EIC SERIES Inverter
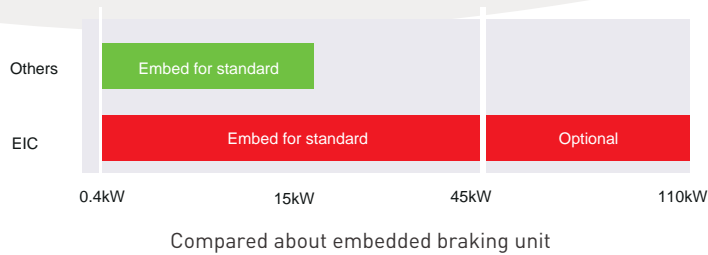## Light Duty. Economic Inverter.

Features

Multi-function and easy to use

DC reactors are built-in inverters ≥18.5kW

## • The braking unit is built-in and standard for inverters ≤37kW but optional for inverters of 45-110kW.

Dynamic braking can be implemented by only configuring braking resistors, reducing occupation space.

Others	Embed for standard	
EIC	Embed for standard	Optional
0.4kW	15kW 45kW	110kW

Compared about embedded braking unit

• Inverters (380V; ≥4kW) support the DC bus sharing solution.

Dynamic braking can be implemented by only configuring braking resistors, reducing occupation space.
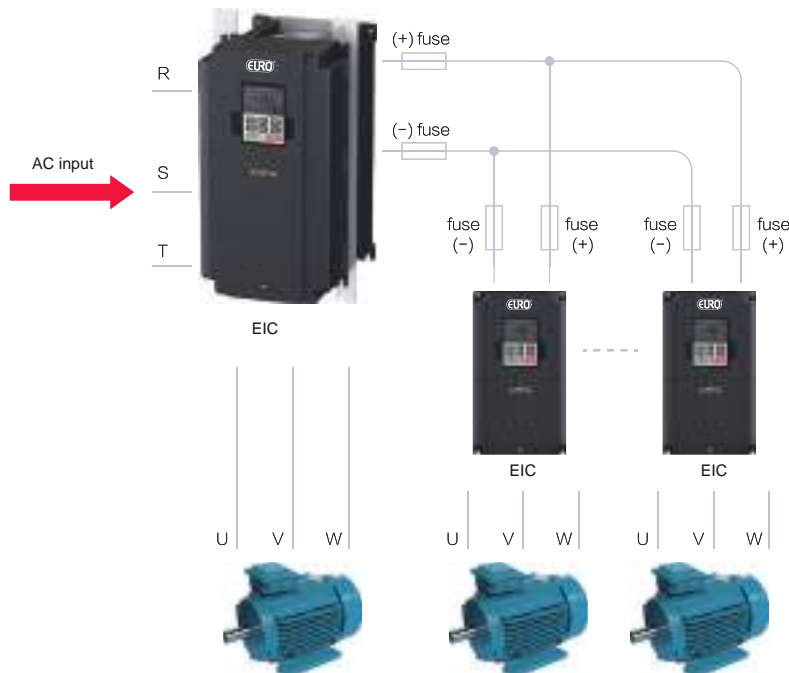
◢ Built-in Safety Torque Off function

EIC series inverter support Built-in Safety Torque Off function, and passed the certification as followed:

Model	Certification standard and grade					
	IEC 61508		EN/ISO 13849-1		EN954-1	
-S2:0.4~2.2kW -2:0.4~0.75kW -4:0.75~2.2kW	SIL	2	PL	d	Category	3
-2:1.5~7.5kW -4:4~110kW	SIL	3	PL	e	Category	3

C3 and C2 filters

C3 filters are built in inverters (3PH; 380V; ⩾4kW) and (3PH;220V; ⩾1.5kW) by using J10 to determine the connection or disconnection. External C3 filters can be configured for inverters (1PH; 220V; ⩽2.2kW), (3PH; 380V; ⩽2.2kW) and (3PH; 220V;⩽0.75kW).

External C2 filters are optional for all EIC series inverters.

| Before installing the filter | After installing the filter |
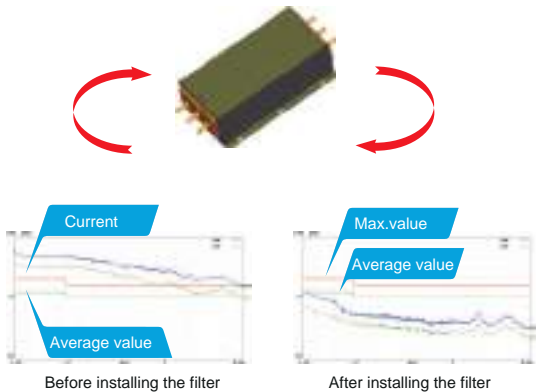
Conductive interference test of the power supply terminals

Remarks:
C2 filter : EMC performance of the inverter achieves the limited usage requirement in civil environment.
C3 filter : EMC performance of the inverter achieves the limited usage requirement in industrial environment.

Support of external keypad

The membrane keypad are standard for inverters (380V; <2.2kW), which also support external LED keypads. The keypads for inverters (3PH; 380V; >4kW) can be used as external keypads.

EIC series inverters can be configured with LED keypad which has the data copy function to upload or download the parameters.


Pluggable design for cooling fans, making maintenance easy

Abundant software functions

Function	Used to	Remarks
RS485 communication	Read and modify inverter parameters through connection to the upper computer so as to control inverter running status.	Configured with RS485 communication interface
PID	Carry out PID operation on feedback signals to control inverter output frequency and improve target accuracy and stability. Applicable to pressure, flow and temperature process control.	Supports PID output polarity switching.
Motor parameter autotuning	Carry out rotation or static autotuning, improving control accuracy and response speed.	Classified into rotation autotuning and static autotuning.
Simple PLC function	Change the running frequency and direction automatically according to the running time set by simple PLC to meet process requirements.	Supports multiple running modes.
Multi-step speed control	Meet the speed control requirements in different periods of time.	A maximum of 16 steps can be divided for multi-step speed control.
Multiple V/F curve settings	Meet the requirements of energy-saving operation for fans and water pumps and of various variable frequency power supplies; adapt to different load applications.	Linear, multi-dot, multi-power and V/F separation settings, implementing flexible setting of V/F curves.
Virtual terminals	Take external signals as local virtual I/O to reduce hardware configuration.	Coresponding virtual terminal functions must be enabled in communication mode.
Delay of switching on and off	Provide more programming and control modes.	Max. switching on/off delay is 50s
Uninterrupted running in instantaneous power off	Ensure uninterrupted running in instantaneous power off. Especially applicable to the situations with high requirements on continous operation.	At transient voltage drop, the inverter can keep running by feedback energy without stop in valid time.
Various protection functions	Provide overall fault protection functions.	Various measures provided to protect against faults such as overcurrent, overvoltage, undervoltage, overheating, and overload, whose information can be saved.
Multiple braking modes available	Provide multiple braking modes, satisfying accurate and quick stop under different loads.	DC braking, flux braking, dynamic braking
Battery capacity display	Display the accumulative power consumption on the inverter without watt-hour meter.	Inverter power consumption can be queried.

Exact thermal design is made based on advanced thermal technology.
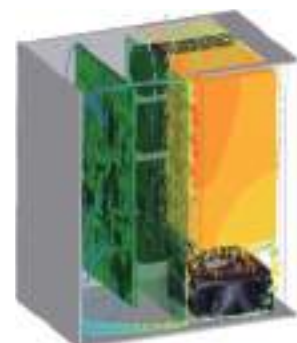
Applications

Textile machinery

Food machinery

Plastic machinery

Printing and packaging

Environmental protection equipment

Ceramic equipment

Woodworking equipment

Conveying equipment

Air compressor

Cable machinery

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Technical specification

Function		Specification
Power input	Input voltage (V)	1PH 220V (-15%)~240V(+10%) 3PH 220V(-15%)~240V(+10%) 3PH 380V (-15%)~440V(+10%)
	Input current (A)	Refer to the rated value
	Input frequency (Hz)	50Hz or 60Hz, allowed range: 47~63Hz
Power output	Output motor capacity (kW)	Refer to the rated value
	Output current (A)	Refer to the rated value
	Output voltage (V)	0~input voltage, error <5%
	Output frequency (Hz)	0~400Hz
Technical Control Feature	Control mode	SVPWM, SVC
	Adjustable-speed ratio	1:100
	Speed control accuracy	±0.2% (SVC)
	Speed fluctuation	± 0.3% (SVC)
	Torque response	<20ms (SVC)
	Torque control accuracy	10%
	Starting torque	0. 5Hz/150% (SVC)
	Overload capability	150% of rated current : 1 minute 180% of rated current : 10 seconds 200% of rated current : 1 second
Running control feature	Frequency setting method	Digital setting, analog setting, pulse frequency setting, multi-step speed running setting, simple PLC setting, PID setting, MODBUS communication setting. Shift between the set combination and set channel.
	Auto-adjustment of the voltage	Keep a stable voltage automatically when the grid voltage transients
	Fault protection	Provide comprehensive fault protection functions: over-current, over-voltage, under-voltage, over-heating, phase loss and overload, etc.
Peripheral interface	Analog input	1 (AI2) 0~10V/0~20mA and 1 (AI3) -10~10V
	Analog output	2 (AO1, AO2) 0~10V/0~20mA
	Digital input	4 common inputs, the Max. frequency : 1kHz; 1 high speed input, the Max. frequency : 50kHz
	Digital output	1 Y1 terminal output;
	Relay output	2 programmable relay outputs RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capacity: 3A/AC250V
Others	Mountable method	Wall and rail mountable
	Braking unit	Embedded
	EMI filter	Optional filter : meet the degree requirement of IEC61800-3 C2, IEC61800-3 C3
	Temperature of the running environment	-10~50°C Above 40°C, derate 1% for every additional 1°C.
	Altitude	<1000m Above 1000m, derate 1% for every additional 100m.
	Protective degree	IP20
	Cooling	Fan cooling

Selection

Type designation key

$$\underline{EIC} - \underline{S} \quad \underline{2} \quad \underline{007}$$

A   B   C   D

Sign	Description of the sign	Specific Contents
A	Series number	
B		S = single none = 3 phase
C	Input voltage	2 : AC 220V (-15%) - 240V (+10%) 3 : AC 380V (-15%) - 440V (+10%)
D	Capacity	007 = 0.75kW k = 110kW

Rated parameters

Model	Voltage degree	Output power (kW)	Input Current (A)	Output Current (A)
EIC-S2004	1PH 220V	0.4	6.5	2.5
EIC-S2007		0.75	9.3	4.2
EIC-S2015		1.5	15.7	7.5
EIC-S2022		2.2	24	10
EIC-2004	3PH 220V	0.4	3.7	2.5
EIC-2007		0.75	5	4.2
EIC-2015		1.5	7.7	7.5
EIC-2022		2.2	11	10
EIC-2037		4	17	16
EIC-2055		5.5	21	20
EIC-2075		7.5	31	30
EIC-3007	3PH 380V	0.75	3.4	2.5
EIC-3015		1.5	5.0	4.2
EIC-3022		2.2	5.8	5.5
EIC-3037		4	13.5	9.5
EIC-3055		5.5	19.5	14
EIC-3075		7.5	25	18.5
EIC-3110		11	32	25
EIC-3150		15	40	32
EIC-3185		18.5	47	38
EIC-3220		22	51	45
EIC-3300		30	70	60
EIC-3370		37	80	75
EIC-3450		45	98	92
EIC-3550		55	128	115
EIC-3750		75	139	150
EIC-3900		90	168	180
EIC-3110K		110	201	215

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Standard wiring

Wiring diagram of control circuit

Multi-function input terminal 1 — S1
Multi-function input terminal 2 — S2
Multi-function input terminal 3 — S3
Multi-function input terminal 4 — S4
High speed pulse input collector — HDI
Open collector input optional

COM
PW
+24V
PE

+10V
AI2
AI3
GND

PE

Y1
COM — Y1 output

AO1
AO1
COM — Analog output 0-10V/0-20mA

AO2
AO2
COM — Analog output 0-10V/0-20mA

Twisted pair Shield layer
485+
485-
GND
PE — RS485 communication

RO1A
RO1B
RO1C — Relay 1 output

RO2A
RO2B
RO2C — Relay 2 output

AI2

Installation dimension

External keypad dimension

Overall drawing

Hole drawing
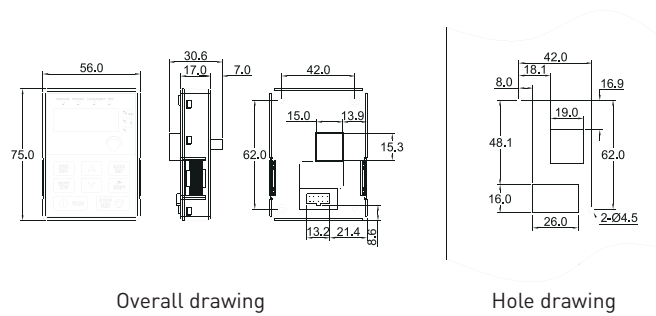
Note: The external keypad can be 20 meters away from the inverter at most.

Installation bracket   Installation dimension
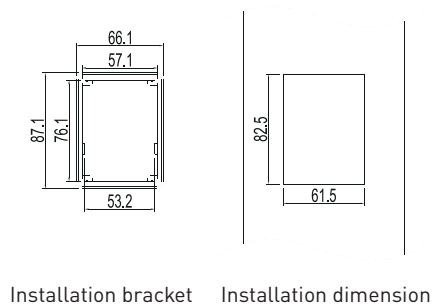
Inverter dimensions
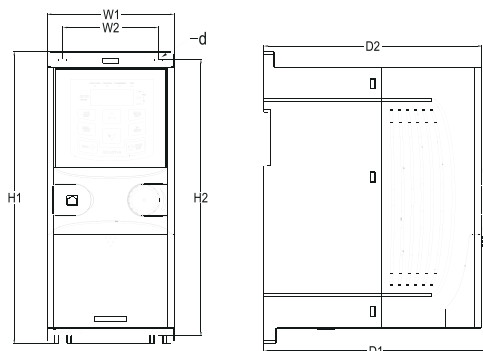
Wall mounting of 0.75~2.2kW inverters

Dimensions (unit: mm)

Model	W1	W2	H1	H2	D1	D2	Hole (d)
EIC-S2004	80.0	60.0	160.0	150.0	123.5	120.3	5
EIC-S2007	80.0	60.0	160.0	150.0	123.5	120.3	5
EIC-S2015	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-S2022	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-2004	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-2007	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-3007	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-3015	80.0	60.0	185.0	175.0	140.5	137.3	5
EIC-3022	80.0	60.0	185.0	175.0	140.5	137.3	5
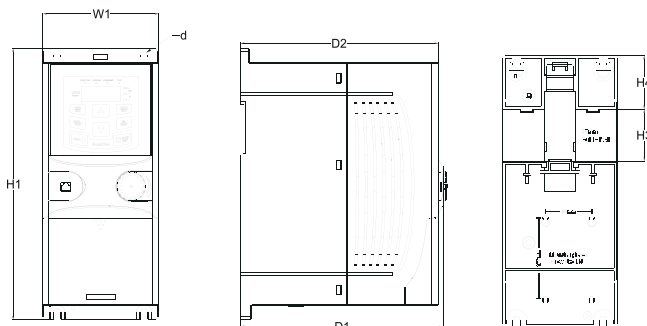
Rail mounting of inverters of 1PH 220V/3PH 380V (≤2.2kW) and 3PH 220V (≤0.75kW)

Dimensions (unit: mm)

Model	W1	W2	H1	H2	D1	D2	Hole (d)
EIC-S2004	80.0	160.0	35.4	36.6	123.5	120.3	5
EIC-S2007	80.0	160.0	35.4	36.6	123.5	120.3	5
EIC-S2015	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-S2022	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-2004	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-2007	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-3007	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-3015	80.0	185.0	35.4	36.6	140.5	137.3	5
EIC-3022	80.0	185.0	35.4	36.6	140.5	137.3	5

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Installation dimension

Inverter dimensions

Wall mounting of 3PH 380V 4~37kW and 3PH 220V 1.5~7.5 kW inverters

Wall mounting of 3PH 380V 45~75kW inverters

Wall mounting of 3PH 380V 90~110kW inverters
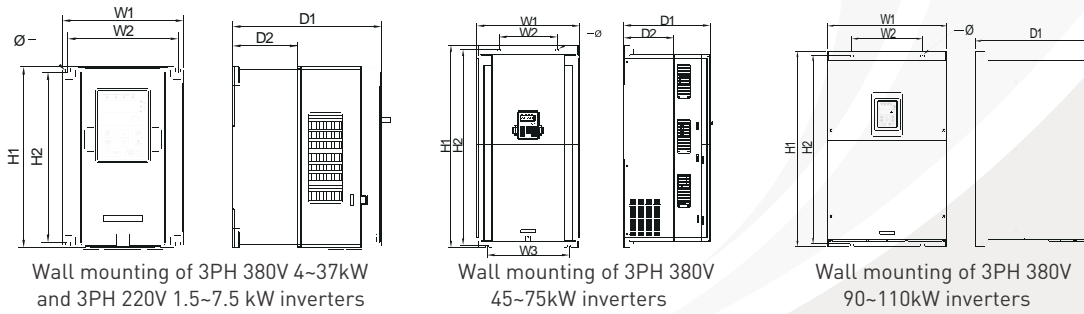
Dimensions (unit: mm)

Model	W1	W2	W3	H1	H2	D1	D2	Hole (d)
EIC-2015	146.0	131.0	—	256.0	243.5	167.0	84.5	6
EIC-2022	146.0	131.0	—	256.0	243.5	167.0	84.5	6
EIC-2037	146.0	131.0	—	256.0	243.5	167.0	84.5	6
EIC-2055	170.0	151.0	—	320.0	303.5	196.3	113.0	6
EIC-2075	170.0	151.0	—	320.0	303.5	196.3	113.0	6
EIC-3037	146.0	131.0	—	256.0	243.5	167.0	84.5	6
EIC-3055	146.0	131.0	—	256.0	243.5	167.0	84.5	6
EIC-3075	170.0	151.0	—	320.0	303.5	196.3	113.0	6
EIC-3110	170.0	151.0	—	320.0	303.5	196.3	113.0	6
EIC-3150	170.0	151.0	—	320.0	303.5	196.3	113.0	6
EIC-3185	200.0	185.0	—	340.6	328.6	184.3	104.5	6
EIC-3220	200.0	185.0	—	340.6	328.6	184.3	104.5	6
EIC-3300	250.0	230.0	—	400.0	380.0	202.0	123.5	6
EIC-3370	250.0	230.0	—	400.0	380.0	202.0	123.5	6
EIC-3450	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
EIC-3550	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
EIC-3750	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
EIC-3900	338.0	200.0	—	554.0	535.0	329.2	—	9.5
EIC-3110K	338.0	200.0	—	554.0	535.0	329.2	—	9.5
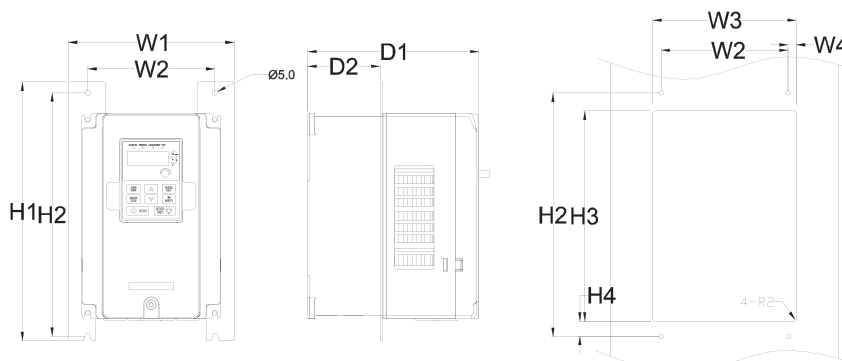
Flange mounting of 3PH 380V 4~75kW and 3PH 220V 1.5~7.5kW inverters
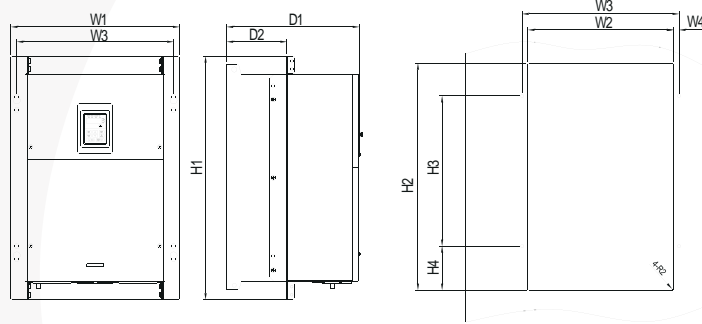
Dimensions (unit: mm)

Model	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Hole (d)	Nut
EIC-2015	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
EIC-2022	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
EIC-2037	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
EIC-2055	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
EIC-2075	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
EIC-3037	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
EIC-3055	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
EIC-3075	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
EIC-3110	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
EIC-3150	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
EIC-3185	266	250	224	13	371	250	350.6	20.3	184.6	104	6	M5
EIC-3220	266	250	224	13	371	250	350.6	20.3	184.6	104	6	M5
EIC-3300	316	300	274	13	430	300	410	55	202	118.3	6	M5
EIC-3370	316	300	274	13	430	300	410	55	202	118.3	6	M5
EIC-3450	352	332	306	13	580	400	570	80	238	133.8	9	M8
EIC-3550	352	332	306	13	580	400	570	80	238	133.8	9	M8
EIC-3750	352	332	306	13	580	400	570	80	238	133.8	9	M8
EIC-3900	418.5	361	389.5	14.2	600	559	370	108.5	329.5	149.5	9.5	M8
EIC-3110K	418.5	361	389.5	14.2	600	559	370	108.5	329.5	149.5	9.5	M8
EIC-3220	200.0	185.0	—	340.6	328.6	184.3	184.3	104.5	184.3	104.5	6	184.3
EIC-3300	250.0	230.0	—	400.0	380.0	202.0	202.0	123.5	202.0	123.5	6	202.0
EIC-3370	250.0	230.0	—	400.0	380.0	202.0	202.0	123.5	202.0	123.5	6	202.0
EIC-3450	282.0	160.0	226.0	560.0	542.0	238.0	238.0	138.0	238.0	138.0	9	238.0
EIC-3550	282.0	160.0	226.0	560.0	542.0	238.0	238.0	138.0	238.0	138.0	9	238.0
EIC-3750	282.0	160.0	226.0	560.0	542.0	238.0	238.0	138.0	238.0	138.0	9	238.0
EIC-3900	338.0	200.0	—	554.0	535.0	329.2	329.2	—	329.2	—	9.5	329.2
EIC-3110K	338.0	200.0	—	554.0	535.0	329.2	329.2	—	329.2	—	9.5	329.2

Note: In flange installation mode, the installation bracket is optional

Optional parts

External LED keypad

Reactor

Filter

Braking resistor

Membrane of heat releasing holes at the side

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Reliable Automation Solution