

Welcome to our “e-REW Express”. In this new issue of “e-REW Express”, we will highlight the metering requirements of whole current meter installation in simple terms and pictorial forms.

We hope you will find the information useful and handy. If you have any suggestion, please send an email to us at mail@hec.com.hk or contact our Customer Installation Section at 2887 3455 so that we can further improve our service.

Metering Requirements of Whole Current Meter Installation

All installations connected to, or intended to be connected to HK Electric’s supply of electricity must comply with HK Electric’s Supply Rules, the Electricity (Wiring) Regulations and other relevant Government Ordinances and Regulations.

Tariff metering equipment are important to HK Electric and customer in the determination of electricity consumption. Tariff meters shall be installed in a clean and dry indoor location which is not exposed to weather, mechanical damage, vibrations, extremes of temperature or dampness, etc. They shall be under conditions which are suitable for meter installation, reading and maintenance and shall comply with requirements mentioned below.

Meter seals shall not be removed or tampered with by customer/Registered Electrical Contractor/Registered Electrical Worker. However, if rewiring of customer’s installation requires removal of the seals, prior consultation with HK Electric shall be made.

1. Type of Whole Current Meters

Whole current meters shall be installed for single-phase installations (as shown in Figure 1) and for 3-phase 4-wire LV installations with main switch rating of 125A and below (as shown in Figure 2).



Figure 1 – Single-Phase Whole Current Meter



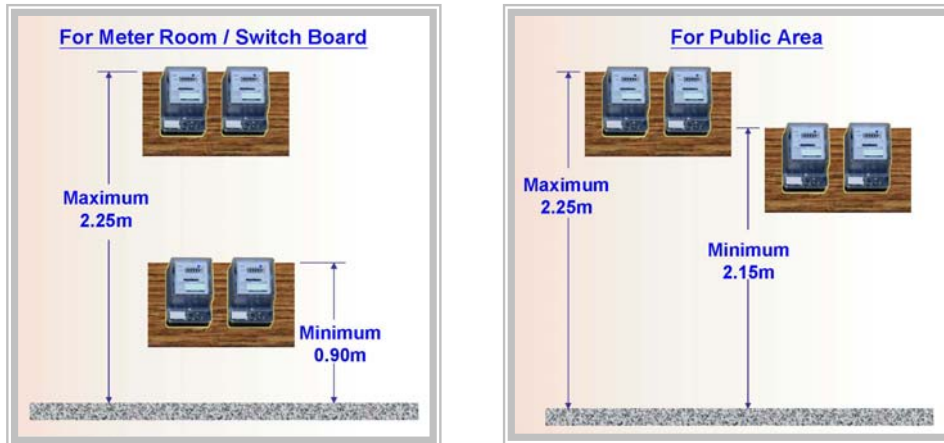
Figure 2 – Three-Phase Whole Current Meter

2. Metering Position

- HK Electric’s LV meter shall be electrically connected at a position immediately after the customer's main switch.
- Meter position shall satisfy the requirements for meter reading, meter fixing and meter maintenance.
- The metering point of an installation shall be at a position as close to the origin of the supply source as practicable.

3. Meter Boards Requirements

- a. Meter boards must be provided by the customer for installation of meters. Meter boards should preferably be of hard wood with varnish treatment and at least 12mm thick, and the distance between the surface of meter board and wall surface shall not be less than 25mm.
- b. Fixing height of meter board (measured from the top of meter board to floor) shall be as follows:



- c. Flat numbering shall be from left to right, top to bottom in ascending order and be uniform throughout the building. A permanent, tidy and securely fixed flat/address label shall be provided at each meter position. Please refer to Figure 3 below for illustration.

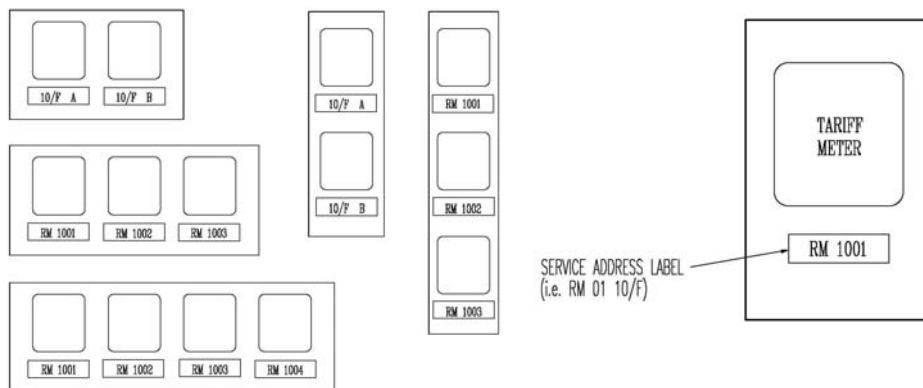


Figure 3 – Typical Meter Board Arrangement

- d. If holes are provided on meter boards for tariff meter leads to terminate onto a meter, there shall be two holes per tariff meter, left for incoming and right for customer’s main cables.
- e. Meter boards and its clearance for more than one meter shall be of dimensions in multiples of unit per Figure 4.

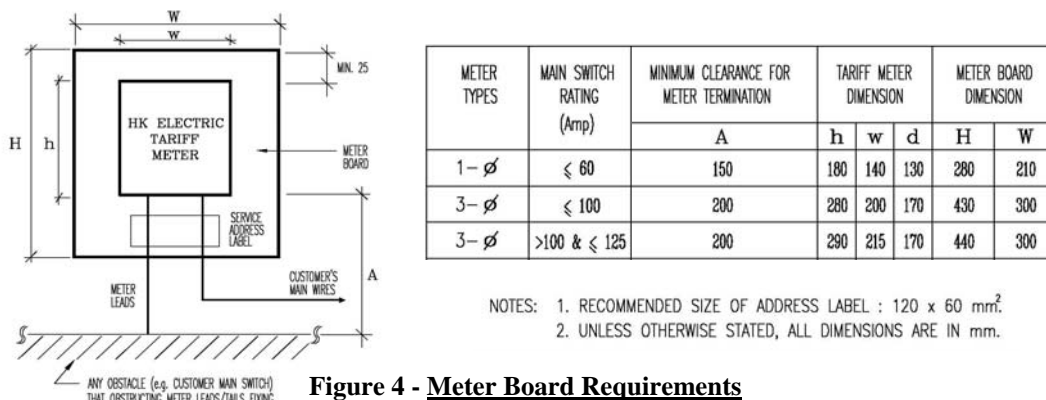


Figure 4 - Meter Board Requirements

4. Meter Ducts/Rooms Requirements

- a. If meters are installed inside a meter duct with no free working space inside, the distance between meter surface to the hinged door of the meter duct at closed position shall be maximum 600mm and minimum 200mm. Please refer to Figure 5 for illustration.
- b. Minimum working space in front of the meter is 900mm. Minimum 70mm clearance is required by the side of meter.
- c. In a multi-customer building, meter ducts/rooms shall be located at public area.
- d. Meter ducts/rooms with reasonable access shall be provided with locks and a master key to all the locks shall be available at the Management Office to facilitate monthly meter reading.
- e. Adequate lighting shall be provided inside the meter ducts/rooms.

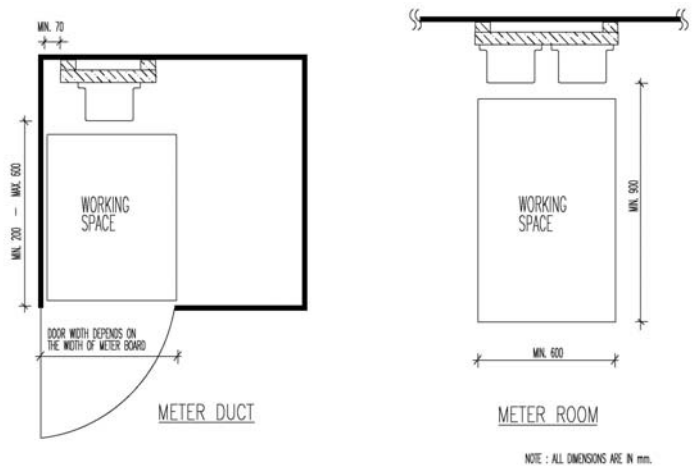


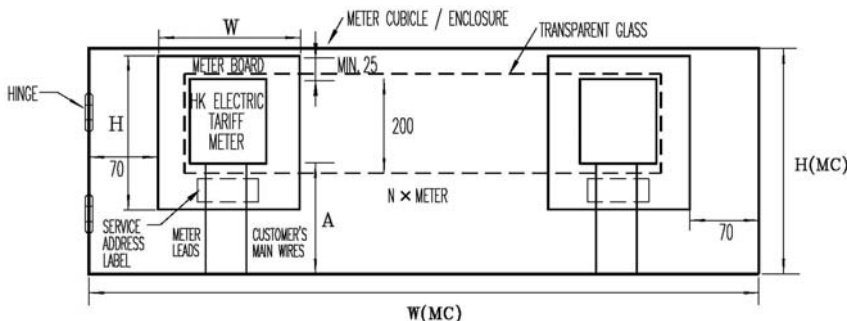
Figure 5 – Minimum Space Requirements for Meter Duct / Room

5. Meter Cubicle/Enclosure Requirements

Meter cubicle/enclosure should be designed to have hinged door and equipped with transparent window (as shown in Figure 6) to facilitate meter reading and maintenance. Please refer to Figure 7 below for detailed requirements.



Figure 6 – Meter Cubicle / Enclosure



METER TYPES	MAIN SWITCH RATING (AMP)	MINIMUM CLEARANCE FOR METER TERMINATION	METER BOARD DIMENSION		METER CUBICLE / ENCLOSURE DIMENSION	
			H	W	H(MC)	W(MC)
1 - ϕ	≤ 60	A	280	$210 \times N$	355	$(210 \times N) + 140$
3 - ϕ	≤ 125	200	440	$300 \times N$	515	$(300 \times N) + 140$

- NOTES :
1. THE DISTANCE BETWEEN METER SURFACE TO THE HINGED DOOR AT CLOSED POSITION SHOULD BE MAXIMUM 50mm AND MINIMUM 20mm.
 2. N IS NUMBER OF METER.
 3. HINGED DOOR COVER SHOULD BE INSTALLED FOR THE METER CUBICLE / ENCLOSURE.
 4. IF OTHER RELATED ELECTRICAL EQUIPMENT IS REQUIRED TO BE INSTALLED INSIDE THE METER CUBICLE / ENCLOSURE, THEN THE SIZE OF THE METER CUBICLE / ENCLOSURE SHOULD BE ENLARGED ACCORDINGLY.
 5. THE METER CUBICLE / ENCLOSURE INCLUDING THE TRANSPARENT GLASS MUST COMPLY WITH THE RELEVANT FIRE REGULATIONS.
 6. RECOMMENDED SIZE OF ADDRESS LABEL : $120 \times 60 \text{ mm}^2$.
 7. ALL DIMENSIONS ARE IN mm.

Figure 7 – Requirements for Meter Cubicle / Enclosure

6. Meter Leads and Meter Tails Requirements

- a. Size of meter leads and meter tails shall be according to Table 1. Minimum size of conductors used for termination onto HK Electric’s whole current type meter shall be 4 mm² stranded copper conductors.

Meter Types	Main Switch Rating (Ampere)	Maximum Meter Leads / Tails Size (mm ² cu.)
1 - Ø	≤ 60	25
3 - Ø	≤ 100	35
3 - Ø	> 100 and ≤ 125	50

Table 1 – Meter Leads / Tails Size

- b. The length of meter leads specified do not include customer’s lateral mains.
- c. The length of meter leads between main switch and meter terminals shall not exceed 3 metres.
- d. Only circular, multi-stranded copper conductors (as shown in Figure 8) are allowed for termination onto HK Electric’s whole current type meters. Sector-shaped conductors (as shown in Figure 9) are not allowed.



Figure 8 – Circular, Multi-stranded Copper Conductors



Figure 9 – Sector-shaped Conductors

- e. All meter leads and meter tails shall be correctly colour coded. Please refer to the following for details of new cable colour code.

i. Single-phase Meter

Where new cable colour code is used in meter leads and/or tails, both meter leads and tails shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1 or L2 or L3 and.

Where new and old cable colour codes are used separately in meter leads and tails, a yellow warning notice in both English and Chinese shall be displayed at or close to the nearest upstream main switch/point of isolation. Details of the label shall comply with the Code of Practice for the Electricity (Wiring) Regulations (as shown in Figure 10).

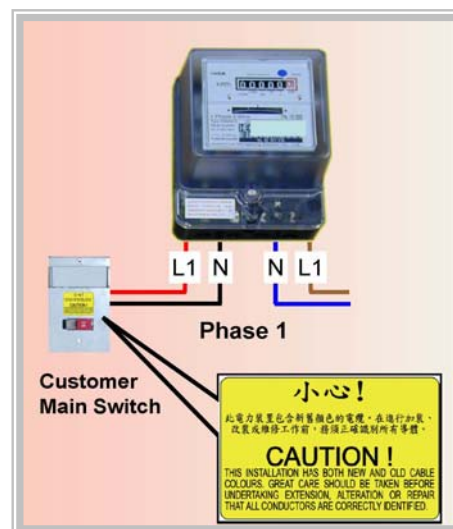


Figure 10 – Requirements for Single-Phase Meter Leads and Tails with New Cable Colour Code

ii. Three-phase Meter

Where new cable colour code is used in meter leads and tails, it is recommended that both meter leads and tails shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1, L2, L3 and N (as shown in Figure 11).

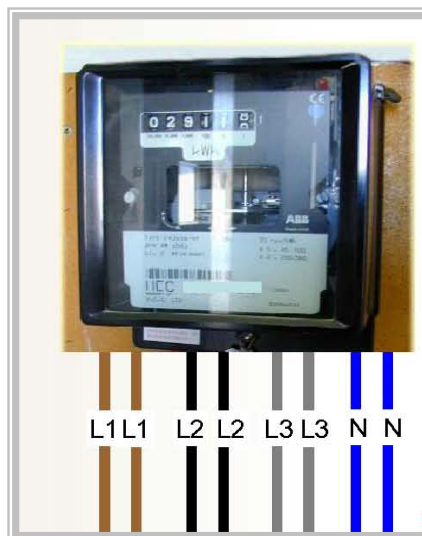


Figure 11 – Meter Leads and Tails with Proper, Durable and Legible Phase Identification Marked in L1, L2, L3 and N

Where different cable colour codes are used in meter leads and tails, both the new and old colour cables shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1, L2, L3 and N. A yellow warning notice in both English and Chinese shall be displayed at or close to the nearest upstream main switch/point of isolation. Details of the label shall comply with the Code of Practice for the Electricity (Wiring) Regulations (as shown in Figure 12).

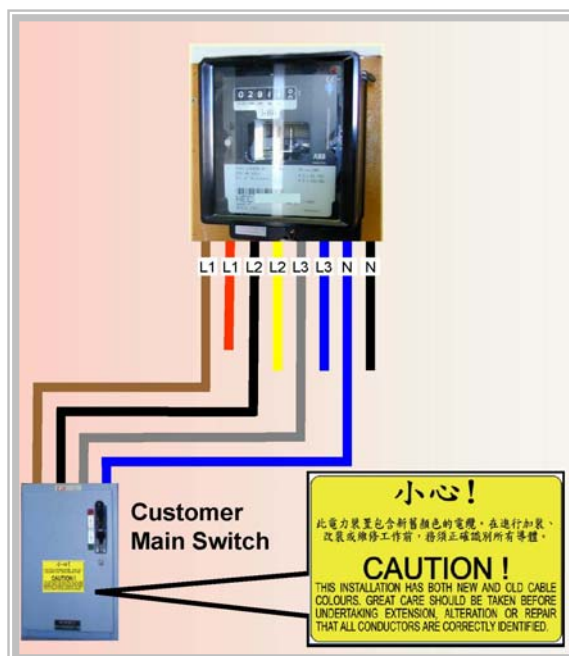


Figure 12 – Requirements for Three-Phase Meter Leads and Tails with New Cable Colour Code