

PRODUCT INFORMATION REQUIREMENTS FOR MOTORS

(EU)No.2019/1781

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Type of model: GM- series

(GM-S2, GM-D2, GM-SSY2, GM-SHY2,
GM-SP, GM-DP, GM-SSYP, GM-SHYP, GM-LJP, GM-DYP)

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(Date) 2022.09.02

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Revisions history

Date	Ver.	Revision	Prepared by	Approved by
June 28 ,2022	*	New	K. Nishiyori	M. Numaguchi
Sep.2 ,2022	A	Added415V/50Hz of 0.2, 0.4kW. Removed 45, 55kW.	K. Nishiyori	M. Numaguchi

1. Rated efficiency (%) at the full, 75 % and 50 % rated load, and rated voltage(s), determined based on 25 °C ambient reference temperature : See Table.1
2. Efficiency level : IE2(0.2 and 0.4kW), IE3(0.75 to 37kW)

*The year of manufacture:

Manufacturing this IE3 product has started since 2014, IE2 product has started since 2021.

The year of manufacture is described in the nameplate on each motor.

3. Manufacturer's name and trade mark:

MITSUBISHI ELECTRIC CORPORATION



Commercial registration number: 0100-01-008772

Place of manufacturer: TOKYO 100-8310, JAPAN

4. Product's model number:

IE3 : GM- * P (GM-SP,GM-DP,GM-LJP,GM-SSYP,GM-SHYP,GM-DYP series)

IE2 : GM- * 2 (GM-S2,GM-D2,GM-SSY2,GM-SHY2 series)

5. Number of poles of the motor : See Table.1

6. The rated power output(s) or range of rated power output (kW) : See Table.1

7. The rated input frequency(s) of the motor (Hz) : See Table.1

8. The rated voltage(s) or range of rated voltage (V) : See Table.1

9. The rated speed(s) or range of rated speed (min^{-1}) : See Table.1

10. Phase : Three-phase

11. Information on the range of operating conditions for which the motor is specially designed

- (i) Altitudes above sea-level: 1000m and less
- (ii) Ambient air temperatures, including for motors with air cooling:
-15°C and more, 40°C and less
- (iii) Water coolant temperature at the inlet to the product: N/A
- (iv) Maximum operating temperature: See Table.1
- (v) Potentially explosive atmospheres: N/A

12. The specific reason why it is considered exempt.

"GM-SSYFP" and "GM-SHYF (M) P" series (IP67) is exempt due to Totally Enclosed Non-Ventilated (TENV) motors.

13. The power losses expressed in percentage (%) of the rated output power at the following different operating points for speed versus torque (25;25) (25;100) (50;25) (50;50) (50;100) (90;50) (90;100) determined based on 25 °C ambient reference temperature : See Table.2-1 and 2-2

Table.1 Item 1, Item 5 – Item 9, Item 11(iv)

Item 5 Number of poles	Item 6 Rated power output (kW)	Item 7 Rated input frequency (Hz)	Item 8 Rated voltage (V)	Item 9 Rated speed (min ⁻¹)	Item 1 Rated efficiency (%)			Item 11(iv) Maximum operating temperature (°C)
					rated load 100%	rated load 75%	rated load 50%	
					4	0.2	50	
4	0.2	50	380	1330	65.1	67.3	64.6	130
4	0.2	50	400	1360	66.2	66.7	62.7	130
4	0.2	50	415	1375	66.7	65.9	60.9	130
4	0.4	50	200	1385	70.8	70.9	67.0	130
4	0.4	50	380	1370	70.4	71.7	69.2	130
4	0.4	50	400	1390	70.9	71.0	67.2	130
4	0.4	50	415	1400	71.0	70.2	65.6	130
4	0.75	50	200	1445	83.6	82.7	79.3	130
4	0.75	50	380	1440	84.2	84.0	81.6	130
4	0.75	50	400	1445	83.5	82.6	79.1	130
4	0.75	50	415	1440	84.1	84.0	81.7	130
4	1.5	50	200	1440	86.1	87.0	86.2	130
4	1.5	50	380	1435	85.7	87.0	86.8	130
4	1.5	50	400	1440	86.0	86.6	85.6	130
4	1.5	50	415	1445	85.8	85.9	83.9	130
4	2.2	50	200	1455	88.8	89.0	87.7	130
4	2.2	50	380	1450	88.6	89.3	88.7	130
4	2.2	50	400	1455	88.8	89.0	87.7	130
4	2.2	50	415	1460	88.5	88.3	86.5	130

Item 5	Item 6	Item 7	Item 8	Item 9	Item 1			Item 11(iv)
Number of poles	Rated power output (kW)	Rated input frequency (Hz)	Rated voltage (V)	Rated speed (min ⁻¹)	Rated efficiency (%)			Maximum operating temperature (°C)
					rated load 100%	rated load 75%	rated load 50%	
4	3.7	50	200	1460	89.0	89.6	88.8	130
4	3.7	50	380	1455	88.7	89.7	89.4	130
4	3.7	50	400	1460	89.0	89.6	88.8	130
4	3.7	50	415	1465	89.2	89.4	88.2	130
4	5.5	50	200	1470	91.1	91.0	89.7	130
4	5.5	50	380	1470	91.1	91.4	90.7	130
4	5.5	50	400	1470	91.1	91.0	89.7	130
4	5.5	50	415	1475	90.8	90.5	88.8	130
4	7.5	50	200	1470	91.4	91.6	90.7	130
4	7.5	50	380	1465	91.1	91.6	91.0	130
4	7.5	50	400	1470	91.4	91.6	90.7	130
4	7.5	50	415	1470	91.3	91.4	90.1	130
4	11	50	200	1470	92.5	92.9	92.1	130
4	11	50	380	1465	92.5	93.1	92.8	130
4	11	50	400	1470	92.5	92.9	92.1	130
4	11	50	415	1470	92.3	92.2	90.9	130
4	15	50	200	1470	93.0	93.1	92.2	130
4	15	50	380	1465	92.9	93.4	92.9	130
4	15	50	400	1470	93.0	93.1	92.2	130
4	15	50	415	1470	92.4	92.2	90.9	130
4	22	50	200	1480	94.0	94.1	93.4	130
4	22	50	380	1475	93.9	94.3	94.0	130
4	22	50	400	1480	94.0	94.1	93.4	130
4	22	50	415	1475	93.3	93.1	91.8	130
6	22	50	200	985	93.4	93.6	92.8	155
6	22	50	380	980	93.5	94.1	93.7	155
6	22	50	400	985	93.4	93.6	92.8	155
6	22	50	415	985	93.2	93.1	92.0	155
4	30	50	200	1485	94.6	94.7	94.1	155

Item 5	Item 6	Item 7	Item 8	Item 9	Item 1			Item 11(iv)
Number of poles	Rated power output (kW)	Rated input frequency (Hz)	Rated voltage (V)	Rated speed (min ⁻¹)	Rated efficiency (%)			Maximum operating temperature (°C)
					rated load 100%	rated load 75%	rated load 50%	
4	30	50	380	1480	94.4	94.8	94.5	155
4	30	50	400	1485	94.6	94.7	94.1	155
4	30	50	415	1485	94.4	94.4	93.6	155
4	37	50	200	1485	95.0	95.1	94.5	155
4	37	50	380	1485	94.9	95.1	94.8	155
4	37	50	400	1485	95.0	95.1	94.5	155
4	37	50	415	1485	95.2	95.1	94.3	155

Table.2-1 Item 13 The power losses at seven operating points by VSD 200V/60Hz

(Conditions: V/F control. Carri frequency 4kHz 0.2 to 2.2kW, 2kHz 3.7 to 37kW. Ambient temperature 25°C)

Rated output power[kW]			0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	22	22	30	37
Number of poles			4										6	4		
100% speed[min^{-1}] by VSD			1615	1660	1735	1725	1745	1745	1760	1755	1760	1760	1775	1180	1770	1780
100% torque[Nm] by VSD			1.2	2.3	4.1	8.3	12.0	20.3	29.8	40.8	59.7	81.4	118	178	162	199
Point	Speed (%)	Torque (%)	Power loss[% of rated output power]													
P1	90	100	50.8	39.2	16.6	15.8	12.8	12.7	9.3	9.6	8.7	8.1	6.4	7.1	6.6	6.5
P2	50	100	45.3	34.7	14.1	13.7	11.0	10.7	8.1	8.4	7.1	6.3	5.4	6.4	5.6	5.0
P3	25	100	46.2	34.8	12.7	12.3	9.9	9.3	6.9	7.2	5.5	5.5	4.4	5.4	4.9	4.2
P4	90	50	26.4	21.0	9.9	6.8	6.5	6.7	5.2	4.9	4.4	4.2	3.3	3.5	3.4	3.5
P5	50	50	21.0	16.7	7.6	5.2	5.1	5.1	4.2	4.0	3.5	3.3	2.5	2.9	2.7	2.3
P6	50	25	16.1	13.0	5.8	3.4	4.0	3.4	3.2	2.9	2.5	2.3	1.8	2.1	1.8	1.6
P7	25	25	14.0	11.6	5.2	3.1	3.2	2.8	2.4	2.3	1.7	1.6	1.3	1.5	1.3	1.1

Table.2-2 Item 13 The power losses at seven operating points by VSD 400V/60Hz

(Conditions: V/F control. Carri frequency 4kHz 0.2 to 2.2kW, 2kHz 3.7 to 37kW. Ambient temperature 25°C)

Rated output power[kW]			0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	22	22	30	37
Number of poles			4										6	4		
100% speed[min^{-1}] by VSD			1620	1660	1735	1730	1745	1745	1760	1755	1760	1760	1775	1180	1770	1780
100% torque[Nm] by VSD			1.2	2.3	4.1	8.3	12.0	20.3	29.8	40.8	59.7	81.4	118	178	162	199
Point	Speed (%)	Torque (%)	Power loss[% of rated output power]													
P1	90	100	49.0	39.8	16.5	15.5	12.8	12.7	9.3	9.6	8.7	8.1	6.4	7.1	6.6	6.5
P2	50	100	44.5	35.8	14.1	13.5	11.0	10.7	8.1	8.4	7.1	6.3	5.4	6.4	5.6	5.0
P3	25	100	44.5	35.8	12.8	12.2	9.9	9.3	6.9	7.2	5.5	5.5	4.4	5.4	4.9	4.2
P4	90	50	25.5	21.0	9.5	6.9	6.5	6.7	5.2	4.9	4.4	4.2	3.3	3.5	3.4	3.5
P5	50	50	21.0	17.0	7.6	5.4	5.1	5.1	4.2	4.0	3.5	3.3	2.5	2.9	2.7	2.3
P6	50	25	16.5	13.3	5.8	3.7	4.0	3.4	3.2	2.9	2.5	2.3	1.8	2.1	1.8	1.6
P7	25	25	14.5	11.8	5.3	3.4	3.2	2.8	2.4	2.3	1.7	1.6	1.3	1.5	1.3	1.1

Note

1. When driving geared motor rated frequency at 50Hz/60Hz by variable speed device, please set the rated voltage / base frequency to 200V/60Hz or 400V/60Hz.
2. Geared motor rated frequency only at 50Hz (380V/50Hz, 415V/50Hz, etc.) are not suitable for driving by variable speed device. Please select geared motor rated frequency at 50Hz/60Hz.