

November 6, 2015

Motor Business Unit  
Smart Factory Solutions Business Division  
Automotive & Industrial Systems Company  
Panasonic Corporation

## **Announcement of New product release:** **MINAS A6-Series AC Servo Motors and Drivers**

In order to meet further market needs of faster, higher precision for industrial machinery, robots and etc., we are releasing our New MINAS A6-Series AC Servo Motors and Drivers. This New product has more compact motor and further advanced servo functions, enabling it to increase the productivity of various industrial machinery and equipment.

1. Official date of release: November 20, 2015
2. Product features
  - 2-1. Industry's smallest, lightest<sup>1</sup> servo motor, industry's fastest-responding<sup>2</sup> servo driver.
    - Servo motor length: 67.5 mm (30% shorter than conventional model<sup>3</sup>) MHMF-type 200 W
    - Servo motor weight: 750 g (20 % lighter than conventional model<sup>3</sup>) MHMF-type 200 W
    - Servo driver velocity response frequency 3.2 kHz (30% faster than conventional model<sup>4</sup>)
    - Multi-functional real-time tuning
    - Fully automatic calibration (fit-gain) = complies with PANATERM setup support software.
  - 2-2. Lineup of network drivers (RTEX[3]) achieving the industry's shortest class<sup>2</sup> of communication cycle.
    - Contributes to Networking of machines and devices and minimizing use of cables.
    - Shortest communication cycle of 62.5 microseconds (25% shorter than conventional model<sup>4</sup>)
      1. For a servo motor (200 W output) as of October 2015. Surveyed by Panasonic.
      2. For a servo driver (200 W output) as of October 2015. Surveyed by Panasonic.
      3. Comparison with our conventional MINAS A5-Series Servo Motor (200 W output).
      4. Comparison with our conventional MINAS A5-Series Servo Driver.

Applications: semiconductor manufacturing devices, LCD manufacturing devices, industrial robots, electronic components mounting devices, machine tools, etc.

3. Output range: 50 W to 5.0 kW. Voltage: 100 V / 200 V
  - Standanrd equipped with 23-bit absolute encoder
  - Max speed 6500 rpm (for 400 W or below MHMF-type and MQMF-type)Lineup will be expanded and released consequently from 2016.
4. Model numbers, prices, and order format  
Refer to Page 3 onwards.  
For the prices, please send RFQ (request for quote) to our sales representatives.  
\* No information is given on shared options with current models.  
\* For motor model numbers ending with letter "M", please make an inquiry to us.
5. External dimensions and specifications  
Refer to the information on our website on the MINAS A6 Series.  
<http://industrial.panasonic.com/sa/products/motors-compressors/fa-motors>

Automotive & Industrial Systems Company, Panasonic Corporation

7-1-1 Morofuku, Daito City, Osaka, 574-0044, Japan  
<http://industrial.panasonic.com/ww/products/motors-compressors>

6. Other

- \* You can download PANATERM, the setup support software, from our website for free.  
Purchase any commercially available mini USB cable for the communications cable.



Ultra high-speed Network MINAS A6N Series  
Realtime Express (RTEX) AC Servo Motor and AC Servo Driver  
Output: 200 W



MINAS A6 Series AC Servo Motor and AC Servo Driver  
Output: 50 W to 5.0 kW

■ **MINAS A6 Series Driver**

• **MINAS A6 Driver (multi-functional type)**

| Model number | Output (W) | Input voltage (V)              |
|--------------|------------|--------------------------------|
| MADLT01SF    | 50         | Single-phase 100               |
| MADLT05SF    | 100        | Single-phase / three-phase 200 |
| MADLT11SF    | 100        | Single-phase 100               |
| MADLT15SF    | 200        | Single-phase / three-phase 200 |
| MBDLT21SF    | 200        | Single-phase 100               |
| MBDLT25SF    | 400        | Single-phase / three-phase 200 |
| MCDLT31SF    | 400        | Single-phase 100               |
| MCDLT35SF    | 750        | Single-phase / three-phase 200 |
| MDDL45SF     | 1k         | Single-phase / three-phase 200 |
| MDDL55SF     | 1.5k       | Single-phase / three-phase 200 |
| MEDLT83SF    | 2k         | Three-phase 200                |
| MFDLTA3SF    | 3k         | Three-phase 200                |
| MFDLTB3SF    | 5k         | Three-phase 200                |

• **MINAS A6 Driver (basic type)**

| Model number | Output (W) | Input voltage (V)              |
|--------------|------------|--------------------------------|
| MADLN01SE    | 50         | Single-phase 100               |
| MADLN11SE    | 100        | Single-phase 100               |
| MADLN05SE    | 100        | Single-phase / three-phase 200 |
| MBDLN21SE    | 200        | Single-phase 100               |
| MADLN15SE    | 200        | Single-phase / three-phase 200 |
| MCDLN31SE    | 400        | Single-phase 100               |
| MBDLN25SE    | 400        | Single-phase / three-phase 200 |
| MCDLN35SE    | 750        | Single-phase / three-phase 200 |
| MDDL45SE     | 1k         | Single-phase / three-phase 200 |
| MDDL55SE     | 1.5k       | Single-phase / three-phase 200 |
| MEDLN83SE    | 2k         | Three-phase 200                |
| MFDLNA3SE    | 3k         | Three-phase 200                |
| MFDLNB3SE    | 5k         | Three-phase 200                |

• **MINAS A6 Driver (without STO)**

| Model number | Output (W) | Input voltage (V)              |
|--------------|------------|--------------------------------|
| MADLN01NE    | 50         | Single-phase 100               |
| MADLN05NE    | 100        | Single-phase / three-phase 200 |
| MADLN11NE    | 100        | Single-phase 100               |
| MADLN15NE    | 200        | Single-phase / three-phase 200 |
| MBDLN21NE    | 200        | Single-phase 100               |
| MBDLN25NE    | 400        | Single-phase / three-phase 200 |
| MCDLN31NE    | 400        | Single-phase 100               |
| MCDLN35NE    | 750        | Single-phase / three-phase 200 |
| MDDLN45NE    | 1k         | Single-phase / three-phase 200 |
| MDDLN55NE    | 1.5k       | Single-phase / three-phase 200 |
| MEDLN83NE    | 2k         | Three-phase 200                |
| MFDLNA3NE    | 3k         | Three-phase 200                |
| MFDLNB3NE    | 5k         | Three-phase 200                |

• **MINAS A6 Driver (RS485/232 Communication type)**

| Model number | Output (W) | Input voltage (V)              |
|--------------|------------|--------------------------------|
| MADLN01SG    | 50         | Single-phase 100               |
| MADLN05SG    | 100        | Single-phase / three-phase 200 |
| MADLN11SG    | 100        | Single-phase 100               |
| MADLN15SG    | 200        | Single-phase / three-phase 200 |
| MBDLN21SG    | 200        | Single-phase 100               |
| MBDLN25SG    | 400        | Single-phase / three-phase 200 |
| MCDLN31SG    | 400        | Single-phase 100               |
| MCDLN35SG    | 750        | Single-phase / three-phase 200 |
| MDDLN45SG    | 1k         | Single-phase / three-phase 200 |
| MDDLN55SG    | 1.5k       | Single-phase / three-phase 200 |
| MEDLN83SG    | 2k         | Three-phase 200                |
| MFDLNA3SG    | 3k         | Three-phase 200                |
| MFDLNB3SG    | 5k         | Three-phase 200                |

■ MINAS A6 Series Motor

Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MHMF Series (□80 mm or less)

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF5AZL1A1  | 50         | 100/200     | ○                    |               |          | ◎         |
| MHMF5AZL1A2  | 50         | 100/200     | ○                    |               |          | Lead wire |
| MHMF5AZL1B1  | 50         | 100/200     | ○                    | ◆             |          | ◎         |
| MHMF5AZL1B2  | 50         | 100/200     | ○                    | ◆             |          | Lead wire |
| MHMF5AZL1C1  | 50         | 100/200     | ○                    |               | ●        | ◎         |
| MHMF5AZL1C2  | 50         | 100/200     | ○                    |               | ●        | Lead wire |
| MHMF5AZL1C3  | 50         | 100/200     | ○                    |               | ▲        | ◎         |
| MHMF5AZL1C4  | 50         | 100/200     | ○                    |               | ▲        | Lead wire |
| MHMF5AZL1D1  | 50         | 100/200     | ○                    | ◆             | ●        | ◎         |
| MHMF5AZL1D2  | 50         | 100/200     | ○                    | ◆             | ●        | Lead wire |
| MHMF5AZL1D3  | 50         | 100/200     | ○                    | ◆             | ▲        | ◎         |
| MHMF5AZL1D4  | 50         | 100/200     | ○                    | ◆             | ▲        | Lead wire |
| MHMF5AZL1S1  | 50         | 100/200     | △                    |               |          | ◎         |
| MHMF5AZL1S2  | 50         | 100/200     | △                    |               |          | Lead wire |
| MHMF5AZL1T1  | 50         | 100/200     | △                    | ◆             |          | ◎         |
| MHMF5AZL1T2  | 50         | 100/200     | △                    | ◆             |          | Lead wire |
| MHMF5AZL1U1  | 50         | 100/200     | △                    |               | ●        | ◎         |
| MHMF5AZL1U2  | 50         | 100/200     | △                    |               | ●        | Lead wire |
| MHMF5AZL1U3  | 50         | 100/200     | △                    |               | ▲        | ◎         |
| MHMF5AZL1U4  | 50         | 100/200     | △                    |               | ▲        | Lead wire |
| MHMF5AZL1V1  | 50         | 100/200     | △                    | ◆             | ●        | ◎         |
| MHMF5AZL1V2  | 50         | 100/200     | △                    | ◆             | ●        | Lead wire |
| MHMF5AZL1V3  | 50         | 100/200     | △                    | ◆             | ▲        | ◎         |
| MHMF5AZL1V4  | 50         | 100/200     | △                    | ◆             | ▲        | Lead wire |
| MHMF011L1A1  | 100        | 100         | ○                    |               |          | ◎         |
| MHMF011L1A2  | 100        | 100         | ○                    |               |          | Lead wire |
| MHMF011L1B1  | 100        | 100         | ○                    | ◆             |          | ◎         |
| MHMF011L1B2  | 100        | 100         | ○                    | ◆             |          | Lead wire |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF011L1C1  | 100        | 100         | ○                    |               | ●        | ◎         |
| MHMF011L1C2  | 100        | 100         | ○                    |               | ●        | Lead wire |
| MHMF011L1C3  | 100        | 100         | ○                    |               | ▲        | ◎         |
| MHMF011L1C4  | 100        | 100         | ○                    |               | ▲        | Lead wire |
| MHMF011L1D1  | 100        | 100         | ○                    | ◆             | ●        | ◎         |
| MHMF011L1D2  | 100        | 100         | ○                    | ◆             | ●        | Lead wire |
| MHMF011L1D3  | 100        | 100         | ○                    | ◆             | ▲        | ◎         |
| MHMF011L1D4  | 100        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MHMF011L1S1  | 100        | 100         | △                    |               |          | ◎         |
| MHMF011L1S2  | 100        | 100         | △                    |               |          | Lead wire |
| MHMF011L1T1  | 100        | 100         | △                    | ◆             |          | ◎         |
| MHMF011L1T2  | 100        | 100         | △                    | ◆             |          | Lead wire |
| MHMF011L1U1  | 100        | 100         | △                    |               | ●        | ◎         |
| MHMF011L1U2  | 100        | 100         | △                    |               | ●        | Lead wire |
| MHMF011L1U3  | 100        | 100         | △                    |               | ▲        | ◎         |
| MHMF011L1U4  | 100        | 100         | △                    |               | ▲        | Lead wire |
| MHMF011L1V1  | 100        | 100         | △                    | ◆             | ●        | ◎         |
| MHMF011L1V2  | 100        | 100         | △                    | ◆             | ●        | Lead wire |
| MHMF011L1V3  | 100        | 100         | △                    | ◆             | ▲        | ◎         |
| MHMF011L1V4  | 100        | 100         | △                    | ◆             | ▲        | Lead wire |
| MHMF012L1A1  | 100        | 200         | ○                    |               |          | ◎         |
| MHMF012L1A2  | 100        | 200         | ○                    |               |          | Lead wire |
| MHMF012L1B1  | 100        | 200         | ○                    | ◆             |          | ◎         |
| MHMF012L1B2  | 100        | 200         | ○                    | ◆             |          | Lead wire |
| MHMF012L1C1  | 100        | 200         | ○                    |               | ●        | ◎         |
| MHMF012L1C2  | 100        | 200         | ○                    |               | ●        | Lead wire |
| MHMF012L1C3  | 100        | 200         | ○                    |               | ▲        | ◎         |
| MHMF012L1C4  | 100        | 200         | ○                    |               | ▲        | Lead wire |
| MHMF012L1D1  | 100        | 200         | ○                    | ◆             | ●        | ◎         |
| MHMF012L1D2  | 100        | 200         | ○                    | ◆             | ●        | Lead wire |
| MHMF012L1D3  | 100        | 200         | ○                    | ◆             | ▲        | ◎         |
| MHMF012L1D4  | 100        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MHMF012L1S1  | 100        | 200         | △                    |               |          | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF012L1S2  | 100        | 200         | △                    |               |          | Lead wire |
| MHMF012L1T1  | 100        | 200         | △                    | ◆             |          | ⊙         |
| MHMF012L1T2  | 100        | 200         | △                    | ◆             |          | Lead wire |
| MHMF012L1U1  | 100        | 200         | △                    |               | ●        | ⊙         |
| MHMF012L1U2  | 100        | 200         | △                    |               | ●        | Lead wire |
| MHMF012L1U3  | 100        | 200         | △                    |               | ▲        | ⊙         |
| MHMF012L1U4  | 100        | 200         | △                    |               | ▲        | Lead wire |
| MHMF012L1V1  | 100        | 200         | △                    | ◆             | ●        | ⊙         |
| MHMF012L1V2  | 100        | 200         | △                    | ◆             | ●        | Lead wire |
| MHMF012L1V3  | 100        | 200         | △                    | ◆             | ▲        | ⊙         |
| MHMF012L1V4  | 100        | 200         | △                    | ◆             | ▲        | Lead wire |
| MHMF021L1A1  | 200        | 100         | ○                    |               |          | ⊙         |
| MHMF021L1A2  | 200        | 100         | ○                    |               |          | Lead wire |
| MHMF021L1B1  | 200        | 100         | ○                    | ◆             |          | ⊙         |
| MHMF021L1B2  | 200        | 100         | ○                    | ◆             |          | Lead wire |
| MHMF021L1C1  | 200        | 100         | ○                    |               | ●        | ⊙         |
| MHMF021L1C2  | 200        | 100         | ○                    |               | ●        | Lead wire |
| MHMF021L1C3  | 200        | 100         | ○                    |               | ▲        | ⊙         |
| MHMF021L1C4  | 200        | 100         | ○                    |               | ▲        | Lead wire |
| MHMF021L1D1  | 200        | 100         | ○                    | ◆             | ●        | ⊙         |
| MHMF021L1D2  | 200        | 100         | ○                    | ◆             | ●        | Lead wire |
| MHMF021L1D3  | 200        | 100         | ○                    | ◆             | ▲        | ⊙         |
| MHMF021L1D4  | 200        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MHMF021L1S1  | 200        | 100         | △                    |               |          | ⊙         |
| MHMF021L1S2  | 200        | 100         | △                    |               |          | Lead wire |
| MHMF021L1T1  | 200        | 100         | △                    | ◆             |          | ⊙         |
| MHMF021L1T2  | 200        | 100         | △                    | ◆             |          | Lead wire |
| MHMF021L1U1  | 200        | 100         | △                    |               | ●        | ⊙         |
| MHMF021L1U2  | 200        | 100         | △                    |               | ●        | Lead wire |
| MHMF021L1U3  | 200        | 100         | △                    |               | ▲        | ⊙         |
| MHMF021L1U4  | 200        | 100         | △                    |               | ▲        | Lead wire |
| MHMF021L1V1  | 200        | 100         | △                    | ◆             | ●        | ⊙         |
| MHMF021L1V2  | 200        | 100         | △                    | ◆             | ●        | Lead wire |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF021L1V3  | 200        | 100         | △                    | ◆             | ▲        | ◎         |
| MHMF021L1V4  | 200        | 100         | △                    | ◆             | ▲        | Lead wire |
| MHMF022L1A1  | 200        | 200         | ○                    |               |          | ◎         |
| MHMF022L1A2  | 200        | 200         | ○                    |               |          | Lead wire |
| MHMF022L1B1  | 200        | 200         | ○                    | ◆             |          | ◎         |
| MHMF022L1B2  | 200        | 200         | ○                    | ◆             |          | Lead wire |
| MHMF022L1C1  | 200        | 200         | ○                    |               | ●        | ◎         |
| MHMF022L1C2  | 200        | 200         | ○                    |               | ●        | Lead wire |
| MHMF022L1C3  | 200        | 200         | ○                    |               | ▲        | ◎         |
| MHMF022L1C4  | 200        | 200         | ○                    |               | ▲        | Lead wire |
| MHMF022L1D1  | 200        | 200         | ○                    | ◆             | ●        | ◎         |
| MHMF022L1D2  | 200        | 200         | ○                    | ◆             | ●        | Lead wire |
| MHMF022L1D3  | 200        | 200         | ○                    | ◆             | ▲        | ◎         |
| MHMF022L1D4  | 200        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MHMF022L1S1  | 200        | 200         | △                    |               |          | ◎         |
| MHMF022L1S2  | 200        | 200         | △                    |               |          | Lead wire |
| MHMF022L1T1  | 200        | 200         | △                    | ◆             |          | ◎         |
| MHMF022L1T2  | 200        | 200         | △                    | ◆             |          | Lead wire |
| MHMF022L1U1  | 200        | 200         | △                    |               | ●        | ◎         |
| MHMF022L1U2  | 200        | 200         | △                    |               | ●        | Lead wire |
| MHMF022L1U3  | 200        | 200         | △                    |               | ▲        | ◎         |
| MHMF022L1U4  | 200        | 200         | △                    |               | ▲        | Lead wire |
| MHMF022L1V1  | 200        | 200         | △                    | ◆             | ●        | ◎         |
| MHMF022L1V2  | 200        | 200         | △                    | ◆             | ●        | Lead wire |
| MHMF022L1V3  | 200        | 200         | △                    | ◆             | ▲        | ◎         |
| MHMF022L1V4  | 200        | 200         | △                    | ◆             | ▲        | Lead wire |
| MHMF041L1A1  | 400        | 100         | ○                    |               |          | ◎         |
| MHMF041L1A2  | 400        | 100         | ○                    |               |          | Lead wire |
| MHMF041L1B1  | 400        | 100         | ○                    | ◆             |          | ◎         |
| MHMF041L1B2  | 400        | 100         | ○                    | ◆             |          | Lead wire |
| MHMF041L1C1  | 400        | 100         | ○                    |               | ●        | ◎         |
| MHMF041L1C2  | 400        | 100         | ○                    |               | ●        | Lead wire |
| MHMF041L1C3  | 400        | 100         | ○                    |               | ▲        | ◎         |



| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF041L1C4  | 400        | 100         | ○                    |               | ▲        | Lead wire |
| MHMF041L1D1  | 400        | 100         | ○                    | ◆             | ●        | ◎         |
| MHMF041L1D2  | 400        | 100         | ○                    | ◆             | ●        | Lead wire |
| MHMF041L1D3  | 400        | 100         | ○                    | ◆             | ▲        | ◎         |
| MHMF041L1D4  | 400        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MHMF041L1S1  | 400        | 100         | △                    |               |          | ◎         |
| MHMF041L1S2  | 400        | 100         | △                    |               |          | Lead wire |
| MHMF041L1T1  | 400        | 100         | △                    | ◆             |          | ◎         |
| MHMF041L1T2  | 400        | 100         | △                    | ◆             |          | Lead wire |
| MHMF041L1U1  | 400        | 100         | △                    |               | ●        | ◎         |
| MHMF041L1U2  | 400        | 100         | △                    |               | ●        | Lead wire |
| MHMF041L1U3  | 400        | 100         | △                    |               | ▲        | ◎         |
| MHMF041L1U4  | 400        | 100         | △                    |               | ▲        | Lead wire |
| MHMF041L1V1  | 400        | 100         | △                    | ◆             | ●        | ◎         |
| MHMF041L1V2  | 400        | 100         | △                    | ◆             | ●        | Lead wire |
| MHMF041L1V3  | 400        | 100         | △                    | ◆             | ▲        | ◎         |
| MHMF041L1V4  | 400        | 100         | △                    | ◆             | ▲        | Lead wire |
| MHMF042L1A1  | 400        | 200         | ○                    |               |          | ◎         |
| MHMF042L1A2  | 400        | 200         | ○                    |               |          | Lead wire |
| MHMF042L1B1  | 400        | 200         | ○                    | ◆             |          | ◎         |
| MHMF042L1B2  | 400        | 200         | ○                    | ◆             |          | Lead wire |
| MHMF042L1C1  | 400        | 200         | ○                    |               | ●        | ◎         |
| MHMF042L1C2  | 400        | 200         | ○                    |               | ●        | Lead wire |
| MHMF042L1C3  | 400        | 200         | ○                    |               | ▲        | ◎         |
| MHMF042L1C4  | 400        | 200         | ○                    |               | ▲        | Lead wire |
| MHMF042L1D1  | 400        | 200         | ○                    | ◆             | ●        | ◎         |
| MHMF042L1D2  | 400        | 200         | ○                    | ◆             | ●        | Lead wire |
| MHMF042L1D3  | 400        | 200         | ○                    | ◆             | ▲        | ◎         |
| MHMF042L1D4  | 400        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MHMF042L1S1  | 400        | 200         | △                    |               |          | ◎         |
| MHMF042L1S2  | 400        | 200         | △                    |               |          | Lead wire |
| MHMF042L1T1  | 400        | 200         | △                    | ◆             |          | ◎         |
| MHMF042L1T2  | 400        | 200         | △                    | ◆             |          | Lead wire |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF042L1U1  | 400        | 200         | △                    |               | ●        | ◎         |
| MHMF042L1U2  | 400        | 200         | △                    |               | ●        | Lead wire |
| MHMF042L1U3  | 400        | 200         | △                    |               | ▲        | ◎         |
| MHMF042L1U4  | 400        | 200         | △                    |               | ▲        | Lead wire |
| MHMF042L1V1  | 400        | 200         | △                    | ◆             | ●        | ◎         |
| MHMF042L1V2  | 400        | 200         | △                    | ◆             | ●        | Lead wire |
| MHMF042L1V3  | 400        | 200         | △                    | ◆             | ▲        | ◎         |
| MHMF042L1V4  | 400        | 200         | △                    | ◆             | ▲        | Lead wire |
| MHMF082L1A1  | 750        | 200         | ○                    |               |          | ◎         |
| MHMF082L1A2  | 750        | 200         | ○                    |               |          | Lead wire |
| MHMF082L1B1  | 750        | 200         | ○                    | ◆             |          | ◎         |
| MHMF082L1B2  | 750        | 200         | ○                    | ◆             |          | Lead wire |
| MHMF082L1C1  | 750        | 200         | ○                    |               | ●        | ◎         |
| MHMF082L1C2  | 750        | 200         | ○                    |               | ●        | Lead wire |
| MHMF082L1C3  | 750        | 200         | ○                    |               | ▲        | ◎         |
| MHMF082L1C4  | 750        | 200         | ○                    |               | ▲        | Lead wire |
| MHMF082L1D1  | 750        | 200         | ○                    | ◆             | ●        | ◎         |
| MHMF082L1D2  | 750        | 200         | ○                    | ◆             | ●        | Lead wire |
| MHMF082L1D3  | 750        | 200         | ○                    | ◆             | ▲        | ◎         |
| MHMF082L1D4  | 750        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MHMF082L1S1  | 750        | 200         | △                    |               |          | ◎         |
| MHMF082L1S2  | 750        | 200         | △                    |               |          | Lead wire |
| MHMF082L1T1  | 750        | 200         | △                    | ◆             |          | ◎         |
| MHMF082L1T2  | 750        | 200         | △                    | ◆             |          | Lead wire |
| MHMF082L1U1  | 750        | 200         | △                    |               | ●        | ◎         |
| MHMF082L1U2  | 750        | 200         | △                    |               | ●        | Lead wire |
| MHMF082L1U3  | 750        | 200         | △                    |               | ▲        | ◎         |
| MHMF082L1U4  | 750        | 200         | △                    |               | ▲        | Lead wire |
| MHMF082L1V1  | 750        | 200         | △                    | ◆             | ●        | ◎         |
| MHMF082L1V2  | 750        | 200         | △                    | ◆             | ●        | Lead wire |
| MHMF082L1V3  | 750        | 200         | △                    | ◆             | ▲        | ◎         |
| MHMF082L1V4  | 750        | 200         | △                    | ◆             | ▲        | Lead wire |
| MHMF092L1A1  | 850        | 200         | ○                    |               |          | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MHMF092L1A2  | 850        | 200         | ○                    |               |          | Lead wire |
| MHMF092L1B1  | 850        | 200         | ○                    | ◆             |          | ◎         |
| MHMF092L1B2  | 850        | 200         | ○                    | ◆             |          | Lead wire |
| MHMF092L1C1  | 850        | 200         | ○                    |               | ●        | ◎         |
| MHMF092L1C2  | 850        | 200         | ○                    |               | ●        | Lead wire |
| MHMF092L1C3  | 850        | 200         | ○                    |               | ▲        | ◎         |
| MHMF092L1C4  | 850        | 200         | ○                    |               | ▲        | Lead wire |
| MHMF092L1D1  | 850        | 200         | ○                    | ◆             | ●        | ◎         |
| MHMF092L1D2  | 850        | 200         | ○                    | ◆             | ●        | Lead wire |
| MHMF092L1D3  | 850        | 200         | ○                    | ◆             | ▲        | ◎         |
| MHMF092L1D4  | 850        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MHMF092L1S1  | 850        | 200         | △                    |               |          | ◎         |
| MHMF092L1S2  | 850        | 200         | △                    |               |          | Lead wire |
| MHMF092L1T1  | 850        | 200         | △                    | ◆             |          | ◎         |
| MHMF092L1T2  | 850        | 200         | △                    | ◆             |          | Lead wire |
| MHMF092L1U1  | 850        | 200         | △                    |               | ●        | ◎         |
| MHMF092L1U2  | 850        | 200         | △                    |               | ●        | Lead wire |
| MHMF092L1U3  | 850        | 200         | △                    |               | ▲        | ◎         |
| MHMF092L1U4  | 850        | 200         | △                    |               | ▲        | Lead wire |
| MHMF092L1V1  | 850        | 200         | △                    | ◆             | ●        | ◎         |
| MHMF092L1V2  | 850        | 200         | △                    | ◆             | ●        | Lead wire |
| MHMF092L1V3  | 850        | 200         | △                    | ◆             | ▲        | ◎         |
| MHMF092L1V4  | 850        | 200         | △                    | ◆             | ▲        | Lead wire |

Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MQMF Series (□80 mm or less)

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MQMF011L1A1  | 100        | 100         | ○                    |               |          | ◎         |
| MQMF011L1A2  | 100        | 100         | ○                    |               |          | Lead wire |
| MQMF011L1B1  | 100        | 100         | ○                    | ◆             |          | ◎         |
| MQMF011L1B2  | 100        | 100         | ○                    | ◆             |          | Lead wire |
| MQMF011L1C1  | 100        | 100         | ○                    |               | ●        | ◎         |
| MQMF011L1C2  | 100        | 100         | ○                    |               | ●        | Lead wire |
| MQMF011L1C3  | 100        | 100         | ○                    |               | ▲        | ◎         |
| MQMF011L1C4  | 100        | 100         | ○                    |               | ▲        | Lead wire |
| MQMF011L1D1  | 100        | 100         | ○                    | ◆             | ●        | ◎         |
| MQMF011L1D2  | 100        | 100         | ○                    | ◆             | ●        | Lead wire |
| MQMF011L1D3  | 100        | 100         | ○                    | ◆             | ▲        | ◎         |
| MQMF011L1D4  | 100        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MQMF011L1S1  | 100        | 100         | △                    |               |          | ◎         |
| MQMF011L1S2  | 100        | 100         | △                    |               |          | Lead wire |
| MQMF011L1T1  | 100        | 100         | △                    | ◆             |          | ◎         |
| MQMF011L1T2  | 100        | 100         | △                    | ◆             |          | Lead wire |
| MQMF011L1U1  | 100        | 100         | △                    |               | ●        | ◎         |
| MQMF011L1U2  | 100        | 100         | △                    |               | ●        | Lead wire |
| MQMF011L1U3  | 100        | 100         | △                    |               | ▲        | ◎         |
| MQMF011L1U4  | 100        | 100         | △                    |               | ▲        | Lead wire |
| MQMF011L1V1  | 100        | 100         | △                    | ◆             | ●        | ◎         |
| MQMF011L1V2  | 100        | 100         | △                    | ◆             | ●        | Lead wire |
| MQMF011L1V3  | 100        | 100         | △                    | ◆             | ▲        | ◎         |
| MQMF011L1V4  | 100        | 100         | △                    | ◆             | ▲        | Lead wire |
| MQMF012L1A1  | 100        | 200         | ○                    |               |          | ◎         |
| MQMF012L1A2  | 100        | 200         | ○                    |               |          | Lead wire |
| MQMF012L1B1  | 100        | 200         | ○                    | ◆             |          | ◎         |
| MQMF012L1B2  | 100        | 200         | ○                    | ◆             |          | Lead wire |
| MQMF012L1C1  | 100        | 200         | ○                    |               | ●        | ◎         |
| MQMF012L1C2  | 100        | 200         | ○                    |               | ●        | Lead wire |

Automotive & Industrial Systems Company, Panasonic Corporation

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MQMF012L1C3  | 100        | 200         | ○                    |               | ▲        | ◎         |
| MQMF012L1C4  | 100        | 200         | ○                    |               | ▲        | Lead wire |
| MQMF012L1D1  | 100        | 200         | ○                    | ◆             | ●        | ◎         |
| MQMF012L1D2  | 100        | 200         | ○                    | ◆             | ●        | Lead wire |
| MQMF012L1D3  | 100        | 200         | ○                    | ◆             | ▲        | ◎         |
| MQMF012L1D4  | 100        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MQMF012L1S1  | 100        | 200         | △                    |               |          | ◎         |
| MQMF012L1S2  | 100        | 200         | △                    |               |          | Lead wire |
| MQMF012L1T1  | 100        | 200         | △                    | ◆             |          | ◎         |
| MQMF012L1T2  | 100        | 200         | △                    | ◆             |          | Lead wire |
| MQMF012L1U1  | 100        | 200         | △                    |               | ●        | ◎         |
| MQMF012L1U2  | 100        | 200         | △                    |               | ●        | Lead wire |
| MQMF012L1U3  | 100        | 200         | △                    |               | ▲        | ◎         |
| MQMF012L1U4  | 100        | 200         | △                    |               | ▲        | Lead wire |
| MQMF012L1V1  | 100        | 200         | △                    | ◆             | ●        | ◎         |
| MQMF012L1V2  | 100        | 200         | △                    | ◆             | ●        | Lead wire |
| MQMF012L1V3  | 100        | 200         | △                    | ◆             | ▲        | ◎         |
| MQMF012L1V4  | 100        | 200         | △                    | ◆             | ▲        | Lead wire |
| MQMF021L1A1  | 200        | 100         | ○                    |               |          | ◎         |
| MQMF021L1A2  | 200        | 100         | ○                    |               |          | Lead wire |
| MQMF021L1B1  | 200        | 100         | ○                    | ◆             |          | ◎         |
| MQMF021L1B2  | 200        | 100         | ○                    | ◆             |          | Lead wire |
| MQMF021L1C1  | 200        | 100         | ○                    |               | ●        | ◎         |
| MQMF021L1C2  | 200        | 100         | ○                    |               | ●        | Lead wire |
| MQMF021L1C3  | 200        | 100         | ○                    |               | ▲        | ◎         |
| MQMF021L1C4  | 200        | 100         | ○                    |               | ▲        | Lead wire |
| MQMF021L1D1  | 200        | 100         | ○                    | ◆             | ●        | ◎         |
| MQMF021L1D2  | 200        | 100         | ○                    | ◆             | ●        | Lead wire |
| MQMF021L1D3  | 200        | 100         | ○                    | ◆             | ▲        | ◎         |
| MQMF021L1D4  | 200        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MQMF021L1S1  | 200        | 100         | △                    |               |          | ◎         |
| MQMF021L1S2  | 200        | 100         | △                    |               |          | Lead wire |
| MQMF021L1T1  | 200        | 100         | △                    | ◆             |          | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MQMF021L1T2  | 200        | 100         | △                    | ◆             |          | Lead wire |
| MQMF021L1U1  | 200        | 100         | △                    |               | ●        | ◎         |
| MQMF021L1U2  | 200        | 100         | △                    |               | ●        | Lead wire |
| MQMF021L1U3  | 200        | 100         | △                    |               | ▲        | ◎         |
| MQMF021L1U4  | 200        | 100         | △                    |               | ▲        | Lead wire |
| MQMF021L1V1  | 200        | 100         | △                    | ◆             | ●        | ◎         |
| MQMF021L1V2  | 200        | 100         | △                    | ◆             | ●        | Lead wire |
| MQMF021L1V3  | 200        | 100         | △                    | ◆             | ▲        | ◎         |
| MQMF021L1V4  | 200        | 100         | △                    | ◆             | ▲        | Lead wire |
| MQMF022L1A1  | 200        | 200         | ○                    |               |          | ◎         |
| MQMF022L1A2  | 200        | 200         | ○                    |               |          | Lead wire |
| MQMF022L1B1  | 200        | 200         | ○                    | ◆             |          | ◎         |
| MQMF022L1B2  | 200        | 200         | ○                    | ◆             |          | Lead wire |
| MQMF022L1C1  | 200        | 200         | ○                    |               | ●        | ◎         |
| MQMF022L1C2  | 200        | 200         | ○                    |               | ●        | Lead wire |
| MQMF022L1C3  | 200        | 200         | ○                    |               | ▲        | ◎         |
| MQMF022L1C4  | 200        | 200         | ○                    |               | ▲        | Lead wire |
| MQMF022L1D1  | 200        | 200         | ○                    | ◆             | ●        | ◎         |
| MQMF022L1D2  | 200        | 200         | ○                    | ◆             | ●        | Lead wire |
| MQMF022L1D3  | 200        | 200         | ○                    | ◆             | ▲        | ◎         |
| MQMF022L1D4  | 200        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MQMF022L1S1  | 200        | 200         | △                    |               |          | ◎         |
| MQMF022L1S2  | 200        | 200         | △                    |               |          | Lead wire |
| MQMF022L1T1  | 200        | 200         | △                    | ◆             |          | ◎         |
| MQMF022L1T2  | 200        | 200         | △                    | ◆             |          | Lead wire |
| MQMF022L1U1  | 200        | 200         | △                    |               | ●        | ◎         |
| MQMF022L1U2  | 200        | 200         | △                    |               | ●        | Lead wire |
| MQMF022L1U3  | 200        | 200         | △                    |               | ▲        | ◎         |
| MQMF022L1U4  | 200        | 200         | △                    |               | ▲        | Lead wire |
| MQMF022L1V1  | 200        | 200         | △                    | ◆             | ●        | ◎         |
| MQMF022L1V2  | 200        | 200         | △                    | ◆             | ●        | Lead wire |
| MQMF022L1V3  | 200        | 200         | △                    | ◆             | ▲        | ◎         |
| MQMF022L1V4  | 200        | 200         | △                    | ◆             | ▲        | Lead wire |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MQMF041L1A1  | 400        | 100         | ○                    |               |          | ◎         |
| MQMF041L1A2  | 400        | 100         | ○                    |               |          | Lead wire |
| MQMF041L1B1  | 400        | 100         | ○                    | ◆             |          | ◎         |
| MQMF041L1B2  | 400        | 100         | ○                    | ◆             |          | Lead wire |
| MQMF041L1C1  | 400        | 100         | ○                    |               | ●        | ◎         |
| MQMF041L1C2  | 400        | 100         | ○                    |               | ●        | Lead wire |
| MQMF041L1C3  | 400        | 100         | ○                    |               | ▲        | ◎         |
| MQMF041L1C4  | 400        | 100         | ○                    |               | ▲        | Lead wire |
| MQMF041L1D1  | 400        | 100         | ○                    | ◆             | ●        | ◎         |
| MQMF041L1D2  | 400        | 100         | ○                    | ◆             | ●        | Lead wire |
| MQMF041L1D3  | 400        | 100         | ○                    | ◆             | ▲        | ◎         |
| MQMF041L1D4  | 400        | 100         | ○                    | ◆             | ▲        | Lead wire |
| MQMF041L1S1  | 400        | 100         | △                    |               |          | ◎         |
| MQMF041L1S2  | 400        | 100         | △                    |               |          | Lead wire |
| MQMF041L1T1  | 400        | 100         | △                    | ◆             |          | ◎         |
| MQMF041L1T2  | 400        | 100         | △                    | ◆             |          | Lead wire |
| MQMF041L1U1  | 400        | 100         | △                    |               | ●        | ◎         |
| MQMF041L1U2  | 400        | 100         | △                    |               | ●        | Lead wire |
| MQMF041L1U3  | 400        | 100         | △                    |               | ▲        | ◎         |
| MQMF041L1U4  | 400        | 100         | △                    |               | ▲        | Lead wire |
| MQMF041L1V1  | 400        | 100         | △                    | ◆             | ●        | ◎         |
| MQMF041L1V2  | 400        | 100         | △                    | ◆             | ●        | Lead wire |
| MQMF041L1V3  | 400        | 100         | △                    | ◆             | ▲        | ◎         |
| MQMF041L1V4  | 400        | 100         | △                    | ◆             | ▲        | Lead wire |
| MQMF042L1A1  | 400        | 200         | ○                    |               |          | ◎         |
| MQMF042L1A2  | 400        | 200         | ○                    |               |          | Lead wire |
| MQMF042L1B1  | 400        | 200         | ○                    | ◆             |          | ◎         |
| MQMF042L1B2  | 400        | 200         | ○                    | ◆             |          | Lead wire |
| MQMF042L1C1  | 400        | 200         | ○                    |               | ●        | ◎         |
| MQMF042L1C2  | 400        | 200         | ○                    |               | ●        | Lead wire |
| MQMF042L1C3  | 400        | 200         | ○                    |               | ▲        | ◎         |
| MQMF042L1C4  | 400        | 200         | ○                    |               | ▲        | Lead wire |
| MQMF042L1D1  | 400        | 200         | ○                    | ◆             | ●        | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MQMF042L1D2  | 400        | 200         | ○                    | ◆             | ●        | Lead wire |
| MQMF042L1D3  | 400        | 200         | ○                    | ◆             | ▲        | ◎         |
| MQMF042L1D4  | 400        | 200         | ○                    | ◆             | ▲        | Lead wire |
| MQMF042L1S1  | 400        | 200         | △                    |               |          | ◎         |
| MQMF042L1S2  | 400        | 200         | △                    |               |          | Lead wire |
| MQMF042L1T1  | 400        | 200         | △                    | ◆             |          | ◎         |
| MQMF042L1T2  | 400        | 200         | △                    | ◆             |          | Lead wire |
| MQMF042L1U1  | 400        | 200         | △                    |               | ●        | ◎         |
| MQMF042L1U2  | 400        | 200         | △                    |               | ●        | Lead wire |
| MQMF042L1U3  | 400        | 200         | △                    |               | ▲        | ◎         |
| MQMF042L1U4  | 400        | 200         | △                    |               | ▲        | Lead wire |
| MQMF042L1V1  | 400        | 200         | △                    | ◆             | ●        | ◎         |
| MQMF042L1V2  | 400        | 200         | △                    | ◆             | ●        | Lead wire |
| MQMF042L1V3  | 400        | 200         | △                    | ◆             | ▲        | ◎         |
| MQMF042L1V4  | 400        | 200         | △                    | ◆             | ▲        | Lead wire |



Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MSMF Series (□80mm or less)

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MSMF5AZL1A1  | 50         | 100/200     | ○                    |               |          | ◎         |
| MSMF5AZL1A2  | 50         | 100/200     | ○                    |               |          | Lead wire |
| MSMF5AZL1B1  | 50         | 100/200     | ○                    | ◆             |          | ◎         |
| MSMF5AZL1B2  | 50         | 100/200     | ○                    | ◆             |          | Lead wire |
| MSMF5AZL1C1  | 50         | 100/200     | ○                    |               | ●        | ◎         |
| MSMF5AZL1C2  | 50         | 100/200     | ○                    |               | ●        | Lead wire |
| MSMF5AZL1D1  | 50         | 100/200     | ○                    | ◆             | ●        | ◎         |
| MSMF5AZL1D2  | 50         | 100/200     | ○                    | ◆             | ●        | Lead wire |
| MSMF5AZL1S1  | 50         | 100/200     | △                    |               |          | ◎         |
| MSMF5AZL1S2  | 50         | 100/200     | △                    |               |          | Lead wire |
| MSMF5AZL1T1  | 50         | 100/200     | △                    | ◆             |          | ◎         |
| MSMF5AZL1T2  | 50         | 100/200     | △                    | ◆             |          | Lead wire |
| MSMF5AZL1U1  | 50         | 100/200     | △                    |               | ●        | ◎         |
| MSMF5AZL1U2  | 50         | 100/200     | △                    |               | ●        | Lead wire |
| MSMF5AZL1V1  | 50         | 100/200     | △                    | ◆             | ●        | ◎         |
| MSMF5AZL1V2  | 50         | 100/200     | △                    | ◆             | ●        | Lead wire |
| MSMF011L1A1  | 100        | 100         | ○                    |               |          | ◎         |
| MSMF011L1A2  | 100        | 100         | ○                    |               |          | Lead wire |
| MSMF011L1B1  | 100        | 100         | ○                    | ◆             |          | ◎         |
| MSMF011L1B2  | 100        | 100         | ○                    | ◆             |          | Lead wire |
| MSMF011L1C1  | 100        | 100         | ○                    |               | ●        | ◎         |
| MSMF011L1C2  | 100        | 100         | ○                    |               | ●        | Lead wire |
| MSMF011L1D1  | 100        | 100         | ○                    | ◆             | ●        | ◎         |
| MSMF011L1D2  | 100        | 100         | ○                    | ◆             | ●        | Lead wire |
| MSMF011L1S1  | 100        | 100         | △                    |               |          | ◎         |
| MSMF011L1S2  | 100        | 100         | △                    |               |          | Lead wire |
| MSMF011L1T1  | 100        | 100         | △                    | ◆             |          | ◎         |
| MSMF011L1T2  | 100        | 100         | △                    | ◆             |          | Lead wire |
| MSMF011L1U1  | 100        | 100         | △                    |               | ●        | ◎         |
| MSMF011L1U2  | 100        | 100         | △                    |               | ●        | Lead wire |

Automotive & Industrial Systems Company, Panasonic Corporation

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MSMF011L1V1  | 100        | 100         | △                    | ◆             | ●        | ◎         |
| MSMF011L1V2  | 100        | 100         | △                    | ◆             | ●        | Lead wire |
| MSMF012L1A1  | 100        | 200         | ○                    |               |          | ◎         |
| MSMF012L1A2  | 100        | 200         | ○                    |               |          | Lead wire |
| MSMF012L1B1  | 100        | 200         | ○                    | ◆             |          | ◎         |
| MSMF012L1B2  | 100        | 200         | ○                    | ◆             |          | Lead wire |
| MSMF012L1C1  | 100        | 200         | ○                    |               | ●        | ◎         |
| MSMF012L1C2  | 100        | 200         | ○                    |               | ●        | Lead wire |
| MSMF012L1D1  | 100        | 200         | ○                    | ◆             | ●        | ◎         |
| MSMF012L1D2  | 100        | 200         | ○                    | ◆             | ●        | Lead wire |
| MSMF012L1S1  | 100        | 200         | △                    |               |          | ◎         |
| MSMF012L1S2  | 100        | 200         | △                    |               |          | Lead wire |
| MSMF012L1T1  | 100        | 200         | △                    | ◆             |          | ◎         |
| MSMF012L1T2  | 100        | 200         | △                    | ◆             |          | Lead wire |
| MSMF012L1U1  | 100        | 200         | △                    |               | ●        | ◎         |
| MSMF012L1U2  | 100        | 200         | △                    |               | ●        | Lead wire |
| MSMF012L1V1  | 100        | 200         | △                    | ◆             | ●        | ◎         |
| MSMF012L1V2  | 100        | 200         | △                    | ◆             | ●        | Lead wire |
| MSMF021L1A1  | 200        | 100         | ○                    |               |          | ◎         |
| MSMF021L1A2  | 200        | 100         | ○                    |               |          | Lead wire |
| MSMF021L1B1  | 200        | 100         | ○                    | ◆             |          | ◎         |
| MSMF021L1B2  | 200        | 100         | ○                    | ◆             |          | Lead wire |
| MSMF021L1C1  | 200        | 100         | ○                    |               | ●        | ◎         |
| MSMF021L1C2  | 200        | 100         | ○                    |               | ●        | Lead wire |
| MSMF021L1D1  | 200        | 100         | ○                    | ◆             | ●        | ◎         |
| MSMF021L1D2  | 200        | 100         | ○                    | ◆             | ●        | Lead wire |
| MSMF021L1S1  | 200        | 100         | △                    |               |          | ◎         |
| MSMF021L1S2  | 200        | 100         | △                    |               |          | Lead wire |
| MSMF021L1T1  | 200        | 100         | △                    | ◆             |          | ◎         |
| MSMF021L1T2  | 200        | 100         | △                    | ◆             |          | Lead wire |
| MSMF021L1U1  | 200        | 100         | △                    |               | ●        | ◎         |
| MSMF021L1U2  | 200        | 100         | △                    |               | ●        | Lead wire |
| MSMF021L1V1  | 200        | 100         | △                    | ◆             | ●        | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MSMF021L1V2  | 200        | 100         | △                    | ◆             | ●        | Lead wire |
| MSMF022L1A1  | 200        | 200         | ○                    |               |          | ◎         |
| MSMF022L1A2  | 200        | 200         | ○                    |               |          | Lead wire |
| MSMF022L1B1  | 200        | 200         | ○                    | ◆             |          | ◎         |
| MSMF022L1B2  | 200        | 200         | ○                    | ◆             |          | Lead wire |
| MSMF022L1C1  | 200        | 200         | ○                    |               | ●        | ◎         |
| MSMF022L1C2  | 200        | 200         | ○                    |               | ●        | Lead wire |
| MSMF022L1D1  | 200        | 200         | ○                    | ◆             | ●        | ◎         |
| MSMF022L1D2  | 200        | 200         | ○                    | ◆             | ●        | Lead wire |
| MSMF022L1S1  | 200        | 200         | △                    |               |          | ◎         |
| MSMF022L1S2  | 200        | 200         | △                    |               |          | Lead wire |
| MSMF022L1T1  | 200        | 200         | △                    | ◆             |          | ◎         |
| MSMF022L1T2  | 200        | 200         | △                    | ◆             |          | Lead wire |
| MSMF022L1U1  | 200        | 200         | △                    |               | ●        | ◎         |
| MSMF022L1U2  | 200        | 200         | △                    |               | ●        | Lead wire |
| MSMF022L1V1  | 200        | 200         | △                    | ◆             | ●        | ◎         |
| MSMF022L1V2  | 200        | 200         | △                    | ◆             | ●        | Lead wire |
| MSMF041L1A1  | 400        | 100         | ○                    |               |          | ◎         |
| MSMF041L1A2  | 400        | 100         | ○                    |               |          | Lead wire |
| MSMF041L1B1  | 400        | 100         | ○                    | ◆             |          | ◎         |
| MSMF041L1B2  | 400        | 100         | ○                    | ◆             |          | Lead wire |
| MSMF041L1C1  | 400        | 100         | ○                    |               | ●        | ◎         |
| MSMF041L1C2  | 400        | 100         | ○                    |               | ●        | Lead wire |
| MSMF041L1D1  | 400        | 100         | ○                    | ◆             | ●        | ◎         |
| MSMF041L1D2  | 400        | 100         | ○                    | ◆             | ●        | Lead wire |
| MSMF041L1S1  | 400        | 100         | △                    |               |          | ◎         |
| MSMF041L1S2  | 400        | 100         | △                    |               |          | Lead wire |
| MSMF041L1T1  | 400        | 100         | △                    | ◆             |          | ◎         |
| MSMF041L1T2  | 400        | 100         | △                    | ◆             |          | Lead wire |
| MSMF041L1U1  | 400        | 100         | △                    |               | ●        | ◎         |
| MSMF041L1U2  | 400        | 100         | △                    |               | ●        | Lead wire |
| MSMF041L1V1  | 400        | 100         | △                    | ◆             | ●        | ◎         |
| MSMF041L1V2  | 400        | 100         | △                    | ◆             | ●        | Lead wire |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MSMF042L1A1  | 400        | 200         | ○                    |               |          | ◎         |
| MSMF042L1A2  | 400        | 200         | ○                    |               |          | Lead wire |
| MSMF042L1B1  | 400        | 200         | ○                    | ◆             |          | ◎         |
| MSMF042L1B2  | 400        | 200         | ○                    | ◆             |          | Lead wire |
| MSMF042L1C1  | 400        | 200         | ○                    |               | ●        | ◎         |
| MSMF042L1C2  | 400        | 200         | ○                    |               | ●        | Lead wire |
| MSMF042L1D1  | 400        | 200         | ○                    | ◆             | ●        | ◎         |
| MSMF042L1D2  | 400        | 200         | ○                    | ◆             | ●        | Lead wire |
| MSMF042L1S1  | 400        | 200         | △                    |               |          | ◎         |
| MSMF042L1S2  | 400        | 200         | △                    |               |          | Lead wire |
| MSMF042L1T1  | 400        | 200         | △                    | ◆             |          | ◎         |
| MSMF042L1T2  | 400        | 200         | △                    | ◆             |          | Lead wire |
| MSMF042L1U1  | 400        | 200         | △                    |               | ●        | ◎         |
| MSMF042L1U2  | 400        | 200         | △                    |               | ●        | Lead wire |
| MSMF042L1V1  | 400        | 200         | △                    | ◆             | ●        | ◎         |
| MSMF042L1V2  | 400        | 200         | △                    | ◆             | ●        | Lead wire |
| MSMF082L1A1  | 750        | 200         | ○                    |               |          | ◎         |
| MSMF082L1A2  | 750        | 200         | ○                    |               |          | Lead wire |
| MSMF082L1B1  | 750        | 200         | ○                    | ◆             |          | ◎         |
| MSMF082L1B2  | 750        | 200         | ○                    | ◆             |          | Lead wire |
| MSMF082L1C1  | 750        | 200         | ○                    |               | ●        | ◎         |
| MSMF082L1C2  | 750        | 200         | ○                    |               | ●        | Lead wire |
| MSMF082L1D1  | 750        | 200         | ○                    | ◆             | ●        | ◎         |
| MSMF082L1D2  | 750        | 200         | ○                    | ◆             | ●        | Lead wire |
| MSMF082L1S1  | 750        | 200         | △                    |               |          | ◎         |
| MSMF082L1S2  | 750        | 200         | △                    |               |          | Lead wire |
| MSMF082L1T1  | 750        | 200         | △                    | ◆             |          | ◎         |
| MSMF082L1T2  | 750        | 200         | △                    | ◆             |          | Lead wire |
| MSMF082L1U1  | 750        | 200         | △                    |               | ●        | ◎         |
| MSMF082L1U2  | 750        | 200         | △                    |               | ●        | Lead wire |
| MSMF082L1V1  | 750        | 200         | △                    | ◆             | ●        | ◎         |
| MSMF082L1V2  | 750        | 200         | △                    | ◆             | ●        | Lead wire |
| MSMF092L1A1  | 1000       | 200         | ○                    |               |          | ◎         |

| Model number | Output (W) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|------------|-------------|----------------------|---------------|----------|-----------|
| MSMF092L1A2  | 1000       | 200         | ○                    |               |          | Lead wire |
| MSMF092L1B1  | 1000       | 200         | ○                    | ◆             |          | ◎         |
| MSMF092L1B2  | 1000       | 200         | ○                    | ◆             |          | Lead wire |
| MSMF092L1C1  | 1000       | 200         | ○                    |               | ●        | ◎         |
| MSMF092L1C2  | 1000       | 200         | ○                    |               | ●        | Lead wire |
| MSMF092L1D1  | 1000       | 200         | ○                    | ◆             | ●        | ◎         |
| MSMF092L1D2  | 1000       | 200         | ○                    | ◆             | ●        | Lead wire |
| MSMF092L1S1  | 1000       | 200         | △                    |               |          | ◎         |
| MSMF092L1S2  | 1000       | 200         | △                    |               |          | Lead wire |
| MSMF092L1T1  | 1000       | 200         | △                    | ◆             |          | ◎         |
| MSMF092L1T2  | 1000       | 200         | △                    | ◆             |          | Lead wire |
| MSMF092L1U1  | 1000       | 200         | △                    |               | ●        | ◎         |
| MSMF092L1U2  | 1000       | 200         | △                    |               | ●        | Lead wire |
| MSMF092L1V1  | 1000       | 200         | △                    | ◆             | ●        | ◎         |
| MSMF092L1V2  | 1000       | 200         | △                    | ◆             | ●        | Lead wire |

Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MSMF Series (□100 mm or more)

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MSMF102L1C5  | 1.0         | 200         | ○                    |               | ●        | ○         |
| MSMF102L1C6  | 1.0         | 200         | ○                    |               | ●        | △         |
| MSMF102L1C7  | 1.0         | 200         | ○                    |               | ▲        | ○         |
| MSMF102L1C8  | 1.0         | 200         | ○                    |               | ▲        | △         |
| MSMF102L1D5  | 1.0         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF102L1D6  | 1.0         | 200         | ○                    | ◆             | ●        | △         |
| MSMF102L1D7  | 1.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF102L1D8  | 1.0         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF102L1G5  | 1.0         | 200         | □                    |               | ●        | ○         |
| MSMF102L1G6  | 1.0         | 200         | □                    |               | ●        | △         |
| MSMF102L1G7  | 1.0         | 200         | □                    |               | ▲        | ○         |
| MSMF102L1G8  | 1.0         | 200         | □                    |               | ▲        | △         |
| MSMF102L1H5  | 1.0         | 200         | □                    | ◆             | ●        | ○         |
| MSMF102L1H6  | 1.0         | 200         | □                    | ◆             | ●        | △         |
| MSMF102L1H7  | 1.0         | 200         | □                    | ◆             | ▲        | ○         |
| MSMF102L1H8  | 1.0         | 200         | □                    | ◆             | ▲        | △         |
| MSMF152L1C5  | 1.5         | 200         | ○                    |               | ●        | ○         |
| MSMF152L1C6  | 1.5         | 200         | ○                    |               | ●        | △         |
| MSMF152L1C7  | 1.5         | 200         | ○                    |               | ▲        | ○         |
| MSMF152L1C8  | 1.5         | 200         | ○                    |               | ▲        | △         |
| MSMF152L1D5  | 1.5         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF152L1D6  | 1.5         | 200         | ○                    | ◆             | ●        | △         |
| MSMF152L1D7  | 1.5         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF152L1D8  | 1.5         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF152L1G5  | 1.5         | 200         | □                    |               | ●        | ○         |
| MSMF152L1G6  | 1.5         | 200         | □                    |               | ●        | △         |
| MSMF152L1G7  | 1.5         | 200         | □                    |               | ▲        | ○         |
| MSMF152L1G8  | 1.5         | 200         | □                    |               | ▲        | △         |
| MSMF152L1H5  | 1.5         | 200         | □                    | ◆             | ●        | ○         |
| MSMF152L1H6  | 1.5         | 200         | □                    | ◆             | ●        | △         |

Automotive & Industrial Systems Company, Panasonic Corporation

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MSMF152L1H7  | 1.5         | 200         | □                    | ◆             | ▲        | ○         |
| MSMF152L1H8  | 1.5         | 200         | □                    | ◆             | ▲        | △         |
| MSMF202L1C5  | 2.0         | 200         | ○                    |               | ●        | ○         |
| MSMF202L1C6  | 2.0         | 200         | ○                    |               | ●        | △         |
| MSMF202L1C7  | 2.0         | 200         | ○                    |               | ▲        | ○         |
| MSMF202L1C8  | 2.0         | 200         | ○                    |               | ▲        | △         |
| MSMF202L1D5  | 2.0         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF202L1D6  | 2.0         | 200         | ○                    | ◆             | ●        | △         |
| MSMF202L1D7  | 2.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF202L1D8  | 2.0         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF202L1G5  | 2.0         | 200         | □                    |               | ●        | ○         |
| MSMF202L1G6  | 2.0         | 200         | □                    |               | ●        | △         |
| MSMF202L1G7  | 2.0         | 200         | □                    |               | ▲        | ○         |
| MSMF202L1G8  | 2.0         | 200         | □                    |               | ▲        | △         |
| MSMF202L1H5  | 2.0         | 200         | □                    | ◆             | ●        | ○         |
| MSMF202L1H6  | 2.0         | 200         | □                    | ◆             | ●        | △         |
| MSMF202L1H7  | 2.0         | 200         | □                    | ◆             | ▲        | ○         |
| MSMF202L1H8  | 2.0         | 200         | □                    | ◆             | ▲        | △         |
| MSMF302L1C5  | 3.0         | 200         | ○                    |               | ●        | ○         |
| MSMF302L1C6  | 3.0         | 200         | ○                    |               | ●        | △         |
| MSMF302L1C7  | 3.0         | 200         | ○                    |               | ▲        | ○         |
| MSMF302L1C8  | 3.0         | 200         | ○                    |               | ▲        | △         |
| MSMF302L1D5  | 3.0         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF302L1D6  | 3.0         | 200         | ○                    | ◆             | ●        | △         |
| MSMF302L1D7  | 3.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF302L1D8  | 3.0         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF302L1G5  | 3.0         | 200         | □                    |               | ●        | ○         |
| MSMF302L1G6  | 3.0         | 200         | □                    |               | ●        | △         |
| MSMF302L1G7  | 3.0         | 200         | □                    |               | ▲        | ○         |
| MSMF302L1G8  | 3.0         | 200         | □                    |               | ▲        | △         |
| MSMF302L1H5  | 3.0         | 200         | □                    | ◆             | ●        | ○         |
| MSMF302L1H6  | 3.0         | 200         | □                    | ◆             | ●        | △         |
| MSMF302L1H7  | 3.0         | 200         | □                    | ◆             | ▲        | ○         |

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MSMF302L1H8  | 3.0         | 200         | □                    | ◆             | ▲        | △         |
| MSMF402L1C5  | 4.0         | 200         | ○                    |               | ●        | ○         |
| MSMF402L1C6  | 4.0         | 200         | ○                    |               | ●        | △         |
| MSMF402L1C7  | 4.0         | 200         | ○                    |               | ▲        | ○         |
| MSMF402L1C8  | 4.0         | 200         | ○                    |               | ▲        | △         |
| MSMF402L1D5  | 4.0         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF402L1D6  | 4.0         | 200         | ○                    | ◆             | ●        | △         |
| MSMF402L1D7  | 4.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF402L1D8  | 4.0         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF402L1G5  | 4.0         | 200         | □                    |               | ●        | ○         |
| MSMF402L1G6  | 4.0         | 200         | □                    |               | ●        | △         |
| MSMF402L1G7  | 4.0         | 200         | □                    |               | ▲        | ○         |
| MSMF402L1G8  | 4.0         | 200         | □                    |               | ▲        | △         |
| MSMF402L1H5  | 4.0         | 200         | □                    | ◆             | ●        | ○         |
| MSMF402L1H6  | 4.0         | 200         | □                    | ◆             | ●        | △         |
| MSMF402L1H7  | 4.0         | 200         | □                    | ◆             | ▲        | ○         |
| MSMF402L1H8  | 4.0         | 200         | □                    | ◆             | ▲        | △         |
| MSMF502L1C5  | 5.0         | 200         | ○                    |               | ●        | ○         |
| MSMF502L1C6  | 5.0         | 200         | ○                    |               | ●        | △         |
| MSMF502L1C7  | 5.0         | 200         | ○                    |               | ▲        | ○         |
| MSMF502L1C8  | 5.0         | 200         | ○                    |               | ▲        | △         |
| MSMF502L1D5  | 5.0         | 200         | ○                    | ◆             | ●        | ○         |
| MSMF502L1D6  | 5.0         | 200         | ○                    | ◆             | ●        | △         |
| MSMF502L1D7  | 5.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MSMF502L1D8  | 5.0         | 200         | ○                    | ◆             | ▲        | △         |
| MSMF502L1G5  | 5.0         | 200         | □                    |               | ●        | ○         |
| MSMF502L1G6  | 5.0         | 200         | □                    |               | ●        | △         |
| MSMF502L1G7  | 5.0         | 200         | □                    |               | ▲        | ○         |
| MSMF502L1G8  | 5.0         | 200         | □                    |               | ▲        | △         |
| MSMF502L1H5  | 5.0         | 200         | □                    | ◆             | ●        | ○         |
| MSMF502L1H6  | 5.0         | 200         | □                    | ◆             | ●        | △         |
| MSMF502L1H7  | 5.0         | 200         | □                    | ◆             | ▲        | ○         |
| MSMF502L1H8  | 5.0         | 200         | □                    | ◆             | ▲        | △         |



Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MDMF Series (□130 mm or more)

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MDMF102L1C5  | 1.0         | 200         | ○                    |               | ●        | ○         |
| MDMF102L1C6  | 1.0         | 200         | ○                    |               | ●        | △         |
| MDMF102L1C7  | 1.0         | 200         | ○                    |               | ▲        | ○         |
| MDMF102L1C8  | 1.0         | 200         | ○                    |               | ▲        | △         |
| MDMF102L1D5  | 1.0         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF102L1D6  | 1.0         | 200         | ○                    | ◆             | ●        | △         |
| MDMF102L1D7  | 1.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF102L1D8  | 1.0         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF102L1G5  | 1.0         | 200         | □                    |               | ●        | ○         |
| MDMF102L1G6  | 1.0         | 200         | □                    |               | ●        | △         |
| MDMF102L1G7  | 1.0         | 200         | □                    |               | ▲        | ○         |
| MDMF102L1G8  | 1.0         | 200         | □                    |               | ▲        | △         |
| MDMF102L1H5  | 1.0         | 200         | □                    | ◆             | ●        | ○         |
| MDMF102L1H6  | 1.0         | 200         | □                    | ◆             | ●        | △         |
| MDMF102L1H7  | 1.0         | 200         | □                    | ◆             | ▲        | ○         |
| MDMF102L1H8  | 1.0         | 200         | □                    | ◆             | ▲        | △         |
| MDMF152L1C5  | 1.5         | 200         | ○                    |               | ●        | ○         |
| MDMF152L1C6  | 1.5         | 200         | ○                    |               | ●        | △         |
| MDMF152L1C7  | 1.5         | 200         | ○                    |               | ▲        | ○         |
| MDMF152L1C8  | 1.5         | 200         | ○                    |               | ▲        | △         |
| MDMF152L1D5  | 1.5         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF152L1D6  | 1.5         | 200         | ○                    | ◆             | ●        | △         |
| MDMF152L1D7  | 1.5         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF152L1D8  | 1.5         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF152L1G5  | 1.5         | 200         | □                    |               | ●        | ○         |
| MDMF152L1G6  | 1.5         | 200         | □                    |               | ●        | △         |
| MDMF152L1G7  | 1.5         | 200         | □                    |               | ▲        | ○         |
| MDMF152L1G8  | 1.5         | 200         | □                    |               | ▲        | △         |
| MDMF152L1H5  | 1.5         | 200         | □                    | ◆             | ●        | ○         |
| MDMF152L1H6  | 1.5         | 200         | □                    | ◆             | ●        | △         |

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MDMF152L1H7  | 1.5         | 200         | □                    | ◆             | ▲        | ○         |
| MDMF152L1H8  | 1.5         | 200         | □                    | ◆             | ▲        | △         |
| MDMF202L1C5  | 2.0         | 200         | ○                    |               | ●        | ○         |
| MDMF202L1C6  | 2.0         | 200         | ○                    |               | ●        | △         |
| MDMF202L1C7  | 2.0         | 200         | ○                    |               | ▲        | ○         |
| MDMF202L1C8  | 2.0         | 200         | ○                    |               | ▲        | △         |
| MDMF202L1D5  | 2.0         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF202L1D6  | 2.0         | 200         | ○                    | ◆             | ●        | △         |
| MDMF202L1D7  | 2.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF202L1D8  | 2.0         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF202L1G5  | 2.0         | 200         | □                    |               | ●        | ○         |
| MDMF202L1G6  | 2.0         | 200         | □                    |               | ●        | △         |
| MDMF202L1G7  | 2.0         | 200         | □                    |               | ▲        | ○         |
| MDMF202L1G8  | 2.0         | 200         | □                    |               | ▲        | △         |
| MDMF202L1H5  | 2.0         | 200         | □                    | ◆             | ●        | ○         |
| MDMF202L1H6  | 2.0         | 200         | □                    | ◆             | ●        | △         |
| MDMF202L1H7  | 2.0         | 200         | □                    | ◆             | ▲        | ○         |
| MDMF202L1H8  | 2.0         | 200         | □                    | ◆             | ▲        | △         |
| MDMF302L1C5  | 3.0         | 200         | ○                    |               | ●        | ○         |
| MDMF302L1C6  | 3.0         | 200         | ○                    |               | ●        | △         |
| MDMF302L1C7  | 3.0         | 200         | ○                    |               | ▲        | ○         |
| MDMF302L1C8  | 3.0         | 200         | ○                    |               | ▲        | △         |
| MDMF302L1D5  | 3.0         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF302L1D6  | 3.0         | 200         | ○                    | ◆             | ●        | △         |
| MDMF302L1D7  | 3.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF302L1D8  | 3.0         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF302L1G5  | 3.0         | 200         | □                    |               | ●        | ○         |
| MDMF302L1G6  | 3.0         | 200         | □                    |               | ●        | △         |
| MDMF302L1G7  | 3.0         | 200         | □                    |               | ▲        | ○         |
| MDMF302L1G8  | 3.0         | 200         | □                    |               | ▲        | △         |
| MDMF302L1H5  | 3.0         | 200         | □                    | ◆             | ●        | ○         |
| MDMF302L1H6  | 3.0         | 200         | □                    | ◆             | ●        | △         |
| MDMF302L1H7  | 3.0         | 200         | □                    | ◆             | ▲        | ○         |

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MDMF302L1H8  | 3.0         | 200         | □                    | ◆             | ▲        | △         |
| MDMF402L1C5  | 4.0         | 200         | ○                    |               | ●        | ○         |
| MDMF402L1C6  | 4.0         | 200         | ○                    |               | ●        | △         |
| MDMF402L1C7  | 4.0         | 200         | ○                    |               | ▲        | ○         |
| MDMF402L1C8  | 4.0         | 200         | ○                    |               | ▲        | △         |
| MDMF402L1D5  | 4.0         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF402L1D6  | 4.0         | 200         | ○                    | ◆             | ●        | △         |
| MDMF402L1D7  | 4.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF402L1D8  | 4.0         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF402L1G5  | 4.0         | 200         | □                    |               | ●        | ○         |
| MDMF402L1G6  | 4.0         | 200         | □                    |               | ●        | △         |
| MDMF402L1G7  | 4.0         | 200         | □                    |               | ▲        | ○         |
| MDMF402L1G8  | 4.0         | 200         | □                    |               | ▲        | △         |
| MDMF402L1H5  | 4.0         | 200         | □                    | ◆             | ●        | ○         |
| MDMF402L1H6  | 4.0         | 200         | □                    | ◆             | ●        | △         |
| MDMF402L1H7  | 4.0         | 200         | □                    | ◆             | ▲        | ○         |
| MDMF402L1H8  | 4.0         | 200         | □                    | ◆             | ▲        | △         |
| MDMF502L1C5  | 5.0         | 200         | ○                    |               | ●        | ○         |
| MDMF502L1C6  | 5.0         | 200         | ○                    |               | ●        | △         |
| MDMF502L1C7  | 5.0         | 200         | ○                    |               | ▲        | ○         |
| MDMF502L1C8  | 5.0         | 200         | ○                    |               | ▲        | △         |
| MDMF502L1D5  | 5.0         | 200         | ○                    | ◆             | ●        | ○         |
| MDMF502L1D6  | 5.0         | 200         | ○                    | ◆             | ●        | △         |
| MDMF502L1D7  | 5.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MDMF502L1D8  | 5.0         | 200         | ○                    | ◆             | ▲        | △         |
| MDMF502L1G5  | 5.0         | 200         | □                    |               | ●        | ○         |
| MDMF502L1G6  | 5.0         | 200         | □                    |               | ●        | △         |
| MDMF502L1G7  | 5.0         | 200         | □                    |               | ▲        | ○         |
| MDMF502L1G8  | 5.0         | 200         | □                    |               | ▲        | △         |
| MDMF502L1H5  | 5.0         | 200         | □                    | ◆             | ●        | ○         |
| MDMF502L1H6  | 5.0         | 200         | □                    | ◆             | ●        | △         |
| MDMF502L1H7  | 5.0         | 200         | □                    | ◆             | ▲        | ○         |
| MDMF502L1H8  | 5.0         | 200         | □                    | ◆             | ▲        | △         |

Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MHMF Series (130 mm or more)

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MHMF102L1C5  | 1.0         | 200         | ○                    |               | ●        | ○         |
| MHMF102L1C6  | 1.0         | 200         | ○                    |               | ●        | △         |
| MHMF102L1C7  | 1.0         | 200         | ○                    |               | ▲        | ○         |
| MHMF102L1C8  | 1.0         | 200         | ○                    |               | ▲        | △         |
| MHMF102L1D5  | 1.0         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF102L1D6  | 1.0         | 200         | ○                    | ◆             | ●        | △         |
| MHMF102L1D7  | 1.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF102L1D8  | 1.0         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF102L1G5  | 1.0         | 200         | □                    |               | ●        | ○         |
| MHMF102L1G6  | 1.0         | 200         | □                    |               | ●        | △         |
| MHMF102L1G7  | 1.0         | 200         | □                    |               | ▲        | ○         |
| MHMF102L1G8  | 1.0         | 200         | □                    |               | ▲        | △         |
| MHMF102L1H5  | 1.0         | 200         | □                    | ◆             | ●        | ○         |
| MHMF102L1H6  | 1.0         | 200         | □                    | ◆             | ●        | △         |
| MHMF102L1H7  | 1.0         | 200         | □                    | ◆             | ▲        | ○         |
| MHMF102L1H8  | 1.0         | 200         | □                    | ◆             | ▲        | △         |
| MHMF152L1C5  | 1.5         | 200         | ○                    |               | ●        | ○         |
| MHMF152L1C6  | 1.5         | 200         | ○                    |               | ●        | △         |
| MHMF152L1C7  | 1.5         | 200         | ○                    |               | ▲        | ○         |
| MHMF152L1C8  | 1.5         | 200         | ○                    |               | ▲        | △         |
| MHMF152L1D5  | 1.5         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF152L1D6  | 1.5         | 200         | ○                    | ◆             | ●        | △         |
| MHMF152L1D7  | 1.5         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF152L1D8  | 1.5         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF152L1G5  | 1.5         | 200         | □                    |               | ●        | ○         |
| MHMF152L1G6  | 1.5         | 200         | □                    |               | ●        | △         |
| MHMF152L1G7  | 1.5         | 200         | □                    |               | ▲        | ○         |
| MHMF152L1G8  | 1.5         | 200         | □                    |               | ▲        | △         |
| MHMF152L1H5  | 1.5         | 200         | □                    | ◆             | ●        | ○         |
| MHMF152L1H6  | 1.5         | 200         | □                    | ◆             | ●        | △         |

Automotive & Industrial Systems Company, Panasonic Corporation

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MHMF152L1H7  | 1.5         | 200         | □                    | ◆             | ▲        | ○         |
| MHMF152L1H8  | 1.5         | 200         | □                    | ◆             | ▲        | △         |
| MHMF202L1C5  | 2.0         | 200         | ○                    |               | ●        | ○         |
| MHMF202L1C6  | 2.0         | 200         | ○                    |               | ●        | △         |
| MHMF202L1C7  | 2.0         | 200         | ○                    |               | ▲        | ○         |
| MHMF202L1C8  | 2.0         | 200         | ○                    |               | ▲        | △         |
| MHMF202L1D5  | 2.0         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF202L1D6  | 2.0         | 200         | ○                    | ◆             | ●        | △         |
| MHMF202L1D7  | 2.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF202L1D8  | 2.0         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF202L1G5  | 2.0         | 200         | □                    |               | ●        | ○         |
| MHMF202L1G6  | 2.0         | 200         | □                    |               | ●        | △         |
| MHMF202L1G7  | 2.0         | 200         | □                    |               | ▲        | ○         |
| MHMF202L1G8  | 2.0         | 200         | □                    |               | ▲        | △         |
| MHMF202L1H5  | 2.0         | 200         | □                    | ◆             | ●        | ○         |
| MHMF202L1H6  | 2.0         | 200         | □                    | ◆             | ●        | △         |
| MHMF202L1H7  | 2.0         | 200         | □                    | ◆             | ▲        | ○         |
| MHMF202L1H8  | 2.0         | 200         | □                    | ◆             | ▲        | △         |
| MHMF302L1C5  | 3.0         | 200         | ○                    |               | ●        | ○         |
| MHMF302L1C6  | 3.0         | 200         | ○                    |               | ●        | △         |
| MHMF302L1C7  | 3.0         | 200         | ○                    |               | ▲        | ○         |
| MHMF302L1C8  | 3.0         | 200         | ○                    |               | ▲        | △         |
| MHMF302L1D5  | 3.0         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF302L1D6  | 3.0         | 200         | ○                    | ◆             | ●        | △         |
| MHMF302L1D7  | 3.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF302L1D8  | 3.0         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF302L1G5  | 3.0         | 200         | □                    |               | ●        | ○         |
| MHMF302L1G6  | 3.0         | 200         | □                    |               | ●        | △         |
| MHMF302L1G7  | 3.0         | 200         | □                    |               | ▲        | ○         |
| MHMF302L1G8  | 3.0         | 200         | □                    |               | ▲        | △         |
| MHMF302L1H5  | 3.0         | 200         | □                    | ◆             | ●        | ○         |
| MHMF302L1H6  | 3.0         | 200         | □                    | ◆             | ●        | △         |
| MHMF302L1H7  | 3.0         | 200         | □                    | ◆             | ▲        | ○         |

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MHMF302L1H8  | 3.0         | 200         | □                    | ◆             | ▲        | △         |
| MHMF402L1C5  | 4.0         | 200         | ○                    |               | ●        | ○         |
| MHMF402L1C6  | 4.0         | 200         | ○                    |               | ●        | △         |
| MHMF402L1C7  | 4.0         | 200         | ○                    |               | ▲        | ○         |
| MHMF402L1C8  | 4.0         | 200         | ○                    |               | ▲        | △         |
| MHMF402L1D5  | 4.0         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF402L1D6  | 4.0         | 200         | ○                    | ◆             | ●        | △         |
| MHMF402L1D7  | 4.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF402L1D8  | 4.0         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF402L1G5  | 4.0         | 200         | □                    |               | ●        | ○         |
| MHMF402L1G6  | 4.0         | 200         | □                    |               | ●        | △         |
| MHMF402L1G7  | 4.0         | 200         | □                    |               | ▲        | ○         |
| MHMF402L1G8  | 4.0         | 200         | □                    |               | ▲        | △         |
| MHMF402L1H5  | 4.0         | 200         | □                    | ◆             | ●        | ○         |
| MHMF402L1H6  | 4.0         | 200         | □                    | ◆             | ●        | △         |
| MHMF402L1H7  | 4.0         | 200         | □                    | ◆             | ▲        | ○         |
| MHMF402L1H8  | 4.0         | 200         | □                    | ◆             | ▲        | △         |
| MHMF502L1C5  | 5.0         | 200         | ○                    |               | ●        | ○         |
| MHMF502L1C6  | 5.0         | 200         | ○                    |               | ●        | △         |
| MHMF502L1C7  | 5.0         | 200         | ○                    |               | ▲        | ○         |
| MHMF502L1C8  | 5.0         | 200         | ○                    |               | ▲        | △         |
| MHMF502L1D5  | 5.0         | 200         | ○                    | ◆             | ●        | ○         |
| MHMF502L1D6  | 5.0         | 200         | ○                    | ◆             | ●        | △         |
| MHMF502L1D7  | 5.0         | 200         | ○                    | ◆             | ▲        | ○         |
| MHMF502L1D8  | 5.0         | 200         | ○                    | ◆             | ▲        | △         |
| MHMF502L1G5  | 5.0         | 200         | □                    |               | ●        | ○         |
| MHMF502L1G6  | 5.0         | 200         | □                    |               | ●        | △         |
| MHMF502L1G7  | 5.0         | 200         | □                    |               | ▲        | ○         |
| MHMF502L1G8  | 5.0         | 200         | □                    |               | ▲        | △         |
| MHMF502L1H5  | 5.0         | 200         | □                    | ◆             | ●        | ○         |
| MHMF502L1H6  | 5.0         | 200         | □                    | ◆             | ●        | △         |
| MHMF502L1H7  | 5.0         | 200         | □                    | ◆             | ▲        | ○         |
| MHMF502L1H8  | 5.0         | 200         | □                    | ◆             | ▲        | △         |

Category indications

(Shaft specifications: straight = ○, with key = □, tap with key = △)

(Oil seal: included = ●, included (protective lip) = ▲)

(Motor I/F: JN = ◎, JN2 = ○, JL10 = △)

• MINAS A6 MGMF Series (□130 mm or more)

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MGMF092L1C5  | 0.85        | 200         | ○                    |               | ●        | ○         |
| MGMF092L1C6  | 0.85        | 200         | ○                    |               | ●        | △         |
| MGMF092L1C7  | 0.85        | 200         | ○                    |               | ▲        | ○         |
| MGMF092L1C8  | 0.85        | 200         | ○                    |               | ▲        | △         |
| MGMF092L1D5  | 0.85        | 200         | ○                    | ◆             | ●        | ○         |
| MGMF092L1D6  | 0.85        | 200         | ○                    | ◆             | ●        | △         |
| MGMF092L1D7  | 0.85        | 200         | ○                    | ◆             | ▲        | ○         |
| MGMF092L1D8  | 0.85        | 200         | ○                    | ◆             | ▲        | △         |
| MGMF092L1G5  | 0.85        | 200         | □                    |               | ●        | ○         |
| MGMF092L1G6  | 0.85        | 200         | □                    |               | ●        | △         |
| MGMF092L1G7  | 0.85        | 200         | □                    |               | ▲        | ○         |
| MGMF092L1G8  | 0.85        | 200         | □                    |               | ▲        | △         |
| MGMF092L1H5  | 0.85        | 200         | □                    | ◆             | ●        | ○         |
| MGMF092L1H6  | 0.85        | 200         | □                    | ◆             | ●        | △         |
| MGMF092L1H7  | 0.85        | 200         | □                    | ◆             | ▲        | ○         |
| MGMF092L1H8  | 0.85        | 200         | □                    | ◆             | ▲        | △         |
| MGMF132L1C5  | 1.3         | 200         | ○                    |               | ●        | ○         |
| MGMF132L1C6  | 1.3         | 200         | ○                    |               | ●        | △         |
| MGMF132L1C7  | 1.3         | 200         | ○                    |               | ▲        | ○         |
| MGMF132L1C8  | 1.3         | 200         | ○                    |               | ▲        | △         |
| MGMF132L1D5  | 1.3         | 200         | ○                    | ◆             | ●        | ○         |
| MGMF132L1D6  | 1.3         | 200         | ○                    | ◆             | ●        | △         |
| MGMF132L1D7  | 1.3         | 200         | ○                    | ◆             | ▲        | ○         |
| MGMF132L1D8  | 1.3         | 200         | ○                    | ◆             | ▲        | △         |
| MGMF132L1G5  | 1.3         | 200         | □                    |               | ●        | ○         |
| MGMF132L1G6  | 1.3         | 200         | □                    |               | ●        | △         |
| MGMF132L1G7  | 1.3         | 200         | □                    |               | ▲        | ○         |
| MGMF132L1G8  | 1.3         | 200         | □                    |               | ▲        | △         |
| MGMF132L1H5  | 1.3         | 200         | □                    | ◆             | ●        | ○         |
| MGMF132L1H6  | 1.3         | 200         | □                    | ◆             | ●        | △         |

| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MGMF132L1H7  | 1.3         | 200         | □                    | ◆             | ▲        | ○         |
| MGMF132L1H8  | 1.3         | 200         | □                    | ◆             | ▲        | △         |
| MGMF182L1C5  | 1.8         | 200         | ○                    |               | ●        | ○         |
| MGMF182L1C6  | 1.8         | 200         | ○                    |               | ●        | △         |
| MGMF182L1C7  | 1.8         | 200         | ○                    |               | ▲        | ○         |
| MGMF182L1C8  | 1.8         | 200         | ○                    |               | ▲        | △         |
| MGMF182L1D5  | 1.8         | 200         | ○                    | ◆             | ●        | ○         |
| MGMF182L1D6  | 1.8         | 200         | ○                    | ◆             | ●        | △         |
| MGMF182L1D7  | 1.8         | 200         | ○                    | ◆             | ▲        | ○         |
| MGMF182L1D8  | 1.8         | 200         | ○                    | ◆             | ▲        | △         |
| MGMF182L1G5  | 1.8         | 200         | □                    |               | ●        | ○         |
| MGMF182L1G6  | 1.8         | 200         | □                    |               | ●        | △         |
| MGMF182L1G7  | 1.8         | 200         | □                    |               | ▲        | ○         |
| MGMF182L1G8  | 1.8         | 200         | □                    |               | ▲        | △         |
| MGMF182L1H5  | 1.8         | 200         | □                    | ◆             | ●        | ○         |
| MGMF182L1H6  | 1.8         | 200         | □                    | ◆             | ●        | △         |
| MGMF182L1H7  | 1.8         | 200         | □                    | ◆             | ▲        | ○         |
| MGMF182L1H8  | 1.8         | 200         | □                    | ◆             | ▲        | △         |
| MGMF292L1C5  | 2.9         | 200         | ○                    |               | ●        | ○         |
| MGMF292L1C6  | 2.9         | 200         | ○                    |               | ●        | △         |
| MGMF292L1C7  | 2.9         | 200         | ○                    |               | ▲        | ○         |
| MGMF292L1C8  | 2.9         | 200         | ○                    |               | ▲        | △         |
| MGMF292L1D5  | 2.9         | 200         | ○                    | ◆             | ●        | ○         |
| MGMF292L1D6  | 2.9         | 200         | ○                    | ◆             | ●        | △         |
| MGMF292L1D7  | 2.9         | 200         | ○                    | ◆             | ▲        | ○         |
| MGMF292L1D8  | 2.9         | 200         | ○                    | ◆             | ▲        | △         |
| MGMF292L1G5  | 2.9         | 200         | □                    |               | ●        | ○         |
| MGMF292L1G6  | 2.9         | 200         | □                    |               | ●        | △         |
| MGMF292L1G7  | 2.9         | 200         | □                    |               | ▲        | ○         |
| MGMF292L1G8  | 2.9         | 200         | □                    |               | ▲        | △         |
| MGMF292L1H5  | 2.9         | 200         | □                    | ◆             | ●        | ○         |
| MGMF292L1H6  | 2.9         | 200         | □                    | ◆             | ●        | △         |
| MGMF292L1H7  | 2.9         | 200         | □                    | ◆             | ▲        | ○         |



| Model number | Output (kW) | Voltage (V) | Shaft specifications | Holding brake | Oil seal | Motor I/F |
|--------------|-------------|-------------|----------------------|---------------|----------|-----------|
| MGMF292L1H8  | 2.9         | 200         | □                    | ◆             | ▲        | △         |
| MGMF442L1C5  | 4.4         | 200         | ○                    |               | ●        | ○         |
| MGMF442L1C6  | 4.4         | 200         | ○                    |               | ●        | △         |
| MGMF442L1C7  | 4.4         | 200         | ○                    |               | ▲        | ○         |
| MGMF442L1C8  | 4.4         | 200         | ○                    |               | ▲        | △         |
| MGMF442L1D5  | 4.4         | 200         | ○                    | ◆             | ●        | ○         |
| MGMF442L1D6  | 4.4         | 200         | ○                    | ◆             | ●        | △         |
| MGMF442L1D7  | 4.4         | 200         | ○                    | ◆             | ▲        | ○         |
| MGMF442L1D8  | 4.4         | 200         | ○                    | ◆             | ▲        | △         |
| MGMF442L1G5  | 4.4         | 200         | □                    |               | ●        | ○         |
| MGMF442L1G6  | 4.4         | 200         | □                    |               | ●        | △         |
| MGMF442L1G7  | 4.4         | 200         | □                    |               | ▲        | ○         |
| MGMF442L1G8  | 4.4         | 200         | □                    |               | ▲        | △         |
| MGMF442L1H5  | 4.4         | 200         | □                    | ◆             | ●        | ○         |
| MGMF442L1H6  | 4.4         | 200         | □                    | ◆             | ●        | △         |
| MGMF442L1H7  | 4.4         | 200         | □                    | ◆             | ▲        | ○         |
| MGMF442L1H8  | 4.4         | 200         | □                    | ◆             | ▲        | △         |

■ **MINAS A6 Options**

• **MINAS A6 Options**

| Model number | Description                         |
|--------------|-------------------------------------|
| DV0PM24581   | Connector kit for motor and encoder |
| DV0PM24582   | Connector kit for motor and encoder |
| DV0PM24583   | Connector kit for motor and encoder |
| DV0PM24584   | Connector kit for motor and encoder |
| DV0PM24585   | Connector kit for motor and encoder |
| DV0PM24586   | Connector kit for motor and encoder |
| DV0PM24587   | Connector kit for motor and encoder |
| DV0PM24588   | Connector kit for motor and encoder |
| DV0PM24589   | Connector kit for motor and encoder |
| DV0PM24590   | Connector kit for motor and encoder |
| DV0PM20100   | A and B Frame mounting bracket      |
| DV0PM20101   | C and D Frame mounting bracket      |