



True RMS Measurement with SPARC<sup>1</sup> and DCOI<sup>2</sup> Algorithm

Fundamental Signal Detection<sup>3</sup>

Real Time Display of Earth Fault in (%)

Fault / lo-set & hi-set Trip LED Indication

Fault Start Event Recording & LED Indication + Output<sup>4</sup>

Pre-Alarm LED Indication + Output<sup>4</sup>

Trip Event Memory (non-volatile 7 previous records)

Fault Start Event Memory (non-volatile 4 previous records)

Programmable Relay Output Contact for K2

Last Trip Elapsed Time (up to 99days)

Software Lock to Prevent Unauthorized Setting

Complies with IEC-60255-26 Standards

ANSII Code: 50N, 51N

External Plug-in Module for :-  
A-01s (RS-485 MODBUS RTU) isolated type

## technical data

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Current Input (In)  | : ..5A or ..1A                                           |
| Frequency           | : Software selectable 50 or 60 Hz                        |
| Burden              | : <0.3 VA @ In                                           |
| Output Relay Rating | : SPDT 5A, 250V AC/DC                                    |
| Display             | : 7-Segment LED (3 + 1digit)                             |
| Indication (LEDs)   | : x10, pre-alarm, fault, fault start event, lo / hi trip |
| Operating Temp.     | : 0°C ~ +55°C                                            |
| Humidity            | : 56 days at 93%RH, 40°C non-condensing                  |
| IP Rating           | : IP54 (front panel)                                     |
| Weight              | : 230 g                                                  |

## parameter setting

|                             |                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------|
| I>: lo-set                  | 2% ~ 100% (step of 1%)                                                                                         |
| t>: lo-set trip delay time  | 0.03s ~ 20.0s<br>0.03s ~ 0.10s (step of 0.01s)<br>0.10s ~ 1.00s (step of 0.02s)<br>1.0s ~ 20.0s (step of 0.1s) |
| I>>: hi-set                 | OFF or 20% ~ 1000% (step of 10%)                                                                               |
| t>>: hi-set trip delay time | fixed @ 30ms                                                                                                   |

<sup>1</sup>SPARC - sampling progressive algorithm for RMS Computation: Computation of multiple rms values/cycle (Superior response in short circuit situation)

<sup>2</sup>DCOI - dc offset independent algorithm: Cancels out dc signal caused by EMI and aging circuitry (Better Immunity against EMI)

<sup>3</sup>Fundamental Signal Detection: To discriminate between signal and noise and eliminate nuisance tripping

<sup>4</sup>Output on k2 dependent on the programmed options

## aux power

|             |                                           |
|-------------|-------------------------------------------|
| DP-21-220a  | : 65 ~ 275 Vac (45~65Hz),<br>90 ~ 300 Vdc |
| DP-21-024d  | : 16 ~ 36 Vdc                             |
| Consumption | : < 3VA                                   |

## fundamental frequency

50 or 60Hz Selectable

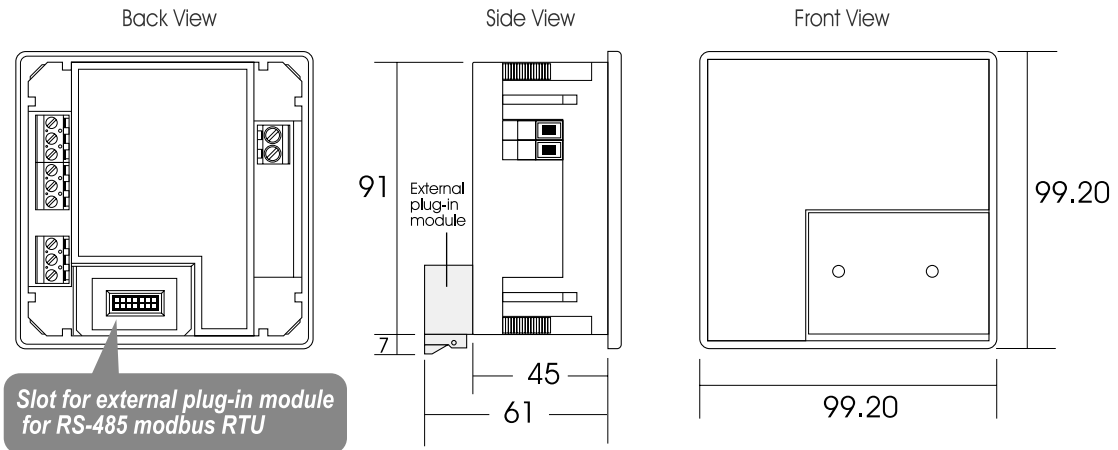
## K1 output contact options

Latching (Lc) or non-latching (nLc) trip

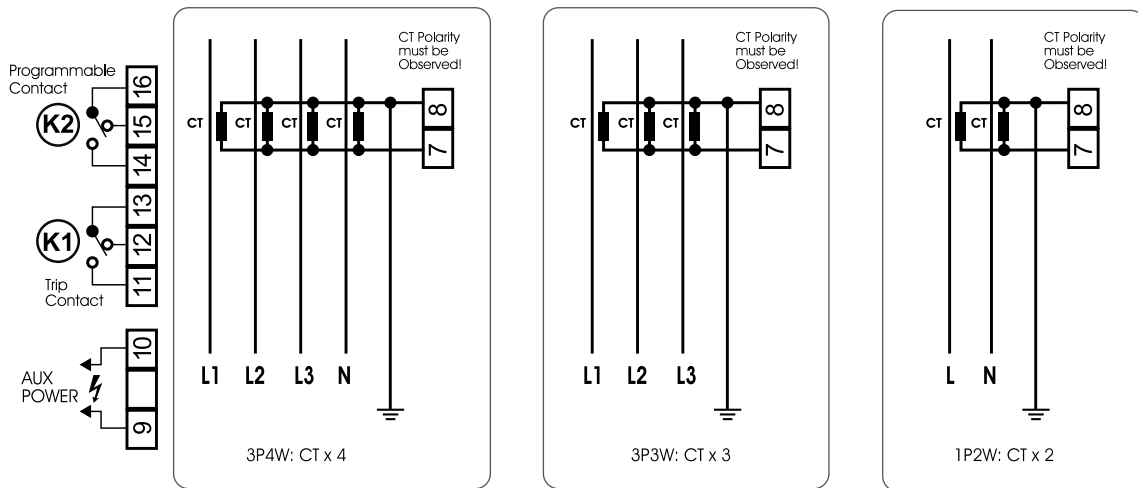
## K2 output contact options

CbF (circuit breaker Failure - nLc only)  
A50 (pre-fault 50% of I> - Lc or nLc)  
A90 (pre-fault 90% of I> - Lc or nLc)  
trP (tripping output - Lc or nLc)  
LFS (lo fault start signal - Lc or nLc)  
HFS (hi fault start signal - Lc or nLc)  
AFS (all fault start signal - Lc or nLc)  
dUF (device failure - Lc only)

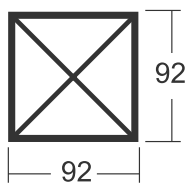
## casing dimension



## wiring diagram



## panel cut-out



Panel Cut-out : 92 x 92

## ordering information

| Model         | Description                                   |
|---------------|-----------------------------------------------|
| DP-21-220a-5A | (CT../5A) 65 ~ 275 Vac (45~65 Hz), 90~300 Vdc |
| DP-21-220a-1A | (CT../1A) 65 ~ 275 Vac (45~65 Hz), 90~300 Vdc |
| DP-21-024d-5A | (CT../5A) 16~36 Vdc                           |
| DP-21-024d-1A | (CT../1A) 16~36 Vdc                           |

Note: All measurement in mm.