

New **S M C**

New Motor Soft Starter

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[1] Introduction

This new model Motor Soft Starter(New SMC), which is designed and produced to the highest standards and most advanced technologies in industry, is a technology-condensed one so as to be able to call a next generation product as for the Motor Soft Starter, and further so as be able to change the usual concept of it. There are various kinds of model such as the plastic case type-A,B,C which is applied in low capacity Unit, and while the steel case type which is applied in high capacity Unit. And also because the cooling efficiency is maximized by using the epochal improved heat sink, the Unit becomes smaller, lighter and economical much more than the existing Unit in the world. Especially the molded control parts of the plastic case type can make the Unit perform a more stable and safe operation at any surroundings.

[2] Model Identification

S M C - 2 2 - 3 . 7 - - D - N E - 0 0



[3] Basic Specification

Input Voltage Rating	• AC220V • AC380 • 440V Frequency : 50~60 Hz	Allowable Isolation	• DC 1500V for one minute between case & case, and case & earth terminal
Allowable Input Voltage	• ±11% of Input Volt Rating	Alarm Output	• One point relay Output
Control power	• Lower than 5 W	Alarm Function	• Required Alarm-Selective Function
Order Input Method	• Digital	Case material	• low capacity : plastic case, • Medium and high capacity : steel case
Communication	• Degree : E1A, RS485(option)	Installation	• Installation in indoor panel
• The Auto and communication mode are an option specification, When you place order, please make sure the inquired specification			

[4] Applicable Equipment, Major Function/ Features

Applicable Equipment	Major Function and Features
• The Motor which need a reduction of the inrush current and soft start	• Multi-Mode Function such as a general move-in mode and current move-in mode
• The Motor which need a soft stop	• The Control by Program-embedded CPU
• The Motor which need a frequent start and stop	• Communication Function by RS485(option)
• The driving Motor which use the method of move-in by Star-Delta, Reactor and Resistor	• Multi Output-Selective Display Function(display Ampere, Voltage, KW and KWh etc)
• The equipment which need a stable operation and extension of long mechanical life	• Error Message-Selective Setting and Release Function,
• The driving Motor which is installed in area containing much dust and gas	• Automatic Operation Function(option)
	• Operation on Touch Panel is possible

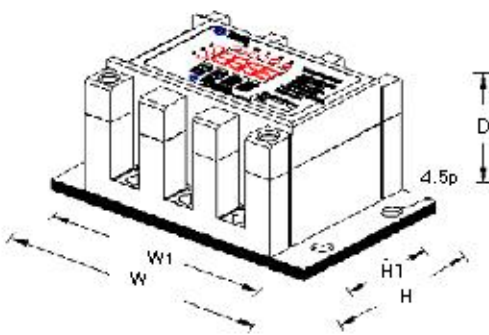
[5] Application

- Hoist & Crane • Fan & Blower • Conveyor • Pump • Blender & Mixer • Centrifuge • Dehydrator
- Saw(Cross & Band) • Milling machine • Agitator • Crusher • Milling machine • Grinder

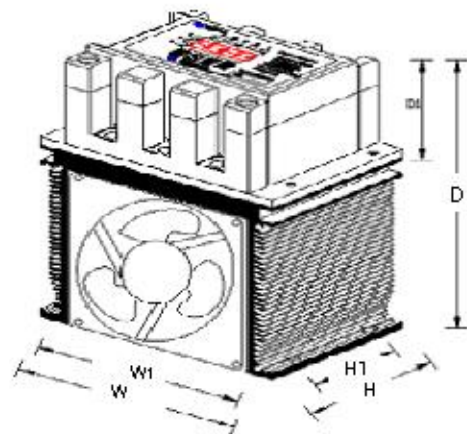
[6] Outline Drawing & Size

Capacity(KW)		H	W	D	W1	H1	Remarks	
220V	3.7 KW(12A) 0 ㅎ†	85	120	165	110	45	Plastic case-C(incl heat sink)	
380V/440V	7.5 KW(14A) 0 ㅎ†							
220V	5.5 KW~11 KW	320	230	230	90	280	Steel case type	
380V/440V	11 KW~22 KW							
220V	15 KW~22 KW	440	185	240	105	400		
380V/440V	30 KW~37 KW							
220V	30 KW~110 KW	500	250	240	150	450		
380V/440V	45 KW~180 KW							
220V	130 KW~180 KW	640	400	280	250	620		
380V/440V	200 KW~300 KW							
220V	200 KW or higher	Customer's specification						
380V/440V	350 KW or higher							

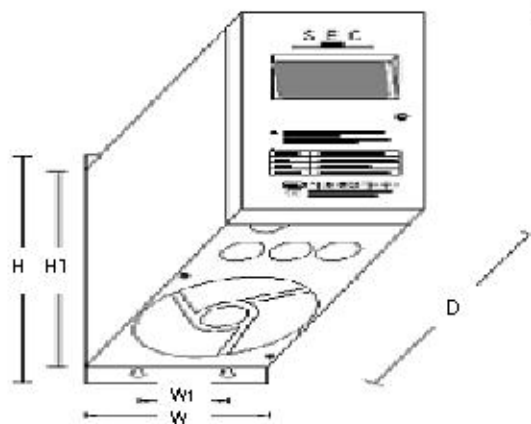
@ The size above may be varied with the design change or modification, please make sure it whenever you order,
 And also please note that in case dual direction type, the size may be changed,



Plastic case-B

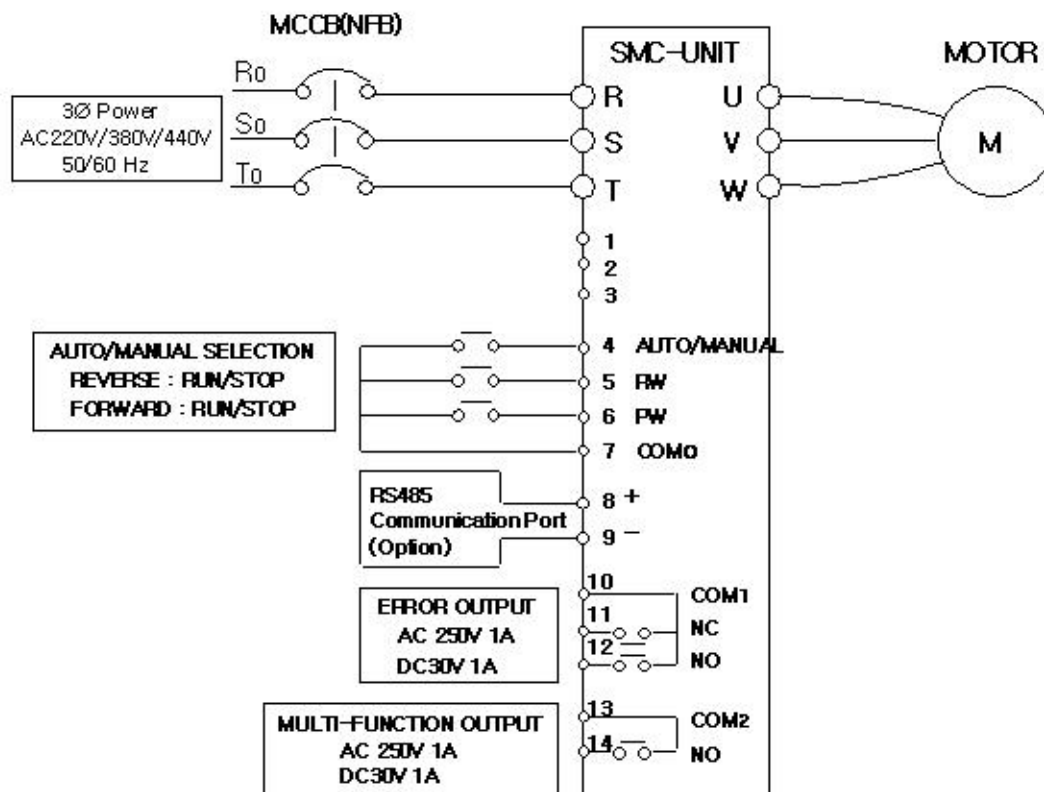


Plastic case-C



Steel case type

[7] Terminals & Connection



- 1, NOTE : 1, To protect the Unit from malfunctioning by noise, the connecting cable of the Control Circuit Terminal No. 4,5,6 and 7 is recommended to use a Twist Shield and Twist Pair Shield type,
- 2, The connecting cable length should be less 50m,
- 3, The connecting cable should be sufficiently thick in consideration of a voltage drop and terminal size,

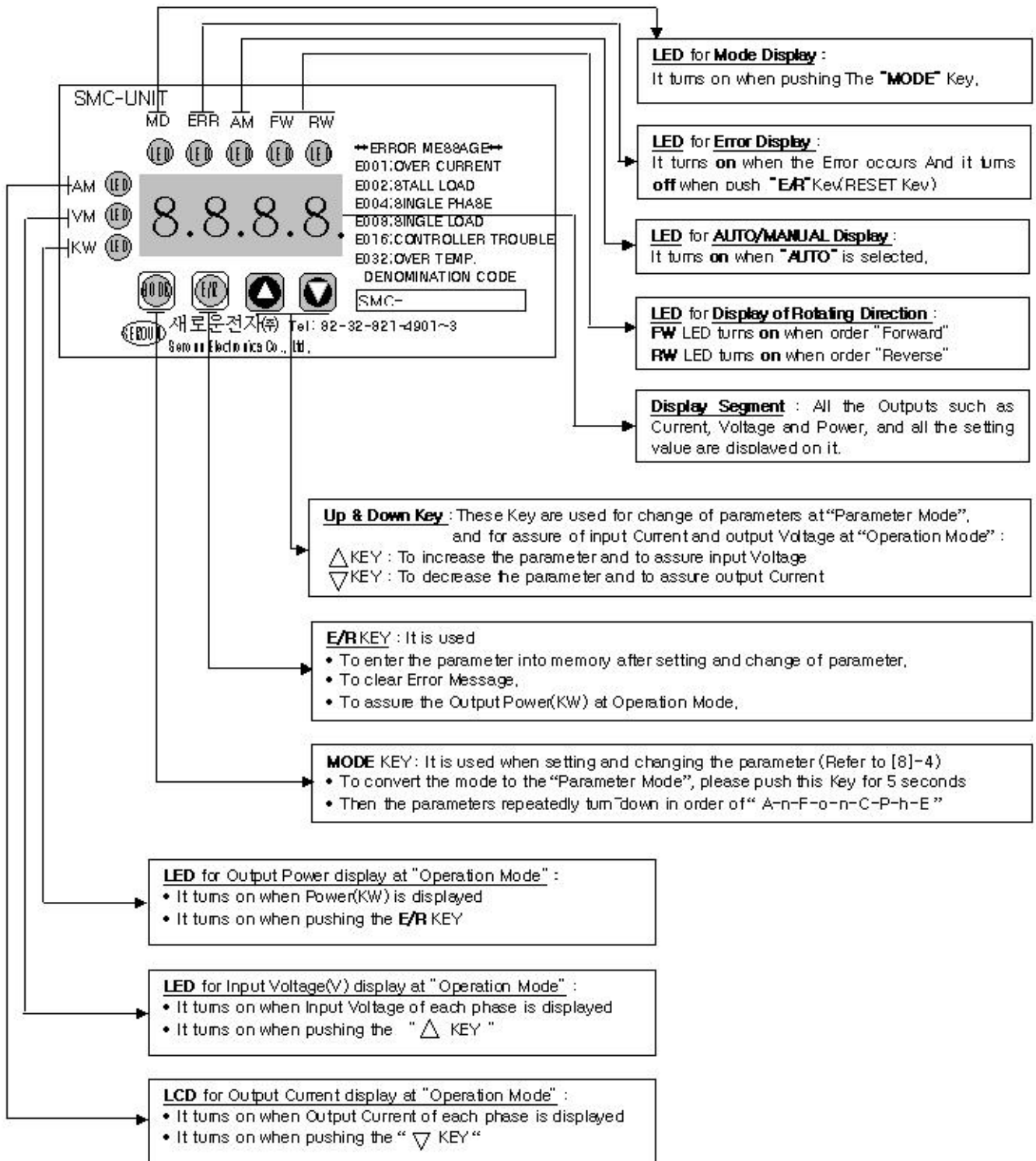
[8] OPERATION

[8]-1. Pre-inspection and Confirmation :

Prior to installation of the Unit, please inspect the Unit and confirm as below

- Check if it is fully complied with the ordered specifications, mainly for the input voltage and current rating, and the capacity,
- Check if there is any damaged parts or not in the Unit and please tighten the loosened bolts @Please note that some damages may happen on the way of delivery,
- Whenever the Unit is installed inside the panel , it is recommendable to install the fan to exhaust the air from the panel box so as to keep the Unit at proper temperature and humidity
- Be careful of SCR and circuit not to be damaged by an improper connection and isolation of the Unit
- Please check if the actual output current and the displayed current are same or not.,
- Please check if the output current of each phase is in balance or not,
If it's unbalance is higher than 20%, please let us know,






[8]-2. Operation and Function of the Key



[8]-3. E/MSG (Error Message)

E001 : Over-Current at Output
 E002 : Stall Load(it alarms on when output current is higher than seven times of current rating)
 E004 : Single Phase(it alarms on when any of input power source is lost)
 E008 : Single Load(it alarms on when any output unbalance in between phases is higher than 30 % of an average output of phases)
 E016 : Controller Trouble(it alarms on when any of control circuit on the Unit is mal-functioning)
 E032 : Over-Temperature(it alarms on when the temperature of heat sink surface is higher than 85[°C])


[8]-4. Parameter Setting Procedure

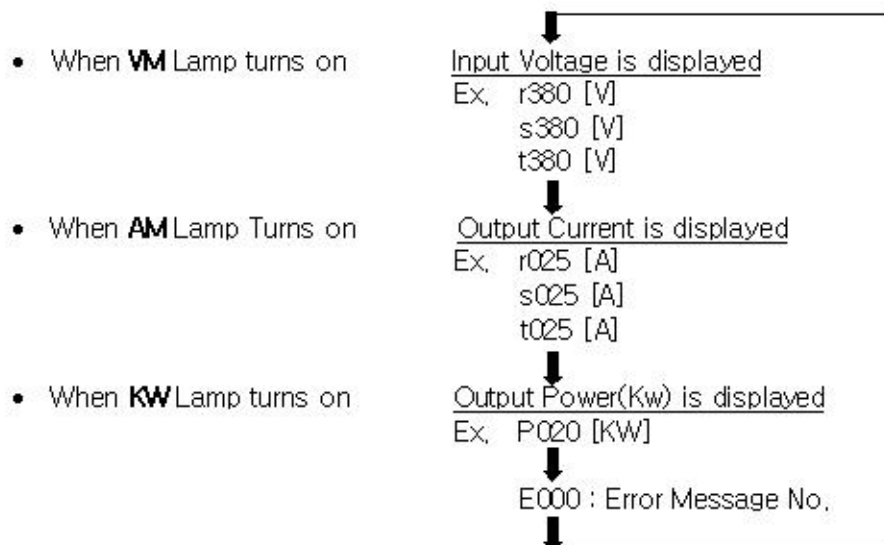
 Push this Mode Key for five(5) seconds, then start to set or change the parameters at "Parameter Mode" as order as below				
Symbol	Parameter's Name	Setting Method	Range of setting	Ex. of setting
A	◆ "Accel Time" : it is time to Break-in	1. Use   Key to increase or decrease the value 2. Whenever moving to next parameter please push the Mode Key	0~30 sec	5 sec A05.0
n	◆ "Run Time" : (it means the sustaining "Run on" time at "Auto-Mode")		Within 1~999 minutes, User should decide	10 minutes n010
F	◆ "Off Time" : (it means the sustaining "Run-off" time at "Auto-Mode")		Within 1~999 minutes, User should decide	2 minutes F002
o	◆ "Offset Value"(%): (it is ratio of "Initial Output Voltage" against "Max. output Voltage")		0~99 %	30 % o030
n̄	◆ Inrush Current Ratio : (it is ratio of "Inrush Current" against "Current Rating")		Within 0~5.0 times @ It is applied at P000 Mode only	4 times n̄04.0
C	◆ "Current Rating"(A)		0~999 A @Current Rating only should be input	Rating : 200A C200
P	◆ "Starting Mode" setting		000 : CC Mode 001 : Normal Mode	CC Mode P000
h	◆ "Frequency" setting		50 hz or 60 hz	60 hz h060
E	◆ "Error Message" election, setting and release		Refer to "[8]-5" of this manual	
The setting procedure for All the Parameters is completed by pushing this  Key (Enter Key)				
Then pushing this  (Mode Key) for 5 seconds, the "Parameter Mode" is returned to "Operation Mode"				




[8]-5. Selection, Setting and Release of E/MSG

Selection of E/MSG	Ex. of setting	Status of Action	Remarks
When set all the E/MSG at same time	E000	Every E/MSG actuale	<ul style="list-style-type: none"> • When E/MSG actuale, output stop • When E/MSG do not actuale, output continue
When release all the E/MSG at same time	E255	Every E/MSG does not actuale	
When set required E/MSG	E254	E001(Over-Current Message) actuale	
When set multiple E/MSG			
Ex : When want to set E001 & E002	E252	E001 & E002 actuale	
When want to set E001 & E004	E250	E001 & E004 actuale	
When want to set E001 & E008	E246	E001 & E008 actuale	
When want to set E001 & E032	E222	E001 & E032 actuale	
When want to set E008 & E032	E215	E008 & E032 actuale	

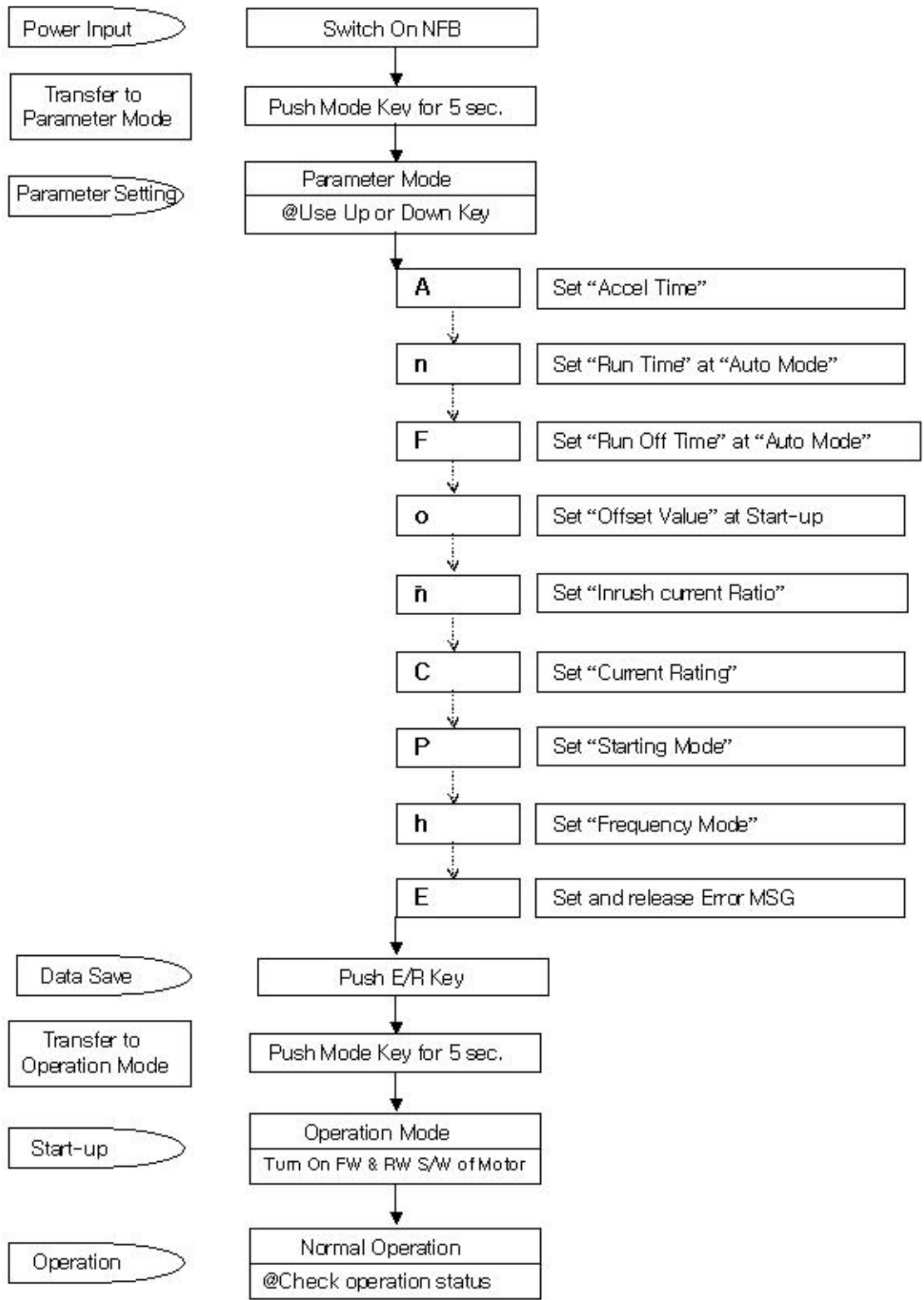
[8]-6. Assurance of Input & Output at "Operation Mode"

- ◆ At "Operation Mode" pushing  Key, LCD lamps turn on, at same time related Input & Output is displayed on the segment and is repeated in order as below.



- ◆ When pushing  Key : KW Lamp turns on, then Output Power is displayed on segment
Ex, P020 : 20 [Kw]
- ◆ When pushing  Key : VM Lamp turns on, then Input Voltage is displayed on segment
Ex, r380 [V]
s380 [V]
t380 [V]
- ◆ When pushing  Key : AM Lamp turns on, then Output Current is displayed on segment
Ex, r025 [A]
s025 [A]
t025 [A]

[8]-7 Operation Procedure



[9] Capacity Table for selection of The Unit.

AC 220V-(Single and Dual Direction)			AC 380/440V(Single and Dual Direction)					
model	class	capacity (KW)	Rating (A)	model	class	capacity (KW)	Rating(A)	
							380V	440V
SMC-22-2.2		2.2	7	SMC -38/44-2.2		2.2	4	4
SMC-22-3.7		3.7	12	SMC -38/44-3.7		3.7	7	6
SMC-22-5.6		5.6	18	SMC -38/44-5.6		5.6	10	8
SMC -22-7.5		7.5	25	SMC -38/44-7.5		7.5	14	12
SMC -22-011		11	36	SMC -38/44-011		11	20	18
SMC -22-015		15	50	SMC -38/44-015		15	28	24
SMC -22-018		18	60	SMC -38/44-018		18	34	29
SMC -22-022		22	72	SMC -38/44-022		22	42	36
SMC -22-030		30	98	SMC -38/44-030		30	57	50
SMC -22-037		37	122	SMC -38/44-037		37	70	60
SMC -22-045		45	148	SMC -38/44-045		45	85	70
SMC -22-055		55	180	SMC -38/44-055		55	105	90
SMC -22-075		75	247	SMC -38/44-075		75	142	123
SMC -22-090		90	300	SMC -38/44-090		90	170	150
SMC -22-110		110	360	SMC -38/44-110		110	210	180
SMC -22-130		130	430	SMC -38/44-130		130	250	216
SMC -22-160		160	530	SMC -38/44-160		160	305	262
SMC -22-180		180	610	SMC -38/44-180		180	345	292
SMC -22-200		200	660	SMC -38/44-200		200	380	320
SMC-22-250		250	820	SMC -38/44-250		250	475	410
SMC-22-300		300	980	SMC -38/44-300		300	580	500

@ Other model is customer's specification.