

Delixi Industrial-control Product
Type Selection Manual

DELIXI

DELIXI Inverter, Your Best Choice

Inverter

CDI-E180 series General VFD

CDI-E100 series Standard VFD

CDI-E102 series Economic VFD

CDI-EM60 series Mini VFD

Soft Starter

CDRA Device-type Soft Starter

Brake Unit

CD-BR Energy-consumption Brake Unit

Accessories

CDI-E series Multi-functional Expansion Card

Distributor Contact Information:

Delixi (Hangzhou) Inverter Co.,Ltd

Address: No.8, Economic Plot, Zhuantang Science & Technology Park,

Zhuantang Street, Xihu District, Hangzhou, Zhejiang

Tel : 0086-0571-87315109

Website: www.delixidrive.com

E-Mail:delixidrive@hz-delixi.com

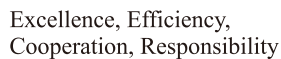




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Inverters: CDI-E180 series Vector Control Inverter

AC 3PH 340V-420V 0.75-630kW
AC 3PH 200V-240V 0.4-30kW

■ Introduction

The CDI-E180 series inverter is a stable and versatile high-performance vector control inverter with optimum control modes such as SVC, V/F control and VC, and is widely used in situations with demanding requirements for speed control precision, torque respond speed and low-frequency output torque.

■ Technical Characteristics

◆ Excellent Performance

Due to the new vector control algorithm, the inverter features large start torque, quick torque response and high control precision to further improve the efficiency of the motor.

◆ Strong Function and Low Cost

The large number of internal function modules such as timer, virtual time-delay relay and math operation modules are as a whole equivalent to an additional small PLC, so that the cost is significantly reduced.

◆ Easy Operation

A special-purpose function is embedded, and the conversion between the special-purpose function and the common function is available through one function code, for the convenience of type selection and flexibility in use.

◆ Flexible Type Selection

The 15kW or below types have standard internal brake units, the 18.5-30kW types can have optional internal brake units, and the 37kW above types shall be connected with external brake units. The 11kW, 15 kW, 200 kW or above types have standard DC inductors, and 18.5-55kW types can have optional DC inductors.



■ Applications

Electric power, textile and chemical fiber, building materials, oil industry, chemical industry, metallurgy, municipal facilities, paper-making, food & beverage and tobacco.

■ Accessories

E180-I/O expansion card; E180-PG coder expansion card; E180-485 communication expansion card; E180-DP communication expansion card.
E180-ZS injection molding machine expansion card; E180-WSP constant pressure water supply expansion card.

Inverters: CDI-E100 series Economical-type Inverter

AC 1PH 200V-240V, 0.4-2.2kW
AC 3PH 200V-240V, 0.4-2.2kW
AC 3PH 340V-420V, 0.75-630kW

■ Introduction

The CDI-E100 series inverter is a general-purpose low-power inverter with optimum control modes including SVC and V/F control, stable performance, diversified functions, high cost performance, optimum structure and elegant appearance.

■ Technical Characteristics

◆ Compact Structure

Optimum structure and elegant appearance; can be installed through both slides and holes; easy to use.

◆ Reliable Small Integrated Module

Reliable small integrated module to ensure good quality and performance at a lower price.

◆ Integrated Communication Module

Standard internal RS-485 communication module which enables standard MODBUS-RTU communication; through such a module, one host computer can communicate with several inverters simultaneously and quickly with perfect anti-interference performance.

◆ Flexible Type Selection

The 15kW or below types have standard internal brake units, and the 18.5-22kW types can have optional internal brake units. The 11kW, 15 kW types have standard DC inductors, and 18.5-22kW types can have optional DC inductors.



■ Applications

Mainly applies to low-power non-VC situations with demanding requirements for input/output. Carving machine, textile machine, glass-making machine and dyeing machine.

■ Accessories

External keyboard, extension cord.

Inverters: CDI-E102 series Economical-type Inverter

AC 1PH 200V-240V, 0.4-2.2kW
AC 3PH 200V-240V, 0.4-2.2kW
AC 3PH 340V-420V, 0.75-630kW

■ Introduction

The CDI-E102 series inverter is a classic-type low-power inverter with optimum SVC and V/F control, stable performance and simplified functions. It reserves the configuration most-frequently used by users, and is more cost-effective.

■ Technical Characteristics

◆ Simplified Functions and More Cost-effective

Optimized configuration according to the functions most-frequently used by users, so as to reduce resource waste, improve cost performance and competitiveness.

◆ Compact Structure

Optimum structure and elegant appearance; can be installed through both slides and holes; easy to use.

◆ Flexible Type Selection

The 15kW or below types have standard internal brake units, and the 18.5-22kW types can have optional internal brake units. The 11kW, 15 kW types have standard DC inductors, and 18.5-22kW types can have optional DC inductors.



■ Applications

Mainly applies to low-power non-VC situations with demanding requirements for input/output. Die-cutting machine, carving machine, textile machine, glass-making machine and dyeing machine.

■ Accessories

External keyboard, extension cord, E102-485 communication expansion card.

Inverters: CDI-EM60 series Mini Inverter

AC 1PH 95V-125V, 0.75-1.5kW
AC 1PH 200V-240V, 0.4-2.2kW
AC 3PH 340V-420V, 0.75-15kW

■ Introduction

The CDI-EM60 series inverter is a mini-type low-power single-phase inverter with optimum SVC and V/F control, stable performance and simplified functions. It reserves the configuration most-frequently used by users, and can be extended with several I/O and communication interfaces.

■ Technical Characteristics

- ◆ Small size and easy operation; Embedded with DC brake function and can have optional external brake unit; Accuracy of stop position.
- ◆ Separate keyboard that supports hot plug and can be pulled out to a distance of 50m at most; a copy keyboard with parameter control is optional.
- ◆ Extensible RS485 communication interface which enables standard MODBUS-RTU communication and can be compatible with a variety of host computers.
- ◆ Long service-life with a controllable fan; the AVR (Automatic Voltage Regulation) function ensures large output torque in case of low input voltage.
- ◆ Multiple protection functions to ensure safe and reliable operation of the motor.
- ◆ All standard products have been treated with conformal coatings.
- ◆ Air-duct isolated by windshields to ensure good thermal dissipation and thus significantly improved adaption to the environment.



■ Applications

Mainly applies to low-power non-VC situations with demanding requirements for input/output. Die-cutting machine, carving machine, textile machine, glass-making machine, dyeing machine, book sewer, automatic production line and food machine.

■ Accessories

EM60-IO expansion card, EM60-485 communication expansion card, internal brake unit.

Soft Start Series: CDRA Device-type/Comprehensive-protection Soft Starter

(Power Range: 11-600kW)

Introduction

The Delixi Soft Starter is a motor control equipment featuring soft start, soft parking, light-loading and energy-saving as well as multi-functional protection. The soft starter enables smooth and impact-less start during the whole start process, and the parameters such as current limit and start time can be adjusted according to the characteristics of the motor load. It can be divided into two categories: the Device-type Soft Starter and the Comprehensive-protection Soft Starter.

Applications

The soft starter can be applied to motors in crushers, compressors, transmission, pumps and air blowers.

Product Characteristics

- ◆ Diversity of starting methods: Current limit soft start, ramp voltage soft start, ramp voltage + current limit soft start.
- ◆ High reliability: A high-performance microprocessor performs digital processing of the signals in the control system.
- ◆ Strong Anti-interference Capability: Easy-tuning, optoelectronic-isolator-based signal transmission in the processing unit, different anti-noise levels.
- ◆ Optimum Structure: Unique compact structure, double-layer shell consisting of plastic upper layer and metal lower layer to meet the aesthetic and durability requirements.
- ◆ Motor Protection: Multi-functional protection (e.g. in case of over-current, input/output default phase, SCR short-circuit and overheat).
- ◆ Easy Maintenance: Four-digit signal monitoring system to monitor the operation of the system equipments in 24 hours and to offer quick fault diagnosis.



Brake Unit Series: CDI-BR Energy-consumption Brake Unit

Introduction

Delixi Brake Unit is mainly designed to release the regenerated power during the speed adjustment of the motor through the brake resistor. It effectively overcomes the disadvantages of low brake speed and small brake torque ($\leq 20\%$ rated torque) of conventional inverters, which makes it extremely suitable for quick brake situations.

Applications

The brake unit is applicable to high rise elevators, escalators, coal mine cars and winches, hoisting equipments, oil field pumping units, lifts, cranes, centrifuges and winding machines.

Product Characteristics

- ◆ Improved short-circuit, overheat and over-current protection.
- ◆ A complete range of products with voltage from 220V to 690V.
- ◆ Set the brake-unit parameters on the host panel.
- ◆ Value adjustment for the multi-shift brake voltage valve, large brake torque, good braking effect.
- ◆ A variety of optional machine types, brake-unit parallel operation is available though the DC bus-bar without capacity limits.
- ◆ Small size and space-saving.



E series Inverter Technical Standards

	Item	Specifications	
Control	Control Mode	V/F control Open-loop Vector Control (SVC) Vector Control (VC) (Not applicable to E100/E102/EM60 series)	
	Frequency Precision	Digital: 0.02% Analog: 0.1%	
	V/F Curve	Linear, square root, any V/F	
	Overload Capacity	G-type: 150% rated current for 60s; 180% rated current for 3s P-type: 120% rated current for 60s; 150% rated current for 3s	
	Start Torque	G-type: 0.5Hz/150% (SVC); 0Hz/180% (VC)	
	Speed Adjustment Range	1:100 (SVC)	1:1000 (VC)
	Steady Speed Precision	0.5% (SVC)	0.02% (VC)
	Torque Precision	5% (VC)	
	Torque Compensation	Manual torque compensation (0.10%-30.0%); Automatic torque compensation	
	Operating Mode	Key-board, terminal, RS485 communication	
Basic Type Function	Frequency Source	14 main sources, 14 auxiliary sources. Easy switch between different modes. Diversified input modes for every source: keyboard potentiometer, external analog, digital setting, pulse frequency, multi-speed, simple PLC, communication, computing results, etc.	
	Torque Source	14 torque sources, including digital setting, external analog, pulse setting, multi-order, communication, computing results, etc.	
	Acceleration and Deceleration Time	4 groups of lines (can be switched through the option terminals); S Curve 1, S Curve 2	
	Emergency Stop	Interrupt the output instantaneously	
	Multi-speed	16-shift speeds at most; can be switched by different combination of order terminals	
	Simple PLC	Continuous operation of 16-shift speeds; the acceleration/deceleration time, operating time and frequency source for every shift can be set separately	
	Inching Control	Inching frequency and inching acceleration/deceleration time can be set separately; Inching can be prioritized in process.	
	Rotating-speed Track	Track the start speed and operating speed of the inverter's load	
	Length and Distance Control	Length and distance control through pulse inputs	
	Counting	Counting through pulse inputs	
	Swing Frequency	For winding machines in the textile industry	
	Internal PID	Closed-loop process control system is available	
	AVR	Ensure constant output in case of fluctuating grid voltage	
	DC Brake	Quick and stable parking is available	
	Slip Compensation	Compensate the slip deviation due to increased load	
	Hopping Frequency	Prevent resonance with the load	
	Droop Function	Balance the load rate of different motors which drive the same load	
	Timing	Automatic stop at a given time	

Product List

E100 Series Product List

Frequency inverter type	Rated capacity (KVA)	Rated input current (A)	Rated output current (A)	Matchable Motor (kW)
S2 (Single-phase 220V, 50/60Hz) (Built-in Brake Unit)				
CDI-E100G0R4S2B	0.8	5.0	2.3	0.4
CDI-E100G0R75S2B	1.5	9	4.0	0.75
CDI-E100G1R5S2B	2.7	15.7	7.0	1.5
CDI-E100G2R2S2B	3.8	27	10.0	2.2
T2 (Three-phase 220V, 50/60Hz) (Built-in Brake Unit)				
CDI-E100G0R4T2B	0.8	2.3	2.3	0.4
CDI-E100G0R75T2B	1.5	6	4.0	0.75
CDI-E100G1R5T2B	2.7	8.8	7.0	1.5
CDI-E100G2R2T2B	3.8	12.5	10.0	2.2
T4 (Three-phase 380V, 50/60Hz) (15kW and below the standard built-in brake unit)				
CDI-E100G0R75T4B	1.5	3.4	2.3	0.75
CDI-E100G1R5T4B	3.0	5.0	3.7	1.5
CDI-E100G2R2T4B	4.0	5.8	5.1	2.2
CDI-E100G3R7T4B	5.9	10.5	9.0	3.7
CDI-E100G5R5/P7R5T4B	8.5/11	15.5/20.5	13/17	5.5/7.5
CDI-E100G7R5/P011T4B	11/17	20.5/26	17/25	7.5/11
CDI-E100G011/P015T4BL	17/21	26/35	25/32	11/15
CDI-E100G015/P018.5T4BL	21/24	35/38.5	32/37	15/18.5
CDI-E100G018.5/P022T4	24/30	38.5/46.5	37/45	18.5/22
CDI-E100G022/P030T4	30/40	46.5/62	45/60	22/30
CDI-E100G030/P037T4	40/50	62/76	60/75	30/37
CDI-E100G037/P045T4	50/60	76/92	75/90	37/45
CDI-E100G045/P055T4	60/72	92/113	90/110	45/55
CDI-E100G055/P075T4	72/100	113/157	110/152	55/75
CDI-E100G075/P093T4	100/116	157/180	152/176	75/93
CDI-E100G093/P110T4	116/138	180/214	176/210	93/110
CDI-E100G110/P132T4	138/167	214/256	210/253	110/132
CDI-E100G132/P160T4	167/200	256/305	253/300	132/160
CDI-E100G160/P185T4	200/224	305/344	300/340	160/185
CDI-E100G185/P200T4	224/250	344/383	340/380	182/200
CDI-E100G200/P220T4L	250/276	383/425	380/420	200/220
CDI-E100G220T4L	276	425	420	220
CDI-E100P250T4L	316	484	480	250
CDI-E100G250/P280T4L	316/355	484/543	480/540	250/280
CDI-E100G280/P315T4L	355/395	543/605	540/600	280/315
CDI-E100G315/P355T4L	395/467	605/714	600/680	315/355
CDI-E100G355/P375T4L	447/467	683/714	680/710	355/375
CDI-E100G375T4L	467	714	710	375
CDI-E100P400T4L	494	753	750	400
CDI-E100P500T4L	612	934	930	500
CDI-E100G500T4L	612	934	930	500
CDI-E100G630T4L	790	1206	1200	630

Product List

E102 Series Product List

Frequency inverter type	Rated capacity (KVA)	Rated input current (A)	Rated output current (A)	Matchable Motor (kW)
S2 (Single-phase 220V, 50/60Hz) (Built-in Brake Unit)				
CDI-E102G0R4S2B	0.8	5.0	2.3	0.4
CDI-E102G0R75S2B	1.5	9	4.0	0.75
CDI-E102G1R5S2B	2.7	15.7	7.0	1.5
CDI-E102G2R2S2B	3.8	27	10.0	2.2
T2 (Three-phase 220V, 50/60Hz) (Built-in Brake Unit)				
CDI-E102G0R4T2B	0.8	2.3	2.3	0.4
CDI-E102G0R75T2B	1.5	6	4.0	0.75
CDI-E102G1R5T2B	2.7	8.8	7.0	1.5
CDI-E102G2R2T2B	3.8	12.5	10.0	2.2
T4 (Three-phase 380V, 50/60Hz) (15kW and below the standard built-in brake unit)				
CDI-E102G0R75T4B	1.5	3.4	2.3	0.75
CDI-E102G1R5T4B	3.0	5.0	3.7	1.5
CDI-E102G2R2T4B	4.0	5.8	5.1	2.2
CDI-E102G3R7T4B	5.9	10.5	9.0	3.7
CDI-E102G5R5/P7R5T4B	8.5/11	15.5/20.5	13/17	5.5/7.5
CDI-E102G7R5/P011T4B	11/17	20.5/26	17/25	7.5/11
CDI-E102G011/P015T4BL	17/21	26/35	25/32	11/15
CDI-E102G015/P018.5T4BL	21/24	35/38.5	32/37	15/18.5
CDI-E102G018.5/P022T4	24/30	38.5/46.5	37/45	18.5/22
CDI-E102G022/P030T4	30/40	46.5/62	45/60	22/30
CDI-E102G030/P037T4	40/50	62/76	60/75	30/37
CDI-E102G037/P045T4	50/60	76/92	75/90	37/45
CDI-E102G045/P055T4	60/72	92/113	90/110	45/55
CDI-E102G055/P075T4	72/100	113/157	110/152	55/75
CDI-E102G075/P093T4	100/116	157/180	152/176	75/93
CDI-E102G093/P110T4	116/138	180/214	176/210	93/110
CDI-E102G110/P132T4	138/167	214/256	210/253	110/132
CDI-E102G132/P160T4	167/200	256/305	253/300	132/160
CDI-E102G160/P185T4	200/224	305/344	300/340	160/185
CDI-E102G185/P200T4	224/250	344/383	340/380	182/200
CDI-E102G200/P220T4L	250/276	383/425	380/420	200/220
CDI-E102G220T4L	276	425	420	220
CDI-E102P250T4L	316	484	480	250
CDI-E102G250/P280T4L	316/355	484/543	480/540	250/280
CDI-E102G280/P315T4L	355/395	543/605	540/600	280/315
CDI-E102G315/P355T4L	395/467	605/714	600/680	315/355
CDI-E102G355/P375T4L	447/467	683/714	680/710	355/375
CDI-E102G375T4L	467	714	710	375
CDI-E102P400T4L	494	753	750	400
CDI-E102P500T4L	612	934	930	500
CDI-E102G500T4L	612	934	930	500
CDI-E102G630T4L	790	1206	1200	630

E180 Series Product List

Frequency inverter type	Rated capacity (KVA)	Rated input current (A)	Rated output current (A)	Matchable Motor (kW)
T2（Three-phase 220V, 50/60Hz）				
CDI-E180G0R4T2B	1.5	3.4	2.3	0.4
CDI-E180G0R75T2B	3	5.0	4.0	0.75
CDI-E180G1R5T2B	4	5.8	7.0	1.5
CDI-E180G2R2T2B	5.9	10.5	10	2.2
CDI-E180G3R7T2B	8.5	15.5	17	3.7
CDI-E180G5R5T2B	17	26	25	5.5
CDI-E180G7R5T2BL	21	35	32	7.5
CDI-E180G011T2	30	46.5	45	11
CDI-E180G015T2	40	62	60	15
CDI-E180G018.5T2	50	76	75	18.5
CDI-E180G022T2	60	92	90	22
CDI-E180G030T2	72	113	110	30
T4（Three-phase 380V, 50/60Hz）				
CDI-E180G0R75T4B	1.5	3.4	2.3	0.75
CDI-E180G1R5T4B	3	5.0	3.7	1.5
CDI-E180G2R2T4B	4	5.8	5.1	2.2
CDI-E180G3R7/P5R5T4B	5.9/8.5	10.5/15.5	9.0/13	3.7/5.5
CDI-E180G5R5MT4B	8.5	15.5	13	5.5
CDI-E180G5R5/P7R5T4B	8.5/11	15.5/20.5	13/17	5.5/7.5
CDI-E180G7R5/P011T4B	11/17	20.5/26	17/25	7.5/11
CDI-E180G011MT4B	17	26	25	11
CDI-E180G011/P015T4BL	17/21	26/35	25/32	11/15
CDI-E180G015/P018.5T4BL	21/24	35/38.5	32/37	15/18.5
CDI-E180G018.5/P022T4	24/30	38.5/46.5	37/45	18.5/22
CDI-E180G022/P030T4	30/40	46.5/62	45/60	22/30
CDI-E180G030/P037T4	40/50	62/76	60/75	30/37
CDI-E180G037/P045T4	50/60	76/92	75/90	37/45
CDI-E180G045/P055T4	60/72	92/113	90/110	45/55
CDI-E180G055/P075T4	72/100	113/157	110/152	55/75
CDI-E180G075/P093T4	100/116	157/180	152/176	75/93
CDI-E180G093/P110T4	116/138	180/214	176/210	93/110
CDI-E180G110/P132T4	138/167	214/256	210/253	110/132
CDI-E180G132/P160T4	167/200	256/305	253/300	132/160
CDI-E180G160/P185T4	200/224	305/344	300/340	160/185
CDI-E180G185/P200T4	224/250	344/383	340/380	182/200
CDI-E180G200/P220T4L	250/276	383/425	380/420	200/220
CDI-E180G220T4L	276	425	420	220
CDI-E180P250T4L	316	484	480	250
CDI-E180G250/P280T4L	316/355	484/543	480/540	250/280

CDI-E180G280/P315T4L	355/395	543/605	540/600	280/315
CDI-E180G315/P355T4L	395/467	605/714	600/680	315/355
CDI-E180G355/P375T4L	447/467	683/714	680/710	355/375
CDI-E180G375T4L	467	714	710	375
CDI-E180P400T4L	494	753	750	400
CDI-E180G400T4L	494	753	750	400
CDI-E180P500T4L	612	934	930	500
CDI-E180G500T4L	612	934	930	500
CDI-E180G630T4L	790	1206	1200	630

EM60 Series Product List

Frequency inverter type	Rated capacity (kVA)	Rated input current (A)	Rated output current (A)	Adaptive motor (kW)
S1 (Single-phase 110V, 50/60Hz)				
CDI-EM60G0R75S1	1.4	26.25	7.0	0.75
CDI-EM60G1R5S1	2.5	48.75	13.0	1.5
S2 (Single-phase 220V 50/60Hz)				
CDI-EM60G0R4S2	0.8	5.0	2.0	0.4
CDI-EM60G0R4S2B	0.8	5.0	2.0	0.4
CDI-EM60G0R75S2	1.5	9	4.0	0.75
CDI-EM60G0R75S2B	1.5	9	4.0	0.75
CDI-EM60G1R1S2	2.0	11.7	5.5	1.1
CDI-EM60G1R1SB	2.0	11.7	5.5	1.1
CDI-EM60G1R5S2	2.7	15.7	7.0	1.5
CDI-EM60G1R5S2B	2.7	15.7	7.0	1.5
CDI-EM60G2R2S2	3.8	27	10.0	2.2
CDI-EM60G2R2S2B	3.8	27	10.0	2.2
T4（Three-phase 380V, 50/60Hz）				
CDI-EM60G0R75T4B	1.5	3.4	2.3	0.75
CDI-EM60G1R5T4B	3.0	5.0	3.7	1.5
CDI-EM60G2R2T4B	4.0	5.8	5.1	2.2
CDI-EM60G3R7T4B	5.9	10.5	8.8	3.7
CDI-EM60G5R5T4B	8.5	15.5	13	5.5
CDI-EM60G7R5T4B	11	20.5	17	7.5
CDI-EM60G011T4B	17	26	25	11
CDI-EM60G015T4B	21	35	32	15

E series Inverter Technical Standard

	Item	Specifications
Enhanced Function	Internal Virtual Time-Delay Relay	Simple logic programming for the multi-functional output terminals and the digital input terminals. The logic results can be equivalent to the digital input terminal function, and can be output through the multi-functional output terminals
	Internal Timer	Two internal timers to collect timing input signals and to output timing signals. The two timers can be used separately or together
	Internal Math Operation Module	One internal 4-way math operation module for elementary arithmetic operations, numerical magnitude judgment and integral operation
Communication	E100	The control panel has a RS485 communication interface which supports standard MODBUS-RTU protocol
	E102/E180/EM60	The control panel does not have a RS485 communication interface, and an external 485 communication expansion card shall be connected. Support standard MODBUS-RTU protocol. The E180 series also support standard PROFIBUS-DP protocol (through an external E180-DP expansion card).
Coder	E100	The coder can be connected directly through the DI5 and DI6 terminals on the control panel, and simple closed-loop control is available through PID control. Such connection is used in undemanding situations.
	EM60	The control panel does not have any interface for the coder, and a one-way high-speed pulser can be extended (through DI6).
	E102	The control panel only has one coder interface (DI6).
	E180	The control panel does not have any coder interface, and an external coder expansion card is necessary. The inverter supports ABZ incremental coder, UVW incremental coder and resolver. Such connection enables high-performance VC, and can be used in situations with demanding control precision requirements.
Motor	E100/E102	Only for asynchronous motors
	E180	For asynchronous motors and synchronous motors
Display	Operation Information	Given frequency, output frequency, output voltage, busbar voltage, input signal, feedback value, module temperature, and synchronous speed of the motor. At most 32 parameters can be displayed in cycle through the ">>" key.
	Fault Information	In the fault protection mode, three pieces of history fault information can be saved. Every piece includes the frequency, current, busbar voltage and I/O terminal status when the fault takes place.
Protection	Inverter Protection	Over-current, over-voltage, module fault protection, under-voltage, overheat, overload, external fault protection, EEPROM fault protection, ground protection, and default phase
	Inverter Alarm	Locked-rotor protection, overload alarm
	Instantaneous Power Down	Less than 15 ms: continuous operation More than 15ms: automatic restart
Environment	Ambient Temperature	-10℃~40℃
	Storage Temperature	-10℃~40℃
	Ambient Humidity	Max. 90% RH (No condensation)
	Altitude/Vibration	Below 1000m; below 0.6g
	Working Place	No corrosive gas, inflammable gas, oil mist or dust
	Cooling	Force-air cooling

E series Inverter Keyboard

E100/E102 series

In the parameter setting mode, the key is used to read and save the parameter settings.

1. Switch between display modes
2. Cancel data changes

1. Select functional code
2. Data increase/decrease setting
3. Increase/decrease setting for a given frequency

Display operation status and unit

1. Display the setting for each functional code
2. Output the watch value

Multi-functional Key

Potentiometer, frequency adjustment

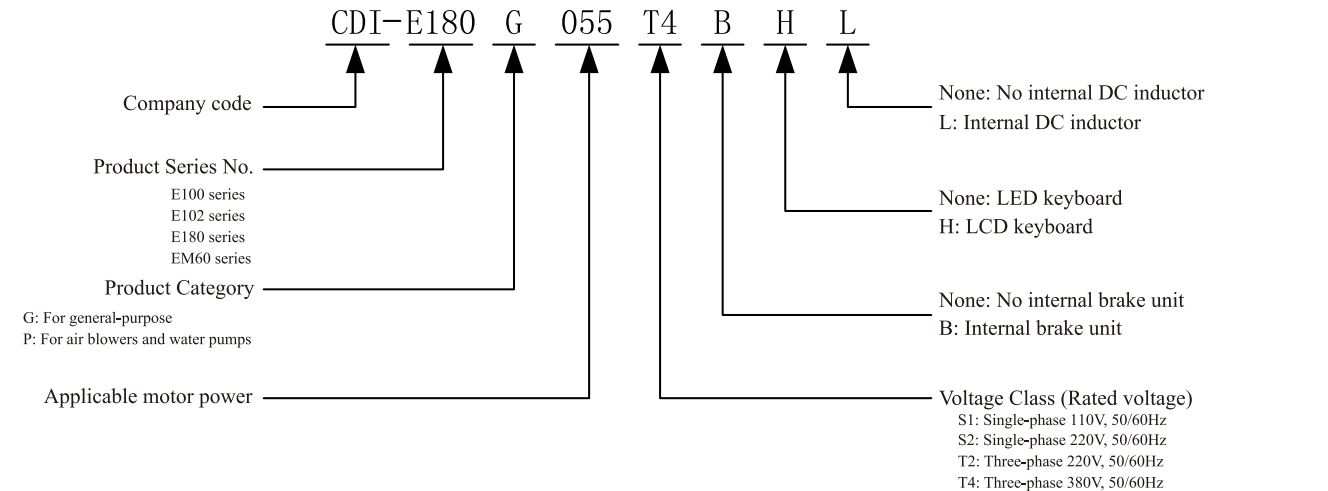
1. In monitoring mode, the key is used to scroll-display the data
2. When parameters are selected and set, the key is used to move to the digit to be modified.

Stop/Reset key

Run Key

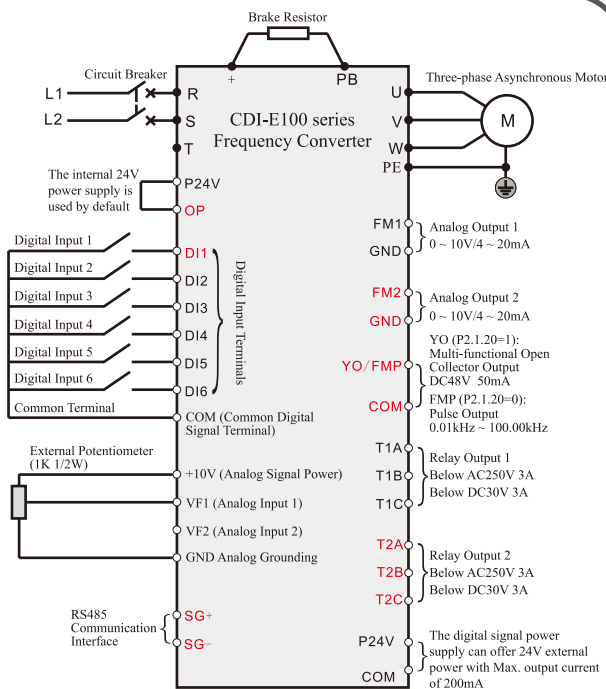
Nameplate Data and Naming Rules

Nameplate Data: e.g. CDI-E180G055T4BHL



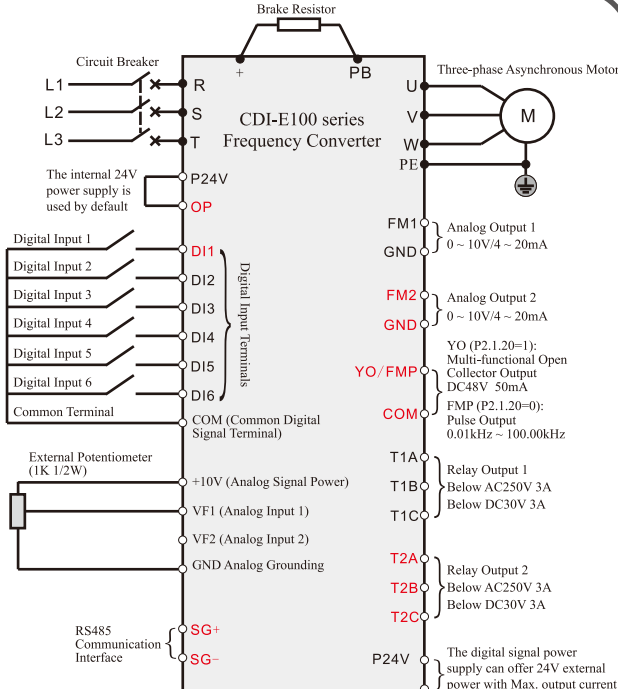
E series Inverter Wiring Diagram

E100/E102 series External Dimension



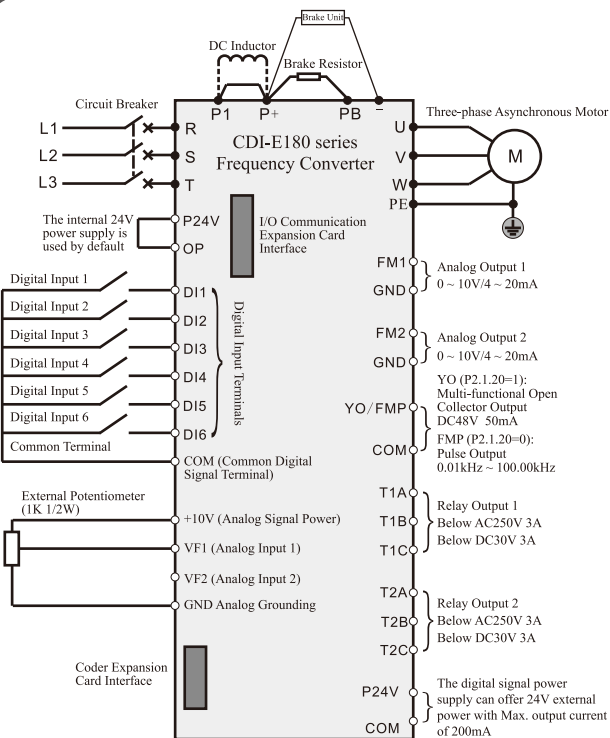
Application: E100/E102 series with single-phase 220V power supply

(Note: The E102 series inverter is not configured with red terminals)

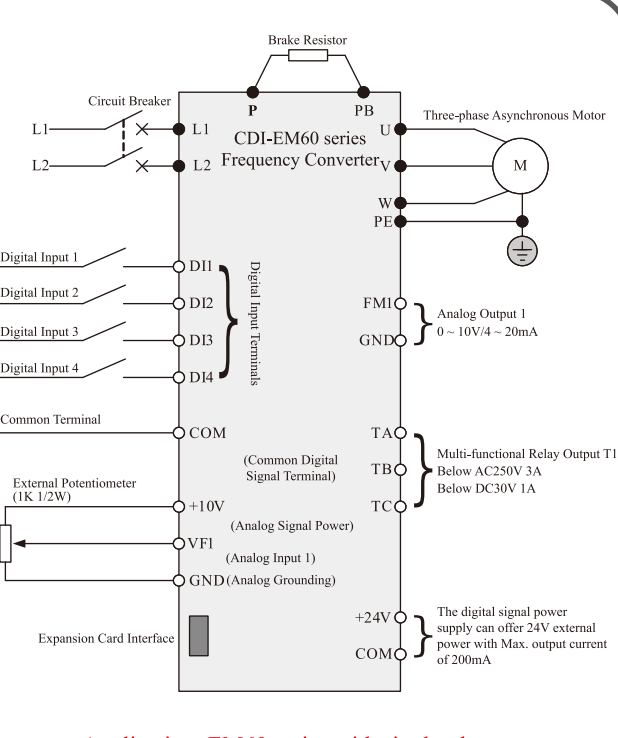


Application: E100/E102 series with three-phase 220V power supply
Application: E100/E102 series with three-phase 380V power supply

(Note: The E102 series inverter is not configured with red terminals)

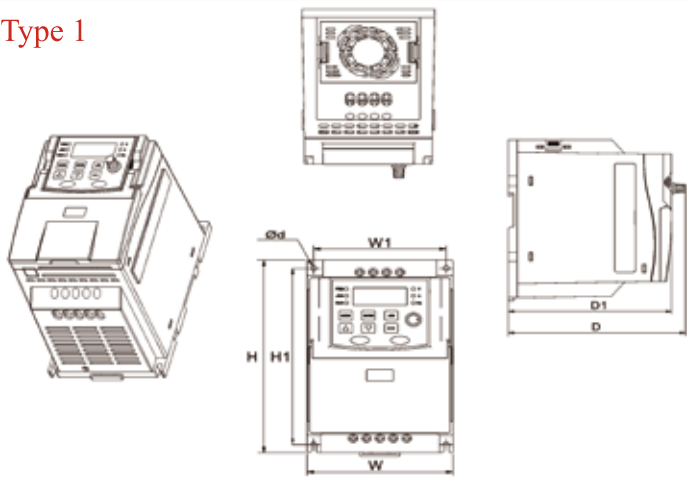


Application: E180 series with three-phase 380V power supply
Application: E180 series with three-phase 220V power supply



Application: EM60 series with single-phase 220V power supply, 0.4-2.2kW

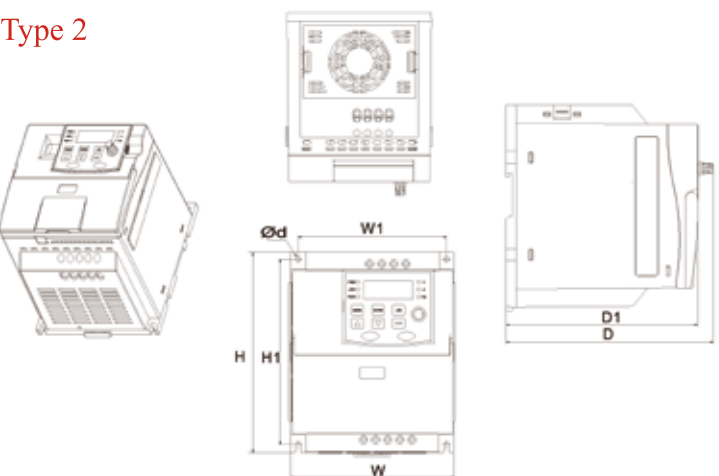
Type 1



Model	W	W1	H	H1	D	D1	φd
CDI-E100G0R4S2B							
CDI-E100G0R75S2B							
CDI-E100G1R5S2B							
CDI-E100G0R4T2B	109	99	167	153	161	148	5
CDI-E100G1R5T2B							
CDI-E100G0R75T4B							
CDI-E100G1R5T4B							
CDI-E100G2R2T4B							

Dimension Unit: Millimeter (mm)

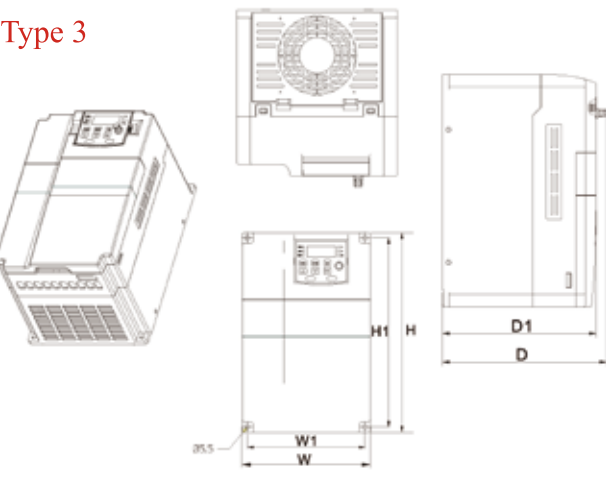
Type 2



Model	W	W1	H	H1	D	D1	φd
CDI-E100G2R2S2B							
CDI-E100G2R2T2B	135	122	167	153	171	158	5
CDI-E100G3R7T4B							

Dimension Unit: Millimeter (mm)

Type 3



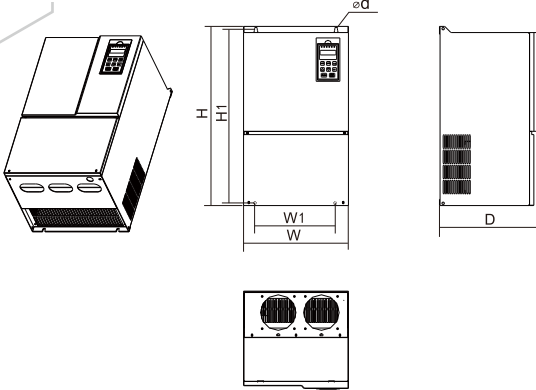
Model	W	W1	H	H1	D	D1	φd
CDI-E100G5R5/P5R5T4B	180	165	280	265	197.5	185	5.5
CDI-E100G7R5/P011T4B							
CDI-E100G011/P015T4BL	230	215	310	295	206	193.5	5.5
CDI-E100G015/P018.5T4BL							
CDI-E100G018.5/P022T4	260	245	340	325	223	210.5	5.5
CDI-E100G022T4							

Dimension Unit: Millimeter (mm)

Note: The External Dimension of E102 series are the same as that of E100 series.

E100/E102 series External Dimension

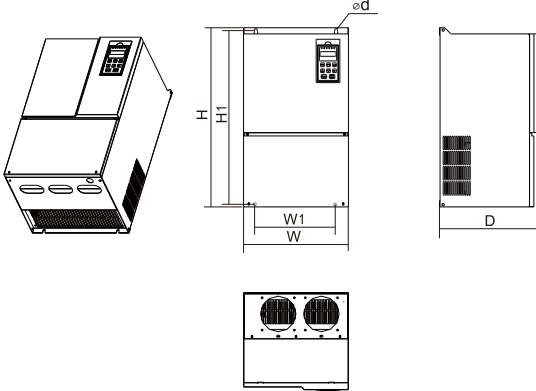
Type 4



Model	W	W1	H	H1	D	ød
CDI-E100G030/P037T4	250	160	430	415	220	ø7
CDI-E100G037/P045T4						

Dimension unit: Millimeter

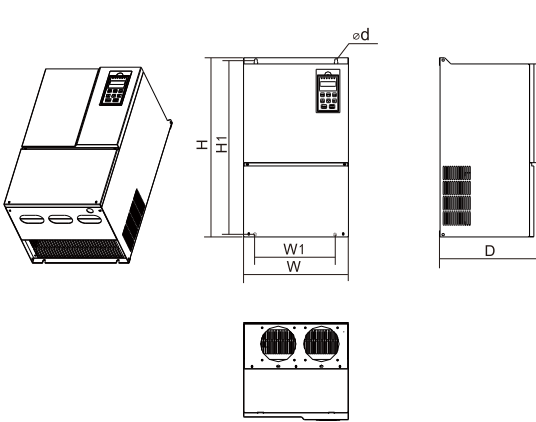
Type 5



Model	W	W1	H	H1	D	ød
CDI-E100G045/P055T4	300	240	530	515	270	ø9
CDI-E100G055/P075T4						

Dimension unit: Millimeter

Type 6



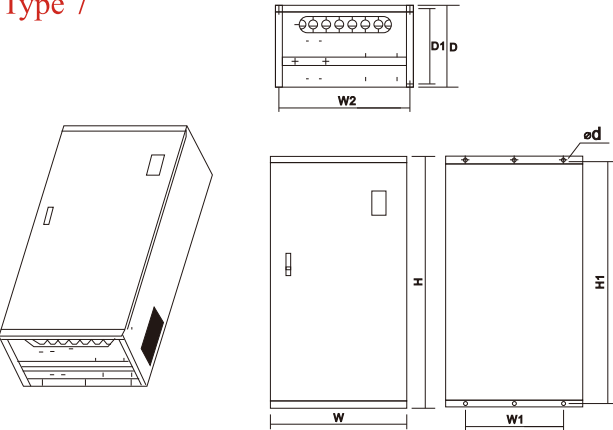
Model	W	W1	H	H1	D	ød
CDI-E100G075/P093T4	340	260	580	565	313	ø9
CDI-E100G093/P110T4						
CDI-E100G110/P132T4						

Dimension unit: Millimeter

Note: The External Dimension of E102 series are the same as that of E100 series.

E100/E102 series External Dimension

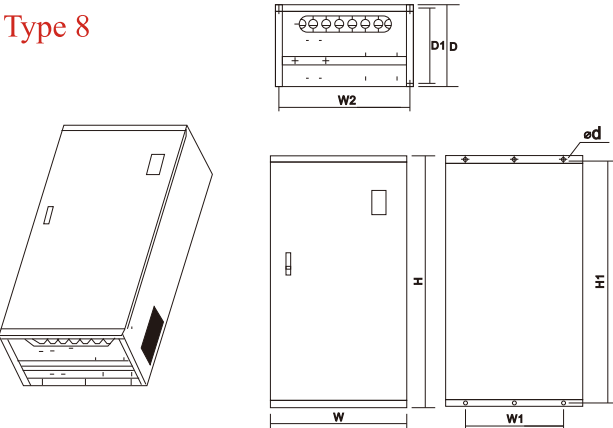
Type 7



Model	W	W1	W2	H	H1	D	D1	ød
CDI-E100G132/P160T4	400	300	365	940	910	367	336	13
CDI-E100G160/P185T4								
CDI-E100G185/P200T4								
CDI-E100G200/P220T4L	514	400	504	1235	1200	400	360	15
CDI-E100G220/P250T4L								

Dimension unit: Millimeter

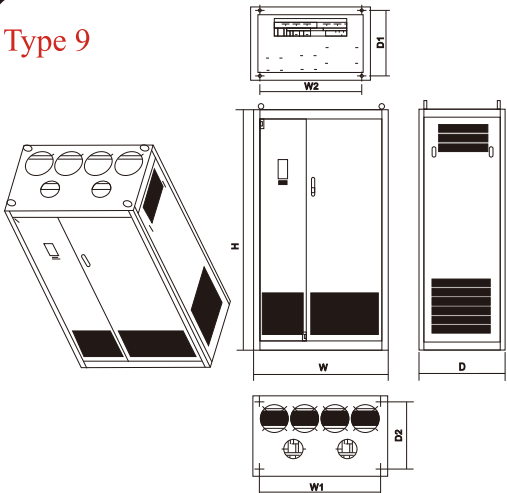
Type 8



Model	W	W1	W2	H	H1	D	D1	ød
CDI-E100G250/P280T4L	545	400	504	1345	1310	400	360	15
CDI-E100G280/P315T4L								
CDI-E100G315/P355T4L								
CDI-E100G355/P400T4L	545	400	504	1450	1415	400	360	15
CDI-E100G400T4L								

Dimension unit: Millimeter

Type 9



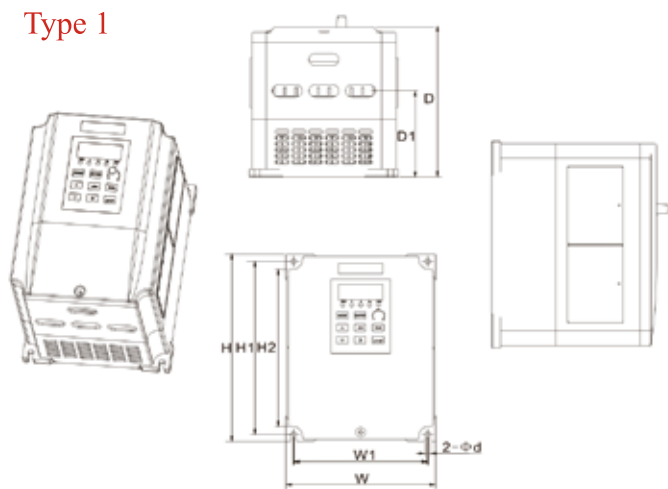
Model	W	W1	W2	H	D	D1	D2	ød
CDI-E100P500T4L	1000	900	850	1600	600	550	500	16
CDI-E100G500T4L								
CDI-E100G630T4L								

Dimension unit: Millimeter

Note: The External Dimension of E102 series are the same as that of E100 series.

E180 series External Dimension

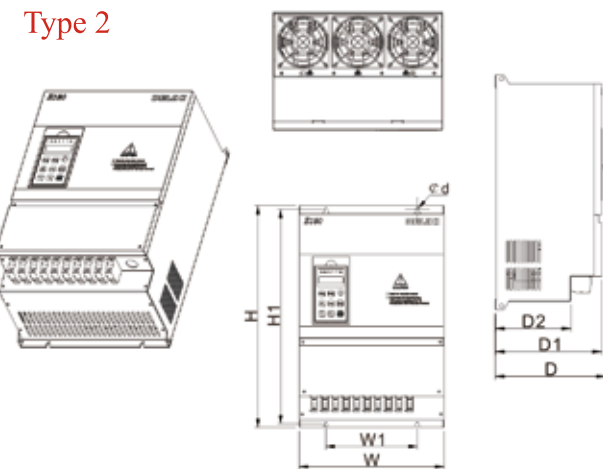
Type 1



Model	W	W1	H	H1	H2	D	D1	ϕd
CDI-E180G0R4T2B	130	120	180	170	154	148	85	5
CDI-E180G0R75T2B								
CDI-E180G0R75T4B								
CDI-E180G1R5T4B								
CDI-E180G2R2T4B	155	145	225	215	199	160	97	5
CDI-E180G1R5T2B								
CDI-E180G2R2T2B								
CDI-E180G3R7/P5R5T4B								
CDI-E180G5R5MT4B	200	188	300	288	270	172	130	6
CDI-E180G3R7T2B								
CDI-E180G5R5/P7R5T4B								
CDI-E180G7R5/P011T4B								
CDI-E180G011MT4B								

Dimension Unit: Millimeter (mm)

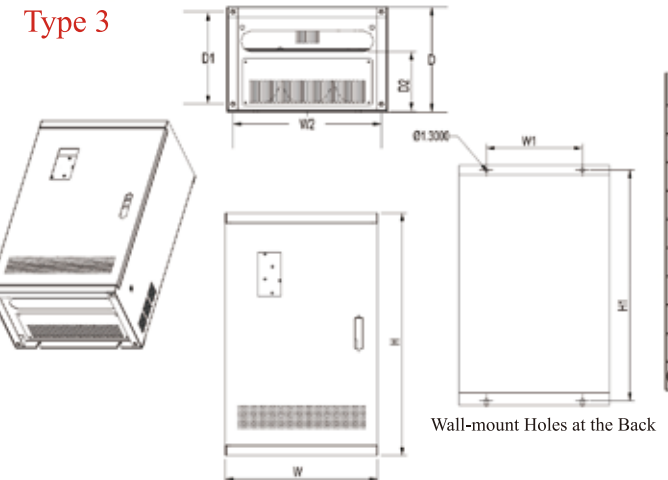
Type 2



Model	W	W1	H	H1	D	D1	D2	ϕd
CDI-E180G5P5T2B	250	180	420	405	197	187	126	7
CDI-E180G7P5T2BL								
CDI-E180G011/P015T4BL								
CDI-E180G015/P018.5T4BL								
CDI-E180G011T2	300	190	460	445	219	209	148	7
CDI-E180G015T2								
CDI-E180G018.5/P022T4								
CDI-E180G022/P030T4								
CDI-E180G030/P037T4	355	290	530	515	257	247	174	9
CDI-E180G018.5T2								
CDI-E180G022T2								
CDI-E180G037/P045T4								
CDI-E180G045/P055T4	390	290	600	585	267	257	174	9
CDI-E180G030T2								
CDI-E180G055/P075T4								
CDI-E180G075/P093T4								

Dimension Unit: Millimeter (mm)

Type 3

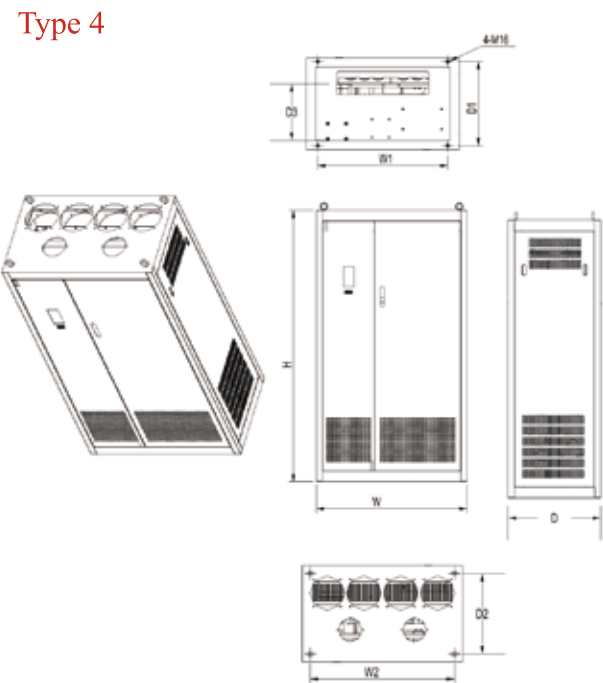


Model	W	W1	W2	H	H1	D	D1	D2	ϕd
CDI-E180G093/P110T4	470	300	435	750	720	305	270	175	13
CDI-E180G110/P132T4									
CDI-E180G132/P160T4	530	350	495	950	920	375	345	262	13
CDI-E180G160/P185T4									
CDI-E180G185/P200T4	620	450	580	1250	1210	420	380	324	15
CDI-E180G200/P220T4L									
CDI-E180G220/P250T4L									
CDI-E180G250/P280T4L	700	500	600	1400	1360	420	380	324	15
CDI-E180G280/P315T4L									
CDI-E180G315/P355T4L									

Dimension Unit: Millimeter (mm)

E180 series External Dimension

Type 4

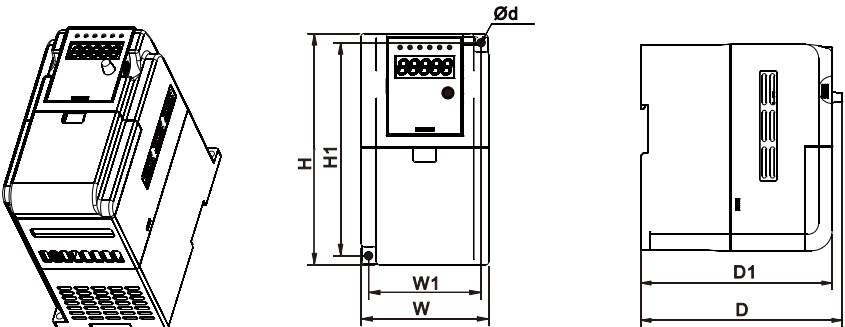


Model	W	W1	W2	H	D	D1	D2	D3	ϕd
CDI-E180G355/P375T4L	1000	850	900	1800	600	550	500	300	16
CDI-E180G375/P400T4L									
CDI-E180G400/P500T4L									
CDI-E180G500T4L									
CDI-E180G630T4L									

Dimension Unit: Millimeter (mm)

EM60 series External Dimension

Type 1



Model	W	W1	H	H1	D	D1	ϕd
CDI-EM60G0R75S1	84	74	152	140	148	141	5.5
CDI-EM60G0R4S2							
CDI-EM60G0R4S2B							
CDI-EM60G0R75S2							
CDI-EM60G0R75S2B							
CDI-EM60G1R5MS2							
CDI-EM60G1R5MS2B							
CDI-EM60G0R75T4B							
CDI-EM60G1R5T2B							
CDI-EM60G1R5T4B							
CDI-EM60G3R7T2B							
CDI-EM60G3R7T4B							

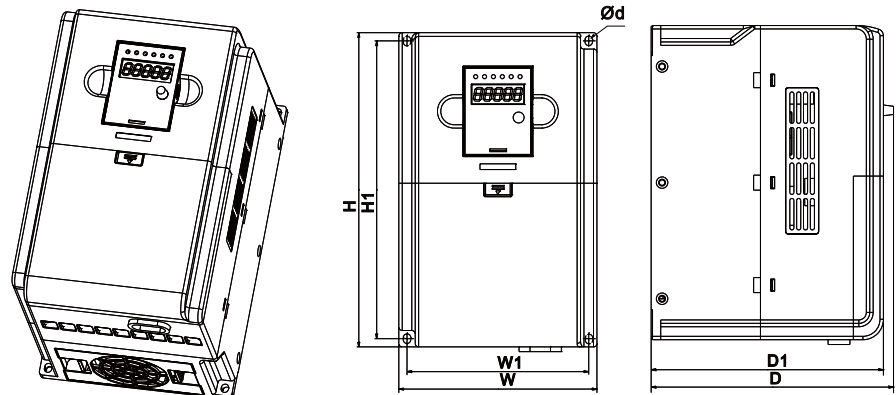
Dimension unit: Millimeter

Model	W	W1	H	H1	D	D1	ϕd
CDI-EM60G1R5S1	105	95	165	153	161	154	5.5
CDI-EM60G1R5S2							
CDI-EM60G1R5S2B							
CDI-EM60G2R2S2							
CDI-EM60G2R2S2B							
CDI-EM60G2R2T2B							
CDI-EM60G2R2T4B							
CDI-EM60G3R7T2B							
CDI-EM60G3R7T4B							
CDI-EM60G3R7T4B							

Dimension unit: Millimeter

Dimensions of EM60 Series

Type 2



Model	W	W1	H	H1	D	D1	Ød
CDI-EM60G5R5T2B	145	133	230	218	177	170	5.5
CDI-EM60G5R5T4B							
CDI-EM60G7R5T2B							
CDI-EM60G7R5T4B							
CDI-EM60G011T4B	180	168	285	273	167	160	5.5
CDI-EM60G015T4B							

Dimension unit: Millimeter

Accessories for E series

E series External Keyboard Dimension and Installation Holes



Accessories:Multi-functional Expansion Card

	Description	Model	Description
	E180-IO1 Expansion Card 4-way digital input (DI7-DI10) 1-way analog input (VF3) 2-way multi-functional open collector output (YO1, YO2) RS-485 communication interface (standard MODBUS-RTU protocol)		E102 Communication Expansion Card Standard MODBUS-RTU protocol
	E180-IO2 Expansion Card 4-way digital input (DI7-DI10) 1-way analog input (VF3) 2-way multi-functional open collector output (YO1, YO2)		E180 PROFIBUS Expansion Card Standard PROFIBUS-DP protocol Optional only for 3.7kW or above types Note: The expansion card E180-DP only applies to models with "DP" endings, e.g. ModelCDI-E180G3R7/P5R5T4B (DP)
	E180 Coder Expansion Card 1 A/B/Z differential input No frequency division output Max. Rate: 100kHz Input differential signal amplitude: ≤7V		E180 Injection Molding Machine Expansion Card 2-way digital input (DI7-DI8) 2-way analog conversion
	E180 Coder Expansion Card 2 A/B/Z/U/V/W differential input No frequency division output Max. Rate: 100kHz Input differential signal amplitude: ≤7V		E180 Water Supply Expansion Card 4 main pumps + 1 auxiliary pump automatic control Pressure control for 8 intervals: any pressure can be set and ON/OFF timing is available within every interval Sleep function and the auxiliary pump to reduce energy consumption and prolong service life Note: Only 5.5kW or above types support rapid configuration
	E180 Coder Expansion Card 3 A/B/Z open collector input Max. Rate: 100kHz		EM60-IO Expansion Card 2-way digital input (DI5, DI6) 1-way analog input (VF2) 1-way analog output (FM2)
	E180 Resolver Expansion Card 10kHz 7VRMS stimulus output 12-digit resolution No frequency division output		EM60 Communication Expansion Card SG+: 485 communication positive signal terminal SG-: 485 communication negative signal terminal MODBUS-RTU protocol
	E180 Communication Expansion Card Standard MODBUS-RTU protocol		

CDRA Series Full-digital Intelligent Soft Starter for AC Motors

The CDRA series Full-digital Intelligent Soft Starter for AC Motors is new advanced-level start equipment featuring electric & electronic technology, micro-processing technology and modern control theory. It enables effective control of start current for asynchronous motors, and is a desired alternative to reduced-voltage starting equipments featuring star-delta conversion starting and self-coupling transformer starting. Furthermore, the soft starter has a variety of control modes through keyboard, external terminals or host computer, as well as output functions such as fault relay output, multi-functional relay output and analog output, so as to be flexible to play a role in the system.

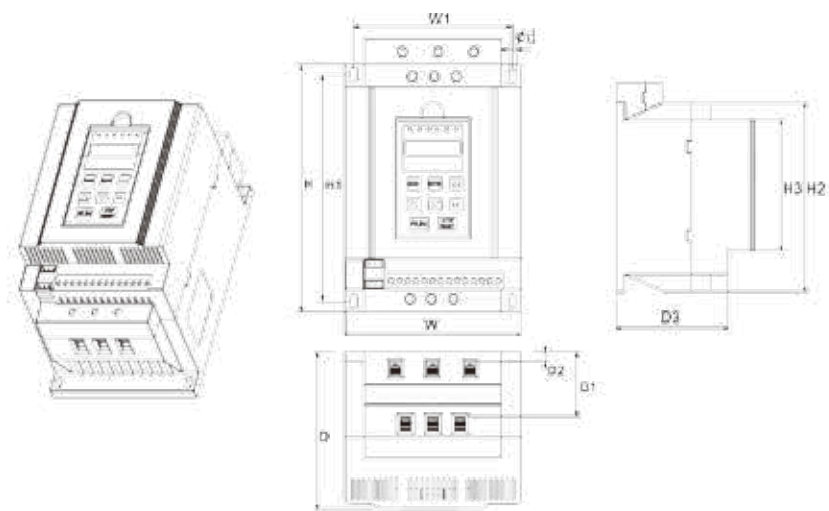
Technical Standard

Operation	Operation Control Mode		Keyboard/External Terminals/RS485 Communication
	Start Mode		Current Limit/ Voltage/ Heavy-load
	Start/Stop Time		Digital Settings
	Start Delay		Digital Settings
	Emergency Stop		Interrupt the output of the soft starter
	Current Limit		Start current below this value in the current limit and heavy-load modes
	Start Voltage		Start voltage can be set digitally in the voltage mode
	Light-load Control		Belt tripping can be detected
	Restart		Restart automatically after stopped due to fault
	Fault Output		Contact output: < AC 250V 5A; < DC 30V 5A
	Multi-functional Relay Output		Start delay, start, operation, stop, complete stop, restart
	Analog Output		0-20mA/ 4-20mA, optional
Protection	Soft Starter Protection		Over-current, overload, overheat, three-phase imbalance, default phase, light-load, external fault
	Soft Starter Alarming		Emergency stop, light-load, restart
Display	Keyboard	Operation Information	Ready, start delay, start, operation, stop, fault alarm
		Parameter Protection	Protect the parameters from being altered
Working Conditions	Type		AC-53b
	Rated Insulation Voltage		660V Rated Impact-withstanding Voltage: 4kV
	Degree of Protection		CDRA011T4~CDRA055T4: IP20 CDRA075T4~CDRA600T4: IP00
Environment	Ambient Temperature		-10 C ~ 40 C
	Storage Temperature		-20 C ~ 65 C
	Ambient Humidity		90% RH at most (No condensation)
	Altitude/Vibration		< 1000m;< 5.9m/s2 (=0.6g)
	Working Place		No corrosive gas, inflammable gas, oil mist, or dust
Cooling			Natural Cooling

CDRA series Soft Starter Models

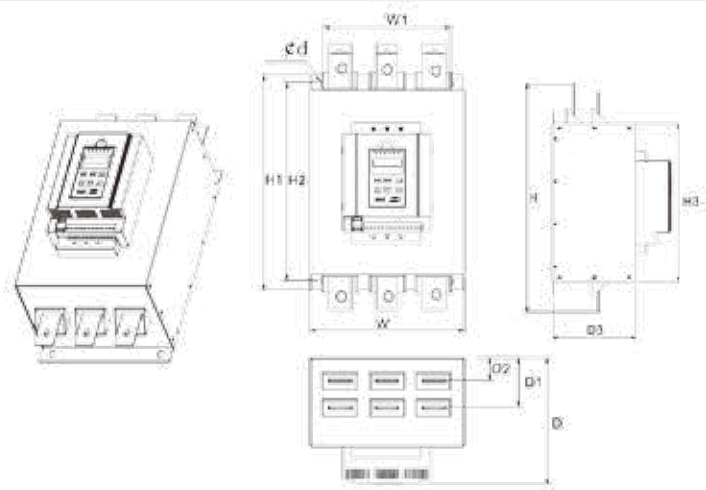
Model	Rated Power (kW)	Rated Current (A)	Circuit Breaker (QF)	Bypass Contactor (KM)	Primary Line
CDRA011T4	11	25	CDM1-63L/32	CJ20-25	6mm Cable
CDRA015T4	15	32	CDM1-63L/40	CJ20-40	10mm Cable
CDRA018T4	18.5	37	CDM1-63L/50	CJ20-40	10mm Cable
CDRA022T4	22	45	CDM1-63L/63	CJ20-63	16mm Cable
CDRA030T4	30	60	CDM1-100L/80	CJ20-63	25mm Cable
CDRA037T4	37	75	CDM1-100L/100	CJ20-100	35mm Cable
CDRA045T4	45	90	CDM1-225L/125	CJ20-100	35mm Cable
CDRA055T4	55	110	CDM1-225L/160	CJ20-160	35mm Cable
CDRA075T4	75	152	CDM1-225L/180	CJ20-160	35mm Cable
CDRA093T4	93	176	CDM1-225L/200	CJ20-250	30*3mm Copper Bar
CDRA110T4	110	210	CDM1-400L/250	CJ20-250	30*3mm Copper Bar
CDRA132T4	132	253	CDM1-400L/315	CJ20-400	30*4mm Copper Bar
CDRA160T4	160	300	CDM1-400L/350	CJ20-400	30*4mm Copper Bar
CDRA200T4	200	380	CDM1-400L/400	CJ20-400	40*4mm Copper Bar
CDRA250T4	250	480	CDM1-630L/630	CJ20-630	40*5mm Copper Bar
CDRA320T4	320	600	CDM1-800H/700	CJ40-800	40*5mm Copper Bar
CDRA400T4	400	750	CDM1-800H/800	CJ40-1000	50*5mm Copper Bar
CDRA450T4	450	892	CDM1-1250/1000	CJ40-1000	50*5mm Copper Bar
CDRA500T4	500	930	CDM1-1250/1250	CJ40-1000	50*5mm Copper Bar
CDRA600T4	600	1100	CDM1-1250/1250	CJ40-1000	50*5mm Copper Bar

CDRA series Soft Starter External and Installation Dimension



Model	W	W1	H	H1	H2	H3	D	D1	D2	D3	ϕd
CDRA011T4											
CDRA015T4											
CDRA018T4											
CDRA022T4	160	145	265	220	240	166	164	67	10	111	8
CDRA030T4											
CDRA037T4											
CDRA045T4											
CDRA055T4											

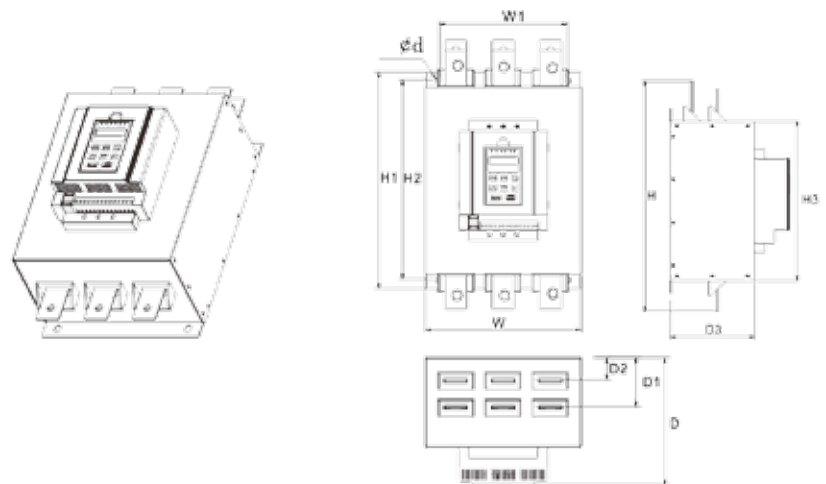
Dimension Unit: Millimeter (mm)



Model	W	W1	H	H1	H2	H3	D	D1	D2	D3	ϕd
CDRA075T4											
CDRA093T4											
CDRA110T4	280	230	534	430	395	370	255	98	44	180	10
CDRA132T4											
CDRA160T4											

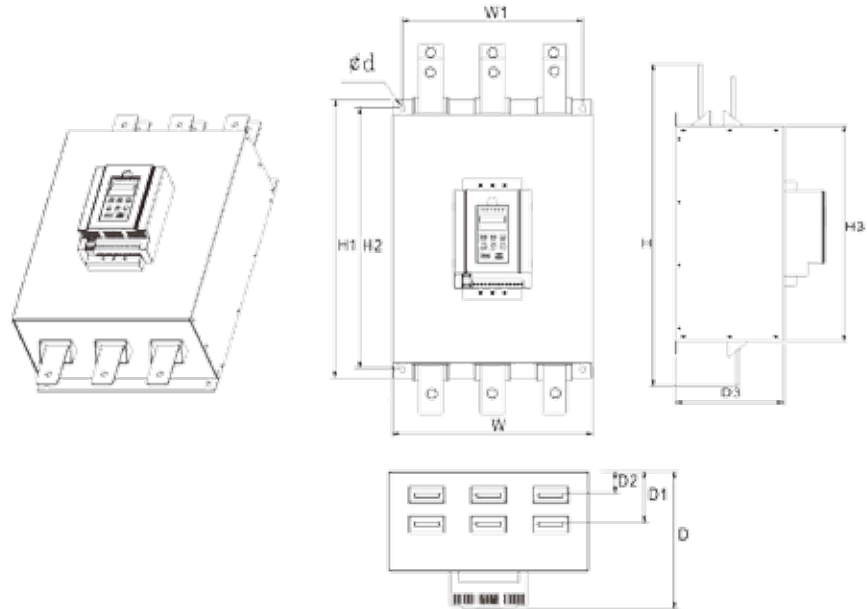
Dimension Unit: Millimeter (mm)

CDRA series Soft Starter External and Installation Dimension



Model	W	W1	H	H1	H2	H3	D	D1	D2	D3	ϕd
CDRA200T4											
CDRA250T4	310	265	594	475	440	415	255	98	44	180	10
CDRA320T4											

Dimension Unit: Millimeter (mm)



Model	W	W1	H	H1	H2	H3	D	D1	D2	D3	ϕd
CDRA400T4											
CDRA450T4	416	375	740	555	520	495	275	106	44	200	10
CDRA500T4											
CDRA600T4											

Dimension Unit: Millimeter (mm)