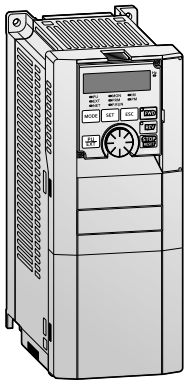
The FR-A800 Series



The FR-A800 series is pure high technology. This generation of Mitsubishi Electric inverters combine innovative functions and reliable technology with maximum power, economy and flexibility. Among many other features, like the possiblility to run vector control also in LD/SLD, or a 100 % ED brake transistor up to 55 kW, Online Autotuning for outstanding speed/torque accuracy, excellent smooth running performance of a synchronous motor, built-in STO emergency stop and a large number of digital/analog inputs and outputs.

Output range:

FR-A820: 0.4–132 kW, 200–240 V AC
FR-A840: 0.4–355 kW, 380–500 V AC

Available accessories:

Optional control units, versatile options and useful accessories are available for this frequency inverter.

Please refer to page 48 for details.

Technical Details FR-A840-00023 to -01160

Product line				FR-A840-□-2-60												
				00023	00038	00052	00083	00126	00170	00250	00310	00380	00470	00620	00770	00930	01160
Output	Rated motor capacity ① kW	120 % overload capacity (SLD)		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
		150 % overload capacity (LD)		0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
		200 % overload capacity (ND)		0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45
		250 % overload capacity (HD)		0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37
	Rated current A	120 % overload capacity (SLD)	I rated	2.3	3.8	5.2	8.3	12.6	17	25	31	38	47	62	77	93	116
			I max. 60	2.1	4.2	5.7	9.1	13.9	18.7	27.5	34.1	41.8	51.7	68.2	84.7	102.3	127.6
			I max. 3 s	2.8	4.6	6.2	10.0	15.1	20.4	30.0	37.2	45.6	56.4	74.4	92.4	111.6	139.2
		150 % overload capacity (LD)	I rated	2.1	3.5	4.8	7.6	11.5	16	23	29	35	43	57	70	85	106
			I max. 60	2.5	4.2	5.8	9.1	13.8	19.2	27.6	34.8	42.0	51.6	68.4	84.0	102.0	127.2
			I max. 3 s	3.2	5.3	7.2	11.4	17.3	24.0	34.5	43.5	52.5	64.5	85.5	105.0	127.5	159.0
		200 % overload capacity (ND)	I rated	1.5	2.5	4	6	9	12	17	23	31	38	44	57	71	86
			I max. 60	2.3	3.8	6.0	9.0	13.5	18.0	25.5	34.5	46.5	57.0	66.0	85.5	106.5	129.0
			I max. 3 s	3.0	5.0	8.0	12.0	18.0	24.0	34.0	46.0	62.0	76.0	88.0	114.0	142.0	172.0
		250 % overload capacity (HD)	I rated	0.8	1.5	2.5	4	6	9	12	17	23	31	38	44	57	71
			I max. 60	1.6	3.0	5.0	8.0	12.0	18.0	24.0	34.0	46.0	62.0	76.0	88.0	114.0	142.0
			I max. 3 s	2.0	3.8	6.3	10.0	15.0	22.5	30.0	42.5	57.5	77.5	95.0	110.0	142.5	177.5
	Overload capacity ②	SLD		110 % of rated motor capacity for 60 s; 120 % for 3 s (max. ambient temperature 40 °C) – inverse time characteristics													
		LD		120 % of rated motor capacity for 60 s; 150 % for 3 s (max. ambient temperature 50 °C) – inverse time characteristics													
		ND		150 % of rated motor capacity for 60 s; 200 % for 3 s (max. ambient temperature 50 °C) – inverse time characteristics													
		HD		200 % of rated motor capacity for 60 s; 250 % for 3 s (max. ambient temperature 50 °C) – inverse time characteristics													
	Voltage ③			3-phase AC, 380–500 V to power supply voltage													
	Frequency range			0.2–590 Hz													
	Control method			V/f; advanced magnetic flux vector, real sensorless vector (RSV), closed loop vector, PM sensorless vector control													
	Brake transistor 100 % ED			Built-in													
	Maximum brake torque	regenerative		100 % torque/2 % ED with built-in brake resistor							20 % torque/continuous						
		with FR-ABR option ⑦		100 % torque/10 %ED							100 % torque/6 %ED				—		
	Minimum brake resistance values ⑥		Ω	371	236	190	130	83	75	52	34	34	21	21	13.5	13.5	13.5
Input	Power supply voltage			3-phase, 380–500 V AC, -15 %/+10 %													
	Voltage range			323–550 V AC at 50/60 Hz (Undervoltage level is selectable by parameter.)													
	Power supply frequency			50/60 Hz ±5 %													
	Rated input current ⑧ A	SLD		3.2	5.4	7.8	10.9	16.4	22.5	31.7	40.3	48.2	58.4	76.8	97.6	115	141
		LD		3	4.9	7.3	10.1	15.1	22.3	31	38.2	44.9	53.9	75.1	89.7	106	130
		ND		2.3	3.7	6.2	8.3	12.3	17.4	22.5	31	40.3	48.2	56.5	75.1	91	108
		HD		1.4	2.3	3.7	6.2	8.3	12.3	17.4	22.5	31	40.3	48.2	56.5	75.1	91
	Power supply capacity ④ kVA	SLD		2.5	4.1	5.9	8.3	12	17	24	31	37	44	59	74	88	107
		LD		2.3	3.7	5.5	7.7	12	17	24	29	34	41	57	68	81	99
		ND		1.7	2.8	4.7	6.3	9.4	13	17	24	31	37	43	57	69	83
		HD		1.1	1.7	2.8	4.7	6.3	9.4	13	17	24	31	37	43	57	69
Others	Cooling			Self cooling			Fan cooling										
	Protective structure ⑤			Enclose type IP20											Open type (IP00)		
	Max. heat dissipation ⑨ kW	SLD		0.055	0.075	0.085	0.13	0.175	0.245	0.345	0.37	0.45	0.565	0.74	0.93	1.11	1.34
		LD		0.05	0.07	0.08	0.12	0.16	0.23	0.315	0.345	0.415	0.52	0.675	0.825	1.02	1.22
		ND		0.04	0.055	0.07	0.1	0.13	0.17	0.22	0.28	0.39	0.45	0.52	0.69	0.84	1.02
		HD		0.03	0.04	0.05	0.075	0.09	0.135	0.165	0.21	0.285	0.385	0.45	0.56	0.7	0.86
	Weight		kg	2,8	2,8	2,8	3,3	3,3	6,7	6,7	8,3	8,3	15	15	23	41	41
	Dimensions (WxHxD)		mm	150x260x140					220x260x170		220x300x190		250x400x190		325x550 x195	435x550x250	
Order information			Art. no.	266741	266742	266743	266744	266745	266746	266747	266748	266749	266750	266751	266752	266753	266754

Remarks:
① The applied motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi Electric 4-pole standard motor. The 200 % overload capacity (ND) is the factory default setting.
② The % value of the overload capacity indicates the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100 % load. The waiting periods can be calculated using the r.m.s. current method (I^2xt), which requires knowledge of the duty.
③ The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the pulse voltage value of the inverter output side voltage remains unchanged at about √2 that of the power supply.
④ The rated input capacity varies depending on the impedance values on the power supply side of the inverter (including the cables and input choke).
⑤ FR-DU08: IP40 (except for the PU connector)
⑥ Value for the ND rating
⑦ The braking capability of the inverter can be improved with a optional brake resistor. Please do not use resistor values below the given minimum values.
⑧ The rated input current indicates a value at a rated output voltage. The impedance at the power supply side (including those of the input choke and cables) affects the rated input current.
⑨ The values displays the maximum possible heat dissipation. Please consider this values during setup of the cabinet.
For overseas types refer to page 95.