selec

**ELR-341-1**
Operating Instructions

OP685-V01




## FEATURES

- Leakage current monitoring in 1Ø and 3Ø systems
- RMS value measurement (AC)
- CBCT detection
- User selectable Power ON Delay, Trip Delay and Recovery Delay
- Adjustable hysteresis
- Pre-alarm indication selectable
- Test and Reset via Front / Remote
- Trip relay with NO or NC operation selectable

## SPECIFICATIONS

**HMI**
3 Digits, Seven Segment Display

**ELECTRICAL CONNECTION**
1Ø-2 wire, 3Ø-4 wire, 3Ø-3 wire

**AUXILIARY SUPPLY**
90-270VAC/DC

**FREQUENCY RANGE**
50 – 60Hz

**VA RATING**
4VA max

**DISPLAY CURRENT RANGE :** 15mA - 33A

**TRIP SETTING**
Leakage Current Range : 30mA - 30A

**INSTANTANEOUS TRIP FOR CURRENT**
ON / OFF (5 times of set current)

**TIME SETTING**
Power ON Delay : 1 - 999sec
Trip time delay : 0 - 999sec
Recovery Time : 1 - 99min
Response Time :
< 30ms (if trip current 5 x set value & Instantaneous trip is ON)
< 50ms (if trip current = 1 x set value)

* For 30mA range, trip time will not be applicable, only response time will be applicable.

**HYSTERESIS**
5 to 40% {For eg., If set HYS is 10% & SV is 100mA; unit will allow untrip at 90mA}

**RESOLUTION**
Depends on trip setting resolution will be,
33mA = 0.1mA
550mA = 1mA
5.50A = 0.01A
30A = 0.1A

**CBCT DETECTION**
Yes, when CBCT absent or short

**ACCURACY**
Current : ±5% of Setting
Time : ±5% of Setting±100ms

**OUTPUT SPECIFICATIONS**
Relay : 1C/O (SPDT)

**RELAY RATING**
NO (5A, 250V AC/28VDC)
NC (5A, 250V AC/28VDC)

**LED INDICATION**
LED1 (Red) : mA indication
('ON' only when mA range is displayed)
LED2 (Red) : Relay
(Continuously ON after trip & blinking for alarm)

**RESET CONDITIONS**
- Power ON reset
- Terminal reset (Y1 & Y2 short)
- Press RST key for 3 sec.
- Auto reset (as per setting)

**TEST/RESET FUNCTION**
Test / Reset function is used to check proper functioning of product. It includes
- Relay contact switching
- LED check

**TEST MODE**
- Press TST key for 3 sec.
- Test through terminal (Y1 & Y2 short)

**RESET MODE**
- Press RST key for 3 sec.
- Reset through terminal (Y1 & Y2 short)

**ENVIRONMENTAL SPECIFICATIONS**
- Indoor use
- Altitude of up to 2000 meters
- Pollution degree II

Temperature : Operating : 0 to 55°C
Storage : -20 to 70°C
Humidity : Up to 95% RH, non-condensing

**MECHANICAL SPECIFICATIONS**
No. of Push Buttons : 3
Size : 96 x 96 mm
Mounting : Panel Mount
Wire Size (max) : 4 sq.mm
Screw tightening torque : 0.5 N-M

**WEIGHT :** 290gm approx.

## LED INDICATION CHART

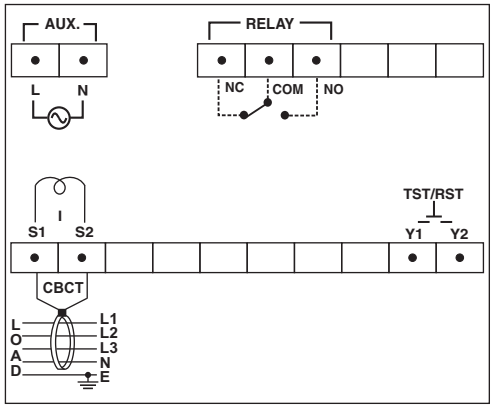
| Various Conditions | 'mA' LED | 'R' LED |
|---|---|---|
| No fault | OFF* | OFF |
| Trip | OFF* | ON |
| Pre-Alarm | OFF* | Blinking |
| CBCT error | OFF* | ON |

* = 'ON' only when 33mA / 550mA range is selected.

## ORDER CODE INFORMATION

| PRODUCT | SUPPLY | CERTIFICATION | |
|---|---|---|---|
| | | CE | UL |
| ELR-341-1 | 230V AC | — | — |

## TERMINAL CONNECTIONS




## NOTE FOR CONNECTION

For single phase applications, only the live and neutral needs to be passed through the CBCT.
The Earth MUST NOT pass through the CBCT.
The distance between relay and CBCT should be kept as short as possible
Use screen, shielded cable or twisted pair cable between the unit and CBCT for long distance (Greater than 1m).

## CONFIGURATION MENU

**Press ▲+▼ for 3sec. to enter or exit configuration menu.**

| | | | | |
|---|---|---|---|---|
| | | | | Press ● to save value |
| Press ▲ or ▼ to scroll through menu | | Press ● + ▲ or ● + ▼ to change parameter value | | |
| **DISPLAY (For 1sec)** | **DESCRIPTION** | **DEFAULT VALUE** | **RANGE** | **CONDITION** |
| P.On | Power ON Delay | 1 | 1 to 999sec | |
| rnG | Range Selection | 5.50 | 33.0, 550, 5.50, 30.0 | Depending upon this selection, the set trip value will be prompted. If this setting is changed the default trip value is loaded. 'OVR' will be displayed; if input current is greater than selected Range. |
| SU | Set Trip Value | 1.00 | SV can be programmed between 30mA to 30A irrespective of the selected range. Default SV for different ranges are : 33.0 : 30.0mA 550 : 100mA 5.50 : 1.00A 30.0 : 10.0A | If SV exceeds max limit of specified range then next range will automatically be made applicable. For eg.If SV is set 40mA, range will get changed from 33mA to 550mA automatically. |
| InS | Instantaneous Trip Selection | On | ON / OFF (5 times of set current) | If INS = ON and leakage current ≥ 5 times the set value, the relay trips instantaneously irrespective of trip time delay. |
| trP | Trip Time Delay | 1 | 0-999sec | (Not Applicable for 33mA range) |
| rEC | Recovery Time Delay | 5 | 1-99Min | |
| PrE | Pre-Alarm | d IS | ENABLE / DISABLE | |
| | | SEt | 50 to 100% | This option will be prompted only if Pre-alarm enabled |
| nOd | Relay Operation Mode | On | ON / OFF (For ON mode, contact will be in changed over state in normal condition). | |
| LCH | Latch | OFF | ON / OFF | If latch is ON, user has to reset the unit manually when fault is removed |
| HyS | Hysteresis | 10 | 5 to 40% | |
| rSt | Reset | no | YES / NO | |

## TEST & RESET FUNCTION

● LED ON ○ LED OFF

| KEY | DESCRIPTION | DISPLAY (For 1sec.) | LED's | CONDITION |
|---|---|---|---|---|
| For TEST | Press TST key for 3 Sec. | tSt | ○ mA ○ R | Test function is applicable only when unit is in healthy condition. |
| Test passed | | Ok | ● mA ● R | If test is passed, OK will be displayed till reset button is pressed. |
| Test Failed | | nOt | ○ mA ○ R | ---- |
| RST | Press RST key for 3 Sec. | Actual Value | ○ mA ○ R | If current is in mA then "mA" LED will be ON. |

| | |
|---|---|
| **RESET** | Press ▼ key for 3sec. to reset manually. |
| **TRIP VALUE** | On ▲ key press : Trip value will be displayed till the key is pressed. |

In configuration menu, if no key pressed for 30 sec. then unit resumes online mode.

## WARRANTY / LIMITATIONS OF LIABILITY

Selec warrants the products to be free from defects in the materials and workmanship for a period of one year (or other period specified, if any) from the date of sale by Selec.

The warranty does not apply to defects resulting from any action of the buyer, including but not limited to improper handling, operating the product outside the specification limits or unauthorized disassembling / altering of the product. The warranty shall be VOID if the product shows evidence of having been tampered or being damaged due to usage in corrosive environment ; or current, heat, moisture or vibration ; improper specification; wrong usage in an application misuse or other operating conditions outside of Selec's control.

Selec shall not be responsible for special, indirect or consequential damages, loss of profits or commercial loss in any way connected with the products, whether such claim is based on contract, warranty, negligence or strict liability.

In no event shall the responsibility of Selec for any act exceed the individual price of the product on which liability is asserted.

In no event shall Selec be responsible for warranty or other claims regarding the products unless Selec's analysis confirms that the products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification or repair.

## SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

## WIRING GUIDELINES

### WARNING

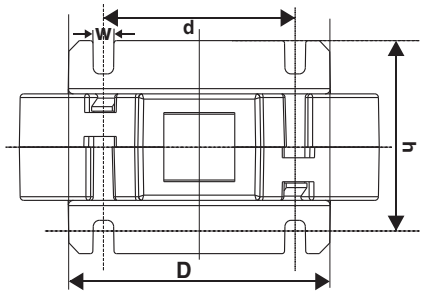
1. To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement.
2. Wiring shall be done strictly according to the terminal layout with shortest connections.
Confirm that all connections are correct.

### CAUTION

1. To ensure the safe operation of unit, check the wiring and connections.

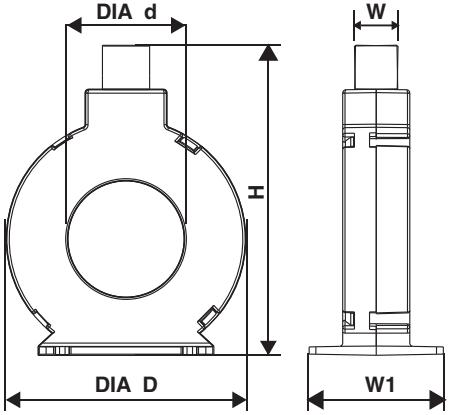
## CT DIMENSIONS

**CORE BALANCED CURRENT TRANSFORMER**




**TOP VIEW**

| CBCT TYPE | Dimensions (mm) | | | |
|---|---|---|---|---|
| | D | d | h | w |
| **35-1** | 52.50 | 38 | 40 | 4 |
| **70-1** | 87 | 38 | 40 | 4 |
| **120-1** | 122 | 38 | 40 | 4 |
| **210-1** | 199.80 | 120 | 55 | 6.60 |
| **310-1** | 300 | 200 | 66 | 6.60 |
| **TOLERANCE** | **Linear Tolerance :** ±0.1mm | | | |



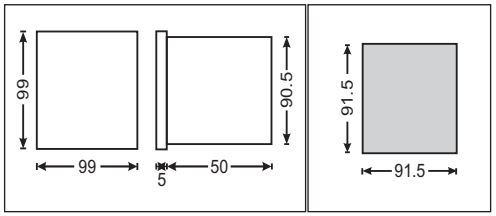

**FRONT VIEW** **SIDE VIEW**

| CBCT TYPE | Dimensions (mm) | | | | |
|---|---|---|---|---|---|
| | D | d | H | W | W1 |
| **35-1** | 71.30 | 35 | 97 | 15 | 40 |
| **70-1** | 107.50 | 70 | 133 | 15.50 | 40 |
| **120-1** | 158 | 120 | 184.50 | 15.50 | 40 |
| **210-1** | 268 | 210 | 270 | 25 | 55 |
| **310-1** | 377 | 310 | 379 | 25.50 | 65 |
| **TOLERANCE** | **Linear Tolerance :** ±0.1mm | | | | |

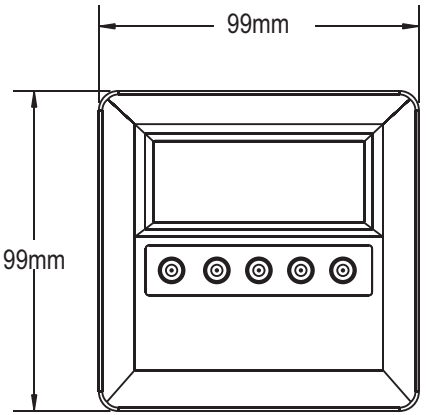
**CT TYPE** ZPC (Zero Phase Current)

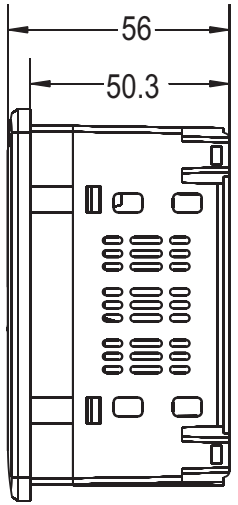
## MECHANICAL SPECIFICATIONS

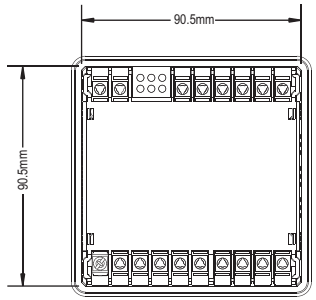
| OUTLINE Dimensions (in mm) | PANEL CUTOUT Dimensions (in mm) |
|---|---|




## DIMENSIONS




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(Specifications subject to change as development is a continuous process.)


**Selec Controls Pvt. Ltd., India**

**Factory Address :**
**EL-27/1, Electronic Zone, TTC Industrial Area,**
**MIDC, Mahape, Navi Mumbai - 400 710, INDIA.**
**Tel. No. : +91-22-28476443 / 1882**
**Fax No. : +91-22-28471733 I Toll free : 1800 227 353**
**Website: www.selec.com I Email: sales@selec.com**