

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 1**

**Note (1):** Bidder must complete/enter YELLOW cells only

**Note (2):** SITA reserves the right to verify Data Sheet information

| ITEM     | DESCRIPTION                                             | UNIT   | REQUIRED/OFFERED                                 |
|----------|---------------------------------------------------------|--------|--------------------------------------------------|
| <b>1</b> | <b>Board ratings</b>                                    |        |                                                  |
| 1.1      | Rated voltage                                           | kV     | <b>11</b>                                        |
| 1.2      | Maximum voltage                                         | kV     | <b>12</b>                                        |
| 1.3      | Rated power frequency withstand voltage                 | kV     | <b>28</b>                                        |
| 1.4      | Rated lightning impulse withstand voltage               | kV     | <b>95</b>                                        |
| 1.5      | Rated frequency                                         | Hz     | <b>50</b>                                        |
| 1.6      | Main busbar rating                                      | A      | <b>1250</b>                                      |
| <b>2</b> | <b>Circuit ratings</b>                                  |        |                                                  |
| 2.1      | Panel Names                                             | Names  | <b>Incomer 1 from CoT<br/>Incomer 2 from CoT</b> |
| 2.2      | Number of identical panels                              | Number | <b>2</b>                                         |
| 2.3      | Incomer Switch Type                                     |        | <b>Circuit Breaker</b>                           |
| 2.4      | Interrupting medium                                     |        | <b>Vacuum</b>                                    |
| 2.5      | Insulating medium                                       |        | <b>Air</b>                                       |
| 2.6      | Incomer breaker rating                                  | A      | <b>1250</b>                                      |
| 2.7      | Low Voltage Compartment Height (max)                    | mm     |                                                  |
| 2.8      | Busbar Coating                                          |        | <b>Not required</b>                              |
| 2.9      | Minimum rated short time making current                 | kA/3s  | <b>20kA/ 3s</b>                                  |
| 2.10     | Internal ARC classification (AFLR)                      | kA/1s  | <b>20kA/ 1s</b>                                  |
| 2.11     | Specific creepage distance                              | mm/kV  | <b>20</b>                                        |
| 2.12     | Switchgear and Control Gear Assemblies- compliance with |        | <b>IEC62271-100</b>                              |
| 2.13     | Switchgear and Control Gear Assemblies: Internal Arc    |        | <b>IEC612271-200 AFLR</b>                        |
| 2.14     | Loss of Service Continuity Category                     |        | <b>LSC-2,PM</b>                                  |
| 2.15     | Earth Switch Interlocking Coil                          |        | <b>Yes</b>                                       |
| 2.16     | Racking Interlocking Coil                               |        | <b>No</b>                                        |
| 2.17     | Conventional CTs and VTs                                |        | <b>Yes</b>                                       |

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 2**

| ITEM     | DESCRIPTION                                            | UNIT            | REQUIRED/OFFERED                |
|----------|--------------------------------------------------------|-----------------|---------------------------------|
| <b>3</b> | <b>Operating details</b>                               |                 |                                 |
| 3,1      | Operating sequence                                     |                 | <b>O-0.3s-CO-3min-CO</b>        |
| 3,2      | Amount of Mechanical Operations                        | Quantity        | <b>Less than 1000 per annum</b> |
| 3,3      | Operation Counter                                      |                 | <b>Yes</b>                      |
| <b>4</b> | <b>Control details</b>                                 |                 |                                 |
| 4,1      | Tripping and closing voltage                           | V DC            | <b>110</b>                      |
| 4,2      | Spring rewind motor                                    | V DC            | <b>110</b>                      |
| 4,3      | Back up Trip Coil                                      |                 | <b>Yes</b>                      |
| 4,4      | Undervoltage Release Trip Coil                         |                 | <b>No</b>                       |
| 4,5      | Remote Control Panel                                   |                 | <b>No</b>                       |
| <b>5</b> | <b>Substation board cable connections</b>              |                 |                                 |
| 5,1      | Power cabling entry                                    |                 | <b>Bottom back</b>              |
| 5,2      | Control cabling entry                                  |                 | <b>Bottom back</b>              |
| 5,3      | Cable Type: Incomers                                   |                 | <b>PILC</b>                     |
| 5,4      | Cable Size: Incomers                                   |                 | <b>240mm<sup>2</sup> Cu</b>     |
| 5,5      | Cable Configuration                                    |                 | <b>Three Core</b>               |
| 5,6      | Number of Cores per Phase                              |                 | <b>One</b>                      |
| 5,7      | Type pf termination                                    |                 | <b>Bolted Lugs</b>              |
| 5,8      | Manufacturer of Termination                            |                 |                                 |
| <b>6</b> | <b>Panel earthing requirements</b>                     |                 |                                 |
| 6,1      | Main earth bar                                         | mm <sup>2</sup> | <b>150</b>                      |
| 6,2      | Cable earth switch                                     |                 | <b>Yes</b>                      |
| 6,3      | Busbar earth switch                                    |                 | <b>No</b>                       |
| <b>7</b> | <b>Control equipment on panel</b>                      |                 |                                 |
| 7,1      | Trip/close/neutral switch                              |                 | <b>Yes</b>                      |
| 7,2      | Local/remote switch (lockable)                         |                 | <b>Yes</b>                      |
| 7,3      | Stand Off Open/Close Socket                            |                 | <b>Yes</b>                      |
| 7,4      | Cable live LEDs, with interlocking contact             |                 | <b>Yes</b>                      |
| 7,5      | Circuit breaker status LEDs                            |                 | <b>Yes</b>                      |
| 7,6      | Data sheets and type test certificates attached        |                 | <b>Yes</b>                      |
| <b>8</b> | <b>Panel Heaters</b>                                   |                 |                                 |
| 8,1      | Location of Heaters - Switch Compartment, 50W          |                 | <b>Yes</b>                      |
| 8,2      | Location of Heaters - Busbar Compartment               |                 | <b>No</b>                       |
| 8,3      | Location of Heaters - Cable Compartment, 100W          |                 | <b>Yes</b>                      |
| <b>9</b> | <b>Auxiliary Breaker Contacts, not used internally</b> |                 |                                 |
| 9,1      | Normally Open 52a                                      | min             | <b>3</b>                        |
| 9,2      | Normally Closed 52b                                    | min             | <b>3</b>                        |
| 9,3      | Change Over 52a/b                                      | min             | <b>3</b>                        |

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 3**

| ITEM        | DESCRIPTION                                                      | UNIT | REQUIRED/OFFERED                                  |
|-------------|------------------------------------------------------------------|------|---------------------------------------------------|
| <b>10</b>   | <b>Connected Position Limit Switches, not used internally</b>    |      |                                                   |
| 10.1        | Closed when connected                                            | min  | <b>3</b>                                          |
| 10.2        | Open when connected                                              | min  | <b>3</b>                                          |
| 10.3        | Change Over 52a/b                                                | min  | <b>3</b>                                          |
| <b>11</b>   | <b>Disconnected Position Limit Switches, not used internally</b> |      |                                                   |
| 11.1        | Closed in disconnected position                                  | min  | <b>3</b>                                          |
| 11.2        | Open in disconnected position                                    | min  | <b>3</b>                                          |
| 11.3        | Change Over 52a/b                                                | min  | <b>3</b>                                          |
| <b>12</b>   | <b>Earth switch auxiliary contacts, not internally used</b>      |      |                                                   |
| 12.1        | Normally Open 57a                                                | min  | <b>3</b>                                          |
| 12.2        | Normally Closed 57b                                              | min  | <b>3</b>                                          |
| 12.3        | Change Over 57a/b                                                | min  | <b>3</b>                                          |
| <b>13</b>   | <b>11kV Voltage Transformers</b>                                 |      |                                                   |
| <b>13.1</b> | <b>General information</b>                                       |      |                                                   |
| 13.1.1      | Manufacturer                                                     |      |                                                   |
| 13.1.2      | Voltage transformer Model number                                 |      |                                                   |
| 13.1.3      | Country of Origin                                                |      |                                                   |
| 13.1.4      | Primary fuses                                                    |      | <b>High Rupturing Current (HRC) limiting type</b> |
| 13.1.5      | Primary fuse replacement possible with VT in withdrawn           |      | <b>Yes</b>                                        |
| 13.1.6      | Insulation Class                                                 |      | <b>Class E or Better</b>                          |
| 13.1.7      | Withdrawable rail mounted with handle, situated on top of        |      | <b>Yes</b>                                        |
| 13.1.8      | Plug in and withdrawable with automatic operating of             |      | <b>Yes</b>                                        |
| 13.1.9      | Latch to hold VT in service position                             |      | <b>Yes</b>                                        |
| 13.1.10     | Latch release required before VT can be isolated.                |      | <b>Yes</b>                                        |
| 13.1.11     | Location                                                         |      | <b>Incomer VTs on incomer panels</b>              |
| 13.1.12     | Height of VT compartment                                         |      |                                                   |

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 4**

| ITEM        | DESCRIPTION                                       | UNIT | REQUIRED/OFFERED                  |
|-------------|---------------------------------------------------|------|-----------------------------------|
| <b>13.2</b> | <b>11kV VT Electrical Details</b>                 |      |                                   |
| 13.2.1      | Number of phases                                  |      | <b>3</b>                          |
| 13.2.2      | Number of limbs                                   |      | <b>5</b>                          |
| 13.2.3      | Number Of Windings                                |      | <b>2</b>                          |
| 13.2.4      | Nominal Ratio                                     | kV/V | <b>11/110</b>                     |
| 13.2.5      | Voltage Class                                     | kV   | <b>12</b>                         |
| 13.2.6      | Vector Group                                      |      | <b>YnYn</b>                       |
| 13.2.7      | Accuracy Class                                    |      | <b>3P/0.2</b>                     |
| 13.2.8      | Primary Voltage (Line To Earth)                   | kV   | <b>11/√3</b>                      |
| 13.2.9      | Secondary Voltage (Line To Earth)                 | V    | <b>2 x 110/√3</b>                 |
| 13.2.10     | Volt Ampere Burden                                | VA   | <b>100 &amp; 50</b>               |
| 13.2.11     | Type of VT                                        |      | <b>Inductive</b>                  |
| 13.2.12     | Rated lightning impulse withstand voltage         | kV   | <b>95</b>                         |
| 13.2.13     | Voltage Factor                                    |      | <b>1,9</b>                        |
| 13.2.14     | Voltage Selection Scheme between the two Incomers |      | <b>Yes</b>                        |
| <b>14</b>   | <b>11kV CT Electrical Details</b>                 |      |                                   |
|             | <b>Incomers</b>                                   |      |                                   |
| 14.1        | CT Orientation                                    |      | <b>P1 Facing Busbars</b>          |
| 14.2        | <b>Core 0</b>                                     |      | <b>Bay Controller, Protection</b> |
| 14.2.1      | Ratio                                             |      | <b>400/1</b>                      |
| 14.2.2      | Secondary Rating                                  | A    | <b>1</b>                          |
| 14.2.3      | Burden                                            | VA   | <b>10</b>                         |
| 14.2.4      | Class                                             |      | <b>5P20</b>                       |
| 14.3        | <b>Core 1</b>                                     |      | <b>PQ Meter</b>                   |
| 14.3.1      | Ratio                                             |      | <b>400/1</b>                      |
| 14.3.2      | Secondary Rating                                  | A    | <b>1</b>                          |
| 14.3.3      | Burden                                            | VA   | <b>10</b>                         |
| 14.3.4      | Class                                             |      | <b>0,5</b>                        |
| 14.4        | <b>Core 2</b>                                     |      | <b>Check Metering</b>             |
| 14.4.1      | Ratio                                             |      | <b>400/1</b>                      |
| 14.4.2      | Secondary Rating                                  | A    | <b>1</b>                          |
| 14.4.3      | Burden                                            | VA   | <b>10</b>                         |
| 14.4.4      | Class                                             |      | <b>0,2</b>                        |
| 14.5        | <b>Core 3</b>                                     |      | <b>Main Metering</b>              |
| 14.5.1      | Ratio                                             |      | <b>400/1</b>                      |
| 14.5.2      | Secondary Rating                                  | A    | <b>1</b>                          |
| 14.5.3      | Burden                                            | VA   | <b>10</b>                         |
| 14.5.4      | Class                                             |      | <b>0,2</b>                        |

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 5**

| ITEM        | DESCRIPTION                                           | UNIT  | REQUIRED/OFFERED      |
|-------------|-------------------------------------------------------|-------|-----------------------|
| 14.6        | <b>Core 4</b>                                         |       | <b>Arc Protection</b> |
| 14.6.1      | Ratio                                                 |       | <b>400/1</b>          |
| 14.6.2      | Secondary Rating                                      | A     | <b>1</b>              |
| 14.6.3      | Burden                                                | VA    | <b>10</b>             |
| 14.6.4      | Class                                                 |       | <b>5P20</b>           |
| <b>15</b>   | <b>11kV Surge Arrestors</b>                           |       |                       |
| <b>15.1</b> | <b>General information</b>                            |       |                       |
| 15.1.1      | Manufacturer                                          |       |                       |
| 15.1.2      | Surge arrestor Model number                           |       |                       |
| 15.1.3      | Country of Origin                                     |       |                       |
| 15.1.4      | Operating Duty Class                                  | kA    | <b>10</b>             |
| 15.1.5      | Class                                                 |       | <b>Station</b>        |
| 15.1.6      | System Maximum Operating Voltage (L-L)                | kV    | <b>12</b>             |
| 15.1.7      | System Normal Rated Voltage (L-L)                     | kV    | <b>11</b>             |
| 15.1.8      | Maximum Continuous Operating Voltage MCOV (L-G) Uc    | kV    | <b>9,6</b>            |
| 15.1.9      | Nominal Lightning Discharge Current (8/20μs)          | kA    | <b>100</b>            |
| 15.1.10     | Peak Residual Voltage For 10kA 8/20μs Current Impulse | kV    | <b>21</b>             |
| 15.1.11     | BIL (Housing)                                         | kV    | <b>95</b>             |
| 15.1.12     | Power Frequency Withstand                             | kV    | <b>28</b>             |
| 15.1.13     | Discharge Current Withstand (4/10μs - 2 Shots)        | kA    | <b>65</b>             |
| 15.1.14     | Creepage Distance                                     | mm/kV | <b>25</b>             |
| 15.1.15     | Rated Energy Absorption Capability                    | kJ/kV | <b>2,5</b>            |
| 15.1.16     | Type                                                  | kJ/kV | <b>ZnO</b>            |
| <b>16</b>   | <b>11kV Substation Incomer Protection</b>             |       |                       |
| <b>16.1</b> | <b>General requirements</b>                           |       |                       |
| 16.1.1      | Manufacturer                                          |       |                       |
| 16.1.2      | Type or designation                                   |       |                       |
| 16.1.3      | Country of origin                                     |       |                       |
| 16.1.4      | Onboard Indoor Protection                             |       | <b>Yes</b>            |

**06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements**



**Project: SITA BETA**  
**Specification: 11KV Switchgear**  
**Date: 29/01/2026**  
**Page: 6**

| ITEM        | DESCRIPTION                                                            | UNIT | REQUIRED/OFFERED               |
|-------------|------------------------------------------------------------------------|------|--------------------------------|
| <b>16.2</b> | <b>Minimum Functionality</b>                                           |      |                                |
| 16.2.1      | Phase Segregated Differential Protection                               |      | No                             |
| 16.2.2      | 3 Stage 3 Phase Over-current Protection (50/51)                        |      | Yes                            |
| 16.2.3      | 3 Stage Earth Fault Protection (50/51 N)                               |      | Yes                            |
| 16.2.4      | Sustained Earth Fault Protection                                       |      | No                             |
| 16.2.5      | Under Frequency Protection                                             |      | No                             |
| 16.2.6      | Directional Over-current Protection                                    |      | Yes                            |
| 16.2.7      | Directional Earth Fault Protection                                     |      | Yes                            |
| 16.2.8      | Directional Sensitive Earth Fault Protection                           |      | No                             |
| 16.2.9      | Under / Over Voltage Protection                                        |      | Yes                            |
| 16.2.10     | Fuse Fail Supervision                                                  |      | Yes                            |
| 16.2.11     | Main Trip Circuit Supervision (Dual State)                             |      | Yes                            |
| 16.2.12     | Backup Trip Circuit Supervision (Dual State)                           |      | Yes                            |
| 16.2.13     | Circuit Breaker Fail Protection                                        |      | Yes                            |
| 16.2.14     | Voltage and Current Measuring Functions                                |      | Yes                            |
| 16.2.15     | 3 Phase Power Measuring Functions                                      |      | Yes                            |
| 16.2.16     | Circuit Breaker Wear Monitor                                           |      | Yes                            |
| 16.2.17     | Number of Voltage Inputs                                               |      | 4                              |
| 16.2.18     | Maximum Power Consumption                                              |      |                                |
| 16.2.19     | Transfer Scheme between the two Incomers                               |      | Yes                            |
| 16.2.20     | Attach Data Sheet, Technical Specifications and Type Test certificates |      | Yes                            |
| 16.2.21     | Conventional CT and VT inputs                                          |      | Yes                            |
| 16.2.22     | Number of alarm outputs                                                | min  | 6                              |
| 16.2.23     | Number of trip outputs                                                 | min  | 2                              |
| 16.2.24     | Number of Inputs                                                       | min  | 10                             |
| 16.2.25     | Auxiliary Voltage                                                      | V DC | 110                            |
| 16.2.26     | Communication                                                          |      | Modbus TCP IP, BACnet Protocol |
| 16.2.27     | Local time synchronisation via communication port                      |      | Yes                            |
| <b>17</b>   | <b>Bay Control Unit</b>                                                |      |                                |
| 17.1        | As per spec                                                            |      | Yes                            |
| <b>18</b>   | <b>11kV Arc Protection Relays (Can be part of Bay Controller)</b>      |      |                                |
| <b>18.1</b> | <b>General requirements</b>                                            |      |                                |

| 18.1.1                                                                                                                                                                                                                                                                                                         | Manufacturer                                                   |                                                                                     |                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 18.1.2                                                                                                                                                                                                                                                                                                         | Model number                                                   |                                                                                     |                                                                                                            |
| 18.1.3                                                                                                                                                                                                                                                                                                         | Country of origin                                              |                                                                                     |                                                                                                            |
| 18.1.4                                                                                                                                                                                                                                                                                                         | Onboard Indoor Protection                                      |                                                                                     | Yes                                                                                                        |
| 06 - SITA Beta 11kV Main Board - Switchgear Datasheet - Incomer Panel Requirements                                                                                                                                                                                                                             |                                                                |                                                                                     |                                                                                                            |
|                                                                                                                                                                                                                               |                                                                | Project: SITA BETA<br>Specification: 11KV Switchgear<br>Date: 29/01/2026<br>Page: 7 |                                                                                                            |
| ITEM                                                                                                                                                                                                                                                                                                           | DESCRIPTION                                                    | UNIT                                                                                | REQUIRED/OFFERED                                                                                           |
| 18.2                                                                                                                                                                                                                                                                                                           | Minimum Functionality                                          |                                                                                     |                                                                                                            |
| 18.2.1                                                                                                                                                                                                                                                                                                         | Breaker and busbar compartment sensors (entire board)          |                                                                                     | Yes                                                                                                        |
| 18.2.2                                                                                                                                                                                                                                                                                                         | Cable compartment sensors (entire board)                       |                                                                                     | Yes                                                                                                        |
| 18.2.3                                                                                                                                                                                                                                                                                                         | Intertripping relays for bus strip                             |                                                                                     | Yes                                                                                                        |
| 18.2.4                                                                                                                                                                                                                                                                                                         | Slave relays for busbar/switch arc sensors                     |                                                                                     |                                                                                                            |
| 18.2.5                                                                                                                                                                                                                                                                                                         | Positive identification of activated arc sensor after each arc |                                                                                     | Yes                                                                                                        |
| 18.2.6                                                                                                                                                                                                                                                                                                         | 2/2 Principle of operation, current & light                    |                                                                                     | Yes                                                                                                        |
| 18.2.7                                                                                                                                                                                                                                                                                                         | Cable compartment arc fault to trip local breaker only         |                                                                                     | Yes                                                                                                        |
| 18.2.8                                                                                                                                                                                                                                                                                                         | Busbar or switch compartment arc fault to trip the entire      |                                                                                     | Yes                                                                                                        |
| 18.2.9                                                                                                                                                                                                                                                                                                         | Health monitoring & alarm if any arc sensor is faulty          |                                                                                     | Yes                                                                                                        |
| 19                                                                                                                                                                                                                                                                                                             | 11kV PQ and Stats Metering                                     |                                                                                     |                                                                                                            |
| 19.1                                                                                                                                                                                                                                                                                                           | PQ and Stats Energy Meter                                      |                                                                                     |                                                                                                            |
| 19.2                                                                                                                                                                                                                                                                                                           | Manufacturer (PowerLogic ION9000 or similar or higher)         |                                                                                     |                                                                                                            |
| 19.3                                                                                                                                                                                                                                                                                                           | Main Features                                                  |                                                                                     | DIN Rail, Remote Display, BACnet protocol, 0.2 Accuracy, 2 x 4-20mA Analogue outputs, 63rd Harmonics, etc. |
| 19.4                                                                                                                                                                                                                                                                                                           | Installation                                                   |                                                                                     | 11kV Incomers inside LV Cubicles and display on Cubicle Doors                                              |
| 20                                                                                                                                                                                                                                                                                                             | 11kV Billing Metering                                          |                                                                                     |                                                                                                            |
| 20.1                                                                                                                                                                                                                                                                                                           | Main Metering Summation CTs on Incomer 1                       |                                                                                     | Yes                                                                                                        |
| 20.2                                                                                                                                                                                                                                                                                                           | Check Metering Summation CTs on Incomer 1                      |                                                                                     | Yes                                                                                                        |
| 20.3                                                                                                                                                                                                                                                                                                           | Metering Scheme Buswiring                                      |                                                                                     | Yes                                                                                                        |
| 20.4                                                                                                                                                                                                                                                                                                           | Wire Summation CT outputs to terminals for future use          |                                                                                     | Yes                                                                                                        |
| I, the bidder, confirm that the details provided in this data sheet are true and accurate. I further accept that all goods and/or works will be delivered as specified herein.<br>[Note (1): SITA reserves the right to verify Data Sheet information]<br>[Note (2): First convert to PDF, then add signature] |                                                                |                                                                                     |                                                                                                            |
|                                                                                                                                                                                                                                                                                                                |                                                                | Bidder's Name                                                                       |                                                                                                            |
|                                                                                                                                                                                                                                                                                                                |                                                                |                                                                                     |                                                                                                            |
|                                                                                                                                                                                                                                                                                                                |                                                                | Signature (above)                                                                   |                                                                                                            |