GUANGZHOU JOYEE SANITARY WARE CO., LTD.

# CE-EMC TEST REPORT

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| Prepared For: | GUANGZHOU JOYEE SANITARY WARE CO., LTD.<br>D228, Building 27, 38 Nanbian Road, Haizhu District, Guangzhou, China |
| Product Name: | Outdoor Spa |
| Trade Mark: | Joyee |
| Model : | Las vegas, more additional models see next page |
| Prepared By : | GUANGZHOU JOYEE SANITARY WARE CO., LTD.<br>D228, Building 27, 38 Nanbian Road, Haizhu District, Guangzhou, China |
| Test Date: | Aug. 14, 2019 – Aug. 23, 2019 |
| Date of Report : | Aug. 04, 2023 |
| Original report number: | UNIA23041220ER-11 |
| Report No.: | UNIA23072716ER-11 |

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|---|---|
| Additional models | M/N: SG-7302AS, SG-7303AS, SG-7303A1S, SG-7303A2S, SG-7304AS, SG-7305AS, SG-7305A1S, SG-7306AS, SG-7306A1S, SG-7307AS, SG-7308AS, SG-7308A1S, SG-7309AS, SG-7302BS, SG-7305B1S, SG-7305B2S, SG-7306B1S, SG-7309BS, SG-7310B1S, SG-7310B2S, SG-7302CS, SG-7305CS, SG-7305C1S, SG-7305C2S, SG-7309CS, SG-7306CS, SC-7306C1S, SG-7310CS, SG-7310C1S, SG-7310C2S, SG-7311CS, SG-7303DS, SG-7304DS, SG-7305ES, SG-7305DS, SG-7309DS, SG-7310DS, SG-7303VS, SG-7305VS, SG-7306VS, SG-7301BS, SG-7301CS, SG-7305BWS, SG-7305BW-RS, SG-7305E-RS, SG-7312BWS, SG-7304HS, SG-9280S, SG-9281S, SG-SW395SS, SG-7305GS, SG-7305G1S, SG-7305G2S, SG-7305G3S, SG-7305G4S, SG-7305HS, SG-7310HS, SG-7305JS, SG-7305J1S, SG-7303FS, SG-7304FS, SG-7309FS, SG-7305TS, SG-7307BS, V1S, V2S, V3S, V4S, V5S, SG-7303ES, SG-7303E1S, SG-7303E2S, SG-7305C-RS, SG-7305D1S, SG-7305D-RS, SG-7306V-RS, SG-7310D-RS, SG-7309C-RS, SG-7312BW-RS, LIV-SPA-S22S, LIV-SPA-Y22S, SG-7301DS, SG-7301ES, SG-7302DS, SG-7303E3S, SG-7303F1S, SG-7304F1S, SG-7305H2S, SG-7305KS, SG-7309F1S, SG-7309GS, SG-7309G1S, SG-7309VS, SG-7313BWS, SG-7314BWS, SG-7315BWS, SG-7316BWS, SG-JD7320S, SG-SW395DS, SG-B398SS, SG-B398DS, SG-9505S, SG-7302ES, SG-7307FS, SG-2105S, SG-7301GS, SG-7301G1S, SG-7302GS, SG-7302G1S, SG-7303GS, SG-7306HS, SG-7306DS, SG-7306KS, SG-7306GS, SG-7307GS, SG-7308GS, SG-MP029S, SG-MP085S, SG-MP092S, SG-MP099S, AU-01S, SG-ITALY01S, SG-SY580S, SG-7330ES, SG-9280TS, SG-SW395D-BS, SG-B398BS, SG-466AS, SG-BW399AS, SG-BW399BS, SG-BW399CS, SG-BW600AS, SG-BW600BS, SG-BW600CS, SG-9506S, SG-9507S, SG-200S, HE4S, HE7S, HE102S, HE121S, HE201S, HE241S, HE542S, HE561S, AR542S, AR561S, FD121S, FD241S, GP4S, GP7S, GD-04S, SP201S, SW395BLS, SW395BL-TS, SG-7308DS, SG-7307F1S, SG-9505AS, SG-9281TS, SG-7301AB, SG-7302AB, SG-7303AB, SG-7303A1B, SG-7303A2B, SG-7304AB, SG-7305AB, SG-7305A1B, SG-7306AB, SG-7306A1B, SG-7307AB, SG-7308AB, SG-7308A1B, SG-7309AB, SG-7302BB, SG-7305B1B, SG-7305B2B, SG-7306B1B, SG-7309BB, SG-7310B1B, SG-7310B2B, SG-7302CB, SG-7305CB, SG-7305C1B, SG-7305C2B, SG-7309CB, SG-7306CB, SC-7306C1B, SG-7310CB, SG-7310C1B, SG-7310C2B, SG-7311CB, SG-7303DB, SG-7304DB, SG-7305EB, SG-7305DB, SG-7309DB, SG-7310DB, SG-7303VB, SG-7305VB, SG-7306VB, SG-7301BB, SG-7301CB, SG-7305BWB, SG-7305BW-RB, SG-7305E-RB, SG-7312BWB, SG-7304HB, SG-9280B, SG-9281B, SG-SW395SB, SG-7305GB, SG-7305G1B, SG-7305G2B, SG-7305G3B, SG-7305G4B, SG-7305HB, SG-7310HB, SG-7305JB, SG-7305J1B, SG-7303FB, SG-7304FB, SG-7309FB, SG-7305TB, SG-7307BB, V1B, V2B, V3B, V4B, V5B, SG-7303EB, SG-7303E1B, SG-7303E2B, SG-6000T, SG-5000, J-01(Bremen), J-02A(Atlanta), J-02B(Las Vegas), J-03A(Houston), J-03B(Washington), J-07(London), J-08(Cambridge), SG340F, SG-7305C-RB, SG-7305D1B, SG-7305D-RB, SG-7306V-RB, SG-7310D-RB, SG-7309C-RB, SG-7312BW-RB, LIV-SPA-S22B, LIV-SPA-Y22B, SG-2103, SG-7301DB, SG-7301EB, SG-7302DB, SG-7303E3B, SG-7303F1B, SG-7304F1B, SG-7305H2B, SG-7305KB, SG-7309F1B, SG-7309GB, SG-7309G1B, SG-7309VB, SG-7313BWB, SG-7314BWB, SG-7315BWB, SG-7316BWB, SG-JD7320B, SG-SW395DB, SG-B398SB, SG-B398DB, SG-9505B, SG-7302EB, SG-7307FB, SG-2105B, SG-7303GB, SG-7306HB, SG-7306DB, SG-7306KB, SG-MP029B, SG-MP085B, SG-MP092B, SG-MP099B, AU-01B, SG-SY580B, SG-7330EB, SG-7317BWB, SG-7318BWB, SG-7319BWB, SG-7321BWB, SG-7322BWB, SG-7323BWB, SG-7324BWB, SG-7325BWB, SG-7326BWB, SG-7327BWB, SG-7328BWB, SG-7329BWB, SG-7330BWB, SG-7331BWB, SG-7332BWB, SG-7333BWB, SG-7334BWB, SG-7335BWB, SG-7336BWB, SG-7337BWB, SG-7338BWB, SG-7339BWB, SG-7340BWB, SG-7341BWB, SG-7344BWB, SG-7345BWB, SG-7346BWB, SG-7347BWB, SG-7350BWB, SG-7351BWB, SG-7352BWB, SG-7353BWB, SG-7354BWB, SG-7355BWB, SG-7356BWB, SG-7357BWB, SG-7358BWB, SG-7360BWB, SG-7361BWB, SG-7362BWB, SG-7363BWB, SG-7364BWB, SG-9280TB, SG-SW395D-BB, SG-B398BB, SG-466AB, SG-BW399AB, SG-BW399BB, SG-BW399CB, SG-BW600AB, SG-BW600BB, SG-BW600CB, SG-9506B, SG-9507B, SG-200B, HE4B, HE7B, HE102B, HE121B, HE201B, HE241B, HE542B, HE561B, AR542B, AR561B, FD121B, FD241B, GP4B, GP7B, GD-04B, SP201B, SW395BLB, SW395BL-TB, SG-7342BWB, SG-7343BWB, SG-7308DB, SG-7307F1B, SG-9505AB, SG-9281TB, SG-6000T, SG-5000, J-01(Bremen), J-02A(Atlanta), J-02B(Las Vegas), J-03A(Houston), J-03B(Washington), J-07(London), J-08 (Cambridge), SG340F, SP5260, SP5260-T, J-05, J-06, J-09, J-10, 7319D, SP102, Atlanta, Houston, Washington,Bremen, Antwerp, Genting, Baden, London, London-L, Seattle, Sydney, Wellington, San Diego, California, Manhattan, Lincoln, Lincoln-R, Leeds, Glasgow, Frankfurt, Pisa, Lyon, Boston, New York, Cologne, Alabama, Alaska, Florida, Austin, Omaha, Colmar, Marseille, Carcassonne, Annecy, Strasbourg, Lille, Toulouse, Detroit, Orlando, Ely, Queens County, Warsaw, Sicily, Bruges, Lindau, Ghent, Seville, Oxford, Granada, Lausanne, Lucerne, Bern, Stavanger, Helsinki, Malaga, Valencia, Krakow, Brussels, Oslo, Gothenburg, Aarhus, Espoo, Vantaa, Odense, Oulu, Linkoping, Rovaniemi, Tbilisi, Cascais, Sibiu, Namur, Rijeka, Heviz, Cork, Rochefort, Menorca, Podol, Podol-plus, Nante, Nante-plus, Columbus, Dover, Dover-plus, Venice, Nice, Vienna, Amsterdam, Prague, Prague-L, Barcelona, Budapest, Budapest-L, Macao, Macao-L, Florence, Florence-L, Brisbane, Copenhagen, Moscow, Munich, Geneva, Sao paulo, Manchester, Bordeaux, Hawaii, Melbourne, Dubai, Provence, Provence-PLUS, Zurich, Toronto, Toronto-PLUS, Rotterdam, Madrid, Berlin, Hamburg, Hamburg-L, Malta, Malta-L, St. Petersburg, Los Angeles, San Francisco, Santorini, Chicago, Milan, Vancouver, Edinburgh, Rome, Athens, Athens-L, Stockholm, Lisbon, Miami, Verona, Porto, Trieste, Split, Bodrum, Zagreb, J-17(Lincoln), SG5850, SG6300(T), SG390(LAGOON SPA) |

# 2 Test Summary

The customer requested EMC tests for a Outdoor Spa.

| Test | Test Requirement | Test Method | Class / Severity | Result |
|---|---|---|---|---|
| Conducted Emission on AC,9kHz to 30MHz | EN 55014-1 | EN 55014-1 | Table 1 Columns 2&3 | PASS |
| Disturbance Power, 30MHz to 300MHz | EN 55014-1 | EN 55014-1 | Table 2 Columns 2&3 | PASS |
| Harmonic Emission on AC,100Hz to 2kHz | EN 61000-3-2 | EN 61000-3-2 | Class A | PASS |
| Flicker Emission on AC | EN 61000-3-3 | EN 61000-3-3 | Clause 5 of EN 61000-3-3 | PASS |
| ESD | EN 55014-2 | EN 61000-4-2 | Contact ±, 4 kV Air ±8 kV | PASS |
| Radiated Immunity, 80MHz to 1GHz | EN 61547 | EN 61000-4-3 | 3V/m, 80%, 1kHz, A.M. | PASS |
| Electrical Fast Transients (EFT) on AC | EN 55014-2 | EN 61000-4-4 | AC±0.5 &1.0Kv Tel ±0.5Kv | PASS |
| Surge Immunity on AC | EN 55014-2 | EN 61000-4-5 | ±1.0kV D.M. ±2.0kV C.M. | PASS |
| Injected Currents on AC 150kHz to 230MHz | EN 55014-2 | EN 61000-4-6 | 3Vrms(emf) , 80%, 1kHz, Amp. Mod. | PASS |
| Voltage Dips and Interruptions on AC | EN 55014-2 | EN 61000-4-11 | 0 % $U_T$* for 0.5per 40 % $U_T$* for 10per 70 % $U_T$* for 25per | PASS |

**REMARKS:**

* $U_T$ is the nominal supply voltage

† D.M. – Differential Mode

‡ C.M. – Common Mode

**General product information:**

Stationary appliance and indoor/outdoor used.

Model which the last letter is “S” can operated for motor function and heater function at the same time. Model which the last letter is “B” can operated separately for motor function or heater function only. Motor function is operated with all pumps without heater.

Heater function is operated with heater and pump WTC50M. Solenoid valve controller is connected to main controller SG-0007.

All models are have the difference of size, appearance and the follow table:

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| Las vegas | LP250(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5800W |
| SG-7302AS | LP200(1pc)<br>WTC50M(1pc) | AP900 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5650W |
| SG-7303AS | LP200(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9550W |
| SG-7303A1S, SG-7303A2S | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9900W |
| SG-7304AS | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7300W |
| SG-7305AS | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP900 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9350W |
| SG-7305A1S | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9150W |
| SG-7306AS | LP200(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6950W |
| SG-7306A1S | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7000W |
| SG-7307AS | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP900 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 10400W |
| SG-7308AS | LP250(1pc)<br>WTC50M(1pc) | None | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5100W |
| SG-7308A1S | LP200(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6950W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7309AS | LP250(2pcs)<br>LP300(1pc)<br>WTC50M(1pc) | AP900 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 10050W |
| SG-7302BS | LP300(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5850W |
| SG-7305B1S,<br>SG-7305B2S | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 10200W |
| SG-7306B1S | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7000W |
| SG-7309BS | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9150W |
| SG-7310B1S,<br>SG-7310B2S | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 10200W |
| SG-7302CS | LP250(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5500W |
| SG-7305CS,<br>SG-7305C1S,<br>SG-7305C2S,<br>SG-7309CS | LP250(1pc)<br>LP300(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8000W |
| SG-7306CS | LP250(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5800W |
| SG-7306C1S | LP300(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6150W |
| SG-7310CS,<br>SG-7310C1S,<br>SG-7310C2S | LP300(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8350W |
| SG-7311CS | LP300(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5850W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7303DS | LP200(2pcs)<br>LP150(1pc)<br>WTC50M(1pc | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8050W |
| SG-7304DS | LP250(2pcs)<br>LP300(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 9850W |
| SG-7305ES | LP300(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5850W |
| SG-7305DS | LP300(2pcs)<br>LP250(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 10200W |
| SG-7309DS | LP250(3pcs)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11000W |
| SG-7310DS | LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8050W |
| SG-7303VS | LP200(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5450W |
| SG-7305VS,<br>SG-7306VS | LP300(1pc)<br>WTC50M(1pc) | AP400,<br>AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6550W |
| SG-7301BS | LP250(1pc)<br>WTC50M(1pc) | | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5100W |
| SG-7301CS | LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8050W |
| SG-7305BWS | LP300(2pcs)<br>TDA50(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8175W |
| SG-7305BW-RS | LP300(2pcs)<br>TDA50(1pc) | | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7775W |
| SG-7305E-RS | LP300(1pc)<br>TDA50(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5975W |
| SG-7312BWS | LP200(1pc)<br>LP250(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7125W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7304HS | LP300(1pc)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7650W |
| SG-9280S | LP300(4pcs)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 10350W/5850W |
| SG-9281S | LP300(4pcs)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 10350W/5850W |
| SG-SW395SS | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 13250W |
| SG-7305GS | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H20-R2 | 220-240V, 50/60Hz, 5000W |
| SG-7305G1S | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6000W |
| SG-7305G2S | LP300(2pcs)<br>WTC50M(1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7650W |
| SG-7305G3S/<br>SG-7305G4S | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H20-R2 | 220-240V, 50/60Hz, 5000W |
| SG-7305HS | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H20-R2 | 220-240V, 50/60Hz, 5000W |
| SG-7310HS | LP200(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5700W |
| SG-7305JS | WP300-II (1pc)<br>LP300(1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7400W |
| SG-7305J1S | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H20-R2 | 220-240V, 50/60Hz, 5000W |
| SG-7303FS | LP200(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6650W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7304FS | LP250(1pc)<br>LP200 (1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7000W |
| SG-7309FS | LP250(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7350W |
| SG-7305TS | LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8050W |
| SG-7307BS | LP300(2pcs)<br>LP250(1pc)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 11700W |
| V1S | LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8050W |
| V2S | LP300(2pcs)<br>JA50(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8170W |
| V3S | WP300-II (1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 5200W |
| V4S | WP250-II (1pc)<br>LP250(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7100W |
| V5S | WP250-II (1pc)<br>LP250(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7100W |
| SG-7303ES | WP200-II (1pc)<br>LP200(1pc) | -- | SG-0007 | H20-R2 | 220-240V, 50/60Hz, 5000W |
| SG-7303E1S | WP300-II (1pc)<br>LP300 (1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7400W |
| SG-7303E2S | LP300(2pcs)<br>WTC50M(1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7650W |
| SG-7305C-RS | LP200(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6950W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7305D1S | LP300(2pcs)<br>LP250 (1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 10200W |
| SG-7305D-RS | LP300 (2pcs)<br>LP250(1pc)<br>TDA50(1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 9620W |
| SG-7306V-RS | LP300 (1pc)<br>LP200(1pc)<br>TDA50(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 7470W |
| SG-7310D-RS | LP250 (3pcs)<br>TDA50 (1pc) | -- | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 8920W |
| SG-7309C-RS | LP200 (2pcs)<br>WTC50M (1pc) | AP700 | SG-0007 | H30-R2 | 220-240V, 50/60Hz, 6950W |
| SG-7312BW-RS | LP300 (1pc)<br>LP250 (1pc)<br>TDA50 (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7820W |
| LIV-SPA-S22S/<br>LIV-SPA-Y22S | LP300(2pcs)<br>TDA50 (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8170W |
| SG-7301DS<br>SG-7301ES | LP300(2pcs)<br>WTC50M (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8050W |
| SG-7302DS | LP200(1pc)<br>WTC50M (1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5450W |
| SG-7303E3S | LP250(2pcs)<br>WTC50M (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| SG-7303F1S | LP150(1pc)<br>WP200-II(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6000W |
| SG-7304F1S | LP200(1pc)<br>WP200-II(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6400W |
| SG-7309F1S | LP250(1pc)<br>WP250-II(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7100W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7305H2S | LP200(2pcs)<br>WTC50M (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6250W |
| SG-7305KS | LP200(2pcs)<br>WTC50M (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6650W |
| SG-7309GS | WP300-II (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5200W |
| SG-7309G1S | WP300-II (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5600W |
| SG-7309VS | LP300(1pc)<br>WTC50M (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5450W |
| SG-7313BWS<br>SG-7314BWS | LP200(3pcs)<br>WTC50M (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7750W |
| SG-7315BWS<br>SG-7316BWS | LP250(2pcs)<br>WTC50M (1pc) | -- | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| SG-JD7320S | LP250(2pcs)<br>WTC50M (1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7350W |
| SG-SW395DS | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 13250W |
| SG-B398SS<br>SG-B398DS | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 13250W |
| SG-9505S | LP300(1pc)<br>LP200(1pc)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 12450W |
| SG-7302ES | LP200(2pcs)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7150W |
| SG-7307FS | LP300(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8050W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-2105S | LP200(1pc)<br>1026080(1pc) | AP200 | SG-0007 | H20-R2 | 220-240V,50/60Hz, 4700W |
| SG-7301GS | LP200(2pcs)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6250W |
| SG-7301G1S | LP200(1pc)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 4650W |
| SG-7302GS | LP200(2pcs)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6250W |
| SG-7302G1S | LP200(1pc)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 4650W |
| SG-7303GS | WP300-II(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5200W |
| SG-7306HS | WP250-II(1pc)<br>LP300(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7050W |
| SG-7306DS | LP300(1pc)<br>LP250 (2pcs)<br>WTC50(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 9850W |
| SG-7306KS | LP200(2pcs)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6650W |
| SG-7306GS | LP200 (1pc)<br>LP300 (2pcs)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 9150W |
| SG-7307GS | LP200 (1pc)<br>LP250 (2pcs)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8450W |
| SG-7308GS | LP200 (1pc)<br>LP250 (1pc)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6600W |
| SG-MP029S | LP300(1pc)<br>WTC50M(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5850W |
| SG-MP085S | LP300(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8350W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-MP092S | LP300(2pcs)<br>LP200(1pc)<br>WTC50(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 9850W |
| SG-MP099S | LP300(4pcs)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 12950W |
| AU-01S | DH1.0(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 4150W |
| SG-ITALY01S | LP200(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 4500W |
| SG-SY580S | LP250(1pc)<br>LP300(1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7800W |
| SG-7330ES | LP300(1pc)<br>LP200(3pcs)<br>WTC100-AB(1pc) | AP900 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11350W |
| SG-9280TS | LP300(1pc)<br>DL112-PS8M-12KA (1pc)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8750W/5850W |
| SG-SW395D-BS | LP300(2pcs)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 13150W |
| SG-B398BS | LP200(3pcs)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8250W |
| SG-466AS | DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8750W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-BW399AS | LP300(3pcs)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 10350W |
| SG-BW399BS | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11850W |
| SG-BW399CS | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11850W |
| SG-BW600AS | LP300(3pcs)<br>WTC100-AB(1pc ) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 10350W |
| SG-BW600BS | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11850W |
| SG-BW600CS | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11850W |
| SG-9506S | DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | SG50 | 220-240V,50/60Hz, 10750W |
| SG-9507S | DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | SG50 | 220-240V,50/60Hz, 10750W |
| SG-200S | LP300(1pc)<br>WTC50M(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 5450W |
| HE4S | WTC200-AB(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE7S | WTC200-AB(2pcs)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| HE102S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE121S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE201S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE241S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE542S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| HE561S | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 6950W |
| AR542S | LP300(3pcs) JA100（1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11050W |
| AR561S | LP300(2pcs) JA100（1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8850W |
| FD121S | LP300(2pcs) JA100（1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8850W |
| FD241S | LP300(3pcs) JA100（1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11050W |
| GP4S | LP300(2pcs) JA100(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8850W |
| GP7S | LP300(2pcs) WTC200-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8850W |
| GD-04S | LP300(1pc) WTC200-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7400W |
| SP201S | LP300(1pc) WTC200-AB(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 7400W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SW395BLS | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 12250W |
| SW395BL-TS | LP200(2pcs)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11750W |
| SG-7308DS | LP200(2pcs)<br>LP150(1pc)<br>WTC50M(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8050W |
| SG-7307F1S | LP300(1pc)<br>WP300-II(1pc) | AP700 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 8100W |
| SG-9505AS | LP300(3pcs)<br>LP200(2pcs)<br>WTC100-AB(1pc) | - | SG-0007 | H30-R2 | 220-240V,50/60Hz, 13350W |
| SG-9281TS | LP300(1pc)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | AP400 | SG-0007 | H30-R2 | 220-240V,50/60Hz, 11350W |
| SG-7301AB | LP250(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2800W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7302AB | LP200(1pc)<br>WTC50M(1pc) | AP900 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2650W,<br>Heater function: 3250W |
| SG-7303AB | LP200(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6550W,<br>Heater function: 3250W |
| SG-7303A1B,<br>SG-7303A2B | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6900W,<br>Heater function: 3250W |
| SG-7304AB | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4300W,<br>Heater function: 3250W |
| SG-7305AB | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP900 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6350W,<br>Heater function: 3250W |
| SG-7305A1B | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6150W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7306AB | LP200(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-7306A1B | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4000W,<br>Heater function: 3250W |
| SG-7307AB | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP900 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7400W,<br>Heater function: 3250W |
| SG-7308AB | LP250(1pc)<br>WTC50M(1pc) | None | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2100W,<br>Heater function: 3250W |
| SG-7308A1B | LP200(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-7309AB | LP250(2pcs)<br>LP300(1pc)<br>WTC50M(1pc) | AP900 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7050W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7302BB | LP300(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2850W,<br>Heater function: 3250W |
| SG-7305B1B,<br>SG-7305B2B | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7200W,<br>Heater function: 3250W |
| SG-7306B1B | LP200(1pc)<br>LP250(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4000W,<br>Heater function: 3250W |
| SG-7309BB | LP200(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6150W,<br>Heater function: 3250W |
| SG-7310B1B,<br>SG-7310B2B | LP250(1pc)<br>LP300(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7200W,<br>Heater function: 3250W |
| SG-7302CB | LP250(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2500W,<br>Heater function: 3250W |
| SG-7305CB,<br>SG-7305C1B,<br>SG-7305C2B,<br>SG-7309CB | LP250(1pc)<br>LP300(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5000W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7306CB | LP250(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2800W,<br>Heater function: 3250W |
| SG-7306C1B | LP300(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3150W,<br>Heater function: 3250W |
| SG-7310CB,<br>SG-7310C1B,<br>SG-7310C2B | LP300(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5350W,<br>Heater function: 3250W |
| SG-7311CB | LP300(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2850W,<br>Heater function: 3250W |
| SG-7303DB | LP200(2pcs)<br>LP150(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5050W<br>Heater function：3250W |
| SG-7304DB | LP250(2pcs)<br>LP300(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6850W,<br>Heater function: 3250W |
| SG-7305EB | LP300(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2850W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7305DB | LP300(2pcs)<br>LP250(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7200W<br>Heater function：3250W |
| SG-7309DB | LP250(3pcs)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 8000W,<br>Heater function: 3250W |
| SG-7310DB | LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |
| SG-7303VB | LP200(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2450W,<br>Heater function: 3250W |
| SG-7305VB,<br>SG-7306VB | LP300(1pc)<br>WTC50M(1pc) | AP400,<br>AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3550W,<br>Heater function: 3250W |
| SG-7301BB | LP250(1pc)<br>WTC50M(1pc) | | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2100W,<br>Heater function: 3250W |
| SG-7301CB | LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |
| SG-7305BWB | LP300(2pcs)<br>TDA50(1pc) | AP400 | GS5-GS510SZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5175W,<br>Heater function: 3375W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7305BW-RB | LP300(2pcs)<br>TDA50(1pc) | | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4775W,<br>Heater function: 3375W |
| SG-7305E-RB | LP300(1pc)<br>WTC50M(1pc) | AP400 | BP21-BP601-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2975W,<br>Heater function: 3375W |
| SG-7312BWB | LP200(1pc)<br>LP250(1pc)<br>TDA50(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4125W,<br>Heater function: 3375W |
| SG-7304HB | LP300(1pc)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4650W,<br>Heater function: 3250W |
| SG-9280B | LP300(4pcs)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7350W/2850W<br>Heater function：3750W/3250W |
| SG-9281B | LP300(4pcs)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7350W/2850W<br>Heater function：3750W/3250W |
| SG-SW395SB | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：10250W<br>Heater function：3750W |
| SG-7305GB | WP200-II (1pc)<br>LP200(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 3350W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7305G1B | WP200-II (1pc)<br>LP200(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 3350W |
| SG-7305G2B | LP300(2pcs)<br>WTC50M(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4650W,<br>Heater function: 3250W |
| SG-7305G3B/<br>SG-7305G4B | WP200-II (1pc)<br>LP200(1pc) | -- | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 2350W |
| SG-7305HB | WP200-II (1pc)<br>LP200(1pc) | -- | BP21-BW6013X1-RCA-2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 2350W |
| SG-7310HB | LP200(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2700W,<br>Heater function: 3250W |
| SG-7305JB | WP300-II (1pc)<br>LP300(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4400W,<br>Heater function: 3450W |
| SG-7305J1B | WP200-II (1pc)<br>LP200(1pc) | -- | BP21-BW6013X1-RCA-2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W<br>Heater function: 2350W |
| SG-7303FB | LP200(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3650W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7304FB | LP250(1pc)<br>LP200 (1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4000W,<br>Heater function: |
| SG-7309FB | LP250(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4350W,<br>Heater function: 3250W |
| SG-7305TB | LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |
| SG-7307BB | LP300(2pcs)<br>LP250(1pc)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 8700W,<br>Heater function: 3250W |
| V1B | LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |
| V2B | LP300(2pcs)<br>JA50(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5170W,<br>Heater function: 3370W |
| V3B | WP300-II (1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2200W<br>Heater function: 3450W |
| V4B | WP250-II (1pc)<br>LP250(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4100W,<br>Heater function: 3400W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| V5B | WP250-II (1pc)<br>LP250(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4100W,<br>Heater function: |
| SG-7303EB | WP200-II (1pc)<br>LP200(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 3350W |
| SG-7303E1B | WP300-II (1pc)<br>LP300 (1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4400W,<br>Heater function: 3450W |
| SG-7303E2B | LP300(2pcs)<br>WTC50M(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4650W,<br>Heater function: 3250W |
| SG-7305C-RB | LP200(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-7305D1B | LP300(2pcs)<br>LP250 (1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7200W,<br>Heater function: 3250W |
| SG-7305D-RB | LP300 (2pcs)<br>LP250(1pc)<br>TDA50(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 6620W<br>Heater function: 3370W |
| SG-7306V-RB | LP300 (1pc)<br>LP200(1pc)<br>TDA50(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4470W,<br>Heater function: 3370W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7310D-RB | LP250 (3pcs)<br>TDA50 (1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5920W,<br>Heater function: |
| SG-7309C-RB | LP200 (2pcs)<br>WTC50M (1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-7312BW-RB | LP300 (1pc)<br>LP250 (1pc)<br>TDA50 (1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5120W,<br>Heater function: 3370W |
| LIV-SPA-S22B/<br>LIV-SPA-Y22B | LP300(2pcs)<br>TDA50 (1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5170W,<br>Heater function: 3370W |
| SG-7301DB<br>SG-7301EB | LP300(2pcs)<br>WTC50M (1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |
| SG-7302DB | LP200(1pc)<br>WTC50M (1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2450W,<br>Heater function: 3250W |
| SG-7303E3B | LP250(2pcs)<br>WTC50M (1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-7303F1B | LP150(1pc)<br>WP200-II(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3000W,<br>Heater function: 3350W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7304F1B | LP200(1pc)<br>WP200-II(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3400W,<br>Heater function: 3350W |
| SG-7309F1B | LP250(1pc)<br>WP250-II(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4100W,<br>Heater function: 3400W |
| SG-7305H2B | LP200(2pcs)<br>WTC50M (1pc) | -- | GS5-GS501Z-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3250W,<br>Heater function: 3250W |
| SG-7305KB | LP200(2pcs)<br>WTC50M (1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3650W,<br>Heater function: 3250W |
| SG-7309GB | WP300-II(1pc) | -- | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2200W,<br>Heater function: 3250W |
| SG-7309G1B | WP300-II(1pc) | AP400 | GS5- GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2600W,<br>Heater function: 3250W |
| SG-7309VB | LP300(1pc)<br>WTC50M (1pc) | -- | GS5- GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 2450W,<br>Heater function: 3250W |
| SG-7313BWB<br>SG-7314BWB | LP200(3pcs)<br>WTC50M (1pc) | -- | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4750W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7315BWB<br>SG-7316BWB | LP250(2pcs)<br>WTC50M (1pc) | -- | GS5-GS501Z-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 3950W,<br>Heater function: 3250W |
| SG-JD7320B | LP250(2pcs)<br>WTC50M (1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 4350W,<br>Heater function: 3250W |
| SG-SW395DB | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：10250W<br>Heater function：3750W |
| SG-B398SB<br>SG-B398DB | LP300(4pcs)<br>WTC100-AB(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K (BP21-BW6013X2- | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：10250W<br>Heater function：3750W |
| SG-9505B | LP300(1pc)<br>LP200(1pc)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 9450W,<br>Heater function: 3750W |
| SG-7302EB | LP200(2pcs)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4150W<br>Heater function：3750W |
| SG-7307FB | LP300(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5050W<br>Heater function：3250W |
| SG-2105B | LP200(1pc)<br>1026080(1pc) | AP200 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2700W<br>Heater function：2000W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7303GB | WP300-II(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2200W<br>Heater function：3450W |
| SG-7306HB | WP250-II(1pc)<br>LP300(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4050W<br>Heater function：3400W |
| SG-7306DB | LP300(1pc)<br>LP250(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |
| SG-7306KB | LP200(2pcs)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3650W<br>Heater function：3250W |
| SG-MP029B | LP300(1pc)<br>WTC50M(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2850W<br>Heater function：3250W |
| SG-MP085B | LP300(2pcs)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5350W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-MP092B | LP300(2pcs)<br>LP200(1pc)<br>WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |
| SG-MP099B | LP300(4pcs)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：9950W<br>Heater function：3750W |
| AU-01B | DH1.0(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：1150W<br>Heater function：3750W |
| SG-SY580B | LP250(1pc)<br>LP300(1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4800W<br>Heater function：3750W |
| SG-7330EB | LP300(1pc)<br>LP200(3pcs)<br>WTC100-AB(1pc) | AP900 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8350W<br>Heater function：3750W |
| SG-7317BWB | LP300(3pcs)<br>WTC50M(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7318BWB | LP300(3pcs)<br>WTC50M(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |
| SG-7319BWB | LP300(3pcs)<br>WTC50M(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |
| SG-7321BWB | LP200(4pcs)<br>WTC50M(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6250W<br>Heater function：3250W |
| SG-7322BWB | LP200(4pcs)<br>WTC50M(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6250W<br>Heater function：3250W |
| SG-7323BWB | LP200(4pcs)<br>WTC50M(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6250W<br>Heater function：3250W |
| SG-7324BWB | LP300(2pcs)<br>Stormforce 9(1pc)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6150W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7325BWB | LP200(3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7326BWB | LP300(3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：6850W Heater function：3250W |
| SG-7327BWB | LP200(3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7328BWB | Stormforce 9 (3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7329BWB | LP200(3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7330BWB | Stormforce 7 (2pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2050W Heater function：2250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7331BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：2250W |
| SG-7332BWB | Stormforce 7 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2050W<br>Heater function：2250W |
| SG-7333BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：2250W |
| SG-7334BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：3250W |
| SG-7335BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7336BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7337BWB | Stormforce 7 (2pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2050W Heater function：2250W |
| SG-7338BWB | Stormforce 9 (3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7339BWB | Stormforce 9 (3pcs) Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：4750W Heater function：3250W |
| SG-7340BWB | Stormforce 9 (4pcs) Stormforce 1(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：6250W Heater function：3250W |
| SG-7341BWB | Stormforce 9 (4pcs) Stormforce 1(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：6250W Heater function：3250W |
| SG-7344BWB | WP300-II(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2200W Heater function：2450W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7345BWB | WP300-II(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7346BWB | LP300(3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6850W<br>Heater function：3250W |
| SG-7347BWB | LP200(3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7350BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7351BWB | LP200(3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7352BWB | Stormforce 7 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2050W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7353BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：3250W |
| SG-7354BWB | Stormforce 7 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2050W<br>Heater function：3250W |
| SG-7355BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：3250W |
| SG-7356BWB | Stormforce 9 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：3250W<br>Heater function：3250W |
| SG-7357BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7358BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7360BWB | Stormforce 7 (2pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA2.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：2050W<br>Heater function：3250W |
| SG-7361BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7362BWB | Stormforce 9 (3pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4750W<br>Heater function：3250W |
| SG-7363BWB | Stormforce 9 (4pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6250W<br>Heater function：3250W |
| SG-7364BWB | Stormforce 9 (4pcs)<br>Stormforce 1(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：6250W<br>Heater function：3250W |
| SG-9280TB | LP300(1pc)<br>DL112-PS8M-12KA(1pc)<br>WTC50M(1pc)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5750W/2850W,<br>Heater function: 3750W/3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-SW395D-BB | LP250(2pcs)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K (BP21-BW6013X1- | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 9450W,<br>Heater function: 3750W |
| SG-B398BB | LP300(3pcs)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7350W<br>Heater function：3750W |
| SG-SW395D-BB | LP250(2pcs)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K (BP21-BW6013X1- | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 9450W,<br>Heater function: 3750W |
| SG-466AB | DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5750W,<br>Heater function: 3750W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-BW399AB | LP300(3pcs)<br>WTC100-AB(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7350W<br>Heater function：3750W |
| SG-BW399BB | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8850W<br>Heater function：3750W |
| SG-BW399CB | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8850W<br>Heater function：3750W |
| SG-BW600AB | LP300(3pcs)<br>WTC100-AB(1pc) | - | BP21-BW6013X1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：7350W<br>Heater function：3750W |
| SG-BW600BB | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8850W<br>Heater function：3750W |
| SG-BW600CB | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8850W<br>Heater function：3750W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-9506B | DL112-PS8M-12KA (2pcs) WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function: 10750W, Heater function: 3750W |
| SG-9507B | DL112-PS8M-12KA (2pcs) WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function: 10750W, Heater function: 3750W |
| SG-200B | LP300(1pc) WTC50M(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE4B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE7B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE102B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| HE121B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE201B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE241B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE542B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| HE561B | WTC200-AB(2pcs) WTC50M(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：2450W Heater function：3250W |
| AR542B | LP300(3pcs) JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz, Motor function：8050W Heater function：3750W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| AR561B | LP300(2pcs)<br>JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5850W<br>Heater function：3750W |
| FD121B | LP300(2pcs)<br>JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5850W<br>Heater function：3750W |
| FD241B | LP300(3pcs)<br>JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：8050W<br>Heater function：3750W |
| GP4B | LP300(2pcs)<br>JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5850W<br>Heater function：3750W |
| GP7B | LP300(2pcs)<br>JA100（1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：5850W<br>Heater function：3750W |
| GD-04B | LP300(1pc)<br>WTC200-AB(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4400W<br>Heater function：4500W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SP201B | LP300(1pc)<br>WTC200-AB(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：4400W<br>Heater function：4500W |
| SW395BLB | LP300(3pcs)<br>LP200(1pc)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function：9250W<br>Heater function：3750W |
| SW395BL-TB | LP200(2pcs)<br>DL112-PS8M-12KA(1pc)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 8750W,<br>Heater function: 3750W |
| SG-7342BWB | LP300 (2pcs)<br>Stormforce 9(2pcs)<br>WTC50M(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7650W,<br>Heater function: 3250W |
| SG-7343BWB | LP300 (2pcs)<br>Stormforce 9(2pcs)<br>WTC50M(1pc) | - | BP21-BW6013X2-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 7650W,<br>Heater function: 3250W |
| SG-7308DB | LP200 (2pcs)<br>LP150 (1pc)<br>WTC50M(1pc) | AP700 | BP21-BP2100G1-RCA3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5050W,<br>Heater function: 3250W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SG-7307F1B | LP300(1pc)<br>WP300-II(1pc) | AP700 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 5100W,<br>Heater function: 3450W |
| SG-9505AB | LP300(3pcs)<br>LP200(2pcs)<br>WTC100-AB(1pc) | - | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 10350W,<br>Heater function: 3750W |
| SG-9281TB | LP300(1pc)<br>DL112-PS8M-12KA (1pc)<br>WTC100-AB(1pc) | AP400 | GS5-GS523DZ-RCA-3.0K | Incorporated with main controller | 220-240V,50/60Hz,<br>Motor function: 8350W<br>Heater function: 3750W |
| SG-6000T | LP200 (1pc)<br>DL112-PS8M-12KA( 1pc)<br>WTC-100AB(1pc) | | BP21-BP6013 G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 1500W<br>Heater function:3750W |
| SG-5000 | LP200 (1pc)<br>LP300(3pc)<br>WTC-100AB(1pc) | | BP21-BP6013 G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:8100W<br>Heater function:3750W |
| J-01（Bremen） | AP700 | BP21-BP6013 G3-RCA3.0K | Incorporated with main controller | 220-240V50/60 HZ，<br>Motor function: 8800W Heater function:3250W | AP700 |
| J-02A（Atlanta） | | BP21-BP6013 G1-RCA3.0K | Incorporated with main controller | 220-240V50/60 HZ，<br>Motor function: 2200W Heater function:3000W | |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| J-02B（Las Vegas） | WTC200(1pc)<br>WTC200(1pc)<br>WTC50M(1pc) | AP400 | BP21-BP6013 G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 3400W<br>Heater function:3250W |
| J-03A（Houston） | WP300(1pc) | | BP21-BP6013 G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 2200W<br>Heater function:3000W |
| J-03B（Washington） | WTC200(1pc)<br>WTC200(1pc)<br>WTC50M(1pc) | AP400 | BP21-BP6013 G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 3400W<br>Heater function:3250W |
| J-07（London） | LP300(3pc)<br>WTC100AB(1pc) | | BP21-BP6013 G31-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:6600W<br>Heater function:3750W |
| J-08（Cambridge） | LP200(2pc)<br>WTC50M(1pc) | | BP21-BP6013 G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 3000W<br>Heater function:3250W |
| SG340F | LP300(3pc)<br>WTC200AB(1pc) | AP700*2 or AP700x1 | BP21-BP2100 G1RCA3.0K or BP21P4BC-R CA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 10350W<br>Heater function:3750W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| SP5260 | LP300 (3pc)<br>LP200(1pc)<br>WTC-100AB(1pc) | AP400 | BP21-BP21P4BC-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:8850W<br>Heater function:3400W |
| SP5260-T | LP200 (1pc)<br>DL112-PS8M-BG<br>12KA(1pc)<br>WTC-100AB(1pc) | | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:5050W<br>Heater function:3000W |
| J-05 | WTC200(3pc)<br>WTC50M(1pc) | | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 4750W<br>Heater function:3000W |
| J-06 | WTC200(3pc)<br>WTC50M(1pc) | | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 4750W<br>Heater function:3000W |
| J-09 | LP300(1pc)<br>WTC50M(1pc) | | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 2450W<br>Heater function:2000W |
| J-10 | WTC200AB(1pc)<br>WTC120AB(1pc)<br>WTC50M(1pc) | | BP21-BP6013G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 2650W |

| Model | Water pump model | Air pump model | Main control circuit | Heater model | Rated |
|---|---|---|---|---|---|
| 7319D | LP250(3pc)<br>LP200 (1pc)<br>WTC50M (1pc) | AP700 | BP21-BP21P4BC-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function: 7300W<br>Heater function: 3700W |
| SP102 | LP300(1pc)<br>WTC200(1pc)<br>WTP100AB(1pc) | AP700 | BP21-BP6013G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:4450W<br>Heater function:3700W |
| J-17（Lincoln） | LP300(3pc)<br>WTC50M (1pc) | AP700 | BP21-BP6013G3-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:7550W<br>Heater function:3000W |
| SG5850 | LP300(4pc)<br>WTC100AB (1pc) | AP700 | BP21-BP21P4BC-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:10250W<br>Heater function:3000W |
| SG6300(T) | LP300(1pc)<br>WTC100AB (1pc)<br>DL112-PS8M-BG12KA(1pc) | AP700 | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:6450W<br>Heater function:3000W |
| SG390(LAGOON SPA) | LP300(1pc)<br>WTC50M (1pc) | AP700 | BP21-BP6013G1-RCA3.0K | Incorporated with main controller | 220-240V50/60HZ，<br>Motor function:3150W<br>Heater function:3000W |

So the main controller SG-0007, GS5-GS523DZ-RCA-3.0K were main test in this report.

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# 4 General Information

## 4.1 Client Information

| | |
|---|---|
| Applicant: | GUANGZHOU JOYEE SANITARY WARE CO., LTD. |
| Address of Applicant: | D228, Building 27, 38 Nanbian Road, Haizhu District, Guangzhou, China |
| Manufacturer: | GUANGZHOU JOYEE SANITARY WARE CO., LTD. |
| Address of Manufacturer: | D228, Building 27, 38 Nanbian Road, Haizhu District, Guangzhou, China |

## 4.2 General Description of E.U.T.

| | |
|---|---|
| EUT Name: | Outdoor Spa |
| Trade Mark: | Joyee |
| Model No.: | Refer to page 4~40 |

## 4.3 Details of E.U.T.

| | |
|---|---|
| Power Supply: | AC 230V 50 Hz (for the test). |
| Rating: | Refer to page 4~40 |
| Power Cord: | 1.5m x 3 wires uncreened AC input cables |

## 4.4 Description of Support Units

The EUT has been tested as an independent unit. Only the electric system was tested

## 4.5 Standards Applicable for Testing

The customer requested EMC tests for an Outdoor Spa.

The standards used were EN 55014-1, EN 55014-2 (steam system), EN 61000-3-2, EN 61000-3-3 (whole system),

## 4.6 Test Company

All tests were performed by:

The test was performed by Shenzhen United testing technology Co., Ltd.

Room 317-319, Block 1, University Town Technology Park, 5th Zone, South Section,

Honghualing Industrial Park, Nanshan District, Shenzhen, PRC.

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Email: hofferlau@uni-lab.hk

## 4.7 Deviation from Standards

None.

## 4.8 Abnormalities from Standard Conditions

None.

## 4.9 Monitoring of EUT for All Immunity Test

Visual: Monitored the LED light, LCD display and movement of the EUT

Audio: Monitored the Sound of the EUT.

# 5 Equipments Used during Test

Conducted Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | AMN | SCHWARZBECK | NNLK8121 | 8121370 | 2019.09.18 |
| 2 | AMN | ETS | 3810/2 | 00020199 | 2019.09.18 |
| 3 | EMI TEST RECEIVER | ROHDE&SCHWARZ | ESCI | 101210 | 2019.09.18 |
| 4 | AAN | TESEQ | T8-Cat6 | 38888 | 2019.09.25 |

Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Horn Antenna | Sunol | DRH-118 | A101415 | 2019.10.09 |
| 2 | Broadband Hybrid Antenna | Sunol | JB1 Antenna | A090215 | 2019.10.09 |
| 3 | Amplifier | HP | 8449B | 3008A00160 | 2019.09.25 |
| 4 | Amplifier | HP | 8447D | 2944A07999 | 2019.09.25 |
| 5 | EMI TEST RECEIVER | ROHDE&SCHWARZ | ESR3 | 101891 | 2019.09.18 |
| 6 | MXA Signal Analyzer | Keysight | N9020A | MY51110104 | 2019.09.28 |
| 7 | Horn Antenna | A-INFOMW | LB-180400-KF | J211060660 | 2019.09.25 |
| 8 | Active Loop Antenna | COM-POWER | AL-310R | 10160009 | 2020.05.11 |
| 9 | Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-1680 | 2020.08.22 |
| 10 | Loop Antenna | Beijing daze Technology | ZN30401 | 13015 | 2019.09.18 |
| 11 | EM CAMLP | SCHWARZBECK | MDS21 | 03350 | 2019.09.25 |

Harmonic / Flicker Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 2 | AC Power Source | California Instrumnets | 5001ix | HK53570 | 2019.09.18 |

Electrostatic Discharge Tes

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | ESD Generator | EVERFINE | EMS61000-2A | P185811CA8371121 | 2020.08.14 |

Surge Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Surge Generator | Shanghai Lioncel | LSG-506S | LSG506S0160601 | 2019.09.18 |
| 2 | CDN | Shanghai Lioncel | CDN-532S | CDN532S0160601 | 2019.09.18 |

Electrical Fast Transient/Burst Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | EFT/B Generator | Shanghai Lioncel | EFT-404S | EFT404S0160601 | 2019.09.18 |

Power-frequency magnetic fields Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Magnetic Field Test System | Shanghai Lioncel | PMF801C-T | PMF801C-T | 2019.09.09 |

Voltage dips and interruptions Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | AC Power Source | California Instrumnets | 5001ix | HK53570 | 2019.09.18 |

# 6 Emission Test Results

## 6.1 Conducted Emissions on Mains Terminals, 150kHz to 30MHz

| | |
|---|---|
| Test Requirement: | EN 55014-1 |
| Test Method: | EN 55014-1 |
| Test Date: | 14, Aug. 2019 |
| Frequency Range: | 150 KHz to 30 MHz |
| Class/Severity: | Table 1, Columns 2 & 3 (AC terminals) of EN55014 |
| Detector: | Peak for pre-scan (9kHz Resolution Bandwidth) / |
| | 200Hz resolution bandwidth between 9kHz & 150kHz |
| | 9kHz resolution bandwidth between 150kHz & 30MHz |
| | Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit |

### 6.1.1 E.U.T. Operation

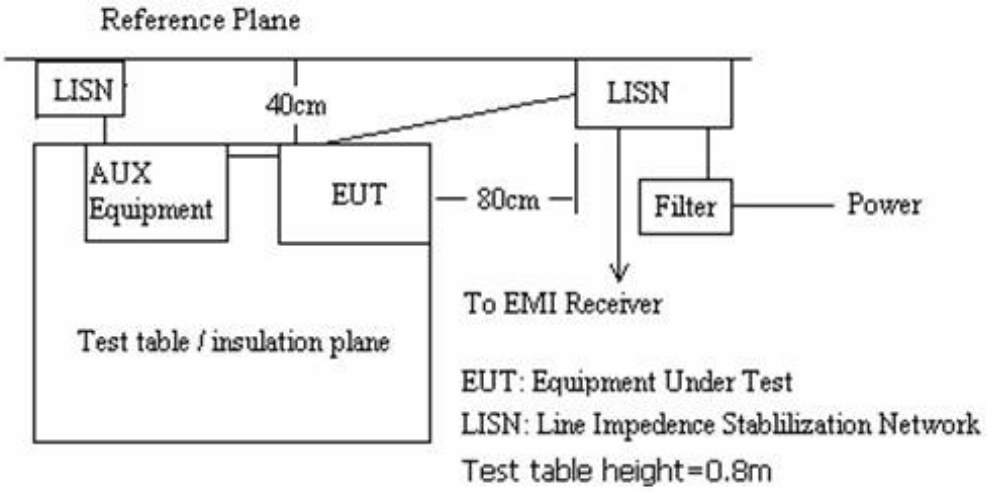
Operating Environment:

Temperature: 22.0 ℃ Humidity: 51 % RH Atmospheric Pressure: 1012 mbar

EUT Operation: EN 55014-1: A pre-test was performed on the EUT in heating mode,motor running mode at 0.9 to 1.1 times the rated voltage in order to find the worst case. Test the EUT in heating mode, motor running mode at 230V AC for the compliance test as no worst case was found.

Measure the maximised peak emissions from the EUT for both the Live and Neutral Lines.
Perform quasi-peak & average measurement if peak emissions are recorded within 6dB of the average limit line.

### 6.1.2 Plan View of Test Setup




### 6.1.3 Measurement Data

**For SG-0007**

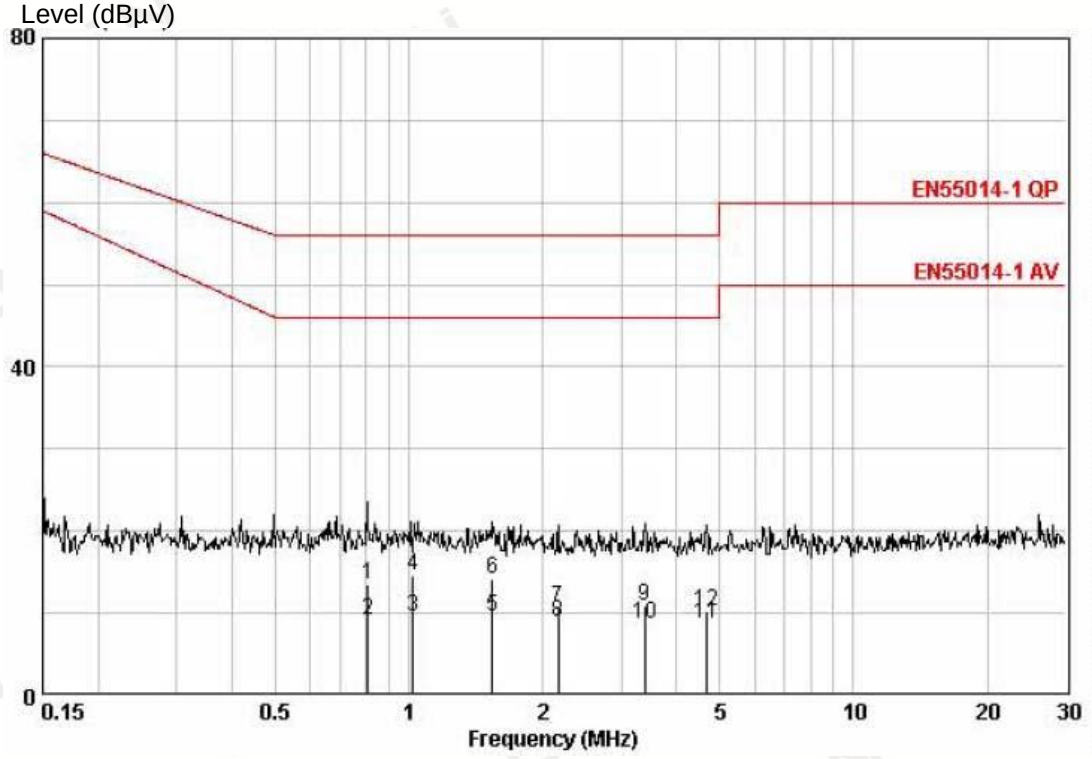
Please see the attached data for reference:

Test according to the standard EN 55014-1:

Live Line:

Peak Scan:

Level (dBµV)




Quasi-peak and Average measurement:

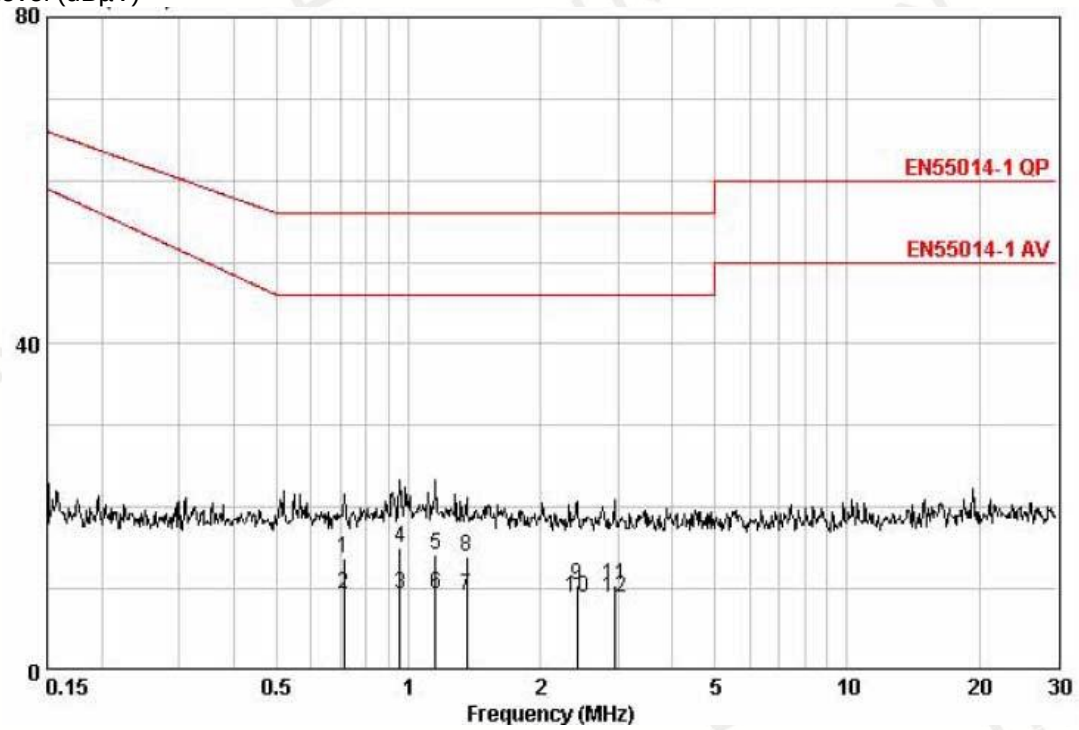
| Freq | Read Level | Cable Loss | LISN Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 0.809 | 3.70 | 0.28 | 9.58 | 13.56 | 56.00 | -42.44 | QP |
| 0.809 | -0.63 | 0.28 | 9.58 | 9.23 | 46.00 | -36.77 | AVERAGE |
| 1.021 | -0.40 | 0.30 | 9.59 | 9.49 | 46.00 | -36.51 | AVERAGE |
| 1.021 | 4.82 | 0.30 | 9.59 | 14.71 | 56.00 | -41.29 | QP |
| 1.544 | -0.33 | 0.24 | 9.60 | 9.52 | 46.00 | -36.48 | AVERAGE |
| 1.544 | 4.32 | 0.24 | 9.60 | 14.17 | 56.00 | -41.83 | QP |
| 2.167 | 0.86 | 0.20 | 9.61 | 10.67 | 56.00 | -45.33 | QP |
| 2.167 | -0.78 | 0.20 | 9.61 | 9.03 | 46.00 | -36.97 | AVERAGE |
| 3.399 | 1.06 | 0.14 | 9.62 | 10.82 | 56.00 | -45.18 | QP |
| 3.399 | -1.01 | 0.14 | 9.62 | 8.75 | 46.00 | -37.25 | AVERAGE |
| 4.672 | -0.93 | 0.10 | 9.63 | 8.80 | 46.00 | -37.20 | AVERAGE |
| 4.672 | 0.54 | 0.10 | 9.63 | 10.27 | 56.00 | -45.73 | QP |

## For SG-0007

Neutral Line

Peak Scan:

Level (dBµV)



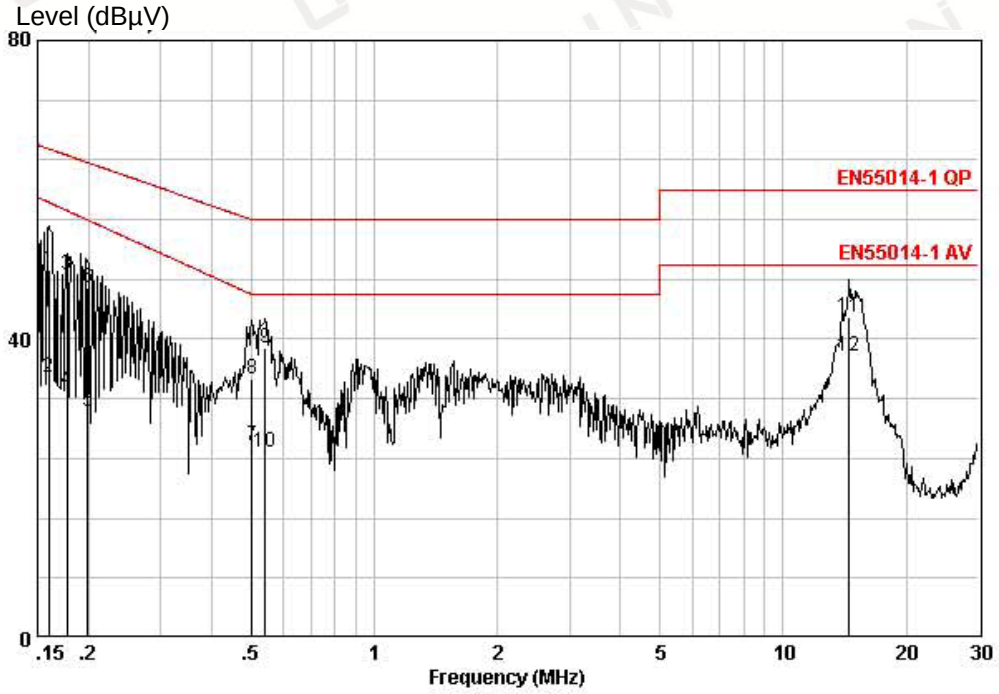

Quasi-peak and Average measurement:

| Freq | Read Level | Cable Loss | LISN Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 0.712 | 3.88 | 0.26 | 9.58 | 13.72 | 56.00 | -42.28 | QP |
| 0.712 | -0.48 | 0.26 | 9.58 | 9.36 | 46.00 | -36.64 | AVERAGE |
| 0.958 | -0.48 | 0.30 | 9.58 | 9.40 | 46.00 | -36.60 | AVERAGE |
| 0.958 | 5.18 | 0.30 | 9.58 | 15.06 | 56.00 | -40.94 | QP |
| 1.153 | 4.22 | 0.28 | 9.58 | 14.09 | 56.00 | -41.91 | QP |
| 1.153 | -0.55 | 0.28 | 9.58 | 9.32 | 46.00 | -36.68 | AVERAGE |
| 1.359 | -0.63 | 0.26 | 9.59 | 9.22 | 46.00 | -36.78 | AVERAGE |
| 1.359 | 4.10 | 0.26 | 9.59 | 13.95 | 56.00 | -42.05 | QP |
| 2.422 | 0.68 | 0.18 | 9.61 | 10.47 | 56.00 | -45.53 | QP |
| 2.422 | -0.78 | 0.18 | 9.61 | 9.01 | 46.00 | -36.99 | AVERAGE |
| 2.946 | 0.78 | 0.16 | 9.61 | 10.55 | 56.00 | -45.45 | QP |
| 2.946 | -0.78 | 0.16 | 9.61 | 8.99 | 46.00 | -37.01 | AVERAGE |

## For GS5-GS523DZ-RCA-3.0K

Live Line:

Peak Scan:




Quasi-peak and Average measurement:

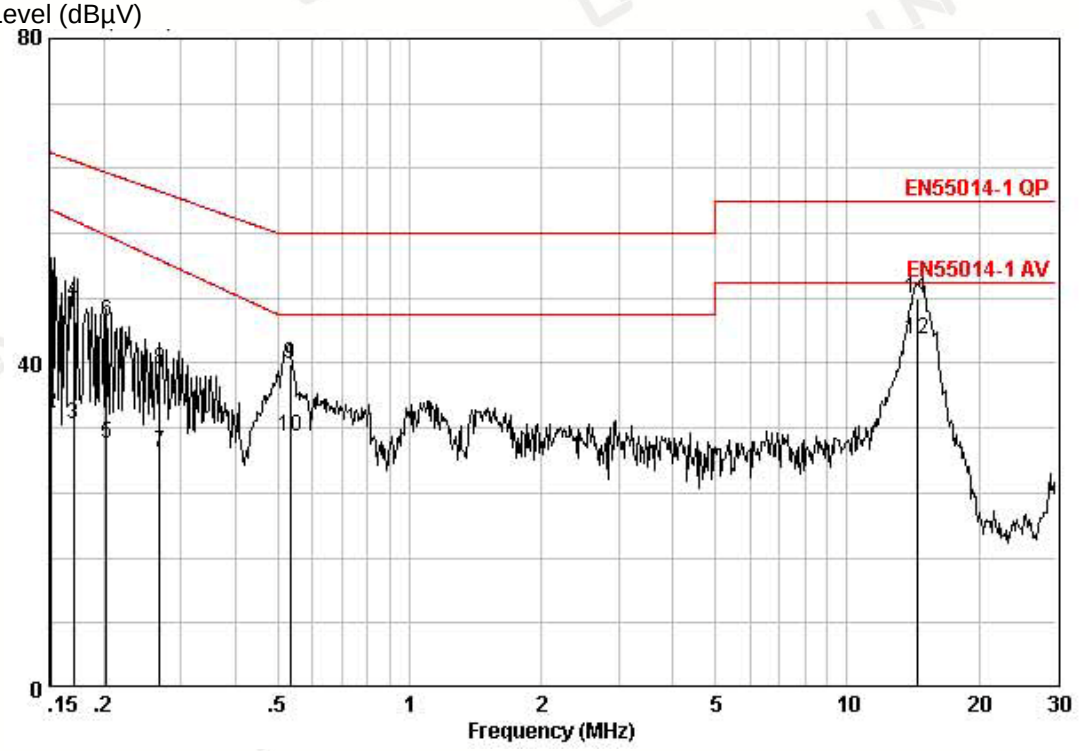
| Freq | Read Level | Cable Loss | LISN Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 0.160 | 39.30 | 0.00 | 10.01 | 49.31 | 65.47 | -16.16 | QP |
| 0.160 | 24.82 | 0.00 | 10.01 | 34.83 | 58.31 | -23.48 | AVERAGE |
| 0.177 | 38.62 | 0.00 | 10.06 | 48.68 | 64.64 | -15.95 | QP |
| 0.177 | 23.11 | 0.00 | 10.06 | 33.17 | 57.23 | -24.05 | AVERAGE |
| 0.199 | 20.50 | 0.00 | 9.87 | 30.37 | 55.97 | -25.60 | AVERAGE |
| 0.199 | 36.98 | 0.00 | 9.87 | 46.85 | 63.67 | -16.82 | QP |
| 0.502 | 15.82 | 0.00 | 9.95 | 25.77 | 46.00 | -20.23 | AVERAGE |
| 0.502 | 24.70 | 0.00 | 9.95 | 34.65 | 56.00 | -21.35 | QP |
| 0.541 | 28.96 | 0.00 | 9.93 | 38.89 | 56.00 | -17.11 | QP |
| 0.541 | 14.91 | 0.00 | 9.93 | 24.84 | 46.00 | -21.16 | AVERAGE |
| 14.517 | 32.96 | 0.17 | 9.87 | 43.00 | 60.00 | -17.00 | QP |
| 14.517 | 27.72 | 0.17 | 9.87 | 37.76 | 50.00 | -12.24 | AVERAGE |

## For GS5-GS523DZ-RCA-3.0K

Neutral Line

Peak Scan:

Level (dBµV)




Quasi-peak and Average measurement:

| Freq | Read Level | Cable Loss | LISN Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 0.152 | 40.22 | 0.00 | 9.79 | 50.01 | 65.91 | -15.90 | QP |
| 0.152 | 24.07 | 0.00 | 9.79 | 33.86 | 58.89 | -25.03 | AVERAGE |
| 0.170 | 22.41 | 0.00 | 10.09 | 32.50 | 57.63 | -25.12 | AVERAGE |
| 0.170 | 37.52 | 0.00 | 10.09 | 47.61 | 64.94 | -17.33 | QP |
| 0.203 | 20.14 | 0.00 | 9.88 | 30.02 | 55.74 | -25.72 | AVERAGE |
| 0.203 | 35.24 | 0.00 | 9.88 | 45.12 | 63.49 | -18.37 | QP |
| 0.269 | 19.14 | 0.00 | 9.90 | 29.04 | 52.71 | -23.67 | AVERAGE |
| 0.269 | 29.26 | 0.00 | 9.90 | 39.16 | 61.16 | -22.00 | QP |
| 0.532 | 29.86 | 0.00 | 9.93 | 39.79 | 56.00 | -16.21 | QP |
| 0.532 | 20.93 | 0.00 | 9.93 | 30.86 | 46.00 | -15.14 | AVERAGE |
| 14.517 | 37.98 | 0.17 | 9.87 | 48.02 | 60.00 | -11.98 | QP |
| 14.517 | 32.97 | 0.17 | 9.87 | 43.01 | 50.00 | -6.99 | AVERAGE |

## 6.2 Disturbance Power Test, 30MHz to 300MHz

| | |
|---|---|
| Test Requirement: | EN 55014-1 |
| Test Method: | EN 55014-1 |
| Test Date: | 14, Aug. 2019 |
| Frequency Range: | 30MHz to 300MHz |
| Class/Severity: | Table 2, Column 2&3 |
| Detector: | Peak for pre-scan |
| | Quasi-Peak and Average at frequency with maximum peak. |
| | (120kHz resolution bandwidth) |

### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 ℃ Humidity: 49 % RH Atmospheric Pressure: 1016 mbar

EUT Operation:

A pre-test was performed the EUT in heating model, motor running mode at vary voltages +/- 10% of 230V AC in order to find the worst case.

Compliance test the EUT in heating, motor running mode at 230V AC as the worst case was found.

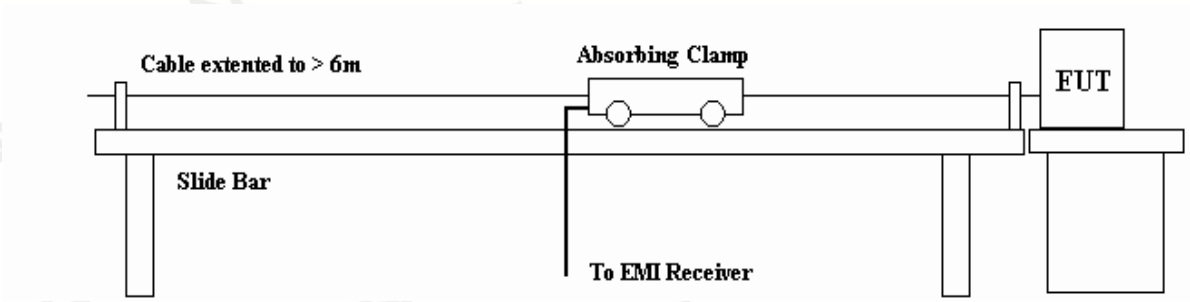
Measure the maximised peak emissions power of the EUT for the AC supply cable from the EUT in peak detection mode.

If any maximised peak emissions are detected within 15dB of the average limit line,then:

- Perform Quasi-Peak and Average (if Quasi-Peak is within 15dB of Average Limit) measurement with clamp next to the EUT. If both Qusia-Peak and Average measurement are greater than 15dB below the respective limit,then the test is terminated.
- If either the Quasi-Peak and Average measurement are within 15dB of the respective limit, then extend the lead to 6m length.

Maximized all Quasi-Peak and Average measurement by moving clamp along cable.

### 6.2.2 Test Setup

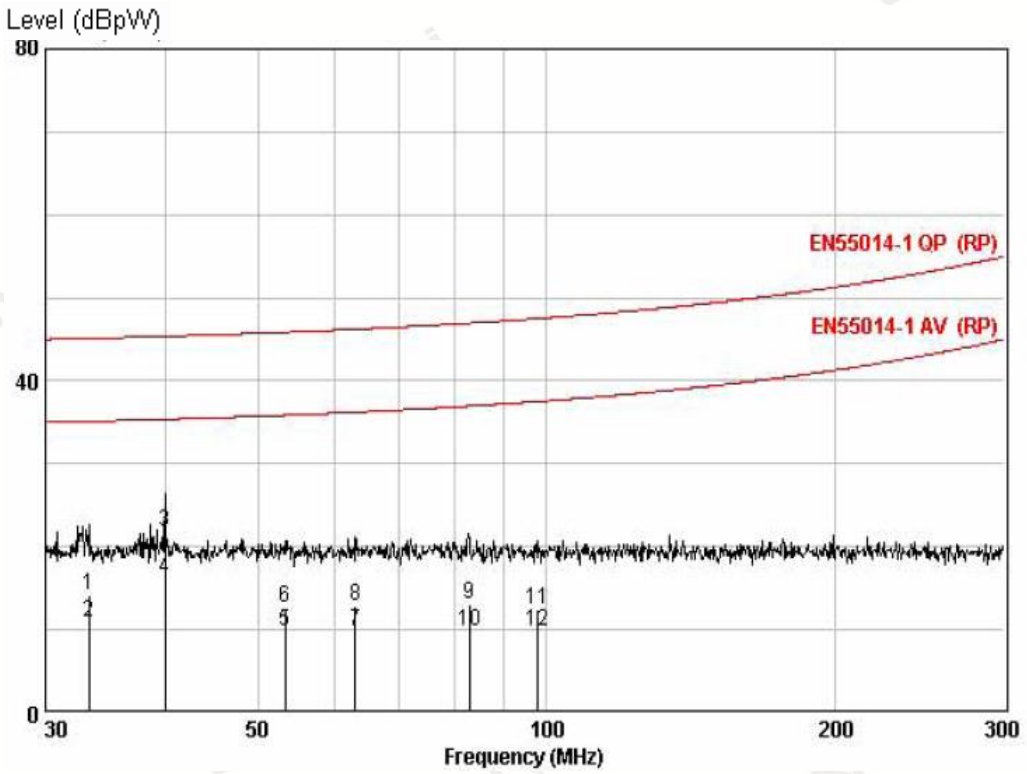


### 6.2.3 Measurement Data

**For SG-0007**

AC Mains: Peak

Scan:



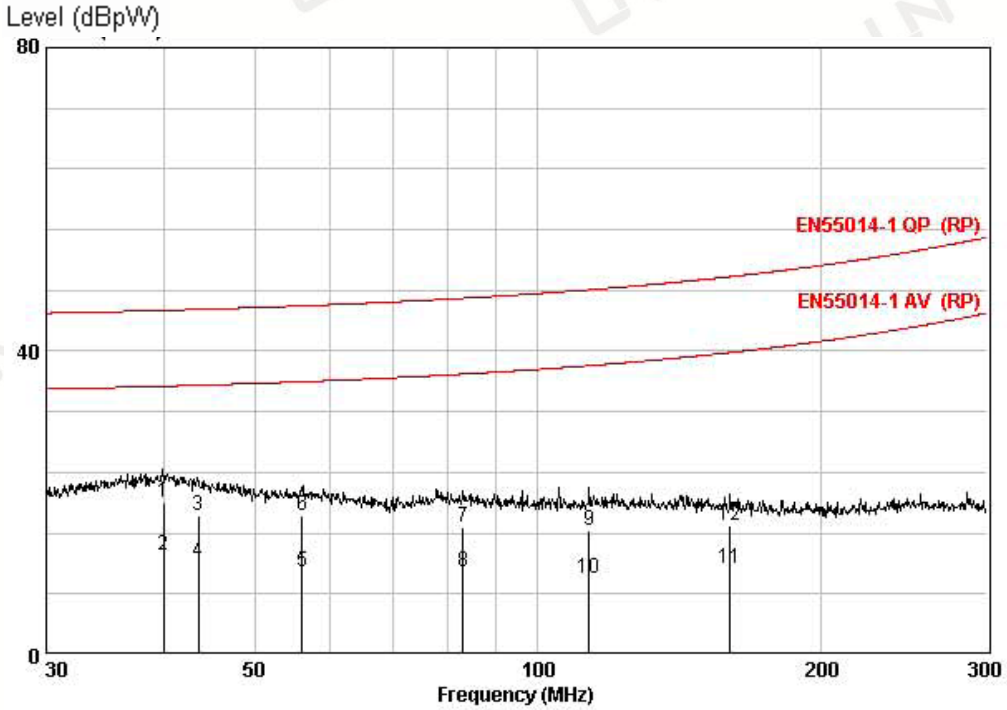

Quasi-peak and Average measurement:

| Freq | Read Level | Trans. | RF Switch Loss | Level | Limit Line | Over Limit | Detector |
|---|---|---|---|---|---|---|---|
| MHz | (dBµV) | dB | dB | (dBpW) | (dBpW) | dB | |
| 33.275 | 12.03 | 2.21 | 0.00 | 14.24 | 45.12 | -30.88 | QP |
| 33.275 | 8.75 | 2.21 | 0.00 | 10.96 | 35.12 | -24.16 | AVERAGE |
| 39.996 | 20.48 | 1.40 | 0.00 | 21.88 | 45.37 | -23.49 | QP |
| 39.996 | 14.72 | 1.40 | 0.00 | 16.12 | 35.37 | -19.25 | AVERAGE |
| 53.348 | 8.24 | 1.50 | 0.00 | 9.74 | 35.86 | -26.12 | AVERAGE |
| 53.348 | 11.08 | 1.50 | 0.00 | 12.58 | 45.86 | -33.28 | QP |
| 63.113 | 8.32 | 1.50 | 0.00 | 9.82 | 36.23 | -26.41 | AVERAGE |
| 63.113 | 11.34 | 1.50 | 0.00 | 12.84 | 46.23 | -33.39 | QP |
| 83.008 | 12.74 | 0.32 | 0.00 | 13.06 | 46.96 | -33.90 | QP |
| 83.008 | 9.57 | 0.32 | 0.00 | 9.89 | 36.96 | -27.07 | AVERAGE |
| 97.751 | 11.57 | 0.85 | 0.00 | 12.42 | 47.51 | -35.09 | QP |
| 97.751 | 8.89 | 0.85 | 0.00 | 9.74 | 37.51 | -27.77 | AVERAGE |

## For GS5-GS523DZ-RCA-3.0K

AC mains:

Peak Scan:




Quasi-peak and Average measurement:

| Freq | Read Level | Trans. | RF Switch Loss | Level | Limit Line | Over Limit | Detector |
|---|---|---|---|---|---|---|---|
| MHz | (dBµV) | dB | dB | (dBpW) | (dBpW) | dB | |
| 40.006 | 16.66 | 3.30 | 0.00 | 19.96 | 45.37 | -25.41 | QP |
| 40.006 | 9.74 | 3.30 | 0.00 | 13.04 | 35.37 | -22.33 | AVERAGE |
| 43.563 | 15.78 | 2.54 | 0.00 | 18.32 | 45.50 | -27.19 | QP |
| 43.563 | 9.74 | 2.54 | 0.00 | 12.28 | 35.50 | -23.23 | AVERAGE |
| 56.120 | 9.89 | 1.11 | 0.00 | 11.00 | 35.97 | -24.97 | AVERAGE |
| 56.120 | 17.10 | 1.11 | 0.00 | 18.21 | 45.97 | -27.76 | QP |
| 83.200 | 16.18 | 0.63 | 0.00 | 16.81 | 46.97 | -30.16 | QP |
| 83.200 | 10.37 | 0.63 | 0.00 | 11.00 | 36.97 | -25.97 | AVERAGE |
| 113.272 | 16.46 | -0.10 | 0.00 | 16.36 | 48.08 | -31.72 | QP |
| 113.272 | 10.03 | -0.10 | 0.00 | 9.93 | 38.08 | -28.15 | AVERAGE |
| 160.001 | 11.57 | -0.30 | 0.00 | 11.27 | 39.81 | -28.54 | AVERAGE |
| 160.001 | 17.38 | -0.30 | 0.00 | 17.08 | 49.81 | -32.73 | QP |

## 6.3 Harmonics Test Results

| | |
|---|---|
| Test Requirement: | EN 61000-3-2 |
| Test Method: | EN 61000-3-2 |
| Test Date: | 14, Aug. 2019 |
| Frequency Range: | 100Hz to 2kHz |
| Class/Severity: | Class A |
| Measurement Time: | 3 min |
| Detector: | As per EN 61000-3-2 |

### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 ℃ Humidity: 53% RH Atmospheric Pressure: 1012 mbar

EUT Operation: Test the EUT in heating mode, motor running mode.

**For SG-0007**

## Harmonics – Class-A per Ed. 2.2 (2004-11)(Run time)

**Test Result: Pass** **Source qualification: Normal**

### Current Test Result Summary (Run time)

**Test Result: Pass Source qualification: Normal**
**THC(A): 0.03 I-THD(%): 0.25 POHC(A): 0.003 POHC Limit(A): 0.251**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 230.08 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 18.257 | I_RMS (Amps): | 13.216 |
| I_Fund (Amps): | 13.188 | Crest Factor: | 1.401 |
| Power (Watts): | 3011.2 | Power Factor: | 0.997 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.008 | 1.080 | 0.7 | 0.011 | 1.620 | 0.67 | Pass |
| 3 | 0.023 | 2.300 | 1.0 | 0.028 | 3.450 | 0.81 | Pass |
| 4 | 0.007 | 0.430 | 1.6 | 0.011 | 0.645 | 1.64 | Pass |
| 5 | 0.013 | 1.140 | 1.1 | 0.017 | 1.710 | 1.00 | Pass |
| 6 | 0.002 | 0.300 | 0.7 | 0.003 | 0.450 | 0.71 | Pass |
| 7 | 0.014 | 0.770 | 1.8 | 0.016 | 1.155 | 1.37 | Pass |
| 8 | 0.002 | 0.230 | 1.0 | 0.003 | 0.345 | 0.97 | Pass |
| 9 | 0.005 | 0.400 | 1.4 | 0.006 | 0.600 | 1.02 | Pass |
| 10 | 0.002 | 0.184 | 1.1 | 0.003 | 0.276 | 1.04 | Pass |
| 11 | 0.002 | 0.330 | 0.7 | 0.003 | 0.495 | 0.64 | Pass |
| 12 | 0.001 | 0.153 | 0.4 | 0.001 | 0.230 | 0.34 | Pass |
| 13 | 0.002 | 0.210 | 1.1 | 0.003 | 0.315 | 0.89 | Pass |
| 14 | 0.001 | 0.131 | 0.5 | 0.001 | 0.197 | 0.48 | Pass |
| 15 | 0.003 | 0.150 | 1.9 | 0.003 | 0.225 | 1.38 | Pass |
| 16 | 0.001 | 0.115 | 1.2 | 0.002 | 0.173 | 1.10 | Pass |
| 17 | 0.002 | 0.132 | 1.3 | 0.002 | 0.199 | 0.95 | Pass |
| 18 | 0.001 | 0.102 | 0.9 | 0.001 | 0.153 | 0.67 | Pass |
| 19 | 0.002 | 0.118 | 1.7 | 0.002 | 0.178 | 1.30 | Pass |
| 20 | 0.001 | 0.092 | 0.7 | 0.001 | 0.138 | 0.68 | Pass |
| 21 | 0.001 | 0.107 | 0.8 | 0.001 | 0.161 | 0.64 | Pass |
| 22 | 0.001 | 0.084 | 0.7 | 0.001 | 0.125 | 0.53 | Pass |
| 23 | 0.001 | 0.098 | 0.6 | 0.001 | 0.147 | 0.51 | Pass |
| 24 | 0.000 | 0.077 | 0.3 | 0.000 | 0.115 | 0.24 | Pass |
| 25 | 0.001 | 0.090 | 1.2 | 0.001 | 0.135 | 0.94 | Pass |
| 26 | 0.000 | 0.071 | 0.4 | 0.000 | 0.106 | 0.32 | Pass |
| 27 | 0.001 | 0.083 | 1.1 | 0.001 | 0.125 | 0.84 | Pass |
| 28 | 0.000 | 0.066 | 0.4 | 0.000 | 0.099 | 0.34 | Pass |
| 29 | 0.001 | 0.078 | 1.5 | 0.001 | 0.116 | 1.08 | Pass |
| 30 | 0.000 | 0.061 | 0.5 | 0.000 | 0.092 | 0.49 | Pass |
| 31 | 0.001 | 0.073 | 1.3 | 0.001 | 0.109 | 0.99 | Pass |
| 32 | 0.000 | 0.058 | 0.6 | 0.000 | 0.086 | 0.57 | Pass |
| 33 | 0.000 | 0.068 | 0.5 | 0.000 | 0.102 | 0.44 | Pass |
| 34 | 0.000 | 0.054 | 0.4 | 0.000 | 0.081 | 0.37 | Pass |
| 35 | 0.001 | 0.064 | 1.0 | 0.001 | 0.096 | 0.80 | Pass |
| 36 | 0.000 | 0.051 | 0.4 | 0.000 | 0.077 | 0.41 | Pass |
| 37 | 0.001 | 0.061 | 1.2 | 0.001 | 0.091 | 0.94 | Pass |
| 38 | 0.000 | 0.048 | 0.4 | 0.000 | 0.073 | 0.35 | Pass |
| 39 | 0.000 | 0.058 | 0.9 | 0.001 | 0.087 | 0.67 | Pass |
| 40 | 0.000 | 0.046 | 0.6 | 0.000 | 0.069 | 0.56 | Pass |

**For GS5-GS523DZ-RCA-3.0K**

## Harmonics – Class-A per Ed. 2.2 (2004-11)(Run time)

**Test Result: Pass Source qualification: Normal**

**Current & voltage waveforms**

### Current Test Result Summary (Run time)

**Test Result: Pass Source qualification: Normal**
**THC(A): 0.03 I-THD(%): 0.25 POHC(A): 0.003 POHC Limit(A): 0.251**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 230.10 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 18.317 | I_RMS (Amps): | 13.156 |
| I_Fund (Amps): | 13.065 | Crest Factor: | 1.402 |
| Power (Watts): | 3027.20 | Power Factor: | 0.99 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.008 | 1.080 | 0.7 | 0.011 | 1.610 | 0.67 | Pass |
| 3 | 0.023 | 2.300 | 1.0 | 0.028 | 3.440 | 0.81 | Pass |
| 4 | 0.007 | 0.430 | 1.6 | 0.011 | 0.645 | 1.64 | Pass |
| 5 | 0.013 | 1.140 | 1.1 | 0.017 | 1.710 | 1.00 | Pass |
| 6 | 0.002 | 0.300 | 0.7 | 0.003 | 0.450 | 0.71 | Pass |
| 7 | 0.014 | 0.770 | 1.8 | 0.016 | 1.155 | 1.37 | Pass |
| 8 | 0.002 | 0.230 | 1.0 | 0.003 | 0.345 | 0.97 | Pass |
| 9 | 0.005 | 0.400 | 1.4 | 0.006 | 0.600 | 1.02 | Pass |
| 10 | 0.002 | 0.184 | 1.1 | 0.003 | 0.276 | 1.04 | Pass |
| 11 | 0.002 | 0.330 | 0.7 | 0.003 | 0.495 | 0.64 | Pass |
| 12 | 0.001 | 0.153 | 0.4 | 0.001 | 0.230 | 0.34 | Pass |
| 13 | 0.002 | 0.210 | 1.1 | 0.003 | 0.315 | 0.89 | Pass |
| 14 | 0.001 | 0.131 | 0.5 | 0.001 | 0.197 | 0.48 | Pass |
| 15 | 0.003 | 0.150 | 1.9 | 0.003 | 0.225 | 1.38 | Pass |
| 16 | 0.001 | 0.115 | 1.2 | 0.002 | 0.173 | 1.10 | Pass |
| 17 | 0.002 | 0.132 | 1.3 | 0.002 | 0.199 | 0.95 | Pass |
| 18 | 0.001 | 0.102 | 0.9 | 0.001 | 0.153 | 0.67 | Pass |
| 19 | 0.002 | 0.118 | 1.7 | 0.002 | 0.178 | 1.30 | Pass |
| 20 | 0.001 | 0.092 | 0.7 | 0.001 | 0.138 | 0.68 | Pass |
| 21 | 0.001 | 0.107 | 0.8 | 0.001 | 0.161 | 0.64 | Pass |
| 22 | 0.001 | 0.084 | 0.7 | 0.001 | 0.125 | 0.53 | Pass |
| 23 | 0.001 | 0.098 | 0.6 | 0.001 | 0.147 | 0.51 | Pass |
| 24 | 0.000 | 0.077 | 0.3 | 0.000 | 0.115 | 0.24 | Pass |
| 25 | 0.001 | 0.090 | 1.2 | 0.001 | 0.135 | 0.94 | Pass |
| 26 | 0.000 | 0.071 | 0.4 | 0.000 | 0.106 | 0.32 | Pass |
| 27 | 0.001 | 0.083 | 1.1 | 0.001 | 0.125 | 0.84 | Pass |
| 28 | 0.000 | 0.066 | 0.4 | 0.000 | 0.099 | 0.34 | Pass |
| 29 | 0.001 | 0.078 | 1.5 | 0.001 | 0.116 | 1.08 | Pass |
| 30 | 0.000 | 0.061 | 0.5 | 0.000 | 0.092 | 0.49 | Pass |
| 31 | 0.001 | 0.073 | 1.3 | 0.001 | 0.109 | 0.99 | Pass |
| 32 | 0.000 | 0.058 | 0.6 | 0.000 | 0.086 | 0.57 | Pass |
| 33 | 0.000 | 0.068 | 0.5 | 0.000 | 0.102 | 0.44 | Pass |
| 34 | 0.000 | 0.054 | 0.4 | 0.000 | 0.081 | 0.37 | Pass |
| 35 | 0.001 | 0.064 | 1.0 | 0.001 | 0.096 | 0.80 | Pass |
| 36 | 0.000 | 0.051 | 0.4 | 0.000 | 0.077 | 0.41 | Pass |
| 37 | 0.001 | 0.061 | 1.2 | 0.001 | 0.091 | 0.94 | Pass |
| 38 | 0.000 | 0.048 | 0.4 | 0.000 | 0.073 | 0.35 | Pass |
| 39 | 0.000 | 0.058 | 0.9 | 0.001 | 0.087 | 0.67 | Pass |
| 40 | 0.000 | 0.046 | 0.6 | 0.000 | 0.069 | 0.56 | Pass |

## 6.4 Flicker Test Result

| | |
|---|---|
| Test Requirement: | EN 61000-3-3 |
| Test Method: | EN 61000-3-3 |
| Test Date: | 14, Aug. 2019 |
| Measurement Time: | 10 mins |
| Class/Severity: | Clause 5 of EN 61000-3-3 |
| Detector: | As per EN 61000-3-3 |

### 6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 ℃ Humidity: 54 % RH Atmospheric Pressure: 1011 mbar

EUT Operation: Test the EUT in heating, motor running mode.

### 6.4.2 Limits

The following limits apply:

- the value of Pst shall not be greater than 1.0;
- the value of P1t shall not be greater than 0.65;
- the value of d(t) during a voltage change shall not exceed 3.3 % for more than 500 ms;
- the relative steady-state voltage change, dc, shall not exceed 3.3 %;
- the maximum relative voltage change, dmax, shall not exceed;

a) 4 % without additional conditions;

b) 6 % for equipment which is:

- switched manually, or
- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart,after a power supply interruption.

Note:The cycling frequency will be further limited by the Pst and P1t limit. For example: a dmax of 6 %producing a rectangular voltage change characteristic twice per hour will give a P1t of about 0.65. c) 7 % for equipment which is:

- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption. Pst and P1t requirements shall not be applied to voltage changes caused by manual switching.

### 6.4.3 Test Result

**Results of maximum flicker :**

**For SG-0007**

| | EUT values | Limit | Result |
|---|---|---|---|
| Pst | 0.049 | 1.00 | PASS |
| Plt | 0.049 | 0.65 | PASS |
| dc [%] | 0.013 | 3.30 | PASS |
| dmax [%] | 0.087 | 4.00 | PASS |
| dt [s] | 0.000 | 0.50 | PASS |

**For GS5-GS523DZ-RCA-3.0K**

| | EUT values | Limit | Result |
|---|---|---|---|
| Pst | 0.052 | 1.00 | PASS |
| Plt | 0.052 | 0.65 | PASS |
| dc [%] | 0.016 | 3.30 | PASS |
| dmax [%] | 0.084 | 4.00 | PASS |
| dt [s] | 0.000 | 0.50 | PASS |

# 7 Immunity Test Results

## 7.1 Performance Criteria Description in Clause 6 of EN 55014-2

Criterion A: The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion B: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C: Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

## 7.2 ESD

Test Requirement: EN 55014-2,
Test Method: EN 61000-4-2
Criterion Required: B
Test Date: 14, Aug. 2019
Discharge Impedance: 330 Ω / 150 pF
Discharge Voltage: Air Discharge: 2, 4, 8 kV
Contact Discharge: 2, 4 kV HCP: 2, 4 kV
Polarity: Positive & Negative
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 21 ℃ Humidity: 51 % RH Atmospheric Pressure: 1011 mbar

EUT Operation: Test in heating mode, motor running mode.

### 7.2.2 Test Results

**Direct Application Test Results**

Observations: Test Point:

1. All insulated enclosure & seams.
2. All accessible metal parts of the enclosure.

| Direct Application | | | Test Results | |
|---|---|---|---|---|
| **Discharge Level (kV)** | **Polarity (+/-)** | **Test Point** | **Contact Discharge** | **Air Discharge** |
| 2, 4, 8 | +/- | 1 | N/A | A |
| 2, 4 | +/- | 2 | A | N/A |

**Indirect Application Test Results**

Observations: Test Point: 1. All sides.

| Indirect Application | | | Test Results | |
|---|---|---|---|---|
| **Discharge Level (kV)** | **Polarity (+/-)** | **Test Point** | **Horizontal Coupling** | **Vertical Coupling** |
| 2, 4 | +/- | 1 | A | N/A |

**Results:**

A: No degradation in the performance of the EUT was observed.

N/A: Not applicable (not requested by Standard)

## 7.3 Electrical Fast Transients (EFT)

Test Requirement: EN 55014-2,

Test Method: EN 61000-4-4

Criterion Required: B

Test Date: 14, Aug. 2019

Test Level: 0.5, 1.0kV on AC port

Polarity: Positive & Negative

Repetition Frequency: 5kHz

Burst Duration: 300ms

Test Duration: 2 minute per level & polarity

### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23 ℃ Humidity: 52% RH Atmospheric Pressure: 1007 mbar

EUT Operation: Test in heating mode, motor running mode.

### 7.3.2 Test Results On AC Supply:

| Lead under Test | Level (±kV) | Coupling Direct/Clamp | EUT operating mode | Observations (Performance Criterion) |
|---|---|---|---|---|
| Live | ±0.5, 1.0 | Direct | All modes | (A) |
| Neutral | ±0.5, 1.0 | Direct | All modes | (A) |
| Earth | ±0.5, 1.0 | Direct | All modes | (A) |
| Live + Neutral + Earth | ±0.5, 1.0 | Direct | All modes | (A) |

A: No loss of function was observed.

## 7.4 Surge

Test Requirement: EN 55014-2
Test Method: EN 61000-4-5
Criterion required: B
Test Date: 14, Aug. 2019
Test Level: ±1kV Live to Neutral
±2kV Live, Neutral to Earth
Polarity: Positive & Negative
Generator source impedance: 2Ω
Trigger Mode: Internal
No. of surges: 5 positive, 5 negative at 0 °, 90 °, 180 °, 270 °.

### 7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 23.0 ℃ Humidity: 52% RH Atmospheric Pressure: 1007 mbar
EUT Operation: Test in heating mode, motor running mode.

For EN 55014-2:

### 7.4.2 Test Results:

| Pulse No | Line-Line | Level (kV) | Surge Interval | Phase (deg) | Observation (Performance Criterion) |
|---|---|---|---|---|---|
| 1–5 | L-N | +1 | 60s | 90 ° | No loss of performance (A) |
| 6–10 | L-N | -1 | 60s | 270 ° | (A) |
| 11–15 | L-PE | +2 | 60s | 90 ° | (A) |
| 16–20 | L-PE | -2 | 60s | 270 ° | (A) |
| 21–25 | N-PE | +2 | 60s | 90 ° | (A) |
| 26–30 | N-PE | -2 | 60s | 270 ° | (A) |

## 7.5 Conducted Immunity

Test Requirement: EN 55014-2

Test Method: EN 61000-4-6

Criterion Required: A

Test Date: 14, Aug. 2019

Frequency Range: 0.15 MHz to 230 MHz

Test level: 3V rms on AC Ports (unmodulated emf into 150 Ω)

Modulation: 80%, 1kHz Amplitude Modulation

### 7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 23 ℃ Humidity: 52 % RH Atmospheric Pressure: 1006 mbar

EUT Operation: Test in heating mode, motor running mode.

### 7.5.2 Test Results:

| Frequency | Line | Test Level | Modulation | Step Size | Dwell Time | Observation (Performance Criterion) |
|---|---|---|---|---|---|---|
| 150kHz to 230MHz | 3 Wire AC Supply Cable | 3Vrms | 80%, 1kHz Amp. Mod. | 1% | 1s | No Loss of Function (A) |

## 7.6 Voltage Dips and Interruptions

Test Requirement: EN 55014-2

Test Method: EN 61000-4-11

Criterion Required: C / 30%VD:C, 100%VD:B

Test Date: 14, Aug. 2019

Test Level: 0% of $U_T$ (Supply Voltage) for 0.5 Periods
40 % of $U_T$ (Supply Voltage) for 10 Periods
70 % of $U_T$ (Supply Voltage) for 25 Periods

No. of Dips / Interruptions: 3 per Level

### 7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23 ℃ Humidity: 51% RH Atmospheric Pressure: 1007 mbar

EUT Operation: Test in heating mode, motor running mode.

### 7.6.2 Test Results:

| EUT operating modes | Dropout % $U_T$ | Phase | Duration of dropout in Periods | No of dropout | Time between dropout | Observations (Performance Criterion) |
|---|---|---|---|---|---|---|
| Heating,motor running mode | 0 | 0 ° | 0.5 | 3 | 10s | No Loss of Function (A) |
| Heating,motor running mode | 0 | 180 ° | 0.5 | 3 | 10s | No Loss of Function (A) |
| Heating,motor running mode | 40 | 0 ° | 10 | 3 | 10s | No Loss of Function (A) |
| Heating,motor running mode | 70 | 0 ° | 25 | 3 | 10s | No Loss of Function (A) |

# 8 Photographs

Details of: SG-7307AB general view

View:

[ x ] general
[ ] front
[ rear
[ ] right
[ ] left
[ ] top
[ ] bottom



Details of: SG-7307AB general view

View:

[ x ] general
[ ] front
[ rear
[ ] right
[ ] left
[ ] top
[ ] bottom



Details of: SG-7303DS general view

View:

[ x ] general
[ ] front
[ rear
[ ] right
[ ] left
[ ] top
[ ] bottom



Details of: SG-7309AS general view

View:

[ x ] general
[ ] front
[ rear
[ ] right
[ ] left
[ ] top
[ ] bottom



Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-Las vegas, SG-7301AB | <br>SG-7302AS, SG-7302AB |
| | <br>SG-7303AS, SG-7303AB | <br>SG-7303A1S, SG-7303A1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7303A2S, SG-7303A2B | <br>SG-7304AS,SG-7304AB |
| | <br>SG-7305AS,SG-7305AB | <br>SG-7305A1S,SG-7305A1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7306AS,SG-7306AB | <br>SG-7306A1S,SG-7306A1B |
| | <br>SG-7307AS,SG-7307AB | <br>SG-7308AS,SG-7308AB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7308A1S,SG-7308A1B | <br>SG-7309AS,SG-7309AB |
| | <br>SG-7302BS,SG-7302BB | <br>SG-7305B1S,SG-7305B1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305B2S,SG-7305B2B | <br>SG-7306B1S,SG-7306B1B |
| | <br>SG-7309BS,SG-7309BB | <br>SG-7310B1S,SG-7310B1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7310B2S,SG-7310B2B | <br>SG-7302CS,SG-7302CB |
| | <br>SG-7305CS,SG-7305CB | <br>SG-7305C1S,SG-7305C1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305C2S,SG-7305C2B | <br>SG-7309CS,SG-7309CB |
| | <br>SG-7306CS,SG-7306CB | <br>SG-7306C1S,SG-7306C1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7310CS,SG-7310CB | <br>SG-7310C1S,SG-7310C1B |
| | <br>SG-7310C2S,SG-7310C2B | <br>SG-7311CS,SG-7311CB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305ES,SG-7305EB | <br>SG-7305DS,SG-7305DB |
| | <br>SG-7309DS,SG-7309DB | <br>SG-7310DS,SG-7310DB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7303VS,SG-7303VB | <br>SG-7301BS,SG-7301BB |
| | <br>SG-7305VS,SG-7305VB | <br>SG-7306VS,SG-7306VB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7303DS,SG-7303DB | <br>SG-7304DS,SG-7304DB |
| | <br>SG-7301CS,SG-7301CB | <br>SG-7304HS,SG-7304HB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305BWS,SG-7305BWB | <br>SG-7305BW-RS,SG-7305BW-RB |
| | <br>SG-7305E-RS,SG-7305E-RB | <br>SG-7312BWS,SG-7312BWB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-9280S,SG-9280B | <br>SG-9281S,SG-9281B |
| | <br>LIV-SPA-S22S, LIV-SPA-S22B | <br>LIV-SPA-Y22S, LIV-SPA-Y22B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7303ES, SG-7303EB | <br>SG-7303E1S, SG-7303E1B |
| | <br>SG-7303E2S, SG-7303E2B | <br>SG-7303FS, SG-7303FB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7304FS, SG-7304FB | <br>SG-7305C-RS, SG-7305C-RB |
| | <br>SG-7305D1S, SG-7305D1B | <br>SG-7305D-RS, SG-7305D-RB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305GS, SG-7305GB | <br>SG-7305G1S, SG-7305G1B |
| | <br>SG-7305G2S, SG-7305G2B | <br>SG-7305G3S, SG-7305G3B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305G4S, SG-7305G4B | <br>SG-7305HS, SG-7305HB |
| | <br>SG-7305JS, SG-7305JB | <br>SG-7305J1S, SG-7305J1B |

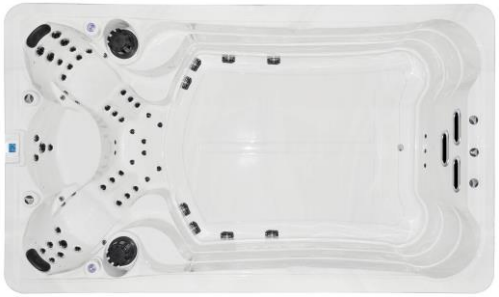
Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7305TS, SG-7305TB | <br>SG-7306V-RS, SG-7306V-RB |
| | <br>SG-7307BS, SG-7307BB | <br>SG-7309C-RS, SG-7309C-RB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7309FS, SG-7309FB | <br>SG-7310D-RS, SG-7310D-RB |
| | <br>SG-7310HS, SG-7310HB | <br>SG-7312BW-RS, SG-7312BW-RB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ ]rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-SW395SS, SG-SW395SB | <br>V1S, V1B |
| | <br>V2S, V2B | <br>V3S, V3B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>V4S, V4B |  |
| | <br>SG-2103S, SG-2103B | <br>SG-7301DS, SG-7301DB |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7301ES, SG-7301EB | <br>SG-7302DS, SG-7302DB |
| | <br>SG-7303E3S, SG-7303E3B | <br>SG-7303F1S, SG-7303F1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7304F1S, SG-7304F1B | <br>SG-7305H2S, SG-7305H2B |
| | <br>SG-7305KS, SG-7305KB | <br>SG-7309F1S, SG-7309F1B |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7309GS, SG-7309GB | <br>SG-7309G1S,SG-7309G1B |
| | <br>SG-7309VS, SG-7309VB | <br>SG-7313BWS, SG-7313BWB |

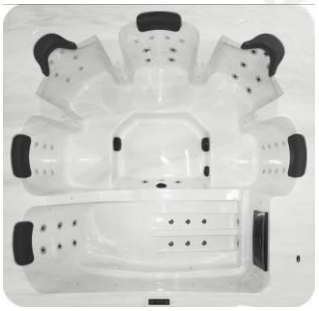
Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7314BWS, SG-7314BWB | <br>SG-7315BWS, SG-7315BWB |
| | <br>SG-7316BWS, SG-7316BWB | <br>SG-9505S, SG-9505B |

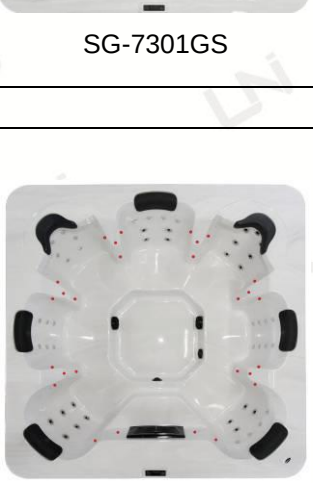
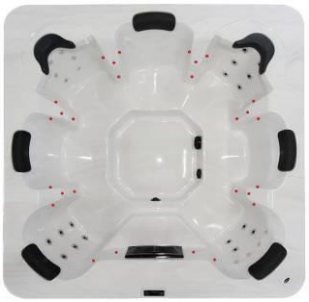
Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-B398DS, SG-B398DB | <br>SG-B398SS, SG-B398SB |
| | <br>SG-JD7320S, SG-JD7320B | <br>SG-SW395DS, SG-SW395DB |

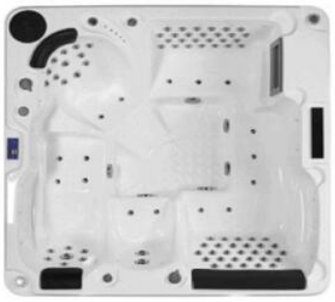
Details of: General view

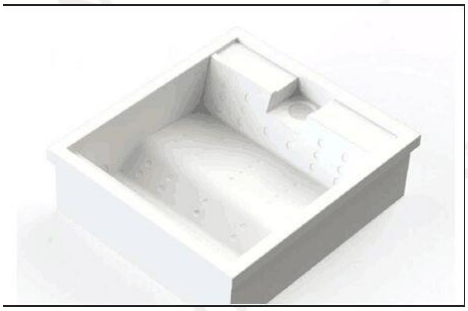
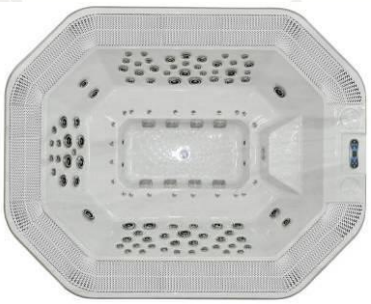
| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7302ES, SG-7302EB | <br>SG-7307FS, SG-7307FB |
| | <br>SG-2105S, SG-2105B | <br>SG-7301GS |

Details of: General view

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7301G1S | <br>SG-7302GS |
| | <br>SG-7302G1S | <br>SG-7303GS, SG-7303GB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7306HS, SG-7306HB | <br>SG-7306DS, SG-7306DB |
| | <br>SG-7306KS, SG-7306KB | <br>SG-MP029S, SG-MP029B |
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7307GS | <br>SG-7308GS |
| | <br>SG-7306GS | <br>SG-7308DS, SG-7308DB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-MP085S, SG-MP085B | <br>SG-MP092S, SG-MP092B |
| | <br>SG-MP099S, SG-MP099B | <br>AU-01S, AU-01B |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-ITALY01S | <br>SG-SY580S, SG-SY580B |
| | <br>SG-7330ES, SG-7330EB | <br>SG-7317BWB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7318BWB | <br>SG-7319BWB |
| | <br>SG-7321BWB | <br>SG-7322BWB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7323BWB | <br>SG-7324BWB |
| | <br>SG-7325BWB | <br>SG-7326BWB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7327BWB | <br>SG-7328BWB |
| | <br>SG-7329BWB | <br>SG-7330BWB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7331BWB | <br>SG-7332BWB |
| | <br>SG-7333BWB | <br>SG-7334BWB |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7335BWB | <br>SG-7336BWB |
|---|---|---|
| | <br>SG-7337BWB | <br>SG-7338BWB |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7339BWB | <br>SG-7340BWB |
|---|---|---|
| | <br>SG-7341BWB | <br>SG-7344BWB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7345BWB | <br>SG-7346BWB |
| | <br>SG-7347BWB | <br>SG-7350BWB |

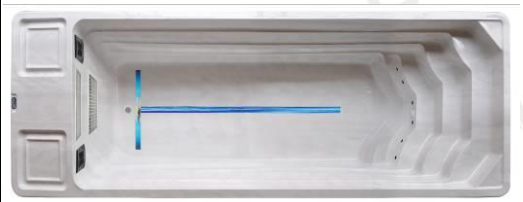
| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7351BWB | <br>SG-7352BWB |
| | <br>SG-7353BWB | <br>SG-7354BWB |

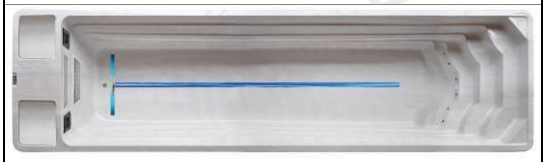
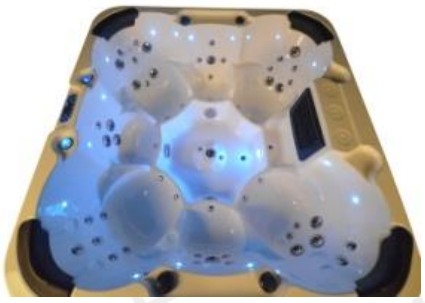
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7355BWB | <br>SG-7356BWB |
|---|---|---|
| | <br>SG-7357BWB | <br>SG-7358BWB |

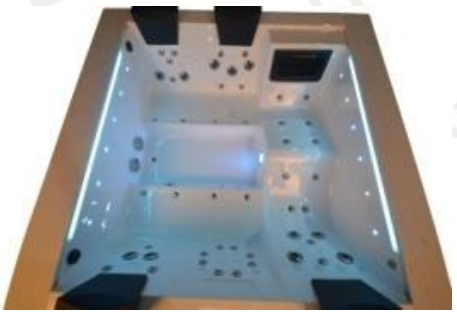
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7360BWB | <br>SG-7361BWB |
|---|---|---|
| | <br>SG-7362BWB | <br>SG-7363BWB |

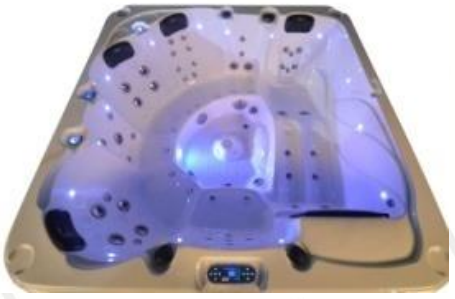
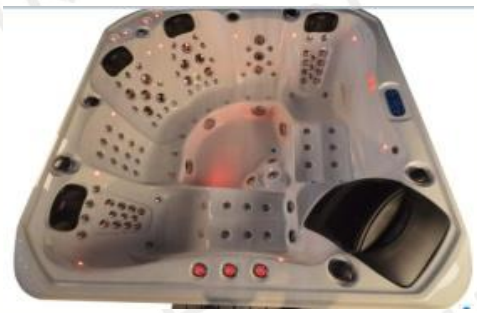
| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7364BWB | <br>SG-9280TS, SG-9280TB |
| | <br>SG-SW395D-BS, SG-SW395D-BB | <br>SG-B398BS, SG-B398BB |

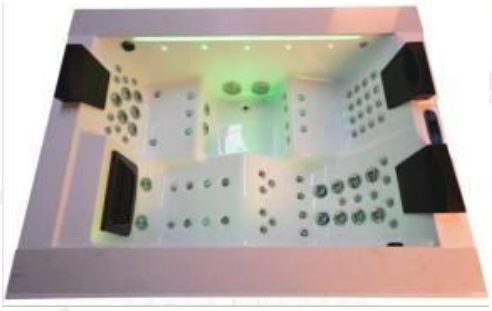
| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-466AS, SG-466AB | <br>SG-BW399AS, SG-BW399AB |
| | <br>SG-BW399BS, SG-BW399BB | <br>SG-BW399CS, SG-BW399CB |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-BW600AS, SG-BW600AB | <br>SG-BW600BS, SG-BW600BB |
|---|---|---|
| | <br>SG-BW600CS, SG-BW600CB | <br>SG-9506S, SG-9506B |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-9507S, SG-9507B | <br>SG-200S, SG-200B |
|---|---|---|
| | <br>HE4S, HE4B | <br>HE7S, HE7B |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>HE102S, HE102B | <br>HE121S, HE121B |
|---|---|---|
| | <br>HE201S, HE201B | <br>HE241S, HE241B |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>HE542S, HE542B | <br>HE561S, HE561B |
|---|---|---|
| | <br>AR542S, AR542B | <br>AR561S, AR561B |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>FD121S, FD121B | <br>FD241S, FD241B |
| | <br>GP4S, GP4B | <br>GP7S , GP7B |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>GD-04S, GD-04B | <br>SP201S, SP201B |
| | <br>SW395BLS, SW395BLB | <br>SW395BL-TS, SW395BL-TB |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>SG-7342BWB | <br>SG-7343BWB |
| | <br>SG-7307F1S, SG-7307F1B | <br>SG-9505AS, SG-9505AB |
| | <br>SG-9281TS, SG-9281TB | <br>SG-6000T |
| | <br>SG-5000 | <br>J-01（Bremen） |

| | | |
|---|---|---|
| |  J-02A（Atlanta） |  J-02B（Las Vegas） |
| |  J-03A（Houston） |  J-03B（Washington） |
| |  J-07（London） |  J-08（Cambridge） |
| |  SG340F | |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>IN.K1001 | <br>SPATOUCH1 |
| | <br>TP600 | <br>TP800 |
| | <br>VL260 | <br>VL401 |

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>VL701S | <br>VL801D |
| | <br>DH1.0 | <br>JA50 |

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>JA100 | <br>LP150 |
| | <br>STORM FORCE 1 | <br>STORM FORCE 7 |

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>STORM FORCE 9 | <br>TDA50 |
| | <br>TDA150 | <br>TDA200 |

| View: | | |
|---|---|---|
| [ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>WP200-II | <br>WP250-II |
| | <br>WP300-II | <br>WTC100-AB |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>WTC120-AB | <br>WTC200-AB |
|---|---|---|
| | <br>BP21-BP21MS3B-RCA3.0K | <br>BP21-BP21P4BC-RCA3.0K |

| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>BP21-BP2100G0-RCA3.0K | <br>BP21-BP2100G1-RCA3.0K |
|---|---|---|
| | <br>BP21-BP6013G1-RCA3.0K | <br>BP21-BP6013G3-RCA3.0K |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>BP21-BW6013X1-RCA2.0K | <br>BP21-BW6013X1-RCA3.0K |
| | <br>BP21-BW6013X2-RCA3.0K | <br>BP21-PL6013X1-RCA3.0K |

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>BP21-BP601-RCA-3.0K | <br>GS5-GS501Z-RCA-3.0K |
| | <br>GS5-GS510SZ-RCA-3.0K | <br>GS5-GS523DZ-RCA-3.0K |

<table>
<tr><td rowspan="4">View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom</td><td><br>IN.YE-3-H3.0</td><td><br>IN.YE-5-H3.0</td></tr>
<tr><td><br>IN.YT-7-H4.0</td><td><br>MP7-GS100-DCA</td></tr>
<tr><td><br>SP5260</td><td><br>SP5260-T</td></tr>
<tr><td><br>J-05</td><td><br>J-06</td></tr>
</table>

| | | |
|---|---|---|
| View:<br>[ x ] general<br>[ ]front<br>[ rear<br>[ ]right<br>[ ]left<br>[ ]top<br>[ ]bottom | <br>J-09 | <br>J-10 |
| | <br>7319D | <br>SP102 |
| | <br>J-17（Lincoln） | <br>SG5850 |
| | <br>SG6300(T) | <br>SG390(LAGOON SPA) |

Details of: main controller GS5-GS523DZ-RCA-3.0K general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Main controller GS5-GS523DZ-RCA-3.0K internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Heater element of main controllerGS5-GS523DZ-RCA-3.0K

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main PCB of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general

[ ]front

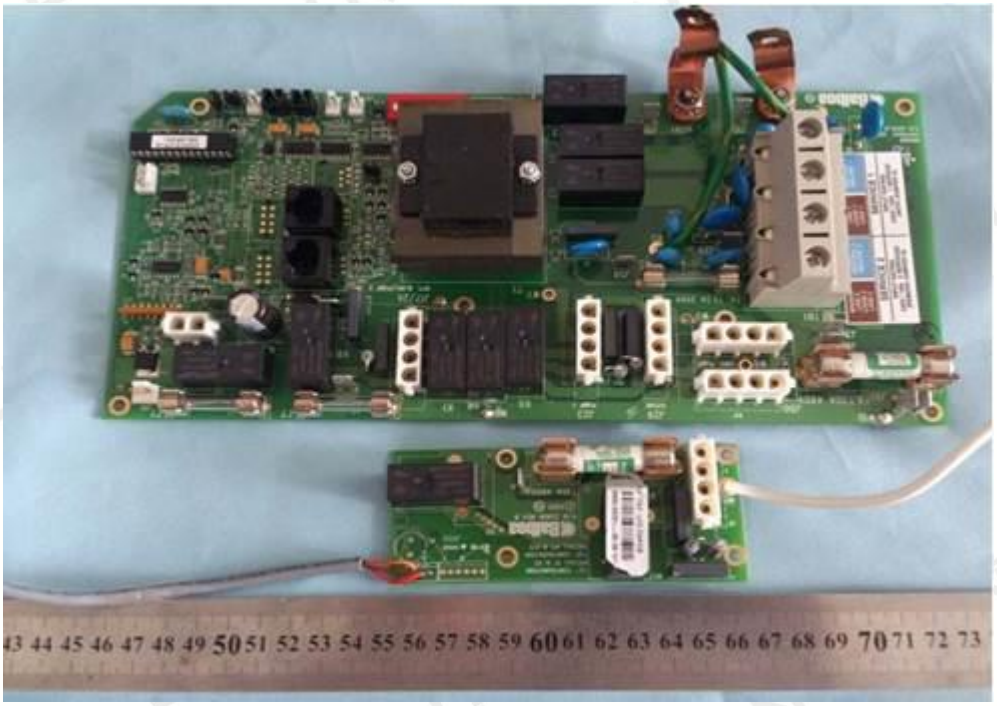
[ ]rear

[ ]right

[ ]left

[ ]top

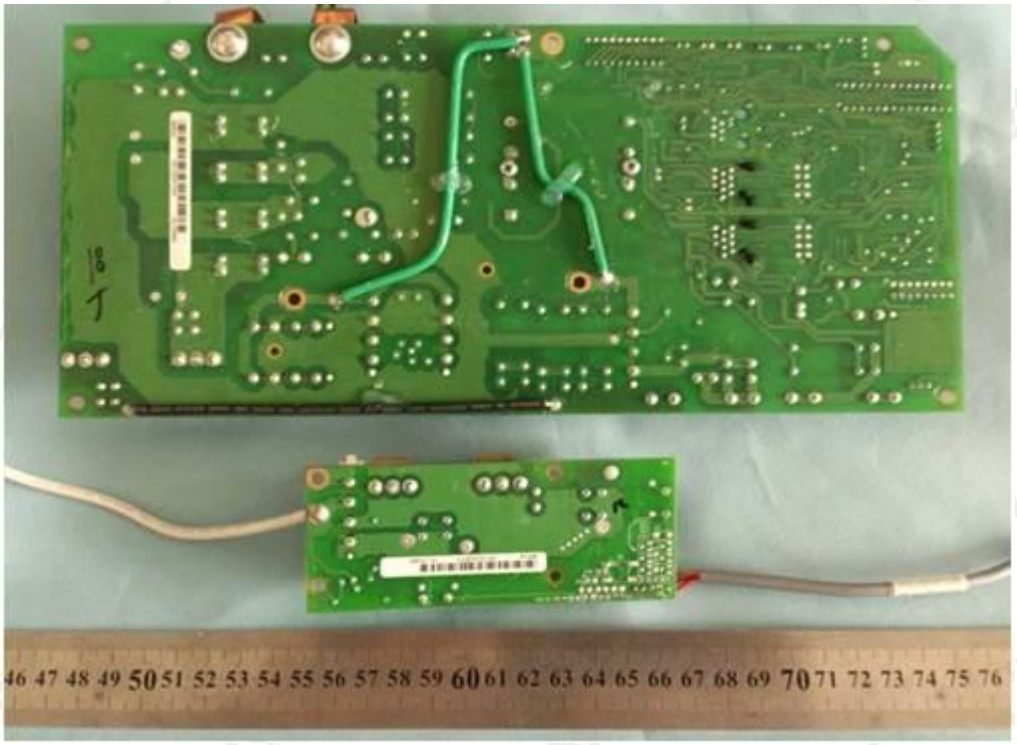
[ ]bottom



Details of: Main PCB of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general
[ ]front
[ ]rear
[ ]right
[ ]left
[ ]top
[ ]bottom



Details of: Control panel of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general
[ ]front
[ ]rear
[ ]right
[ ]left
[ ]top
[ ]bottom



Details of: Control PCB of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Control PCB of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general

[ ]front

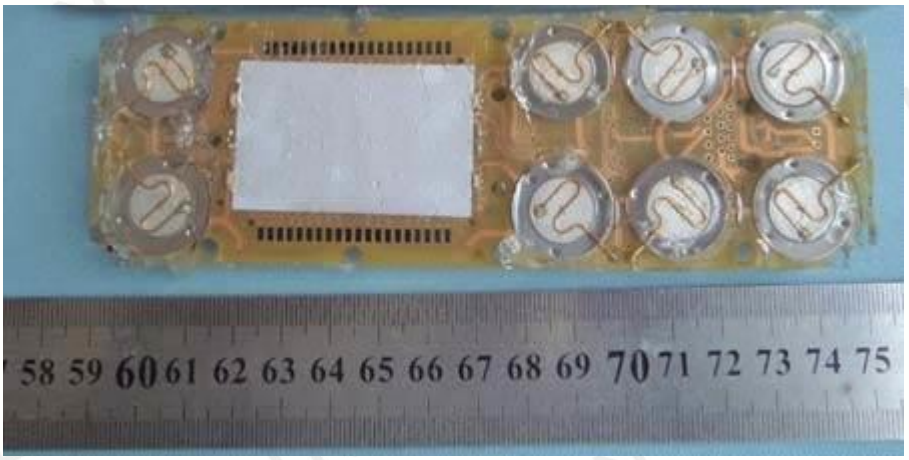
[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Remote control of main controller GS5-GS523DZ-RCA-3.0K

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Main controller of SG-0007 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main controller of SG-0007 internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Remark:The input wire of transformer has two insulation layers.

Details of: Main PCB of main controller SG-0007

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main PCB of main controller SG-0007

View:

[ x ] general

[ ]front

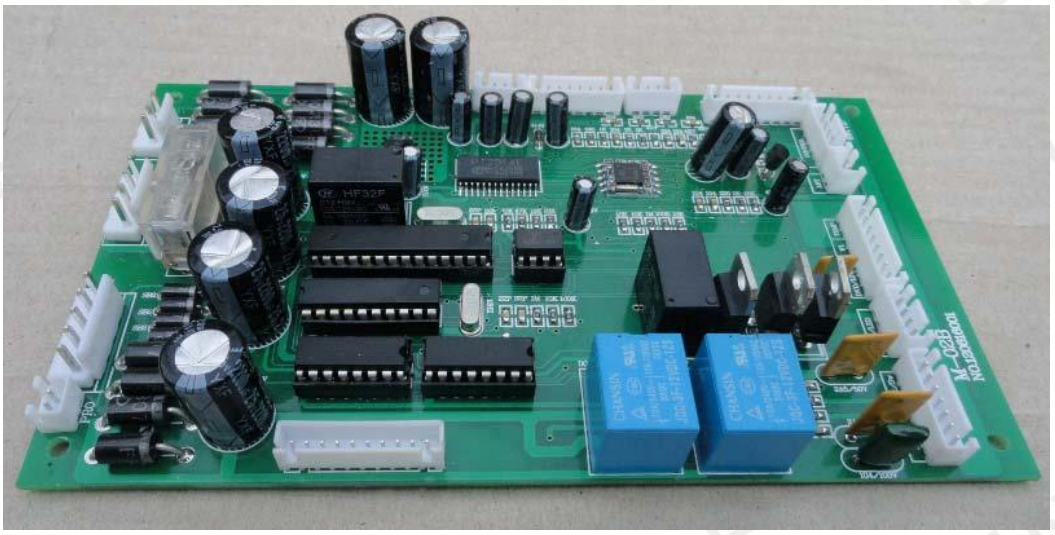
[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main controller SG-0007 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main PCB of main controller SG-0007

View:

[ x ] general

[ ]front

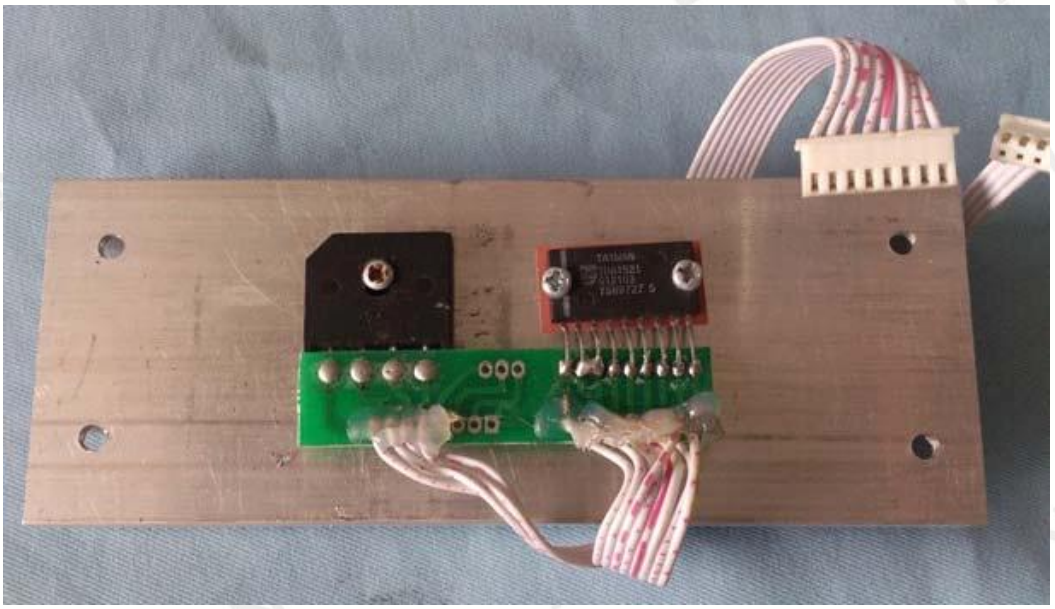
[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Main PCB of main controller SG-0007

View:

[ x ] general

[ ]front

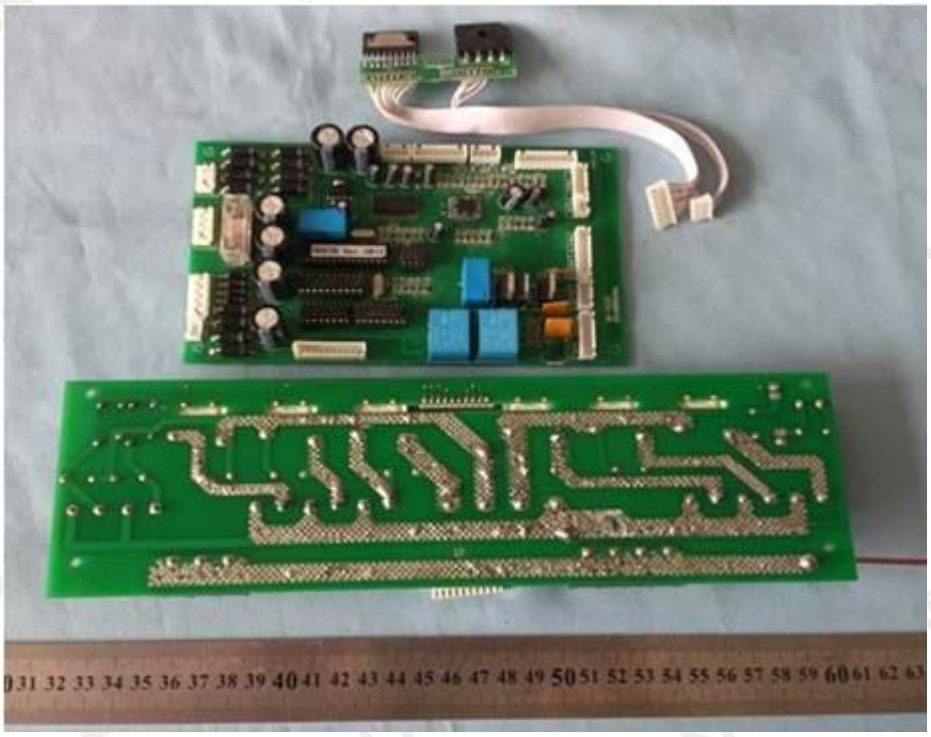
[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Control panel of main controller SG-0007

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Control PCB of main controller SG-0007

View:

[ x ] general

[ ]front

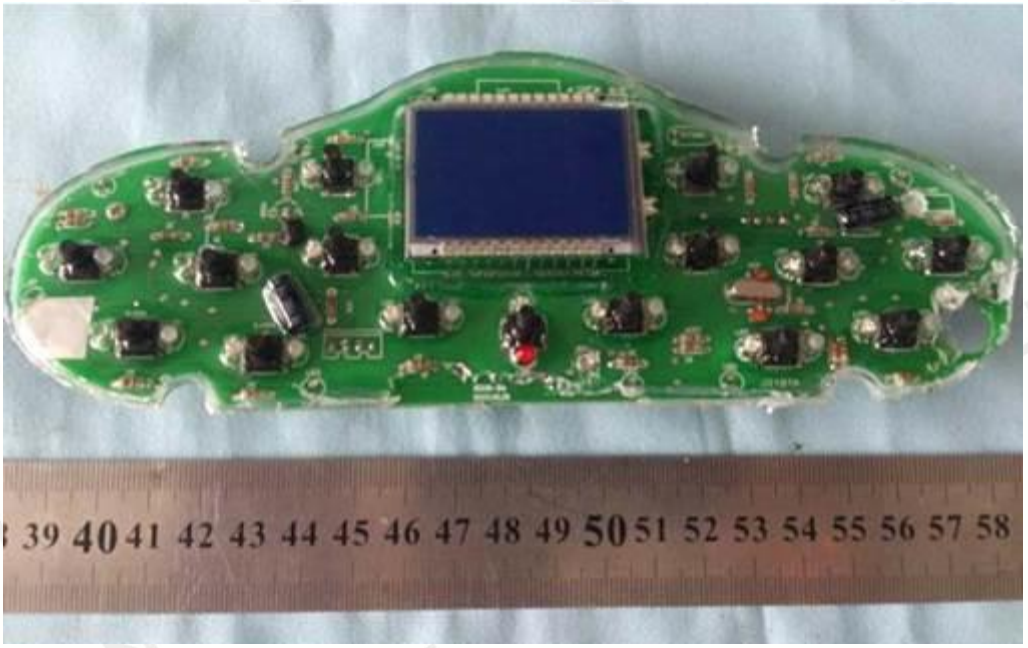
[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Control PCB of main controller SG-0007

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Solenoid valve controller general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Solenoid valve controller internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Remark:The input wire of transformer has two insulation layers.

Details of: PCB of solenoid valve controller

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: PCB of solenoid valve controller

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: PCB of solenoid valve controller

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Water pump LP300 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Water pump LP250 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Water pump LP200 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]botto




Details of: Water pump LP300，LP250，LP200 internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Water pump WTC50M general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Water pump WTC50M internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Air pump AP900 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Air pump AP700 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Air pump AP400 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Air pump AP900, AP700, AP400 internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Ozonizer general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Ozonizer internal view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom



Details of: Heater element H30-R2 general view

View:

[ x ] general

[ ]front

[ ]rear

[ ]right

[ ]left

[ ]top

[ ]bottom




Details of: Heater element H30-R2 internal view

View:

[ x ] general

[ ]front

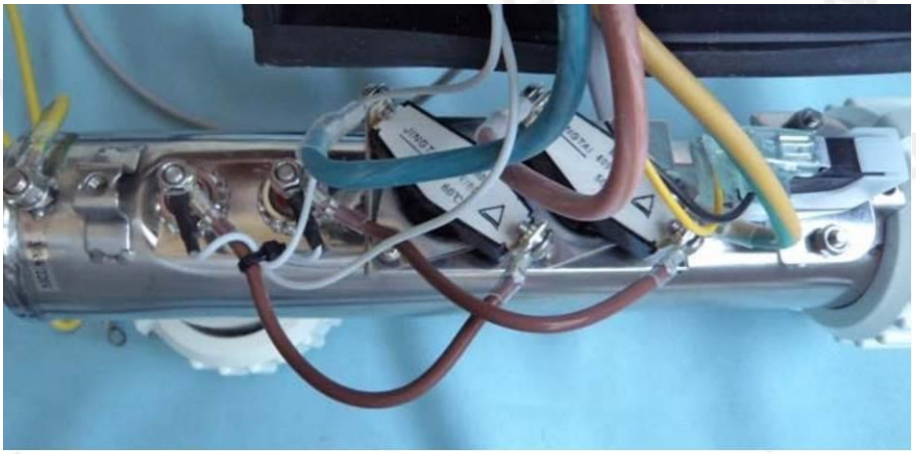
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***End of report***