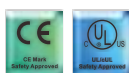




Automation for a Changing World

# Delta Power Regenerative Unit REG2000 Series



[www.delta.com.tw/ia](http://www.delta.com.tw/ia)



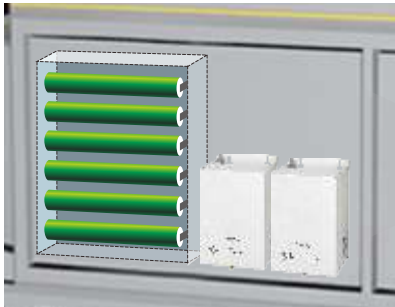
Smarter. Greener. Together.

## Features

- Lower harmonics and high power factor using sinewave PWM control
- Compact design with reactor included and easy installation needs only 5 wires of connection

### Regular solution

Inverter (55kW/ 400V) + Brake Unit + Brake Resistor



### Delta solution

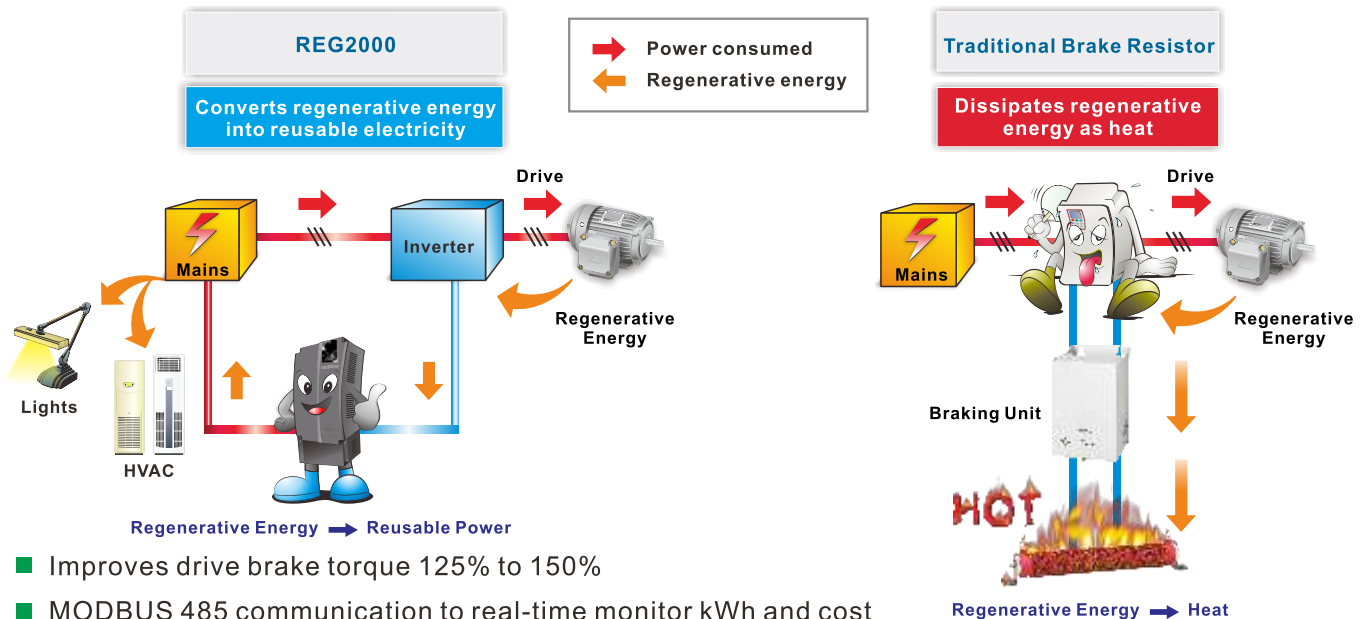
Inverter (55kW/400V) + Delta REG2000



Space saving

50%

- Replace traditional brake resistor providing reduced heat generation and more than 95% power regeneration efficiency



- Improves drive brake torque 125% to 150%
- MODBUS 485 communication to real-time monitor kWh and cost
- High flexibility, compatible with other inverters and servo drives
- Parallel connections\* for large power applications
- More option cards\* available upon purchase: MODBUS TCP, CANopen (DS301), PROFIBUS, DeviceNet, EtherNet/IP

\*Please contact Delta Industrial Automation

## Applications

- **Large-inertia load applications:** centrifuge equipment, industrial laundries, roving machines and more.
- **4-quadrant load applications:** elevators, cranes, pumpjacks and more.
- **Quick braking applications:** machine tools, bag making machines, auto storage and retrieval systems, press machines and more
- **Long-term energy feedback applications:** printing machines, escalators and more.



Escalators



Elevators



Tension Controls



Hoists



Centrifuge Equipment



Press Machines



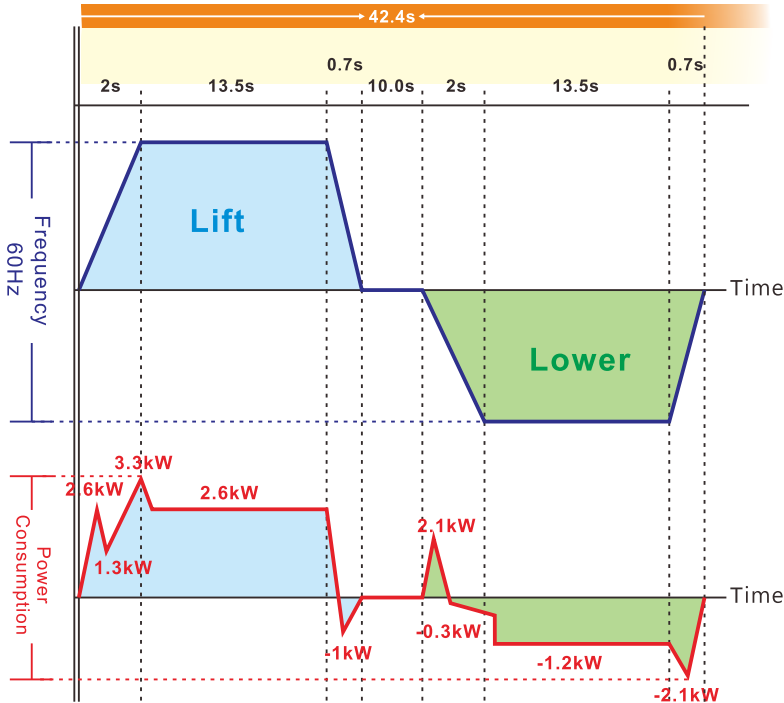
Industrial Laundries



Machine Tools

# Applications

Examples of REG2000 application for hoist and elevator systems. The energy saving results are measured using a power meter.



## Hoist

This hoist system works 12 hours a day and 265 days a year. Each cycle takes 42.4 seconds and the cost for 1 kWh is NT 3.5 dollar.

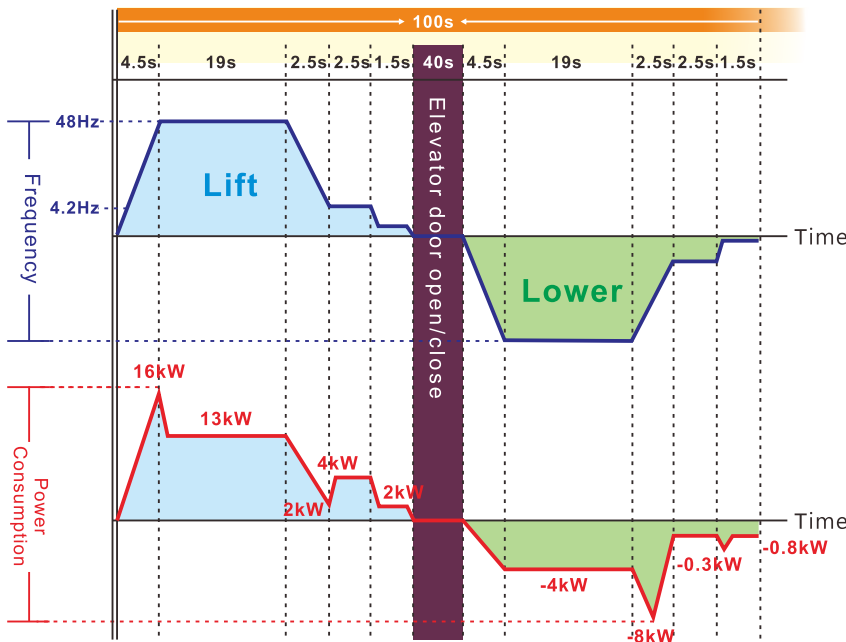
- Hoist system: 5.5kw motor + REG2000
- Hoist capacity: 10 tons
- Host speed: 3.6m/min
- Loads: 3 tons
- Cycle: 5 times

REG2000	+Whr	87.088
	-Whr	-28.89
Brake Resistor	+Whr	86.033
	-Whr	0

- Average savings per cycle :  $\frac{28.89}{5} = 5.778\text{Whr}$
- Operation time per cycle: 42.4 sec
- Operation/day:  $\frac{12(\text{hr}) \times 60(\text{min}) \times 60(\text{sec})}{42.4(\text{sec})} = 1019 \text{ cycles}$

### Delta's REG2000 offers

- Energy saved:  $\frac{28}{87} \times 100\% = 32\%$
- Annual savings:  $\frac{5.778}{1000} (\text{kWhr/cycle}) \times 1019 (\text{cycle/day}) \times 265 \text{ days} \times \text{NTD } 3.5 = \text{NTD } 5461 (\text{USD } 183)$



## Elevator

This elevator system works 12 hours a day and 265 days a year. Each cycle takes 100 seconds and the cost for 1 kwh is NT 3.5 dollar.

- Elevator system: 22kW motor + REG2000
- Elevator capacity: 2 tons
- Elevator speed: 60m/min
- Height: B1~4F
- Loads: empty car
- Cycle: 5 times

REG2000	+Whr	360.7
	-Whr	111.1
Brake Resistor	+Whr	354.2
	-Whr	0

- Average savings per cycle :  $\frac{111}{5} = 23.2\text{Whr}$
- Operation time per cycle: 100 sec
- Operation/day:  $\frac{12(\text{hr}) \times 60(\text{min}) \times 60(\text{sec})}{100(\text{sec})} = 432 \text{ cycles}$

### Delta's REG2000 offers

- Energy saved:  $\frac{111}{361} \times 100\% = 30\%$
- Annual savings:  $\frac{22}{1000} (\text{kWhr/cycle}) \times 432 (\text{cycle/day}) \times 265 \text{ days} \times \text{NTD } 3.5 = \text{NTD } 8903 (\text{USD } 297)$

## Specifications

230V		A		B			C	
Frame								
Model number REG___A23A-21	075	110	150	185	220	300	370	
Power rating (kW)	7.5	11	15	18.5	22	30	37	
Mains	Input current (A)	20	32	38	49	60	80	100
	Voltage / frequency rating	3-phase AC 200V~240V (-15% ~ +10%) · 50/60Hz						
	Operation voltage	170~265Vac						
	Frequency tolerance	47~63Hz						
Feedback activation DC voltage range	300~360Vdc (can be adjusted via parameter 01-08)							
Net weight	7.5±0.5Kg		16.5±0.5Kg			25.5±0.5Kg	28.0±0.5Kg	

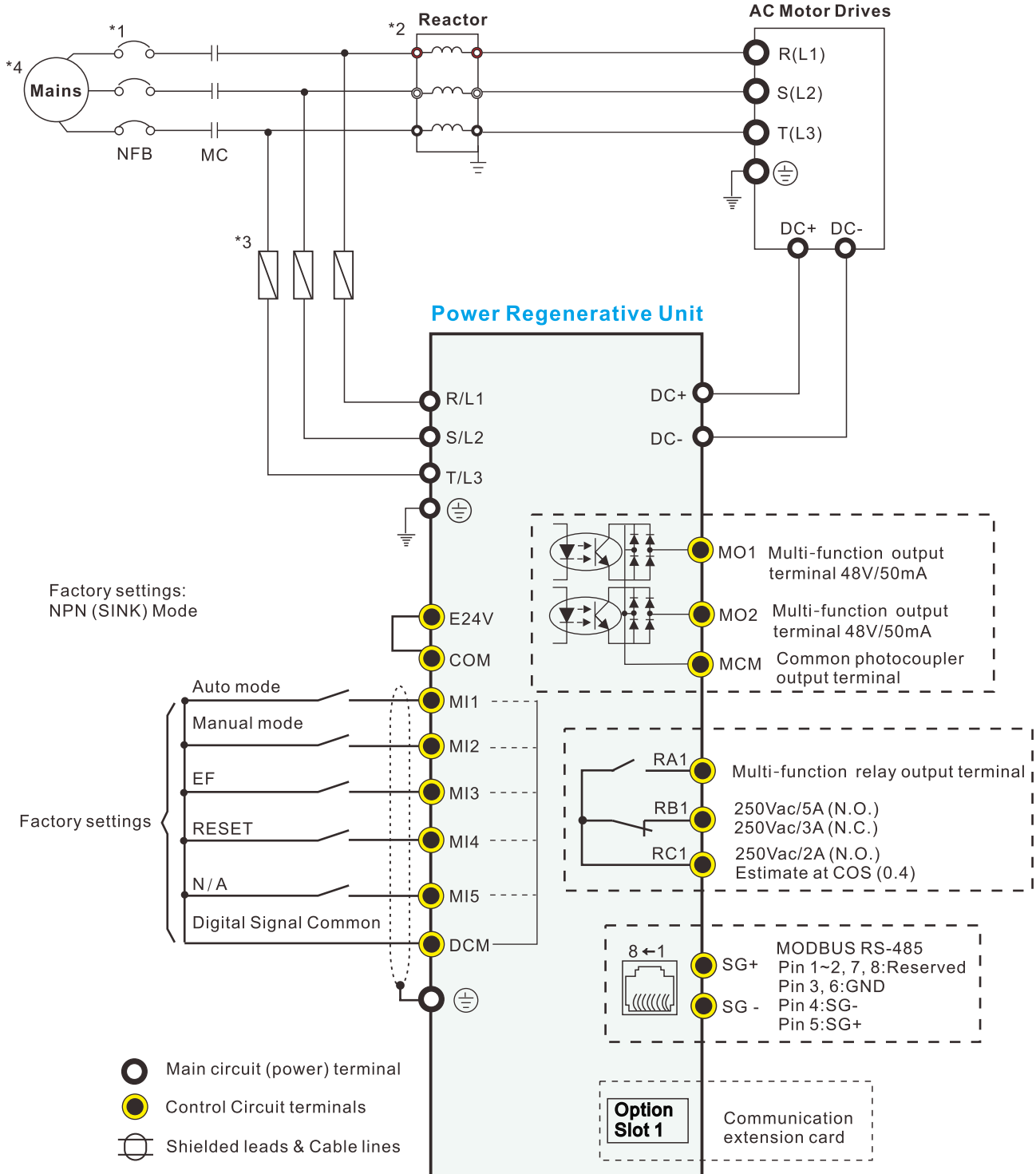
460V		A			B			C		
Frame										
Model number REG___A43A-21	075	110	150	185	220	300	370	450	550	
Power rating (kW)	7.5	11	15	18.5	22	30	37	45	55	
Mains	Input current (A)	10.5	17	20	25	32	43	49	60	75
	Voltage / frequency rating	3-phase AC 380V - 480V (-15%~+10%) · 50/60Hz								
	Operation voltage	323~528Vac								
	Frequency tolerance	47~63Hz								
Feedback activation DC voltage range	580~720Vdc (can be adjusted via parameter 01-08)									
Net weight	7.5±0.5Kg			17.0±0.5Kg			26.5±0.5Kg	29.0±0.5Kg	29.5±0.5Kg	

## Common Characteristics

Control Characteristics	Control method	SVPWM
	Brake torque	80% rated input current continuously; 100% rated input current for 1min, 25%ED
	Overload capacity	150% rated current for 10sec
	Generic input signal	5 sets of signal terminals 24Vdc 6mA
	Generic output signal	2 sets of signal terminals 48Vdc 50mA; 1 set of signal terminal for relay output
	Cooling method	Forced air cooling (Fan cooling)
Environment	Enclosure	IP20/NEMA 1
	Environment for operation, storage and transportation	DO NOT expose the Active Regenerative Unit to harsh environments, such as dust, direct sunlight, corrosive/ inflammable gasses, humidity, liquid or vibrations. The salt in the air must be less than 0.01mg/cm <sup>2</sup> per year.
	Operation temperature	-10~40°C
	Storage temperature	-25~+70°C
	Rated humidity	Blow 90% RH (Non-condense)
	Vibration	Blow 5.9m/S <sup>2</sup> (0.6G) (10~55Hz) (JIS C0040)
Certifications	CE, UL, cUL, C-Tick	

# Wiring

■ Applicable to frames A~C



\*1 The NFB can be selected based on the selection of the drive.

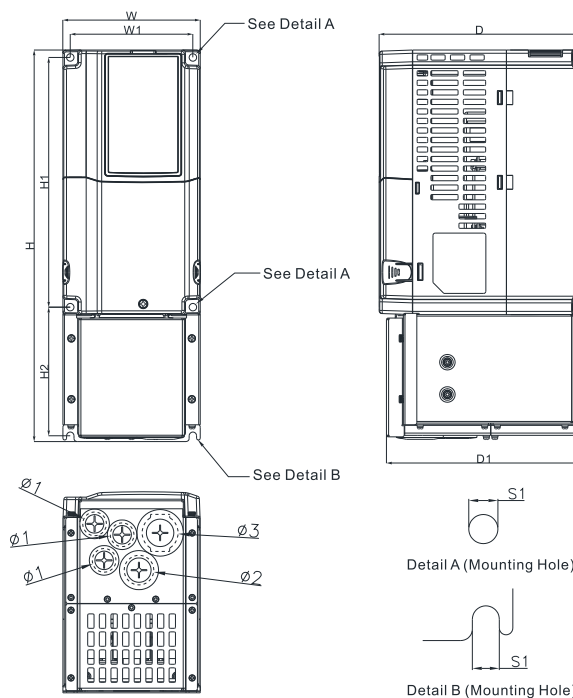
\*2 If a reactor is connected to the drive, install the reactor here (optional).

\*3 Please refer to the user manual Chapter 05 Optional Accessories for the selection of fuses.

\*4 It is recommended not to connect an REG2000 to the power system if the power system is already connected with a generator or UPS.

# Dimensions

## Frame A

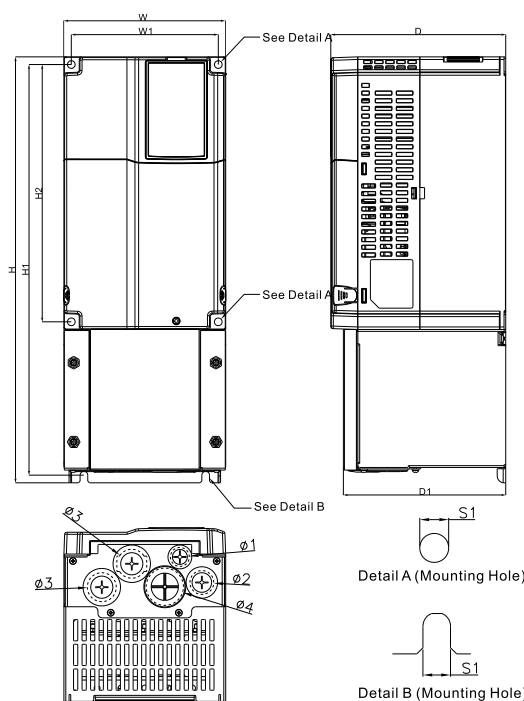


### MODEL

- REG075A23A-21
- REG110A23A-21
- REG075A43A-21
- REG110A43A-21
- REG150A43A-21

Frame		W	H	D	W1	H1	H2	D1	S1	Ø1	Ø2	Ø3
A1	mm	130.0	370.0	190.0	116.0	357.5	236.0	183.0	7.0	22.2	28.0	34.0
	inch	5.12	14.56	7.48	4.57	14.07	9.29	7.20	0.28	0.87	1.10	1.34

## Frame B

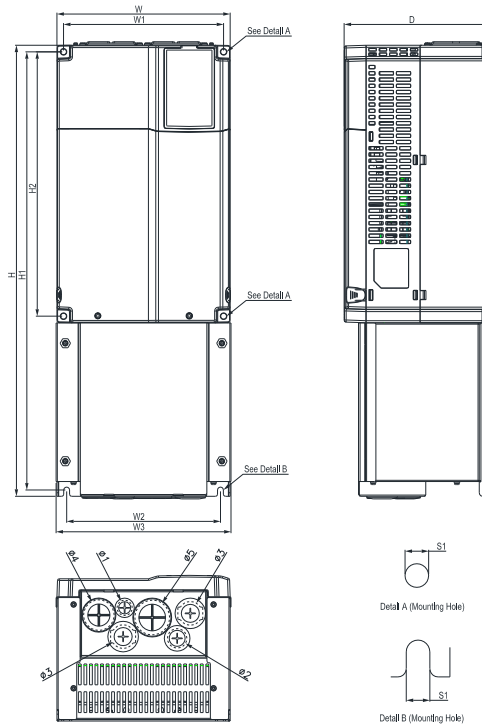


### MODEL

- REG150A23A-21
- REG185A23A-21
- REG220A23A-21
- REG185A43A-21
- REG220A43A-21
- REG300A43A-21

Frame		W	H	D	W1	H1	H2	D1	S1	Ø1	Ø2	Ø3	Ø4
B1	mm	190.0	500.0	205.0	172.5	482.0	302.0	190.5	9.0	22.2	28.0	34.0	43.8
	inch	7.48	19.68	8.09	6.79	18.98	11.89	7.50	0.35	0.87	1.10	1.34	1.72

## Frame C

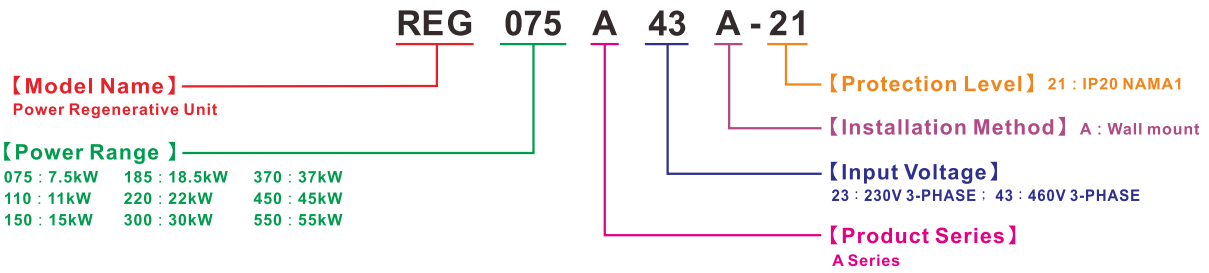


### MODEL

REG300A23A-21  
 REG370A23A-21  
 REG370A43A-21  
 REG450A43A-21  
 REG550A43A-21

Frame		W	H	D	W1	W2	W3	H1	H2	S1	Ø1	Ø2	Ø3	Ø4	Ø5
C1	mm	250.0	650.0	210.0	231.0	220.0	252.5	631.5	381.0	8.5	22.2	28.0	34.0	44.0	50.1
	inch	9.84	25.59	8.27	9.09	8.74	9.94	24.86	15.00	0.33	0.87	1.10	1.34	1.73	1.97

## Model Name





Smarter. Greener. Together.

## Industrial Automation Headquarters

### Delta Electronics, Inc.

Taoyuan Technology Center  
No.18, Xinglong Rd., Taoyuan City,  
Taoyuan County 33068, Taiwan  
TEL: 886-3-362-6301 / FAX: 886-3-371-6301

## Asia

### Delta Electronics (Jiangsu) Ltd.

Wujiang Plant 3  
1688 Jiangxing East Road,  
Wujiang Economic Development Zone  
Wujiang City, Jiang Su Province,  
People's Republic of China (Post code: 215200)  
TEL: 86-512-6340-3008 / FAX: 86-769-6340-7290

### Delta Greentech (China) Co., Ltd.

238 Min-Xia Road, Pudong District,  
ShangHai, P.R.C.  
Post code : 201209  
TEL: 86-21-58635678 / FAX: 86-21-58630003

### Delta Electronics (Japan), Inc.

Tokyo Office  
2-1-14 Minato-ku Shibadaimon,  
Tokyo 105-0012, Japan  
TEL: 81-3-5733-1111 / FAX: 81-3-5733-1211

### Delta Electronics (Korea), Inc.

1511, Byucksan Digital Valley 6-cha, Gasan-dong,  
Geumcheon-gu, Seoul, Korea, 153-704  
TEL: 82-2-515-5303 / FAX: 82-2-515-5302

### Delta Electronics Int'l (S) Pte Ltd

4 Kaki Bukit Ave 1, #05-05, Singapore 417939  
TEL: 65-6747-5155 / FAX: 65-6744-9228

### Delta Electronics (India) Pvt. Ltd.

Plot No 43 Sector 35, HSIIDC  
Gurgaon, PIN 122001, Haryana, India  
TEL : 91-124-4874900 / FAX : 91-124-4874945

## Americas

### Delta Products Corporation (USA)

Raleigh Office  
P.O. Box 12173, 5101 Davis Drive,  
Research Triangle Park, NC 27709, U.S.A.  
TEL: 1-919-767-3800 / FAX: 1-919-767-8080

### Delta Greentech (Brasil) S.A

Sao Paulo Office  
Rua Itapeva, 26 - 3º andar Edificio Itapeva One-Bela Vista  
01332-000-São Paulo-SP-Brazil  
TEL: +55 11 3568-3855 / FAX: +55 11 3568-3865

## Europe

### Deltronics (The Netherlands) B.V.

Eindhoven Office  
De Witbogt 15, 5652 AG Eindhoven, The Netherlands  
TEL: 31-40-2592850 / FAX: 31-40-2592851

\*We reserve the right to change the information in this catalogue without prior notice.