

WD400 Series High-Performance General-Purpose AC Drive (0.75-710 kW)

WOLONG
Power your future



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If you would like to know more about our products, please scan the QR code to follow our WeChat Official Account and click "Contact Us" to get "Customer Services", where our experts will provide online services.

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COMPANY PROFILE

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.

All factories pass
ISO9001
ISO14001
ISO45001 Quality & EHS system certification

3 Manufacturing bases
42 Factories

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



Regional Manufacturing

Regional Support

PRODUCT OVERVIEW



Designed and developed by Wolong Electric, WD400 Series is a new generation of high-performance general-purpose vector AC drive, which supports regular AC asynchronous motors and multiple high-efficiency motor control algorithms. It can be perfectly integrated with Wolong's synchronous and asynchronous motors, tailored for higher energy efficiency. Compared with the last generation, WD400 boasts significant improvements for having reached the industry frontier in terms of speed control range, torque output accuracy, low-frequency characteristics, and other key performance indices. Coupled with Safe Torque Off (STO), WD400 ensures both personal and equipment safety. Also, it is available in overseas high-end scenarios for its compliance with CE, UL, EAC, and other international certification standards. Featuring excellent reliability, performance, extensibility, and ease of assembly, WD400 is rather user-friendly.

SCOPE OF APPLICATION

 Customized Solution	 Compressors	 Ships	 Metallurgy
 Injection Molding	 Mining	 Textiles	 Petrochemicals
 HVAC	 Cement	 Material Handling	 Power Plants

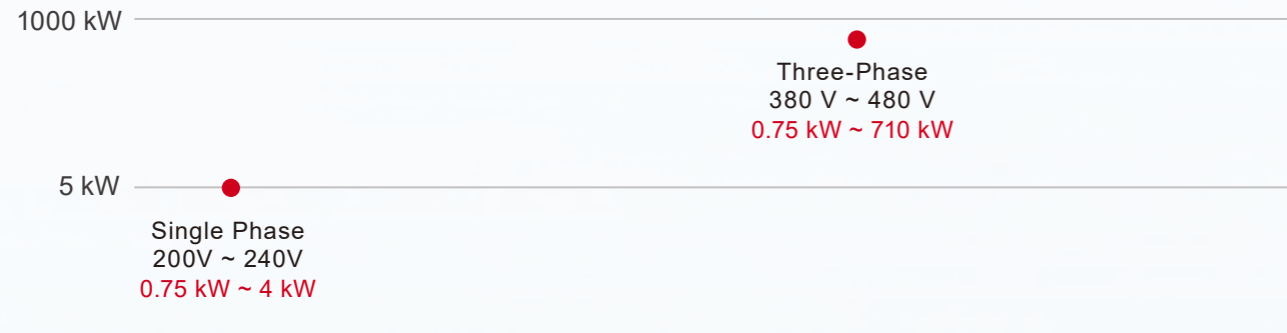
Typical Applications

 Belt Conveyor Crusher	 Induction Motor, Permanent Magnet Synchronous Motor, Synchronous Reluctance Motor		
 Injection Molding Machine, Rolling Mill, Crane	 Marine Propulsion		
 Port	 Chemical Industry	 Mine Belt Conveyor	 Cement
 Water Treatment	 Pulp and Paper	 Food and Beverage	 Hydrogen Production

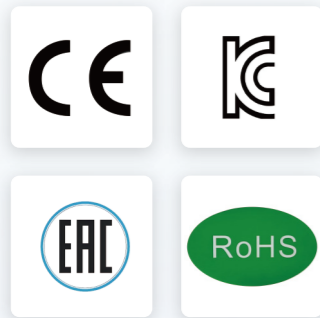
PRODUCT ADVANTAGE

Comprehensive and Versatile Product Range

The WD400 series AC Drive covers a power range from 0.75 kW to 1000 kW and can be used with four types of power supplies.



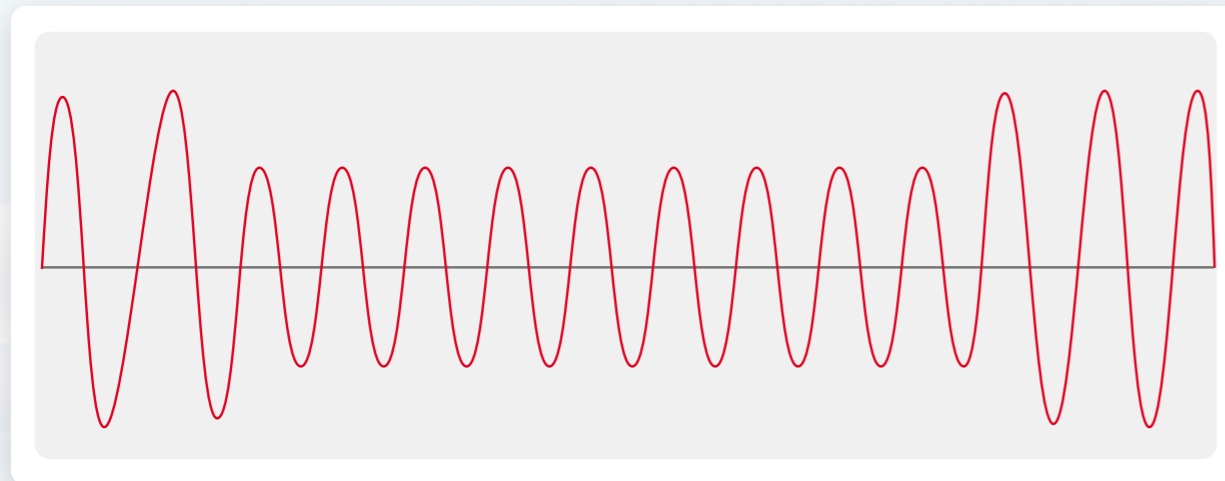
International Standards



Available in overseas high-end scenarios for its compliance with CE, KC, EAC, and other international certification standards.

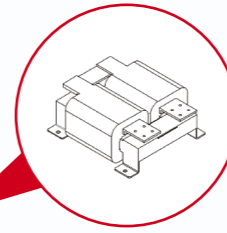
Note: Some models are still in the process of certification.

Wide Voltage Input



Wide Voltage Design, Suitable for 380-480 V Three-Phase Grid Applications in Different Regions Overseas

Built-in DC Reactor



Slim Design, Significantly Reduces Installation Space for Customers
Integrated DC Reactor, Enhances Grid Compatibility

Easy Compact Cabinet



Flexible and Compact Integrated Cabinet Design

Flexible Installation Options

Rail Mounting
0.75 kW - 5.5 kW

Wall Mounting
0.75 kW - 630 kW

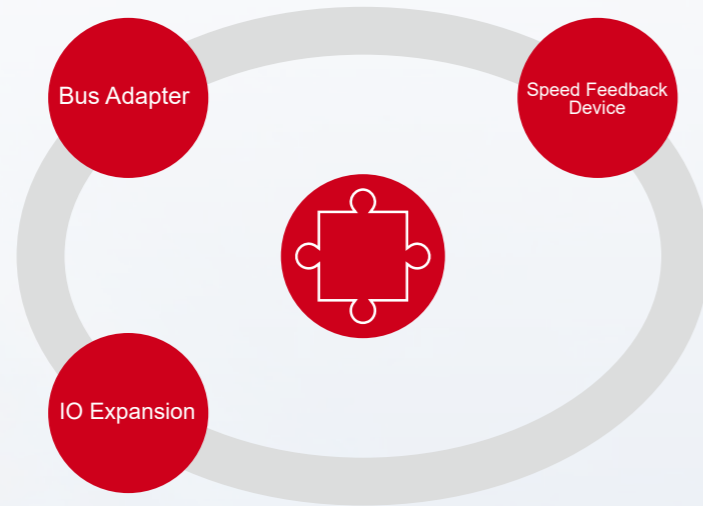
Flange Mounting
75 kW - 160 kW

Self Standing
220 kW - 710 kW

Supports Multiple Function Extensions, Simplified Design Language, Extensive Ecosystem, User-Configurable-Free

Multi-Function Expansion Interfaces Support PROFIBUS, PROFINET, CANopen, and Other Communication Cards

Compatible with Resolver, ABZ Encoder (Push-Pull, Differential, Open Collector), and Communication-Type Encoder



High-Performance 10 Supports Digital and Analog Input/Output, Compatible with External Temperature Sensors Such as PT100 and PT1000 for Motor Temperature Detection and Environmental Temperature Monitoring

Networked Eco-inverters



- Adapted to Industry 4.0

Keeping up with the industrial frontier, we utilize information technology to build an intelligent manufacturing + industrial Internet ecosystem.

- Adapts to multiple network topologies

Supports communication cards such as Modbus, Profibus-DP*, Profinet*, CANopen*, EtherNET*, and IoT card*.

Options are marked with an *asterisk.

- IoT Module

The equipment is not restricted by geographic location, supports intelligent remote inspection, fault remote warning, visualization and analysis, and can be adapted to various cloud platforms.

Keypad

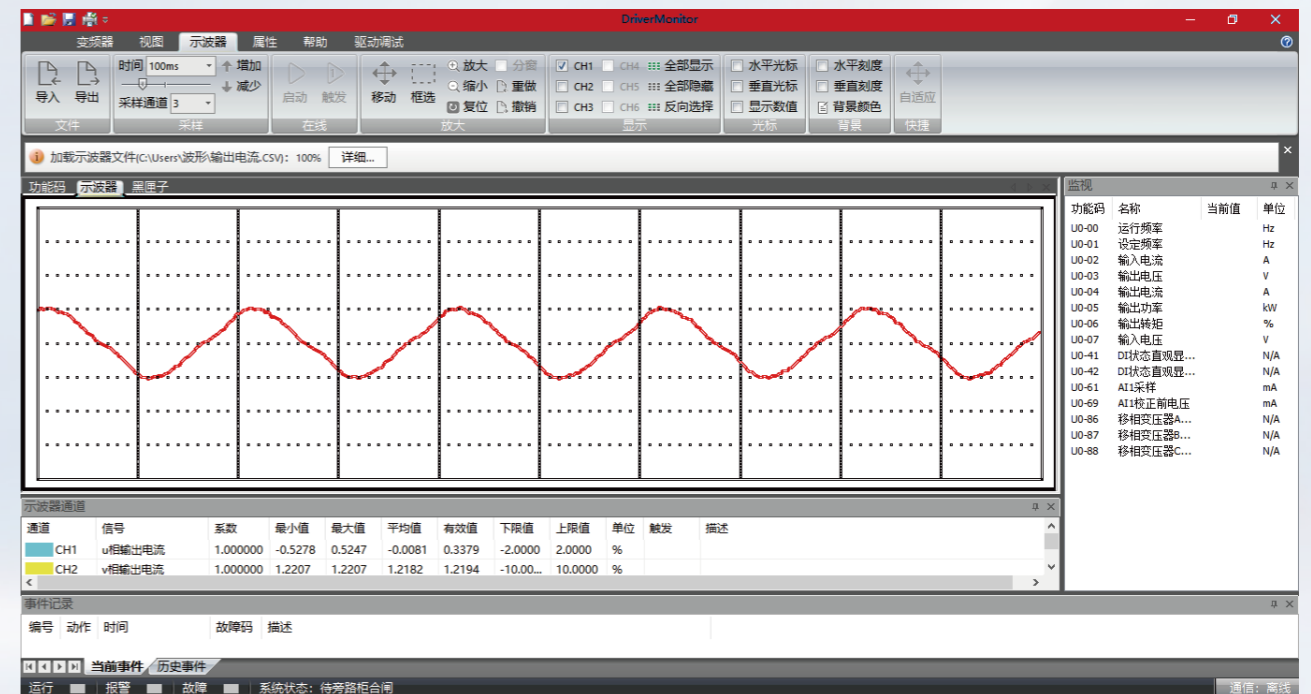
Multiple Keypad are available. Support parameter online modification monitoring, user rights management, shortcut keys and other operations.



- LCD Keypad
Simplified Graphical Interface Display, Multilingual Display, Parameter Copying

- LED Keypad
Bright LED Display, Numeric Keypad Operation, Suitable for Harsh Environments

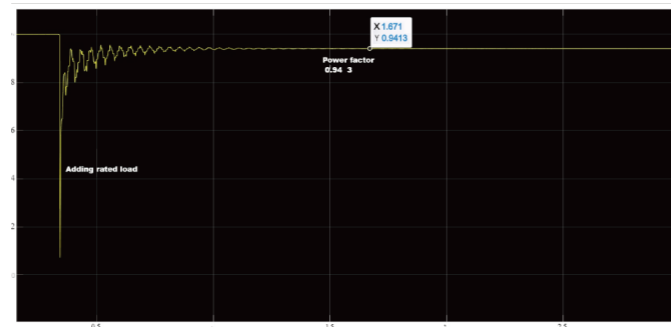
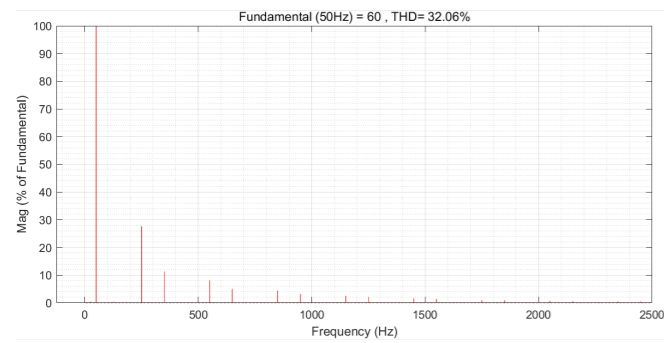
Host Computer



The host computer is equipped with virtual console and parameter monitor, which can realize online debugging, motor online learning, parameter copying, parameter loading, user rights management and other operations.

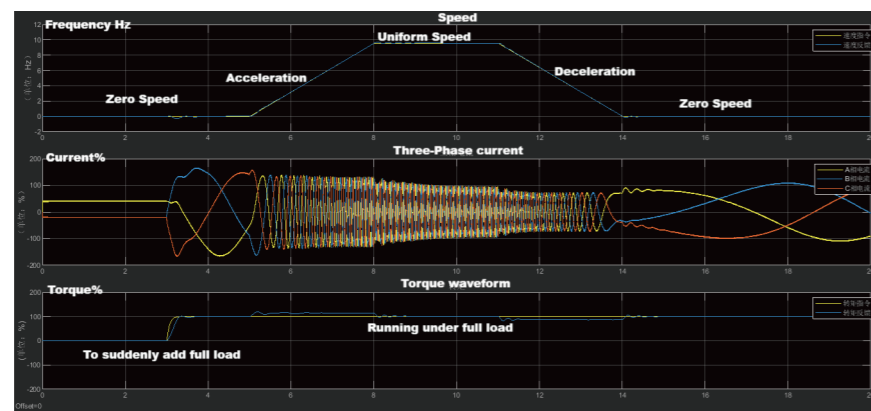
Energy saving and emission reduction

- Synchronous machine running at rated condition, side THDI $\leq 40\%$ (grid-side harmonic content is low)
- Power factor $\geq 92\%$.
- With this typical application, the power factor is high and meets the green and low carbon requirements.



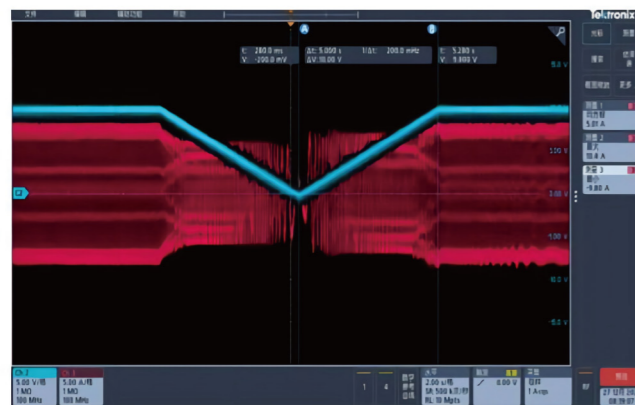
Excellent Zero-Speed Control Performance

- At Zero Speed, sudden application of rated load results in quick convergence of the observer, with no significant drop in feedback speed, indicating good Zero-speed control.
- During acceleration, constant speed, and deceleration stages, speed and torque tracking performance is Excellent.
- Deceleration to 0 Hz shows no significant speed fluctuation, demonstrating good system stability underrated load at zero speed.



Excellent Forward-Reverse Switching Control

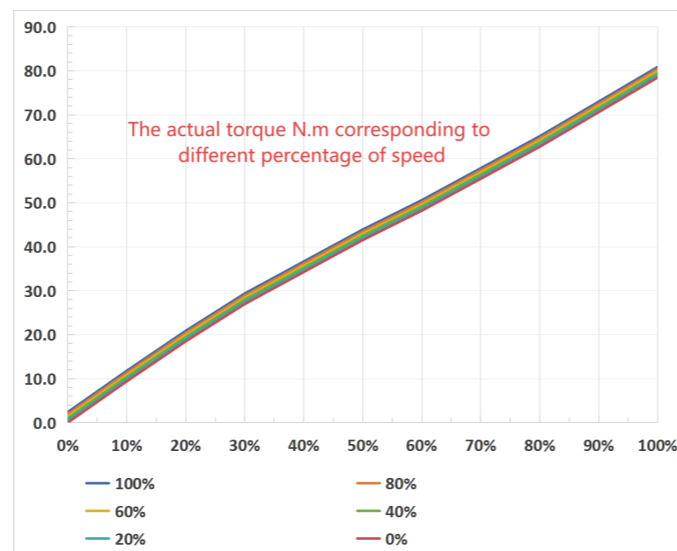
- During forward-reverse switching, the current waveform envelope is torque current, which is smooth without spikes
- Speed is set for linear acceleration and deceleration, with accurate acceleration and deceleration times, and excellent tracking performance.



— 反馈速度波形
— u相电流波形

Excellent Torque Control Performance

- In torque control mode, the given torque matches the actual output torque curve, achieving a torque linearity deviation of 3%, ensuring high performance operation of the inverter.



PERFORMANCE PARAMETER

Items		Specification
Supported motor types		Asynchronous induction motors (IM), permanent magnet synchronous motors (PMSM)
Control mode		Sensor less Vector Control (SVC); Field-Oriented Vector Control (FVC), V/F control
Protection		Overcurrent, Overvoltage, Buffer Resistor Overload Fault, Undervoltage, Inverter Overload, Motor Overload, Input Phase Loss, Output Phase Loss, Inverter Overheating, Buffer Resistor Engagement Fault, Current Zero Drift Detection Error, Ground Short Circuit Detection Fault, PWM Limiting Fault, Initial Position Fault, Tuning Failure, Signal Encoder Fault, Brake Resistor Direct Short, Brake Resistor Continuous On-Time Timeout, Back EMF Fault
Asynchronous machine VF	Supported Functions	Energy-Saving Control, Overvoltage Suppression, Overcurrent Suppression, Voltage Dip Suppression, Oscillation Suppression, Torque Boost, Slip Compensation, Different VF Curve Selection, VF Separation, DC Braking, Overexcitation Rapid Deceleration, Droop Control
Asynchronous machine FVC	Supported Functions	Energy-Saving Control, Droop Control, Master-Slave Control, Load Observer, Overvoltage Suppression, Voltage Dip Suppression, Overexcitation Rapid Deceleration, Automatic Voltage Adjustment (AVR Generator Bus Voltage Control), DC Braking,
	Encoder Support	ABZ Encoder (Differential, Collector, Push-Pull), Resolver
	Starting Torque	200 %
	Torque Step Response	Torque step response within 2ms
	Speed Stability Precision	0.02 %
	Speed Fluctuation	0.05 %
	Torque Control Precision	Torque Control Precision $\pm 2\%$
Flux Weakening Factor	5 x Flux Weakening	
Asynchronous machine SVC	Supported Functions	Energy-Saving Control, Droop Control, Master-Slave Control, Load Observer, Overvoltage Suppression, Voltage Dip Suppression, Overexcitation Rapid Deceleration, Automatic Voltage Adjustment (AVR Generator Bus Voltage Control), Speed Tracking, DC Braking, etc.
	Speed Range	1 : 500
	Starting Torque	200 %
	Torque Step Response	Torque step response within 2ms
	Torque Control Precision	Torque Control Precision $\pm 3\%$ above 5 Hz
	Speed Accuracy	10 % within rated slip
	Flux Weakening Factor	5 x Flux Weakening
Synchronous Machine FVC	Supported Functions	Electronic Fusing, Overexcitation Rapid Deceleration, Master-Slave Control, MTPA Maximum Torque per Amp Control, Droop Control, Master-Slave Control, Overvoltage Suppression, Voltage Dip Suppression, Automatic Voltage Adjustment (AVR Generator Bus Voltage Control), DC Braking,
	Encoder Support	ABZ Encoder (Differential, Collector, Push-Pull), Resolver
	Starting Torque	200 %
	Torque Step Response	Torque step response within 2ms
	Speed Stability Precision	0.02 %
	Speed Fluctuation	0.05 %
	Torque Control Precision	Torque Control Precision $\pm 2\%$
Synchronous Machine SVC	Supported Functions	Speed Tracking, Electronic Fusing, Overexcitation Rapid Deceleration, Master-Slave Control, MTPA Maximum Torque per Amp Control, Droop Control, Master-Slave Control, Overvoltage Suppression, Voltage Dip Suppression, Automatic Voltage Adjustment (AVR Generator Bus Voltage Control), DC Braking,
	Speed Range	1 : 200
	Starting Torque	200 %
	Torque Step Response	Torque step response within 2 ms
	Speed Stability Precision	0.05 %
Torque Control Precision	Torque Control Precision $\pm 3\%$ above 5 Hz	

OTHER TECHNICAL PARAMETERS

Items	Specification
Supply Voltage	Single-Phase: 200 V ~ 240 V Three-Phase: 380 V ~ 480 V
Power Supply Frequency	50 / 60 Hz ± 5 %
Power Range	0.75 kW - 710 kW
Overload Capacity	150 % of rated current for 60 seconds
Analog Input	2 Channels: AI1 (0 - 10 V / 0 - 20 mA / 4 - 20 mA), AI2 (0 - 10 V / 0 - 20 mA / 4 - 20 mA)
Analog Output	2 Channels: AO1 (0 - 10 V / 0 - 20 mA / 4 - 20 mA), AO2 (0-10 V / 0 - 20 mA / 4 - 20 mA) Note: Models with Frame Size 5 and below have only 1-channel AO output.
Digital Input	7-Channel Programmable Digital Input (with a maximum input frequency of 1KHz and an internal impedance of 4.4 kΩ) Note: Models with Frame Size 5 and below have only 5-channel programmable digital input.
Digital Output	1-Channel Programmable Open-Collector Logic Output (with a maximum current of 1.2 mA when powered by internal supply and a maximum current of 200 mA when powered by external supply) 1-Channel High-Speed Pulse Output (with a maximum frequency of 100 kHz)
Relay Output	2-Channel Programmable Relay Output: TA1/NO1 Normally Open Contact; TB1/NC1 Normally Closed Contact; TC1/CM1 Common Terminal TB2/NO2 Normally Open Contact; TC2/CM2 Common Terminal Note: Models with Frame Size 5 and below are subject to 1-channel relay output.
Standard Communication Protocol	Modbus RTU Communication: A+/B-/485G
Expansion	2 Expansion Interfaces: SLOT, SLOT2 Options: I/O expansion modules, speed feedback encoder modules, communication modules, etc.
Optional Communication Protocols	Profibus-DP, Profinet, EtherNET, 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/PTC)
Keypad	LED for Parameter display, LCD (Optional) for Parameter Copy
Brake Unit	Standard built-in brake unit for 0.75 - 22 kW Optional external brake unit for 30 kW and above
DC Reactor	Standard Built-in DC reactor for 30 kW and above
Installation	Rail Mounting; Wall Mounting; Flange Mounting; Self Standing
Cooling Method	Forced Air Cooling
Protection Level	IP20
Operating Temperature	- 10 °C ~ + 50 °C (derating is required for temperatures above 40 °C, and derate by 1.5 % for every 1 °C higher than 40 °C)
Storage Temperature	-20 °C ~ +60 °C
Compliance with standards	IEC61800-5-1; GB12668
EMC Performance	Meets IEC61800-3 requirements

Terminal interface

7 digital inputs
2 relay outputs

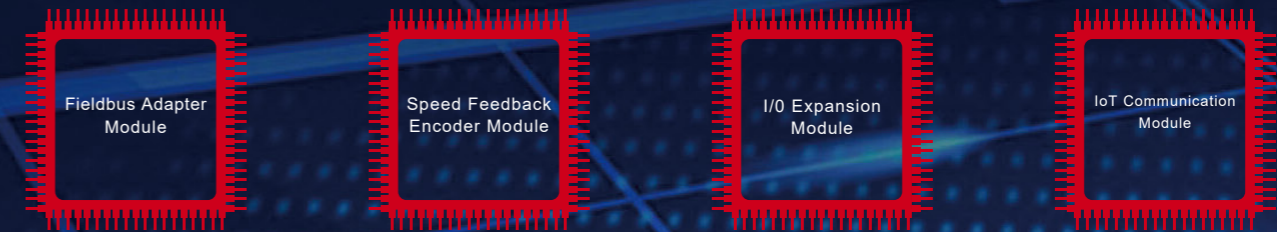
1 transistor output
1 high-speed pulse output

2 analog inputs
2 analog outputs

Standard Modbus RTU
communication interface

Expandable Function

Dual expansion slot design, capable of meeting various application needs, supports optional modules



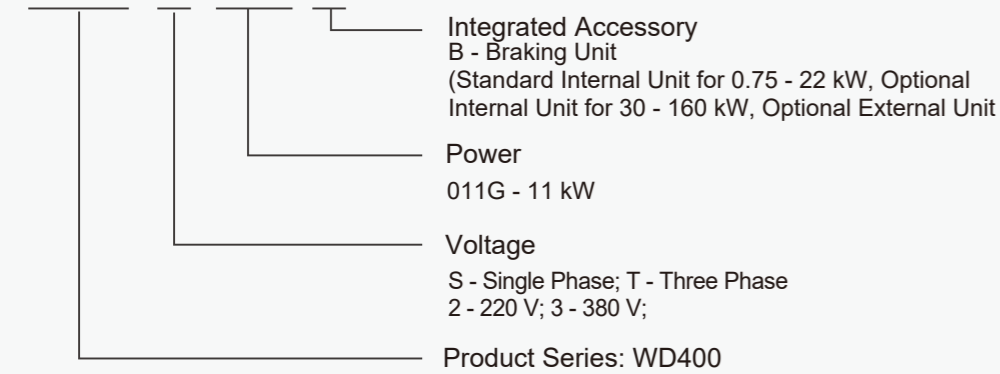
OPTIONAL MODEL

Product	Type	Note
Optional Communication Protocols	WD-PN01A	PROFINET
	WD-DP01A	PROFIBUS-DP
	WD-EN01A	EtherNET
	WD-CAN01A	CANopen
Speed Feedback Encoder	WD-PG01A	Incremental encoder(A/B/Z)
	WD-PG02A	Resolver
IO Expansion Card	WD-IO01A	I/O expansion card
Keypad	WD-OP04A	Dual line LED keypad
	WD-OP03A	LCD keypad

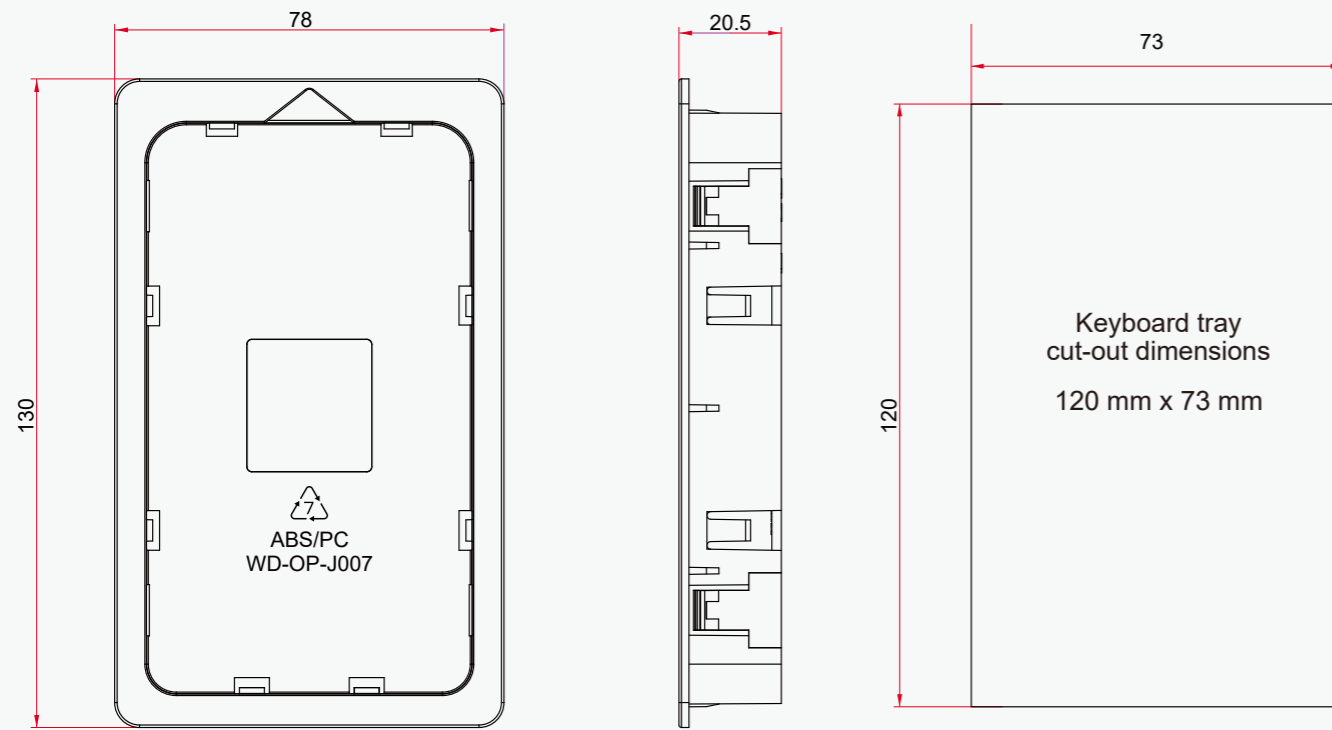
More optional accessories will be available soon.

NAMING RULES

WD400 - T3 - 011G - B



KEYBOARD BASE OPENING SIZE



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

Motor		Power supply (input)		Frequency converter (output)		Model	Outer Dimensions			Installation Dimensions			Frame Size
G: heavy load	Rated power	Line current	Maximum Continuous Output Electric Current In	Maximum Instantaneous Current 1.5 In (Heavy Load) 60 s	W1		D1	H1	W2	H2	aperture		
	kW	HP	A	A	mm	mm	mm	mm	mm	mm			
G	0.75	1	8.2	4	6	WD400-S2-R75G-B	80	155	200	65	190	3-Ø5	Frame Size 1
G	1.5	2	14	7	10.5	WD400-S2-1R5G-B	80	155	200	65	190	3-Ø5	
G	2.2	3	20	10	15	WD400-S2-2R2G-B	100	155	242	84	232	4-Ø5	Frame Size 2
G	4	5	32	16	24	WD400-S2-004G-B	100	155	242	84	232	4-Ø5	

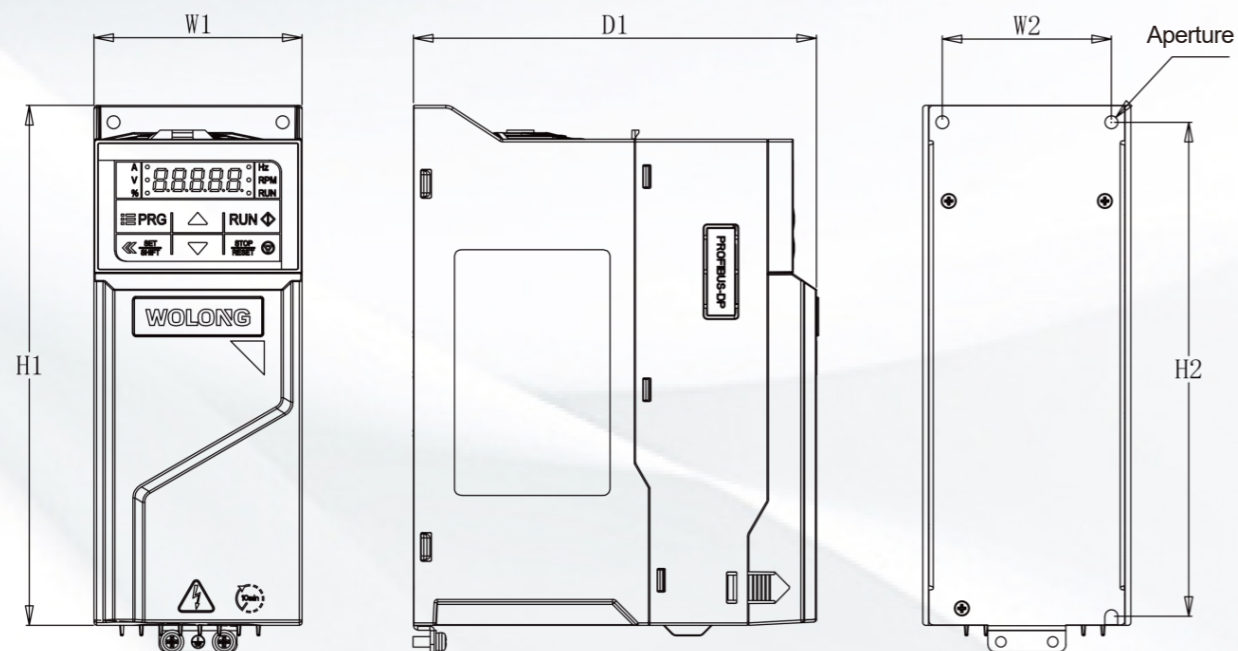
Supply voltage: three-phase, 380 V ~ 480 V; 50 / 60 Hz

Motor		Power supply (input)		Frequency converter (output)		Model	Outer Dimensions			Installation Dimensions			Frame Size
G: heavy load	Rated power	Line current	Maximum Continuous Output Electric Current In	Maximum Instantaneous Current 1.5 In (heavy Load) 60 s	W1		D1	H1	W2	H2	aperture		
	kW	HP	A	A	mm	mm	mm	mm	mm	mm			
G	0.75	1	3.5	3	4.5	WD400-T3-R75G-B	80	155	200	65	190	3-Ø5	Frame Size 1
G	1.5	2	5	4	6	WD400-T3-1R5G-B	80	155	200	65	190	3-Ø5	
G	2.2	3	5.8	6	9	WD400-T3-2R2G-B	80	155	200	65	190	3-Ø5	Frame Size 2
G	4	5	11	10	15	WD400-T3-004G-B	100	155	242	84	232	4-Ø5	
G	5.5	7.5	15	13	19.5	WD400-T3-5R5G-B	100	155	242	84	232	4-Ø5	Frame Size 3
G	7.5	10	20	17	25.5	WD400-T3-7R5G-B	116	175	320	98	308	4-Ø6	
G	11	15	26	25	37.5	WD400-T3-011G-B	116	175	320	98	308	4-Ø6	Frame Size 4
G	15	20	35	32	48	WD400-T3-015G-B	142	225	383	120	372	4-Ø6	
G	18.5	25	39	38	57	WD400-T3-018G-B	142	225	383	120	372	4-Ø6	Frame Size 5
G	22	30	46	45	67.5	WD400-T3-022G-B	142	225	383	120	372	4-Ø6	
G	30	40	62	60	90	WD400-T3-030G	170	225	430	150	416	4-Ø6.5	Frame Size 6
G	37	50	76	75	112.5	WD400-T3-037G	170	225	430	150	416	4-Ø6.5	
G	45	60	90	90	135	WD400-T3-045G	240	310	560	176	545	4-Ø7	Frame Size 7
G	55	75	105	110	165	WD400-T3-055G	240	310	560	176	545	4-Ø7	
G	75	100	140	150	225	WD400-T3-075G	240	310	560	176	545	4-Ø7	Frame Size 8
G	90	125	160	180	270	WD400-T3-090G	270	350	638	195	615	4-Ø10	
G	110	150	210	210	315	WD400-T3-110G	270	350	638	195	615	4-Ø10	Frame Size 9
G	132	200	240	250	375	WD400-T3-132G	350	390	735	220	715	4-Ø10	
G	160	250	290	310	465	WD400-T3-160G	350	390	735	220	715	4-Ø10	Frame Size 10
G	185	-	330	340	510	WD400-T3-185G	360	485	942	200	890	4-Ø12	
G	200	275	370	380	570	WD400-T3-200G	360	485	942	200	890	4-Ø12	Frame Size 11
G	220	300	410	415	622.5	WD400-T3-220G	360	485	942	200	890	4-Ø12	
G	250	340	460	470	705	WD400-T3-250G	370	545	1127	200	1075	4-Ø20	Frame Size 12
G	280	380	500	510	765	WD400-T3-280G	370	545	1127	200	1075	4-Ø20	
G	315	430	580	600	900	WD400-T3-315G	400	545	1212	240	1147	4-Ø20	Frame Size 13
G	355	485	620	670	1005	WD400-T3-355G	400	545	1212	240	1147	4-Ø20	
G	400	545	670	750	1125	WD400-T3-400G	400	545	1212	240	1147	4-Ø20	Frame Size 14
G	450	600	780	800	1200	WD400-T3-450G	460	545	1400	300	1340	4-Ø20	
G	500	675	835	860	1290	WD400-T3-500G	460	545	1400	300	1340	4-Ø20	Frame Size 15
G	560	750	920	990	1485	WD400-T3-560G	460	545	1400	300	1340	4-Ø20	
G	630	850	1050	1200	1800	WD400-T3-630G	825	635	1920	600	560	4-Ø14	Frame Size 16
G	710	950	1301	1340	2010	WD400-T3-710G	825	635	1920	600	560	4-Ø14	

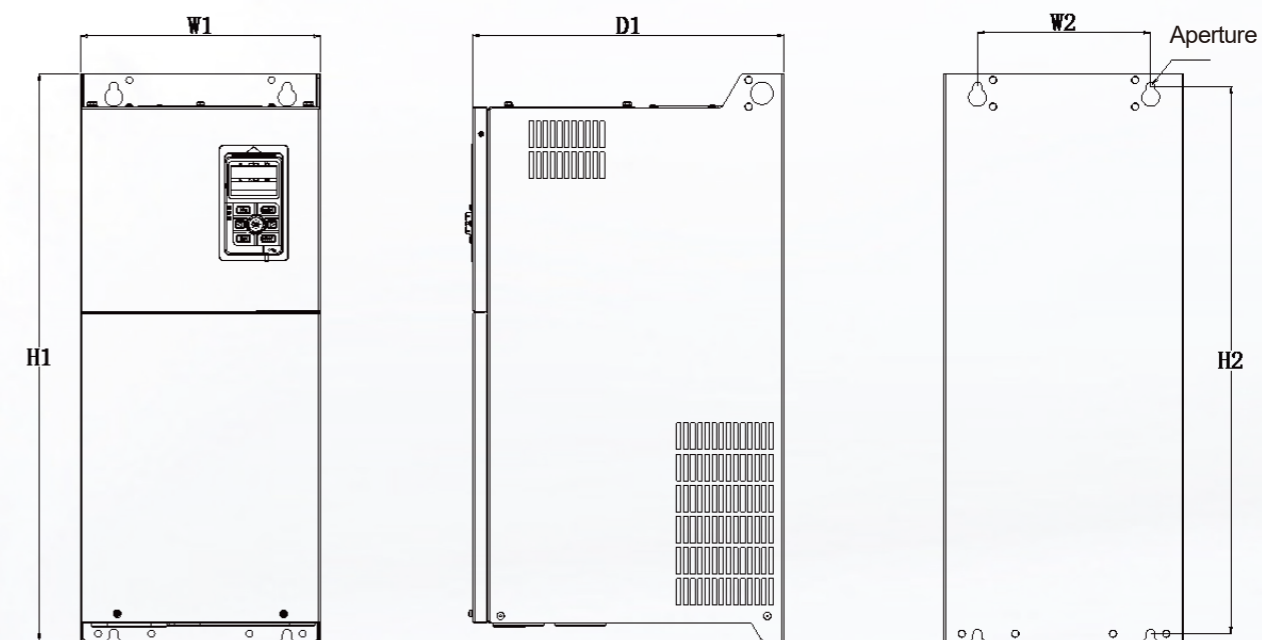
WD400-T3-630G and above models are cabinet-type inverters; the installation dimensions refer to the cutout dimensions of the cabinet base.

OUTLINE DIAGRAM

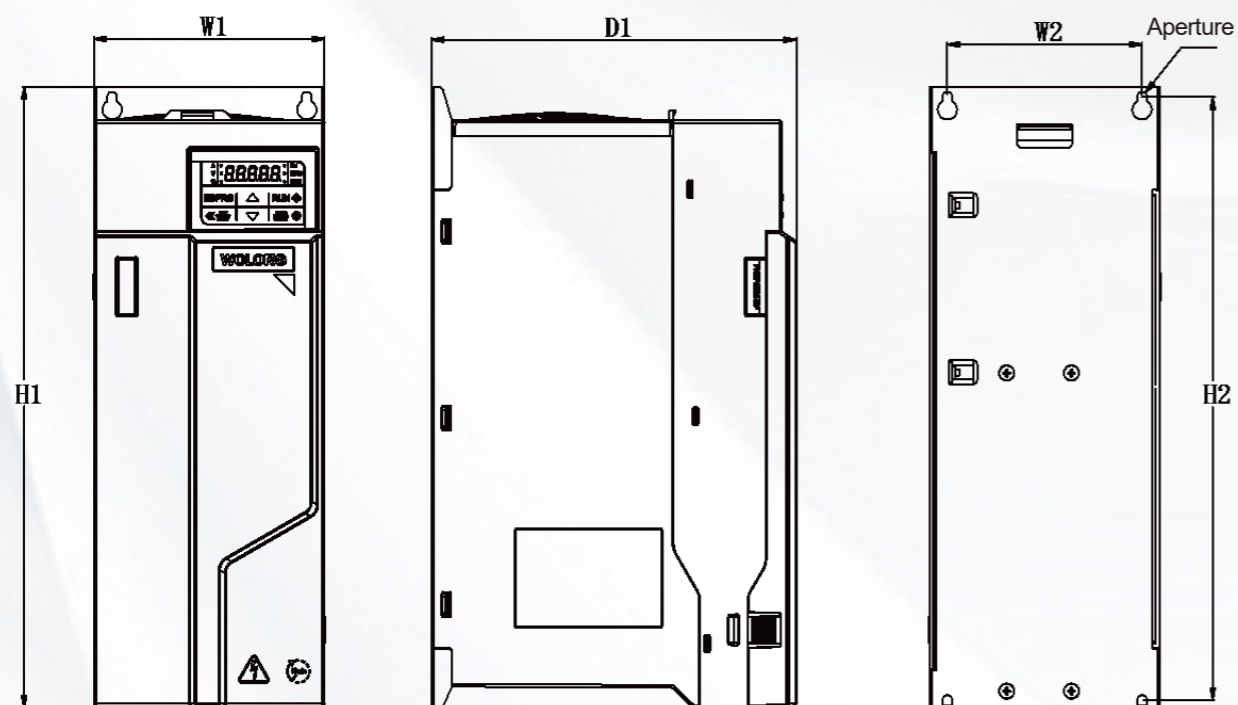
▼ WD400 FRAME SIZE 1



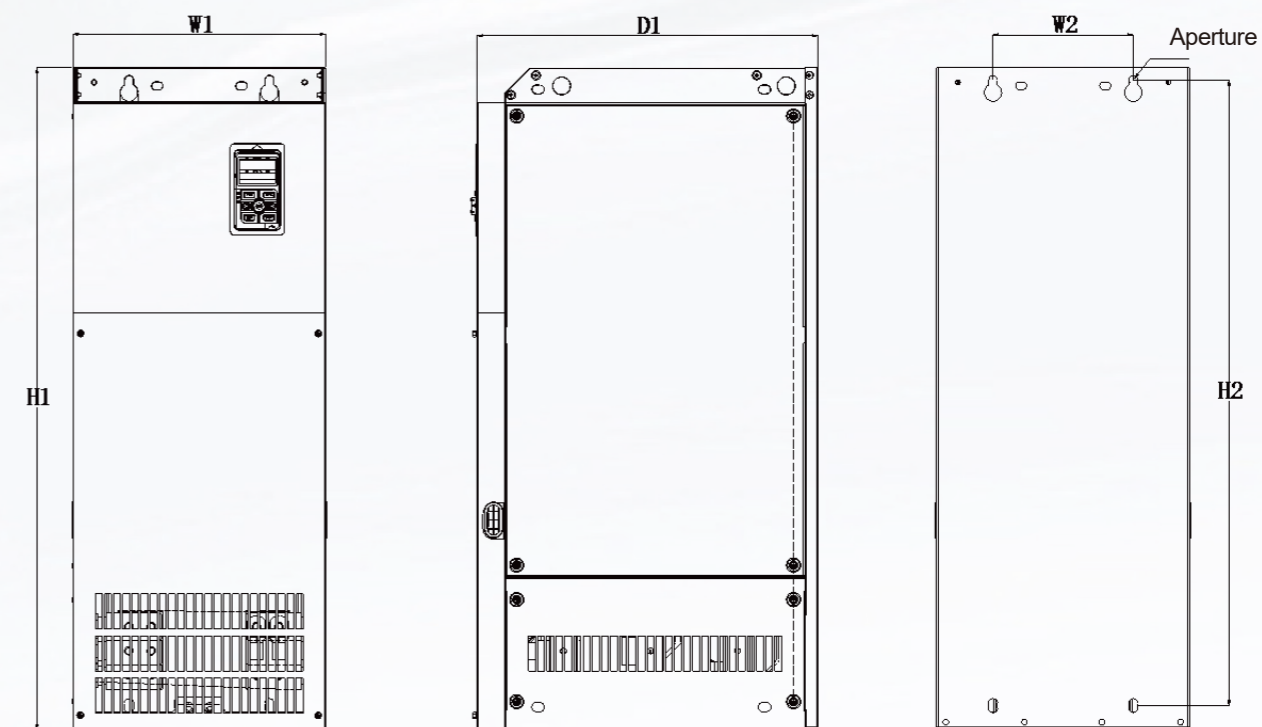
▼ WD400 FRAME SIZE 6 - 8



▼ WD400 FRAME SIZE 2 - 5

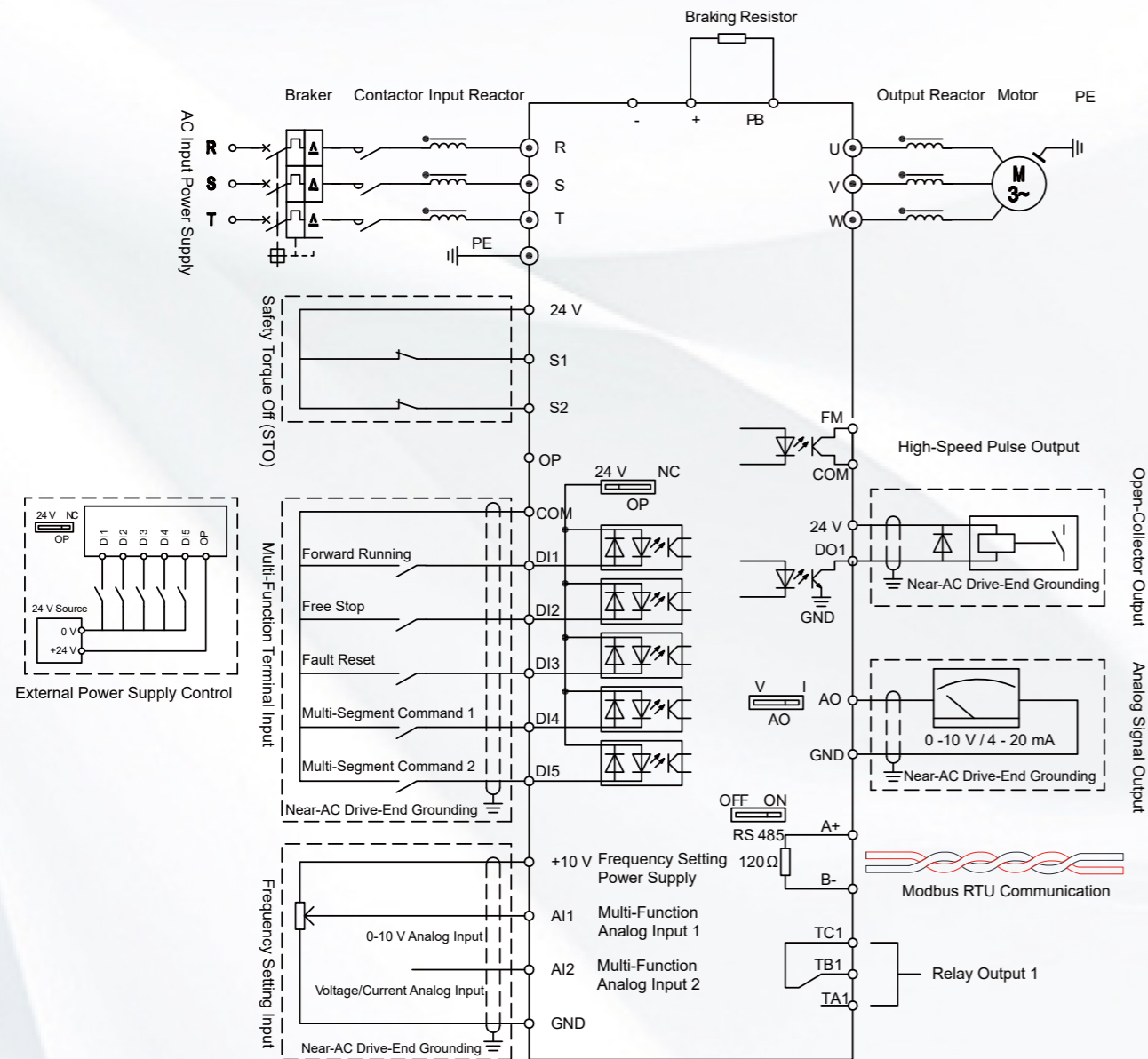


▼ WD400 FRAME SIZE 9 - 12

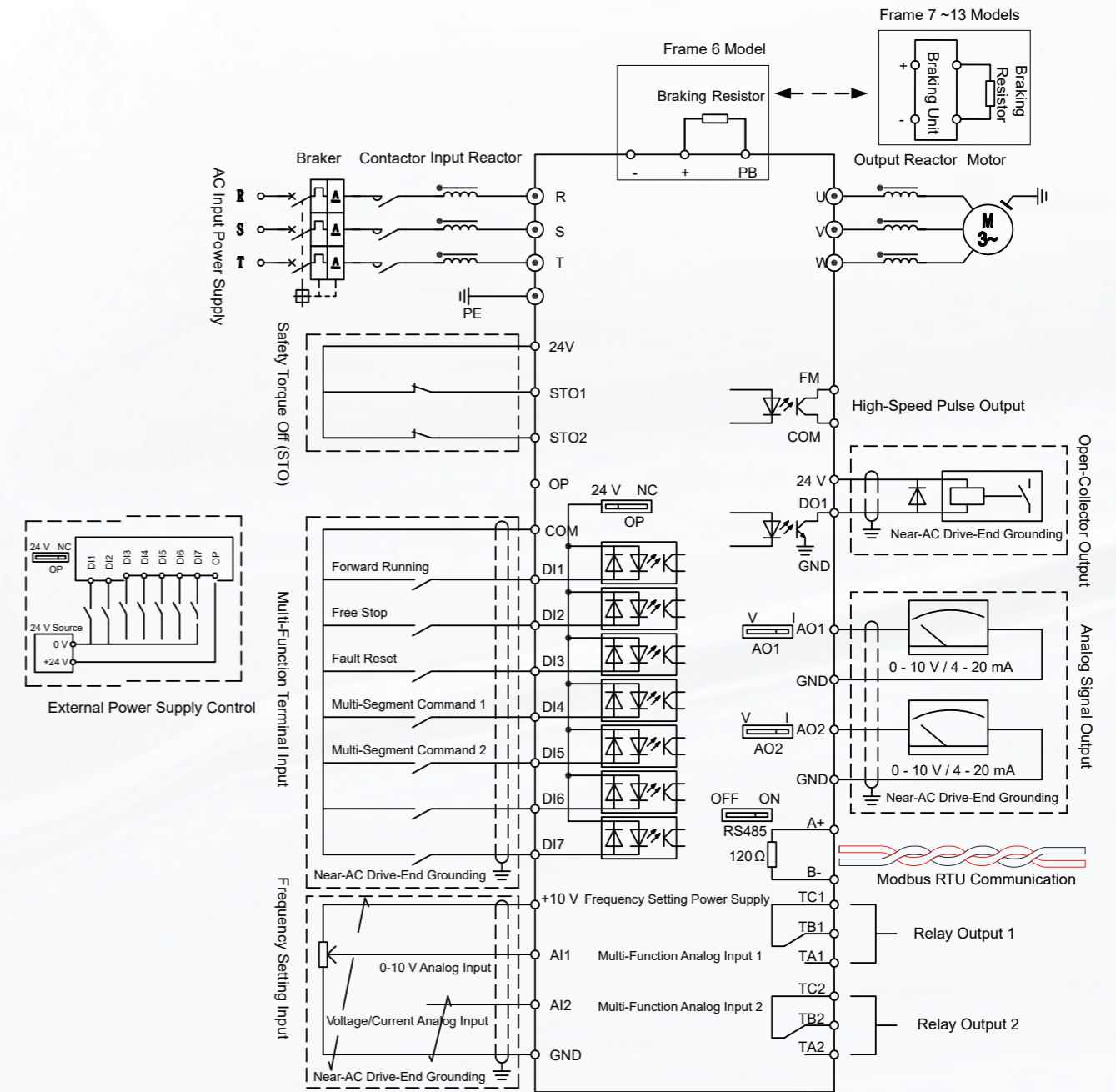


TERMINAL CONNECTION DIAGRAM

▼ TYPICAL WIRING DIAGRAM FOR FRAME SIZES 1 ~ 5



▼ TYPICAL WIRING DIAGRAM FOR FRAME SIZES 6 ~ 14



Note: Frame Sizes 9 ~ 14 are not provided with a "PB" terminal.

※ The data in this document is subject to change due to technological advancements without prior notice. Please pay attention to changes in the document version.

※ The final interpretation of this document belongs to Wolong Electric Group Co., Ltd.