

ZS350 SERIES

HIGH-PERFORMANCE MULTI-FUNCTION VFD



INTRODUCTION

ZS350-UL is a brand new high-performance VFD which integrates speed, torque, and position control. It has built-in STO function and standard LCD keypad. And it's highly extensible and flexible with quantities of extension cards. ZS350-UL is widely available to satisfy in plastics, textiles, machine tools, food packaging, chemicals, printing, building materials, etc.



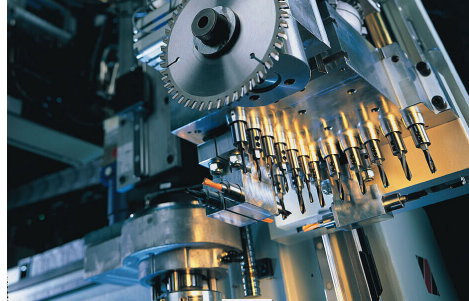
FEATURES

- Support multiple types of motors
- Support both constant torque load and variable torque load
- Keep running for a while when power off Instantaneously
- Three card slots for rich variety of extension demands
- Optional built-in PLC card for secondary development
- Rich external interfaces can meet most applications
- Bluetooth/WIFI access enables APP to replace traditional control operation
- Built-in STO(SIL2) function make it safe and reliable
- Built-in brake unit for VFDs of 220V ($\leq 15\text{kW}$) and 460V($\leq 30\text{kW}$).

APPLICATIONS



PLASTICS INDUSTRY



WOOD INDUSTRY



PRINTING INDUSTRY



TEXTILE INDUSTRY



INTRALOGISTICS



**PASSENGER AND
MATERIAL TRANSPORT**

MODEL SELECTION

**¹
ZS350** - **²
0450CL** - **³
4** - **⁴
06**

SIGN	DESCRIPTION	CONTENTS
1	Product series	ZS350: Multi VFD Frequency Inverter, Vector Control, IP20, UL certified
2	Power range+ load type (refer to table Power Ratings)	e.g. 0450 CL : 45kW @ constant torque load xxx CL : constant torque load xxx VL : variable torque load
3	Voltage level	2: 3PH 200V-240V Rated voltage: 220V 4: 3PH 380V-480V Rated voltage: 460V 6: 3PH 520V-600V Rated voltage: 575V
4	Device housing	01 ... 10: housing size

POWER RATINGS

VOLTAGE	MODEL	RATED OUTPUT POWER (KW)	RATED OUTPUT CURRENT (A)	RATED INPUT CURRENT (A)	DIMENSION W*H*D (MM)	NET WEIGHT (KG)
3PH 200-240V	ZS350-0007CL-2-01	0.75	4.5	5	126*186*185	2
	ZS350-0015CL-2-02	1.5	7	7.5	146*256*192	3.5
	ZS350-0022CL-2-02	2.2	10	11		
	ZS350-0040CL-2-03	4	16	17	170*320*219	6
	ZS350-0055CL-2-03	5.5	20	21		
	ZS350-0075CL-2-04	7.5	30	31	230*330*217	7.8
	ZS350-0110CL-2-05	11	42	43	255*400*242	11
	ZS350-0150CL-2-05	15	55	59		
	ZS350-0185CL-2-06	18.5	70	71	270*555*325	30
	ZS350-0220CL-2-06	22	80	81		
	ZS350-0300CL-2-06	30	110	112		
	ZS350-0370CL-2-07	37	130	132	325*680*365	47
	ZS350-0450CL-2-07	45	160	163		
	ZS350-0550CL-2-07	55	200	200		
3PH 380-480V	ZS350-0015CL-4-01	1.5	3.7	5	126*186*185	2
	ZS350-0022CL-4-01	2.2	5	5.8		
	ZS350-0040CL-4-02	4/5.5	9.5/14	13.5/19.5	146*256*192	3.5
	ZS350-0055CL-4-02	5.5/7.5	14/18.5	19.5/25		
	ZS350-0075CL-4-03	7.5/11	18.5/25	25/32	170*320*219	6
	ZS350-0110CL-4-03	11/15	25/32	32/40		
	ZS350-0150CL-4-04	15/18.5	32/38	40/47	230*330*217	7.8
	ZS350-0185CL-4-04	18.5/22	45	47/56		
	ZS350-0220CL-4-05	22/30	45/60	56/70	255*400*242	11
	ZS350-0300CL-4-05	30/37	60/75	70/80		

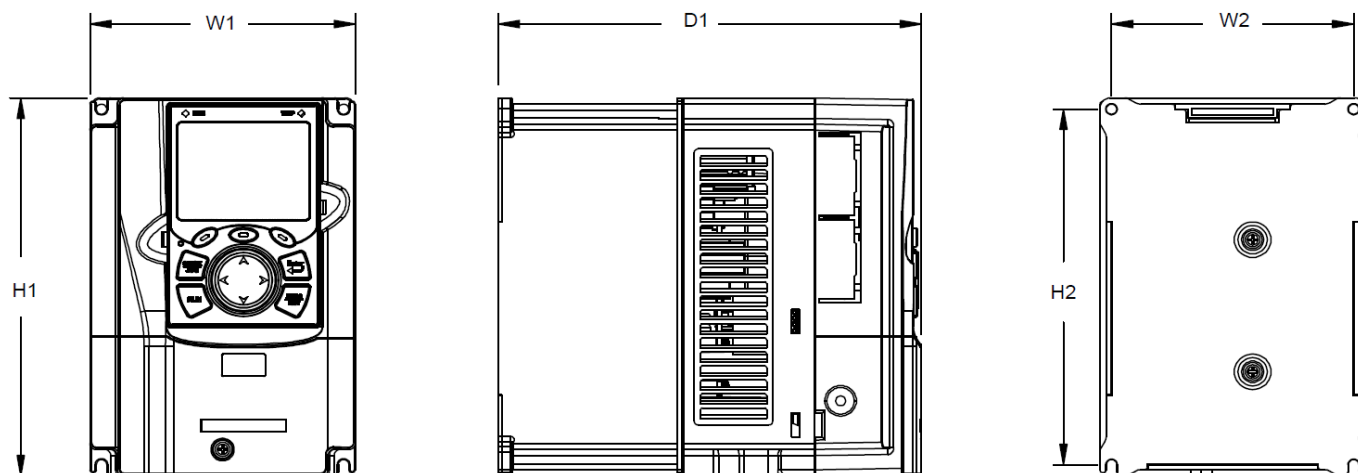
VOLTAGE	MODEL	RATED OUTPUT POWER (KW)	RATED OUTPUT CURRENT (A)	RATED INPUT CURRENT (A)	DIMENSION W*H*D (MM)	NET WEIGHT (KG)
3PH 380-480V	ZS350-0370CL-4-06	37/45	75/92	80/94	270*555*325	30
	ZS350-0450CL-4-06	45/55	92/115	94/128		
	ZS350-0550CL-4-06	55	115	128		
	ZS350-0750VL-4-07	75	150	160	325.680*365	47
	ZS350-0750CL-4-07	75/90	150/180	160/190		
	ZS350-0900CL-4-07	90/110	180/215	190/225		
	ZS350-1100CL-4-07	110	215	225		
	ZS350-1320VL-4-08	132	260	265	500*870*360	76
	ZS350-1320CL-4-08	132/160	260/305	265/310		
	ZS350-1600CL-4-08	160/185	305/340	310/345		
	ZS350-1850CL-4-08	185/200	340/380	345/385		
	ZS350-2000CL-4-08	200/220	380/425	385/430	750*1410*380	200
	ZS350-2200CL-4-09	220/250	425/480	430/485		
	ZS350-2500CL-4-09	250/280	480/530	485/545		
	ZS350-2800CL-4-09	280/315	530/600	545/610		
	ZS350-3150CL-4-09	315/350	600/650	610/625	620*1700*560	350
	ZS350-3500CL-4-10	350/400	650/720	625/715		
	ZS350-4000CL-4-10	400	720	715		
	ZS350-5000VL-4-10	500	860	890		
	ZS350-5000CL-4-10	500	860	890		
3PH 520-600V	ZS350-0007CL-6-02	0.75	2.1	3.3	146*256*19~	3
	ZS350-0015CL-6-02	1.5	3.2	5		
	ZS350-0022CL-6-02	2.2	4.5	7		
	ZS350-0040CL-6-03	4	6.5	10	170*320*219	5.8
	ZS350-0055CL-6-03	5.5	9	13		
	ZS350-0075CL-6-03	7.5	12	16.5		
	ZS350-0110CL-6-04	11	16	19	230*320*219	7.8
	ZS350-0150CL-6-04	15	21	24		
	ZS350-0185CL-6-04	18.5	27	29		
	ZS350-0220CL-6-06	22	35	40	270*555*325	30
	ZS350-0300CL-6-06	30	45	47		
	ZS350-0370CL-6-06	37	52	52		
	ZS350-0450CL-6-07	45	62	65	325*680*365	47
	ZS350-0550CL-6-07	55	86	85		
	ZS350-0750CL-6-07	75	98	95		
	ZS350-0900CL-6-07	90	120	118		
	ZS350-1100CL-6-07	110	150	145		

TECHNICAL SPECIFICATION

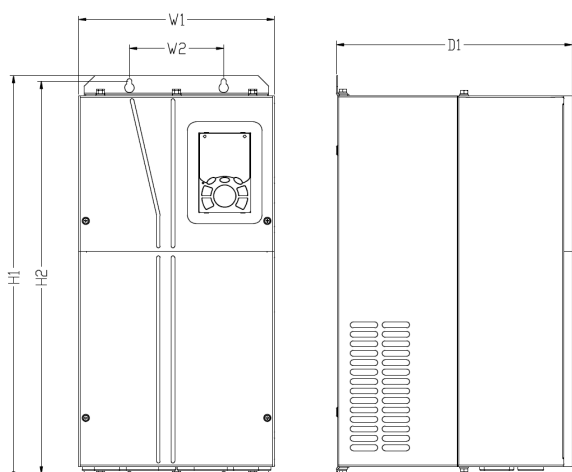
POWER INPUT	Input voltage (V) & Power	3PH 200V-240V Rated voltage: 220V 0.75 ... 55 kW 3PH 380V-480V Rated voltage: 460V 1.5 ... 500kW 3PH 520V-600V Rated voltage: 575V 0.75 ... 110kW Allowable voltage fluctuation: -15%~+10%
	Input frequency (Hz)	50Hz or 60Hz, allowable range: 47-63Hz
POWER OUTPUT	Output voltage (V)	0-input voltage
	Output frequency (Hz)	0-400Hz
TECHNICAL CONTROL PERFORMANCE	Control mode	SVPWM control, SVC, VC
	Motor type	Asynchronous motor, permanent-magnet synchronous motor
	Speed regulation ratio	Asynchronous motor 1:200 (SVC); Synchronous motor 1:20 (SVC). 1:1000(VC)
	Speed control precision	±0.2%(SVC), ±0.02%(VC)
	Speed fluctuation	± 0.3%(SVC)
	Torque response	<20msSVC) , <10ms(VC)
	Torque control precision	10%(SVC) , 5%(VC)
	Starting torque	Asynchronous motor: 0.25Hz/150% (SVC) Synchronous motor: 2.5 Hz/150% (SVC). 0Hz/200% (VC)
	Overload capacity	Constant load CL type: 150%: 60s 180%: 10s 200%: 1s Variable load VL type: 120%: 60s 150%: 10s 180%: 1s
RUNNING CONTROL PERFORMANCE	Frequency setting mode	Digital, analog, pulse frequency, multi-step speed running, simple PLC, PID, Modbus communication, PROFIBUS communication, etc.
	Automatic voltage regulation	Keep the output voltage constant when grid voltage changes
	Fault protection function	Keep the output voltage constant when grid voltage changes
	Speed tracking restart	Realize impact-free starting of the motor in rotating. It's available for power ≥4kW
PERIPHERAL INTERFACE	Analog input	2 inputs, AI1: 0-10V/O-20mA; AI2: -10 ... +10V
	Analog output	1 output, AO1: 0-10V /O-20mA
	Digital input	4 regular inputs; max. frequency: 1kHz; internal impedance:3.3k 2 high-speed inputs; max. frequency: 50kHz; supports quadrature encoder input
	Digital output	1 high-speed pulse output; max. frequency: 50kHz 1 Y terminal open collector output
	Relay output	2 programmable relay outputs. Contact capacity: 3A/AC250V, 1A/DC30V
	STO(Safety torque off)	Integrates safety function-STO, SIL2
	Standard LCD keypad	Maximum 16 lines text display as well as graphical display, Wizard Mode.

OPTIONAL EXPANSION CARDS	Expansion interface	Maximum 3 expansion interfaces: SLOT1, SLOT2, SLOT3
	Expansion I/O card	4 DI, 1 AI, 1 AO, 1 DO, 2 RO
	Communication card	Profibus-DP, CANopen, Profinet, EtherCAT, Ethernet/IP, etc.
	Encode card	EC- 5V Differential Incremental, Resolver 5V/12V Multifunctional Incremental 24V Incremental, SIN/COS, Simple Incremental
	Programmable card	PLC card, 1 AI, 6 DI, 1 AO, 2 Relay, 1 R S485
	Wireless communication	Bluetooth, WiFi, realize wireless communication
OTHERS	Installation mode	Support wall-mounting, floor-mounting and flange-mounting
	Temperature	-10~50° C (Derating is required if the ambient temperature exceeds 40° C)
	Protection level	IP20 (With Optional Kits can support NEMA1)
	Cooling mode	Air cooling
	Reactor	3-phase 380-480: 220kW-500kW, standard built-in AC input reactors
	Brake unit	Built-in for VFDs of 220V (≤15kW) and 460V(≤30kW); Optional for VFDs of 220V (18.5-55kW), 460V(≥37kW), and 575V
	EMC filter	The VFDs of 460V are configured with built-in C3 filters, meeting the requirements of IEC61800-3 C2.

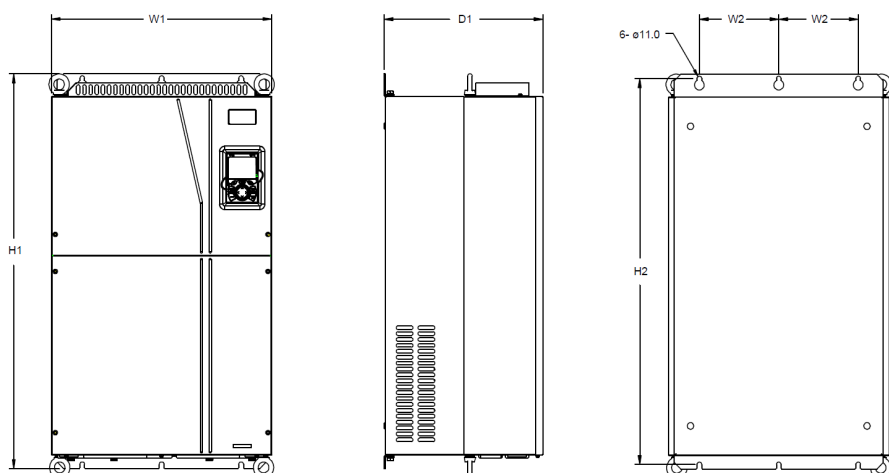
	housing	"rated power [kW]"	dimensions [mm]								weight [kg]	inst. type
			W1	W2 W2	W3	W4	H1	H2	D1	inst. hole Ø		
	200V - 240 V @ 220V rated											
1	1	0,75	126	115	-	-	186	175	185	5	2	wall
	2	1,5 ... 2,2	146	131	-	-	256	243,5	192	5	3,5	
	3	4 ... 5,5	170	151	-	-	320	303,5	219	6	6	
	4	7,5	230	210	-	-	330	311	217	6	7,8	
	5	11 ... 15	255	237	-	-	400	384	242	7	11	
2	6	18,5 ... 30	270	130	-	-	555	540	325	7	30	
	7	37 ... 55	325	200	-	-	680	661	365	9,5	47	
	380V - 480 V @ 460V rated											
1	1	1,5 ... 2,2	126	115	-	-	186	175	185	5	2	wall
	2	4 ... 5,5	146	131	-	-	256	243,5	192	5	3,5	
	3	7,5 ... 11	170	151	-	-	320	303,5	219	6	6	
	4	15 ... 18,5	230	210	-	-	330	311	217	6	7,8	
	5	22 ... 30	255	237	-	-	400	384	242	7	11	
2	6	37 ... 55	270	130	-	-	555	540	325	7	30	
	7	75 ... 110	325	200	-	-	680	661	365	9,5	47	
3	8	132 ... 200	500	180	-	-	870	850	360	11	76	
*	9	220 ... 315	750	230	714	680	1410	1390	380	13/12	200	floor
	10	350 ... 500	620	230	572	-	1700	1678	560	22/12	350	
	520V - 600 V @ 575V rated											
*	2	0,75 ... 2,2	146	131	-	-	256	243,5	192	5	3	wall
	3	4 ... 7,5	170	151	-	-	320	303,5	219	6	5,8	
	4	11 ... 18,5	230	210	-	-	330	311	217	6	7,8	
	6	22 ... 37	270	130	-	-	555	540	325	7	30	
	7	45 ... 110	325	200	-	-	680	661	365	9,5	47	



1 Wall installation diagram ZS350
housing 1 ... 5 / 220 V: 0,75 ... 15 kW and 460 V: 1,5 ... 30 kW



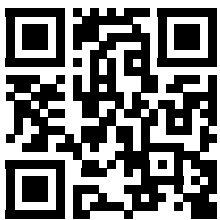
2 Wall installation diagram ZS350
housing 6 ... 7 / 220 V: 18,5 ... 55 kW and 460 V: 37 ... 110 kW



3 Wall installation diagram ZS350
housing 8 / 460 V: 132 ... 200 kW

***** Wall/Floor installation diagram ZS350
housing 9 ... 10 / 460 V: 220 ... 500 kW and all types of 565 V inverters **on request**

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