**ACCS FUNCTION AND FINAL SETTING TEST**

1. GENERAL DATA AND INFORMATION

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Designation | : |  | Aux. Voltage | : | 125 V DC |
| Manufacturer | : | ABB | Software  | : |  |
| Type | : | REC670 | Serial no | : |  |

1. **MECHANICAL CHECK AND VISUAL INSPECTION**:

|  |  |  |
| --- | --- | --- |
| **ITEM** | **DESCRIPTION** | **CHECKED** |
| 1 | Inspect for any physical damage or defects. |  |
| 2 | Verify connections as per approved drawings. |  |
| 3 | Check case earthing |  |
| 4 | Watchdog contacts checked |  |
| 5 | Operational single line diagram in BCU |  |

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**4.0 . BINARY INPUTS: (BIM)**

**SLOT NO : P3**

**SLOT NO :P5**

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BI 01 | X31:1&2 | 13.8Kv incomer-1 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 02 | X31:3&4 | 13.8Kv incomer-1 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 03 | X31:5&6 | 13.8Kv incomer-1 CB TEST | 🗹 Yes | ❑ N/A |
| BI 04 | X31:7&8 | 13.8Kv incomer-1 CB SERVICE | 🗹 Yes | ❑ N/A |
| BI 05 | X31:9&10 | SPARE | 🗹 Yes | ❑ N/A |
| BI 06 | X31:11&12 | SPARE | 🗹 Yes | ❑ N/A |
| BI 07 | X31:13&14 | 13.8Kv incomer-2 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 08 | X31:15&16 | 13.8Kv incomer-2 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 09 | X32:1&2 | 13.8Kv incomer-2 CB TEST | 🗹 Yes | ❑ N/A |
| BI 10 | X32:3&4 | 13.8Kv incomer-2 CB SERVICE | 🗹 Yes | ❑ N/A |
| BI 11 | X32:5&6 | SPARE | 🗹 Yes | ❑ N/A |
| BI 12 | X32:7&8 | SPARE | 🗹 Yes | ❑ N/A |
| BI 13 | X32:9&10 | 13.8Kv incomer-3 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 14 | X32:11&12 | 13.8Kv incomer-3 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 15 | X32:13&14 | 13.8Kv incomer-3 CB TEST | 🗹 Yes | ❑ N/A |
| BI 16 | X32:15&16 | 13.8Kv incomer-3 CB SERVICE | 🗹 Yes | ❑ N/A |

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BI 01 | X51:1&2 | SPARE | 🗹 Yes | ❑ N/A |
| BI 02 | X51:3&4 | SPARE | 🗹 Yes | ❑ N/A |
| BI 03 | X51:5&6 | 13.8Kv BUS TIE-1 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 04 | X51:7&8 | 13.8Kv BUS TIE-1 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 05 | X51:9&10 | 13.8Kv BUS TIE-1 CB TEST | 🗹 Yes | ❑ N/A |
| BI 06 | X51:11&12 | 13.8Kv BUS TIE-1 CB SERVICE | 🗹 Yes | ❑ N/A |
| BI 07 | X51:13&14 | SPARE | 🗹 Yes | ❑ N/A |
| BI 08 | X51:15&16 | SPARE | 🗹 Yes | ❑ N/A |
| BI 09 | X52:1&2 | 13.8Kv BUS TIE-2 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 10 | X52:3&4 | 13.8Kv BUS TIE-2 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 11 | X52:5&6 | 13.8Kv BUS TIE-2 CB TEST | 🗹 Yes | ❑ N/A |
| BI 12 | X52:7&8 | 13.8Kv BUS TIE-2 CB SERVICE | 🗹 Yes | ❑ N/A |
| BI 13 | X52:9&10 | SPARE | 🗹 Yes | ❑ N/A |
| BI 14 | X52:11&12 | SPARE | 🗹 Yes | ❑ N/A |
| BI 15 | X52:13&14 | 13.8KV CAP BANK-1 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 16 | X52:15&16 | 13.8KV CAP BANK-1 CB CLOSED | 🗹 Yes | ❑ N/A |

**SLOT NO : P6**

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BI 01 | X61:1&2 | 13.8KV CAP BANK-1 CB TEST | 🗹 Yes | ❑ N/A |
| BI 02 | X61:3&4 | 13.8KV CAP BANK-1 CB SERIVICE | 🗹 Yes | ❑ N/A |
| BI 03 | X61:5&6 | SPARE | 🗹 Yes | ❑ N/A |
| BI 04 | X61:7&8 | SPARE | 🗹 Yes | ❑ N/A |
| BI 05 | X61:9&10 | 13.8KV CAP BANK-2 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 06 | X61:11&12 | 13.8KV CAP BANK-2 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 07 | X61:13&14 | 13.8KV CAP BANK-2 CB TEST | 🗹 Yes | ❑ N/A |
| BI 08 | X61:15&16 | 13.8KV CAP BANK-2 CB SERIVICE | 🗹 Yes | ❑ N/A |
| BI 09 | X62:1&2 | SPARE | 🗹 Yes | ❑ N/A |
| BI 10 | X62:3&4 | SPARE | 🗹 Yes | ❑ N/A |
| BI 11 | X62:5&6 | 13.8KV CAP BANK-3 CB OPEN | 🗹 Yes | ❑ N/A |
| BI 12 | X62:7&8 | 13.8KV CAP BANK-3 CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 13 | X62:9&10 | 13.8KV CAP BANK-3 CB TEST | 🗹 Yes | ❑ N/A |
| BI 14 | X62:11&12 | 13.8KV CAP BANK-3 CB SERIVICE | 🗹 Yes | ❑ N/A |
| BI 15 | X62:13&14 | SPARE | 🗹 Yes | ❑ N/A |
| BI 16 | X62:15&16 | SPARE | 🗹 Yes | ❑ N/A |

**SLOT NO: P7**

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BI 01 | X71:1&2 | GT-1 HV CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 02 | X71:3&4 | GT-1 VT MCB FAIL | 🗹 Yes | ❑ N/A |
| BI 03 | X71:5&6 | GT-2 HV CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 04 | X71:7&8 | GT-2 VT MCB FAIL | 🗹 Yes | ❑ N/A |
| BI 05 | X71:9&10 | GT-3 HV CB CLOSED | 🗹 Yes | ❑ N/A |
| BI 06 | X71:11&12 | GT-3 VT MCB FAIL | 🗹 Yes | ❑ N/A |
| BI 07 | X71:13&14 | A2 RELAY FAULTY | 🗹 Yes | ❑ N/A |
| BI 08 | X71:15&16 | CAP-1 PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 09 | X72:1&2 | CAP-2 PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 10 | X72:3&4 | CAP-3 PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 11 | X72:5&6 | 13.8KV BUS-A PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 12 | X72:7&8 | 13.8KV BUS-A PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 13 | X72:9&10 | 13.8KV BUS-A PROT TRIP | 🗹 Yes | ❑ N/A |
| BI 14 | X72:11&12 | BLOCK ON SWITCHING BUS-A | 🗹 Yes | ❑ N/A |
| BI 15 | X72:13&14 | BLOCK ON SWITCHING BUS-B | 🗹 Yes | ❑ N/A |
| BI 16 | X72:15&16 | BLOCK ON SWITCHING BUS-C | 🗹 Yes | ❑ N/A |

**SLOT NO: P8**

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BI 01 | X81:1&2 | C1 U/OV BLOCK | 🗹 Yes | ❑ N/A |
| BI 02 | X81:3&4 | C2 U/OV BLOCK | 🗹 Yes | ❑ N/A |
| BI 03 | X81:5&6 | C3 U/OV BLOCK | 🗹 Yes | ❑ N/A |
| BI 04 | X81:7&8 | ACCS REMOTE | 🗹 Yes | ❑ N/A |
| BI 05 | X81:9&10 | ACCS LOCAL | 🗹 Yes | ❑ N/A |
| BI 06 | X81:11&12 | ACCS AUTO | 🗹 Yes | ❑ N/A |
| BI 07 | X81:13&14 | ACCS MANUAL | 🗹 Yes | ❑ N/A |
| BI 08 | X81:15&16 | ACCS ON | 🗹 Yes | ❑ N/A |
| BI 09 | X82:1&2 | ACCS OFF | 🗹 Yes | ❑ N/A |
| BI 10 | X82:3&4 | ACCS TEST ON | 🗹 Yes | ❑ N/A |
| BI 11 | X82:5&6 | ACCS TEST OFF | 🗹 Yes | ❑ N/A |
| BI 12 | X82:7&8 | CB1 MANUAL ON | 🗹 Yes | ❑ N/A |
| BI 13 | X82:9&10 | CB1 MANUAL OFF | 🗹 Yes | ❑ N/A |
| BI 14 | X82:11&12 | CB2 MANUAL OFF | 🗹 Yes | ❑ N/A |
| BI 15 | X82:13&14 | CB2 MANUAL ON | 🗹 Yes | ❑ N/A |
| BI 16 | X82:15&16 | CB3 MANUAL OFF | 🗹 Yes | ❑ N/A |

**1 BINARY OUTPUTS (BOM)**

 **SLOT NO:P4**

|  |  |  |  |
| --- | --- | --- | --- |
| **Binary Inputs** | **Relay terminals** | **Function Duty** | **Result** |
| BO01 | X41:2&1 | CAP .BANK-1 CLOSE CMND | 🗹 Yes | ❑ N/A |
| BO02 | X41:2&3 | CAP .BANK-1 OPEN CMND | 🗹 Yes | ❑ N/A |
| BO03 | X41:5&4 | CAP .BANK-2 CLOSE CMND | 🗹 Yes | ❑ N/A |
| BO 04 | X41:5&6 | CAP .BANK-2 OPEN CMND | 🗹 Yes | ❑ N/A |
| BO 05 | X41:8&7 | CAP .BANK-3 CLOSE CMND | 🗹 Yes | ❑ N/A |
| BO 06 | X41:8&9 | CAP .BANK-3 OPEN CMND | 🗹 Yes | ❑ N/A |
| BO 07 | X41:11&10 | SPARE | 🗹 Yes | ❑ N/A |
| BO 08 | X41:11&12 | SPARE | 🗹 Yes | ❑ N/A |
| BO 09 | X41:14&13 | SPARE | 🗹 Yes | ❑ N/A |
| BO 10 | X41:14&15 | SPARE | 🗹 Yes | ❑ N/A |
| BO 11 | X41:17&16 | SPARE | 🗹 Yes | ❑ N/A |
| BO 12 | X41:17&18 | SPARE | 🗹 Yes | ❑ N/A |
| BO 13 | X42:2&1 | SPARE | 🗹 Yes | ❑ N/A |
| BO 14 | X42:2&3 | SPARE | 🗹 Yes | ❑ N/A |
| BO 15 | X42:5&4 | SPARE | 🗹 Yes | ❑ N/A |
| BO 16 | X42:5&6 | SPARE | 🗹 Yes | ❑ N/A |
| BO17 | X42:8&7 | SPARE | 🗹 Yes | ❑ N/A |
| BO18 | X42:8&9 | SPARE | 🗹 Yes | ❑ N/A |
| BO19 | X42:11&10 | SPARE | 🗹 Yes | ❑ N/A |
| BO20 | X42:11&12 | SPARE | 🗹 Yes | ❑ N/A |
| BO21 | X42:14&13 | SPARE | 🗹 Yes | ❑ N/A |
| BO22 | X42:14&15 | SPARE | 🗹 Yes | ❑ N/A |
| BO23 | X42:17&16 | SPARE | 🗹 Yes | ❑ N/A |
| BO24 | X42:17&18 | SPARE | 🗹 Yes | ❑ N/A |

FUNCTIONAL CHECK :

Case: 1 INCOMER-1 (INDEPENDANT)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over 9Mvar** | **close** | **open** | **open** | **open** | **open** | **o-c****5min** | **open** | **open** |  |
| **Under mvar**  **1 Mvar** | **close** | **open** | **open** | **open** | **open** | **c-o****5min** | **open** | **open** |  |

Case: 2 INCOMER-2 (INDEPENDANT)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****9 Mvar** | **open** | **close** | **open** | **open** | **open** | **open** | **o-c****5min** | **open** |  |
| **Under mvar** **1 Mvar** | **open** | **close** | **open** | **open** | **open** | **open** | **c-o****5min** | **open** |  |

Case: 3 INCOMER-3 (INDEPENDANT)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****9 Mvar** | **open** | **open** | **close** | **open** | **open** | **open** | **open** | **o-c****5min** |  |
| **Under mvar** **1 Mvar** | **open** | **open** | **close** | **open** | **open** | **open** | **open** | **c-o****5min** |  |

Case: 4 INCOMER 1&2 PARALLEL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **close** | **close** | **open** | **close** | **open** | **o-c****5min** | **o-c****10min** | **open** |  |
| **Under mvar****2,3 Mvar**  | **close** | **close** | **open** | **close** | **open** | **c-o****10min** | **c-o****5 min** | **open** |  |

Case: 5 INCOMER 2&3 PARALLEL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **open** | **close** | **close** | **open** | **close** | **open** | **o-c****5min** | **o-c****10min** |  |
| **Under mvar** **2,3 Mvar** | **open** | **close** | **close** | **open** | **close** | **open** | **c-o****10min** | **c-o****5 min** |  |

Case: 6 INCOMER 1&3 PARALLEL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **close** | **open** | **close** | **close** | **close** | **o-c****5min** | **open** | **o-c****10min** |  |
| **Under mvar** **2,3 Mvar** | **close** | **open** | **close** | **close** | **close** | **c-o****10min** | **open** | **c-o****5 min** |  |

Case: 7 INCOMER 1,2, IN PARALLEL BC-1&2 CLOSED

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **close** | **close** | **open** | **close** | **close** | **o-c****5min** | **o-c****10min** | **open** |  |
| **Under mvar** **2,3 Mvar** | **close** | **close** | **open** | **close** | **close** | **c-o****10min** | **c-o****5 min** | **open** |  |

**CASE: 8**

**INCOMER 2&3 CLOSED BC-1 &2 CLOSED**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **open** | **close** | **close** | **close** | **close** | **open** | **o-c****5min** | **o-c****10min** |  |
| **Under mvar** **2,3 Mvar** | **open** | **close** | **close** | **close** | **close** | **open** | **c-o****10 min** | **c-o****5 min** |  |

**CASE:9**

**INCOMER 1&3 CLOSED BC-1 &2 CLOSED**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Starting status** | **Qt1** | **Qt2** | **Qt3** | **Qbus1** | **Qbus2** | **Qc1** | **Qc2** | **Qc3** | **pass** |
| **Mvar over****10,11 Mvar** | **close** | **open** | **close** | **close** | **close** | **o-c****5min** | **open** | **o-c****10min** |  |
| **Under mvar** **2,3 Mvar** | **close** | **open** | **close** | **close** | **close** | **c-o****10 min** | **open** | **c-o****5 min** |  |

**LABELS :**

**QT1 : INCOMER 1(H11)**

**QT2 : INCOMER 2(H12)**

**QT3 : INCOMER 3(H40)**

**QB1 : BUS TIE -1(H120)**

**QB2 : BUS TIE-2(H320)**

**QC1 : CAPACITOR FEEDER 1(H01)**

**QC2 : CAPACITOR FEEDER 2(H24)**

**QC3 : CAPACITOR FEEDER 3(H48)**