



FR150A Series Multifunctional Inverter



FR150A Series Summary

FR150A series multifunctional Inverter is a product developed on the latest technology platform of FRECON, with advanced control modes for high torque, high precision, high reliability, and wide-speed drive. The FR150A features multifunctional control such as built-in PID, simple PLC, programmable input and output terminals, RS485, analog input and output etc, ideal for equipment matching, engineering reconstruction, automation control and other special industry applications.

Suitable for Several Types of Motor

Standard application wiring



Three phase 380V asynchronous motor Three phase 220V asynchronous motor

Special application wiring

(※ Please contact factory if using below application wiring)

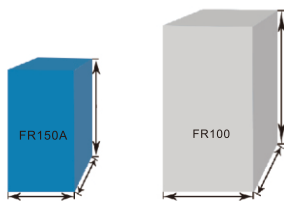


Single phase 220V asynchronous motor

Leading Technology Platform and Optimized Structural Design

Latest technology platform

➤ More compact design for saving installation space, maximum volume reduced by 50%



Volume reduced by 50%



Common DC Bus

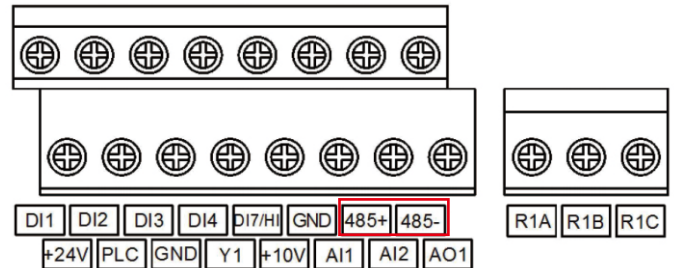
➤ Multiple FR150A units can be connected in parallel to share regenerative braking energy, thus the power of braking resistor can be reduced or cancelled.

Rich Protection Functions

➤ Comprehensive protection to ensure reliable operation

Built-in RS485 Communication (Modbus)

➤ RS 485 terminals, support standard Modbus RTU communication for system integration



Convenient Debugging

Powerful background software



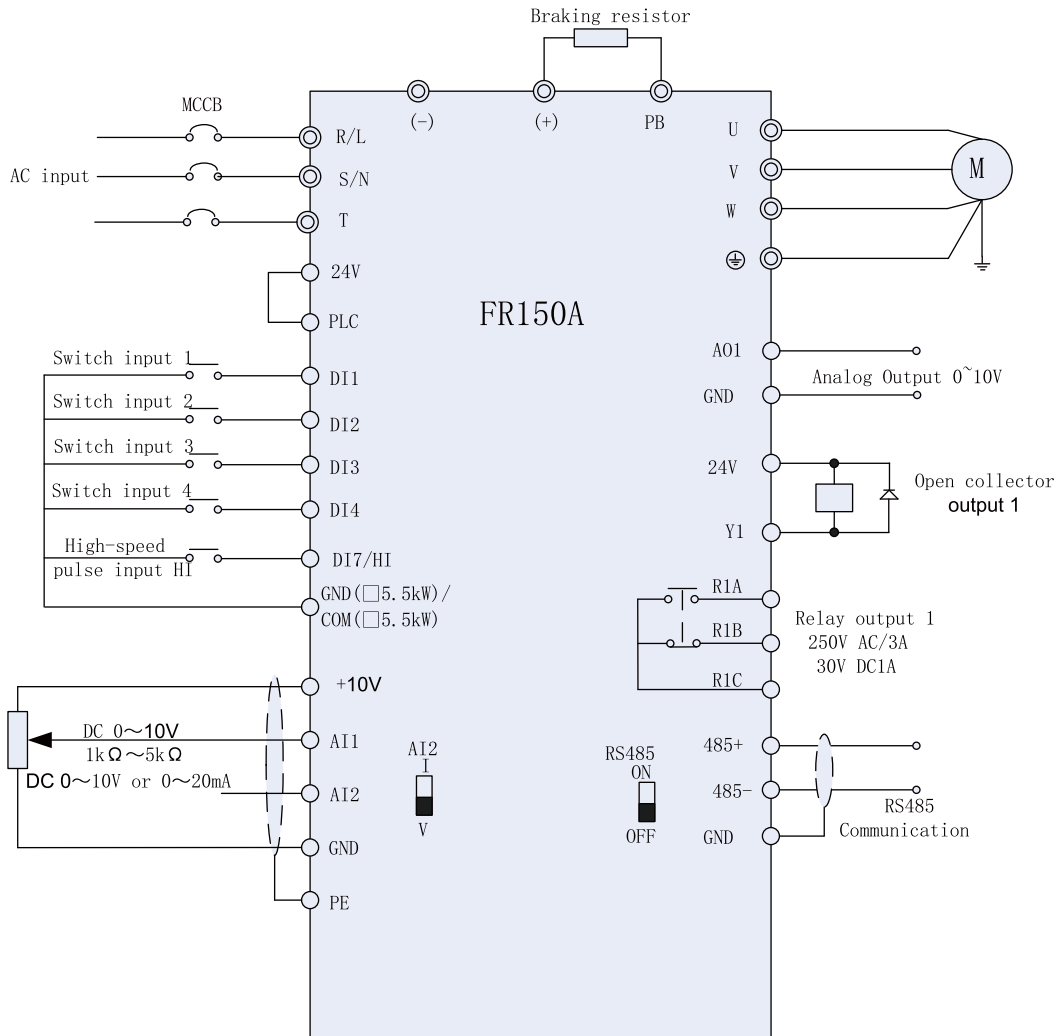
Short-cut menu

➤ Common parameters setting rapidly to save customer's time

➤ Customized application macro according to industry demand

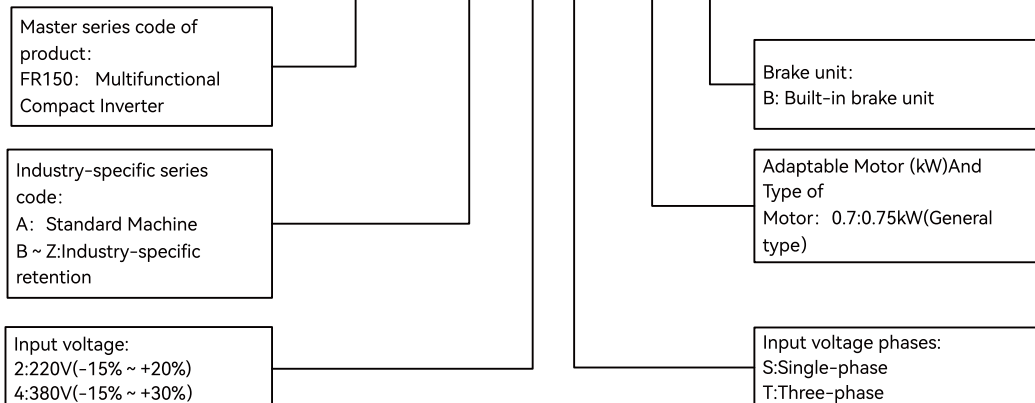
Technical Parameters

| | Item | Specification |
|------------------------|--|--|
| Input Power | Rated input voltage (V) | Single phase 220 V (-15%~+20%); Three phase 380 V (-15%~+30%) |
| | Rated input frequency (Hz) | 50Hz/60Hz, $\pm 5\%$ |
| Output Power | Rated output voltage (V) | 0~Rated input voltage, Error $\leq\pm 3$ |
| | Rated output frequency(Hz) | 0.00~600.00 Hz, Units: 0.01Hz |
| Control Characteristic | Control mode | V/F control ; Sensor-less vector control 1 ; Sensor-less vector control 2 |
| | Speed range | 1:50 (V/F control) ; 1:100(sensor-less vector control 1) ; 1:200(sensor-less vector control 2) |
| | Speed accuracy | $\pm 0.5\%$ (V/F control) ; $\pm 0.2\%$ (sensor-less vector control 1 & 2) |
| | Speed fluctuation | $\pm 0.3\%$ (sensor-less vector control 1 & 2) |
| | Torque response | <10ms (sensor-less vector control 1&2) |
| | Starting torque | 0.5Hz: 180% (V/F control, sensor-less vector control 1) 0.25Hz: 180% (sensor-less vector control 2) |
| Basic functions | Carrier frequency | 0.7kHz~16kHz |
| | Overload capability | 150% Rated current 60s ; 180% Rated current 10s ; 200% Rated current 1s |
| | Torque boost | Automatic torque boost ; Manual torque boost 0.1%~30.0% |
| | V/F curve | Three ways: Straight ; Multi-point type ; N Th-type V/F curve |
| | Acceleration and deceleration curve | Line or curve acceleration and deceleration mode Four kinds of acceleration and deceleration time, Ramp time range: 0.0~6000.0s |
| | DC brake | DC brake start frequency: 0.00~600.00Hz DC brake time: 0.0s~10.0s ; DC brake current : 0.0%~150.0 % |
| Run | Command source | The control panel, control terminal, serial communication port given |
| | Frequency given | 8 kinds of frequency sources |
| | Input terminal | 5 switch input terminals, one way to make high-speed pulse input 2-channel analog inputs, including 1-channel voltage input, 1-channel voltage and current options |
| | Output terminal | 1 switch output terminal, 1 relay output terminal, 1 analog output terminal |
| Featured functions | Parameter copy, parameter backup, flexible parameter displayed & hidden. Reliable speed search started. Timing control, fixed length control, count function, three faults recorded, overvoltage stall protection, undervoltage stall protection, restart upon power loss, Motor thermal protection, Wobble frequency control, High-precision torque | |
| Protection function | Provide fault protection function: overcurrent, overvoltage, undervoltage, overtemperature, overload protection etc . | |
| Environment | Place of operation | Indoors, no direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, water drop and salt, etc. |
| | Altitude | 0~2000m De-rate 1 % for every 100m when the altitude is above 1000 meters |
| | Ambient temperature | -10°C~50°C |
| Others | Efficiency | Rated power; $\geq 93\%$ |
| | Installation | Wall-mounted or Flange mounting |
| | IP grade | IP20 |
| | Cooling method | Fan cooled |



Selection rules

FR150 A-4T-0.7B

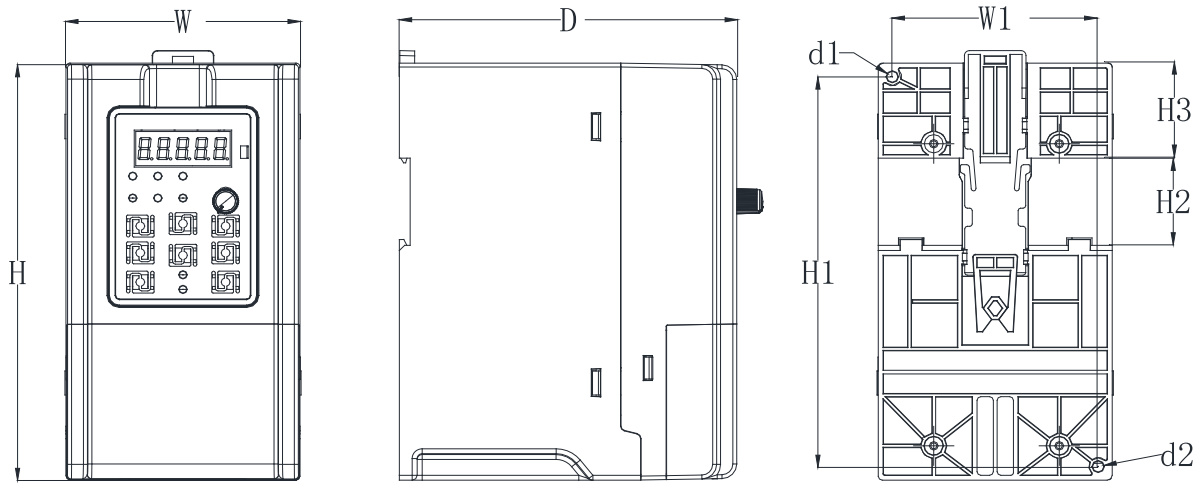


Electrical Specifications

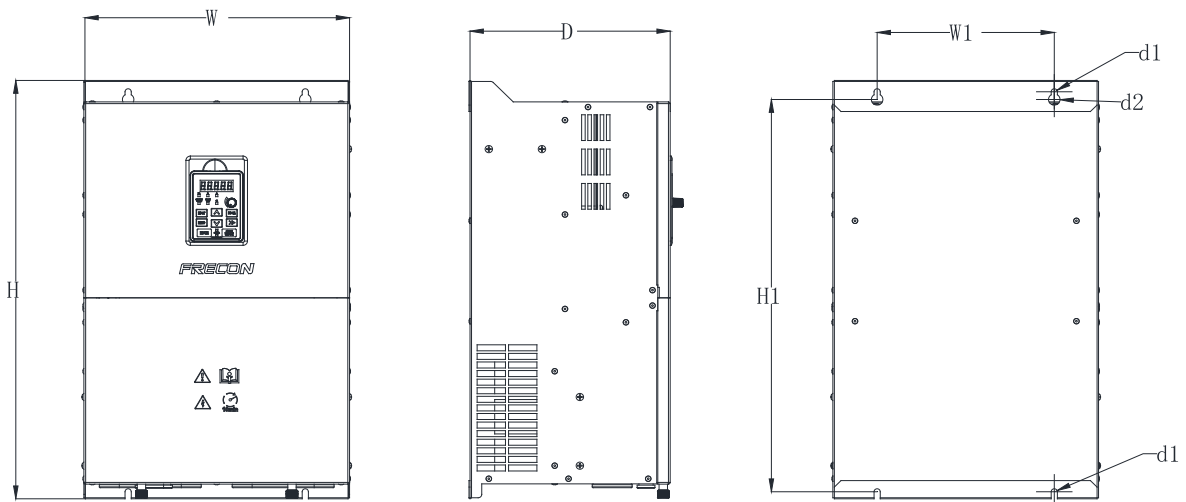
| Model | Power capacity (KVA) | Rated input current (A) | Rated output current(heavy load) (A) | Rated output current(light load) (A) | Adaptive motor | |
|------------------|----------------------|-------------------------|--------------------------------------|--------------------------------------|----------------|------|
| | | | | | kW | HP |
| FR150A-2S-0.2B-H | 0.5 | 4.9 | 1.6 | 2.5 | 0.25 | 0.25 |
| FR150A-2S-0.4B-H | 1 | 6.5 | 2.5 | 3 | 0.37 | 0.5 |
| FR150A-2S-0.7B-H | 1.5 | 9.3 | 4.2 | 4.6 | 0.75 | 1 |
| FR150A-2S-1.5B-H | 3 | 15.7 | 7.5 | 8.5 | 1.5 | 2 |
| FR150A-2S-2.2B-H | 4 | 24 | 9.5 | 10.5 | 2.2 | 3 |
| FR150A-4T-0.7B-H | 1.5 | 3.4 | 2.5 | 3 | 0.75 | 1 |
| FR150A-4T-1.5B-H | 3 | 5 | 4.2 | 4.6 | 1.5 | 2 |
| FR150A-4T-2.2B-H | 4 | 5.8 | 5.5 | 6.5 | 2.2 | 3 |
| FR150A-4T-4.0B-H | 6 | 11 | 9.5 | 10.5 | 4.0 | 5 |
| FR150A-4T-5.5B-H | 8.9 | 14.6 | 13 | 17 | 5.5 | 7.5 |
| FR150A-4T-7.5B-H | 11 | 20.5 | 17 | 20 | 7.5 | 10 |
| FR150A-4T-011B-H | 17 | 26 | 25 | 32 | 11 | 15 |
| FR150A-4T-015B-H | 21 | 35 | 32 | 37 | 15 | 20 |
| FR150A-4T-018B-H | 24 | 38.5 | 37 | 45 | 18.5 | 25 |
| FR150A-4T-022B-H | 30 | 46.5 | 45 | 49 | 22 | 30 |
| FR150A-4T-030B-H | 40 | 62 | 60 | 75 | 30 | 40 |
| FR150A-4T-037B-H | 57 | 76 | 75 | 82 | 37 | 50 |
| FR150A-4T-045-H | 69 | 92 | 91 | 112 | 45 | 60 |
| FR150A-4T-055-H | 85 | 113 | 112 | 134 | 55 | 70 |
| FR150A-4T-075-H | 114 | 157 | 150 | 168 | 75 | 100 |
| FR150A-4T-090-H | 134 | 186 | 176 | 210 | 90 | 125 |
| FR150A-4T-110-H | 160 | 220 | 210 | 253 | 110 | 150 |
| FR150A-4T-132-H | 192 | 260 | 253 | 304 | 132 | 175 |
| FR150A-4T-160-H | 231 | 310 | 304 | 340 | 160 | 210 |

Product installation dimension drawing

➤ 0.2~22kW installation size



➤ 30~160kW installation size



Product installation size table

| Model | External and Install dimensions (mm) | | | | | | | | | N.W (kg) |
|-------------------|--------------------------------------|-----|-----|-----|-----|----|----|-------------------|-------------------|----------|
| | W | H | D | W1 | H1 | H2 | H3 | Install hole (D1) | Install hole (D2) | |
| FR150A-2S-0. 2B-H | 75 | 150 | 120 | 65 | 140 | 35 | 39 | 4.5 | 4.5 | 0.95 |
| FR150A-2S-0. 4B-H | | | | | | | | | | |
| FR150A-2S-0. 7B-H | | | | | | | | | | |
| FR150A-4T-0. 7B-H | | | | | | | | | | |
| FR150A-4T-1. 5B-H | | | | | | | | | | |
| FR150A-2S-1. 5B-H | 93 | 171 | 132 | 82 | 160 | 35 | 39 | 4.5 | 4.5 | 1.46 |
| FR150A-2S-2. 2B-H | | | | | | | | | | |
| FR150A-4T-2. 2B-H | | | | | | | | | | |
| FR150A-4T-4. 0B-H | | | | | | | | | | |
| FR150A-4T-5. 5B-H | 117 | 187 | 160 | 102 | 172 | - | - | 4.7 | 4.7 | 2.5 |
| FR150A-4T-7. 5B-H | | | | | | | | | | |
| FR150A-4T-011B-H | 146 | 249 | 187 | 131 | 236 | - | - | 5.5 | 5.5 | 3.9 |
| FR150A-4T-015B-H | 198 | 300 | 194 | 183 | 287 | - | - | 5.5 | 5.5 | 6.2 |
| FR150A-4T-018B-H | | | | | | | | | | |
| FR150A-4T-022B-H | | | | | | | | | | |
| FR150A-4T-030B-H | 245 | 390 | 187 | 200 | 375 | - | - | 7 | 13 | 11.6 |
| FR150A-4T-037B-H | | | | | | | | | | |
| FR150A-4T-045-H | 300 | 485 | 226 | 200 | 581 | - | - | 7 | 13 | 14.8 |
| FR150A-4T-055-H | | | | | | | | | | |
| FR150A-4T-075-H | 335 | 600 | 236 | 200 | 581 | - | - | 9.5 | 17.5 | 22.8 |
| FR150A-4T-090-H | 310 | 620 | 280 | 200 | 601 | - | - | 9.5 | 17.5 | 25 |
| FR150A-4T-110-H | 310 | 650 | 309 | 200 | 620 | - | - | 11.5 | 22 | 40 |
| FR150A-4T-132-H | | | | | | | | | | |
| FR150A-4T-160-H | 400 | 750 | 320 | 300 | 723 | - | - | 11.5 | 22 | 69 |

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