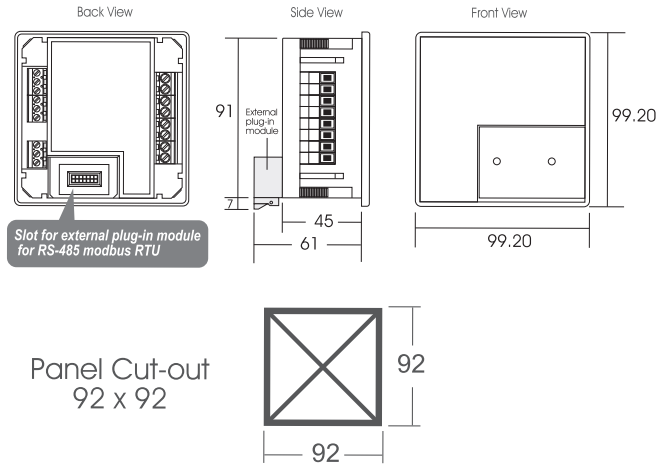




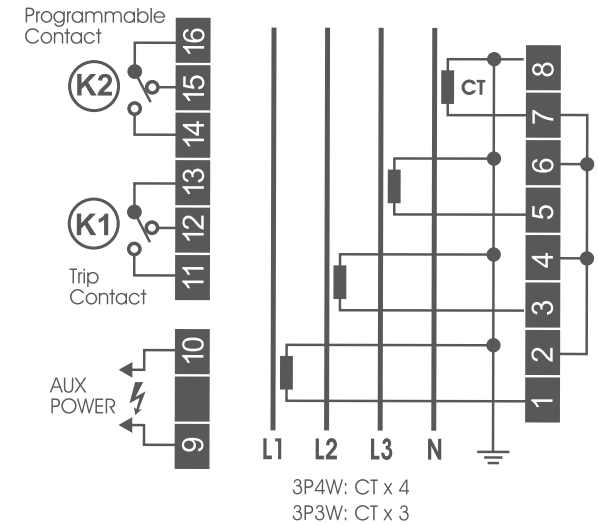
Note: Specification subject to change without prior notification
(please visit www.delab.com.my for latest specification)

Casing



Note: All measurement in mm.

Wiring



User Guide

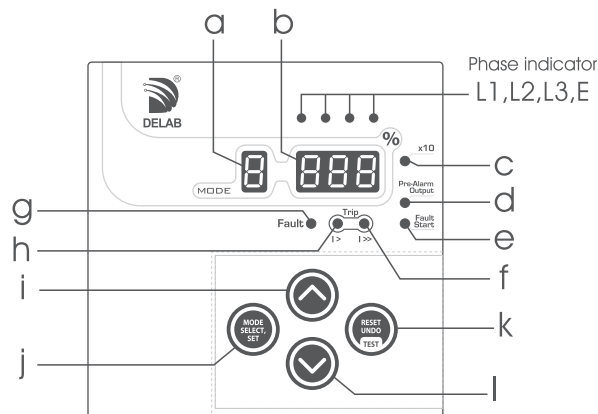
DP-34

IDMT
Combined Over Current & Earth Fault Relay

features

- True RMS Measurement with SPARC¹ and DCOI² Algorithm
- Auto / Manual Scroll for Real Time Display of Phase Current and Earth Fault in %
- 6 Selectable IDMT Graphs + 1 DTL
- Fault / lo-set & hi-set Trip LED Indication
- Fault Start Event Recording & LED Indication + Output³
- Pre-Alarm LED Indication + Output³
- Trip Event Memory (non-volatile 7 previous records for 3 phases + earth)
- Fault Start Event Memory (non-volatile 4 previous records with phase info)
- Programmable Relay Output Contacts for K2, K3*
 - Last Trip Elapsed Time (up to 99days)
- Software Lock to Prevent Unauthorized Setting
- Complies with IEC-60255-26 Standards
- ANSI Code: 50P, 50G, 51P, 51G
- External Plug-in Module for :- A-01 (RS-485 MODBUS RTU)
- A-02 (RS-485 MODBUS RTU + k3)*

Overview



- a. single digit mode LED display
- b. 3 digit data LED display
- c. x 10
- d. Pre-Alarm output indication
- e. Fault start indication
- f. Hi-set trip indication
- g. Fault indication
- h. Lo-set trip indication
- i. increment / up button
- j. mode select / set button
- k. reset / undo / test button
- l. decrement / down button

Technical Data

Aux Power	: 65~275 Vac ; 90~300 Vdc / 16~36 Vdc
Fundamental Frequency	: 50 or 60 Hz (software selectable)
Burden	: <0.3 VA @ In
Output Relay Rating	: SPDT 5A, 250V AC/DC
Display	: 7-Segment LED (3 + 1 digit)
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	: 275g

Parameter Setting Range

Phase OverCurrent

$I_p >$ (lo-set trip)	2% to 200% (step of 1%)
IDMT $I_p >$	6 IDMT + 1 DTL
TMs $I_p >$	0.05 ~ 1.00 (step of 0.01)
$t_p >$ (lo-set trip time delay)	0.03s ~ 20.0s 0.03s ~ 0.10s (step of 0.01s) 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%
$t_p >>$ (hi-set trip time delay)	20% ~ 1000% (step of 10%) 1000% ~ 2000% (step of 100%)
$t_p >> :$	0.03s ~ 0.5s

Earth Fault

$I_e >$ (lo-set trip)	2% to 100% (step of 1%)
IDMT $I_e >$	6 IDMT + 1 DTL
TMs $I_e >$	0.05 ~ 1.00 (step of 0.01)
$t_e >$ (lo-set trip time delay)	0.03s ~ 20.0s 0.03s ~ 0.10s (step of 0.01s) 0.10s ~ 1.00s (step of 0.02s) 1.0s ~ 20.0s (step of 0.1s)
$I_e >>$ (hi-set trip)	OFF or 20% ~ 1000% (step of 10%)
$t_e >>$ (hi-set trip time delay)	0.03s ~ 0.5s

Modes	
PARAMETER SETTING	<p>Phase OverCurrent</p> <p>1 $I_p >$: I_p-set trip (%)</p> <p>2 IDMT $I_p >$: 6 IDMT + 1 DTL</p> <p>3 TMs $I_p >$ or $t_p >$: Time Multiplier or I_p-set trip time</p> <p>4 $I_p >>$: hi-set trip</p> <p>5 $t_p >>$: hi-set trip time delay (sec)</p>
VIEWING INFO	<p>Earth Fault</p> <p>6 $I_e >$: I_e-set trip (%)</p> <p>7 IDMT $I_e >$: 6 IDMT + 1 DTL</p> <p>8 TM $I_e >$ or $t_e >$: Time Multiplier or I_e-set trip time</p> <p>9 $I_e >>$: hi-set trip (%)</p> <p>0 $t_e >>$: hi-set trip time delay (sec)</p>
SPECIAL SETTING MODE	<p>b, 01 to 06 Trip memory 7 trip event memories (non-volatile)</p> <p>d Last trip elapsed time Last trip elapsed time</p> <p>01 to 04 Fault start memory 4 fault start event memories (non-volatile)</p> <p>UEr Version Firmware version</p> <p>OPh Operation hr. Device operated in hours (x 1000 hr)</p>
	<p>Software lock Keypad lock : OFF or ON</p> <p>TripRelay K1 response type Latching or Non-latching</p> <p>Output relay K2 function Programmable relay output</p> <p>Trip relay K2 response type Latching or Non-latching</p> <p>Network frequency Selectable as : 50 Hz or 60 Hz</p> <p>Standby mode Running LED bar : ON or OFF</p> <p>Selection of plug-in module A-01 (RS485 modbus plug-in module) or none</p> <p>Modbus address Selectable from 1 ~ 247</p> <p>Baud rate setting Selectable from 3,6,12,24,48,96,192,288</p> <p>End End program setting Exit special setting mode</p>

Parameters Setting

Single digit mode display

Three digit mode display

Mode decimal
Indicates standby mode / seconds count

STEP 1

Press [SELECT] button while in default mode (when mode display is blank)

To scroll thru modes, just press & release the Select button

STEP 2

Press [UP] or [DOWN] button to desired value

For fast increment or decrement, press and hold the Up or Down button

MODE SELECT, SET

↑

↓

RESET UNDO TEST

STEP 3

Press [SET] button to store new value & proceed to next mode

RESET/UNDO

Press button to undo changes or exit mode

TEST TRIP

Press and hold 5 seconds to test trip device

5 flashes (mode decimal) = 5 seconds

All modes exit automatically if left untouched for more than 20 secs.

Info Viewing

b, 01 ~ 06

Tripped values for last 7 events

Press [SELECT] until mode b or hold [SELECT] for 1 second in any mode 1~A.

Display will show the tripped value for the most recent tripped event.

Single flash : Indicate a lo-set trip

Double flash : Indicate a high-set trip

Manual tripped event will display a flashing **ErP**.

Press [SELECT] button again to scroll thru mode 01 to 06. (Auto skip to mode 0 if memory is empty)

Skip directly to mode d : Hold [SELECT] button for 1 second.

Clear trip event memory : Hold [RESET] button for 3 seconds in mode b.

Press [UNDO] button to exit.

00 ~ 04

Fault start event memory

Press [SELECT] until mode 00.

If display shows ---. (No fault event has occurred)

Press [SELECT] button again to scroll thru mode 00 to 04. (Auto skip to next mode if no fault start event has occurred)

Press [UNDO] button to exit.

d

View last trip elapsed time

Press [SELECT] until mode d.

Display will show the elapsed time of last trip since last power up.

--- Indicate no tripping since last power up.

99h99n Display up to 99 Hour 99 min

99d99h Display up to 99 Day 99 hour

00n99d Over 99 Days

Press [UNDO] button to exit.

UEr

Firmware version

Press [SELECT] until mode UEr.

Display will show the firmware of the device.

Press [UNDO] button to exit.

OPh

Total operation hour

Press [SELECT] until mode OPh.

Display will show the firmware of the device.

Press [UNDO] button to exit.

0

Manual Scroll

Press [UP/DOWN] when mode display is blank.

Display will show the individual phase value (L1,L2,L3,E) in real time. Continue pressing the [UP/DOWN] button to scroll thru the next phase.

Press [UNDO] button to exit.

Special Setting Modes

When NO mode is selected (mode display is blank),

- i) Press [SELECT] & [RESET] button simultaneously and hold for 5 seconds until mode 0 appears.
- ii) Press [Up] or [Down] button to modify
- iii) Press [SET] button to confirm and proceed to next mode

0 Software keypad lock

OFF or On

02 Trip relay K2 response type

Lc : Latching trip nLc : Non-Latching trip

01 Trip relay K1 response type

Lc Latching trip nLc Non-Latching trip

0r Electrical network system frequency

Electrical network frequency setting:

50 = 50 Hz 60 = 60 Hz

02 Output relay K2 function

ErP : Tripping output (Lc / nLc)

- Standby option

OFF : De-activate On : Activate

Fault Start Output Function

LFS : Lo-set fault start signal output (Lc / nLc)

AFS : Any fault start signal output (Lc / nLc)

Fault start event LED (e) indicates any detected fault events.

To clear event indication, press [RESET] or scroll to mode 00 while no fault is present.

K2 output will be activated when there is any fault start event if programmed is being set as 'AFS'.

To latch fault events output, select 02 to Lc in special setting mode.

0 Selection of plug-in module

001 : A-01 none None

0d Modbus address

Selectable from 1~247

0r Baud rate setting

Set the baud rate in a modbus communication between host computer and device. Selectable as: (3 = 300, 6 = 600, 12 = 1200, 24 = 2400, 48 = 4800, 96 = 9600, 192=19200 or 288 = 28800) bps

Data parity is fixed to none.

End End setting

Press [SELECT] to exit or [UNDO] to go back.

