

# FA-1L... / FA-3H...

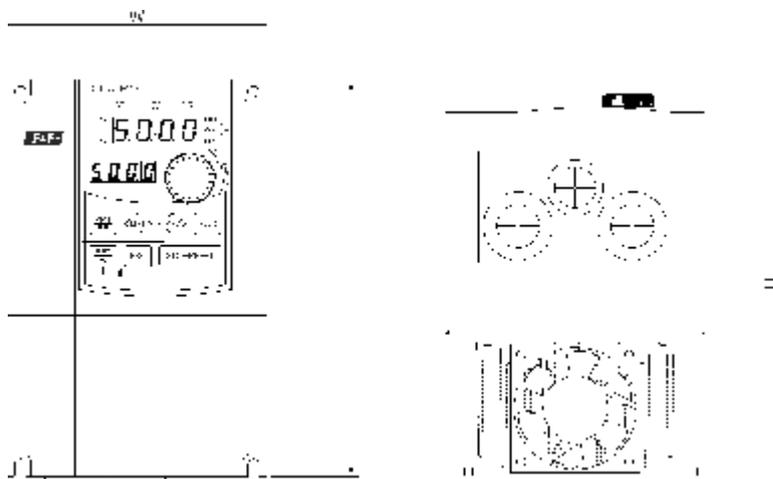
## KEY FUNCTIONS

- \* The design of efficient inverter-based 32-bit DSP processor ensures fast and effective implementation of advanced control algorithms, asynchronous three-phase motor.
- \* Ability to work in speed control mode or torque control mode
- \* Motor control based on vector control (both sensorless and with speed-feedback loop), and control based on the freely programmable V / F.
- \* Automatic slip compensation, and a large starting torque (up to 180% at a frequency of 0.25Hz).
- \* Multi-function control panel connected to the inverter on a "hot-plug" with the possibility of simultaneous storage of up to four sets of parameter settings and feature an easy transfer settings from one inverter to another.
- \* Mode PLC - programmable up to seven steps performed once or periodically by the inverter. For each step, you can determine the speed, acceleration and duration.
- \* Large programming freedom inverter inputs and outputs, both analog and digital.
- \* Built-in RS-485 Modbus RTU protocol support allows plugging the inverter to fieldbus and remote control, monitoring and configuration of the inverter.

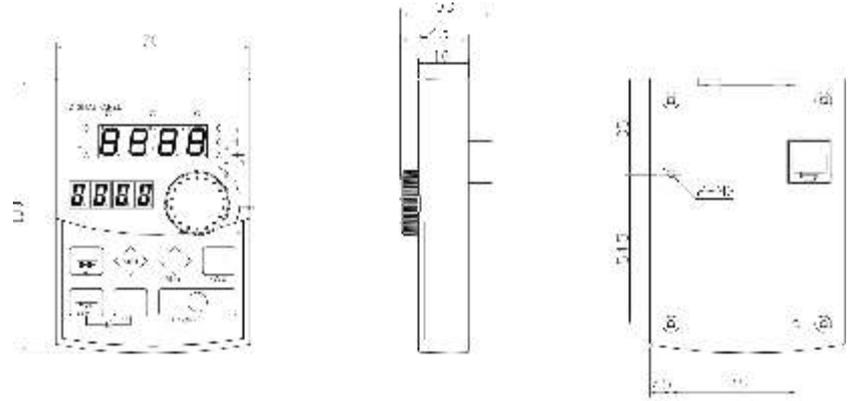


## TYPES

Inverter type	Input voltage V	Input current A	Output voltage V	Output current A	Motor power max kW	Length L mm	Width W mm	Height H mm
FA-1L007	1×230V	9A	3×230V	4A	0.75kW	185	120	168.5
FA-1L015	1×230V	17.5A	3×230V	7A	1.5kW	185	120	168.5
FA-1L022	1×230V	24A	3×230V	10A	2.2kW	220	150	185.5
FA-1L040	1×230V	36A	3×230V	16A	4.0kW	220	150	185.5
FA-3H007	3×400V	3.3A	3×400V	2.5A	0.75kW	185	120	168.5
FA-3H015	3×400V	5A	3×400V	3.7A	1.5kW	185	120	168.5
FA-3H022	3×400V	7A	3×400V	5A	2.2kW	185	120	168.5
FA-3H040	3×400V	11A	3×400V	8.5A	4.0kW	220	150	185.5
FA-3H055	3×400V	16.5A	3×400V	13A	5.5kW	220	150	185.5
FA-3H075	3×400V	20A	3×400V	16A	7.5kW	285	180	200.0
FA-3H110	3×400V	28A	3×400V	25A	11kW	285	180	200.0



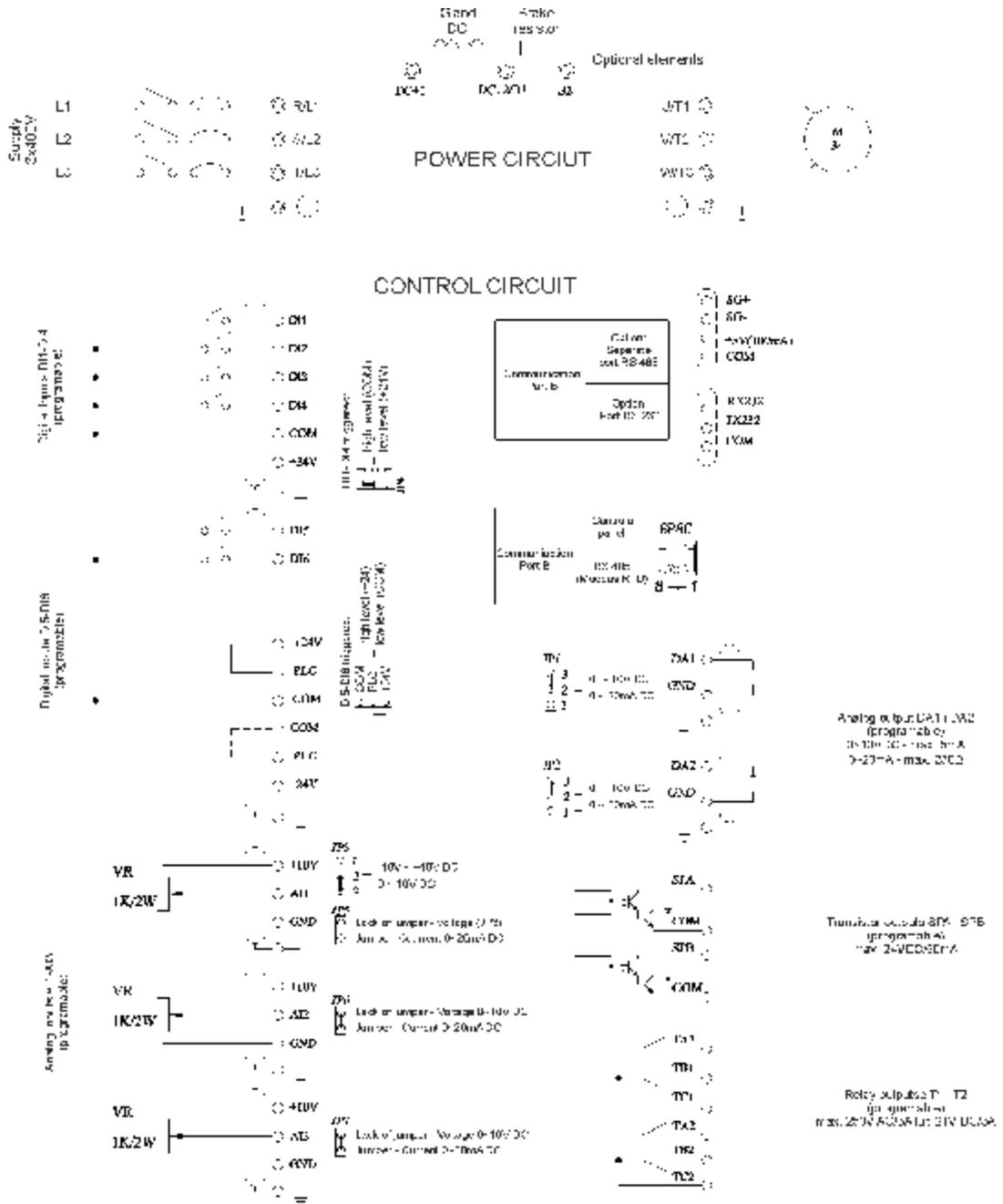
CONTROL PANEL



Control panel is detachable from the main body of the inverter.

This allows for external mounting on the cabinet door for quick access to settings and adjust the parameters of the inverter.

IN/OUT DESCRIPTION



SPECIFICATIONS

Function		Technical data		
Power supply	Voltage and frequency	1× 230V 3× 380 V ÷ 415 V (±15%), 50/60 Hz (±5%)		
	Output voltage	3× 230 V (for 230 V supply) 3× 380 ÷ 400 V (for 400 V supply)		
	Output frequency	0.00÷320.0 Hz		
	V/F control characteristic	1) Constant torque characteristics 2) Characteristics of the reduced torque (3 types) 3) Characteristics of the torque set by the user (8 points) 4) Vector control (sensorless or closed-loop)		
		V/F control	Sensorless vector control	Vector control with feedback
	Starting torque	18.0% for 0.50 Hz	18.0% for 0.50 Hz	18.0% for 0.50 Hz
	The dynamics of speed control	1: 100	1: 200	1: 2000
	The stability of the output speed	±0.5%	±0.2%	±0.02%
	Torque boost	In this mode V/F control - automatic or user defined		
	Acceleration/deceleration	Linear or by programmed curve S Maximum acceleration and braking - 3200 sec		
	Accuracy frequency reference	Digital frequency reference: 0.01 Hz (f≤100Hz), 0.1 Hz (>100 Hz) Analog frequency reference 1% of maximum frequency		
	Overload	1) 150% rated current for 1 minute 2) 200% rated current for 0.1 sec		
	Motor slip compensation	In this mode V/F control can automatically compensate for the slip		
	Security	Security of inverter	1) Before too high or too low supply voltage 2) Prior to exceeding the maximum current 3) Before the load is too high 4) Before losing speed and stall 5) Within the current to ground 6) Prior to excessive overheating inverter 7) In addition, the inverter is protected against communication errors or incorrect feedback signal	
Safety switch		Can be programmed as input or button on the safety switch causing immediate image voltage of the inverter output		
Security settings		Possibility to secure the set the inverter to use a PIN		
Error deleting		You can set both automatic and manual reset errors		
Braking	DC braking and using an external braking resistor			
IO	6 digital inputs	1) Trigger inputs for both low level (COM) and high (+24V) 2) A large freedom of programming functions - it is possible to assign to the terminals 68 different functions. Among other things, running back and forth, trying to run back and forth, safety switch, reset, multi-speed control, motor potentiometer, change of acceleration and deceleration, pulse input and more.		
	3 analog inputs	1) They can workboth as input voltage (0÷10 V) and input current 0÷20mA (software, you can set the range of 4÷20 mA) 2) The analog inputs can be used to ask frequency and time, and to cooperate with PID controller		
	2 analog outputs	1) They can workboth as a voltage output (0÷10 V) and output current 0÷20mA 2) Analog outputs can be programmed to indicate: a. Set point and actual frequency b. Voltage and output current c. DC voltage on the track d. Temperatures IGBT power amplifier e. Power output f. Engine speeds g. Torque drive		
	2 transistor outputs	1) Fast pulse outputs (max. frequency 50 kHz) Possible signalling: a. Desired frequency b. Actual frequency c. The current values d. Output Voltages e. DC voltage on the track f. Temperatures power amplifier g. Output power 2) Overload of transistor - max 20 mA/27V		

	2 relay outputs	1) Overload of contact 5 A/250 V AC or 5A/ 30 V DC 2) Extensive programming output function (signalling 34 different states of the inverter)
Communication	Bulit-in RS-485 communication port running Modbus RTU standard (constant speed of 19 200 bpsec). Optional with additional interface RS-485	
Control panel	Multi-function operator panel: 1) Connected to the inverter via a standard RJ45 socket (according to EIA T568A standard) - easy to connect the inverter such as outside the control cabinet 2) Two displays and eight LEDs provide simultaneous transmission of multiple diagnostic information, and facilitate the programming of the inverter 3) Built-in potentiometer for min. easily change the speed of the motor 4) The standard buttons for start, stop and change the direction of motor rotation 5) Two freely programmable buttons MF1 and MF2 which can be assigned to one of 18 functions 6) Extended error diagnostics - with information about the type of error, the time of its occurrence and the inverter parameters when an error occurs 7) Can be stored in the operator panel set four sets of inverters with the ability to easily transfer settings from one inverter to another	
Speed control	1) Wide range speed refernce, including taking into account different combinations of digital inputs, analog inputs, potentiometer and buttons on the control panel, pulse inputs and motor potentiometer 2) Multi-speed - the possibility of 16 different speed and eight times the acceleration/deceleration 3) PLC mode - can define a sequence of seven steps that will be performed by the inverter. For each step, you can determine the motor speed, acceleration/deceleration and duration step. You can also specify whether the sequence is executed only once, or will be repeated in a loop.	
PID	Bulit-in PID increases the ability of the drive to match process requirements. Both the reference and the feedback signal may be placed in one of the following sources: 1) control panel (buttons or potentiometer) 2) RS-485 interface 3) analog inputs 4) digital inputs 5) pulse input	
Motor	1) Ability to define parameters for two independent motors 2) The motor parameters defined by the user: a. frequency b. voltage and rated current c. number of poles d. rated speed 3) Three methods for identification of motor parameters: a. based on the parameters entered by the user b. measurement of the rotor motor is stopped c. measurement engine with rotating rotor	
Environmental conditions	Working temperature	-10°C ÷ 50°C. If the temperature exceeds 40°C, the maximum output current is reduced by 1% with each additional °C
	Storage	-40°C ÷ 70°C
	Humidity	5 ÷ 95%, without humidity condensation
	Height	0 ÷ 2000 m
	Assembly	Installation in a vertical position inside the cabinet with good ventilation to the mounting plate made of non-combustible material. Mounting must also protect the inverter from direct sunlight, dust moisture and corrosive or explosive gases.
	Ventilation	Cooling by natural and forced air

