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|                                                                |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
|----------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|----------|
| Applicable standard                                            |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Rating                                                         | Operating Temperature Range | -55 to +105°C (Note1)                                                                                                                                                       | Storage Temperature Range |                                                                                      | -10 °C to +60°C (Note3)                            |          |
|                                                                | Operating Humidity Range    | 20% to 80% (Note2)                                                                                                                                                          | Storage Humidity Range    |                                                                                      | 40% to 70% (Note3)                                 |          |
|                                                                | Applicable Connector        | DF51-3S-2C(##)                                                                                                                                                              | Current                   |                                                                                      | AWG 30 : 0.5A<br>AWG 28 : 1.0A<br>AWG 22-26 : 2.0A |          |
|                                                                | Voltage                     | 250 V AC/DC                                                                                                                                                                 | UL • C-UL<br>Rating       | Voltage                                                                              | 30V AC/DC                                          |          |
|                                                                |                             |                                                                                                                                                                             | Current                   | 2.0A                                                                                 |                                                    |          |
| Specifications                                                 |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Item                                                           |                             | Test method                                                                                                                                                                 |                           | Requirements                                                                         |                                                    | QT AT    |
| Construction                                                   |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| General Examination                                            |                             | Visually and by measuring instrument.                                                                                                                                       |                           | According to drawing.                                                                |                                                    | X X      |
| Marking                                                        |                             | Confirmed visually.                                                                                                                                                         |                           |                                                                                      |                                                    | X X      |
| Electric Characteristics                                       |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Contact Resistance<br>Millivolt Level Method                   |                             | 20mV MAX, 1mA (DC or 1000Hz).                                                                                                                                               |                           | 30 mΩ MAX.                                                                           |                                                    | X —      |
| Insulation Resistance                                          |                             | 500 V DC.                                                                                                                                                                   |                           | 1000 MΩ MIN.                                                                         |                                                    | X —      |
| Voltage Proof                                                  |                             | 650 V AC for 1 min.                                                                                                                                                         |                           | No flashover or breakdown.                                                           |                                                    | X —      |
| Mechanical Characteristics                                     |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Mechanical Operation<br>(An Plating)                           |                             | 50 times insertion and extraction.                                                                                                                                          |                           | 1.No damage, crack or looseness of parts.                                            |                                                    | X —      |
| Mating and unmating<br>Force<br>(Au Plating)                   |                             | It takes out and inserts with a conformity connector.                                                                                                                       |                           | 1.Insertion Force : 17.7N MAX.<br>2.Extraction Force : 0.75N MIN.                    |                                                    | X —      |
| Vibration                                                      |                             | Frequency 10 to 55 Hz, single amplitude 0.75 mm, at<br>10 cycles for 3 direction.                                                                                           |                           | 1.No electrical discontinuity of 1 μ s.<br>2.No damage, crack or looseness of parts. |                                                    | X —      |
| Shock                                                          |                             | Acceleration 490 m/s <sup>2</sup> duration of pulse 11 ms at 3<br>times for 3 directions.                                                                                   |                           |                                                                                      |                                                    | X —      |
| Environmental Characteristics                                  |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Damp Heat<br>(Steady State)                                    |                             | Exposed at 40 ± 2°C , humidity 90 to 95 %, 96 h.<br>(After leaving the room temperature for 1 to 2h.)                                                                       |                           | 1.Insulation resistance: 500 MΩ MIN.<br>2.No damage, crack or looseness of parts.    |                                                    | X —      |
| Rapid Change Of<br>Temperature                                 |                             | Temperature -55°C→ +105°C<br>Time 30min→ 30min<br>Under 5 Cycles.<br>(The transferring time of the tank is 2 to 3 MIN)<br>(After leaving the room temperature for 1 to 2h.) |                           | 1.Insulation resistance: 1000 MΩ MIN.<br>2.No damage, crack or looseness of parts.   |                                                    | X —      |
| Dry Heat                                                       |                             | Exposed at 105±2°C, 96h                                                                                                                                                     |                           |                                                                                      |                                                    | X —      |
| Cold                                                           |                             | Exposed at -55±3°C, 96h                                                                                                                                                     |                           |                                                                                      |                                                    | X —      |
| Remarks                                                        |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Note 1: Include the temperature rising by current.             |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Note 2: No condensing.                                         |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
| Note 3: Apply to the unused and packaged condition.            |                             |                                                                                                                                                                             |                           |                                                                                      |                                                    |          |
|                                                                | COUNT                       | DESCRIPTION OF REVISIONS                                                                                                                                                    | DESIGNED                  | CHECKED                                                                              | DATE                                               |          |
| △2                                                             | 1                           | DIS-H-00018757                                                                                                                                                              | KT. NUMATA                | TT. OHSAKO                                                                           | 20230803                                           |          |
| Unless otherwise specified, refer to IEC 60512.                |                             |                                                                                                                                                                             |                           | APPROVED                                                                             | S.J. OKAMURA                                       | 20230324 |
|                                                                |                             |                                                                                                                                                                             |                           | CHECKED                                                                              | S.J. OKAMURA                                       | 20230324 |
|                                                                |                             |                                                                                                                                                                             |                           | DESIGNED                                                                             | SN. MIWA                                           | 20230324 |
|                                                                |                             |                                                                                                                                                                             |                           | DRAWN                                                                                | SN. MIWA                                           | 20230324 |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test |                             |                                                                                                                                                                             | DRAWING NO.               |                                                                                      | ELC-401456-00-00                                   |          |
| HRS                                                            | SPECIFICATION SHEET         |                                                                                                                                                                             | PART NO.                  | DF51B-3EP-2A                                                                         |                                                    |          |
|                                                                | HIROSE ELECTRIC CO., LTD.   |                                                                                                                                                                             | CODE NO.                  | CL0543-5134-0-00                                                                     | △2                                                 | 1/1      |