

| APPLICABLE STANDARD                                                                                                                                                                    |                                                                                                               |                                                                                                                               |  |                                                                                                                                                                                                                            |                                          |                                                                                       |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------|-----|
| Rating                                                                                                                                                                                 | Operating Temperature Range  | -55 °C to 105 °C <sup>(1)</sup>                                                                                               |  | Storage Temperature Range                                                                                                                                                                                                  | -10 °C to 60 °C <sup>(2)</sup>           |                                                                                       |     |
|                                                                                                                                                                                        | Voltage                                                                                                       | Signal Contact : 50 V AC<br>Power Contact : 200 V AC                                                                          |  | Storage Humidity Range                                                                                                                                                                                                     | Relative humidity 85% max<br>(Not dewed) |                                                                                       |     |
|                                                                                                                                                                                        | Current                                                                                                       | Signal Contact : 0.5 A<br>Power Contact : 3.0A                                                                                |  | Operating Humidity Range                                                                                                                                                                                                   |                                          |                                                                                       |     |
| 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                                                                                                                                                                     |                                                                                                               | 100 mA(DC or 1000Hz)                                                                                                          |  | Signal Contact : 70mΩ MAX.<br>Power Contact : 20mΩ MAX.                                                                                                                                                                    |                                          | x                                                                                     | —   |
| Insulation Resistance                                                                                                                                                                  |                                                                                                               | Signal Contact : 100 V DC.<br>Power Contact : 250 V DC                                                                        |  | Signal Contact : 100 MΩ MIN.<br>Power Contact : 1000 MΩ MIN.                                                                                                                                                               |                                          | x                                                                                     | —   |
| Voltage Proof                                                                                                                                                                          |                                                                                                               | Signal Contact : 150 V AC for 1 min.                                                                                          |  | No flashover or breakdown.                                                                                                                                                                                                 |                                          | x                                                                                     | x   |
|                                                                                                                                                                                        |                                                                                                               | Power Contact : 600 V AC for 1 min.                                                                                           |  |                                                                                                                                                                                                                            |                                          | x                                                                                     | —   |
| MECHANICAL CHARACTERISTICS                                                                                                                                                             |                                                                                                               |                                                                                                                               |  |                                                                                                                                                                                                                            |                                          |                                                                                       |     |
| Insertion and Withdrawal Forces                                                                                                                                                        |                                                                                                               | Measured by applicable connector.                                                                                             |  | Insertion Force: 27 N MAX.<br>Withdrawal Force: 3 N MIN.                                                                                                                                                                   |                                          | x                                                                                     | —   |
| Mechanical Operation                                                                                                                                                                   |                                                                                                               | 100 times insertions and extractions.                                                                                         |  | ① Contact Resistance:<br>Signal Contact : 80mΩ MAX.<br>Power Contact : 30mΩ MAX.<br>② No damage, crack and looseness of parts.                                                                                             |                                          | x                                                                                     | —   |
| Vibration                                                                                                                                                                              |                                                                                                               | Frequency 10 to 55 to 10Hz, approx 5min<br>Single amplitude : 0.75 mm, 10 cycles<br>for 3 axial directions.                   |  | ① No electrical discontinuity of 1 μs.<br>② No damage, crack and looseness of parts.                                                                                                                                       |                                          | x                                                                                     | —   |
| Shock                                                                                                                                                                                  |                                                                                                               | 490 m/s <sup>2</sup> , duration of pulse 11 ms<br>at 3 times for 3 both axial directions.                                     |  |                                                                                                                                                                                                                            |                                          | x                                                                                     | —   |
| ENVIRONMENTAL CHARACTERISTICS                                                                                                                                                          |                                                                                                               |                                                                                                                               |  |                                                                                                                                                                                                                            |                                          |                                                                                       |     |
| Damp Heat (Steady state)                                                                                                                                                               |                                                                                                               | Exposed at 40±2 °C, 90 ~ 95 %, 96 h.                                                                                          |  | ① Contact Resistance:<br>Signal Contact : 80mΩ MAX.<br>Power Contact : 30mΩ MAX.<br>② Insulation Resistance:<br>Signal Contact : 100 MΩ MIN.<br>Power Contact : 1000 MΩ MIN.<br>③ No damage, crack and looseness of parts. |                                          | x                                                                                     | —   |
| Rapid Change of Temperature                                                                                                                                                            |                                                                                                               | Temperature -55 → +85 °C<br>Time 30 → 30 min.<br>under 5 cycles.<br>(Relocation time to chamber : within 2~3 MIN)             |  |                                                                                                                                                                                                                            |                                          | x                                                                                     | —   |
| Cold                                                                                                                                                                                   |                                                                                                               | Exposed at -55°C, 96 h                                                                                                        |  | ① Contact Resistance:<br>Signal Contact : 80mΩ MAX.<br>Power Contact : 30mΩ MAX.<br>② No damage, crack and looseness of parts.                                                                                             |                                          | x                                                                                     | —   |
| Dry Heat                                                                                            |                                                                                                               | Exposed at 105°C, 96 h                                                                                                        |  |                                                                                                                                                                                                                            |                                          | x                                                                                     | —   |
| Sulfur Dioxide                                                                                                                                                                         |                                                                                                               | Exposed at 25±2°C, 75±5%RH, 25 PPM for 96 h.<br>(Test standard: IEC 68)                                                       |  | ① No defect such as corrosion which impairs the function of connector.<br>② Contact Resistance:<br>Signal Contact : 80mΩ MAX.<br>Power Contact : 30mΩ MAX.                                                                 |                                          | x                                                                                     | —   |
| Resistance to Soldering Heat                                                                                                                                                           |                                                                                                               | 1)Reflow soldering :<br>Peak TMP : 260°C MAX<br>Reflow TMP: 220°C MIN for 60sec<br>2) Soldering irons : 360°C MAX. for 5 sec. |  |                                                                                                                                                                                                                            |                                          | x                                                                                     | —   |
| Solderability                                                                                                                                                                          |                                                                                                               | Soldered at solder temperature<br>240±3°C for immersion duration, 3 sec.                                                      |  | A new uniform coating of solder shall cover a minimum of 95 % of the surface being immersed.                                                                                                                               |                                          | x                                                                                     | —   |
|                                                                                                                                                                                        | COUNT                                                                                                         | DESCRIPTION OF REVISIONS                                                                                                      |  | DESIGNED                                                                                                                                                                                                                   | CHECKED                                  | DATE                                                                                  |     |
|                                                                                                     | 2                                                                                                             | DIS-F-00002062                                                                                                                |  | TS. 00N0                                                                                                                                                                                                                   | HT. YAMAGUCHI                            | 17. 02. 02                                                                            |     |
| REMARKS <sup>(1)</sup> Include temperature rise caused by current-carrying.<br><sup>(2)</sup> "STORAGE" means a long-term storage state for the unused product before assembly to PCB. |                                                                                                               |                                                                                                                               |  | APPROVED                                                                                                                                                                                                                   | HS. OKAWA                                | 14. 07. 18                                                                            |     |
|                                                                                                                                                                                        |                                                                                                               |                                                                                                                               |  | CHECKED                                                                                                                                                                                                                    | KN. SHIBUYA                              | 14. 07. 18                                                                            |     |
|                                                                                                                                                                                        |                                                                                                               |                                                                                                                               |  | DESIGNED                                                                                                                                                                                                                   | TS. 00N0                                 | 14. 07. 17                                                                            |     |
|                                                                                                                                                                                        |                                                                                                               |                                                                                                                               |  | DRAWN                                                                                                                                                                                                                      | TS. 00N0                                 | 14. 07. 17                                                                            |     |
| Unless otherwise specified, refer to IEC 60512.                                                                                                                                        |                                                                                                               |                                                                                                                               |  |                                                                                                                                                                                                                            |                                          |                                                                                       |     |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test                                                                                                                         |                                                                                                               |                                                                                                                               |  | DRAWING NO.                                                                                                                                                                                                                |                                          | ELC-353546-00-00                                                                      |     |
|                                                                                                     | SPECIFICATION SHEET                                                                                           |                                                                                                                               |  | PART NO.                                                                                                                                                                                                                   | FX23-60P-0. 5SV20                        |                                                                                       |     |
|                                                                                                                                                                                        | HIROSE ELECTRIC CO., LTD.                                                                                     |                                                                                                                               |  | CODE NO.                                                                                                                                                                                                                   | CL573-3103-0-00                          |  | 1/1 |