

Digital Earth Leakage Relay

DP-10/*10_R

Auto-reset type



features



True RMS Measurement with SPARC¹ and DCOI² Algorithm
 Fundamental Signal Detection³
 Real Time Display of $I_{\Delta n}$ in mA/A
 Fault / lo-set & hi-set Trip LED Indication
 Fault Start Event Recording & LED Indication + (Output⁴: DP-10 only)
 Pre-Alarm LED Indication + Output⁴ (DP-10 only)
 Trip Event Memory (non-volatile 7 previous records)
 Fault Start Event Memory (non-volatile 4 previous records)
 Selectable Frequency (50/60 Hz)
 Programmable Relay Output contact for K2 (DP-10 only)
 *Trip Lock-out contact for K2
 Last Trip Elapsed Time (up to 99days)
 *Self Reclosing / Auto-reset
 *Re-start Interval Setting
 Auto Z.C.T. Detection
 Software Lock to Prevent Unauthorized Setting
 Complies with :
 IEC-60255-26/27 ; BS EN 50121-5 Standards
 External Plug-in Module for :-
 A-01s / A-01sp (RS-485 MODBUS RTU) isolated type

technical data

Current Input ($I_{\Delta n}$)	: ZCT (multiple sizes from ID of 30~200mm)
Fundamental Frequency	: Software selectable 50 or 60 Hz
Measurement Range	: 0.01 ~ 30.0 A
Output Relay Rating	: SPDT 5A, 250V AC/DC
Accuracy	: Current protection threshold ($\pm 5\%$) Time delayed (+5% or 50ms)
Display	: 7-Segment LED (3 + 1 digit)
Indication (LEDs)	: mA, fault start event, lo / hi-set trip, fault (pre-alarm for DP-10 only)
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

$I_{\Delta n} > (A)$: lo-set trip	0.03~30.0 A
$t > (sec)$: lo-set trip time delay	0.03 ~ 20.0 sec
$I_{\Delta n} \gg (A)$: hi-set trip	OFF or 0.1~30.0 A
$t \gg (sec)$: hi-set trip time delay	fixed @ 30ms
*Trip-lockout $\gg$	1 ~ 10 times
*Auto-reset timer	3~200 sec
*Re-start interval	OFF or 5 mins~24hrs

aux power

DP-10/10R-220a	: 65 ~ 275 Vac (45~65Hz), 90 ~ 300 Vdc
DP-10/10R-024d	: 18 ~ 72 Vdc
Consumption	: < 3VA

K1 output contact options (DP-10 only)

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

K2 output contact options (DP-10 only)

trP (tripping output)	Lc or nLc
LFS (lo-set fault start signal)	Lc or nLc
HFS (hi-set fault start signal)	Lc or nLc
AFS (any fault start signal)	Lc or nLc
dUF (device failure)	nLc only
CbF (circuit breaker failure)	nLc only
A50 (pre-alarm fault) >50% of $I_{\Delta n}$	Lc or nLc
A90 (pre-alarm fault) >90% of $I_{\Delta n}$	Lc or nLc

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

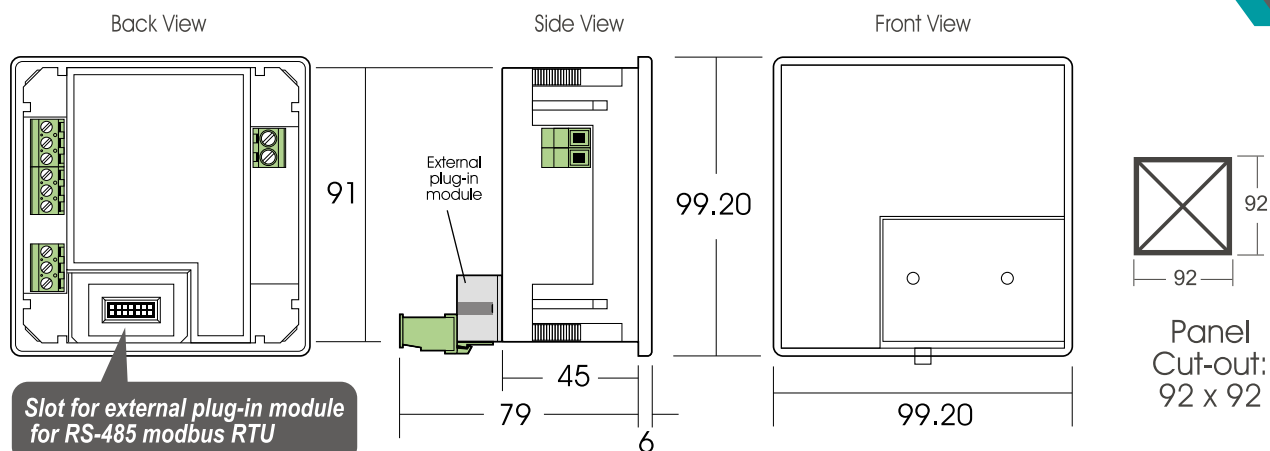
²DCOI - dc offset independent algorithm:
Cancels out dc signal caused by EMI and aging circuitry (Better Immunity against EMI)

³Fundamental Signal Detection:
To discriminate between signal and noise and eliminate nuisance tripping

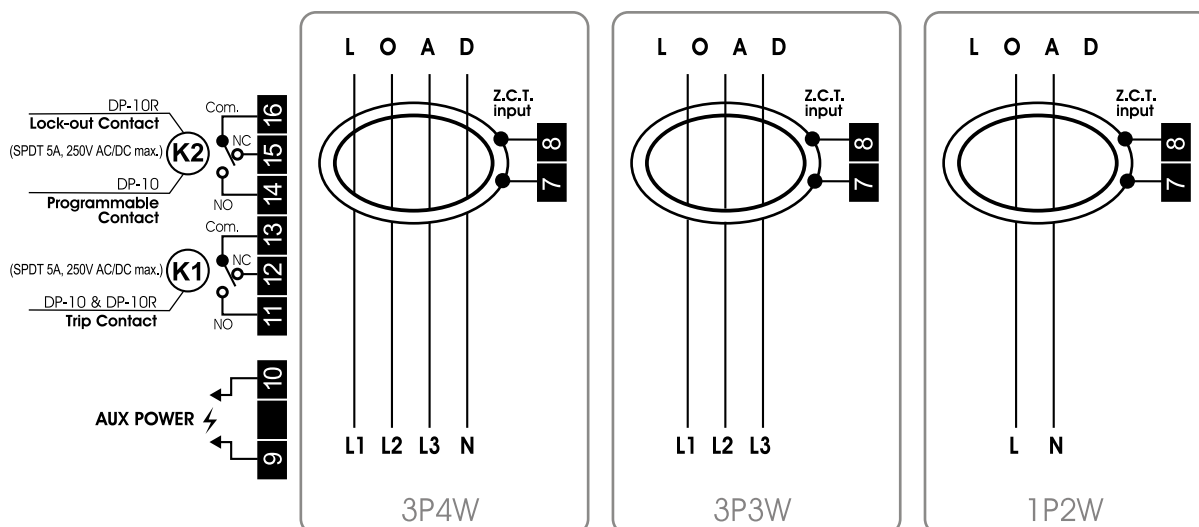
⁴Output on K2 dependent on the programmed options

* Available only for model DP-10R (Auto-reset type)

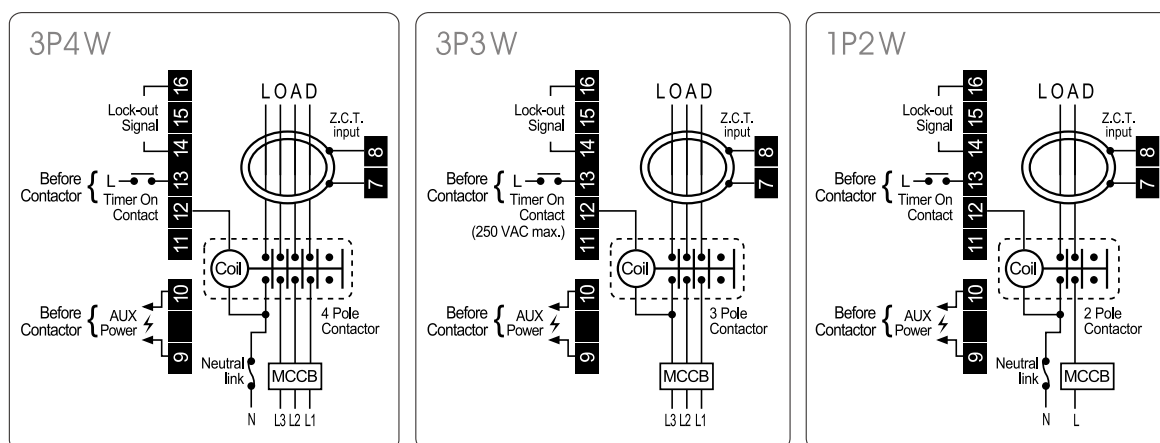
casing dimension



wiring diagram



auto-reset wiring diagram



ordering information

Model	Description
DP-10-220a	65 ~ 275 Vac (45~65Hz), 90 ~ 300 Vdc
DP-10-024d	18 ~ 72 Vdc

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Note: All measurement in mm.