



ABS



PATENT No.0483573  
DESIGN REGISTRATION No.0322702 / 0322703



- PERFECT PROVISION AGAINST NOISE  
(NO SHIELD & GROUNDING REQUIRED ON INSTALLATION)  
EMC/EMI-EN 60945
- SELF-DIAGNOSTIC FUNCTION (STAND-BY STARTER)
- 4WIRE HARDWARE COMMUNICATION
- FLAME RETARDANT ENCLOSURE & IP65 FRONT SIDE
- EMERGENCY CONTROL FUNCTION

# MOTOR CONTROLLER

- STAND-BY START (2 or 3 STAND-BY)
- 2 SPEED REVERSIBLE START
- 2 SPEED START
- REVERSIBLE START
- CONSTANT START  
(AUTO / MANUAL, REMOTE / LOCAL, Y-D START)

# MOTOR CONTROLLER

SMC-500 / 500B SERIES

## GENERAL INFORMATION

The SMC 500 / 500B series motor controllers are high quality products combined with related functions and especially developed to be easily applied to marine system, power plant, steel, chemical plant and any other places where the motors should be controlled. They comply with various international standards, and standardized circuit is adopted. In addition to a basic function, the controller has applicable functions, and control circuit consists of high quality components up to various standards.

Particularly, the enclosure is made of flame retardant polycarbonate material, and it has the highest electric insulation and strong resistance to shock.

And also, it's weight is very light. So, it can be easily applied in any environmental conditions.

The SMC 500 / 500B series improves the reliability of control circuit and correctness of assembling for starter, and saves the design M/h for group start panel. Moreover, the size of a starter can be reduced about 30% compared with starter without SMC 500 / 500B series.

Starter with SMC 500 / 500B series can be superior in quality, and it's design and assembling can be standardized. Also, maintenance can be done easily, promptly, and can be managed systematically.

As the major point, SMC 500 series have sequential start (UVR/UVP), alarm signal out and remote control, and SMC-503, 504, 504R models have the prevention against inrush current while changing direction or speed.

Especially, SMC-505 model has common circuit (function) to 2 or 3 stand-by, so design and maintenance can be done economically.

and it has interlock device and auto-changeover function (by intercommunication function between the running, stand-by and steady motors) for various abnormal conditions.

As a result, SMC-505 model can be expansively applied to the special function.



**For safety, read and give attention to "CAUTION" and "MANUAL".**

"CAUTION" notice with the left symbol must be observed, otherwise (for your daily habit or behavior) the controller can be seriously damaged and some problem on system can occur.

## SMC 500 SERIES / 500B SERIES & INDEX

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SMC- 505

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SMC- 504RH



SMC- 504R

### 2 SPEED START Page.17



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SMC- 504

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SMC- 503

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SMC- 502YH



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### CONSTANT START(AUTO/MANUAL) Page.32



SMC- 501AH



SMC- 501A



SMC- 501BAH



SMC- 501BA

### CONSTANT START Page.38



SMC- 501H



SMC- 501



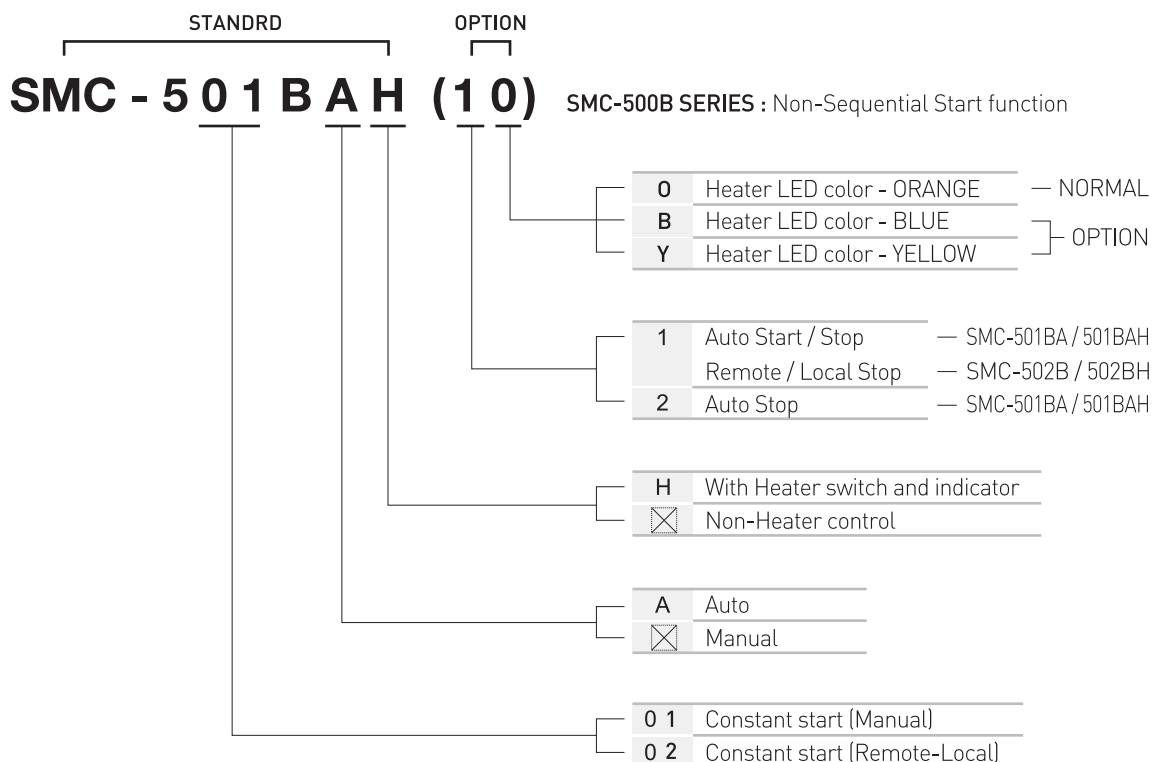
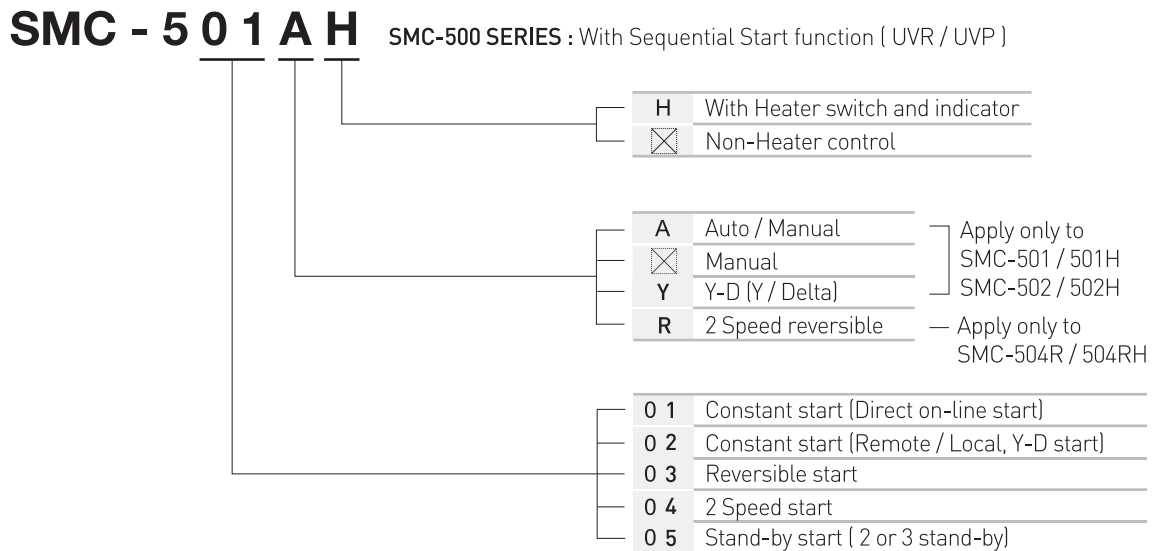
SMC- 501BH



SMC- 501B

## ORDERING INFORMATION

Motor control circuits are different from one another in their operation according to their auxiliary machines or systems. The following is applicable models. Please select the applicable model according to the plan of the system and the specification on this operation manual. To apply the extra model of the following regular series, please refer to the "Appendix-Derivation Model for SMC-500."



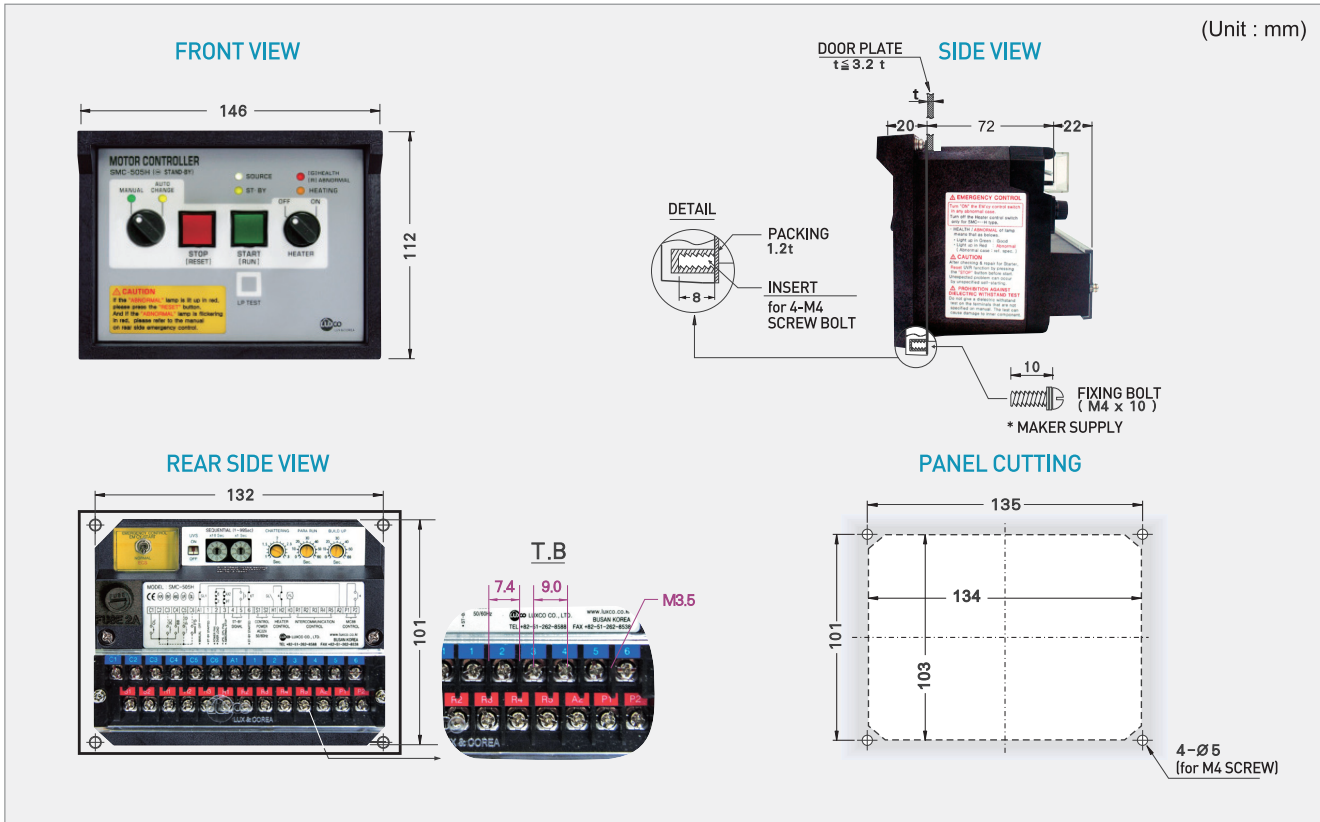
## ELECTRICAL AND MECHANICAL SPECIFICATIONS

INPUT POWER SOURCE	RATING	AC 22V 50 / 60Hz	
	VARIATION	CONTINUOUS : AC 22V ±10%	MAXIMUM : AC 22V ±20%
	SURGE TRANSIENT	2kV 50uVs line / earth : 1kV 50uVs line / line(IEC 1000-4-5/1995/)	
	POWER CONSUMPTION	20VA(max.)---Inside Control Fuse : 250Vac 2A(miniature glass tube)	
TIMER SPECIFICATION (Controlled by digital circuit)	ACCURACY (Ta: ambient temperature)	less than ±1% (-10°C < Ta < +45°C) less than ±5% (-20°C < Ta < -10°C, +45°C < Ta < +55°C)	
RATING OF PUSH BUTTON FOR START, STOP		250Vac, 3A (p.f=0.4), (-25°C < Ta < +55°C) -Life Expectancy : Mechanical life – 1,000,000 cycles Electrical life – 100,000 cycles	
RATING OF SELECTOR SWITCH FOR AUTO / MANUAL, HEATER		250Vac, 3A (p.f=0.4), (-25°C < Ta < +55°C) -Life Expectancy : Mechanical life – 250,000 cycles Electrical life – 100,000 cycles	
RATING OF EXTERNAL T.B FOR CONNECTION		600V / 15A (-30°C < Ta < +105°C), 1000V / 9A (-30°C < Ta < +105°C)	
RATING OF CONTROL RELAY FOR ELECTROMAGNETIC CONTACTOR	APPLICATION CIRCUIT	<p>250Vac From SMC 500 series 4 : Relay contact for driving electromagnetic contactor 4X : Electromagnetic contactor ※ I = 3A (p.f=0.4) 51A for 2ms</p>	
	LIFE EXPECTANCY	Mechanical life – 30,000,000 cycles / Electrical life – 100,000 cycles	
SIGNAL OUTPUT (250Vac 0.3A : p.f=0.4)		Stand-by, Stand-by started(5sec.), Overloaded, Low pressure, Power fail, Abnormal stop, CPU fail	
ELECTRICAL INSULATION RESISTANCE		Above 200megger ohms between live part and enclosure.	
DIELECTRIC STRENGTH		2.5kVac, 1min between 88 control line(P1, P2, P3, P4, P5) and enclosure.	

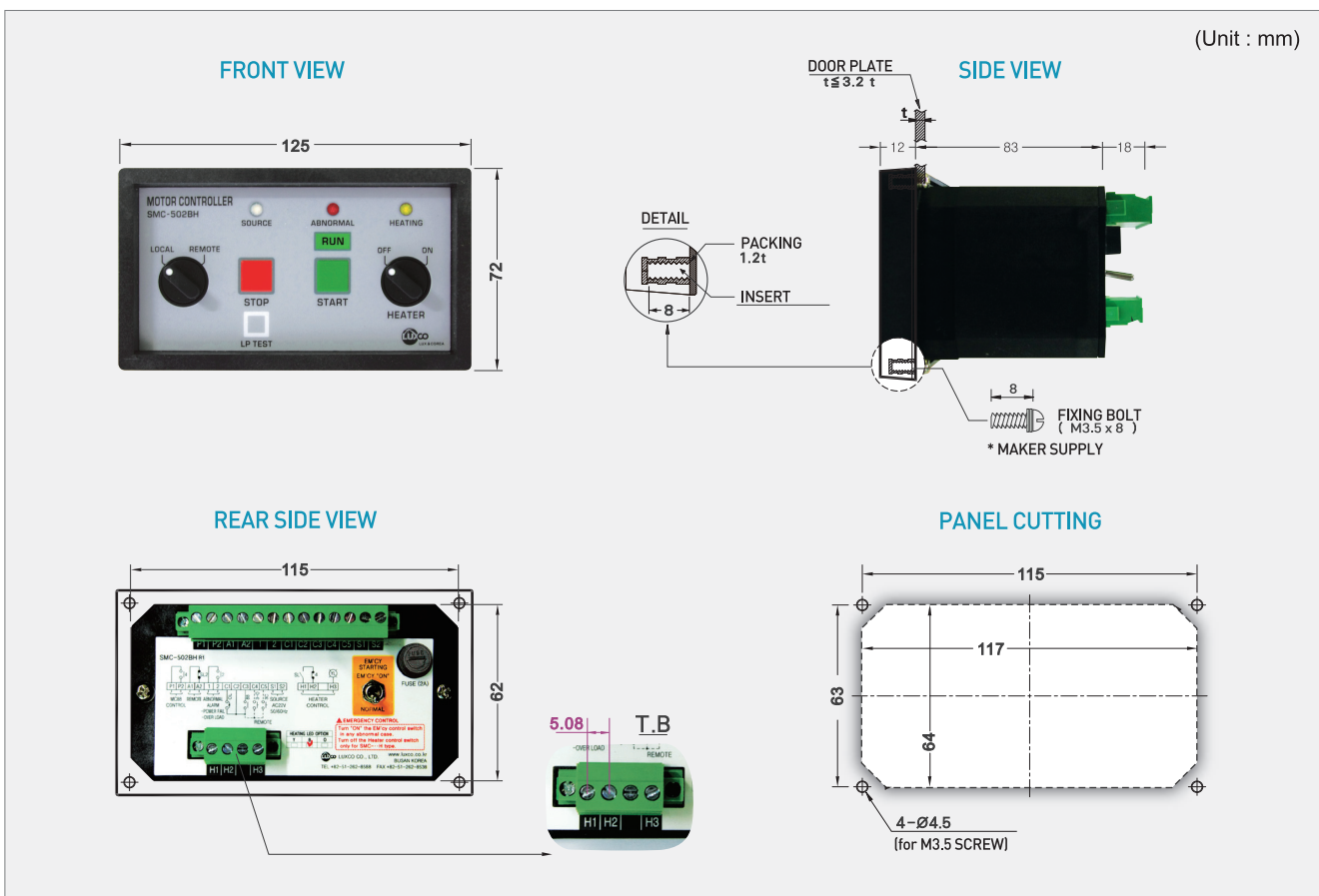
## CONSTRUCTIONAL AND ENVIRONMENT SPECIFICATIONS

ENCLOSURE	MATERIAL (flame retardant)	PC : UL94 V-0 TRIREX3025G10 / GLASS FIBER REINFORCED
	DIELECTRIC STRENGTH	31 KV / mm
	COLOR	Black (Maker standard)
TEMPERATURE / HUMIDITY FOR OPERATION	AMBIENT TEMPERATURE RANGE	-25°C ~ +55°C
	STORAGE TEMPERATURE RANGE	-25°C ~ +85°C
	HUMIDITY	45% ~ 85% R.H
IP GRADE	PUSH BUTTON	IP 65
	PUSH BUTTON WITH LAMP	IP 65
	SELECTOR SWITCH	IP 65
	MOUNTING BRACKET	IP 65 with PACKING
EXTERNAL CONNECTION T.B	MATERIAL	INSULATION MATERIAL : PC (flame retardant) UL94 V-0 TRIREX3025G10 / GLASS FIBER REINFORCED FLAMMABILITY CLASS : UL94 V-0
	WIRE SIZE (max.)	3.5mm <sup>2</sup>
	SPACING BETWEEN TERMINAL	9.0mm
	CONNECTING SCREW	M3.5
VIBRATION TEST (LR rule)		30Hz, Acceleration : ±0.7G (±7m/s <sup>2</sup> )
SHOCK RESISTANCE		10G

**DIMENSIONS FOR SMC-500 SERIES (All models are the same size)**



**DIMENSIONS FOR SMC-500B SERIES (All models are the same size)**



# MOTOR CONTROLLER

## GENERAL INFORMATION

The SMC 505 series is applied to the automatic changeover system. In this system, 2 or 3 motors are monitored their operations and the controllers communicate with each other, and in case some trouble occurs to the running motor, pressure or control system, the stand-by motor starts automatically and runs instead of the running motor or parallel with running motor.

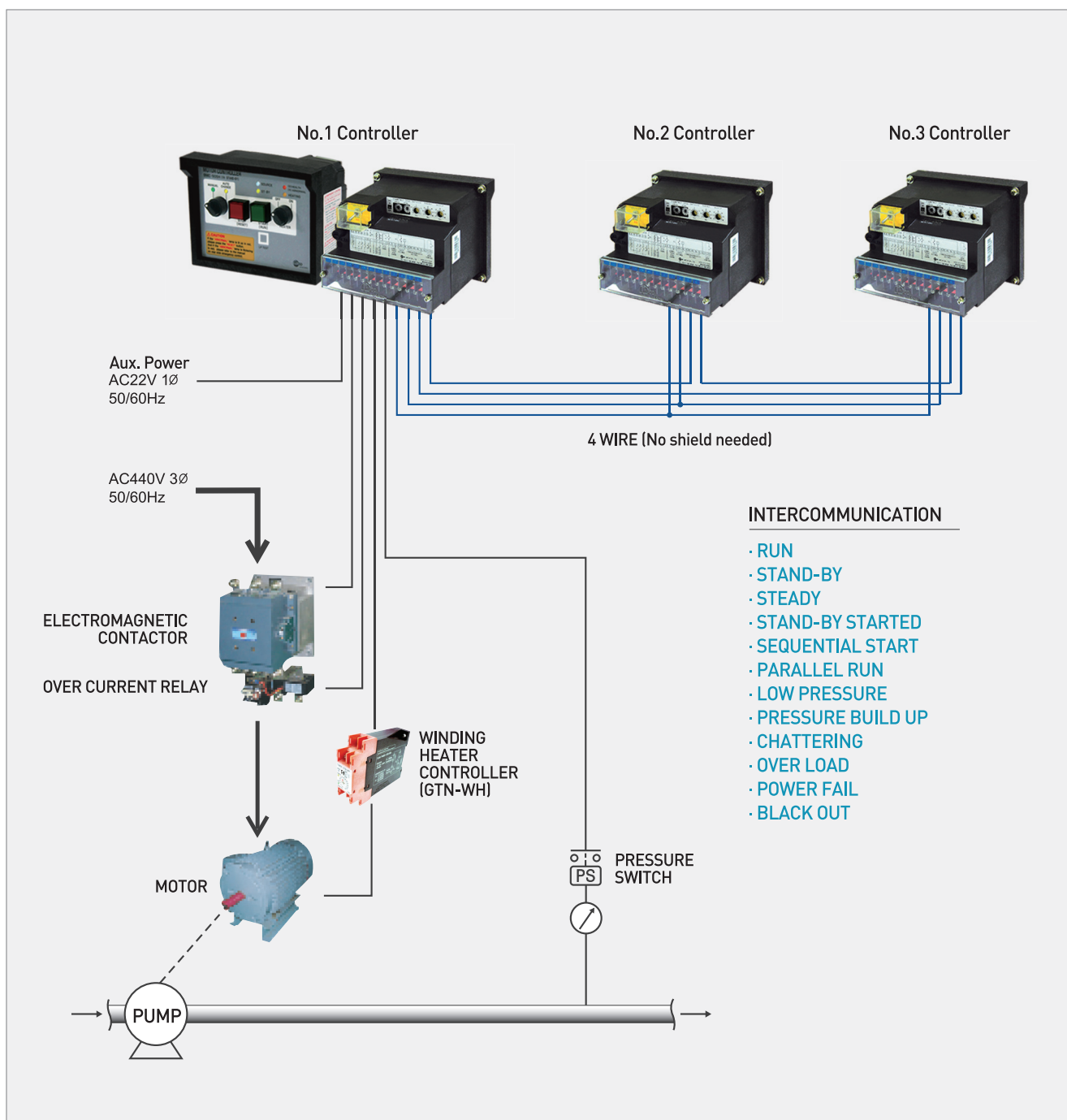
As the major point, SMC 505 series has common circuit to 2 or 3 stand-by, so design and maintenance can be done economically. And it has interlock device and auto-changeover function (by 4 wires hardware intercommunication function between running, stand-by and steady state which is not under influence of noise.) for various abnormal conditions.

As a result, SMC 505 series can expansively applied to the special function.

And also, it has sequential start function (UVP / UVR), self diagnosis, alarm signal output, remote control and manual emergency control function.

Note.) Refer to the technical manual to see the detail description of function.

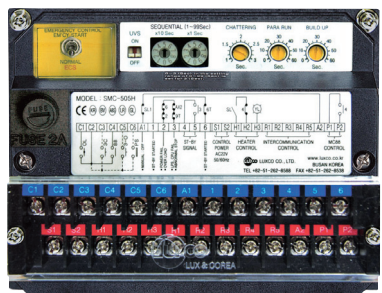
## SYSTEM LAYOUT



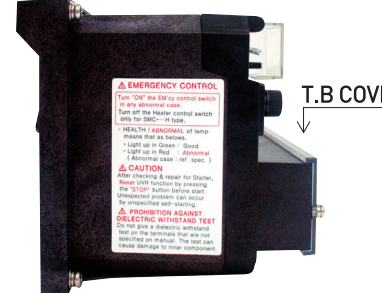
**SMC-505H**



**REAR VIEW**



**SIDE VIEW**



**SMC-505**



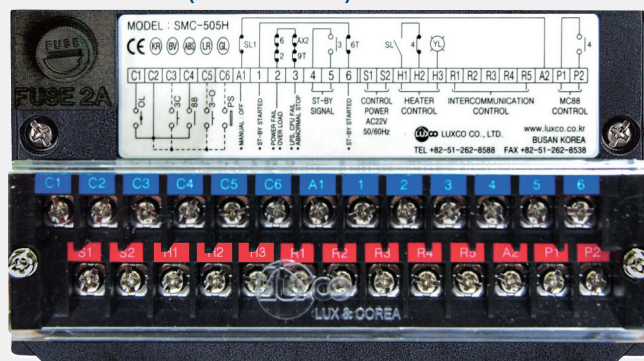
**REAR VIEW**



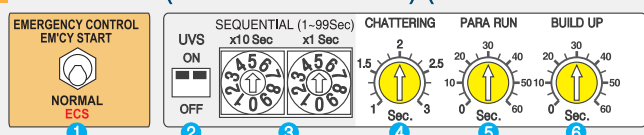
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-505 OR 505H
- 3 MANUAL MODE INDICATOR ..... LIGHT UP IN GREEN
- 4 AUTO CHANGE MODE INDICATOR ..... LIGHT UP IN YELLOW
- 5 MANUAL/ AUTO CHANGE SWITCH ..... Ø18 SELECTOR SWITCH
- 6 STOP BUTTON ..... 18 x 18 RED
- 7 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 8 LAMP TEST BUTTON ..... TACT SWITCH
- 9 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 10 CONDITION INDICATOR ..... DUAL COLOR LED  
 - HEALTH : LIGHT UP IN GREEN  
 - ABNORMAL :  
 ① LIGHT UP STEADILY IN "RED" WITH ALARM SIGNAL OUTPUT.(SYSTEM ABNORMAL)  
 ② FLICKERING IN "RED" WITH ALARM SIGNAL OUTPUT.(SELF DIAGNOSIS SYSTEM : CPU FAIL)
- 11 STAND-BY INDICATOR ..... LIGHT UP IN YELLOW
- 12 HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- 13 HEATING INDICATOR ..... LIGHT UP IN ORANGE

**T.B LAYOUT (SMC-505H)**

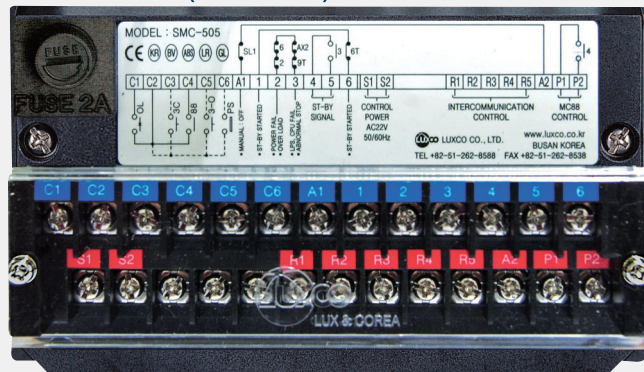


**PRE. SET (SWITCH & TIMER) (SMC-505 & 505H)**



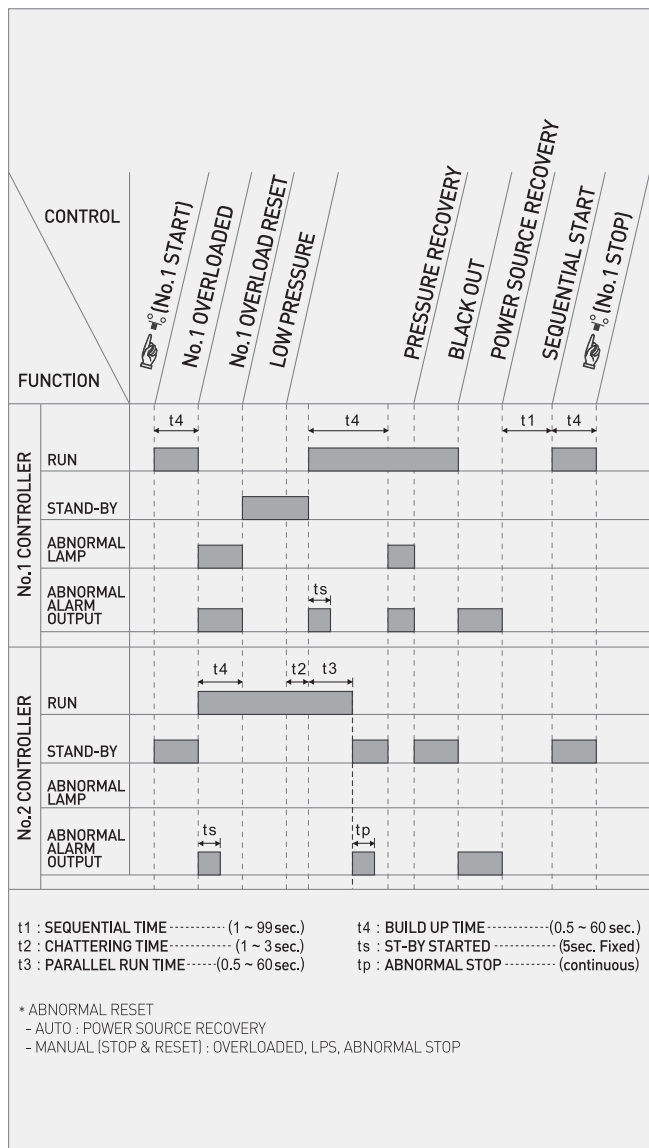
- 1 ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 3 SEQUENTIAL TIMER ..... 1-99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0-1 (SEC.) IN THE SETTING RANGE OF 0-99 (SEC.) IS SET FOR 1(SEC.)
- 4 CHATTERING TIMER ..... 1-3 SEC. ADJUSTABLE BY V / R
- 5 PARA RUN TIMER ..... 0.5-60 SEC. ADJUSTABLE BY V / R
- 6 BUILD UP TIMER ..... 0.5-60 SEC. ADJUSTABLE BY V / R

**T.B LAYOUT (SMC-505)**

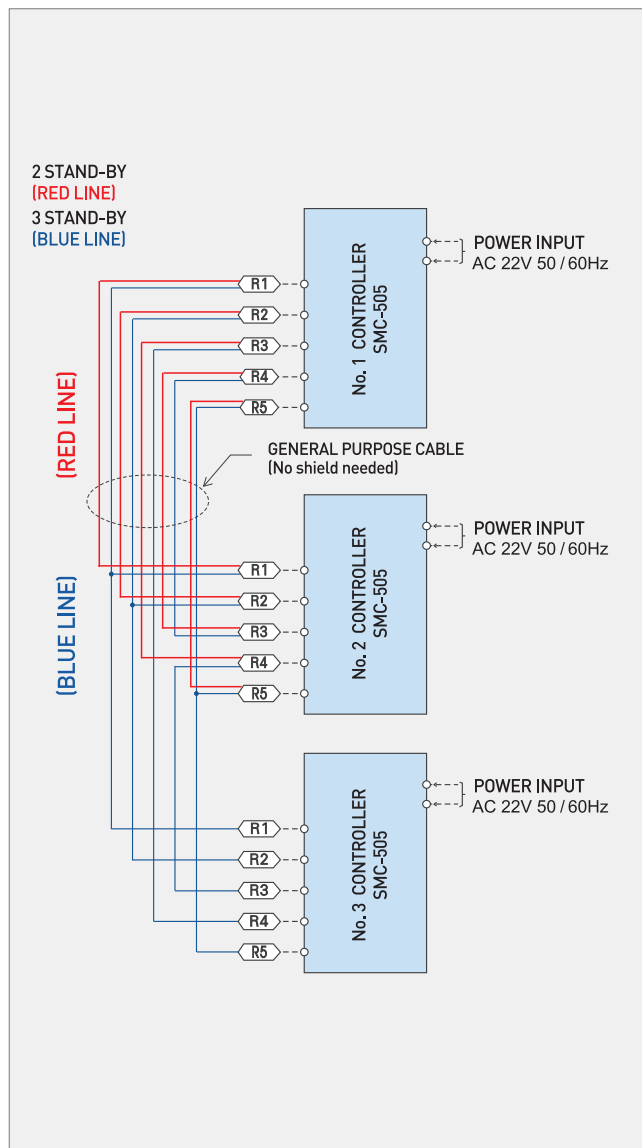


# MOTOR CONTROLLER

## FUNCTION TIMING FLOW CHART FOR 2 STAND-BY



## TRANSMISSION / RECEIPT WIRING DIAGRAM

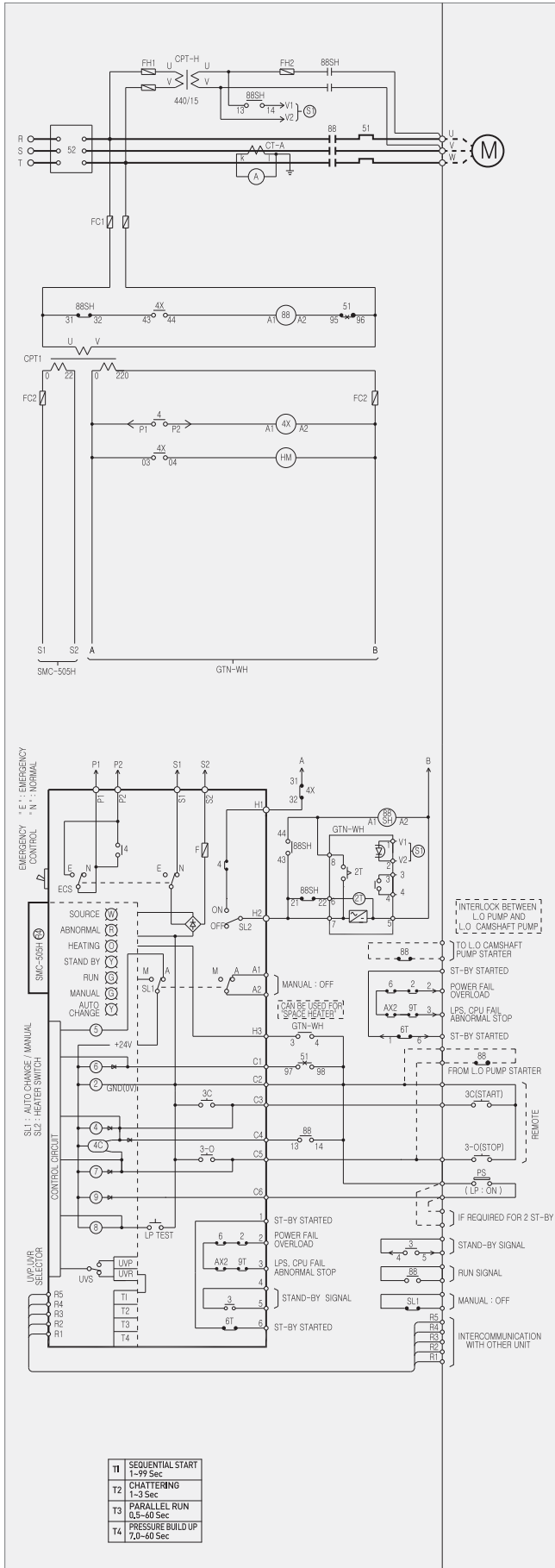


## FUNCTION TABLE

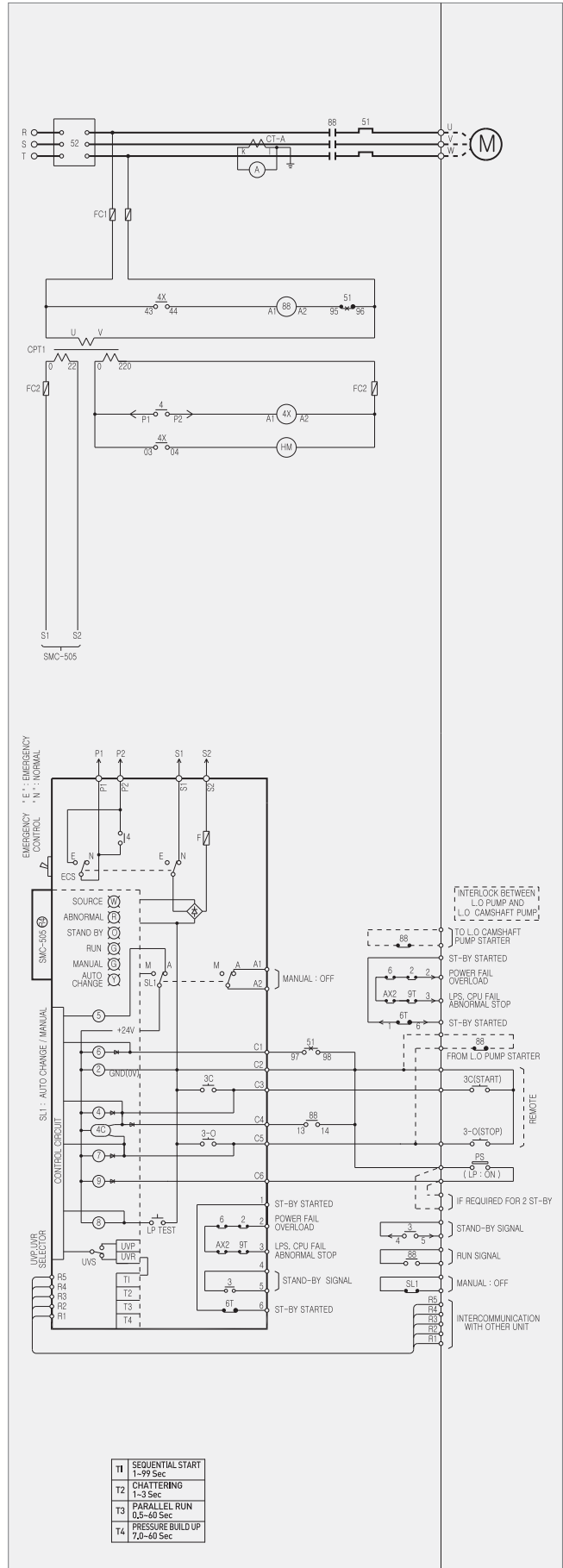
MODE			CONDITION		
No.1 STARTER	No.2 STARTER	No.3 STARTER	No.1 MOTOR	No.2 MOTOR	No.3 MOTOR
AUTO CHANGE	AUTO CHANGE	AUTO CHANGE	RUN	STAND-BY	STEADY
			STEADY	RUN	STAND-BY
			STAND-BY	STEADY	RUN
			RUN	ABNORMAL	STAND-BY
			STAND-BY	RUN	ABNORMAL
			ABNORMAL	STAND-BY	RUN
			RUN	RUN	STAND-BY
			STAND-BY	RUN	RUN
AUTO CHANGE	AUTO CHANGE	MANUAL or EMERGENCY CONTROL	RUN	STAND-BY	
			STAND-BY	RUN	
MANUAL or EMERGENCY CONTROL	AUTO CHANGE	AUTO CHANGE		RUN	STAND-BY
				STAND-BY	RUN
AUTO CHANGE	MANUAL or EMERGENCY CONTROL	AUTO CHANGE	STAND-BY		RUN
			RUN		STAND-BY



### SMC-505H CONNECTION DIAGRAM



### SMC-505 CONNECTION DIAGRAM



# MOTOR CONTROLLER

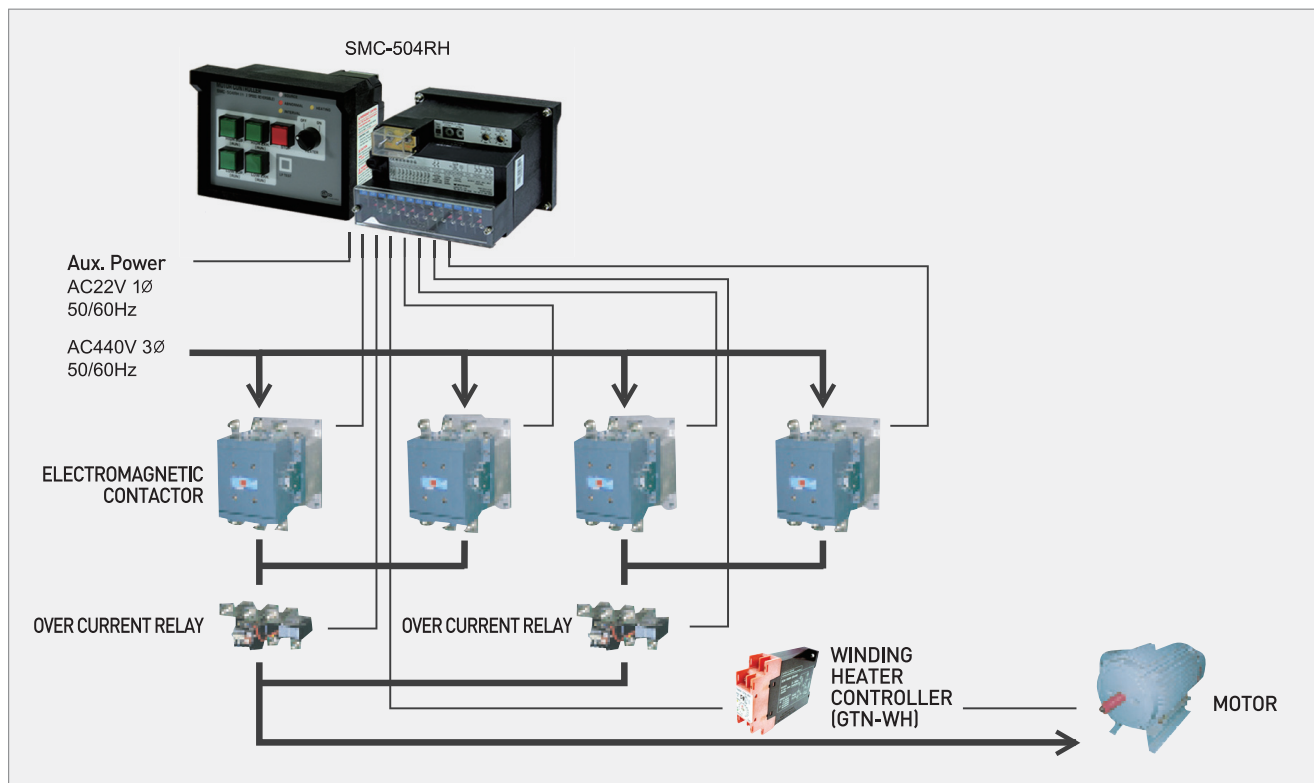
## GENERAL INFORMATION

The SMC 504R series motor controllers are formed as forward high speed, forward low speed, reverse high speed and reverse low speed, so it can be applied to changing speed.

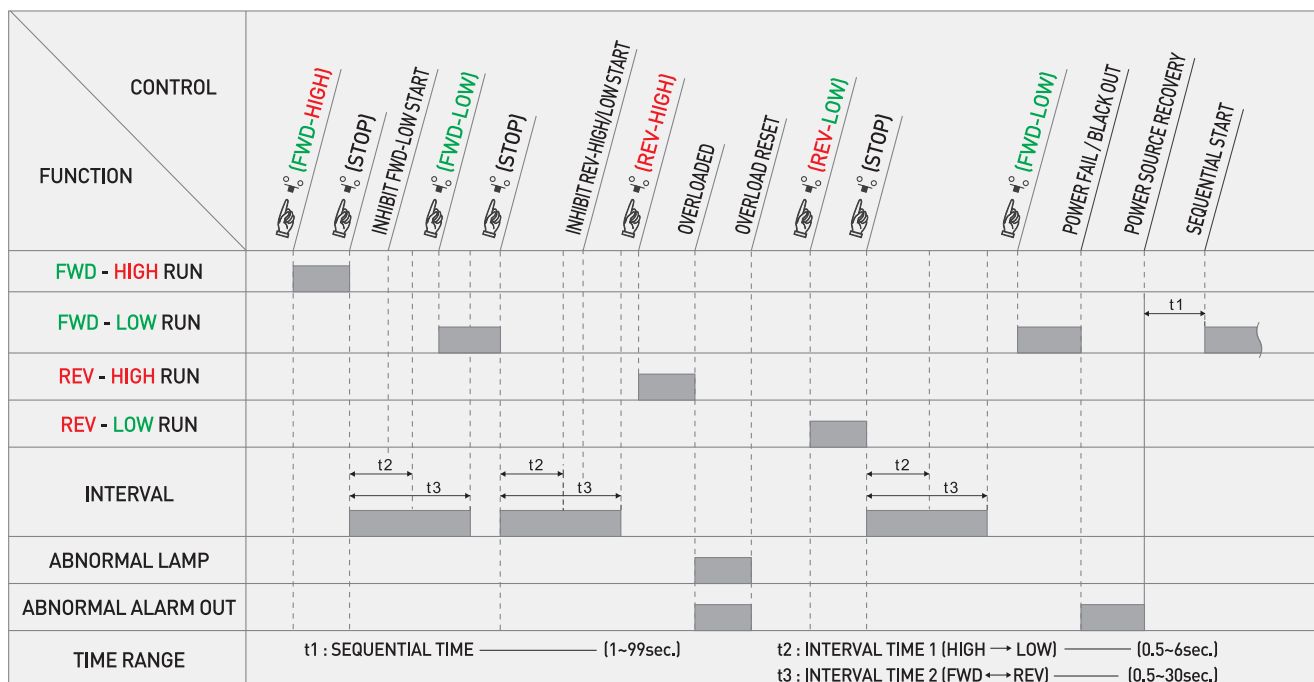
As the major point, they have interval time (starting delay time) for prevention against inrush current while changing direction or speed. And also, they have sequential (UVR/UVP), alarm signal out and remote control.

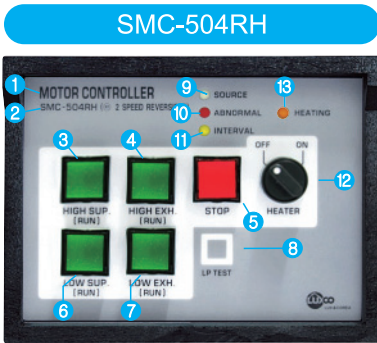
Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT



## FUNCTION TIMING FLOW CHART FOR 2 SPEED REVERSIBLE (FWD-HIGH / FWD-LOW / REV-HIGH / REV-LOW)

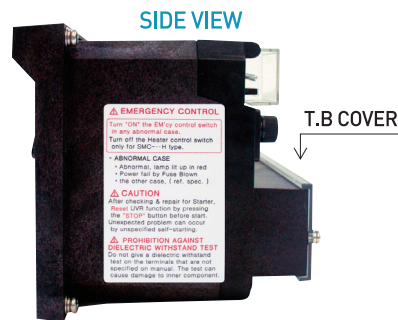




**SMC-504RH**



**REAR VIEW**



**SIDE VIEW**

**T.B COVER**



**SMC-504R**

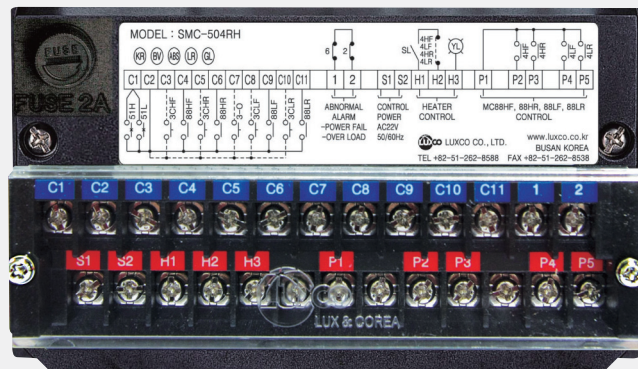


**REAR VIEW**

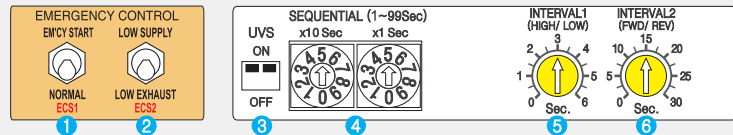
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT..... MOTOR CONTROLLER
- 2 MODEL NAME..... SMC-504R OR 504RH
- 3 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 4 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 5 STOP BUTTON..... 18 x 18 RED
- 6 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 7 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 8 LAMP TEST BUTTON..... TACT SWITCH
- 9 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 10 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 11 INTERVAL INDICATOR ..... LIGHT UP IN YELLOW
- 12 HEATER SWITCH ..... Ø 18 SELECTOR SWITCH
- 13 HEATING INDICATOR..... LIGHT UP IN ORANGE

**T.B LAYOUT (SMC-504RH)**

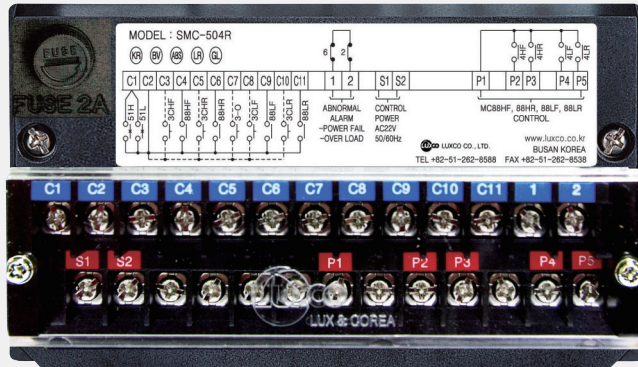


**PRE. SET (SWITCH & TIMER) (SMC-504R & 504RH)**

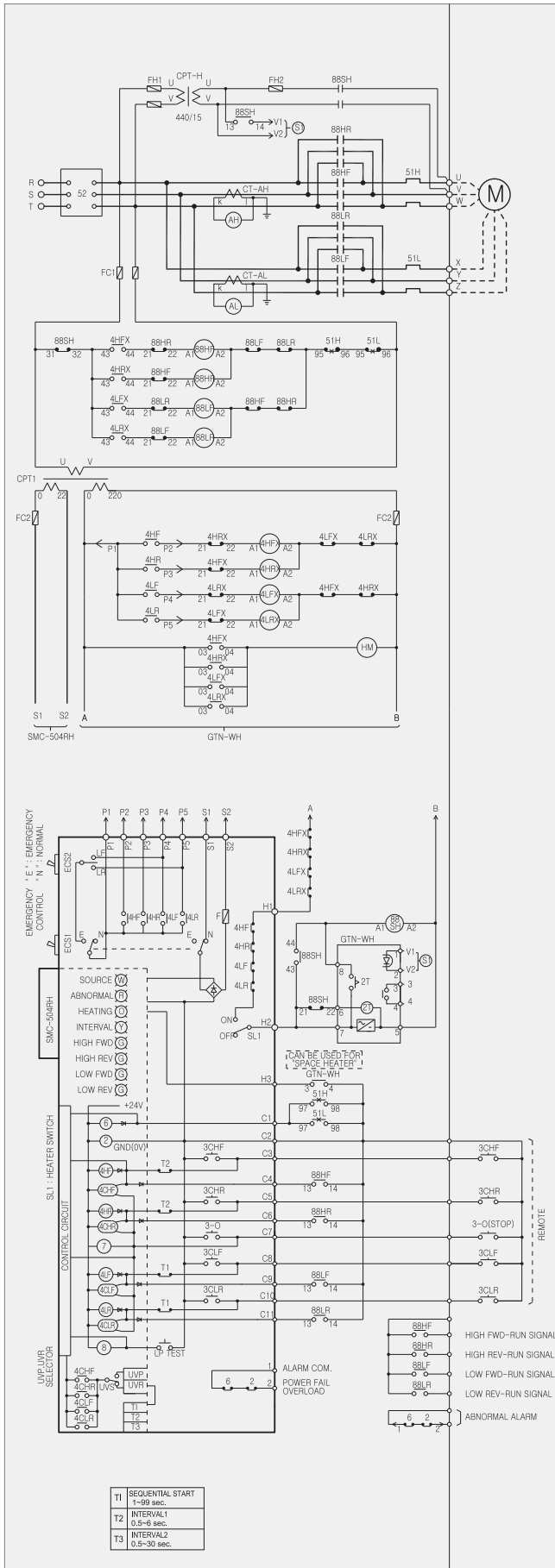


- 1 ECS 1 SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 ECS 2 SWITCH ..... LOW SUPPLY / LOW EXHAUST START BY TOGGLE SWITCH
- 3 UVS SWITCH..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 4 SEQUENTIAL TIMER..... 1~99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0~1(SEC.) IN THE SETTING RANGE OF 0~99(SEC.) IS SET FOR 1(SEC.)
- 5 INTERVAL TIMER 1 ..... 0.5~6 SEC. ADJUSTABLE BY V / R  
 (High / Low)
- 6 INTERVAL TIMER 2 ..... 0.5~30 SEC. ADJUSTABLE BY V / R  
 (Forward / Reverse)

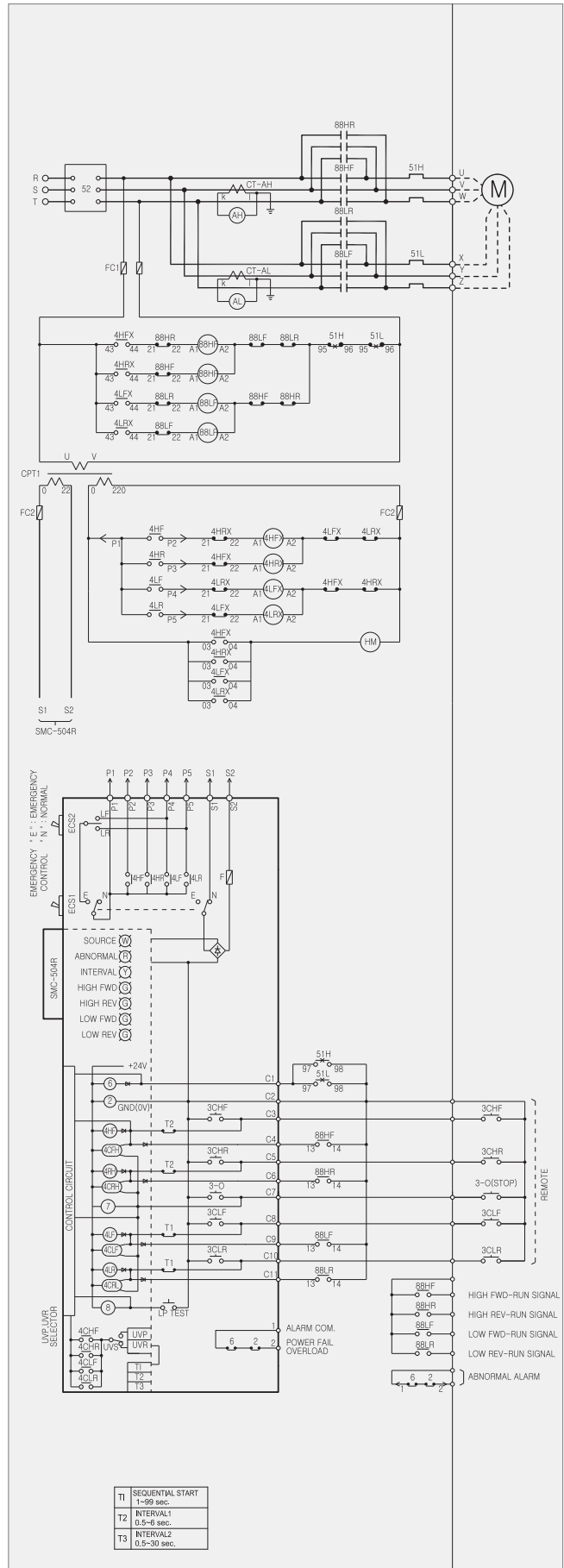
**T.B LAYOUT (SMC-504R)**



## SMC-504RH CONNECTION DIAGRAM



## SMC-504R CONNECTION DIAGRAM

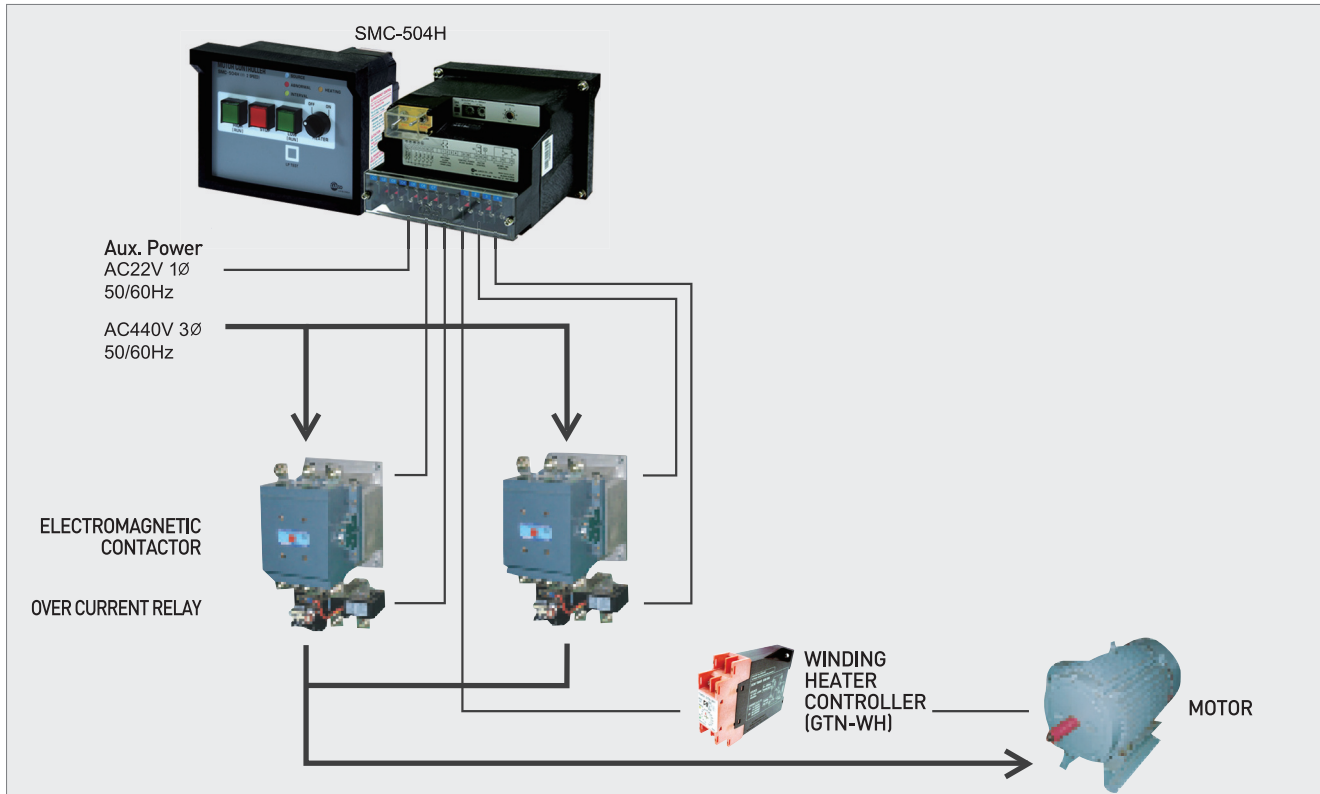


## GENERAL INFORMATION

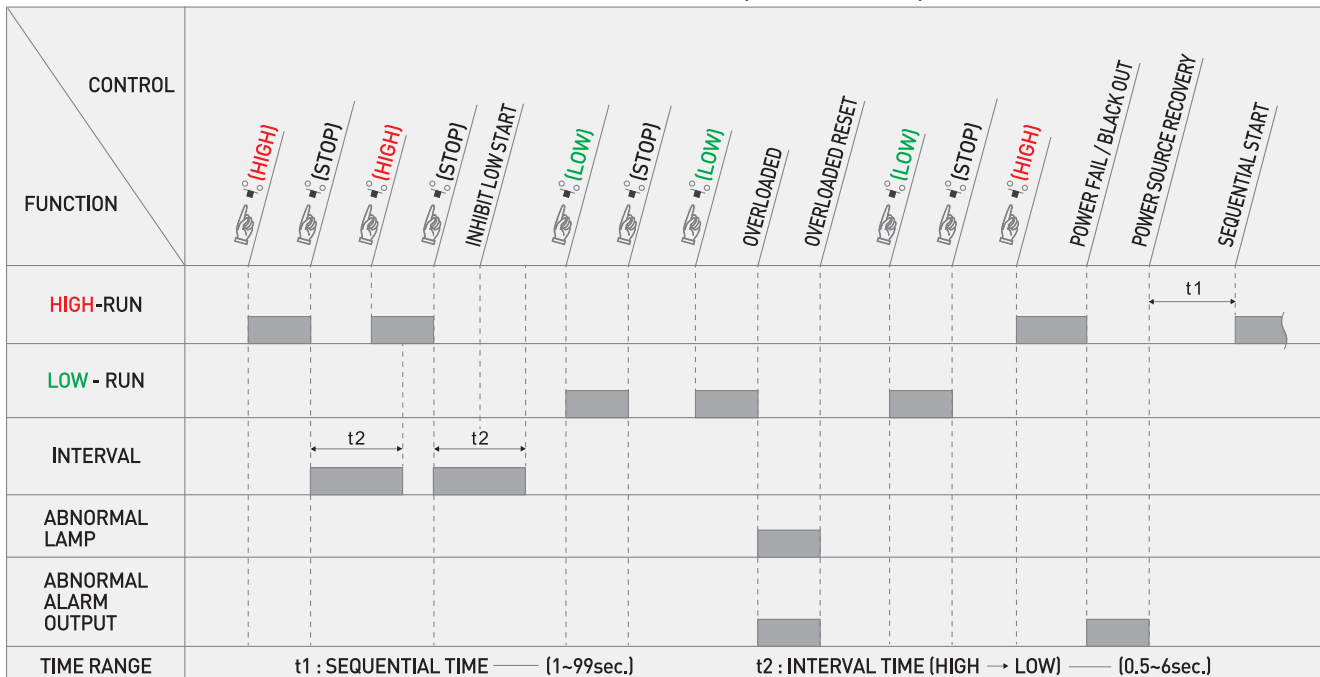
The SMC 504 series motor controllers, differently from the direct on-line start, are formed as 2 speed (high/low), so it can be applied to changing power and speed. As the major point, they have interval time (starting delay time) for prevention against inrush current while changing speed. And also, they have sequential start (UVR/UVP), alarm signal out and remote control.

Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT

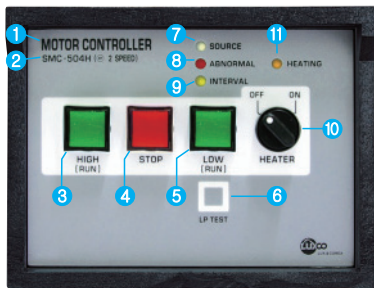


## FUNCTION TIMING FLOW CHART FOR 2 SPEED (HIGH / LOW)

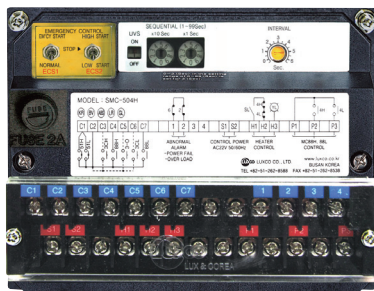


# MOTOR CONTROLLER

## SMC-504H



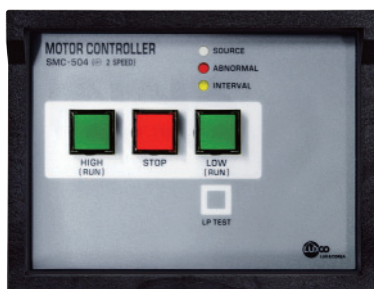
### REAR VIEW



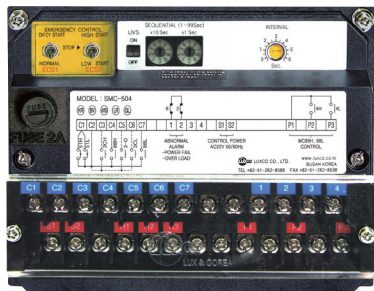
### SIDE VIEW



## SMC-504



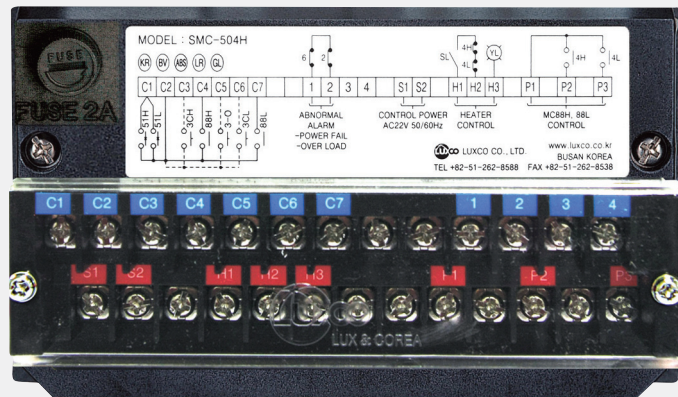
### REAR VIEW



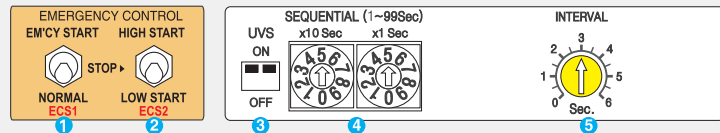
## FRONT VIEW LAYOUT

- |    |                        |                     |
|----|------------------------|---------------------|
| 1  | NAME OF PRODUCT        | MOTOR CONTROLLER    |
| 2  | MODEL NAME             | SMC-504 OR 504H     |
| 3  | START BUTTON WITH LAMP | 18 x 18 GREEN       |
| 4  | STOP BUTTON            | 18 x 18 RED         |
| 5  | START BUTTON WITH LAMP | 18 x 18 GREEN       |
| 6  | LAMP TEST BUTTON       | TACT SWITCH         |
| 7  | SOURCE INDICATOR       | LIGHT UP IN WHITE   |
| 8  | ABNORMAL INDICATOR     | LIGHT UP IN RED     |
| 9  | INTERVAL INDICATOR     | LIGHT UP IN YELLOW  |
| 10 | HEATER SWITCH          | Ø18 SELECTOR SWITCH |
| 11 | HEATING INDICATOR      | LIGHT UP IN ORANGE  |

## T.B LAYOUT (SMC-504H)

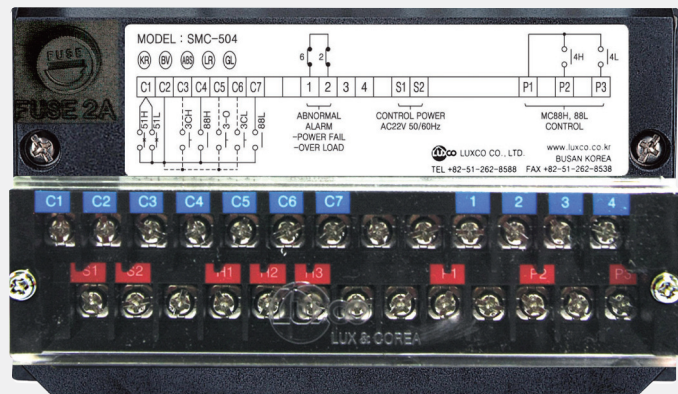


## PRE. SET (SWITCH & TIMER) (SMC-504 & 504H)

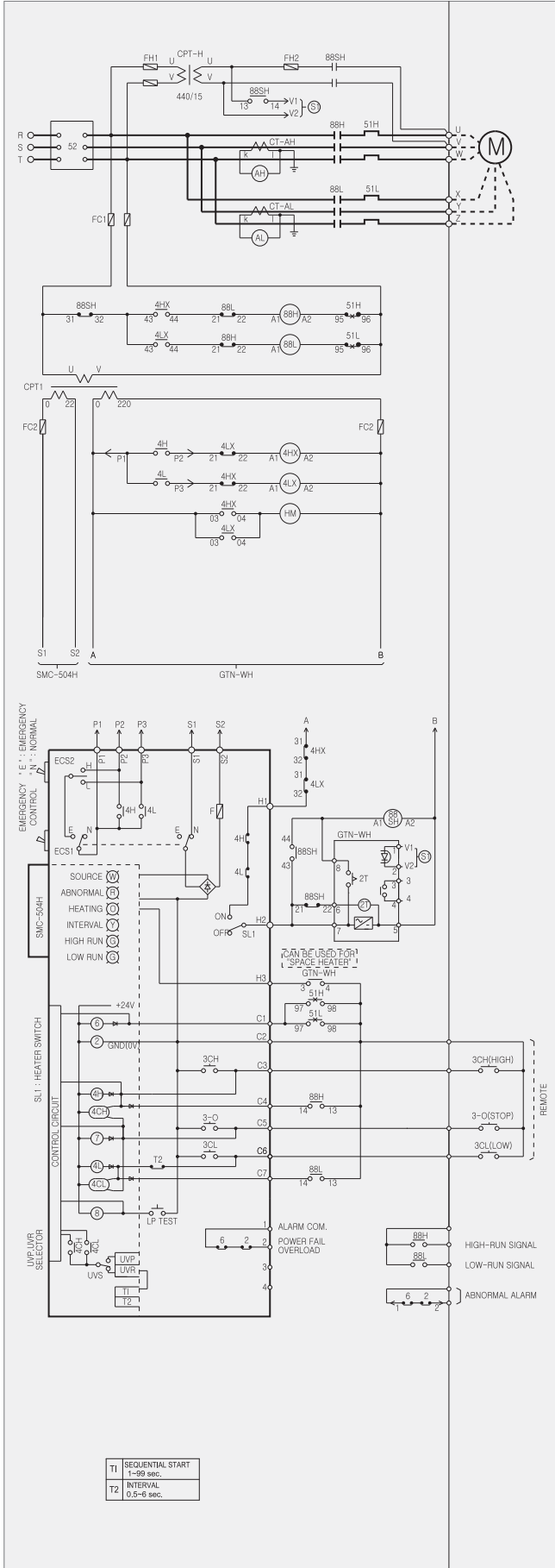


- |   |                  |   |
|---|------------------|---|
| 1 | ECS 1 SWITCH     | EM'CY START BY TOGGLE SWITCH  |
| 2 | ECS 2 SWITCH     | HIGH / LOW START BY TOGGLE SWITCH   |
| 3 | UVS SWITCH       | SEQUENTIAL START BY DIP SWITCH<br>UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)<br>UVS SET "ON" POSITION<br>UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)<br>UVS SET "OFF" POSITION |
| 4 | SEQUENTIAL TIMER | 1~99 SEC. ADJUSTABLE BY DIGITAL SWITCH<br>0~1 (SEC.) IN THE SETTING RANGE OF 0~99 (SEC.) IS SET FOR 1 (SEC.)  |
| 5 | INTERVAL TIMER   | 0.5~6 SEC. ADJUSTABLE BY V / R  |

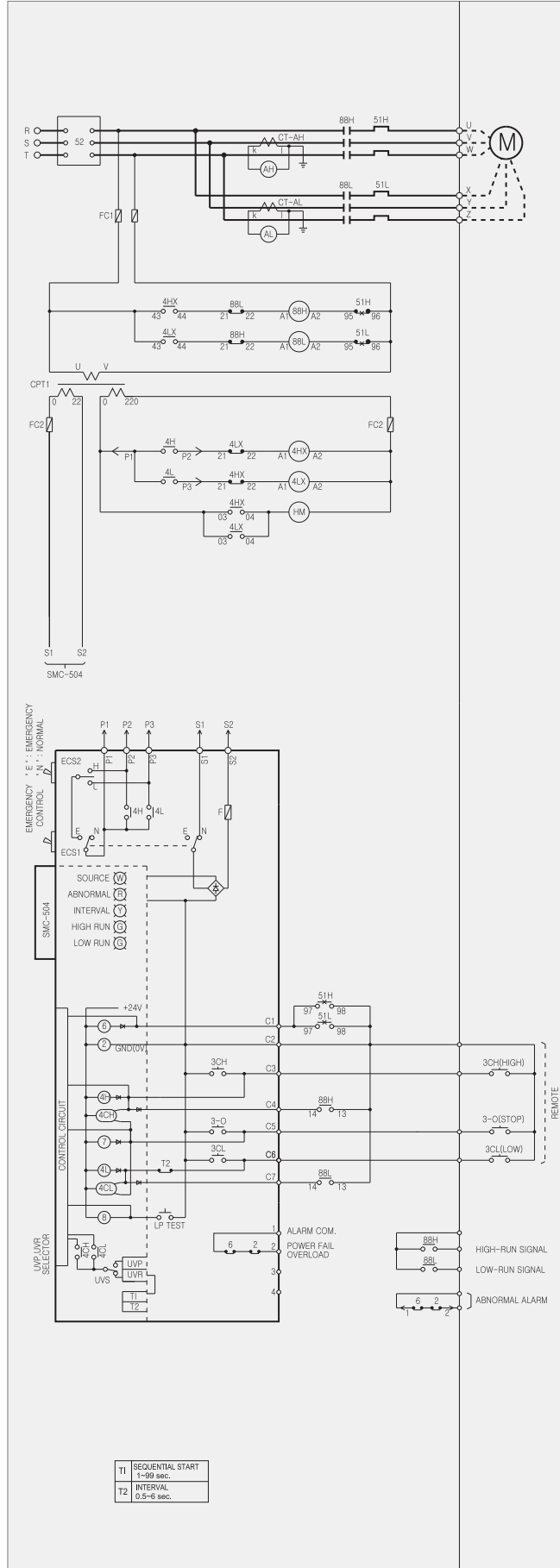
## T.B LAYOUT (SMC-504)



### SMC-504H CONNECTION DIAGRAM



### SMC-504 CONNECTION DIAGRAM



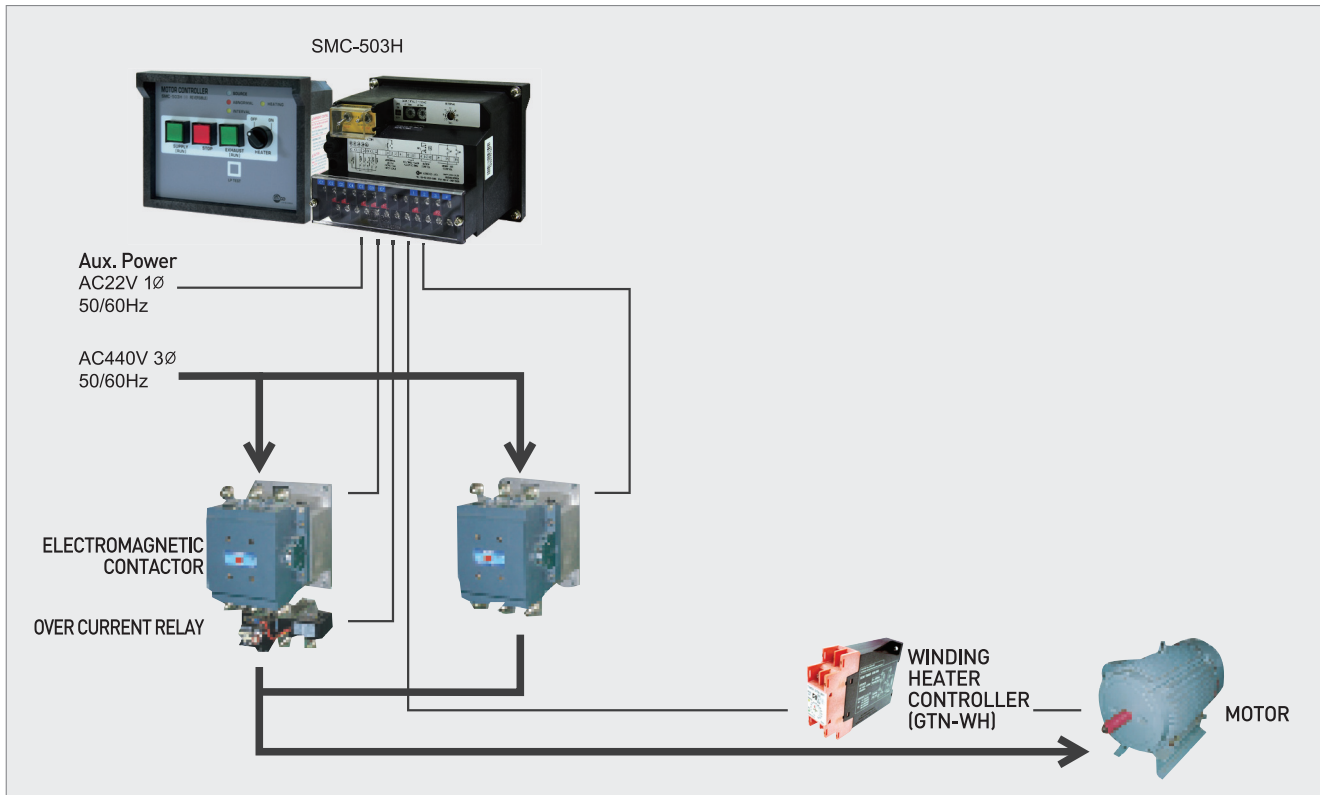
# MOTOR CONTROLLER

## GENERAL INFORMATION

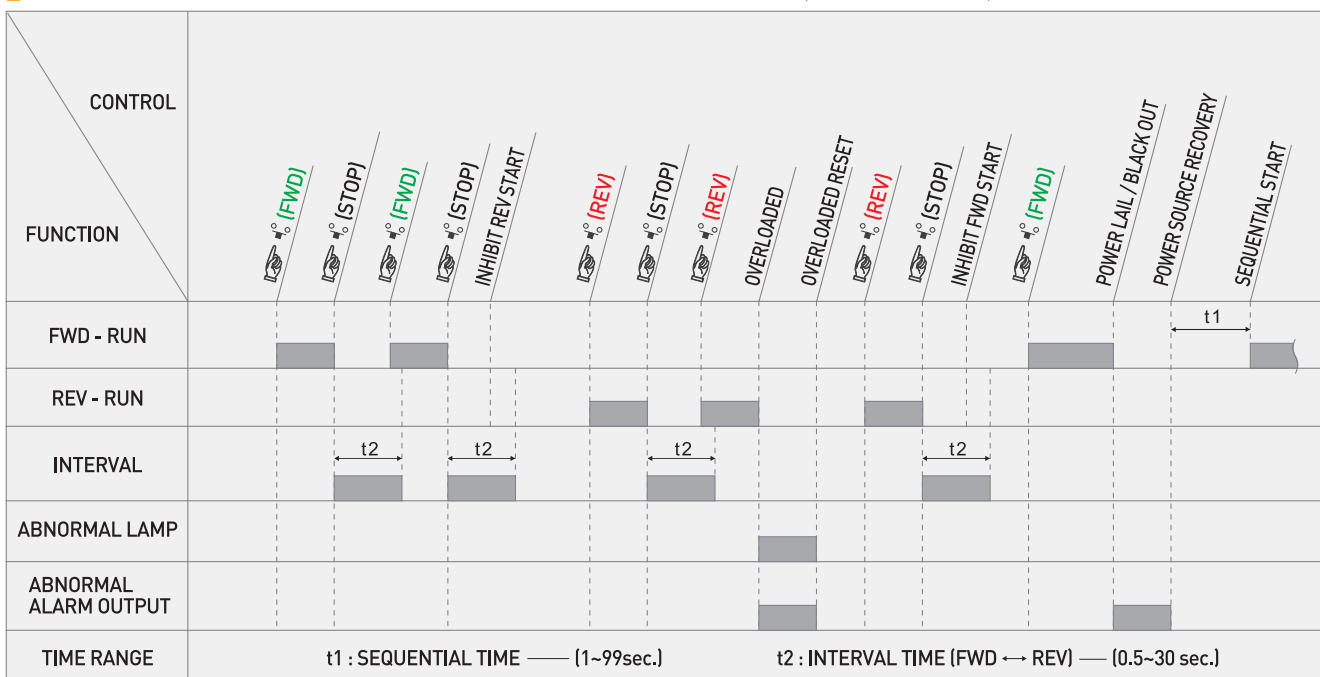
The SMC 503 series motor controllers, differently from the direct on-line start, are formed as 2 direction (forward /reverse) operation. As the major point, they have interval time (starting delay time) for prevention against inrush current while changing direction. And also, they have sequential start (UVR/ UVP), alarm signal out and remote control.

Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT

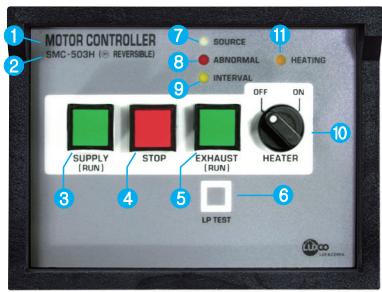


## FUNCTION TIMING FLOW CHART FOR REVERSIBLE (FORWARD / REVERSE)

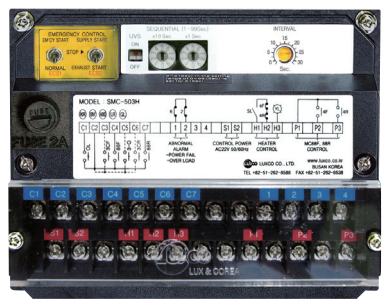




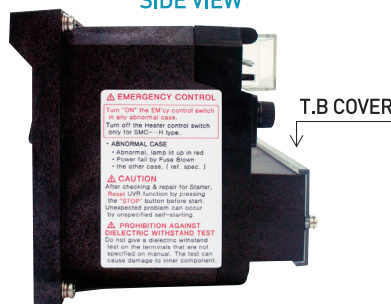
**SMC-503H**



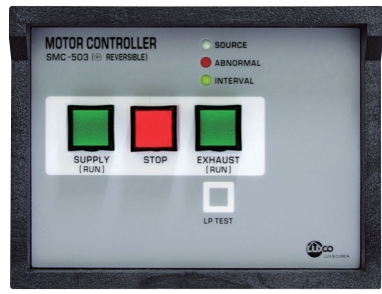
**REAR VIEW**



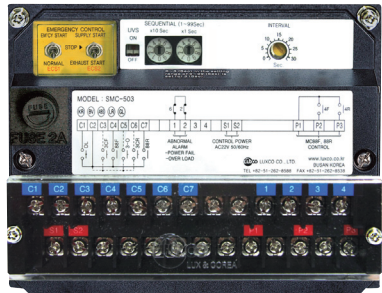
**SIDE VIEW**



**SMC-503**



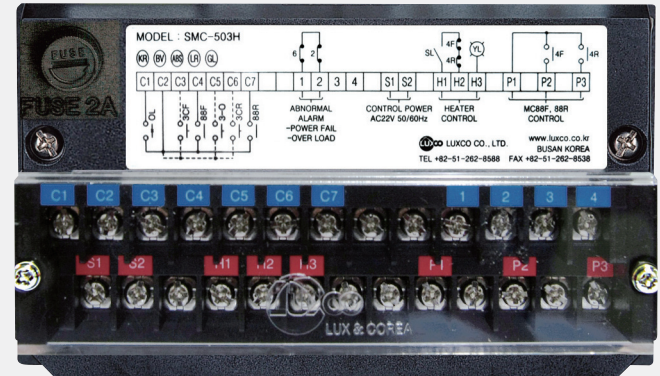
**REAR VIEW**



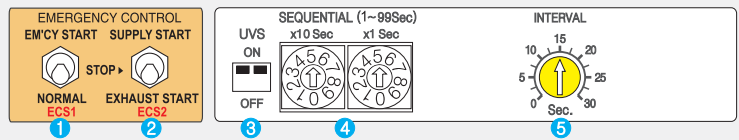
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-503 OR 503H
- 3 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 4 STOP BUTTON ..... 18 x 18 RED
- 5 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 6 LAMP TEST BUTTON ..... TACT SWITCH
- 7 SOURCE INDICATOR..... LIGHT UP IN WHITE
- 8 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 9 INTERVAL INDICATOR ..... LIGHT UP IN YELLOW
- 10 HEATER SWITCH ..... Ø 18 SELECTOR SWITCH
- 11 HEATING INDICATOR ..... LIGHT UP IN ORANGE

**T.B LAYOUT (SMC-503H)**

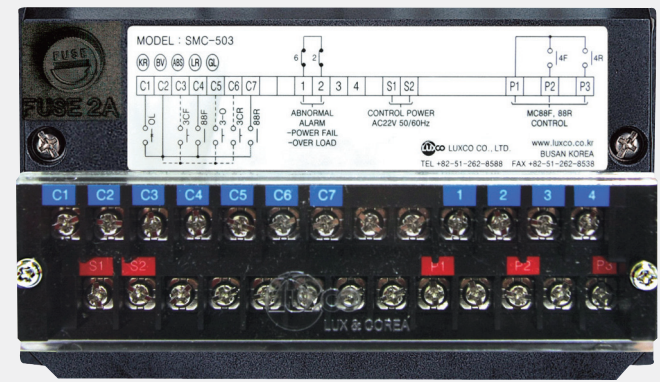


**PRE. SET (SWITCH & TIMER) (SMC-503 & 503H)**

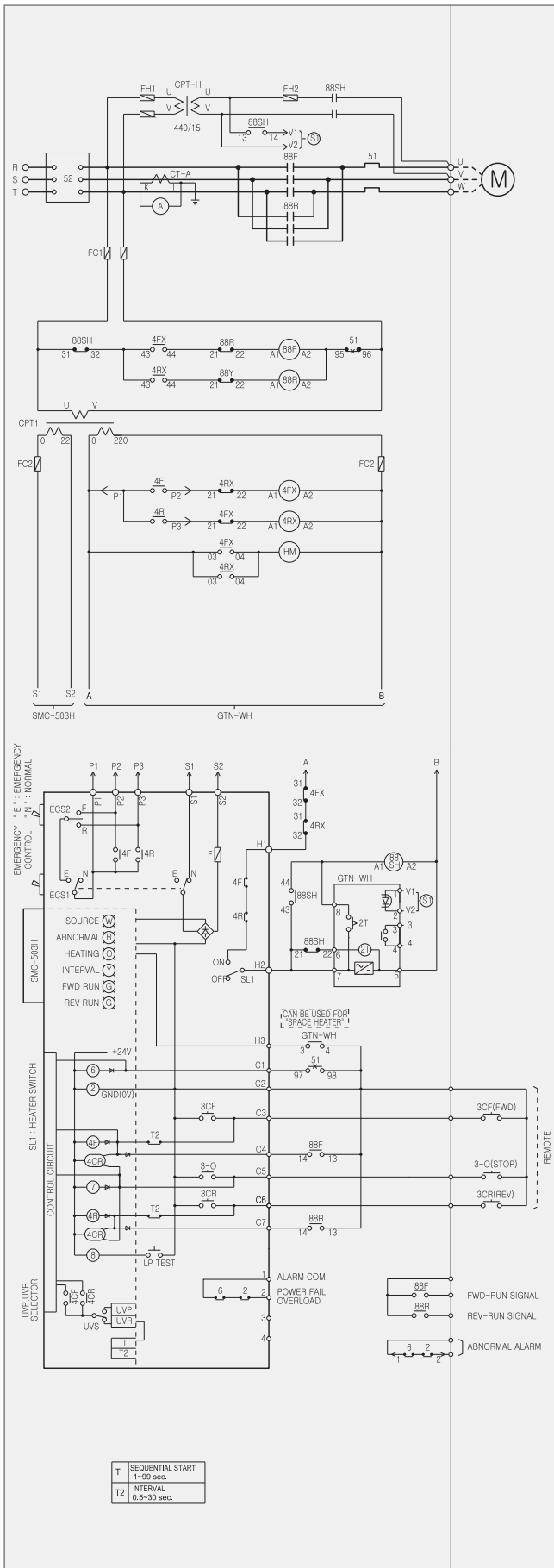


- 1 ECS 1 SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 ECS 2 SWITCH ..... SUPPLY / EXHAUST START BY TOGGLE SWITCH
- 3 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 4 SEQUENTIAL TIMER ..... 1~99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0~1 (SEC.) IN THE SETTING RANGE OF 0~99 (SEC.) IS SET FOR 1 (SEC.)
- 5 INTERVAL TIMER ..... 0.5~30 SEC. ADJUSTABLE BY V/R

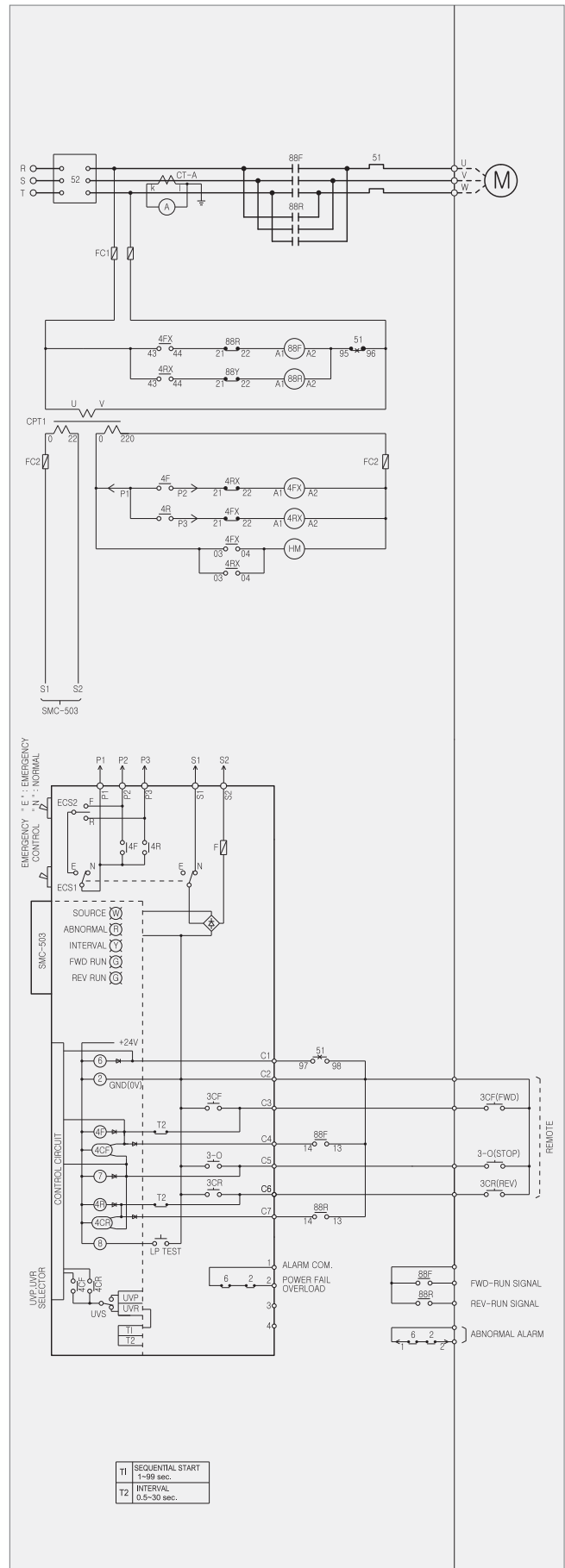
**T.B LAYOUT (SMC-503)**



## SMC-503H CONNECTION DIAGRAM



## SMC-503 CONNECTION DIAGRAM

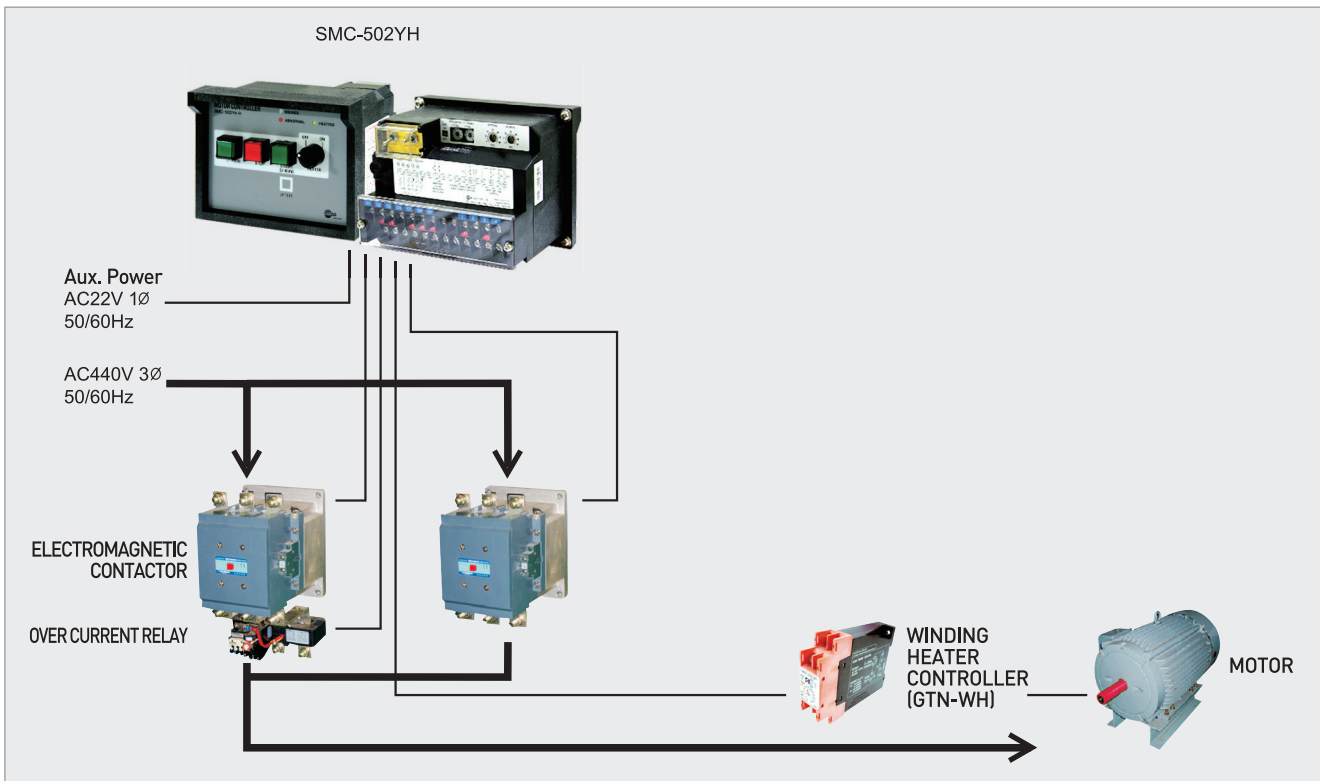


## GENERAL INFORMATION

The SMC 502Y series motor controllers, differently from the direct on-line start, are formed as Star(Y) and Delta(D) running. Y-Delta starting is widely applied to restrict the starting current on initial start. The motor starts through 2 steps of Y-Delta starting by dual winding of the stator. As the major point, the controllers have a timer for Y-Delta starting, so external timer is not required. And also, they have sequential start (UVR/UVP), alarm signal out and remote control.

Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT

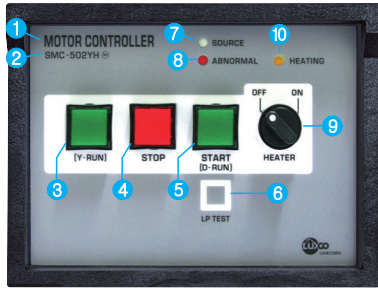


## FUNCTION TIMING FLOW CHART FOR CONSTANT (Y-DELTA)

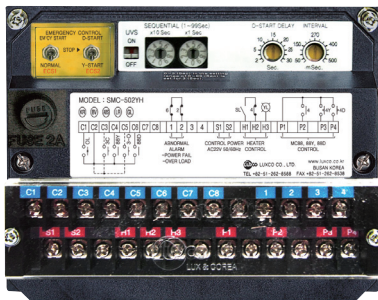
CONTROL \ FUNCTION	START	D-START DELAY TIMER COUNT UP	DELTA-RUN	OVERLOADED	OVERLOAD RE-SET	START	POWER FAIL / BLACKOUT	POWER SOURCE RECOVERY	SEQUENTIAL START	D-START DELAY TIMER COUNT UP	DELTA-RUN	STOP
Y-RUN	t2							t1	t2			
D-RUN		t3								t3		
ABNORMAL LAMP												
ABNORMAL ALARM OUTPUT												
TIME RANGE	t1 : SEQUENTIAL TIME (1~99sec.)						t3 : INTERVAL TIME (50~500m sec.)					
	t2 : D-START DELAY TIME (2~30sec.)											

# MOTOR CONTROLLER

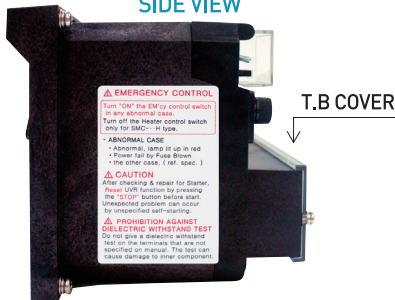
## SMC-502YH



### REAR VIEW



### SIDE VIEW

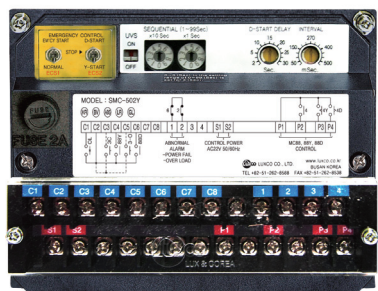


T.B COVER

## SMC-502Y



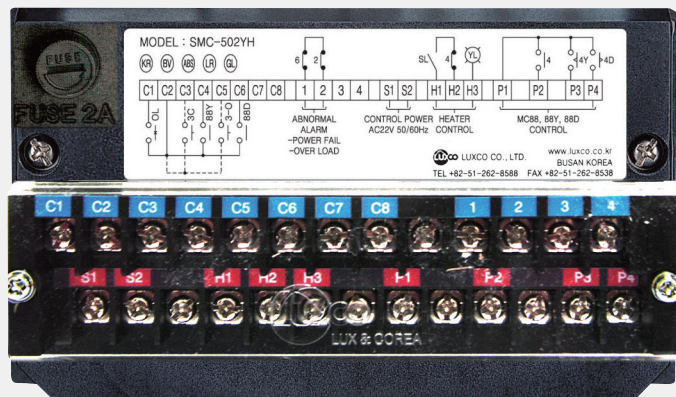
### REAR VIEW



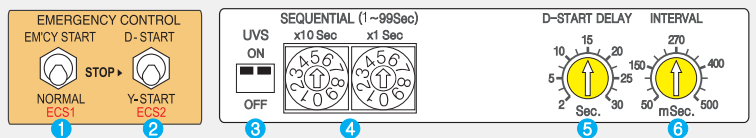
## FRONT VIEW LAYOUT

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-502Y OR 502YH
- 3 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 4 STOP BUTTON ..... 18 x 18 RED
- 5 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 6 LAMP TEST BUTTON ..... TACT SWITCH
- 7 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 8 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 9 HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- 10 HEATING INDICATOR ..... LIGHT UP IN ORANGE

## T.B LAYOUT (SMC-502YH)

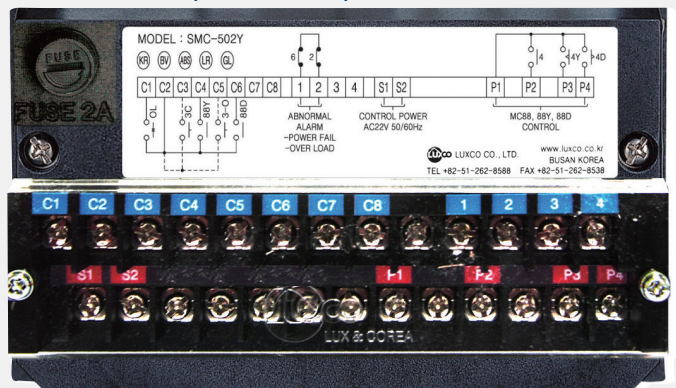


## PRE. SET (SWITCH & TIMER) (SMC-502Y & 502YH)

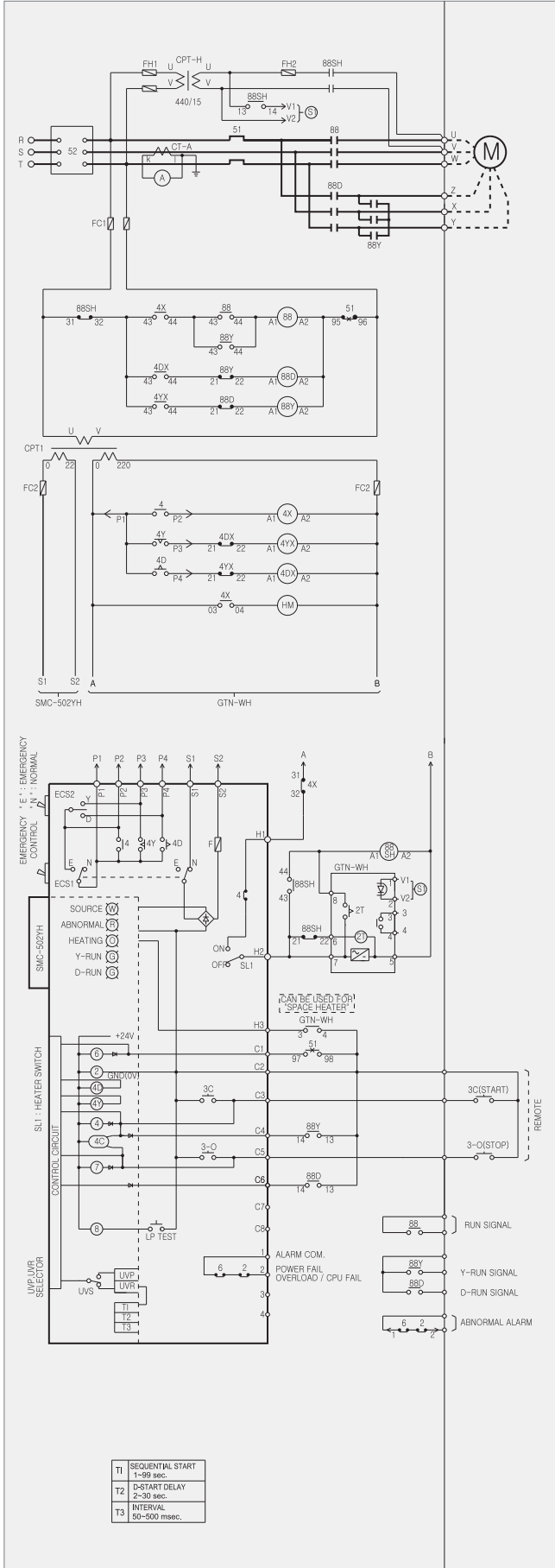


- 1 ECS 1 SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 ECS 2 SWITCH ..... Y-START / D-START BY TOGGLE SWITCH
- 3 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
UVS SET "ON" POSITION  
UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
UVS SET "OFF" POSITION
- 4 SEQUENTIAL TIMER ..... 1-99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
0-1(SEC.) IN THE SETTING RANGE OF 0-99(SEC.) IS SET FOR 1 (SEC.)
- 5 D-START DELAY TIMER ..... 2-30 SEC. ADJUSTABLE BY V / R
- 6 INTERVAL TIMER ..... 50-500 mSEC. ADJUSTABLE BY V / R

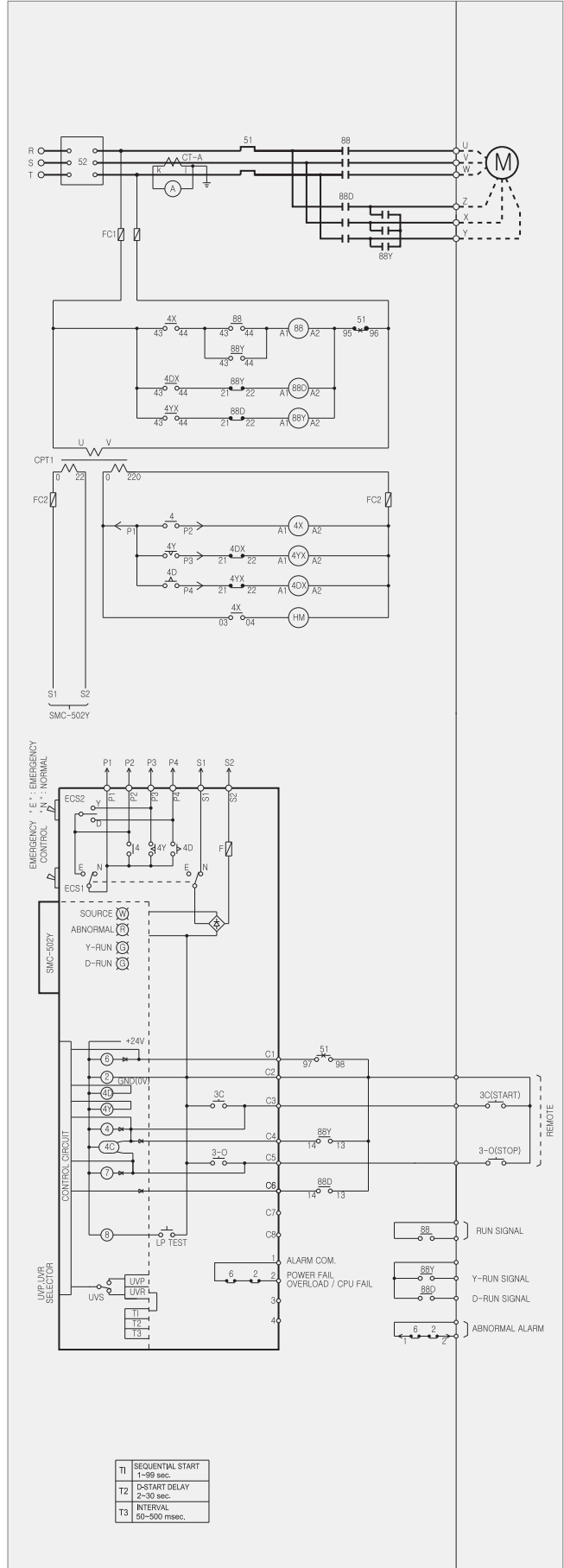
## T.B LAYOUT (SMC-502Y)



### SMC-502YH CONNECTION DIAGRAM



### SMC-502Y CONNECTION DIAGRAM



# MOTOR CONTROLLER

## GENERAL INFORMATION

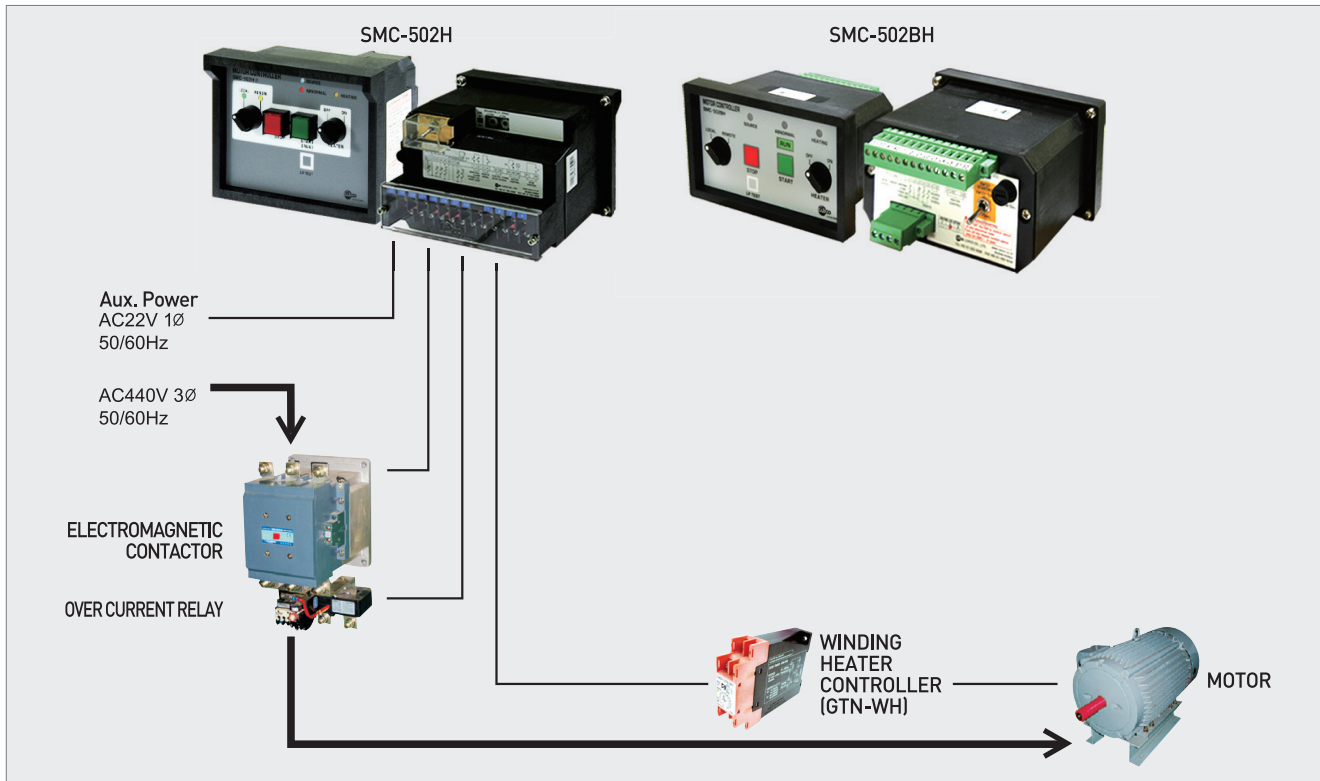
The SMC 502 / 502B series motor controllers have control function for 2 separate locations besides the basic function of direct on-line start.

They are formed as general local or remote operation.

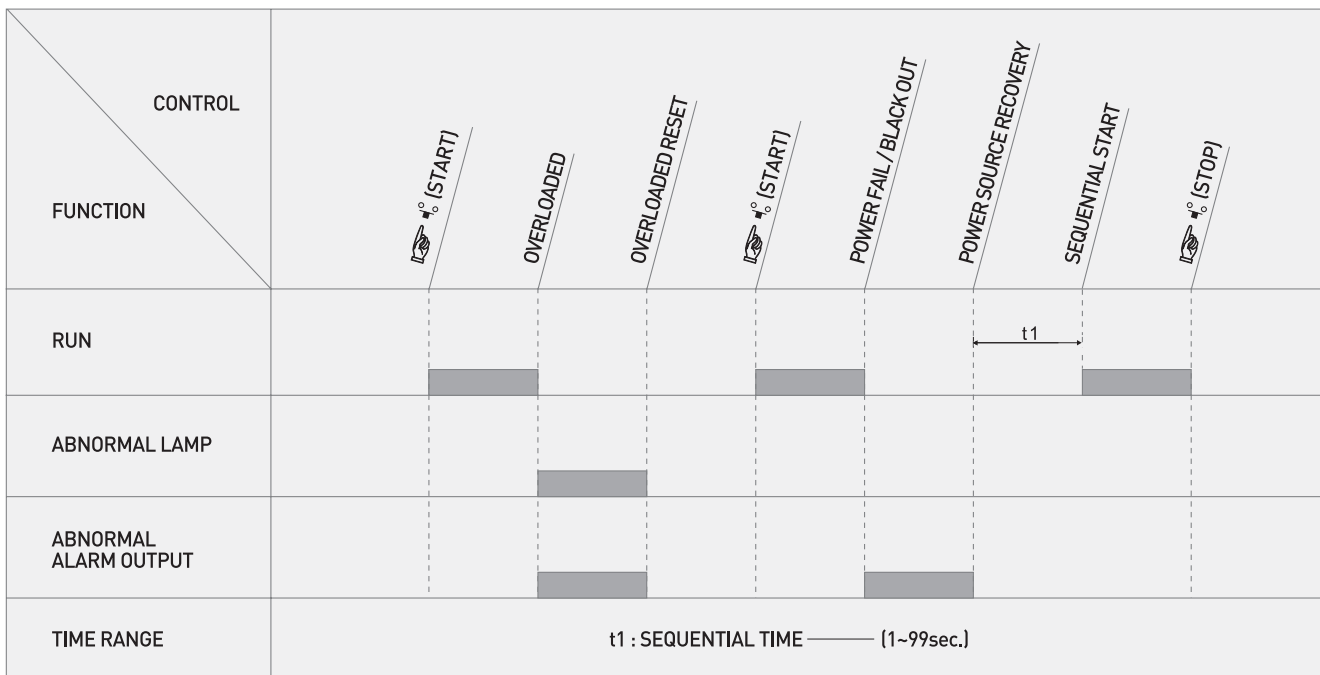
As the major point, SMC 502 series have sequential start (UVR/UVP), alarm signal out.

Note.) Refer to the technical manual to see the detail description of function.

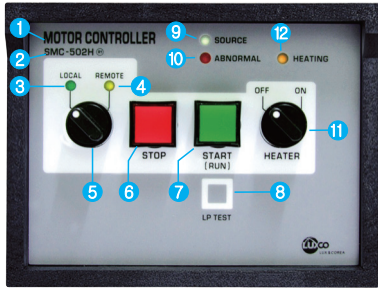
## SYSTEM LAYOUT



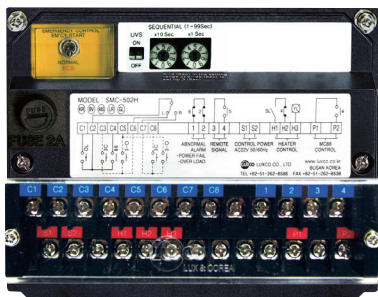
## FUNCTION TIMING FLOW CHART FOR CONSTANT (REMOTE / LOCAL)



**SMC-502H**



REAR VIEW



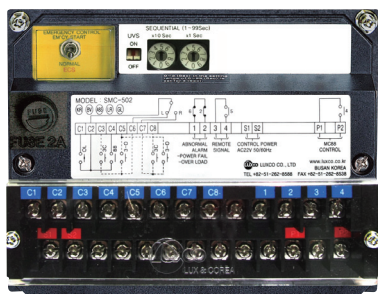
SIDE VIEW



**SMC-502**



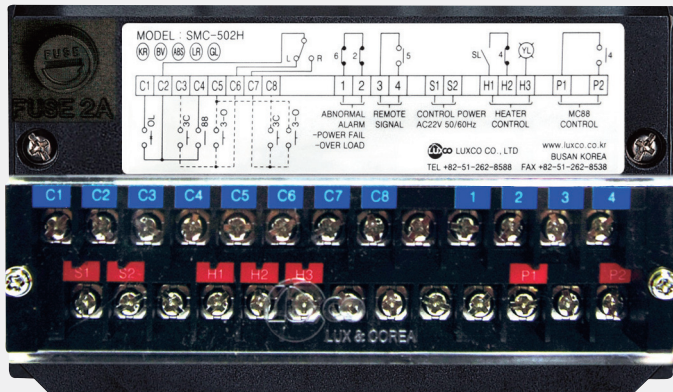
REAR VIEW



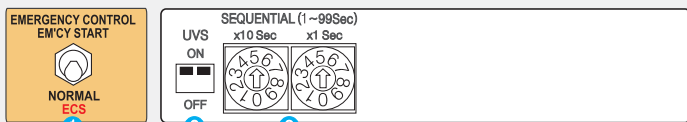
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-502 OR 502H
- 3 LOCAL MODE INDICATOR ..... LIGHT UP IN GREEN
- 4 REMOTE MODE INDICATOR ..... LIGHT UP IN YELLOW
- 5 LOCAL / REMOTE SWITCH ..... Ø18 SELECTOR SWITCH
- 6 STOP BUTTON ..... 18 x 18 RED
- 7 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 8 LAMP TEST BUTTON ..... TACT SWITCH
- 9 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 10 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 11 HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- 12 HEATING INDICATOR ..... LIGHT UP IN ORANGE

**T.B LAYOUT (SMC-502H)**

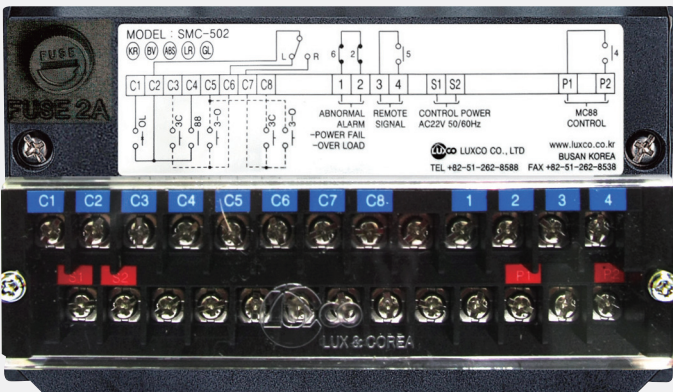


**PRE. STE (SWITCH & TIMER) (SMC-502 & 502H)**

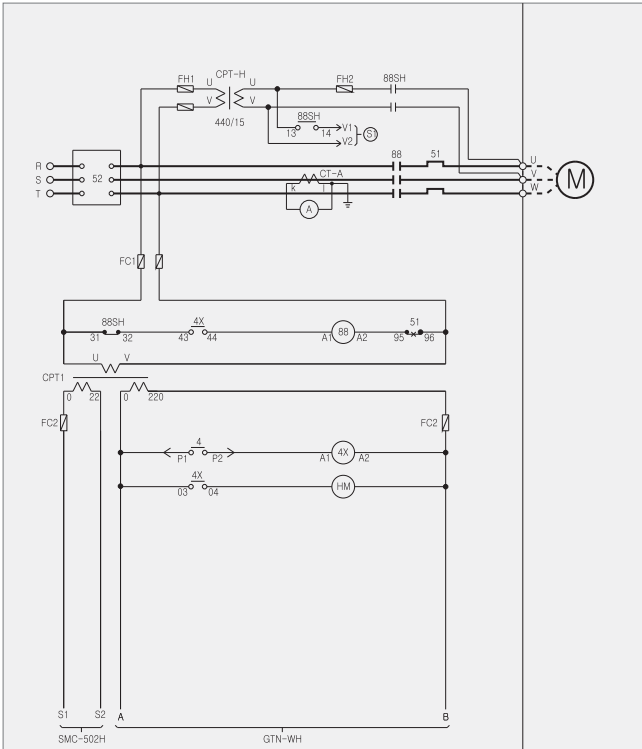


- 1 ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 3 SEQUENTIAL TIMER ..... 1-99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0-1 (SEC.) IN THE SETTING RANGE OF 0-99 (SEC.) IS SET FOR 1 (SEC.)

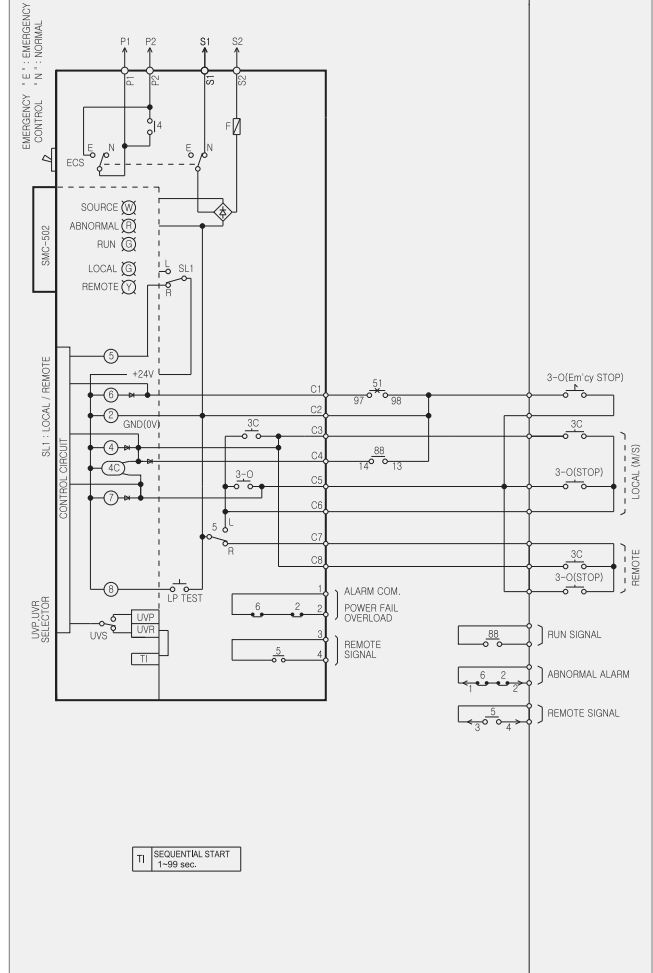
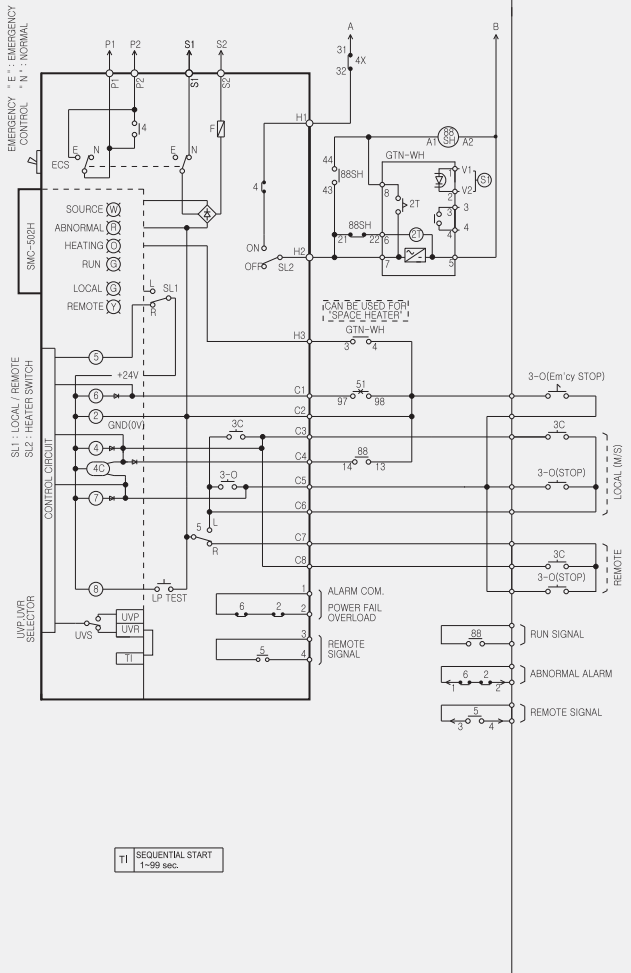
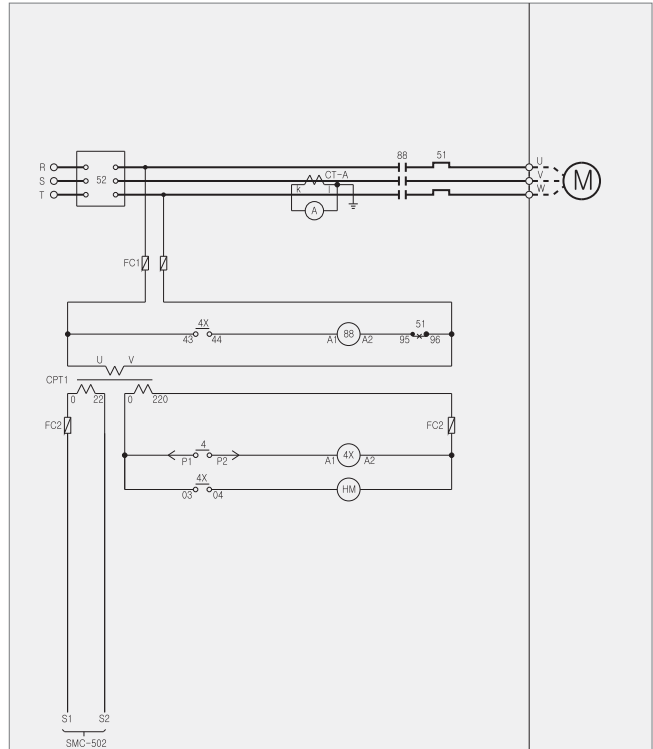
**T.B LAYOUT (SMC-502)**



## SMC-502H CONNECTION DIAGRAM

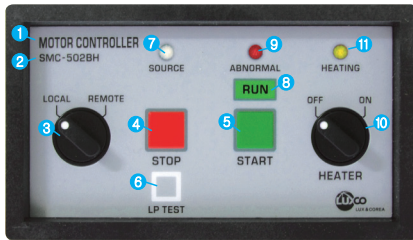


## SMC-502 CONNECTION DIAGRAM





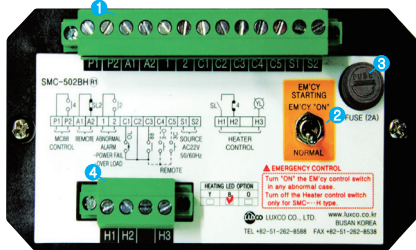
**SMC-502BH**



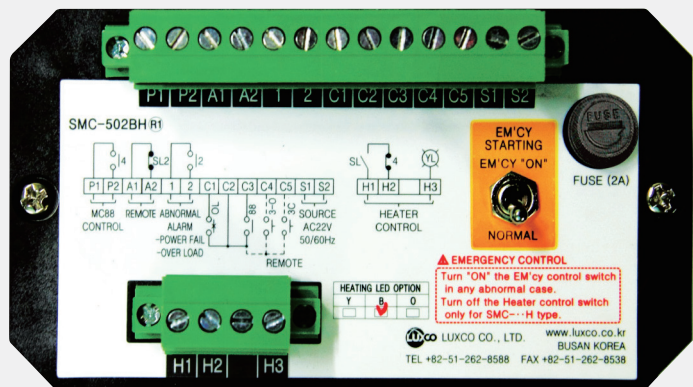
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-502B OR 502BH
- 3 LOCAL/REMOTE SWITCH ..... Ø18 SELECTOR SWITCH
- 4 STOP BUTTON ..... TACT SWITCH RED
- 5 START BUTTON ..... TACT SWITCH GREEN
- 6 LAMP TEST BUTTON ..... TACT SWITCH
- 7 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 8 RUN INDICATOR ..... LIGHT UP IN GREEN
- 9 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 10 HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- 11 HEATING INDICATOR ..... LIGHT UP IN YELLOW

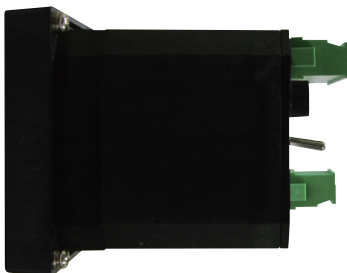
**REAR VIEW**



**T.B LAYOUT (SMC-502BH)**



**SIDE VIEW**



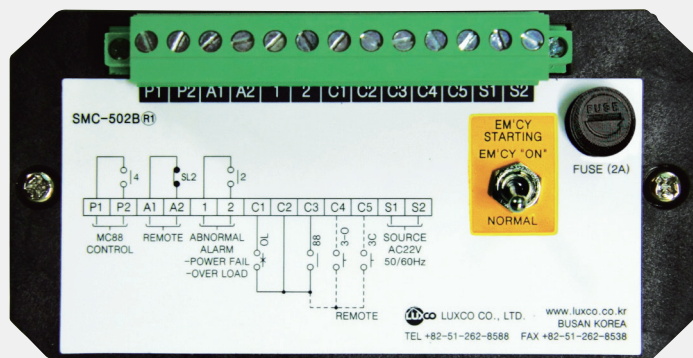
**REAR VIEW LAYOUT**

- 1 CONNECTION T.B ..... M3 ( Plug in type )
- 2 ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 3 FUSE ..... 5x20 (2A)
- 4 CONNECTION T.B ..... M3 ( Plug in type )

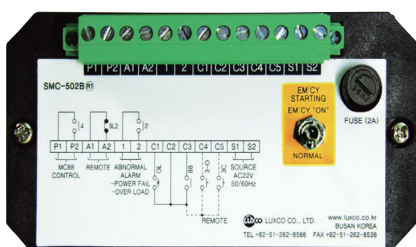
**SMC-502B**



**T.B LAYOUT (SMC-502B)**

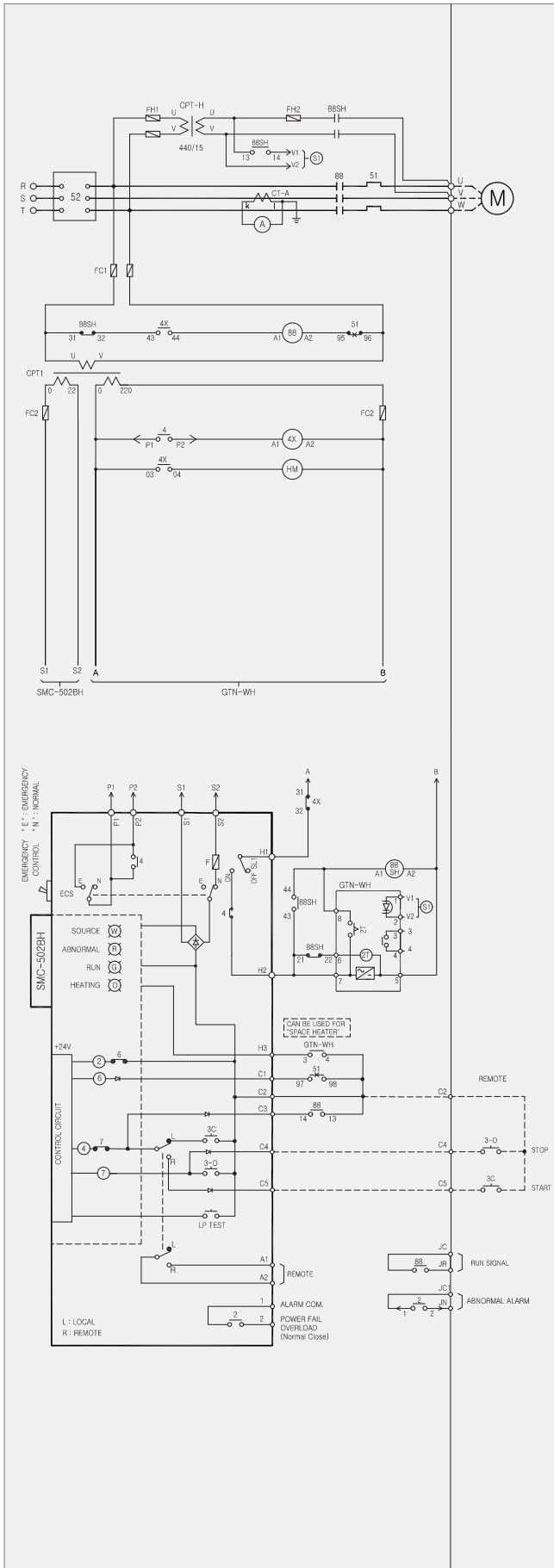


**REAR VIEW**

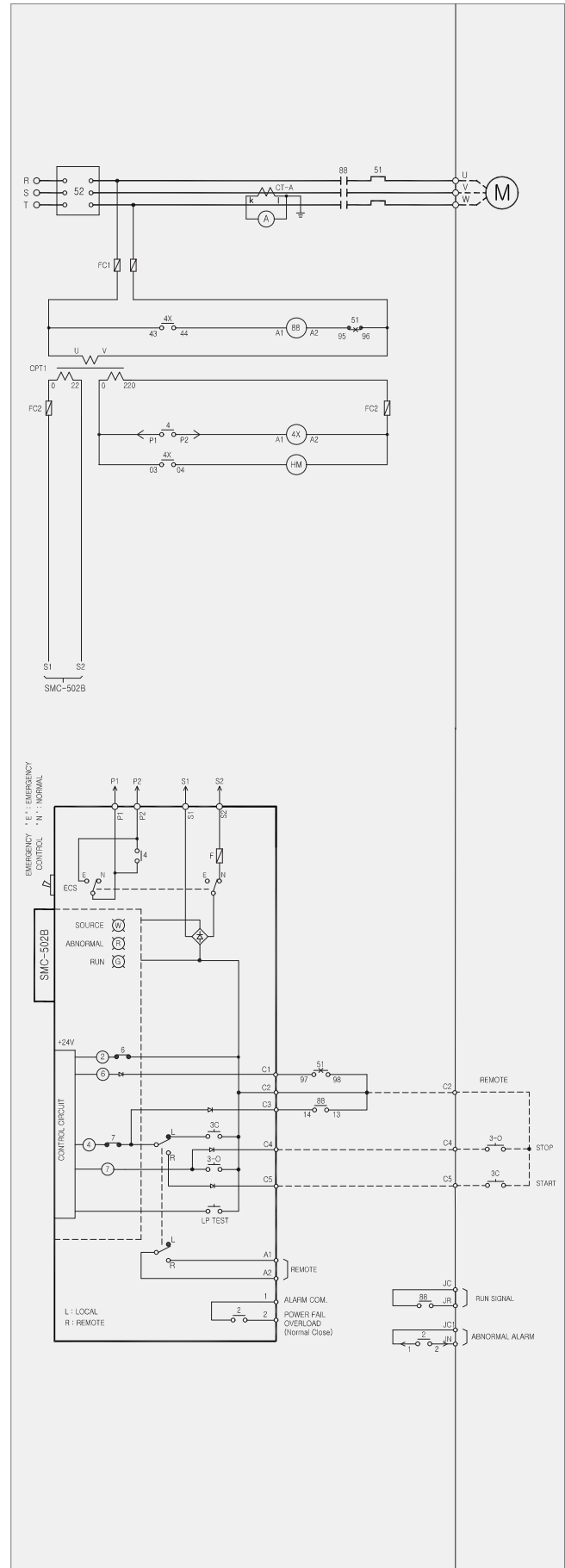


# MOTOR CONTROLLER

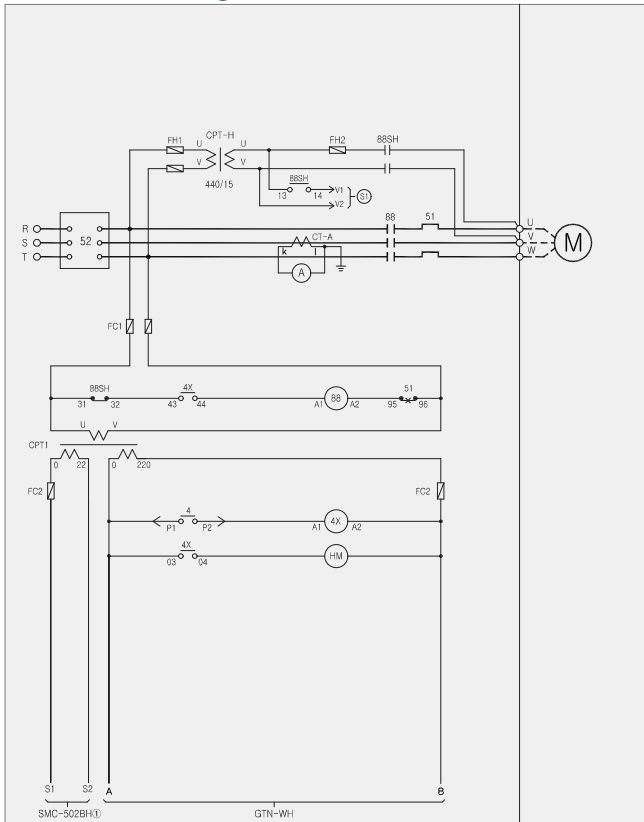
## SMC-502BH CONNECTION DIAGRAM



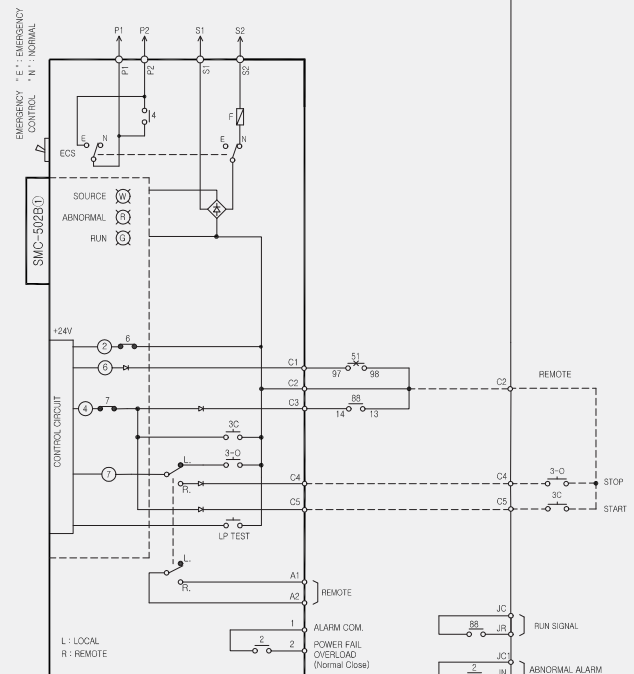
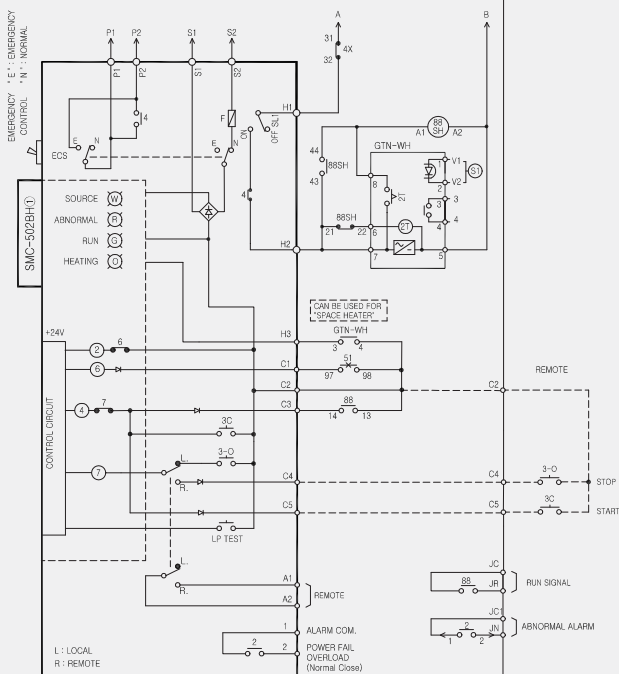
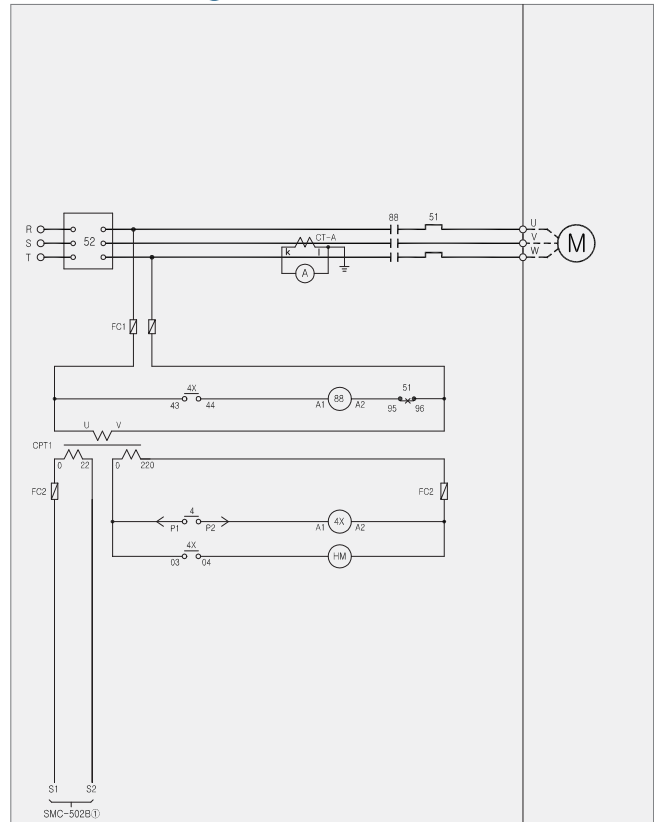
## SMC-502B CONNECTION DIAGRAM



### SMC-502BH① CONNECTION DIAGRAM



### SMC-502B① CONNECTION DIAGRAM



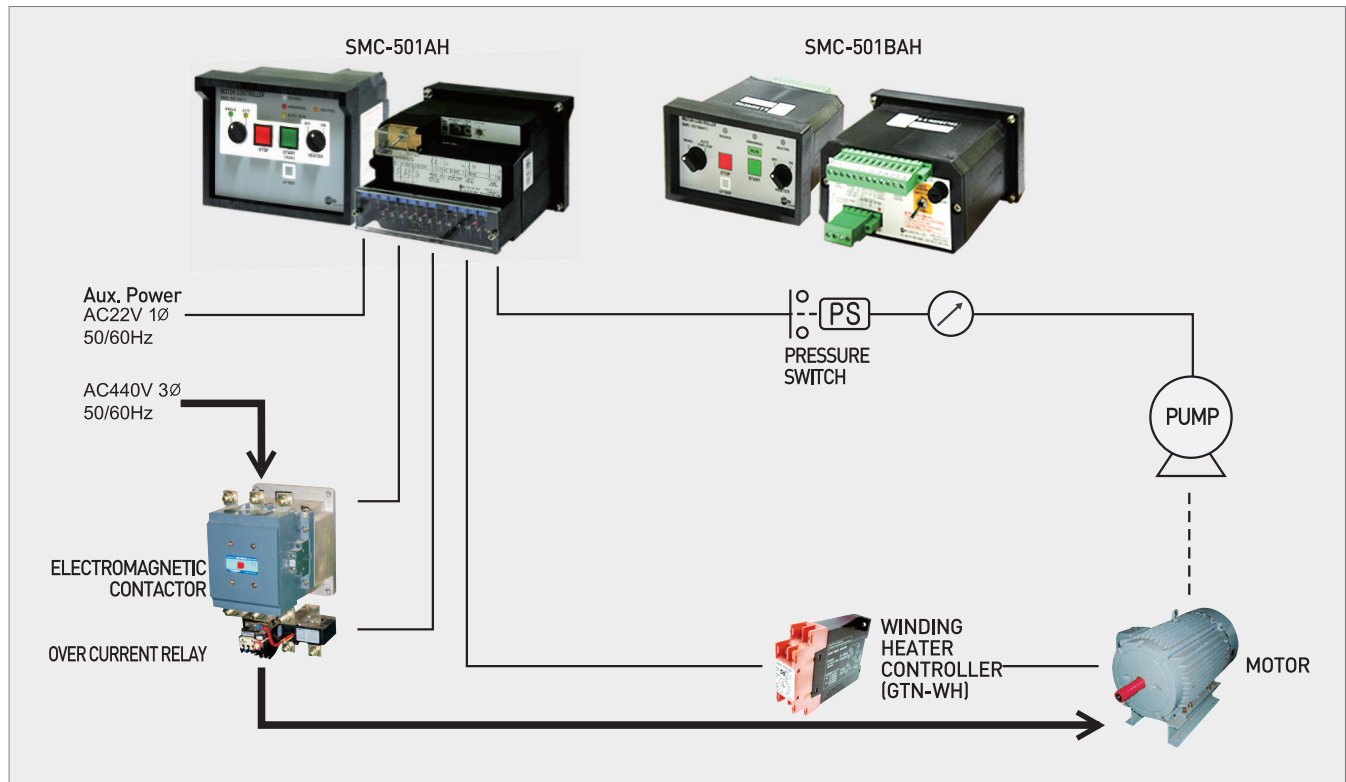
# MOTOR CONTROLLER

## GENERAL INFORMATION

The SMC 501A / 501BA series motor controllers have the basic function of direct on-line start. They are formed as general manual operation or automatic operation with pressure switch. As the major point, SMC 501A series have sequential start (UVR/UVP), alarm signal out.

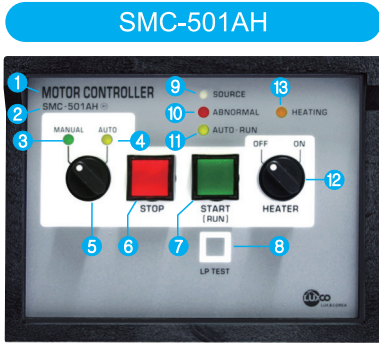
Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT



## FUNCTION TIMING FLOW CHART FOR CONSTANT (AUTO / MANUAL)

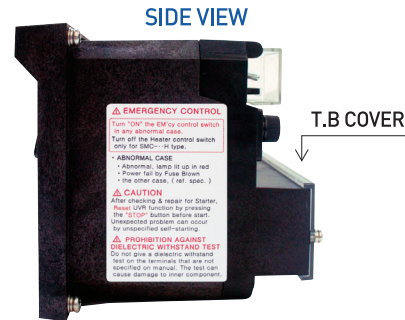
		AUTO MODE						MANUAL MODE								
CONTROL																
FUNCTION		START	LOW PRESSURE	CATTERING TIMER COUNT UP	PRESSURE RECOVERY	LOW PRESSURE	CATTERING TIMER COUNT UP	STOP	START	OVERLOADED	OVERLOAD RESET	START	POWER FAIL / BLACK OUT	POWER SOURCE RECOVERY	SEQUENTIAL START	STOP
RUN			t2			t2								t1		
PRESSURE SWITCH																
AUTO RUN LAMP																
ABNORMAL LAMP																
ABNORMAL ALARM OUTPUT																
TIME RANGE		t1 : SEQUENTIAL TIME (1~99sec.)						t2 : CHATTERING TIME (1~3sec.)								



SMC-501AH



REAR VIEW



SIDE VIEW

T.B COVER



SMC-501A

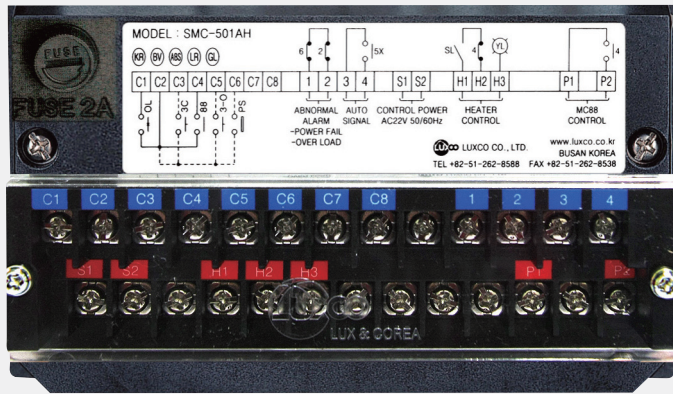


REAR VIEW

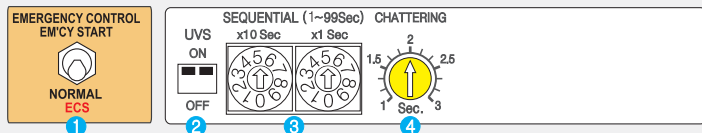
### FRONT VIEW LAYOUT

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-501A OR 501AH
- 3 MANUAL MODE INDICATOR ..... LIGHT UP IN GREEN
- 4 AUTO MODE INDICATOR ..... LIGHT UP IN YELLOW
- 5 MANUAL / AUTO SWITCH ..... Ø 18 SELECTOR SWITCH
- 6 STOP BUTTON ..... 18 x 18 RED
- 7 START BUTTON WITH LAMP ..... 18x 18 GREEN
- 8 LAMP TEST BUTTON ..... TACT SWITCH
- 9 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 10 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 11 AUTO RUN INDICATOR ..... LIGHT UP IN YELLOW
- 12 HEATER SWITCH ..... Ø 18 SELECTOR SWITCH
- 13 HEATING INDICATOR ..... LIGHT UP IN ORANGE

### T.B LAYOUT (SMC-501AH)

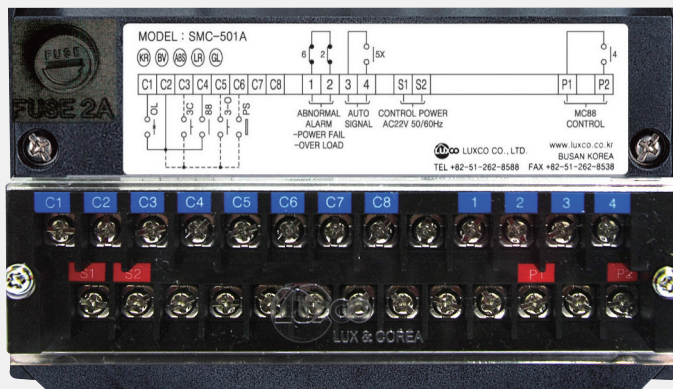


### PRE. SET (SWITCH & TIMER) (SMC-501A & 501AH)

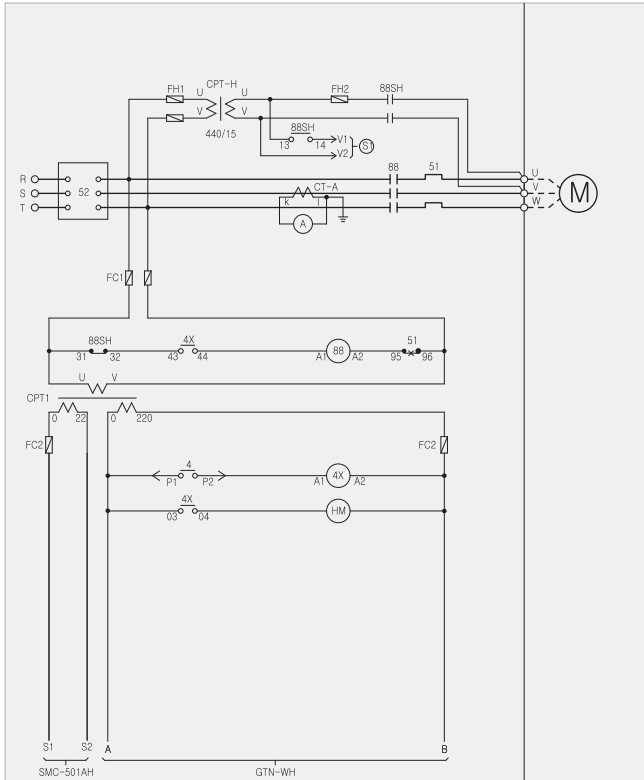


- 1 ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UNP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 3 SEQUENTIAL TIMER ..... 1~99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0-1 (SEC.) IN THE SETTING RANGE OF 0-99 (SEC.) IS SET FOR 1 (SEC.)
- 4 CHATTERING TIMER ..... 1~3 SEC. ADJUSTABLE BY V / R

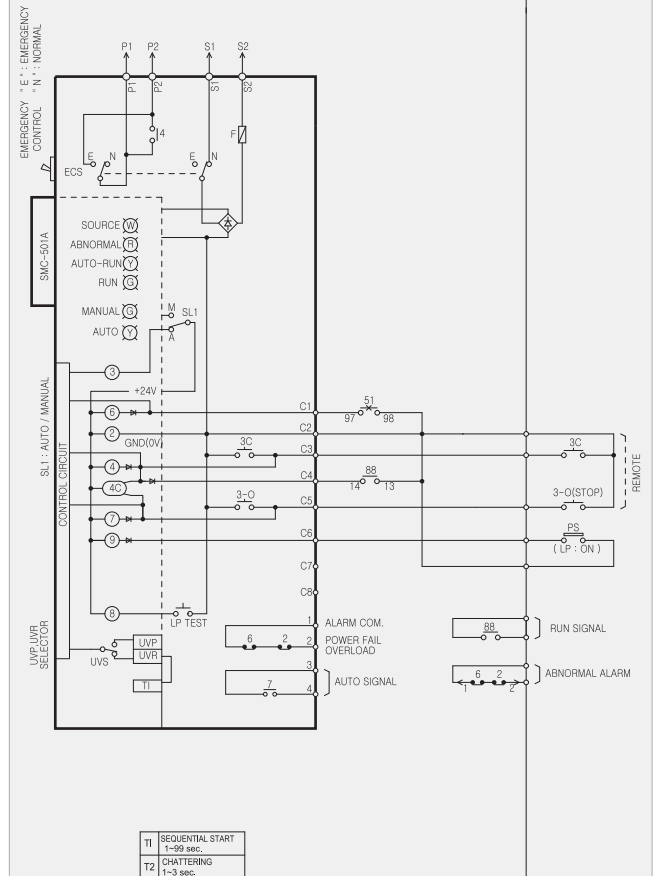
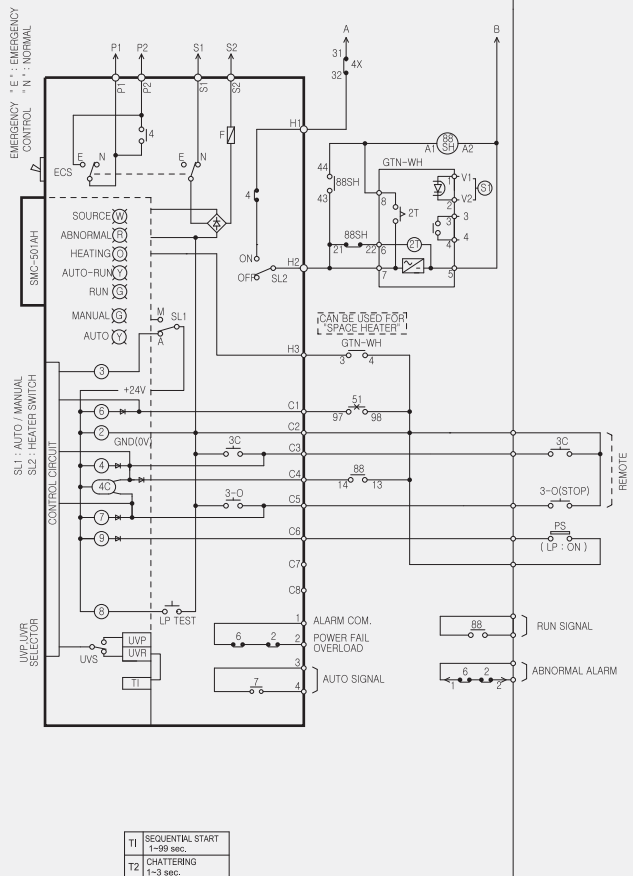
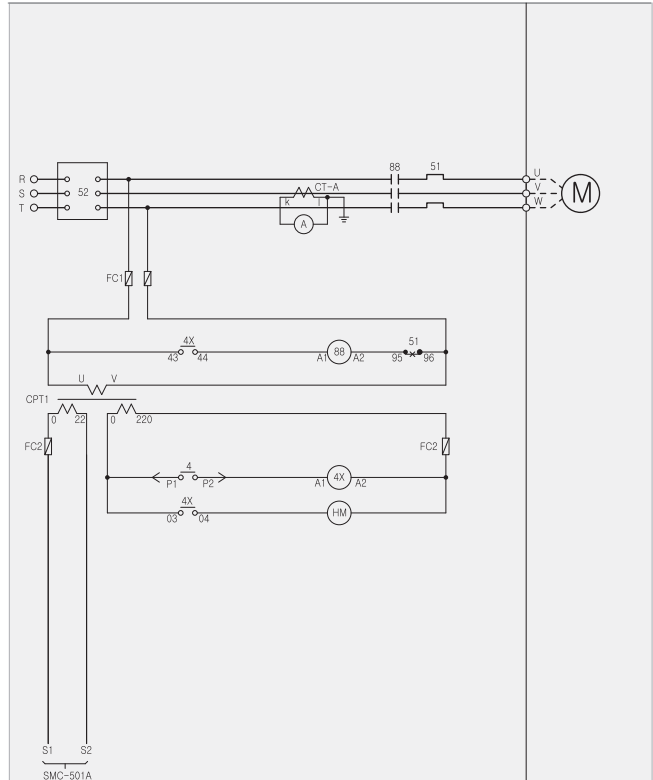
### T.B LAYOUT (SMC-501AH)



## SMC-501AH CONNECTION DIAGRAM



## SMC-501A CONNECTION DIAGRAM



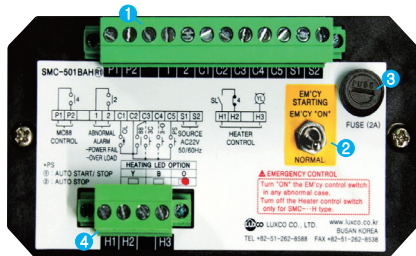
SMC-501BAH



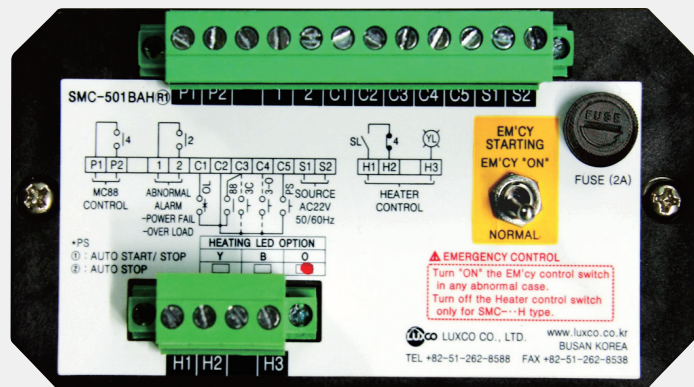
FRONT VIEW LAYOUT

- ① NAME OF PRODUCT ..... MOTOR CONTROLLER
- ② MODEL NAME ..... SMC-501BA OR 501BAH
- ③ LOCAL/REMOTE SWITCH ..... Ø18 SELECTOR SWITCH
- ④ STOP BUTTON ..... TACT SWITCH RED
- ⑤ START BUTTON ..... TACT SWITCH GREEN
- ⑥ LAMP TEST BUTTON ..... TACT SWITCH
- ⑦ SOURCE INDICATOR ..... LIGHT UP IN WHITE
- ⑧ RUN INDICATOR ..... LIGHT UP IN GREEN
- ⑨ ABNORMAL INDICATOR ..... LIGHT UP IN RED
- ⑩ HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- ⑪ HEATING INDICATOR ..... LIGHT UP IN YELLOW

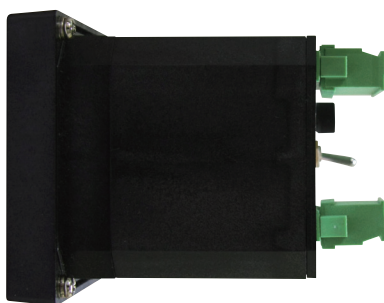
REAR VIEW



T.B LAYOUT (SMC-501BAH)



SIDE VIEW



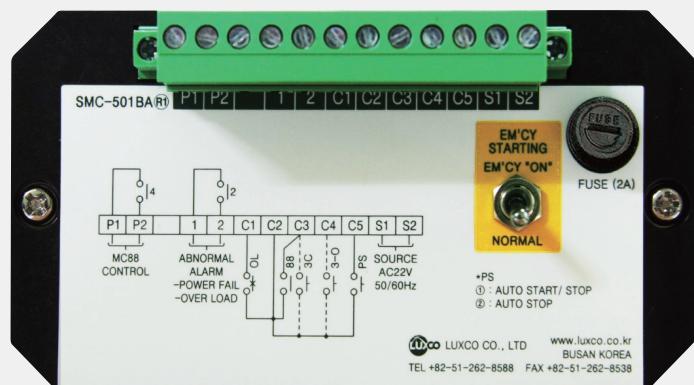
REAR VIEW LAYOUT

- ① CONNECTION T.B ..... M3 ( Plug in type )
- ② ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- ③ FUSE ..... 5x20 (2A)
- ④ CONNECTION T.B ..... M3 ( Plug in type )

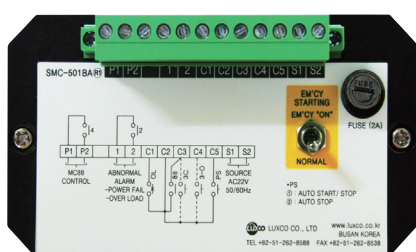
SMC-501BA



T.B LAYOUT (SMC-501BA)

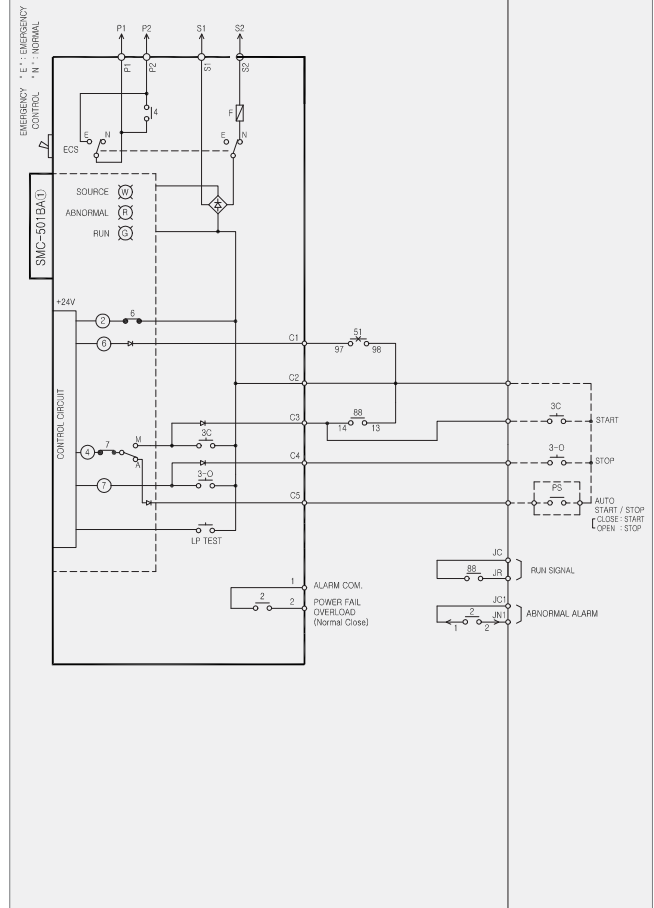
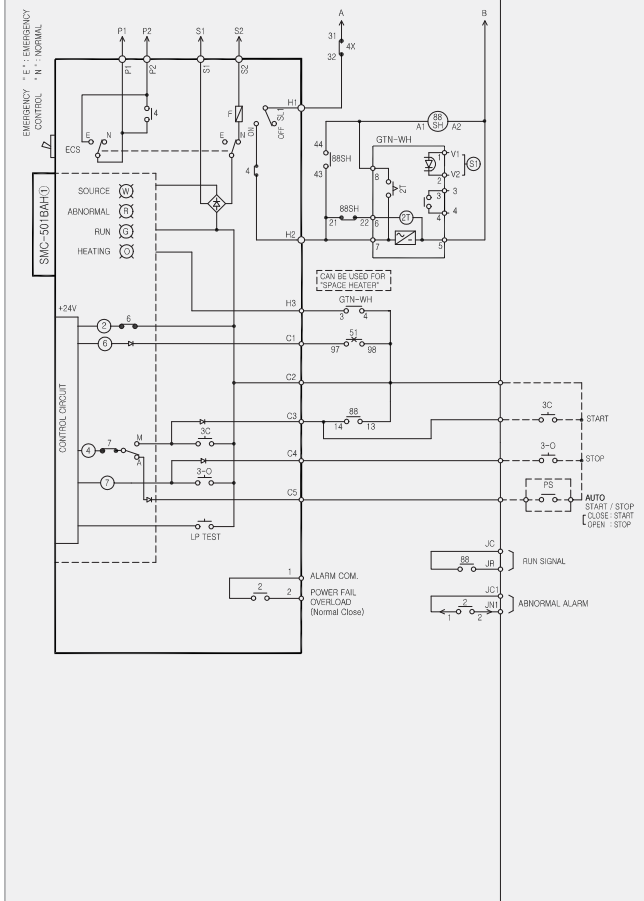
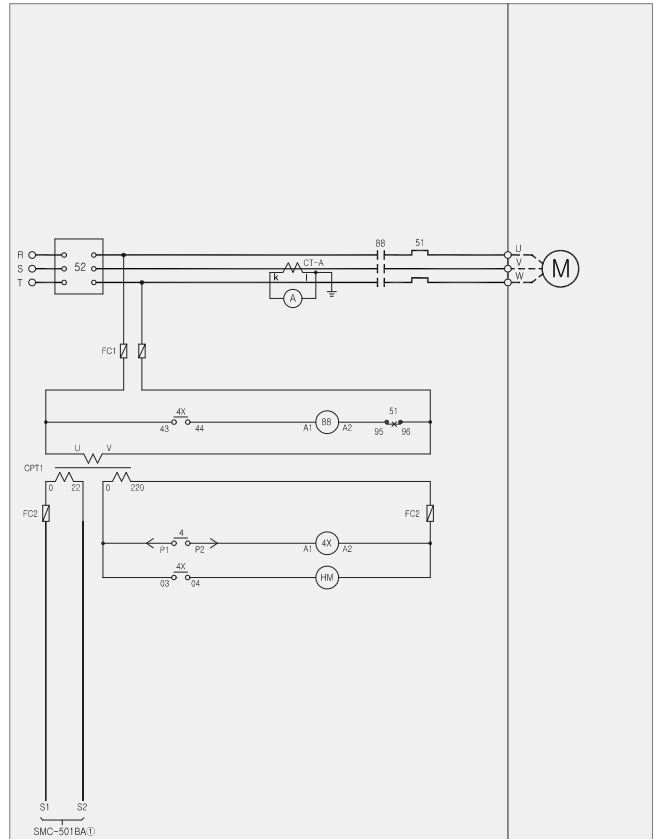
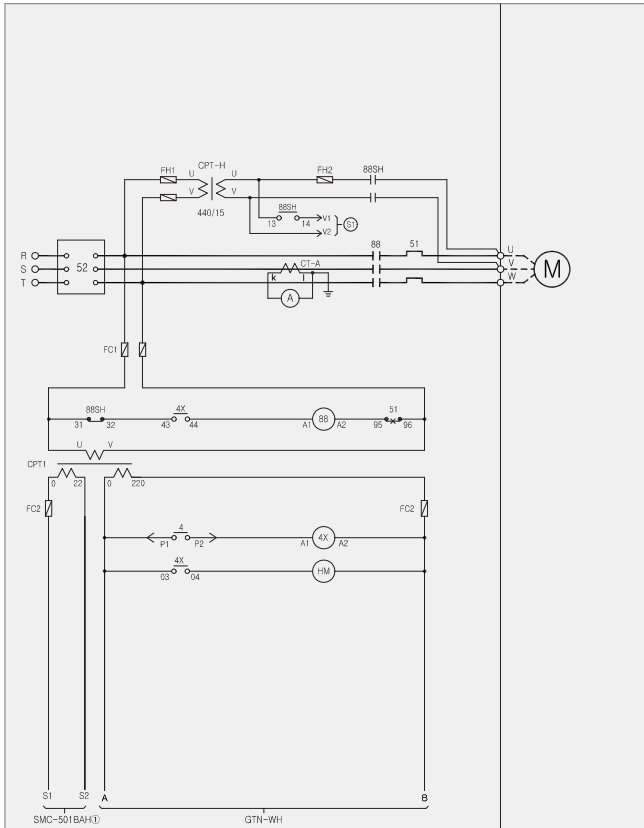


REAR VIEW



## SMC-501BAH① CONNECTION DIAGRAM

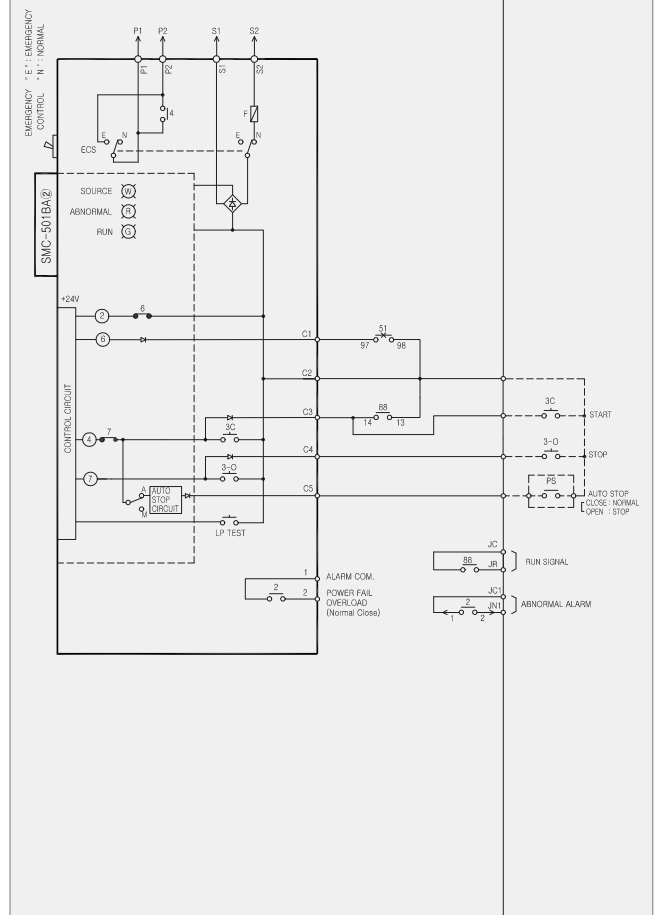
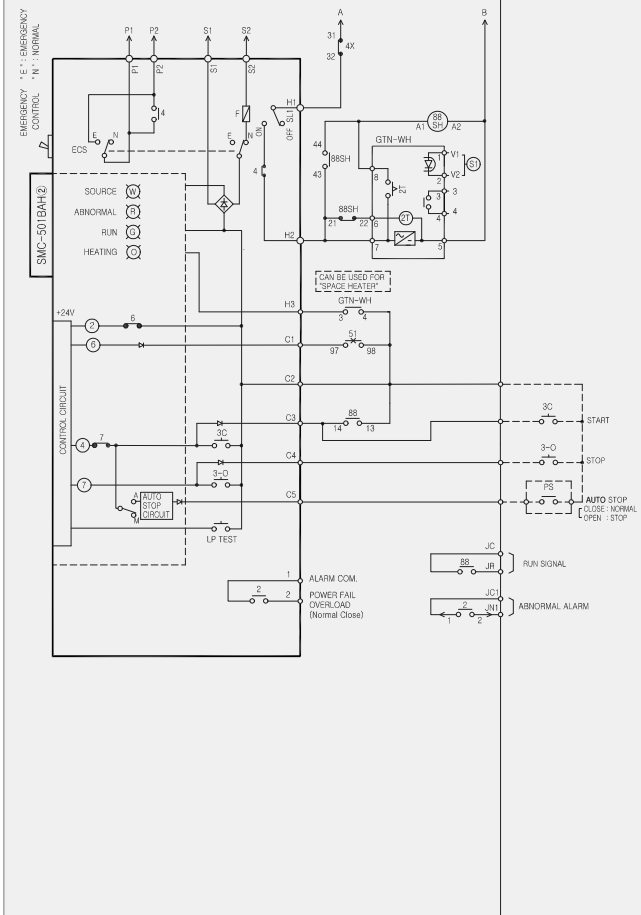
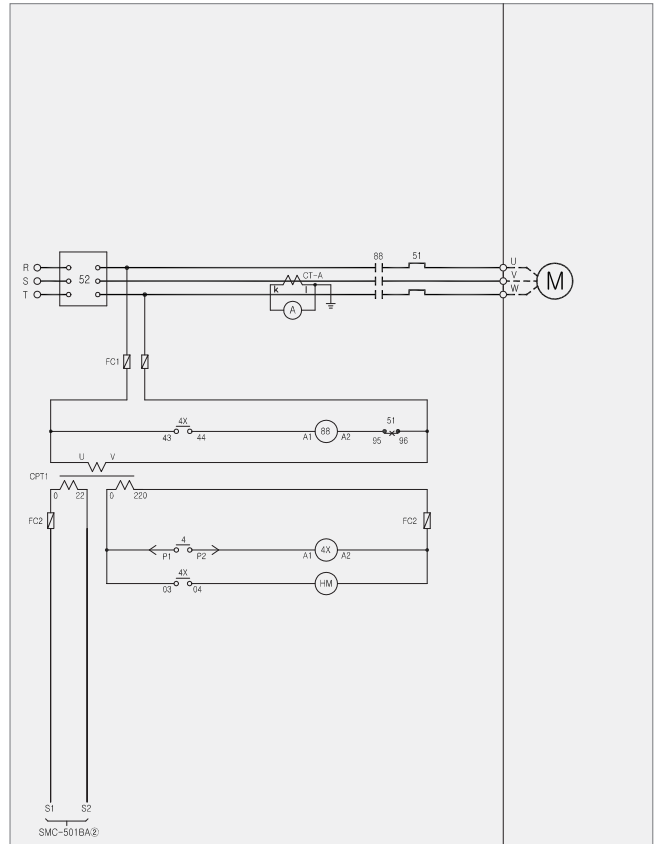
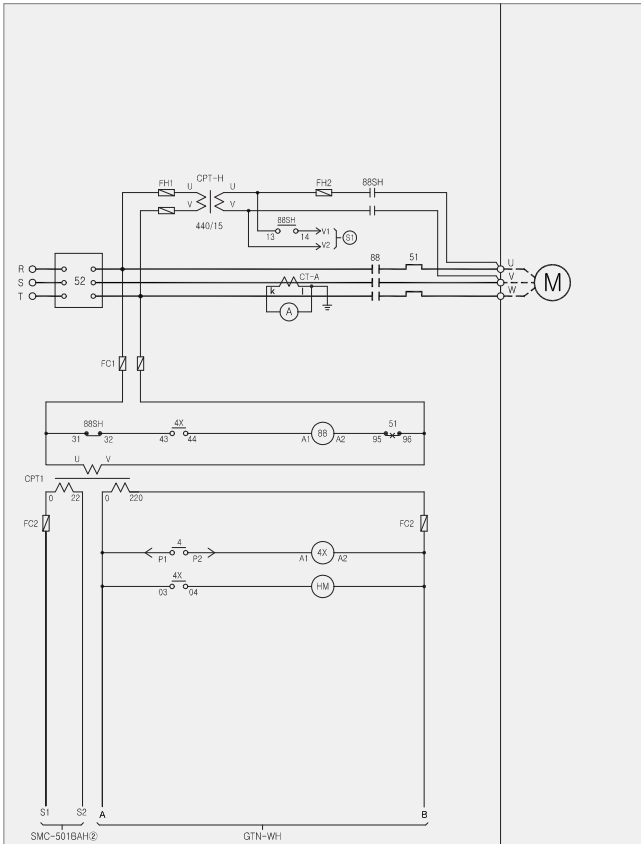
## SMC-501BA① CONNECTION DIAGRAM





### SMC-501BAH② CONNECTION DIAGRAM

### SMC-501BA② CONNECTION DIAGRAM



MOTOR CONTROLLER

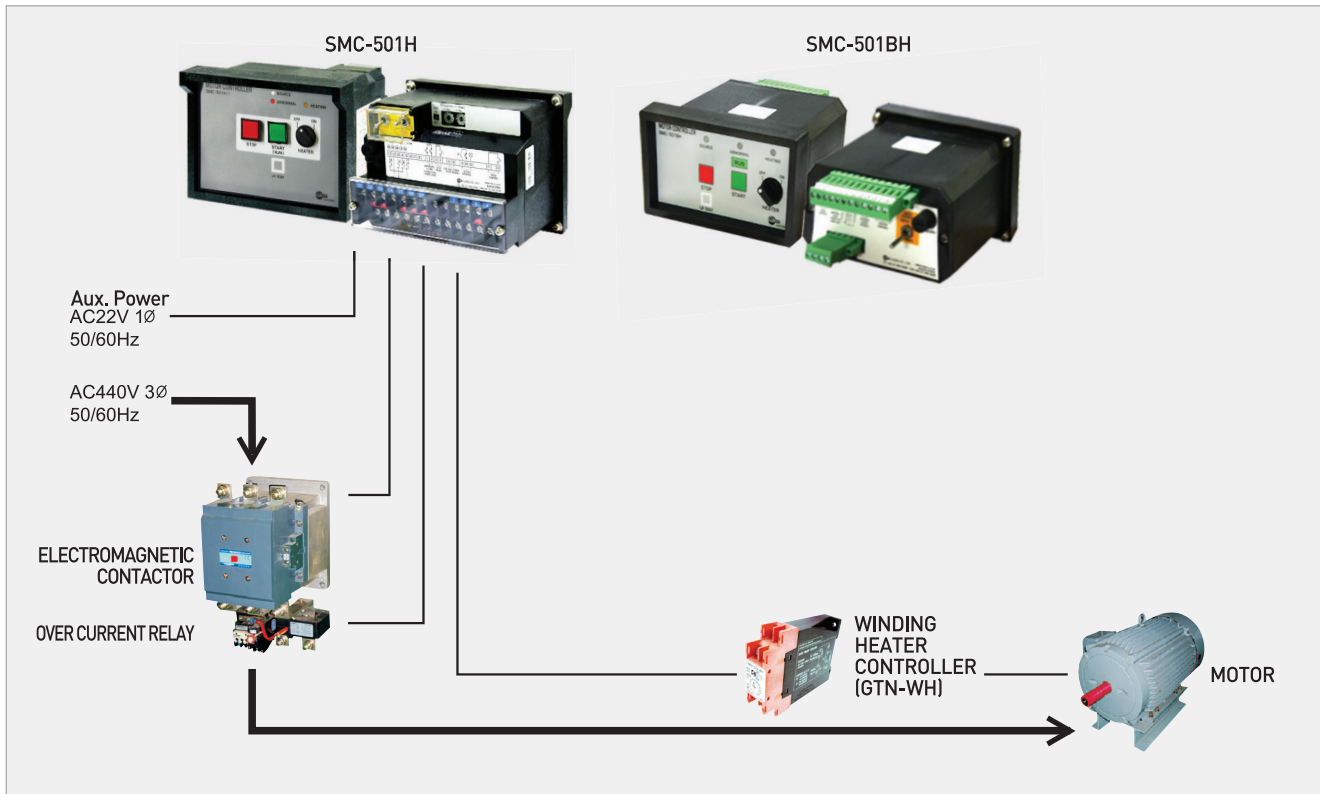
# MOTOR CONTROLLER

## GENERAL INFORMATION

The SMC 501 series motor controllers have the basic function of direct on-line start. They are formed as general manual operation. As the major point, SMC-501 series have sequential start (UVR/UVP), alarm signal out.

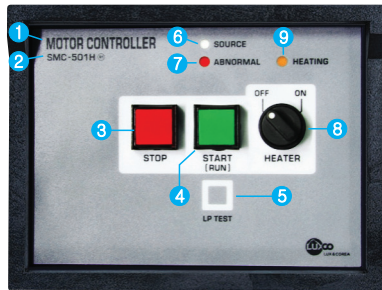
Note.) Refer to the technical manual to see the detail description of function.

## SYSTEM LAYOUT

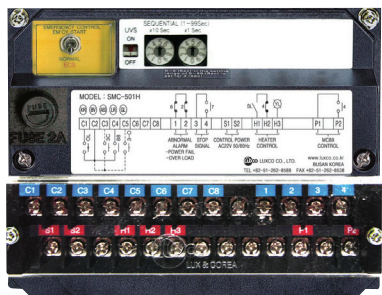


CONTROL								
FUNCTION	☞ (START)	OVERLOADED	OVERLOAD RESET	☞ (START)	POWER FAIL / BLACK OUT	POWER SOURCE RECOVERY	SEQUENTIAL START	☞ (STOP)
RUN	ON	OFF	ON	ON	OFF	ON	OFF	ON
ABNORMAL LAMP	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
ABNORMAL ALARM OUTPUT	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
TIME RANGE						t1		
						t1 : SEQUENTIAL TIME — (1~99sec.)		

**SMC-501H**



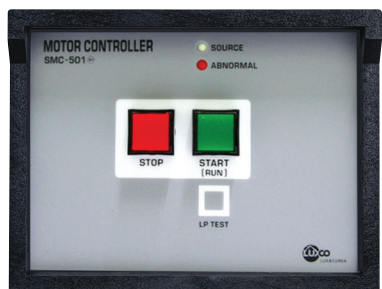
**REAR VIEW**



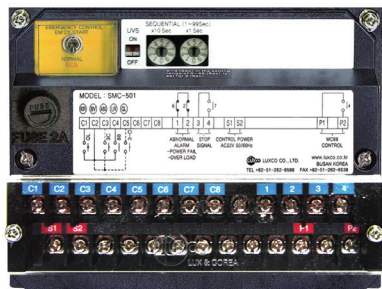
**SIDE VIEW**



**SMC-501**



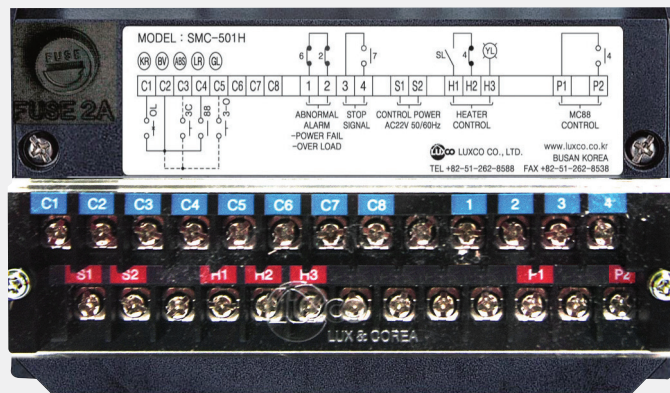
**REAR VIEW**



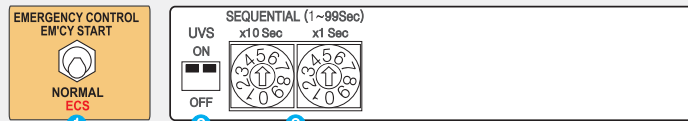
**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-501 OR 501H
- 3 STOP BUTTON ..... 18 x 18 RED
- 4 START BUTTON WITH LAMP ..... 18 x 18 GREEN
- 5 LAMP TEST BUTTON ..... TACT SWITCH
- 6 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 7 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 8 HEATER SWITCH ..... Ø 18 SELECTOR SWITCH
- 9 HEATING INDICATOR ..... LIGHT UP IN ORANGE

**T.B. LAYOUT (SMC-501H)**

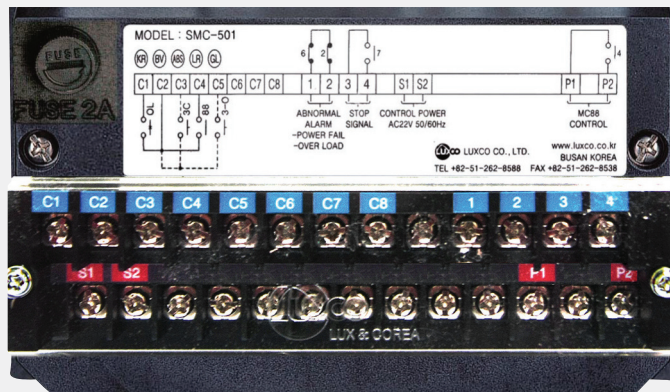


**PRE. SET (SWITCH & TIMER) (SMC-501 & 501H)**

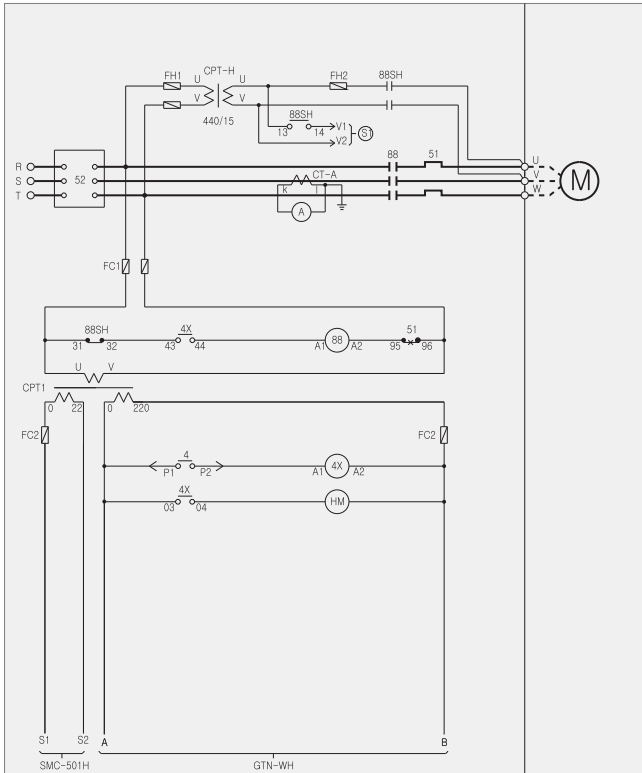


- 1 ECS SWITCH ..... EM'CY START BY TOGGLE SWITCH
- 2 UVS SWITCH ..... SEQUENTIAL START BY DIP SWITCH  
 UVR - UNDER VOLTAGE RELEASE : (SEQUENTIAL START ACTION)  
 UVS SET "ON" POSITION  
 UVP - UNDER VOLTAGE PROTECTION : (NO SEQUENTIAL START ACTION)  
 UVS SET "OFF" POSITION
- 3 SEQUENTIAL TIMER ..... 1~99 SEC. ADJUSTABLE BY DIGITAL SWITCH  
 0~1(SEC.) IN THE SETTING RANGE OF 0~99 (SEC.) IS SET FOR 1 (SEC.)

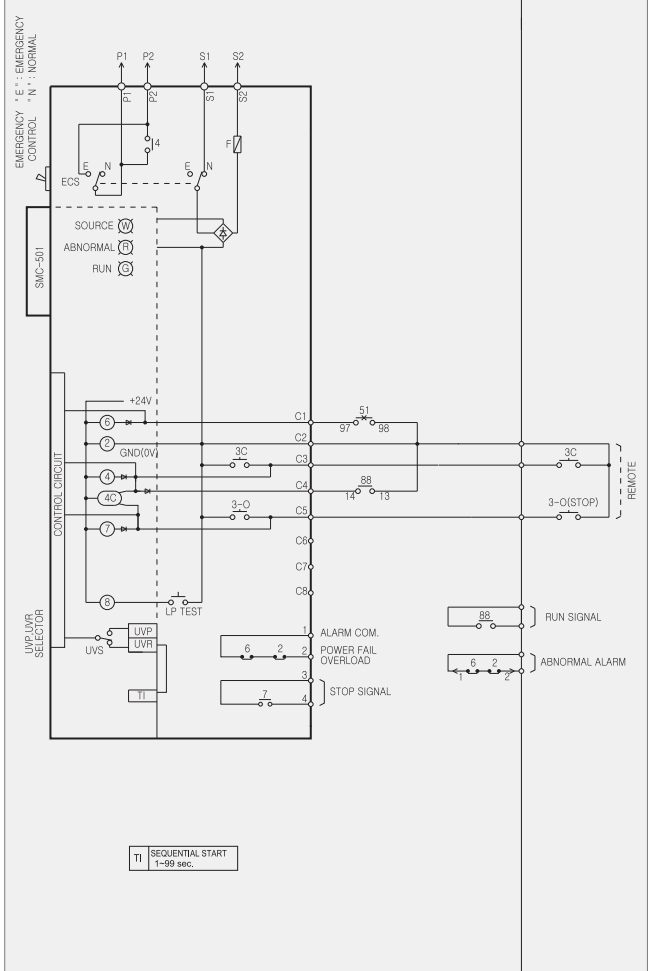
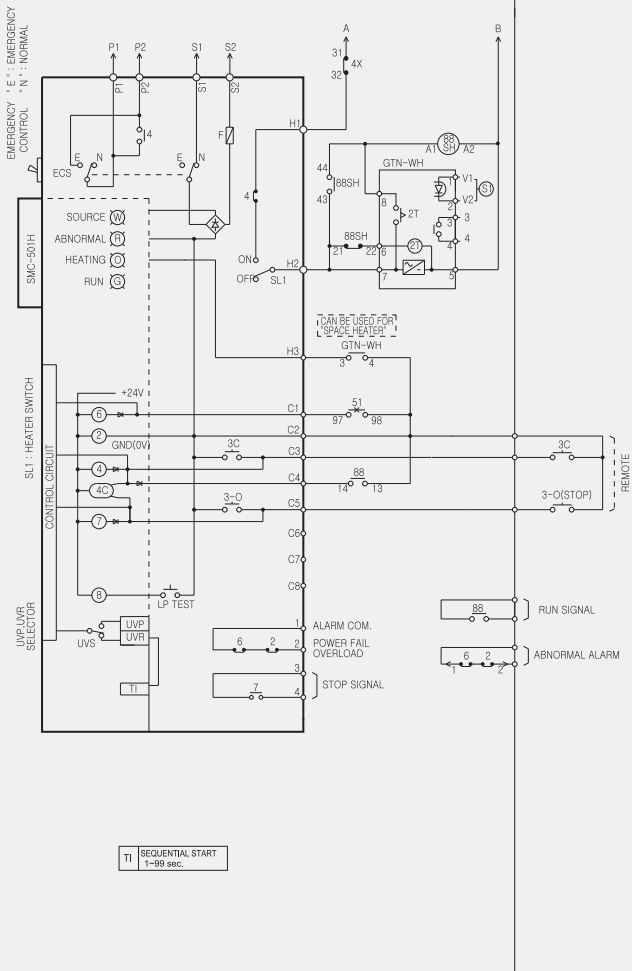
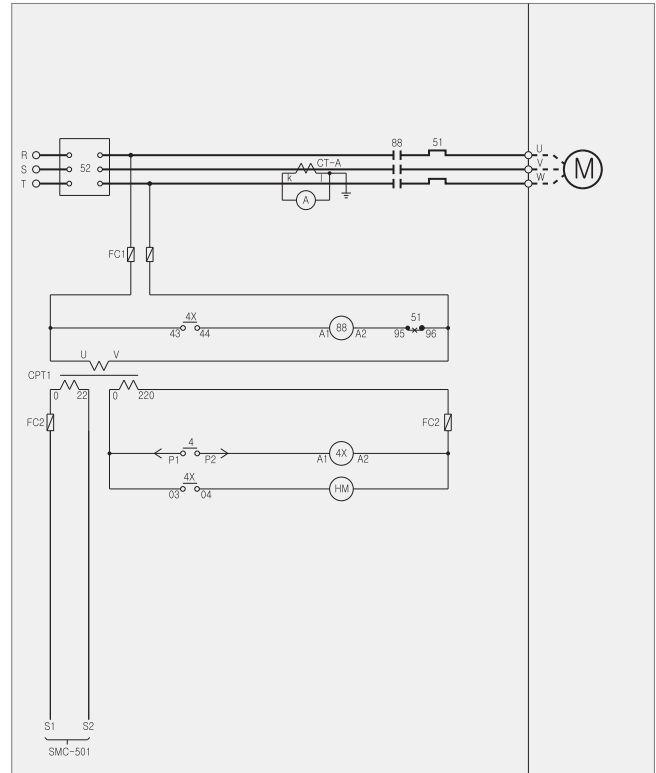
**T.B. LAYOUT (SMC-501)**



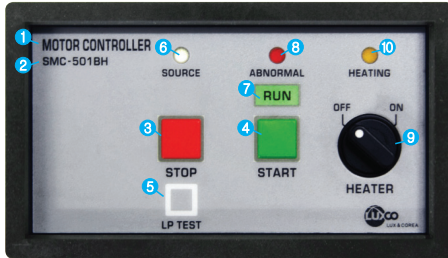
### SMC-501H CONNECTION DIAGRAM



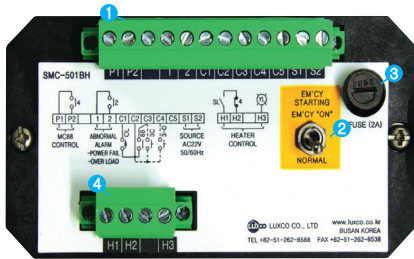
### SMC-501 CONNECTION DIAGRAM



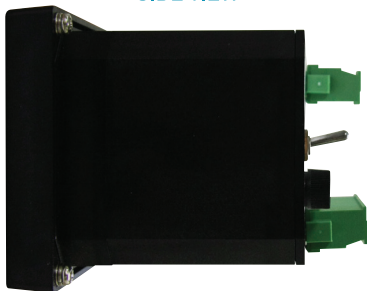
**SMC-501BH**



**REAR VIEW**



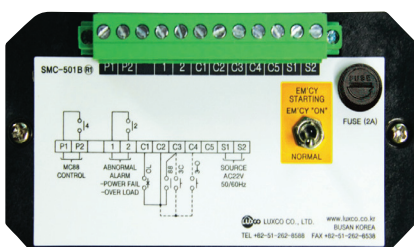
**SIDE VIEW**



**SMC-501B**



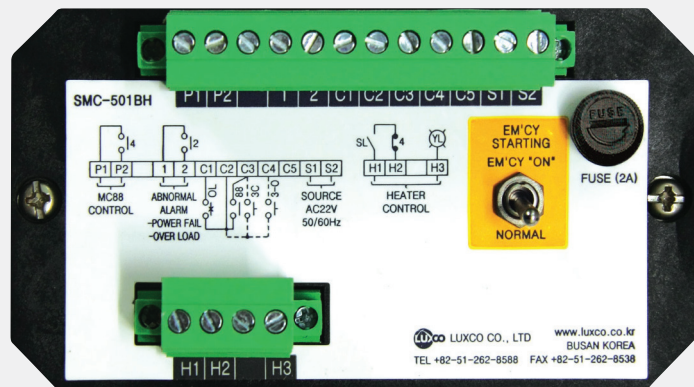
**REAR VIEW**



**FRONT VIEW LAYOUT**

- 1 NAME OF PRODUCT ..... MOTOR CONTROLLER
- 2 MODEL NAME ..... SMC-501B OR 501BH
- 3 STOP BUTTON ..... TACT SWITCH RED
- 4 START BUTTON ..... TACT SWITCH GREEN
- 5 LAMP TEST BUTTON ..... TACT SWITCH
- 6 SOURCE INDICATOR ..... LIGHT UP IN WHITE
- 7 RUN INDICATOR ..... LIGHT UP IN GREEN
- 8 ABNORMAL INDICATOR ..... LIGHT UP IN RED
- 9 HEATER SWITCH ..... Ø18 SELECTOR SWITCH
- 10 HEATING INDICATOR ..... LIGHT UP IN YELLOW

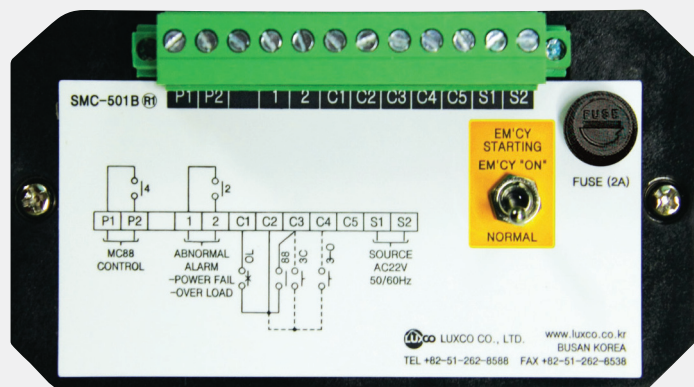
**T.B LAYOUT (SMC-501BH)**



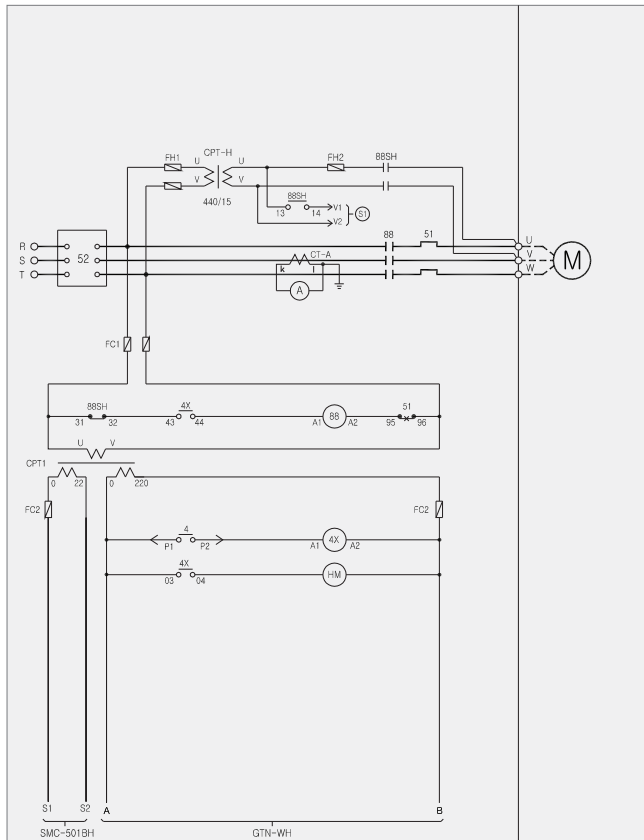
**REAR VIEW LAYOUT**

- 1 CONNECTION T.B ..... M3 ( Plug in type )
- 2 ECS SWITCH ..... EM 'CY START BY TOGGLE SWITCH
- 3 FUSE ..... 5x20 (2A)
- 4 CONNECTION T.B ..... M3 ( Plug in type )

**T.B LAYOUT (SMC-501B)**



### SMC-501BH CONNECTION DIAGRAM



### SMC-501B CONNECTION DIAGRAM

