

## Index by Model No./Safety Standards List - ACDC Fans **AC**

| Models listed in the main section of this catalog | Frame Size   | Model         | Rated Voltage [V] | UL (cUL) | CSA (cUL) | TÜV | CE | PSE | Note    | page |
|---|--------------|---------------|-------------------|----------|-----------|-----|----|-----|---------|------|
| 9AD0901H12  | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 413  |
| 9AD0901H121                                       | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 413  |
| 9AD0901H1H  | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 413  |
| 9AD0901H1H1                                       | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 413  |
| 9AD0901M12  | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 413  |
| 9AD0901M121                                       | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 413  |
| 9AD0901M1H  | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 413  |
| 9AD0901M1H1                                       | 92×92×38mm   | San Ace 92AD  | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 413  |
| 9AD1201H12  | 120×120×38mm | San Ace 120AD | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 417  |
| 9AD1201H121                                       | 120×120×38mm | San Ace 120AD | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 417  |
| 9AD1201H1H  | 120×120×38mm | San Ace 120AD | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribbed  | 417  |
| 9AD1201H1H1                                       | 120×120×38mm | San Ace 120AD | 100 to 240        | ✓        | ✓         | ✓   | ✓  | ✓   | Ribless | 417  |

Please contact your point of sale for pulse sensors and lock sensors.

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|---|----------------------------|-------------|-------------------|----|-----|-----|----|-----|------|------|
| 109-033UL   | 80×80×42mm                 | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-040UL   | 80×80×42mm                 | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-041UL   | 80×80×42mm                 | San Ace 80  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-043UL   | 80×80×42mm                 | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-044UL   | 80×80×42mm                 | San Ace 80  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-047UL   | 80×80×42mm                 | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 433  |
| 109-130   | 60×60×38mm                 | San Ace 60  | 100               | ✓  | —   | ✓   | ✓  | —   |      | 425  |
| 109-133   | 60×60×38mm                 | San Ace 60  | 115               | ✓  | —   | ✓   | ✓  | —   |      | 425  |
| 109-150   | 80×80×38mm                 | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 431  |
| 109-151   | 80×80×38mm                 | San Ace 80  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 431  |
| 109-153   | 80×80×38mm                 | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 431  |
| 109-154   | 80×80×38mm                 | San Ace 80  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 431  |
| 109-180   | 60×60×28mm                 | San Ace 60  | 100               | ✓  | —   | ✓   | ✓  | —   |      | 423  |
| 109-183   | 60×60×28mm                 | San Ace 60  | 115               | ✓  | —   | ✓   | ✓  | —   |      | 423  |
| 109-210   | 80×80×20mm                 | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | —   |      | 427  |
| 109-213   | 80×80×20mm                 | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | —   |      | 427  |
| 109-311   | φ 172mm×51mm (Round type)  | San Ace 172 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 451  |
| 109-312   | φ 172mm×51mm (Round type)  | San Ace 172 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 451  |
| 109-313   | φ 172mm×51mm (Round type)  | San Ace 172 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 451  |
| 109-314   | φ 172mm×51mm (Round type)  | San Ace 172 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 451  |
| 109-371   | φ 172mm×51mm (with sensor) | San Ace 172 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 451  |
| 109-372   | φ 172mm×51mm (with sensor) | San Ace 172 | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 451  |
| 109-373   | φ 172mm×51mm (with sensor) | San Ace 172 | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 451  |
| 109-374   | φ 172mm×51mm (with sensor) | San Ace 172 | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 451  |
| 109-601   | 160×160×51mm               | San Ace 160 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 447  |
| 109-602   | 160×160×51mm               | San Ace 160 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 447  |
| 109-603   | 160×160×51mm               | San Ace 160 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 447  |
| 109-604   | 160×160×51mm               | San Ace 160 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 447  |
| 109-641   | 160×160×51mm (with sensor) | San Ace 160 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 447  |
| 109-642   | 160×160×51mm (with sensor) | San Ace 160 | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 447  |
| 109-643   | 160×160×51mm (with sensor) | San Ace 160 | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 447  |
| 109-644   | 160×160×51mm (with sensor) | San Ace 160 | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 447  |
| 109S005   | 120×120×38mm               | San Ace 120 | 100               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S005UL   | 120×120×38mm               | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S006   | 120×120×38mm               | San Ace 120 | 100               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S006UL   | 120×120×38mm               | San Ace 120 | 100/115           | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S008   | 120×120×38mm               | San Ace 120 | 200               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S008UL   | 120×120×38mm               | San Ace 120 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S010   | 120×120×38mm               | San Ace 120 | 200               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S010UL   | 120×120×38mm               | San Ace 120 | 200/240           | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S013   | 120×120×38mm               | San Ace 120 | 100               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S013UL   | 120×120×38mm               | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S024   | 120×120×38mm               | San Ace 120 | 120               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S024UL   | 120×120×38mm               | San Ace 120 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S025   | 120×120×38mm               | San Ace 120 | 230               | —  | —   | —   | —  | ✓   |      | 443  |
| 109S025UL   | 120×120×38mm               | San Ace 120 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S029UL   | 120×120×38mm               | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |

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|---|----------------------------------|-------------|-------------------|----|-----|-----|----|-----|------|------|
| 109S030   | 80×80×25mm                       | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S031   | 80×80×25mm                       | San Ace 80  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S033   | 80×80×25mm                       | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S034   | 80×80×25mm                       | San Ace 80  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S050   | 80×80×25mm                       | San Ace 80  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S051   | 80×80×25mm                       | San Ace 80  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S053   | 80×80×25mm                       | San Ace 80  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S054   | 80×80×25mm                       | San Ace 80  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 429  |
| 109S072UL   | 120×120×38mm                     | San Ace 120 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S074UL   | 120×120×38mm                     | San Ace 120 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S075UL   | 120×120×38mm                     | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S078UL   | 120×120×38mm                     | San Ace 120 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 443  |
| 109S081   | 120×120×25mm                     | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S082   | 120×120×25mm                     | San Ace 120 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S083   | 120×120×25mm                     | San Ace 120 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S084   | 120×120×25mm                     | San Ace 120 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S085   | 120×120×25mm                     | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S086   | 120×120×25mm                     | San Ace 120 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S087   | 120×120×25mm                     | San Ace 120 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S088   | 120×120×25mm                     | San Ace 120 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S089   | 120×120×25mm                     | San Ace 120 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 439  |
| 109S091   | 92×92×25mm                       | San Ace 92  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S092   | 92×92×25mm                       | San Ace 92  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S093   | 92×92×25mm                       | San Ace 92  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S094   | 92×92×25mm                       | San Ace 92  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S095   | 92×92×25mm                       | San Ace 92  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S096   | 92×92×25mm                       | San Ace 92  | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S192   | 92×92×25mm                       | San Ace 92  | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S193   | 92×92×25mm                       | San Ace 92  | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S194   | 92×92×25mm                       | San Ace 92  | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 435  |
| 109S301   | φ172mm×150mm×51mm (Sidecut type) | San Ace 172 | 100               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 449  |
| 109S302   | φ172mm×150mm×51mm (Sidecut type) | San Ace 172 | 200               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 449  |
| 109S303   | φ172mm×150mm×51mm (Sidecut type) | San Ace 172 | 230               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 449  |
| 109S304   | φ172mm×150mm×51mm (Sidecut type) | San Ace 172 | 115               | ✓  | ✓   | ✓   | ✓  | ✓   |      | 449  |
| 109S405UL   | 120×120×38mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S406UL   | 120×120×38mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S408UL   | 120×120×38mm (with sensor)       | San Ace 120 | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S424UL   | 120×120×38mm (with sensor)       | San Ace 120 | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S425UL   | 120×120×38mm (with sensor)       | San Ace 120 | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S429UL   | 120×120×38mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S472UL   | 120×120×38mm (with sensor)       | San Ace 120 | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S474UL   | 120×120×38mm (with sensor)       | San Ace 120 | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S475UL   | 120×120×38mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S478UL   | 120×120×38mm (with sensor)       | San Ace 120 | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 443  |
| 109S484   | 120×120×25mm (with sensor)       | San Ace 120 | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 439  |
| 109S485   | 120×120×25mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 439  |
| 109S486   | 120×120×25mm (with sensor)       | San Ace 120 | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 439  |
| 109S487   | 120×120×25mm (with sensor)       | San Ace 120 | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 439  |
| 109S488   | 120×120×25mm (with sensor)       | San Ace 120 | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 439  |
| 109S491   | 92×92×25mm (with sensor)         | San Ace 92  | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |
| 109S492   | 92×92×25mm (with sensor)         | San Ace 92  | 200               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |
| 109S493   | 92×92×25mm (with sensor)         | San Ace 92  | 115               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |
| 109S494   | 92×92×25mm (with sensor)         | San Ace 92  | 230               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |
| 109S495   | 92×92×25mm (with sensor)         | San Ace 92  | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |
| 109S496   | 92×92×25mm (with sensor)         | San Ace 92  | 100               | ✓  | —   | ✓   | ✓  | ✓   |      | 435  |

# Safety Standards

List of safety standards acquired → refer to the index (pp. 495 to 517)

## Description of safety standards

### 1. UL ratings (USA)



Underwriters Laboratories Inc. was established by the American Union of Fire Insurance Underwriters. The purpose of UL is to ensure safety of machines, equipment, and materials and protect human lives and property from fire and other accidents. To that end, UL has conducted numerous tests and extensive research and, as a result, set up UL ratings. Any seller of products in any of the majority of the states of the USA must produce their products according to the UL ratings, have them pass UL-specified safety inspections, and have them listed in UL's registration book. Therefore, to export and sell any product in the United States, one must in most cases apply for UL-listing. Additionally, UL is accredited by The Standards Council of Canada (SCC) as both a Certification Organization (CO) and a Testing Organization (TO) and is officially recognized in all provinces and territories throughout Canada. Accordingly, our products can be tested by UL for compliance with Canadian safety standards. Certified products are entitled to display the C-UL Mark, which authorizes their use and sale in Canada. If products are deemed to be compliant with both U.S. and Canadian standards, then both the UL Mark and C-UL Mark can be displayed or a combination U.S. and Canadian mark (bottom left). Our products are certified as satisfying all UL507 requirements.

### 2. CSA standards (Canada)



The Canadian Standards Association (CSA) was set up in response to the advice of the Canadian government. In Canada, the law prohibits the use and sale of any product other than those approved under CSA in terms of safety. CSA has set up CSA standards as inspection procedures and other requirements to ensure product safety. Our products are certified as satisfying the CSA standard C22.2 No. 113.

### 3. EN standards (EU members)



In the EU territory, the harmonization of industrial standards and safety standards of different countries is under way. The unified standards are called Harmonized Standards. Each of these standards is marked EN above the standard number. EN standards offer the grounds in design and manufacture when one exports a product to the EU territory. In order for a product to receive a safety marking, the product must be found to conform to TÜV, VDE, or other relevant standard. Our products are certified as satisfying all TÜV Rheinland EN60950 requirements.

### 4. Electrical appliance and material safety law



As of April 1, 2001, the Electrical Appliance and Material Control Law has been revised and reenacted as the Electrical Appliance and Material Safety Law. AC fans are classified as 'Blowers' under 'Electric motor-operated appliances'. They are categorized as electrical products other than specific electrical appliances (with the exception of some models) and are required to be labeled to indicate PSE certification.

### 5. CE marking



To distribute their equipment in the EU territory, manufacturers are obligated to give a CE marking as proof that the equipment conforms to related EU directives. Manufacturers use EN standards as criteria of judgment as to whether the equipment satisfies the requirements of specific directives or, in the absence of applicable EN standards, they use IEC standards. Manufacturers then prepare a self-declaration to indicate that the equipment conforms to related directives and apply a CE marking. (Depending on the degree of risk of the equipment, some kinds of equipment are required to receive type tests conducted by certified authorities and, after a type test certificate is obtained, manufacturers make a self-declaration.)

Scope of application and compulsory timing of major EC directives

#### Machine directives

These directives apply to equipment that has a moving part that may injure humans. The directives generally apply to a wide range of machine tools and other industrial machines.

#### EMC directives

They apply to equipment which may be affected by electromagnetic interference (EMI) or has electromagnetic susceptibility (EMS).

#### Low-voltage directive

This directive applies to equipment that is used in an AC range between 50 and 1,000V and in a DC range between 75 and 1,500V.

#### JIS: Japanese Industrial Standards

Japan's national standards related to mining and manufacturing industries

#### IEC : International Electrotechnical Commission

This is an international commission on electrical standardization. This commission promotes the unification and cooperation of international standards related to electric and electronics engineering and issues IEC standards in order eventually to allow different countries to conform to the international standards.

#### DIN : Deutsches Institut für Normung e.V.

This is a German standards institute. The institute uses a wide-range set of standards covering many industrial sectors. The set of standards includes basic standards.

#### VDE : Verband Deutscher Elektrotechniker e.V.

It is a German association of electric engineers. VDE establishes safety standards related to electrical engineering and issues them as DIN-VDE standards.