



# INVERTER SERIES

## Accessories & Options

EN



J1000  
V1000  
Accessories  
Options  
Inverter Series  
A1000

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## Experience and Innovation

Since 1915 YASKAWA has manufactured and supplied products for machine building and industrial automation. Our standard products as well as tailor-made solutions are well known and have a high reputation for outstanding quality and reliability.

YASKAWA is the leading global manufacturer of inverter drives, servo drives, machine controllers, medium voltage inverters, and industrial robots.

We have always been a pioneer in motion control and drive technology, launching product innovations, which optimise the productivity and efficiency of both machines and systems.



YASKAWA Eschborn, Germany

Today we produce more than 1.8 million inverters per year. Considering this, YASKAWA is probably the biggest inverter manufacturer in the world.



YASKAWA Motoman Robots

Furthermore, with a yearly production of more than 800,000 servo motors and 20,000 robots we offer a wide range of products for drive automation processes in many different industries. YASKAWA technology is used in all fields of machine building and industrial automation.

## A Leader in Inverter Drives Technology

Extensive research and development has allowed YASKAWA to remain at the forefront of motion control and automation technology. This technological leadership has helped to modernise industries such as mining, steel, pulp and paper, chemical, automotive, packaging, textile, lift, compressor and pump.



YASKAWA A1000 in Paper Industry



YASKAWA A1000 for Crane Applications, with IP 54 Chassis

## Wherever You Are – Our Local Support is Near.



Employing more than 14,600 people worldwide

More than 1,350 employees in worldwide service network

More than 1,200 employees in Europe



YASKAWA Allershausen, Germany

## A1000

A1000 is a premium high performance vector drive for use up to 630 kW and covers a broad application range from simple fan up to hoist, winder control, precise positioning and beyond. It provides built-in functional safety and is available in IP00, IP20, IP54 and as configurable Floor Standing Panel.



### 200 V Class Three Phase

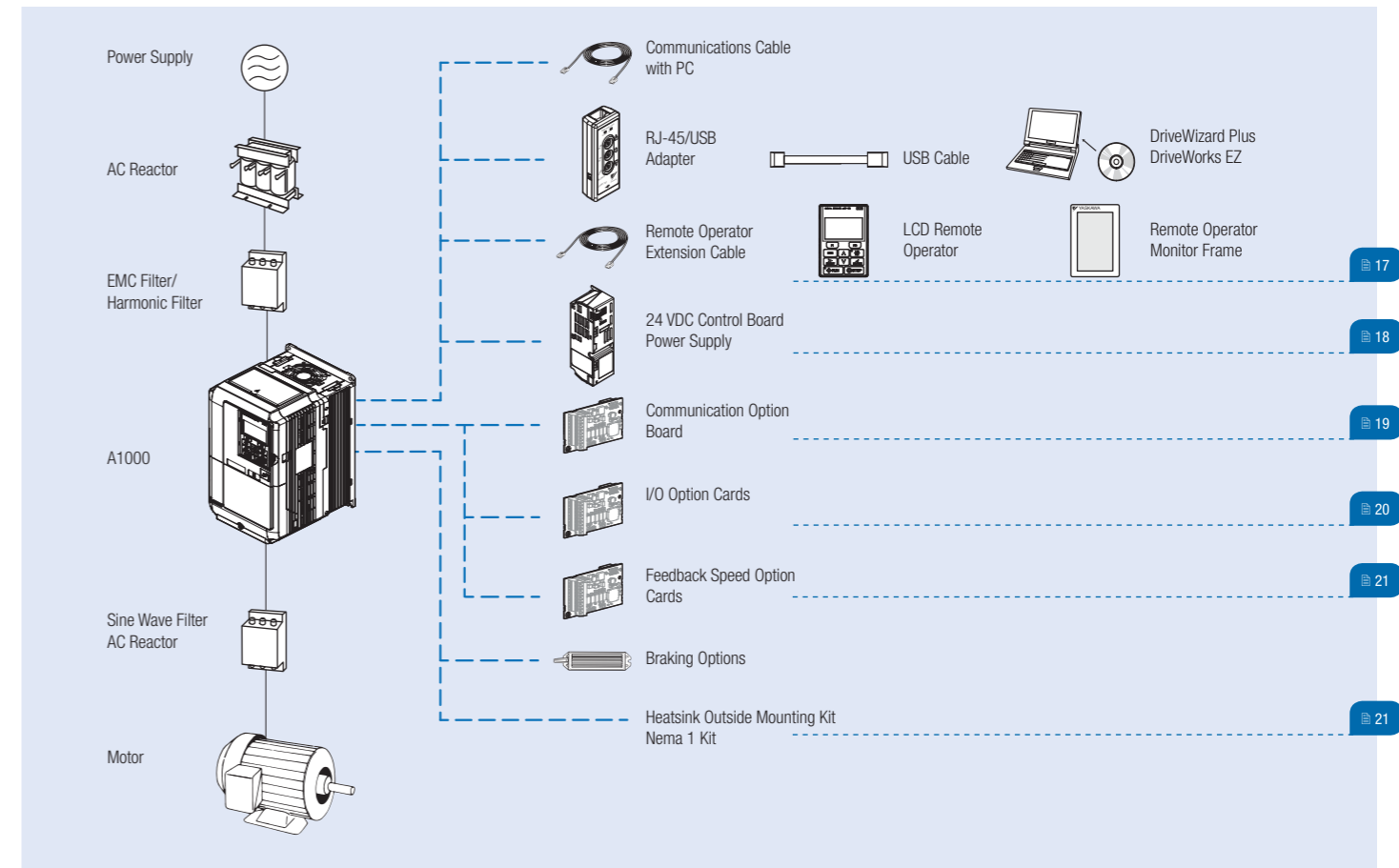
| Model<br>CIMR-AC2A □ | Max. applicable motor capacity [kW] |            | Standard<br>EMC Filter | Braking Unit | Mechanical Options |                            |
|----------------------|-------------------------------------|------------|------------------------|--------------|--------------------|----------------------------|
|                      | Normal Duty                         | Heavy Duty |                        |              | CDBR               | Heatsink Ext. Mounting Kit |
| 0004                 | 0.75                                | 0.55       | FB-40008A              | -            | -                  | EZZ020800A                 |
| 0006                 | 1.1                                 | 0.75       |                        |              |                    | EZZ020800A                 |
| 0010                 | 2.2                                 | 1.5        | FB-40014A              | -            | -                  | EZZ020800A                 |
| 0012                 | 3                                   | 2.2        |                        |              |                    | EZZ020800B                 |
| 0021                 | 5.5                                 | 4          | FB-40025A              | -            | -                  | EZZ020800B                 |
| 0030                 | 7.5                                 | 5.5        |                        |              |                    | EZZ020800C                 |
| 0040                 | 11                                  | 7.5        | FB-40060A              | -            | -                  | EZZ020800D                 |
| 0056                 | 15                                  | 11         |                        |              |                    | EZZ020800D                 |
| 0069                 | 18.5                                | 15         | FB-40072A              | -            | -                  | EZZ020800D                 |
| 0081                 | 22                                  | 18.5       |                        |              |                    | EZZ020800D                 |
| 0110                 | 30                                  | 22         | FB-40170A              | -            | -                  | 100-054-500                |
| 0138                 | 37                                  | 30         |                        |              |                    | 100-054-501                |
| 0169                 | 45                                  | 37         | -                      | 2037D        | -                  | 100-054-502                |
| 0211                 | 55                                  | 45         |                        |              |                    | 100-054-502                |
| 0250                 | 75                                  | 55         | FB-40250A              | -            | -                  | 100-054-503                |
| 0312                 | 90                                  | 75         |                        |              |                    | 100-054-504                |
| 0360                 | 110                                 | 90         | FB-40414A              | -            | -                  | 100-054-503                |
| 0415                 | 110                                 | 110        |                        |              |                    | 100-054-504                |

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### 400 V Class Three Phase

| Model<br>CIMR-AC4A □ | Max. applicable motor capacity [kW] |            | AC Input Reactor |                | Standard<br>EMC Filter | EMC Filter for<br>IT-Grid | Harmonic Filter |                | AC Output Reactor |                    | Sine Wave<br>Output Filter IP00/20 | Braking Unit | Braking Resistor HD |                   | Braking Resistor ND |                   | Mechanical Options         |                 | Model<br>CIMR-AC4A □ |
|----------------------|-------------------------------------|------------|------------------|----------------|------------------------|---------------------------|-----------------|----------------|-------------------|--------------------|------------------------------------|--------------|---------------------|-------------------|---------------------|-------------------|----------------------------|-----------------|----------------------|
|                      | Normal Duty                         | Heavy Duty | 4%               | 2%             |                        |                           | THD-18 %        | THD-15 %       | IP00              | IP20               |                                    |              | 40% Duty Cycle      | 10% Duty Cycle    | 40% Duty Cycle      | 10% Duty Cycle    | Heatsink Ext. Mounting Kit | NEMA Type 1 Kit |                      |
| 0002                 | 0.75                                | 0.55       | LR3 40-4/2       | ALR3 40-2/2    | FB-40008A              | HLD 810-500/8             | HF1K 7-400      | HFM FB 7 400   | MDB 400/6,3       | MR3 400/4          | SB-40004A-IP00 / IP20              | Built-in     | RH-0100W830         | RH-0100W830       | RH-0100W330         | RH-0100W330       | EZZ020800A                 | -               | 0002                 |
| 0004                 | 1.5                                 | 0.75       | LR3 40-4/4       | ALR3 40-2/4    |                        |                           |                 |                |                   | MR3 400/10         |                                    |              | RH-0100W330         | RH-0100W330       | RH-0260W270         | RH-0260W270       |                            |                 | 0004                 |
| 0005                 | 2.2                                 | 1.5        | LR3 40-4/6       | ALR3 40-2/6    | FB-40014A              | HLD 810-500/16            | HF1K 7-400      | HFM FB 7 400   | MDB 400/13        | MR3 400/10         | SB-40010A-IP00 / IP20              | Built-in     | RH-0260W270         | RH-0260W270       | RH-0520W120         | RH-0520W120       | EZZ020800B                 | -               | 0005                 |
| 0007                 | 3                                   | 2.2        | LR3 40-4/10      | ALR3 40-2/10   |                        |                           |                 |                |                   | MR3 400/18         |                                    |              | RH-0520W120         | RH-0520W120       | RH-0780W40          | RH-0780W40-10     |                            |                 | 0007                 |
| 0009                 | 4                                   | 3          | LR3 40-4/10      | ALR3 40-2/10   | FB-40025A              | HLD 810-500/30            | HF1K 18-400     | HFM FB 13 400  | MDB 400/24        | MR3 400/24         | SB-40017A-IP00 / IP20              | Built-in     | RH-0520W120         | RH-0520W120       | RH-0780W40          | RH-0780W40-10     | EZZ020800C                 | -               | 0009                 |
| 0011                 | 5.5                                 | 4          | LR3 40-4/16      | ALR3 40-2/16   |                        |                           |                 |                |                   | MR3 400/18         |                                    |              | RH-0780W40          | RH-0780W40-10     | RH-1560W040         | RH-1560W040-10    |                            |                 | 0011                 |
| 0018                 | 7.5                                 | 5.5        | LR3 40-4/20      | ALR3 40-2/20   | FB-40044A              | HLD 810-500/42            | HF1K 13-400     | HFM FB 13 400  | MDB 400/24        | MR3 400/24         | SB-40024A-IP00 / IP20              | Built-in     | RH-0780W40          | RH-0780W40-10     | RH-1560W040         | RH-1560W040-10    | EZZ020800D                 | -               | 0018                 |
| 0023                 | 11                                  | 7.5        | LR3 40-4/25      | ALR3 40-2/25   |                        |                           |                 |                |                   | MR3 400/24 or 37** |                                    |              | RH-1560W040         | RH-1560W040-10    | RH-1560W040         | RH-1560W040-10    |                            |                 | 0023                 |
| 0031                 | 15                                  | 11         | LR3 40-4/45      | ALR3 40-2/45   | FB-40060A              | HLD 810-500/55            | HF1K 30-400     | HFM FB 30 400  | MDB 400/46        | MR3 4000/48        | SB-40037A-IP00 / IP20              | Built-in     | RH-1560W040         | RH-1560W040-10    | RH-1560W040         | RH-1560W040-10    | EZZ020800C                 | -               | 0031                 |
| 0038                 | 18.5                                | 15         | LR3 40-4/45      | ALR3 40-2/45   |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-4800W022         | RH-4800W022-10    | RH-4800W22          | RH-4800W022-10    |                            |                 | 0038                 |
| 0044                 | 22                                  | 18.5       | LR3 40-4/63      | ALR3 40-2/63   | FB-40072A              | HLD 810-500/55            | HF1K 50-400     | HFM FB 50 400  | MDB 400/72        | MR3 400/61         | SB-40048A-IP00 / IP20              | Built-in     | RH-4800W022         | RH-4800W022-10    | RH-4800W22          | RH-4800W022-10    | EZZ020800D                 | -               | 0044                 |
| 0058                 | 30                                  | 22         | LR3 40-4/70      | ALR3 40-2/70   |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-6000W022         | RH-6000W022-10    | RH-6000W22          | RH-6000W022-10    |                            |                 | 0058                 |
| 0072                 | 37                                  | 30         | LR3 40-4/70      | ALR3 40-2/70   | FB-40105A              | HLD 810-500/75            | HF1K 50-400     | HFM FB 50 400  | MDB 400/72        | MR3 4000/48        | SB-40061A-IP00 / IP20              | Built-in     | RH-6000W022         | RH-6000W022-10    | RH-6000W022         | RH-6000W022-10    | -                          | -               | 0072                 |
| 0088                 | 45                                  | 37         | LR3 40-4/90      | ALR3 40-2/90   |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-6000W022         | RH-6000W022-10    | RH-6000W022         | RH-6000W022-10    |                            |                 | 0088                 |
| 0103                 | 55                                  | 45         | LR3 40-4/115     | ALR3 40-2/115  | FB-40105A              | HLD 810-500/100           | HF1K 70-400     | HFM FB 70 400  | MDB 400/110       | MR3 4000/48        | SB-40072A-IP00 / IP20              | Built-in     | RH-9600W015         | RH-9600W015-10    | RH-9600W015         | RH-9600W015-10    | -                          | -               | 0103                 |
| 0139                 | 75                                  | 55         | LR3 40-4/160     | ALR3 40-2/160  |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-9600W015         | RH-9600W015-10    | RH-9600W015         | RH-9600W015-10    |                            |                 | 0139                 |
| 0165                 | 90                                  | 75         | LR3 40-4/160     | ALR3 40-2/160  | FB-40170A              | HLD 810-500/180           | HF1K 100-400    | HFM FB 100 400 | MDB 400/176       | MR3 4000/48        | SB-40115A-IP00                     | 4045D        | RH-9600W015         | RH-9600W015-10    | RH-9600W015         | RH-9600W015-10    | -                          | -               | 0165                 |
| 0208                 | 110                                 | 90         | LR3 40-4/200     | ALR3 40-2/200  |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-9600W015         | RH-9600W015-10    | RH-9600W015         | RH-9600W015-10    |                            |                 | 0208                 |
| 0250                 | 132                                 | 110        | LR3 40-4/250     | ALR3 40-2/250  | FB-40250A              | HLD 810-500/250           | HF1K 100-400    | HFM FB 100 400 | MDB 400/176       | MR3 4000/48        | SB-40180A-IP00                     | 2x 4030D     | 2x RH-6000W022      | 2x RH-6000W022-10 | 2x RH-6000W022      | 2x RH-6000W022-10 | -                          | -               | 0250                 |
| 0296                 | 160                                 | 132        | LR3 40-4/300     | ALR3 40-2/300  |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | 2x RH-6000W015      | 2x RH-9600W015-10 | 2x RH-9600W015      | 2x RH-9600W015-10 |                            |                 | 0296                 |
| 0362                 | 185                                 | 160        | LR3 40-4/400     | ALR3 40-2/400  | FB-40250A              | HLD 810-500/250           | HF1K 100-400    | HFM FB 125 400 | B1107115          | MR3 4000/48        | SB-40250A-IP00                     | 4220B        | 2x RH9600W015       | 2x RH-9600W015-10 | 2x RH-9600W015      | 2x RH-9600W015-10 | -                          | -               | 0362                 |
| 0414                 | 220                                 | 185        | LR3 40-4/400     | ALR3 40-2/400  |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | 2x RH9600W015       | 2x RH-9600W015-10 | 2x RH-9600W015      | 2x RH-9600W015-10 |                            |                 | 0414                 |
| 0515                 | 250                                 | 220        | LR3 40-4/500     | ALR3 40-2/500  | FB-40414A              | HLD 803-500/415           | -               | HFM FB 200 400 | B1107115          | MR3 4000/48        | SB-40414A-IP00                     | 4220B        | RH-38500W3P8-10     | RH-38500W3P8-10   | RH-38500W3P8-10     | RH-38500W3P8-10   | -                          | -               | 0515                 |
| 0675                 | 355                                 | 315        | LR3 40-4/710     | ALR3 40-2/710  |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-38500W3P8-10     | RH-38500W3P8-10   | RH-38500W3P8-10     | RH-38500W3P8-10   |                            |                 | 0675                 |
| 0930                 | 500                                 | 450        | LR3 40-4/1200    | ALR3 40-2/1200 | FB-40414A              | HLD 803-500/415           | -               | HFM FB 225 400 | B1107115          | MR3 4000/48        | SB-40414A-IP00                     | 4220B        | RH-38500W3P8-10     | RH-38500W3P8-10   | RH-38500W3P8-10     | RH-38500W3P8-10   | -                          | -               | 0930                 |
| 1200                 | 630                                 | 560        | LR3 40-4/1200    | ALR3 40-2/1200 |                        |                           |                 |                |                   | MR3 400/61         |                                    |              | RH-38500W3P8-10     | RH-38500W3P8-10   | RH-38500W3P8-10     | RH-38500W3P8-10   |                            |                 | 1200                 |

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\*1 when using 8 kHz choose MDB 400/46.  
\*2 when using 8 kHz choose MR3 400/37.

## V1000

The general purpose vector control inverter V1000 is designed for use with induction and PM motors. Functional Safety and PLC functionality is built-in. The V1000 supports all major field bus systems and is available in IP20, IP66 and Cold Plate. Major applications for the V1000 range from lower demanding to heavy duty applications such as compressors or hoists.

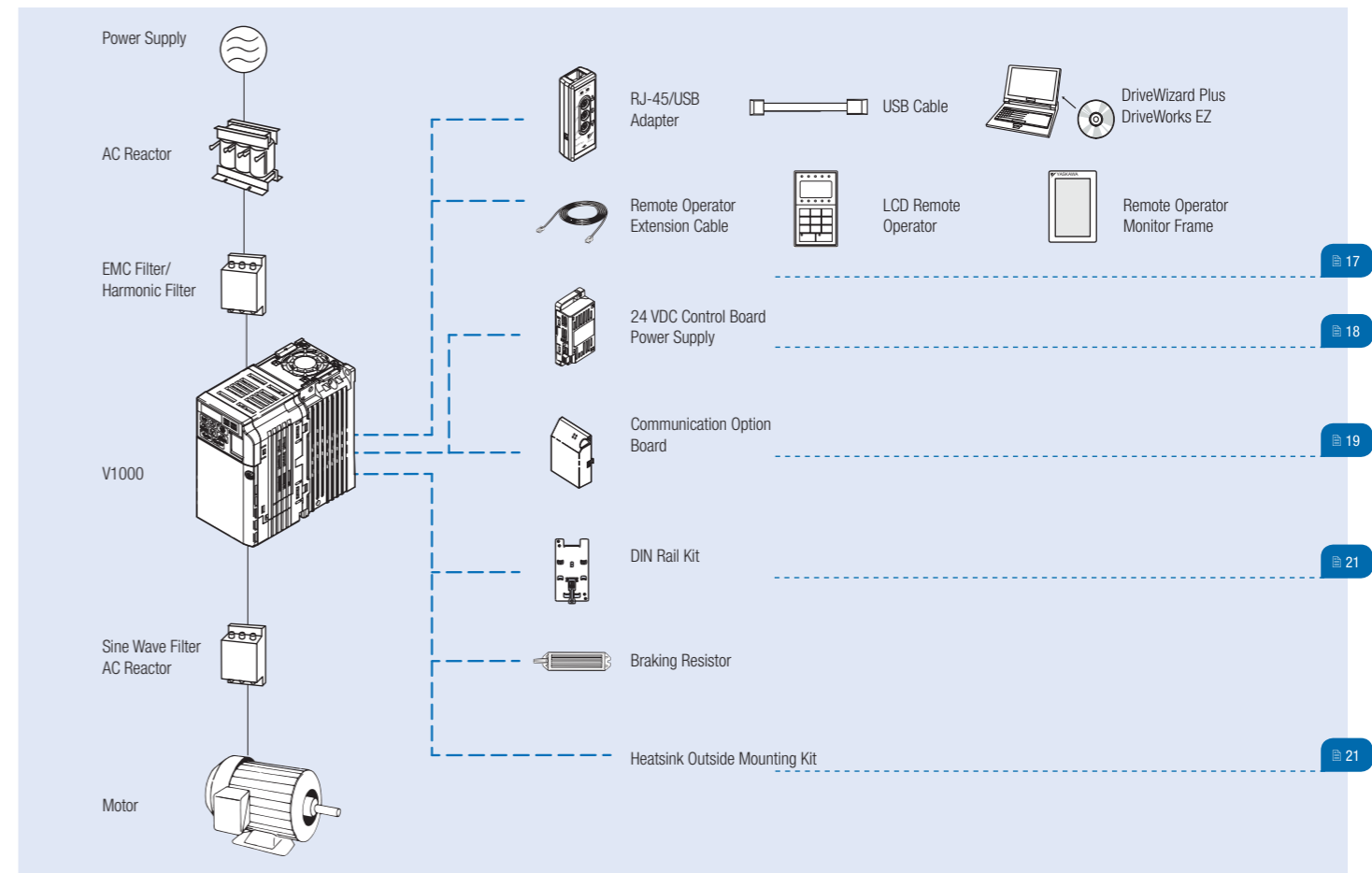


### 200 V Class Single Phase

| Model<br>CIMR-VCBA □ | Max. applicable motor capacity [kW] |            | Standard<br>EMC Filter | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       |
|----------------------|-------------------------------------|------------|------------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|
|                      | Normal Duty                         | Heavy Duty |                        | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit |
| 0001                 | 0.18                                | 0.1        | FS23638-10-07          | RH-0100W830         | RH-0100W830    | RH-0100W330         | RH-0100W330    | EZZ020568A                 | EZZ08122A             |
| 0002                 | 0.37                                | 0.18       |                        | RH-0100W330         | RH-0100W330    |                     |                |                            |                       |
| 0003                 | 0.75                                | 0.55       | FS23638-20-07          | RH-0260W270         | RH-0260W270    | RH-0260W135         | RH-0260W135    | EZZ020568B                 | EZZ08122B             |
| 0006                 | 1.1                                 | 0.75       |                        | RH-0260W135         | RH-0260W135    |                     |                |                            |                       |
| 0010                 | 2.2                                 | 1.5        | FS23638-30-07          | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    | EZZ020568C                 | EZZ08122C             |
| 0012                 | 3.0                                 | 2.2        |                        | RH-0390W070         | RH-0390W070    |                     |                |                            |                       |
| 0018                 | -                                   | 4.0        | FS23638-40-07          | RH-0780W040         | RH-0780W040-10 | RH-0780W040         | RH-0780W040-10 | EZZ020568E                 | EZZ08122D             |

### 200 V Class Three Phase

| Model<br>CIMR-VC2A □ | Max. applicable motor capacity [kW] |            | Standard<br>EMC Filter | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       |
|----------------------|-------------------------------------|------------|------------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|
|                      | Normal Duty                         | Heavy Duty |                        | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit |
| 0001                 | 0.18                                | 0.1        | FS23637-8-07           | RH-0100W830         | RH-0100W830    | RH-0100W330         | RH-0100W330    | EZZ020568A                 | EZZ08122A             |
| 0002                 | 0.37                                | 0.2        |                        | RH-0100W330         | RH-0100W330    |                     |                |                            |                       |
| 0004                 | 0.75                                | 0.4        | FS23637-8-07           | RH-0260W270         | RH-0260W270    | RH-0260W135         | RH-0260W135    | EZZ020568B                 | EZZ08122B             |
| 0006                 | 1.1                                 | 0.75       |                        | RH-0260W135         | RH-0260W135    |                     |                |                            |                       |
| 0010                 | 2.2                                 | 1.5        | FS23637-14-07          | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    | EZZ020568D                 | EZZ08122B             |
| 0012                 | 3.0                                 | 2.2        | FS23637-14-07          | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    |                            |                       |
| 0020                 | 5.5                                 | 4.0        | FS23637-24-07          | RH-0780W040         | RH-0780W040-10 | RH-0780W040         | RH-0780W040-10 | EZZ020568E                 | EZZ08122C             |
| 0030                 | 7.5                                 | 5.5        | FS23637-52-07          | RH-0780W040         | RH-0780W040-10 | RH-9600W015         | RH-9600W015-10 | EZZ020568H                 | -                     |
| 0040                 | 11.0                                | 7.5        |                        | RH9600W015          | RH9600W015-10  |                     |                |                            |                       |
| 0056                 | 15.0                                | 11.0       | FS23637-68-07          | RH9600W015          | RH9600W015-10  | RH-9600W015         | RH-9600W015-10 | EZZ020568J                 | -                     |
| 0069                 | 18.5                                | 15.0       | FS23637-80-07          | RH9600W015          | RH9600W015-10  | RH-9600W015         | RH-9600W015-10 | EZZ020568K                 |                       |



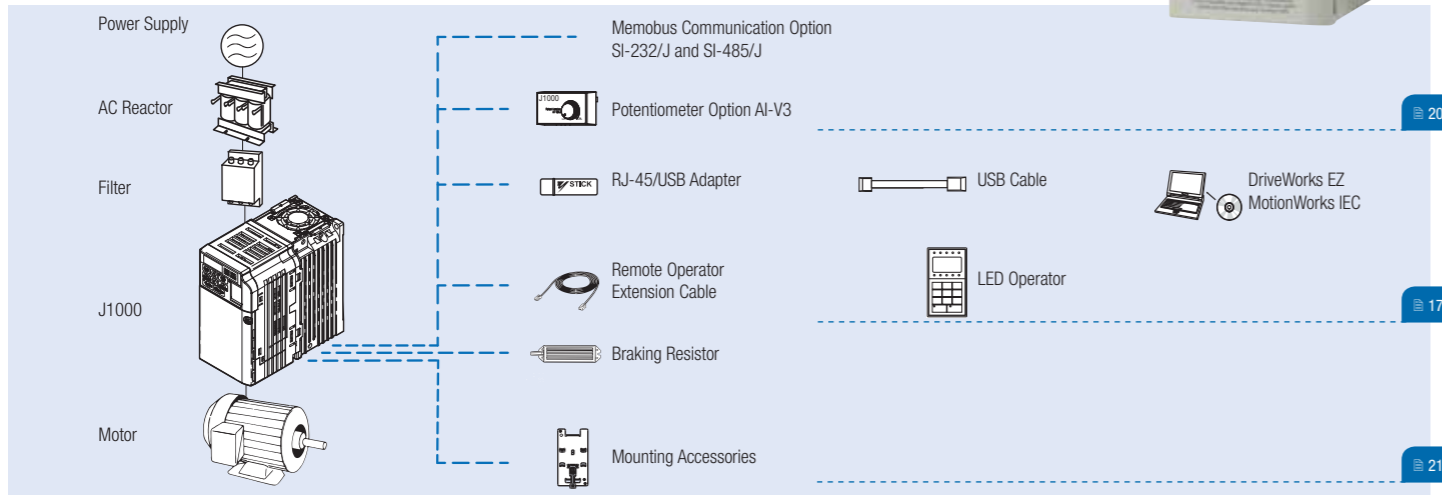
### 400 V Class Three Phase

| Model<br>CIMR-VC4A □ | Max. applicable motor capacity [kW] |            | AC Input Reactor |              | Standard<br>EMC Filter | Harmonic Filter |               | AC Output Reactor   |                     |
|----------------------|-------------------------------------|------------|------------------|--------------|------------------------|-----------------|---------------|---------------------|---------------------|
|                      | Normal Duty                         | Heavy Duty | 4%               | 2%           |                        | THD-I 8 %       | THD-I 5 %     | IP00                | IP20                |
| 0001                 | 0.37                                | 0.18       | LR3 40-4/2       | ALR3 40-2/2  | FS23639-5-07           | HF1K 7-400      | HFM FB 7 400  | MDB 400/6,3         | MR3 400/4           |
| 0002                 | 0.75                                | 0.37       |                  |              |                        |                 |               |                     | MR3 400/10          |
| 0004                 | 1.5                                 | 0.75       | LR3 40-4/4       | ALR3 40-2/4  | FS23639-10-07          | HF1K 7-400      | HF1K 7-400    | MDB 400/6,3         | MR3 400/10          |
| 0005                 | 2.2                                 | 1.5        |                  |              |                        |                 |               |                     | MR3 400/10          |
| 0007                 | 3.0                                 | 2.2        | LR3 40-4/10      | ALR3 40-2/10 | FS23639-10-07          | HF1K 7-400      | HF1K 7-400    | MDB 400/13          | MR3 400/10          |
| 0009                 | 4.0                                 | 3.0        |                  |              |                        |                 |               |                     | MR3 400/10          |
| 0011                 | 5.5                                 | 4.0        | LR3 40-4/16      | ALR3 40-2/16 | FS23639-15-07          | HF1K 13-400     | HFM FB 13 400 | MDB 400/24          | MR3 400/18          |
| 0018                 | 7.5                                 | 5.5        |                  |              |                        |                 |               |                     | MR3 400/24          |
| 0023                 | 11                                  | 7.5        | LR3 40-4/25      | ALR3 40-2/25 | FS23639-30-07          | HF1K 18-400     | HFM FB 18 400 | MDB 400/24 or 46 *1 | MR3 400/24 or 37 *2 |
| 0031                 | 15                                  | 11.0       |                  |              |                        |                 |               |                     | MR3 400/24 or 37 *2 |
| 0038                 | 18.5                                | 15.0       | LR3 40-4/45      | ALR3 40-2/45 | FS23639-50-07          | HF1K 30-400     | HFM FB 30 400 | MDB 400/46          | MR3 4000/48         |

| Sine Wave<br>Output Filter IP00/20 | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       | Model<br>CIMR-VC4A □ |
|------------------------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|----------------------|
|                                    | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit |                      |
| SB-40004A-IP00 / IP20              | RH-0100W830         | RH-0100W830    | RH-0100W830         | RH-0100W830    | EZZ020568L                 | EZZ08122B             | 0001                 |
| SB-40010A-IP00 / IP20              | RH-0260W270         | RH-0260W270    | RH-0260W270         | RH-0260W270    | EZZ020568C                 |                       | 0002                 |
| SB-40017A-IP00 / IP20              |                     |                |                     |                | EZZ020568D                 |                       | 0004                 |
| SB-40017A-IP00 / IP20              | EZZ020568D          | 0005           |                     |                |                            |                       |                      |
| SB-40024A-IP00 / IP20              | RH-0520W120         | RH-0520W120    | RH-0520W120         | RH-0520W120    | EZZ020568E                 | EZZ020568C            | 0007                 |
| SB-40024A-IP00 / IP20              | RH-0520W120         | RH-0520W120    | RH-0520W120         | RH-0520W120    | EZZ020568E                 | EZZ020568C            | 0009                 |
| SB-40024A-IP00 / IP20              | RH-0780W040         | RH-0780W040-10 | RH-0780W040         | RH-0780W040-10 | EZZ020568E                 | EZZ020568C            | 0011                 |
| SB-40037A-IP00 / IP20              | RH-1560W040         | RH-1560W040-10 | RH-1560W040         | RH-1560W040-10 | EZZ020568H                 | -                     | 0018                 |
| SB-40037A-IP00 / IP20              | RH-1560W040         | RH-1560W040-10 | RH-1560W040         | RH-1560W040-10 | EZZ020568H                 |                       | 0023                 |
| SB-40048A-IP00 / IP20              | RH-1560W040         | RH-1560W040-10 | RH-1560W040         | RH-1560W040-10 | EZZ020568J                 |                       | 0031                 |
| SB-40048A-IP00 / IP20              | RH-4800W022         | RH-4800W022-10 | RH-4800W022         | RH-4800W022-10 | EZZ020568J                 | -                     | 0038                 |

### J1000

J1000 is the compact inverter drive from YASKAWA. With its easy set-up with just a few number of settings it perfectly suits low demanding applications.



### L1000A

The YASKAWA L1000A provides many technical features and a special design which enhance product applicability and reliability for first class efficiency.



#### 200 V Class Three Phase

| Model<br>CIMR-LC2A □      | Max. applicable motor capacity [kW] | Standard EMC Filter | AC Input Reactor for Lift |                   | Braking Unit<br>CDBR |
|---------------------------|-------------------------------------|---------------------|---------------------------|-------------------|----------------------|
|                           |                                     |                     | IP00                      | IP20              |                      |
| 0008                      | 1.5                                 | FB-40014A           | LR3 40-4/16               | LR3 40-4/16-IP20  | -                    |
| 0011                      | 2.2                                 |                     |                           |                   |                      |
| 0018                      | 4                                   | FB-40025A           | LR3 40-4/20               | LR3 40-4/20-IP20  |                      |
| 0025                      | 5.5                                 |                     |                           |                   |                      |
| 0033                      | 7.5                                 | FB-40060A           | LR3 40-4/45               | LR3 40-4/45-IP20  |                      |
| 0047                      | 11                                  |                     |                           |                   |                      |
| 0060                      | 15                                  | FB-40072A           | LR3 40-4/70               | LR3 40-4/70-IP20  |                      |
| 0075                      | 18.5                                |                     |                           |                   |                      |
| 0085                      | 22                                  | FB-40105A           | LR3 40-4/90               | LR3 40-4/90-IP20  |                      |
| 0115                      | 30                                  |                     |                           |                   |                      |
| 0145                      | 37                                  | FB-40170A           | LR3 40-4/115              | LR3 40-4/115-IP20 |                      |
| 0180                      | 45                                  |                     |                           |                   |                      |
| 0215                      | 55                                  | FB-40250A           | LR3 40-4/160              | LR3 40-4/160-IP20 | 2037D                |
| 0283                      | 75                                  |                     |                           |                   |                      |
| 0346                      | 90                                  | FB-40414A           | LR3 40-4/200              | LR3 40-4/200-IP20 | 2x 2022D             |
| 0415                      | 110                                 |                     |                           |                   |                      |
| Find more details on page |                                     |                     | 12                        | 14                | 22                   |

\*1 when using 8 kHz choose MDB 400/46.  
\*2 when using 8 kHz choose MR3 400/37.

#### 200 V Class Single Phase

| Model<br>CIMR-JCBA □      | Max. applicable motor capacity [kW] |            | Standard EMC Filter | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       |                |
|---------------------------|-------------------------------------|------------|---------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|----------------|
|                           | Normal Duty                         | Heavy Duty |                     | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit | NEMA Type1 Kit |
| 0001                      | 0.2                                 | 0.1        | FS23638-10-07       | RH-0100W830         | RH-0100W830    | RH-0100W330         | RH-0100W330    | EZZ020568A                 | EZZ08122A             | EZZ020564A     |
| 0002                      | 0.4                                 | 0.2        |                     | RH-0100W330         | RH-0100W330    | RH-0260W270         | RH-0260W270    | EZZ020568B                 |                       |                |
| 0003                      | 0.75                                | 0.4        |                     | RH-0260W270         | RH-0260W270    | RH-0260W135         | RH-0260W135    | EZZ020568C                 |                       |                |
| 0006                      | 1.1                                 | 0.75       | FS23638-20-07       | RH-0260W135         | RH-0260W135    | RH-0260W135         | RH-0260W135    | EZZ020568C                 | EZZ08122B             | EZZ020564C     |
| 0010                      | 2.2                                 | 1.5        |                     | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    | EZZ020568D                 |                       |                |
| Find more details on page |                                     |            |                     |                     |                |                     |                |                            |                       |                |

#### 200 V Class Three Phase

| Model<br>CIMR-JC2A □      | Max. applicable motor capacity [kW] |            | Standard EMC Filter | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       |                |
|---------------------------|-------------------------------------|------------|---------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|----------------|
|                           | Normal Duty                         | Heavy Duty |                     | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit | NEMA Type1 Kit |
| 0001                      | 0.2                                 | 0.1        | FS23637-8-07        | RH-0100W830         | RH-0100W830    | RH-0100W330         | RH-0100W330    | EZZ020568A                 | EZZ08122A             | EZZ020564A     |
| 0002                      | 0.4                                 | 0.2        |                     | RH-0100W330         | RH-0100W330    | RH-0260W270         | RH-0260W270    | EZZ020568B                 |                       |                |
| 0004                      | 0.75                                | 0.4        |                     | RH-0260W270         | RH-0260W270    | RH-0260W135         | RH-0260W135    | EZZ020568G                 |                       |                |
| 0006                      | 1.1                                 | 0.75       | FS23637-14-07       | RH-0260W135         | RH-0260W135    | RH-0260W135         | RH-0260W135    | EZZ020568G                 | EZZ08122B             | EZZ020564G     |
| 0010                      | 2.2                                 | 1.5        |                     | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    | EZZ020568D                 |                       |                |
| 0012                      | 3.0                                 | 2.2        |                     | RH-0390W070         | RH-0390W070    | RH-0390W070         | RH-0390W070    | EZZ020568D                 |                       |                |
| 0020                      | 5.5                                 | 4.0        | FS23637-24-07       | RH-0780W040         | RH-0780W040-10 | RH-0780W040         | RH-0780W040-10 | EZZ020568E                 | EZZ08122C             | EZZ020564H     |
| Find more details on page |                                     |            |                     |                     |                |                     |                |                            |                       |                |

#### 400 V Class Three Phase

| Model<br>CIMR-JC4A □      | Max. applicable motor capacity [kW] |            | Standard EMC Filter | Braking Resistor HD |                | Braking Resistor ND |                | Mechanical Options         |                       |                |
|---------------------------|-------------------------------------|------------|---------------------|---------------------|----------------|---------------------|----------------|----------------------------|-----------------------|----------------|
|                           | Normal Duty                         | Heavy Duty |                     | 40% Duty Cycle      | 10% Duty Cycle | 40% Duty Cycle      | 10% Duty Cycle | Heatsink Ext. Mounting Kit | DIN Rail Mounting Kit | NEMA Type1 Kit |
| 0001                      | 0.4                                 | 0.2        | FS23639-5-07        | RH-0100W830         | RH-0100W830    | RH-0100W830         | RH-0100W830    | EZZ020568L                 | EZZ08122B             | EZZ020564G     |
| 0002                      | 0.75                                | 0.4        |                     | RH-0100W830         | RH-0100W830    | RH-0260W270         | RH-0260W270    | EZZ020568C                 |                       |                |
| 0004                      | 1.5                                 | 0.75       |                     | RH-0260W270         | RH-0260W270    | RH-0260W120         | RH-0260W120    | EZZ020568D                 |                       |                |
| 0005                      | 2.2                                 | 1.5        | FS23639-10-07       | RH-0260W270         | RH-0260W270    | RH-0260W270         | RH-0260W270    | EZZ020568D                 | EZZ08122C             | EZZ020564J     |
| 0007                      | 3.0                                 | 2.2        |                     | RH-0520W120         | RH-0520W120    | RH-0520W120         | RH-0520W120    | EZZ020568E                 |                       |                |
| 0009                      | 3.7                                 | 3.0        |                     | RH-0520W120         | RH-0520W120    | RH-0520W120         | RH-0520W120    | EZZ020568E                 |                       |                |
| 0011                      | 5.5                                 | 3.7        | FS23639-15-07       | RH-0520W120         | RH-0520W120    | RH-0520W120         | RH-0520W120    | EZZ020568E                 | EZZ08122C             | EZZ020564H     |
| Find more details on page |                                     |            |                     |                     |                |                     |                |                            |                       |                |

#### 400 V Class Three Phase

| Model<br>CIMR-LC4A □      | Max. applicable motor capacity [kW] | Standard EMC Filter | AC Input Reactor for Lift |           | Harmonic Filter |                    | AC Output Reactor  |            | Sine Wave Output Filter IP00/20 | Braking Unit<br>CDBR | Braking Resistor HD |
|---------------------------|-------------------------------------|---------------------|---------------------------|-----------|-----------------|--------------------|--------------------|------------|---------------------------------|----------------------|---------------------|
|                           |                                     |                     | IP00                      | IP20      | THD-I 8 %       | THD-I 5 %          | IP00               | IP20       |                                 |                      |                     |
| 0005                      | 2.2                                 | FB-40008A           | B 0903084                 | B 0903088 | HF1K 7-400      | HFM FB 7 400       | MDB 400/13         | MR3 400/10 | SB-40010A-IP00 / IP20           | Built-in             |                     |
| 0006                      | 3                                   | FB-40014A           |                           |           | HF1K 13-400     | HFM FB 13 400      | MDB 400/24         | MR3 400/18 |                                 |                      |                     |
| 0009                      | 4                                   |                     |                           |           | HF1K 18-400     | HFM FB 18 400      | MDB 400/24         | MR3 400/24 |                                 |                      |                     |
| 0015                      | 5.5                                 | FB-40025A           | B 0903085                 | B 0903089 | HF1K 18-400     | HFM FB 13 400      | MDB 400/24         | MR3 400/24 | SB-40024A-IP00 / IP20           | Built-in             | RH-1000W120         |
| 0018                      | 7.5                                 |                     |                           |           | HFM FB 18 400   | MDB 400/24 or 46*1 | MR3 400/24 or 37*2 |            |                                 |                      |                     |
| 0023                      | 11                                  | FB-40044A           | B 0903086                 | B 0903090 | HF1K 30-400     | HFM FB 30 400      | MDB 400/46         | MR3 400/48 | SB-40037A-IP00 / IP20           | Built-in             | RH-2700W025         |
| 0031                      | 15                                  |                     |                           |           | B 0903087       | B 0903091          | HFM FB 30 400      | MDB 400/46 |                                 |                      |                     |
| 0039                      | 18.5                                | FB-40060A           | B 0910009                 | B 0910014 | HF1K 50-400     | HFM FB 50 400      | MDB 400/72         | MR3 400/61 | SB-40048A-IP00 / IP20           | Built-in             | RH-4800W022         |
| 0045                      | 22                                  |                     |                           |           | HFM FB 50 400   | MDB 400/72         | MR3 400/61         |            |                                 |                      |                     |
| 0060                      | 30                                  | FB-40072A           | B 0910011                 | B 0910016 | HF1K 50-400     | HFM FB 50 400      | MDB 400/72         | -          | SB-40061A-IP00 / IP20           | Built-in             | RH-6000W022         |
| 0075                      | 37                                  |                     |                           |           | HF1K 70-400     | HFM FB 70 400      | MDB 400/110        |            |                                 |                      |                     |
| 0091                      | 45                                  | FB-40105A           | B 0910013                 | B 0910018 | HF1K 70-400     | HFM FB 100 400     | MDB 400/110        | -          | SB-40072A-IP00 / IP20           | Built-in             | RH-7500W023         |
| 0112                      | 55                                  |                     |                           |           | HF1K 100-400    | HFM FB 100 400     | MDB 400/176        |            |                                 |                      |                     |
| 0150                      | 75                                  | FB-40170A           | B 0910013                 | B 0910018 | HF1K 100-400    | HFM FB 125 400     | MDB 400/176        | -          | SB-40115A-IP00                  | 4045D                | RH-9600W015         |
| 0180                      | 90                                  |                     |                           |           | HFM FB 150 400  | B1107115           |                    |            |                                 |                      |                     |
| 0216                      | 110                                 | FB-40250A           | -                         | -         | HFM FB 200 400  | B1107115           |                    |            | SB-40250A-IP00                  |                      | RH-4800W022         |
| Find more details on page |                                     |                     |                           |           |                 |                    |                    |            |                                 |                      |                     |

### L1000V

The L1000V is the drive of choice for retrofit or new installation of open loop driven, geared lifts with speeds up to 1.0 m/s.



#### 200 V Class Three Phase

| Model<br>CIMR-LC2V □      | Max. applicable motor capacity [kW] | Standard EMC Filter | AC Input Reactor for Lift |                  | Braking Resistor HD |
|---------------------------|-------------------------------------|---------------------|---------------------------|------------------|---------------------|
|                           |                                     |                     | IP00                      | IP20             |                     |
| 0018                      | 4.0                                 | FS23637-24-07       | LR3 40-4/20               | LR3 40-4/20-IP20 | RH-1560W040         |
| 0025                      | 5.5                                 | FS23637-52-07       | LR3 40-4/45               | LR3 40-4/45-IP20 | RH-2700W025         |
| 0033                      | 7.5                                 |                     |                           |                  |                     |
| 0047                      | 11.0                                | FS23637-68-07       | LR3 40-4/70               | LR3 40-4/70-IP20 | RH-3700W025         |
| 0060                      | 15.0                                | FS23637-80-07       |                           |                  |                     |
| Find more details on page |                                     | 12                  | 14                        |                  | 22                  |

#### 400 V Class Three Phase

| Model<br>CIMR-LC4V □      | Max. applicable motor capacity [kW] | Standard EMC Filter | AC Input Reactor for Lift |           | Harmonic Filter |               | AC Output Reactor   |                     | Sine Wave Output Filter IP00/IP20 | Braking Resistor HD |
|---------------------------|-------------------------------------|---------------------|---------------------------|-----------|-----------------|---------------|---------------------|---------------------|-----------------------------------|---------------------|
|                           |                                     |                     | IP00                      | IP20      | THD-I 8 %       | THD-I 5 %     | IP00                | IP20                |                                   |                     |
| 0009                      | 4.0                                 | FS23639-15-07       | B 0903084                 | B 0903088 | HF1K 13-400     | HFM FB 13 400 | MDB 400/24          | MR3 400/18          | SB-40024A-IP00 / IP20             | RH-1000W120         |
| 0015                      | 5.5                                 | FS23639-30-07       | B 0903085                 | B 0903089 | HF1K 18-400     | HFM FB 13 400 | MDB 400/24          | MR3 400/24          | SB-40024A-IP00 / IP20             | RH-1000W120         |
| 0018                      | 7.5                                 |                     |                           |           |                 | HFM FB 18 400 | MDB 400/24 or 46 *1 | MR3 400/24 or 37 *2 | SB-40037A-IP00 / IP20             | RH-1560W040         |
| 0024                      | 11.0                                | FS23639-50-07       | B 0903086                 | B 0903090 | HF1K 30-400     | HFM FB 30 400 | MDB 400/46          | MR3 4000/48         | SB-40048A-IP00 / IP20             | RH-2700W025         |
| 0031                      | 15.0                                |                     |                           |           |                 |               |                     |                     |                                   | B 0903087           |
| Find more details on page |                                     | 22                  | 14                        |           | 15              | 23            |                     | 16                  | 22                                |                     |

### AC Input Reactors

This reactor type is used to suppress harmonic currents and to improve the total power factor. It prevents the rectifier from harmonics and sudden variation of power voltage.



#### Specifications

|                     |   |
|---------------------|---|
| Ambient Temperature | -10 to +40 °C   |
| Standards           | DIN EN 61558-2-20<br>IEC 61558-2-20<br>UL 506<br>CSA 22.2 |
| Approvals           | UL 506<br>CSA 22.2  |
| Protection Class    | IP 00   |

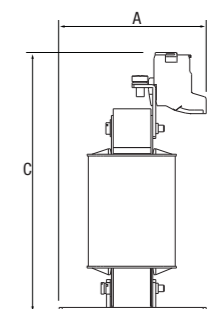
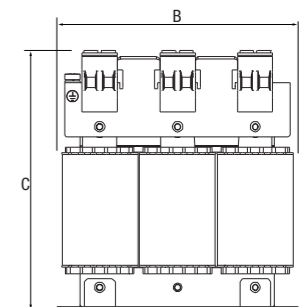
#### 2% Short Circuit Voltage to Mains

| Order Code   | A    | B   | C   | Weight (kg) |
|--------------|------|-----|-----|-------------|
|              | (mm) |     |     |             |
| ALR3 40-2/2  | 54   | 78  | 87  | 0.5         |
| ALR3 40-2/4  | 54   | 78  | 87  | 0.5         |
| ALR3 40-2/6  | 64   | 78  | 87  | 1.1         |
| ALR3 40-2/10 | 76   | 96  | 107 | 1.5         |
| ALR3 40-2/16 | 76   | 127 | 125 | 2           |
| ALR3 40-2/20 | 76   | 127 | 125 | 2           |
| ALR3 40-2/25 | 89   | 127 | 125 | 2.9         |
| ALR3 40-2/45 | 102  | 152 | 163 | 3.8         |
| ALR3 40-2/63 | 102  | 178 | 188 | 6.8         |

#### 4% Short Circuit Voltage to Mains

| Order Code    | A    | B   | C   | Weight (kg) |
|---------------|------|-----|-----|-------------|
|               | (mm) |     |     |             |
| LR3 40-4/2    | 56   | 78  | 100 | 0.5         |
| LR3 40-4/4    | 60   | 96  | 117 | 1.3         |
| LR3 40-4/6    | 69   | 96  | 117 | 1.5         |
| LR3 40-4/10   | 85   | 120 | 140 | 2           |
| LR3 40-4/16   | 95   | 120 | 140 | 2.7         |
| LR3 40-4/20   | 95   | 155 | 162 | 3.8         |
| LR3 40-4/25   | 110  | 155 | 177 | 5.8         |
| LR3 40-4/45   | 112  | 185 | 210 | 8.3         |
| LR3 40-4/63   | 122  | 185 | 210 | 9.7         |
| LR3 40-4/70   | 117  | 210 | 240 | 10.8        |
| LR3 40-4/90   | 149  | 276 | 200 | 16          |
| LR3 40-4/115  | 179  | 291 | 210 | 21          |
| LR3 40-4/160  | 189  | 291 | 210 | 25.5        |
| LR3 40-4/200  | 194  | 352 | 260 | 32          |
| LR3 40-4/250  | 207  | 352 | 260 | 41          |
| LR3 40-4/300  | 219  | 352 | 260 | 48          |
| LR3 40-4/400  | 234  | 352 | 260 | 56          |
| LR3 40-4/500  | 245  | 352 | 260 | 62          |
| LR3 40-4/710  | 235  | 480 | 380 | 102         |
| LR3 40-4/1200 | 330  | 555 | 445 |             |

#### Dimensions



YASKAWA Lift Inverters make Motion a Pleasure – for Passengers and Operators

### Standard EMC Filters

Filter for power supply side for electromagnetic interference suppression of single and multiple drives.

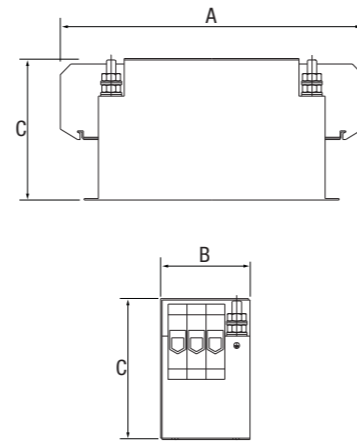


#### Specifications

|                     |             |
|---------------------|-------------|
| Ambient Temperature | max. +50 °C |
| Standards           | EN 60939-2  |
| Protection Class    | IP 00       |

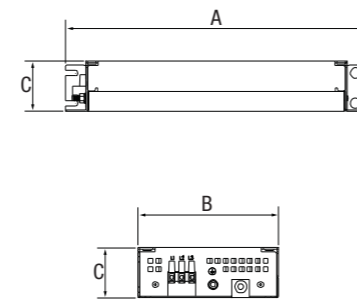
| Order Code | Rated Current (A) | EN61800-3: Class      | A    | B   | C   | Weight (kg) | Terminals           |    | Foot Mount |     |
|------------|-------------------|-----------------------|------|-----|-----|-------------|---------------------|----|------------|-----|
|            |                   |                       | (mm) |     |     |             | Phase               | PE |            |     |
| FB-40008A  | 8                 | C1 (25m) and C2 (50m) | 301  | 140 | 50  | 2.3         | 3× 2.5              | M5 | yes        |     |
| FB-40014A  | 14                |                       | 301  | 140 | 50  | 2.4         |                     |    |            |     |
| FB-40025A  | 25                |                       | 301  | 140 | 50  | 3           |                     |    |            |     |
| FB-40044A  | 44                | C2 (50m)              | 341  | 180 | 60  | 4.3         | 3× 16               | M8 | no         |     |
| FB-40060A  | 60                |                       | 310  | 85  | 135 | 4.5         | 35 mm <sup>2</sup>  |    |            |     |
| FB-40072A  | 72                |                       | 310  | 85  | 135 | 4.7         |                     |    |            |     |
| FB-40105A  | 105               |                       | 325  | 95  | 150 | 5.3         | 50 mm <sup>2</sup>  |    |            | M10 |
| FB-40170A  | 170               |                       | 440  | 130 | 181 | 9.4         | 95 mm <sup>2</sup>  |    |            |     |
| FB-40250A  | 250               |                       | 525  | 155 | 220 | 12.4        | 150 mm <sup>2</sup> |    |            | M12 |
| FB-40414A  | 414               |                       | 500  | 300 | 130 | 26.5        | 25×6 (ØM12)         |    |            |     |
| FB-40675A  | 675               |                       | 500  | 300 | 130 | 28.5        | 30×10 (ØM12)        |    |            |     |
| FB-41200A  | 1200              |                       | 716  | 300 | 160 | 49.6        | 50×12 (ØM12)        |    |            |     |

#### Dimensions Without Foot Mount



| Order Code    | Rated Current (A) | EN61800-3: Class | A    | B   | C   | Weight (kg)        | Terminals           |    | Foot Mount |
|---------------|-------------------|------------------|------|-----|-----|--------------------|---------------------|----|------------|
|               |                   |                  | (mm) |     |     |                    | Phase               | PE |            |
| FS23637-8-07  | 7,3               | C1               | 169  | 71  | 40  | 0.4                | 1 mm <sup>2</sup>   | M5 | no         |
| FS23637-14-07 | 14                |                  | 169  | 111 | 45  | 0.6                | 1,5 mm <sup>2</sup> |    |            |
| FS23637-24-07 | 24                |                  | 174  | 144 | 50  | 0.9                | 4 mm <sup>2</sup>   |    |            |
| FS23637-52-07 | 52                |                  | 304  | 137 | 56  | 2                  | 6 mm <sup>2</sup>   |    |            |
| FS23637-68-07 | 68                |                  | 304  | 175 | 65  | 2.6                | 10 mm <sup>2</sup>  |    |            |
| FS23637-80-07 | 80                | 393              | 212  | 65  | 3.1 | 16 mm <sup>2</sup> | M8                  |    |            |
| FS23638-10-07 | 10                | C1               | 169  | 71  | 45  | 0.5                | 1,5 mm <sup>2</sup> | M5 | no         |
| FS23638-20-07 | 20                |                  | 169  | 111 | 50  | 0.75               | 2,5 mm <sup>2</sup> |    |            |
| FS23638-30-07 | 30                |                  | 174  | 144 | 50  | 1.1                | 4 mm <sup>2</sup>   |    |            |
| FS23638-40-07 | 40                | 174              | 174  | 50  | 1.3 | 6 mm <sup>2</sup>  |                     |    |            |
| FS23639-5-07  | 5                 | C1               | 169  | 111 | 45  | 0.5                | 1,5 mm <sup>2</sup> | M5 | no         |
| FS23639-10-07 | 10                |                  | 169  | 111 | 45  | 0.7                |                     |    |            |
| FS23639-15-07 | 15                |                  | 174  | 144 | 50  | 0.9                | 2,5 mm <sup>2</sup> |    |            |
| FS23639-30-07 | 30                |                  | 304  | 137 | 56  | 1.8                | 4 mm <sup>2</sup>   |    |            |
| FS23639-50-07 | 50                |                  | 340  | 175 | 65  | 2.7                | 6 mm <sup>2</sup>   |    |            |

#### Dimensions With Foot Mount



### EMC Filters for IT Grid

Filter for power supply side EMI suppression of single or multiple drives in isolated networks (IT grid).



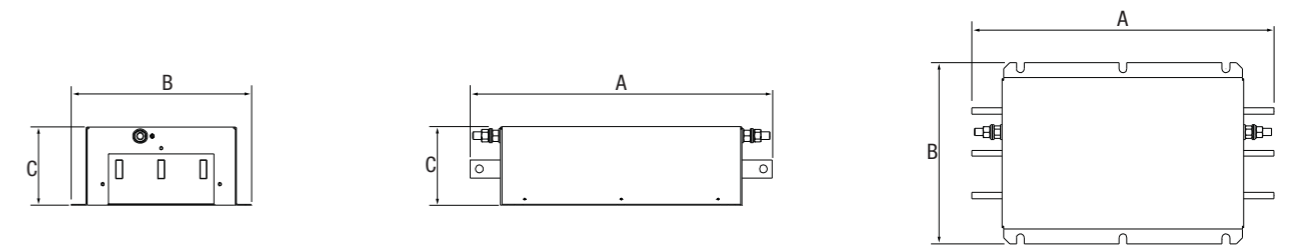
#### Specifications

|                     |  |
|---------------------|--|
| Ambient Temperature | max. +50 °C                                    |
| Approvals           | cURus<br>UL 1283 5th edition<br>CSA C22.2 No.8 |
| Protection Class    | IP 20  |

| Order Code      | Rated Current (A) | EN61800-3: Class | A    | B   | C   | Terminals           |     | Weight (kg) |
|-----------------|-------------------|------------------|------|-----|-----|---------------------|-----|-------------|
|                 |                   |                  | (mm) |     |     | Phase               | PE  |             |
| HLD 810-500/8   | 8                 | C3 (10m)*        | 190  | 45  | 75  | 4 mm <sup>2</sup>   | M5  | 0.8         |
| HLD 810-500/16  | 16                |                  | 250  | 45  | 75  |                     |     | 1.2         |
| HLD 810-500/30  | 30                |                  | 270  | 55  | 95  | 10 mm <sup>2</sup>  | M5  | 1.8         |
| HLD 810-500/42  | 42                |                  | 310  | 55  | 95  |                     |     | 2.1         |
| HLD 810-500/55  | 55                |                  | 250  | 85  | 95  | 16 mm <sup>2</sup>  | M6  | 2.5         |
| HLD 810-500/75  | 75                |                  | 270  | 85  | 135 | 35 mm <sup>2</sup>  | M8  | 4.5         |
| HLD 810-500/100 | 100               |                  | 270  | 95  | 150 | 50 mm <sup>2</sup>  | M10 | 5.2         |
| HLD 810-500/130 | 130               |                  | 270  | 95  | 150 |                     |     | 5.6         |
| HLD 810-500/180 | 180               |                  | 380  | 130 | 181 | 95 mm <sup>2</sup>  | M10 | 9.2         |
| HLD 810-500/250 | 250               |                  | 450  | 155 | 220 | 150 mm <sup>2</sup> | M12 | 12.2        |
| HLD 803-500/415 | 415               |                  | 500  | 280 | 130 | 25x6 (ØM12)         | M12 | 24          |
| HLD 803-500/675 | 675               |                  | 500  | 280 | 130 | 30x10 (ØM12)        | M12 | 27          |

\* There are no EMC limits according to norms. The C3 level list just for information.

#### Dimensions



## Reactors for Lift and Escalator Applications

These reactors are used at the output of drives in order to improve the power factor and to comply with requirements to harmonic distortion units resulting from EN12015.

### Specifications

|                     |   |
|---------------------|---|
| Ambient Temperature | -10 to +50 °C   |
| Standards           | VDE 0570 / EN 61 558 Part 1<br>VDE 0570 / EN 61 558 Part 20 |

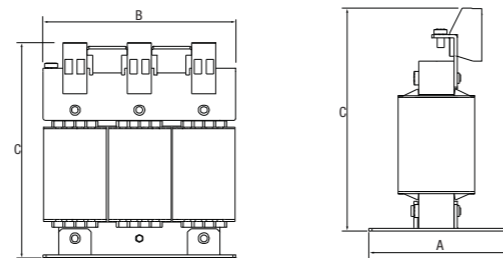


B 0903084

### With IP00 Chassis

| Order Code | Rated Current | Inductance<br>(mH) | A   | B   | C   | Weight<br>(kg) |
|------------|---------------|--------------------|-----|-----|-----|----------------|
|            | (A)           |                    |     |     |     |                |
| B 0903084  | 8             | 10                 | 110 | 155 | 170 | 6              |
| B 0903085  | 16            | 5.1                | 102 | 185 | 196 | 7.1            |
| B 0903086  | 21            | 4.7                | 125 | 210 | 220 | 9.1            |
| B 0903087  | 27            | 3.15               | 135 | 210 | 220 | 10.7           |
| B 0910009  | 38            | 2                  | 166 | 230 | 205 | 12.5           |
| B 0910011  | 65            | 1.3                | 166 | 263 | 205 | 25             |
| B 0910013  | 96            | 0.9                | 180 | 330 | 270 | 36.4           |

### Dimensions of IP00 Chassis

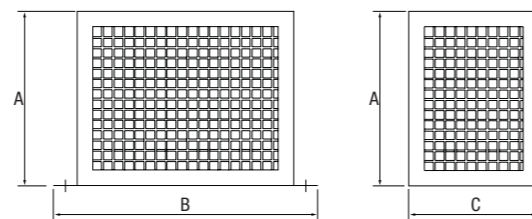


B0903088

### With IP20 Chassis

| Order Code | Rated Current | Inductance<br>(mH) | A   | B   | C   | Weight<br>(kg) |
|------------|---------------|--------------------|-----|-----|-----|----------------|
|            | (A)           |                    |     |     |     |                |
| B 0903088  | 8             | 10                 | 190 | 275 | 210 | 7              |
| B 0903089  | 16            | 5.1                |     |     |     | 8.1            |
| B 0903090  | 21            | 4.7                | 195 | 345 | 240 | 12             |
| B 0903091  | 27            | 3.15               |     |     |     | 12.5           |
| B 0910014  | 38            | 2                  |     |     |     | 14.4           |
| B 0910016  | 65            | 1.3                | 240 | 395 | 280 | 27.5           |
| B 0910018  | 96            | 0.9                |     |     |     | 39             |

### Dimensions of IP20 Chassis



## Harmonic Filters

Provide sinusoidal input current helping to comply with power quality standards like IEEE519 or EN61000-312. Furthermore harmonic filters reduce the electrical and thermal burden on the power supply infrastructure.

### Specifications

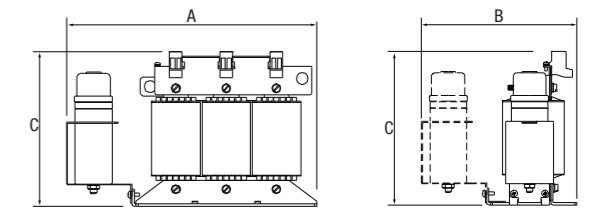
|                     |  |
|---------------------|--|
| Ambient Temperature | -10 °C to +40 °C   |
| Standards           | EN 61558 Part 1<br>EN 61558 Part 20<br>UL 508 17th Ed.<br>CSA 22.2 No. 14-10 |
| Approvals :         | UL 506, CSA 22.2   |



### Total Harmonic Distortion THD-I < 8%

| Order Code   | Rated Current<br>(A) | A B C<br>(mm) |     |     | Terminals          |    | Weight<br>(kg) |
|--------------|----------------------|---------------|-----|-----|--------------------|----|----------------|
|              |                      | Phase         | PE  |     |                    |    |                |
| HF1K 7-400   | 10                   | 231           | 375 | 235 | 10 mm <sup>2</sup> | M6 | 14             |
| HF1K 13-400  | 19                   | 275           | 440 | 270 |                    |    | 28             |
| HF1K 18-400  | 26                   | 272           | 425 | 270 |                    |    | 31             |
| HF1K 30-400  | 44                   | 290           | 545 | 350 |                    |    | 59             |
| HF1K 50-400  | 73                   | 320           | 545 | 315 | M8 bolt            | M8 | 75,5           |
| HF1K 70-400  | 102                  | 348           | 685 | 460 |                    |    | 125            |
| HF1K 100-400 | 144                  | 375           | 685 | 460 |                    |    | 163            |

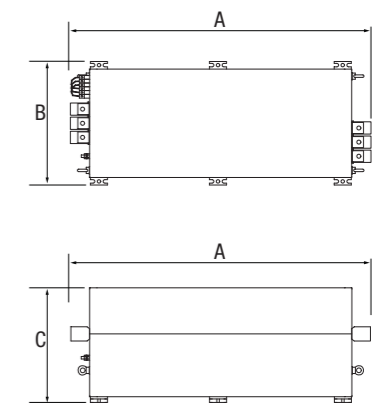
### Dimensions for THD-I < 8%



### Total Harmonic Distortion THD-I < 5%

| Order Code     | Rated Current<br>(A) | A B C<br>(mm) |     |      | Terminals           |     | Weight<br>(kg)      |
|----------------|----------------------|---------------|-----|------|---------------------|-----|---------------------|
|                |                      | Phase         | PE  |      |                     |     |                     |
| HFM FB 7 400   | 10                   | 455           | 165 | 242  | 16 mm <sup>2</sup>  | M8  | 27                  |
| HFM FB 13 400  | 19                   | 455           | 165 | 242  |                     |     | 28                  |
| HFM FB 18 400  | 26                   | 645           | 365 | 225  |                     |     | 40                  |
| HFM FB 30 400  | 43                   | 885           | 357 | 225  |                     |     | 52                  |
| HFM FB 50 400  | 72                   | 885           | 357 | 225  | 50 mm <sup>2</sup>  | M8  | 88                  |
| HFM FB 70 400  | 101                  | 1060          | 393 | 400  |                     |     | 150                 |
| HFM FB 100 400 | 144                  | 1060          | 393 | 400  |                     |     | 167                 |
| HFM FB 125 400 | 180                  | 1160          | 454 | 420  | 150 mm <sup>2</sup> | M8  | 178                 |
| HFM FB 150 400 | 217                  | 1160          | 454 | 420  |                     |     | 224                 |
| HFM FB 200 400 | 289                  | 1330          | 545 | 420  | 95 mm <sup>2</sup>  | M8  | 271                 |
| HFM FB 225 400 | 325                  | 1330          | 545 | 420  |                     |     | 284                 |
| HFM FB 255 400 | 370                  | 1350          | 530 | 420  |                     |     | 240 mm <sup>2</sup> |
| HFM FB 300 400 | 433                  | 1350          | 530 | 420  | 300 mm <sup>2</sup> | M8  | 387                 |
| B 1108040      | 500                  | 1700          | 540 | 600  |                     |     | 45x4 mm / 2x Ø15 mm |
| B 1108043      | 900                  | 1700          | 540 | 1000 | 45x4 mm / 2x Ø15 mm | M12 | 750                 |

### Dimensions for THD-I < 5%



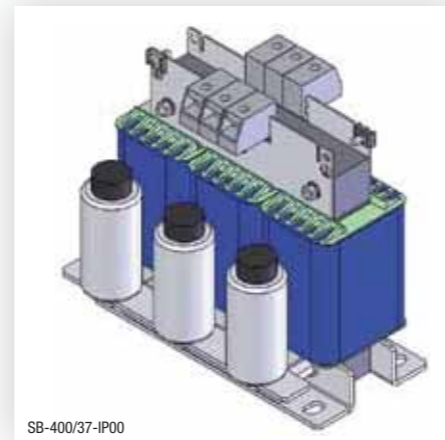


### Sine Wave Output Filter

This filter type smoothens the drive output voltage and suppresses differential mode interference, thus improves motor service life and EMC environment. Recommended also for very long, unshielded motor cables.

#### Specifications

|                     |   |
|---------------------|---|
| Ambient Temperature | -10 to +50 °C                                   |
| Standards           | EN 61 558 Part 1<br>EN 61 558 Part 20<br>UL 508 |
| Approvals           | CE, cURus                                       |



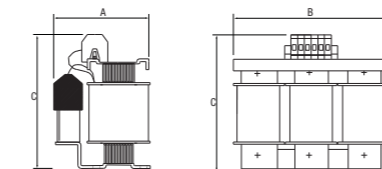
SB-400/37-IP00

### With IP00 Chassis

| Order Code     | Current (A) | A (mm) | B (mm) | C (mm) | Terminals           |     | Weight (kg) |
|----------------|-------------|--------|--------|--------|---------------------|-----|-------------|
|                |             |        |        |        | Phase               | PE  |             |
| SB-40004A-IP00 | 4           | 105    | 155    | 160    | 4 mm <sup>2</sup>   | M4  | 12          |
| SB-40010A-IP00 | 10          | 120    | 155    | 160    |                     |     | 15,5        |
| SB-40017A-IP00 | 16.5        | 160    | 190    | 185    | 10 mm <sup>2</sup>  | M4  | 18          |
| SB-40024A-IP00 | 23.5        | 190    | 240    | 280    |                     |     | 30,5        |
| SB-40037A-IP00 | 37          | 210    | 240    | 280    | 16 mm <sup>2</sup>  | M6  | 45          |
| SB-40048A-IP00 | 48          | 220    | 240    | 280    |                     |     | 50          |
| SB-40061A-IP00 | 61          | 228    | 300    | 315    | 35 mm <sup>2</sup>  | M6  | 60          |
| SB-40072A-IP00 | 72          | 242    | 300    | 320    | 50 mm <sup>2</sup>  | M8  | 48          |
| SB-40115A-IP00 | 115         | 210    | 360    | 415    | 95 mm <sup>2</sup>  | M8  | 66          |
| SB-40180A-IP00 | 180         | 240    | 360    | 415    | 150 mm <sup>2</sup> | M8  | 75          |
| SB-40250A-IP00 | 250         | 400    | 500    | 450    | 150 mm <sup>2</sup> | M12 | 120         |
| SB-40414A-IP00 | 414         | 300    | 505    | 450    | M16                 | M8  | 200         |
| SB-40515A-IP00 | 515         | 375    | 505    | 530    |                     |     | 200         |
| SB-40675A-IP00 | 675         | 400    | 620    | 650    | M12                 | M10 | 315         |
| SB-41200A-IP00 | 1200        | 780    | 780    | 610    |                     |     | 450         |

#### Dimensions

IP00 chassis

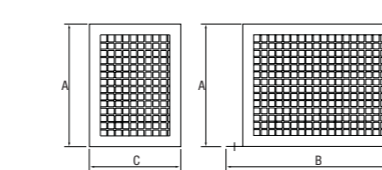


### With IP20 Chassis

| Order Code     | Current (A) | A (mm) | B (mm) | C (mm) | Terminals          |    | Weight (kg) |
|----------------|-------------|--------|--------|--------|--------------------|----|-------------|
|                |             |        |        |        | Phase              | PE |             |
| SB-40004A-IP20 | 4           | 190    | 275    | 210    | 4 mm <sup>2</sup>  | M4 | 12          |
| SB-40010A-IP20 | 12          | 190    | 275    | 210    |                    |    | 15,5        |
| SB-40017A-IP20 | 16.5        | 190    | 275    | 210    | 10 mm <sup>2</sup> | M4 | 19          |
| SB-40024A-IP20 | 23.5        | 195    | 345    | 240    |                    |    | 32,5        |
| SB-40037A-IP20 | 37          | 240    | 395    | 280    | 16 mm <sup>2</sup> | M6 | 47          |
| SB-40048A-IP20 | 48          | 240    | 395    | 330    |                    |    | 52          |
| SB-40061A-IP20 | 61          | 240    | 395    | 330    | 35 mm <sup>2</sup> | M6 | 55          |
| SB-40072A-IP20 | 72          | 240    | 395    | 330    | 50 mm <sup>2</sup> | M8 | 53          |

#### Dimensions

IP20 chassis



### Operators

The digital operators are used not only display the status of the device at a glance, they can also be used for programming. And with the IP65 operator mounting frame the digital operator can be installed on the outside for easier accessibility.

#### Digital Operator

Practical keypad, usable for remote operation.

Built in parameter copy function.

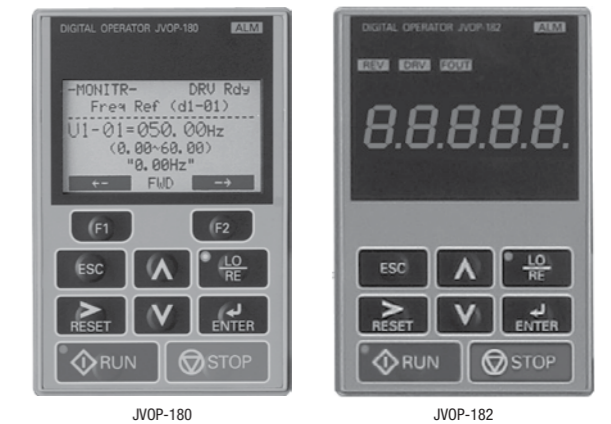
For cabinet door mounting: JVOP-V11001

5 digit, 8 segment LED operator JVOP-182:

- ▶ Good readability from distance and in dark environment

Full text LCD keypad JVOP-180:

- ▶ Up to 13 languages\*



JVOP-180

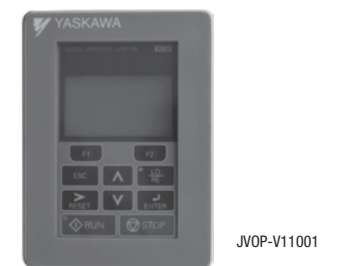
JVOP-182

\* depending on the drive

#### IP65 Operator Mounting Frame

Provides a simple way of installing the Digital Operator of a drive on a cabinet wall or door.

- ▶ Suitable for LED operator JVOP-182 and LCD operator JVOP-180
- ▶ IP65 protection - resistant against dust and water



JVOP-V11001

#### Compatibility

| Option Type              | Order Code  | Description                              | Compatibility |       |            |       |        |        |        |        |                |            |                      |   |
|--------------------------|-------------|--|---------------|-------|------------|-------|--------|--------|--------|--------|----------------|------------|----------------------|---|
|                          |             |  | J1000         | V1000 | V1000 IP66 | A1000 | L1000V | L1000A | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |   |
| Digital Operator         | JVOP-180    | LCD Clear Text Digital Operator          | -             | •     | •*2        | •     | •      | •      | •      | •      | •              | -          | •                    | - |
|                          | JVOP-182    | LED Digital Operator                     | •*1           | •     | •*2        | •     | •      | •      | •      | •      | •              | -          | •                    | - |
| Mounting Frame           | JVOP-V11001 | IP65 Operator Mounting Frame             | -             | -     | -          | -     | -      | -      | -      | -      | -              | -          | -                    | • |
| Copy Unit                | JVOP-181    | Parameter Copy Unit/USB converter        | •*1           | •     | •*2        | •     | •      | •      | •      | •      | •              | •          | •                    | - |
| Operator Extension Cable | WV001-YEG   | 1 m extension cable for Digital Operator | •*1           | •     | •          | •     | •      | •      | •      | •      | •              | •          | •                    | • |
|                          | WV003-YEG   | 3 m extension cable for Digital Operator | •*1           | •     | •          | •     | •      | •      | •      | •      | •              | •          | •                    | • |

\*1 SI-232/J required.

\*2 Only for version Drive with Remote Operator Plug or with open enclosure.

• Accessory is compatible with the drive.

- Accessory is not compatible with the drive.

### Copy Unit/USB Converter

Handy copy unit for drive parameters.

- ▶ Copy/verify parameter settings between drives easily
- ▶ Usable as USB converter for V1000 based drives
- ▶ Memorize parameter settings, archive them on a PC later



### 24 V Control Power Supply

- ▶ Attachable to A1000 and V1000 based drives
- ▶ Connect an external 24 V power supply to keep the control circuit alive while drive main power is switched off
- ▶ Drive status can be monitored via communication even if mains are switched off



#### Compatibility

| Order Code | Description  | Compatibility |       |            |       |        |        |        |        |                |            |                      |
|------------|--|---------------|-------|------------|-------|--------|--------|--------|--------|----------------|------------|----------------------|
|            |  | J1000         | V1000 | V1000 IP66 | A1000 | L1000V | L1000A | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |
| PS-V10S    | 24 VDC external control power supply for V1000 drives with max. applicable motor capacity of up to 4 kW (HD) | -             | •     | -          | -     | •      | -      | •      | -      | -              | -          | -                    |
| PS-V10M    | 24 VDC external control power supply for V1000 drives with max. applicable motor capacity of 5.5 kW (HD)     | -             | •     | -          | -     | •      | -      | •      | -      | -              | -          | -                    |
| PS-A10L    | 24 VDC external control power supply for A1000 drives 200 V Class  | -             | -     | -          | •     | -      | •      | -      | •      | -              | •          | •                    |
| PS-A10H    | 24 VDC external control power supply for A1000 drives 400 V Class  | -             | -     | -          | •     | -      | •      | -      | •      | -              | •          | •                    |

• Accessory is compatible with the drive.  
 - Accessory is not compatible with the drive.

### Communication Option Cards

Communication option cards connect a drive to a network.

Using this option unit a master device can:

- ▶ Operate the drive
- ▶ Monitor the drive operation status
- ▶ Read or modify drive parameters



| Option Type                 | Specifications  |                                  |   |
|-----------------------------|---|----------------------------------|---|
|                             | Communication Profile   | Connector                        | Communication Speed                                 |
| CANopen option card         | DS 301 Ver. 4.02   DSP 402 Ver. 1.1 Velocity Mode   | 9-pin D-SUB #4/40 UNC thread     | 10 kbps to 1 Mbps                                   |
| DeviceNet option card       | Group 2 Server (UCMM capable)   Explicit Messages: Fragmentation supported. In-/output up to 32 bytes   Polled I/O Messages: Fragmentation not supported. In-/output up to 8 bytes   Faulted Node Recovery / Offline Connection Set Messages / Automatic Device Replacement (ADR)   Change of State Message (COS) | 5-pin open-style screw connector | 125/250/500 kbps                                    |
| PROFIBUS-DP option card     | PROFIBUS DP-V0, V1   PPO TYPE: 1-5   Extended data 1   Extended data 2   Basic data   | 9-pin D-SUB #4/40 UNC thread     | 9.6 kbps to 12 Mbps                                 |
| CC-Link option card         | CC-Link V1.10   RY / RX / RW  | CC-Link cables                   | 156 kbps to 10 Mbps                                 |
| MECHATROLINK II option card | Start-stop synchronization   Master/slave method  | USB A                            | MECHATROLINK-II: 10 Mbps<br>MECHATROLINK-II: 4 Mbps |
| Ethernet-IP option card     | Explicit: Explicit Class 3, Unconnected   I/O: Class 1, Listen Only, Input Only   | RJ45                             | 10/100 Mbps   |
| Modbus TCP/IP option card   | Read Multiple Registers (03H)   Write Single Register (06H)   Write Multiple Registers (10H)   Read and Write Registers (17H)   Commands that support multiple registers have a maximum Read and Write size of 16 registers   | RJ45                             | 10/100 Mbps   |
| PROFINET option card        | ProfiDrive   YASKAWA-specific frame   Identification and Messaging (I&M)   Fault Buffer Mechanism   | 2x RJ45                          | 10/100 Mbps   |
| EtherCAT option card        | DS 301 Ver. 4.02   DSP 402 Ver. 1.1 Velocity Mode   | 2x RJ45                          | 10/100 Mbps   |
| Powerlink option card       | DSP 402 Velocity Mode   | 2x RJ45                          | 100 Mbps  |

#### Compatibility

| Option Type   | Order Code                                 | Description  | Compatibility   |                 |                 |       |        |                 |                 |        |                |            |                      |
|---|--|--|-----------------|-----------------|-----------------|-------|--------|-----------------|-----------------|--------|----------------|------------|----------------------|
|   |  |  | J1000           | V1000           | V1000 IP66      | A1000 | L1000V | L1000A          | T1000V          | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |
| Fieldbus Option Cards (for A1000 drives)                      | SI-S3                                      | CANopen option card                                      | -               | -               | -               | •     | -      | •               | -               | •      | •              | •          |                      |
|   | SI-N3                                      | DeviceNet option card                                    | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-P3                                      | PROFIBUS-DP option card                                  | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-C3                                      | CC-Link option card                                      | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-T3                                      | MECHATROLINK II option card                              | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-EN3                                     | Ethernet-IP option card                                  | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-EM3                                     | Modbus TCP/IP option card                                | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-EP3                                     | PROFINET option card                                     | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
|   | SI-ES3                                     | EtherCAT option card                                     | -               | -               | -               | •     | -      | -               | •               | •      | •              | •          |                      |
| SI-EL3  | Powerlink option card                      | -  | -               | -               | •               | -     | -      | •               | •               | •      | •              |            |                      |
| Fieldbus Option Cards in Snap-on Enclosure (for V1000 drives) | SI-S3/V                                    | CANopen option card in snap-on enclosure                 | -               | •               | •               | -     | -      | -               | •               | -      | -              | -          |                      |
|   | SI-N3/V                                    | DeviceNet option card in snap-on enclosure               | -               | •               | •               | -     | -      | -               | •               | -      | -              | -          |                      |
|   | SI-P3/V                                    | PROFIBUS-DP option card in snap-on enclosure             | -               | •               | •               | -     | -      | -               | •               | -      | -              | -          |                      |
|   | SI-C3/V                                    | CC-Link option card in snap-on enclosure                 | -               | •               | •               | -     | -      | -               | •               | -      | -              | -          |                      |
|   | SI-T3/V                                    | MECHATROLINK II option card in snap-on enclosure         | -               | •               | •               | -     | -      | -               | •               | -      | -              | -          |                      |
|   | SI-EN3/V                                   | Ethernet-IP option card in snap-on enclosure             | -               | • <sup>*1</sup> | • <sup>*1</sup> | -     | -      | -               | • <sup>*1</sup> | -      | -              | -          |                      |
|   | SI-EM3/V                                   | Modbus TCP/IP option card in snap-on enclosure           | -               | • <sup>*1</sup> | • <sup>*1</sup> | -     | -      | -               | • <sup>*1</sup> | -      | -              | -          |                      |
|   | SI-EP3/V                                   | PROFINET option card in snap-on enclosure                | -               | • <sup>*1</sup> | • <sup>*1</sup> | -     | -      | -               | • <sup>*1</sup> | -      | -              | -          |                      |
|   | SI-ES3/V                                   | EtherCAT option card in snap-on enclosure                | -               | • <sup>*1</sup> | • <sup>*1</sup> | -     | -      | -               | • <sup>*1</sup> | -      | -              | -          |                      |
| SI-EL3/V  | Powerlink option card in snap-on enclosure | -  | • <sup>*1</sup> | • <sup>*1</sup> | -               | -     | -      | • <sup>*1</sup> | -               | -      | -              |            |                      |
| J1000 communication options                                   | SI-232/J                                   | RS232 port for permanent connection                      | •               | -               | -               | -     | -      | -               | -               | -      | -              | -          |                      |
|   | SI-232/JC                                  | RS232 port for temporary connection (e.g. PC tool usage) | •               | -               | -               | -     | -      | -               | -               | -      | -              | -          |                      |
|   | SI-485/J                                   | RS485 port   | •               | -               | -               | -     | -      | -               | -               | -      | -              | -          |                      |

\*1 Older versions of drive firmware may not be compatible.  
 • Accessory is compatible with the drive.  
 - Accessory is not compatible with the drive.

## I/O Option Cards

### Analogue Input Option Card AI-A3

Allows to input a high resolution analog signal to the drive. The option card terminals can be set up in two ways.

- ▶ Separate functions for each terminal: Use the multi-function analog input terminals on the option card instead the drive's analog input terminals for a higher resolution signal.
- ▶ Combined input: The drive adds all signals input to the option card terminals to build the frequency reference



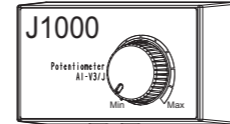
### Digital Input Option Card DI-A3

Used to set the speed reference using binary coded digital inputs.



### Potentiometer Option AI-V3/J

Allows to adjust the speed reference by potentiometer directly in J1000 drives.



### Analogue Output Option Card AO-A3

Expands the number of analogue outputs used to monitor drive performance (output frequency, output current, etc.). The channel functions gain and bias can easily be adjusted by drive parameters.



### Digital Output Option Card DO-A3

Expands the number of digital outputs used to monitor drive operation status (alarm signals, zero speed detection, etc.). This option card provides 8 outputs: 6 photocoupler outputs and 2 relay outputs.



#### Compatibility

| Option Type         | Order Code | Description  | Compatibility |       |            |       |        |        |        |        |                |            |                      |
|---------------------|------------|--|---------------|-------|------------|-------|--------|--------|--------|--------|----------------|------------|----------------------|
|                     |            |  | J1000         | V1000 | V1000 IP66 | A1000 | L1000V | L1000A | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |
| Input Option Cards  | AI-A3      | 2 channel analogue input option                        | -             | -     | -          | •     | -      | -      | -      | •      | •              | •          | •                    |
|                     | DI-A3      | 18 channel Digital Reference Card                      | -             | -     | -          | •     | -      | •      | -      | •      | •              | •          | •                    |
|                     | AI-V3/J    | Potentiometer option card                              | •             | -     | -          | -     | -      | -      | -      | -      | -              | -          | -                    |
| Output Option Cards | AO-A3      | 2 channel analogue output option                       | -             | -     | -          | •     | -      | •      | -      | •      | •              | •          | •                    |
|                     | DO-A3      | Digital output option card, 6 photo couplers, 2 relays | -             | -     | -          | •     | -      | •      | -      | •      | •              | •          | •                    |

• Accessory is compatible with the drive.  
- Accessory is not compatible with the drive.

## Speed Feedback Option Cards



### Encoder Option PG-B3

To connect an incremental encoder with complementary output for motor speed feedback. Increases the control accuracy and dynamics using speed feedback.

Max. input frequency from encoder: 50 kHz

### Encoder Option PG-F3

The pulse generator option card PG-F3 uses rotary encoder EnDat2.1/01 and EnDat2.2/01 by HEIDENHAIN. This option can only be used with PM motors.

Max. input frequency from encoder: 50 kHz



### Encoder Option PG-E3

For connection of ERN1387/ERN487 rotary/encoders. This option can only be used with PM motors.

Max. input frequency from encoder: 20 kHz

### Encoder Option PG-X3

To connect an incremental line driver encoder for motor speed feedback to the drive.

Max. input frequency from encoder: 300 kHz

#### Compatibility

| Order Code | Description  | Compatibility |       |            |       |        |        |        |        |                |            |                      |
|------------|--|---------------|-------|------------|-------|--------|--------|--------|--------|----------------|------------|----------------------|
|            |  | J1000         | V1000 | V1000 IP66 | A1000 | L1000V | L1000A | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |
| PG-B3      | Speed feedback option, HTL or open collector, 3 tracks, 50 kHz | -             | -     | -          | •     | -      | -      | -      | •      | •              | •          | •                    |
| PG-X3      | Speed feedback option, Line Driver, 3 tracks, 300 kHz          | -             | -     | -          | •     | -      | -      | -      | •      | •              | •          | •                    |
| PG-E3      | Speed feedback option for Heidenhain ERN1387/ERN487            | -             | -     | -          | -     | -      | -      | -      | -      | -              | -          | -                    |
| PG-F3      | Speed feedback option for Endat 2.1/01                         | -             | -     | -          | -     | -      | -      | -      | •      | -              | -          | -                    |

## Mechanical Options

For harsher environments the protection level of the inverter can be improved by using mechanical options. They also provide more options for mounting an inverter.

#### Compatibility

| Option Type                         | Order Code  | Description   | Compatibility |       |            |       |        |        |        |        |                |            |                      |
|-------------------------------------|-------------|---|---------------|-------|------------|-------|--------|--------|--------|--------|----------------|------------|----------------------|
|                                     |             |   | J1000         | V1000 | V1000 IP66 | A1000 | L1000V | L1000A | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |
| NEMA1 Kit                           | 100-054-5   | Nema Type 1 kit for drives from 22 kW (HD) and higher   | -             | -     | -          | •     | -      | -      | -      | •      | -              | -          | -                    |
|                                     | EZZ020564   | NEMA Type 1 kit for for improved protection level   | •             | -     | -          | -     | -      | -      | -      | -      | -              | -          | -                    |
| Heatsink External Mounting Kit      | EZZ020800   | Installation kit for mounting the drive with the heatsink outside of the panel (Side-by-Side mounting possible) | -             | -     | -          | •     | -      | •      | -      | •      | -              | -          | -                    |
|                                     | EZZ020568   | Installation kit for mounting the drive with the heatsink outside of the panel (Side-by-Side mounting possible) | •             | •     | -          | -     | -      | •      | -      | •      | -              | -          | -                    |
| Mounting Frame for Digital Operator | EUOP-V11001 | Frame for mounting JVOP-180/182 on panel door or wall, IP65   | •             | •     | •          | •     | •      | •      | •      | •      | -              | •          | -                    |
| DIN Rail Mounting Kit               | EZZ08122    | Mechanical kit for mounting a drive on a DIN rail   | •             | •     | -          | -     | •      | -      | •      | -      | -              | -          | -                    |

• Accessory is compatible with the drive.  
- Accessory is not compatible with the drive.

## Braking Options

Braking options dissipate regenerative energy in applications like hoist, elevator, or machines with rapid deceleration.



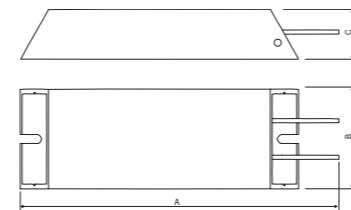
## Braking Resistors

|                 | Order Code      | Rated Power (W) | A    | B   | C   | Weight (kg) |
|-----------------|-----------------|-----------------|------|-----|-----|-------------|
|                 |                 |                 | (mm) |     |     |             |
| 10% Duty Cycle  | RH-0100W830     | 100             | 160  | 40  | 20  | 0,26        |
|                 | RH-0100W330     | 100             | 160  | 40  | 20  | 0,26        |
|                 | RH-0260W270     | 260             | 217  | 60  | 30  | 0,78        |
|                 | RH-0520W120     | 520             | 337  | 60  | 30  | 1,10        |
|                 | RH-0780W040     | 780             | 395  | 140 | 95  | 3,10        |
|                 | RH-1560W040     | 1,560           | 570  | 190 | 180 | 3,50        |
|                 | RH-4800W022     | 4,800           | 570  | 390 | 180 | 7,00        |
|                 | RH-6000W022     | 6,000           | 570  | 390 | 180 | 8,00        |
| 40% Duty Cycle* | RH-9600W015     | 9,600           | 490  | 650 | 250 | 14,00       |
|                 | RH-0780W040-10  | 780             | 267  | 60  | 30  | 1           |
|                 | RH-1560W040-10  | 1,560           | 267  | 60  | 30  | 1           |
|                 | RH-4800W022-10  | 1,600           | 570  | 190 | 180 | 3,5         |
|                 | RH-6000W022-10  | 1,800           | 570  | 190 | 180 | 3,5         |
|                 | RH-9600W015-10  | 3,200           | 570  | 290 | 180 | 6           |
|                 | RH-29000W3P8-10 | 8,000           | 530  | 485 | 400 | 20          |
|                 | RH-38500W3P8-10 | 9,500           | 530  | 485 | 400 | 21          |
| RH-48000W3P8-10 | 12,000          | 530             | 485  | 400 | 23  |             |

### Specifications

Ambient Temperature -25 to +50 °C  
Protection Class IP 20

### Dimensions



\* 40% duty cycle means 120 s cycle time with 48 s on.

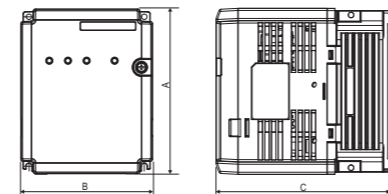
## Braking Unit

| Order Code | Voltage (V) | Output                     |                             | A    | B   | C   |
|------------|-------------|----------------------------|-----------------------------|------|-----|-----|
|            |             | Max. Discharge Current (A) | Rated Discharge Current (A) | (mm) |     |     |
| 2022D      | 200         | 60                         | 20                          | 150  | 120 | 157 |
| 2045B      |             | 100                        | 30                          | 370  | 180 | 200 |
| 2110B      |             | 250                        | 80                          | 370  | 180 | 200 |
| 4030D      | 400         | 40                         | 15                          | 150  | 120 | 157 |
| 4045D      |             | 60                         | 18                          | 150  | 120 | 157 |
| 4090B      |             | 100                        | 30                          | 370  | 220 | 200 |
| 4220B      |             | 250                        | 80                          | 370  | 250 | 200 |
| 5037D      | 575         | 40                         | 15                          | 150  | 120 | 157 |
| 5110B      |             | 100                        | 30                          | 370  | 220 | 200 |
| 5300B      |             | 250                        | 80                          | 370  | 250 | 200 |

### Specifications

Ambient Temperature -10 to +50 °C  
Protection Class IP00 enclosure  
IP20 enclosure  
Standards UL508C, CE, RoHS

### Dimensions



## Compatibility

| Option Type      | Order Code | Description                       | Compatibility |       |            |                 |        |                 |        |        |                |            |                      |                 |
|------------------|------------|-----------------------------------|---------------|-------|------------|-----------------|--------|-----------------|--------|--------|----------------|------------|----------------------|-----------------|
|                  |            |                                   | J1000         | V1000 | V1000 IP66 | A1000           | L1000V | L1000A          | T1000V | T1000A | IP54 Wallmount | IP54 Ready | A1000 Floor Standing |                 |
| Braking Resistor | RH-...W... | Converts braking energy into heat | •             | •     | -          | •               | •      | •               | •      | •      | •              | -          | -                    | • <sup>*3</sup> |
| Braking Unit     | CDBR-...   | External Braking Unit             | -             | •     | -          | • <sup>*2</sup> | •      | • <sup>*2</sup> | •      | •      | -              | •          | • <sup>*3</sup>      |                 |

\*2 If > 30 kW

\*3 Configurable from factory

• Accessory is compatible with the drive.

- Accessory is not compatible with the drive.

## Motor Reactors

Motor reactors limit voltage peaks at the motor winding, especially with long motor cables, thus improving the motor service life.



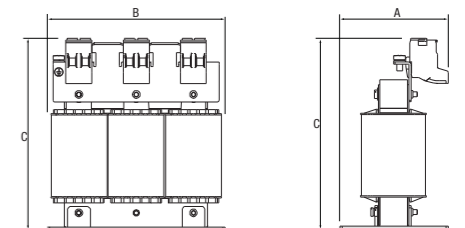
### Specifications

Ambient Temperature max. 40 °C  
Standards DIN EN 61558-2-20  
IEC 61558-2-20  
Carrier Frequency 8 kHz  
Motor Cable Screened 100 m screen  
Motor Cable not Screened 150 m no screen

## With IP00 Protection, up to 120 Hz Output Frequency

| Order Code  | Rated Current | A    | B   | C   | Weight (kg) |
|-------------|---------------|------|-----|-----|-------------|
|             | (A)           | (mm) |     |     |             |
| MDB 400/6,3 | 6.3           | 155  | 170 | 160 | 4,5         |
| MDB 400/13  | 13            | 155  | 85  | 160 | 5,5         |
| MDB 400/24  | 24            | 190  | 115 | 193 | 10          |
| MDB 400/46  | 46            | 210  | 120 | 182 | 10,3        |
| MDB 400/72  | 72            | 210  | 120 | 182 | 10,3        |
| MDB 400/110 | 110           | 240  | 131 | 205 | 20          |
| MDB 400/176 | 176           | 240  | 165 | 205 | 27,5        |
| B1107115    | 380           | 300  | 171 | 259 | 27,7        |
| B1107116    | 430           | 350  | 207 | 261 | 38,2        |
| B1107117    | 700           | 420  | 270 | 435 | 105         |

### Dimensions



## With IP20 Protection, up to 50 Hz Output Frequency

| Order Code | Rated Current | A    | B   | C   | Weight (kg) |
|------------|---------------|------|-----|-----|-------------|
|            | (A)           | (mm) |     |     |             |
| MR3 400/4  | 4             | 77   | 63  | 101 | 0,9         |
| MR3 400/10 | 10            | 240  | 170 | 273 | 1,8         |
| MR3 400/18 | 18            | 240  | 190 | 275 | 2,1         |
| MR3 400/24 | 24            | 120  | 95  | 142 | 2,2         |
| MR3 400/37 | 37            | 310  | 190 | 335 | 3,6         |
| MR3 400/48 | 48            | 185  | 100 | 211 | 6,5         |
| MR3 400/61 | 61            | 185  | 112 | 210 | 7,8         |



**YASKAWA Europe GmbH**

Drives & Motion Division  
Hauptstr. 185  
65760 Eschborn  
Germany

+49 6196 569-300  
info@yaskawa.eu.com  
www.yaskawa.eu.com