

```
selection at the end, add back the deselected mirror modifier object
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = modifier_ob
print("Selected" + str(modifier_ob)) # modifier ob is the active ob
#mirror_ob.select = 0
one = bpy.context.selected_object[0]
bpy.data.objects[one.name].select = 1
print("please select exactly two objects, the last one gets the modifier unless its not a mod")

----- OPERATOR CLASSES -----

class MirrorX(bpy.types.Operator):
    """Adds an X mirror to the selected object"""
    bl_name = "object.mirror_mirror_x"
    bl_idname = "Mirror X"

    @classmethod
    def poll(cls, context):
        return context.selected_objects

    def execute(self, context):
```



WD200 High performance universal frequency converter (0.75-1000kW)



WOLONG ELECTRIC GROUP CO.,LTD.

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Web: www.wolong-electric.com

www.wolong-electric.com



Introduction

Wolong, founded in 1984 and headquartered in Shaoxing, Zhejiang Province, is a global leading industrial enterprise committed to providing safe, efficient, intelligentized and green power drive system solutions with life-long supporting services to global users.

By utilizing cutting edge permanent magnet, nanotechnology and silicon carbide technologies, Wolong has built the China's first motor material demonstration platform, that satisfy the highest standards for power density and energy efficiency of motors and generators. With more than 30 years of development, the company has grown into one of the World's top three motor and drive manufacturers and sales enterprises. Wolong insists on technological innovation to lead the industrial reform, actively supports business digital transformation, continuously develops efficient drive system solutions and creates smart industry brain for the motor and drive life cycle management.

3 Manufacturing bases, 39 factories

Asia (China, Vietnam)
 Europe (UK, Germany, Italy, Poland, Serbia)
 America (Mexico)

1 Global Sales HQ and 4 Regional Sales HQs

Shanghai, China (Global Sales Headquarter) | Beijing, China (North Region)
 Haiphong, Vietnam (APAC) | Mönchengladbach, Germany (EMEA)
 Houston, U.S. (Americas)

4 R&D Centers

China | America | Japan | India

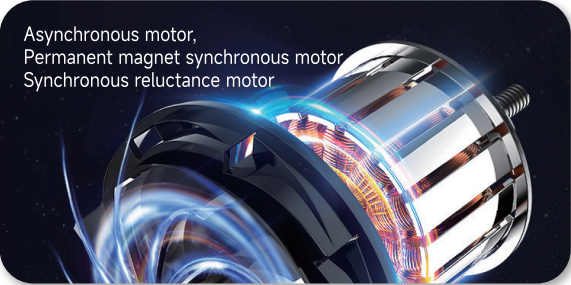


Overview



The WD200 is a new generation high-performance universal frequency converter from Wolong, which adopts advanced motor control algorithms and efficiently matches Wolong motors. It supports the control of AC asynchronous motors, permanent magnet synchronous motors, and synchronous reluctance motors. It has the characteristics of high reliability, high performance, strong scalability, support for multiple transmissions, and easy cabinet formation.

Typical Applications



Asynchronous motor,
Permanent magnet synchronous motor
Synchronous reluctance motor



Injection molding machine
Steel rolling machine
Crane



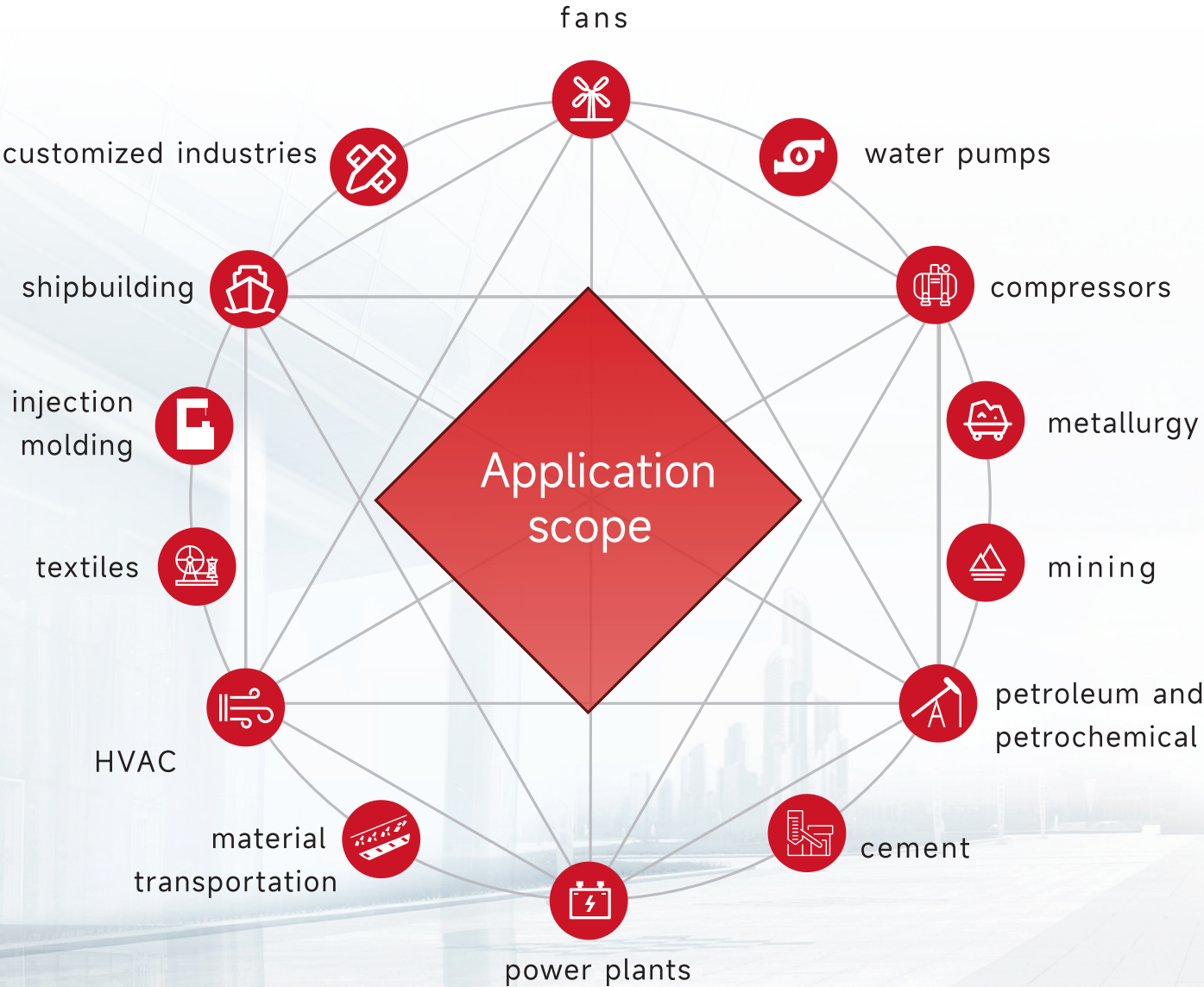
Fan
Water pump
Refrigerant compressor



Belt conveyor
Crusher



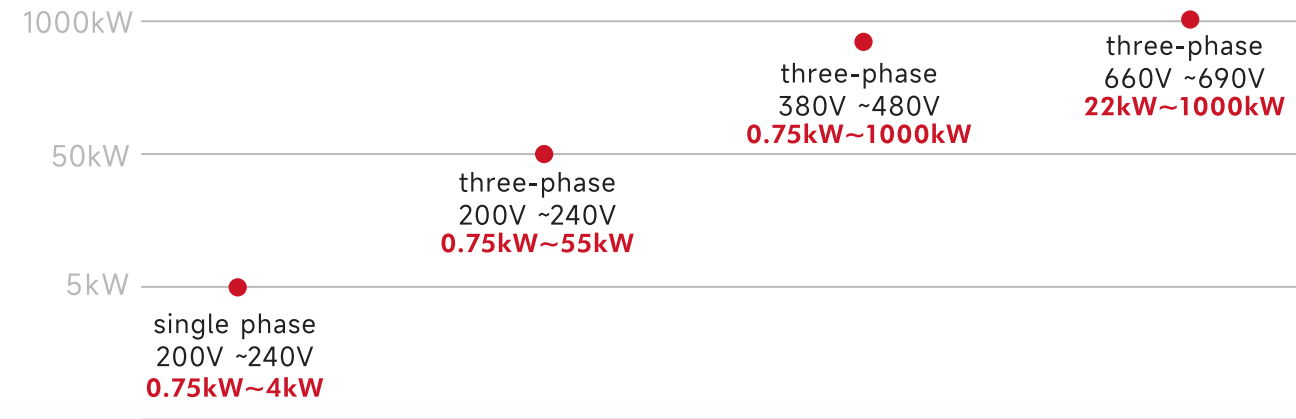
Ship propulsion



Introduction

Comprehensive and universal product

The WD200 covers the powers from 0.75 kW to 1000 kW. The product can use four types of power supplies:



The product adopts a narrow body design, making the cabinet assembly more flexible

Save cabinet space and reduce costs; Depending on the model, multiple installation methods are supported:

DIN-Rail Mounting 0.75kW to 5.5kW	Wall mounted installation 0.75kW to 630kW	flange mounting 75kW to 160kW	Floor mounted 220kW to 1000kW
---	---	---	---

A single model is matched with two different power motors

USERS CAN CHOOSE ACCORDING TO THE LOAD CONDITIONS:

Standard load (P-type) : Suitable for applications with low overload (up to 120%), The motor power is less than or equal to the standard load power of the frequency converter.

Heavy load (G-type) : Suitable for applications with high overload (up to 150%), Motor power less than or equal to the heavy-duty power of the frequency converter.

Innovative features

Integrated design of synchronous, asynchronous, and reluctance motor drive	Supports open-loop control and speed/torque control, suitable for various industrial applications	The control panel supports parameter storage, upload and download, facilitating debugging and parameter backup
Support mainstream industrial communication protocols (PROFIBUS-DP, PROFINET, Ethernet, EtherCAT, CANopen, Modbus)	Supporting multi drive applications with common DC bus	Supporting four quadrant applications, energy-saving and efficient



Hardware design

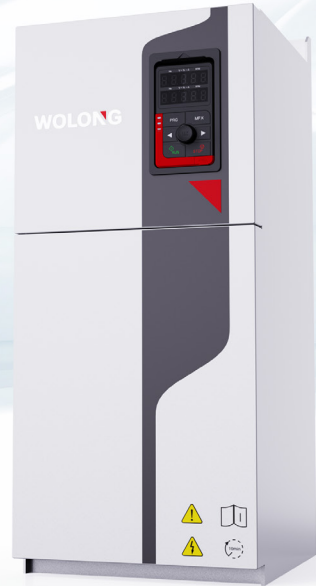
The medium and high-power models adopt thyristor rectification, without internal pre charging contactors or mechanical contacts, stable and reliable

Supporting adaptive protection function for bus short circuit can greatly reduce power device damage caused by bus short circuit

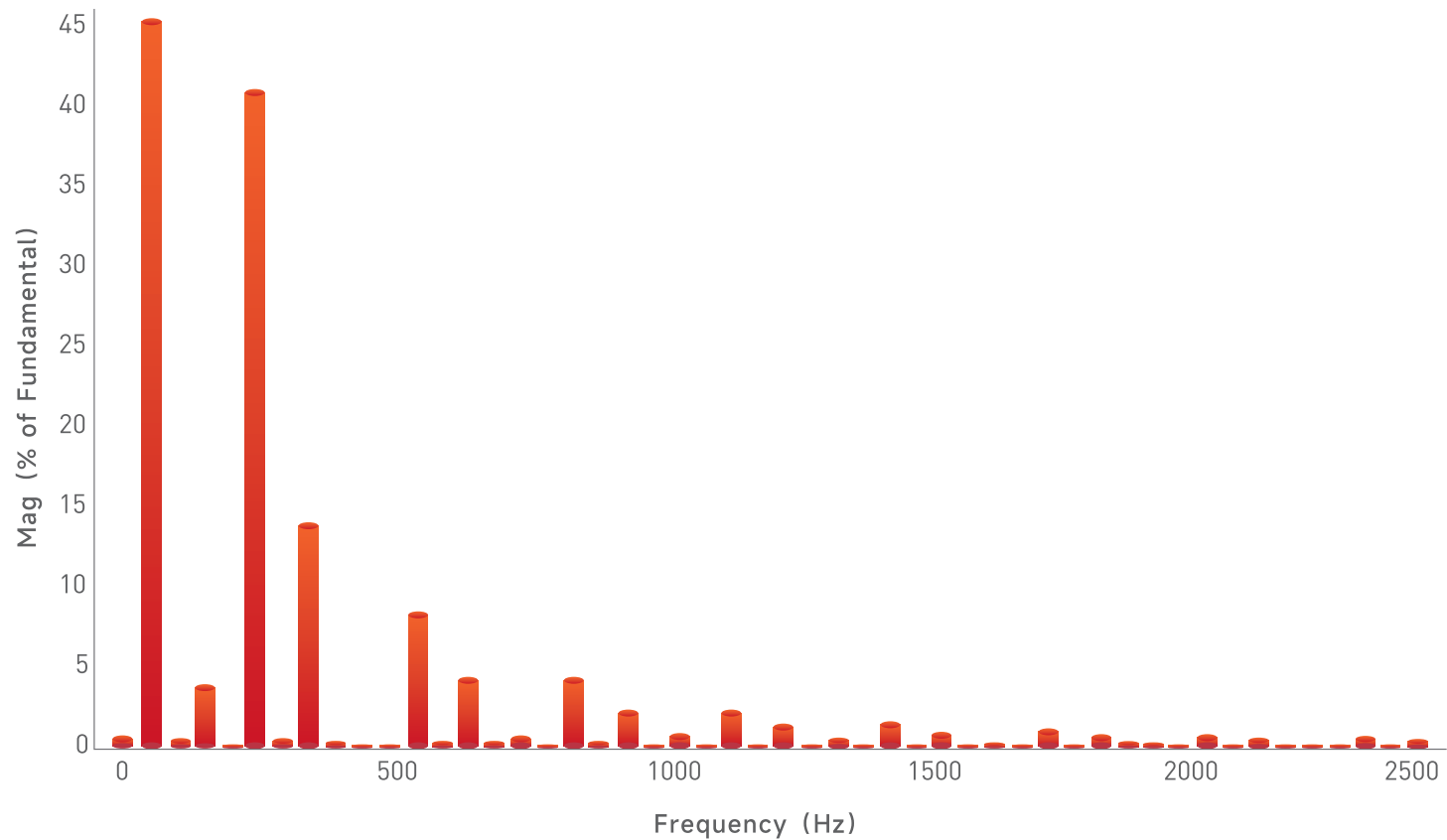
Support STO (Safe Torque Interrupt) function to meet the safety design requirements of the equipment

Enhanced circuit board coating protection design to meet usage requirements in harsh environments

Under 80% to 100% load conditions, THDI \leq 48%



Fundamental(50Hz) =381.5, THD=46.23%



Excellent performance

High starting torque

0.5Hz output 150% rated torque(SVC)
0Hz output 200% rated torque (FVC)

Up to 98% work efficiency

High speed control accuracy

deviation \leq 0.1%rated speed(SVC)
deviation \leq 0.05%rated speed(FVC)

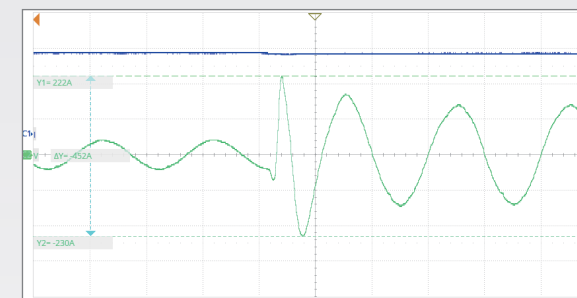


Good low-frequency characteristics

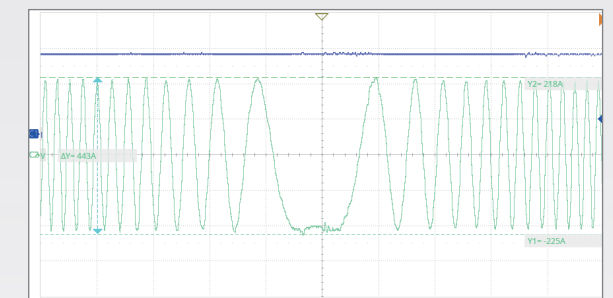
1Hz rated load stable operation (SVC)
0Hz rated load stable operation (FVC)

Excellent current suppression function: Suppress the surge current generated by sudden load changes, Reduce equipment downtime due to malfunctions

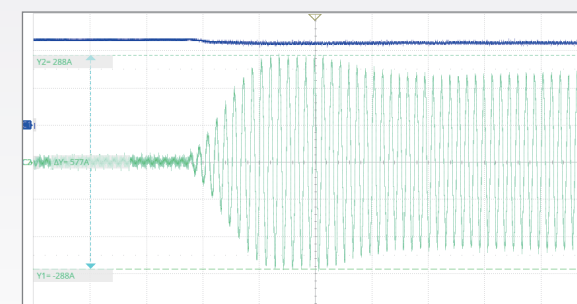
Data source: WOLONG Laboratory



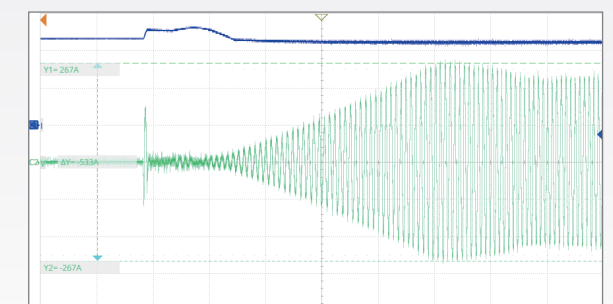
1Hz sudden increase in rated load waveform



Forward and reverse switching test under rated load



Rated frequency sudden increase rated load waveform



Speed tracking start test

Terminal interface

7 digital inputs
2 relay outputs

1 digital output
1 high-speed pulse output

2 analog inputs
2 analog outputs

Standard Modbus RTU
terminal interface

Scalable functionality

The dual expansion card slot design can meet multiple application requirements simultaneously

Fieldbus
adapter
module

Speed
feedback
encoder
module

I/O
expansion
module

IoT
communi-
cation
module

Technical Parameter

project	standard
Supply Voltage	single phase 200V~240V -10%~10%
power range	three-phase 200V~240V -10%~10%
	three-phase 380V~480V -15%~10%
	three-phase 660V~690V -10%~10%
	0.75-1000kW
Power supply frequency	50/60Hz ±5%
Motor type	three phase asynchronous Motor(IM)/Permanent magnet synchronous motor(PMSM)/Synchronous reluctance motor(SynRM)
control model	VVVF/sensor-less vector(SVC)/feedback vector(FVC)/Voltage frequency separation control
speed range	1:200 (SVC) 1:1000 (FVC)
Steady speed accuracy	IM:±0.5%/PMSM:±0.1% (SVC) ±0.02% (FVC)
Torque control accuracy	IM:±10%/PMSM:±5% (SVC) IM:±5%/PMSM:±2.5% (FVC)
Starting torque	0.5Hz 150% (SVC) 0.0Hz 200% (FVC)
overload	heavy load: 150% rated current 60s Standard application: 120% rated current 60s
Output frequency range	0-600Hz
analog input	2: AI1(0-10V/0-20mA/4-20mA) , AI2(0-10V/0-20mA/4-20mA)
Analog Output	2: AO1(0-10V/0-20mA/4-20mA) , AO2(0-10V/0-20mA/4-20mA) (R5 and smaller models have only one AO)
Digital input	7-channel programmable digital input, maximum input frequency of 1kHz, internal impedance of 4.4kΩ (R5 and smaller models have 5 digital input signals)
Digital Output	One channel of open collector programmable logic output, the maximum current of internal power supply is 12 mA, and the maximum current of external power supply is 200mA 1 channel of high-speed pulse output, with a maximum frequency of 100kHz
Relay	2 programmable relay outputs: TA1/NO1 normal open, TB1/NC1 normally closed contact, TC1/CM1 Common terminal TB2/NO2 normally open contact, TC2/CM2 common terminal (R5 and smaller models have only one Relay)
communication Interface	Modbus RTU: A+/B-/485G
Expansion	2 extension interfaces:EX-A、EX-B Scalable: I/O expansion module, speed feedback encoder module, communication module, etc
Option Modules	
Fieldbus adapter	PROFIBUS-DP, PROFINET, Ethernet, EtherCAT, CANopen
I/O expansion	4 digital inputs (including 1 high-speed input), 1 digital output, 1 analog output, 1 relay output, 1 temperature input (PT100/PT1000)
speed feedback	Incremental encoder module, rotary encoder module
Other options	
LCD Panel	All series available
Brake Unit	0.75-22kw Standard built-in brake unit 30-160kW Optional built-in brake unit 160kw or above optional external brake unit
DC Reactor	DC reactor can be optional for 30kW or above
major function	Asynchronous or permanent magnet synchronous motor control, synchronous reluctance motor, V/F or vector control, open loop/closed loop control,Speed control, torque control, PID control, multi speed function, simple PLC function, swing frequency control,Counting and timing function, speed tracking start, power outage restart function, et.
Installation method	DIN-Rail Mounting,Wall mounted installation,flange mounting,Floor mounted
Cooling method	Forced air cooling
protection grade	IP20
operation temperature	-10°C ~ +50°C, >40°CNeed to reduce capacity
storage temperature	-30°C ~ +60°C
standard	IEC61800-5-1
harmonic	IEC61800-2

Model Description

WD200-T3-011G/015P -B

Integrated accessories

B-Brake Unit
L-DC Reactor

Power level

011G-11kW G: heavy load
015P-15kW P: Standard load

Voltage level

S-single phase T-three phase
2-200V ~ 240V , 3-380V ~ 480V , 6-660V ~ 690V

Name

WD200



Supply voltage: three-phase 380V~480V 50/60Hz

G: heavy load P: standard load	motor		power supply (input)	Frequency converter (output)			model	Overall dimensions			Installation dimensions		
	Rated power		line current	Maximum continuous output electric current In	Maximum instantaneous current 1.5In(heavy load) 60S	Maximum instantaneous current 1.2In(standard load) 60S		W1	D1	H1	W2	H2	aperture
	kW	HP	A	A	A	A		mm	mm	mm	mm	mm	mm
G	0.75	1	3.5	3	4.5	-	WD200-T3-R75G-B	80	155	200	65	190	3-Ø5
P	1.5	2	5	4	-	4.8							
G	1.5	2	5	4	6	-	WD200-T3-1R5G-B	80	155	200	65	190	3-Ø5
P	2.2	3	5.8	6	-	7.2							
G	2.2	3	5.8	6	9	-	WD200-T3-2R2G-B	80	155	200	65	190	3-Ø5
P	-	-	-	-	-	-							
G	4	5	11	10	15	-	WD200-T3-004G/5R5P-B	100	155	242	84	232	4-Ø5
P	5.5	7.5	15	13	-	15.6							
G	5.5	7.5	15	13	19.5	-	WD200-T3-5R5G/7R5P-B	100	155	242	84	232	4-Ø5
P	7.5	10	20	17	-	20.4							
G	7.5	10	20	17	25.5	-	WD200-T3-7R5G/011P-B	116	175	320	98	308	4-Ø6
P	11	15	26	25	-	30							
G	11	15	26	25	37.5	-	WD200-T3-011G/015P-B	116	175	320	98	308	4-Ø6
P	15	20	35	32	-	38.4							
G	15	20	35	32	48	-	WD200-T3-015G/018P-B	142	225	383	120	372	4-Ø6
P	18.5	25	39	38	-	45.6							
G	18.5	25	39	38	57	-	WD200-T3-018G/022P-B	142	225	383	120	372	4-Ø6
P	22	30	46	45	-	54							
G	22	30	46	45	67.5	-	WD200-T3-022G/030P-B	142	225	383	120	372	4-Ø6
P	30	40	62	60	-	72							
G	30	40	62	60	90	-	WD200-T3-030G/037P	170	225	430	150	416	4-Ø6.5
P	37	50	76	75	-	90							
G	37	50	76	75	112.5	-	WD200-T3-037G/045P	170	225	430	150	416	4-Ø6.5
P	45	60	90	90	-	108							
G	45	60	90	90	135	-	WD200-T3-045G/055P	240	310	560	176	545	4-Ø7
P	55	75	105	110	-	132							
G	55	75	105	110	165	-	WD200-T3-055G/075P	240	310	560	176	545	4-Ø7
P	75	100	140	150	-	180							
G	75	100	140	150	225	-	WD200-T3-075G/090P	240	310	560	176	545	4-Ø7
P	90	125	160	180	-	216							
G	90	125	160	180	270	-	WD200-T3-090G/110P	270	350	638	195	615	4-Ø10
P	110	150	210	210	-	252							
G	110	150	210	210	315	-	WD200-T3-110G/132P	270	350	638	195	615	4-Ø10
P	132	200	240	250	-	300							
G	132	200	240	250	375	-	WD200-T3-132G/160P	350	390	735	220	715	4-Ø10
P	160	250	290	310	-	372							
G	160	250	290	310	465	-	WD200-T3-160G/185P	350	390	735	220	715	4-Ø10
P	185	-	330	340	-	408							
G	185	-	330	340	510	-	WD200-T3-185G/200P	360	485	942	200	890	4-Ø12
P	200	275	370	380	-	456							
G	200	275	370	380	570	-	WD200-T3-200G/220P	360	485	942	200	890	4-Ø12
P	220	300	410	415	-	498							
G	220	300	410	415	622.5	-	WD200-T3-220G/250P	360	485	942	200	890	4-Ø12
P	250	340	460	470	-	564							
G	250	340	460	470	705	-	WD200-T3-250G/280P	370	545	1127	200	1075	4-Ø20
P	280	380	500	510	-	612							
G	280	380	500	510	765	-	WD200-T3-280G/315P	370	545	1127	200	1075	4-Ø20
P	315	430	580	600	-	720							
G	315	430	580	600	900	-	WD200-T3-315G/355P	400	545	1212	240	1147	4-Ø20
P	355	485	620	670	-	804							
G	355	485	620	670	1005	-	WD200-T3-355G/400P	400	545	1212	240	1147	4-Ø20
P	400	545	670	750	-	900							
G	400	545	670	750	1125	-	WD200-T3-400G/450P	400	545	1212	240	1147	4-Ø20
P	450	600	780	800	-	960							
G	450	600	780	800	1200	-	WD200-T3-450G/500P	460	545	1400	300	1340	4-Ø20
P	500	675	835	860	-	1032							
G	500	675	835	860	1290	-	WD200-T3-500G/560P	460	545	1400	300	1340	4-Ø20
P	560	750	920	990	-	1188							
G	560	750	920	990	1485	-	WD200-T3-560G/630P	460	545	1400	300	1340	4-Ø20
P	630	850	1050	1100	-	1320							
G	630	850	1050	1200	1800	-	WD200-T3-630G/710P	825	635	1920	600	560	4-Ø14
P	710	950	1301	1340	-	1608							
G	710	950	1301	1340	2010	-	WD200-T3-710G/800P	825	635	1920	600	560	4-Ø14
P	800	1080	1466	1500	-	1800							
G	800	1080	1466	1500	2250	-	WD200-T3-800G/900P	1200	800	2200	520	494	10-Ø14
P	900	1215	1649	1620	-	1944							
G	900	1215	1649	1620	2430	-	WD200-T3-900G/1000P	1200	800	2200	520	494	10-Ø14
P	1000	1350	1832	1720	-	2064							
G	1000	1350	1832	1720	2580	-	WD200-T3-1000G	1200	800	2200	520	494	10-Ø14

The WD200-T3-630G/710P and above models are cabinet frequency converters, and the installation dimensions are the opening dimensions of the cabinet base

Supply voltage: single-phase 200V~240V 50/60Hz

G: heavy load P: standard load	motor		power supply (input)	Frequency converter (output)		model	Overall dimensions			Installation dimensions		
	Rated power		line current	Maximum continuous output electric current In	Maximum instantaneous current 1.5In(heavy load) 60S		W1	D1	H1	W2	H2	aperture
	kW	HP	A	A	A		mm	mm	mm	mm	mm	mm
G	0.75	1	8.2	4	6	WD200-S2-R75G-B	80	155	200	65	190	3-Ø5
G	1.5	2	14	7	10.5	WD200-S2-1R5G-B	80	155	200	65	190	3-Ø5
G	2.2	3	20	10	15	WD200-S2-2R2G-B	100	155	242	84	232	4-Ø5
G	4	5	32	16	24	WD200-S2-004G-B	100	155	242	84	232	4-Ø5

Supply voltage: three-phase 200V~240V 50/60Hz

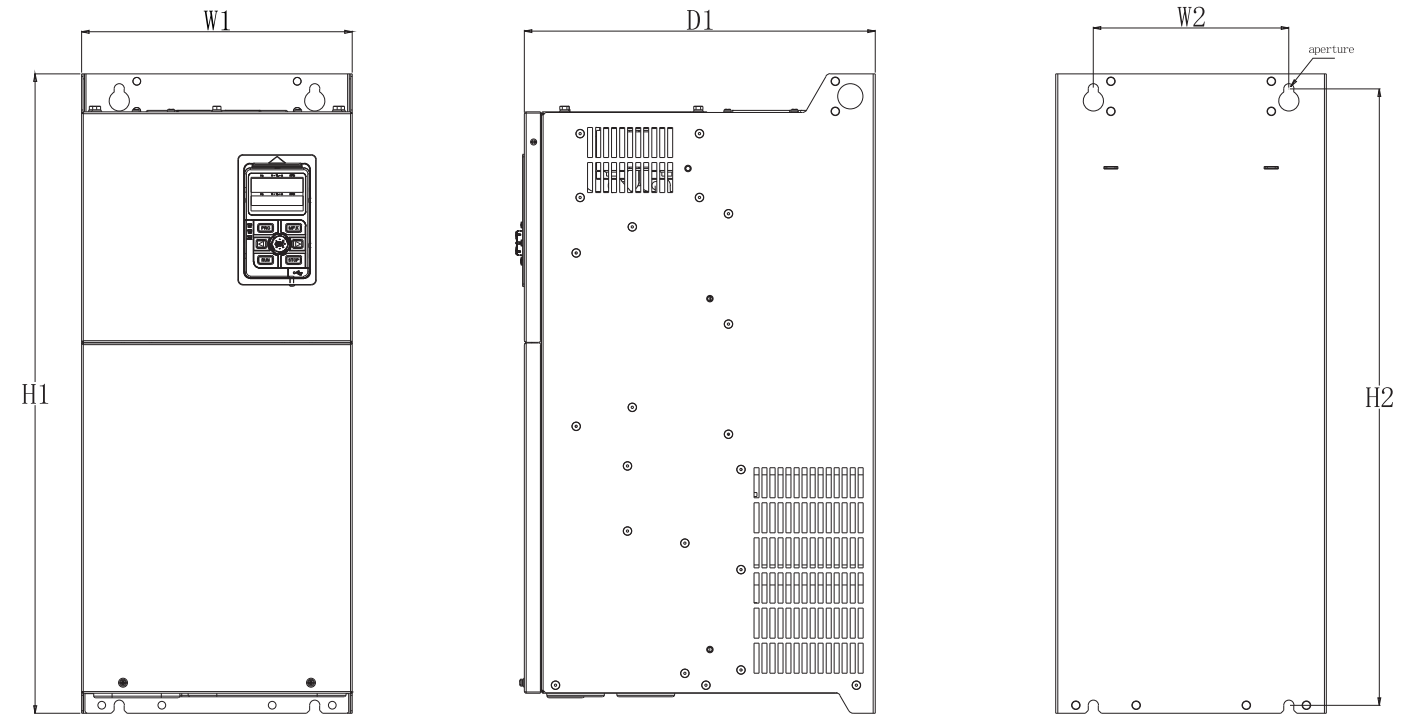
G: heavy load P: standard load	motor		power supply (input)	Frequency converter (output)		model	Overall dimensions			Installation dimensions		
	Rated power		line current	Maximum continuous output electric current In	Maximum instantaneous current 1.5In(heavy load) 60S		W1	D1	H1	W2	H2	aperture
	kW	HP	A	A	A		mm	mm	mm	mm	mm	mm
G	0.75	1	4.6	4	6	WD200-T2-R75G-B	80	155	200	65	190	3-Ø5
G	1.5	2	9	7	10.5	WD200-T2-1R5G-B	80	155	200	65	190	3-Ø5
G	2.2	3	11.4	10	15	WD200-T2-2R2G-B	100	155	242	84	232	4-Ø5
G	4	5	16.7	16	24	WD200-T2-004G-B	100	155	242	84	232	4-Ø5
G	5.5	7.5	32.2	20	30	WD200-T2-5R5G-B	116	175	320	98	308	4-Ø6
G	7.5	10	41.3	30	45	WD200-T2-7R5G-B	142	225	383	120	372	4-Ø6
G	11	15	59	42	63	WD200-T2-011G-B	142	225	383	120	372	4-Ø6
G	15	20	57	55	82.5	WD200-T2-015G-B	170	225	430	150	416	4-Ø6.5
G	18.5	25	69	70	105	WD200-T2-018G-B	170	225	430	150	416	4-Ø6.5
G	22	30	89	80	120	WD200-T2-022G-B	170	225	430	150	416	4-Ø6.5
G	30	40	106	110	165	WD200-T2-030G	240	310	560	176	545	4-Ø7
G	37	50	139	130	195	WD200-T2-037G	240	310	560	176	545	4-Ø7
G	45	60	164	160	240	WD200-T2-045G	240	310	560	176	545	4-Ø7
G	55	75	196	200	300	WD200-T2-055G	270	350	638	195	615	4-Ø10

Supply voltage: three-phase 660V~690V 50/60Hz

motor		power supply (input)		Frequency converter (output)			model	Overall dimensions			Installation dimensions		
G: heavy load P: standard load	Rated power		line current	Maximum continuous output electric current	Maximum instantaneous current 1.5In(heavy load) 60S	Maximum instantaneous current 1.2In(standard load) 60S		W1	D1	H1	W2	H2	aperture
	kW	HP		A	A	A		mm	mm	mm	mm	mm	mm
G	22	30	40	28	42	-	WD200-T6-022G/030P	240	310	560	176	545	4-Ø7
P	30	40	47	35	-	42							
G	30	40	47	35	52.5	-	WD200-T6-030G/037P	240	310	560	176	545	4-Ø7
P	37	50	55	45	-	54							
G	37	50	55	45	67.5	-	WD200-T6-037G/045P	240	310	560	176	545	4-Ø7
P	45	60	65	52	-	62							
G	45	60	65	52	78	-	WD200-T6-045G/055P	240	310	560	176	545	4-Ø7
P	55	75	85	63	-	76							
G	55	75	85	63	94.5	-	WD200-T6-055G/075P	240	310	560	176	545	4-Ø7
P	75	100	95	86	-	103							
G	75	100	95	86	129	-	WD200-T6-075G/090P	240	310	560	176	545	4-Ø7
P	90	125	100	98	-	118							
G	90	125	100	98	147	-	WD200-T6-090G/110P	270	350	638	195	615	4-Ø10
P	110	150	118	121	-	145							
G	110	150	118	121	181.5	-	WD200-T6-110G/132P	270	350	638	195	615	4-Ø10
P	132	200	145	150	-	180							
G	132	200	145	150	225	-	WD200-T6-132G/160P	350	390	735	220	715	4-Ø10
P	160	250	165	175	-	210							
G	160	250	165	175	262.5	-	WD200-T6-160G/185P	350	390	735	220	715	4-Ø10
P	185	-	190	198	-	238							
G	185	-	190	198	297	-	WD200-T6-185G/200P	360	485	942	200	890	4-Ø12
P	200	275	210	218	-	262							
G	200	275	210	218	327	-	WD200-T6-200G/220P	360	485	942	200	890	4-Ø12
P	220	300	230	235	-	282							
G	220	300	230	235	352.5	-	WD200-T6-220G/250P	360	485	942	200	890	4-Ø12
P	250	340	255	270	-	324							
G	250	340	255	270	405	-	WD200-T6-250G/280P	370	545	1127	200	1075	4-Ø20
P	280	380	290	330	-	396							
G	280	380	290	330	495	-	WD200-T6-280G/315P	370	545	1127	200	1075	4-Ø20
P	315	430	340	345	-	414							
G	315	430	340	345	517.5	-	WD200-T6-315G/355P	400	545	1212	240	1147	4-Ø20
P	355	485	380	380	-	456							
G	355	485	380	380	570	-	WD200-T6-355G/400P	400	545	1212	240	1147	4-Ø20
P	400	545	410	430	-	516							
G	400	545	410	430	645	-	WD200-T6-400G/450P	400	545	1212	240	1147	4-Ø20
P	450	600	460	466	-	559							
G	450	600	460	466	699	-	WD200-T6-450G/500P	460	545	1400	300	1340	4-Ø20
P	500	675	520	540	-	648							
G	500	675	520	540	810	-	WD200-T6-500G/560P	460	545	1400	300	1340	4-Ø20
P	560	750	580	600	-	720							
G	560	750	580	600	900	-	WD200-T6-560G/630P	460	545	1400	300	1340	4-Ø20
P	630	850	660	690	-	828							
G	630	850	660	690	1035	-	WD200-T6-630G/710P	825	635	1920	600	560	4-Ø14
P	710	950	730	760	-	912							
G	710	950	730	760	1140	-	WD200-T6-710G/800P	825	635	1920	600	560	4-Ø14
P	800	1080	807	860	-	1032							
G	800	1080	807	860	1290	-	WD200-T6-800G/900P	1200	800	2200	520	494	10-Ø14
P	900	1215	908	932	-	1118							
G	900	1215	908	932	1398	-	WD200-T6-900G/1000P	1200	800	2200	520	494	10-Ø14
P	1000	1350	1009	1040	-	1248							
G	1000	1350	1009	1040	1560	-	WD200-T6-1000G	1200	800	2200	520	494	10-Ø14

The WD200-T6-630G/710P and above models are cabinet frequency converters, and the installation dimensions are the opening dimensions of the cabinet base

Appearance



Optional part models

Name/Model		illustrate
Fieldbus adapter	WD-PN01A	Profinet communication module
	WD-DP01A	PROFIBUS-DP communication module
	WD-EN01A	Ethernet communication module
	WD-CAN01A	CANopen communication module
	WD-EC01A	EtherCAT communication module
Speed feedback encoder	WD-PG01A	Incremental encoder module
	WD-PG02A	Rotary encoder module
I/O extend	WD-IO01A	I/O extension module
Panel	WD-OP01A	Dual line display LED Panel
	WD-OP02A	LCD Panel

More options are coming soon!



※The data in this product catalogue is subject to change without notice. Please pay attention to change to the catalogue version.

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