

Digital  
DTL Over Current Relay  
**DP-23**



features



- True RMS Measurement with SPARC<sup>1</sup> and DCOI<sup>2</sup> Algorithm
- Auto / Manual Scroll for Real Time Display of Phase Current in (%)
- LTI + DTL
- Fault / lo-set & hi-set Trip LED Indication
- Fault Start Event Recording & LED Indication + Output<sup>3</sup>
- Pre-Alarm LED Indication + Output<sup>3</sup>
- Trip Event Memory (non-volatile 7 previous records for all phases)
- Fault Start Event Memory (non-volatile 4 previous records with phase info)
- Selectable Frequency (50 /60 Hz)
- Programmable Relay Output Contact for K2
- Last Trip Elapsed Time (up to 99days)
- Software Lock to Prevent Unauthorized Setting
- Complies with : IEC-60255-26/27 ; BS EN 50121-5 Standards
- ANSI Code: 50P, 51P
- External Plug-in Module for :- A-01s / A-01sp (RS-485 MODBUS RTU) isolated type

technical data

Current Input (In)	: ..,5A or ..,1A
Fundamental Frequency	: Software selectable 50 or 60 Hz
Burden	: <0,3 VA @ In
Output Relay Rating	: SPDT 5A, 250V AC/DC
Accuracy	: Current protection threshold ( ±5%) Time delayed (+5% or 50ms)
Display	: 7-Segment LED (3 + 1 digit)
Indication (LEDs)	: phase, x10, pre-alarm, fault start event, lo / hi-set trip, fault
Operating Temp.	: 0°C ~ +55°C
Humidity	: 56 days at 93%RH, 40°C non-condensing
IP Rating	: IP54 (front panel)
Weight	: 260 g

parameter setting

$I_p >$ (%): lo-set trip	2% ~ 200% (step of 1%)
IDMT $I_p >$	LTI + DTL
TMs $I_p >$ : Time multiplier for IDMT	0.05 ~ 1.00 (step of 0.01)
$t_p >$ (sec): lo-set trip time delay for DTL	0.03s ~ 20.0s 0.10s ~ 1.00s (step of 0.02s) 1.0s ~ 20.0s (step of 0.1s)
$I_p >>$ (%): hi-set trip	OFF or 20% ~ 2000% 20% ~ 1000% (step of 10%) 1000% ~ 2000% (step of 100%)
$t_p >>$ (sec): hi-set trip time delay	Instant or 0.02s ~ 0.5s (step of 0.01s)

aux power

DP-23-220a	: 65 ~ 275 Vac (45~65Hz), 90 ~ 300 Vdc
DP-23-024d	: 18 ~ 72 Vdc
Consumption	: < 3VA

K1 output contact options

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

K2 output contact options

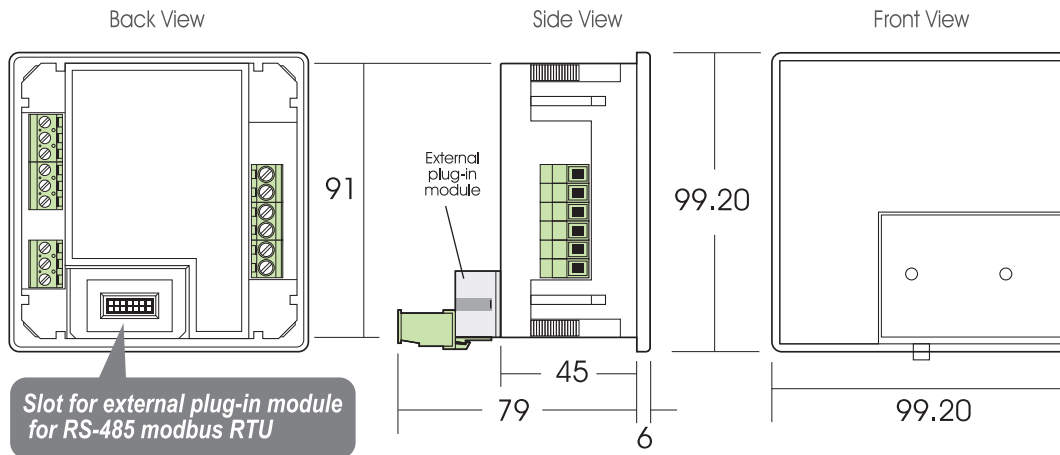
<b>trP</b> (tripping output)	Lc or nLc
<b>LFS</b> (lo-set fault start signal)	Lc or nLc
<b>HFS</b> (hi-set fault start signal)	Lc or nLc
<b>AFS</b> (any fault start signal)	Lc or nLc
<b>dUF</b> (device failure)	nLc only
<b>CbF</b> (circuit breaker failure)	nLc only
<b>A90</b> (pre-alarm fault) > 90% of $I_p >$	Lc or nLc
<b>A95</b> (pre-alarm fault) > 95% of $I_p >$	Lc or nLc

<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)

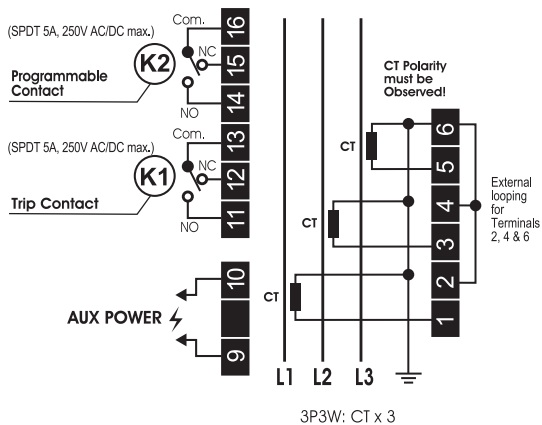
<sup>3</sup>Output on k2 dependent on the programmed options

## casing dimension

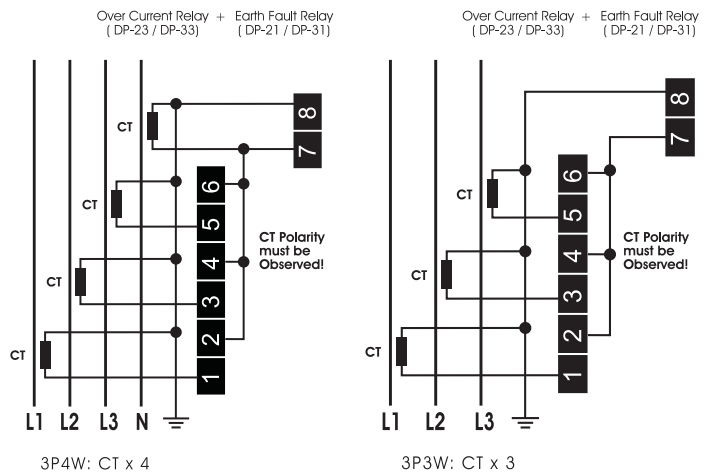


## wiring diagram

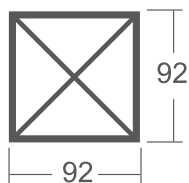
When used without Earth Fault Relay



CT connection when used with Earth Fault Relay



## panel cut-out



Panel Cut-out : 92 x 92

## ordering information

### Model

DP-23-220c-5A  
 DP-23-220c-1A  
 DP-23-024c-5A  
 DP-23-024c-1A

### Description

(CT.../5A) 65 ~ 275 Vac (45~65 Hz), 90~300 Vdc  
 (CT.../1A) 65 ~ 275 Vac (45~65 Hz), 90~300 Vdc  
 (CT.../5A) 18~72 Vdc  
 (CT.../1A) 18~72 Vdc

Note: All measurement in mm.