II LOAD LIMITER [전기식 과부하 방지 장치] [ELECTRIC OVERLOAD LIMITER]

1. 개 요 (INTRODUCTION)

DOSUNG LOAD LIMITER는 전동기를 사용하는 기계를 충격 부하 및 과부하로부터 보호하는 안전장치입니다. DOSUNG LOAD LIMITER is the safety device to protect machine running on electric motor from the shock load and overload.

기계에 충격부하 및 과부하가 걸리면 변류기(C.T)에서 검출 LOAD LIMITER의 설정치에 대한 과부하로 판단하고 이상 신호 RELAY를 동작시켜 입력 전원을 차단하여 기계를 보호합니다.

If the shock load and overload are caught in machine, C.T detects them and the LOAD LIMITER cuts the power source with operating the relay to protect the machine.

2. 제품의 특징 (FEATURE OF PRODUCT)

1) 본 제품은 micro chip을 탑재하여 상승시간을 정확히 기억해 과부하 시 동일시간 하강하면 자동 복귀 됩니다.
Our product has the micro chip, so memorize the rising time firmly and if the descending time is equal, our product will reset automatically when overloading.

2) DIGITAL TYPE으로 시간 및 전류를 미소단위로 정밀하게 설정할 수 있어 정밀 조정이 가능하여 동작이 확실합니다.
You can set the time and current minutely because of digital type, so the operation is accurate.

3) "L" 상과 "H" 상은 CREEP의 경우 저속과 고속의 전류를 각각 설정이 가능하며 과부하 TRIP 시 "L"(저속)상과 "H"(고속) 상의 TRIP의 식별이 가능합니다.
In case of creep, you can set the "L" mode current and "H" mode current individually and when overloading, you can distinguish whose mode get "trip" easily.

4) 운전시 MOTOR의 전류가 표시되므로 SETTING이 용이합니다.
Setting is easy because electric current of motor be indicate during operation.

5) 과부하 TRIP시 경보 LED가 점멸되므로 TRIP식별이 용이합니다.
The distinguising of TRIP is easy because (warning) led turns on and off when overload TRIP.

6) 외장 변류기(C.T)를 사용하므로 배선 및 설치가 편리합니다.
By using the C.T(current transformer) of external type, it is easy to wire and install.

7) 본 제품은 기동 횟수를 확인할 수 있고 최고 전류치를 확인 할 수 있습니다.
You can confirm electric machine s operating number and maximum current value.

8) 조작전압은 FREE VOLTAGE이기 때문에 전체 작업성이 편리하고 전압조작에 의한 파손 및 손실을 예방 할 수 있습니다.
Working efficiency is easy and can protect this product from breakdown or damages by voltage operation because operation voltage is free voltage.

3. RATED SPECIFICATION OF LOAD LIMITER

CLASSIFICATION \ NAME OF MODEL		WIRE type	CHAIN type
		DSL/W250 HV	DSL/C250 HV
APPLICATION	CAPACITY	250A	250A
	VOLTAGE	AC 3PH 220V ~ 480V	AC 3PH 220V ~ 480V
LOAD CURRENT - REGULATION RANGE		0.5A ~ 250A	0.5A ~ 250A
START TIME - REGULATION RANGE		0.1 ~ 25 SEC	0.1 ~ 25 SEC
SHOCK TIME - REGULATION RANGE		0.1 ~ 25 SEC	0.1 ~ 25 SEC
RESET TIME - REGULATION RANGE		0.1 ~ 25 SEC	0.1 ~ 25 SEC
CURRENT SETTING UNIT		0.1A ~ 1A (AUTO)	0.1A ~ 1A (AUTO)
OPERATING VOLTAGE		AC 1PH 110V ~ 220V (FREE)	AC 1PH 110V ~ 220V (FREE)
CONTACT CAPACITY		1a1b point of contact,AC250V 5A(resistance load)	1a1b point of contact,AC250V 5A(resistance load)
OPERATING AMBIENT TEMP.		-25 ~ 60℃	-25 ~ 60℃
POWER CONSUMTION		1VA	1VA
REMARKS		C.T(CURRENT TRANSFORMER) OF EXTERNAL TYPE	

※ Reference : You can also order LV type(AC 1PH 24 ~ 48V, free voltage), INVERTER type and EX-PROOF type separately.

4. PRECAUTIONS FOR SAFETY

▶ CAUTION . WARNING NOTIFICATIONS

It marks the warning and caution notifications in order to emphasize the important WORDS FOR SAFETY.
This manual' s precautions are defined as belows;

In case of not pay attention, it can occur death or serious wound. It is urgent and dangerous situation.

In case of not pay attention, it can occur death or serious wound. It is potential risky situation.

In case of not pay attention, it can occur slight wound. It is potential risky situation.

▶ COMMON FACTORS

Before installation, operation or maintenance, please read carefully all manual contents and practice.

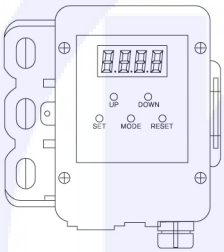
Please relative preparation process in order to protect occurable accidents by not authorized person

5. 조작부의 명칭과 기능 (NAME&FUNCTION OF CONTROL SECTION)

● 표시창 (DISPLAY)

모터전류, 과부하 동작 상태를 표시합니다.
It indicates motor current and the state of overload.

WIRE형 (WIRE TYPE)



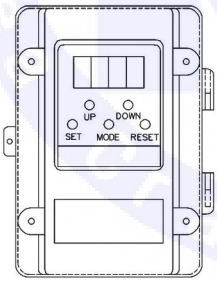
● 기억버튼(MEMORY BUTTON) (SET)

동작 기능별 설정값을 입력하거나 기억 시킬때 사용합니다.
You use it to set or memorize the setting value.
(COVER 전면을 열고 조작하셔야 합니다.)
(You must operate it with opening the cover' s whole surface)

● 선택버튼 (SELECTION BUTTON) (MODE)

설정 값 변경시 기능별 번호를 표시합니다.
It indicates the functional number when changing the setting value.

CHAIN형 (CHAIN TYPE)



● UP, DOWN 버튼 (UP,DOWN BUTTON)

설정값을 변경시 사용합니다. (You use it to change the setting value)

● 복귀버튼(RETURN BUTTON) (RESET)

모든 기능을 다시 할때 사용합니다. (You use it to reset all function)

● "L" "H" 시험버튼 ("L" "H" TEST BUTTON)

UP버튼을 1~2초간 누르면 H상 시험이 되고, DOWN 버튼을 1~2초간 누르면 L상 시험이 됩니다.
If you press "UP" button for 1~2 seconds, you can "H" mode test and if you press "DOWN" button for 1~2 seconds, you can "L" mode test.

INSTRUCTION MANUAL FOR LOAD LIMITER

1. HOW TO USE

1) INPUT THE POWER SOURCE

When input the power source, [CH7] (waiting) is indicated at display window

2) TIME SETTING

If you press the SET button, [h2h4] appears and it changes to [1 0] (1, 0) and flickers.

At this moment, set the START TIME by pressing the UP, DOWN buttons.

Continuously for setting the SHOCK TIME, press the MODE button then it changes to [2 0] (2, 0) and flickers.

Then set the SHOCK TIME as same way.

And if you press the MODE button one more time, it changes to [3 0] (3, 0) and flickers.

Then you can set the RESET TIME as same way, too.

3) CURRENT VALUE SETTING

After setting the times, if you press the MODE button, it changes to [L 0] (L, 0) and flickers.

Then set the "L" mode current value by pressing the UP, DOWN buttons.

And then if you press the MODE button one more time, it changes to [H 0] (H, 0) and flickers.

As the same way, you can set the "H" mode current value.

4) MEMORY SETTING

After setting the all settings, if you press the SET button, all settings will be memorized with [7107] (memory) sign.

⚠ CAUTION

- If you operate a series of continuity over 2~3 times per sec, it can be cause of malfunction.
- It requires attention that setting values changes to initial value, it will cause the malfunction, because of inputting the power source repeatedly. So you use the power source which is connected to the top of motor switch(MCCB) or the operating power source.
- Operating voltage is 110V~220V(FREE) and unauthorized voltage using causes the malfunction.
- C.T s connection line should be twisted and the length should be short as possible so not to excess 1m.

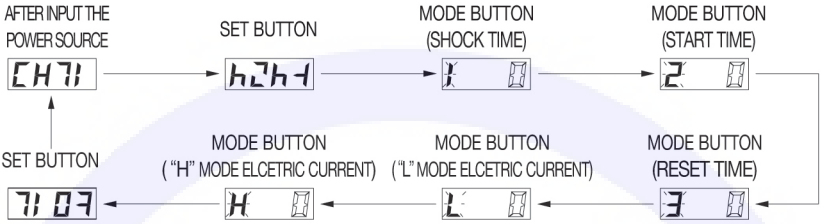
⚠ WARNING

This product is composed of DIGITAL circuit of control-way using MICRO COMPUTER and EEPROM. MICRO COMPUTER has the possibility to be initiallized by strong outer noise from the outside or by frequent SWITCHING "ON-OFF", and also may not be operated propely. this matter will allow the motor to be overloaded and may cause the dangerous accidents relating to human life and injury. So, the person in charge of safety management or the authorized workers at the circumstance exposed to frequent operation of power "ON-OFF" should regularily check for these device.

When firstly install this device, please install after know fully about instruction manual.

※ AT THE CREEP TYPE, START TIME IS "L" MODE OVERLOAD TIME AND OVERLOAD TIME IS "H" MODE OVERLOAD TIME.

2. HOW TO SET THE TIME & CURRENT



● SETTING RANGE OF BY FUNCTION AND THE UNIT

DISPLAY	FUNCTIONAL NAME	INITIAL SETTING	RANGE OF SETTING	SETTING UNIT
1 0	SHOCK TIME	ex) 0.5 SEC	0.1~25 SEC.	0.1 SEC.
2 0	START TIME	0.5 SEC	0.1~25 SEC.	0.1 SEC.
3 0	RESET TIME	1.0 SEC	0.1~25 SEC.	0.1 SEC.
L 0	"L" MODE SETTING CURRENT	MOTOR-RATED CURRENT VALUE	SETTING BY THE SETTING UNIT-VALUE OF MODEL-RATED	
H 0	"H" MODE SETTING CURRENT	MOTOR-RATED CURRENT VALUE		

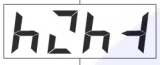
● THE METHOD OF DISPLAY DISTINCTION BY MOVING STATE

DISPLAY	FUNCTIONAL NAME	CONTENTS
CH7!	THE STATE OF INPUTTING THE POWER SOURCE	IT INDICATES THAT OUR PRODUCT IS READY TO OPERATE.
L 00	THE STATE OF "L" MODE OVERLOAD	IT INDICATES THAT THE MOTOR GETS OVERLOAD DURING "L" MODE.
H 00	THE STATE OF "H" MODE OVERLOAD	IT INDICATES THAT THE MOTOR GETS OVERLOAD DURING "H" MODE.
L250	THE STATE OF OPERATING IN "L" MODE	IT INDICATES THE MOTOR S CURRENT VALUE IN "L" MODE.
H250	THE STATE OF OPERATING IN "H" MODE	IT INDICATES THE MOTOR S CURRENT VALUE IN "H" MODE.

3. HOW TO SET BY FUNCTION

〈SETTING THE SHOCK TIME〉

Press the SET button



(SEQUENCE)

FLICKERS

According to product' s specificity, set 1~2 SEC

▲ or ▼

Press the SET button

COMPLETION OF SETTING

(REMEMBER)

〈SETTING THE START TIME〉

Press the SET button

Press the MODE button one time

FLICKERS

According to product' s specificity, set 1~2 SEC

▲ or ▼

Press the SET button

COMPLETION OF SETTING

(REMEMBER)

〈SETTING THE RESET TIME〉

Press the SET button

Press the MODE button twice

FLICKERS

SET MORE(ABOUT 0.2 SEC.) THAN SHOCK TIME + START TIME

▲ or ▼

Press the SET button

COMPLETION OF SETTING

(REMEMBER)

〈SETTING THE "L" MODE CURRENT〉

Press the SET button

Press the MODE button three times

FLICKERS

According to product' s specificity, set the SETTING electric current

▲ or ▼

Press the SET button

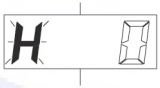
COMPLETION OF SETTING

〈SETTING THE "H" MODE CURRENT〉

Press the SET button

Press the MODE button four times

FLICKERS



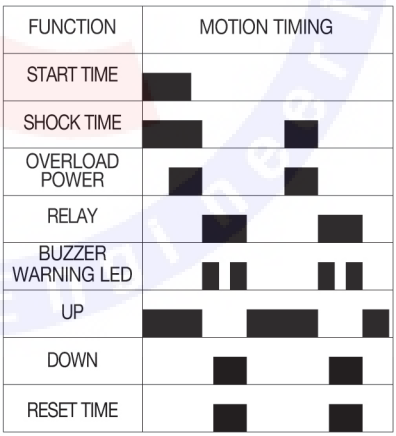
According to product' s specificity, set the SETTING electric current

▲ or ▼

Press the SET button

COMPLETION OF SETTING

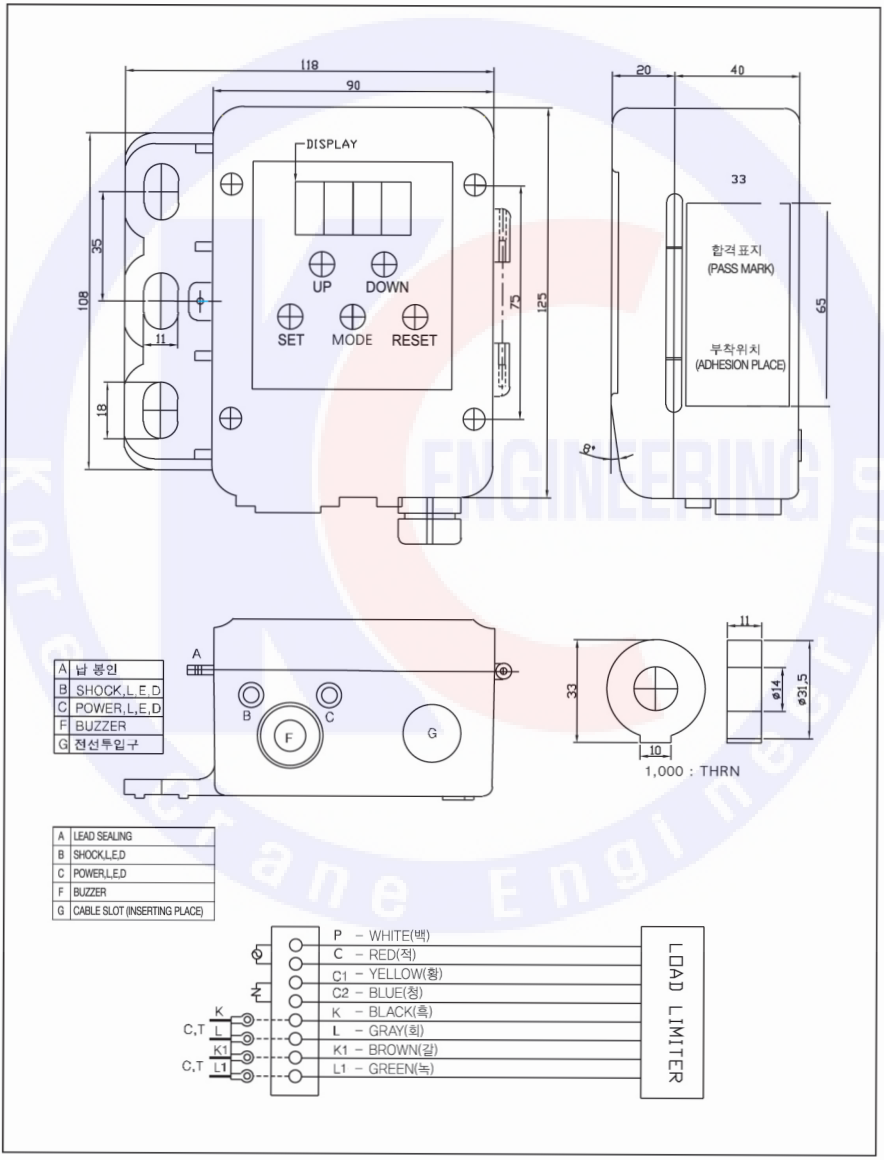
〈LOAD LIMITER FLOW CHART〉



※ SHOCK TIME should be set shorter than START TIME, that is safe. When application time of singular velocity HOIST, should be set the "L" mode and "H" mode' s setting current and it is 2-line detection way. Case of applying two speed hoist (CREEP TYPE, CHAIN HOIST), "L" mode should be set low-speed and "H" mode should be set high-speed respectively, at this time it is one-line detection way.

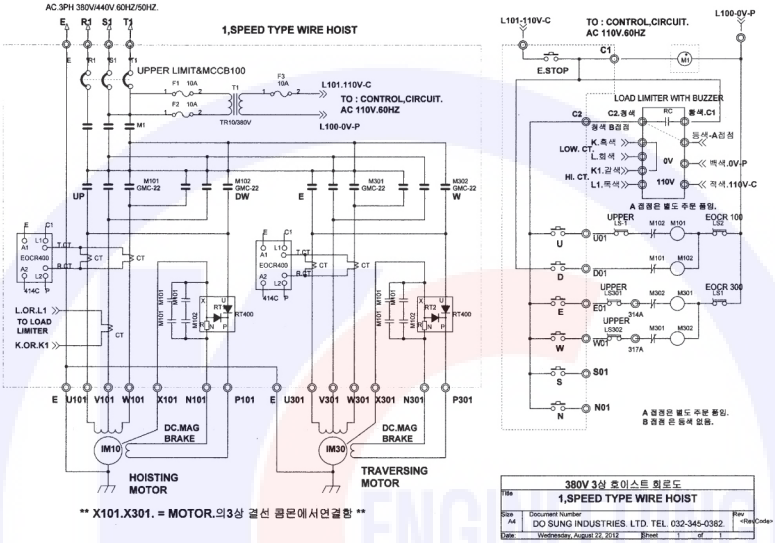
Ⅳ LOAD LIMITER 도면 (LOAD LIMITER DIAGRAM)

1. BOX LAY-OUT (WIRE TYPE)

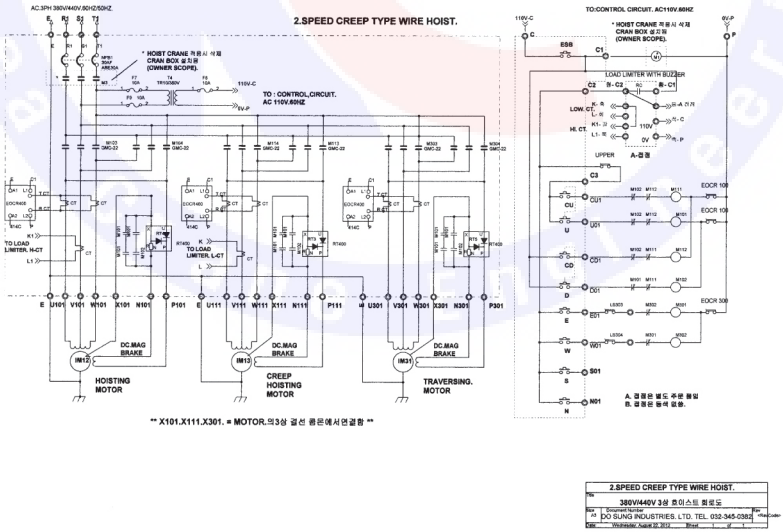


2. ELECTRIC WIRE HOIST SEQUENCE DWG

1 SPEED TYPE



2 SPEED TYPE



V LOAD LIMITER ; CHECKING FACTORS BEFORE BREAKDOWN NOTIFICATION

BREAKDOWN SIGNALS	CHECKING POINTS	THE METHOD OF TREATMENT
THERE' S NO 'SIGN' IN DISPLAY WINDOW	CHECKING FOR WIRING, DISCONNECTING AND CONTACT OF MAIN OR OPERATING SOURCE OF ELECTRICITY	INQUIRE AT PURCHASING PLACE
THERE IS "" STAND BY"" SIGN AT DISPLAY WINDOW,BUT WHEN THAT IS NOT OPERATED	PRESS THE OPERATING SWITCH ON	IF THE NUMERICAL VALUE NOT BE CHANGED, REFER TO THE MANUAL OR INQUIRY TO PURCHASING PLACE
WHEN NOT SWITCH OPERATION	CONFIRMATION AFTER REMOVE GLOVE OR STRANGE SUBSTANCES	INQUIRY TO PURCHASING PLACE OR A/S REQUEST
WHEN NOT ACT ELECTRIC CURRENT OR FUNCTIONAL SIGN AT DISPLAY WINDOW	DO CHECK C.T DISCONNECTION OR CONTACT DISCONNECTION	REQUEST A/S
※ YOU MUST BE CAREFUL TO ELECTRIC SHOCK OR ACCIDENT RISKS WHEN YOU OPEN OR DISASSEMBLE AT INEXPERT STATE		

VI QUALITY WARRANTY

1. THE TERM OF WARRANTY

   We guarantee one-year from purchasing date.

2. CONTENTS OF WARRANTY

   Dosung guarantees operating rightly when it used under conditions as it is explained to instruction manual which instruct about installation, use, check, repair etc.

3. RANGE OF WARRANTY

   Dosung guarantees about its parts and capacity's occurable troubles of overload Power protection.

4. RANGE OF NON-WARRANTY

   - In case of not using the designated voltage.
   - In case of not using under normal conditions.
   - In case of disassembling or assembling the product as one likes.
   - The breakdown or accidents caused by temperature and humidity or corrosiveness gas.
   - The breakdown or damage caused by odd voltage, external factors and careless treatment.
   - The breakdown or damage caused by natural disasters such as fire, earthquake, flood, thunderbolt etc.
   - The damages caused by not abide by instruction manual's directions.

5. A/S CENTER CONTACT ADDRESS

TEL : 031-989-0389 FAX : 031-987-2800