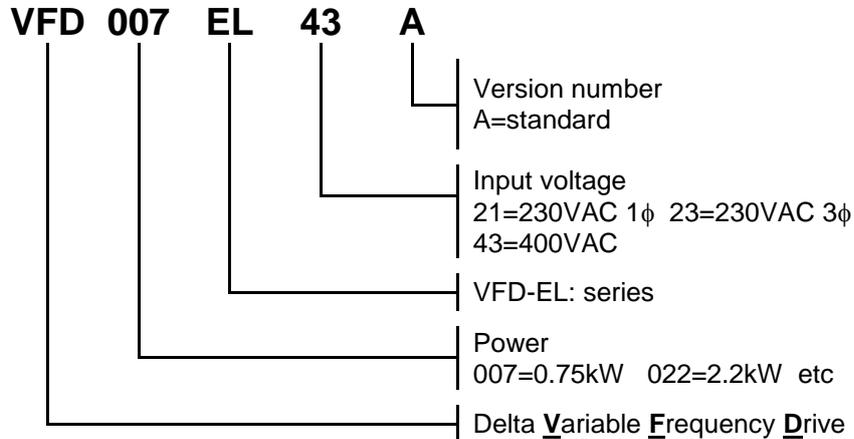


## Type number key



## 230V single phase 0.2 ~ 2.2kW

Type number	VFD□□□□□□	002EL21A	004EL21A	007EL21A	015EL21A	022EL21A
Rated power	kW	0.2	0.4	0.75	1.5	2.2
Rated output current	A RMS	1.6	2.5	4.2	7.5	11
Current limit	%	150% 60s				
Rated output capacity	kVA	0.6	1	1.6	2.9	4.2
Rated input current	A RMS	4.9	6.5	9.7	15.7	24
Mains fuse (for UL: Bussmann)		JJN-10	JJN-15	JJN-20	JJN-30	JJN-50
Dimensions HxWxD	mm	174x72x136			174x100x136	
Size ****		A			B	
Weight	kg	1.1			1.9	
Section of power cables	mm <sup>2</sup>	0.8 ~ 3			0.8 ~ 8	
Cooling		Convection		Fan		
Carrier frequency	kHz	2 ~ 12				
EMC-Filter		Built-in				
DC-Choke		No				
DC-Bus connection		Yes				
Brake chopper		No				
Recommended brake resistor	$\Omega$ /W	200/80 **			110/300 **	110/300 ***
Minimum brake resistor value	$\Omega$	105.6 **				

\*\* With external BUE20015 brake chopper

\*\*\* With external BUE20037 brake chopper

\*\*\*\* See dimensional drawing on Page 2.

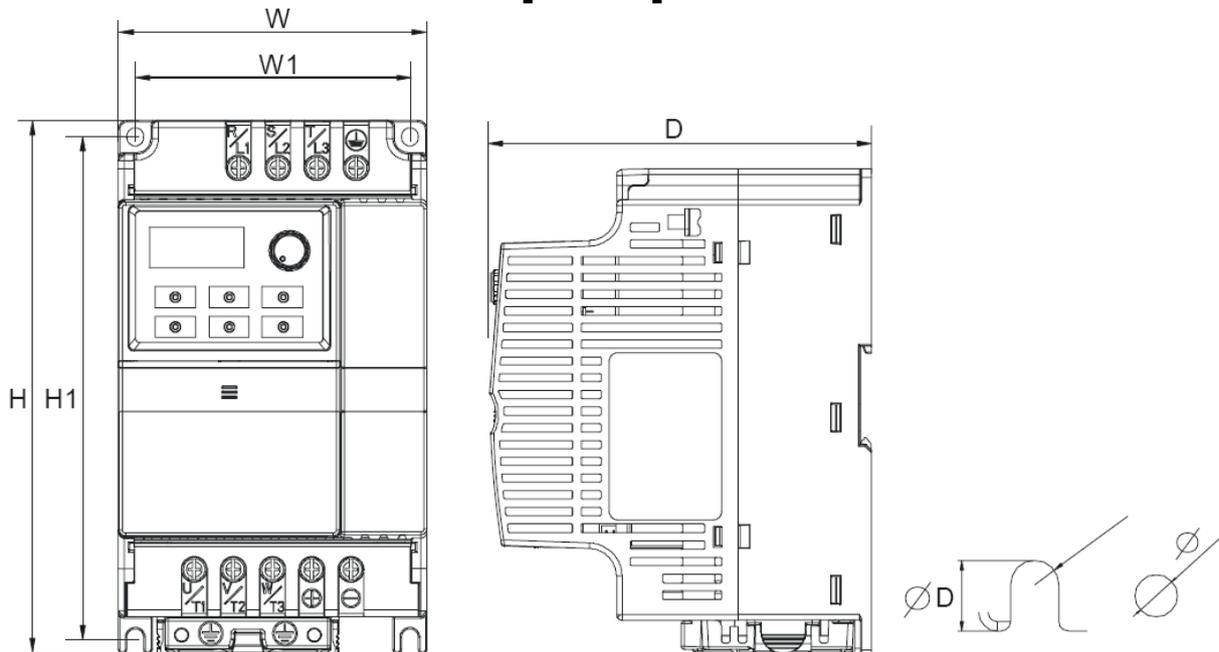
**400V 0.4 ~ 3.7kW**

Type number	VFD□□□□□□□□	004EL43A	007EL43A	015EL43A	022EL43A	037EL43A
Rated power	kW	0.4	0.75	1.5	2.2	3.7
Rated output current	A RMS	1.5	2.5	4.2	5.5	8.2
Current limit	%	150% 60s				
Rated output capacity	kVA	1.2	2	3.3	4.4	6.8
Rated input current	A RMS	1.9	3.2	4.3	7.1	11.2
Mains fuse (for UL: Bussmann)		JJS-6	JJS-6	JJS-10	JJS-15	JJS-20
Dimensions HxWxD	mm	174x72x136			174x100x136	
Size ****		A			B	
Weight	kg	1.2			1.9	
Section of power cables	mm <sup>2</sup>	0.8 ~ 3			0.8 ~ 8	
Cooling		Convection			Fan	
Carrier frequency	kHz	2 ~ 12				
EMC-Filter		Built-in				
DC-Choke		No				
DC-Bus connection		Yes				
Brake chopper		No				
Recommended brake resistor	Ω/W	750/80 **		360/200 **	250/300 ***	140/600 ***
Minimum brake resistor value	Ω	422 **		95 **	84.4 ***	

\*\* With external BUE40015 brake chopper  
 \*\*\* With external BUE40037 brake chopper

\*\*\*\* See dimensional drawing below.

**Sizes and dimensions in mm [inches]**



Frame	W	W1	H	H1	D	Ø	ØD
A	72.0[2.83]	59.0[2.32]	174.0[6.86]	151.6[5.97]	136.0[5.36]	5.4[0.21]	2.7[0.11]
B	100.0[3.94]	89.0[3.50]	174.0[6.86]	162.9[6.42]	136.0[5.36]	5.4[0.21]	2.7[0.11]

**Common data VFD-EL**

Mains voltage range	V	200V: 180 ~ 264 400V: 342 ~ 528	
Mains frequency	Hz	47 ~ 63	
Output frequency range	Hz	0 ~ 599	
Output voltage range	V	0 ~ Mains	
Operating temperature	°C	-10 ~ +50 *	
Storage temperature	°C	-20 ~ +60	
Atmospheric pressure	kPa	86 ~ 106	
Relative humidity	%	≤90 (non condensing)	
Vibration		<20Hz: 1G / 20~50Hz: 0.6G	
Degree of protection		IP20	
Pollution degree		2	
Altitude	m	≤1000	
Keypad		Standard	
Max. Signal cable section	mm <sup>2</sup>	0.2 ~ 1.3 **	
Digital inputs	6x MIx	SINK or SOURCE	Via jumper
		Range	24VDC
		Debounce time	2~40ms
Analogue inputs	1x AVI	Pull-up (internal)	3.6kΩ (ca. 6mA)
		Accuracy	10 bits
		Range	0~10VDC or 4~20mA
Digital outputs	1x MOx	Impedance	47kΩ      250Ω
		Optocoupler OC	48VDC/50mA
Analogue outputs	1x AFM	Accuracy	8 bits
		Range	0~10VDC/2mA (square wave)
		Impedance	47Ω
Relays	1x	<b>Change-over</b>	
		NO: R <sub>A</sub> ~R <sub>C</sub>	Resistive 5A/240VAC-24VDC Inductive 1.5A/240VAC-24VDC
		NC: R <sub>B</sub> ~R <sub>C</sub>	Resistive 3A/240VAC-24VDC Inductive 0.5A/240VAC-24VDC
Signal supply	1x	+24VDC/50mA	
Potentiometer supply	1x	+10VDC/3mA	
Trip memory		Last 5 errors	
Acc/Dec Times	s	0.01 ~ 600s	
Serial communication	1x RJ45	Modbus RS485	
		Baudrate	4800 ~ 38400
		Address	1 ~ 254
		Mode	ASCII 7,N,1 / 7,N,2 / 7,E,1 / 7,E,2 / 7,O,1 / 7,O,2
		Modbus RTU	8,N,2 / 8,N,2 / 8,E,1 / 8,E,2 / 8,O,1 / 8,O,2

\* Side-by-side mounting -10 ~ +40°C

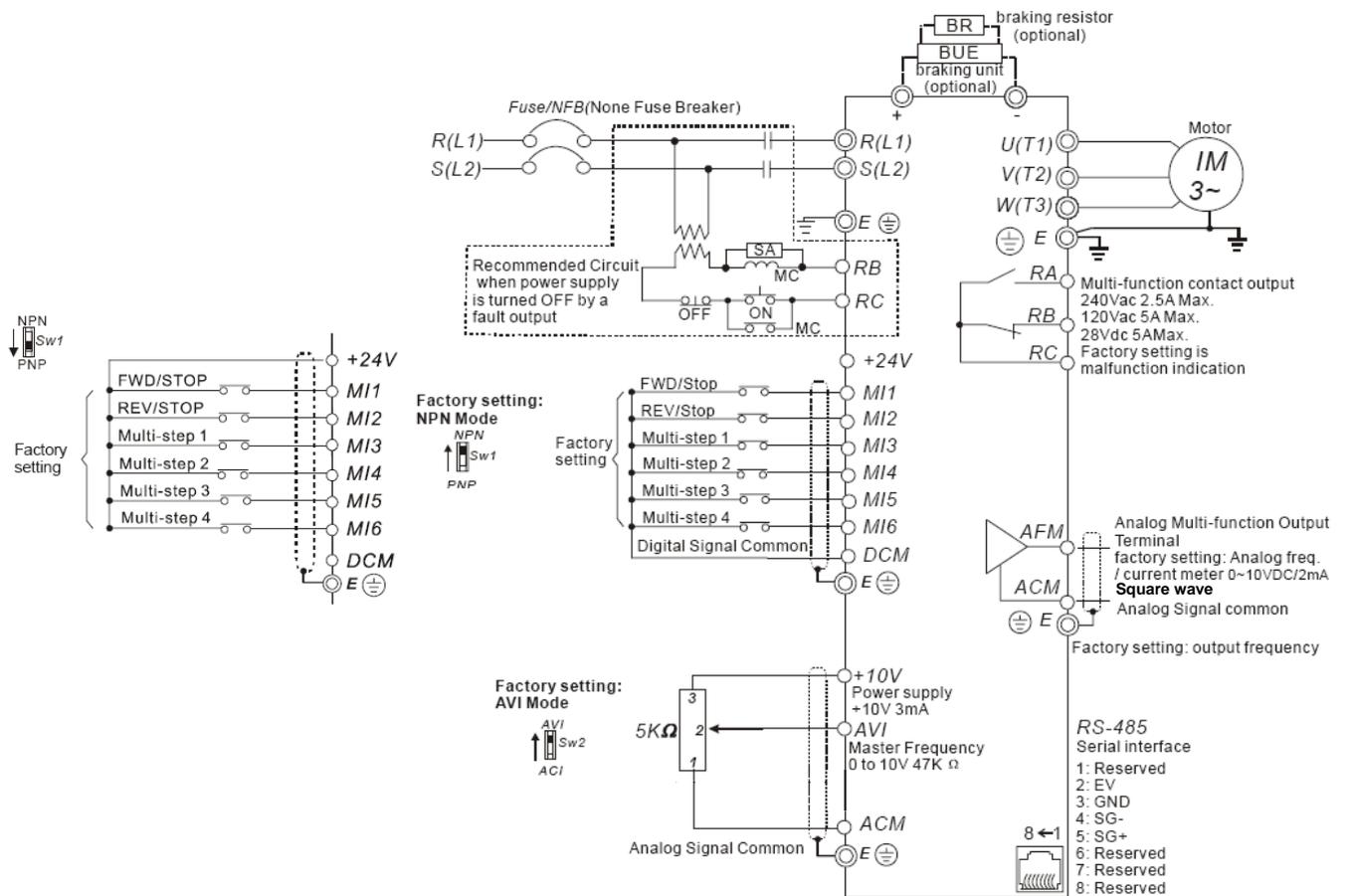
\*\* For standard relay 0.2 ~ 3mm<sup>2</sup>

\*\*\* Select via switch ACI/AVI

**Power terminals (general)**

Terminal symbol	Terminal function
R/L1, S/L2, T/L3	Mains input
U/T1, V/T2, W/T3	Motor output
+ -	DC-bus connection for brake unit
	Ground

# Basic wiring diagram



## Options

### Filters

Built-in option:  
 230V 1-phase: 1<sup>st</sup> Environment Class C1, motor cable  $\leq$ 1m, carrier frequency  $\leq$ 8kHz  
 1<sup>st</sup> Environment Class C2, motor cable  $\leq$ 5m, carrier frequency  $\leq$ 8kHz  
 400V: 2<sup>nd</sup> Environment Class C3, motor cable  $\leq$ 15m, carrier frequency  $\leq$ 8kHz

### Braking

Brake resistors and Brake units.

### Keypad&Cables

PU06 Copy Keypad.

### Mounting

DIN-rail and Earthing plate.

### Communication

USB converter, Communication converters, Splitters, Cables.

### Fieldbus

Option modules: Devicenet, Profibus, LonWorks, CANopen.

### Software

To read, save, copy, change parameters, download VFDSOft. It can be downloaded from [www.delta-emea.com](http://www.delta-emea.com).

## Programming

<b>Group 00-xx</b>	<b>User Parameters</b> Drive ID, Software version, Password, Parameter reset, User-defined display, etc.
<b>Group 01-xx</b>	<b>Basic Parameters</b> V/f-curve, Acc/Dec times, Jogging, S-curve, etc.
<b>Group 02-xx</b>	<b>Operation Method Parameters</b> Source of frequency/operation, Carrier frequency, 2-3 Wire operation, Motor direction inhibit, Stop method, etc.
<b>Group 03-xx</b>	<b>Output Function Parameters</b> Function and setting of analogue and digital outputs and relay, Count values, Fan control, Brake control, etc.
<b>Group 04-xx</b>	<b>Input Function Parameters</b> Function and setting of analogue and digital inputs, Index function, Debounce time, Digital input status, etc.
<b>Group 05-xx</b>	<b>Multi-step Speed Parameters</b> 15 Speed steps.
<b>Group 06-xx</b>	<b>Protection Parameters</b> Protection settings, Fault memory, etc.
<b>Group 07-xx</b>	<b>Motor Parameters</b> Setting of motor parameters, Slip&Torque Compensation, PTC-function.
<b>Group 08-xx</b>	<b>Special Parameters</b> DC-Braking, 3 Skip frequencies, Speed search, AVR, Auto energy saving, Auto reset, etc.
<b>Group 09-xx</b>	<b>Communication Parameters</b> Protocol, Address, Transmission speed, etc.
<b>Group 10-xx</b>	<b>PID Control Parameters</b> PID settings, Sleep and Wake-up, Multi-pump function, etc.

[www.delta-emea.com](http://www.delta-emea.com)

