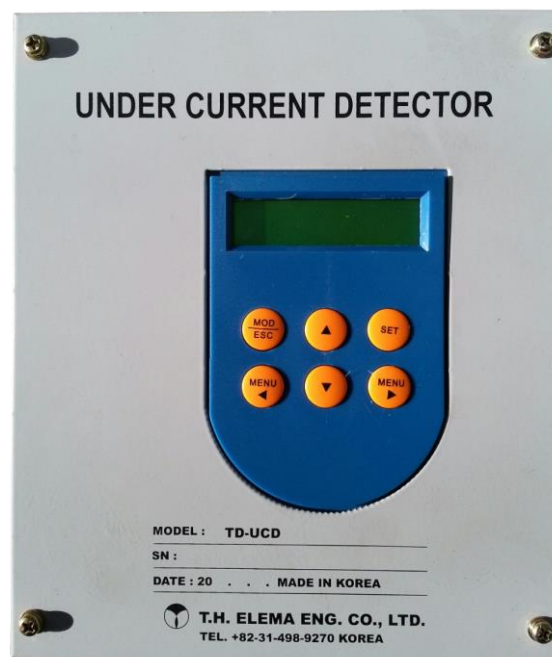


TDP-UC Series

(8-CH Under Current Detector)

OPERATING MANUAL



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Thanks for purchase HANMI TECHWIN's under current detector. This operating manual wrote to explain basic installation, setting, and how to work. Please read this manual carefully before the operation.

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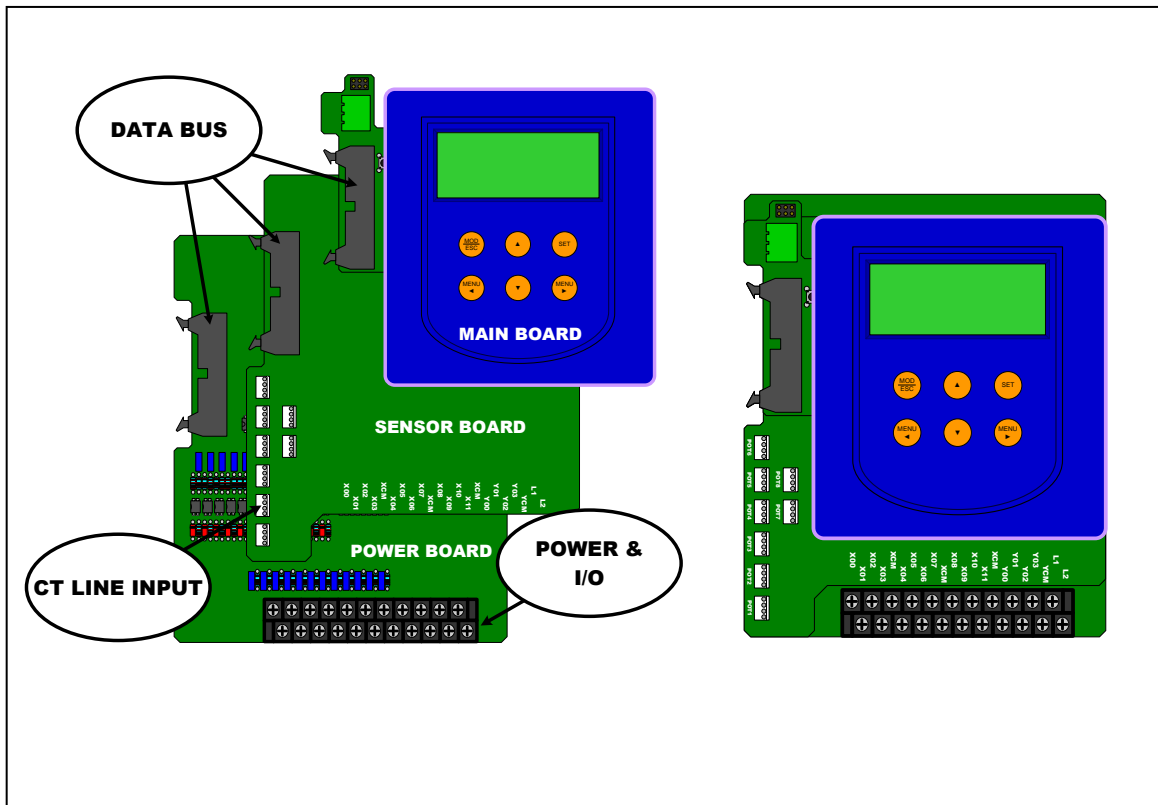
1. Introduction

TDP-UC Series is under current detector for magnet to detect current from magnet pots of which installed sensor for using feedback voltage at each pot to find various causes of under current and over current during the magnet operation preventing accidents.

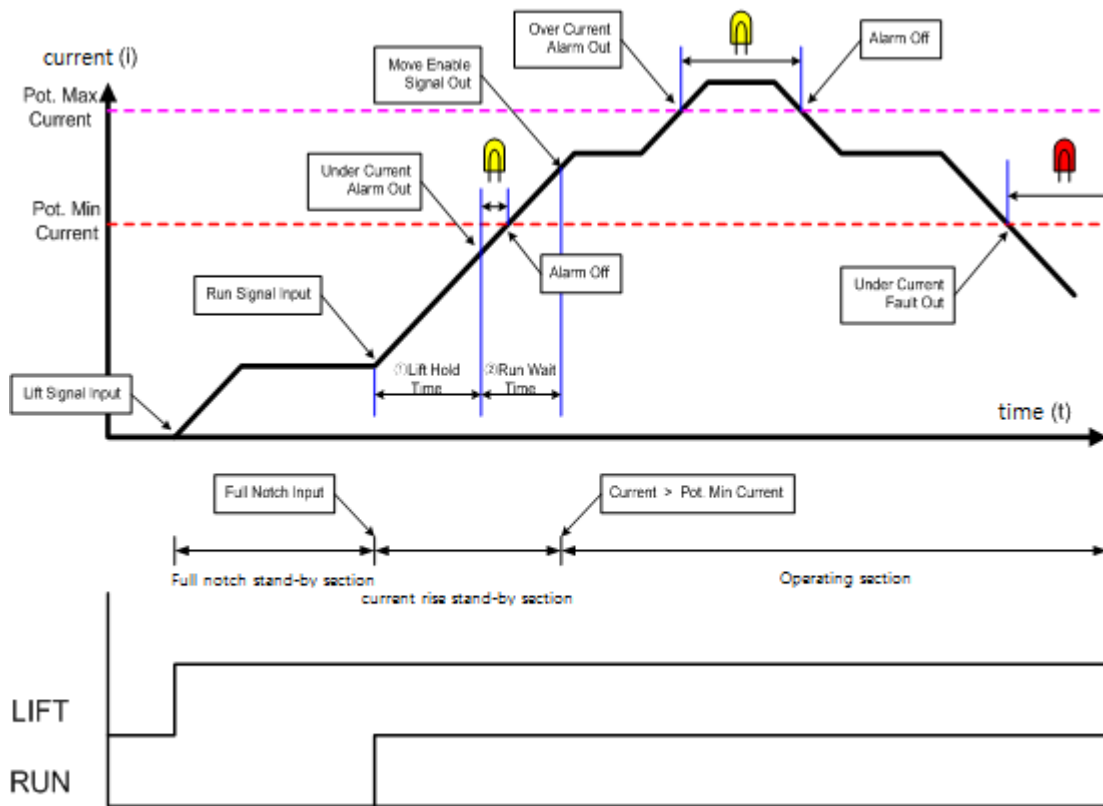
2. Characteristics

- ① It is possible to control simple key for changing setting value.
- ② Real time monitors permitted current from 8 channels.
- ③ When detects under current, displays fault message.
- ④ When detects over current, sounds an alarm.
- ⑤ When operates long time lifting operation, sounds an alarm.

3. Diagram for control board



4. System flow

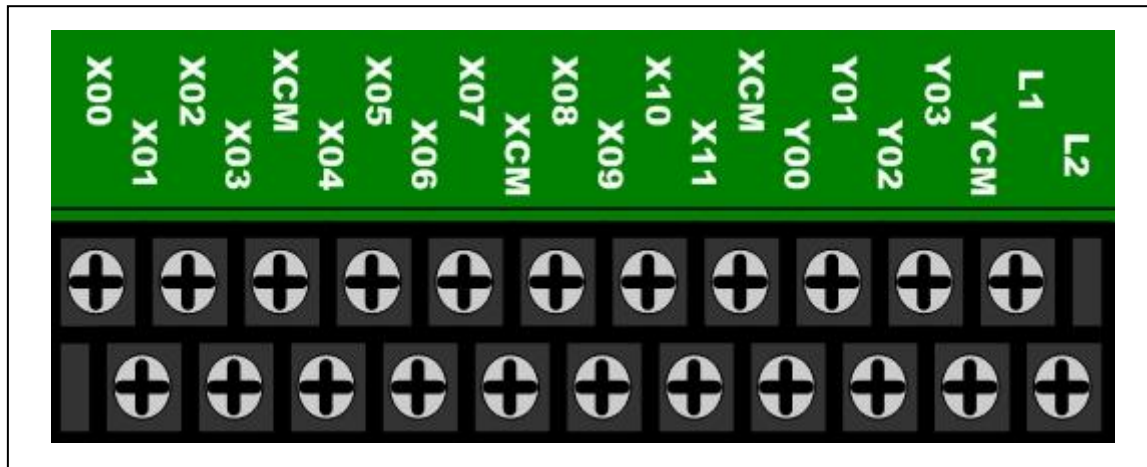


- (1) Full notch stand-by section: Full notch stand-by section shows current value; however, alarm and fault message do not output.
- (2) Current rise stand-by section: During the lifting operation, when input full notch, it will be stand-by section until magnet pot permit enough current. It could be set holding time whether lifting hold time and run wait time.
 - ① Lift hold time: when run signal input, under current detector operates. During the lift hold time, it will not output fault or alarm for flow enough current.
 - ② Run wait time: To enter run wait time after lift hold time. It detects current status at present. If current lower than set pot min. current, sounds alarm. Otherwise enter run status.
- (3) Operating section: After run wait time, permitted normal current to enter operating section. If port permitted current is more than pot max. Current with any causes, sounds alarm for over current cause. However, if current lower than pot min. current, display fault message.
 - ※ If magnet pot keeps lifting operation for a long period time, magnet pot could be overheated to drop current situation. These phenomenon occurs, please stop operation to maintenance magnet pot for protect magnet pot.

5. Parameter

Parameter	Setting Range	initialization	explanation
Lift Hold Time	1~10 [sec]	5	To set lift hold time from lift signal and run (full-notch) signal to enough current at magnet pot. It displays current value; however, alarm signal will not be output.
Run Wait Time	1~10 [sec]	3	To set detecting current after lift hold time. At this range, alarm signal output when under current detected.
Keep Cur. Time	10~1000 [ms]	50	For approval of effective current, it decides as noise below necessarily current time duration, setting value.
Pot Max Current	1~200 [A]	20	Setting over current. If current more than setting value, output alarm signal.
Pot Min Current	1~200 [A]	5	To set under current. If current flows blow setting value. - Output alarm signal (Run Wait Time). - Output fault signal (after run wait time).
C/T Rating	50~500	50	Setting C/T rating.
P. Disable Time	0.1~6.0 [sec]	3.0	Setting current detection limit time when Pot on or off.
Health Interval	1~30 (0.1~3 [sec])	10	Setting for period of arm lamp.
Overload Time	1~20 [min]	5	Overload time setting
Alarm Out Type	Close / Toggle	High	To set method of output alarm signal. Close – contact shorted Toggle – On/Off for health interval period
Faults History	View	To check recorded fault lists.	
	Clear	Initialization of fault lists.	

6. Explanation of terminal block



6.1 X00 : Run Signal (LIFT Full / SO)

Under current detector starts to detect current when input run signal during lift signal. It displays current value during lift hold time. When it detects abnormal current during run wait time, it will output under current alarm, over current alarm, under current fault signal. If run signal does not input, it displays current not for output any signal.

6.2 X01 : LIFT

This is lift input terminal of magnet unit. If input run signal, it starts detect current. If it is not, it just displays current value until input run signal.

6.3 X02 : DROP

This is drop signal terminal of magnet unit. It displays DROP on the LCD display.

6.4 X03 : RESET

It is reset signal terminal for reset under current detector.

6.5 XCM : INPUT COMMON

It is common terminal for input.

6.6 X04 ~ X07, X08 ~ X11 : Magnet Pot Select

Selecting terminal of the object detects current for magnet pot.

X04 – Pot1, X05 – Pot2, X06 – Pot3, X07 – Pot4,
X08 – Pot5, X09 – Pot6, X10 – Pot7, X10 – Pot8

6.7 Y00 : Fault output terminal

During the lift operation, if magnet pot output lower than pot min. current, fault signal output. When fault signal output, if current goes up to pot min. current, it could not release fault. Operator need to input reset signal.

6.8 Y01 : Alarm output terminal

It could be used for prohibition of transport signal. At current rise stand-by section, if current of entering run wait time is lower than pot min. current, alarm signal output. This alarm will be released when current is higher than pot min. current. In addition, if current is higher than pot max. Current this device recognizes over current, so that alarm signal outputs. The method of output alarm could be changed at alarm out type menu in parameter.

6.9 Y02 : Move Enable Output Terminal

At the current rise stand-by section, if the current is higher than pot min. current, it will output move enable signal. This signal is judged signal for flow normal current; therefore, it could be used for lifting operating signal.

6.10 Y03 : Overload output terminal

When magnet pot operating as lift motion for a long period of time, coil for pot temperature is rising to reduce current, it could be caused of damage of magnet pot. This output counts from the lifting operation to set time. It decides to overload to send warning signal. Operating time could be changed at overload time menu in Parameter

6.11 YCM : OUTPUT COMMON

It is common output terminal.

6.12 L1-L2 : AC INPUT

It is power plug for under current detector. Input power is AC90V~240V.

7. Monitoring

RDY	PS:FF
1: 10 A	2: -- A

Under current detector indicates current operating mode, operating status of magnet unit, pot selection of magnet pot, and amount of current at magnet port though LCD display easily.

7.1 Operating status

It displays present operating status of under current detector.

- ① RDY – It indicates ready status and stand-by.
- ② RUN – It shows to input run signal during the ready.
- ③ LIFT – It indicates to input lift signal. It will not be output any alarm or fault signal during the lift. Overload warning signal outputs when input lift signal during the overload time.
- ④ HOLD – To enter lift hold time, when run signal inputs during the lift operation. This period time is for increasing current as current rising stand-by section; it will not be output alarm or fault about under current.
- ⑤ WAIT – It indicates to enter run wait time after lift hold time. This period time outputs alarm and fault signal about under current; however, if it is not any alarm or fault signal, it enters operating section.
- ⑥ MOVE – It indicates operating section. This means current flow normally at each pot and as use as an operating section signal move enables signal outputs.
- ⑦ ALRM – Outputs alarm signal. If current is lower than pot min. current, under current warning occurs. If current is higher than pot max. Current, over current warning occurs. In addition, lift operation keep running during the overload time, overload warning outputs.

7.3 Pot Select

It indicates magnet pot with hex code during detecting under current. Hex code could be changed due to pot select for selecting port as shown as 00~FF.

PS	Pot8	Pot7	Pot6	Pot5	Pot4	Pot3	Pot2	Pot1
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Ex1) During the detection of Pot1 and Pot2, it shows as PS:03.

Ex2) During the detection of Pot5, Pot6, Pot7, and Pot8, it shows as PS:F0.

Ex3) During the detection of Pot1, Pot2, Pot3, Pot4, and Pot5 it shows PS:1F.

7.4 Current of magnet pot

It displays current for selected magnet pot. To check two pots at the one display, and in front of detector left and right button checks other pots. Unselected pot shows as --.

As well as, if pot select button from OFF to ON, it is necessary to set P.Disable time in parameter to preventing detecting under current. It could be prevent unintended error from dead time.

8. Ordered specification and outside dimension

8.1 Ordered specification

TDP-UC-Series is classed as capacity of current sensor and quantity of magnet pot channels as follow (TDP-UC-***#);

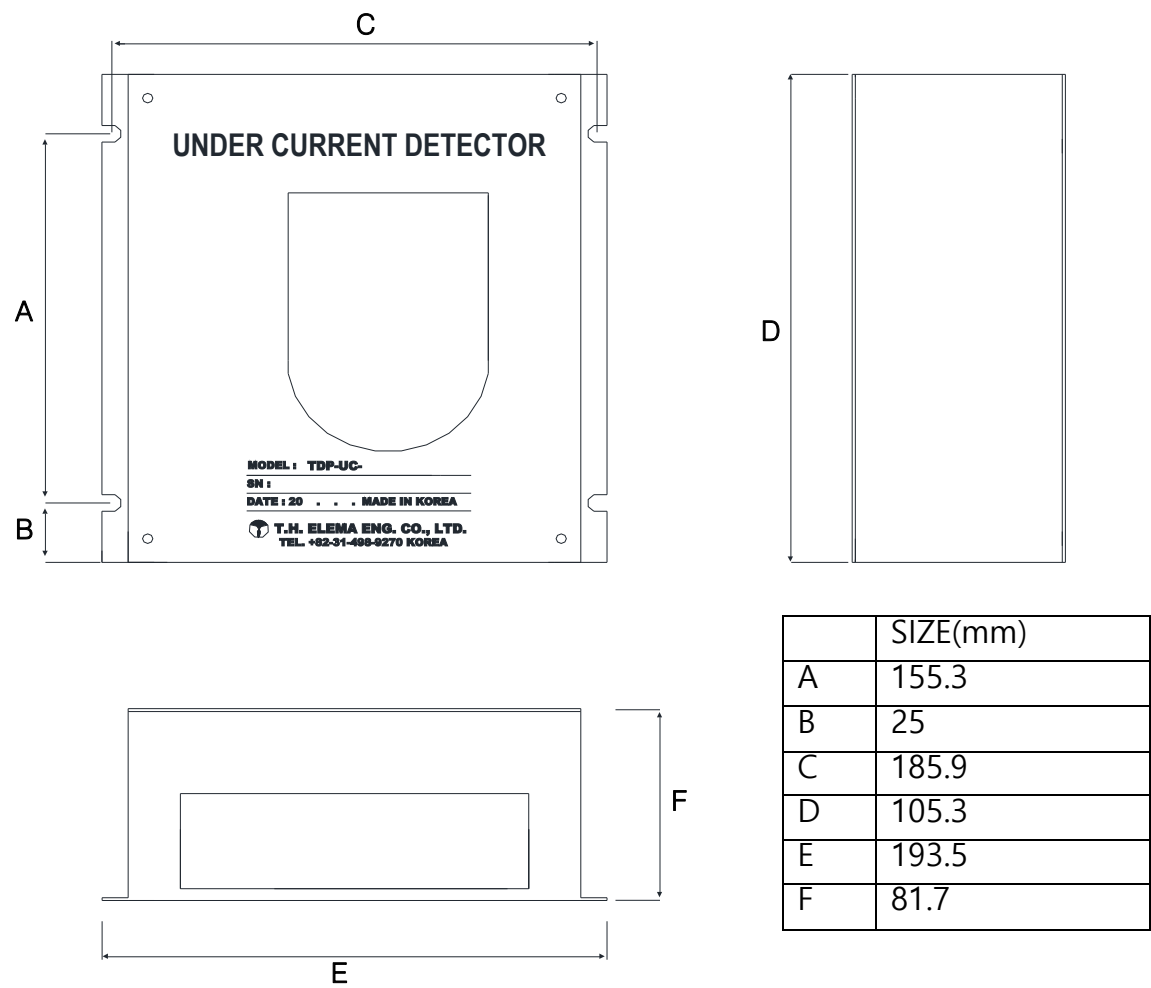
Capacity of current sensor (***)	050	Max. allowance current 50[A], LMA050-04DA12
	100	Max. allowance current 100[A], LMA100-04DA12
	150	Max. allowance current 150[A], LMA150-04DA12
	200	Max. allowance current 200[A], LMA200-04DA12
Number of channels(#)	No. of current sensing channel (1~8 channels)	

< TDP-UC-Series ordered specification >

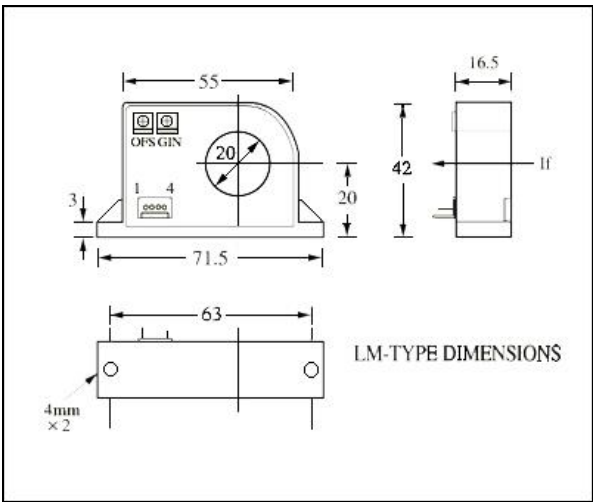
예) TDP-UC-1008

- 100 : To select current sensor with 100A at each pots.
- 8 : Detecting flew current for 8 magnet pots

8.2 Outside dimension



< TDP-UC-Series >



< LMA-Type Current Sensor >