

# • DSP-3ESSG

## Abstraction

- Compact size/Energy save type
- Current range of each type : 0.5~6A, 3~30A, 5~60A
  - Over current, Phase loss, Locked rotor, Ground fault
  - : phase loss, loked rotor by over current
  - : ground fault by ZCT
- Wide protection current range :0.5~600A with External CT
- Free voltage control power
- Operating indication & checking actual working current : LED  
/turned on red
- Stable operation in working environment
- Reset : Manual(instant)/Power-off
- Standard type : de-energized in case control power is on (optional type :energized)



## Usage

- Over current protection relay for low voltage induction motor
- Mechanical shock detection
- Current relay job to check a fault
- Possible to replace existing protection relay

## Function

- Over current : trip after preset o-time
- Phase loss : trp after preset O-Time through preset d-time by over current
- Locked rotor : trip after preset d-time
- Ground fault protection by zero phase current : external ZCT
- To check actual current : LED
- Green LED : control power, operation
- Red LED : trip, over current state
- Yellow LED : ground fault

## How to preset

Division	Preset	Description
Starting trip delay time	D-TIME	*Preset D-TIME greater than necessary time to meet safe motor starting due to starting current as turning knob
		*Adjustable d-time : 0~60 sec
Over current Trip delay time	O-TIME	*Preset necessary o-time to stop a motor in case of over current condition as turning knob
		*Adjustable o-time : 0.2~12 sec

1. Start a motor after positioning current knob to maximum value
2. Slowly turn the knob anti-clockwisely in operating state,then positioned value of knob that red LED flickers is a ponit of actual load current(100%).
3. Nextly turn the knob clockwisely a bit of angle right untill red LED is turned off, then fix its position
4. Finally this position is matched with 110~120% of actual load current

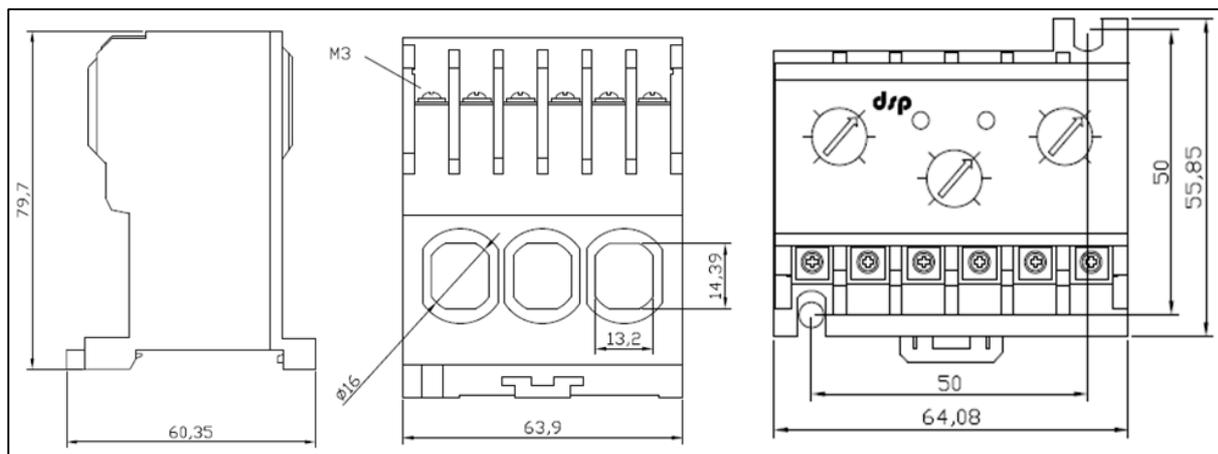
## Self-diagnostics

- Keep physically pressing state for TEST button until preset added time (o-time + d-time) has elapsed while the control power is on and motor is stopped, then LED to indicate over current state(OL) will be turned on and trip output is energized as if it trips under motor working state due to over current
- Press Reset button to make reset after test trip, then LED is turned off and return to initial state

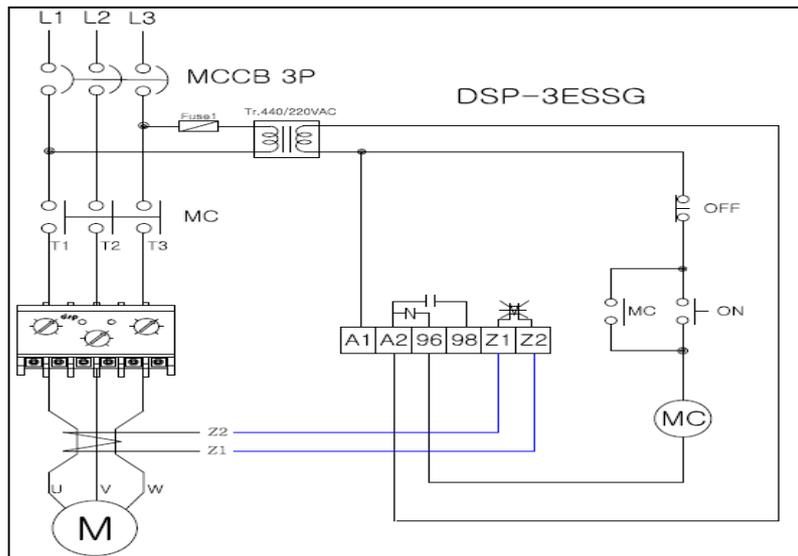
## Technical specification

DIV		Description	
Load Current range	06 Type	0.5A~6A or with external CT	
	30 Type	3A~30A	
	60 Type	5A~60A	
Time preset	Starting delay time(dt)	0.2~60sec/def.	
	over current trip delay time(ot)	*0.2~12sec/def.	
Reset		*Manual(instant):reset sw *Power off:remote *Auto : instant	
GR zero phase sequence current		50mA~600mA/ZCT(200mA/1.5mA)	
Allowable error	Time	±15%	
	Current	±15%	
Control power	24	*24VAC/DC	
	220	*90V ~ 260VAC,50/60Hz	
	440	*380V ~ 440VAC,50/60Hz	
Trip output relay	Main : 95-96-98	1c(1-SPDT),3A/Resistive	
Application environment	temperature	Operation	-25°C~+70°C
		Storage	-40°C~+80°C
	Humidity	30~85%,non-condensing	
Insulation Resistance		50 Mohm or more/500VDC, circuit-case	
Withstanding Voltage		*circuit-case:AC 2000V,60Hz, 1 min	
		*contact-contact:AC 1000V,60Hz,1min	
Installation		35mm DIN rail, screw	
Power consumption		0.5W Max	

## Dimension



## Application Sequence Diagram



## Order form

- DSP-1(Type)-2(Rating current)-3(Control Power)-4(Initial output state) -5(Auto Reset )

Item	Reference Code	Remarks
DSP-3ESSG	DSP-3ESSG-06-24-R	0.5~6A,24VAC/DC,de-energized initial output
	DSP-3ESSG-06-220-R	0.5~6A,90~260VAC,de-energized initial output
	DSP-3ESSG-06-440-R	0.5~6A,380~440VAC,de-energized initial output
	DSP-3ESSG-06-24-N	0.5~6A,24VAC/DC,energized initial output
	DSP-3ESSG-06-220-N	0.5~6A,90~260VAC,energized initial output
	DSP-3ESSG06-440-N	0.5~6A,380~440VAC,energized initial output
	DSP-3ESSG-30-24-R	3~30A,24VAC/DC,de-energized initial output
	DSP-3ESSG-30-220-R	3~30A,90~260VAC,de-energized initial output
	DSP-3ESSG-30-420-R	3~30A,380~440VAC,de-energized initial output
	DSP-3ESSG-30-24-N	3~30A,24VAC/DC,energized initial output
	DSP-3ESSG-30-220-N	3~30A,90~260VAC,energized initial output
	DSP-3ESSG-30-440-N	3~30A,380~440VAC,energized initial output
	DSP-3ESSG-60-24-R	5~60A,24VAC/DC,de-energized initial output
	DSP-3ESSG-60-220-R	5~60A,90~260VAC,de-energized initial output
	DSP-3ESSG-60-420-R	5~60A,380~440VAC,de-energized initial output
	DSP-3ESSG-60-24-N	5~60A,24VAC/DC,energized initial output
	DSP-3ESSG-60-220-N	5~60A,90~260VAC,energized initial output
	DSP-3ESSG-60-440-N	5~60A,380~440VAC,energized initial output

- Auto reset type

\* Reference code : Basic code + A(suffix code)