

# VACON® 100

VACON0100-3L-0031-4-X

## 1 Technical Data

| Item     | Characteristic                    | Value                                                                             | Units  |
|----------|-----------------------------------|-----------------------------------------------------------------------------------|--------|
| <b>1</b> | <b>MANUFACTURER</b>               |                                                                                   |        |
| 1,01     | MANUFACTURER / CERTIFICATE HOLDER | Danfoss Drives Oy                                                                 |        |
| 1,02     | BRAND NAME                        | VACON                                                                             |        |
| 1,03     | TRADING NAME                      | Danfoss (Australia) Pty Ltd                                                       |        |
| 1,04     | SERIES                            | VACON 100X                                                                        |        |
| 1,05     | MODEL NUMNER                      | VACON0100-3L-0031-4-X                                                             |        |
| 1,06     | COUNTRY OF ORIGIN                 | Italy                                                                             |        |
| 1,06     | FRAME SIZE                        | MM5                                                                               |        |
| 1,07     | FIRMWARE NUMBER                   | AMIT1181 ≥ V207.vcx                                                               |        |
| 1,08     | CERTIFYING BODY                   | SGS Systems                                                                       |        |
| 1,09     | CERTIFICATE NUMBER                | 220528 (VACON 100X)                                                               |        |
| 1,10     | APPLICABLE STANDARDS              | IEC 62109-1/ IEC 62109-2                                                          |        |
| <b>2</b> | <b>GENERATOR CONNECTION</b>       |                                                                                   |        |
| 2,01     | NUMBER OF PHASES                  | 3                                                                                 | Phases |
| 2,02     | INPUT VOLTAGE (VAC)               | 0 to 480 VAC                                                                      | VAC    |
| 2,03     | INPUT VOLTAGE TOLERANCE (%)       | -15% to +10%                                                                      | %      |
| 2,04     | INPUT FREQUENCY (Hz)              | 50 Hz                                                                             | Hz     |
| 2,05     | TOPOLOGY                          | Transformerless                                                                   |        |
| 2,06     | MAXIMUM EFFICIENCY (%)            | >97%                                                                              | %      |
| 2,07     | INPUT FREQUENCY TOLERANCE (Hz)    | 47.5 to 66 Hz                                                                     | Hz     |
| 2,08     | CONNECTION TO GENERATOR           | Once per minute or less                                                           |        |
| 2,09     | SHORT-CIRCUIT CURRENT (A)         | Max. short-circuit current has to be < 100 kA (with optional input switch < 5 kA) | kA     |
| <b>3</b> | <b>DC CONNECTIONS</b>             |                                                                                   |        |
| 3,01     | PV DC CONNECTORS MANUFACTURER     | N/A                                                                               |        |
| 3,02     | PV DC CONNECTORS MODEL            | N/A                                                                               |        |
| 3,03     | PV DC VOLTAGE MINIMUM (VDC)       | 436                                                                               | VDC    |
| 3,04     | PV DC VOLTAGE MAXIMUM (VDC)       | 800                                                                               | VDC    |
| 3,05     | PV DC VOLTAGE TOLERANCE (VDC)     | 0                                                                                 | VDC    |
| 3,06     | PV INPUT POWER MAXIMUM (kW)       | 30                                                                                | kW     |
| 3,07     | START UP DC VOLTAGE (VDC)         | 351                                                                               | VDC    |
| 3,08     | SOLAR FEATURES                    |                                                                                   |        |
| 3,09     | NUMBER OF MPPT                    | 1                                                                                 |        |
| 3,10     | MPPT MINIMUM VOLTAGE (VDC)        | 436                                                                               | VDC    |
| 3,11     | MPPT MAXIMUM VOLTAGE (VDC)        | 800                                                                               | VDC    |

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|----------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 3,12     | MPPT 1 MAXIMUM INPUT CURRENT (A)                          | 34,4                                                                                                                                                             | A     |
| 3,13     | MPPT 1 MAXIMUM SHORT CIRCUIT CURRENT (kA)                 | < 100kA, however the maximum $I_{sc}$ PV and inverter back-feed current depend on the DC fuses selected                                                          | kA    |
| 3,14     | RECOMMENDED DC FUSES SIZE                                 | 2 X 50A/1000Vdc                                                                                                                                                  |       |
| 3,15     | DEMAND RESPONSE MODES                                     | N/A                                                                                                                                                              |       |
| 3,16     | POWER QUALITY RESPONSE MODE                               | N/A                                                                                                                                                              |       |
| 3,17     | EXTERNAL EQUIPMENT REQUIRED FOR COMPLIANCE                | N/A                                                                                                                                                              |       |
| 3,18     | MULTIPLE INVERTER COMBINATIONS:                           | N/A                                                                                                                                                              |       |
| <b>4</b> | <b>MOTOR CONNECTIONS</b>                                  |                                                                                                                                                                  |       |
| 4,01     | OUTPUT VOLTAGE (VAC)                                      | 3 VAC to Input Voltage                                                                                                                                           | VAC   |
| 4,02     | RATED OUTPUT CURRENT (A) (AT 40°C AMBIENT TEMPERATURE)    | 31                                                                                                                                                               | A     |
| 4,03     | OVERLOAD OUTPUT CURRENT (A) (AT 40°C AMBIENT TEMPERATURE) | 46,5                                                                                                                                                             | A     |
| 4,04     | STARTING OUTPUT CURRENT (A) (AT 40°C AMBIENT TEMPERATURE) | 62 for 2 s every 20 s.                                                                                                                                           | A     |
| 4,05     | OUTPUT FREQUENCY (Hz)                                     | 0 to 320 Hz (standard)                                                                                                                                           | Hz    |
| 4,06     | FREQUENCY RESOLUTION (Hz)                                 | 0.01 Hz                                                                                                                                                          | Hz    |
| 4,07     | CABLE TYPE                                                | Screened motor cable                                                                                                                                             |       |
| 4,08     | OUTPUT APPARENT POWER (KVA)                               | 14,9                                                                                                                                                             |       |
| <b>5</b> | <b>CONTROL CHARACTERISTICS</b>                            |                                                                                                                                                                  |       |
| 5,01     | FIELDBUS                                                  | Standard: Serial communication (RS485/Modbus); EtherNet/IP, PROFINET IO, Modbus TCP, BACnet IP Optional: CANOpen; PROFIBUS DP, DeviceNet, LonWorks, AS-interface |       |
| 5,02     | CONTROL PERFORMANCE                                       | Open loop vector control (5-150% of base speed): speed control 0.5%, dynamic 0.3%/sec, torque linearity <2%, torque rise time ~5 ms                              | %     |
| 5,03     | RAMP TIMES (s)                                            | 0.01 to 3000 s                                                                                                                                                   | sec   |
| <b>6</b> | <b>AMBIENT CONDITIONS</b>                                 |                                                                                                                                                                  |       |
| 6,01     | AMBIENT TEMPERATURE MIN (°C)                              | -10°C                                                                                                                                                            | °C    |
| 6,02     | AMBIENT TEMPERATURE MAX (°C)                              | 40°C to 50°C with derating                                                                                                                                       | °C    |
| 6,03     | STORAGE TEMP (°C)                                         | -40°C to +70°C                                                                                                                                                   | °C    |
| 6,04     | RELATIVE HUMIDITY (%)                                     | 0 to 100% RH, non-condensing, non-corrosive                                                                                                                      | %     |
| 6,05     | POLLUTION DEGREE                                          | PD2 used for PCB design. However the drives are suitable for outdoor use because of dust-tight enclosure to numeral 6 [acc. to IEC 60529].                       |       |
| 6,06     | MAXIMUM ALTITUDE (M)                                      | 1000m - 3000m with derating                                                                                                                                      | m     |
| 6,07     | STATIONARY VIBRATION: SINUSOIDAL                          | 3 Hz ≤ f ≤ 8.72 Hz: 10 mm 8.72 Hz ≤ f ≤ 200 Hz: 3g [3M7 acc. to IEC 60721-3-3]                                                                                   |       |
| 6,08     | SHOCK / BUMP                                              | 25g / 6 ms [3M7 acc. to IEC 60721-3-3]                                                                                                                           |       |
| 6,09     | IP RATING                                                 | IP66                                                                                                                                                             |       |

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|----------|------------------------------------------|----------------------------------------------|-------|
| <b>7</b> | <b>NOISE LEVEL</b>                       |                                              |       |
| 7,01     | Average noise level (min-max) in dB (A)  | 57-65 dBA Dependant on the cooling fan speed | dBA   |
| <b>8</b> | <b>WEIGHT, CLEARANCES AND DIMENSIONS</b> |                                              |       |
| 8,01     | DIMENSIONS: HEIGHT (MM)                  | 367                                          | mm    |
| 8,02     | DIMENSIONS: WIDTH (MM)                   | 233                                          | mm    |
| 8,03     | DIMENSIONS: DEPTH (MM)                   | 231                                          | mm    |
| 8,04     | WEIGHT (KG)                              | 14,9                                         | kg    |
| 8,05     | CLEARANCE ABOVE (MM)                     | 160                                          | mm    |
| 8,06     | CLEARANCE SIDES (MM)                     | 80                                           | mm    |
| 8,07     | CLEARANCE BELOW (MM)                     | 60                                           | mm    |

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