

MODELS: FR-A800-R2R

TITLE: Applicable cables of FR-A800-R2R series in multiple ratings.

Applicable cables are shown below when you use FR-A800-R2R series in multiple ratings.

1. Standard Model
 (1) HIV wire etc

Voltage	Inverter model (ND rating) FR-A820-[-]-R2R FR-A840-[-]-R2R	Input (R,S,T) Recommended cable gauge (mm ²) *1									
		Power factor improving (AC or DC) reactor									
		Without					With				
		SLD	LD	SND	ND	HD	SLD	LD	SND	ND	HD
200V	0.4K(00046)	2	2	2	2	2	2	2	2	2	2
	0.75K(00077)	2	2	2	2	2	2	2	2	2	2
	1.5K(00108)	2	2	2	2	2	2	2	2	2	2
	2.2K(00167)	3.5	3.5	3.5	2	2	3.5	3.5	3.5	2	2
	3.7K(00250)	5.5	5.5	5.5	3.5	2	5.5	5.5	5.5	3.5	2
	5.5K(00340)	14	8	8	5.5	3.5	8	5.5	5.5	5.5	3.5
	7.5K(00490)	14	14	14	14	5.5	14	14	14	14	5.5
	11K(00630)	22	22	22	14	14	22	22	22	14	14
	15K(00770)	38	38	38	22	14	22	22	22	22	14
	18.5K(00930)	38	38	38	38	22	38	38	38	22	22
	22K(01250)	60	60	60	38	38	60	60	60	38	22
	30K(01540)	80	80	80	60	38	80	60	60	60	38
	37K(01870)	100	100	100	80	60	100	100	100	60	60
	45K(02330)	100	100	100	100	80	100	100	100	100	60
	55K(03160)	-	-	-	100	100	125	125	100	100	100
	75K(03800)	-	-	-	-	-	150	150	150	125	100
90K(04750)	-	-	-	-	-	2×100	150	150	150	125	
400V	0.4K(00023)	2	2	2	2	2	2	2	2	2	
	0.75K(00038)	2	2	2	2	2	2	2	2	2	
	1.5K(00052)	2	2	2	2	2	2	2	2	2	
	2.2K(00083)	2	2	2	2	2	2	2	2	2	
	3.7K(00126)	2	2	2	2	2	2	2	2	2	
	5.5K(00170)	3.5	3.5	3.5	2	2	3.5	3.5	3.5	2	2
	7.5K(00250)	5.5	5.5	5.5	3.5	2	5.5	5.5	5.5	3.5	2
	11K(00310)	8	8	8	5.5	3.5	5.5	5.5	5.5	5.5	3.5
	15K(00380)	14	14	14	8	5.5	8	8	8	5.5	5.5
	18.5K(00470)	14	14	14	14	8	14	14	14	8	5.5
	22K(00620)	22	22	22	14	14	22	22	22	14	8
	30K(00770)	22	22	22	22	14	22	22	22	22	14
	37K(00930)	38	38	38	22	22	38	38	38	22	22
	45K(01160)	60	60	60	38	22	60	60	60	38	22
	55K(01800)	-	-	-	60	38	60	60	60	60	38
	75K(02160)	-	-	-	-	-	80	60	60	60	60
	90K(02600)	-	-	-	-	-	100	80	80	60	60
	110K(03250)	-	-	-	-	-	125	100	100	80	60
	132K(03610)	-	-	-	-	-	150	125	125	100	80
	160K(04320)	-	-	-	-	-	2×100	150	150	125	100
185K(0410)	-	-	-	-	-	2×100	2×100	2×100	150	125	
220K(05470)	-	-	-	-	-	2×125	2×100	2×100	2×100	150	
250K(06100)	-	-	-	-	-	2×150	2×125	2×125	2×100	2×100	
280K(06830)	-	-	-	-	-	2×200	2×150	2×150	2×125	2×100	

mitsubishi electric
INVERTER TECHNICAL BULLETIN

NAGOYA WORKS
File No. : MF-X-129
Date of issue: 2016-01-20

MODELS: FR-A800-R2R

Voltage	Inverter model (ND rating) FR-A820-[-]-R2R FR-A840-[-]-R2R	Output (U,V,W) Recommended cable gauge (mm ²) *1				
		SLD	LD	SND	ND	HD
200V	0.4K(00046)	2	2	2	2	2
	0.75K(00077)	2	2	2	2	2
	1.5K(00108)	2	2	2	2	2
	2.2K(00167)	3.5	3.5	3.5	2	2
	3.7K(00250)	5.5	5.5	5.5	3.5	2
	5.5K(00340)	8	5.5	5.5	5.5	3.5
	7.5K(00490)	14	14	14	8	5.5
	11K(00630)	22	22	22	14	8
	15K(00770)	22	22	22	22	14
	18.5K(00930)	38	38	38	22	22
	22K(01250)	60	60	60	38	22
	30K(01540)	80	60	60	60	38
	37K(01870)	100	100	100	60	60
	45K(02330)	100	100	100	100	60
	55K(03160)	125	125	100	100	100
	75K(03800)	150	150	150	125	100
90K(04750)	2×100	150	150	150	125	
400V	0.4K(00023)	2	2	2	2	2
	0.75K(00038)	2	2	2	2	2
	1.5K(00052)	2	2	2	2	2
	2.2K(00083)	2	2	2	2	2
	3.7K(00126)	2	2	2	2	2
	5.5K(00170)	3.5	3.5	3.5	2	2
	7.5K(00250)	5.5	5.5	5.5	3.5	2
	11K(00310)	5.5	5.5	5.5	5.5	3.5
	15K(00380)	8	8	8	5.5	5.5
	18.5K(00470)	14	14	14	8	5.5
	22K(00620)	22	22	22	14	8
	30K(00770)	22	22	22	22	14
	37K(00930)	38	38	38	22	22
	45K(01160)	60	60	60	38	22
	55K(01800)	60	60	60	60	38
	75K(02160)	80	60	60	60	60
	90K(02600)	100	80	80	60	60
	110K(03250)	125	100	100	80	60
	132K(03610)	150	125	125	100	80
	160K(04320)	2×100	150	150	125	100
185K(0410)	2×100	2×100	2×100	150	125	
220K(05470)	2×125	2×100	2×100	2×100	150	
250K(06100)	2×150	2×125	2×125	2×100	2×100	
280K(06830)	2×200	2×150	2×150	2×125	2×100	

MODELS: FR-A800-R2R

(2)AWG/MCM

Voltage	Inverter model (ND rating) FR-A820-[-]R2R FR-A840-[-]R2R	Input (R,S,T) Recommended cable gauge (AWG) *2									
		Power factor improving (AC or DC) reactor									
		Without					With				
		SLD	LD	SND	ND	HD	SLD	LD	SND	ND	HD
200V	0.4K(00046)	14	14	14	14	14	14	14	14	14	14
	0.75K(00077)	14	14	14	14	14	14	14	14	14	14
	1.5K(0010/8)	14	14	14	14	14	14	14	14	14	14
	2.2K(00167)	12	12	12	14	14	12	12	12	14	14
	3.7K(00250)	10	10	10	12	14	10	10	10	12	14
	5.5K(00340)	6	6	6	10	12	8	10	10	10	12
	7.5K(00490)	6	6	6	6	10	6	6	6	8	10
	11K(00630)	4	4	4	6	6	4	4	4	6	8
	15K(00770)	2	2	2	4	6	4	4	4	4	6
	18.5K(00930)	2	2	2	2	4	2	2	2	4	4
	22K(01250)	1/0	1/0	1/0	2	2	1/0	1/0	1/0	2	4
	30K(01540)	3/0	3/0	3/0	1/0	2	3/0	1/0	1/0	1/0	2
	37K(01870)	4/0	4/0	4/0	3/0	1/0	4/0	4/0	4/0	1/0	1/0
	45K(02330)	4/0	4/0	4/0	4/0	3/0	4/0	4/0	4/0	4/0	1/0
	55K(03160)	-	-	-	4/0	4/0	250	250	4/0	4/0	4/0
	75K(03800)	-	-	-	-	-	2×4/0	2×4/0	2×4/0	250	4/0
90K(04750)	-	-	-	-	-	2×4/0	2×4/0	2×4/0	300	250	
400V	0.4K(00023)	14	14	14	14	14	14	14	14	14	14
	0.75K(00038)	14	14	14	14	14	14	14	14	14	14
	1.5K(00052)	14	14	14	14	14	14	14	14	14	14
	2.2K(00083)	14	14	14	14	14	14	14	14	14	14
	3.7K(00126)	12	12	12	14	14	14	14	14	14	14
	5.5K(00170)	12	12	12	12	14	12	12	12	12	14
	7.5K(00250)	10	10	10	12	12	10	10	10	12	12
	11K(00310)	8	8	8	10	12	10	10	10	10	12
	15K(00380)	6	6	6	8	10	8	8	8	10	10
	18.5K(00470)	6	6	6	6	8	6	6	6	8	10
	22K(00620)	4	4	4	6	6	4	4	4	6	8
	30K(00770)	4	4	4	4	6	4	4	4	4	6
	37K(00930)	1	1	1	4	4	2	2	2	4	4
	45K(01160)	1/0	1/0	1/0	1	4	1/0	1/0	1/0	2	4
	55K(01800)	-	-	-	1/0	1	1/0	1/0	1/0	1/0	2
	75K(02160)	-	-	-	-	-	3/0	1/0	1/0	1/0	1/0
	90K(02600)	-	-	-	-	-	4/0	3/0	3/0	3/0	1/0
	110K(03250)	-	-	-	-	-	250	4/0	4/0	3/0	3/0
	132K(03610)	-	-	-	-	-	300	250	250	4/0	3/0
	160K(04320)	-	-	-	-	-	2×4/0	300	300	250	4/0
185K(0410)	-	-	-	-	-	2×4/0	2×4/0	2×4/0	300	250	
220K(05470)	-	-	-	-	-	2×250	2×4/0	2×4/0	2×4/0	300	
250K(06100)	-	-	-	-	-	2×300	2×250	2×250	2×4/0	2×4/0	
280K(06830)	-	-	-	-	-	2×350	2×300	2×300	2×250	2×4/0	

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Voltage	Inverter model (ND rating) FR-A820-[-]-R2R FR-A840-[-]-R2R	Output (U,V,W) Recommended cable gauge (AWG) *2				
		SLD	LD	SND	ND	HD
200V	0.4K(00046)	14	14	14	14	14
	0.75K(00077)	14	14	14	14	14
	1.5K(00108)	14	14	14	14	14
	2.2K(00167)	12	12	12	14	14
	3.7K(00250)	10	10	10	12	14
	5.5K(00340)	8	10	10	10	12
	7.5K(00490)	6	6	6	8	10
	11K(00630)	4	4	4	6	8
	15K(00770)	4	4	4	4	6
	18.5K(00930)	2	2	2	4	4
	22K(01250)	1/0	1/0	1/0	2	4
	30K(01540)	3/0	1/0	1/0	1/0	2
	37K(01870)	4/0	4/0	4/0	1/0	1/0
	45K(02330)	4/0	4/0	4/0	4/0	1/0
	55K(03160)	250	250	4/0	4/0	4/0
	75K(03800)	2×4/0	2×4/0	2×4/0	250	4/0
90K(04750)	2×4/0	2×4/0	2×4/0	300	250	
400V	0.4K(00023)	14	14	14	14	14
	0.75K(00038)	14	14	14	14	14
	1.5K(00052)	14	14	14	14	14
	2.2K(00083)	14	14	14	14	14
	3.7K(00126)	14	14	14	14	14
	5.5K(00170)	12	12	12	14	14
	7.5K(00250)	10	10	10	12	14
	11K(00310)	10	10	10	10	12
	15K(00380)	8	8	8	10	10
	18.5K(00470)	6	6	6	8	10
	22K(00620)	4	4	4	6	8
	30K(00770)	4	4	4	4	6
	37K(00930)	2	2	2	4	4
	45K(01160)	1/0	1/0	1/0	2	4
	55K(01800)	1/0	1/0	1/0	1/0	2
	75K(02160)	3/0	1/0	1/0	1/0	1/0
	90K(02600)	4/0	3/0	3/0	3/0	1/0
	110K(03250)	250	4/0	4/0	3/0	3/0
	132K(03610)	300	250	250	4/0	3/0
	160K(04320)	2×4/0	300	300	250	4/0
185K(0410)	2×4/0	2×4/0	2×4/0	300	250	
220K(05470)	2×250	2×4/0	2×4/0	2×4/0	300	
250K(06100)	2×300	2×250	2×250	2×4/0	2×4/0	
280K(06830)	2×350	2×300	2×300	2×250	2×4/0	

MODELS: FR-A800-R2R

(3) PVC wire etc

Voltage	Inverter model (ND rating) FR-A820-[-]R2R FR-A840-[-]R2R	Input (R,S,T) Recommended cable gauge (mm ²) *3									
		Power factor improving (AC or DC) reactor									
		Without					With				
		SLD	LD	SND	ND	HD	SLD	LD	SND	ND	HD
200V	0.4K(00046)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	0.75K(00077)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	1.5K(0010/8)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	2.2K(00167)	4	4	4	2.5	2.5	4	4	4	2.5	2.5
	3.7K(00250)	6	6	6	4	2.5	6	6	6	4	2.5
	5.5K(00340)	16	16	16	6	4	10	6	6	6	4
	7.5K(00490)	16	16	16	16	6	16	16	16	10	6
	11K(00630)	25	25	25	16	16	25	25	25	16	10
	15K(00770)	50	35	35	25	16	25	25	25	25	16
	18.5K(00930)	50	35	35	35	25	50	35	35	25	25
	22K(01250)	50	50	50	35	35	50	50	50	35	25
	30K(01540)	70	70	70	50	35	70	70	50	50	35
	37K(01870)	95	95	95	70	50	95	95	95	70	50
	45K(02330)	95	95	95	95	70	95	95	95	95	70
	55K(03160)	-	-	-	95	95	-	-	-	95	95
	75K(03800)	-	-	-	-	-	-	-	-	-	95
90K(04750)	-	-	-	-	-	-	-	-	-	-	
400V	0.4K(00023)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	0.75K(00038)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	1.5K(00052)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	2.2K(00083)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	3.7K(00126)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	5.5K(00170)	4	4	4	2.5	2.5	4	4	4	2.5	
	7.5K(00250)	6	6	6	4	2.5	6	6	6	4	
	11K(00310)	10	10	10	6	4	6	6	6	6	
	15K(00380)	16	16	16	10	6	10	10	10	6	
	18.5K(00470)	16	16	16	16	10	16	16	16	10	
	22K(00620)	25	25	25	16	16	25	25	25	16	
	30K(00770)	25	25	25	25	16	25	25	25	25	
	37K(00930)	50	50	50	25	25	50	50	50	25	
	45K(01160)	50	50	50	50	25	50	50	50	50	
	55K(01800)	-	-	-	50	50	50	50	50	50	
	75K(02160)	-	-	-	-	-	70	50	50	50	
	90K(02600)	-	-	-	-	-	95	70	70	50	
	110K(03250)	-	-	-	-	-	120	95	95	70	
	132K(03610)	-	-	-	-	-	150	120	120	95	
	160K(04320)	-	-	-	-	-	2×95	150	150	120	
185K(0410)	-	-	-	-	-	2×95	2×95	2×95	150		
220K(05470)	-	-	-	-	-	2×120	2×95	2×95	2×95		
250K(06100)	-	-	-	-	-	2×150	2×120	2×120	2×95		
280K(06830)	-	-	-	-	-	2×185	2×150	2×150	2×120		

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Voltage	Inverter model (ND rating) FR-A820-[-]-R2R FR-A840-[-]-R2R	Output (U,V,W) Recommended cable gauge (mm ²) *2				
		SLD	LD	SND	ND	HD
200V	0.4K(00046)	2.5	2.5	2.5	2.5	2.5
	0.75K(00077)	2.5	2.5	2.5	2.5	2.5
	1.5K(00108)	2.5	2.5	2.5	2.5	2.5
	2.2K(00167)	4	4	4	2.5	2.5
	3.7K(00250)	6	6	6	4	2.5
	5.5K(00340)	10	6	6	6	4
	7.5K(00490)	16	16	16	10	6
	11K(00630)	25	25	25	16	10
	15K(00770)	25	25	25	25	16
	18.5K(00930)	50	35	35	25	25
	22K(01250)	50	50	50	35	25
	30K(01540)	70	70	50	50	35
	37K(01870)	95	95	95	70	50
	45K(02330)	95	95	95	95	70
	55K(03160)	-	-	-	95	95
	75K(03800)	-	-	-	-	95
90K(04750)	-	-	-	-	-	
400V	0.4K(00023)	2.5	2.5	2.5	2.5	2.5
	0.75K(00038)	2.5	2.5	2.5	2.5	2.5
	1.5K(00052)	2.5	2.5	2.5	2.5	2.5
	2.2K(00083)	2.5	2.5	2.5	2.5	2.5
	3.7K(00126)	2.5	2.5	2.5	2.5	2.5
	5.5K(00170)	4	4	4	2.5	2.5
	7.5K(00250)	6	6	6	4	2.5
	11K(00310)	6	6	6	6	4
	15K(00380)	10	10	10	6	6
	18.5K(00470)	16	16	16	10	6
	22K(00620)	25	25	25	16	10
	30K(00770)	25	25	25	25	16
	37K(00930)	50	50	50	25	25
	45K(01160)	50	50	50	50	25
	55K(01800)	50	50	50	50	50
	75K(02160)	70	50	50	50	50
	90K(02600)	95	70	70	50	50
	110K(03250)	120	95	95	70	50
	132K(03610)	150	120	120	95	70
	160K(04320)	2×95	150	150	120	95
185K(0410)	2×95	2×95	2×95	150	120	
220K(05470)	2×120	2×95	2×95	2×95	150	
250K(06100)	2×150	2×120	2×120	2×95	2×95	
280K(06830)	2×185	2×150	2×150	2×120	2×95	

MODELS: FR-A800-R2R

- *1 For FR-A820-03160(55K)-R2R or lower and FR-A840-01800(55K)-R2R or lower, it is the gauge of a cable with the continuous maximum permissible temperature of 75°C. (HIV cable (600 V grade heat-resistant PVC insulated wire), etc.) It assumes a surrounding air temperature of 50°C or lower and the wiring distance of 20 m or shorter. For FR-A820-03800(75K)-R2R or higher and FR-A840-02160(75K)-R2R or higher, it is the gauge of the cable with the continuous maximum permissible temperature of 90°C or higher. (LMFC (heat resistant flexible cross-linked polyethylene insulated cable), etc.) It assumes a surrounding air temperature of 50°C or lower and in-enclosure wiring.
- *2 For all the 200 V class capacities and FR-A840-01160(45K)-R2R or lower, it is the gauge of a cable with the continuous maximum permissible temperature of 75°C (THHW cable). It assumes a surrounding air temperature of 40°C or lower and the wiring distance of 20 m or shorter. For the FR-A840-01800(55K)-R2R or higher, it is the gauge of a cable with the continuous maximum permissible temperature of 90°C (THHN cable). It assumes a surrounding air temperature of 40°C or lower and in-enclosure wiring. (Selection example for use mainly in the United States.)
- *3 For the FR-A820-00770(15K)-R2R or lower and the FR-A840-01160(45K)-R2R or lower, it is the gauge of a cable with the continuous maximum permissible temperature of 70°C (PVC cable). It assumes a surrounding air temperature of 40°C or lower and the wiring distance of 20 m or shorter. For the FR-A820-00930(18.5K)-R2R or higher and the FR-A840-01800(55K)-R2R or higher, it is the gauge of a cable with the continuous maximum permissible temperature of 90°C (XLPE cable). It assumes a surrounding air temperature of 40°C or lower and in-enclosure wiring. (Selection example for use mainly in Europe.)

MODELS: FR-A800-R2R

2. Converter Separated Type

(1) HIV cable, etc

Voltage	Inverter Model *7 (ND rating) FR-A820-[]-R2R FR-A840-[]-R2R	Recommended cable gauge (mm2) *4				
		Output (U,V,W)				
		SLD	LD	SND	ND	HD
400V class	315K(07700)	2×200	2×200	2×200	2×150	2×125
	355K(08660)	2×250	2×200	2×200	2×200	2×150
	400K(09620)	2×250	2×250	2×250	2×200	2×200
	450K(10940)	3×200	2×250	2×250	2×250	2×200
	500K(12120)	3×200	3×200	3×200	2×250	2×250

(2) AWG/MCM

Voltage	Inverter Model *7 (ND rating) FR-A820-[]-R2R FR-A840-[]-R2R	Recommended cable gauge (mm2) *5				
		Output (U,V,W)				
		SLD	LD	SND	ND	HD
400V class	315K(07700)	2×400	2×350	2×350	2×300	2×250
	355K(08660)	2×500	2×400	2×400	2×350	2×300
	400K(09620)	2×500	2×500	2×500	2×400	2×350
	450K(10940)	3×350	2×500	2×500	2×500	2×400
	500K(12120)	3×400	3×350	3×350	2×500	2×500

(3) PVC cable, etc.

Voltage	Inverter Model *7 (ND rating) FR-A820-[]-R2R FR-A840-[]-R2R	Recommended cable gauge (mm2) *6				
		Output (U,V,W)				
		SLD	LD	SND	ND	HD
400V class	315K(07700)	2×185	2×185	2×185	2×150	2×120
	355K(08660)	2×240	2×185	2×185	2×185	2×150
	400K(09620)	2×240	2×240	2×240	2×185	2×185
	450K(10940)	3×185	2×240	2×240	2×240	2×185
	500K(12120)	3×185	3×185	3×185	2×240	2×240

*4 It is the gauge of the cable with the continuous maximum permissible temperature of 90°C or higher. (LMFC (heat resistant flexible cross-linked polyethylene insulated cable), etc.). It assumes a surrounding air temperature of 50°C or lower and in-enclosure wiring.

*5 It is the gauge of a cable with the continuous maximum permissible temperature of 90°C (THHN cable). It assumes a surrounding air temperature of 40°C or lower and in-enclosure wiring. (Selection example for use mainly in the United States.)

*6 It is the gauge of a cable with the continuous maximum permissible temperature of 90°C (XLPE cable). It assumes a surrounding air temperature of 40°C or lower and in-enclosure wiring. (Selection example for use mainly in Europe.)

*7 Regarding the input (R,S,T) of the FR-A842-315K and above, select by matching to the FR-CC2 converter unit. (refer to the FR-A800 catalogue)