

FR150A Series

Multifunctional Inverter

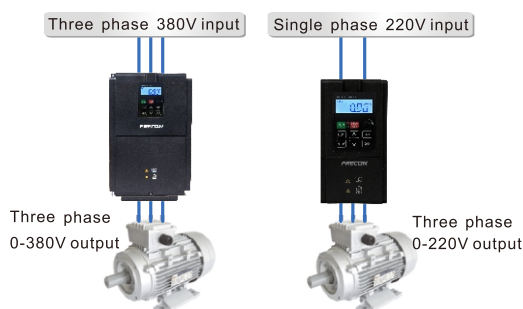


FR150A Series Summary

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

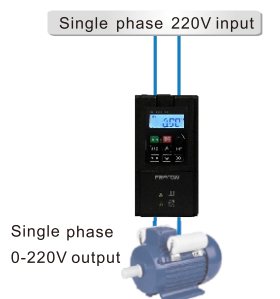
Standard application wiring



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

Special application wiring

(※ Please contact factory if using below application wiring)

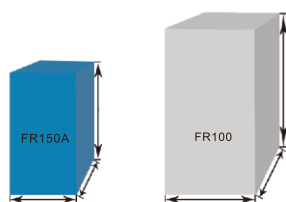


Single phase 220V asynchronous motor

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

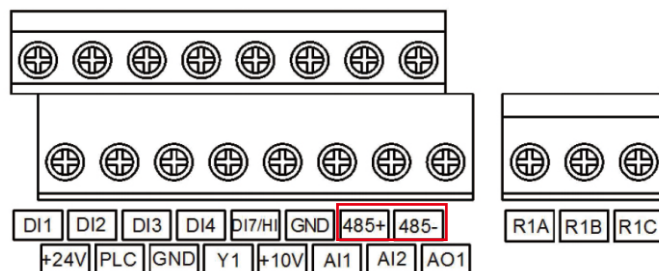
- Multiple FR150A units can be connected in parallel to share regenerative braking energy, thus the power of braking resistor can be reduced or cancelled.

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



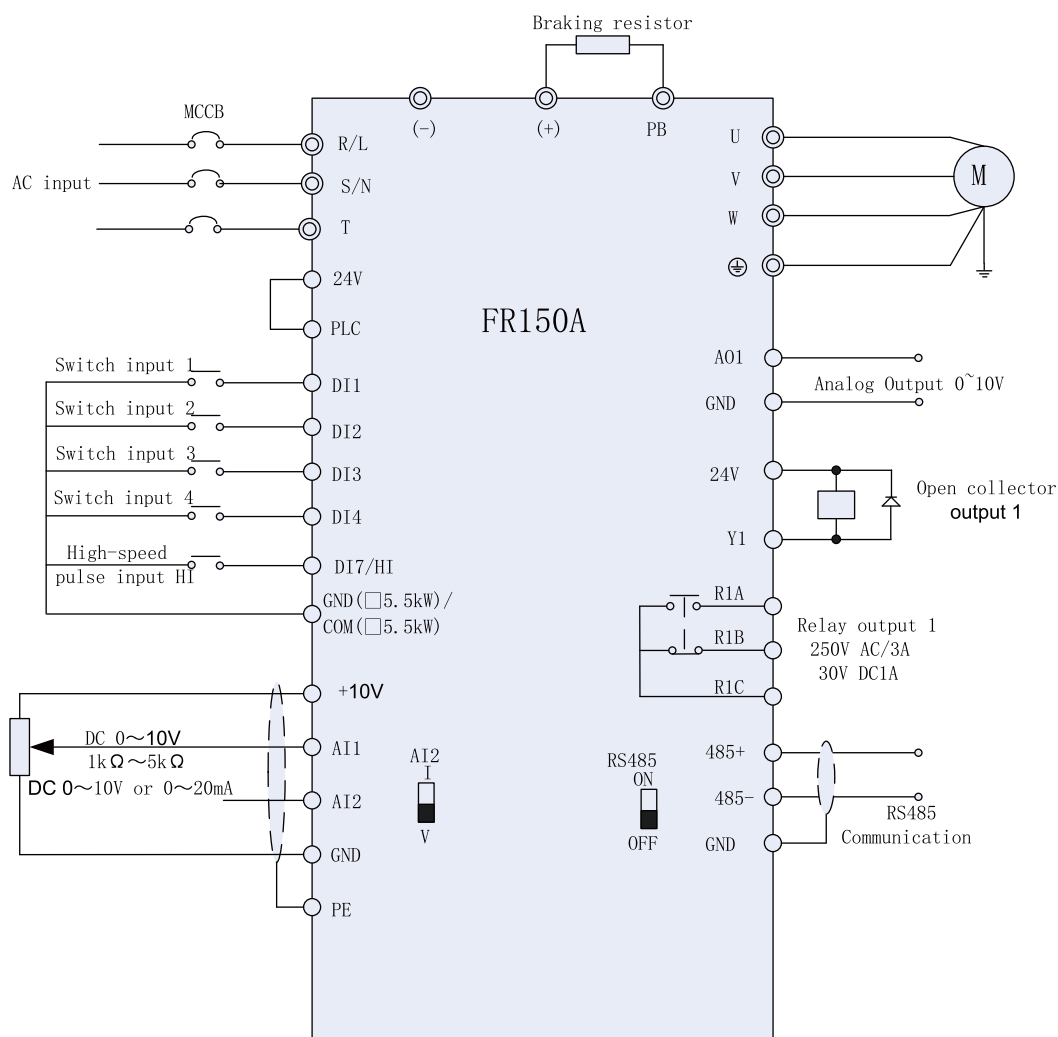
Short-cut menu

- Common parameters setting rapidly to save customer's time
- Customized application macro according to industry demand

Technical Parameters

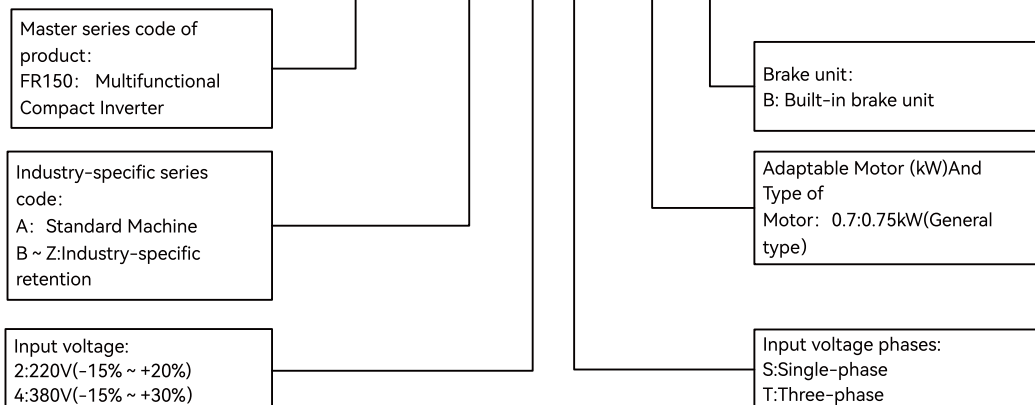
	Item	Specification
Input Power	Rated input voltage (V)	Single phase 220 V (-15%~+20%) ;Three phase 380 V (-15%~+30%)
	Rated input frequency (Hz)	50Hz/60Hz, $\pm 5\%$
Output Power	Rated output voltage (V)	0~Rated input voltage, Error $\leq \pm 3$
	Rated output frequency(Hz)	0.00~600.00 Hz, Units: 0.01Hz
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	$< 10\text{ms}$ (sensor-less vector control 1&2)
	Starting torque	0.5Hz: 180% (V/Fcontrol, 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

Wiring diagram



Selection rules

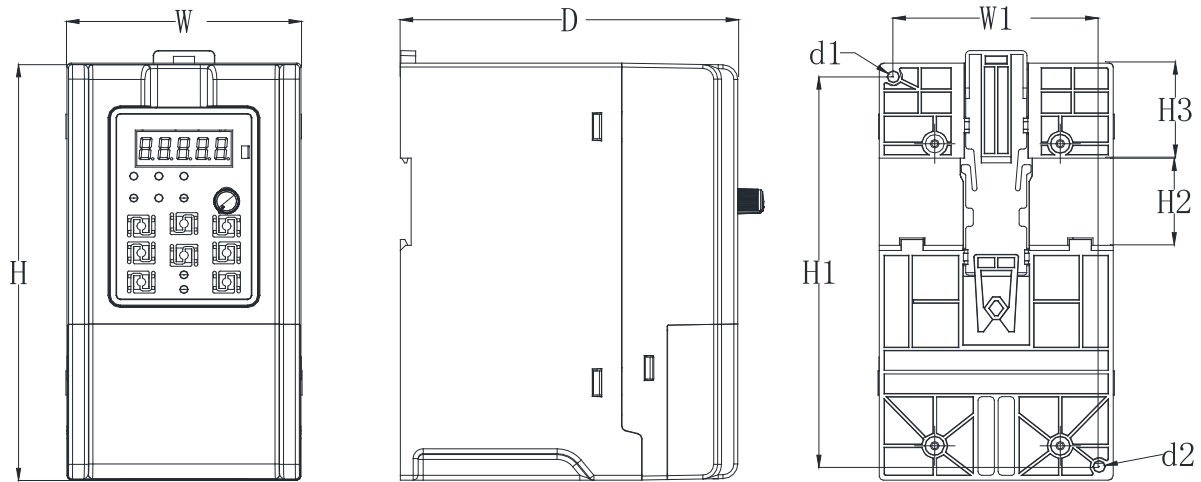
FR150 A-4T-0.7B



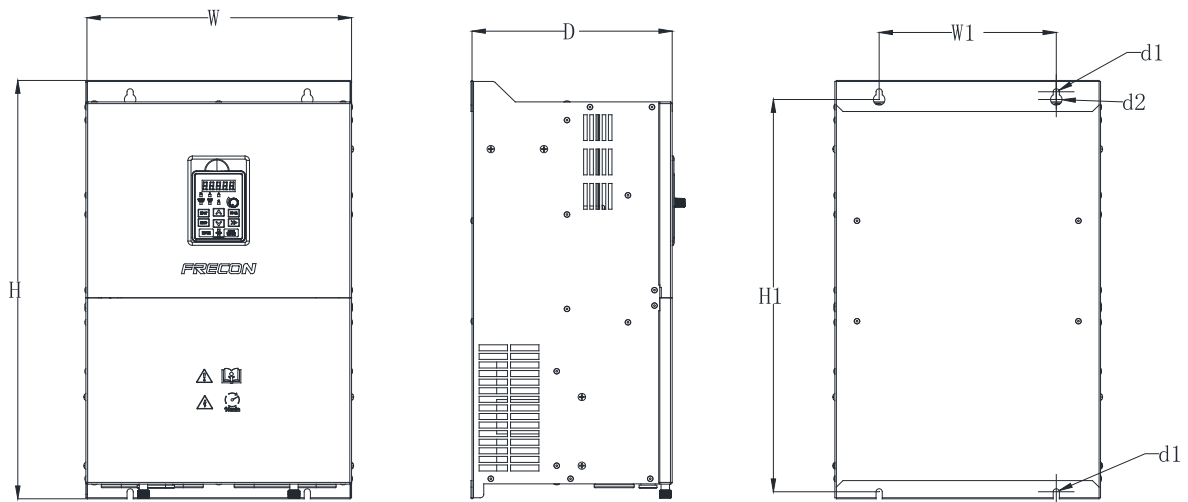
Electrical Specifications

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

➤ 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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