

December 24, 2020

Industrial Device Business Division,  
Industrial Solutions Company  
Panasonic Corporation

### **Notice of Compliance with China Energy Efficiency Label Regulations**

We would like to inform you that in order to comply with latest China Energy Label (CEL) regulations, we will mark our motors with energy efficiency labels starting from January 2021 production.

- Note -

#### ■ Overview of the regulation

On April 29, 2020, the Chinese authorities released 'Ordinance for Enforcement of Energy Efficiency Label for Permanent Magnet Synchronous Motor' (CEL038 -2020) and "GB 30253 -2013". As a result, permanent magnet synchronous motors will be required to display an energy efficiency label at customs in China from July 1, 2020.

#### ■ Energy Efficiency Label Implementation Regulations for Permanent Magnet Synchronous Motors

##### (1) Regulation content

This regulation requires permanent magnet synchronous motors sold and used in China to display energy efficiency labels.

In order to obtain an energy efficiency label, the motor efficiency must satisfy the efficiency standard value specified in the "GB 30253 -2013" standard.

##### (2) The applicable motor scope

- Permanent-magnet synchronous motors (without built-in brakes)
- Rated voltage: up to 1000 V,
- Rated power of 0.55 kW to 90 kW
- Rated speed of 500 r/min to 3000 r/min.

#### **Affected Panasonic motor series:**

- MINAS A5 Series AC Servo Motors  
Part numbers: MSMD、MHMD、M \* ME \*\*\*\*\* (750 W to 15 kW without brake)
- MINAS A6 Series AC Servo Motors  
Part numbers: M \* MF \*\*\*\*\* (750 W to 22 kW without brake)
- MINAS-BL KV-Series Brushless Motors  
Part numbers: MBMS082BL \* (750 W without brake)

##### (3) Not affected / Exemptions

- Inseparable motors: motors that are fully fitted with other equipment such as pumps, fans, compressors, hoists, gear boxes, etc.
- Motors with integrated brakes
- Water cooled motors
- Motors out of mentioned power and speed ranges
- When exporting motors to China for equipment repair purpose \* 4

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However, if you receive an inquiry from Chinese customs at the time of export to China, you may need a document indicating that it is a spare part for repair. Please prepare it on your side and submit it to Chinese customs if necessary.

\*3) Refer to "Energy Efficiency Label Implementation Regulations for Permanent Magnet Synchronous Motors" section 1.2. (Chinese)

\*4) Please refer to "The efficiency of the power source should be labeled and managed" on page 5 (7) on the following website. (Chinese)

<https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/201603/W020190905495017011772.pdf>

(4) Energy Efficiency Label Specifications

The Energy Label shown below will be attached to the motors.

	Grade 1	Grade 2
Energy label specification		

oFor "Energy Efficiency Label Implementation Regulations for Permanent Magnet Synchronous Motors", please refer to the following technical document download page.

oJudgment of Grade 1 and Grade 2 is based on the standard of "GB 30253 -2013" and actual measurement value is judged as Grade 1 or Grade 2.

"Table 3" of the standard on page 7/7 ... "GB 30253 -2013"

■Schedule of implementation:

➢ from January, 2021 production

■Changes:

1. Instruction manual

"Note: This product is sold in China <<Ordinance for Enforcement of Energy Efficiency Label for Permanent Magnet Synchronous Motor>>." shall be complied with. in the I will add it to the safety instruction manual " Operating Instructions Safety" , " Safety Guide" that comes with it.

Post script location Japanese, English and Chinese pages only

○Japanese

設置したモータ・アンプの周囲温度を使用温度・使用湿度範囲にする。	適切な取り付け、設置をしないと、けが・故障の原因になります
アンプと制御器内面、またはその他の機器との間隔は規定の距離をあけて設置する。	
指定された電圧を守る。	定格電圧範囲外で使用する、感電・けが・火災の原因になります
ブレーキ制御用リレーと図列に非常停止で減速するリレーを接続する。	接続しないと、けが・故障の原因になります
内蔵ブレーキ、ギヤヘッドの空転やロック、ギヤヘッドのグリス漏れに対する安全装置を設置する。	設置しないと、けが・故障・汚損の原因になります
！ 停電発生時の復電後、突然再始動する可能性があるため、再始動しても人に対する安全を確保する機械の設定を怠らなう。	けがの原因になります
モータとアンプは指定の組合わせで使用する。	正しい組み合わせで使用しないと、故障・火災の原因になります
試運転はモータを固定し機械系と切り離した状態で動作確認後、機械系に取り付ける。	機械系が壊れる原因により、けがの原因になります
エラー発生時は原因を取り除き、安全を確認した後、エラーを解除し再起動する。	エラーの原因を取除かないと、けがの原因になります
アンプが故障した場合は、アンプの電源側で電源を遮断する。	大電流が流れ続けると、火災の原因になります
長時間使用しない場合は、必ず電源を切る。	発熱などによる、けがの原因になります
電池を廃棄する場合、電池をテープなどで絶縁して、自治体の案内に従って廃棄する。	
廃棄する場合は産業廃棄物として処理する。	
モータに貼り付けているラベルにじわが発生しても、モータの使用には影響ございません。	

○English

Observe the specified mounting method and direction.	Failure to heed these requirements will result in personal injury or malfunction.
Use the eye bolt of the motor for transportation of the motor only, and never use this for transportation of the machine.	Using it for transportation of the machine will cause personal injury or malfunction.
Adjust the motor and driver ambient environmental condition to match the motor operating temperature and humidity.	Failure to heed these requirements will result in personal injury or malfunction.
Create the specified clearance between the driver and the control panel inner surface or other devices.	
Observe the specified voltage.	Operation from a voltage outside the rated voltage will cause electric shock, personal injury or fire.
Connect the brake control relay to the relay which is to shut off at emergency stop in series.	Missing of one of these devices will result in personal injury or malfunction.
！ Provide protection device against idling of built-in brake or gear head, or grease leakage from gear head.	No protection will cause personal injury, damage, pollution or fire.
Do not approach to the machine since it may suddenly restart after the power resumption. Design the machine to ensure the safety for the operator even at a sudden restart.	Failure to observe this instruction could result in injuries.
Use the motor and the driver in the specified combination.	Not using the motor and the driver in the specified combination will result in fire.
Test-run the securely fixed motor without loading to verify normal operation, and then connect it to the mechanical system.	Operation using a wrong model or wrong wiring connection will result in personal injury.
When any error occurs, remove the cause and release the error after securing the safety, then restart.	Not removing the cause of the error will result in personal injury.
If the driver fails, shut off the power on the power supply side of the driver.	Allowing a large current to continue to pass will result in fire.
Always keep power disconnected when the power is not necessary for a long time.	Improper operation will cause personal injury.
When you dispose the batteries, observe any applicable regulations or laws after insulating them with tape.	
！ This product shall be treated as industrial waste when you dispose.	
If the label appears to shrink during use is a normal phenomenon. It does not affect the use of the motor.	

"Even if wrinkles appear on the label attached to the motor, there is no problem in using the product." was added to the safety precautions page in Japanese and English.

○Chinese

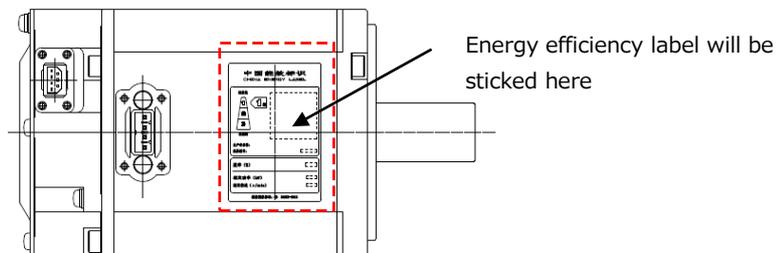
安全注意事项 (请务必遵守)	
在停电结束、恢复供电时，有可能出现突然再启动的情况，请勿靠近机器。做好机械的定位，以避免再启动时的意外情况发生，确保人身安全。	会引发受伤事故。
马达与驱动器应使用指定的组合。	若不使用正确的组合，则可能引发故障・火灾事故。
！ 在进行试运转时应将马达固定好，在与其他机械分离的状态下确认运转后再安装到相关机械上。	型号错误、接线错误会引发受伤事故。
出错时，请解除出错原因，确保安全后，解除出错重新启动。	若不解除出错原因，则可能引发受伤事故。
驱动器发生故障时，请切断驱动器电源侧的电源。	若继续接通大电流，则可能引发火灾事故。
当长时间不使用时必须切断电源。	设备动作等的失误会引发受伤事故。
将电池做为废物处理时，请将电池用胶带等进行绝缘，并根据有关部门的规定进行处理。	
产品废弃时，请遵守有关部门对电子产品回收、再利用的相关法令、法规。	
！ 本公司生产的550 W以上且无制动器的电机符合中国的《永磁同步伺服电动机能效标识实施规则 (GB 30253-2013)》，即使标签出现皱裂，不影响马达使用。	

Motors with an output of 550 W or more and without a holding brake have a designated label affixed based on the "Energy Efficiency Label Implementation Regulations for Permanent Magnet Synchronous Motors" (CEL 038-2020) "GB30253-2013".

2. Product (motor body): Energy efficiency label will be attached to the motor  
[AC servo motor]

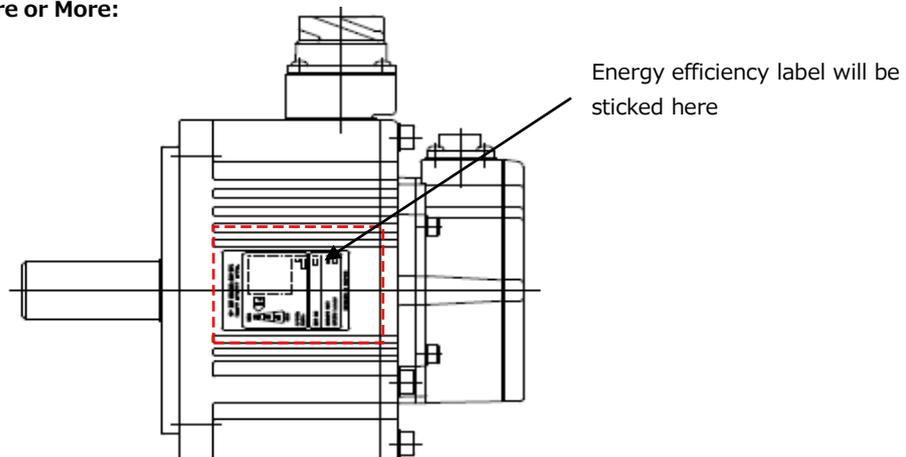
**Flange size 80 mm sq.:**

Example:MHMF082L1A1



**Flange size 100 mm Square or More:**

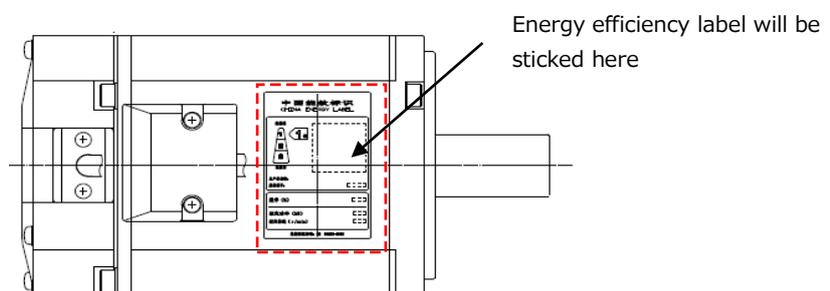
Example:MDMF102L1C6M



[Brushless Motor]

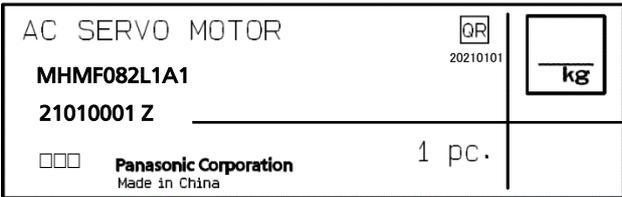
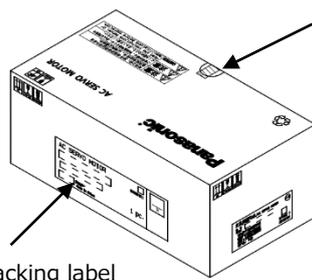
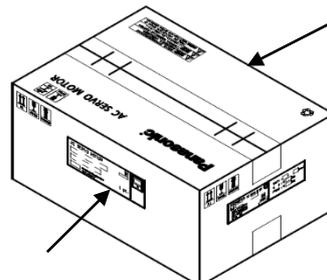
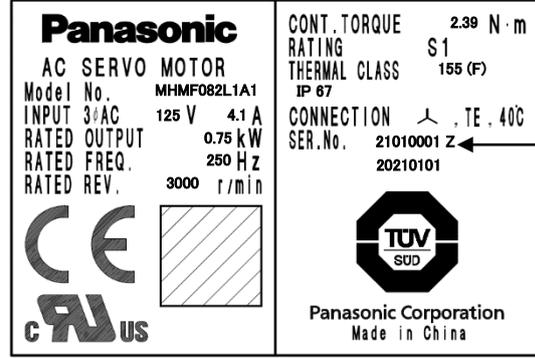
**Flange size 80 mm Square only:**

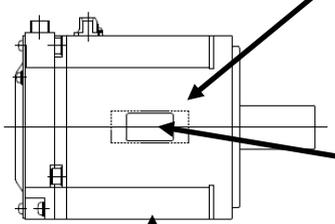
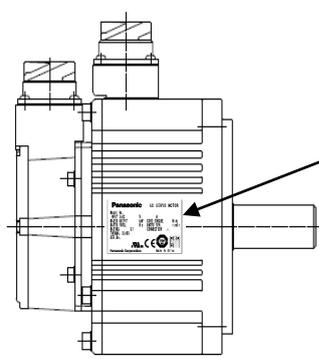
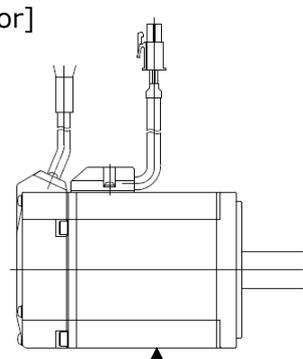
Example:MBMS082BLC



■How to check the production month

To check the manufacturing year and month from the serial number.  
[Packing]

<p>Manufacturing number on the packing label</p>	<p>Example:MHMF082L1A1</p>  <p>Serial number Example: <b>21010001 Z</b></p> <p>Sequential (4 digits) Manufacturing month (2 digits)</p> <p>Year of manufacture (last two digits of the year)</p> <p>Check these manufacturing years and months</p>
<p>Packing Labels Part Packing Labels</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>◆ Flange size 80 mm Square</p>  <p>And on this label, Enter the serial number. I haven't.</p> <p>Packing label</p> </div> <div style="text-align: center;"> <p>◆ Flange size 100 mm Square or More</p>  <p>And on this label, Enter the serial number. I haven't.</p> <p>Packing label</p> </div> </div>
<p>Location of lot number on product nameplate</p>	<p><b>Flange size 80 mm</b> Example:MHMF082L1A1</p>  <p>Serial number Example: <b>21010001 Z</b></p> <p>Sequential (4 digits) Manufacturing month (2 digits)</p> <p>Year of manufacture (last two digits of the year)</p> <p>Check these manufacturing years and months.</p>

<p>Location of lot number on product nameplate</p>	<p><b>Flange size 100 mm or More</b> Example:MDMF102L1C6M</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> <p><b>Panasonic AC SERVO MOTOR</b></p> <p>Model No. MDMF 102 L 1 C 6 M</p> <p>INPUT 3ϕAC 128 V 5.2 A</p> <p>RATED OUTPUT 1.0 kW CONT.TORQUE 4.77 N·m</p> <p>RATED FREQ. 167 Hz RATED REV. 2000 r/min</p> <p>RATING S1 CONNECTION Δ IP 67</p> <p>THERMAL CLASS 155 (F)</p> <p>SER.No. 21010001 Z</p> <p>20210101</p> <p><b>Panasonic Corporation</b> <b>Made In China</b></p> </div> <div> <p>Serial number Example: <b>21010001 Z</b></p> <div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;"> <p>↑↑↑↑</p> <p>Manufacturing month (2 digits)</p> <p>↑↑</p> <p>Year of manufacture (last two digits of the year)</p> </div> <div style="font-size: 2em; margin-right: 10px;">}</div> <div> <p>Sequential (4 digits)</p> </div> </div> <p>Check these manufacturing years and months.</p> </div> </div>
<p>Product nameplate place of pasting</p>	<p>[AC servo motor]</p> <div style="text-align: center;">  <p>Chinese origin label (Right side viewed from the motor output shaft end)</p> <p>High temperature caution label (Left side viewed from the motor output shaft end)</p> <p>Product nameplate</p> </div> <div style="text-align: center; margin-top: 20px;">  <p>Product nameplate</p> </div> <p>[Brushless motor]</p> <div style="text-align: center;">  <p>Product nameplate</p> </div>

"GB 30253 -2013" Standard "Table 3"

表 3 变频驱动永磁同步电动机能效等级

GB 30253—2013

额定 功率 kW	效率 %																	
	1 级						2 级						3 级					
	额定转速/(r/min)																	
	3 000	2 500	2 000	1 500	1 000	500	3 000	2 500	2 000	1 500	1 000	500	3 000	2 500	2 000	1 500	1 000	500
0.55	87.3	87.3	87.3	85.6	85.9	81.8	79.8	79.8	81.7	81.5	80.3	75.8	76.2	76.8	77.3	77.9	75.9	72.3
0.75	88.6	88.6	88.6	85.6	87.4	82.3	81.5	81.3	83.3	82.5	82.1	77.5	77.4	78.1	78.9	79.6	75.6	73.2
1.1	89.8	89.8	89.8	87.4	88.7	83.3	83.0	83.2	84.7	84.1	83.7	79.0	79.6	80.2	80.8	81.4	78.1	76.4
1.5	90.9	90.9	90.8	88.1	89.9	84.5	84.5	84.6	86.1	85.3	85.1	80.7	81.3	81.8	82.3	82.8	79.8	77.8
2.2	91.8	91.8	91.8	89.7	90.9	85.3	85.7	86.2	87.2	86.7	86.5	82.5	83.2	83.6	83.9	84.3	81.8	79.9
3	92.6	92.6	92.6	90.3	91.8	86.1	86.9	87.3	88.3	87.7	87.7	83.7	84.6	84.9	85.2	85.5	83.3	81.4
4	93.3	93.3	93.3	90.9	92.7	87.6	88.0	88.3	89.3	88.6	88.8	84.0	85.8	86.1	86.3	86.6	84.6	82.5
5.5	94.0	94	93.9	92.1	93.4	88.4	88.9	89.3	90.1	89.6	89.7	85.4	87.0	87.2	87.5	87.7	86.0	84.1
7.5	94.5	94.5	94.4	92.6	94.0	88.9	89.8	90.2	90.9	90.4	90.6	86.6	88.1	88.3	88.5	88.7	87.2	85.6
11	95.0	95	94.9	93.6	94.5	90.9	90.6	91.3	91.6	91.4	91.4	87.9	89.4	89.5	89.7	89.8	88.7	86.9
15	95.3	95.3	95.3	94.0	94.9	91.6	91.3	92	92.2	92.1	92.0	89.0	90.3	90.4	90.5	90.6	89.7	87.8
18.5	95.6	95.6	95.6	94.3	95.3	92.7	92.0	92.5	92.8	92.6	92.6	89.8	90.9	91	91.1	91.2	90.4	88.6
22	95.9	95.9	95.8	94.7	95.6	93.3	92.5	92.8	93.2	93.0	93.2	90.3	91.3	91.4	91.5	91.6	90.9	89.2
30	96.1	96.1	96.0	95.0	95.8	93.6	93.1	93.4	93.7	93.6	93.6	91.1	92.0	92.1	92.2	92.3	91.7	90.1
37	96.3	96.3	96.2	95.3	96.0	93.9	93.6	93.8	94.1	93.9	94.0	91.4	92.5	92.6	92.6	92.7	92.2	90.6
45	96.4	96.4	96.3	95.6	96.2	94.2	94.0	94.1	94.4	94.2	94.4	91.9	92.9	93	93	93.1	92.7	91.2
55	96.5	96.5	96.4	95.8	96.3	94.5	94.4	94.4	94.7	94.6	94.7	92.6	93.2	93.3	93.4	93.5	93.1	91.7
75	96.6	96.6	96.5	96.0	96.4	94.7	94.8	94.8	95.0	95.0	95.0	93.1	93.8	93.9	93.9	94.0	93.7	92.6
90	96.7	96.7	96.6	96.2	96.5	94.7	95.2	95.1	95.3	95.2	95.2	93.5	94.1	94.1	94.2	94.2	94.0	93.0