

Derwent  
Top 100  
Global  
Innovator  
2020

# High Performance Standard AC Drive **iS7**

0.75~75kW(1~100HP) 3-Phase 200~230V  
0.75~375kW(1~600HP) 3-Phase 380~480V  
IP54 0.75kW~22kW(1~30HP) 3-Phase 200~230V  
IP54 0.75kW~22kW(1~30HP) 3-Phase 380~480V



RoHS

**LS** ELECTRIC

Motor Rating	200V Class		400V Class	
	VT(Normal Duty)	CT(Heavy Duty)	VT(Normal Duty)	CT(Heavy Duty)
0.75kW	SV0008 iS7-2NO(F)(D)	SV0008 iS7-2NO(F)(D)	SV0008 iS7-4NO(F)(D)	SV0008 iS7-4NO(F)(D)
1.5kW	SV0008 iS7-2NO(F)(D)	SV0015 iS7-2NO(F)(D)	SV0008 iS7-4NO(F)(D)	SV0015 iS7-4NO(F)(D)
2.2kW	SV0015 iS7-2NO(F)(D)	SV0022 iS7-2NO(F)(D)	SV0015 iS7-4NO(F)(D)	SV0022 iS7-4NO(F)(D)
3.7kW	SV0022 iS7-2NO(F)(D)	SV0037 iS7-2NO(F)(D)	SV0022 iS7-4NO(F)(D)	SV0037 iS7-4NO(F)(D)
5.5kW	SV0037 iS7-2NO(F)(D)	SV0055 iS7-2NO(F)(D)	SV0037 iS7-4NO(F)(D)	SV0055 iS7-4NO(F)(D)
7.5kW	SV0055 iS7-2NO(F)(D)	SV0075 iS7-2NO(F)(D)	SV0055 iS7-4NO(F)(D)	SV0075 iS7-4NO(F)(D)
11kW	SV0075 iS7-2NO(F)(D)	SV0110 iS7-2NO(F)(D)	SV0075 iS7-4NO(F)(D)	SV0110 iS7-4NO(F)(D)
15kW	SV0110 iS7-2NO(F)(D)	SV0150 iS7-2NO(F)(D)	SV0110 iS7-4NO(F)(D)	SV0150 iS7-4NO(F)(D)
18.5kW	SV0150 iS7-2NO(F)(D)	SV0185 iS7-2NO(F)(D)	SV0150 iS7-4NO(F)(D)	SV0185 iS7-4NO(F)(D)
22kW	SV0185 iS7-2NO(F)(D)	SV0220 iS7-2NO(F)(D)	SV0185 iS7-4NO(F)(D)	SV0220 iS7-4NO(F)(D)
30kW	SV0220 iS7-2NO(F)(D)	SV0300 iS7-2S0	SV0220 iS7-4NO(F)(D)	SV0300 iS7-4NO(D)
37kW	SV0300 iS7-2S0	SV0370 iS7-2S0	SV0300 iS7-4NO(D)	SV0370 iS7-4NO(D)
45kW	SV0370 iS7-2S0	SV0450 iS7-2S0	SV0370 iS7-4NO(D)	SV0450 iS7-4NO(D)
55kW	SV0450 iS7-2S0	SV0550 iS7-2S0	SV0450 iS7-4NO(D)	SV0550 iS7-4NO(D)
75kW	SV0550 iS7-2S0	SV0750 iS7-2S0	SV0550 iS7-4NO(D)	SV0750 iS7-4NO(D)
90kW	SV0750 iS7-2S0		SV0750 iS7-4NO(D)	SV0900 iS7-4SOD
110kW			SV0900 iS7-4SOD	SV1100 iS7-4SOD
132kW			SV1100 iS7-4SOD	SV1320 iS7-4SOD
160kW			SV1320 iS7-4SOD	SV1600 iS7-4SOD
185kW			SV1600 iS7-4SOD	SV1850 iS7-4SOD
220kW			SV1850 iS7-4SOD	SV2200 iS7-4SOD
280kW			SV2200 iS7-4SOD	SV2800 iS7-4S0
315kW			SV2800 iS7-4S0	SV3150 iS7-4S0
375kW			SV3150 iS7-4S0	SV3750 iS7-4S0
450kW			SV3750 iS7-4S0	

※ (F) : Built-in EMC (F) or Non-EMC (Blank) selectable  
 ※ (D) : Built-in DCR (D) or Non-Reactor (Blank) selectable  
 ※ Non DCR products are provided warranty service when used in CT (Constant torque) load rating only.  
 ※ Please request LS sale person for UL type 12 (IP54) / Web customized product.

SV

0008

iS7

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N

O

F

D

W

LS Drive Starvert Series	Capacity of Applied Motor	Series Name	Input Voltage	UL	Customized Product
	0008 0.75 [kW]		2 3-Phase 200~230[V]	O Open	W Winder
	0015 1.5 [kW]		4 3-Phase 380~480[V]	E Enclosed UL type 1 <sup>1)</sup>	S Synchronous
	0022 2.2 [kW]			P Enclosed UL type 12 <sup>2)</sup>	T Safety <sup>3)</sup>
	0037 3.7 [kW]				V <sup>4)</sup> Marine
	0055 5.5 [kW]				Customization
	0075 7.5 [kW]				W: Web control,
	0110 11 [kW]				S: Synchronization,
	0150 15 [kW]				V: Vessel
	0185 18.5 [kW]				E: High efficiency
	0220 22 [kW]				
	0300 30 [kW]				
	0370 37 [kW]				
	0450 45 [kW]				
	0550 55 [kW]				
	0750 75 [kW]				
	0900 90 [kW]				
	1100 110 [kW]				
	1320 132 [kW]				
	1600 160 [kW]				
	1850 185 kW				
	2200 220 kW				
	2800 280 kW				
	3150 315 kW				
	3750 375 kW				

Keypad	
N	NON
S	GLCD (Graphic loader)

Filter	
Blank	NON
F	EMC filter

DC Reactor	
Blank	NON
D	DC reactor
R	DB resistor <sup>3)</sup> (Inner mounted)

<sup>1)</sup> For 0.75~75kW enclosed type 1 can be satisfied if conduit option installed.  
<sup>2)</sup> Enclosed UL type 1,2 is available from 0.75 to 22kW.  
<sup>3)</sup> Built-in DB resistor option is available only for web version product from 0.75kW to 3.7kW. DB resistor of IS7 product is the option of WEB product. Applicable capacity is from 0.75 to 375 kW of IS7 products.  
<sup>4)</sup> More information about marine certification, refer to the 25 page.  
<sup>5)</sup> For 0.75~160kW, the safety option cannot be installed in the field. A type "T" safety iS7 must be specified and ordered from the factory. For 185~375kW, a safety option can be purchased separately and field installed on the standard iS7.

## Rated Input and Output: Input Voltage of 200V Class (0.75~22kW)

Type: SV □□□□ iS7-2 □			0008	0015	0022	0037	0055	0075	0110	0150	0185	0220	
Motor Applied <sup>1)</sup>	VT	[HP]	2	3	5	7.5	10	15	20	25	30	40	
		[kW]	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	
	CT	[HP]	1	2	3	5	7.5	10	15	20	25	30	
		[kW]	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	
Rated Output	Rated Capacity [kVA] <sup>2)</sup>		1.9	3.0	4.5	6.1	9.1	12.2	17.5	22.9	28.2	33.5	
	Rated Current [A] <sup>3)</sup>	CT	5	8	12	16	24	32	46	60	74	88	
		VT	8	12	16	24	32	46	60	74	88	124	
	Output Frequency [Hz]		0 ~ 400 [Hz] <sup>4)</sup>										
Output Voltage [V]		3-phase 200 ~ 230V <sup>5)</sup> (Sensorless-1 : 0~300Hz, Sensorless-2, Vector : 0.1~120Hz)											
Rated Input	Available Voltage [V]		3-phase 200 ~ 230 VAC [-15% ~ +10%]										
	Frequency [Hz]		50 ~ 60 [Hz] (±5%)										
	Rated Current [A]	CT	4.3	6.9	11.2	14.9	22.1	28.6	44.3	55.9	70.8	85.3	
VT		6.8	10.6	14.9	21.3	28.6	41.2	54.7	69.7	82.9	116.1		

## 2.1.2 Rated Input and Output: Input Voltage of 200V Class (30~75kw)

Type: SV □□□□ iS7-2 □			0300	0370	0450	0550	0750	-	-	-	-	-	
Motor Applied <sup>1)</sup>	VT	[HP]	50	60	75	100	125	-	-	-	-	-	
		[kW]	37	45	55	75	90	-	-	-	-	-	
	CT	[HP]	40	50	60	75	100	-	-	-	-	-	
		[kW]	30	37	45	55	75	-	-	-	-	-	
Rated Output	Rated Capacity [kVA] <sup>2)</sup>		46	57	69	84	116	-	-	-	-	-	
	Rated Current [A] <sup>3)</sup>	CT	116	146	180	220	288	-	-	-	-	-	
		VT	146	180	220	288	345	-	-	-	-	-	
	Output Frequency [Hz]		0 ~ 400 [Hz] <sup>4)</sup> (Sensorless-1: 0 ~ 300Hz, Sensorless-2, Vector: 0.1~120Hz)										
Output Voltage [V]		3-phase 200 ~ 230V <sup>5)</sup>											
Rated Input	Available Voltage [V]		3-phase 200 ~ 230 VAC [-15% ~ +10%]										
	Input Frequency		50 ~ 60 [Hz] (±5%)										
	Rated Current [A]	CT	121	154	191	233	305	-	-	-	-	-	
VT		152	190	231	302	362	-	-	-	-	-		

## Rated Input and Output: Input Voltage of 400V Class (0.75~22kW)

Type: SV □□□□ iS7-4 □			0008	0015	0022	0037	0055	0075	0110	0150	0185	0220	
Motor Applied <sup>1)</sup>	VT	[HP]	2	3	5	7.5	10	15	20	25	30	40	
		[kW]	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	
	CT	[HP]	1	2	3	5	7.5	10	15	20	25	30	
		[kW]	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	
Rated Output	Rated Capacity [kVA] <sup>2)</sup>		1.9	3.0	4.5	6.1	9.1	12.2	18.3	22.9	29.7	34.3	
	Rated Current [A] <sup>3)</sup>	CT	2.5	4	6	8	12	16	24	30	39	45	
		VT	4	6	8	12	16	24	30	39	45	61	
	Output Frequency [Hz]		0 ~ 400 [Hz] <sup>4)</sup>										
Output Voltage [V]		3-phase 380 ~ 480V <sup>5)</sup> (Sensorless-1 : 0~300Hz, Sensorless-2, Vector : 0.1~120Hz)											
Rated Input	Available Voltage [V]		3-phase 380 ~ 480 VAC [-15% ~ +10%]										
	Frequency [Hz]		50 ~ 60 [Hz] (±5%)										
	Rated Current [A]	CT	2.2	3.6	5.5	7.5	11.0	14.4	22.0	26.6	35.6	41.6	
VT		3.7	5.7	7.7	11.1	14.7	21.9	26.4	35.5	41.1	55.7		

\*1) Motor Applied indicates the maximum capacity applied to use of a standard 4 pole standard motor.

\*2) Rated Capacity: the input capacity of a 200V class is based on 220V and that of a 400V class is based on 440V. The current rating is based on CT current.

\*3) The output of rated current is limited according to the setting of the carrier frequency (CON-04).

\*4) You can set the frequency at up to 300Hz by selecting 3, 4 Sensorless-1, Sensorless-2 as the control mode (DRV-09 Control Mode).

\*5) The maximum output voltage does not go over the supplied power voltage. You can select the output voltage as you want below the supplied power voltage.

\* Non DCR products are provided warranty service when used in CT (Heavy duty) load rating only.

## Rated Input and Output: Input Voltage of 400V Class (30~375kW)

Type: SV □□□□ iS7-4 □			0300	0370	0450	0550	0750	0900	1100	1320	1600	1850	2200	2850	3150	3750	
Motor Applied <sup>1)</sup>	VT	[HP]	50	60	75	100	125	150	200	250	300	350	400	500	600	700	
		[kW]	37	45	55	75	90	110	132	160	185	220	280	315	375	450	
	CT	[HP]	40	50	60	75	100	125	150	200	250	300	350	400	500	600	
		[kW]	30	37	45	55	75	90	110	132	160	185	220	280	315	375	
Rated Output	Rated Capacity [kVA] <sup>2)</sup>		46	57	69	84	116	139	170	201	248	286	329	416	467	557	
	Rated Current [A] <sup>3)</sup>	CT	61	75	91	110	152	183	223	264	325	370	432	547	613	731	
		VT	75	91	110	152	183	223	264	325	370	432	547	613	731	877	
	Output Frequency [Hz]		0 ~ 400 [Hz] (Sensorless-1: 0 ~ 300Hz, Sensorless-2, Vector: 0 ~ 120Hz) <sup>4)</sup>														
Output Voltage [V]		3-phase 380 ~ 480V <sup>5)</sup>															
Rated Input	Available Voltage [V]		3-phase 380 ~ 480 VAC [-15% ~ +10%]														
	Frequency [Hz]		50 ~ 60 [Hz] (±5%)														
	Rated Current [A]	CT	55.5	67.9	82.4	102.6	143.4	174.7	213.5	255.6	316.3	404	466	605	674	798	
VT		67.5	81.7	101.8	143.6	173.4	212.9	254.2	315.3	359.3	463	590	673	796	948		

\*1) Motor Applied indicates the maximum capacity applied of a standard 4 pole OTIS-LG motor.

\*2) Rated Capacity: the input capacity of a 200V class is based on 220V and that of a 400V class is based on 440V. The current rating is based on CT current.

\*3) The output of rated current is limited according to the setting of the carrier frequency (CON-04).

\*4) In case of Sensorless-1, you can set the frequency at up to 300Hz by selecting 3, 4 as the control mode (DRV-09 Control Mode).

In case of Sensorless-2, you can set the frequency at up to 120Hz by selecting 3, 4 as the control mode (DRV-09 Control Mode).

\*5) The maximum output voltage does not go up over the supplied power voltage. You can select the output voltage as you want below the supplied power voltage.

\* Non DCR products are provided warranty service when used in CT (Heavy duty) load rating only.

## Control

Control Method	V/F control, V/F PG, slip compensation, sensorless vector-1, sensorless vector-2, vector control
Frequency Setting Resolution	Digital command: 0.01Hz Analog command: 0.06Hz (maximum frequency: 60Hz)
Frequency Tolerance	Digital command operation: 0.01% of the maximum frequency Analog command operation: 0.1% of the maximum frequency
V/F Pattern	Linear, double reduction, user V/F
Overload Capacity	CT current rating: 150% for 1 minute, VT current rating: 110% for 1 minute
Torque Boost	Manual torque boost, automatic torque boost

## Specifications

Control Method		Selectable among keypad/terminal block/communication operation	
Frequency Setting		Analog: 0 ~ 10[V], -10 ~ 10[V], 0 ~ 20[mA] Digital: keypad	
Operating Function		PID control, up-down operation, 3-wire operation, DC brake, frequency limit, frequency jump, second function, slip compensation, reverse rotation prevention, auto restart, drive by-pass, auto tune flying start, energy buffering, power braking, flux braking, leakage current reduction, MMC, easy start	
Input	Multi-Function Terminal (8 Points) P1 ~ P8 <sup>1)</sup>	NPN(Sink)/PNP(Source) selectable	
		Function: forward operation; reverse operation; reset; external trip; emergency stop; jog operation; sequential frequency-high; medium and low; multi-level acceleration and deceleration-high; medium and low; D.C. control during stop; selection of a second motor; frequency increase; frequency decrease; 3-wire operation; change to general operation during PID operation; main body operation during option operation; analog command frequency fixation; acceleration and deceleration stop selectable	
Output	Multi-Function Open Collector Terminal	Drive fault output	Below DC 46V 100mA
	Multi-Function Relay Terminal		Below (N.O., N.C.) AC250V 1A, Below DC 30V 1A
	Analog Output	0 ~ 10 Vdc (below 20mA): selectable from frequency, current, voltage, direct current voltage	

\*1) The Functions for Multi-function terminal available according to IN-65-72 parameter setting of IN Group.

## Protective Functions

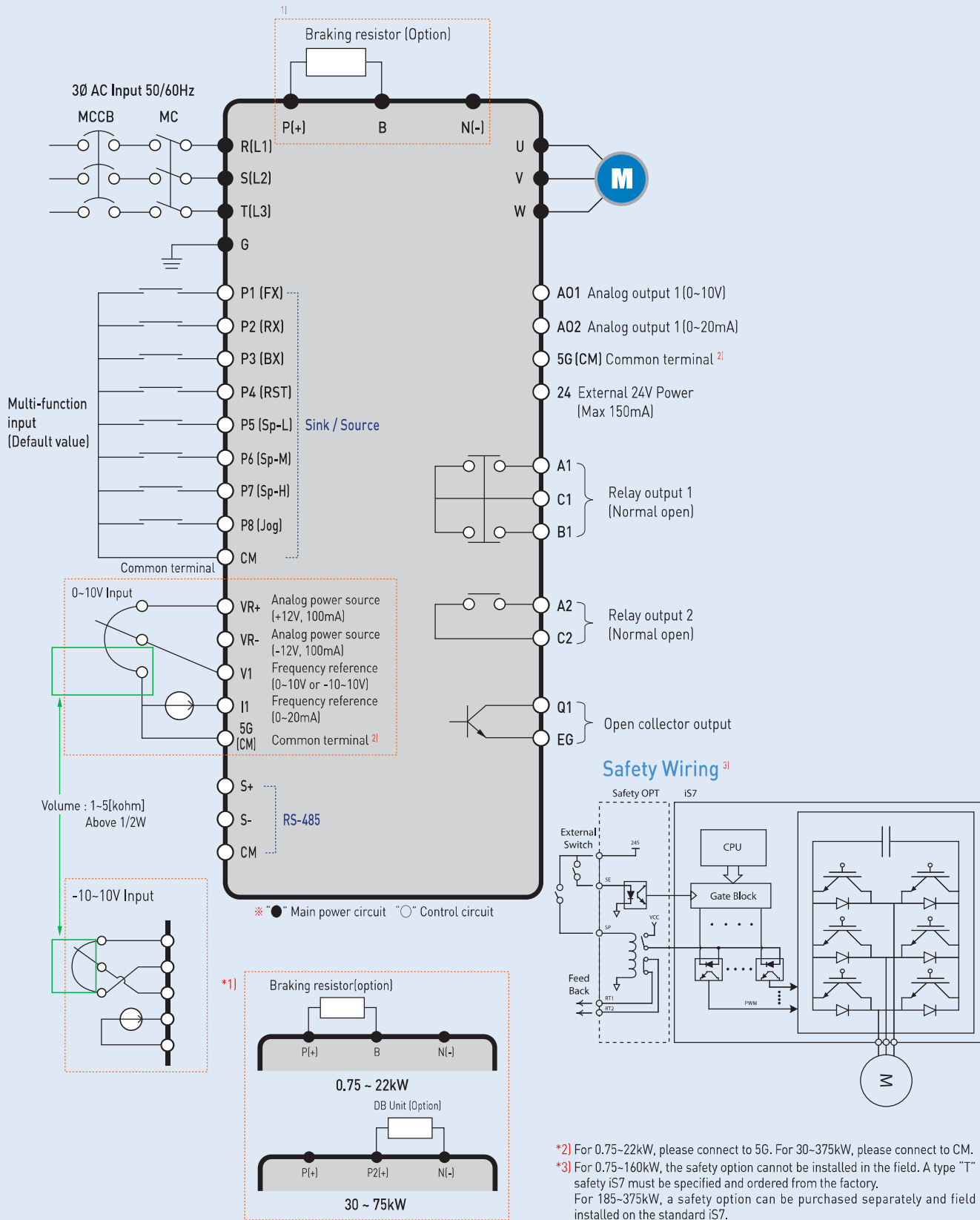
Trip	Over voltage, low voltage, over current, over current detection, drive overheat, motor thermal protection, phase loss protection, overload protection, communication error, frequency command loss, hardware failure, cooling fan failure, pre-PID failure, no motor trip, external brake trip, Safety function, etc.
Alarm	Stall prevention, overload, diminished load, encoder error, fan failure, keypad command loss, speed command loss.
Instantaneous Interruption <sup>2)</sup>	Below CT class 15 msec (VT class 8 msec): operation continues (within rated input voltage, rated output) Over CT class 15 msec (VT class 8 msec): automatic restart

\*2) Operation at the CT (Heavy Duty) current rating

## Structure and Use Environment

Cooling Method	Forced air blast cooling: 0.75 ~ 15kW(200/400V class), 22kW(400V class) Inhalation cooling: 22 ~ 75kW(200V class), 30~375kW(400V class)
Protection Structure	0.75~22kW(200V), 0.75~75kW(400V): Open type IP 21(default), UL enclosed type 1 (Option) <sup>3)</sup> 30 ~ 75kW(200V), 90~375kW(400V): Open type IP 00 (default), UL enclosed type 1 (Option) <sup>3)</sup> 0.75~22kW-2/4 and etc: Enclosed IP54 type, UL enclosed type 12
Surrounding Temperature	CT (Heavy duty) load: -10 ~ 50°C, (14 ~ 122°F) without ice or frost VT (Normal duty) load: -10~ 40°C (14 ~ 104°F) without ice or frost (It is recommended that you use less than 80% load when you use VT load at 50°C (122°F)) IP54 product: -10~40°C (14~122°F) without ice or frost
Preservation Temperature	-20 ~ 65°C (-4 ~ 149°F)
Surrounding Humidity	Below 95% RH of relative humidity (with no dew formation)
Altitude, Vibration	Below 1,000m (From 1000 to 4000m, the rated input voltage and rated output current of the drive must be derated by 1% for every 100m.), below 5.9m/sec <sup>2</sup> (19.36 ft/sec <sup>2</sup> , 0.6G)
Environment	There should be no corrosive gas, flammable gas, oil mist or dust. Pollution degree 2 environment
Conformal Coating	To meet the below IEC standard in the harsh operating environment and to enhance PCB Ass'y life cycle IEC 60721-3-3(3C2) / IEC 60068-2-43 / IEC 60068-2-60

\*3) UL Enclosed type 1 with conduit box installed. (30~75kW(200V) conduit box has been installed, is open type IP 20)



\*2) For 0.75-22kW, please connect to 5G. For 30-375kW, please connect to CM.  
\*3) For 0.75-160kW, the safety option cannot be installed in the field. A type "T" safety iS7 must be specified and ordered from the factory.  
For 185-375kW, a safety option can be purchased separately and field installed on the standard iS7.