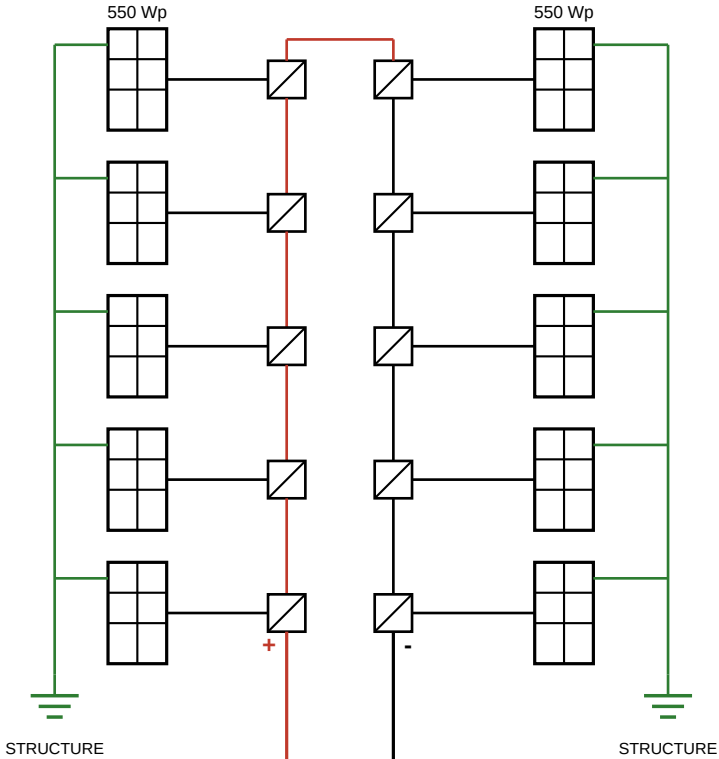


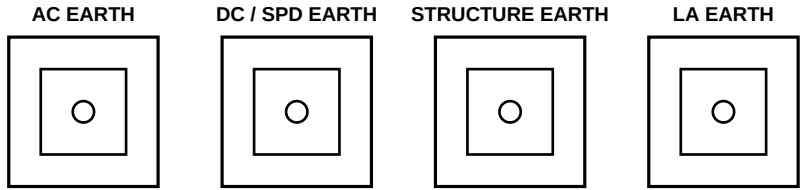
PV ARRAY: 10 x 550 Wp = 5.50 kWp, 1 STRING x 10 S-SERIES OPTIMISERS (1:1)

S-Series optimisers with SE5000H: 6 to 25 optimisers per string, max 6840 W per string, one module per optimiser



50 sq.mm Al down conductor  
to dedicated LA earth pit

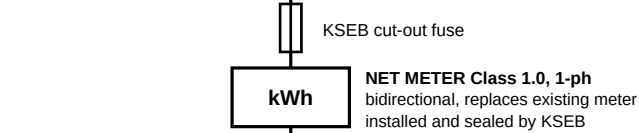
**LIGHTNING ARRESTER**  
as per IS/IEC 62305



Earth pits: GI pipe 40 mm dia x 2.5 m (or Cu-bonded rod), chemical backfill; 16 sq.mm Cu / 25x3 GI; LA 50 sq.mm Al.  
LA earth kept separate; AC, DC and structure earths interconnected. Earth resistance < 5 ohm (CEA Reg. 41).

FROM KSEB SUPPLY, 230 V 1-PH

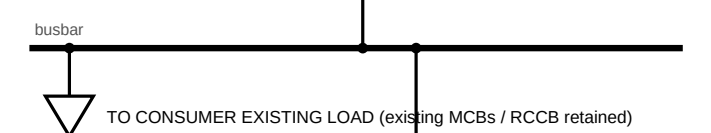
**CONSUMER METER BOX**



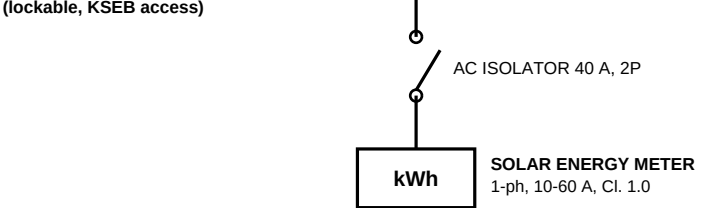
**LOCKABLE ENCLOSURE**



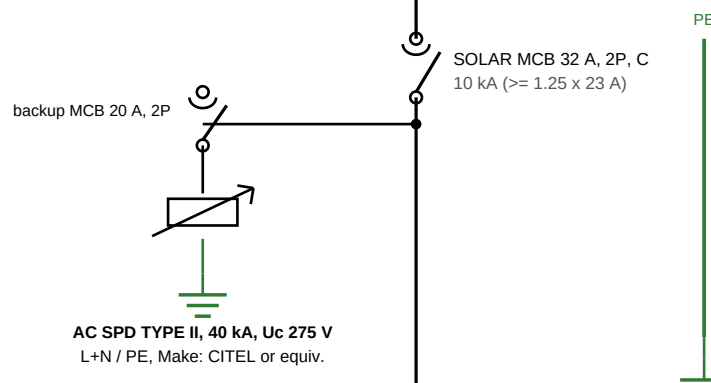
**CONSUMER MAIN DB / LT PANEL (existing)**



**1-PH SOLAR METER BOX (lockable, KSEB access)**



**ACDB**



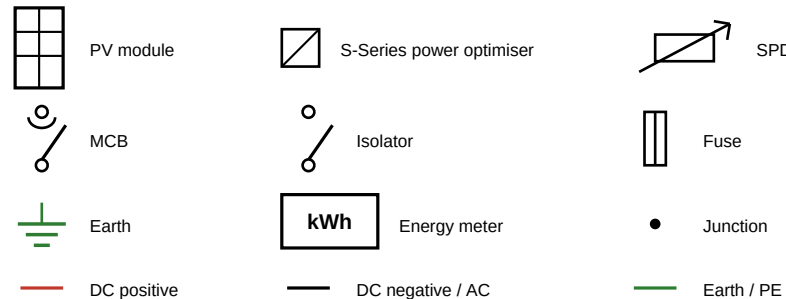
**GENERAL NOTES**

1. Scheme: KSEB net metering under PM Surya Ghar: Muft Bijli Yojana. Solar capacity shall not exceed the sanctioned connected load; prior feasibility approval from KSEB section office.
2. Single-phase net metering normally limited to 5 kW; above that a 3-ph connection is required.
3. Inverter: grid-interactive, anti-islanding, BIS IS 16221 / IS 16169, IEC 61727 / 62116 compliant.
4. Modules: ALMM-listed, DCR (domestic cells and modules) as required for central subsidy.
5. Net meter (bidirectional) supplied / tested / sealed by KSEB; solar generation meter Class 1.0 installed in a separate lockable box with KSEB access (MNRE requirement).
6. Lockable AC isolator accessible to KSEB staff; 'DUAL SUPPLY - SOLAR PV' warning labels at consumer DB, meter box and ACDB (CEA Safety Regulations 2010 / 2023).
7. Earthing: separate pits for AC, DC/SPD, structure and LA; < 5 ohm; LA down conductor 50 sq.mm Al, LA earth not bonded to others (IS/IEC 62305). Earth electrodes as per IS 3043.
8. If an RCD is called for by the Electrical Inspectorate, use Type A, trip >= 100 mA (SolarEdge).
9. Module mounting structure hot-dip galvanised, designed for wind load per IS 875 (Part 3).
10. DC cables 1.1 kV UV-resistant XLPE in UPVC conduit; AC cables FRLS PVC/XLPE; voltage drop <= 2%.
11. One S-Series optimiser per module; string length and power within SolarEdge limits; no mixing.
12. Installation to CEA Technical Standards for Connectivity (2013, as amended) and KSEB Soura norms.
13. Internet (Wi-Fi/Ethernet) for SolarEdge monitoring; commissioning via SetApp; O&M per schedule.

**DESIGN DATA - SE5000H (5 kW) WITH S-SERIES OPTIMISERS**

|                |                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------|
| PV modules     | 10 x 550 Wp = 5.50 kWp (DC/AC ratio 1.10)                                                             |
| Optimiser      | SolarEdge S-Series: 1100 W in, module Voc <= 125 V, 15 A in, 18 A / 80 V max out                      |
| String         | 1 string, 10 optimisers (min 6, max 25); 5500 W <= 6840 W                                             |
| Inverter AC    | 5000 VA, 230 V 1-ph, 50 Hz, max 23 A continuous                                                       |
| Inverter DC    | max 7500 W, 480 V max, 380 V nominal, max 13.5 A                                                      |
| DC fuses       | 20 A, 1000V gPV, both poles (>= 1.25 x 13.5 A)                                                        |
| DC isolator    | 25 A, 600V DC 2P, ganged                                                                              |
| DC SPD         | Type II, 2-pole, Uc 600 V DC, 40 kA                                                                   |
| DC cable       | 4 sq.mm x 1C solar XLPE Cu, 1.1 kV, UV rated                                                          |
| String voltage | 380 V fixed in operation (inverter regulated); never above 480 V inverter max; 1 V/optimiser when off |
| AC MCB         | 32 A, 2P, C-curve, 10 kA (>= 1.25 x 23 A)                                                             |
| AC SPD         | Type II, 40 kA, Uc 275 V, backup MCB 20 A, 2P, C                                                      |
| AC cable       | 6 sq.mm x 3C (L,N,E) Cu                                                                               |
| AC isolator    | 40 A, 2P, lockable, in solar meter box                                                                |
| Gen. meter     | 1-ph, 10-60 A, Class 1.0, in-line                                                                     |
| Earthing       | 4 pits: AC, DC/SPD, structure: 16 sq.mm Cu or 25x3 GI strip; LA: 50 sq.mm Al                          |
| Bonding        | 10 SWG bare Cu: module frames to structure and frame-to-frame jumpers                                 |

**LEGEND**



**CUSTOMER / SITE DETAILS**

|                             |  |
|-----------------------------|--|
| Customer name               |  |
| Consumer number             |  |
| Site address / KSEB section |  |

**SOLAREGE ON-GRID PV SYSTEM - 5 kW SINGLE PHASE  
SE5000H HD-WAVE + S-SERIES OPTIMISERS - SINGLE LINE DIAGRAM  
PROVISIONAL - VERIFY BEFORE USE**

|                                             |                       |                      |                   |
|---------------------------------------------|-----------------------|----------------------|-------------------|
| Drawing No.<br><b>JSS/SE/SLD/1PH/5KW/01</b> | Revision<br><b>00</b> | Scale<br><b>NONE</b> | Size<br><b>A3</b> |
| Originated by                               | Checked by            | Approved by          | Date              |