ELECAL

Universal Single-Phase Frequency Conveter of ADL900 Series

1.Introduction

The high quality universal single-phase FC of ADL900 Series, produced by our company based on independent R&D technologies, provided with functions such as built-in PID control, signal setting / feedback disconnection monitoring switching, underload protection, fault signal tracking, automatic restart upon fault, built-in braking unit, 14 fault protection modes, fault monitoring, different I/O terminals, different speed setting modes, automatic voltage adjustment, wobble frequency control and multi-speed control, can meet requirement of different load to motion control. The keyboard is provided with a LED for display of running data and fault codes. The powerful background commissioning and monitoring software can be used through the built-in standard RS485 interface network; The MODBUS bus protocol and expansion card are compatible with on-site bus control such as PROFIBUS, DEVICENET and CANOPEN etc.

Application:

OEM machinery: Machinery used for textile industry, plastics industry, food industry, printing industry, package industry, carpentry etc.

Heavy industry: Industries such as metallurgy, chemical industry, cement, electric power, coal, petroleum, paper making, water supply, heating & ventilation and sewage treatment etc.

2.Feature

2.1. Silent running.

2.2. Trip control, realizing powerful and stable running.

2.3. Quick menu design.

2.4. Easy PLC, PID adjustment.

2.5. Built-in flexible PWM power consumption brake for quick shutdown.

2.6. Compact and handy structure.

2.7. Customized design with good stability and high anti-interference ability

2.8. Built-in RS-485 communication interface, standard MODBUS protocol.

2.9. 14 protection modes.

3.Nameplate

Model →
Input power supply →
Output power supply →
Freq. setting range →
Serial no. and barcode →

MODEL： ADL900-2022 G
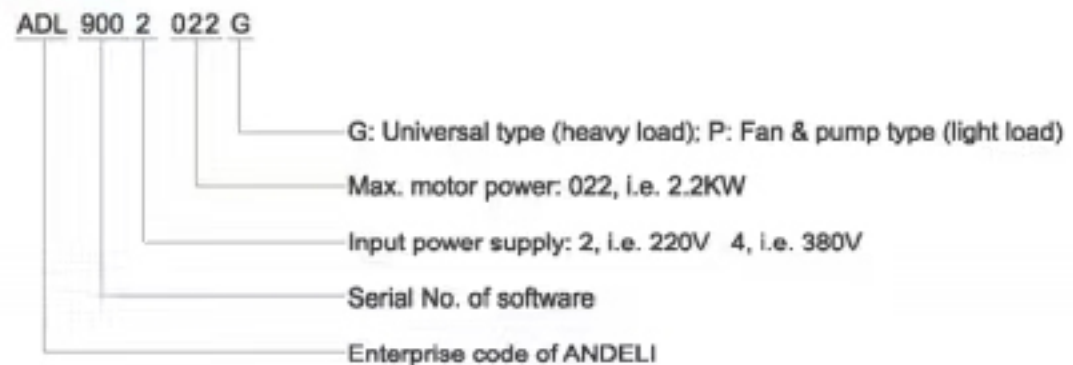INPUT： 1PH AC220V 50/60Hz
OUTPUT： 3PH AC0-220V 2.2kW 9.6A
FREQUENCY RANGE： 0-600Hz

A92022G100100001

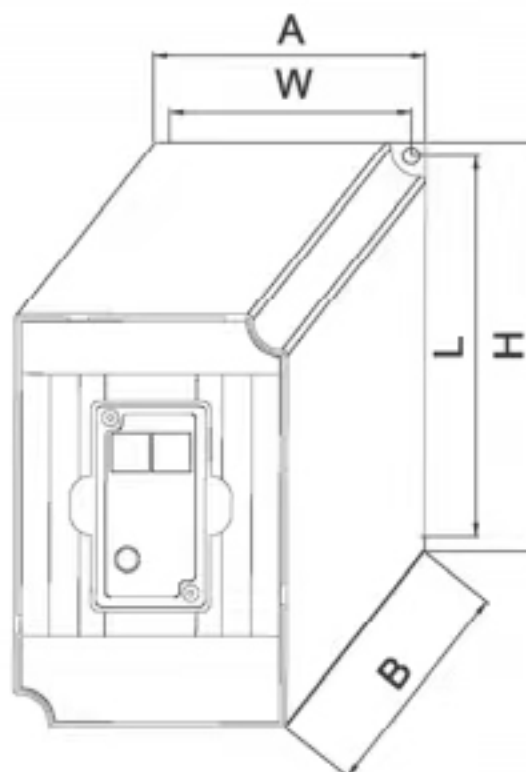Manufacturer → ELECAL GROUP CO.,LTD.

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ADL900

4.Model

ADL 900 2 022 G

- G: Universal type (heavy load): P: Fan & pump type (light load)
- Max. motor power: 022, i.e. 2.2KW
- Input power supply: 2, i.e. 220V   4, i.e. 380V
- Serial No. of software
- Enterprise code of ANDELI

5.Technical specification

	Item	Spec.
Input	Rated voltage / freq.	Single-phase 220V, three-phase 220V; 50Hz/60Hz
	Variable range	Voltage: -20% ~ +20% voltage unbalance rate: < 3% freq.: ±5%
Output	Rated voltage	0~220V
	Freq. range	0Hz~600Hz
	Freq. resolution	0.01Hz
	Overload capacity	G type: 150% rated current-1min, 180%-1s, 200%-instantaneous protection P type: 120% rated current-1min, 150% -1s, 180%-instantaneous protection
Main control	Modulation mode	Optimization of space voltage vector PWM modulation
	Freq. accuracy	Digital setting. max. freq. x ± 0.01% Analog setting. max. freq. X ± 0.2%
	Freq. resolution	Digital setting: 0.01Hz analog setting: max. freq. x 0.1%
	Start freq.	0.40Hz~10.00Hz
	Torque increase	Automatic torque increase, manual torque increase 0.1%~30.0% (available fore V/F mode)
	V/F curve	Linear V/F curve, quadratic V/F curve, customized V/F curve
	Acc. / dec. duration	Time unit (min/s), optional, max. time 3600 (0.1-3600)
	DC braking	Options at start / stop time, motion freq.: 0~20.00Hz Motion time: 0~30.0s, braking current: 0~80%
	Inching	Inching freq. range: 0.1Hz~50.00Hz inching acc./dec. duration 0.1~3600s
	Built-in PID	For forming a closed-loop control system being available for pressure and flow process control etc.
	Multi-speed running	Multi-speed running through PLC or control terminals
	Textile wobble freq.	For realizing wobble frequency functions of fixed oscillation amplitude and variable oscillation amplitude
	Automatic voltage regulation (AVR)	When the grid voltage changes, the constant output voltage can be kept
	Automatic energy-saving running	The V/F curve can be optimized automatically according to the load and therefore the energy-saving running can be realized
	Automatic current limiting	Automatic current limiting during operation, preventing fault trip caused by frequent overcurrent
	Communication	Standard RS485 comm. interface supporting MODBUS commu. protocol in formats of ASCII and RTU.
Running	Running com. channel	Three switchable modes are provided: Operating panel, control terminal and serial port
	Freq. setting channel	Switchable modes are provided: Analog potentiometer of keyboard, ▲ / ▼ of keyboard, digital function code, serial port, Terminal UP/DOWN, analog voltage, analog current, impulse and combination
	Switching input channel	Forward / reversal rotation command, 5-channel programmable switching input. 35 functions can be set respectively.

	Item	Spec.
Running	Analog input channel	2-channel analog signal input, 4~20mA, 0~10V, optional
	Analog output channel	Analog signal output, 4~20mA or 0~10V, optional, output of physical quantities such as set freq. and output freq. etc. is allowed.
Operating panel	Digital LED display	Parameters such as set freq., output voltage and output current etc. can be shown
	External instrument display	Physical quantities such as output freq., output current and output voltage can be shown
	Protection	Overcurrent protection, overvoltage protection, undervoltage protection, overheat protection and overload protection etc.
	Option	Braking components, remote control operating panel, remote control cable, keyboard base etc.
Environment	Place	Indoor, without direct sunlight, dust, corrosive gases, oil mist and steam etc.
	Altitude	Less than 1000m (the rated value shall be lowered if it is higher than 1000m)
	Environment temp.	-10° C ~ +40° C
	Humidity	Less than 90%RH, without condensation
	Vibration	below 5.9m, s2 (0.6G)
	Storage temp.	-20° C ~ +60° C
Struct-ure	Protection level	IP 20 (when the statue display unit or keyboard is selected)
	Cooling mode	Forced air cooling
	Installation mode	Hanging

6.Exterior structure

7.Mechanical parameter

Installation size (mm)

Model	Overall dimension A × B × H	Installation size WXL	Hole dia.	RMK
AO	39 × 73 × 20	37 × 71(installation hole of operating panel)	Φ4.5	Panel size
A1	102 × 118 × 152	90 × 142		Plastic case & hanging type

8.Notification before ordering

8.1 The ADL900 is an universal single-phase FC with high performance and constant torque load. The product is available for hoisting equipment and mining / building / packaging / printing machines etc.
8.2 If external keyboards and extension lines are required, please inform us during ordering.

9.Wiring diagram for basic running