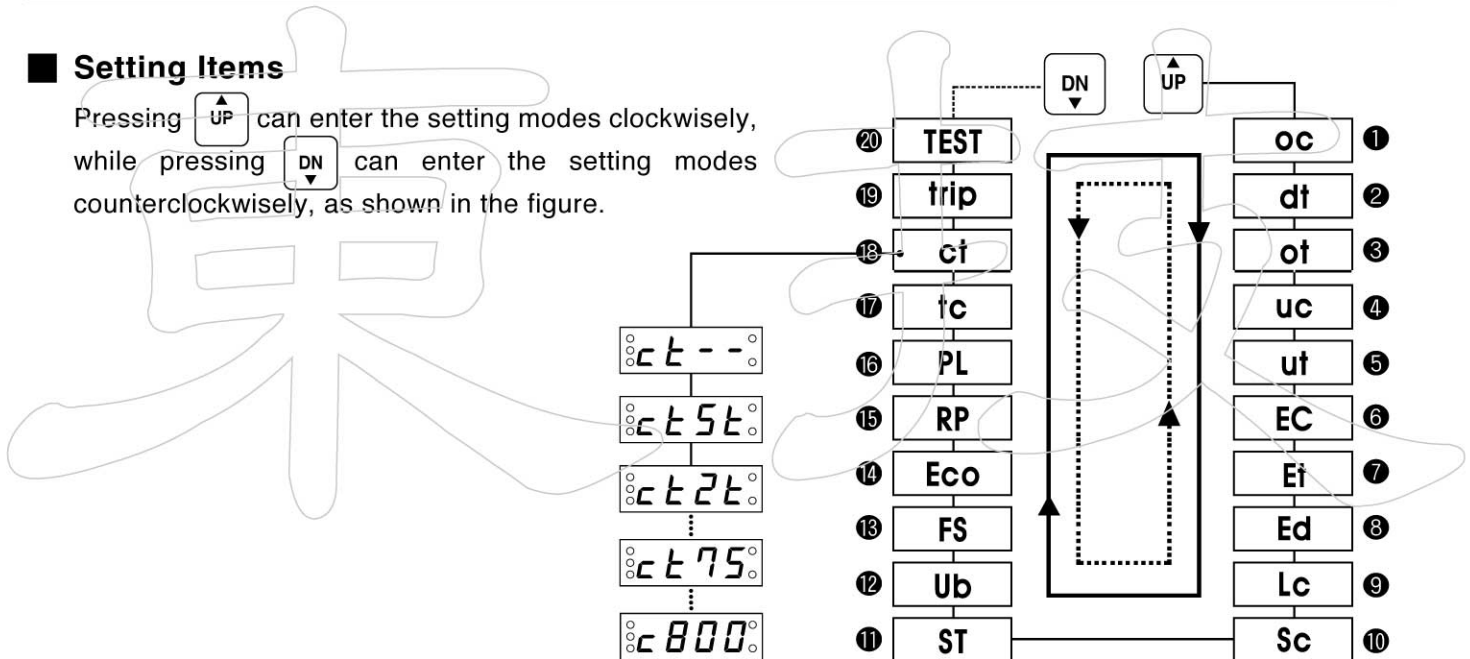


Setting Procedure

1. Navigation		Navigation keys, press to select the mode to be set.
2. Set		Press to adjust a parameter. This makes display blinking.
3. Adjust		Parameter adjustment key.
4. Store		Press to store a new value. This makes display stop blinking.
Reset		Reset
Presentation	Pressing SET in the presentation mode makes stop rotation of measurement display, pressing SET again changes the displayed phase (L1 → L2 → L3 → L1...), and then pressing RESET makes start the rotation again.	


Setting Items

Pressing can enter the setting modes clockwise, while pressing can enter the setting modes counterclockwise, as shown in the figure.




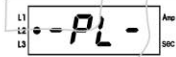

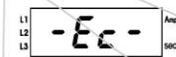
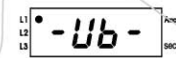




No.	Mode	Function	Description	Range	Default
1		over current	<ul style="list-style-type: none"> • 0.5 ~ 10A : 0.1A step • 10 ~ 60A : 1A step • Not possible to set a current value over 11A if inverse characteristics is selected. For >11A, use external CT. • Required to set a preset protected value(<6A) at first based on CT secondary output before setting a CT ratio if needed to adopt external CT instead of wide range ["CT":OFF(--)]. 	0.5 ~ 60A	10
2		starting time delay	<ul style="list-style-type: none"> • 1 ~ 100sec. : 1s step • 101 ~ 200sec. : 10s step • In order not to trip due to the surge current during motor starting, this time delay is set. However, relay will still trip anyway when phase reversal or phase loss happens. • Off (--) : no time delay. 	1 ~ 200sec. off (--)	10

No.	Mode	Function	Description	Range	Default
3	ot 10.	over current trip time delay	<ul style="list-style-type: none"> 0.5 / 1 ~ 30sec. : 1s step. Operates after "Starting Time Delay (dt) " 	0.5 / 1~30 (definite) 1~30 (inverse)	5
4	uc 0.5	under current	<ul style="list-style-type: none"> Not possible to set over "over-current set-value (oc)". 0.5A / 1~10A : 0.1A step. 10A ~ : 1A step. 	0.5A ~ less than "oc" Off (--)	--
5	ut 10.	under current trip time delay	<ul style="list-style-type: none"> 0.5 / 1 ~ 30sec. : 1s step. Operates after "Starting Time Delay (dt) " Automatically off (--) when "uc" is set off (--). 	0.5 / 1~30	--
6	Ec 0.3	earth fault current	<ul style="list-style-type: none"> threshold for earth fault detection 	0.02 ~ 3A	3.0
7	Et 0.1.	earth fault trip time delay	<ul style="list-style-type: none"> 0.05 / 0.1 ~ 1sec. : 0.1s step 1 ~ 10sec. : 1s step 	0.05 / 0.1 ~ 10	1
8	Ed --	earth fault starting delay	<ul style="list-style-type: none"> Blocking time of earth fault detection during motor starting. Off (--) : no delay 	0.05 ~ 10	1
9	Lc 7	locked rotor	<ul style="list-style-type: none"> Definite time Tripped within 0.5sec., After elapse of "dt". The decreased proportional % of "Lc" is determined by formula: [Max. value of "Lc"=100/"oc" setting value] 	2~10 times of "oc" setting Off (--)	10
10	Sc 2.0	stall	<ul style="list-style-type: none"> Definite time Tripped after elapse of preset time "St". More than 11A: set automatically by proper decreased %. The decreased proportional % of "Sc" is determined by formula: [Max. value of "Sc"=100/"oc" setting value] 	1.5~5times of "oc" setting Off (--)	5
11	St 5.0.	stall operating time	<ul style="list-style-type: none"> Automatically off (--) when "Sc" is set off (--). 	0.5 / 1~10sec. Off (--)	5
12	Ub 10	phase unbalance current	<ul style="list-style-type: none"> $[(\text{Max curr.} - \text{Min curr.}) / \text{Max}] \times 100[\%] > \text{Ub setting } \%$ 	5 ~ 50% Off (--)	50
13	Fson	fail safe	<ul style="list-style-type: none"> Fson: tripping relay is normally energized with control power supply. FS --: in all cases, the failure of the control voltage may not interrupt the process. Impossible to set during operation. 	On (Fson) Off (--)	--
14	Eco a	earth fault trip contact type	<ul style="list-style-type: none"> earth fault output contact 57-58 type selection a: 57-58 = NO ; b: 57-58 = NC 	a / b	a
15	APon	phase reversal	<ul style="list-style-type: none"> Trip after detection, 0.1sec. 	On Off (--)	On
16	PLon	phase loss	<ul style="list-style-type: none"> Trip after detection, 3sec. 	On Off (--)	On
17	tcdE	over current time characteristic	<ul style="list-style-type: none"> Definite: following curve "definite" in the catalogue Inverse: following curve "inverse" in the catalogue cold: motor starting hot: motor in operation In the case of "oc" setting value is more than 11A, applying definite characteristic automatically. 	dE: definite In: inverse	dE

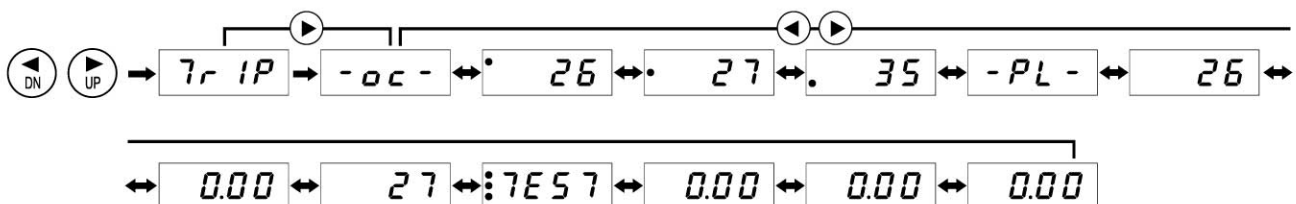
No.	Mode	Function	Description	Range	Default
18	ct 75	CT primary	<ul style="list-style-type: none"> --- : wide range (0.5~60A) : 5t: 0.1~1.2A : 2t: 0.25~3A Required to set a current value under 6A based on CT secondary output if need to adopt external CT instead of wide range ["CT":OFF(- -)] Refer detail in "oc" mode. Not possible to adjust during the operation 	--, 5t, 2t, 10-15-20-25-30-40-50- 60-75-100-120-150- 200-250-300-400-500- 600-750-800	--
19	tr IP	trip history	<ul style="list-style-type: none"> Stored the trip causes, regardless power is off. The stored information is displayed from last trip causes and able to check each phase current when tripped. 	the latest 3 records	
20	7E57.	test	 <p>Test will start automatically after 3 seconds.</p> <p>"End" will be displayed after the "ot" set value.</p> <ul style="list-style-type: none"> Test function is not permitted during operation to prevent unnecessary trip. 	not allowed during operation	

■ Trip Message

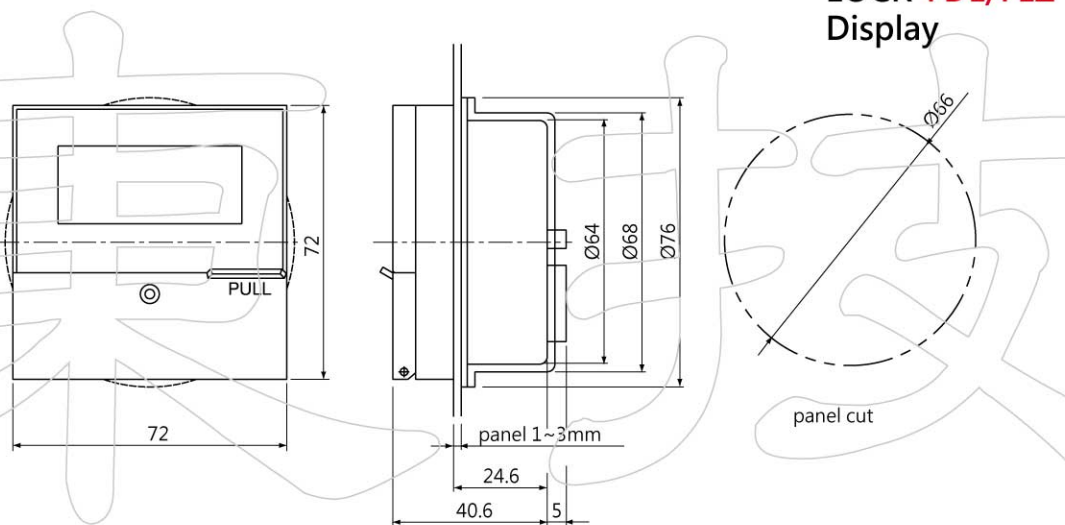
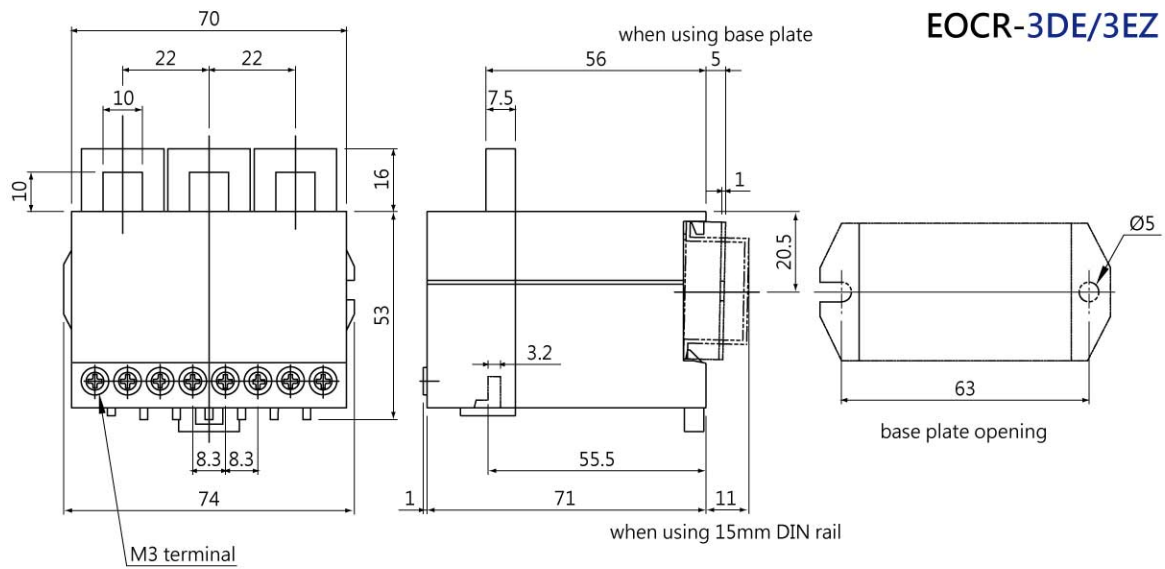
Trip Cause Indication	LED Display	Illustration	Note
Over-current Trip		An over-current trip detected from phase L1	use left/right key to switch phases 
Under-current Trip		An under-current trip detected from phase L1	
Phase Loss Trip		A phase loss/failure trip on phase L2	
Phase Reversal Trip		A phase reversal trip has occurred	
Ground Fault Trip		A ground fault trip has occurred	
Phase Unbalance Trip		An unbalance trip detected from phase L1	
Locked Rotor Trip		A locked rotor trip detected from phase L3	
Rotor Stall Trip		A rotor stall trip detected from phase L3	

■ Trip History

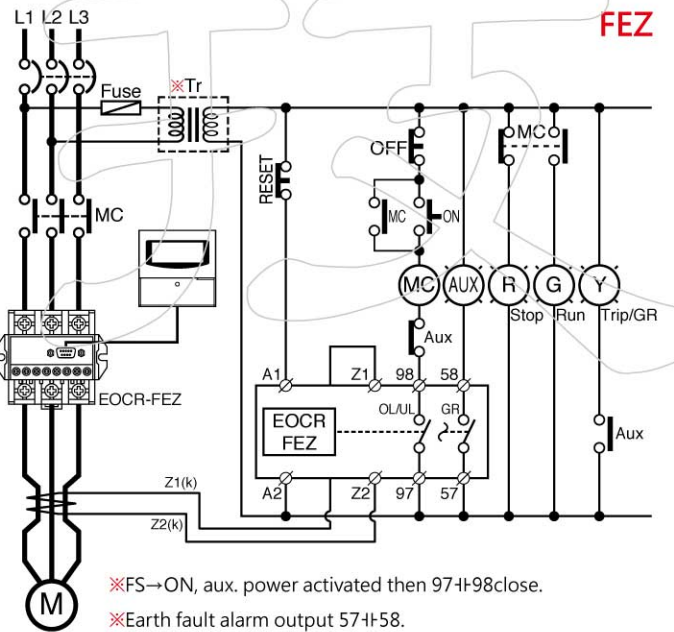
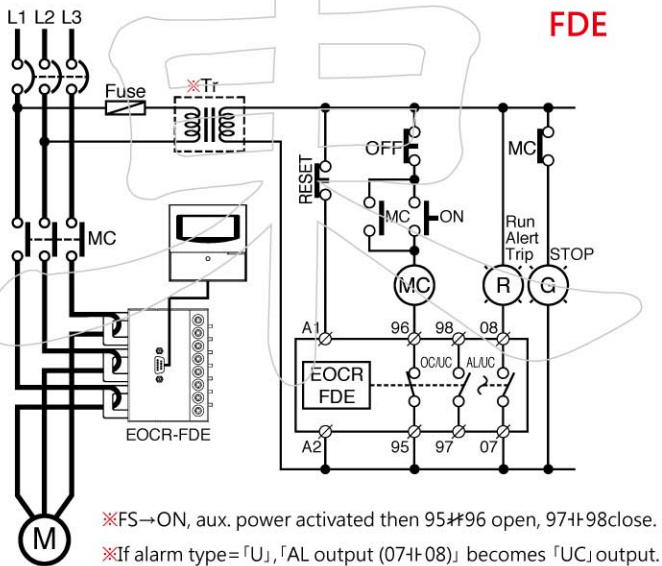
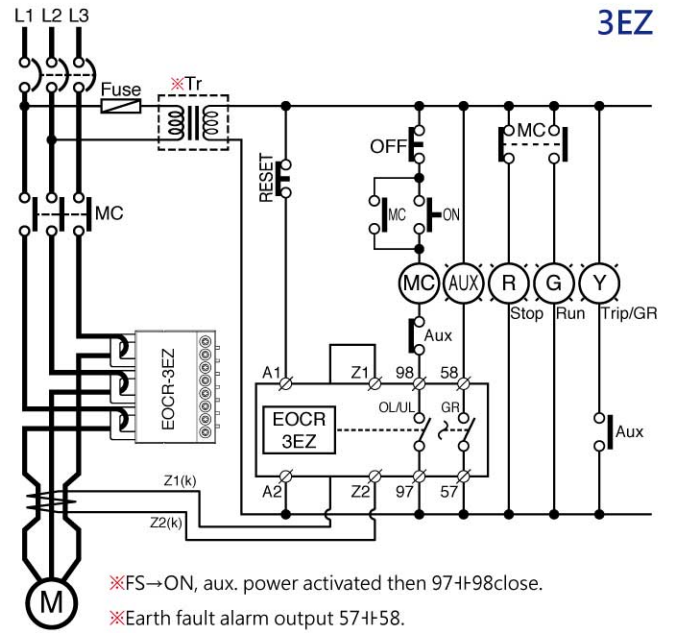
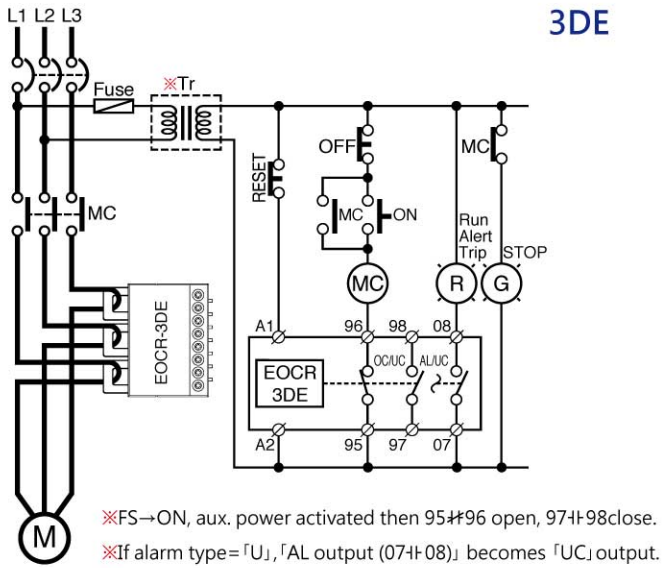
- Enter into "trip" mode by pressing once Set/Store key, then latest trip cause is shown.
- Each phase current is displayed in order whenever depressing Up/Dn key in every once under trip mode.
- The 2nd trip cause is shown after displaying 3-phase currents of the latest trip.
- The 3rd trip cause is shown after displaying 3-phase currents of 2nd trip.



■ Dimension (mm)



Wiring Diagram



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