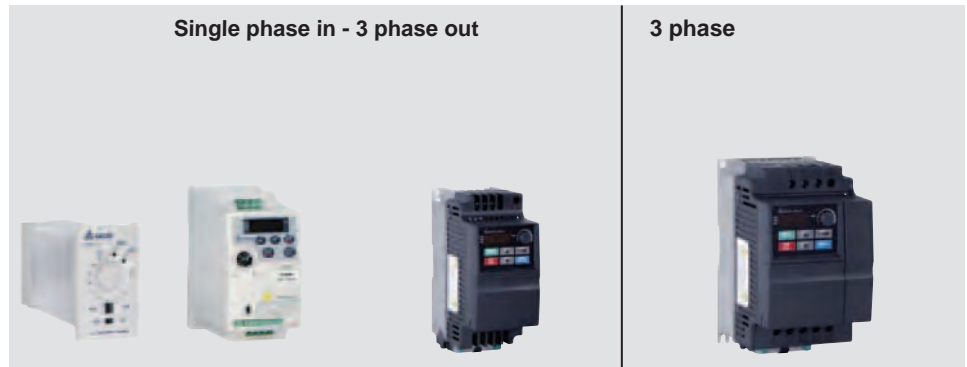




AC motor drives

- excellent characteristics
- high efficiency, reliable
- built-in MODBUS
- torque boost
- auto-slip compensation
- PID control
- adjustable carrier frequency



series	L Series (sub fractional)					EL Series				EL Series 3 phase				
size	40W	001	002	004	007	002	004	007	015	004	007	015	022	037
output power	25/40W	60/100W	0.2	0.4	0.75	0.2	0.4	0.75	1.5	0.4	0.75	1.5	2.2	3.7
output current	0.28/0.4	0.56/0.8	1.6	2.5	4.2	1.6	2.5	4.2	7.5	1.5	2.5	4.2	5.5	8.2
over current	150% 60s					150% 60s				150% 60s				
output frequency	1.0 - 120		1.0 - 400			0.1 - 600				0.1 - 600				
carrier frequency	-					3 - 10kHz				1 - 15kHz				
mains voltage	180 - 264					200 - 240				380 - 480				
phases	single phase - 3 phase out					single phase - 3 phase out				3 phase				
mains current	0.5/0.7	1/1.4	4.9	6.5	9.7	4.9	6.5	9.7	15.7	1.9	3.2	4.3	7.1	11.2
operating temperature	-10 - +40		-10 - +40			-10 - +50				-20 - +50°C				
inputs analogue	0		1 (0 - 10V/4 - 20mA)			2 (0 - 10V/4 - 20mA)				2 (0-10V/4-20mA)				
inputs digital	2		4(0-18VDC)			6				6				
outputs analogue	0		0			1(0-10V)				1 (0-10V)				
outputs digital	1		0			1(48VDC 50mA)				1				
outputs relay	0		1 (make)			(2.5A 230VAC)				1				
serial communication	RS485 (modbus ASCII)		RS485 (modbus RTU or ASCII)			RS485 (modbus RTU or ASCII)				RS485 (modbus RTU or ASCII)				
control & functions														
parameters	6 (via DIP switch)		95			106				106				
modulation	SVPWM		SVPWM			SPWM V/F (sensorless vector control)				SPWM (sensorless vector control)				
PID control	no		no			yes				yes				
motor parameters	no		limited			limited				limited				
starting torque	-		150% at 5Hz			150% at 3Hz				150% at 5.0Hz				
auto energy saving	no		no			yes				yes				
slip compensation	no		yes			yes				yes				
momentary power loss	no		no			yes				yes				
speed search	no		no			yes				yes				
DC-brake	auto at start		yes			yes				yes				
protection														
overcurrent	yes		yes			yes				yes				
over voltage	yes		yes			yes				yes				
over temp (inverter)	yes		yes			yes				yes				
over temp (motor)	no		I ² t			I ² t				I ² t				
stall prevention	no		no			yes				yes				
low voltage	yes		no			yes				yes				
overload	yes		yes			yes				yes				
external trip	no		yes			yes				yes				
mains phase loss	no		no			yes				no				
output phase loss	no		no			no				no				
ground fault	no		no			yes				yes				
short-circuit	yes		yes			yes				yes				
autorestart	no		10			10				10				
trip memory	no		6			3				5				
s-curve	no		yes			yes				yes				
skip frequencies	no		3			3				3				
jog	no		yes			yes				yes				
preset speeds	no		4			15				7				
torque boost	no		yes			yes				yes				
front potentiometer	yes		yes			yes				yes				
detachable keypad	no		no			yes				yes				
special functions	-		multi-speed step (PLC)			multi-speed step (PLC)				multi-speed step (PLC)				
suitable applications	-		simple general purpose			low cost, easy-to-use general purpose				general purpose				
cooling	convection		fan			convection		fan		convection		fan		
dimensions (H) x (W) x (D)	100 x 60 x 136		132 x 68 x 128			142x72x152		174x100x152		174 x 72 x 136		174 x 100 x 136		



AC motor drives



E Series 3 phase											B Series 3 phase						
004	007	015	022	037	055	075	110	150	185	220	300	370	450	550	750		
0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75		
1.5	2.5	4.2	5.5	8.2	13	18	24	32	38	45	60	73	91	110	150		
150% 60s											150% 60s						
0.1 - 600											0.1 - 400						
1 - 15kHz											1 - 15kHz						
380 - 480											380 - 480						
3 phase											3 phase						
1.9	3.2	4.3	7.1	11.2	14	19	26	32	39	49	60	63	90	130	160		
-10 - +50											-10 - +40						
2 (0-10V/4-20mA)											3 (10bits) 0-10V/4-20mA						
6											11 (24VDC)						
1 (0-10V)											1 (10bits) 0-10V/2mA						
1 (48VDC 50mA)											3 + 1 (freq) photocoupler 48V/50mA						
(2.5A 230Vac)											1 (2.5A 230VAC)						
RS485 (modbus RTU or ASCII)											RS485 (modbus RTU/ASCII)						
106											162						
SPWM (sensorless vector control)											SPWM						
yes											yes						
limited											auto						
150% at 3Hz											150% at 1Hz						
yes											yes						
yes											auto						
yes											yes						
yes											yes						
yes											yes						
yes											yes						
yes											yes						
no											yes						
no											no						
yes											yes						
yes											yes						
10											10						
3											4						
yes											yes						
3											3						
yes											yes						
7											15						
yes											yes						
yes											yes						
yes											yes						
multi-speed step (PLC)											multi-speed step (PLC), counter, cascading						
low cost easy to use general purpose											general use, pump, fans						
convection		fan									fan						
142 x 72 x 152			174 x 100 x 152			260 x 130 x 169			310 x 200 x 190			589 x 370 x 260			660 x 425 x 280		



AC motor drives

Delta AC motor drives incorporate superior microprocessor digital control, with high frequency pulse width modulation for smooth motor operation. An extensive array of software control functions, combined with hardware options, provide total solutions for motor automation and control.

Sensorless vector, flux vector and other technologies are employed in a broad range of products, all offer high torque, smooth operation with low harmonic distortion.



VFD-40W



VFD-004L



VFD-015EL



VFD-037EL



BUE-40015



EME-R2CA

type	motor rating	description	dimensions H x W x D	price
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L series sub-fractional general purpose drive (ultra compact)

- output frequency 1.0~ 400Hz
- adjustable V/f curve control
- built-in MODBUS communication (baud rate upto 9600bps)
- built-in EMI filter

Single phase 180-264V 50/60 Hz (three-phase output voltage)

VFD-40WL21B	40W	panel mnt 1ph AC motor drive	100	60	136
VFD-001L21B	100W	panel mnt 1ph AC motor drive	100	60	156
VFD-002L21B	200W	rail mount 1ph AC motor drive	132	68	128
VFD-004L21B	400W	rail mount 1ph AC motor drive	132	68	128
VFD-007L21B	750W	rail mount 1ph AC motor drive	132	68	128

EL series multi-function micro AC Motor Drives

- output frequency 0.1-600Hz
- high efficiency cooling and flexible space (side-by-side installation)
- standard MODBUS protocol via RS-485
- built-in PID feedback control and EMI filter filter
- optional fieldbus modules (Profibus, DeviceNet, LonWorks, CANopen)
- complete protection function
- built-in front facia keypad for frequency adjustment and start/stop

Single phase 180-264V 50/60 Hz (three phase output voltage)

VFD-002EL21A	200W	single phase AC motor drive	142	72	136
VFD-004EL21A	400W	single phase AC motor drive	142	72	136
VFD-007EL21A	750W	single phase AC motor drive	142	72	136
VFD-015EL21A	1.5kW	single phase AC motor drive	174	100	136
VFD-022EL21A	2.2kW	single phase AC motor drive	174	100	136

Three phase 380-480V 50/60 Hz

VFD-004EL43A	400W	three phase AC motor drive	174	72	136
VFD-007EL43A	750W	three phase AC motor drive	174	72	136
VFD-015EL43A	1.5kW	three phase AC motor drive	174	72	136
VFD-022EL43A	2.2kW	three phase AC motor drive	174	100	136
VFD-037EL43A	3.7kW	three phase AC motor drive	174	100	136

Accessories for above EL/E Drives

for drives

CME-COP01	Can Open module for drives	VFD-E/EL
CME-DN01	Device Net module for drives	VFD-E/EL
CME-LW01	Lon Works module for drives	VFD-E/EL
CME-PD01	PROFIBUS module for drives	VFD-E/EL
KPE-LE02	digital display / keypad for speed change/status	VFD-E
EG2010A	cable for door mounted keypad to drive (2 meter)	VFD-E
CME-USB01	USB card for VFD-E parameter setting/programming	VFD-E
EME-A22A	plug-in analogue I/O card (2AI/2AO)	VFD-E
EME-D33A	plug-in I/O card (photocoupler 3in + 3out)	VFD-E
EME-PG01	plug-in Pluse Gen. card (open collector 24VDC 50mA)	VFD-E
EME-R2CA	plug-in relay card (2 x changeover contacts)	VFD-E
EME-R3AA	plug-in relay card (3 x normally open contacts)	VFD-E
MKE-DRA	DIN rail adaptor for "A" frame (004-015E)	VFD-E
MKE-DRB	DIN rail adaptor for "B" frame (022-037E)	VFD-E

BUE-20015	braking unit (up to 1.5kW 230VAC)	VFD-E/EL
BUE-40015	braking unit (up to 1.5kW 400VAC)	VFD-E/EL
BUE-40037	braking unit (up to 3.7kW 400VAC)	VFD-E/EL



AC motor drives



VFD-007E



VFD-037E

new



VFD-110E



VFD-450B

type	motor rating	description	dimensions H x W x D	price
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E series high performance micro AC motor drives with built-in PLC

- built-in PLC function (easy to write PLC programmes without additional PLC)
- side-by-side installation (up to 40°C)
- standard MODBUS protocol via RS-485
- built-in EMI filter (efficiently reduces electromagnetic interference)
- optional fieldbus modules (Profibus, DeviceNet, LonWorks, CANopen)
- flexible extension (via optional cards IO/relay/PG encoder/USB)
- fascia can be replaced with optional keypad KPE-LE02 (speed change and status indication)

Three phase 380-480V 50/60 Hz (three phase output voltage)

VFD-004E43A	400W	three phase AC motor drive	142	72	152
VFD-007E43A	750W	three phase AC motor drive	142	72	152
VFD-015E43A	1.5kW	three phase AC motor drive	142	72	152
VFD-022E43A*	2.2kW	three phase AC motor drive	174	100	152
VFD-037E43A*	3.7kW	three phase AC motor drive	174	100	152
VFD-055E43A*	5.5kW	three phase AC motor drive	260	130	169
VFD-075E43A*	7.5kW	three phase AC motor drive	260	130	169
VFD-110E43A*	11.0kW	three phase AC motor drive	260	130	169
VFD-150E43A*	15.0kW	three phase AC motor drive	310	200	190
VFD-185E43A*	18.5kW	three phase AC motor drive	310	200	190
VFD-220E43A*	22.0kW	three phase AC motor drive	310	200	190

* braking chop built-in

Accessories see previous page

B series general purpose drives

- sensorless open and closed loop vector AC drive
- output frequency 0.1~400Hz
- adjustable V/f curve and vector control
- master/auxiliary and 1st/2nd frequency source selectable
- 16 step speed control and 15 step preset speed process control
- built-in PID feedback control
- auto torque boost and slip compensation
- built-in MODBUS communication, band rate 38400 Bps
- built-in PLC functions

Three phase 380-480VAC 50/60Hz

VFD-300B43A	30kW	3 phase AC motor drive	589	370	260
VFD-370B43A	37kW	3 phase AC motor drive	589	370	260
VFD-450B43A	45kW	3 phase AC motor drive	589	370	260
VFD-550B43C	55kW	3 phase AC motor drive	660	425	280
VFD-750B43C	75kW	3 phase AC motor drive	660	425	280

Three phase 500-600VAC 50/60Hz

VFD-015B53A*	1.5kW	3 phase AC motor drive	185	118	160
VFD-022B53A*	2.2kW	3 phase AC motor drive	260	150	160
VFD-037B53A*	3.7kW	3 phase AC motor drive	260	150	160
VFD-055B53A	5.5kW	3 phase AC motor drive	323	200	184
VFD-075B53A	7.5kW	3 phase AC motor drive	323	200	184
VFD-110B53A	11.0kW	3 phase AC motor drive	323	200	184
VFD-220B53A	22.0kW	3 phase AC motor drive	430	250	205
VFD-450B53A	45.0kW	3 phase AC motor drive	589	370	260

* braking chop built-in.

VFDB braking units

Braking units are applied to absorb motor regeneration energy when three phase motors are stopped by deceleration with VFDB braking unit, the regeneration energy is dissipated by braking resistors.

VFDB-4030	up to 30kW	three phase 460V	for B series drives
VFDB-4045	up to 45kW	three phase 460V	for B series drives
VFDB-4050	up to 45kW	three phase 575V	for B series drives

EMI filters for B series drives

- high performance
- easy to install
- UL listed CE marked
- optimized for long cable runs and operation under full load.

100TDS84C	3ph,480V	EMI filter for drive	300/370B43A
150TDS84C	3ph,480V	EMI filter for drive	450B43A
200TDS84C	3ph,480V	EMI filter for drive	550/750B43A

Recommended braking resistors (see page 224)