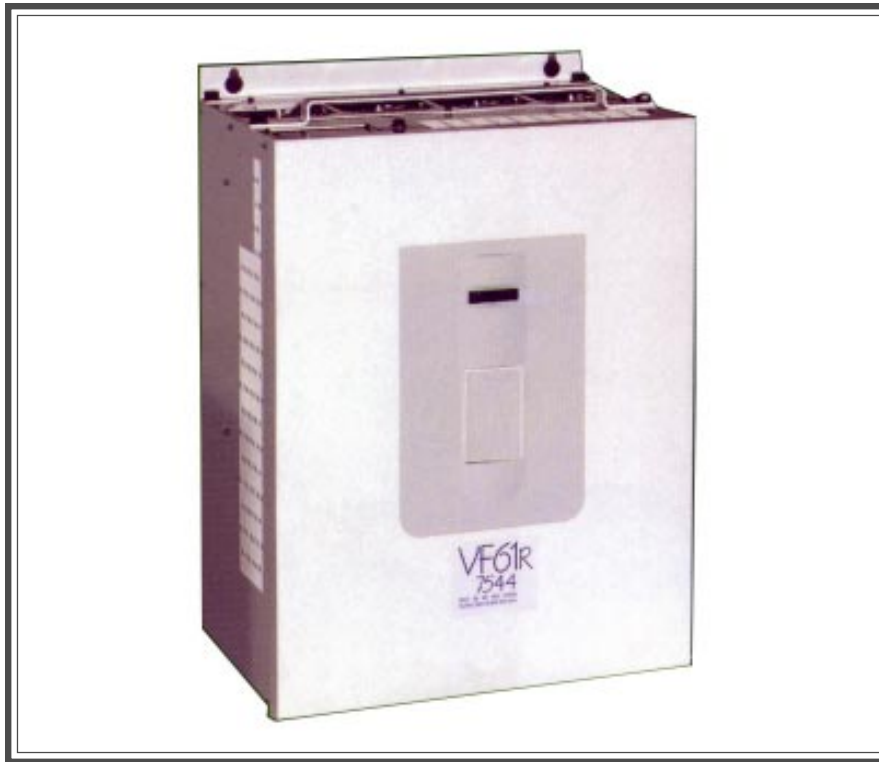


## VF61R

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### Applications:

- Dynamometers
- Web Control
- Test Cells
- Centrifuges
- Powered Unwinders
- Conveyors
- Hoists & Winches
- Storage and Retrieval Machines
- Elevators



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# Line Regenerative Converters

## Features and Functions

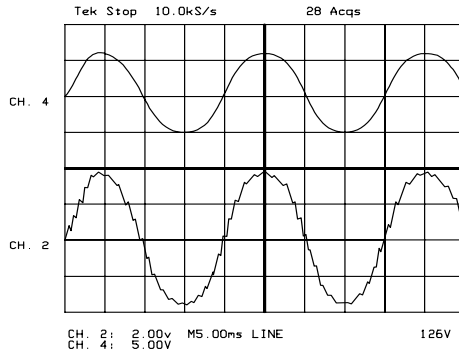
### Continuous 4 Quadrant Operation For AC Motors

Drivecon Corporation's VF61R Regenerative Converters convert our VF61 Series of AC drives to 4 quadrant line regenerative type controls. AC motors can now be used for applications where regenerative type DC drives could only be used in the past. Large, non-efficient dynamic brake resistors are not required with this energy saving line regenerator. Overdriven motor's energy will be delivered back to the utility power source in an efficient manner saving energy and allowing an AC motor to function as a continuous load brake. Quick transitions from powering to regeneration can be accomplished since the converter's power transistors are continually conducting during operation. Load sharing, common DC bus configurations are possible with multiple drives connected to a single regenerative control. Regenerative capacities range from 10KVA to 600KVA. Larger capacities are available upon request.

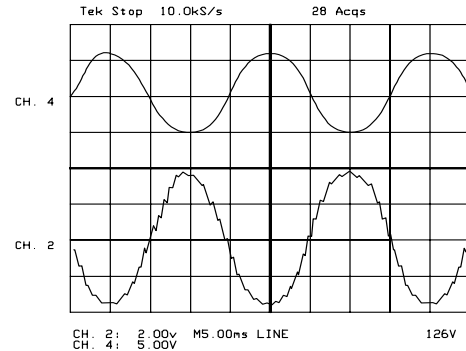
### Features of VF61R

1. Power source harmonic wave are drastically suppressed by our proprietary control system (instantaneous minimization control of distortion). Total current distortion factor is less than 5% (at rated load).

Power source voltage

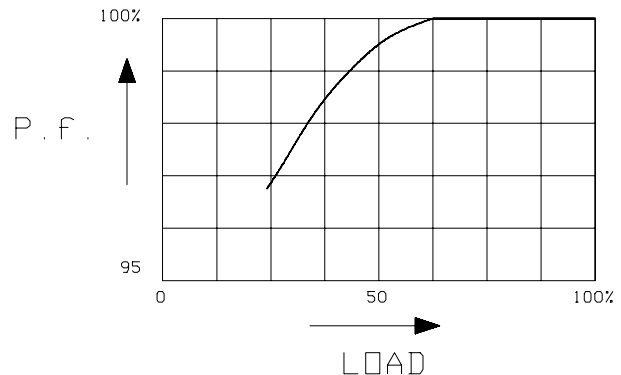


In powering operation



In regeneration operation

2. High power source power factor  
More than 99% (at rated load)  
More than 95% (at load of more than 30%)  
Power source capacity can be curtailed drastically.
3. 100% continuous power source regenerative operation is possible.  
Braking capacity of AC drive is improved remarkably and total efficiency is also increased.
4. High performance, High efficiency.  
Highest performance is achieved with maximum switching frequency, using IGBT output power stages.



## VF61R

### Standard Features

<b>Protective Fault Features</b>	FCL1: 150% current limit FCL2: High speed 160% current limit IOC: 180% instantaneous current trip OL: 150% for over 1 minute overload LV: Low DC bus voltage Ø: Phase loss detection ROT: Phase rotation error TH: Converter overheat OV: Overvoltage of DC bus GAP: Commutation dip
<b>Status Relays</b>	Run Form C Relay activates during converter operation Fault Form C Relay activates during converter fault Ready Form A Relay activates after power energization
<b>Status Displays</b>	IOC: Overcurrent trip Ø: Phase loss detection ROT: Phase rotation error OL: 150% overload TH: Converter overheat OV: DC bus overvoltage FU: DC bus fuse blown CHG: DC bus capacitor charged RUN: Converter running REG: Converter regenerating to line

### 200V class

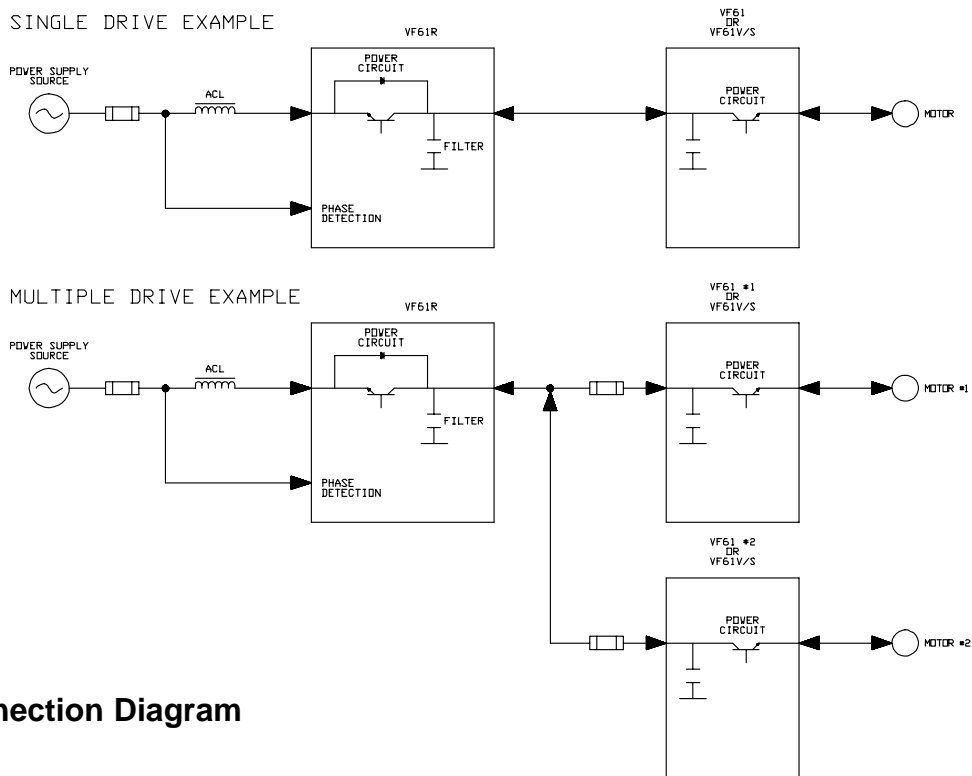
Model VF61R-	1122	1522	2222	3022	3722	4522	5522	7522	9022
Rated Capacity (KVA)	18.3	24.8	34.6	48.1	58	70.5	84.6	107	130
Rated AC Current (A)	46	62.5	87	121	146	185	222	280	340
Rated Voltage (V)	200-230V AC, 3 PHASE, 50/60 Hz								
DC Capacity (KW)	11	15	22	30	37	45	55	75	90

### 400V class

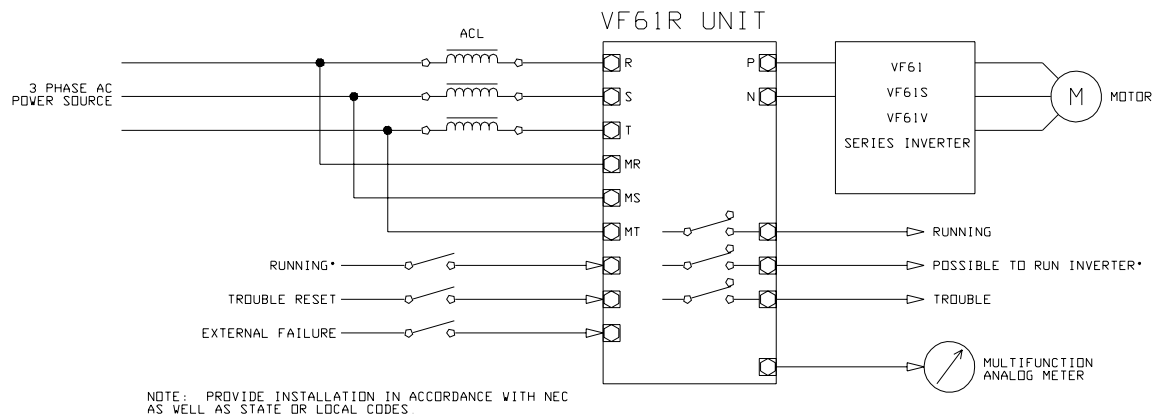
Model VF61R-	1144	1544	2244	3044	3744	4544	5544	7544	11044	16044	20044	25044
Rated Capacity (KVA)	19.1	25.8	36.6	49.7	60	70.5	92.5	112	160	229	282	351
Rated AC Current (A)	24	32.5	46	62.5	75.5	92.5	111	146	210	300	370	460
Rated Voltage (V)	380-460V AC, 3 PHASE, 60 Hz											
DC Capacity (KW)	11	15	22	30	37	45	55	75	110	160	200	250

## VF61R

### Block Diagram Example



### Connection Diagram



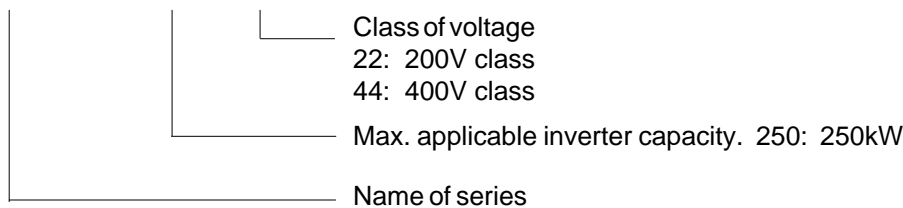
# Line Regenerative Converters

## Standard Specifications

Item	200V Series	400V Series
Power source voltage	3 phase 3 wires 200~230V 50/60Hz	3 phase 3 wires 380~460V 50/60Hz
Output voltage	320~383 Vdc	640~716 Vdc
Applicable Inverter capacity (kW) (VF61, VF61S, VF61V)	11 / 15 / 22 / 30 / 37 / 45 / 55 / 75 / 90 / 150 / 180	11 / 15 / 22 / 30 / 37 / 45 / 55 / 75 / 110 / 160 / 200 / 250 / 315 / 500 / 750 / 1000
Content rate of harmonic wave (current)	Less than 5% (at 100% load)	
Input power factor	More than 99% (at 100% load) More than 95% (at load of more than 30%)	
Overload capacity	150% 1 min.	
Enclosure	IPOO (open type)	
Protective function	DC overvoltage / Instantaneous overcurrent / Overload / Overheat / Power element abnormality / AC, DC fuse melting / Undervoltage	
Display	5 digits, 7 segment LED	
Option	Digital console panel / RSH61V (RS-485) / RSV2 (RS-422, 485)	
Input Signal	Run / Trouble reset / External failure	
Output Signal	Run / Trouble / Possible to run Inverter (1c relay contact) Multifunction analog meter output.	
Ambient Conditions	Ambient temperature: 0~50°C Humidity: Less than 90% RH (non-condensing) Altitude: Less than 1000m Storage temperature: -20°~60°C (temperature range applicable for short time, such as during transportation)	
Input Power Supply	Voltage variance	+/-10% of rated voltage maximum
	Frequency variance	+/-5% of rated frequency maximum
	Phase imbalance	+/-3% maximum
	Short term voltage variation	+15% / - 25% of rated voltage
	Allowable distortion	Notch width less than .5ms
Converter	Control	Fixed 180° phase conduction period during powering or regeneration
	DC voltage	1.35 x AC source voltage
	DC regulation	+5% of rated capacity
	Overload	150% of rated capacity for 1 minute
	Overcurrent	180% of rated current

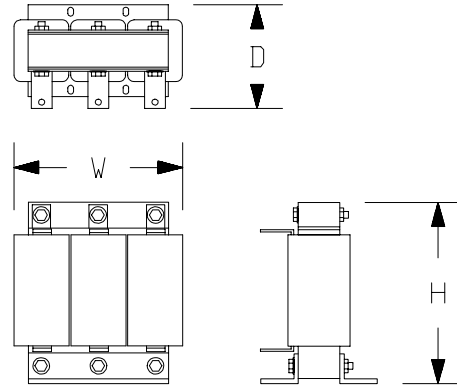
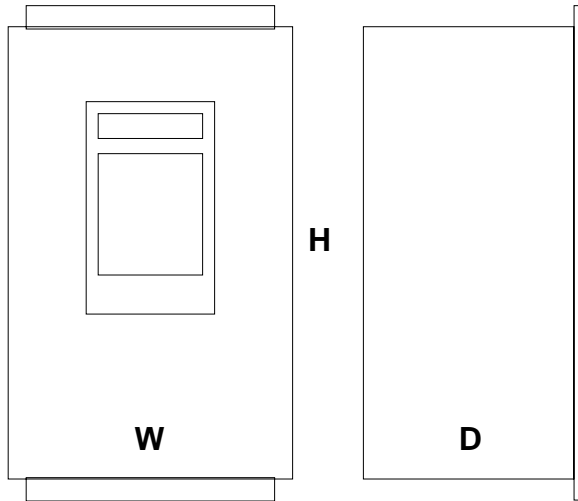
## Explanation of type of sinusoidal wave converter:

VF61R - 250 44



# Line Regenerative Converters

## Enclosure and ACL Dimensions



Type	W (width)	H (height)	D (depth)	WEIGHT (LBS)
VF61R-1122	10.04	16.14	11.22	37.4
VF61R-1522	10.04	16.14	11.22	37.4
VF61R-2222	11.81	18.11	11.22	48.4
VF61R-3022	16.93	22.64	12.2	85.8
VF61R-3722	16.93	22.64	12.2	85.8
VF61R-4522	19.69	23.62	11.81	94.6
VF61R-5522	19.69	23.62	11.81	94.6
VF61R-7522	19.69	28.35	13.78	160.6
VF61R-9022	24.41	30.31	13.78	202.4
VF61R-1144	10.04	16.14	11.22	37.4
VF61R-1544	10.04	16.14	11.22	37.4
VF61R-2244	11.81	18.11	11.22	48.4
VF61R-3044	16.93	22.64	12.2	85.8
VF61R-3744	16.93	22.64	12.2	85.8
VF61R-4544	19.69	23.62	11.81	94.6
VF61R-5544	19.69	23.62	11.81	94.6
VF61R-7544	19.69	28.35	13.78	138.6
VF61R-11044	24.41	30.31	13.78	180.4
VF61R-16044	19.69	39.37	13.78	209
VF61R-20044	20.67	39.37	14.96	286
VF61R-25044	20.67	39.37	14.96	330

ACL Type	W (width)	H (height)	D (depth)	WEIGHT (LBS)	
200V	1122	7.09	6.3	7.09	24.5
	1522	7.09	7.09	7.09	26.46
	2222	8.27	8.27	7.09	37.48
	3022	9.45	7.87	8.27	50.71
	3722	9.45	7.87	8.27	52.91
	4522	9.45	8.66	8.66	59.52
	5522	11.22	10.43	10.24	83.78
	7522	13	11.22	10.63	105.82
	9022	13	12	10.63	114.6
	400V	1144	7.09	6.3	6.7
1544		7.09	7.09	6.7	26.46
2244		8.27	8.27	7.09	37.48
3044		9.45	7.87	7.87	50.71
3744		9.45	7.87	7.87	52.91
4544		9.45	8.66	8.27	59.52
5544		11.22	10.43	9.84	83.78
7544		13	11.22	10.24	105.82
11044		13	12	10.63	125.66
16044		14.17	14.76	11.42	165.35
20044		14.17	15.6	12.6	187.4
25044		14.17	15.6	14.17	242.5
31544		16.54	16.73	14.6	308.65

- (1) Any information contained within is subject to change without notice due to improvements in the product.
  - (2) Consult Drivecon about the external connection of capacitors.
  - (3) Consult Drivecon on use of VF61R on machines feed from a generator.
- Please read Instruction Manual to insure correct installation and use. All dimensions in inches. All weights in lbs.

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