



Distributor

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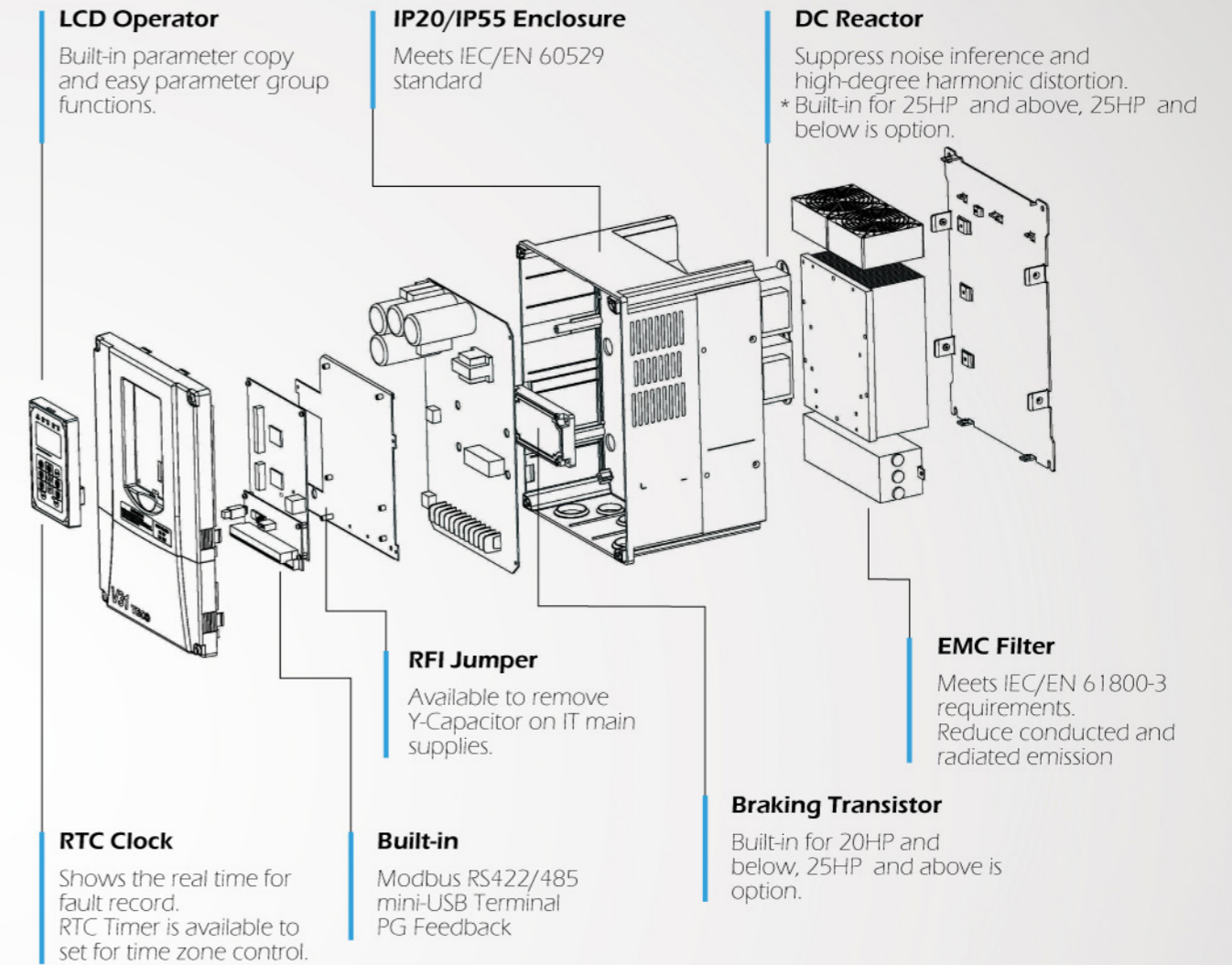
V31

High Performance Field-oriented Control

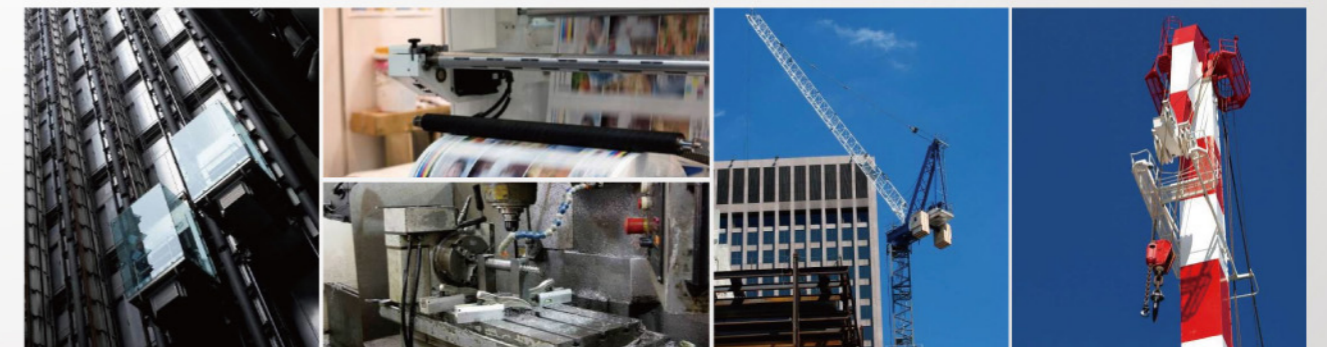


An amazing number !

There are 80% of inverter failure
has been caused by harsh environment !



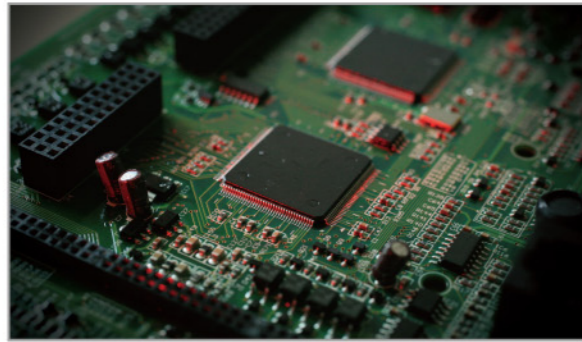
Applications



- **Industrial Tools**
Punching Machine, Extrusion, Molding Machine
- **Tension Control**
Drawing Machine, Recoiler, Printer

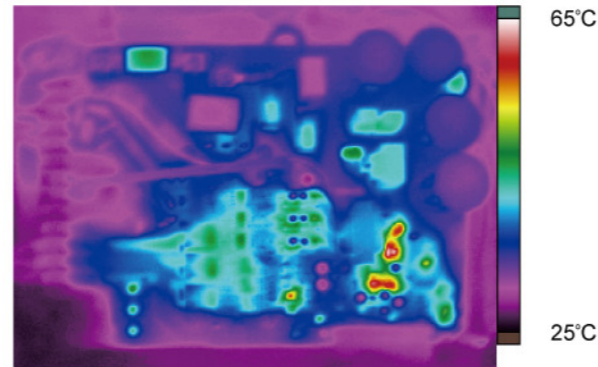
- **Gravitational Load**
Elevator, Crane, Hoist, Escalator,
Automatic Parking Equipment

Dual-Core Processor



Control and protection circuit are separated by 32bit MCU and ASIC (dual-core design).

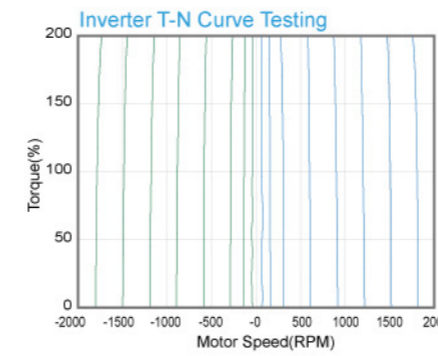
Thermal Optimization



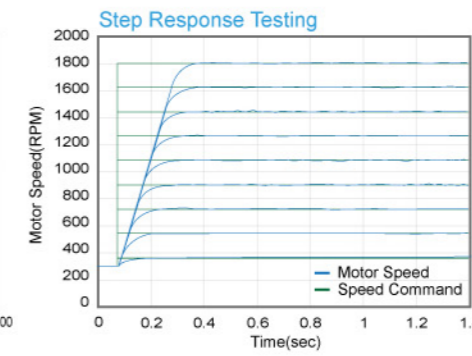
Consider product for long term operation and reliability.

Field-oriented Control Technology

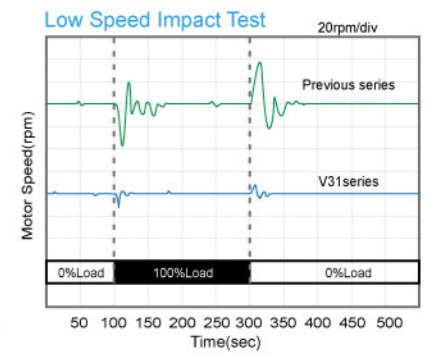
User-friendly motor parameter autotuning with revolving and static autotuning to significantly reduce setup time.



FOC algorithm achieves the feature of excellent control. SLV control mode has a high starting torque at 200% / 0.6 Hz.

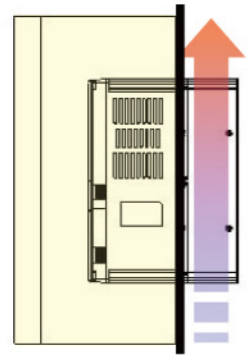


ASR can adjust speed control loop, which effectively suppresses overshoot and improves speed response.



Rapid response effectively suppresses speed fluctuation when encountering impact from load.

Robust Design

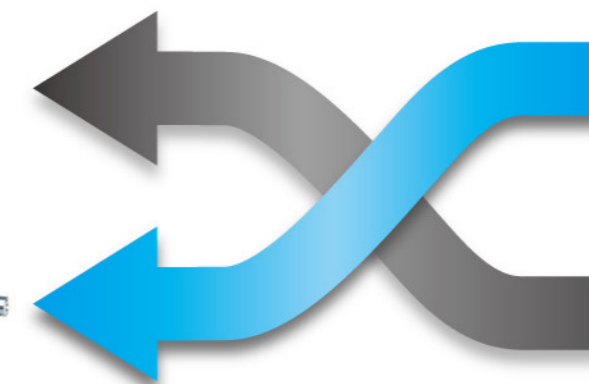


Through panel installation design can separate the cooling system and the electronic components.



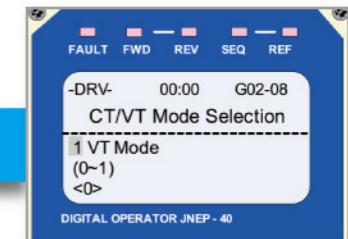
IP20 (NEMA1) and IP55 (NEMA12) enclosure meets IEC/EN 60529 requirements, rugged design is available for harsh environment.

Dual Rating Design

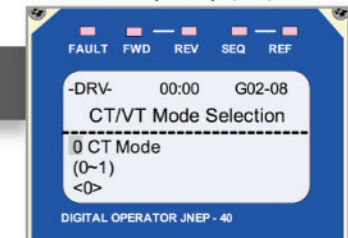


G02-08 CT/VT Mode Selection

Normal Duty (VT)

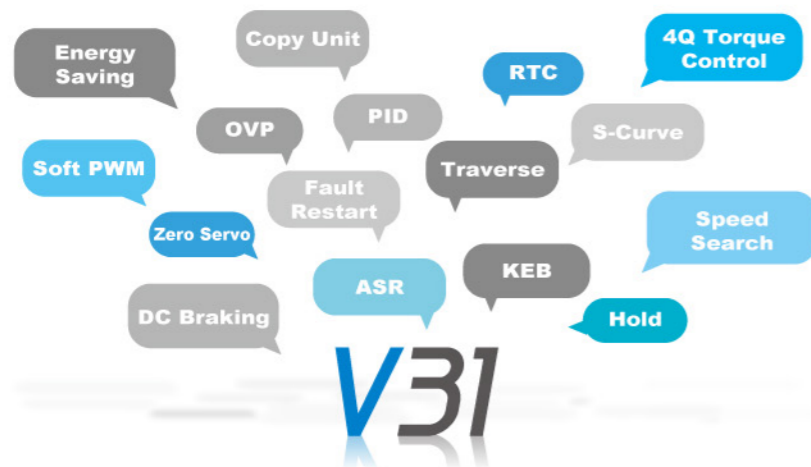


Heavy Duty (CT)



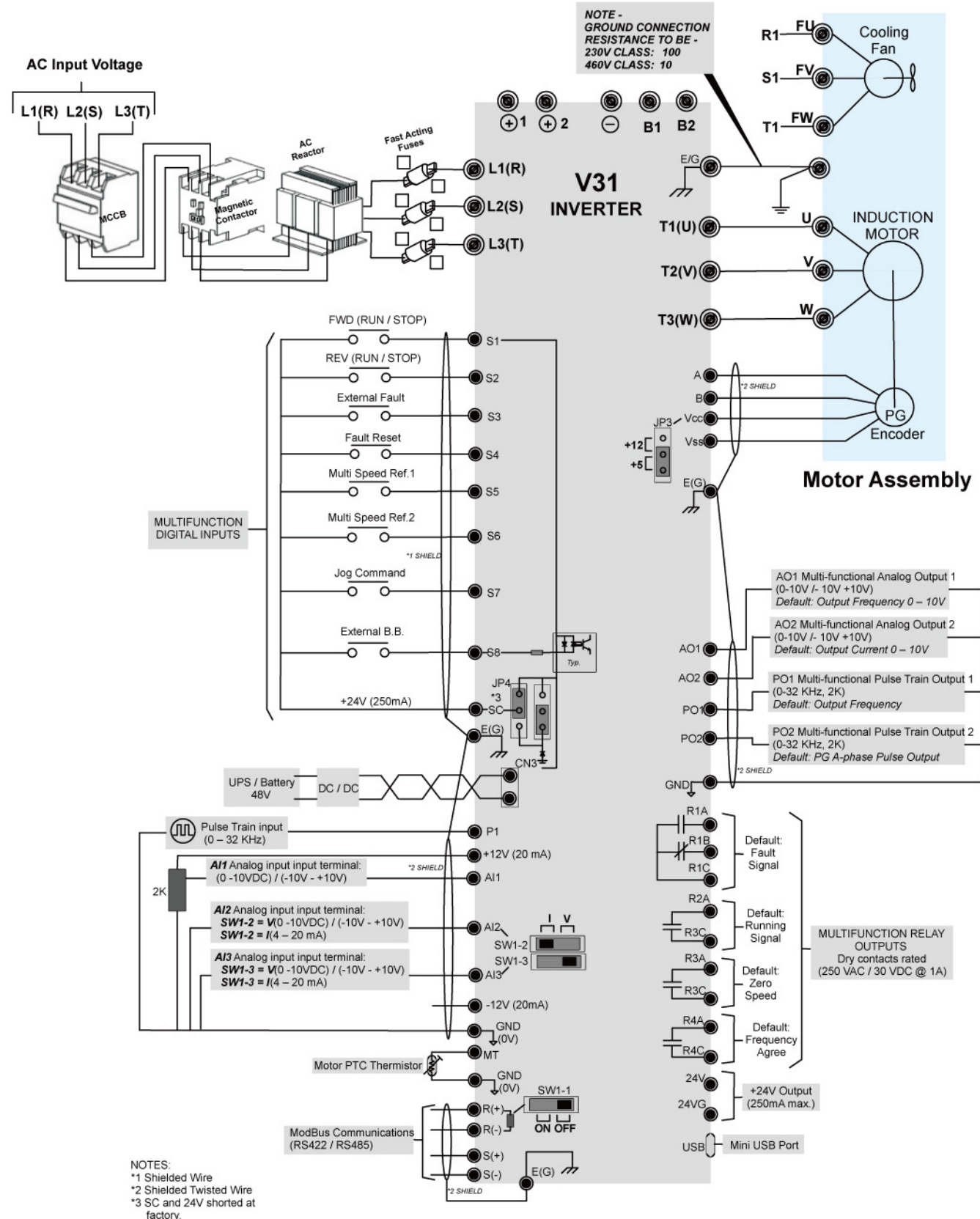
Enhance Software Functions

We engaged in develop new software functions for various application requirements.



V31

Wiring Diagram



NOTES:
 *1 Shielded Wire
 *2 Shielded Twisted Wire
 *3 SC and 24V shorted at factory.

General Specifications

200V Class Model Designation		0024	0032	0048	0064	0080	0096
Output Rating	HD Mode						
	Max. Applicable Motor Output HP (KW)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)
	Rated Output Capacity (KVA)	9.1	12	18	25	31	37
	Rated Output Current (A)	24	32	48	64	80	96
	Overload Capacity	150% of rated output current for 1 minute (200% , 2 sec)					
	Max. Carrier Frequency	8 ~ 14		8 ~ 12		6 ~ 10	
Output Rating	ND Mode						
	Max. Applicable Motor Output HP (KW)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)
	Output Current (A)	30	41	57	72	87	111
	Overload Capacity	120% of rated output current for 1 minute					
	Max. Carrier Frequency	6 ~ 12		6 ~ 10		4 ~ 8	
	Max. Output Frequency	120.00Hz					
Power Source	Rated Voltage Frequency	3 Phase, 200 - 240V / 50,60Hz					
	Voltage Variable Rate	+10%, -15%					
	Frequency Variable Rate	± 5%					
	Rated Input Current	HD Mode	29	38	58	77	88
	HD Mode	36	52	68	86	96	123
DC Reactor		Optional			Built-in		
Filter		Optional					
Enclosure		IEC IP20 (NEMA 1) or IEC IP55 (NEMA12)					

400V Class Model Designation		0014	0018	0027	0032	0040	0050	0065
Output Rating	HD Mode							
	Max. Applicable Motor Output HP (KW)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)
	Rated Output Capacity (KVA)	10.7	14	21	24	31	38	50
	Rated Output Current (A)	14	18	27	32	40	50	65
	Overload Capacity	150% of rated output current for 1 minute (200% , 2 sec)						
	Max. Carrier Frequency	8 ~ 14		8 ~ 12		6 ~ 10		
Output Rating	ND Mode							
	Max. Applicable Motor Output HP (KW)	10 (7.5)	15 (11)	20 (15)	25 (18.5)	30 (22)	40 (30)	50 (37)
	Output Current (A)	16	22.7	30	38	46	61	76
	Overload Capacity	120% of rated output current for 1 minute						
	Max. Carrier Frequency	6 ~ 12		6 ~ 10		4 ~ 8		
	Max. Output Frequency	120.00Hz						
Power Source	Rated Voltage Frequency	3 Phase, 380 - 480V / 50,60Hz						
	Voltage Variable Rate	+10%, -15%						
	Frequency Variable Rate	± 5%						
	Rated Input Current	HD Mode	17	22	33	38	44	55
	HD Mode	19	27	36	45	51	66	84
DC Reactor		Optional			Built-in			
Filter		Optional or Built-in						
Enclosure		IEC IP20 (NEMA 1) or IEC IP55 (NEMA12)						

Model Designation

JNV31	4	0014	H	3	F	N4
V31	Rated Voltage	Output Current	Braking Transistor	Input Power Source	Filter	Enclosure
	2 : 200V Level 4 : 400V Level	0014 : 14A 0096 : 96A	H : None B : Built-in	3 : 3Phases	Blank : None F : Filter and DCL Built-in D : DCL Built-in only	Blank : IP20(NEMA1) N4 : IP55(NEMA12)

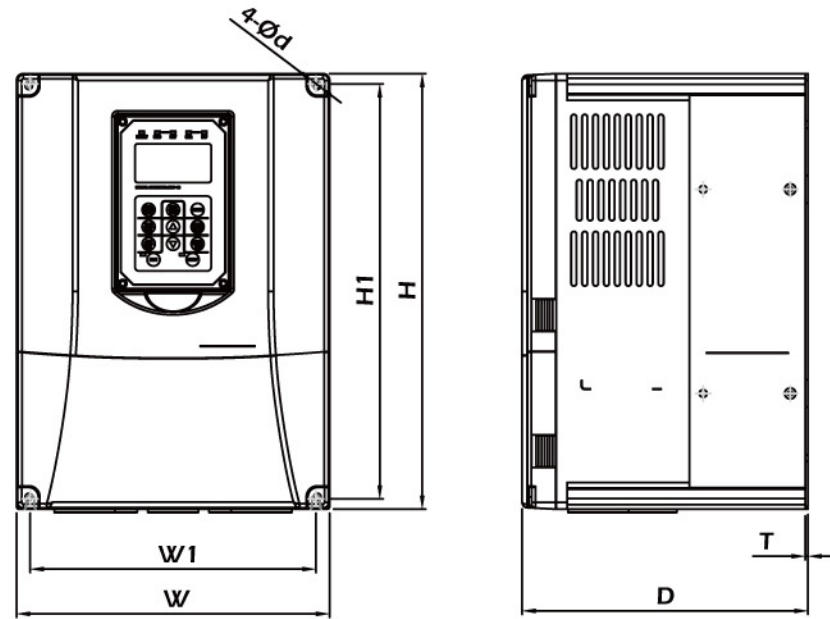
Items	Description	
Control Feature	Control Method	SPWM Control (Including Soft PWM Function) Control Modes (Selected by G01-03) - V/F Mode - V/F+PG Mode - SLV Mode : Sensorless Current Vector Control (FOC) - SV Mode : Sensor Current Vector Control (FOC)
	Starting Torque	V/F : 150% / 3 Hz SLV : 200% at 0.6 Hz SV : 200% at 0 Hz
	Speed Control Range	V/F : 1:40 : SLV : 1:100 : SV : 1:1000
	Speed Control Response	SLV : 10Hz : SV : 30Hz
	Speed Control Accuracy	± 0.5% (SLV, 25°C ± 10°C) ± 0.2% (SV, 25°C ± 10°C)
	Torque Limits	Provided for Sensorless Vector Control and Sensor Vector Control (4 quadrant steps can be changed by constant setting)
	Torque Accuracy	± 5%
	Frequency Control Range	0.01 to 400.00 Hz*3*4
	Frequency Accuracy	Digital references: ± 0.01% (-10°C to 45°C) Analog references: ± 0.1% (25°C to 10°C)
	Frequency Setting Resolution	Digital references: 0.01 Hz Analog references: 0.06 Hz/60Hz (11 bit with sign)
	Output Frequency Resolution	0.01Hz
	Frequency setting signal	0 - 10V, -10V - +10V, 4 - 20mA, Pulse train
	Overload capacity	Dual Rating: CT mode – 150% of rated output current for 1 minute.(200%,2 sec) VT mode – 120% of rated output current for 1 minute.
	Acceleration Deceleration time	0.1sec to 6000.0 sec (4 selectable combinations of acceleration and deceleration times set independently)
	Braking Torque	Approx. 20% (over 100% when using braking resistor) Inverter of 20HP(15kw) and below have an built-in braking transistor, 25HP(18.5kw) and above have an built-in option
	Main Control Functions	Bi-directional Speed searches, restarting for momentary power loss, over-torque detection, under-torque detection, torque limits, 17-speed control (max.), S-curve, accel/decel time changes, 3-wire sequence, dwell function, cooling fan ON/OFF control, auto tuning (rotational and stationary), slip compensation, torque compensation, jump freq., PID control (with sleep/wake-up function), auto energy saving control, fault reset, copy function, droop control, speed/torque control switching, PG interface built-in, zero servo, OV protection control, RTC function, Help key function...etc.

Items	Description	
Protective Functions	Motor overload protection (OL1)	UL recognized electronic thermal overload relay (i2 t)
	Motor Pre-overheat / overheat Protection (OH3/OH4)	Motor PTC thermistor (active: 1330Ω, return: 550Ω)
	Instantaneous overcurrent protection (OC)	Limits at approx. 260% of rated output current
	Short Circuit protection (SC)	Baseblock at approx. 500% of rated output current
	Inverter overload protection (OL2)	CT mode: 1.5 × rated output current (1 min. / 10 min.) VT mode: 1.2 × rated output current (1 min. / 10 min.)
	Over Voltage (OV)	230V class: motor coasts to stop if the DC voltage exceeds 410 VDC. 460V class: motor coasts to stop if the DC voltage exceeds 820 VDC.
	Under Voltage (UV)	230V class: motor coasts to stop if the DC voltage drops to 190 VDC or below 460V class: motor coasts to stop if the DC voltage drops to 380 VDC or below
	Ground Fault (GF)	Phase-to-ground on drive output (In case of ground fault in motor or motor cable, only the inverter is protected)
	Input phase loss (IPL)	Trips if any input phase is missing
	Momentary power loss	Stops for 15ms or more at full load (operation can be continued if power is restored within 2 sec. by selecting the momentary power loss method)
	Cooling fin pre-overheat / Overheat (OH/OH1)	Protection by thermistor
	Motor stall prevention	Stall prevention at acceleration / deceleration and constant speed operation
	Overtorque / Undertorque Protection (OT/UT)	Trips if the motor loses its load
	Charge indicator	Charge LED stays on until DC bus voltage drops below approx. 50V
	Environmental Conditions	Location
Ambient operating temperature		-10°C (no frost) to +50°C *2 (+14°F to +122°F)
Storage temperature		-25°C to +65°C (-13°F to +149°F)
Relative humidity		0 to 95% RH, non-condensing or dripping water (Conforming to IEC 600068-2-3)
Altitude		100% load capacity (no de-rating) up to 1000m (1% de-rating for each 100m above 1000m; max. 3000m)
Vibration		Max. acceleration amplitude 0.5G (5 m/s ²) at 9 to 200Hz Displacement amplitude 1.5mm (peak) at 2 to 9Hz water (Conforming to IEC 60721-3-3-3M3)
Enclosure Class		IP20 (NEMA 1) standard in entire KW/HP range (Conforming to EN60529(1991), IEC60664-1(1992))
Safety	EMC	Meets IEC/EN 61800-3 requirements
	CE	Meets IEC/EN 61800-3 and IEC/EN 61800-1 requirements
	UL	UL508C

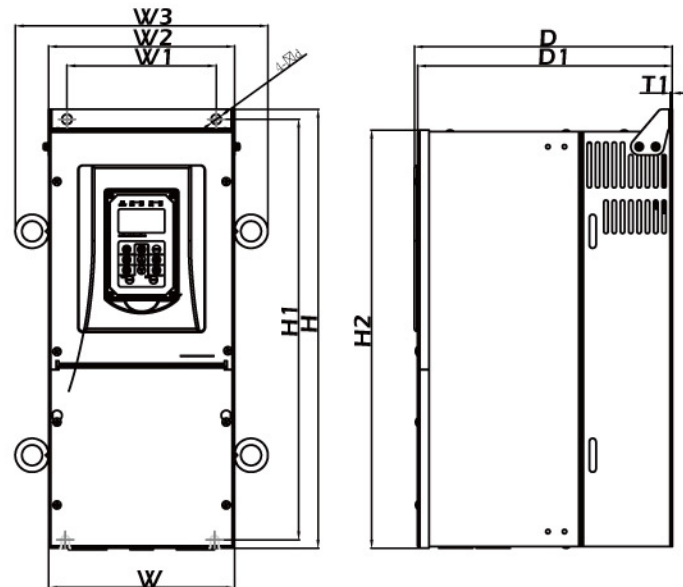
1. Braking transistor built-in (JNV31-□□□□□-B3□□□).
2. The max ambient temperature without de-rating is 45°C. At higher temperatures (up to +50°C) the de-rating is 1%/1°C.
3. The maximum output frequency of sensorless vector control mode is 60Hz. Do not use sensorless vector control mode for elevating machines.
4. The maximum output frequency of flux vector control mode is 120Hz.

Dimensions

Voltage	Capacity (HP)	Frame	IP20(NEMA1) / IP55(NEMA12), mm											Weight (kg)	
			W	H	D	W1	H1	T1	d	W2	W3	H2	D1		
230V	7.5	FR1	230	320	210	210	305	2	M5						10.5
	10														
	15		FR2	265	396	227	249	380	2	M5					16.5
20															
480V	25	FR3	224	527	311	180	505	2	M10	225	305	504	307	32.5	
	30														
	7.5		FR1	230	320	210	210	305	2	M5					11.5
	10														
	15			FR2	265	396	227	249	380	2	M5				
20															
25	FR3	224	527	311	180	505	2	M10	225	305	504	307	34.5		
30															
40															



FR1 – FR2
 JNV31-20024、JNV31-20032
 JNV31-20048、JNV31-20064
 JNV31-40014、JNV31-40018
 JNV31-40027、JNV31-40032



FR3
 JNV31-20080、JNV31-20096
 JNV31-40040、JNV31-40050
 JNV31-40065

Accessories

PG Option Card	Model	Inverter Model	
	JNPG-O(Open Collector)	V31 Series	
	JNPG-L(Line Driver)		
Filter (Plug-In)	Model	Inverter Model	
	FS29020-42-99	42A	JNV31-20024、JNV31-20032
	FS29020-75-99	75A	JNV31-20048、JNV31-20064
	FS29020-120-99	120A	JNV31-20080、JNV31-20096
	FS29040-30-99	30A	JNV31-40014、JNV31-40018
	FS29040-42-99	42A	JNV31-40027、JNV31-40032
	FS29040-75-99	75A	JNV31-40040、JNV31-40050、JNV31-40065
Filter (Footprint)	Model	Inverter Model	
	FS29021-42-99	42A	JNV31-20024、JNV31-20032
	FS29021-75-99	75A	JNV31-20048、JNV31-20064
	FS29041-30-99	30A	JNV31-40014、JNV31-40018
	FS29041-42-99	42A	JNV31-40027、JNV31-40032
Braking Unit	Model	Inverter Model	
	JNTBU-230		JNV31-20080-H3、JNV31-20096-H3 JNV31-40040-H3、JNV31-40050-H3 JNV31-40065-H3
	JNTBU-430		Note: 20HP(or below) built-in braking transistor
Braking Resistor	Model	Inverter Model	
	JNBR-520W30	520W/30Ω	JNV31-20024
	JNBR-780W20	780W/20Ω	JNV31-20032
	JNBR-2R4KW13R6	2400W/13.6Ω	JNV31-20048
	JNBR-3KW10	3000W/10Ω	JNV31-20064
	JNBR-4R8KW8	4800W/8Ω	JNV31-20080
	JNBR-4R8KW6R8	4800W/6.8Ω	JNV31-20096
	JNBR-600W130	600W/130Ω	JNV31-40014
	JNBR-800W100	800W/100Ω	JNV31-40018
	JNBR-1R6KW50	1600W/50Ω	JNV31-40027
	JNBR-1R5KW40	1500W/40Ω	JNV31-40032
	JNBR-4R8KW32	4800W/32Ω	JNV31-40040
	JNBR-4R8KW27R2	4800W/27.2Ω	JNV31-40050
JNBR-6KW20	6000W/20Ω	JNV31-40065	
Digital Operator Cable	Model	Inverter Model	
	4H332D0010000(1m)		V31 Series
	4H332D0030001(2m)		
	4H332D0020005(3m)		
	4H332D0040006(5m)		
	4H332D0130005(10m)		