For 3-phase 230V, 1.5kW and below, 4.0kW~11kW - braking unit is standard.  
 For 132kW and above - there is no built-in braking unit.  
 For 3-phase 575V, 18.5kW and below - braking unit is built-in and optional.  
 For 3-phase 575V, 22kW and above - there is no built-in braking unit.

### Local keypad:

Structure code	Keypad code	Contents
E1	AE03	AE English without potentiometer
	AE04	AE English with potentiometer
E2~E6	AF03	AF English without potentiometer
	AF04	AF English with potentiometer
E7~CB	A603	A6 English LED without potentiometer
	A604	A6 English LED with potentiometer
	A607	A6 English 9-key LED without potentiometer
	A608	A6 English 9-key LED with potentiometer
	A614	A6 English LED with digital potentiometer
	A902	A9 English LCD4 without potentiometer

### Remote keypad model:

Keypad	
A603	A6 English LED without potentiometer
A604	A6 English LED with potentiometer
A607	A6 English 9-key LED without potentiometer
A608	A6 English 9-key LED with potentiometer
A614	A6 English LED with digital potentiometer
A902	A9 English LCD4 without potentiometer
AA03	AA English LED without potentiometer
AA04	AA English LED with potentiometer

### Communication:

Structure code	Communication code	Contents
E1	F2	Modbus
E2 structure and above	F15	Modbus+CAN

### Certificate:

Certificate Code	Contents	Inverter power
U1	CE	≤400 kW
U5	UL+cUL+CE	≤185 kW

## Technical Product Data

Items	Contents
Input	Rated Voltage Range 3-phase 380-480V (+10%, -15%) note 1 3-phase 220V~240V ±15% 3-phase 525V-600V(+10%, -15%) 1-phase 110-120V ±15% 1-phase 220-240V ±15%
	Rated Frequency 50/60Hz
Output	Rated Voltage Range 3-phase 0-INPUT (V)
	Frequency Range 0.50~590.0Hz (In SVC control mode, the max frequency should be lower than 500Hz.)
Control Mode	Carrier Frequency 800~16000Hz; Fixed carrier-wave and random carrier-wave can be selected by F159
	Input Frequency Resolution Digital setting: 0.01Hz, analog setting: max frequency X 0.1%
	Control Mode For induction motor: V/F control, SVC (open-loop vector control) CLVC (closed-loop vector control) For PMSM: SVC (open-loop vector control)
	Start Torque 0.5Hz/150% (SVC) 0Hz/180% (VC), 5% of rated speed/100% of rated torque (PMSM SVC)
	Speed-Control Scope 1:100 (SVC), 1:1000 (CLVC), 1:20 (in PMSM SVC)
	Steady Speed Precision ±0.5%~(SVC), ±0.02%(CLVC)
	Torque Control Precision ±5%
	Overload Capacity 150% rated current, 60 seconds. Adjustable as required.
	Torque Elevating Auto torque promotion, Manual Torque Promotion includes 1-20 curves.
	V/F Curve Three kinds of modes: beeline type, square type and under-defined V/F.
Startup Mode Direct startup, speed track startup (V/F control)	
DC Braking DC braking frequency: 0.20-50.00 Hz, braking time: 0.00~30.00s	
Jogging Control Jogging frequency range: min frequency~max frequency, jogging acceleration/deceleration time: 0.1~3000s	

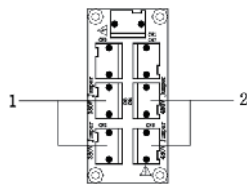
Items	Contents	
Control Mode	Auto Circulating Running And Multi-Stage Speed Running	Auto circulating running or terminals control can realize 15-stage speed running.
	Built-in PID	Easy to realize a system for process closed loop control
	Auto Voltage Regulation (AVR)	When the source voltage changes, the modulation rate can be adjusted automatically, so the output voltage is unchanged.
Operation Function	Frequency Setting	Potentiometer or external analog signal (0~5V, 0~10V, 0~20Ma); keypad (terminal)▲/▼ keys, external control logic and automatic circulation setting.
	Start/Stop Control	Terminal control, keypad control or communication control.
	Running Command Channels	3 kinds of channels from keypad panel, control terminal and MODBUS.
	Frequency Source	Frequency sources: Customer supplied digital, analog voltage, analog current and MODBUS
	Accessorial Frequency Source	7 kinds of accessorial frequency
Standard Features	Built-in EMI filter, Built-in braking unit, Modbus, Remote keypad	
Protection Function	Input and output phase loss, input under-voltage, DC over-voltage, over-current, inverter over-load, motor over-load, current stall, over-heat, external disturbance, under-load, pressure control, analog line disconnected, PG line disconnection, keypad disconnection, oPEn protection, STO and STO1.	
Display	Keypad showing present output frequency, present rotate-speed (rpm), present output current, present output voltage, present linear-velocity, types of faults, and parameters for the system and operation; LED indicators showing the current working status of inverter.	
Environment Conditions	Equipment Location	In an indoor location, Prevent exposure from direct sunlight, Free from dust, caustic gases, flammable gases, steam or the salt-contented, etc.
	Environment Temperature	-10℃~+50℃
	Environment Humidity	Below 90% (no water-bead coagulation)
	Vibration Strength	Below 0.5g
	Height Above Sea Level	1000m or below
Protection Level	IP20/NEMA1	
Applicable Motor	0.2~400kW	

Note 1: Under different voltage levels, user should connect jumper on the pin board, the model of pin board is E2F3UZ00.

1) When input voltage is 380~420VAC, please connect CN2 to CN3 (380V Jumper).

2) When input voltage is 420~480VAC, please connect CN4 to CN5 (480V Jumper).

The default system is 380~420VAC, if some operation is needed, please power off inverter and contact profession engineer.



## Functions of Control Terminals

Terminal	Type	Description	Function
DO1	Output Signal	Multifunctional output terminal 1	When the token function is valid, the value between this terminal and CM is 0V; when the inverter is stopped, the value is 24V. When DO1 is as high-frequency output terminal, the max output frequency is 100KHz and please do not connect to intermediate relay.
DO2 <small>Note 1</small>		Multifunctional output terminal 2	
TA	Relay contact	TC is a common point, TB-TC are normally closed contacts, TA-TC are normally open contacts. The contact capacity is 10A/125VAC, NO/NC 3A 250VAC/30VDC.	The functions of output terminals shall be defined per manufacturer's value. Their initial state may be changed through changing function codes.
TB			
TC			

# Functions of Control Terminals

Terminal	Type	Description	Function										
AO1	Output Signal	Voltage/current output	Connected with frequency meter, speedometer, or ammeter externally, and its minus pole is connected with GND. See F423~F426 for details.										
AO2		Current output	Connected with ammeter externally, and its minus pole is connected with GND. See F427~F430 for details										
10V	Analog Power Supply	Self-contained power supply	Internal 10V inverter power supply provides power to the inverter. When used externally, it can only be used as the power supply for voltage control signal, with current restricted below 20mA.										
AI1 <sup>Note 2</sup>	Input Signal	Voltage analog input port	When analog speed control is adopted, the voltage or current signal is input through this terminal. The range of voltage input is 0~5V or 0~10V or -10V-10V, and the current input is 0~20mA, the input resistor is 500Ohm, and grounding: GND. If the input is 4~20mA, it can be realized by setting F406=2. The voltage or current signal can be chosen by coding switch. See table 5-2, 5-3 for details, the default setting of AI1 is 0~10V, and the default setting of AI2 is 0~20mA.										
AI2		Voltage / current analog input port											
GND		Self-contained power supply ground	Ground terminal of external control signal (voltage control signal or current source control signal) is also the ground of 10V power supply of this inverter.										
24V	Power Supply	Control power supply	Power: 24±1.5V, grounding is CM; current is restricted below 200mA for external use.										
DI1	Digital Input Control Terminal	Jogging terminal	When this terminal is valid, the inverter will have jogging running. The jogging function of this terminal is valid under both at stopped and running status. This terminal can also be used as high-speed pulse input port. The max frequency is 100KHz.										
DI2		External emergency stop	When this terminal is valid, "ESP" malfunction signal will be displayed.										
DI3		"FWD" Terminal	When this terminal is valid, inverter will run forward.										
DI4		"REV" Terminal	When this terminal is valid, inverter will run reversely.										
DI5		Reset terminal	Make this terminal valid under fault status to reset the inverter.										
DI6		Free-stop	Make this terminal valid during running can realize free stop.										
DI7 <sup>Note 1</sup>		Running terminal	When this terminal is in the valid state, inverter will run by the acceleration time.										
DI8 <sup>Note 1</sup>		Stop terminal	Make this terminal valid during running can realize stop by the deceleration time.										
				The functions of input terminals shall be defined per manufacturer's value. Other functions can also be defined by changing function codes.									
CM	Common Port	Grounding of control power supply	Grounding of 24V power supply and other control signals.										
GND	485 Communication Terminals	Grounding of differential signal	Grounding of differential signal										
5V		Power of differential	Power- differential signal										
A+		Positive polarity of differential signal	Standard: TIA/EIA-485(RS-485) Communication protocol: Modbus										
B-		Negative polarity of differential signal	Communication rate: 1200/2400/4800/9600/19200/38400/57600bps										
TA TB TC D01 D02 24V CM DI1 DI2 DI3 DI4 DI5 DI6 DI7 DI8 10V AI1 AI2 GND AO1 AO2													
GND 5V A+ B-													

**Note:**

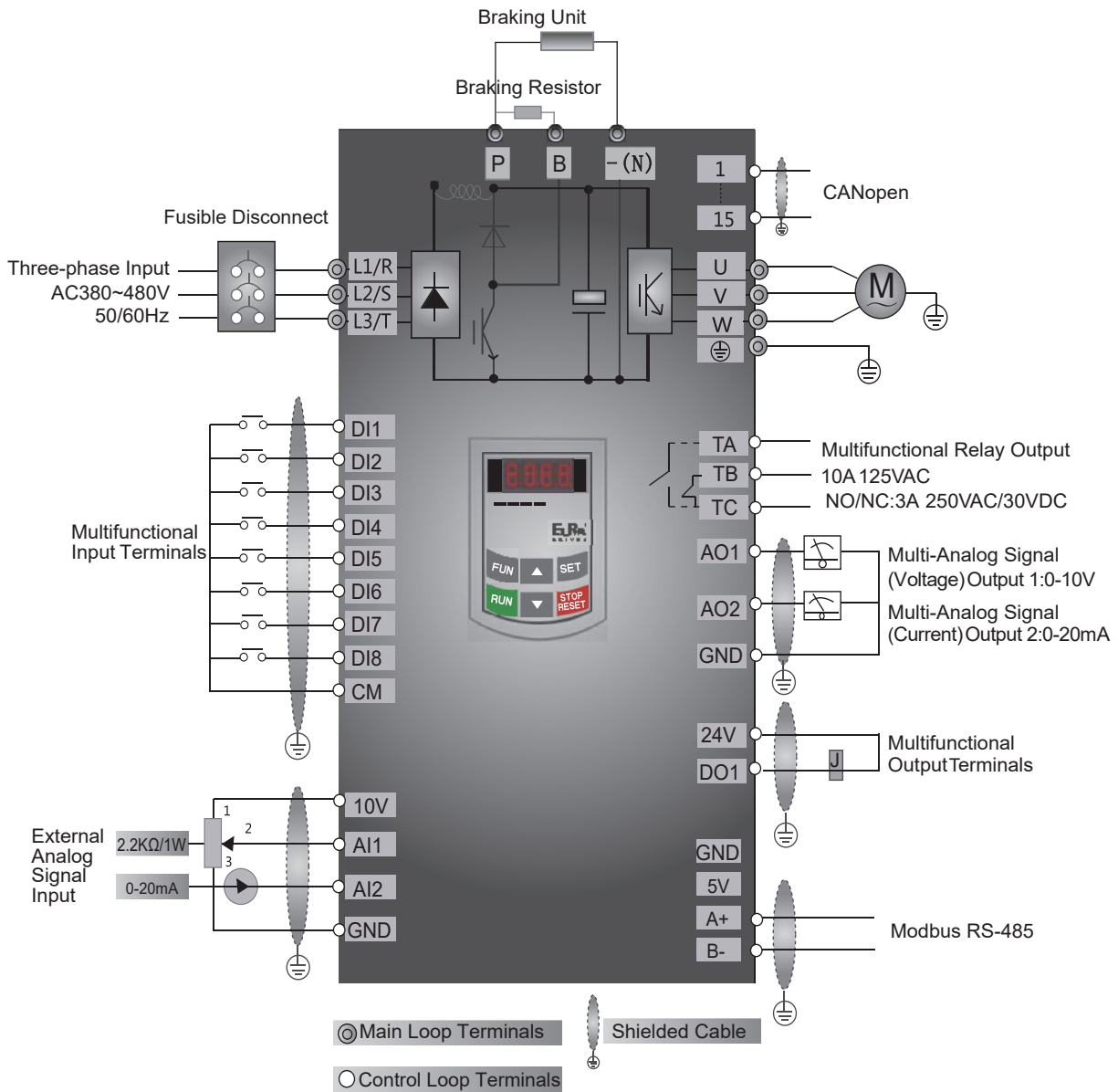
1. T3 30kW and below and T2 2.2kw and below inverters have no DO2, DI7 and DI8 control terminals.
2. AI1 terminal of T3 30kW and below and T2 2.2kw and below inverters can only accept voltage signal, the default voltage is 0~10V.
3. 3-Phase 575V 18.5kW and below inverters have no DO2, DI7 and DI8 control terminals.
4. 3-Phase 575V 18.5kw and below inverters can only accept voltage signal, the default voltage is 0-10V.

# Product List

Model	Applicable Motor (kW/HP)	Rated Output Current	Structure Code	External Dimension [A×B(B1)×H] mm	Mounting Size (W×L) mm	Mounting Bolt	Cooling Mode	Remarks
E2100-0004S1	0.4/0.5	2.5	E2	106×150(157)×180(195)	94×170	M4	Self-Cooling	1-phase 110V plastic housing
E2100-0007S1	0.75/1	4.5	E2	106×150(157)×180(195)	94×170	M4	Air-Cooling	
E2100-0015S1	1.5/2	7.0	E4	142×152(159)×235(248)	126×225	M5	Air-Cooling	
E2100-0022S1	2.2/3	10.0	E4	142×152(159)×235(248)	126×225	M5	Air-Cooling	
E2100-0002S2	0.2/0.3	1.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	1-phase 230V plastic housing
E2100-0004S2	0.4/0.5	2.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0007S2	0.75/1	4.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0015S2	1.5/2	7.0	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0022S2	2.2/3	10.0	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	3-phase 230V plastic housing
E2100-0002T2	0.2/0.3	1.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0004T2	0.4/0.5	2.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0007T2	0.75/1	4.5	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0015T2	1.5/2	7	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0022T2	2.2/3	10	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0030T2	3.0/4	12	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0040T2	4.0/5.5	17	E4	142×152(159)×235(248)	126×225	M5	Air- Cooling	
E2100-0055T2	5.5/7.5	21	E5	161×170(177)×265(280)	146×225	M5	Air- Cooling	
E2100-0075T2	7.5/10	30	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	
E2100-0110T2	11/15	40	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	3-phase 460V plastic housing
E2100-0007T3	0.75/1	2.0	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0015T3	1.5/2	4.0	E1	80×135(142)×138(153)	70×128	M4	Air- Cooling	
E2100-0022T3	2.2/3	6.5	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0030T3	3.0/4	7.0	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0040T3	4.0/5.5	9.0	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0055T3	5.5/7.5	12.0	E4	142×152(159)×235(248)	126×225	M5	Air- Cooling	
E2100-0075T3	7.5/10	17.0	E4	142×152(159)×235(248)	126×225	M5	Air- Cooling	
E2100-0110T3	11/15	23.0	E5	161×170(177)×265(280)	146×225	M5	Air- Cooling	
E2100-0150T3	15/20	32.0	E5	161×170(177)×265(280)	146×225	M5	Air- Cooling	
E2100-0185T3	18.5/25	38.0	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	3-phase 460V metal housing
E2100-0220T3	22/30	44.0	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	
E2100-0300T3	30/40	60	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	
E2100-0370T3	37/50	75	E7	265×235(242)×435(465)	235×412	M6	Air- Cooling	
E2100-0450T3	45/60	90	E7	265×235(242)×435(465)	235×412	M6	Air- Cooling	
E2100-0550T3	55/75	110	C51	360×265×630	320×605	M8	Air- Cooling	
E2100-0750T3	75/100	150	C51	360×265×630	320×605	M8	Air- Cooling	
E2100-0900T3	90/120	180	C61	410×300×765	370×740	M10	Air- Cooling	
E2100-1100T3	110/150	220	C61	410×300×765	370×740	M10	Air- Cooling	
E2100-1320T3	132/180	265	C61	410×300×765	370×740	M10	Air- Cooling	
E2100-1600T3	160/220	320	C7	516×326×765	360×740	M10	Air- Cooling	3-phase 575V plastic housing
E2100-1850T3	185/245	360	C8	560×342×910	90×882	M10	Air- Cooling	
E2100-0007T5	0.75/1	1.7	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0015T5	1.5/2	3.5	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0022T5	2.2/3	4.5	E2	106×150(157)×180(195)	94×170	M4	Air- Cooling	
E2100-0030T5	3.0/4	5.5	E4	142×150(157)×180(195)	126×225	M5	Air- Cooling	
E2100-0040T5	4.0/5.5	7.5	E4	142×150(157)×180(195)	126×225	M5	Air- Cooling	
E2100-0055T5	5.5/7.5	10.0	E4	142×150(157)×180(195)	126×225	M5	Air- Cooling	
E2100-0075T5	7.5/10	13.5	E4	142×150(157)×180(195)	126×225	M5	Air- Cooling	

Model	Applicable Motor (kW/HP)	Rated Output Current	Structure Code	External Dimension [A×B(B1)×H] mm	Mounting Size (W×L) mm	Mounting Bolt	Cooling Mode	Remarks
E2100-0110T5	11/15	19.0	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	3-phase 575V plastic housing
E2100-0150T5	15/20	23.0	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	
E2100-0185T5	18.5/25	27.0	E6	210×196(203)×340(358)	194×330	M5	Air- Cooling	
E2100-0220T5	22/30	34.0	C4A	315×250×476	274×460	M6	Air- Cooling	3-phase 575V metal housing
E2100-0300T5	30/40	41.0	C4A	315×250×476	274×460	M6	Air- Cooling	
E2100-0370T5	37/50	52.0	C4A	315×250×476	274×460	M6	Air- Cooling	
E2100-0450T5	45/60	62.0	C5	360×265×555	320×530	M8	Air- Cooling	
E2100-0550T5	55/75	80.0	C5	360×265×555	320×530	M8	Air- Cooling	

## Wiring Diagram



Basic Wiring Diagram for Three-phase AC Drives(NPN type)

# A DRIVES COMPANY

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