

# G100 Declaration of Conformance

## Type test Details

### Inverter

|                     |   |
|---------------------|---|
| <b>Type</b>         | LXP-6K Hybrid   |
| <b>Manufacturer</b> | Shenzhen Lux Power Technology Co., Ltd  |
| <b>Address</b>      | 5th Floor, Building 11, Phase III, Yangbei Industrial Zone, Huangtian Community, Hangcheng Street, Baoan District, Shenzhen City, China |

### Meter & CT

|                     |   |
|---------------------|---|
| <b>Meter Type</b>   | SDM120-Modbus   |
| <b>Manufacturer</b> | Jiaxing Eastron Electronic Instruments Co.,Ltd          |
| <b>Address</b>      | No.1369 Chengnan Road, Jiaxing, Zhejiang, 314001, China |

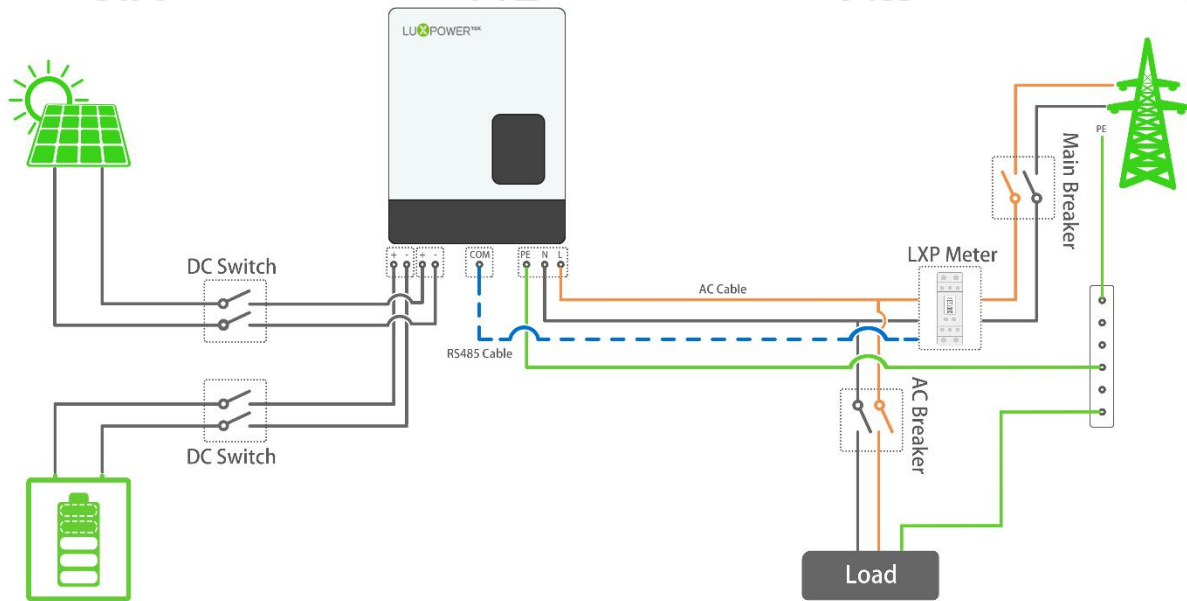
|                     |  |
|---------------------|--|
| <b>CT Type</b>      | CTSA016-100A/100mA   |
| <b>Manufacturer</b> | Yuanxing electronics Co.,LTD   |
| <b>Address</b>      | Pioneering Park, Science & Technology Industry Zone, Zhangdian, Zibo, Shandong, PRC 255095 |

|                     |   |  |  |
|---------------------|---|--|--|
| <b>Test Address</b> | Room 403, Building 63, Zhongwuxin Industrial Park, Zhongwu 1 <sup>st</sup> Road, Xixiang, Baoan District, Shenzhen, Guangdong Province, China |  |  |
| <b>Telephone</b>    | +86 0755 8520 9056  |  |  |
| <b>Email</b>        | <a href="mailto:info@luxpowertek.com">info@luxpowertek.com</a>  |  |  |
| <b>Date</b>         | 2022/5/27   |  |  |

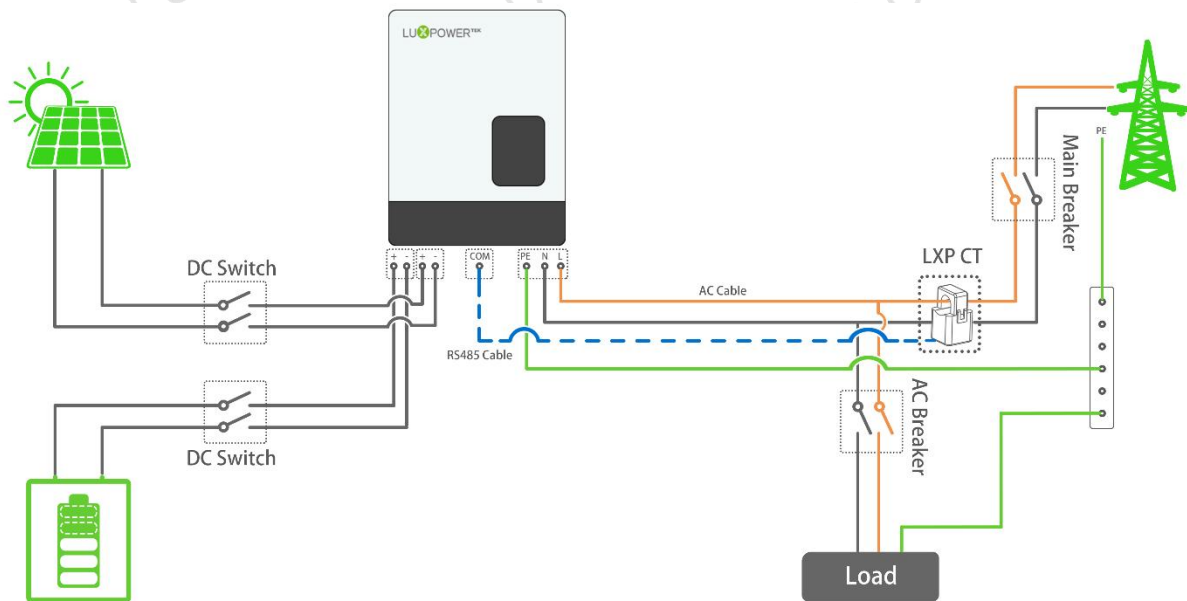
|                  |                   |                     |                   |
|------------------|-------------------|---------------------|-------------------|
| <b>Signature</b> | <i>James Wang</i> | <b>On Behalf of</b> | <i>James Wang</i> |
|------------------|-------------------|---------------------|-------------------|

## System Connection Diagram

### 1. System Connection with Meter



### 2. System Connection with CT



## Power Limiting Setting: adjustable, decided by DNO

|   | <b>Non Export</b>  |
|---|--|
| <b>Reverse Power Limit Test Set Point</b> | 2% / 25% / 50% / 75% of inverter rating.                                     |
| <b>Declared Accuracy</b>                  | 2% (set value = Agreed value – 2%)   |
| <b>Definite Time Delay (Fall Time)</b>    | 5s (detect an excursion and reduce the export to the Agreed Export Capacity) |
| <b>Response Time</b>                      | 1s (sense an excursion and signal to the generation to reduce output)        |

## Type Testing Data

### 1. Setting Protection Test

| <b>Requirement</b>  | <b>Result</b> | <b>Note</b> |
|---|---------------|-------------|
| The settings is in the monitor platform, and cannot be changed by anyone other than getting written agreement of the DNO. | PASS          |             |

### 2. Fail-safe Test

Method: Set 50% export limit, implement the test before start or in running.

Criteria: response time is less than 1s, fall time is less than 5s, the inverter's output active power is less than set limit. After fail safe test, disconnect AC, the reconnect time delay is more than 10min.

| <b>No.</b> | <b>Component</b>                | <b>Test</b>                     | <b>Active Power</b> | <b>Response Time</b> | <b>Fall Time</b> | <b>Reconnect Time</b> | <b>Pass/Fail</b> |
|------------|---------------------------------|---------------------------------|---------------------|----------------------|------------------|-----------------------|------------------|
| 1          | Power Monitoring Unit (PMU)     | Remove power supply to meter    | 3005W               | 692mS                | 0s               | 10min31s              | PASS             |
| 2          | Power Monitoring Unit (PMU)     | Remove CT                       | 2998W               | 700mS                | 0s               | 10min33s              | PASS             |
| 3          | Control Unit (CU)               | Remove power supply to any CU   | NA                  | NA                   | NA               | NA                    | NA               |
| 4          | Generator Interface Units (GIU) | Remove power supply to all GIUs | NA                  | NA                   | NA               | NA                    | NA               |
| 5          | Demand Control Unit (DCU)       | Remove power supply to all DCUs | NA                  | NA                   | NA               | NA                    | NA               |
| 6          | Network Hub / Switches          | Remove POWER SUPPLY             | NA                  | NA                   | NA               | NA                    | NA               |
| 7          | PMU to CU communication         | Unplug cable                    | 3002w               | 687mS                | 0s               | 10min35s              | PASS             |

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|    |                                      |  |    |    |    |    |    |
|----|--------------------------------------|--|----|----|----|----|----|
|    | Cable                                |  |    |    |    |    |    |
| 8  | CU to GIU Communication Cable        | Unplug cable (repeat where additional GUI units) | NA | NA | NA | NA | NA |
| 9  | GIU to Generator Communication Cable | Unplug cable (repeat where additional GIU units) | NA | NA | NA | NA | NA |
| 10 | CU to DCU Communication Cable        | Unplug cable (repeat where additional DCU units) | NA | NA | NA | NA | NA |
| 11 | DCU to Load Communication Cable      | Unplug cable (repeat where additional DCU units) | NA | NA | NA | NA | NA |

### 3. Power Limit Check

Method: Set export limit, implement the test before start, than start the inverter.

Criteria: response time is less than 1s, fall time is less than 5s, export power  $\pm 2\%P_n$ .

2% export Agreed Limit.

|                          |      | Input Supply (% Inverter Rating) |              |              |              |
|--------------------------|------|----------------------------------|--------------|--------------|--------------|
|                          |      | 25%                              | 50%          | 75%          | 100%         |
| Load (% Inverter Rating) | 0%   | PASS / 4.02s                     | PASS / 4.05s | PASS / 2.88s | PASS / 2.90s |
|                          | 25%  | PASS / 4.19s                     | PASS / 3.87s | PASS / 2.85s | PASS / 2.95s |
|                          | 50%  | NA                               | PASS / 3.87s | PASS / 2.87s | PASS / 2.93s |
|                          | 75%  | NA                               | NA           | PASS / 3.66s | PASS / 2.94s |
|                          | 100% | NA                               | NA           | NA           | PASS / 3.86s |

25% export Agreed Limit.

|                          |      | Input Supply (% Inverter Rating) |              |              |              |
|--------------------------|------|----------------------------------|--------------|--------------|--------------|
|                          |      | 25%                              | 50%          | 75%          | 100%         |
| Load (% Inverter Rating) | 0%   | PASS / 3.82s                     | PASS / 3.88s | PASS / 4.3s  | PASS / 2.89s |
|                          | 25%  | NA                               | PASS / 3.93s | PASS / 3.96s | PASS / 2.58s |
|                          | 50%  | NA                               | NA           | PASS / 2.79s | PASS / 4.36s |
|                          | 75%  | NA                               | NA           | NA           | PASS / 3.72s |
|                          | 100% | NA                               | NA           | NA           | NA           |

50% export Agreed Limit.

|      |    | Input Supply (% Inverter Rating) |              |             |              |
|------|----|----------------------------------|--------------|-------------|--------------|
|      |    | 25%                              | 50%          | 75%         | 100%         |
| Load | 0% | NA                               | PASS / 4.07s | PASS / 2.7s | PASS / 2.87s |

|                            |             |    |    |              |              |
|----------------------------|-------------|----|----|--------------|--------------|
| <b>(% Inverter Rating)</b> | <b>25%</b>  | NA | NA | PASS / 2.65s | PASS / 3.69s |
|                            | <b>50%</b>  | NA | NA | NA           | PASS / 2.63s |
|                            | <b>75%</b>  | NA | NA | NA           | NA           |
|                            | <b>100%</b> | NA | NA | NA           | NA           |

75% export Agreed Limit.

|                                 |             | <b>Input Supply (% Inverter Rating)</b> |            |              |              |
|---------------------------------|-------------|---|------------|--------------|--------------|
|                                 |             | <b>25%</b>                              | <b>50%</b> | <b>75%</b>   | <b>100%</b>  |
| <b>Load (% Inverter Rating)</b> | <b>0%</b>   | NA                                      | NA         | PASS / 3.06s | PASS / 2.04s |
|                                 | <b>25%</b>  | NA                                      | NA         | NA           | PASS / 2.43s |
|                                 | <b>50%</b>  | NA                                      | NA         | NA           | NA           |
|                                 | <b>75%</b>  | NA                                      | NA         | NA           | NA           |
|                                 | <b>100%</b> | NA                                      | NA         | NA           | NA           |

#### 4. Decreasing Load Test

Input Supply: 100% of the inverter rating.

The load shall be decreased from the initial load to the final load as shown in followed Table. The export control function shall manage the input supply such that the export power is below the export limit setting within the relevant time frame for all step decreases in load shown in Table.

Criteria: response time is less than 1s, fall time is less than 5s, export power  $\pm 2\%$  Pn.

2% export Agreed Limit.

|                                       |            | <b>Initial Load (% Inverter Rating)</b> |              |              |              |
|---------------------------------------|------------|---|--------------|--------------|--------------|
|                                       |            | <b>100%</b>                             | <b>75%</b>   | <b>50%</b>   | <b>25%</b>   |
| <b>Final Load (% Inverter Rating)</b> | <b>75%</b> | PASS / 4.07s                            | NA           | NA           | NA           |
|                                       | <b>50%</b> | PASS / 4.68s                            | PASS / 2.88s | NA           | NA           |
|                                       | <b>25%</b> | PASS / 4.05s                            | PASS / 2.62s | PASS / 3.67s | NA           |
|                                       | <b>0%</b>  | PASS / 4.3s                             | PASS / 3.3s  | PASS / 4.76s | PASS / 3.75s |

25% export Agreed Limit.

|                                       |            | <b>Initial Load (% Inverter Rating)</b> |              |              |              |
|---------------------------------------|------------|---|--------------|--------------|--------------|
|                                       |            | <b>100%</b>                             | <b>75%</b>   | <b>50%</b>   | <b>25%</b>   |
| <b>Final Load (% Inverter Rating)</b> | <b>75%</b> | PASS / 3.48s                            | NA           | NA           | NA           |
|                                       | <b>50%</b> | PASS / 4.34s                            | PASS / 4.24s | NA           | NA           |
|                                       | <b>25%</b> | PASS / 3.08s                            | PASS / 3.22s | PASS / 30.2s | NA           |
|                                       | <b>0%</b>  | PASS / 3.23s                            | PASS / 3.68s | PASS / 2.25s | PASS / 3.53s |

50% export Agreed Limit.

|                   |            | <b>Initial Load (% Inverter Rating)</b> |            |            |            |
|-------------------|------------|---|------------|------------|------------|
|                   |            | <b>100%</b>                             | <b>75%</b> | <b>50%</b> | <b>25%</b> |
| <b>Final Load</b> | <b>75%</b> | NA                                      | NA         | NA         | NA         |



|                            |            |              |              |              |              |
|----------------------------|------------|--------------|--------------|--------------|--------------|
| <b>(% Inverter Rating)</b> | <b>50%</b> | PASS / 3.94s | PASS / 4.1s  | NA           | NA           |
|                            | <b>25%</b> | PASS / 4.5s  | PASS / 3.22s | PASS / 2.23s | NA           |
|                            | <b>0%</b>  | PASS / 3.6s  | PASS / 2.59s | PASS / 4.11s | PASS / 3.67s |

75% export Agreed Limit.

|                                       |            | <b>Initial Load (% Inverter Rating)</b> |              |              |              |
|---------------------------------------|------------|---|--------------|--------------|--------------|
|                                       |            | <b>100%</b>                             | <b>75%</b>   | <b>50%</b>   | <b>25%</b>   |
| <b>Final Load (% Inverter Rating)</b> | <b>75%</b> | NA                                      | NA           | NA           | NA           |
|                                       | <b>50%</b> | NA                                      | NA           | NA           | NA           |
|                                       | <b>25%</b> | PASS / 2.94s                            | PASS / 2.35s | PASS / 4.45s | NA           |
|                                       | <b>0%</b>  | PASS / 3.4s                             | PASS / 3.62s | PASS / 4.15s | PASS / 3.52s |

### 5. Adding Input Supply Test

At given load, the input shall be added from the initial input to the final as shown in followed Table. The export power will below the export limit setting within the relevant time frame for all step.

Criteria: response time is less than 1s, fall time is less than 5s, export power  $\pm 2\%$  Pn.

2% export Agreed Limit.

|   |            | <b>Final Input Supply (% Inverter Rating)</b> |              |             |              |
|---|------------|---|--------------|-------------|--------------|
|   |            | <b>25%</b>                                    | <b>50%</b>   | <b>75%</b>  | <b>100%</b>  |
| <b>Initial Input Supply (% Inverter Rating)</b> | <b>0%</b>  | PASS / 3.49s                                  | PASS / 2.55s | PASS / 3.4s | PASS / 3.26s |
|   | <b>25%</b> | NA  | PASS / 0s    | PASS / 0s   | PASS / 0s    |
|   | <b>50%</b> | NA  | NA           | PASS / 0s   | PASS / 0s    |
|   | <b>75%</b> | NA  | NA           | NA          | PASS / 0s    |

25% export Agreed Limit.

|   |            | <b>Final Input Supply (% Inverter Rating)</b> |              |              |              |
|---|------------|---|--------------|--------------|--------------|
|   |            | <b>25%</b>                                    | <b>50%</b>   | <b>75%</b>   | <b>100%</b>  |
| <b>Initial Input Supply (% Inverter Rating)</b> | <b>0%</b>  | PASS / 0s                                     | PASS / 4.89s | PASS / 4.21s | PASS / 2.53s |
|   | <b>25%</b> | NA  | PASS / 0s    | PASS / 0s    | PASS / 0s    |
|   | <b>50%</b> | NA  | NA           | PASS / 0s    | PASS / 0s    |
|   | <b>75%</b> | NA  | NA           | NA           | PASS / 0s    |

50% export Agreed Limit.

|   |            | <b>Final Input Supply (% Inverter Rating)</b> |             |              |              |
|---|------------|---|-------------|--------------|--------------|
|   |            | <b>25%</b>                                    | <b>50%</b>  | <b>75%</b>   | <b>100%</b>  |
| <b>Initial Input Supply (% Inverter Rating)</b> | <b>0%</b>  | NA  | PASS / 3.18 | PASS / 4.88s | PASS / 4.8s  |
|   | <b>25%</b> | NA  | NA          | PASS / 2.51s | PASS / 4.29s |
|   | <b>50%</b> | NA  | NA          | NA           | PASS / 0s    |
|   | <b>75%</b> | NA  | NA          | NA           | NA           |

75% export Agreed Limit.

|   |            | <b>Final Input Supply (% Inverter Rating)</b> |            |            |              |
|---|------------|---|------------|------------|--------------|
|   |            | <b>25%</b>                                    | <b>50%</b> | <b>75%</b> | <b>100%</b>  |
| <b>Initial Input Supply (% Inverter Rating)</b> | <b>0%</b>  | NA  | NA         | PASS / 0s  | PASS / 2.54s |
|   | <b>25%</b> | NA  | NA         | NA         | PASS / 2.88s |
|   | <b>50%</b> | NA  | NA         | NA         | NA           |
|   | <b>75%</b> | NA  | NA         | NA         | NA           |