Strengths of UDICON

2008 Completion of patent registration of prevention of UDICON free-fall function

In crane movement and all sorts of loads or horizontal loads, the primary of wound-rotor induction motor drives with a soft and strong torque by P I control and at the same time, the secondary controls the secondary resistance switch with tacho speed detection. So it makes torque big when starting, and it gets torque of motor which matches up with the number of revolutions, which can get the maximum torque and efficiency needed for driving. As it composes an electronic circuit with SCR element at the same time of the primary and the secondary and makes non-contactize, it makes the efficiency and productivity of facilities management improve a lot.

It has an accident prevention function as monitoring the movement state.

- Monitors an open-phase of movement power.
- Has over current protecting function.
- As monitoring unusual condition of each stage number input line, can prevent accidents.
- Having self-diagnosis can prevent unusual movement.

Convenient because it remembers every setting value.

- As it always remembers every number and setting value about driving when inputting, it is rid of blackout and power down.

Energy is saved from 4 quadrant operation.

- As it is possible to revive from 4 quadrant operation when doing down, energy is saved and driving is soft.

Maintenance is simple and lifespan is long.

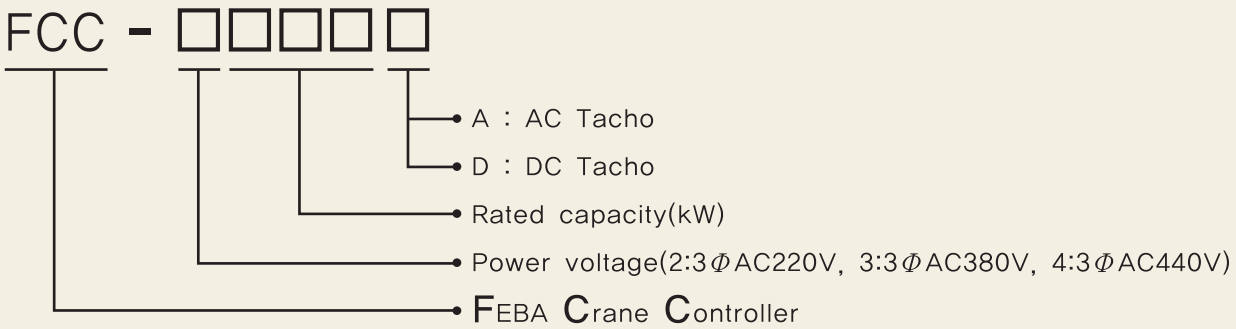
- We have designed it from our long time experience and wide knowledge in electricity and electronic field, and also used components whose mechanical structure is strong and lifespan is long, so breakdown is rare.
- Wiring is simple and small so you can change it easily.
- As UDICON controls the primary voltage of induction motor using a thyristor, and controlsthe secondary voltage through the notch of the secondary resistance at the same time, it generates soft and strong torque when starting.

Moves more softly and safely.

- Digitalized all the systems so that the size is small, you can install without limit of install space.
- As you can set up the accel/deceleration when doing up and down, it moves more softly.
- Having accel/deceleration function, mechanical shock occurred by brake when stopping and lining fraying of brake is relieved.
- Accel/deceleration time is set up freely to 9.9 sec with a 0.1 unit.
- Not only digitalized PI control totally but also realized control algorithm of non linear field, so that it moves softly and stably.
- As you can set up speed of each stage freely, you can set up the optimum speed to crane movement.
- Regardless of installation of vertical load or horizontal load, it is operated to respond to every load.

Name Form of Products & Specification

▶ Name Form of Products



▶ Basic Specification

Specification	Contents
Manipulative Source Voltage	AC110V / AC220V ±15%
Input Frequency	60Hz ±5% (※ 50H is an option.)
Using Place	Indoors (without corrosive gas and dirt)
Ambient Temperature	−10~+50℃
Humidity	Below 90%RH (No dew forming)
Control Method	Every digital type primary PI voltage control & secondary resistance switch (speed control by tacho)
Speed Detecting Method	DC TACHO GENERATOR
Speed Order Method	Input the number of stages (each of up and down has 5 stages)
NOTCH Output	The secondary resistance switch 5 notch output
Motor Protection	Short circuit protection and protection by electronic thermal
Over-current Protection	Protect with Instantaneous over current limit setting value (set up to 400%)
Power Noise	Input square wave by Noise Simulator, R-phase, T-phase (between power sockets)
Cooling System	Natural cooling by a heat sink and forced cooling by a heat sink and a fan
Overheat Sensor	Temperature response sensor, operation temperature 85℃±5℃
Insulation Resistance	Above 1000V 5MΩ
Communication Function (OPTION)	Operating state by RS-422, RS-485 full duplex and half duplex open protocol, READ& WRITE, breakdown state, monitoring function is equipped

▶ Product Specification

- AC 220V specification

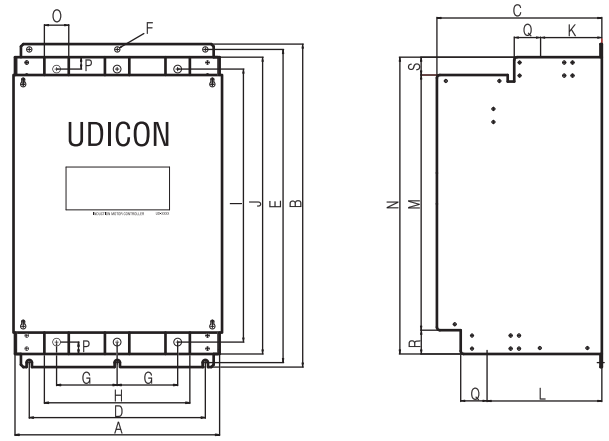
Name \ Division	kW	A	Applied CASE
FCC-202D	2.2	9	UD-1500
FCC-203D	3.7	15	
FCC-205D	5.5	22	
FCC-207D	7.5	30	
FCC-211D	11	45	
FCC-215D	15	60	UD-2700
FCC-222D	22	88	
FCC-230D	30	120	UD-4000
FCC-237D	37	150	
FCC-256D	56	225	
FCC-275D	75	300	
FCC-2112D	112	450	UD-4700
FCC-2150D	150	600	UD-6000
FCC-2187D	187	750	
FCC-2200D	200	800	

- AC 380V/440V specification

Name \ Division	kW	A	Applied CASE
FCC-303D FCC-403D	3.7	7.5	UD-1500
FCC-305D FCC-405D	5.5	11	
FCC-307D FCC-407D	7.5	15	
FCC-311D FCC-411D	11	22	
FCC-315D FCC-415D	15	30	
FCC-322D FCC-422D	22	45	
FCC-330D FCC-430D	30	60	UD-2700
FCC-337D FCC-437D	37	75	
FCC-356D FCC-456D	56	112	UD-4000
FCC-375D FCC-475D	75	150	
FCC-3112D FCC-4112D	112	225	
FCC-3150D FCC-4150D	150	300	
FCC-3195D FCC-4195D	195	390	UD-4700
FCC-3240D FCC-4240D	240	480	UD-4800
FCC-3300D FCC-4300D	300	600	UD-6000
FCC-3375D FCC-4375D	375	750	
FCC-3400D FCC-4400D	400	800	
FCC-3450D FCC-4450D	450	900	
FCC-3500D FCC-4500D	500	1000	
FCC-4600D	600	1200	UD-7000

External dimension

▶ External dimension



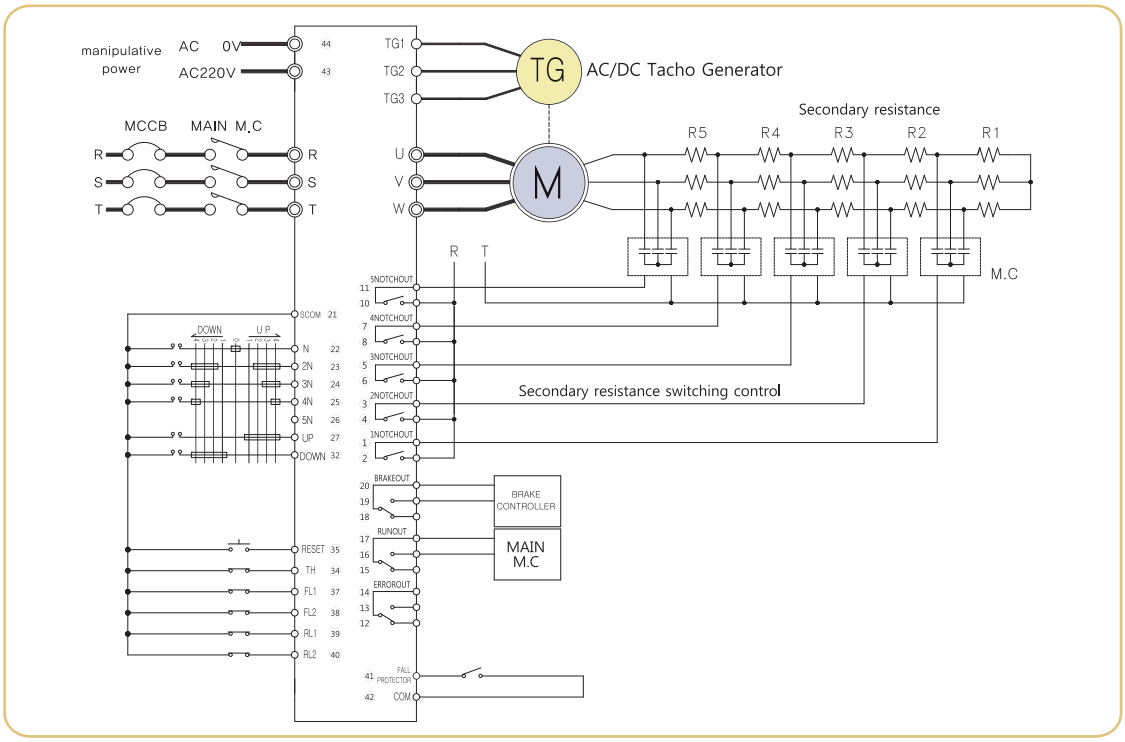
Unit : mm

Case classifi-cation	Applicable model						width	height	depth	wide adher-ence	long adher-ence	attaching hole ϕ
							A	B	C	D	E	F
	AC220V(kW)		AC380V(kW)		AC440V(kW)		busbar distance	busbar wide maximum length	busbar Hole long distance	busbar long maximum length	R,S,T side busbar height	U,V,W side busbar height
	MODEL	HP	MODEL	HP	MODEL	HP	G	H	I	J	K	L
UD-1500	FCC-202	3	FCC-303	5	FCC-403	5	263	379	246	205	364	9
	FCC-205	7	FCC-305	7	FCC-405	7						
	FCC-207	10	FCC-307	10	FCC-407	10						
	FCC-211	15	FCC-311	15	FCC-411	15						
			FCC-315	20	FCC-415	20						
			FCC-322	30	FCC-422	30						
UD-2700	FCC-215	20	FCC-330	40	FCC-430	40	277	444	281	205	429	9
	FCC-222	30	FCC-337	50	FCC-437	50	76	182	364	404	126	126
UD-4000	FCC-230	40	FCC-356	75	FCC-456	75	344	543	278	264	526	9
	FCC-237	50	FCC-375	100	FCC-475	100						
	FCC-256	75	FCC-3112	150	FCC-4112	150	102	244	459	499	108	198
	FCC-275	100	FCC-3150	200	FCC-4150	200						
UD-4700	FCC-2112	150	FCC-3195	260	FCC-4195	260	365	700	316	284	683	9
							115	270	616	656	107	206
UD-4800	FCC-2150	200	FCC-3240	320	FCC-4240	320	451	732	375	351	716	12
							140	320	634	674	163	228
UD-6000	FCC-2187	250	FCC-3300	400	FCC-4300	400	546	1210	420	446	1186	12
	FCC-2200	260	FCC-3375	500	FCC-4375	500						
			FCC-3400	530	FCC-4400	530	178	416	1300	1340	127	204
			FCC-3500	670	FCC-4500	670						
UD-7000			FCC-3600	800	FCC-4600	800	600	1450	481	492	1420	16
							190	455	1305	1345	155	239

※ Outward appearance can be changed without notice to improve its quality.
Please ask about it if ordering it. (Please see our homepage.)

Connection Diagram

▶ Connection diagram



*output terminals

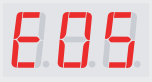
No.	Terminal name	Terminal function
1	N.O	1 NOTCH output
2	COM	
3	N.O	2 NOTCH output
4	COM	
5	N.O	3 NOTCH output
6	COM	
7	N.O	4 NOTCH output
8	COM	
9		
10	N.O	5 NOTCH output
11	COM	
12	N.C	ERROR Out
13	N.O	
14	COM	
15	N.C	Run Out
16	N.O	
17	COM	
18	N.C	Brake Out
19	N.O	
20	COM	
41	COM	Fall protection
42	N.O	

*Input terminals

No.	Terminal name	Terminal function
21	SCOM	Single Common
22	N	Neutral
23	2N	Input 2 stage
24	3N	Input 3 stage
25	4N	Input 4 stage
26	5N	Input 5 stage
27	FOR	Input forward
28		
29		
30		
31		
32	REV	Input reverse
33	SCM	Single common
34	TH	Input motor overheat sensor
35	RES	Reset when occurred an error
36	SCM	Single Common
37	FL1	Maximum limit SW1
38	FL2	Maximum limit SW2
39	RL1	minimum limit SW1
40	RL2	minimum limit SW2
43	manipulative power	AC220V
44	manipulative power	AC 0V

ERROR CODE and Measurement

▶ ERROR CODE and Measurement

ERROR CODE	Contents	Measures
	Overload	1. Parameter check 2. Load current of output side check
	Self diagnosis error When inputting controlling power, after checking EPU itself in the main board, if there is a strange thing, an error is occurred.	1. After inputting the controlling power, check if the main is inputted on the CPU stability status. 2. When inputting the controlling power, check if there is an section that an arc from AUX relay move 3. Check if UDICON input, output power and controlling power wiring is mixed with near inverter output line 4. Check if UDICON and inverter's distance is near 5. check output and insulating status of control wire
	Stage input error When the joystick's location is not checked.	1. When stopping driving, check if the joystick location is neutral. 2. UDICON display the end of the left green display line displays "n" mark when neutral and if there is no neutral contact point, "n" mark is not displayed. 3. Check if up, down contract point input is entered exactly.
	Tacho input error If there is much difference with a need from T.G voltage input, an error is occurred.	1. Check if connection of coupling between T.G and the motor is exact. 2. Check if the wire from T.G is short circuited. 3. Check T.G voltage 4. Check if the secondary short circuit point is shorted by stage number by speed from yield point. 5. The secondary resistance short circuiting and open status check. Including the slip ring.
	R.S.T open phase	1. R.S.T input side voltage check
	Motor overheat and fuse damage	1. When inputted the temperature switch's contact point by side of the motor on the TH terminals (no.33,34) of UDICON, check temperature increase of the motor. 2. Check if driving by rated current error current when driving. 3. Check hasty decision fuse in the product (in case fuse is damaged). Should check inside SCR together. 4. When inputted EOCR or THR contact point on the UDICON TH stage terminal (no.33,34), check EOCR or THR status.

▶ Notice

1. Avoid any of places where have water, oil, dirt, or direct sunlight.
2. Avoid a sealed place or a place where has severe temperature increase.
3. Avoid places where has strong vibration or impacts.
4. Do not install it if the product is damaged in appearance or does not work when test driving.
5. Use power voltage and frequency within rating value.
6. Power cable should be tightened and grounded safely.
7. Install it after checking input voltage.
8. Be careful if foreign substances are not coming inside of the product.

▶ Warranty & After-service (A/S)

The range of warranty

– In case of troubles that occurs within warranty period with a status that using and managing the product that you bought normally as the specifications of the operational manual that we have given, if it is found that it is because of quality of each component or faults of producing process by technical analysis, we repair those products without compensation.

Warranty period

– One of these, for 18 months from the produced day, or for a year from the bought day, that comes first is considered to an expiration of warranty period.

Exceptions of warranty

– We do not warranty it if it is applied one of these exceptions even though within warranty period.

1. Breakdown from random modification.
2. Damage from excessive driving or mistakes from users.
3. Using product with extra usages from normal.
4. Product that is damaged its product number.
5. Consumables such as fuse, etc.
6. Troubles from improper choice.
7. Putting on too much voltage out of range or breakdowns from lightening or flood, etc.
8. Breakdowns from natural disasters.
9. Non-operation expenses except applied components and wages when warranty repairing.
   i.e., expenses such as transportation, staying, stoppage loss or taxes and the public utilities' charge.

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