

Welcome to our “e-REW Express”. In support of the Government's pledge to achieve carbon neutrality before 2050, HK Electric provides a one-stop service, Smart Power for Construction Site, to facilitate the electrification of construction sites such that not only energy costs can be saved but also carbon emissions and noise pollution during construction period can be reduced. To help the industry move forward, we will introduce technical requirements for temporary supply to construction sites and share some common departures found at sites in this issue of “e-REW Express”.

If you have any suggestion, please send an email to us via mail@hkelectric.com or contact our Customer Installation Department on 2887 3455.

Technical Requirements and Common Departures for the Temporary Supply to Construction Sites

1. Supply Source

For meeting power demand of 3-phase 800A or below, the temporary supply will be provided via HK Electric’s low-voltage (LV) cables (via LV service cutouts housing in weatherproof enclosures).

For those demand above 3-phase 800A, the supply will be provided via HK Electric’s pre-fabricated modular transformer pillars.



Weatherproof enclosures housing LV service cutout and meter supplied by HK Electric



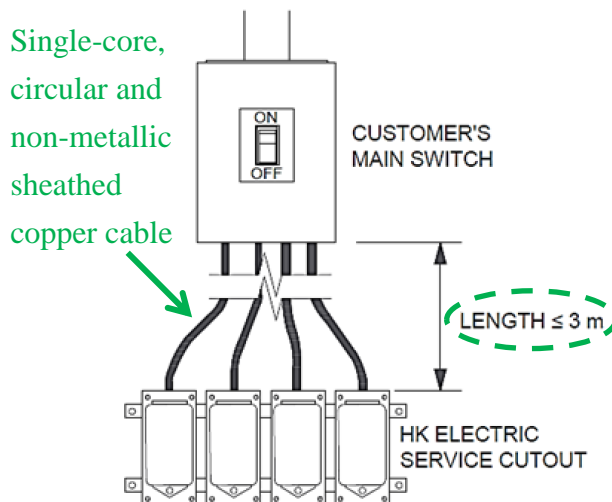
Pre-fabricated modular transformer pillar provided by HK Electric

2. Technical Requirements

i. Connection Arrangements

a. Supply via LV Service Cables

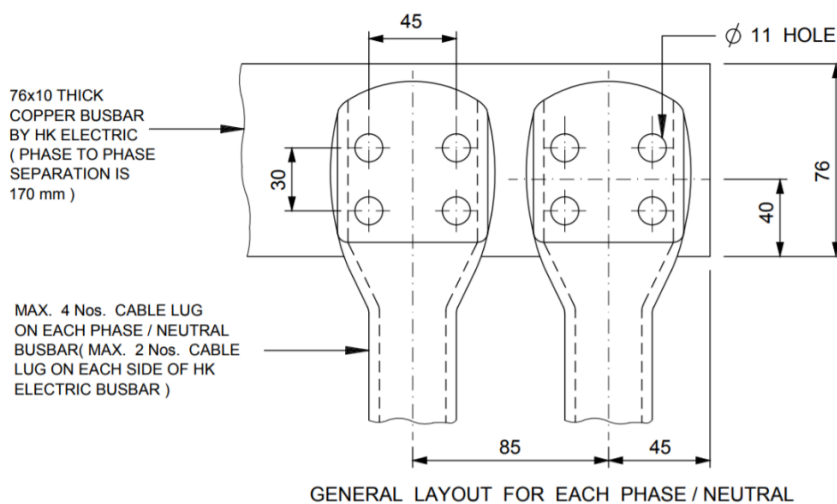
- The length of customer’s LV cables between HK Electric service cutout and the customer’s LV main switch shall not exceed 3 metres.
- Those LV cables interconnecting HK Electric service cutout with the customer’s LV main switch shall be of single-core, circular and non-metallic sheathed type.



- The minimum size of copper conductor to be terminated onto the outgoing service terminals of HK Electric service cutout shall be 50 sq. mm.

b. Supply via Pre-fabricated Modular Transformer Pillars

- The length of customer’s LV cables between HK Electric transformer/isolator and the customer LV main switch shall not exceed 20 metres.
- Those LV cables interconnecting HK Electric transformer/isolator with the customer’s LV main switch shall be of single-core and non-metallic sheathed type. A maximum of four cables per phase may be used and the neutral conductor shall be of same installed rating as the phase conductor.



ii. Customer's LV Main Switch

a. General Requirements

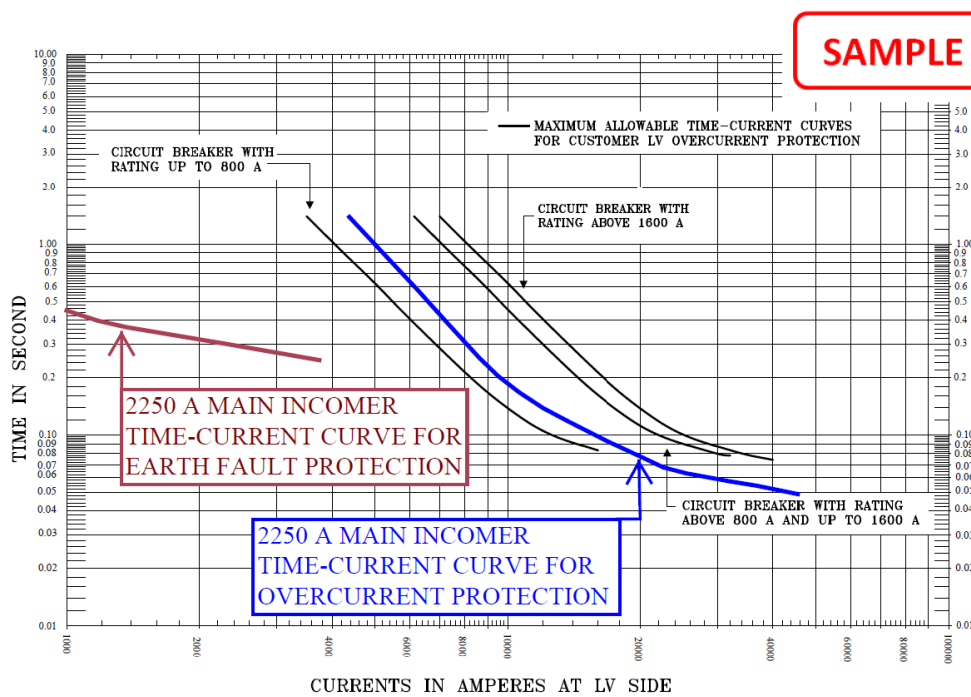
- Switchgear/circuit breakers connected directly to HK Electric's transformer/ service cutout shall have a minimum of short-circuit breaking capacity of 40 kA at low voltage.
- The characteristics of the protective devices for automatic disconnection and the earth fault loop impedance at the customer's LV main switch side shall be coordinated so that the disconnection is achieved within 5 seconds during an earth fault.
- Both 4-pole and TP&N switches may be used. If the switch is a 3-pole linked switch or circuit breaker, a link shall be inserted in the neutral conductor and securely fixed by bolts or screws.

U _i 800 V	U _{imp} 8 kV
U _e (V)	I _{cu} (kA) I _{cs}
220/240	~ 85 85
380/415	~ 50 50
440	~ 42 42
500	~ 30 30
525	~ 22 11
660/690	~ 10 10



b. Other Requirements (for Supply via Pre-fabricated Modular Transformer Pillars)

- The overcurrent protection of the customer's LV main switch shall be properly graded with that of HK Electric's transformer and has an operating time not exceeding the maximum allowable time-current curves according to different ratings of LV main switches (Drg. No. GCS/4/05).

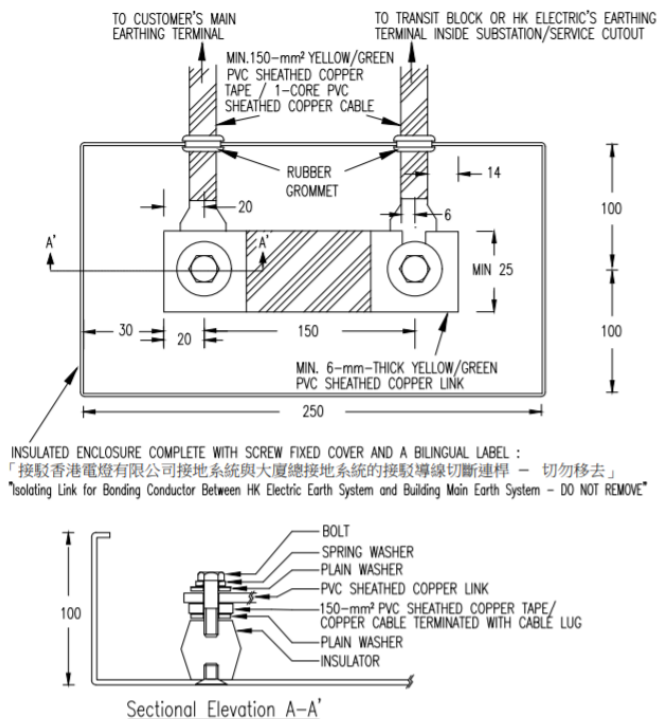


Drg. No. GCS/4/05
MAXIMUM ALLOWABLE TIME-CURRENT CURVES OF OVERCURRENT PROTECTION AT CUSTOMER LV MAIN SWITCH

- Circuit breaker used to receive the supply directly from HK Electric's transformer shall normally be of draw-out type.

iii. Earthing

- In accordance with Regulation 12(2) of the Electricity (Wiring) Regulations, where the supply is taken directly from HK Electric transformer where the fixed electrical installation is situated, the main earthing terminal of the installation shall be bonded to the bonding terminal that connects to the earthed point of HK Electric transformer. A disconnection link (Drg. No. GCS/6/09) for testing purpose shall also be provided to disconnect the bonding conductor between HK Electric and customer's earthing system.



3. Common Departures

i. Location of Customer's LV Main Switch Cubicle



Customer's LV main switch cubicle is installed inside the boundary of construction site and faces towards the site rather than pavement.



Position of the weatherproof enclosure and customer's LV main switch cubicle shall be at the boundary of construction site and face the pavement, with a minimum clearance space of 900 mm for the full width in front of the enclosure.

ii. Customer's LV Main Switch



Customer's LV main switch with residual current device for protection against earth leakage is not provided.



Residual current device shall be provided at customer's LV main switch.

iii. Earthing



Earth electrode without inspection pit.



Earth electrode with inspection pit shall be provided.

With sufficient information available (e.g. the schematic wiring diagram of the supply arrangement for construction site), we are always pleased to provide our advisory service to Registered Electrical Contractors / Workers on the subject accordingly.