BROCHURE

Variable Speed Drives & Accessories

NIETZ

NIETZ

Innovation + Driving Tomorrow

WHO WE ARE

NIETZ is one Leading Manufacturer of industrial automation products, with more than millions units sold worldwide, established 2005 Shanghai, China. We are committed to building long-lasting and successful business relations with our partners, has gained good reputation and deep influence.

We aim to provide the best quality, unmatched reliability and low price in our services and our products. We aim to reduce your costs, streamline manufacturing, to improve productivity.

The products of NIETZ are Variable Frequency Inverters, AC Servo System, Soft Starter, Planetary Gearboxes and Complete Device,The products NIETZ are technological advanced products and it has quite wide product range and already used widely in various applications such as textile machine, air compressor, hoist, packing machine, printing machine, electronic machine and other industries, which exported to over 40 countries and regions such as Europe, South America, Southeast Asia, Middle East and so on.

NIETZ always aims to be the professional driving solution provider and your mutual-benefit partner.


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Production Workshop


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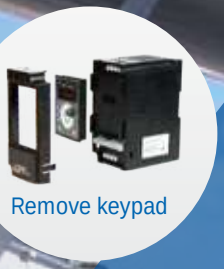
NL1000

Micro & Economic

- Small Dimension, Low Cost
- Terminals Uncovered, Easy to Use and Wiring
- DIN-Rail Mounting and Wall Mounting
- Support MODBUS via RS485
- V/F Control; Buit-in PID Control
- Frequency Range 0.1...999.9Hz

Item			Specifications
	Power Supply	Rated Voltage	220 VAC, 50/60Hz, 1 Phase Input and 3 Phase Output 220 VAC, 50/60Hz, 1 Phase Input and 1 Phase Output 220 VAC, 50/60Hz, 3 Phase Input and 3 Phase Output 380 VAC, 50/60Hz, 3 Phase Input and 3 Phase Output
		Voltage Range	220 VAC 170-240 VAC 380 VAC 330-440 VAC
	Output	Voltage Range	220 VAC 0-240 VAC 380 VAC 0-380 VAC
		Frequency Range	0.10-999.9 Hz
	Control Mode		V/F Control, Space Vector Control
	Indication		Operating status/Alarm definition/interactive guidance: eg, frequency setting, the output frequency/ current, DC bus voltage, the temperature and so on.
Control Specification	Output Frequency Range		0.10-999.90 Hz
	Frequency Setting Resolution		Digital Input 0.1 Hz Analog Input 0.1% of Max. Output Frequency
	Output Frequency Accuracy		0.1 Hz
	V/F Control		Setting V/F Curve to Satisfy Various Load Requirements
	Torque Control		Auto Increase Auto raise Torque by Loading Condition Manual Increase Enable to Set 0.1-20.0% of Raising Torque
	Multi-Functional Output Terminal		One Multi-Fuction Output Terminal for Displaying of Running, Zero Speed, Counter, External Abnormity, Program Operation and Other Information and UP / DOWN Fuction and Emergency Stop and Other Functions.
	Multi-Functional Input Terminal		Four Multi-Fuction Input Terminals, Realizing Functions Including 15 Sections Speed Control, Program Running, 4 Section Acceleration / Deceleration Speed Switch, Warnings.
	Accel/Decel Time		0-999.9s Acceleration/Deceleration Time can be Set Individually
Others Functions	Frequency Setting		Analog input 0 to 10V, 0to 20mA can be Selected. Digital Input Input Using the Setting Dial of the Operation Panel or RS485 or UP/DOWN. Note AVI Terminals can be Used to Select an Analog Voltage Input (0-10V) and Analog Current Input (4-20mA) through the Switch J2.
	Multi-Speed		4 Multi-Fuction Input Terminals, 15 sections Speed can be Set
	Automatic Voltage Regulation		Automatic Voltage Regulation Function can be Selected
	Counter		Built-in 2 Group of Counters
Protection Function	Overload		150%, 60 s (Constant Torque)
	Over Voltage		Over Voltage Protection can be Selt.
	Under Voltage		Under Voltage Protection can be Set.
	Other Protections		Output Short Circuit, Over Current and Parameter Lock and so on.
Environment Installation	Ambient Temperature		-10 to 40°C (Non-Condensing)
	Ambient Humidity		Max. 95% (No-Condensing)
	Altitude		Lower Than 1000m
	Vibration		Max. 0.5G
	Cooling Mode		Forced Air Cooling.
	Protection Class		IP20
	Installation Mode		Wall-Mounted or Standard 35mm Rail Mounting (Below 5.5kW)



AT20

General Purpose, Compact

- Various Control Version, V/F, Sensorless Vector and Cloosed Loop Vector Control
- Built-in braking unit up to 450kW (optional)
- Support MODBUS RS485, ProfiNet is Selectable
- Digital and analogue I/O optional cards
- Support different PG cards, including resolover
- Suitable AC Inductiion Motor, Permanent Magnet Synchronous Motor is selectable

	Item	Specifications
Basic Function	Control Mode	V/F Control Sersorless Flux Vector Control, SFVC Closed-Loop Vector Control, FVC, Above 3.7kW
	Max. Frequency	0.0-600.0 Hz
	Carrier Frequency	0.5 kHz-8.0 kHz The Carrier Frequency is Automatically Adjusted Based on the Load Features.
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%
	Start Torque	G Type 0.5 Hz / 150%, SVC P Type 0.5 Hz / 100%
	Speed Range	1:100, SVC
	Speed Stability Accuracy	±0.5%, SVC
	Overload capacity	G Type 60s for 150% of the Rated Current, 3s for 180% of the Rated Current. P Type 60s for 120% of the Rated Current, 3s for 150% of the Rated Current.
	Torque boost	Auto-Boost; Customized Boost: 0.1%~30.0%
	Ramp Mode	Straight-Line Ramp. Four Groups of Acceleration/Deceleration Time with the Range of 0.00-6500.0s
	DC Braking	DC Braking Frequency 0.00Hz~Maximum frequency Braking Time 0.0s~36.0s Braking Action Current Value 0.0%~100.0%
	JOG control	JOG Frequency Range 0.00 Hz-50.00 Hz JOG Acceleration/Deceleration Time: 0.0s~6500.0s
	Simple PLC, Multiple Preset Speeds	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States
	Onboard PID	It Realizes Process Controlled Closed Loop Control System Easily
	Auto voltage regulation（AVR）	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes
	Overvoltage / Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoid Frequent Tripping Due to Over Voltage/Over Current.
	Rapid Current Limit	It Helps to Avoid Frequent Over Current Faults of the AC Drive.
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process. Torque Control can be Implemented in the FVC Mode.
Individualized Functions	High Performance	Control of Asynchronous Motor are Implemented Through the High-Performance Current Vector Control Technology.
	Rapid Dip Ride Through	The Load Feedback Energy Compensates the Voltage Reduction so That the AC Drive can Continue to Run for a Short Time
	Support for Multiple PG Card	Support for Differential Input PG Card, Resolver PG Card, Rotating Transformer PG Card...
	Rapid Current Limit	It Helps to Avoid Frequent Over Current Faults of the AC Drive.
	Timing Control	0.0-6500.0 min.
	Communication Methods	RS 485 standard, ProfiNet is selectable
Running	Command Source	Operation Panel / Control Terminals / Serial Communication Port You can Perform Switchover Between these Sources in Various Ways.
	Frequency Source	There are Ten Frequency Sources. Digital Setting, Analog Voltage Setting, Analog Current Setting, Pulse Setting, Serial Port Setting. You can Perform Switchover Between these Sources in Various Ways.
	Input Terminal	Standard: 5 Digital Input Terminals (Below 5.5kW)/6 Digital Input Terminals (Above 7.5kW); 1 Analog Input Terminal (Below 5.5kW)/2 Analog Input Terminals (Above 6.5kW); 1 Voltage Input (Only Support for 0-10V, Above 7.5kW),1 Voltage Input (0-10V) or Current Input (4-20mA)
	Output Terminal	1 High-Speed Pulse Output Terminal (Open-Collector), Above 3.7kW. 1 Relay Output Terminal (Below 5.5kW)/2 Relay Output Terminals (Above 7.5kW) 1 Analog Output Terminal (3.7-5.5kW)/2 Analog Output Terminal (Above 7.5kW), Support for 4-20mA Current Output or 0-10V Voltage Output

NZ2000

General Purpose, Sensorless Vector Control

- Auto Identification, Simple to use
- PID Process Control, Multi-Function I/O
- Heavy Duty Use (3s 180%, 60s 150%)
- Support MODBUS, EtherCAT is selectable
- Power Range 0.4-280 kW
- Drives AC Induction Motor; Permanent Magnet Synchronous Motor is Selectable

Item		Specifications
Basic Function	Control Mode	V/F Control Sersorless Flux Vector Control, SFVC
	Max. Frequency	Vector Control 0.0-320.0 Hz V/F Control 0.1-3200 Hz
	Carrier Frequency	1.0 kHz-16.0 kHz The Carrier Frequency is Automatically Adjusted Based on the Load Features.
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%
	Start Torque	G Type 0.5 Hz / 150%, SFVC P Type 0.5 Hz / 100%
	Speed Range	1:100, SFVC
	Speed Stability Accuracy	±0.5%, SFVC
	Overload Capacity	G Type 60s for 150% of the Rated Current, 3s for 180% of the Rated Current. P Type 60s for 120% of the Rated Current, 3s for 150% of the Rated Current.
	Torque Boost	Fixed Boost; Customized Boost 0.1%~30.0%
	Ramp Mode	Straight-Line Ramp; S-Curve Ramp Four Groups of Acceleration/Deceleration Time with the Range of 0.00-6500.0s
	DC Braking	DC Braking Frequency 0.00Hz~Maximum frequency Braking Time 0.0s~100.0s Braking Action Current Value 0.0%~100.0%
	JOG control	JOG Frequency Range 0.00 Hz-50.00 Hz JOG Acceleration/Deceleration Time: 0.0s~6500.0s
	Simple PLC, Multiple Preset Speeds	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States
	Onboard PID	It Realizes Process Controlled Closed Loop Control System Easily
	Auto voltage regulation（AVR）	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes
	Overvoltage / Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoid Frequent Tripping Due to Overvoltage/Over Current.
	Rapid Current Limit	It Helps to Avoid Frequent Over Current Faults of the AC Drive.
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process.
	High Performance	Control of Asynchronous Motor are Implemented Through the High-Performance Current Vector Control Technology.
	Running Command Channel	Given by the Panel, Control Terminals, Serial Communication Port, can be Switched by Many Ways.
	Frequency Source	There are Ten Frequency Sources. Digital Setting, Analog Voltage Setting, Analog Current Setting, Pulse Setting, Serial Port Setting. You can Perform Switchover Between these Sources in Various Ways.
	Auxiliary Frequency Source	10 kinds of Frequency Sorce, can be eaSlly reallze Micro Adjust, Frequency Synthesizer
	Timing Control	0.0-6500.0 min.
	Communication Methods	RS 485, EtherCAT is optional
Input & Output	Input Terminal	6 Digital Input Terminals, One of Which Supports up to 100 kHz High-Speed Pulse Input (Optional). 2 Analog Input Terminals, One of Which Only Supports 0-10V Voltage Input and the Other Supports 0-10V Voltage Input or 4-20mA Current Input.
	Output Terminal	1 Digital Output Terminal 1 Relay Output Terminal 1 Analog Output Terminal, That Supports 0-20mA Current Output or 0-10V Voltage Output
Others	Protection Function	Motor Shourt-Circuit Detection at Power-On, Output Phase Loss Protection, Over-Current Protection , Overheat Protection and Overload
	Key Locking and Function Selection	It can Lock the Keys Parlially or Completelly and Define the Function Range of Some Keys so as to Prevent Mis-Function.
	Protection Class	IP20

NZ8000

High Performance & Powerfull, Heavy Duty

- Various Control Version, V/F, Sensorless Vector and Cloosed Loop Vector Control
- Modbus RS 485, Profibus-DP, CANopen Communication Mode
- Flexible Programmable I/Os
- Heavy Duty 150% 60s, 180% 3s
- Wide Operating Voltage 220 to 690 VAC

	Item	Specifications
Basic Function	Control Mode	V/F Control Sersorless Flux Vector Control, SFVC Closed-Loop Vector Control, FVC, Above 3.7kW
	Max. Frequency	Vector Control 0.0-320.0 Hz V/F Control 0.0-3200.0 Hz
	Carrier Frequency	1.0 kHz-16.0 kHz The Carrier Frequency is Automatically Adjusted Based on the Load Features.
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%
	Start Torque	G Type 0.5 Hz / 150%, SFVC; 0.0 Hz / 180%, FVC P Type 0.5 Hz / 100%
	Speed Range	1:100, SFVC / 1:1000, FVC
	Speed Stability Accuracy	±0.2%, SFVC / ±0.02%, FVC
	Torque Control Accuracy	±5%, Cloosed-Loop Vector Cotrol FVC Mode
	Overload capacity	G Type 60s for 150% of the Rated Current, 3s for 180% of the Rated Current. P Type 60s for 120% of the Rated Current, 3s for 150% of the Rated Current.
	Torque boost	Fixed Boost; Customized Boost: 0.1%~30.0%
	Ramp Mode	Straight-Line Ramp.; S-Curve Ramp; Four Groups of Acceleration/Deceleration Time with the Range of 0.00-6500.0s
	DC Braking	DC Braking Frequency 0.00Hz~Maximum frequency Braking Time 0.0s~100.0s Braking Action Current Value 0.0%~100.0%
	JOG control	JOG Frequency Range 0.00 Hz-50.00 Hz JOG Acceleration/Deceleration Time 0.0s~6500.0s
	Onboard Multiple Preset Speeds	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States
	Onboard PID	It Realizes Process Controlled Closed Loop Control System Easily
	Auto voltage regulation（AVR）	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes
	Overvoltage / Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoid Frequent Tripping Due to Over Voltage/Over Current.
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process. Torque Control can be Implemented in the FVC Mode.
Individualized Functions	High Performance	Control of Asynchronous Motor and Synchronous Motor are Implemented Through the High Performance Current Vector Control Technology.
	Rapid Dip Ride Through	The Load Feedback Energy Compensates the Voltage Reduction so That the AC Drive can Continue to Run for a Short Time
	Support for Multiple PG Card	Differential Input PG Card / Resolver PG Card / Rotating Transformer PG Card UVW Differential Input PG Card / OC Input PG Card
	Rapid Current Limit	It Helps to Avoid Frequent Over Current Faults of the AC Drive.
	Timing Control	0.0-6500.0 min.
	Communication Methods	Modbus (Standrad), Profibus-DP, CANopen
Running	Running Command Source	Operation Panel / Control Terminals / Serial Communication Port You can Perform Switchover Between these Sources in Various Ways.
	Frequency Source	Digital Setting, Analog Voltage Setting, Analog Current Setting, Pulse Setting, Serial Port Setting. You can Perform Switchover Between these Sources in Various Ways.
	Input Terminal	8 Digital Input Terminals, One of Which Supports up to 100 kHz High-Speed Pulse Input 2 Analog Input Terminal, One of Which Only Supports 0-10V Voltage Input and the Other Suppports 0-10V Voltage Input or 4-20 mA Current Input.
	Output Terminal	1 High-Speed Pulse Output Terminal (Open-Collector) that Supports 0-100kHz Square Wave Signal Output 1 Digital Output Terminal 2 Relay Output Terminal 2 Analog Output Terminal - that Supports 0-20mA Current Output or 0-10V Voltage Output.
	Protection Function	Motor shourt-circuit detection at power-on, output phase loss, over-current, overheat, under voltage and overload

NZS Power range Max. up to 110 kW

IP65/IP54 Class, V/F and Sensorless Vector Control

- High Level Protection Class, Outdoor Application
- Various Version Control Mode, V/F and SFVC
- Pumps Application/General Purpose Selectable
- Compact, Rugged Design. It can be Directly Installed on the Motors or on Virtually any Other Mounting Surface Based on the Application Requirements.
- Master/slave system makes this easy to set pumps

Coated heatsink as Standard

Item		General Purpose Version	Pumps Application Version
Basic Function	Control Mode	V/F Control / Sersorless Flux Vector Control Selectable	V/F Controll, Space Vector Control
	Max. Frequency	Vector Control 0.0-320.0 Hz V/F Control 0.1-3200 Hz	0.1-400 Hz
	Carrier Frequency	1.0 kHz-16.0 kHz The Carrier frequency is automatically adjusted based on the load features.	1.0 kHz-15.0 kHz
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%	Digital Setting 0.1 Hz Analog Setting Max. Frequency x 0.1%
	Start Torque	G Type 0.5 Hz / 150%, SFVC P Type 0.5 Hz / 100%	0.5 Hz / 100%
	Speed Range	1:100, SFVC	/
	Speed Stability Accuracy	±0.5%, SFVC	/
	Overload Capacity	G Type 60s for 150% / 3s for 180% of rated current P Type 60s for 120%/3s for 150% of rated current	60s for 120%/3s for 150% of rated current
	Torque Boost	Fixed Boost; Customized Boost 0.1%~30.0%	Auto-raise torque by loading condition; Manual increase 0.0-20% of rasing torque
	Ramp Mode	Straight-Line Ramp; S-Curve Ramp 4 Groups of Acceleration/Deceleration Time with the Range of 0.0-6500.0s	Straight-Line Ramp, the Range of 0.0-999.9.0s
	DC Braking	DC Braking Frequency 0.0 Hz-Max.frequency Braking Time 0.0s~100.0s Braking action current value 0.0~100.0%	DC Braking Frequency 0.0-10.0Hz Braking Time 0-25.0s Braking action current value 0-150%
	JOG control	Frequency Range 0.00 Hz-50.00 Hz Acce-tion/deceleration time 0.0-6500.0s	Frequency range 0.0 Hz-Max.frequency Acce-tion/deceleration time 0.0-999.9s
	Simple PLC, Multiple Preset Speeds	It implements up to 16 speeds via the simple PLC Function or combination of terminal states	4 multiple terminals, It implements up to 15 speeds
	Onboard PID	It realizes process Controlled Closed Loop Control system easily	Built-in PID
	Auto voltage regulation（AVR）	It can keep constant output voltage automatically when the mains voltage changes	Automatic voltage regulation function can be selected as required
	Overvoltage / Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to overvoltage/over current.	The overvoltage protection can be set
	Frequency Source	There are 10 frequency sources. digital set, analog voltage set, analog current set, pulse set, serial port set, you can perform switchover between these Sources in various ways.	Analog input 0 to 10V, 0to 20mA can be selected directly set by keyboard, RS485 set, up/down set and others various ways
Input & Output	Input Terminal	6 Digital Input Terminals,1 of which supports up to 100 kHz high-speed pulse Input (Optional).2 analog input terminals, 1 of which only supports 0-10V voltage Input and the other supports 0-10V voltage Input or 4-20mA current input.	4 multi-function Input terminals, 1 analog input terminal, supports 0-10V voltage input or 4-20mA current input.
	Output Terminal	1 digital output terminal 1 relay output terminal 1 analog output terminal, that supports 0-20mA or 0-10V	2 relay output terminal (0.75-5.5 kW) 1 relay output terminal (7.5kw and above)
	Others	10 kinds of frequency source, can easily realize micro adjust, frequency synthesizer	Built-in 2 groups of counters
	Protection Function	Motor shourt-circuit detection at power-on, output phase loss, over-current, overheat, under voltage and overload	
	Communication Methods	RS 485	
	Protection Class	IP54 (Above 3.7kw) /IP65 (below 3.7kw), outdoor	
	Mounting Mode	Mounted on the motor or on wall	
	Indication	LED indiction parameters	
	Vibration feature	less 5.9 m/s2 (0.6g)	

Efficient Cooling Aluminum Radiator

Flexible Mounting Panel

PDS-7

Pumps Drives -Wall-Mounted Type
220 / 380VAC; 1HP - 3HP

- Compact, Directly Mounted on Motors
- Using DSP high-speed digital processor and high-performance IGBT, the circuit is mature and the performance is stable.
- Easy to Use, Suitable to Any Pumps
- Built-in PID, PLC; Max.Frequency up to 999.9 Hz
- V/F Control Mode; Performance Load Capacity

Item		Specifications
Power Supply	Rated Voltage	220 VAC, 50/60Hz, 1 Phase Input and 3 Phase Output 380 VAC, 50/60Hz, 3 Phase Input and 3 Phase Output
	Voltage Range	220 VAC 170-240 VAC 380 VAC 330-440 VAC
Output	Voltage Range	220 VAC 0-240 VAC 380 VAC 0-380 VAC
	Frequency Range	0.0-999.9 Hz
Control Mode		V/F Control
Carrier frequency setting		0.5-16.0 kHz
Basic Specification	Output Frequency Range	0.0-999.90 Hz
	Frequency Setting Resolution	Digital Input 0.1 Hz Analog Input 0.025% of Max. Output Frequency
	Startup Torque	G type 0.5 Hz /150% P type 0.5 Hz / 100%
	Speed Range	1:100
	Overload Capacity	G type 150% of rated current, 60s; 180% of rated current, 3s P type 120% of rated current, 60s; 150% of rated current, 3s
	Torque Boost	Manual mode 0.1%~30.0%
	Acce-tion & deceleration curve time	0-999.9s, 4 types acc-tiion/deceleration time
	DC Braking	DC Braking Frequency 0.0 Hz-Max.frequency Braking Time 0.0-36.0s Braking action current value 0.0~100.0%
	JOG control	JOG frequency range 0.0Hz~50.00Hz Acce-tion/deceleration time 0.0s~999.9s
	Multi-Speed, PLC operation	It implements multi-speeds via the built-in PLC function or combination of terminal states
	Onboard PID software	Integrated enhanced PID control algorithm: with sleep, wake-up, antifreeze, disconnection detection, high and low pressure alarm, water shortage detection, automatic operation after water supply / fault reset and other functions
	Automatic Voltage Regulation	It can keep constant output voltage automatically when the mains voltage changes
	Communication	RS-485
	Protection Functions	I/O phase loss protection, over current protection, over voltage protection, under voltage protection, overheat protection and overload protection
Input & Output, others	Input Terminals	2 digital input terminals; 2 analog,each of which supports 0~10V or 4~20mA current input;
	Frequency Source	Digital, analog voltage, analog current, serial port. Can be switching in various ways.
	Command Source	Operation panel/Control terminals/Serial communication port
	Output Source	1 transistor output terminal 1 relay output terminal
	Protection Class	IP20
	Installation Mode	Mounted on the Motor Directly or Wall-Mounted

PDS-7 wall-mounted frequency converter for fixed-speed equipped with asynchronous motors. Its a new generation of high-end intelligent integrated compact water supply special products independently researched & developed by NIETZ.

It can be installed on various brands of Pump Motor terminalboxes, and can be accessed in various types of sensor signal, saving panel space and cost.

- Newly developed SOFTWARE 2.0 platform, using modular design, software performance is excellent and stable.
- Adopt a new space vector algorithm with a reliable protection mechanism.
- Integrated enhanced PID control algorithm: with sleep wake-up,antifreeze, disconnection detection, high & low pressure alarm, water shortage detection, water shortage shutdown, automatic operation after water supply, automatic fault reset and other functions.
- Featuring simple operation, good reliability, low noise and high performance.

TECHNICAL FEATURES

	Power, kW	Main Circuit Wire Diameter, mm2	Air Circuit Breaker, A	Electromagnet Contactor, A	Rated Input Current, A	Rated Output Current, A
220V ±15% 1 Phase Input, 3 Phase output	0.75	1.0	25	13	7.2	5
	1.5	1.5	25	18	10	7
	2.2	2.0	25	25	13	9
380V ±15% 3 Phase Input, 3 Phase output	0.75	0.5	10	6	3.5	2.1
	1.5	1.0	10	9	5	3.7
	2.2	1.0	10	10	5.8	5

NIETZ

WP9

Multi-Pumps Control

- V/F Control, Sensorless Vector Control
- Controls max. 4 water pumps after add relay output
- Heavy Duty Use (3s 180%, 60s 150%)
- Support MODBUS via RS485
- 24 VDC power supply support to Current sensor
- STO Function more Effecient Protect the Pumps

Advantage and Features

WP-9 multiple pump Variable Speed Drive is for controls multi-pumps, max. 4 in parallel, The inverter selects which pumps will operate in order to keep/control the process value of the pumping system. An alternation between their activation is also performed, making it possible an equal use of the pumps.

▶Features

- Full protection for pumping systems and maximized usability through special functions The ▲▼ key directly adjusts the target pressure
- Power off,then when the power is restored, it will automatically restart the running function.
- Extended relay output can achieve one inverter control 4 constant pressure water supply pump.
- 24VDC power supply to power the current sensor. The Drive has the intelligent judgment function of dormancy.
- English keyboard displays target value and feedback value.
- It can be extended to 4 pumps for water supply, including stabilized pressure pump and variable frequency pump.
- It supports the online selection function of feed-1 pump and 1 frequency conversion linkage control completes constant pressure water supply function.
- The keyboard can start the constant pressure water supply control function, can have the stop function and the fault reset function.

Security Alarm Function ◀

- High water pressure alarm function, low water pressure alarm function
- Protection function of water shortage
- Antifreeze function
- Detect sensor disconnection
- Automatic reset of water shortage fault

Multi-pump control, fault pump is manually cut off

Optional Water Supply Card can be control Max. 4 pumps

	Item	Specifications
Basic Function	Control Mode	V/F Control, Sensorless Verctor Control
	Max. Frequency	0.0-600.0 Hz
	Carrier Frequency	0.5 kHz-12.0 kHz The Carrier Frequency is Automatically Adjusted Based on the Load Features.
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%
	Start Torque	G Type 0.5 Hz / 150% P Type 0.5 Hz / 100%
	Speed Range	1:200
	Speed Stability Accuracy	±0.5%, SFVC
	Overload Capacity	G Type 60s for 150%; 3s for 180% of rated current P Type 60s for 120%; 3s for 150% of rated current
	Torque Boost	Auto-boost; Manuals adjust range 0.1%~30.0%
	V/F Curve	Linear/ Multi-Point and N-th Power V/F Curve
	V/F Separation	Full Separation and Half Separation
	Ramp Mode	Straight-Line Ramp; S-Curve Ramp 4 Groups of Acce-tion/Dece-tion time 0.0-6500.0s
	DC Braking	DC Braking Frequency 0.0Hz to Max. frequency Braking Time 0.0s~36.0s Braking Action Current Value 0.0%~100.0%
	JOG control	JOG Frequency Range 0.00 Hz-50.00 Hz JOG Acceleration/Deceleration Time 0-6500.0s
	Simple PLC, Multiple Preset Speed	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States
	Onboard PID	It Realizes Process Controlled Closed Loop Control System Easily
	Auto voltage regulation (AVR)	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes
	Overvoltage/ Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoide Frequent Tripping Due to Overvoltage/Over Current.
	Rapid Current Limit	It Helps to Avoid Frequent Over Current Faults of the AC Drive.
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process.
	Multi-Pumps control	Can realize 1 contrl 2-3, add expasion water supply card, can realize max.4 pumps
	Running Command Channel	Given by the Panel, Control Terminals, Serial Communication Port, can be Switched by Many Ways.
	Frequency Source	10 Frequency Sources. Digital, Analog Voltage , Analog Current, Pulse, Serial Port. You can Perform Switchover Between these Sources in Various Ways.
	Auxiliary Frequency Source	10 Multiple Auxiliary frequency source. Flexible realization of auxiliary frequency fine-tuning and frequency synthesis.
	Timing set/ Communication	0.0-6500.0 min./ RS485
Input & Output	Input Terminal	6 Digital Input terminal 2 Analog Input Terminals, 1 of Which Only Supports 0-10V and the Other Supports 0-10V or 4-20mA
	Output Terminal	1 Digital Output Terminal MO1 2 Relay Output Terminal RA, RB, RC/TA, TC 2 Analog Output Terminal,That Supports 0-20mA Current Output or 0-10V Voltage Output
	Protection Function	Output phase loss, overcurrent, overvoltage, undervoltage, overheat , overload protections, etc.

APV

Integrated Pumps Drives -Wall-Mounted Type
220 / 380VAC; 1HP - 3HP

- Compact, Directly Mounted on Motors
- Robust Enclosure, High Protection Class
- Easy to Use, installation
- Advanced Pumps Control Function
- V/F Control; Max. output frequency 999.9 Hz

APV - Integrated Pumps Control

APV is a new generation of high-end intelligent integrated ultra-high protection water supply special products independently researched and developed by NIETZ

The Variable Speed Drives is dustproof and waterproof, and can be installed on various brands of pump motor terminal boxes, and can be accessed in various types of sensor signal. Can be use in dirty and damp environments, even with low pressure jets; saving panel space and cost.

- Compact & Robust
- Easy to use, directly mounted on motor pumps.
- Protection class IP65, can be use at outdoor, dusty, moist
- In order to mechanically install the drive controller on the motor, the adapter is used in place of the terminal box. any motor can be adapted.

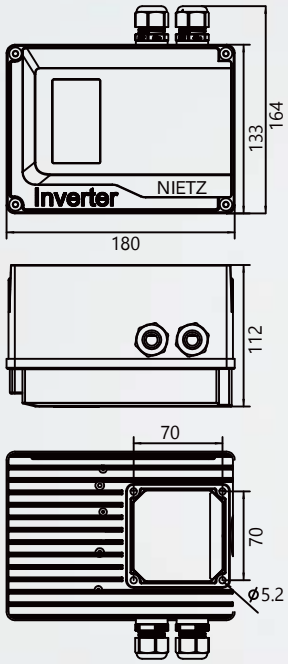
Motor adapter plate

In order to mechanically install the drive controller on the motor, the adapter is used in place of the terminal box. any motor can be adapted.

	Power, kW	Main Circuit Wire Diameter, mm2	Air Circuit Breaker, A	Electromagnet Contactor, A	Rated Input Current, A	Rated Output Current, A
220V ±15% 1 Phase Input, 3 Phase output	0.75	0.75	16	12	7.2	4.5
	1.5	1.5	25	18	10	7
	2.2	2.5	32	25	16	10
380V ±15% 3 Phase Input, 3 Phase output	0.75	0.75	6	9	3.8	2.5
	1.5	0.75	10	9	5	3.7
	2.2	0.75	10	9	5.8	5

Compact & robust
Aluminum heat sink
Simple mounting on motor

Dimenstion, mm



NIETZ

CV20

Solution for Industrial Crane and Hoist

- Sensorless Vector Control, Closed-Loop Vector Control
- Professional brake timing control; start and stop smoothly without slipping the hook to prevent the cargo from sliding down
- Intelligent anti-sway, Load holding function
- Built-in Brake Unit, Heave Duty

Professional brake timing control

According to the frequency, output current and torque of the inverter, the brake release command will be output. When starting and stopping, keep the necessary torque to stabilize the cargo, and open the holding brake, and start / stop smoothly without slipping

Brake failure detection

When the stop brake is valid, the encoder is used to detect whether the brake is invalid. If it fails, the inverter is automatically started to maintain torque to prevent accidents (Valid Closed Loop).

Light load speed increase adaptive

Through the light load speed-increasing function, the best running speed matching the load can be achieved. When the load is light, it allows automatic speed increase and improves efficiency, no auxiliary ho ok design is required, which can shorten the operating period of the crane witha long head.

Intelligent anti-sway

With built-in anti-sway function, so can suppress the shaking of the goods during translation. Since the load does not sway, it can be laid down faster, which is beneficial to shorten the operating cycle. CV20 drives with integrated sensorless control functionality enhance productivity and safety by avoiding sway in cranes.

Stroke Limit Control

By the limit sensor input can prevent the hook from overtraveling and excessive hoisting.

Open and Closed Loop Control

CV20 drives help to ensure excellent open-loop crane performance without encoders. Travel and hoist commissioning is simple. Droop control equalizes torque between the two motors operating in parallel. Closed loop control offers even better crane dynamics. We offer flexible encoder interfaces for broad component choice.

Crane Types Served

- Bridge crane, Overhead crane, Process crane
- Rail-mounted gantry crane, Goliath crane
- Rubber tired gantry crane, RTG crane, Grab crane
- Marine crane, Mobile crane, Mobile harbor cane
- Ship to shore crane (STS crane), container crane
- Tower crane, Construction hoist, Port Crane

Advantage and Features

CV20 AC drives with built-in crane control software, brake unit and range of safety functions help various types of cranes move efficiently. Our CV20 drives are an excellent choice for standalone cranes

CV20 series inverter special for hoisting is tailor-made for various severe application conditions in the hoisting industry, and it can easily solve technical and performance problems.

CV20 adopts vector frequency conversion control technology, while maintaining excellent performance and function, from the perspective of lifting application, it is superior in terms of ease of use, maintainability, environmental protection, installation space and design standards to similar products. With high-performance current vector technology, it can easily drive asynchronous induction motors to meet the working requirements in various environments

▶ Features

- **Rope Length Detection**
  The height information of the hook can be seen in the cab just by the inverter. When the wire rope reaches the set length, the collision with the lifting drum can be avoided by reducing the ascent and descent speed.
- **Rapid Deceleration**
  By inputting a quick stop command through the terminal, it can perform rapid deceleration near the target position.
- **Load Holding Function**
  When stopped, the load can be kept at the current position through zero-speed control. Close the brake when it is stable.
- **Overload Detection**
  The torque rise value is detected when the cargo accidentally contacts other objects. At this time, the motor can be automatically stopped to prevent accidents and improve safety.
- **Self-Tuning Motor Parameter**
  It can accurately identify asynchronous induction motors and achieve high-performance vector control; It can achieve accurate setting of motor parameters of long-distance ower cables under load, and can automatically discriminate encoder signal directions under encoder conditions, simplifying the debugging process.
- **Parameter macro**
  The function to select the purpose according to the crane action. Just select hoist, long travel, trolley and other uses, you can automatically set the necessary and unnecessary functions to be valid or invalid. The best parameters can be set simply for different purposes.

ESD / ESD2

For Small Power AC Motors

- Mini Dimension, Low Cost
- Potentionmeter Knob to Covenient Adjust to Speed Regulation, Optimized Structure
- ESD2 series Support MODBUS via RS485
- V/F Control; 220V, Easy to use
- Frequency Range 1.0...99.0Hz/ 0.0...300.0Hz

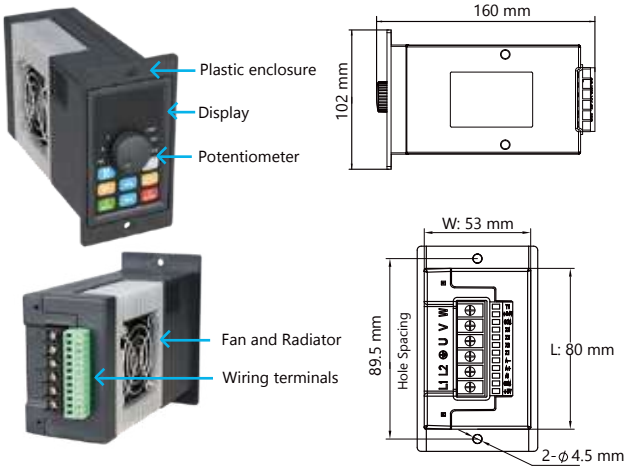
ESD2 Variable Speed Drives

ESD2 series frequency inverter is a new generation micro power variable speed drive, specially designed for small power motor. Micro dimension, save installation space, instrument embedded structure, installation is simple and compact.

Advantage and Features

- Power range: 0.2~1.1 kW / 220V; V / F type control
- Input / output: single / three phase
- Output frequency range 0-300 Hz, analog input 0-5 V
- Carrier frequency up to 38.4 kHz
- Built-in MODBUS RS485, baud rate up to 9600 bps
- Forced air cooling
- Potentiometer knob to convenient adjust to speed regulation, optimized structure, forced air cooling
- Adopt a new generation I P M module with complete protection functions

DIMENSION

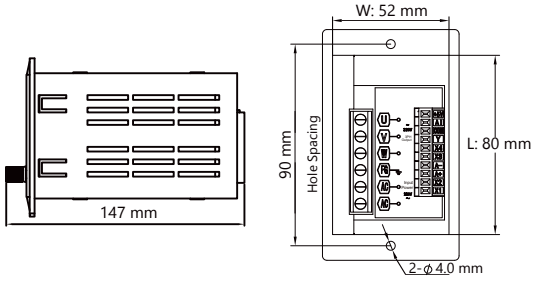


ESD Variable Speed Drives

ESD frequency inverter is embedded small power inverter, specially designed for small power motor. Small dimension, save installation space, instrument embedded structure, installation is simple and easy to use.

Advantage and Features

- Power range: 0.4~0.75 kW / 220V; V / F type control
- Input / output: single / three phase
- Output frequency range 1-99 Hz
- With speed adjust potential device, also can outer connect speed adjust potential device;
- Built-in MODBUS RS485, baud rate up to 9600 bps
- Interior configured intelligent logic controller can realize the simple, easy logic control function.
- With electric thermal electric relay function and other traditional motor protection device;
- Can outer connect LED for indicate, convenient for field use requirements;
- Humanization operating interface, simple and clear the parameters setting, convenient for operating;



Typical Applications

Suitable for electronic equipment, package equipments, wood cutting machine, transportation belt, wire drawing machine, etc.

NIETZ

AMD

AC Spindle Servo Drives / 380V, 0.4-160 kW

- V/F Control, SFVC, FVC Control Mode
- Controls AC Induction, Spindle Asynchronous Motor
- Support Various Optional Encoder
- Easy and flexible control; MODBUS RS485
- Increadible Performance of Speed, torque and position control; All protection

AMD series spindle servo drives is designed for numerical control machine of new type and high precision and it has new functions like positioning control, pulse synchronous control and so on. It supports FEEDBACK vector control towards the spindle motor with encoder. This drive has high responding ability towards speed as well as smooth speed. It can achieve various functions like warrant stop of spindle; Rigid tapping; indexing positioning and so on by cooperating with different numerical control system.

▶Features

- Multi encoder support; it can support differential encoder; ABZ encoder and so on.
- Power dip ride-through, load feedback energy compensates for any voltage reduction, allowing the drive to continue to operate for a short time during power dips.
- Overvoltage and overcurrent stall control; the system limits the output current and voltage automatically during operation to prevent frequent or excessive trips.
- Torque limit and control: the system limits the torque automatically to prevent frequent over-current tripping during operation. Torque control is applied in vector control.
- Onboard multiple preset position: the system implements up to 16 position by using simple PLC function or by using digital input signals.

	Item	Specifications	
Basic Function	Control Mode	V/F Control, Sensorless Verctor Control, Closed-Loop Vector Control	
	Motor Types	3 Phase Induction Motor	Spindle Asynchronous Motor
	Max. Frequency	V/F control mode Vector control mode	0-1500 Hz 0-1000 Hz
	Carrier Frequency	0.8-16.0 kHz Adjust the frequecny automaticaally according to loading characteristics.	
	Input Frequency Resolution	Digital Setting Analog Setting	0.01 Hz Max. Frequency x 0.025%
	Start Torque	G Type -0.5 Hz / 150% (SFVC) / 0.0 Hz / 180% (FVC)	
	Speed setting Range	1:100 SFVC	1:1000 FVC
	Speed Stability Accuracy	±0.5%, SFVC	±0.2%, FVC
	Overload Capacity	G Type P Type	60s for 150%; 3s for 180% of rated current 60s for 120%; 3s for 150% of rated current
	Torque Boost	Auto-boost; Manuals adjust range	0.1%~30.0%
	V/F Curve	Linear/ Multi-Point and N-th Power V/F Curve	
	Ramp Mode	Straight Line Ramp; 4 Groups of Acce-tion/Dece-tion time 0.0-6500.0s	
	DC Braking	DC Braking Frequency Braking Time Braking Action Current Value	0.0Hz to Max. frequency 0.0s~36.0s 0.0%~100.0%
	Simple PLC, Multiple Preset Speed	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States	
	Auto voltage regulation (AVR)	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes	
	Overvoltage/ Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoide Frequent Tripping Due to Overvoltage/Over Current.	
	Rapid Current Limit	It can decrease the over-current fault on a maximum extent, thus protecting the normal operation of the spindle servo driver.	
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process. Can be adjust the torque through FVC control mode.	
	Optional support PG cards	Differential input PG card Rotating transformer PG card	Open collector
	Running Command Channel	Given by the Panel, Control Terminals, Serial Communication Port, can be Switched by Many Ways.	
	Auxiliary Frequency Source	Multiple Auxiliary frequency source. Flexible realization of auxiliary frequency fine-tuning and frequency synthesis	
	Timing set	0.0-6500.0 min.	
	Communication	ModBus RS485	
	Input Terminal	6 Digital Input terminal 2 Analog Input Terminals, 1 of Which Only Supports 0-10V and the Other Supports 0-10V or 4-20mA	
	Output Terminal	1 Digital Output Terminal 2 Relay Output Terminal 1 Analog Output Terminal,That Supports 0-20mA Current Output or 0-10V Voltage Output	MO1 RA, RB, RC, YA, YB,YC
	Protection Function	Output phase loss, overcurrent, overvoltage, undervoltage, overheat , overload protections, etc.	

TYPICAL APPLICATION

- CNC lathe, turn-milling machine tool, vertical lathe, Heavy duty horizontal lathe
- Drilling and tapping center, engraving and milling machine, gear hobbing machine, gear shaping machine, gear milling machine

AT10 series

Electrohydraulic Servo Drive

- Built-in CAN, MODBUS RS485 communications
- Support single, double and multiple electro hydraulic pump system
- Variety of signal reference modes, more saving energy
- Buit-in Brake unit. Heavy Duty, 150% in 60s; 180% in 5s.
- Voltage Supply 220 ~ 380 VAC; Powerfull 7.5 ~ 450 kW
- Various protection functions such as phase loss, short circuit, overheating detection and etc.
- High-performance servo control: Vector control + field weakening control + PID control
- Support 0-10V DC / 4-20mA direct analog signal input
- Fast and safe isolated terminal wiring
- Performance Start torque: 0Hz 180%; Steady speed accuracy: ± 0.02%; Torque control accuracy: ± 5%
- Air cooling, liquid cooling way, Flexibility to use

Electro-Hydraulic ServoSystem combined both electrical and hydraulic characteristics can accurately follow the command changes to adjust the output. With high precision, fast response, big output power, flexible signal processing, easy to control, etc., it is widely used in various industries such as in Injection molding machines, hydraulic presses, stamping and bending machines, etc.

▶ADVANTAGE

✓ **Save Energy Consumption**
Optimized pressure and flow control algorithm saving energy max. 80%

✓ **High Precision, Intelligence**
Multiple Control modes of speed loop, current loop and pressure loop to ensure high precision repeatability.

✓ **Noise Reduction**
Efficient reduction of Noise, less than 65dB improve equipments usage environment

✓ **Save Volume and Place**
Suitable PM Synchronous Motor, Compact size Compared with the open hydraulic circuit, save 75% tank volume

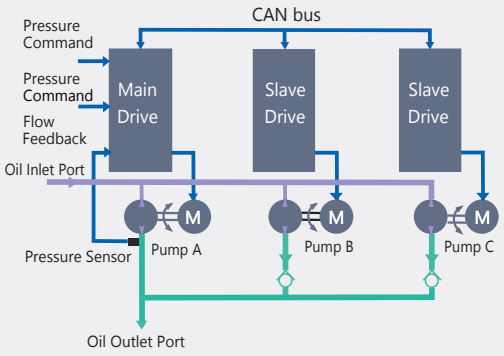
Item		Specifications
Control Mode		V/F Control / Closed Loop Vector Control
Carrier frequency setting		1-12.0 kHz Automatically adjust the carrier frequency according to the load characteristics.
Basic Specification	Output Frequency Range	0.0-599.00 Hz
	Frequency Setting Resolution	Digital Input 0.1 Hz Analog Input 0.025% of Max. Output Frequency
	Startup Torque	0.0 Hz /180%
	Speed Range	1:1000 (FVC Mode Control)
	Overload Capacity	150% of rated current, 60s; 180% of rated current, 5s
	Torque Control Accuracy	± 5% (FVC Mode Control)
	Steady Speed Accuracy	± 0.02% (FVC Mode Control)
	Acceleration and dece-leration curves	Linear acceleration and deceleration. 4 kinds of ace-tion and dece-tion time, plus or minus time range 0.0 ~ 6500.0s.
	Fast Current Limiting Function	Min. Overcurrent faults,Protect the ServoDrive to normal operation
	Encoder Support	Resolver Encoder
	Overvoltage/ Overcurrent Stall Control	Automatically limits the current and voltage during running to avoid frequent tripping caused by overvoltage / overcurrent.
	Communication	RS-485 and CANbus
	Protection Functions	I/O phase loss protection, over current protection, over voltage protection, under voltage protection, overheat protection and overload protection

Typical Applications

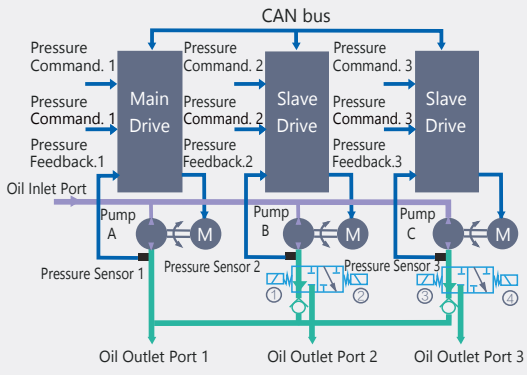
- Air compressor, Pumping unit in oil field, etc.
- Injection molding machines, hydraulic presses, stamping and bending machines, etc.

▶ Flow-Converging and Dividing System

Multi-Pump Flow-Converging System

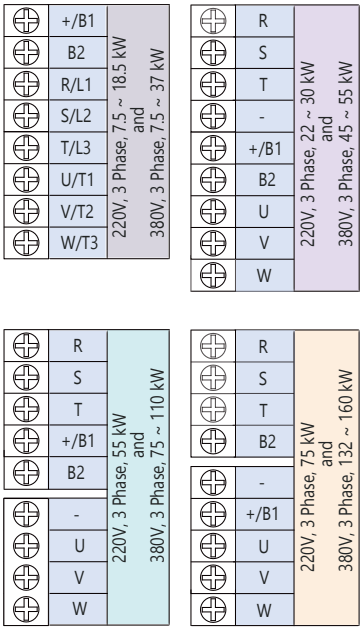


Multi-Pump Distributed Flow System



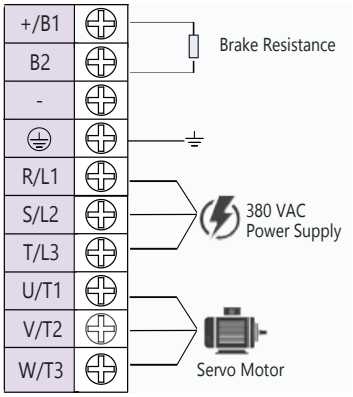
- Set the same speed for motors through communication
- Control the convergent/distributed flow of pumps 2 and 3 by powering on and off solenoid valves ①, ②, ③, and ④
- When the convergent flow control is enabled, the pressure and flow references and pressure feedback signals received by slave drives are invalid.
- When the distributed flow control is enabled, the CAN communication references received by slave drives are invalid.

Main Circuit Terminal Description



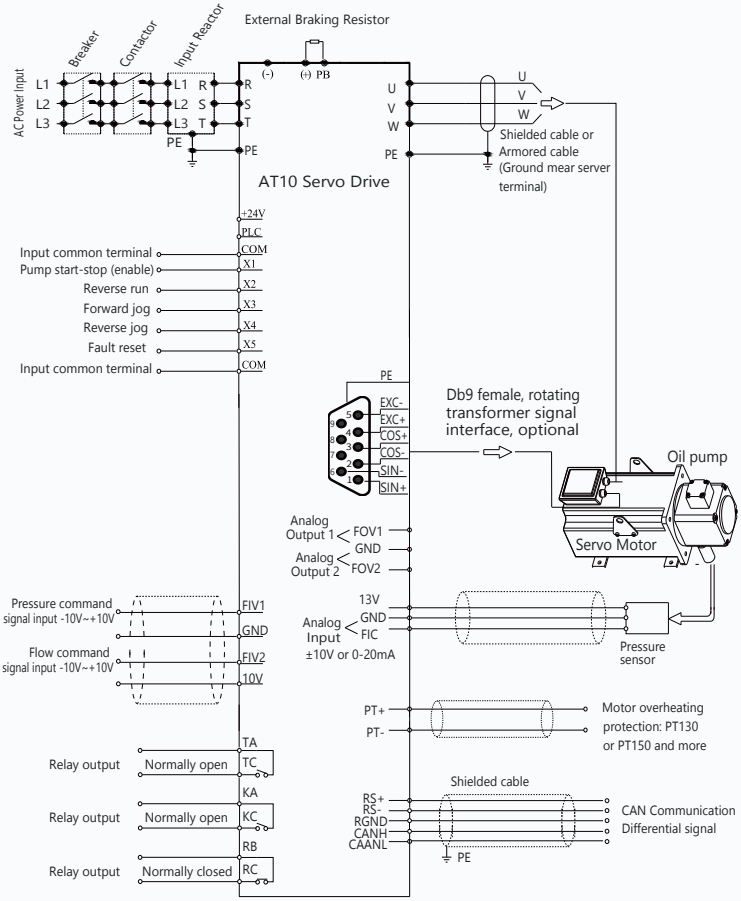
Terminal Code	Function
R/L1, S/L2, T/L3	Voltage Input
U/TI, V/T2, W/T3	Output Terminal of Drive Connect to AC Motor 3 ph.
+/B1, -	DC Power + / -; Can be connect to Brake Unit
+/B1, B2	Connect to Brake Resitance
⏚	Ground Terminal
(+) / (-)	Brake Unit Terminal

Main Circuit Wiring Exsample



Power Supply	Power, kW	Rated Input Current, A	Rated Output Current, A
220V ±15% 3 Phase	7.5	35	32
	11	46.5	45
	15	62	60
	18.5	76	75
	22	92	90
	30	113	110
	37	157	152
	45	180	176
	55	214	210
	75	307	304
	90	345	340
380V ±15% 3 Phase	7.5	20	17
	11	26	25
	15	35	32
	18.5	38	37
	22	46	45
	30	62	60
	37	76	75
	45	92	90
	55	113	110
	75	157	150
	90	180	176
	110	214	210
	132	256	253
	160	307	300
	185	355	340
	200	385	380
	220	430	420
	250	468	470
	280	525	520
	315	610	600
	350	665	640
	400	700	690

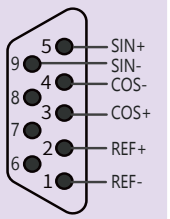
Wiring Diagram



External Optional

visit www.nietz.cn for selection

Resolver Encoder Terminal Arragement and Definition



1	REF-	Resolver excitation " -"
2	REF+	Resolver excitation "+"
3	COS+	Resolver feedback COS "+"
4	COS-	Resolver feedback COS "-"
5	SIN+	Resolver Feedback SIN "+"
6	/	/
7	/	/
8	/	/
9	SIN-	Resolver feedback SIN "-"

Model Code Description

AT10 – 7R5 – G2 – A – R – M – □

- AT10 – Product Series
- 7R5 – Power,kW (7.5 kW = 7R5; 11 kW = 011)
- G2 – Power Supply (220 VAC = G2; 380 VAC = G4)
- A – Software Version A = A
- R – Encoder Code | Resolver Type
- M – Communication Type (Modbus RS485 = M; CANopen = C)
- □ – Cooling Method | Fan (standard) = Blank; Oli (customized)= Y

Micro AC Drive

High Performace General Purpose

The FC1000 family offers a compact AC drive that combines easy operation with high-efficiency control for AC induction, PMS motor. The robust compact designed, various controls mode, support EtherCAT, Modbus, Profibus-DP communication, built-in EMC filter, 24DC, STO function, Extersion PG Cards.....

- Cost Effective; Micro Compact Design
- Easy to use and install; DIN rail mount, RJ45 interface keypad cable
- Integrated safety - Safe Torque Off feature
- Built-in EMC Filter, 24VDC power resurce, PID
- V/F, Sensorless Vector, Closed-Loop Vector Controls mode
- Frequency range 0~599Hz; Power Range 0.4~450 kW
- Automatic Voltage Regulation; Performance Load features
- Support Various Extersion Cards; EtherCAT, Profibus-DP, Modbus TCP, Digital I/O
- External Keypad copy function and automatic parameter back-up

Ordering Guide

FC1000 — 0R7 — G — 4 — E

VFD Series
FC1000

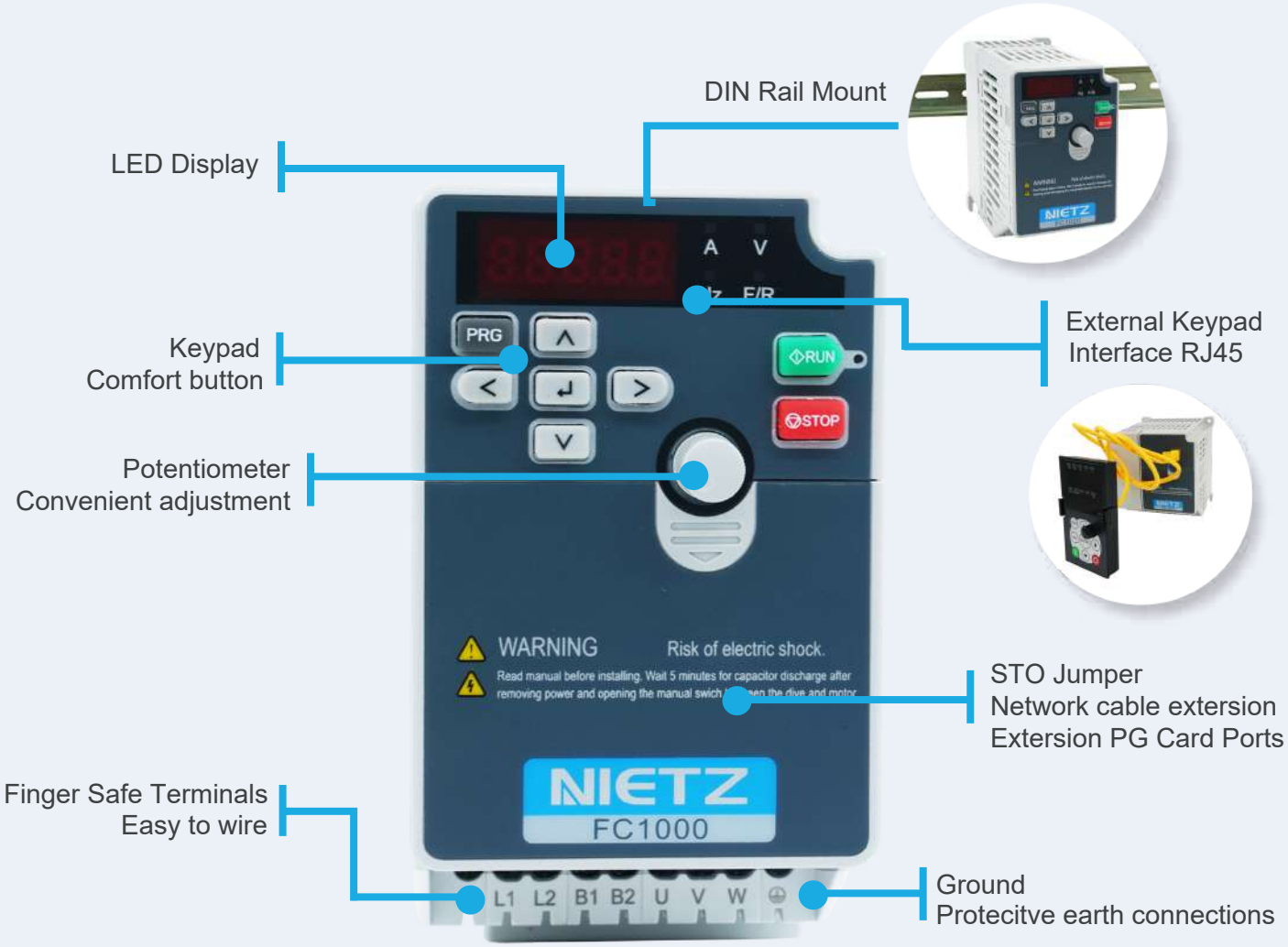
Power,kW
0R7 0.75
1R5 1.5

Load Capacity
G Heaty load
P Light load

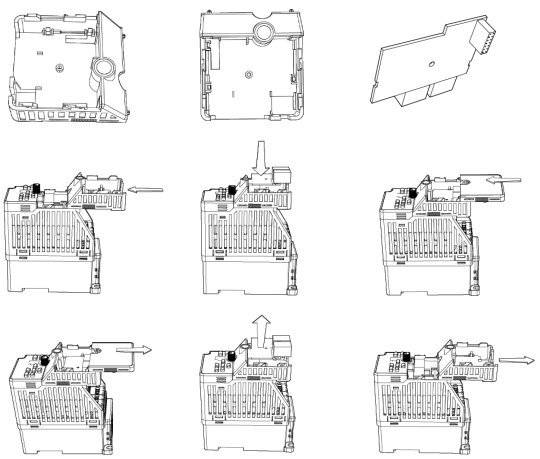
Voltage, V
1 110V
2 220V
4 400V
5 480V

EMC Filter
Blank no EMC
E Built in EMC

Specification of FC1000



Installation and removal of expansion cards (≤ 55kW)

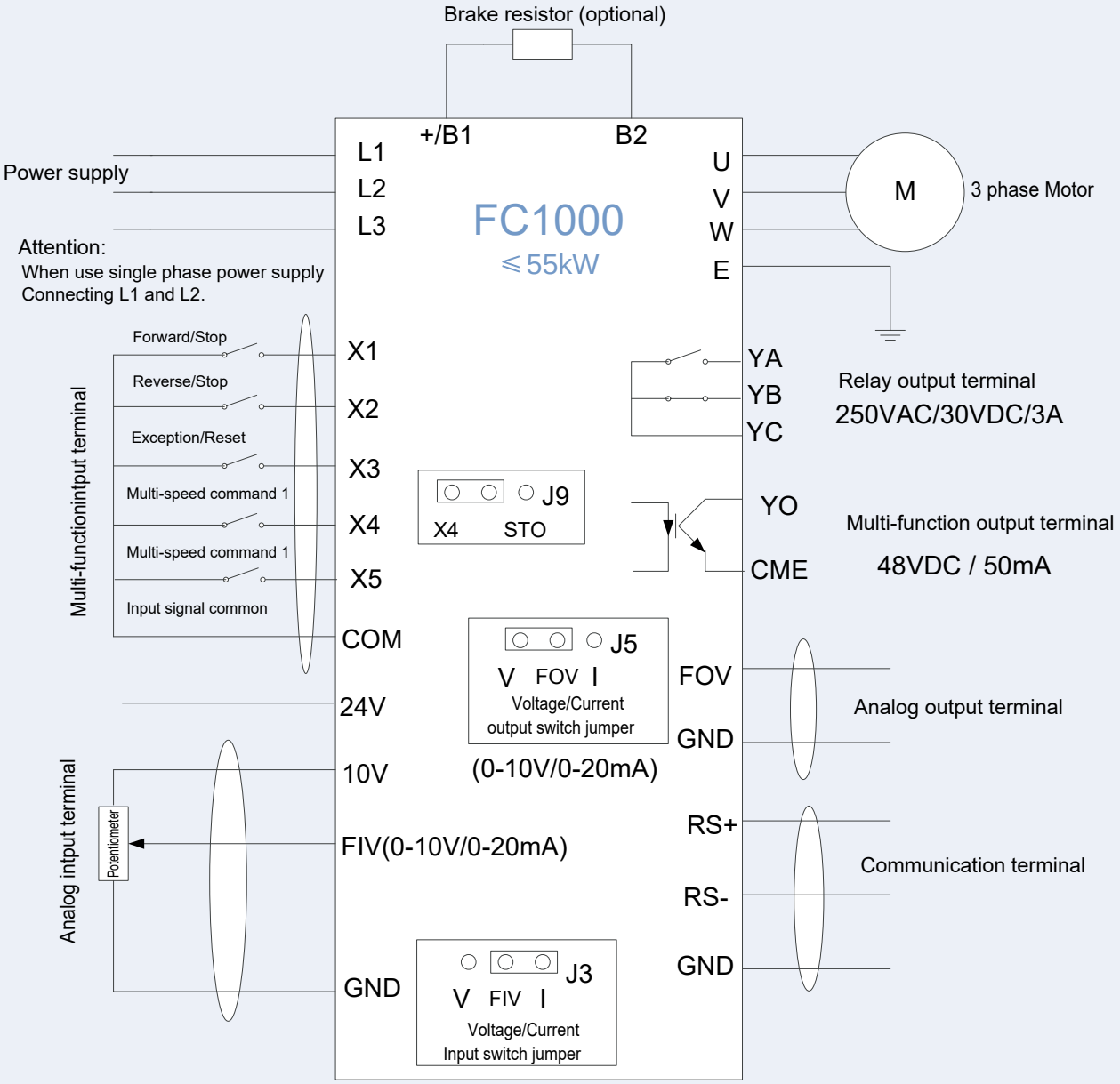


Expansion Card and Box

Installation

Remove

General Connection Diagram



PC Software tools

If you are looking to keep a backup copy of parameter set or need to customize the drive's functionality to match your application, the FC1000 has the PC software tools to help.

Specification of FC1000

Item		Specifications
Basic Function	Control Mode	V/F Control Sersorless Flux Vector Control, FVC
	Max. Frequency	Vector Control 0.0-599.0 Hz V/F Control 0.0-3200 Hz
	Carrier Frequency	0.5 kHz-16.0 kHz The Carrier Frequency is Automatically Adjusted Based on the Load Features.
	Input Frequency Resolution	Digital Setting 0.01 Hz Analog Setting Max. Frequency x 0.025%
	Start Torque	G Type 0.5 Hz / 150%, SFVC P Type 0.5 Hz / 100%
	Speed Range	1:100, SFVC
	Speed Stability Accuracy	±0.5%, SFVC
	Overload Capacity	G Type 60s for 150% of the Rated Current, 3s for 180% of the Rated Current. P Type 60s for 120% of the Rated Current, 3s for 150% of the Rated Current.
	Torque Boost	Fixed Boost; Customized Boost 0.1%~30.0%
	Ramp Mode	Straight-Line Ramp; S-Curve Ramp Four Groups of Acceleration/Deceleration Time with the Range of 0.00-6500.0s
	DC Braking	DC Braking Frequency 0.00Hz~Maximum frequency Braking Time 0.0s~100.0s Braking Action Current Value 0.0%~100.0%
	JOG control	JOG Frequency Range 0.00 Hz-50.00 Hz JOG Acceleration/Deceleration Time: 0.0s~6500.0s
	Simple PLC, Multiple Preset Speeds	It Implements up to 16 Speeds via the Simple PLC Function or Combination of Terminal States
	Onboard PID	It Realizes Process Controlled Closed Loop Control System Easily
	Auto voltage regulation（AVR）	It Can Keep Constant Output Voltage Automatically when the Mains Voltage Changes
	Overvoltage / Overcurrent Stall Control	The current and voltage are limited automatically during the running process so as to avoid Frequent Tripping Due to Overvoltage/Over Current.
	Rapid Current Limit	It helps to Avoid Frequent Over Current Faults of the AC Drive.
	Torque Limit and Control	It can Limit the Torque Automatically and Prevent Frequent Over Current Tripping During the Runing Process.
	High Performance	Control of Asynchronous Motor are Implemented Through the High-Performance Current Vector Control Technology.
	Running Command Channel	Given by the Panel, Control Terminals, Serial Communication Port, can be Switched by Many Ways.
	Frequency Source	There are Ten Frequency Sources. Digital Setting, Analog Voltage Setting, Analog Current Setting, Pulse Setting, Serial Port Setting. You can Perform Switchover Between these Sources in Various Ways.
	Auxiliary Frequency Source	10 kinds of Frequency Sorce, can be easlly reallze Micro Adjust, Frequency Synthesizer
	Timing Control	0.0-6500.0 min.
	Communication Methods	RS 485, EtherCAT, Profibus-DP, CAN is optional
Input & Output	Input Terminal	5 Digital Input Terminals, One of Which Supports up to 100 kHz High-Speed Pulse Input 1 Analog Input Terminals, One of Which Only Supports 0-10V Voltage Input or 4-20mA current input.
	Output Terminal	1 Digital Output Terminal 1 Relay Output Terminal 1 Analog Output Terminal, That Supports 0-20mA Current Output or 0-10V Voltage Output
Others	Protection Function	Motor Shourt-Circuit Detection at Power-On, Output Phase Loss Protection, Over-Current Protection , Overheat Protection and Overload
	Key Locking and Function Selection	It can Lock the Keys Parlially or Completelly and Define the Function Range of Some Keys so as to Prevent Mis-Function.
	Protection Class	IP20

Typical Applications

- Fan, Pumps, Converyors, Food processing machinery
- Packaging machinery, Textiles, Mixers, Air conditioner
- Water supply System, centrifugal, etc.

NIETZ

OPTIMIZE MOTOR CONTROL

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