EOCR-3DE/FDE Series

Features

- Compact Design
- 3DE/3EZ : Panel Mounting Type
- FDE/FEZ : Panel Flush Mounting Type
- MCU(Microprocessor Control Unit) Based
- 3 Integral Current Transformers
- Multiple Protection Functions
- Digital Ammeter
- Troubleshooting / Trip Cause Memory, Display
- Adjustable Operating Features by Mode switch
- Wide Current Adjustment Range
- Selectable Time-Current Characteristics (Inverse / Definite)
- Manual (Instantaneous) / Electrical (Remote) Reset
- Test Function
- Ambient Insensitive
- Selectable Fail-safe and Non-fail-safe Operation Modes

Comparison Table of Model

EOCR		3DE / FDE	3EZ / FEZ
Protection	Over - current	●	●
	Under - current	●	●
	Phase Loss	●	●
	Phase Unbalance	●	●
	Phase Reverse	●	●
	Locked Rotor	●	●
	Ground Fault	-	●
Run Monitor & Load Alert Function		●	-
Selectable Alerting Pulse		●	-

Protection Feature

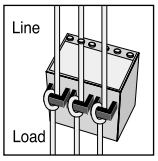
Function	mode		Description
Over-current	tc	dE (Definite T-C)	This is provided by the relay tripping when motor operating current(In) exceeds current setting value in "oc" mode for a period greater than the preset trip time(O-Time in "ot" mode)(Curve-2)
		In (Inverse T-C)	This is provided by the relay tripping when motor operating current(In) exceeds current setting value in "oc" mode according to the Time-current Characteristic Curve(Curve-1)
Under-current	Uc	Definite T-C	This is provided by the relay tripping when motor operating current(In) is lower than current setting value in "uc" mode for a perid greater than the preset trip time(Time in "ut" mode)
Phase Loss	PL	On	The relay will be operated within 3 sec. When the phase failure occurs
Phase Unbalance	Ub	5~50%	This is provided by the relay tripping in phase unbalance greater than setting % difference in terms of maximum phase current : [(MAX-MIN)/MAX] × 100[%]
Phase Reversal	RP	On	In the event of phase reversal, the relay trips in 0.1sec
		Off(--)	Phase reversal protection function is disabled : this allows the relay to be used for reversing application
Ground Fault	Ec	0.03~3A	Ground fault protection is provided by the relay tripping accoding to zero sequence current sensed by ZCT
Locked Rotor	Lc	2~10 Times OC	This is a protection for locked rotor in starting state. The variable setting range is 2~10 times oc setting value, but maximum setting value is limited in case "oc" setting value is greater than 10A. The maximum setting value is calculated by [100/oc setting value]
Stall	Sc	1.5~5 Times OC	This is a protection for locked rotor while motor is working. The variable setting range is 1.5~5 times oc setting value, but the maximum setting value is limited in case "oc" setting value is greater than 20A, The maximun setting value is calculated by [100/oc seting value]

※T-C : Time-Current Characteristic

Looping Option

Smaller ampere ranges than particular EOCR current range can be covered by looping the motor wire 2 or 3 times as under described.

	No of Loops	Current Ratio of Ext. CT	Current Setting Range (A)
0.5 Type	0	1	0.5 - 6
Looping Option	1	2	0.25 - 3
	2	3	0.17 - 2
	3	4	0.12 - 1.5
	4	5	0.1 - 1.2



Looping Option (1-Loop)

External CT Option

Higher ampere ranges can be achieved by setting in "CT" mode fitted to an external current transformer, and the actual motor current display is possible in any case

Type	Value in "CT" mode	Current Setting Range (A)
wide Range	OFF(--)	0.5 ~ 60A
10 : 5	10	1 ~ 12A
15 : 5	15	1.5 ~ 18A
⋮	⋮	⋮
800 : 5	800	80 ~ 960A


EOCR-3DE+External CT

Alert Function

When motor operating current (In) exceeds the alert setting (As), the alert relay outputs three kind of signal. The output can be used to warn customers/operators of possible overloading and avoid unnecessary motor shutdown.

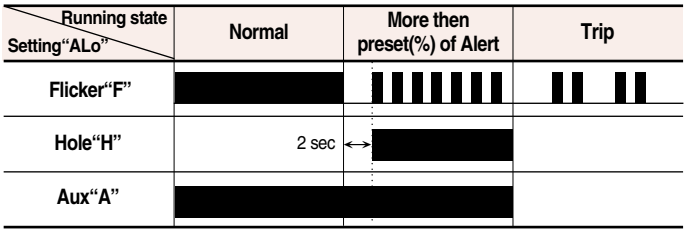
The type of output signal is decided by the selection in the "Alo" mode

"A"(Ampere relay): energized whenever CT senses a current

"F"(Flickering): character"A" and current value flashs frequently

"H"(Holding): ON-OFF

"U"(Undercurrent mode): the "AL" output(07-┤ ├-08) is transferred into "Uc" output



In = Motor Operating Current / Is = EOCR Over-current Setting / As = Alert Setting

Fail-safe & Non-fail-safe

The tripping relay can be operatcd in a fail-safe or non-fail-safe mode

Application of the Fail-safe (Electrically Held) Connection

Faie safe setting in"FS" mode : ON

The tripping relay is normally energized with control power supply

Application of the Non-fail-safe Connection

Fail safe setting in "FS" mode: OFF(--)

In all cases, the failure of the control voltage may not interrupt the process.