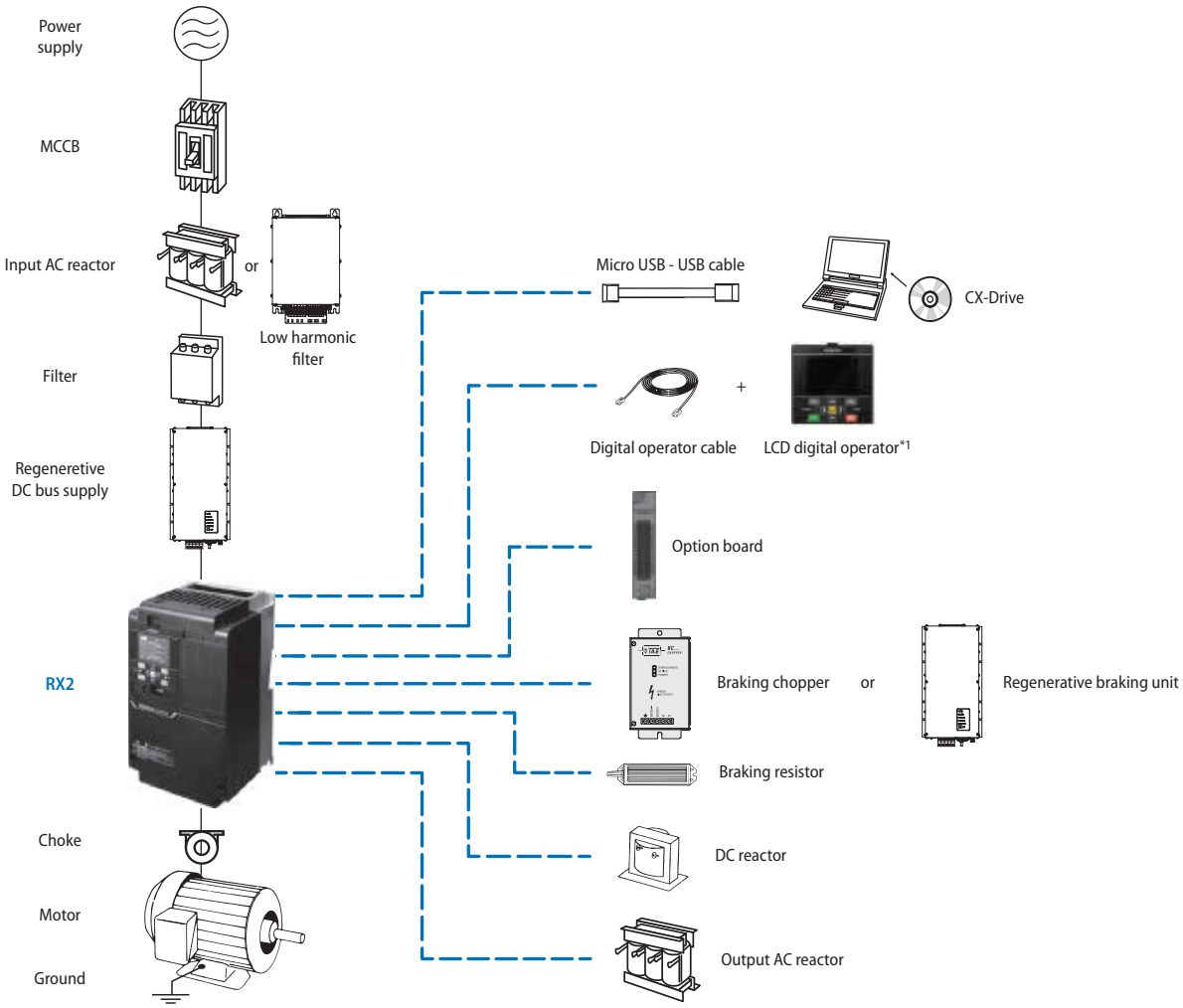
## The Driving Evolution

- High starting torque in open loop: 200% at 0.3 Hz, Full torque at 0 Hz in closed loop
- Sensor-less and vector closed-loop control
- Triple rating: VLD 110%/1min, LD 120%/1 min and ND 150%/1 min
- Built-in EMC filter, logic programming and application functionality
- Safe Torque Off (STO) according to EN ISO 13849-1:2008 (Safety Category 3/PLd) and IEC 60204-1 Stop Category 0
- IM & PM motor control
- Communication options: PROFIBUS, PROFINET, Modbus TCP
- Regenerative solutions as option
- CE, CULus, RoHS

## Ratings

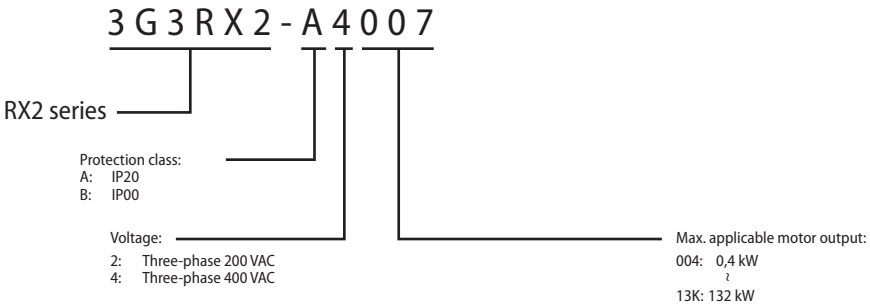
- 200 V class three-phase: 0.4 kW to 55 kW
- 400 V class three-phase: 0.75 kW to 132 kW

## System configuration




*1 The LCD digital operator is provided with the inverter from factory.

## Type designation




## Specifications

### Common specifications

| Item | | | Specifications | |
|---|---|---|---|---|
| Control mode (output to the motor) | | | Sine wave PWM control voltage output (line sine wave modulation) | |
| Output frequency range *1 | | | 0.00 to 590.00 Hz | |
| Frequency accuracy | | | Digital command ±0.01% and analog command ±0.2% (25°C±10°C) against the maximum frequency | |
| Frequency resolution | | | Digital setting: 0.01 Hz<br>Analog setting: maximum frequency/4000<br>(Ai1 terminal/Ai2 terminal: 12 bit/0 to +10 V or 0 to +20 mA, Ai3 terminal 12 bit/-10 to +10 V) | |
| Control mode (frequency/voltage calculation) *2 | | | IM | V/f control (fixed torque/reduced torque/free), automatic boost control, cascade model sensorless vector control, 0 Hz range sensorless vector control, vector control with sensor. |
| | | | SM/PMM | Synchronous starting sensorless vector control, IVMS starting smart sensorless vector control |
| Speed fluctuation *3 | | | ±0.5% (during sensorless vector control) | |
| Acceleration or deceleration time | | | 0.00 to 3600.00 sec (linear, S-shaped, U-shaped, reverse U-shaped, EL-S shaped) | |
| Display monitor | | | Output frequency, output current, output torque, trip history, I/O terminal status, I/O power *4, P-N voltage. | |
| Starting functions | | | Start after DC braking, frequency collection start, frequency entrainment start, reduced voltage start, retry start | |
| Stopping functions | | | Free-run stop, DC braking after deceleration stop or terminal DC braking (braking power, operating speed adjustment) | |
| Stall prevention function | | | Overload restraining function, overcurrent suppression function, overvoltage suppression function | |
| Protective function *5 | | | Overcurrent error, Motor overload error, Braking resister Overload error, Overvoltage error, Memory error, Undervoltage error, Current detector error, CPU error, External trip error, USP error, Ground fault error, Incoming over voltage error, Instantaneous power failure error, Temperature detector error, Cooling fan rotation speed reduction temperature error, Temperature error, Input open-phase error, IGBT error, Output open-phase error, Thermistor error, Brake error, Low-speed range overload error, Controller overload error, RS485 communication error, Operator keypad disconnection error. | |
| Other functions | | | V/f free settings (7 points), Upper/lower limit frequency limiter, Frequency jump, Curve acceleration/deceleration, Manual torque boost, Energy-saving operation, Analog output adjustment function, Minimum frequency, Carrier frequency adjustment, Motor electronic thermal function (free setting is also possible), Inverter electronic thermal function, External start/end (volume/ratio), Frequency input selection, Trip retry, Restart after instantaneous stop, Output of signals, Initialization settings, PID control, Automatic deceleration at power shut-off, Brake control function, and Auto-tuning for commercial switching function (online/offline). | |
| Input | Frequency setting | Standard operator keypad | Parameter setting using arrow keys | |
| | | External signals *6 | Ai1/Ai2 terminal (when changing voltage) | Setting through input of 0 to 10 VDC voltage (input impedance: 10 kΩ) |
| | | | Ai1/Ai2 terminal (when changing current) | Setting through input of 0 to 20 mA current (input impedance: 100 Ω) |
| | | | Ai3 terminal | Setting through input of -10 to +10 V voltage (input impedance: 10 kΩ) |
| | | | Multistage speed terminal (use of input terminal function) | 15 speed |
| | | | Pulse string input (A/B terminal, use of input terminal function) | 32 kHz × 2 at maximum |
| | | External port | Setting via RS485 serial communication (protocol: Modbus-RTU) | |
| | Normal rotation/ reverse rotation Run/ stop | Standard operator keypad | Execution with the RUN /STOP key<br>(normal rotation/reverse rotation can be switched by setting parameters) | |
| | | External signals | Normal rotation operation (FW)/reverse rotation (RV) (when an input terminal function is assigned) 3-wire input available (when an input terminal function is assigned) | |
| | | External port | Setting via RS485 serial communication (protocol: Modbus-RTU (maximum: 115.2 kbps) | |
| | Input terminal function | | 11 terminals (input of pulse string is available on terminal A and B) | |
| | | | FW (Normal rotation)/RV (Reverse rotation), CF1-4 (Multistage speed 1-4), SF1-7 (Multistage speed bit 1-7), ADD (Addition of frequency), SCHG (Switching of frequency command), STA (3-wire start)/STP (3-wire stop)/F_R (3-wire normal/reverse), AHD (Retention of analog command), FUP (Increase of speed via remote operation/FDN (Deceleration via remote operation), UDC (Deletion of data via remote operation), F-OP (Forced command switching), SET (Second control), RS (Reset), JG (Jogging), DB (External current braking), 2CH (2-stage acceleration/deceleration), FRS (Free-run stop), EXT (External abnormality), USP (Prevention of restart after restoration of power), CS (Commercial switching), SFT (Soft-lock), BOK (Brake check), OLR (Overload restriction switching), KHC (Clearance of integrated input power), OKHC (Clearance of integrated output power), PID (PID1 disabled), PIDC (PID1 integration reset), PID2 (PID2 disabled), PIDC2 (PID2 integration reset), SVC1-4 (PID1 multistage target values 1-4), PRO (PID gain switching), PIO (PID output switching), SLEP (SLEEP condition satisfied)/WAKE (WAKE condition satisfied), TL (Torque restriction enabled), TRQ1, 2 (Switching of torque limit 1, 2), PPI (Switching of P/PI control), CAS (Switching of control gain), FOC (Preparatory excitation), ATR (Torque control enabled), TBS (Torque bias enabled), LAC (Cancellation of acceleration/deceleration), Mi1-11 (General-purpose input 1-11), PCC (Clearance of pulse counter), ECOM (Start of EzCOM), PRG (Program run), HLD (Acceleration/deceleration stop), REN (Operation permission signal), PLA (Pulse string input A), and PLB (Pulse string input B) | |
| | Backup power supply terminal | | P+/P-: DC24V input (allowable input voltage: 24 V±10%) | |
| | STO input terminal | | 2 terminals (simultaneous input) | |
| | Thermistor input terminal | | 1 terminal (possible to switch between positive temperature coefficient/negative temperature coefficient resistance element) | |

| Item | | Specifications | |
|---|---|---|---|
| Output | Output terminal function | Transistor output 5 terminal, 1a contact relay 1 point, 1c contact relay 1 point | |
| | Relay and alarm relay (16, AL) | RUN (During operation), FA1-5 (Reached signal), IRDY (Operation ready completion), FWR (During normal rotation operation), RVR (During reverse rotation operation), FREF (Frequency command operator keypad), REF (Operation command operator keypad), SETM (Second control under selection), AL (Alarm signal), MJA (Severe failure signal), OTQ (Over torque) *7, IP (During instantaneous power failure), UV (Under insufficient voltage), TRQ (During torque limitation), IPS (During power failure deceleration), RNT (RUN time over), ONT (Power on time over), THM (Electronic thermal warning), THC (Electronic thermal warning), WAC (Capacitor life advance notice), WAF (Fan life advance notice), FR (Operation command signal), OHF (Cooling fin heating advance notice), LOC/LOC2 (Low-current signal), OL/OL2 (Overload advance notice), BRK (Brake release), BER (Brake abnormality), ZS (Zero-speed detection signal), OD/OD2 (PID deviation excessive), FBV/FBV2 (PID feedback comparison), NDc (Communication disconnection), Ai1Dc/Ai2Dc/Ai3Dc (Analog disconnection Ai1/Ai2/Ai3), WCAi1/WCAi2/WCAi3 (Window comparator Ai1/Ai2/Ai3), LOG1-7 (Logical operation result 1-7), MO1-7 (General output 1-7), and OVS (Receiving overvoltage). | |
| | EDM output terminal | Output for STO diagnosis | |
| | Monitor output terminal *8 | Possible to output through selection from monitor data of parameters | |
| EMC filter switching *9 | | Possible to enable the EMC noise filter (switching method is different depending on the model) | |
| External access to PC | | USB Micro-B | |
| Use environment | Ambient temperature *10 | ND (normal duty) | -10 to 50°C |
| | | LD (low duty) | -10 to 45°C |
| | | VLD (very low duty) | -10 to 40°C |
| | Storage temperature *11 | -20 to 65°C | |
| | Humidity | 20-90%RH (location free of condensation) | |
| | Vibration *12 | 5.9 $m/s^2$ (0.6 G) 10 to 55 Hz: 3G3RX2-A2004 to A2220 / 3G3RX2-A4007 to A4220<br>2.94 $m/s^2$ (0.3 G) 10 to 55 Hz: 3G3RX2-A2300 to A2550 / 3G3RX2-A4300 to A413K | |
| | Use location *13 | 1000 m altitude or lower (location free from corrosive gas, oil mist, and dust) | |
| Expected Life time | | Smoothing capacitor 10 years | |
| | | Designed life of cooling fan 10 years (models equipped with a cooling fan) free from dust | |
| | | Memory element on the control circuit board | |
| Applicable standards *14 | | Compliance with UL/cUL/CE standards, RCM, Functional Safety SIL3/PLe (to be obtained) | |
| Painting color | | Black | |
| Operating, display | | LCD Operator *15 | |
| Number of option slots | | 3 ports | |
| Other options | | Braking resistor, AC reactor, DC reactor, noise filter | |

*1 The output frequency range depend on the control and motor used. When running the inverter exceeding 60 Hz, check the maximum allowable frequency with the manufacturer of the motor.
*2 When the control mode is changed, unless the motor constant is appropriately configured, you cannot obtain the desired starting torque or the inverter may trip.
*3 The variable range of motor speed may vary depending on your system or the environment where the motor is used. Please contact us for details.
*4 Both the input power and output power are reference values, which are not appropriate for use in calculation of efficiency values, etc. To obtain an accurate value, use an external device.
*5 The IGBT error [E030] is generated by the protective function not only for short circuit protection but also when IGBT is damaged. Depending on the operating conditions of the inverter, the overcurrent error [E001] may occur, instead of the IGBT error.
*6 At the factory default setting, when voltage and current on Ai1/Ai2 terminal is changed using a switch, with input of voltage at 9.8 V and current at 19.8 mA, the maximum frequency is commanded. To change characteristics, make adjustments using the analog start/end function.
*7 The threshold for signal output varies depending on the motor to be combined with the inverter, parameter adjustment, etc.
*8 The output data of analog voltage monitor and analog current monitor are reference values for connecting an analog meter. Due to the meter to be connected and variation in analog output circuit, the maximum output value may slightly vary from 10 V or 20 mA. To change characteristics, make adjustments using the Ao1 adjustment and Ao2 adjustment functions. Some monitor data cannot be output.
*9 To enable the EMC filter, connect with a power supply grounded at a neutral point. Otherwise, the leakage current may increase.
*10 Use the 400 V class inverter at an input voltage of 500 VAC or below. If input voltage exceeds 500 VAC due to fluctuation of power, use the inverter at 40°C or lower ambient temperature.
*11 The storage temperature is the temperature during transport.
*12 To be in accordance with the testing method specified in JIS C 60068-2-6: 2010 (IEC 60068-2-6:2007)
*13 When the inverter is used in a location at 1000 m or higher altitude, air pressure reduces approximately 1% every 100 m elevation. Perform 1% current derating and conduct evaluation for every 100 m elevation.
*14 For insulation distance, comply with UL and CE standards
*15 When a clock function is used, the optional battery (CR2032, 3 V) is required. When you purchase, this LCD operator does not come with the battery.

### 3G3RX2 200 V class

Very Low Duty (VLD)/Low Duty (LD)/Normal Duty (ND)

| 3G3RX2-A2□□□ | | | | A2004 | A2007 | A2015 | A2022 | A2037 | A2055 | A2075 | A2110 | A2150 | A2185 | A2220 | A2300 | A2370 | A2450 | A2550 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Applicable motor (4-pole) capacity (kW) | | | VLD | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| | | | LD | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| | | | ND | 0.4 | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 |
| Output | Rated output current (A) | | VLD | 4.4 | 8.0 | 10.4 | 15.6 | 22.8 | 33.0 | 46.0 | 60.0 | 80.0 | 93.0 | 124 | 153 | 185 | 229 | 295 |
| | | | LD | 3.7 | 6.3 | 9.4 | 12.0 | 19.6 | 30.0 | 40.0 | 56.0 | 73.0 | 85.0 | 113 | 140 | 169 | 210 | 270 |
| | | | ND | 3.2 | 5.0 | 8.0 | 11.0 | 17.5 | 25.0 | 32.0 | 46.0 | 64.0 | 76.0 | 95.0 | 122 | 146 | 182 | 220 |
| | Overload current rating | | VLD | 110% 60 sec / 120% 3 sec | | | | | | | | | | | | | | |
| | | | LD | 120% 60 sec / 150% 3 sec | | | | | | | | | | | | | | |
| | | | ND | 150% 60 sec / 200% 3 sec | | | | | | | | | | | | | | |
| | Rated output voltage | | | 3-phase (3-wire) 200 to 240 V (depending on receiving voltage) | | | | | | | | | | | | | | |
| | Rated capacity (kVA) | 200 V | VLD | 1.5 | 2.8 | 3.6 | 5.4 | 7.9 | 11.4 | 15.9 | 20.8 | 27.7 | 32.2 | 43.0 | 53.0 | 64.1 | 79.3 | 102.2 |
| | | | LD | 1.3 | 2.2 | 3.3 | 4.2 | 6.8 | 10.4 | 13.9 | 19.4 | 25.3 | 29.4 | 39.1 | 48.5 | 58.5 | 72.7 | 93.5 |
| | | | ND | 1.1 | 1.7 | 2.8 | 3.8 | 6.1 | 8.7 | 11.1 | 15.9 | 22.2 | 26.3 | 32.9 | 42.3 | 50.6 | 63.0 | 76.2 |
| | | 240 V | VLD | 1.8 | 3.3 | 4.3 | 6.5 | 9.5 | 13.7 | 19.1 | 24.9 | 33.3 | 38.7 | 51.5 | 63.6 | 76.9 | 95.2 | 122.6 |
| | | | LD | 1.5 | 2.6 | 3.9 | 5.0 | 8.1 | 12.5 | 16.6 | 23.3 | 30.3 | 35.3 | 47.0 | 58.2 | 70.3 | 87.3 | 112.2 |
| | | | ND | 1.3 | 2.1 | 3.3 | 4.6 | 7.3 | 10.4 | 13.3 | 19.1 | 26.6 | 31.6 | 39.5 | 50.7 | 60.7 | 75.7 | 91.5 |
| Input | Rated input current (A) *1 | | VLD | 5.2 | 9.5 | 12.4 | 18.6 | 27.1 | 39.3 | 54.8 | 71.4 | 95.2 | 110.7 | 147.6 | 182.1 | 220.2 | 272.6 | 351.2 |
| | | | LD | 4.4 | 7.5 | 11.2 | 14.3 | 23.3 | 35.7 | 47.6 | 66.7 | 86.9 | 101.2 | 134.5 | 166.7 | 201.2 | 250.0 | 321.4 |
| | | | ND | 3.8 | 6.0 | 9.5 | 13.1 | 20.8 | 29.8 | 38.1 | 54.8 | 76.2 | 90.5 | 113.1 | 145.2 | 173.8 | 216.7 | 261.9 |
| | Rated input AC voltage | | | Control power supply: Power supply single phase 200 to 240 V/allowable variation range 170 to 264 V, 50 Hz (allowable variation range: 47.5 to 52.5 Hz)/60 Hz (allowable variation range: 57 to 63 Hz) | | | | | | | | | | | | | | |
| | | | | Main circuit power supply: 3-phase (3-wire) 200 to 240 V/allowable variation range 170 to 264 V, 50 Hz (allowable variation range: 47.5 to 52.5 Hz)/60 Hz (allowable variation range: 57 to 63 Hz) | | | | | | | | | | | | | | |
| | Power supply equipment capacity (kVA) *2 | | VLD | 2.0 | 3.6 | 4.7 | 7.1 | 10.3 | 15.0 | 20.9 | 27.2 | 36.3 | 42.2 | 56.3 | 69.4 | 83.9 | 103.9 | 133.8 |
| | | | LD | 1.7 | 2.9 | 4.3 | 5.4 | 8.9 | 13.6 | 18.1 | 25.4 | 33.1 | 38.6 | 51.3 | 63.5 | 76.7 | 95.3 | 122.5 |
| | | | ND | 1.5 | 2.3 | 3.6 | 5.0 | 7.9 | 11.3 | 14.5 | 20.9 | 29.0 | 34.5 | 43.1 | 55.3 | 66.2 | 82.6 | 99.8 |
| Carrier frequency operating range *3 | | | VLD | 0.5 to 10.0 kHz | | | | | | | | | | | | | | |
| | | | LD | 0.5 to 12.0 kHz | | | | | | | | | | | | | | |
| | | | ND | 0.5 to 16.0 kHz | | | | | | | | | | | | | | |
| Motor start torque *4 | | | | 200%/0.3 Hz | | | | | | | | | | | | | | |
| Braking | Regenerative braking | | | Equipped with BRD circuit (with a discharging resistor separately installed) | | | | | | | | | | | Regenerative braking unit separately installed | | | |
| | Minimum resistance that can be connected (Ω) | | | 50 | 50 | 35 | 35 | 35 | 16 | 10 | 10 | 7.5 | 7.5 | 5 | --- | --- | --- | --- |
| Dimension | Height (mm) | | | 255 | 255 | 255 | 255 | 255 | 260 | 260 | 260 | 390 | 390 | 390 | 540 | 550 | 550 | 700 |
| | Width (mm) | | | 150 | 150 | 150 | 150 | 150 | 210 | 210 | 210 | 245 | 245 | 245 | 300 | 390 | 390 | 480 |
| | Depth (mm) | | | 140 | 140 | 140 | 140 | 140 | 170 | 170 | 170 | 190 | 190 | 190 | 195 | 250 | 250 | 250 |
| Protection class | | | | IP20 *5 / UL open type | | | | | | | | | | | | | | |
| Approximate mass (kg) | | | | 3 | 3 | 3 | 3 | 3 | 6 | 6 | 6 | 10 | 10 | 10 | 22 | 33 | 33 | 47 |

*1 The rated input currents shown in the table are the values when the rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)

*2 The power supply equipment capacities shown in the table are the values when 220 V rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)

*3 The setting of rated values for carrier frequencies [bb101]/[bb201] are internally limited in accordance with the description. Also, it is recommended to set values equivalent to or above (maximum output frequency for driving ×10) Hz for the setting of carrier frequencies [bb101]/[bb201]. Also, in the case of induction motor (IM) control, for items other than those subject to V/f control, it is recommended to set carrier frequency at 2 kHz or more. In the case of synchronous motor (SM)/permanent magnet motor (PMM) control, it is recommended to set carrier frequency at 8 kHz or more.

*4 The value of the sensor-less vector control applied to the ND rating in the Standard motor. Torque characteristics may vary depending on the control method and the motor used.

*5 Based on self declaration.

### 3G3RX2 400 V class

Very Low Duty (VLD)/Low Duty (LD)/Normal Duty (ND)

| 3G3RX2-□4□□□ | | | | A4007 | A4015 | A4022 | A4037 | A4055 | A4075 | A4110 | A4150 | A4185 | A4220 | A4300 | A4370 | A4450 | A4550 | B4750 | B4900 | B411K | B413K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Applicable motor (4-pole) capacity (kW) | | | VLD | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 |
| | | | LD | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 |
| | | | ND | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 |
| Output | Rated output current (A) | | VLD | 4.1 | 5.4 | 8.3 | 12.6 | 17.5 | 25.0 | 31.0 | 40.0 | 47.0 | 62.0 | 77.0 | 93.0 | 116 | 147 | 176 | 213 | 252 | 316 |
| | | | LD | 3.1 | 4.8 | 6.7 | 11.1 | 16.0 | 22.0 | 29.0 | 37.0 | 43.0 | 57.0 | 70.0 | 85.0 | 105 | 135 | 160 | 195 | 230 | 290 |
| | | | ND | 2.5 | 4.0 | 5.5 | 9.2 | 14.8 | 19.0 | 25.0 | 32.0 | 39.0 | 48.0 | 61.0 | 75.0 | 91.0 | 112 | 150 | 180 | 217 | 260 |
| | Overload current rating | | VLD | 110% 60 sec / 120% 3 sec | | | | | | | | | | | | | | | | | |
| | | | LD | 120% 60 sec / 150% 3 sec | | | | | | | | | | | | | | | | | |
| | | | ND | 150% 60 sec / 200% 3 sec | | | | | | | | | | | | | | | | | |
| | Rated output voltage | | | 3-phase (3-wire) 380 to 500 V (depending on receiving voltage) | | | | | | | | | | | | | | | | | |
| | Rated capacity (kVA) | 400 V | VLD | 2.8 | 3.7 | 5.8 | 8.7 | 12.1 | 17.3 | 21.5 | 27.7 | 32.6 | 43.0 | 53.3 | 64.4 | 80.4 | 101.8 | 121.9 | 147.6 | 174.6 | 218.9 |
| | | | LD | 2.1 | 3.3 | 4.6 | 7.7 | 11.1 | 15.2 | 20.1 | 25.6 | 29.8 | 39.5 | 48.5 | 58.9 | 72.7 | 93.5 | 110.9 | 135.1 | 159.3 | 200.9 |
| | | | ND | 1.7 | 2.8 | 3.8 | 6.4 | 10.3 | 13.2 | 17.3 | 22.2 | 27.0 | 33.3 | 42.3 | 52.0 | 63.0 | 77.6 | 103.9 | 124.7 | 150.3 | 180.1 |
| | | 500 V | VLD | 3.6 | 4.7 | 7.2 | 10.9 | 15.2 | 21.7 | 26.8 | 34.6 | 40.7 | 53.7 | 66.7 | 80.5 | 100.5 | 127.3 | 152.4 | 184.5 | 218.2 | 273.7 |
| | | | LD | 2.7 | 4.2 | 5.8 | 9.6 | 13.9 | 19.1 | 25.1 | 32.0 | 37.2 | 49.4 | 60.6 | 73.6 | 90.9 | 116.9 | 138.6 | 168.9 | 199.2 | 251.1 |
| | | | ND | 2.2 | 3.5 | 4.8 | 8.0 | 12.8 | 16.5 | 21.7 | 27.7 | 33.8 | 41.6 | 52.8 | 65.0 | 78.8 | 97.0 | 129.9 | 155.9 | 187.9 | 225.2 |
| Input | Rated input current (A) *1 | | VLD | 4.9 | 6.4 | 9.9 | 15.0 | 20.8 | 29.8 | 36.9 | 47.6 | 56.0 | 73.8 | 91.7 | 110.7 | 138.1 | 175.0 | 209.5 | 253.6 | 300.0 | 376.2 |
| | | | LD | 3.7 | 5.7 | 8.0 | 13.2 | 19.0 | 26.2 | 34.5 | 44.0 | 51.2 | 67.9 | 83.3 | 101.2 | 125.0 | 160.7 | 190.5 | 232.1 | 273.8 | 345.2 |
| | | | ND | 3.0 | 4.8 | 6.5 | 11.0 | 17.6 | 22.6 | 29.8 | 38.1 | 46.4 | 57.1 | 72.6 | 89.3 | 108.3 | 133.3 | 178.6 | 214.3 | 258.3 | 309.5 |
| | Rated input AC voltage | | | Control power supply: Power supply single phase 380 to 500 V (allowable variation range 323 to 550 V), 50 Hz (allowable variation range: 47.5 to 52.5 Hz)/60 Hz (allowable variation range: 57 to 63 Hz) | | | | | | | | | | | | | | | | | |
| | | | | Main circuit power supply: 3-phase (3-wire) 380 to 500 V (allowable variation range) 323 to 550 V, 50 Hz (allowable variation range: 47.5 to 52.5 Hz)/60 Hz (allowable variation range: 57 to 63 Hz) | | | | | | | | | | | | | | | | | |
| | Power supply equipment capacity (kVA) *2 | | VLD | 3.7 | 4.9 | 7.5 | 11.4 | 15.9 | 22.7 | 28.1 | 36.3 | 42.6 | 56.3 | 69.9 | 84.4 | 105.2 | 133.4 | 159.7 | 193.2 | 228.6 | 286.7 |
| | | | LD | 2.8 | 4.4 | 6.1 | 10.1 | 14.5 | 20.0 | 26.3 | 33.6 | 39.0 | 51.7 | 63.5 | 77.1 | 95.3 | 122.5 | 145.2 | 176.9 | 208.7 | 263.1 |
| | | | ND | 2.3 | 3.6 | 5.0 | 8.3 | 13.4 | 17.2 | 22.7 | 29.0 | 35.4 | 43.5 | 55.3 | 68.0 | 82.6 | 101.6 | 136.1 | 163.3 | 196.9 | 235.9 |
| Carrier frequency range *3 | | | VLD | 0.5 to 10.0 kHz | | | | | | | | | | | | | | 0.5 to 8.0 kHz | | | |
| | | | LD | 0.5 to 12.0 kHz | | | | | | | | | | | | | | 0.5 to 8.0 kHz | | | |
| | | | ND | 0.5 to 16.0 kHz | | | | | | | | | | | | | | 0.5 to 10.0 kHz | | | |
| Motor start torque *4 | | | | 200%/0.3 Hz | | | | | | | | | | | | | | 180%/0.3 Hz | | | |
| Braking | Regenerative braking | | | Equipped with braking resistance circuit (with a discharging resistor separately installed) | | | | | | | | | | | | Regenerative braking unit separately installed | | | | | |
| | Minimum resistance that can be connected (Ω) | | | 100 | 100 | 100 | 70 | 70 | 35 | 35 | 24 | 24 | 20 | 15 | 15 | 10 | 10 | --- | --- | --- | --- |
| Dimension | Height (mm) | | | 255 | 255 | 255 | 255 | 260 | 260 | 260 | 390 | 390 | 390 | 540 | 550 | 550 | 550 | 700 | 700 | 740 | 740 |
| | Width (mm) | | | 150 | 150 | 150 | 150 | 210 | 210 | 210 | 245 | 245 | 245 | 300 | 390 | 390 | 390 | 390 | 390 | 480 | 480 |
| | Depth (mm) | | | 140 | 140 | 140 | 140 | 170 | 170 | 170 | 190 | 190 | 190 | 195 | 250 | 250 | 250 | 270 | 270 | 270 | 270 |
| Protection class | | | | IP20 *5 / UL open type | | | | | | | | | | | | | | IP00 / UL open type | | | |
| Approximate mass (kg) | | | | 3 | 3 | 3 | 3 | 6 | 6 | 6 | 8.5 | 8.5 | 8.5 | 22 | 31 | 31 | 31 | 41 | 41 | 53 | 53 |

*1 The rated input currents shown in the table are the values when the rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)

*2 The power supply equipment capacities shown in the table are the values when 220 V rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)

*3 The setting of rated values for carrier frequencies [bb101]/[bb201] are internally limited in accordance with the description. Also, it is recommended to set values equivalent to or above (maximum output frequency for driving ×10) Hz for the setting of carrier frequencies [bb101]/[bb201]. Also, in the case of induction motor (IM) control, for items other than those subject to V/f control, it is recommended to set carrier frequency at 2 kHz or more. In the case of synchronous motor (SM)/permanent magnet motor (PMM) control, it is recommended to set carrier frequency at 8 kHz or more.

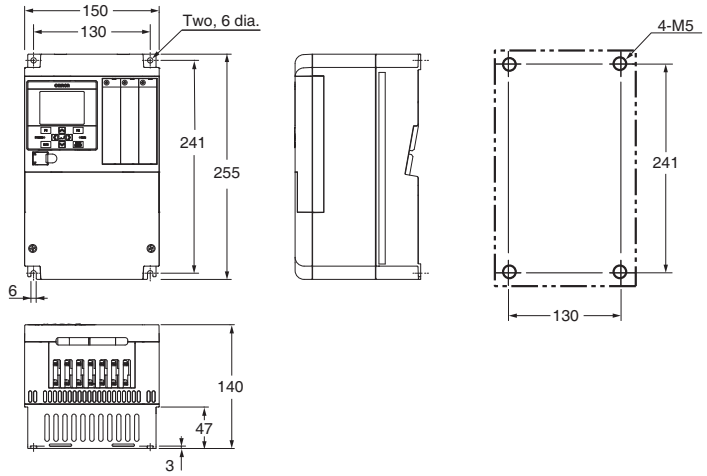
*4 The value of the sensor-less vector control applied to the ND rating in the Standard motor. Torque characteristics may vary depending on the control method and the motor used.

*5 Based on self declaration.

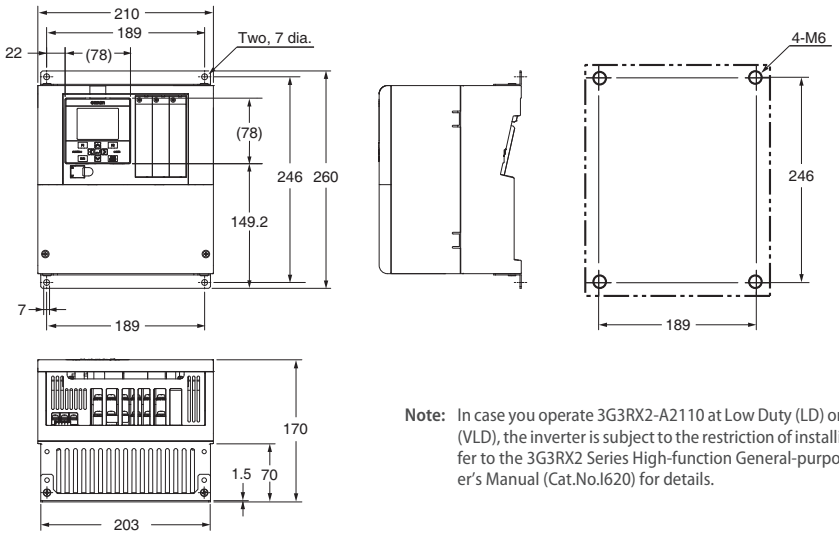
## Dimensions

### 3G3RX2 inverter

3G3RX2-A2004/A2007/A2015/A2022/A2037
3G3RX2-A4007/A4015/A4022/A4037

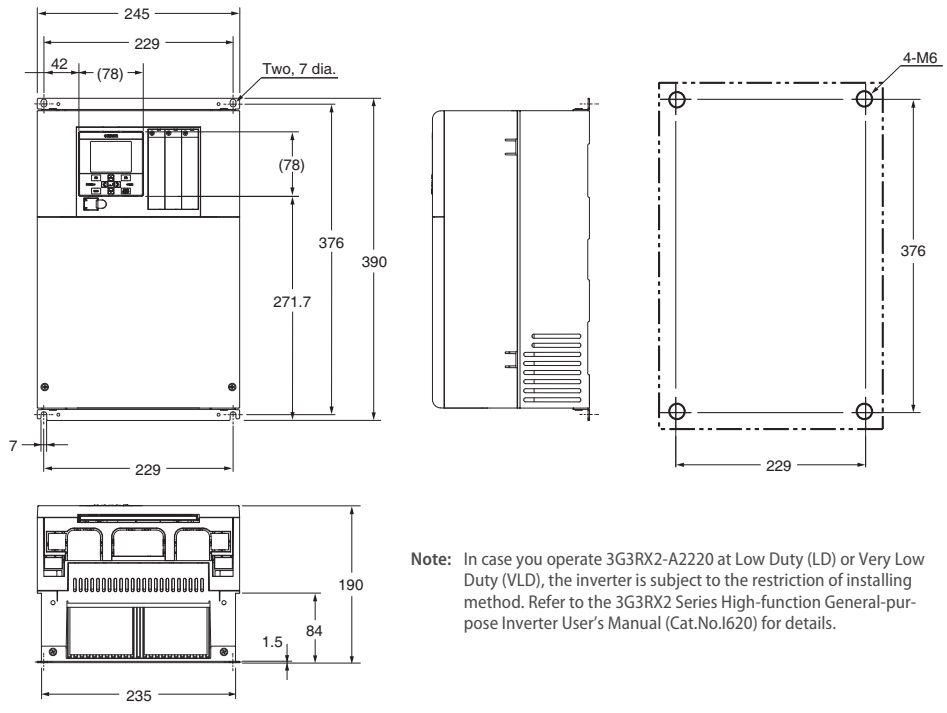



3G3RX2-A2055/A2075/A2110
3G3RX2-A4055/A4075/A4110



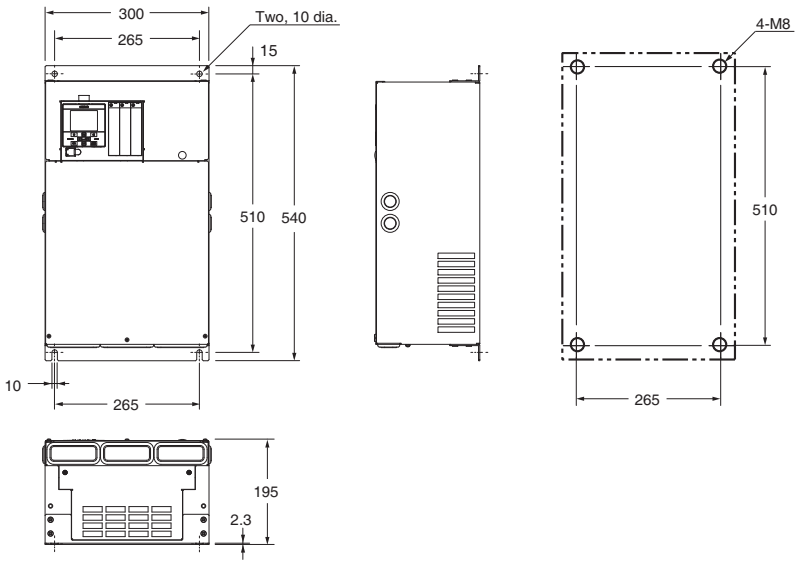

**Note:** In case you operate 3G3RX2-A2110 at Low Duty (LD) or Very Low Duty (VLD), the inverter is subject to the restriction of installing method. Refer to the 3G3RX2 Series High-function General-purpose Inverter User's Manual (Cat.No.I620) for details.

3G3RX2-A2150/A2185/A2220
3G3RX2-A4150/A4185/A4220

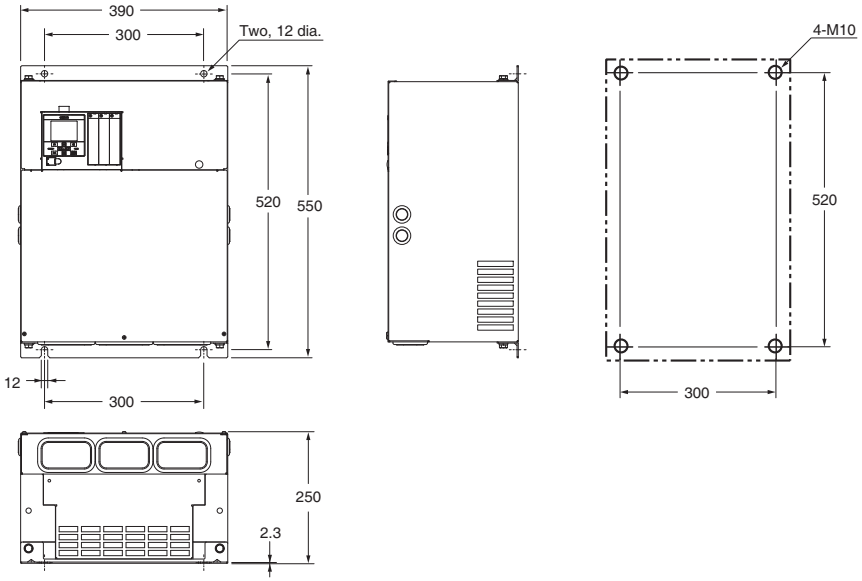



**Note:** In case you operate 3G3RX2-A2220 at Low Duty (LD) or Very Low Duty (VLD), the inverter is subject to the restriction of installing method. Refer to the 3G3RX2 Series High-function General-purpose Inverter User's Manual (Cat.No.I620) for details.

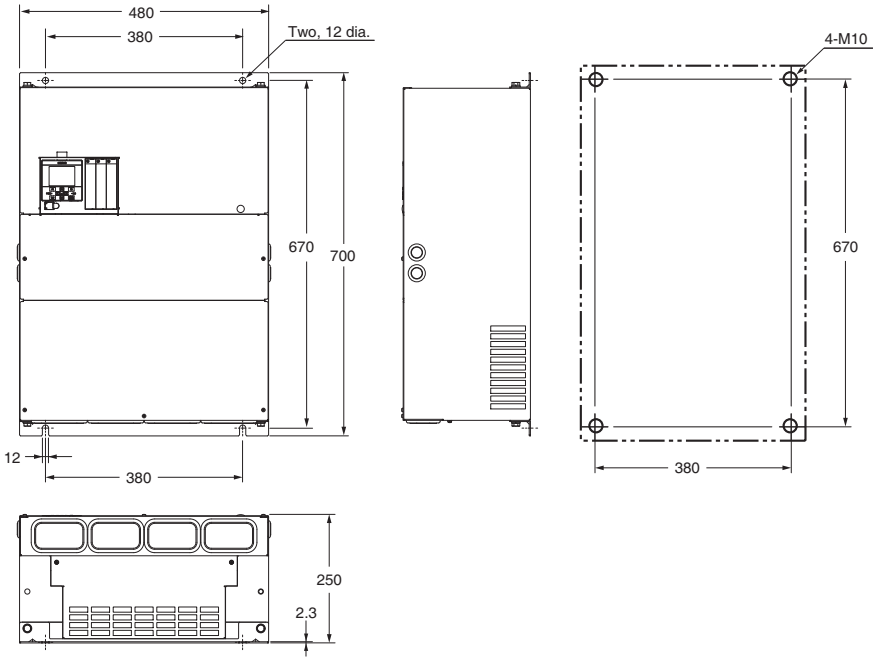
3G3RX2-A2300
3G3RX2-A4300



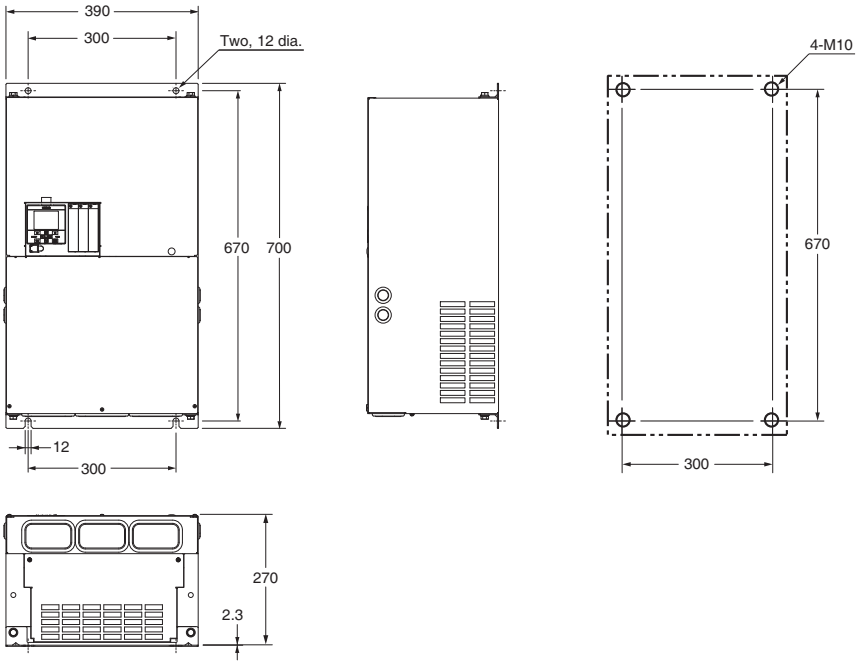

3G3RX2-A2370/A2450
3G3RX2-A4370/A4450/A4550



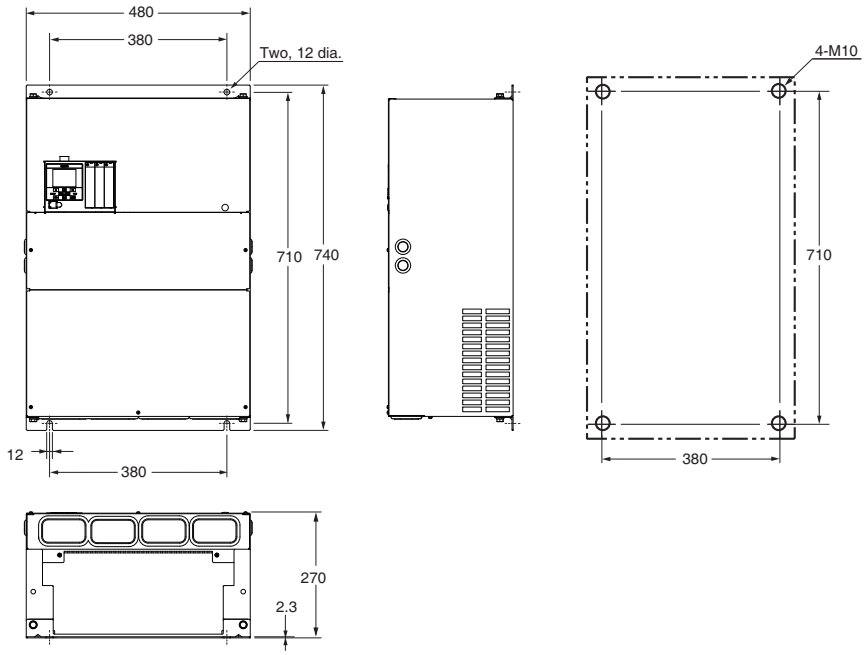

3G3RX2-A2550



3G3RX2-B4750/B4900



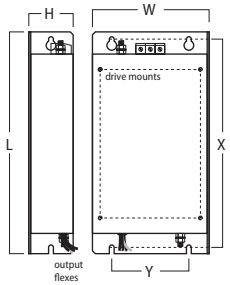

3G3RX2-B411K/B413K



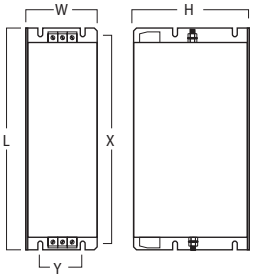
## Accessories

### Schaffner filters

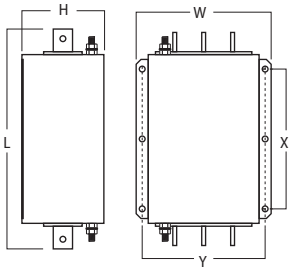
**Footprint dimensions**




**Book type dimensions**

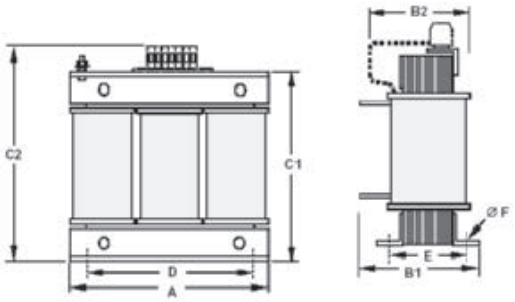



**Block type dimensions**




| Voltage class | Inverter model | Schaffner model | Filter type | Dimensions in mm | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | W | H | X | Y | M | Weight (kg) |
| 3-phase 200 V | 3G3RX2-A2004 | AX-FIR2021-SE | Footprint | 300 | 152 | 52 | 284 | 120 | M5 | 1.5 |
| | 3G3RX2-A2007 | | | | | | | | | |
| | 3G3RX2-A2015 | | | | | | | | | |
| | 3G3RX2-A2022 | | | | | | | | | |
| | 3G3RX2-A2037 | | | | | | | | | |
| | 3G3RX2-A2055 | AX-FIR2055-SE | Footprint | 306 | 213 | 56 | 290 | 170 | M6 | 2.5 |
| | 3G3RX2-A2075 | | | | | | | | | |
| | 3G3RX2-A2110 | | | | | | | | | |
| | 3G3RX2-A2150 | AX-FIR2114-SE | Footprint | 436 | 248 | 90 | 421 | 200 | M6 | – |
| | 3G3RX2-A2185 | | | | | | | | | |
| | 3G3RX2-A2220 | | | | | | | | | |
| | 3G3RX2-A2300 | AX-FIR4146-SE | Book | 310 | 100 | 225 | – | 70 | – | 6.6 |
| | 3G3RX2-A2370 | AX-FIR4310-SE | Block | 386 | 260 | 115 | 240 | 235 | – | 9.5 |
| | 3G3RX2-A2450 | | | | | | | | | |
| | 3G3RX2-A2550 | | | | | | | | | |
| 3-phase 400 V | 3G3RX2-A4007 | AX-FIR4011-SE | Footprint | 300 | 152 | 52 | 284 | 120 | M5 | 1.2 |
| | 3G3RX2-A4015 | | | | | | | | | |
| | 3G3RX2-A4022 | | | | | | | | | |
| | 3G3RX2-A4037 | | | | | | | | | |
| | 3G3RX2-A4055 | AX-FIR4030-SE | Footprint | 306 | 213 | 52 | 290 | 170 | M6 | 2 |
| | 3G3RX2-A4075 | | | | | | | | | |
| | 3G3RX2-A4110 | | | | | | | | | |
| | 3G3RX2-A4150 | AX-FIR4058-SE | Footprint | 436 | 248 | 56 | 421 | 200 | M6 | 3 |
| | 3G3RX2-A4185 | | | | | | | | | |
| | 3G3RX2-A4220 | | | | | | | | | |
| | 3G3RX2-A4300 | AX-FIR4073-SE | Book | 290 | 80 | 205 | – | 50 | – | 4.3 |
| | 3G3RX2-A4370 | AX-FIR4090-SE | Book | 300 | 90 | 210 | – | 60 | – | 5.1 |
| | 3G3RX2-A4450 | AX-FIR4146-SE | Book | 310 | 100 | 225 | – | 70 | – | 6.6 |
| | 3G3RX2-A4550 | | | | | | | | | |
| | 3G3RX2-B4750 | AX-FIR4310-SE | Block | 386 | 260 | 115 | 240 | 235 | – | 9.5 |
| | 3G3RX2-B4900 | | | | | | | | | |
| | 3G3RX2-B411K | | | | | | | | | |
| | 3G3RX2-B413K | | | | | | | | | |

## Input AC reactor




| Voltage class | Reference | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B1 | B2 | C1 | C2 | D | E | F | Weight (kg) |
| 3-phase 200 V | AX-RAI02800080-DE | 120 | – | 70 | – | 120 | 80 | 52 | 5.5 | 1.78 |
| | AX-RAI00880200-DE | | | 80 | | | | 62 | | 2.35 |
| | AX-RAI00350335-DE | 180 | | 85 | | 190 | 140 | 55 | 6 | 5.5 |
| | AX-RAI00180670-DE | | | | | | | | | |
| | AX-RAI00091000-DE | | | | | 205 | | | | 6.5 |
| | AX-RAI00071550-DE | | | 105 | | | | 85 | | 11.7 |
| | AX-RAI00042300-DE | | 120 | – | 150 | – | | | | |
| 3-phase 400 V | AX-RAI07700050-DE | 120 | – | 70 | – | 120 | 80 | 52 | 5.5 | 1.78 |
| | AX-RAI03500100-DE | | | 80 | | | | 62 | | 2.35 |
| | AX-RAI01300170-DE | 180 | | 75 | | 195 | 140 | 55 | 6 | 5.5 |
| | AX-RAI00740335-DE | | | 85 | | 190 | | | | |
| | AX-RAI00360500-DE | | | | | 205 | | | | 6.5 |
| | AX-RAI00290780-DE | | | 105 | | | | 75 | | 11.2 |
| | AX-RAI00191150-DE | 240 | | 110 | | 275 | 200 | | | 16.0 |
| | AX-RAI00111850-DE | | | | | | | | | |
| | AX-RAI00072700-DE | | 180 | – | 210 | – | | 110 | | 25.4 |

## DC reactor

Figure 1

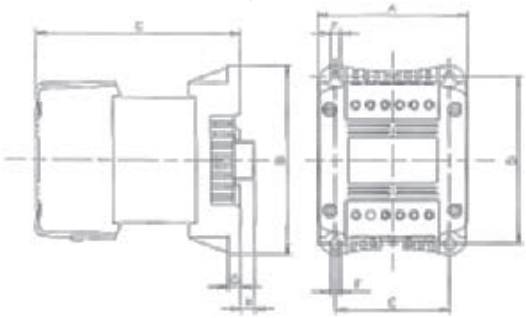
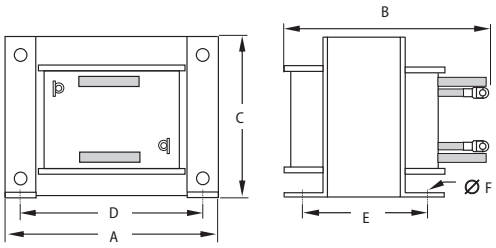


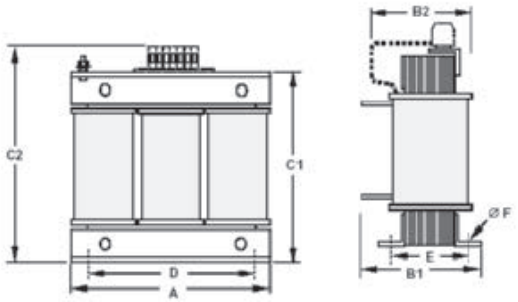
Figure 2




| Voltage class | Reference | Fig | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | D | E | F | G | H | Weight (kg) |
| 3-phase 200 V | AX-RC10700032-DE | 1 | 84 | 113 | 96 | 101 | 66 | 5 | 7.5 | 2 | 1.22 |
| | AX-RC06750061-DE | | | | 105 | | | | | | 1.60 |
| | AX-RC03510093-DE | | | | | | | | | | |
| | AX-RC02510138-DE | | | | 116 | | | | | | 1.95 |
| | AX-RC01600223-DE | | 108 | 135 | 124 | 120 | 82 | 6.5 | 9.5 | 9.5 | 3.20 |
| | AX-RC01110309-DE | | 120 | 152 | 136 | 135 | 94 | 7 | | – | 5.20 |
| | AX-RC00840437-DE | | | | 146 | | | | | | 6.00 |
| | AX-RC00590614-DE | | 150 | 177 | 160 | 160 | 115 | | 2 | | 11.4 |
| | AX-RC00440859-DE | | | | 183 | | | | | | 14.3 |
| | AX-RC00301275-DE | 2 | 195 | 161 | 163 | 185 | 88 | 10 | – | – | 17.0 |
| | AX-RC00231662-DE | | | 196 | | | 123 | | | | 25.0 |
| | AX-RC00192015-DE | | 240 | 188 | 200 | 228 | 109 | 12 | | | 34.0 |
| | AX-RC00162500-DE | | | 208 | | | 129 | | | | 42.0 |
| | AX-RC00133057-DE | | | 228 | | | 149 | | | | 48.0 |

| Voltage class | Reference | Fig | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | D | E | F | G | H | Weight (kg) |
| 3-phase 400 V | AX-RC27000030-DE | 1 | 84 | 113 | 105 | 101 | 66 | 5 | 7.5 | 2 | 1.60 |
| | AX-RC14000047-DE | | | | | | | | | | |
| | AX-RC10100069-DE | | | | 116 | | | | | | 1.95 |
| | AX-RC06400116-DE | | 108 | 135 | 133 | 120 | 82 | 6.5 | 9.5 | 9.5 | 3.70 |
| | AX-RC04410167-DE | | 120 | 152 | 136 | 135 | 94 | 7 | | – | 5.20 |
| | AX-RC03350219-DE | | | | 146 | | | | | | 6.00 |
| | AX-RC02330307-DE | | 150 | 177 | 160 | 160 | 115 | 7 | 2 | | 11.4 |
| | AX-RC01750430-DE | | | | 183 | | | | | | 14.3 |
| | AX-RC01200644-DE | 2 | 195 | 161 | 163 | 185 | 88 | 10 | – | – | 17.0 |
| | AX-RC00920797-DE | | | 196 | | | 123 | | | | 25.5 |
| | AX-RC00741042-DE | | 240 | 188 | 200 | 228 | 109 | 12 | | | 34.0 |
| | AX-RC00611236-DE | | | 198 | | | 119 | | | | 38.0 |
| | AX-RC00501529-DE | | | 228 | | | 149 | | | | 48.0 |
| | AX-RC00372094-DE | | | | | | | | | | |
| | AX-RC00312446-DE | | 300 | 230 | 256 | 250 | 160 | | | | 49.0 |
| | AX-RC00252981-DE | | | 245 | | | | | | | 52.5 |
| | AX-RC00213613-DE | | | 250 | | | 180 | | | | 79.0 |

**Output AC reactor**




| Voltage class | Reference | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B1 | B2 | C1 | C2 | D | E | F | Weight (kg) |
| 3-phase 200 V | AX-RAO11500026-DE | 120 | – | 70 | – | 120 | 80 | 52 | 5.5 | 1.78 |
| | AX-RAO07600042-DE | 120 | – | 70 | – | 120 | 80 | 52 | 5.5 | 1.78 |
| | AX-RAO04100075-DE | 120 | – | 80 | – | 120 | 80 | 62 | 5.5 | 2.35 |
| | AX-RAO03000105-DE | 120 | – | 80 | – | 120 | 80 | 62 | 5.5 | 2.35 |
| | AX-RAO01830160-DE | 180 | – | 85 | – | 195 | 140 | 55 | 6 | 5.5 |
| | AX-RAO01150220-DE | 180 | – | 85 | – | 195 | 140 | 55 | 6 | 5.5 |
| | AX-RAO00950320-DE | 180 | – | 85 | – | 210 | 140 | 55 | 6 | 6.5 |
| | AX-RAO00630430-DE | 180 | – | 95 | – | 210 | 140 | 65 | 6 | 9.1 |
| | AX-RAO00490640-DE | 180 | – | 105 | – | 210 | 140 | 75 | 6 | 11.7 |
| | AX-RAO00390800-DE | 240 | – | 110 | – | 275 | 200 | 75 | 6 | 16.0 |
| | AX-RAO00330950-DE | 240 | – | 110 | – | 275 | 200 | 75 | 6 | 16.0 |
| | AX-RAO00251210-DE | 240 | – | 110 | – | 300 | 200 | 75 | 6 | 16.0 |
| | AX-RAO00191450-DE | 240 | 130 | – | 215 | – | 200 | 85 | 6 | 18.6 |
| | AX-RAO00161820-DE | 240 | 160 | – | 215 | – | 200 | 110 | 6 | 27.0 |
| | AX-RAO00132200-DE | 300 | 165 | – | 300 | – | 200 | 125 | 6 | 33.5 |

| Voltage class | Reference | Dimensions in mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B1 | B2 | C1 | C2 | D | E | F | Weight (kg) |
| 3-phase 400 V | AX-RAO16300038-DE | 120 | – | 80 | – | 120 | 80 | 62 | 5.5 | 2.35 |
| | AX-RAO11800053-DE | 120 | – | 80 | – | 120 | 80 | 62 | 5.5 | 2.35 |
| | AX-RAO07300080-DE | 180 | – | 85 | – | 195 | 140 | 55 | 6 | 5.5 |
| | AX-RAO04600110-DE | 180 | – | 85 | – | 195 | 140 | 55 | 6 | 5.5 |
| | AX-RAO03600160-DE | 180 | – | 85 | – | 210 | 140 | 55 | 6 | 6.5 |
| | AX-RAO02500220-DE | 180 | – | 95 | – | 210 | 140 | 65 | 6 | 9.1 |
| | AX-RAO02000320-DE | 240 | – | 110 | – | 275 | 200 | 75 | 6 | 16.0 |
| | AX-RAO01650400-DE | 240 | – | 110 | – | 275 | 200 | 75 | 6 | 16.0 |
| | AX-RAO01300480-DE | 240 | – | 110 | – | 275 | 200 | 75 | 6 | 16.0 |
| | AX-RAO01030580-DE | 240 | – | 110 | – | 281 | 200 | 75 | 6 | 16.0 |
| | AX-RAO00800750-DE | 240 | – | 120 | – | 281 | 200 | 85 | 6 | 18.6 |
| | AX-RAO00680900-DE | 240 | – | 150 | – | 281 | 200 | 110 | 6 | 27.0 |
| | AX-RAO00531100-DE | 300 | – | 125 | – | 350 | 200 | 105 | 6 | 27.9 |
| | AX-RAO00401490-DE | 300 | 170 | – | 270 | – | 200 | 125 | 6 | 44.0 |
| | AX-RAO00331760-DE | 300 | 170 | – | 270 | – | 200 | 125 | 6 | 44.0 |
| | AX-RAO00262170-DE | 360 | 230 | – | 315 | – | 300 | 150 | 8 | 55.0 |
| | AX-RAO00212600-DE | 420 | 240 | – | 370 | – | 300 | 150 | 8 | 75.0 |

## Chokes

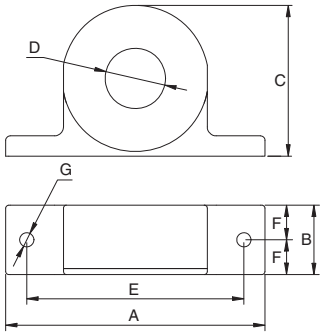



Figure 1

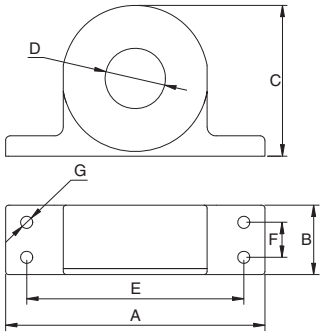



Figure 2

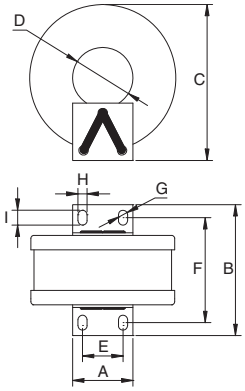



Figure 3

| Reference | Fig | D (diameter) | Motor (kW) | Dimensions (mm) | | | | | | | | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | C | D | E | F | G (diameter) | H | I | |
| AX-FER2102-PE | 1 | 21 | < 2.2 | 86 | 24 | 50 | 21 | 70 | 12 | 4 | – | – | 0.09 |
| AX-FER2815-PE | | 28 | < 15 | 106 | 25 | 65 | 28 | 90 | 12.5 | | | | 0.22 |
| AX-FER5045-PE | 2 | 50 | < 45 | 150 | 51 | 112 | 50 | 125 | 30 | 5 | | | 0.53 |
| AX-FER5255-PE | 3 | 52 | ≥ 55 | 47 | 75.5 | 110 | 52 | 30 | 58.5 | | 5 | 7 | 1.20 |

## DC Supply with Regenerative Active Front End

### Regenerative DC bus supply

**Figure 1**

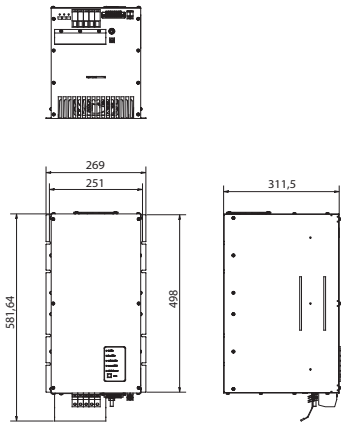



**Figure 2**

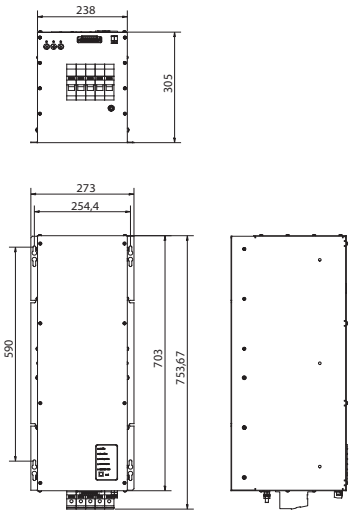
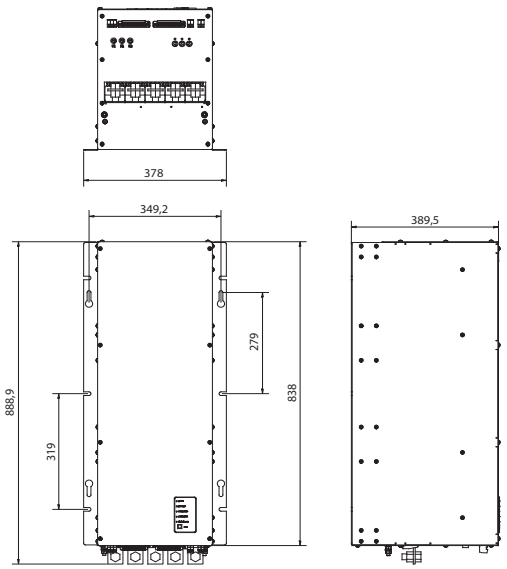


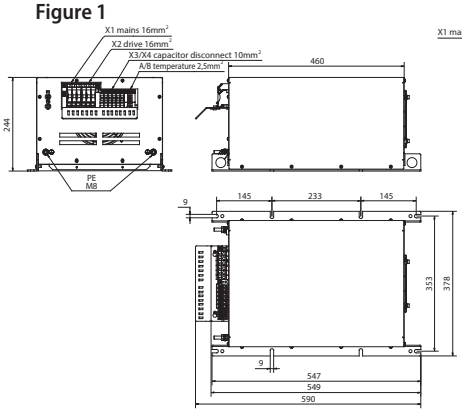

**Figure 3**



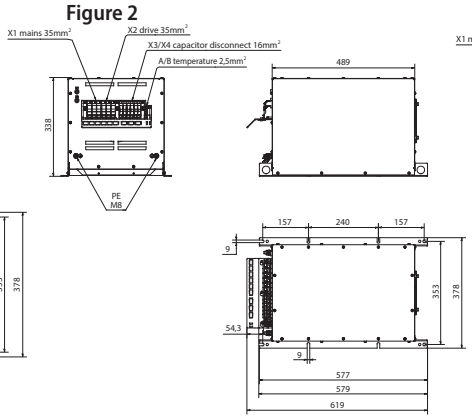

| Reference | Fig | Weight (kg) |
|---|---|---|
| RFE-B3 30-400-50-230-A-RVE | 1 | 37 |
| RFE-B3 45-400-50-230-A-RVE | | 38 |
| RFE-B3 60-400-50-230-A-RVE | 2 | 45 |
| RFE-B3 80-400-50-230-A-RVE | | 52 |
| RFE-B3 100-400-50-230-A-RVE | | 65 |
| RFE-B3 125-400-50-230-A-RVE | 3 | 87 |
| RFE-B3 150-400-50-230-A-RVE | | 89 |
| RFE-B3 200-400-50-230-A-RVE | | 100 |

## Low harmonic filter

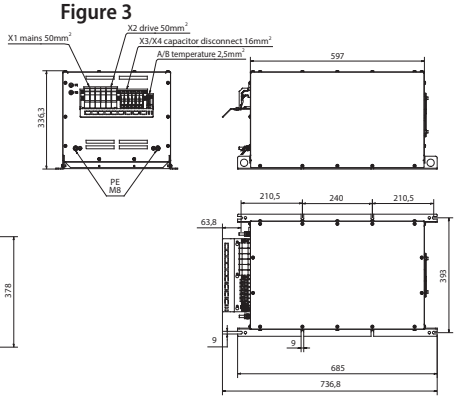
### Figure 1



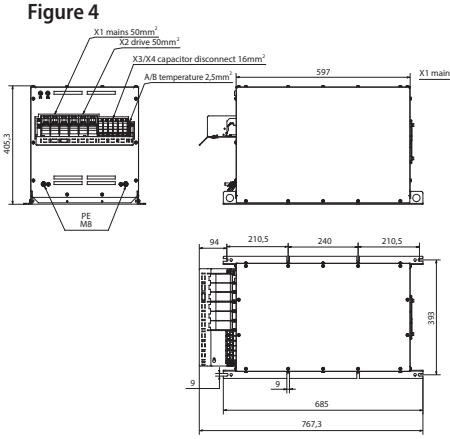

### Figure 2



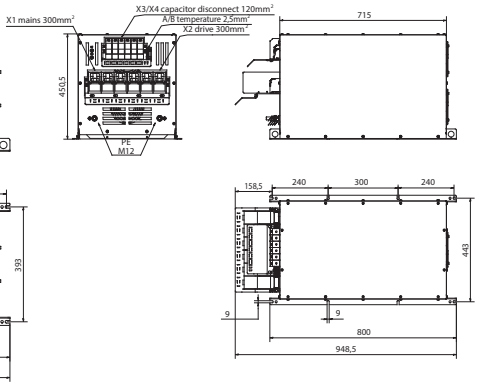

### Figure 3




### Figure 4



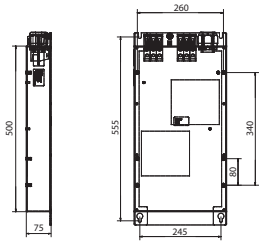

### Figure 5



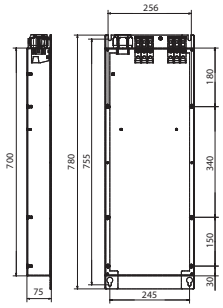

| Reference | Fig | Weight (kg) |
|---|---|---|
| RHF-RA 43-400-50-20-A-RVE | 1 | 39 |
| RHF-RA 72-400-50-20-A-RV | 2 | 56 |
| RHF-RA 86-400-50-20-A-RVE | 3 | 62 |
| RHF-RA 144-400-50-20-A-RVE | 4 | 85 |
| RHF-RA 180-400-50-20-A-RVE | | 102 |
| RHF-RA 217-400-50-20-A-RVE | 5 | 119 |
| RHF-RA 304-400-50-20-A-RVE | | 142 |

## EMC filter

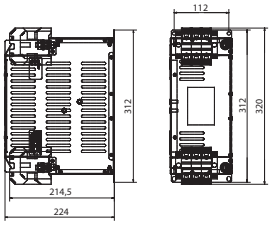
### Figure 1



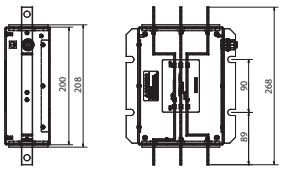

### Figure 2




### Figure 3




### Figure 4




| Reference | Fig | Filter type | Weight (kg) |
|---|---|---|---|
| RFI-RA 12-RVE | 1 | Footprint | 11,1 |
| RFI-RA 23-RVE | 2 | | 15,1 |
| RFI-RA X5-RVE | 3 | Book | 4,9 |
| RFI-RA X6-RVE | 4 | Block | 3,9 |

## Regenerative Braking unit

**Figure 1**

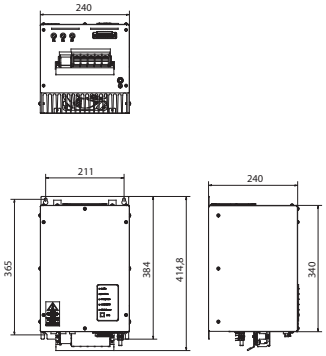



**Figure 2**

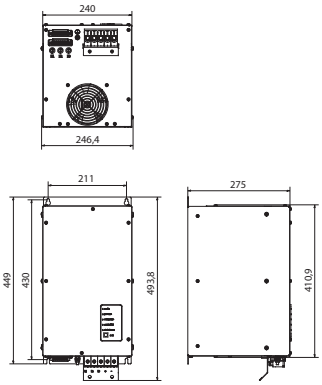



**Figure 3**

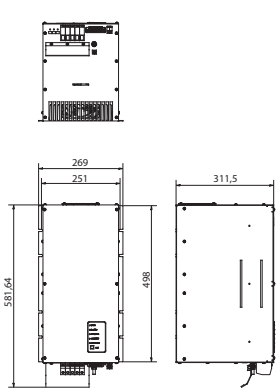



**Figure 4**

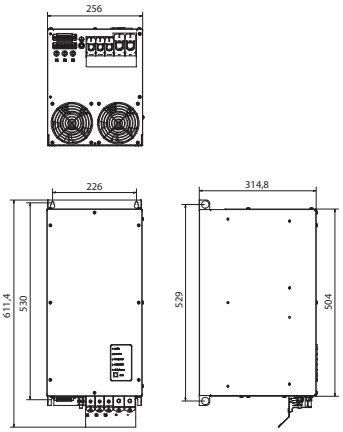



**Figure 5**

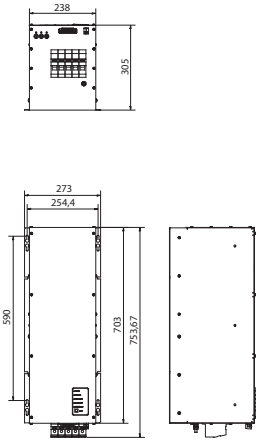



**Figure 6**

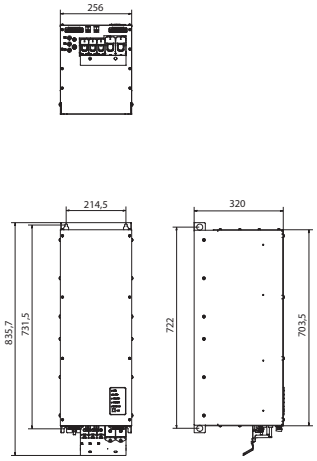
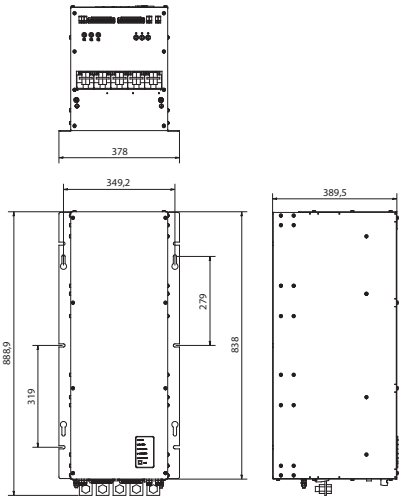


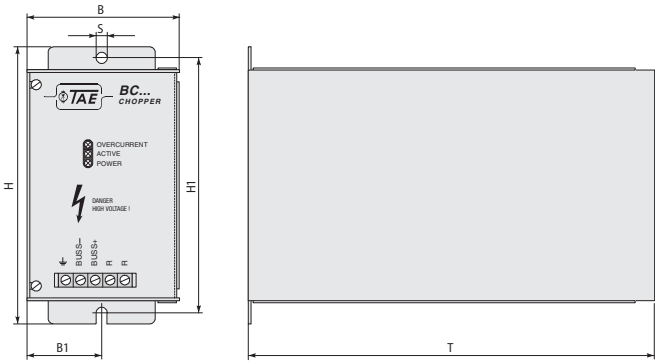

**Figure 7**




| Models for Low Duty applications (50%) | Fig | Weight (kg) | Models for High Duty applications | Fig | Weight (kg) |
|---|---|---|---|---|---|
| RLD-E0 8-400-50-0-A-RVE | 1 | 16 | RHD-B0 7-400-50-0-A-RVE | 1 | 17 |
| RLD-E0 12-400-50-0-A-RVE | | 17 | RHD-B0 13-400-50-0-A-RVE | | 18 |
| RLD-E0 16-400-50-0-A-RVE | | 18 | RHD-B0 18-400-50-0-A-RVE | | 20 |
| RLD-E0 20-400-50-0-A-RVE | | | RHD-B0 24-400-50-0-A-RVE | 3 | 32,5 |
| RLD-E0 24-400-50-0-A-RVE | 2 | | RHD-B0 30-400-50-230-A-RVE | | |
| RLD-E0 32-400-50-0-A-RVE | | 22 | RHD-B0 50-400-50-230-A-RVE | 5 | 40 |
| RLD-E0 40-400-50-0-A-RVE | | 23 | RHD-B0 70-400-50-230-A-RVE | | 51 |
| RLD-E0 48-400-50-0-A-RVE | 4 | 27 | RHD-B0 100-400-50-230-A-RVE | 7 | 85 |
| RLD-E0 58-400-50-0-A-RVE | | 28 | RHD-B0 125-400-50-230-A-RVE | | 91 |
| RLD-E0 80-400-50-0-A-RVE | | 30 | RHD-B0 150-400-50-230-A-RVE | | 100 |
| RLD-E0 95-400-50-0-A-RVE | | 35 | | | |
| RLD-E0 116-400-50-0-A-RVE | | 38 | | | |
| RLD-E0 140-400-50-0-A-RVE | 6 | 52 | | | |
| RLD-E0 170-400-50-230-A-RVE | | 60 | | | |
| RLD-E0 200-400-50-230-A-RVE | | 68 | | | |

### Braking unit

| Reference | Dimensions in mm | | | | | |
|---|---|---|---|---|---|---|
| | B | B1 | H | H1 | T | S |
| AX-BCR4015045-TE | 82.5 | 40.5 | 150 | 138 | 220 | 6 |
| AX-BCR4017068-TE | | | | | | |
| AX-BCR2035090-TE | 130 | 64.5 | 205 | 193 | 208 | 6 |
| AX-BCR2070130-TE | | | | | | |
| AX-BCR4035090-TE | | | | | | |
| AX-BCR4070130-TE | | | | | | |
| AX-BCR4090240-TE | 131 | 64.5 | 298 | 280 | 300 | 9 |




### Resistor

AX-REM00K15xxx

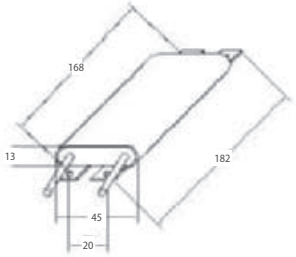



**Fig 1**

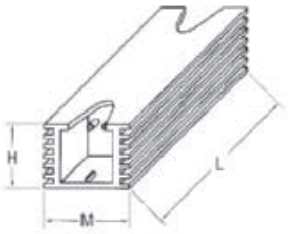



**Fig 2**

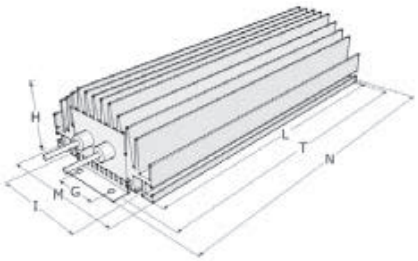



**Fig 3**

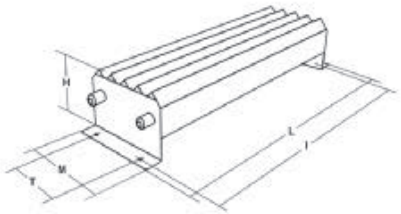



**Fig 4**

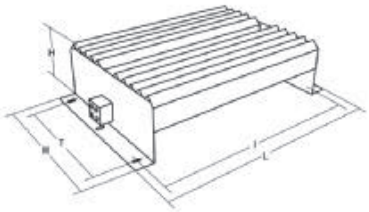
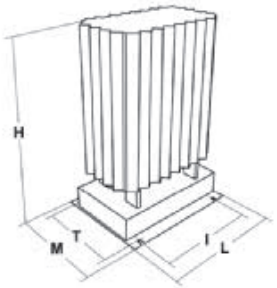


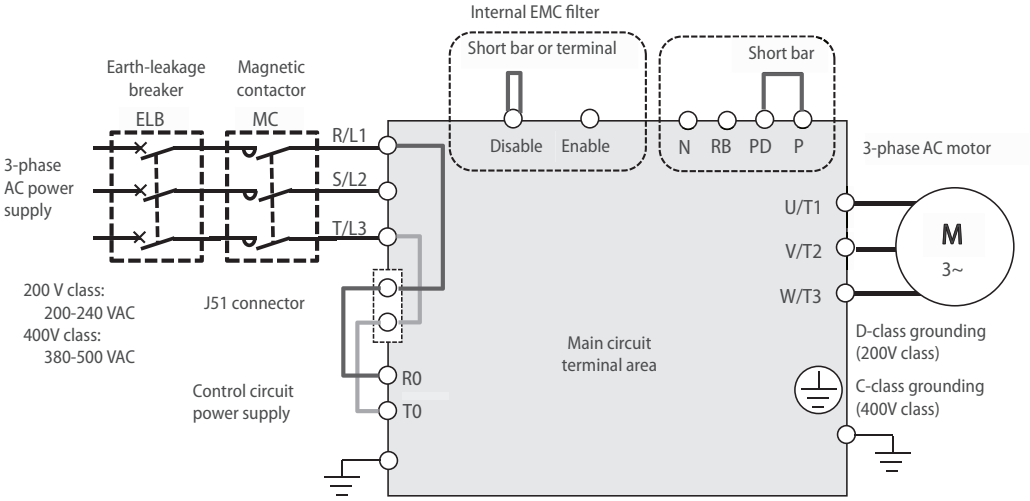

**Fig 5**




| Reference | Fig | Dimensions in mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | H | M | I | T | G | N | Weight (kg) |
| AX-REM00K2070-IE | 1 | 105 | 27 | 36 | 94 | – | – | – | 0.2 |
| AX-REM00K2120-IE | | | | | | | | | |
| AX-REM00K2200-IE | | | | | | | | | |
| AX-REM00K4075-IE | | 200 | 27 | 36 | 189 | – | – | – | 0.425 |
| AX-REM00K4035-IE | | | | | | | | | |
| AX-REM00K4030-IE | | | | | | | | | |
| AX-REM00K5120-IE | | 260 | 27 | 36 | 249 | – | – | – | 0.58 |
| AX-REM00K6100-IE | | 320 | 27 | 36 | 309 | – | – | – | 0.73 |
| AX-REM00K6035-IE | | | | | | | | | |
| AX-REM00K9070-IE | 2 | 200 | 61 | 100 | 74.5 | 216 | 40 | 230 | 1.41 |
| AX-REM00K9020-IE | | | | | | | | | |
| AX-REM00K9017-IE | | | | | | | | | |
| AX-REM01K9070-IE | 3 | 365 | 73 | 105 | 350 | 70 | – | – | 4 |
| AX-REM01K9017-IE | | | | | | | | | |
| AX-REM02K1070-IE | 4 | 310 | 100 | 240 | 295 | 210 | – | – | 7 |
| AX-REM02K1017-IE | | | | | | | | | |
| AX-REM03K5035-IE | | 365 | 100 | 240 | 350 | 210 | – | – | 8 |
| AX-REM03K5010-IE | | | | | | | | | |
| AX-REM19K0006-IE | 5 | 206 | 350 | 140 | 190 | 50 | – | – | 8.1 |
| AX-REM19K0008-IE | | | | | | | | | |
| AX-REM19K0020-IE | | | | | | | | | |
| AX-REM19K0030-IE | | | | | | | | | |
| AX-REM38K0012-IE | | 306 | 350 | 140 | 290 | 50 | – | – | 14.5 |

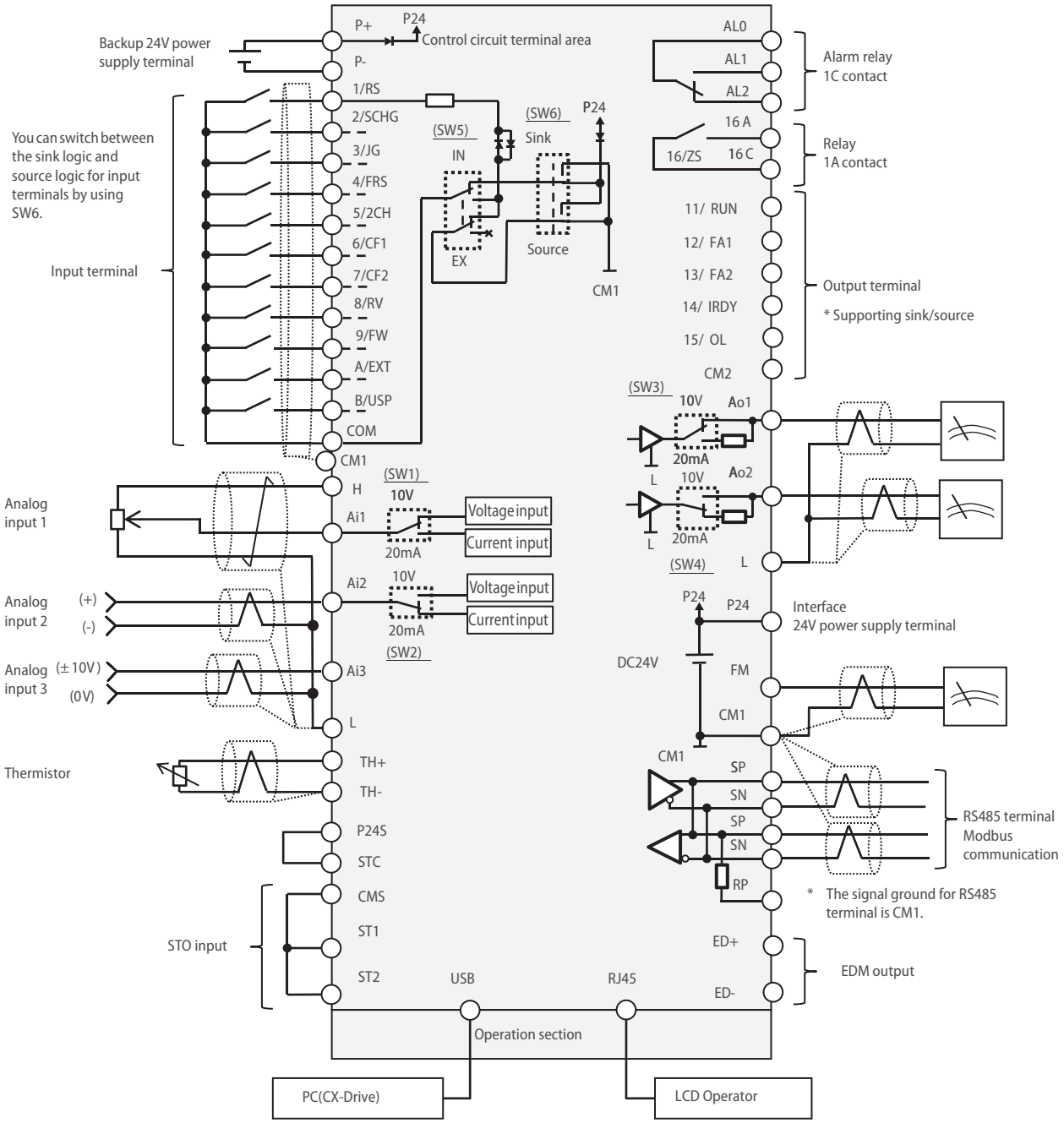
## Installation

### Terminal connections




| Terminal | Name | Function (signal level) |
|---|---|---|
| R/L1, S/L2, T/L3 | Main circuit power supply input | Used to connect the AC power supply |
| U/T1, V/T2, W/T3 | Inverter output terminal | Used to connect the 3-phase motor |
| PD/+1, P/+ | External DC reactor terminal | Remove the short bar between PD and P terminals, and connect the optional reactor DCL for improving power factor |
| P/+, RB | Braking resistor connection terminal | Connect option braking resistor (if a braking torque is required) |
| P/+, N/- | Regenerative braking unit connection terminal | Connect optional regenerative braking units |
| PE | Grounding | The earth terminal for the Inverter case. Please connect this terminal to the ground<br>Conduct class-D ground work for 200 V class, and class-C ground work for 400 V class |

## Control circuit




| | | | Terminal symbol | Terminal name | Description | Electrical characteristics |
|---|---|---|---|---|---|---|
| Input terminal | Digital input | Contact | 9, 8, 7, 6, 5, 4, 3, 2, 1 | Input terminal | You can select terminal functions using the parameter settings corresponding to each terminal. You can switch between the sink logic and source logic by switching SINK/SRC of SW6. | Voltage between each input/COM<br>• ON voltage Min. DC18V<br>• OFF voltage Max. DC3V<br>• Maximum allowable voltage DC27V<br>• Load current 5.6mA (at DC27V) |
| | | Contact/pulse | A | Pulse input-A | When (CA-90) is set to 00, A, and B terminals can be used as input terminals.<br>You can select terminal functions using the parameter settings corresponding to each terminal<br>When (CA-90) is not set to 00, they are used as terminals for pulse string input.<br>The maximum input pulse is 32kpps. | Voltage between each input/COM<br>• ON voltage Min. DC18V<br>• OFF voltage Max. DC3V<br>• Maximum allowable voltage DC27V<br>• Load current 5.6mA (at DC27V)<br>• Maximum 32kpps pulse input |
| | | | B | Pulse input-B | | |
| | | Common | COM | Common for input terminal | Common terminals for digital input terminals (1, 2, 3, 4, 5, 6, 7, 8, 9, A, B). There are three COM terminals | |

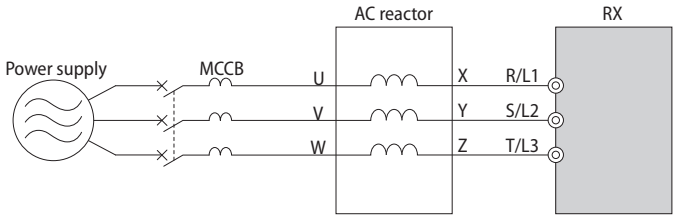
| | | | Terminal symbol | Terminal name | Description | Electrical characteristics |
|---|---|---|---|---|---|---|
| Output terminal | Digital output | Open collector | 15, 14, 13, 12, 11 | Output terminal | You can select terminal functions using the parameter settings corresponding to each terminal. These terminals can be used both in sink logic or source logic | Open collector output<br>• Between each terminal and CM2<br>• Voltage drop at ON: 4V or below<br>• Maximum allowable voltage· 27V<br>• Maximum allowable current: 50mA |
| | | | CM2 | Common for output terminal | Common terminals for output terminals 11-15 | |
| | | Relay | 16A<br>16C | 1a relay terminal | A relay for contact A output. | Maximum capacity of contact<br>• AC250V, 2A (resistance)/ AC250V, 1A (induction)<br>Minimum capacity of contact<br>• DC1V, 1mA |
| | | | AL0<br>AL1<br>AL2 | 1c relay terminal | A relay for contact C output. | Maximum capacity of contact AL1/AL0:<br>• AC250V, 2A (resistance)/AC250V, 0 2A (induction)<br>AL2/ALO:<br>• AC250V, 1A (resistance)/AC250V, 0.2A (induction)<br>Minimum capacity of contact (common)<br>• AC100V, 10mA/DC5V, 100mA |
| | | Monitor output | FM | Digital monitor (voltage) | For digital monitor output, you can choose the PWM output method at 6.4 ms interval or pulse output method with about 50% duty in which frequency varies. | Pulse string output DC0-10V<br>• Maximum allowable current 1.2 mA<br>• Maximum frequency 3.60 kHz |
| | | | CM1 | Common for digital monitor | The common terminal for digital monitor | |
| Analog input terminal for switching voltage and current | | Power supply | L | Analog power common | Common terminals for analog input terminals (Ai1, Ai2, Ai3) and analog output terminals (Ao1, Ao2). There are two L terminals | |
| | | | H | Power supply for setting speed | This is a 1OV VDC power supply. It is used when using analog input terminals (Ai1, Ai2, Ai3) and variable resistor for inputting voltage | Maximum allowable input current 20mA |
| | | Analog input | Ai1 | Analog input terminal 1 (voltage /current switching SW1) | For Ai1 and Ai2, 0-10 VDC voltage input and 0-20 mA current input can be switched using a switch for use. It can be used for input frequency command or feedback | In the case of voltage input:<br>• Input impedance about 10kΩ<br>• Allowable input voltage -0.3 to 12V<br>In the case of current input:<br>• Input impedance about 100Ω<br>• Maximum allowable input current 24 mA |
| | | | Ai2 | Analog input terminal 2 (voltage /current switching SW2) | | |
| | | | Ai3 | Analog input terminal 3 | -10 to 10 VDC voltage input is available. It can be used for input frequency command or feedback. | Only voltage input:<br>• Input impedance about 10 kΩ<br>• Allowable voltage input -12 to 12VDC |
| | | Analog output | Ao1 | Analog output terminal 1 (voltage /current switching SW3) | For Ao1 and Ao2. 0-10 VDC voltage output and 0-20 mA current output can be switched using a switch as output of information monitor data of the inverter. | In the case of voltage output:<br>• Maximum allowable output current 2mA<br>• Output voltage accuracy ±10%<br>(Ambient temperature: 25±10°C)<br>In the case of current input:<br>• Allowable load impedance 250Ω or below<br>• Output current accuracy: ±20%<br>(Ambient temperature: 25±10°C) |
| | | | Ao2 | Analog output terminal 2 (voltage /current switching SW4) | | |
| Thermistor terminal | | Analog input | TH+ | External thermistor input | When an external thermistor is connected, and resistance abnormality occurs due to abnormal temperature, etc., trip the inverter.<br>Connect the thermistor with TH+ and TH-. The level of detecting resistance abnormality can be adjusted from 0 to 10000Ω.<br>[Recommended thermistor characteristics]<br>Recommended product SHIBAURA ELECTRONICS Co., Ltd. PB41 E<br>AJlowable rated power: 100mW or more<br>Impedance at abnormal temperature: 3kΩ | 0 to 5VDC<br>[Input circuit] |
| | | | TH- | Common for external thermistor | | |
| RS485 communication | | Serial communication | SP<br>SN<br>RP<br>(CM1) | RS-485 terminal for Modbus communication | SP terminal: RS-485 differential (+) signal<br>SN terminal: RS-485 differential (–) signal<br>RP terminal: Connect to SP via the terminating resistor<br>CM1 terminal: Connect with the signal ground of an external communication device. (also used by FM terminal)<br>There are two SP terminals an SN terminals each, which are connected internally.<br>Maximum baud rate is 115.2 kps. | Equipped with terminating resistor (120Ω)<br>Enable: Short RP-SN<br>Disable: Open RP-SN |
| 24V power supply | | Power input | P24 | 24V output power terminal | 24 VDC power supply for contact signal.<br>The common terminal is P–. | 100 mA output at maximum |
| | | | P+ | External 24V input terminal (24V) | Input an external 24 VDC power to the inverter. With input of 24 V power, you can change parameter settings or operate optional communication without using a control power supply | Allowable input voltage 24 VDC±10%<br>Maximum power consumption 1 A |
| | | | P– | Terminal for P24/P+ (0 (zero) V) | | |

| | Terminal symbol | Terminal name | Description | Electrical characteristics |
|---|---|---|---|---|
| STO | P24S | 24V output power terminal | 24-VDC power supply for contact signals dedicated for ST1/ST2 terminal. Common is CMS. | Maximum output current is 100 mA |
| | CMS | Common terminal for STO terminal | Common terminal of 24-VDC power supply for contact signals dedicated for ST1/ST2 terminal | |
| | STC | Logic switching terminal | This is a STO Input logic switching terminal.<br>The Input logic can be changed by changing the position of short bar.<br>In case of using external power supply, remove short bars and then it is used as ST1/ST2 input common. | <at sink logic><br>Short bar: connect between P24S and STC.<br><at source logic><br>Short bars: connect between CMSand STC. |
| | ST1/ST2 | STO input terminal | Input terminal of STO | Voltage between<br>ST1 -STC/ST2-STC<br>• ON voltage 15 VDC min.<br>• OFF voltage 5 VDC max<br>• Maximum allowable voltage 27VDC<br>• Load current 5.8 mA (at 27 VDC)<br>Internal resistance: 4. 7 kΩ |
| | ED+ | Monitoring output | + side terminal of EDM signal (STO status monitor) | Open collector output<br>• Between ED+/ED-<br>• Voltage depression 4 V or below at ON<br>• Maximum allowable voltage 27 V<br>• Maximum allowable current 50 mA |
| | ED– | | – side terminal of EDM signal (STO status monitor) | |

## Inverter heat loss

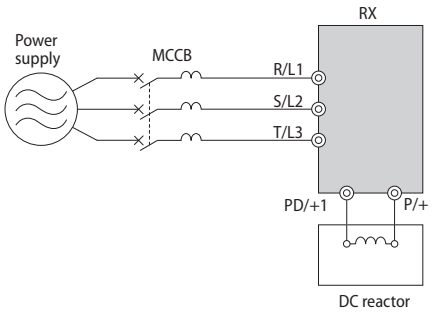
| Voltage | Loss at 100% load (W) | | | | | |
|---|---|---|---|---|---|---|
| | 200 V | | | 400 V | | |
| | ND | LD | VLD | ND | LD | VLD |
| 0.4 | 50 | 53 | 65 | | | |
| 0.75 | 65 | 80 | 105 | 62 | 67 | 76 |
| 1.5 | 93 | 118 | 135 | 94 | 98 | 104 |
| 2.2 | 142 | 162 | 197 | 96 | 107 | 134 |
| 3.7 | 225 | 253 | 314 | 145 | 163 | 189 |
| 5.5 | 348 | 365 | 420 | 235 | 260 | 290 |
| 7.5 | 376 | 400 | 520 | 240 | 280 | 306 |
| 11 | 498 | 625 | 754 | 260 | 306 | 380 |
| 15 | 742 | 922 | 1059 | 361 | 444 | 482 |
| 18.5 | 964 | 1167 | 1332 | 495 | 601 | 633 |
| 22 | 1163 | 1263 | 1377 | 687 | 805 | 860 |
| 30 | 1317 | 1536 | 1698 | 783 | 854 | 920 |
| 37 | 1534 | 1801 | 2092 | 812 | 880 | 971 |
| 45 | 1625 | 1940 | 2300 | 1047 | 1218 | 1300 |
| 55 | 1878 | 2669 | 3046 | 1130 | 1488 | 1592 |
| 75 | | | | 1570 | 1811 | 2020 |
| 90 | | | | 2034 | 2150 | 2359 |
| 110 | | | | 2219 | 2397 | 2557 |
| 132 | | | | 3872 | 4352 | 4598 |

## Input AC reactor




| 3-phase 200 V | | | | 3-phase 400 V | | | |
|---|---|---|---|---|---|---|---|
| Max. applicable motor output kW | Reference | Current value A | Inductance mH | Max. applicable motor output kW | Reference | Current value A | Inductance mH |
| 0.4 to 1.5 | AX-RAI02800080-DE | 8.0 | 2.8 | 0.75 to 1.5 | AX-RAI07700050-DE | 5.0 | 7.7 |
| 2.2 to 3.7 | AX-RAI00880200-DE | 20.0 | 0.88 | 2.2 to 4.0 | AX-RAI03500100-DE | 10.0 | 3.5 |
| 5.5 to 7.5 | AX-RAI00350335-DE | 33.5 | 0.35 | 5.5 to 7.5 | AX-RAI01300170-DE | 17.0 | 1.3 |
| 11.0 to 15.0 | AX-RAI00180670-DE | 67.0 | 0.18 | 11.0 to 15.0 | AX-RAI00740335-DE | 33.5 | 0.74 |
| 18.5 to 22.0 | AX-RAI00091000-DE | 100.0 | 0.09 | 18.5 to 22.0 | AX-RAI00360500-DE | 50.0 | 0.36 |
| 30.0 to 37.0 | AX-RAI00071550-DE | 155.0 | 0.07 | 30.0 to 37.0 | AX-RAI00290780-DE | 78.0 | 0.29 |
| 45.0 to 55.0 | AX-RAI00042300-DE | 230.0 | 0.04 | 45.0 to 55.0 | AX-RAI00191150-DE | 115.0 | 0.19 |
| | | | | 75.0 to 90.0 | AX-RAI00111850-DE | 185.0 | 0.11 |
| | | | | 110.0 to 132.0 | AX.RAI00072700-DE | 270.0 | 0.07 |

## DC reactor




| 3-phase 200 V | | | | 3-phase 400 V | | | |
|---|---|---|---|---|---|---|---|
| Max. applicable motor output kW | Reference | Current value A | Inductance mH | Max. applicable motor output kW | Reference | Current value A | Inductance mH |
| 0.4 | AX-RC10700032-DE | 3.2 | 10.70 | 0.75 | AX-RC27000030-DE | 3.0 | 27.00 |
| 0.7 | AX-RC06750061-DE | 6.1 | 6.75 | 1.5 | AX-RC14000047-DE | 4.7 | 14.00 |
| 1.5 | AX-RC03510093-DE | 9.3 | 3.51 | 2.2 | AX-RC10100069-DE | 6.9 | 10.10 |
| 2.2 | AX-RC02510138-DE | 13.8 | 2.51 | 4.0 | AX-RC06400116-DE | 11.6 | 6.40 |
| 3.7 | AX-RC01600223-DE | 22.3 | 1.60 | 5.5 | AX-RC04410167-DE | 16.7 | 4.41 |
| 5.5 | AX-RC01110309-DE | 30.9 | 1.11 | 7.5 | AX-RC03350219-DE | 21.9 | 3.35 |
| 7.5 | AX-RC00840437-DE | 43.7 | 0.84 | 11.0 | AX-RC02330307-DE | 30.7 | 2.33 |
| 11.0 | AX-RC00590614-DE | 61.4 | 0.59 | 15.0 | AX-RC01750430-DE | 43.0 | 1.75 |
| 15.0 | AX-RC00440859-DE | 85.9 | 0.44 | 18.5 to 22 | AX-RC01200644-DE | 64.4 | 1.20 |
| 18.5 to 22 | AX-RC00301275-DE | 127.5 | 0.30 | 30 | AX-RC00920797-DE | 79.7 | 0.92 |
| 30 | AX-RC00231662-DE | 166.2 | 0.23 | 37 | AX-RC00741042-DE | 104.2 | 0.74 |
| 37 | AX-RC00192015-DE | 201.5 | 0.19 | 45 | AX-RC00611236-DE | 123.6 | 0.61 |
| 45 | AX-RC00162500-DE | 250.0 | 0.16 | 55 | AX-RC00501529-DE | 152.9 | 0.50 |
| 55 | AX-RC00133057-DE | 305.7 | 0.13 | 75 | AX-RC00372094-DE | 209.4 | 0.37 |
| | | | | 90 | AX-RC00312446-DE | 244.6 | 0.31 |
| | | | | 110 | AX-RC00252981-DE | 298.1 | 0.25 |
| | | | | 132 | AX-RC00213613-DE | 361.3 | 0.21 |

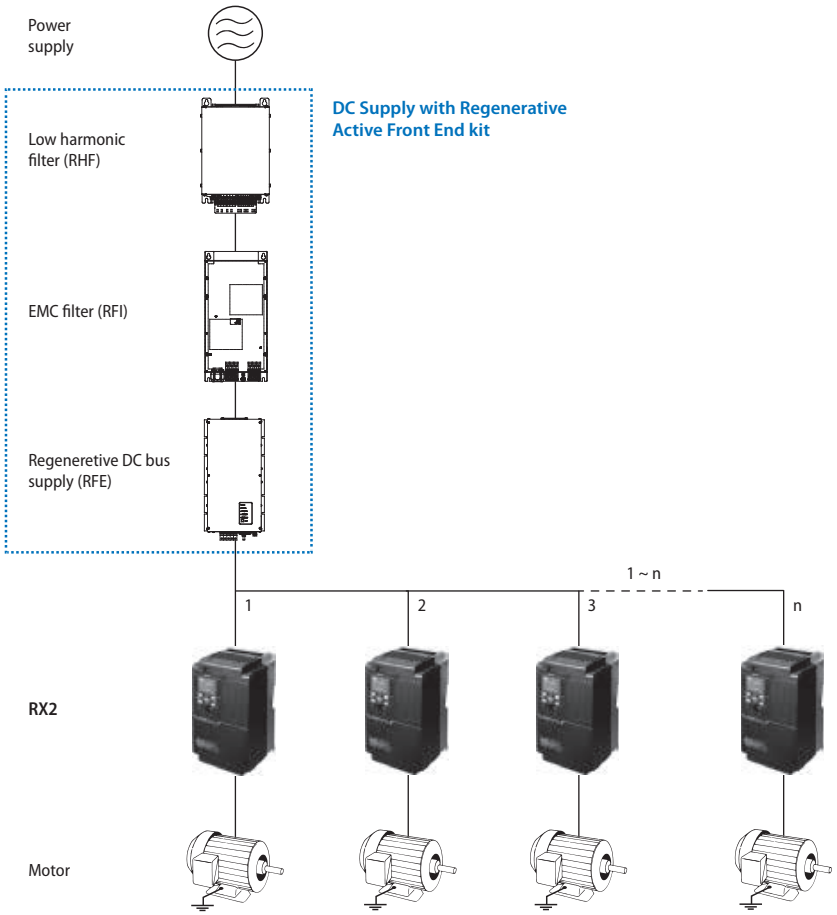
## Output AC reactor

| 3-phase 200 V | | | | 3-phase 400 V | | | |
|---|---|---|---|---|---|---|---|
| Max. applicable motor output kW | Reference | Current value A | Inductance mH | Max. applicable motor output kW | Reference | Current value A | Inductance mH |
| 0.4 | AX-RAO11500026-DE | 2.6 | 11.50 | 0.75 to 1.5 | AX-RAO16300038-DE | 3.8 | 16.30 |
| 0.75 | AX-RAO07600042-DE | 4.2 | 7.60 | 2.2 | AX-RAO11800053-DE | 5.3 | 11.80 |
| 1.5 | AX-RAO04100075-DE | 7.5 | 4.10 | 4.0 | AX-RAO07300080-DE | 8.0 | 7.30 |
| 2.2 | AX-RAO03000105-DE | 10.5 | 3.00 | 5.5 | AX-RAO04600110-DE | 11.0 | 4.60 |
| 3.7 | AX-RAO01830160-DE | 16.0 | 1.83 | 7.5 | AX-RAO03600160-DE | 16.0 | 3.60 |
| 5.5 | AX-RAO01150220-DE | 22.0 | 1.15 | 11 | AX-RAO02500220-DE | 22.0 | 2.50 |
| 7.5 | AX-RAO00950320-DE | 32.0 | 0.95 | 15 | AX-RAO02000320-DE | 32.0 | 2.00 |
| 11 | AX-RAO00630430-DE | 43.0 | 0.63 | 18.5 | AX-RAO01650400-DE | 40.0 | 1.65 |
| 15 | AX-RAO00490640-DE | 64.0 | 0.49 | 22 | AX-RAO01300480-DE | 48.0 | 1.30 |
| 18.5 | AX-RAO00390800-DE | 80.0 | 0.39 | 30 | AX-RAO01030580-DE | 58.0 | 1.03 |
| 22 | AX-RAO00330950-DE | 95.0 | 0.33 | 37 | AX-RAO00800750-DE | 75.0 | 0.80 |
| 30 | AX-RAO00251210-DE | 121.0 | 0.25 | 45 | AX-RAO00680900-DE | 90.0 | 0.68 |
| 37 | AX-RAO00191450-DE | 145.0 | 0.19 | 55 | AX-RAO00531100-DE | 110.0 | 0.53 |
| 45 | AX-RAO00161820-DE | 182.0 | 0.16 | 75 | AX-RAO00401490-DE | 149.0 | 0.40 |
| 55 | AX-RAO00132200-DE | 220.0 | 0.13 | 90 | AX-RAO00331760-DE | 176.0 | 0.33 |
| | | | | 110 | AX-RAO00262170-DE | 217.0 | 0.26 |
| | | | | 132 | AX-RAO00212600-DE | 260.0 | 0.21 |

## Braking unit

| Voltage | Reference | Specifications | | | | |
|---|---|---|---|---|---|---|
| | | Permanent | | Peak (5 s max) | | Minimum connectable resistor (Ohms) |
| | | Current value A | Brake power kVA | Current value A | Brake power kVA | |
| 3-phase 200 V | AX-BCR2035090-TE | 35 | 13 | 90 | 32 | 4 |
| | AX-BCR2070130-TE | 70 | 25 | 130 | 47 | 2.8 |
| 3-phase 400 V | AX-BCR4015045-TE | 15 | 11 | 45 | 33 | 16 |
| | AX-BCR4017068-TE | 17 | 13 | 68 | 51 | 11 |
| | AX-BCR4035090-TE | 35 | 26 | 90 | 67 | 8.5 |
| | AX-BCR4070130-TE | 70 | 52 | 130 | 97 | 5.5 |
| | AX-BCR4090240-TE | 90 | 67 | 240 | 180 | 3.2 |

## DC Supply with Regenerative Active Front End system




### Regenerative DC bus supply

| Reference: RFE-B3_ | | | 30 | 45 | 60 | 80 | 100 | 125 | 150 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|
| Max. input power kW | | | 30 | 45 | 60 | 80 | 100 | 125 | 150 | 200 |
| DC capacity µF | | | 100 | | 220 | | | 440 | 660 | |
| Max. input current A[*1] | Driving | AC | 65 | 98 | 130 | 173 | 217 | 271 | 325 | 433 |
| | | DC | 78 | 118 | 156 | 208 | 260 | 325 | 390 | 520 |
| | Braking | AC | 52 | 78 | 104 | 139 | 173 | 217 | 260 | 346 |
| | | DC | 62 | 97 | 125 | 167 | 208 | 260 | 312 | 415 |
| Rated input voltage | | | 3-phase 400 V | | | | | | | |
| Allowable voltage fluctuation | | | -15% to 10% | | | | | | | |
| Mains frequency | | | 40 to 60 Hz | | | | | | | |
| Efficiency η | | | 98% | | | | | | | |
| Degree of protection | | | IP20 | | | | | | | |
| Ambient humidity | | | 85% RH or less (without condensation) | | | | | | | |
| Storage temperature | | | –25 to 55°C | | | | | | | |
| Ambient temperature | | | 5 to 40°C | | | | | | | |

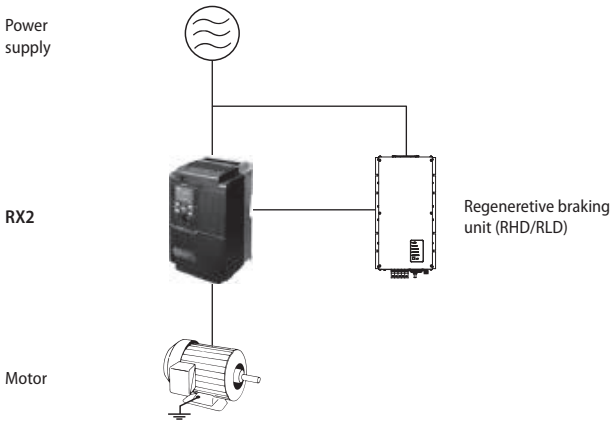
[*1] At nominal voltage 400 V. 1 min in 10 min.

### Low harmonic filter

| Reference: RHF-RA_ | | 43 | 72 | 86 | 144 | 180 | 217 | 304 |
|---|---|---|---|---|---|---|---|---|
| $I_{RMS}$ current A[*1] | 100% AC | 43 | 72 | 86 | 144 | 180 | 217 | 304 |
| | 150% AC 1 min in 10 min | 64,5 | 108 | 129 | 216 | 270 | 325,5 | 456 |
| Heat loss W[*1] | | 242 | 352 | 374 | 488 | 692 | 743 | 905 |
| Allowable voltage fluctuation | | -15% to 10% | | | | | | |
| Power frequency | | 50 Hz | | | | | | |
| Efficiency η | | 98,5-99,5% | | | | | | |
| Degree of protection | | IP20 | | | | | | |
| Ambient humidity | | 85% RH or less (without condensation) | | | | | | |
| Storage temperature | | –25 to 55°C | | | | | | |
| Ambient temperature | | –20 to 45°C | | | | | | |

[*1] At nominal voltage 400 V, 50 Hz.

### Regenerative Braking unit system




### Regenerative Braking unit for Low Duty applications (50%)

| Reference: RLD-E0_ | | 8 | 12 | 16 | 20 | 24 | 32 | 40 | 48 | 58 | 80 | 95 | 116 | 140 | 170 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. regenerative power kW | | 8 | 12 | 16 | 20 | 24 | 32 | 40 | 48 | 58 | 80 | 95 | 116 | 140 | 170 | 200 |
| DC capacity µF | | 20 | | 40 | | 220 | | | 440 | | | | | 660 | | |
| Max. current A[*1] | DC | 14 | 20 | 28 | 35 | 42 | 55 | 70 | 83 | 101 | 139 | 165 | 202 | 242 | 295 | 348 |
| | AC | 12 | 17 | 23 | 29 | 35 | 46 | 58 | 69 | 84 | 116 | 137 | 168 | 202 | 246 | 290 |
| Allowable voltage fluctuation | | -15% to 10% | | | | | | | | | | | | | | |
| Mains frequency | | 50 to 60 Hz | | | | | | | | | | | | | | |
| Efficiency η | | 98% | | | | | | | | | | | | | | |
| Degree of protection | | IP20 | | | | | | | | | | | | | | |
| Ambient humidity | | 85% RH or less (without condensation) | | | | | | | | | | | | | | |
| Storage temperature | | –25 to 55°C | | | | | | | | | | | | | | |
| Ambient temperature | | 5 to 40°C | | | | | | | | | | | | | | |

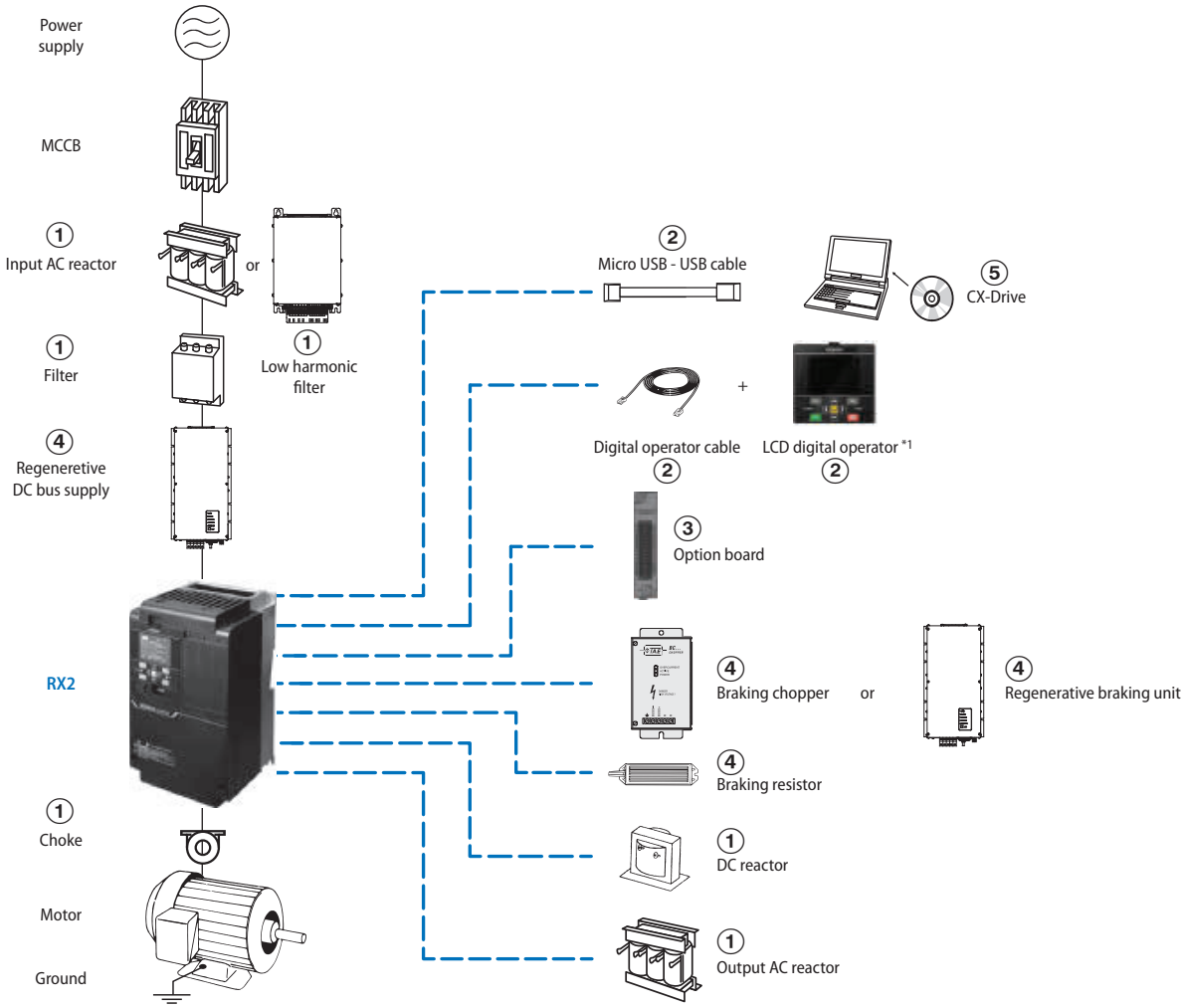
[*1] At nominal voltage 400 V.

### Regenerative Braking unit for High Duty applications

| Reference: RHD-B0_ | | 7 | 13 | 18 | 24 | 30 | 50 | 70 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. regenerative power kW | | 7 | 13 | 18 | 24 | 30 | 50 | 70 | 100 | 125 | 150 |
| DC capacity µF | | 20 | | 100 | 40 | | 220 | | 660 | 440 | 660 |
| Max. current A[*1] | DC I 100% | 12 | 23 | 31 | 42 | 52 | 87 | 122 | 174 | 218 | 260 |
| | AC $I_{eff}$ 100% | 10 | 19 | 26 | 35 | 43 | 72 | 101 | 144 | 180 | 217 |
| | AC $I_{eff}$ 60 s in 10 min | 12 | 23 | 31 | 42 | 52 | 86 | 121 | 173 | 216 | 260 |
| Allowable voltage fluctuation | | -15% to 10% | | | | | | | | | |
| Mains frequency | | 40 to 60 Hz | | | | | | | | | |
| Efficiency η | | 98% | | | | | | | | | |
| Degree of protection | | IP20 | | | | | | | | | |
| Ambient humidity | | 85% RH or less (without condensation) | | | | | | | | | |
| Storage temperature | | –25 to 55°C | | | | | | | | | |
| Ambient temperature | | 5 to 40°C | | | | | | | | | |

[*1] At nominal voltage 400 V.

## Ordering information




*1 The LCD digital operator is provided with the inverter from factory.

### 3G3RX2 inverter

| Rated voltage | Protection class | Max. applicable motor capacity | | Order code |
|---|---|---|---|---|
| | | Normal Duty (ND) | Low Duty (LD)/ Very Low Duty (VLD) | |
| 3-phase 200 VAC | IP20 | 0.4 kW | 0.75 kW | 3G3RX2-A2004 |
| | | 0.75 kW | 1.5 kW | 3G3RX2-A2007 |
| | | 1.5 kW | 2.2 kW | 3G3RX2-A2015 |
| | | 2.2 kW | 3.7 kW | 3G3RX2-A2022 |
| | | 3.7 kW | 5.5 kW | 3G3RX2-A2037 |
| | | 5.5 kW | 7.5 kW | 3G3RX2-A2055 |
| | | 7.5 kW | 11 kW | 3G3RX2-A2075 |
| | | 11 kW | 15 kW | 3G3RX2-A2110 |
| | | 15 kW | 18.5 kW | 3G3RX2-A2150 |
| | | 18.5 kW | 22 kW | 3G3RX2-A2185 |
| | | 22 kW | 30 kW | 3G3RX2-A2220 |
| | | 30 kW | 37 kW | 3G3RX2-A2300 |
| | | 37 kW | 45 kW | 3G3RX2-A2370 |
| | | 45 kW | 55 kW | 3G3RX2-A2450 |
| | | 55 kW | 75 kW | 3G3RX2-A2550 |

| Rated voltage | Protection class | Max. applicable motor capacity | | Order code |
|---|---|---|---|---|
| | | Normal Duty (ND) | Low Duty (LD)/ Very Low Duty (VLD) | |
| 3-phase 400 VAC | IP20 | 0.75 kW | 1.5 kW | 3G3RX2-A4007 |
| | | 1.5 kW | 2.2 kW | 3G3RX2-A4015 |
| | | 2.2 kW | 3.7 kW | 3G3RX2-A4022 |
| | | 3.7 kW | 5.5 kW | 3G3RX2-A4037 |
| | | 5.5 kW | 7.5 kW | 3G3RX2-A4055 |
| | | 7.5 kW | 11 kW | 3G3RX2-A4075 |
| | | 11 kW | 15 kW | 3G3RX2-A4110 |
| | | 15 kW | 18.5 kW | 3G3RX2-A4150 |
| | | 18.5 kW | 22 kW | 3G3RX2-A4185 |
| | | 22 kW | 30 kW | 3G3RX2-A4220 |
| | | 30 kW | 37 kW | 3G3RX2-A4300 |
| | | 37 kW | 45 kW | 3G3RX2-A4370 |
| | | 45 kW | 55 kW | 3G3RX2-A4450 |
| | | 55 kW | 75 kW | 3G3RX2-A4550 |
| | IP00 | 75 kW | 90 kW | 3G3RX2-B4750 |
| | | 90 kW | 110 kW | 3G3RX2-B4900 |
| | | 110 kW | 132 kW | 3G3RX2-B411K |
| | | 132 kW | 160 kW | 3G3RX2-B413K |

## Accessories

### ① Line filter

| Schaffner line filter | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3-phase 200 V | | | | | 3-phase 400 V | | | | |
| Model 3G3RX2-_ | Order code | Rated current A | Leakage current | Weight (kg) | Model 3G3RX2-_ | Order code | Rated current A | Leakage current | Weight (kg) |
| A2004/A2007/ A2015/A2022/ A2037 | AX-FIR2021-SE | 21 | 1.44 mA | 1.5 | A4007/A4015/ A4022/A4037 | AX-FIR4011-SE | 11 | 3.1 mA | 1.2 |
| A2055/A2075/ A2110 | AX-FIR2055-SE | 55 | 1.53 mA | 2.5 | A4055/A4075/ A4110 | AX-FIR4030-SE | 30 | 3.3 mA | 2 |
| A2150/A2185/ A2220 | AX-FIR2114-SE | 114 | 2.15 mA | – | A4150/A4185/ A4220 | AX-FIR4058-SE | 58 | 3.3 mA | 3 |
| A2300 | AX-FIR4146-SE | 146 | 3.2 mA | 6.6 | A4300 | AX-FIR4073-SE | 73 | 3.75 mA | 4.3 |
| A2370/A2450/ A2550 | AX-FIR4310-SE | 310 | 3.8 mA | 9.5 | A4370 | AX-FIR4090-SE | 90 | 3.75 mA | 5.1 |
| | | | | | A4450/A4550 | AX-FIR4146-SE | 146 | 6.95 mA | 6.6 |
| | | | | | B4750/B4900/ B411K/B413K | AX-FIR4310-SE | 310 | 8.2 mA | 9.5 |

### ① Input AC reactor

| 3-phase 200 V | | 3-phase 400 V | |
|---|---|---|---|
| Model 3G3RX2-_ | Order code | Model 3G3RX2-_ | Order code |
| A2004/A2007/A2015 | AX-RAI02800100-DE | A4007/A4015 | AX-RAI07700050-DE |
| A2022/A2037 | AX-RAI00880200-DE | A4022/A4037 | AX-RAI03500100-DE |
| A2055/A2075 | AX-RAI00350335-DE | A4055/A4075 | AX-RAI01300170-DE |
| A2110 /A2150 | AX-RAI00180670-DE | A4110/A4150 | AX-RAI00740335-DE |
| A2185/A2220 | AX-RAI00091000-DE | A4185/A4220 | AX-RAI00360500-DE |
| A2300/A2370 | AX-RAI00071550-DE | A4300/A4370 | AX-RAI00290780-DE |
| A2450/A2550 | AX-RAI00042300-DE | A4450/A4550 | AX-RAI00191150-DE |
| | | B4750/B4900 | AX-RAI00111850-DE |
| | | B411K/B413K | AX-RAI00072700-DE |

### ① DC reactor

| 3-phase 200 V | | 3-phase 400 V | |
|---|---|---|---|
| Model 3G3RX2-_ | Order code | Model 3G3RX2-_ | Order code |
| A2004 | AX-RC10700032-DE | A4007 | AX-RC27000030-DE |
| A2007 | AX-RC06750061-DE | A4015 | AX-RC14000047-DE |
| A2015 | AX-RC03510093-DE | A4022 | AX-RC10100069-DE |
| A2022 | AX-RC02510138-DE | A4037 | AX-RC06400116-DE |
| A2037 | AX-RC01600223-DE | A4055 | AX-RC04410167-DE |
| A2055 | AX-RC01110309-DE | A4075 | AX-RC03350219-DE |
| A2075 | AX-RC00840437-DE | A4110 | AX-RC02330307-DE |
| A2110 | AX-RC00590614-DE | A4150 | AX-RC01750430-DE |
| A2150 | AX-RC00440859-DE | A4185/A4220 | AX-RC01200644-DE |
| A2185/A2220 | AX-RC00301275-DE | A4300 | AX-RC00920797-DE |
| A2300 | AX-RC00231662-DE | A4370 | AX-RC00741042-DE |
| A2370 | AX-RC00192015-DE | A4450 | AX-RC00611236-DE |

| 3-phase 200 V | | 3-phase 400 V | |
|---|---|---|---|
| Model 3G3RX2-_ | Order code | Model 3G3RX2-_ | Order code |
| A2450 | AX-RC00162500-DE | A4550 | AX-RC00501529-DE |
| A2500 | AX-RC00133057-DE | B4750 | AX-RC00372094-DE |
| | | B4900 | AX-RC00312446-DE |
| | | B411K | AX-RC00252981-DE |
| | | B413K | AX-RC00213613-DE |

### ① Chokes

| Diameter | Description | Order code |
|---|---|---|
| 21 | For 2.2 kW motors or below | AX-FER2102-PE |
| 28 | For 15 kW motors or below | AX-FER2815-PE |
| 50 | For 45 kW motors or below | AX-FER5045-PE |
| 52 | For 55 kW motors or above | AX-FER5255-PE |

### ① Output AC reactor

| 3-phase 200 V | | 3-phase 400 V | |
|---|---|---|---|
| Model 3G3RX2-_ | Order code | Model 3G3RX2-_ | Order code |
| A2004 | AX-RAO11500026-DE | A4007/A4015 | AX-RAO16300038-DE |
| A2007 | AX-RAO07600042-DE | A4022 | AX-RAO11800053-DE |
| A2015 | AX-RAO04100075-DE | A4037 | AX-RAO07300080-DE |
| A2022 | AX-RAO03000105-DE | A4055 | AX-RAO04600110-DE |
| A2037 | AX-RAO01830160-DE | A4075 | AX-RAO03600160-DE |
| A2055 | AX-RAO01150220-DE | A4110 | AX-RAO02500220-DE |
| A2075 | AX-RAO00950320-DE | A4150 | AX-RAO02000320-DE |
| A2110 | AX-RAO00630430-DE | A4185 | AX-RAO01650400-DE |
| A2150 | AX-RAO00490640-DE | A4220 | AX-RAO01300480-DE |
| A2185 | AX-RAO00390800-DE | A4300 | AX-RAO01030580-DE |
| A2220 | AX-RAO00330950-DE | A4370 | AX-RAO00800750-DE |
| A2300 | AX-RAO00251210-DE | A4450 | AX-RAO00680900-DE |
| A2370 | AX-RAO00191450-DE | A4550 | AX-RAO00531100-DE |
| A2450 | AX-RAO00161820-DE | B4750 | AX-RAO00401490-DE |
| A2500 | AX-RAO00132200-DE | B4900 | AX-RAO00331760-DE |
| | | B411K | AX-RAO00262170-DE |
| | | B413K | AX-RAO00212600-DE |

**Note:** This table corresponds with HD rating. When ND is used, please choose the reactor for the next size inverter.

### ② Accessories

| Type | | Order code |
|---|---|---|
| Digital operator cable (RJ45 connector) | 1 m length | 3G3AX-OPCN1 |
| | 3 m length | 3G3AX-OPCN3 |

### ③ Option boards

| Type | Description | | Order code |
|---|---|---|---|
| Encoder feedback | PG speed controller option board | A high accuracy operation which suppresses velocity fluctuation and positional control by pulse train position command input is achieved by feedback after detecting the rotation velocity of the encoder-equipped motor. | 3G3AX-RX2-PG01 |
| Communication option board | PROFIBUS option board | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current… through communications with the host controller | P1-PB |
| | PROFINET option board | | P1-PN |
| | Modbus TCP option board | | P1-EN |
| | EtherCAT option board | | Coming soon |

### ④ DC Supply with Regenerative Active Front End

| Max. input power kW | Stand-alone | | | Kit |
|---|---|---|---|---|
| | Regenerative DC bus supply | Low harmonic filter | EMC filter | |
| 30 | RFE-B3 30-400-50-230-A-RVE | RHF-RA 43-400-50-20-A-RVE | RFI-RA 12-RVE | RFE-B3 30-400-50-230-IF-RVE |
| 45 | RFE-B3 45-400-50-230-A-RVE | RHF-RA 72-400-50-20-A-RVE | | RFE-B3 45-400-50-230-IF-RVE |
| 60 | RFE-B3 60-400-50-230-A-RVE | RHF-RA 86-400-50-20-A-RVE | RFI-RA 23-RVE | RFE-B3 60-400-50-230-IF-RVE |
| 80 | RFE-B3 80-400-50-230-A-RVE | RHF-RA 144-400-50-20-A-RVE | | RFE-B3 80-400-50-230-IF-RVE |
| 100 | RFE-B3 100-400-50-230-A-RVE | | RFI-RA X5-RVE | RFE-B3 100-400-50-230-IF-RVE |
| 125 | RFE-B3 125-400-50-230-A-RVE | RHF-RA 180-400-50-20-A-RVE | RFI-RA X6-RVE | RFE-B3 125-400-50-230-IF-RVE |
| 150 | RFE-B3 150-400-50-230-A-RVE | RHF-RA 217-400-50-20-A-RVE | | RFE-B3 150-400-50-230-IF-RVE |
| 200 | RFE-B3 200-400-50-230-A-RVE | RHF-RA 304-400-50-20-A-RVE | | RFE-B3 200-400-50-230-IF-RVE |

**Note:** The DC Supply with Regenerative Active Front End kit includes a Regenerative DC bus supply, low harmonic filter and EMC filter.

### ④ Regenerative Braking unit

| Low Duty applications (50%) | | High Duty applications | |
|---|---|---|---|
| Max. regenerative power kW | Regenerative braking unit | Max. regenerative power kW | Regenerative braking unit |
| 8 | RLD-E0 8-400-50-0-A-RVE | 7 | RHD-B0 7-400-50-0-A-RVE |
| 12 | RLD-E0 12-400-50-0-A-RVE | 13 | RHD-B0 13-400-50-0-A-RVE |
| 16 | RLD-E0 16-400-50-0-A-RVE | 18 | RHD-B0 18-400-50-0-A-RVE |
| 20 | RLD-E0 20-400-50-0-A-RVE | 24 | RHD-B0 24-400-50-0-A-RVE |
| 24 | RLD-E0 24-400-50-0-A-RVE | 30 | RHD-B0 30-400-50-230-A-RVE |
| 32 | RLD-E0 32-400-50-0-A-RVE | 50 | RHD-B0 50-400-50-230-A-RVE |
| 40 | RLD-E0 40-400-50-0-A-RVE | 70 | RHD-B0 70-400-50-230-A-RVE |
| 48 | RLD-E0 48-400-50-0-A-RVE | 100 | RHD-B0 100-400-50-230-A-RVE |
| 58 | RLD-E0 58-400-50-0-A-RVE | 125 | RHD-B0 125-400-50-230-A-RVE |
| 80 | RLD-E0 80-400-50-0-A-RVE | 150 | RHD-B0 150-400-50-230-A-RVE |
| 95 | RLD-E0 95-400-50-0-A-RVE | | |
| 116 | RLD-E0 116-400-50-0-A-RVE | | |
| 140 | RLD-E0 140-400-50-0-A-RVE | | |
| 170 | RLD-E0 170-400-50-230-A-RVE | | |
| 200 | RLD-E0 200-400-50-230-A-RVE | | |

### ④ Braking unit, braking resistor unit

| Inverter | | | | | Braking resistor unit | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | Max. motor kW | Model 3G3RX2-_ 3-phase | Braking unit AX-BCR_ | Connectable min. resistance | Inverter mounted type (3%ED, 10 sec max) | | Braking torque % | External resistor 10%ED, 10 sec max for built-in, 5 sec for braking unit | | Braking torque % |
| | | | | | Type AX-_ | Resistance | | Type AX-_ | Resistance | |
| 200 V (three-phase) | 0.55 | A2004 | Built-in | 50 Ω | REM00K1200-IE | 200 Ω | 180 | REM00K1200-IE | 200 Ω | 180 |
| | 1.1 | A2007 | | | | | 100 | REM00K2070-IE | 70 Ω | 200 |
| | 1.5 | A2015 | | 35 Ω | REM00K2070-IE | 70 Ω | 140 | REM00K4075-IE | 75 Ω | 130 |
| | 2.2 | A2022 | | | | | 90 | REM00K4035-IE | 35 Ω | 180 |
| | 4.0 | A2037 | | | REM00K4075-IE | 75 Ω | 50 | REM00K6035-IE | | 100 |
| | 5.5 | A2055 | | 16 Ω | REM00K4035-IE | 35 Ω | 75 | REM00K9020-IE | 20 Ω | 150 |
| | 7.5 | A2075 | | 10 Ω | | | 55 | REM01K9017-IE | 17 Ω | 110 |
| | 11.0 | A2110 | | | REM00K6035-IE | | 40 | REM02K1017-IE | | 75 |
| | 15.0 | A2150 | | 7.5 Ω | REM00K9017-IE | 17 Ω | 55 | REM03K5010-IE | 10 Ω | 95 |
| | 18.5 | A2185 | | | REM03K5010-IE | 10 Ω | 75 | REM19K0008-IE | 8 Ω | 95 |
| | 22.0 | A2220 | | 5 Ω | | | 65 | | | 80 |
| | 30.0 | A2300 | 2035090-TE | 4 Ω | | | | REM19K0006-IE | 6 Ω | 80 |
| | 37.0 | A2370 | | | | | | | | 60 |
| | 45.0 | A2450 | 2070130-TE | 2.8 Ω | | | | 2 × REM19K0006-IE | 3 Ω | 105 |
| | 55.0 | A2550 | | | | | | | | 85 |
| 400 V (three-phase) | 1.1 | A4007 | Built-in | 100 Ω | REM00K1400-IE | 400 Ω | 200 | REM00K1400-IE | 400 Ω | 200 |
| | 1.5 | A4015 | | | REM00K1200-IE | 200 Ω | 190 | REM00K2200-IE | 200 Ω | 190 |
| | 2.2 | A4022 | | | REM00K2200-IE | | 130 | REM00K5120-IE | 120 Ω | 200 |
| | 3.7 | A4037 | | 70 Ω | REM00K2120-IE | 120 Ω | 120 | REM00K6100-IE | 100 Ω | 140 |
| | 5.5 | A4055 | | | REM00K4075-IE | 75 Ω | 140 | REM00K9070-IE | 70 Ω | 150 |
| | 7.5 | A4075 | | 35 Ω | | | 100 | REM01K9070-IE | | 110 |
| | 11.0 | A4110 | | | REM00K6100-IE | 100 Ω | 50 | REM02K1070-IE | | 75 |
| | 15.0 | A4150 | | 24 Ω | REM00K9070-IE | 70 Ω | 55 | REM03K5035-IE | 35 Ω | 110 |
| | 18.5 | A4185 | | | REM03K5035-IE | 35 Ω | 90 | REM19K0030-IE | 30 Ω | 100 |
| | 22.0 | A4220 | | 20 Ω | | | 75 | | | 85 |
| | 30.0 | A4300 | | 16 Ω | | | | REM19K0020-IE | 20 Ω | 95 |
| | 37.0 | A4370 | | 11 Ω | | | | REM38K0012-IE | 15 Ω | 125 |
| | 45.0 | A4450 | 4017068-TE | | | | | | | 100 |
| | 55.0 | A4550 | 4035090-TE | 8.5 Ω | | | | 2 × REM19K0020-IE | 10 Ω | 100 |
| | 75.0 | B4750 | | | | | | 3 × REM19K0030-IE | | 75 |
| | 90.0 | B4900 | 4070130-TE | 5.5 Ω | | | | 2 × REM38K0012-IE | 6 Ω | 105 |
| | 110.0 | B411K | 4090240-TE | 3.2 Ω | | | | 3 × REM38K0012-IE | 4 Ω | 125 |
| | 132.0 | B413K | | | | | | | | 105 |

### ⑤ Computer software

| Type | Description | Order code |
|---|---|---|
| Computer software | Configuration and monitoring software tool | CX-Drive |
| | | CX-One |
| | Software tool for energy saving calculation | €Saver |

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. I176E-EN-01B

In the interest of product improvement, specifications are subject to change without notice.