

MONITORING RELAYS



These relays are best suitable for monitoring balanced or unbalanced supplies, either of single phase, 3-phase 3-wire or 3-phase 4 wire loads powered by generators, UPS, stabilizers, inverters, or Mains (by Electricity Boards / Utilities); in AMF panels, PCCs, distribution boards and for power monitoring of individual loads / motors / pumps.

MODELS

**D1 VCR1, D1 VCR2
VCT D2, VCF D2, D2 VCT1, D1 VCT1,
S2 VMR 4, S2 VMR 5,
D2 EFR1, OCS D1,
S2 CMR2, S2 CMR3, S2 CMR4,
OFS D1, S2 FMR1,
RPT D2, RPF D2, CBCT**



FEATURES

- Fixed/adjustable under/Over trip settings for parameters.
- Fixed/adjustable trip delays and Power On delays
- Built-in or external power supply
- Resetting – Auto or Manual
- Output contacts : 1 CO or 2 CO
- Choice of enclosures (DIN-Rail, Flush)
- Models with Micro-Controller based design
- Use of SMD Technology
- User-friendly LED indications

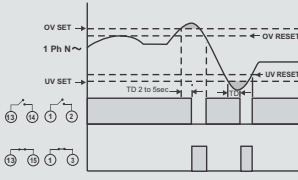
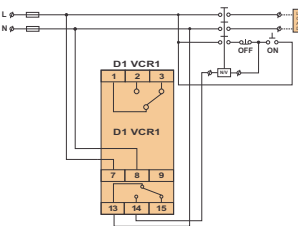
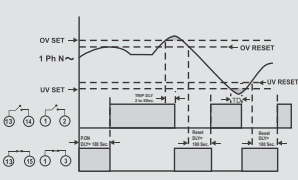
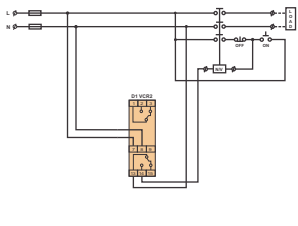
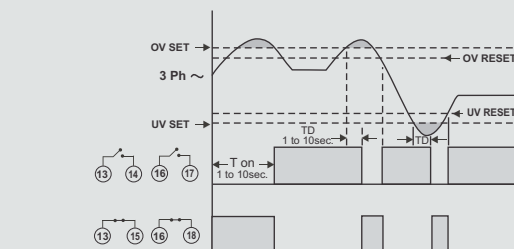
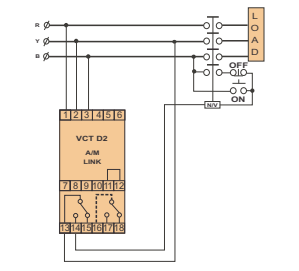
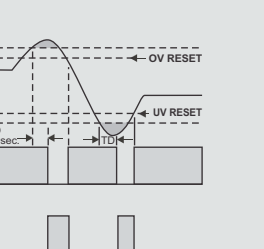
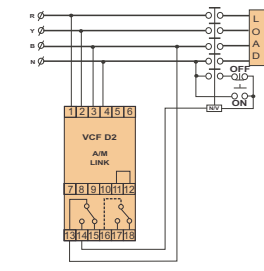
PROTECTIONS / FUNCTIONS

- Under/over Voltage,
- Under/Over Current
- Under/Over Frequency
- Reverse Power
- Earth Fault/Ground Fault
- Earth leakage

Ordering Instructions

- ✓ Product Family Name
- ✓ Model Name
- ✓ System Supply Voltage & frequency
- ✓ Aux. Supply/Control supply voltage
- ✓ Current input (1A or 5A)

VOLTAGE MONITORING RELAYS

	D1 VCR 1 1 Phase Voltage Monitoring Relay	D1 VCR 2 1 Phase Voltage Monitoring Relay	VCT D2 Voltage Monitoring Relay, 3Ø-3W	VCF D2 Voltage Monitoring Relay, 3Ø-4W
				
	Single Phase Under & Over voltage, Auto Reset, Adjustable under / over voltage settings, 2 CO output relay.	Single Phase Under & Over voltage, Auto Reset, Adjustable under/over voltage settings, 2 CO output relay	3-Phase 3-Wire Under & Over voltage Auto/Manual Reset, Adjustable under/over voltage settings, adjustable trip delay & ON delay, 2 CO output relay	3-Phase 4-Wire Under & Over voltage Auto/Manual Reset, Adjustable under/over voltage settings, adjustable trip delay & ON delay, 2 CO output relay
System Supply	220/230/240 V AC (+20%-30%), 50/60 Hz $\pm 3\%$	220/240 VAC, (+20%,-25%)50/60 Hz $\pm 3\%$	110/240/380/415/440 V AC +20%, - 25% 50/60Hz	
Output Relay Contact	2 CO	2 CO	2 CO	2 CO
Trip Setting				
Under Voltage	75 - 95% [Variable] of set value	165 V to 225 V (in step of 15) ($\pm 2\%$)	75% - 95% (adjustable)	75% - 95% (adjustable)
Over Voltage	105 - 120% [Variable] of set value	230 V to 290 V (in step of 15) ($\pm 2\%$)	105% -120% (adjustable)	105% -120% (adjustable)
Trip Time Delay	2- 5 Sec (Fixed) (UV/OV)	3.5 sec. (± 1.5 sec.)	1-10 secs. (adjustable)	1-10 secs. (adjustable)
Power on Delay		3 min. (± 20 sec)	1-10 secs. (adjustable)	1-10 secs. (adjustable)
Reset	Auto Reset	Auto Reset	Auto / Manual	Auto / Manual
Weight	180 gms.	180 gms.	450 gms.	450 gms.
Dimensions (mm)				
Overall (L x W x D)	76 x 30.5 x 117.5	76 x 30.5 x 117.5	76 x 56.5 x 117.5	76 x 56.5 x 117.5
Mounting	68 mm centre to centre / 35 mm rail mounting	68 mm centre to centre / 35 mm rail mounting	67 x 46  / 35 mm rail mounting	67 x 46  / 35 mm rail mounting
Wherever not specified Contact Rating : 5A @ 230 V AC (resistive)	 	 	 	 

Relay contact position shown in 'Power off' condition

VOLTAGE MONITORING RELAYS

minilec®

D1 VCT1

Voltage Monitoring
Relay, 3Ø-3W



3-Phase 3-Wire Under & Over Voltage,
Auto reset,
Adjustable UV/OV
settings,
fixed trip delay,
2 CO output relay.

D2 VCT1

Voltage Monitoring
Relay



3-Phase 3-Wire and 3-Phase
4-Wire (selectable) Under & Over
voltage, Microcontroller based
design, Auto/Manual Reset,
Adjustable under/over voltage
settings, Absolute values for
UV/OV, adjustable trip delay &
ON delay, 2 CO output relay (or
selectable 1CO for UV, 1CO for OV)
Failsafe-non-failsafe selectable

S2 VMR4

Voltage Monitoring
Relay, 3Ø-3W



3-Phase 3-Wire Under & Over
voltage, Microcontroller based
design, SMD Technology
Auto/Manual Reset, , Adjustable
under/over voltage settings,
Absolute values for UV/OV,
adjustable trip delay & ON delay,
2 CO output relay (or selectable
1CO for UV, 1CO for OV)
Failsafe-non-failsafe selectable

S2 VMR5

Voltage Monitoring
Relay, 3Ø-4W



3-Phase 4-Wire Under & Over
voltage, Microcontroller based
design, SMD Technology, Auto /
Manual Reset, Adjustable
under/over voltage settings,
Absolute values for UV/OV,
adjustable trip delay & ON delay,
2 CO output relay (or selectable
1CO for UV, 1CO for OV)
Failsafe-non-failsafe selectable

100-120/220-240/380-440 V AC
2 CO

75-115 Unit of 100-120 V AC
165-225 Unit of 220-240 V AC
285-425 Unit of 380-440 V AC

105-145 Unit of 100-120 V AC
230-290 Unit of 220-240 V AC
400-520 Unit of 380-440 V AC

3.5±1.5 Sec (UV/OV)

Auto Reset
200 gms. (Approx).

76 x 30.5 x 117.5

68 centre to centre / 35 mm rail
mounting

100-120/220-240/380-440V AC -25%+20%,48-63 Hz
1 CO + 1 CO / 2 CO

Ph Ph Setting:

For 380-440V AC	285-425V AC (Variable)
For 220-240V AC	165-225V AC (Variable)
For 100-120V AC	75-115V AC (Variable)

Ph N Sensing:

For 380-440V AC	165-245V AC (Variable)
For 220-240V AC	95-135V AC (Variable)
For 100-120V AC	45-65V AC (Variable)

Ph Ph Sensing:

For 380-440V AC	400-520V AC (Variable)
For 220-240V AC	230-290V AC (Variable)
For 100-120V AC	105-145V AC (Variable)

Ph N Sensing:

For 380-440V AC	230-310V AC (Variable)
For 220-240V AC	130-170V AC (Variable)
For 100-120V AC	60-80V AC (Variable)

1-10 Sec (Variable) UV/OV/NF

1-10 Sec (Variable)

Auto/ Manual Reset

300 gms (Approx.)

76 X 56.5 X 117.5

67 x 46 / 35 mm rail mounting

100-120/220-240/380-440V AC -25%+20%,48-63 Hz
1 CO + 1 CO / 2 CO

285 - 425V AC (Variable)
165-225V AC (Variable)
75-115V AC (Variable)

165-245V AC (Variable)
95-135V AC (Variable)
45-65V AC (Variable)

400-520V AC (Variable)
230-290V AC (Variable)
105-145V AC (Variable)

230-310V AC (Variable)
130-170V AC (Variable)
60-80V AC (Variable)

1-10 Sec. (Variable)

1-10 Sec (Variable)

Auto / Manual Reset

110 gms (Approx.)

90 X 35 X 60

35 mm Rail Mounting

100-120/220-240/380-440V AC -25%+20%,48-63 Hz
1 CO + 1 CO / 2 CO

285 - 425V AC (Variable)
165-225V AC (Variable)
75-115V AC (Variable)

165-245V AC (Variable)
95-135V AC (Variable)
45-65V AC (Variable)

400-520V AC (Variable)
230-290V AC (Variable)
105-145V AC (Variable)

230-310V AC (Variable)
130-170V AC (Variable)
60-80V AC (Variable)

1-10 Sec. (Variable)

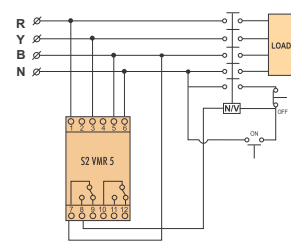
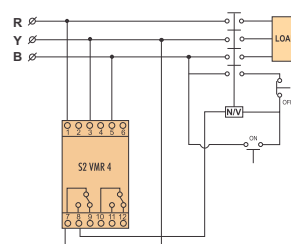
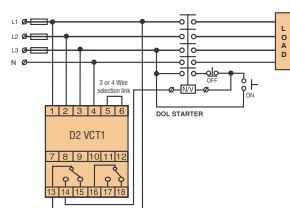
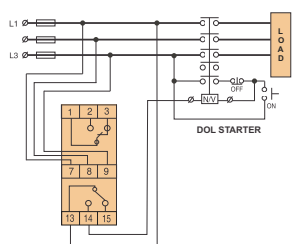
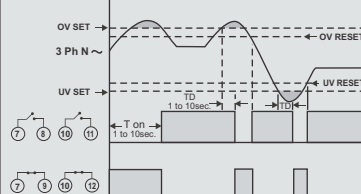
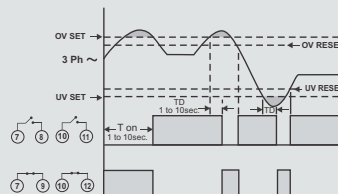
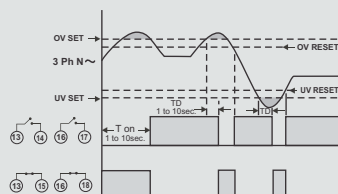
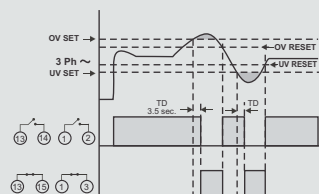
1-10 Sec (Variable)

Auto / Manual Reset

110 gms (Approx.)

90 X 35 X 60

35 mm Rail Mounting



Relay position shown in 'Power off' condition

Note: S2 Series - RoHS Product available on request.

CURRENT MONITORING RELAYS

OCS D1

1 Phase Over Current Relay



Single phase over current Auto reset,
Input 1A or 5 A through CT,
Adjustable over current trip settings,
Adjustable trip delay,
1 CO output relay

S2 CMR2

1 Phase Current Monitoring Relay



Single phase under & over current
Microcontroller based design, SMD technology,
Auto/Manual reset, Input 1A or 5 A through CT,
Adjustable under / over current trip settings,
adjustable trip delay & ON delay,
2 CO output relay (or selectable 1CO for UC,
1CO for OC)
Failsafe-non-failsafe mode selectable

Supply Voltage

System

Auxiliary

Ext. Input

Output contact

Trip setting

EF Trip Setting

Under Current

Over Current

Power On Delay

Trip Time Delay

Resetting

Weight

Dimensions (mm)

Overall (L x W x D)

Mounting (L x W)

110-120/220-240/380-440 V AC $\pm 20\%$,
12 V DC/24/30 V DC $\pm 10\%$

1 Amp / 5 Amp (Secondary) CT or 250/500 mA

1 CO

—

N.A.

50% -140% (adjustable) of CT sec

3.5 secs ± 1.5 sec (fixed)

1 - 10 secs (adjustable)

Auto

250 gms.

76 x 30.5 x 117.5

68mm centre to centre / 35mm rail Mounting

100-120 / 220-240 V AC $\pm 20\%$,
24 V DC $\pm 10\%$

1 Amp / 5 Amp (Secondary) CT

1 CO + 1 CO

—

10% - 100% (Variable)

50% - 140% (Variable)

1-10 Sec. (Adjustable) ± 1 Sec.

1-10 Sec. (Adjustable) ± 1 Sec.

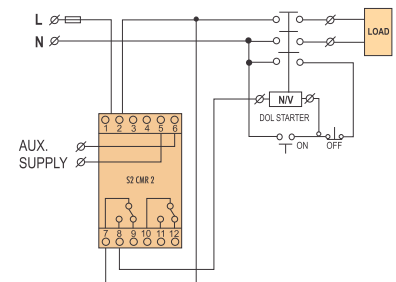
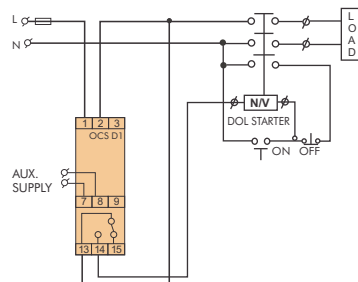
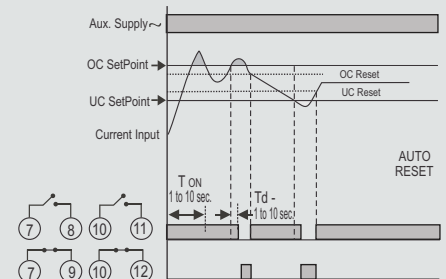
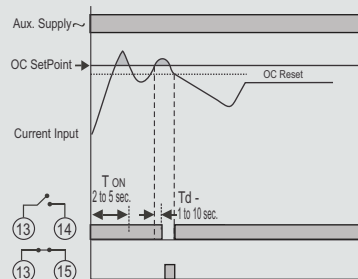
Auto / Manual

140 gms

90 X 35 X 60

35 mm Rail Mounting

- Wherever not specified
Contact Rating :
5A @ 230 V AC
(resistive)



Relay contact position shown in 'Power off' condition

Note: S2 Series - RoHS Product available on request.

D2 EFR1 Earth Fault Relay



Earth fault/Ground fault monitoring of 3 phase systems
Manual Reset,
Input 1A or 5A through CBCT,
Adjustable earth fault trip setting,
adjustable trip delay,
2 CO relay output

S2 CMR3 Ground Fault Relay



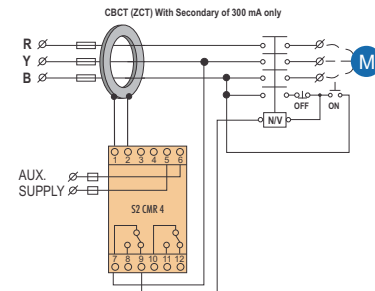
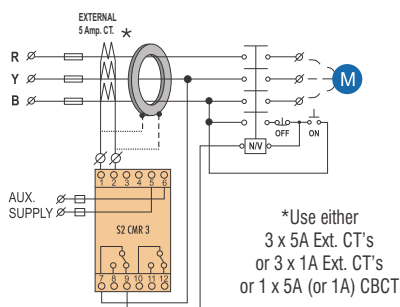
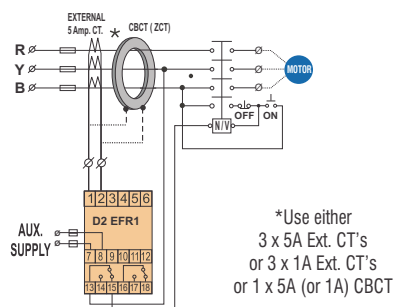
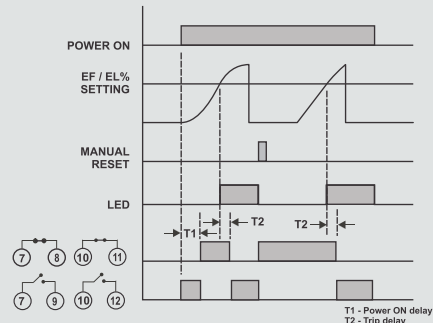
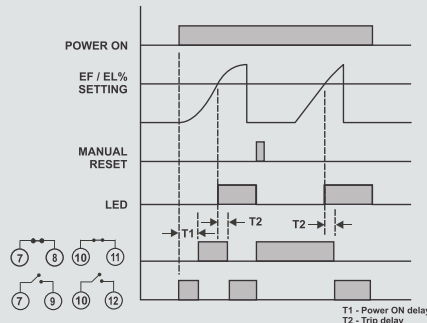
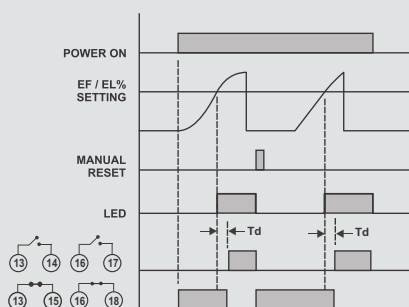
Earth fault/Ground fault monitoring of 3 phase systems, Microcontroller based design, SMD technology, Manual Reset,
Input 1A or 5A through CBCT,
Adjustable earth fault trip setting,
Adjustable trip delay & ON delay,
2 CO relay output
Failsafe-non-failsafe selectable

S2 CMR4 Earth Leakage Relay



Earth leakage monitoring of 3 phase systems, Microcontroller based design, SMD technology, Manual Reset,
Input through CBCT,
Adjustable trip setting,
Adjustable trip delay & ON delay,
2 CO relay output
Failsafe-non-failsafe selectable

24-30 VDC / 110-240 V AC / DC / 380-440 V AC $\pm$ 20%	100-120/220-240/380-440 V AC $\pm$ 20%, 48-63 Hz 100-120/220-240 V AC / 24V DC $\pm$ 20%	100-120/220-240/380-440 V AC $\pm$ 20%, 48-63 Hz 100-110/240V AC / 24V DC $\pm$ 20%
1A or 5A (Selectable) CBCT Secondary 1 CO (2 CO) (Pick up on Fault)	1A or 5A (Selectable) CBCT Secondary 2 CO	300mA CBCT Secondary 2 CO
10% - 100% (adjustable) of CT sec	10% - 100% of Rated Current Input (Variable) (Input through CT of 1AMP or 5AMP Secondary)	10% - 100% of Rated Current Input (Variable) (Input through CBCT of 300m A Secondary)
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	1 - 10 Sec. (Adjustable)	1 - 10 Sec. (Adjustable)
0.1 - 1.0 / 1 - 10 Sec. (Adjustable)	0.1 - 1 Sec. (Adjustable)	0.1 Sec to 1 Sec. (Adjustable)
Manual / Remote (Selectable)	Manual	Manual
550gms.	140 gms	140 gms
76 x 56.5 x 117.5 67 x 46 / 35 mm rail Mounting	90 X 35 X 60 35 mm Rail Mounting	90 X 35 X 60 35 mm Rail Mounting



Relay contact position shown in 'Power off' condition

Note: S2 Series - RoHS Product available on request.

FREQUENCY MONITORING RELAYS

OFS D1 Over Frequency Relay



Single phase over frequency,
Auto reset,
Adjustable over frequency trip
settings,
Adjustable trip delay,
1 CO output relay

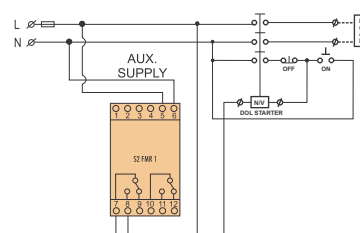
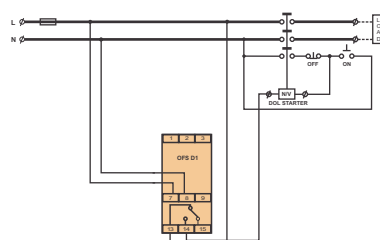
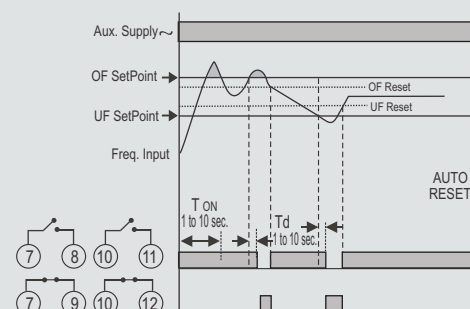
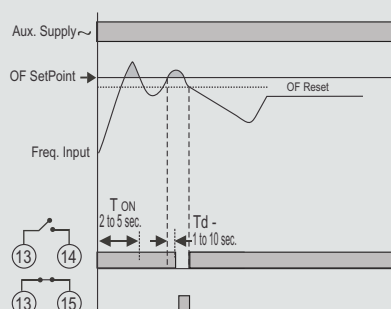
S2 FMR1 Frequency Monitoring Relay



Single phase under & over
frequency, Microcontroller based
design, SMD technology, Auto
reset, Adjustable under/over
frequency trip settings,
Adjustable trip delay & ON delay,
2 CO output relay Failsafe-non-
failsafe mode selectable

Supply Voltage		
System	100-120 / 220-240 / 380-440 V AC $\pm 20\%$	100-120/220-240/380-440 V AC $\pm 20\%$, 38-72 Hz
Auxiliary	12 / 24 V DC or Built in	In Built
Ext. Input		
Output contact	1 CO	1 CO + 1 CO
Trip setting		
Under Frequency	N.A.	40 Hz - 60 Hz (Variable)
Over Frequency	50 Hz - 70 Hz	50 Hz - 70 Hz (Variable)
Reverse Power	—	—
Power On Delay	3.5 secs. ± 1.5 sec (fixed)	1 - 10 Sec.(Adjustable) ± 1 Sec.
Trip Time Delay	1 - 10 secs. (adjustable)	1 - 10 Sec.(Adjustable) ± 1 Sec.
Resetting	Auto	Auto / Manual
Weight	450 gms.	130 gms
Dimensions (mm)		
Overall (L x W x D)	76 x 30.5 x 117.5	90 X 35 X 60
Mounting (L x W)	68 centre to centre / 35 mm Rail Mounting	35 mm Rail Mounting

- Wherever not specified
Contact Rating :
5A @ 230 V AC
(resistive)



Relay contact position shown in 'Power off' condition

Note: S2 Series - RoHS Product available on request.

POWER MONITORING RELAYS

RPT D2

Reverse Power Relay, (3Ø-3W)



3-phase 3-wire generators reverse power monitoring
Auto/Manual reset,
Reverse power (current) trip settings adjustable,
ON delay and trip delay adjustable,
2 CO output relay

100-120 / 220-240 / 380-440 V AC $\pm 20\%$

Built-in

5A CT Secondary & R, Y, B

2 CO

—

2% - 20% (adjustable)

1 - 10 secs. (adjustable)

1 - 10 secs. (adjustable.)

Auto / Manual

460 gms.

76 x 56.5 x 117.5

67 x 46 / 35 mm Rail Mounting

RPF D2

Reverse Power Relay, (3Ø-4W)



Single phase or 3-phase 4-wire generators reverse power monitoring
Auto/Manual reset,
Reverse power (current) trip settings adjustable,
ON delay and trip delay adjustable,
2 CO output relay

100-120 / 220-240 / 380-440 V AC $\pm 20\%$

Built-in

5A CT Secondary & B, Neutral

2 CO

—

2% - 20% (adjustable)

1 - 10 secs. (adjustable)

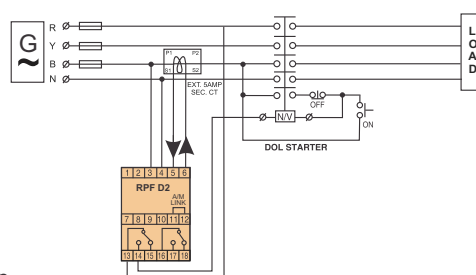
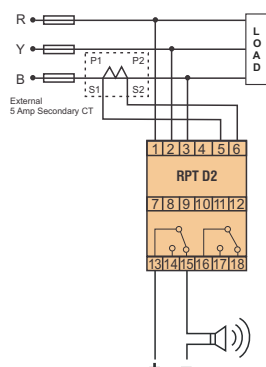
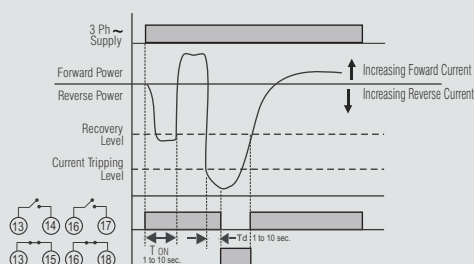
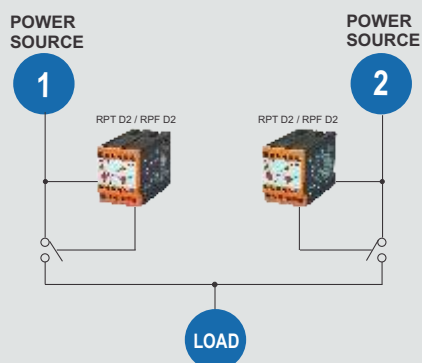
1 - 10 secs. (adjustable)

Auto / Manual

460 gms.

76 x 56.5 x 117.5

67 x 46 / 35 mm Rail Mounting



Relay contact position
shown in 'Power off' condition