

Q2V

Driving Quality

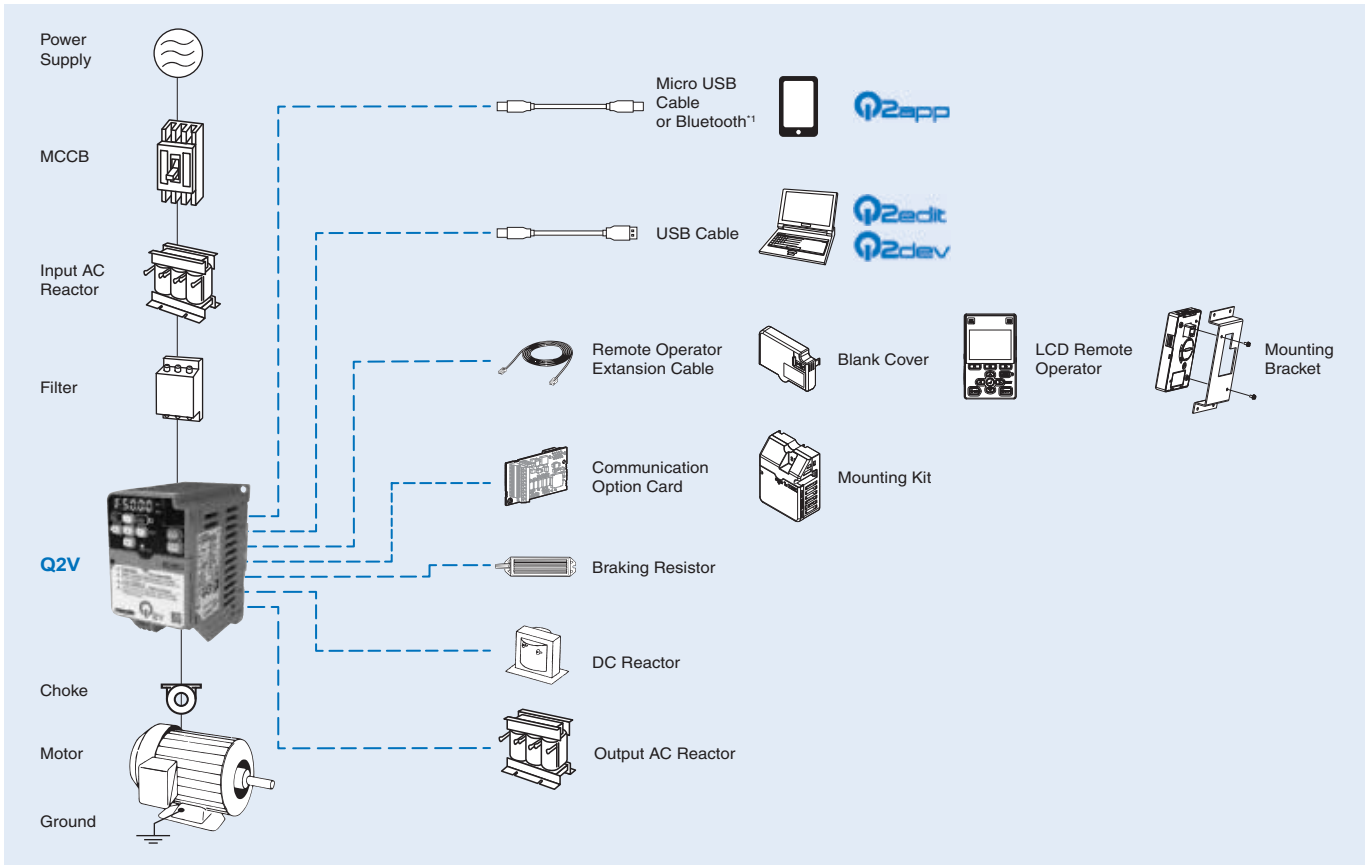
- Flexible motor control: IM, PM, SynRM
- V/f and Sensorless vector motor control
- Speed and torque control in open loop
- Embedded STO (Safe Torque Off) safety function, SIL3/PLe
- Built-in C1/C2/C3 class EMC filter
- Built-in braking transistor
- Quick and easy setup with optional remote LCD keypad with Micro SD card for data storage
- 24 VDC power supply input for control board
- Communication options: EtherCAT, EtherNet/IP, PROFINET, POWERLINK
- Up to 5 Q2V with a single communication option card
- Q2dev: Intuitive drag and drop programming
- Q2app: Mobile app for setup and monitoring
- CE, UL, cUL, EAC, REACH, RoHS

Ratings

- 200 V class single-phase: 0.1 to 4 kW
- 200 V class three-phase: 0.1 to 22 kW
- 400 V class three-phase: 0.37 to 30 kW



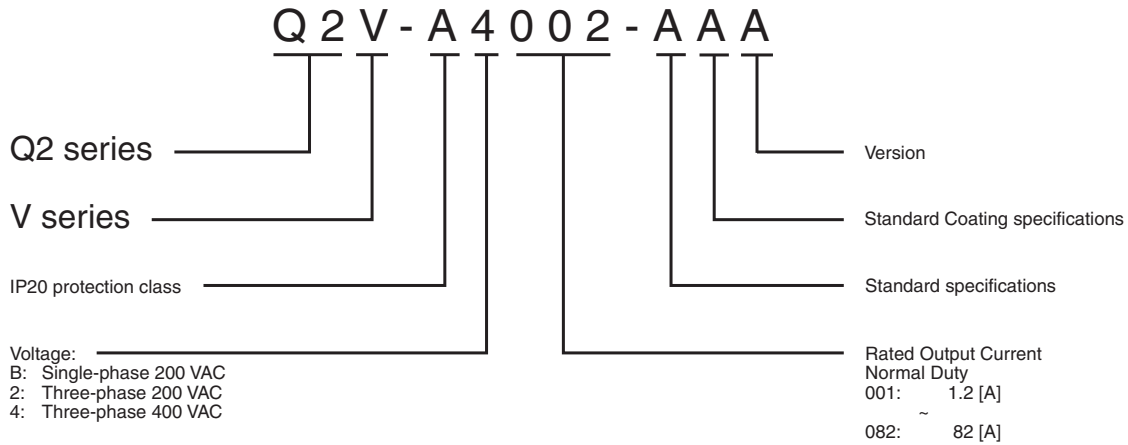
System configuration



*1 With optional LCD remote operator model with Bluetooth.

Specifications

Type designation



200 V class

| Single-phase: Q2V-A□ | | Duty rating | B001 | B002 | B004 | B006 | B010 | B012 | B018 | — | — | — | — | — | |
|---|------------------|-------------|--|------|------|------|------|------|--|------|------|------|------|------|------|
| Three-phase: Q2V-A□ | | | 2001 | 2002 | 2004 | 2006 | 2010 | 2012 | — | 2021 | 2030 | 2042 | 2056 | 2070 | 2082 |
| Max. applicable motor output (kW) | HD ^{*1} | | 0.1 | 0.25 | 0.55 | 1.1 | 1.5 | 2.2 | 4.0 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 |
| | ND ^{*2} | | 0.18 | 0.37 | 0.75 | 1.1 | 2.2 | 3.0 | — | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 |
| Inverter capacity (kVA) ^{*3} | HD | | 0.3 | 0.6 | 1.1 | 1.9 | 3.0 | 4.2 | 6.7 | 6.7 | 9.5 | 12.6 | 17.9 | 22.9 | 28.6 |
| | ND | | 0.5 | 0.7 | 1.3 | 2.3 | 3.7 | 4.6 | — | 8.0 | 11.4 | 16 | 21.3 | 26.7 | 31.2 |
| Rated output current (A) | HD | | 0.8 | 1.6 | 3.0 | 5.0 | 8.0 | 11 | 17.6 | 17.6 | 25 | 33 | 47 | 60 | 75 |
| | ND | | 1.2 | 1.9 | 3.5 | 6.0 | 9.6 | 12.2 | — | 21 | 30 | 42 | 56 | 70 | 82 |
| Overload tolerance ^{*4} | | | <ul style="list-style-type: none"> HD: 150% of the rated output current for 60 seconds ND: 110% of the rated output current for 60 seconds | | | | | | | | | | | | |
| Carrier frequency ^{*5} (without derating the drive capacity) | | | <ul style="list-style-type: none"> HD: 10 kHz ND: 2 kHz | | | | | | <ul style="list-style-type: none"> HD: 8 kHz ND: 2 kHz | | | | | | |
| Max. output voltage | | | <ul style="list-style-type: none"> Proportional to input voltage: 200-240 V | | | | | | | | | | | | |
| Max. output frequency | | | <ul style="list-style-type: none"> EZOLV: 120 Hz AOLV/PM: 270 Hz V/f, OLV, OLV/PM: 590 Hz | | | | | | | | | | | | |
| Rated voltage and frequency | | | <ul style="list-style-type: none"> 3-phase AC power supply 200-240 V at 50/60 Hz DC power supply 270-340 VDC | | | | | | | | | | | | |
| Allowable voltage fluctuation | | | -15% to +10% | | | | | | | | | | | | |
| Allowable frequency fluctuation | | | ±5% | | | | | | | | | | | | |
| Input Power (kVA) | HD | | 0.3 | 0.7 | 1.3 | 2.7 | 3.4 | 5.0 | 9.2 | 8.7 | 11.0 | 17.0 | 24.0 | 31.0 | 44.0 |
| | ND | | 0.5 | 1.2 | 1.8 | 3.3 | 4.9 | 6.4 | — | 11.0 | 17.0 | 24.0 | 31.0 | 37.0 | 52.0 |
| Weight (kg) | | | 0.5 | | 0.8 | 0.9 | 1.5 | | 2.9 | 2.0 | 3.4 | 3.6 | 5.5 | 7.5 | 8.0 |

*1. The maximum applicable motor output complies with 208 V motor ratings as specified in NEC Table 430.250. The rated output current of the drive output amps must be equal to or more than the motor rated current.
 *2. The maximum applicable motor output is based on 4-pole, general-purpose 220 V motor ratings. The rated output current of the drive output amps must be equal to or more than the motor rated current.
 *3. The rated output capacity is calculated with a rated output voltage of 220 V.
 *4. Derating may be necessary for applications that start and stop frequently.
 *5. Derate the drive capacity to use values to 15 kHz maximum.

400 V class

| Three-phase: Q2V-A□ | | Duty rating | 4001 | 4002 | 4004 | 4005 | 4007 | 4009 | 4012 | 4018 | 4023 | 4031 | 4038 | 4044 | 4060 |
|---|----|-------------|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Max. applicable motor output (kW) ^{*1} | HD | | 0.37 | 0.55 | 1.1 | 1.5 | 2.2 | 3.0 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 |
| | ND | | 0.37 | 0.75 | 1.5 | 2.2 | 3.0 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 |
| Inverter capacity (kVA) ^{*2} | HD | | 0.9 | 1.4 | 2.6 | 3.7 | 4.3 | 5.6 | 7.0 | 11.3 | 13.7 | 18.3 | 23.6 | 29.7 | 34.3 |
| | ND | | 0.9 | 1.6 | 3.1 | 4.1 | 5.4 | 6.8 | 9.1 | 13.3 | 17.8 | 23.6 | 29 | 33.5 | 45.7 |
| Rated output current (A) | HD | | 1.2 | 1.8 | 3.4 | 4.8 | 5.6 | 7.3 | 9.2 | 14.8 | 18 | 24 | 31 | 39 | 45 |
| | ND | | 1.2 | 2.1 | 4.1 | 5.4 | 7.1 | 8.9 | 11.9 | 17.5 | 23.4 | 31 | 38 | 44 | 60 |
| Overload tolerance ^{*3} | | | <ul style="list-style-type: none"> HD: 150% of the rated output current for 60 seconds ND: 110% of the rated output current for 60 seconds | | | | | | | | | | | | |
| Carrier frequency ^{*4} (without derating the drive capacity) | | | <ul style="list-style-type: none"> HD: 8 kHz ND: 2 kHz | | | | | | | | | | | | |
| Max. output voltage | | | <ul style="list-style-type: none"> Proportional to input voltage: 380-480 V | | | | | | | | | | | | |
| Max. output frequency | | | <ul style="list-style-type: none"> V/f, OLV, OLV/PM: 590 Hz AOLV/PM: 270 Hz EZOLV: 120 Hz | | | | | | | | | | | | |

| Three-phase: Q2V-A□ | | Duty rating | 4001 | 4002 | 4004 | 4005 | 4007 | 4009 | 4012 | 4018 | 4023 | 4031 | 4038 | 4044 | 4060 |
|---------------------|---------------------------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Power supply | Rated voltage and frequency | • 3-phase AC power supply 380-480 V at 50/60 Hz | | | | | | | | | | | | | |
| | Allowable voltage fluctuation | -15% to +10% | | | | | | | | | | | | | |
| | Allowable frequency fluctuation | ±5% | | | | | | | | | | | | | |
| Input Power (kVA) | HD | 1.1 | 1.6 | 2.9 | 4.0 | 5.5 | 7.5 | 9.5 | 14 | 18 | 27 | 36 | 47 | 55 | |
| | ND | 1.1 | 1.9 | 3.9 | 5.4 | 7.4 | 8.6 | 13 | 18 | 22 | 35 | 40 | 55 | 74 | |
| Weight (kg) | | 0.8 | 0.9 | 1.5 | | | | 2.0 | 3.0 | 3.2 | 4.6 | 4.8 | 6.5 | | |

- *1. The maximum applicable motor output complies with 380 V motor ratings as specified in Annex G of IEC 60947-4-1. The rated output current of the drive output amps must be equal to or more than the motor rated current.
- *2. The rated output capacity is calculated with a rated output voltage of 440 V.
- *3. Derating may be necessary for applications that start and stop frequently.
- *4. Derate the drive capacity to use values to 15 kHz maximum.

Common specifications

| Model number Q2V-A□ | Specifications | |
|----------------------|---|---|
| Control functions | Control methods | V/f Control (V/f), Open Loop Vector Control (OLV), Open Loop Vector Control for PM (OLV/PM), Advanced Open Loop Vector Control for PM (AOLV/PM), EZ Open Loop Vector Control (EZOLV) |
| | Frequency control range | <ul style="list-style-type: none"> • V/f, OLV and OLV/PM: 0.01 Hz to 590 Hz • AOLV/PM: 0.01 Hz to 270 Hz • EZOLV: 0.01 Hz to 120 Hz |
| | Frequency tolerance | <ul style="list-style-type: none"> • Digital inputs: ±0.01% of the max. output frequency (-10 to +40 °C) • Analog inputs: ±0.1% of the max. output frequency (25 ±10 °C) |
| | Frequency setting resolution | <ul style="list-style-type: none"> • Digital inputs: 0.01 Hz • Analog inputs: 1/2048 of the max. output frequency (11-bit signed) |
| | Output frequency resolution | 0.001 Hz |
| | Frequency setting signal | <ul style="list-style-type: none"> • Main speed freq reference: 0 to 10 VDC (20 kΩ), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω) • Main speed reference: Pulse train input (max. 32 kHz) |
| | Starting torque*1 | <ul style="list-style-type: none"> • V/f: 150%/3 Hz • OLV: 150%/1 Hz • OLV/PM: 100%/5% speed • AOLV/PM: 100%/0 min⁻¹ (when high frequency injection is enabled) • EZOLV: 100%/10% speed |
| | Speed control range | <ul style="list-style-type: none"> • V/f: 1:40 • OLV: 1:100 • OLV/PM: 1:10 • AOLV/PM: 1:100 (when high frequency injection is enabled) • EZOLV: 1:10 |
| | Zero speed control | Possible in AOLV/PM control method |
| | Torque limits | Parameter settings allow different limits in four quadrants in these control methods: OLV, AOLV/PM, EZOLV |
| Accel/Decel Time | 0.0 to 6000.0 s (the drive can set four pairs of different acceleration and deceleration times) | |
| Control functions | Braking torque | <p>Approximately 20% Approximately 125% with a dynamic braking option</p> <p>Short-time average deceleration torque:</p> <ul style="list-style-type: none"> • Motor output 0.1/0.2 kW: over 150% • Motor output 0.4/0.75 kW: over 100% • Motor output 1.5 kW: over 50% • Motor output 2.2 kW and larger: over 20%, • Overexcitation Braking/High Slip Braking allow for approximately 40% <p>Short-time average deceleration torque refers to the torque needed to decelerate the motor (uncoupled from the load) from the rated speed to zero. Motor characteristics can change the actual specifications. Motor characteristics change the continuous regenerative torque and short-time average deceleration torque for motors of 2.2 kW or higher.*2</p> |
| | V/f characteristics | Select from 15 pre-defined V/f patterns or a user-set V/f pattern |
| Functionality | Main control functions | Feed Forward Control, Restart After Momentary Power Loss, Speed Search, Overtorque Detection, Torque Limit, 17 Step Speed (max.), Accel/Decel Switch, S-curve Acceleration/Deceleration, 3-wire Sequence, Auto-Tuning (Rotational and Stationary), Dwell Function, Cooling Fan ON/OFF Switch, Slip Compensation, Torque Compensation, Frequency Jump, Upper/Lower Limits for Frequency Reference, DC Injection Braking at Start and Stop, Overexcitation Braking, High Slip Braking, PID Control (with Sleep Function), Energy Saving Control, MEMOBUS/Modbus Communications (RS-485 max, 115.2 kbps), Auto Restart, Application Presets, DriveWorksEZ (customized functions), Parameter Backup Function, Online Tuning, KEB, Overexcitation Deceleration, Overvoltage Suppression, High Frequency Injection. |
| Protection functions | Motor | Electronic thermal overload protection |
| | Momentary overcurrent | Drive stops when the output current exceeds 200% of the HD output current |
| | Overload | Drive stops when the output current exceeds 150% of the HD output current or 110% of the ND output current for 60 seconds*3 |
| | Overvoltage | 200 V class: Stops when the DC bus voltage is more than approximately 410 V 400 V class: Stops when the DC bus voltage is more than approximately 820 V |
| | Undervoltage | Single-phase 200 V class: Stops when the DC bus voltage decreases to less than approximately 160 V Three-phase 200 V class: Stops when the DC bus voltage decreases to less than approximately 190 V Three-phase 400 V class: Stops when the DC bus voltage decreases to less than approximately 380 V |
| | Momentary power loss ride-thru | Stops when power loss is longer than 15 ms. Continues operation if power loss is shorter than 2 s (depending on parameter settings). Stop time may be shortened depending on the load and motor speed. Drive capacity will change the continuous operation time. A momentary power loss recovery unit is necessary to continue operation through a 2 s power loss on models 2001 to 2042 and 4001 to 4023. |
| | Heatsink overheat | Protected by thermistor |
| | Stall prevention | Stall prevention is available during acceleration, deceleration and during run |
| | Ground fault | Electronic circuit protection This protection detects ground faults during run. The drive will not provide protection when there is a low-resistance ground fault for the motor cable or terminal block or energizing the drive when there is a ground fault. |
| | DC Bus charge LED | Charge LED illuminates when DC bus voltage is more than 50 V. |

| | | |
|--------------------------------------|--|--|
| Environment | Area of use | Indoor (no corrosive gas, dust, etc...) |
| | Power supply | Overvoltage Category III |
| | Ambient temperature | -10°C to +50°C |
| | Humidity | 95% RH or less (without condensation) |
| | Storage temperature | -20°C to +70°C (short-term temperature during transportation) |
| | Surrounding area | Pollution degree 2 or less Install the drive in an area without: <ul style="list-style-type: none"> • Oil mist, corrosive or flammable gas or dust • Metal powder, oil, water or other unwanted materials • Radioactive materials or flammable materials, including wood • Harmful gas or fluids • Salt • Direct sunlight |
| | Altitude | Up to 1000 meters max. (output derating of 1% per 100 m above 1000 m, max. 3000 m) |
| | Vibration | <ul style="list-style-type: none"> • 10 Hz to 20 Hz: 1G (9.8 m/s²) • 20 Hz to 55 Hz: 0.6G (5.9 m/s²) |
| Installation orientation | Install the drive vertically for sufficient airflow to cool the drive. | |
| Safety standard | <ul style="list-style-type: none"> • UL61800-5-1 • EN61800-3 • EN61800-5-1 • Two Safe Disable inputs and one EDM output according to ISO/EN13849-1 Cat.III PLe, IEC/EN61508 SIL3 | |
| Protection design⁴ | Open chassis type: IP20 | |

*1. Correctly select drive capacity for this starting torque in these control methods: OLV, AOLV/PM.

*2. Set L3-04 to 0 (Stall Prevention during Decel = Disabled) when operating the drive with a regenerative converter, regenerative unit, braking unit, braking resistor or braking resistor unit. Failure to obey could prevent the drive from stopping in the specified deceleration time and cause serious injury or death.

*3. The drive can trigger the overload protection function within the overload tolerance if the output frequency is less than 6 Hz. Do not allow the overload more than once every ten minutes.

*4. Install an UL Type 1 kit on an Open-chassis type (IP20) to convert the drive to a Enclosed wall-mounted type (UL Type 1).

Dimensions

Q2V inverter

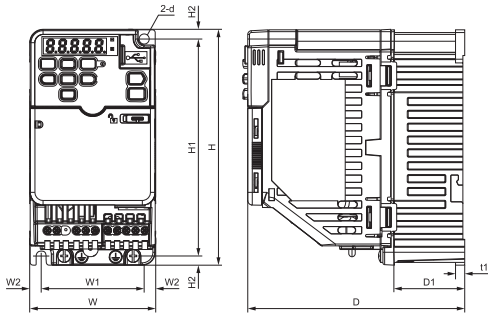


Figure 1

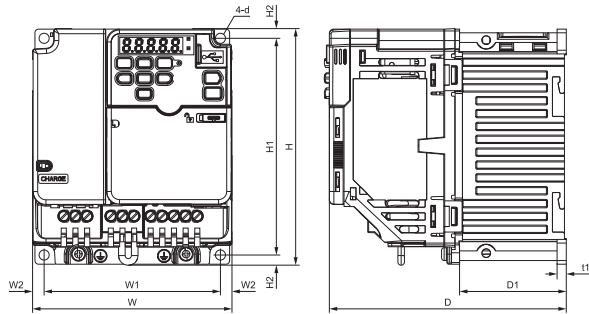


Figure 2

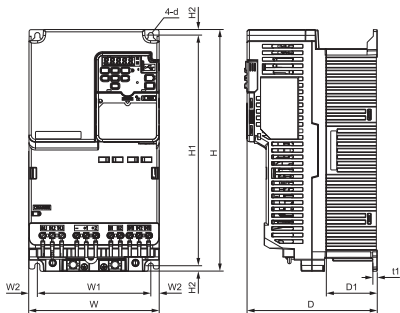


Figure 3

| Voltage | Inverter model | Fig. | Dimensions (mm) | | | | | | | | | | |
|-----------------------|------------------|------|-----------------|-----|-----|-----|-----|-----|-------|------|-----|----|-----|
| | | | W | W1 | W2 | H | H1 | H2 | D | D1 | t1 | d | |
| Single-phase 200 V | B001, B002 | 1 | 68 | 56 | 6 | 128 | 118 | 5 | 116 | 6.5 | 3 | M5 | |
| | B004 | | | | | | | | 158 | 38.5 | | | |
| | B006 | 2 | 108 | 96 | 6 | 128 | 118 | 5 | 182.5 | 56.5 | | | |
| | B010 | | | | | | | | 199 | | | | |
| | B012 | | | | | | | | 203 | 65 | | | |
| B018 | 170 | 158 | 180 | | | | | | | | | | |
| Three-phase 200 V | 2001, 2002 | 1 | 68 | 56 | 6 | 128 | 118 | 5 | 116 | 6.5 | 3 | M5 | |
| | 2004 | | | | | | | | 148 | 38.5 | | | |
| | 2006 | | | | | | | | 168 | 58.5 | | | |
| | 2010 | 2 | 108 | 96 | 6 | 128 | 118 | 5 | 174 | 56.5 | | | |
| | 2012 | | | | | | | | 182.5 | | | | |
| | 2021 | 3 | 140 | 128 | 9 | 260 | 248 | 6 | 193 | 65 | | | |
| | 2030, 2042 | | | | | | | | 196 | 55 | | | |
| | 2056 | | | | | | | | 180 | 160 | 10 | | 300 |
| 2070, 2082 | 220 | 192 | 14 | 350 | 336 | 7 | 216 | 78 | 5 | M6 | | | |
| Three-phase 400 V | 4001 | 2 | 108 | 96 | 6 | 128 | 118 | 5 | | 126 | 8.5 | 5 | M5 |
| | 4002 | | | | | | | | 144 | 26.5 | | | |
| | 4004 | | | | | | | | 182.5 | 56.5 | | | |
| | 4005, 4007, 4009 | | | | | | | | 199 | | | | |
| | 4012 | 140 | 128 | 9 | 260 | 248 | 6 | 193 | 65 | | | | |
| | 4018, 4023 | 3 | 140 | 122 | 9 | 260 | 248 | 6 | 196 | 55 | | | |
| | 4031, 4038 | | | | | | | | 180 | 160 | 10 | | 300 |
| 4044, 4060 | 190 | | | | | | | | 15 | 350 | 336 | 7 | 251 |

Line filters

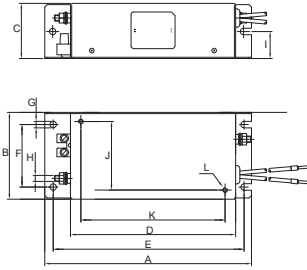


Figure 1

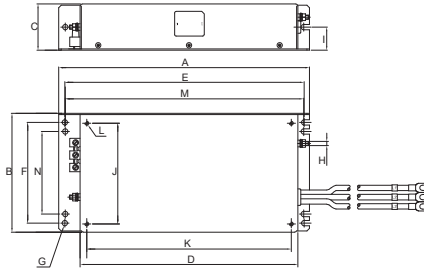


Figure 2

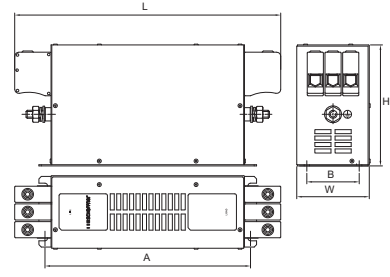


Figure 3

| Standard line filter | | Fig | Dimensions (mm) | | | | | | | | | | | | | | Weight (kg) | | | |
|-----------------------|---------------------|-----|-----------------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-----|------|-----|-------------|------|-----|-----|
| | | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | | W | | |
| Single-phase 200 V | A1000-FIV1010-SE | 1 | 169 | 71 | 45 | 135 | 156 | 51 | 5.3 | M5 | 22 | 56 | 118 | M4 | - | - | - | 0.44 | | |
| | A1000-FIV1020-SE-Q | | 111 | 50 | 91 | | 25 | 96 | | | 0.8 | | | | | | | | | |
| | A1000-FIV1030-SE-Q | | 174 | 144 | 128 | | 158 | 1.2 | | | | | | | | | | | | |
| | A1000-FIV1040-SE | | 174 | 150 | 1.6 | | | | | | | | | | | | | | | |
| Three-phase 200 V | A1000-FIV2010-SE-V1 | 1 | 166 | 70 | 40 | 130 | 156 | 51 | 6.5 | M5 | 20 | 56 | 248 | M5 | 289 | 100 | 90 | 0.4 | | |
| | A1000-FIV2020-SE | | 169 | 111 | 45 | | 135 | 91 | | | 22 | 96 | | | 0.58 | | | | | |
| | A1000-FIV2030-SE | | 174 | 144 | 50 | | 161 | 120 | | | 25 | 128 | | | 0.9 | | | | | |
| | A1000-FIV2060-SE-V1 | 2 | 305 | 144 | 56 | 264 | 290 | 122 | 6.5 | M6 | 28 | 122 | 248 | M5 | 289 | 100 | 80 | 2.0 | | |
| | A1000-FIV2080-SE-V1 | | 345 | 182 | 65 | 300 | 330 | 160 | | | 32.5 | 160 | 285 | | 325 | 130 | | | 2.6 | |
| | A1000-FIV2100-SE-V1 | | 394 | 214 | 353 | 380 | 192 | M8 | | | 192 | 336 | M6 | | 378 | 167 | | | 3.1 | |
| | Q2-FIA4100-SE | 3 | 255 | 65 | - | - | - | - | - | 150 | - | - | - | 330 | M10 | - | - | 4.0 | | |
| Three-phase 400 V | A1000-FIV3005-SE | 1 | 169 | 111 | 45 | 135 | 156 | 91 | 5.3 | M5 | 22 | 96 | 118 | M4 | - | - | - | 0.5 | | |
| | A1000-FIV3010-SE-Q | | 174 | 144 | 50 | | 161 | 120 | | | 25 | 128 | | | 0.7 | | | | | |
| | A1000-FIV3020-SE-Q | | 174 | 144 | 50 | | 161 | 120 | | | 25 | 128 | | | 0.9 | | | | | |
| | A1000-FIV3030-SE-V1 | 2 | 305 | 144 | 56 | 264 | 290 | 122 | 6.5 | M6 | 28 | 122 | 248 | M5 | 289 | 100 | 80 | 1.8 | | |
| | A1000-FIV3050-SE-V2 | | 345 | 182 | 65 | 300 | 330 | 160 | | | M6 | 32.5 | 160 | | 285 | 325 | | | 130 | 2.7 |
| | Q2-FIA4080-SE | | 3 | 270 | - | - | - | - | | | - | - | 205 | | - | - | | | - | 250 |

| Low leakage line filter | | Fig | Dimensions (mm) | | | | | | | | | | | | | | Weight (kg) | | | | |
|-------------------------|-----------------------|-----|-----------------|-----|-----|-----|-----|------|-----|----|------|------|-----|----|------|-----|-------------|------|------|-----|------|
| | | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | | W | | | |
| Single-phase 200 V | A1000-FIV1010-SE-LL | 1 | 166 | 70 | 40 | 130 | 156 | 51 | 5.3 | M5 | 20 | 56 | 118 | M4 | - | - | - | 0.33 | | | |
| | A1000-FIV1020-SE-LL-Q | | 110 | 50 | 91 | | 25 | 96 | | | 0.72 | | | | | | | | | | |
| | A1000-FIV1030-SE-LL-Q | | 171 | 142 | 128 | | 158 | 0.92 | | | | | | | | | | | | | |
| | A1000-FIV1040-SE-LL | | 174 | 176 | 135 | | 150 | 1.4 | | | | | | | | | | | | | |
| Three-phase 200 V | A1000-FIV2010-SE-LL | 1 | 191 | 80 | 40 | 130 | 181 | 62 | 6.5 | M5 | 20 | 56 | 248 | M5 | 289 | 100 | 80 | 0.35 | | | |
| | A1000-FIV2020-SE-LL | | 166 | 110 | 50 | | 156 | 91 | | | 25 | 96 | | | 0.65 | | | | | | |
| | A1000-FIV2030-SE-LL | | 172 | 142 | 161 | | 120 | 128 | | | 0.92 | | | | | | | | | | |
| Three-phase 400 V | A1000-FIV3005-SE-LL | 1 | 166 | 110 | 45 | 130 | 156 | 91 | 6.5 | M6 | 22.5 | 96 | 248 | M5 | 289 | 100 | 80 | 0.5 | | | |
| | A1000-FIV3010-SE-LL-Q | | 171 | 142 | 161 | | 120 | 128 | | | 0.66 | | | | | | | | | | |
| | A1000-FIV3020-SE-LL-Q | | 171 | 142 | 161 | | 120 | 128 | | | 0.85 | | | | | | | | | | |
| | A1000-FIV3030-SE-LL | | 304 | 140 | 55 | | 263 | 290 | | | 122 | 27.5 | | | 122 | 248 | | | 325 | 130 | 1.85 |
| | A1000-FIV3050-SE-LL | | 344 | 180 | 300 | | 330 | 160 | | | 160 | 285 | | | 325 | 130 | | | 2.65 | | |

Input AC Reactor

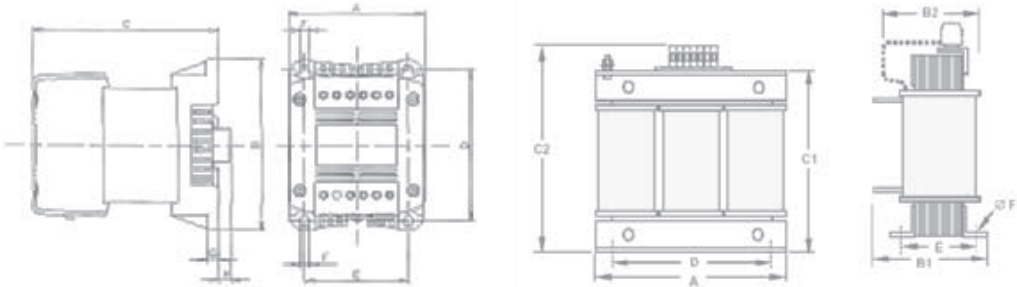


Figure 1

Figure 2

| Voltage | Reference | Fig | Dimensions (mm) | | | | | | | | | | Weight (kg) |
|-----------------------|-------------------|-----|-----------------|-----|------|------|-----|-----|------|-----|-----|------|-------------|
| | | | A | B | B2 | C | C2 | D | E | F | G | H | |
| Single-phase 200 V | AX-RAI02000070-DE | 1 | 84 | 113 | - | 96 | - | 101 | 66 | 5 | 7.5 | 2 | 1.22 |
| | AX-RAI01700140-DE | | | | 116 | 1.95 | | | | | | | |
| | AX-RAI01200200-DE | | | | 131 | 2.55 | | | | | | | |
| | AX-RAI00630240-DE | | | | 116 | 1.95 | | | | | | | |
| Three-phase 200 V | AX-RAI02800100-DE | 2 | 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 | | | 205 | 6 | 6.5 | | | | | | | |
| | AX-RAI00091000-DE | | | 70 | 120 | 80 | 52 | 5.5 | 1.78 | | | | |
| Three-phase 400 V | AX-RAI07700042-DE | 120 | - | 80 | 120 | 80 | 52 | 62 | 5.5 | - | - | 2.35 | |
| | AX-RAI03500090-DE | | | 75 | | | | | | | | 195 | 140 |
| | AX-RAI03500100-DE | 180 | 85 | 190 | 140 | 55 | 6 | 75 | - | - | 6.5 | | |
| | AX-RAI01300170-DE | | 105 | 205 | | | | | | | 6 | 11.2 | |
| | AX-RAI00740335-DE | | 75 | 190 | | | | | | | 6 | 11.2 | |
| | AX-RAI00360500-DE | 105 | 205 | 6 | 11.2 | | | | | | | | |
| | AX-RAI00290780-DE | 105 | 205 | 6 | 11.2 | | | | | | | | |

DC Reactor

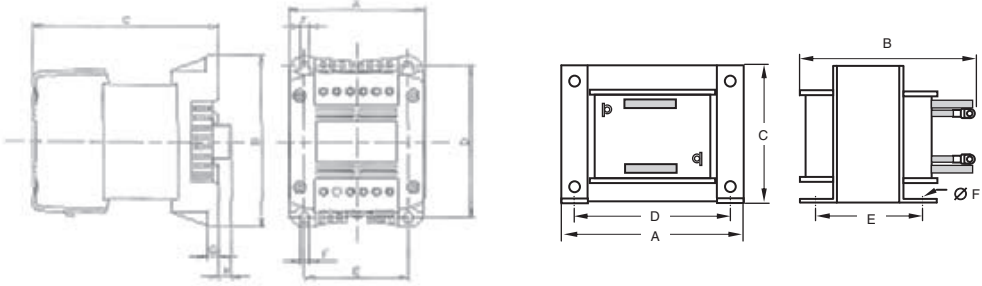
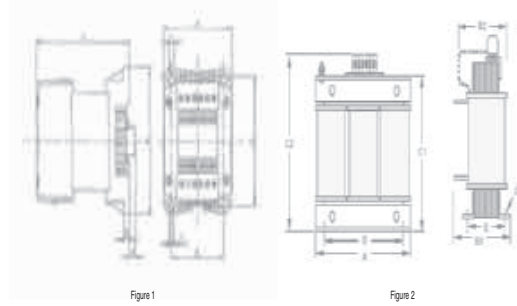


Figure 1

Figure 2

| Voltage | Reference | Fig | Dimensions (mm) | | | | | | | | Weight (kg) | | | | | | | |
|------------------|------------------|-----|-----------------|-----|-----|-----|-----|-----|-----|------|-------------|-----|-----|----|-----|-----|-----|------|
| | | | A | B | C | D | E | F | G | H | | | | | | | | |
| 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 | | | | 116 | | | | | | 1.95 | | | | | | | |
| | AX-RC02510138-DE | 108 | 135 | 124 | 120 | 82 | 6.5 | 9.5 | 9.5 | 3.20 | | | | | | | | |
| | AX-RC01600223-DE | | | 136 | | | | | | 5.20 | | | | | | | | |
| | AX-RC01110309-DE | | | 146 | | | | | | 6.00 | | | | | | | | |
| | AX-RC00840437-DE | 150 | 177 | 160 | 160 | 115 | 7 | 2 | - | 11.4 | | | | | | | | |
| | AX-RC00590614-DE | | | 183 | | | | | | 14.3 | | | | | | | | |
| | AX-RC00440859-DE | | | 163 | | | | | | 17.0 | | | | | | | | |
| AX-RC00301275-DE | 2 | 195 | 161 | 163 | 185 | 88 | 10 | - | - | 17.0 | | | | | | | | |
| 400 V | AX-RC43000020-DE | 1 | 84 | 113 | 96 | 101 | 66 | 5 | 7.5 | 2 | 1.22 | | | | | | | |
| | 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 | | | | | | | | | | | 160 | | | | | | 160 |
| | AX-RC01750430-DE | | | | 183 | | | | | | 14.3 | | | | | | | |

Output AC Reactor



| Voltage | Reference | Dimensions (mm) | | | | | | Weight (kg) | | |
|-------------------|-------------------|-----------------|-----|-----|-----|-------------------|------|-------------------|------|-----|
| | | A | B2 | C2 | D | E | F | | | |
| 200 V | AX-RAO11500026-DE | 120 | 70 | 120 | 80 | 52 | 5.5 | 1.78 | | |
| | AX-RAO07600042-DE | | 80 | | | 62 | | | 2.35 | |
| | AX-RAO04100075-DE | | | | | AX-RAO03000105-DE | | | | |
| | AX-RAO01830160-DE | 180 | 85 | 195 | 140 | 55 | 6 | 5.5 | | |
| | AX-RAO01150220-DE | | | 210 | | | | | 65 | 6.5 |
| | AX-RAO00950320-DE | | 95 | | | 75 | | | 9.1 | |
| | AX-RAO00630430-DE | | 105 | | | | | | | |
| | AX-RAO00490640-DE | 240 | 110 | 275 | 200 | 75 | 16.0 | | | |
| | AX-RAO00390800-DE | | | | | | | AX-RAO00330950-DE | | |
| AX-RAO00330950-DE | | | | | | | | | | |
| 400 V | AX-RAO16300038-DE | 120 | 80 | 120 | 80 | 62 | 5.5 | 2.35 | | |
| | AX-RAO11800053-DE | | | | | | | | | |
| | AX-RAO07300080-DE | 180 | 85 | 195 | 140 | 55 | 6 | 5.5 | | |
| | AX-RAO04600110-DE | | | 210 | | | | | 65 | 9.1 |
| | AX-RAO03600160-DE | | 95 | | | 75 | | | 16.0 | |
| | AX-RAO02500220-DE | 240 | 110 | 275 | 200 | | 75 | 16.0 | | |
| | AX-RAO02000320-DE | | | | | AX-RAO01650400-DE | | | | |
| | AX-RAO01300480-DE | | | | | AX-RAO00800750-DE | | | | |
| | AX-RAO00800750-DE | | | | | 120 | | | 281 | 85 |

Chokes

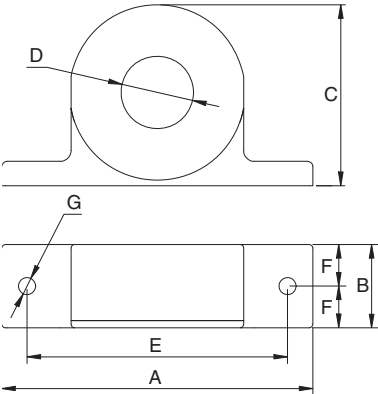


Figure 1

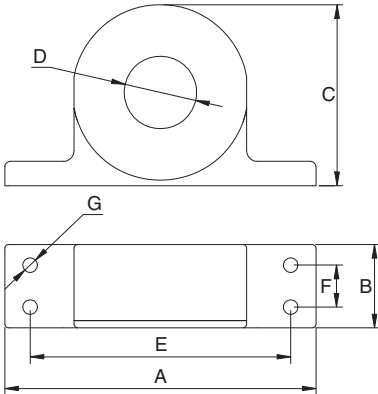
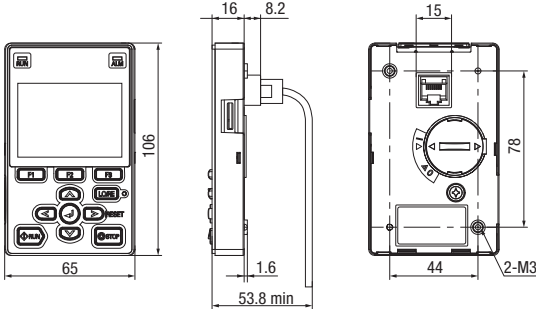


Figure 2

| 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 |

LCD keypad



Braking resistor

AX-REM00K1200-IE

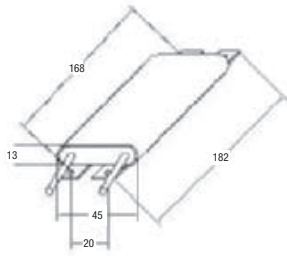


Fig 3

Fig 1

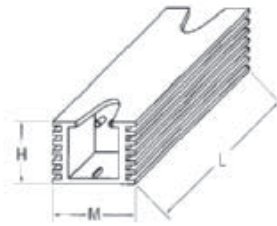


Fig 2

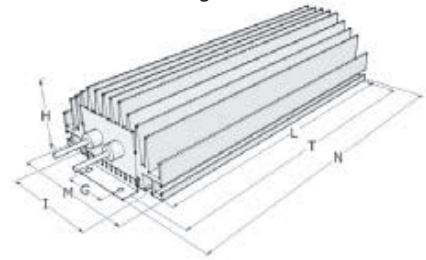


Fig 5

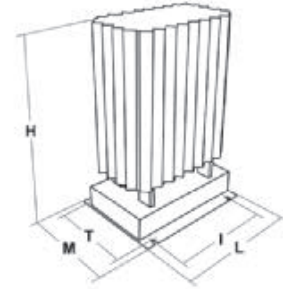
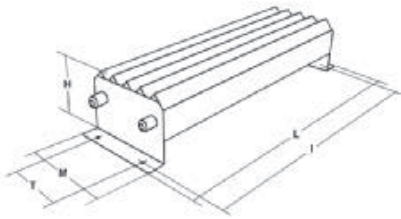
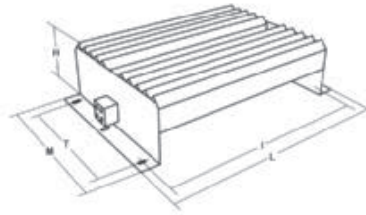


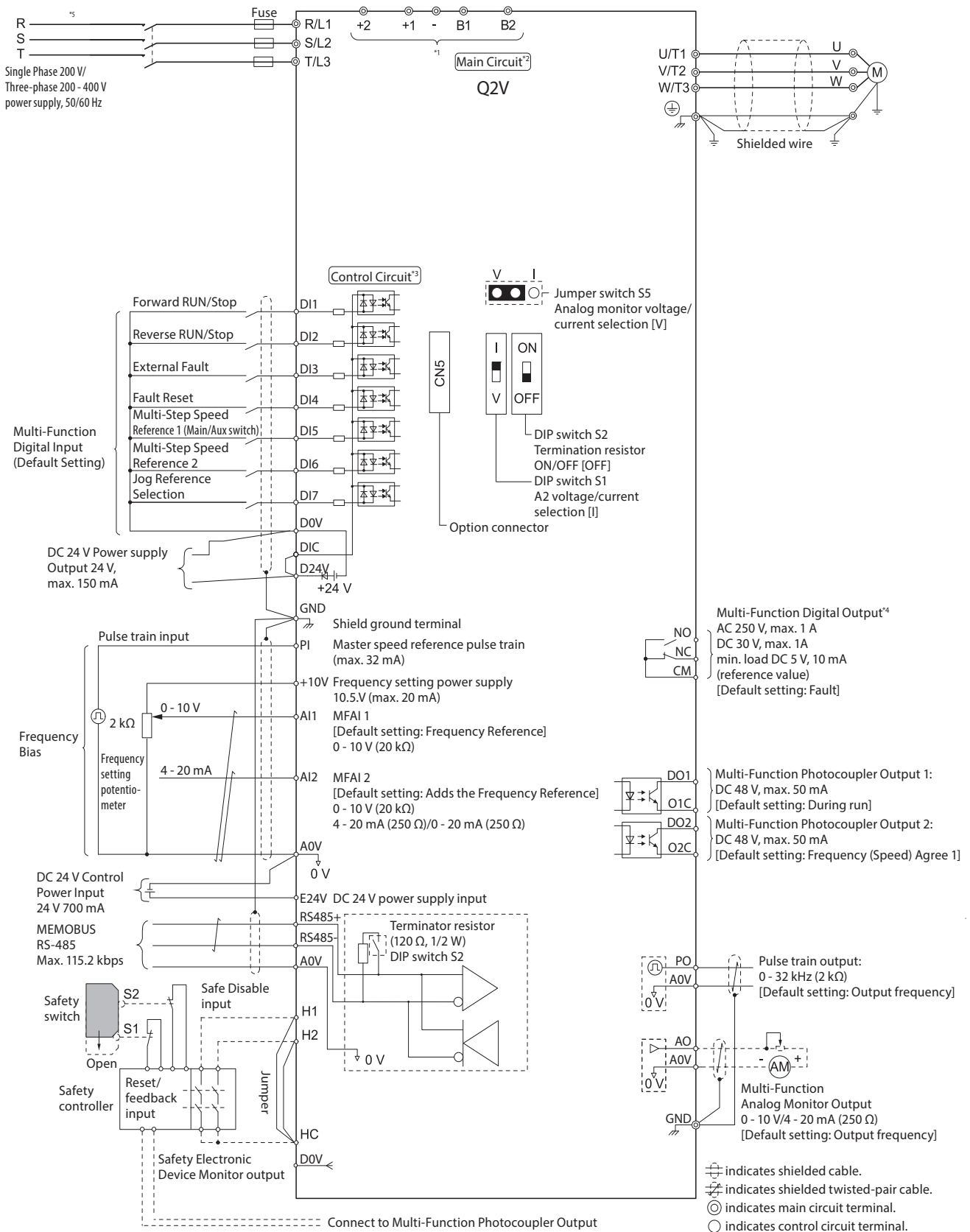
Fig 4



| Type | Fig | Dimensions (mm) | | | | | | | Weight (kg) | | | | | |
|------------------|-----|-----------------|-----|-----|------|-----|----|-----|-------------|-----|---|---|---|---|
| | | L | H | M | I | T | G | N | | | | | | |
| AX-REM00K1400-IE | 1 | 105 | 27 | 36 | 94 | - | - | - | 0.2 | | | | | |
| AX-REM00K2070-IE | | | | | | | | | | | | | | |
| AX-REM00K2120-IE | | | | | | | | | | | | | | |
| AX-REM00K2200-IE | | 200 | - | - | 189 | - | - | - | 0.425 | | | | | |
| AX-REM00K4035-IE | | | | | | | | | | | | | | |
| AX-REM00K4075-IE | | | | | | | | | | | | | | |
| AX-REM00K5120-IE | | 260 | - | - | 249 | - | - | - | 0.58 | | | | | |
| AX-REM00K6035-IE | | | | | | | | | | | | | | |
| AX-REM00K6100-IE | | | | | | | | | | | | | | |
| AX-REM00K9020-IE | 2 | 200 | 61 | 100 | 74.5 | 216 | 40 | 230 | 1.41 | | | | | |
| AX-REM00K9070-IE | | | | | | | | | | | | | | |
| AX-REM01K9017-IE | 3 | 365 | 73 | 105 | 350 | 70 | - | - | 4 | | | | | |
| AX-REM01K9070-IE | | | | | | | | | | | | | | |
| AX-REM02K1017-IE | 4 | 310 | 100 | 240 | 295 | 210 | - | - | 7 | | | | | |
| AX-REM02K1070-IE | | | | | | | | | | | | | | |
| AX-REM03K5010-IE | | 365 | | | - | | | | - | 350 | - | - | - | 8 |
| AX-REM03K5035-IE | | | | | | | | | | | | | | |
| AX-REM19K0020-IE | 5 | 206 | 350 | 140 | 190 | 50 | - | - | 8.1 | | | | | |

Installation

Standard connections



*1. For three-phase 200 V class and 400 V class drives, use terminals -, +1, +2, B1 and B2 to connect options to the drive. For single-phase 200 V class drives, use terminals -, +1, B1 and B2 to connect options to the drive.

WARNING! Fire Hazard. Only connect factory-recommended devices or circuits to drive terminals B1, B2, -, +1, +2 and +3 terminals. Do not connect AC power to these terminals. Incorrect wiring can cause damage to the drive and serious injury or death from fire.

*2. For circuit protection, the main circuit is separated from the surface case that can touch the main circuit.


*3. The control circuit is a Safety Extra-Low Voltage circuit. Separate this circuit from other circuits with reinforced insulation. Make sure that the Safety Extra-Low Volt-

age circuit is connected as specified.

*4. Reinforced insulation separates the output terminals from other circuits. Users can also connect circuits that are not Safety Extra-Low Voltage circuits if the drive output is 250 VAC 1 A max. or 30 VDC 1 A maximum.

*5. Set L8-05 = 1 [In PhaseLoss Selection = Enabled] or set the wiring sequence to prevent input phase loss.

Main circuit

| Terminal | Name | Function |
|---|---|--|
| R/L1, S/L2, T/L3 | Main circuit power supply input (2001 to 2082 and 4001 to 4060) | Used to connect a power supply |
| L/L1, N/L2 | Main circuit power supply input (B001 to B018) | Used to connect a power supply |
| U/T1, V/T2, W/T3 | Inverter output | Used to connect a motor |
| B1, B2 | Braking resistor connection | To connect a braking resistor or braking resistor unit |
| +2 | DC reactor connection (2001 to 2082 and 4001 to 4060 models) | +1 and +2: To connect a DC reactor ^{*1} |
| +1 | | |
| - | | |
|  | <ul style="list-style-type: none"> 200 V class: D class grounding (ground to 100 Ω or less) 400 V class: C class grounding (ground to 10 Ω or less) | To ground the inverter |

*1. Remove the jumper between terminals +1 and +2 to connect a DC reactor.

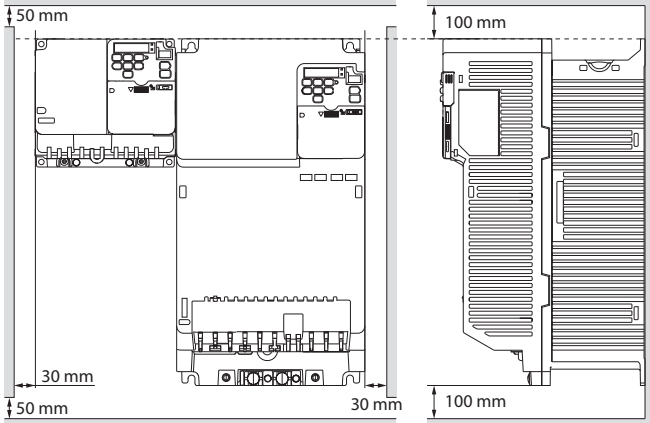
Control circuit

| Type | Terminal | Name | Function (Signal level) | |
|----------------------------|---------------------------|---|--|---------------------------------------|
| Digital input signals | DI1 | Multi-Function Digital Input 1 (ON: Forward run, OFF: Stop) | Photocoupler 24 V, 6 mA Install the wire jumpers between DIC-D24V and DIC-D0V terminals to set the Multi-Function Digital Input power supply. <ul style="list-style-type: none"> SINK mode: Install a jumper between DIC and D24V terminals. SOURCE mode: Install a jumper between DIC and D0V terminals. External power supply: No jumper necessary. | |
| | DI2 | Multi-Function Digital Input 2 (ON: Reverse run, OFF: Stop) | | |
| | DI3 | Multi-Function Digital Input 3 (External fault (N.O.)) | | |
| | DI4 | Multi-Function Digital Input 4 (Fault reset) | | |
| | DI5 | Multi-Function Digital Input 5 (Multi-step speed reference 1) | | |
| | DI6 | Multi-Function Digital Input 6 (Multi-step speed reference 2) | | |
| | DI7 | Multi-Function Digital Input 7 (Jog reference selection) | | |
| | D0V ^{*1} | MFDI power supply 0 V | | 24 V, 150 mA max. (for external fuse) |
| | DIC | MFDI common | | |
| D24V | MFDI power supply +24 VDC | | | |
| Safe Disable input | H1 | Safe Disable input 1 | Remove the jumper between H1-HC and H2-HC terminals to use the Safe Disable input. 24 V, 6 mA ON: Normal operation, OFF: Coasting motor Internal impedance: 4.7 kΩ Minimum OFF time of 3 ms | |
| | H2 | Safe Disable input 2 | | |
| | HC ^{*2} | Safe Disable function common | | |
| Master frequency reference | PI | Master speed reference pulse train | Response frequency: 0 to 32 kHz H level duty and voltage: 30 to 70%, 3.5 to 13.2 V L level voltage: 0 to 0.8 V Input impedance: 3 kΩ | |
| | +10V | Frequency setting power supply | +10.5 V (allowable current max. 20 mA) | |
| | A11 | Multi-Function Analog Input 1 (Frequency reference) | <ul style="list-style-type: none"> Voltage input or current input: 0 to 10 V/100 % (input impedance: 20 kΩ) 4 to 20 mA/100 %, 0 to 20 mA/100 % (input impedance: 250 Ω) | |
| | A12 | Multi-Function Analog Input 2 (Frequency reference bias) | | |
| | A0V | Frequency reference common | 0 V | |
| GND | Connecting shielded cable | | | |
| Fault relay output | NO | Multi-Function Digital Output, N.O. output | Relay output 30 VDC, 10 mA to 1 A 250 VAC, 10 mA to 1 A Min. load: 5 V, 10 mA (Reference value) | |
| | NC | Multi-Function Digital Output, N.C. output | | |
| | CM | MFDO common | | |

| Type | Terminal | Name | Function (Signal level) |
|------------------------------------|----------|--|--|
| Multi-function photocoupler output | DO1 | Multi-Function Photocoupler Output 1 (During Run) | Photocoupler output*3 48 V, 2 mA to 50 mA |
| | O1C | | |
| | DO2 | Multi-Function Photocoupler Output 2 (Speed agree 1) | |
| | O2C | | |
| Monitor output | PO | Pulse train output (Output frequency) | 32 kHz max. |
| | AO | Analog monitor output (Output frequency) | Select voltage or current output: 0 to 10 V / 0 to 100 % 4 to 20 mA |
| | A0V | Monitor common | 0 V |
| External power supply input | E24V | External 24 V power supply input | Supplies backup power to the drive control circuit, keypad and option board. 21.6 to 26.4 VDC, 700 mA |
| | A0V | External 24 V power supply ground | 0 V |
| MEMOBUS/Modbus ⁴ | RS485+ | Communication input/output (+) | MEMOBUS/Modbus communication protocol Use an RS-485 cable to connect the inverter Maximum 115.2 kbps |
| | RS485- | Communication output (-) | |
| | A0V | Shield ground | 0 V |

*1. Do not close the circuit between D24V and D0V terminals. Failure to obey will cause damage to the drive.
 *2. Do not close the circuit between HC and D0V terminals. Failure to obey will cause damage to the drive.
 *3. Connect a flywheel diode as shown in when you drive a reactive load such as a relay coil. Make sure that the diode rating is larger than the circuit voltage.
 *4. Select DIP switch S2 to ON to enable the termination resistor in the last drive in a MEMOBUS/Modbus network.

Side by side mounting



Inverter watt loss

Single-phase 200 V class

| Inverter model Q2V-A□ | Heavy Duty (HD) | | | | | Normal Duty (ND) | | | | |
|--------------------------|--------------------------|-------------------------|------------------------|----------------------|----------------|--------------------------|-------------------------|------------------------|----------------------|----------------|
| | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) |
| B001 | 0.8 | 10 | 8 | 5 | 13 | 1.2 | 2 | 8 | 6 | 14 |
| B002 | 1.6 | | 10 | 9 | 19 | 1.9 | | 14 | 11 | 25 |
| B004 | 3 | | 14 | 16 | 30 | 3.5 | | 17 | 17 | 31 |
| B006 | 5 | | 18 | 28 | 46 | 6 | | 17 | 26 | 43 |
| B010 | 8 | 8 | 31 | 42 | 73 | 9.6 | | 36 | 50 | 86 |
| B012 | 11 | | 41 | 55 | 96 | 12.2 | | 48 | 60 | 108 |
| B018 | 17.6 | | 53 | 98 | 151 | N/A | | 49 | 92 | 141 |

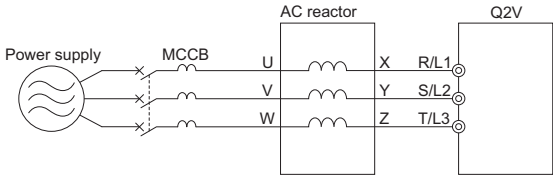
Three-phase 200 V class

| Inverter model Q2V-A□ | Heavy Duty (HD) | | | | | Normal Duty (ND) | | | | |
|--------------------------|--------------------------|-------------------------|------------------------|----------------------|----------------|--------------------------|-------------------------|------------------------|----------------------|----------------|
| | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) |
| 2001 | 0.8 | 10 | 6 | 5 | 11 | 1.2 | 2 | 7 | 5 | 12 |
| 2002 | 1.6 | | 7 | 8 | 15 | 1.9 | | 9 | 9 | 18 |
| 2004 | 3 | | 10 | 16 | 26 | 3.5 | | 11 | 16 | 27 |
| 2006 | 5 | | 14 | 27 | 41 | 6 | | 14 | 25 | 39 |
| 2010 | 8 | 8 | 18 | 43 | 61 | 9.6 | | 25 | 51 | 76 |
| 2012 | 11 | | 24 | 56 | 80 | 12.2 | | 30 | 61 | 91 |
| 2021 | 17.6 | | 40 | 108 | 148 | 21 | | 52 | 111 | 163 |
| 2030 | 25 | | 49 | 187 | 236 | 30 | | 63 | 240 | 303 |
| 2042 | 33 | | 60 | 232 | 292 | 42 | | 84 | 307 | 391 |
| 2056 | 47 | | 85 | 318 | 403 | 56 | | 109 | 367 | 476 |
| 2070 | 60 | | 119 | 473 | 592 | 70 | | 142 | 534 | 676 |
| 2082 | 75 | | 148 | 525 | 673 | 82 | | 160 | 531 | 691 |

Three-phase 400 V class

| Inverter model Q2V-A□ | Heavy Duty (HD) | | | | | Normal Duty (ND) | | | | |
|--------------------------|--------------------------|-------------------------|------------------------|----------------------|----------------|--------------------------|-------------------------|------------------------|----------------------|----------------|
| | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) | Rated output current (A) | Carrier frequency (kHz) | Interior unit loss (W) | Cooling fin loss (W) | Total loss (W) |
| 4001 | 1.2 | 8 | 9 | 11 | 20 | 1.2 | 2 | 8 | 7 | 15 |
| 4002 | 1.8 | | 11 | 16 | 27 | 2.1 | | 13 | 12 | 25 |
| 4004 | 3.4 | | 15 | 31 | 46 | 4.1 | | 14 | 24 | 38 |
| 4005 | 4.8 | | 18 | 42 | 60 | 5.4 | | 16 | 32 | 48 |
| 4007 | 5.6 | | 18 | 49 | 67 | 7.1 | | 20 | 44 | 64 |
| 4009 | 7.3 | | 25 | 65 | 90 | 8.9 | | 28 | 58 | 86 |
| 4012 | 9.2 | | 32 | 85 | 117 | 11.9 | | 39 | 83 | 122 |
| 4018 | 14.8 | | 55 | 166 | 221 | 17.5 | | 52 | 155 | 207 |
| 4023 | 18 | | 61 | 200 | 261 | 23.4 | | 86 | 236 | 322 |
| 4031 | 24 | | 79 | 255 | 334 | 31 | | 101 | 284 | 385 |
| 4038 | 31 | | 95 | 338 | 433 | 38 | | 108 | 341 | 449 |
| 4044 | 39 | | 127 | 442 | 569 | 44 | | 137 | 417 | 554 |
| 4060 | 45 | | 135 | 446 | 581 | 60 | | 176 | 490 | 666 |

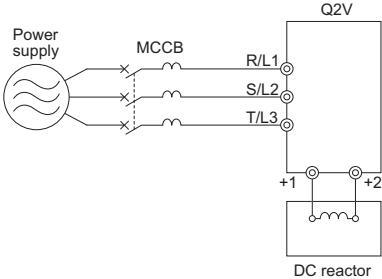
Input AC reactor



| Single-phase 200 V | | | | Three-phase 200 V | | | | Three-phase 400 V | | | |
|---|-------------------|-------------------|-----------------|---|-------------------|-------------------|-----------------|---|-------------------|-------------------|-----------------|
| Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) | Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) | Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) |
| 0.75 | AX-RAI0200070-DE | 7.0 | 2.0 | 1.1 | AX-RAI02800100-DE | 8.0 | 2.8 | 0.75 | AX-RAI07700042-DE | 4.2 | 7.7 |
| 1.1 | AX-RAI01700140-DE | 14.0 | 1.7 | 3.0 | AX-RAI00880200-DE | 20.0 | 0.88 | 1.5 | AX-RAI07700050-DE | 5.0 | 7.7 |
| 2.2 | AX-RAI01200200-DE | 20.0 | 1.2 | 7.5 | AX-RAI00350335-DE | 33.5 | 0.35 | 2.2 | AX-RAI03500090-DE | 9.0 | 3.5 |
| 3.0 | AX-RAI00630240-DE | 24.0 | 0.63 | 15.0 | AX-RAI00180670-DE | 67.0 | 0.18 | 3.0 | AX-RAI03500100-DE | 10.0 | 3.5 |
| - | | | | 22.0 | AX-RAI00091000-DE | 100.0 | 0.09 | 5.5 | AX-RAI01300170-DE | 17.0 | 1.3 |
| | | | | - | | | | 11.0 | AX-RAI00740335-DE | 33.5 | 0.74 |
| | | | | | | | | 18.5 | AX-RAI00360500-DE | 50.0 | 0.36 |
| | | | | | | | | 30.0 | AX-RAI00290780-DE | 78.0 | 0.29 |

*1. The motor sizes are for heavy duty applications.

DC reactor



| 200 V class | | | | 400 V class | | | |
|---|------------------|-------------------|-----------------|---|------------------|-------------------|-----------------|
| Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) | Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) |
| 0.37 | AX-RC10700032-DE | 3.2 | 10.7 | 1.5 | AX-RC43000020-DE | 2.0 | 43.0 |
| 0.75 | AX-RC06750061-DE | 6.1 | 6.75 | 2.2 | AX-RC10100069-DE | 6.9 | 10.1 |
| 2.2 | AX-RC03510093-DE | 9.3 | 3.51 | 4.0 | AX-RC06400116-DE | 11.6 | 6.4 |
| 3.0 | AX-RC02510138-DE | 13.8 | 2.51 | 5.5 | AX-RC04410167-DE | 16.7 | 4.41 |
| | AX-RC01600223-DE | 22.3 | 1.60 | 7.5 | AX-RC03350219-DE | 21.9 | 3.35 |
| 7.5 | AX-RC01110309-DE | 30.9 | 1.11 | 11.0 | AX-RC02330307-DE | 30.7 | 2.33 |
| 11.0 | AX-RC00840437-DE | 43.7 | 0.84 | 18.5 | AX-RC01750430-DE | 43.0 | 1.75 |
| 15.0 | AX-RC00590614-DE | 61.4 | 0.59 | 22.0 | AX-RC01200644-DE | 64.4 | 1.20 |
| 18.5 | AX-RC00440859-DE | 85.9 | 0.44 | | - | | |
| 22.0 | AX-RC00301275-DE | 127.5 | 0.30 | | | | |

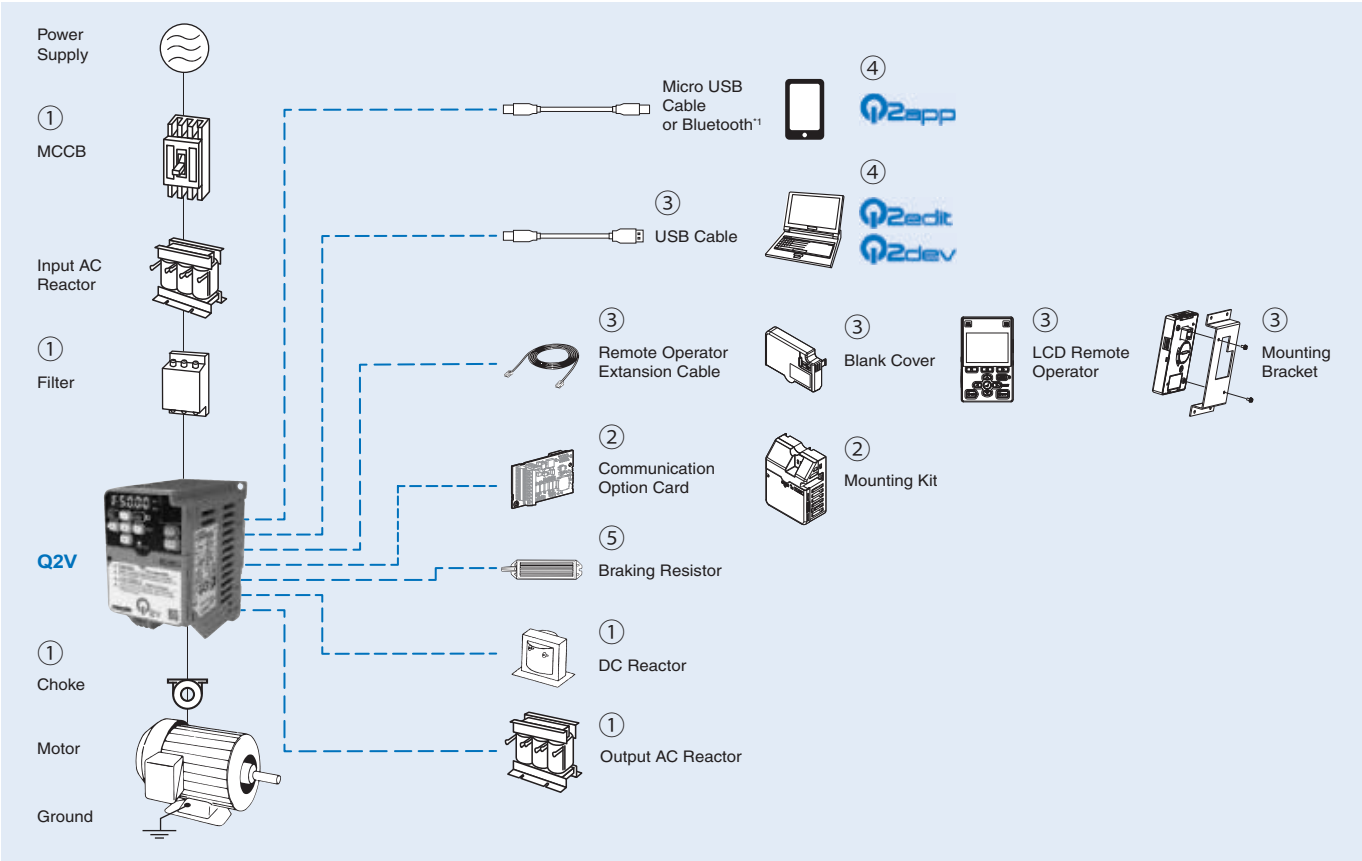
*1. The motor sizes are for heavy duty applications.

Output AC reactor

| 200 V class | | | | 400 V class | | | |
|---|-------------------|-------------------|-----------------|---|-------------------|-------------------|-----------------|
| Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) | Max. applicable motor output (kW) ^{*1} | Reference | Current value (A) | Inductance (mH) |
| 0.37 | AX-RAO11500026-DE | 2.6 | 11.5 | 0.75 | AX-RAO16300038-DE | 3.8 | 16.3 |
| 0.75 | AX-RAO07600042-DE | 4.2 | 7.60 | 1.5 | AX-RAO11800053-DE | 5.3 | 11.8 |
| 1.1 | AX-RAO04100075-DE | 7.5 | 4.10 | 2.2 | AX-RAO07300080-DE | 8.0 | 7.3 |
| 2.2 | AX-RAO03000105-DE | 10.5 | 3.00 | 4.0 | AX-RAO04600110-DE | 11.0 | 4.6 |
| 3.0 | AX-RAO01830160-DE | 16.0 | 1.83 | 5.5 | AX-RAO03600160-DE | 16.0 | 3.6 |
| 5.5 | AX-RAO01150220-DE | 22.0 | 1.15 | 7.5 | AX-RAO02500220-DE | 22.0 | 2.5 |
| 7.5 | AX-RAO00950320-DE | 32.0 | 0.95 | 11.0 | AX-RAO02000320-DE | 32.0 | 2.0 |
| 11.0 | AX-RAO00630430-DE | 43.0 | 0.63 | 15.0 | AX-RAO01650400-DE | 40.0 | 1.65 |
| 15.0 | AX-RAO00490640-DE | 64.0 | 0.49 | 22.0 | AX-RAO01300480-DE | 48.0 | 1.3 |
| 18.5 | AX-RAO00390800-DE | 80.0 | 0.39 | 30.0 | AX-RAO00800750-DE | 75.0 | 0.8 |
| 22.0 | AX-RAO00330950-DE | 95.0 | 0.33 | | - | | |

*1. The motor sizes are for heavy duty applications.

Ordering information



*1 With optional LCD remote operator model with Bluetooth.

Q2V inverter

| Voltage | Specifications | | | | Model |
|-----------------------|-----------------|-------------------|------------------|-------------------|---------------|
| | Heavy Duty (HD) | | Normal Duty (ND) | | |
| | Max motor (kW) | Rated current (A) | Max motor (kW) | Rated current (A) | |
| Single-phase 200 V | 0.1 | 0.8 | 0.18 | 1.2 | Q2V-AB001-AAA |
| | 0.25 | 1.6 | 0.37 | 1.9 | Q2V-AB002-AAA |
| | 0.55 | 3.0 | 0.75 | 3.5 | Q2V-AB004-AAA |
| | 1.1 | 5.0 | 1.1 | 6.0 | Q2V-AB006-AAA |
| | 1.5 | 8.0 | 2.2 | 9.6 | Q2V-AB010-AAA |
| | 2.2 | 11.0 | 3.0 | 12.2 | Q2V-AB012-AAA |
| | 4.0 | 17.6 | - | - | Q2V-AB018-AAA |
| Three-phase 200 V | 0.1 | 0.8 | 0.18 | 1.2 | Q2V-A2001-AAA |
| | 0.25 | 1.6 | 0.37 | 1.9 | Q2V-A2002-AAA |
| | 0.55 | 3.0 | 0.75 | 3.5 | Q2V-A2004-AAA |
| | 1.1 | 5.0 | 1.1 | 6.0 | Q2V-A2006-AAA |
| | 1.5 | 8.0 | 2.2 | 9.6 | Q2V-A2010-AAA |
| | 2.2 | 11 | 3.0 | 12.2 | Q2V-A2012-AAA |
| | 4.0 | 17.6 | 5.5 | 21 | Q2V-A2021-AAA |
| | 5.5 | 25 | 7.5 | 30 | Q2V-A2030-AAA |
| | 7.5 | 33 | 11 | 42 | Q2V-A2042-AAA |
| | 11 | 47 | 15 | 56 | Q2V-A2056-AAA |
| | 15 | 60 | 18.5 | 70 | Q2V-A2070-AAA |
| 18.5 | 75 | 22 | 82 | Q2V-A2082-AAA | |

| Specifications | | | | | |
|----------------------|-----------------|-------------------|------------------|-------------------|---------------|
| Voltage | Heavy Duty (HD) | | Normal Duty (ND) | | Model |
| | Max motor (kW) | Rated current (A) | Max motor (kW) | Rated current (A) | |
| Three-phase 400 V | 0.37 | 1.2 | 0.37 | 1.2 | Q2V-A4001-AAA |
| | 0.55 | 1.8 | 0.75 | 2.1 | Q2V-A4002-AAA |
| | 1.1 | 3.4 | 1.5 | 4.1 | Q2V-A4004-AAA |
| | 1.5 | 4.8 | 2.2 | 5.4 | Q2V-A4005-AAA |
| | 2.2 | 5.6 | 3.0 | 7.1 | Q2V-A4007-AAA |
| | 3.0 | 7.3 | 4.0 | 8.9 | Q2V-A4009-AAA |
| | 4.0 | 9.2 | 5.5 | 11.9 | Q2V-A4012-AAA |
| | 5.5 | 14.8 | 7.5 | 17.5 | Q2V-A4018-AAA |
| | 7.5 | 18 | 11 | 23.4 | Q2V-A4023-AAA |
| | 11 | 24 | 15 | 31 | Q2V-A4031-AAA |
| | 15 | 31 | 18.5 | 38 | Q2V-A4038-AAA |
| | 18.5 | 39 | 22 | 44 | Q2V-A4044-AAA |
| 22 | 45 | 30 | 60 | Q2V-A4060-AAA | |

① Line filters

| Inverter | | Standard line filter | | Low leakage line filter | |
|-----------------------|---------------------|----------------------|-------------|-------------------------|-------------|
| Voltage | Model Q2V-A□ | Reference | Current (A) | Reference | Current (A) |
| Single-phase 200 V | B001/B002/B004 | A1000-FIV1010-SE | 10 | A1000-FIV1010-SE-LL | 10 |
| | B006/B010 | A1000-FIV1020-SE-Q | 20 | A1000-FIV1020-SE-LL-Q | 20 |
| | B012 | A1000-FIV1030-SE-Q | 30 | A1000-FIV1030-SE-LL-Q | 24 |
| | B018 | A1000-FIV1040-SE | 40 | A1000-FIV1040-SE-LL | 40 |
| Three-phase 200 V | 2001/2002/2004/2006 | A1000-FIV2010-SE-V1 | 10 | A1000-FIV2010-SE-LL | 10 |
| | 2010/2012 | A1000-FIV2020-SE | 14 | A1000-FIV2020-SE-LL | 20 |
| | 2021 | A1000-FIV2030-SE | 24 | A1000-FIV2030-SE-LL | 30 |
| | 2030/2042 | A1000-FIV2060-SE-V1 | 52 | - | |
| | 2056 | A1000-FIV2080-SE-V1 | 68 | | |
| | 2070 | A1000-FIV2100-SE-V1 | 80 | | |
| 2082 | Q2-FIA4100-SE | 100 | | | |
| Three-phase 400 V | 4001/4002 | A1000-FIV3005-SE | 5 | A1000-FIV3005-SE-LL | 5 |
| | 4004/4005/4007/4009 | A1000-FIV3010-SE-Q | 10 | A1000-FIV3010-SE-LL-Q | 10 |
| | 4012 | A1000-FIV3020-SE-Q | 15 | A1000-FIV3020-SE-LL-Q | 15 |
| | 4018/4023 | A1000-FIV3030-SE-V1 | 30 | A1000-FIV3030-SE-LL | 30 |
| | 4031/4038 | A1000-FIV3050-SE-V2 | 50 | A1000-FIV3050-SE-LL | 50 |
| | 4044/4060 | Q2-FIA4080-SE | 80 | - | - |

① Input AC reactors

| Single-phase 200 V | | Three-phase 200 V | | Three-phase 400 V | |
|--------------------|-------------------|---------------------|-------------------|-------------------|-------------------|
| Model Q2V-A□ | Input AC reactor | Model Q2V-A□ | Input AC reactor | Model Q2V-A□ | Input AC reactor |
| B001/B002/B004 | AX-RAI02000070-DE | 2001/2002/2004/2006 | AX-RAI02800100-DE | 4001/4002 | AX-RAI07700042-DE |
| B006 | AX-RAI01700140-DE | 2010/2012 | AX-RAI00880200-DE | 4004 | AX-RAI07700050-DE |
| B010 | AX-RAI01200200-DE | 2021/2030 | AX-RAI00350335-DE | 4005 | AX-RAI03500090-DE |
| B012 | AX-RAI00630240-DE | 2042/2056 | AX-RAI00180670-DE | 4007 | AX-RAI03500100-DE |
| B018 | - | 2070/2082 | AX-RAI00091000-DE | 4009/4012 | AX-RAI01300170-DE |
| | | | | 4018/4023 | AX-RAI00740335-DE |
| | | | | 4031/4038 | AX-RAI00360500-DE |
| | | | | 4044/4060 | AX-RAI00290780-DE |

① DC reactors

| Single-phase 200 V | | Three-phase 200 V | | Three-phase 400 V | |
|--------------------|------------------|---------------------|------------------|-------------------|------------------|
| Model Q2V-A□ | DC reactor | Model Q2V-A□ | DC reactor | Model Q2V-A□ | DC reactor |
| B001/B002 | AX-RC10700032-DE | 2001/2002/2004/2006 | AX-RC06750061-DE | 4001/4002/4004 | AX-RC43000020-DE |
| B004 | AX-RC06750061-DE | 2010 | AX-RC03510093-DE | 4005 | AX-RC10100069-DE |
| B006 | AX-RC03510093-DE | 2012 | AX-RC02510138-DE | 4007/4009 | AX-RC06400116-DE |
| B010 | AX-RC02510138-DE | 2021/2030 | AX-RC01110309-DE | 4012 | AX-RC04410167-DE |
| B012 | AX-RC01600223-DE | 2042 | AX-RC00840437-DE | 4018 | AX-RC03350219-DE |
| B018 | - | 2056 | AX-RC00590614-DE | 4023 | AX-RC02330307-DE |
| | | 2070 | AX-RC00440859-DE | 4031/4038 | AX-RC01750430-DE |
| | | 2082 | AX-RC00301275-DE | 4044 | AX-RC01200644-DE |

① Output AC reactors

| Single-phase 200 V | | Three-phase 200 V | | Three-phase 400 V | |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Model Q2V-A□ | Output AC reactor | Model Q2V-A□ | Output AC reactor | Model Q2V-A□ | Output AC reactor |
| B001/B002 | AX-RAO11500026-DE | 2001/2002/2004 | AX-RAO07600042-DE | 4001/4002 | AX-RAO16300038-DE |
| B004 | AX-RAO07600042-DE | 2006 | AX-RAO04100075-DE | 4004 | AX-RAO11800053-DE |
| B006 | AX-RAO04100075-DE | 2010 | AX-RAO03000105-DE | 4005 | AX-RAO07300080-DE |
| B010 | AX-RAO03000105-DE | 2012/2021 | AX-RAO01150220-DE | 4007/4009 | AX-RAO04600110-DE |
| B012 | AX-RAO01830160-DE | 2030 | AX-RAO00950320-DE | 4012 | AX-RAO03600160-DE |
| B018 | AX-RAO01150220-DE | 2042 | AX-RAO00630430-DE | 4018 | AX-RAO02500220-DE |
| | | 2056 | AX-RAO00490640-DE | 4023 | AX-RAO02000320-DE |
| | | 2070 | AX-RAO00390800-DE | 4031 | AX-RAO01650400-DE |
| | | 2082 | AX-RAO00330950-DE | 4038/4044 | AX-RAO01300480-DE |
| | | | | 4060 | AX-RAO00800750-DE |

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

① Chokes

| Model | Diameter | Description |
|---------------|----------|----------------------------|
| AX-FER2102-PE | 21 | For 2.2 KW motors or below |
| AX-FER2815-PE | 28 | For 15 KW motors or below |
| AX-FER5045-PE | 50 | For 45 KW motors or below |

② Option cards

| Type | Model | Description | Function |
|--|------------|---|---|
| Mounting kit | JOHB-Q2V | Option card enclosure | Enclosure to install a communication option card on a Q2V. |
| Communication option cards | SI-ES3 | EtherCAT | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current, or similar items through EtherCAT communication with the host controller. |
| | SI-EP3 | PROFINET | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current, or similar items through PROFINET communication with the host controller. |
| | SI-EN3 | EtherNet/IP | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current, or similar items through EtherNet/IP communication with the host controller. |
| | SI-EN3/D | EtherNet/IP Dual-Port | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current, or similar items through EtherNet/IP communication with the host controller. |
| | SI-EL3 | POWERLINK | Used for running or stopping the inverter, setting or referencing parameters, and monitoring output frequency, output current, or similar items through POWERLINK communication with the host controller. |
| Mounting kit + communication option card | SI-ES3/Q2V | Option card enclosure + EtherCAT option board | Enclosure with the EtherCAT communication card ready to be installed on a Q2V. |

③ Accessories

| Description | Functions | Model | |
|-------------------------|--|-------------------|-----------------|
| LCD remote operator | Standard model | JVOP-KPLCA04AEZ | |
| | Model with Bluetooth | JVOP-KPLCC04ABZ | |
| Blank cover | This cover is required when using a LCD remote operator | JVOP-KPBCH04AAZ | |
| USB cable | Mini USB to USB cable | AX-CUSBM002-E | |
| Remote operator cable | 3 meters cable to connect the keypad and drive | 3G3AX-CAJOP300-EE | |
| Keypad mounting bracket | This bracket is required to mount the LCD Remote Operator outside an enclosure panel | Screw type | 900-192-933-001 |
| | | Nut type | 900-192-933-002 |

④ Software tools

| Description | Functions | Model |
|----------------|--|--------|
| Software tools | Software tool to configure drives and manage parameters | Q2edit |
| | Software tool to do advanced drive programming | Q2dev |
| | Software tool to configure drives and manage parameters for mobile devices (Android & iOS) | Q2app |

⑤ Braking resistor

| Inverter model Q2V-A□ | | | | | Braking resistor (3 % ED, 10 sec max) | | | | Braking resistor (10 % ED, 10 sec max) | | | |
|-----------------------|--------------------------|--------------|-------------|-----------------------------|---------------------------------------|------------------|-------|------------------|--|----------------|------------------|-----|
| Voltage | Max. applicable motor kW | Single-phase | Three-phase | Connectable min. resistance | Model | Specifications | | Qty | Model | Specifications | | Qty |
| 200 V | 0.1 | B001 | 2001 | 300 Ω | AX-REM00K1400-IE | 100 W | 400 Ω | 1 | AX-REM00K1400-IE | 100 W | 400 Ω | 1 |
| | 0.25 | B002 | 2002 | | | | | | | | | |
| | 0.55 | B004 | 2004 | 200 Ω | AX-REM00K1200-IE | | 200 Ω | | AX-REM00K1200-IE | | 200 Ω | |
| | 1.1 | B006 | 2006 | 120 Ω | | | | | AX-REM00K2200-IE | 200 W | | |
| | 1.5 | B010 | 2010 | 60 Ω | AX-REM00K2070-IE | 200 W | 70 Ω | | AX-REM00K4075-IE | 400 W | 75 Ω | |
| | 2.2 | B012 | 2012 | | | | | | | | | |
| | 4.0 | B018 | 2021 | 32 Ω | AX-REM00K4035-IE | 400 W | 35 Ω | | AX-REM00K6035-IE | 600 W | 35 Ω | |
| | 5.5 | - | 2030 | 9.6 Ω | | | | | AX-REM00K9020-IE | 900 W | 20 Ω | |
| | 7.5 | | 2042 | | | | | | AX-REM01K9017-IE | 1900 W | 17 Ω | |
| | 11 | | 2056 | | | | | | AX-REM00K6035-IE | 600 W | | |
| | 15 | | 2070 | | | | | | AX-REM00K9020-IE | 900 W | 20 Ω | |
| | 18.5 | | 2082 | | | | | | | | | |
| | | | | | | | | | | | | |
| | 400 V | 0.37 | - | 4001 | 750 Ω | AX-REM00K1400-IE | 100 W | | 400 Ω | 2 | AX-REM00K1400-IE | |
| 0.55 | | 4002 | | | | | | | | | | |
| 1.1 | | 4004 | | 510 Ω | | | | | | | | |
| 1.5 | | 4005 | | 240 Ω | | | | | | | | |
| 2.2 | | 4007 | | 200 Ω | AX-REM00K2200-IE | 200 W | 200 Ω | AX-REM00K2200-IE | 200 W | | 200 Ω | |
| 3.0 | | 4009 | | 100 Ω | AX-REM00K2120-IE | | 120 Ω | AX-REM00K5120-IE | 500 W | | 120 Ω | |
| 4.0 | | 4012 | | | | | | AX-REM00K6100-IE | 600 W | | 100 Ω | |
| 5.5 | | 4018 | | 32 Ω | AX-REM00K4035-IE | 400 W | 35 Ω | AX-REM00K9070-IE | 900 W | | 70 Ω | |
| 7.5 | | 4023 | | | | | | AX-REM01K9070-IE | 1900 W | | | |
| 11 | | 4031 | | 20 Ω | AX-REM00K6035-IE | 600 W | 35 Ω | AX-REM02K1017-IE | 2100 W | | | |
| 15 | | 4038 | | | AX-REM00K9020-IE | 900 W | 20 Ω | AX-REM03K5010-IE | 3500 W | | 10 Ω | |
| 18.5 | | 4044 | | 19.2 Ω | | | | AX-REM03K5035-IE | 3500 W | | 35 Ω | |
| 22 | | 4060 | | | | | | AX-REM19K0020-IE | 19000 W | | 20 Ω | |

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