3G3R1

New High-Performance Multifunctional Inverter

Freedom to design

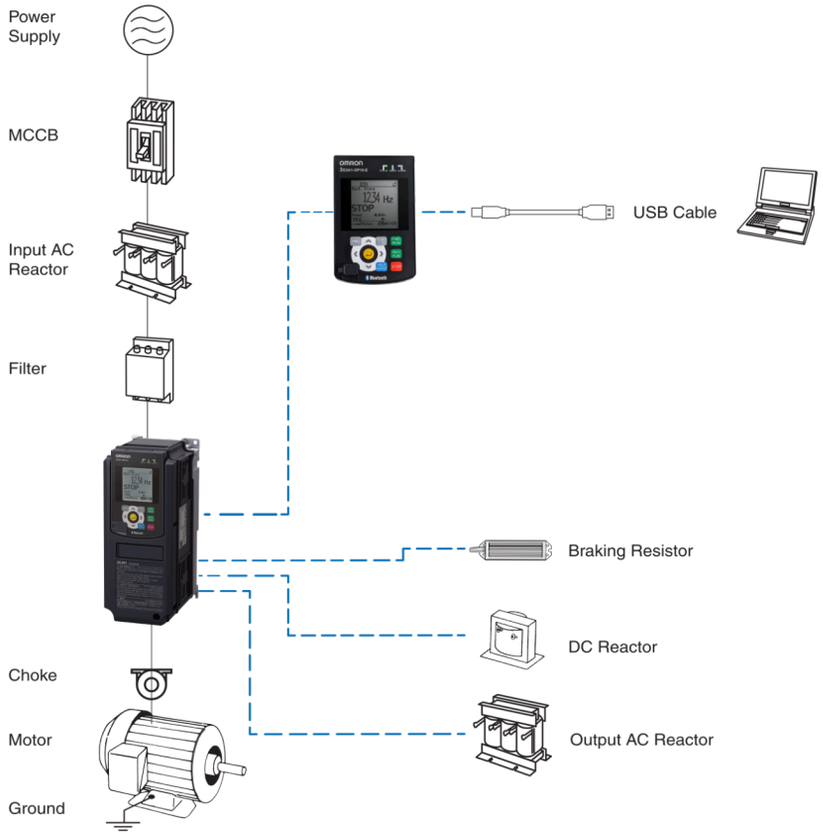
- IM and PM motor control in OLV & CLV (200% or more torque at 0.0Hz speed).
- Supports applications that require high speed rotation and minimal speed and torque fluctuations.
- 40Hz Sensor-less and 200Hz Vector closed-loop control enhanced speed and 1000Hz current response.
- Increases the maximum output frequency of all control systems to 599 Hz.
- Quadruple rating: HHD 150%/1min, 200% 3sc, HND 120%/1 min, HD 150%/1 min and ND 120%/1 min
- Built-in EMC filter (all range), braking transistor up to 75kW and braking resistor up to 7.5kW.
- Positioning Control & Orientation functionality, Master-follower operation, Auto energy saving operation
- Multifunctional Programming Plug-In software
- Embedded STO safety function, SIL3/Cat.3/PL:e
- 4 x Encoder option boards: 100kHz open collector & line driver interfaces
- Modbus RTU built-in including Modbus Mapping Function
- Communication options: EtherCAT, PROFINET, EtherNet/IP and Modbus TCP (coming soon)
- PC configuration tool: Sysmac Studio IDE
- Long life expectancy of the main components: 10 Years design life
- CE, UL Standard, cULStandard, 3C2 PCB coating, RoHS2

Ratings:

- 400V Class three-phase 0.4 to 630KW



System configuration



Type designation

3G3R1 - A 4 0 0 4

Drive Series

A: IP20 Protection
B: IP00 Protection

Voltage:
4: Three-phase 400 VAC

Rated power:
3-phase 400 VAC: 0.4 to 630 KW

Specifications

Item				Specification														
Type (3G3R1-□□□□□)				A4004	A4007	A4015	A4022	A4037	A4055	A4075	A4110	A4150	A4185	A4220	B4300	B4370	B4450	B4550	B4750	B4900
Standard applicable motor*1	Three-phase Input	kW	HHD	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
			HND	-					7.5	11	15	18.5	22	30	37	45	55	75	110	132
			HD	-											37	45	55	75	90	110
			ND	-											45	55	75	90	110	132
		HP	HHD	1/2	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100	125
			HND	-					10	15	20	25	30	40	50	60	75	100	150	200
			HD	-											50	60	75	100	150	150
			ND	-											60	75	100	125	150	200
Output ratings	Three-phase Output	Rated capacity [kVA]	HHD	1.1	1.9	3.2	4.5	6.8	10	14	18	24	29	34	45	57	69	85	114	137
			HND	-					13	17	26	31	34	45	57	69	85	114	165	198
			HD	-											57	69	85	114	137	165
			ND	-											64	80	105	136	165	198
		Rated current [A] (at Ta=50°C)	HHD	1.5	2.5	4.2	6.0	9.0	13.5	18.5	24.5	32	39	45	60	75	91	112	150	180
			HND	-					17.5	23	35	41	45	60	75	91	112	150	217	261
		Rated current [A] (at Ta=40°C)	HD	-											75	91	112	150	180	217
			ND	-											85	105	139	179	217	261
	Rated voltage [V]			Three-phase 380 to 480 V (with AVR function)																
	Overload current rating [A] (permissible overload time)		HHD	150% for 1 minute, 200% for 3 seconds																
			HND	120% for 1 minute																
			HD	150% for 1 minute																
			ND	120% for 1 minute																
	Ambient temperature		HHD	-10 to +55 °C (current derating necessary in +50 to +55 °C range)																
			HND	-					-10 to +55 °C (current derating necessary in +50 to +55 °C range)											
			HD	-											-10 to +55 °C (current derating necessary in +40 to +55 °C)					
			ND	-																
	Rated frequency [Hz]			50/60 Hz																

Item				Specification														
Type (3G3R1-□□□□□)				A4004	A4007	A4015	A4022	A4037	A4055	A4075	A4110	A4150	A4185	A4220	B4300	B4370	B4450	B4550	B4750	B4900
Input rating	Three-phase Input	Voltage, frequency		Three-phase 380 to 480 V, 50/60 Hz																
		Voltage, frequency fluctuation		Voltage: +10 to -15% (interphase unbalance ratio: within 2%)*5, Frequency: +5 to -5 %																
		Rated Current [A]	With DCR	HHD	0.85	1.6	3.0	4.5	7.5	10.6	14.4	21.1	28.8	35.5	42.2	57.0	68.5	83.2	102	138	164
				HND	-					14.4	21.1	28.8	35.5	42.2	57	68.5	83.2	102	138	201	238
				HD	-											68.5	83.2	102	138	164	201
				ND	-											83.2	102	138	164	201	238
			Without DCR	HHD	1.7	3.1	5.9	8.2	13	17.3	23.2	33	43.8	52.3	60.6	77.9	94.3	114	140	-	-
				HND	-					23.2	33	43.8	52.3	60.6	77.9	94.3	114	140	-	-	-
				HD	-											94.3	114	140	-	-	-
				ND	-											114	140	-	-	-	-
		Required power supply capacity (with DCR) [kVA]		HHD	0.6	1.2	2.1	3.2	5.2	7.4	10	15	20	25	30	40	48	58	71	96	114
				HND	-					10	15	20	25	30	40	48	58	71	96	140	165
				HD	-											48	58	71	96	114	140
				ND	-											58	71	96	114	140	165
	Auxiliary control power supply voltage			-	Single-phase 380 to 480 V, 50/60 Hz																
Braking	Torque [%]		HHD	150	100						20				10 to 15					
			HND	-					70		15				7 to 12					
			HD, ND	-											7 to 12					
	Braking transistor			Built-in as standard																option
	Minimum connectable resistance [Ω]			200		160		96	64	48	32	24	16		10	9.0	8.0	6.5	4.7	-
	Built-in braking resistor [Ω]			720	470	160			80		Option									-
	Built-in braking resistor [W]			30	40	80			90		-									
	Time [s]		HHD	5							-									
			HND	-					3.7	3.4	-									
			HD, ND	-																
	%ED		HHD	5	3	5	3	2	3	2	-									
			HND	-					2.2	1.4	-									
			HD, ND	-																
EMC filter				Emissions: EN 61800-3:2004/A1:2012 Category C3, Immunity: 2nd Env.																
DC reactor (DCR)			HHD	Option															Option	
			HND	Option														Option		
			HD	-											Option			Option		
			ND	-											Option		Option			
Protective construction (IEC 60529)				IP20 enclosed type, UL open type											IP00 open type, UL open type IP55 at external side when external cooling installed					
Cooling system				Natural cooling			Fan cooling													
Weight (kg)				1.8	2.0	2.6	2.9	3.0	5.9	6.0	5.7	10	11	11	23	23	28	31	38	60

Item					Specification										
Type (3G3R1-□□□□□)					B411K	B413K	B416K	B420K	B422K	B428K	B431K	B435K	B440K	B450K	B463K
Standard applicable motor		Three-phase Input	kW	HHD	110	132	160	200	220	280	315	355	400	500	630
				HND	160	200	220	280	315	355	400	500	560	630	710
				HD	132	160	200	220	250	315	355	400	450	560	710
				ND	160	200	220	280	315	400	450	560	630	710	800
			HP	HHD	150	200	250	300	350	400	450	500	600	800	900
				HND	200	300	350	450	500	500	600	700	800	900	1000
				HD	200	250	300	350	400	450	500	600	700	900	1200
				ND	200	300	350	450	500	600	700	900	900	1200	1300
Output ratings	Three-phase Output	Rated capacity [kVA]		HHD	164	198	247	287	329	396	445	495	563	731	891
				HND	221	275	316	416	464	495	563	731	792	891	1056
				HD	198	247	287	329	363	445	495	563	640	792	1056
				ND	221	286	328	416	464	563	640	791	890	1055	1127
		Rated current [A] (at Ta=50°C)		HHD	216	260	325	377	432	520	585	650	740	960	1170
				HND	290	361	415	547	610	650	740	960	1040	1170	1386
		Rated current [A] (at Ta=40°C)		HD	261	325	377	432	477	585	650	740	840	1040	1386
				ND	290	376	431	547	610	739	840	1039	1169	1385	1480
	Rated voltage [V]				Three-phase 380 to 480 V (with AVR function)										
	Overload current rating [A] (permissible overload time)			HHD	150% for 1 minute, 200% for 3 seconds										
				HND	120% for 1 minute										
				HD	150% for 1 minute										
				ND	120% for 1 minute										
	Ambient temperature			HHD	-10 to +55 °C [14 to 131 °F] (current derating necessary in +50 to +55 °C)										
				HND	-10 to +55 °C [14 to 131 °F] (current derating necessary in +50 to +55 °C)										
				HD	-10 to +55 °C [14 to 131 °F] (current derating necessary in +40 to +55 °C)										
				ND	-10 to +55 °C [14 to 131 °F] (current derating necessary in +40 to +55 °C)										
	Rated frequency [Hz]				50/60 Hz										

Item					Specification										
Type (3G3R1-□□□□□)					B411K	B413K	B416K	B420K	B422K	B428K	B431K	B435K	B440K	B450K	B463K
Input rating	Three-phase Input	Voltage, frequency			Three-phase 380 to 480 V, 50/60 Hz										
		Voltage, frequency fluctuation			Voltage: +10 to -15% (interphase unbalance ratio: within 2%)*5, Frequency: +5 to -5 %										
		Rated current [A]	With DCR	HHD	201	238	286	357	390	500	559	628	705	881	1115
				HND	286	357	390	500	559	628	705	881	990	1115	1256
				HD	238	286	357	390	443	559	628	705	789	990	1256
				ND	286	357	390	500	559	705	789	990	1115	1256	1415
			With-out DCR	HHD	-	-	-	-	-	-	-	-	-	-	-
				HND	-	-	-	-	-	-	-	-	-	-	-
				HD	-	-	-	-	-	-	-	-	-	-	-
				ND	-	-	-	-	-	-	-	-	-	-	-
		Required power supply capacity (with DCR) [kVA]		HHD	140	165	199	248	271	347	388	436	489	611	773
				HND	199	248	271	347	388	436	489	611	686	773	871
				HD	165	199	248	271	307	388	436	489	547	686	871
				ND	199	248	271	347	388	489	547	686	773	871	981
	Auxiliary control power supply voltage				Single-phase 380 to 480 V, 50/60 Hz										
Braking	Torque [%]			HHD	10 to 15										
				HND	7 to 12										
				HD, ND	7 to 12										
	Braking transistor				Option										
	Minimum connectable resistance value [Ω]				-										
	Built-in braking resistor [Ω]				Option										
	Time [s]				-										
	%ED				-										
EMC filter					Emissions: EN 61800-3:2004/A1:2012 Category C3 Immunity: 2nd Env.										
DC reactor (DCR)				HHD	Option*9										
				HND	Option*9										
				HD	Option*9										
				ND	Option*9										
Protective construction (IEC 60529)					IP00 open type, UL open type. IP55 at external side when external cooling installed										
Cooling system					Fan cooling										
Weight (kg)					60	89	89	116	124	221	221	291	295	450	450

Common specifications

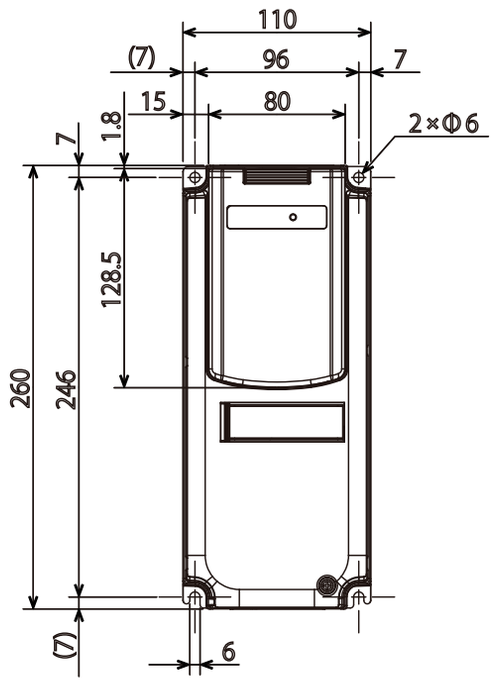
Item		Specifications
Output	Maximum output frequency	5 to 599 Hz
	Base frequency	5 to 599 Hz variable (in conjunction with maximum output frequency)
	Number of motor poles setting	2 to 128 poles
	Starting frequency	0.1 to 60.0 Hz variable (0.0 Hz under vector control)
	Carrier frequency	0.75 to 16 kHz variable setting HHD specification: 0.4 to 55 kW (type : A4004 to B4550) HND specification: 5.5 to 18.5 kW (type : A4055 to A4185) 0.75 to 10 kHz variable setting HHD specification: 75 to 630 kW (type : B4750 to B463K) HND specification: 22 to 55 kW (type : A4220 to B4550) HD specification: 30 to 55 kW (type : B4300 to B4550) 0.75 to 6 kHz variable setting HND and HD specification: 75 to 630 kW (type : B4750 to B463K) ND specification: 30 to 630 kW (type : B4300 to B463K)
	Frequency setting resolution	Analog setting: 1/3000 of maximum frequency / Digital setting: 0.01 Hz (on operator with LCD) / Link setting: 0.005% of maximum frequency or 0.01 Hz (fixed)
	Control method	VF (Voltage frequency with and without PG), SCVF (Voltage frequency with slip compensation), DTV (Dynamic torque vector control with and without PG), DTV (Vector control with and without PG) and PM-SVC (permanent magnet vector control with and without PG)
	Speed control range	VF, SCFV, IMPG-VF 1:20 DTV, IMPG-DTV and IM-SVC 1:200 IMPG-VC and PMPG-VC 1:1500 PM-SVC 1:10 to 1:100
	Speed control accuracy, Output frequency accuracy	

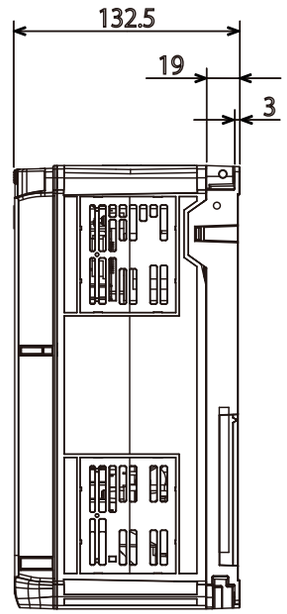
Control method	Speed control accuracy
VF, DTV, SCVF IMPG-VF, IMPG-DTV, IMPG-VC, PMPG-VC	Analog setting: ±0.2% or less of maximum output frequency (at 25 ±10 °C) (77 ±18 °F)
	Digital setting: ±0.01% or less of maximum output frequency (at -10 to +50 °C) (14 to 122 °F)
IM-SVC, PM-SVC	Analog setting: ±0.5% or less of maximum output frequency (at 25 ±10 °C) (77 ±18 °F)
	Digital setting: ±0.5% or less of maximum output frequency (at -10 to +50 °C) (14 to 122 °F)

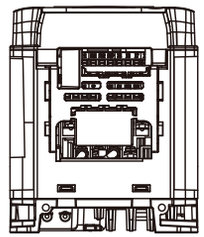
Standards

Model number 3G3R1			Specifications
Regulations and Standards	CE UKCA	EMC	EN 61800-3:2004/A1:2012 (2018 is ratified)
		Functional safety	IEC 61800-5-2:2016 IEC/EN 61800-5-2:2017 STO SIL3 EN ISO 13849-1:2015, Cat.3 / Ple (2016 already exist)
		Electrical safety	EN 61800-5-1:2017
	UL	US	UL61800-5-1, Edition 1, 2012 (A1 2017 ratified)
		CA	CSA-C22.2 No.274, 2017
	KC		KS-C9800-3 (Pending)
	EAC		–
	RCM		EN 61800-3:2004+A1:2012 (2016 ratified)
Protection design			Open chassis type: IP20 Model

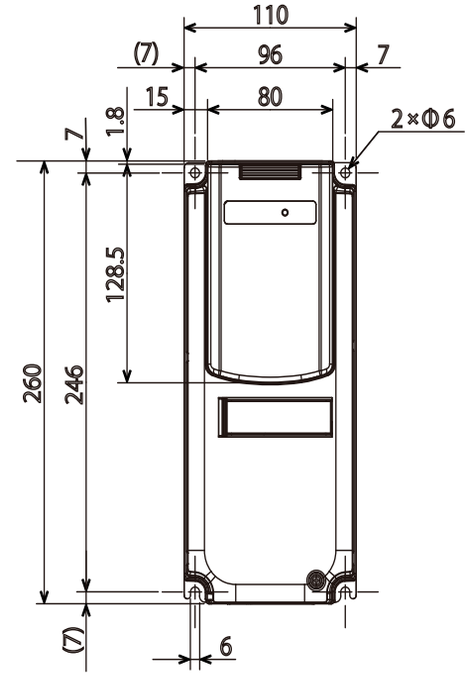
Dimensions

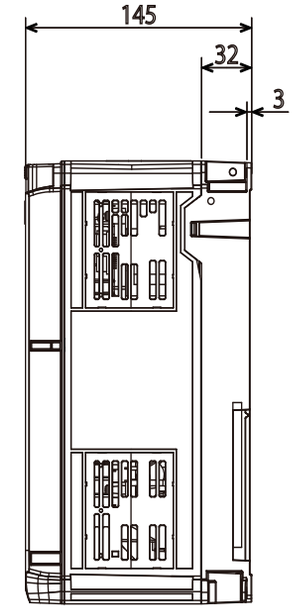


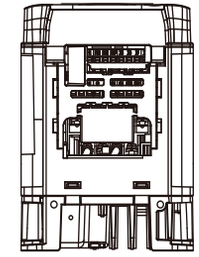




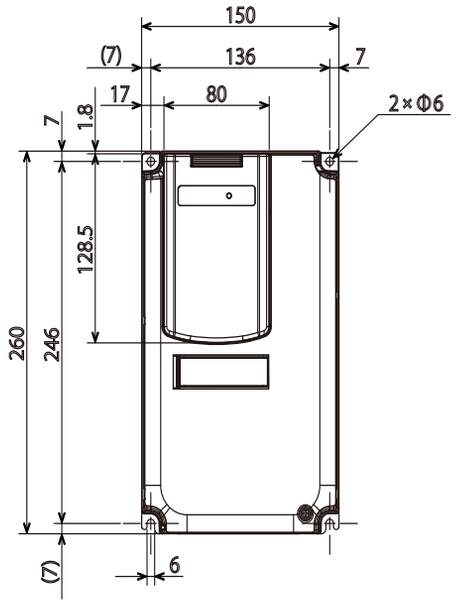
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-A4004	110 (4.33)	260 (10.24)	132 (5.2)

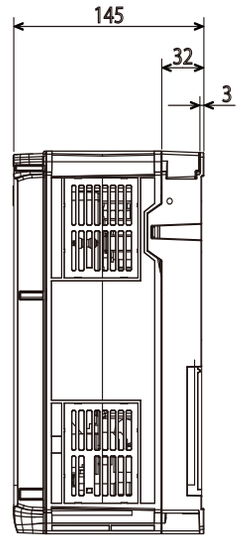


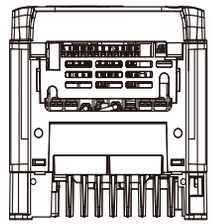


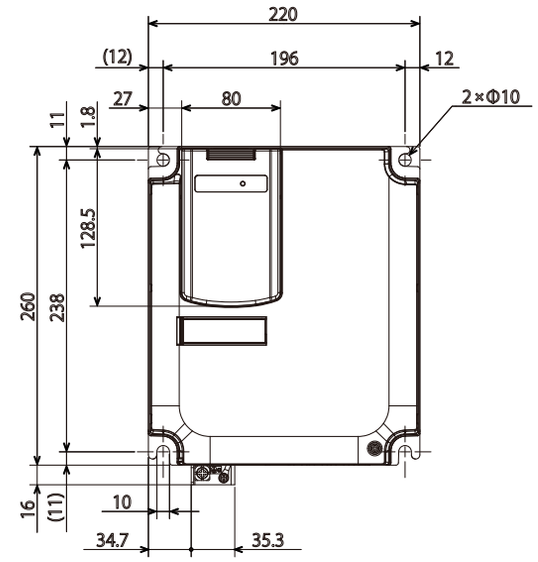


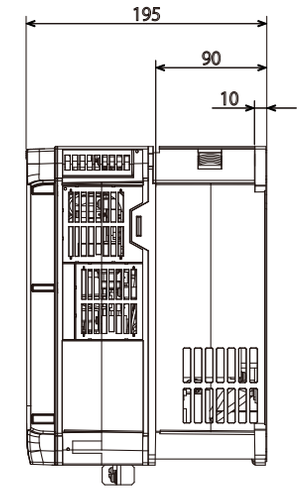
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-A4007	110 (4.33)	260 (10.24)	145 (5.69)

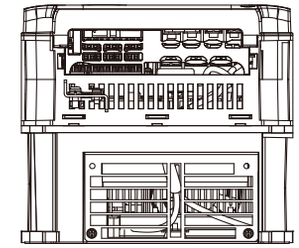






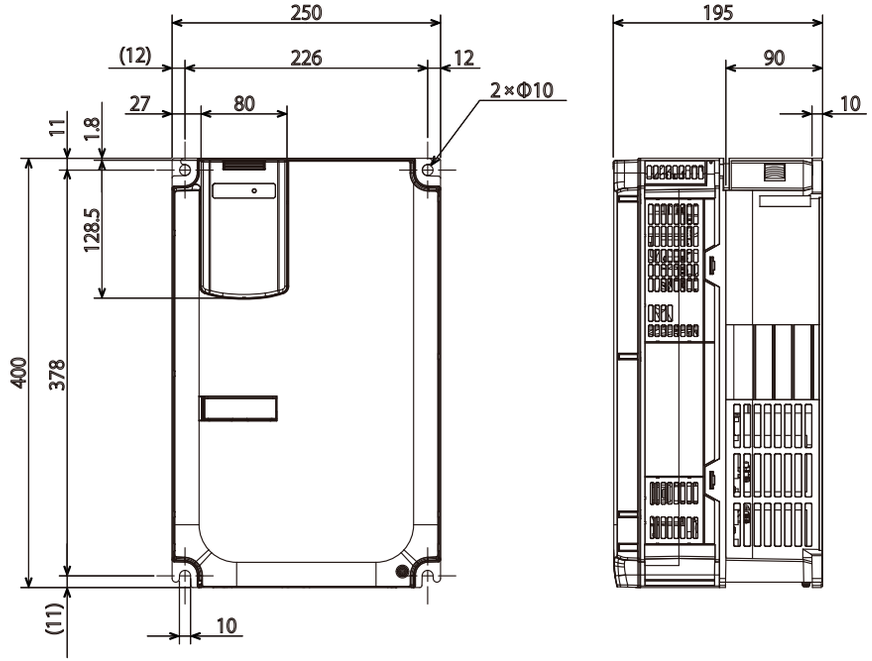


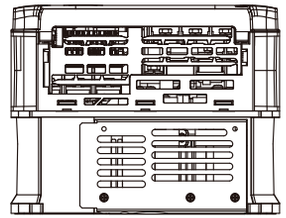


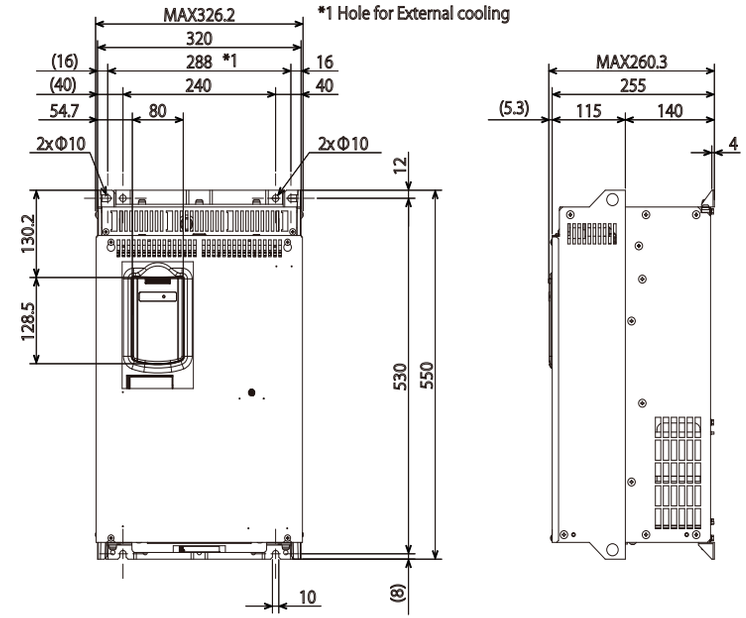


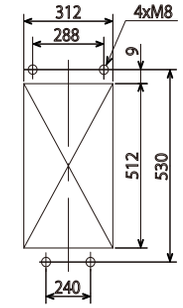
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-A4015	150 (5.91)	260 (10.24)	145 (5.69)
	3G3R1-A4022			
	3G3R1-A4037			

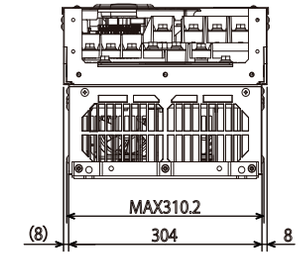
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-A4055	220 (8.66)	260 (10.24)	195 (7.66)
	3G3R1-A4075			
	3G3R1-A4110			





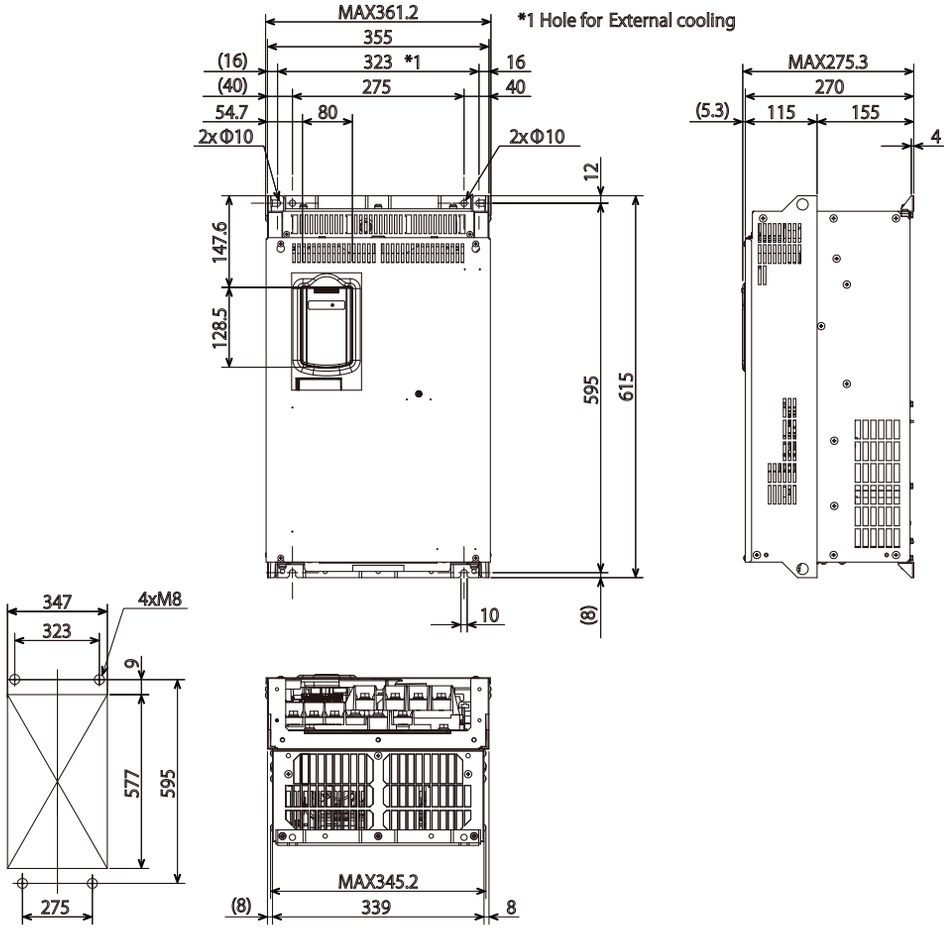


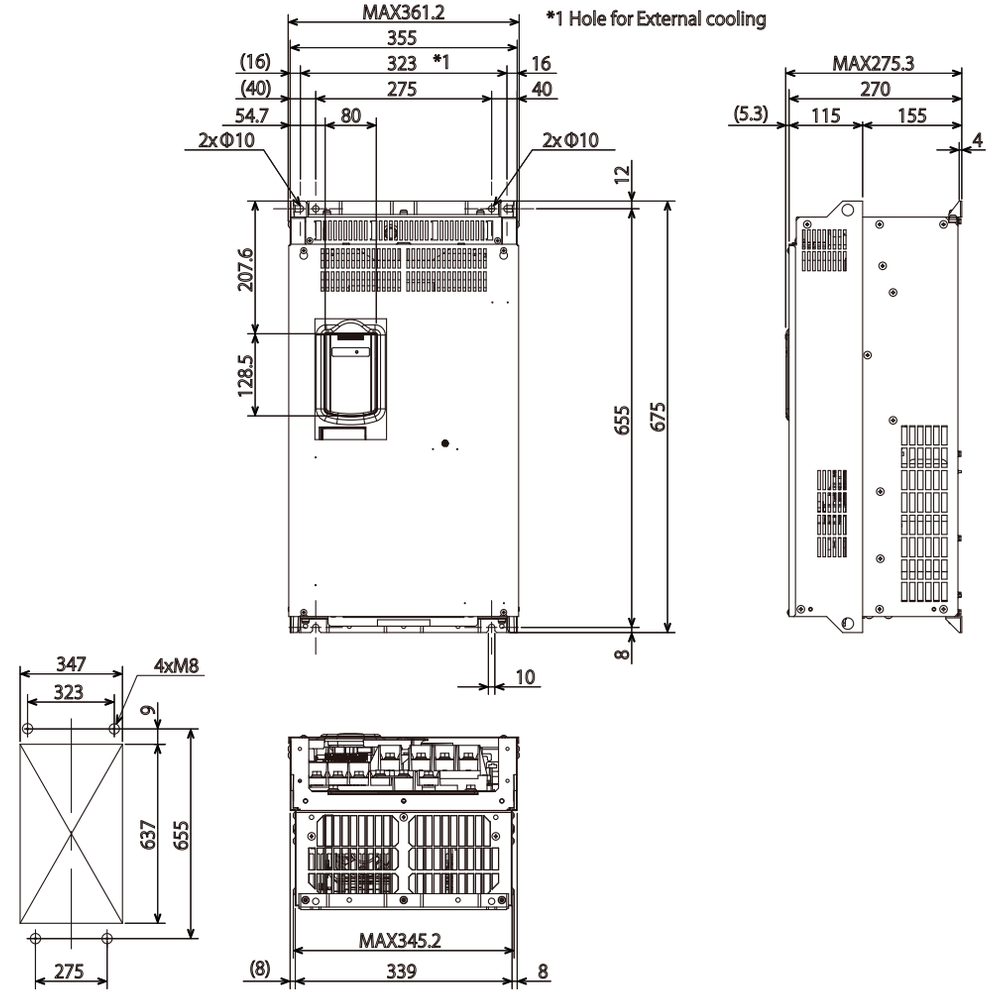




Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-A4150	250 (9.84)	400 (15.75)	195 (7.66)
	3G3R1-A4185			
	3G3R1-A4220			

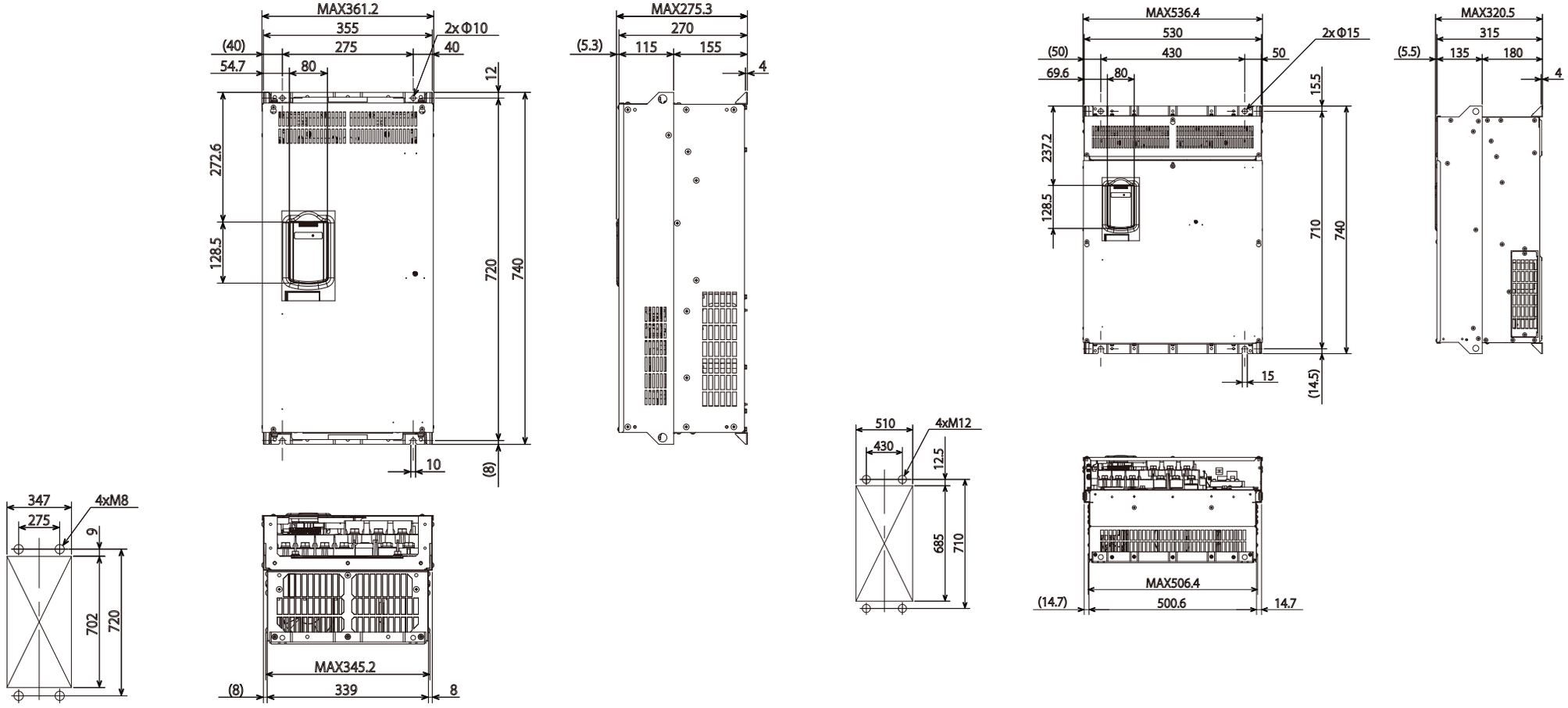
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B4300	326.2 (12.84)	550 (21.65)	260.3 (10.24)
	3G3R1-B4370			





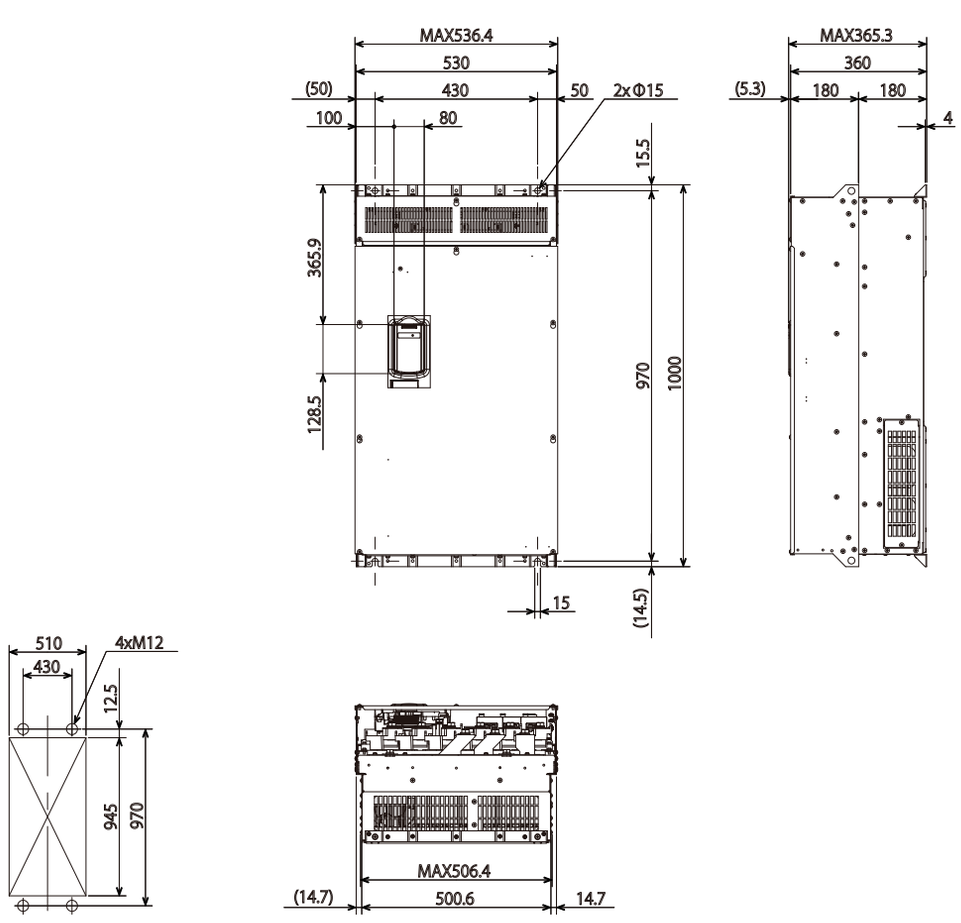
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B4450	361.2 (14.22)	615 (24.21)	275.3 (10.83)

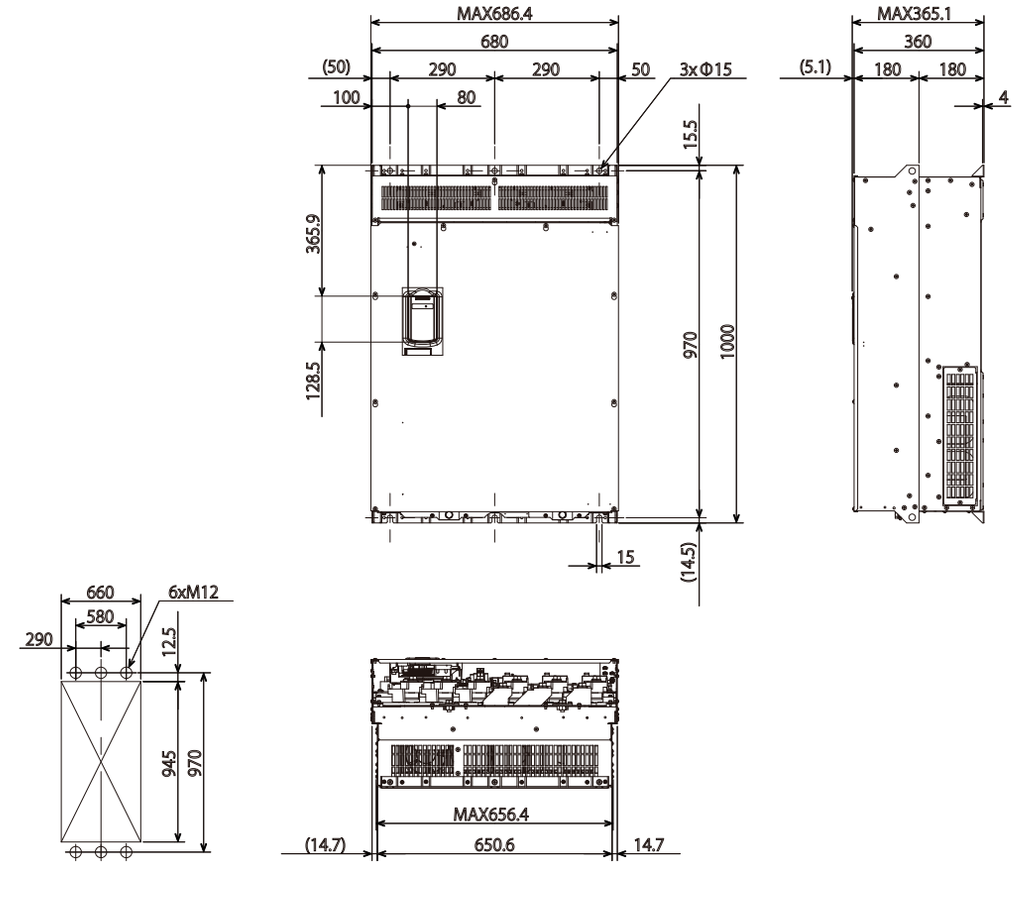
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B4550	361.2 (14.22)	675 (26.57)	274.1 (10.79)



Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B4750	361.2 (14.22)	740 (29.13)	274.1 (10.79)

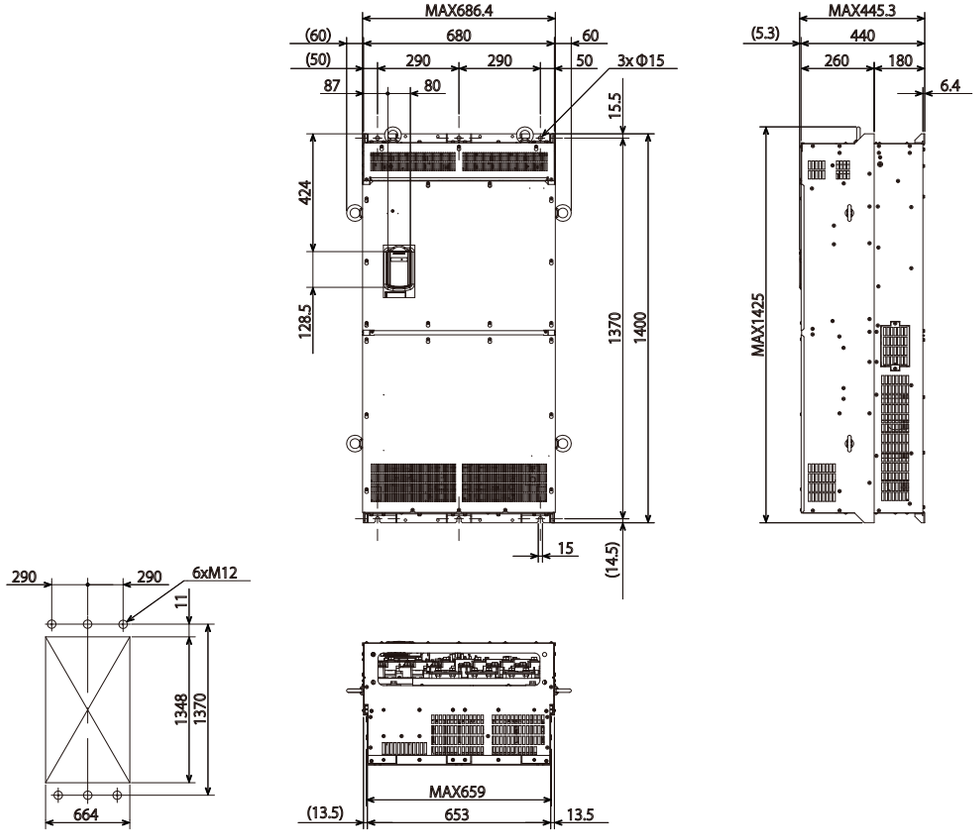
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B4900	536.4 (21.12)	740 (29.13)	319.3 (12.57)
	3G3R1-B411K			

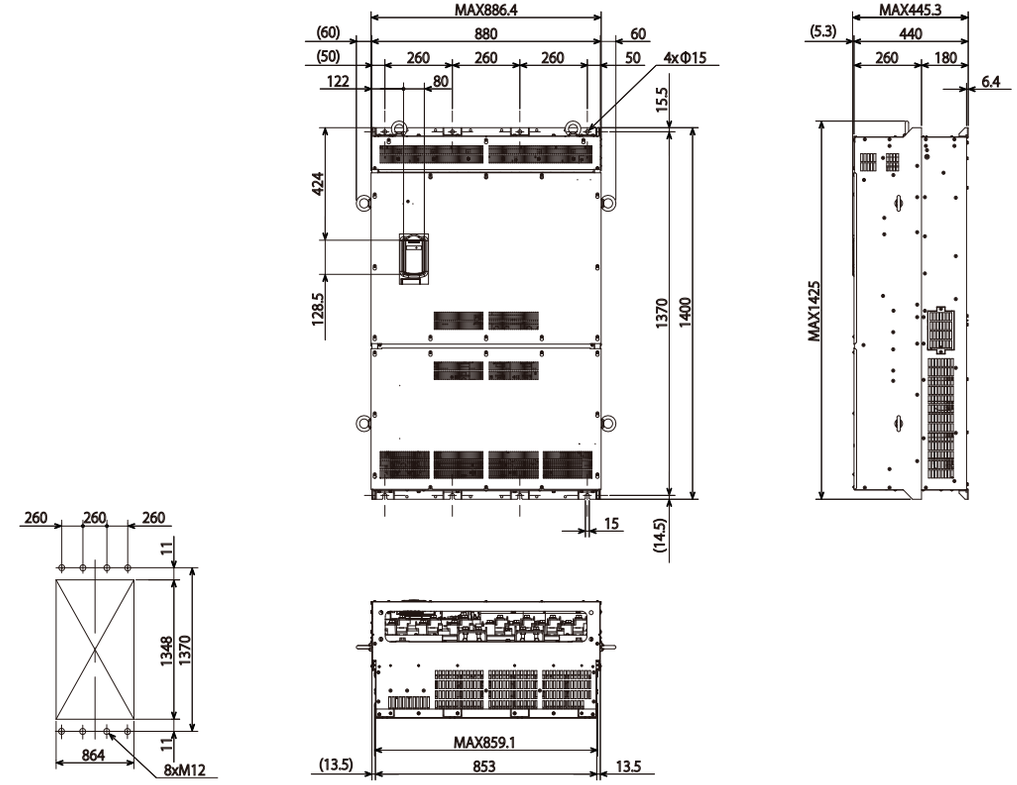




Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B413K	536.4 (21.12)	1000 (39.37)	363.9 (14.33)
	3G3R1-B416K			

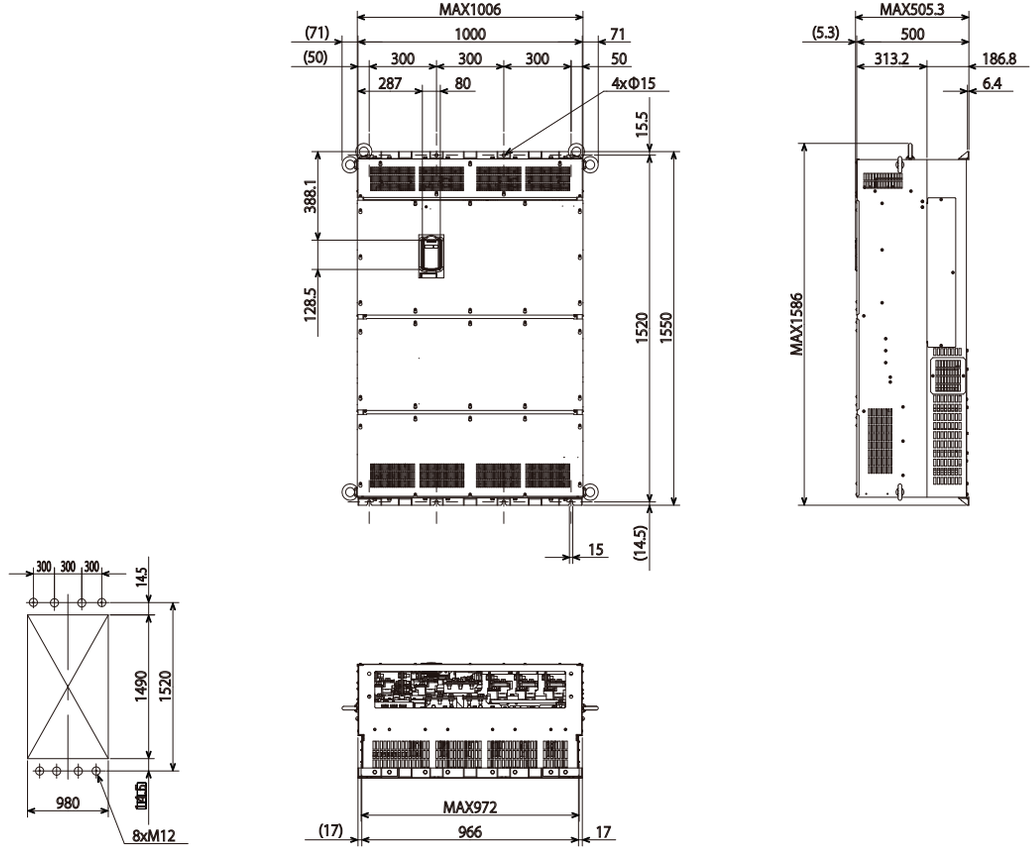
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B420K	686.4 (27.02)	1000 (39.37)	363.9 (14.33)
	3G3R1-B422K			





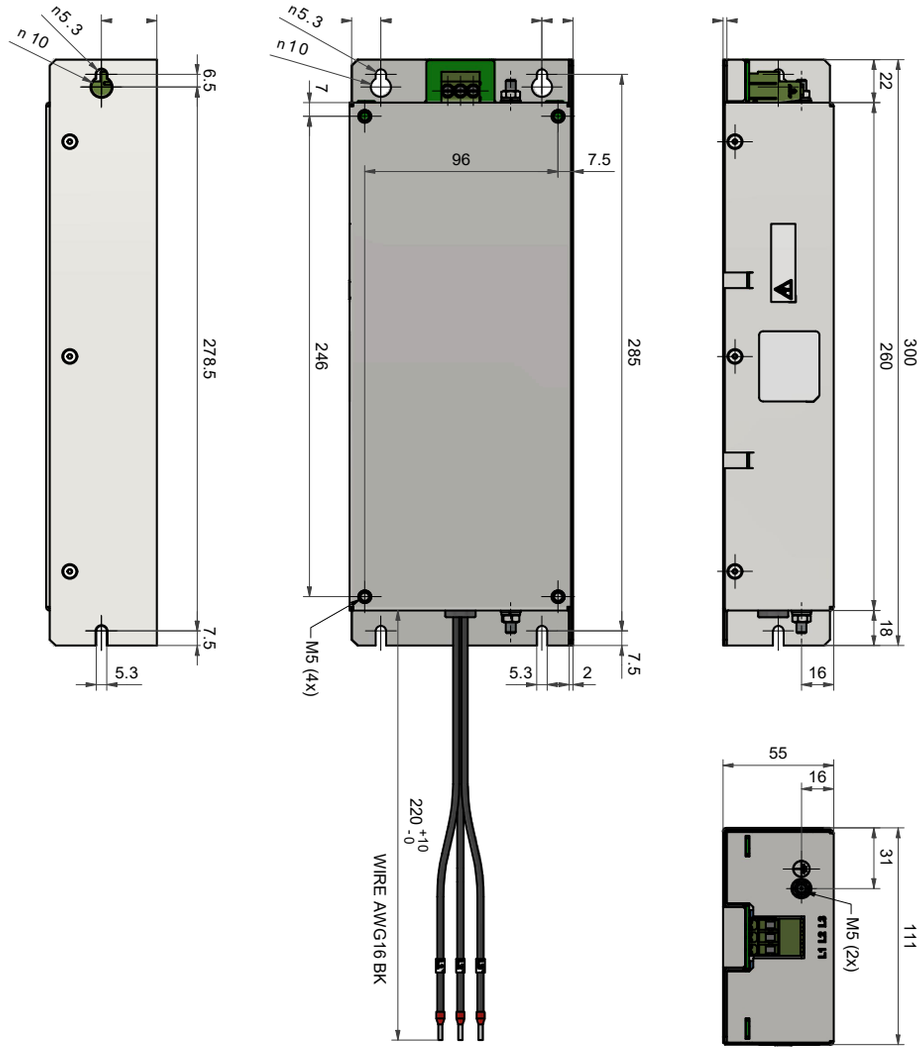
Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B428K	686.4 (27.02)	1400 (55.12)	444.1 (17.48)
	3G3R1-B431K			

Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B435K	886.4 (34.9)	1400 (55.12)	444.1 (17.48)
	3G3R1-B440K			

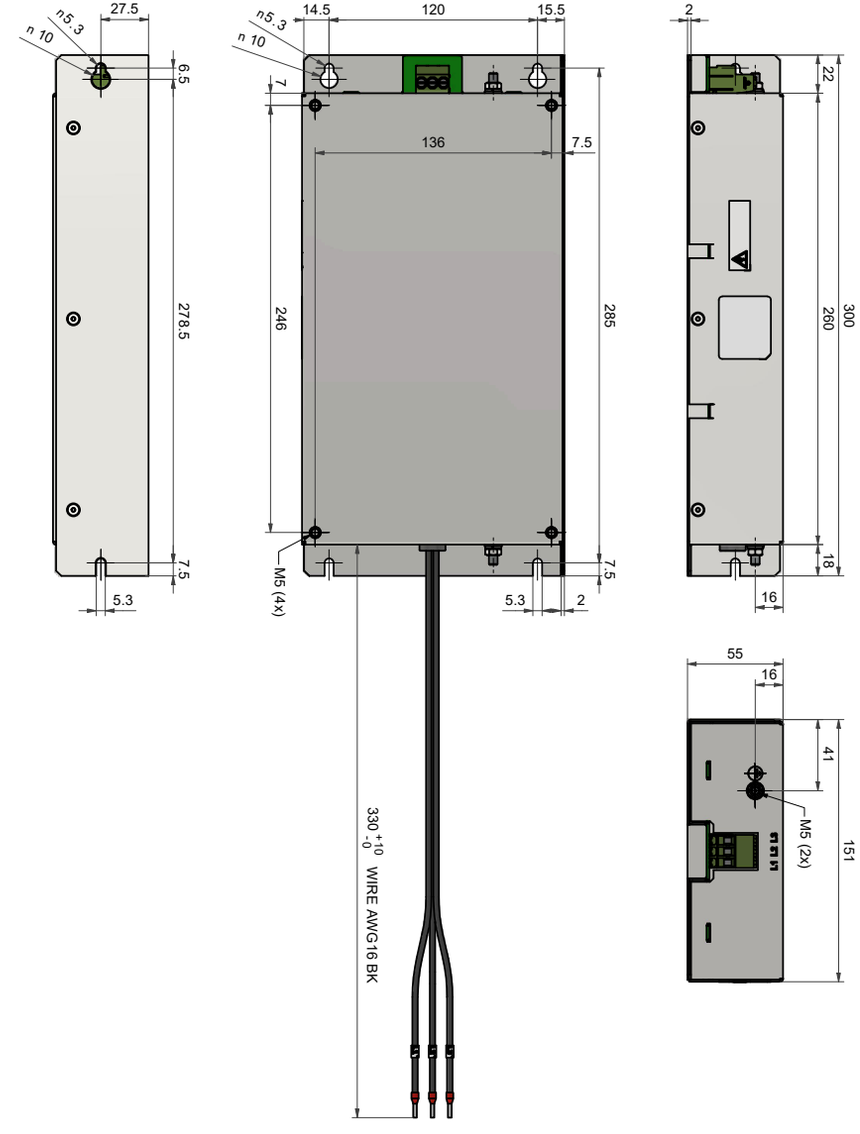


Power supply	Model	W [mm]	H [mm]	D [mm]
Three-phase 400 V	3G3R1-B450K	1006 (39.61)	1550 (61.02)	504.1 (19.85)
	3G3R1-B463K			

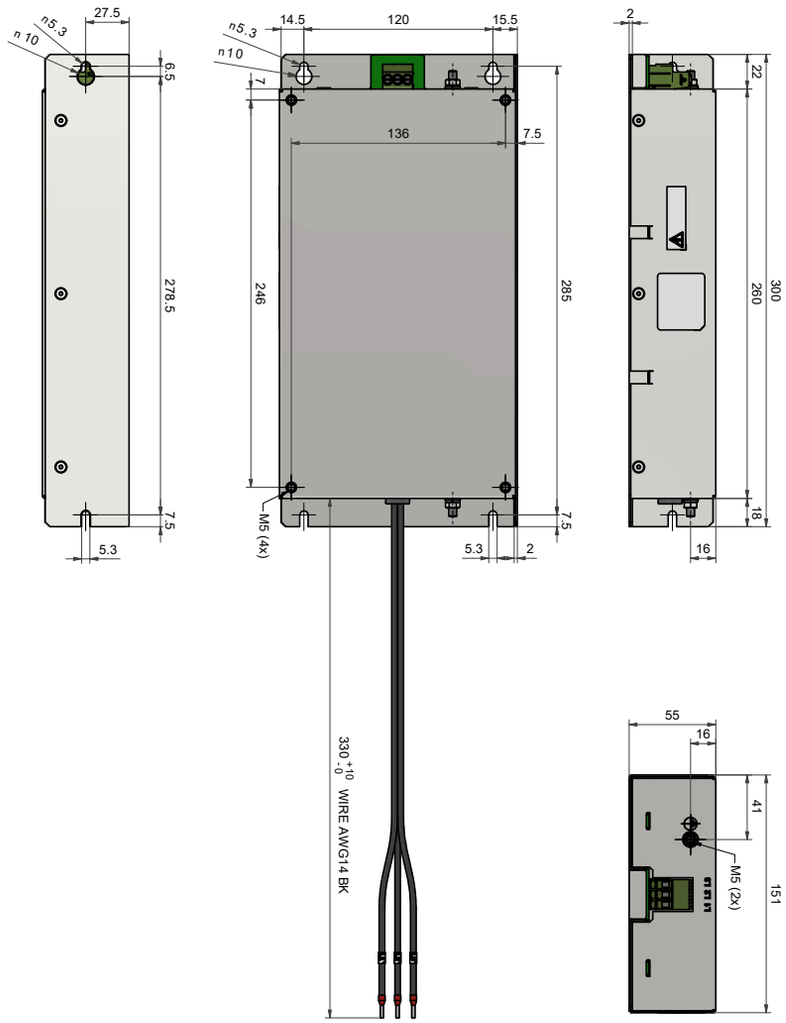
AX-FIR4003-SE



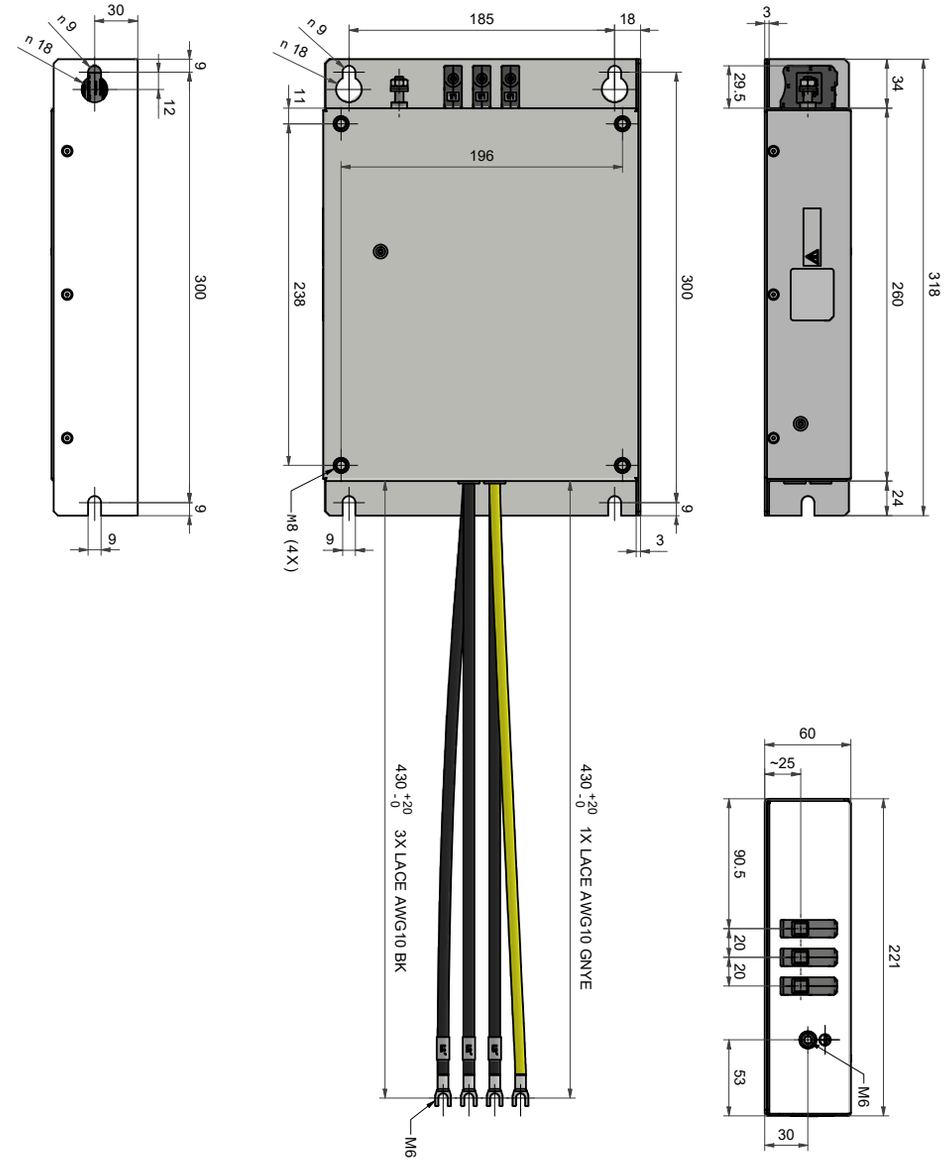
AX-FIR4009-SE



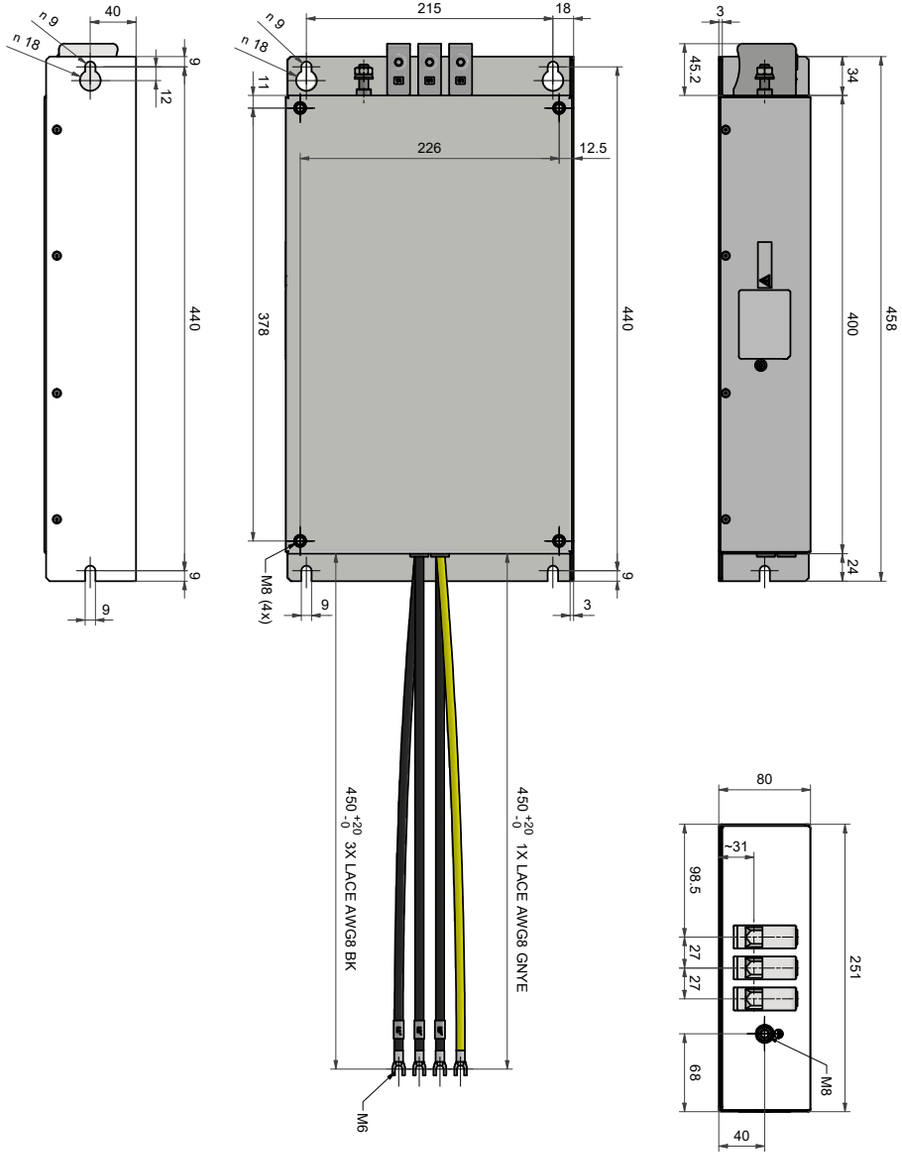
AX-FIR4013-SE



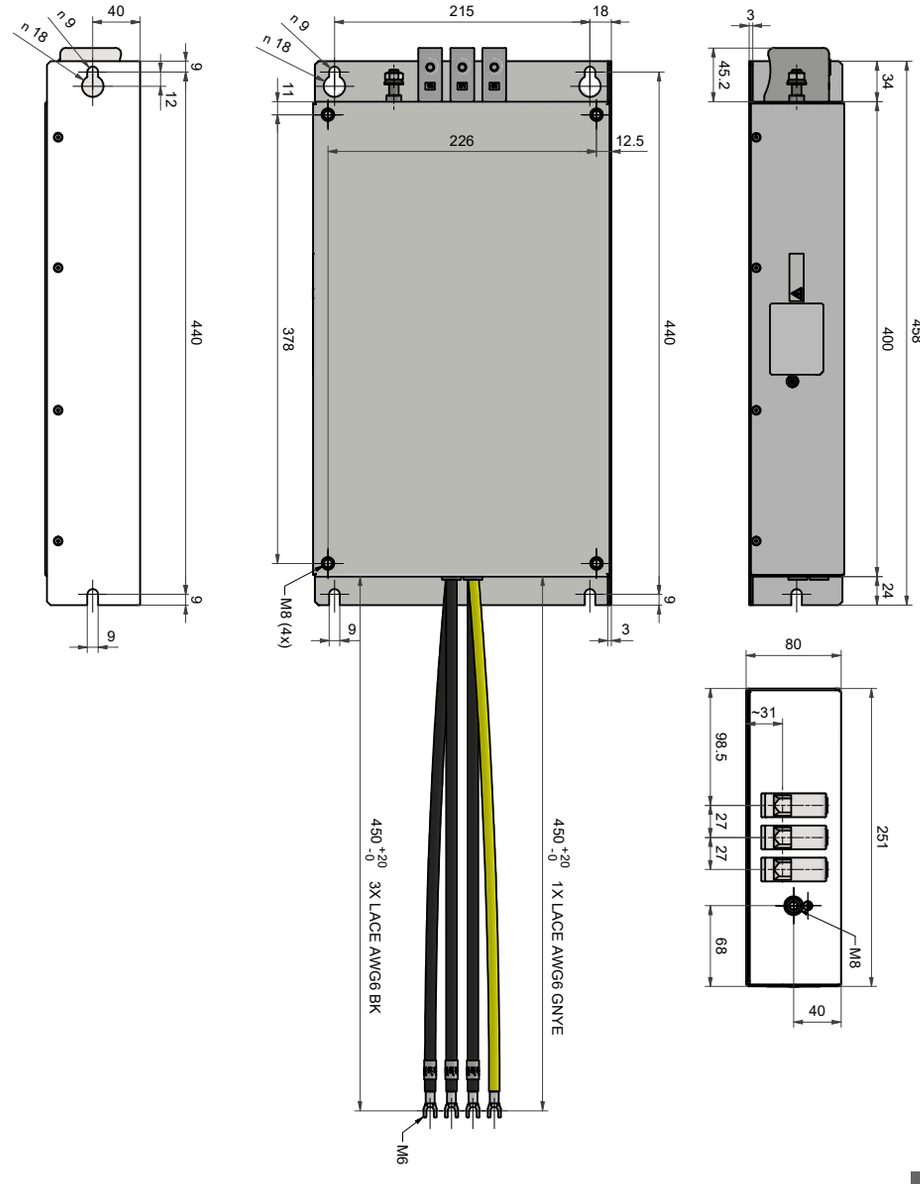
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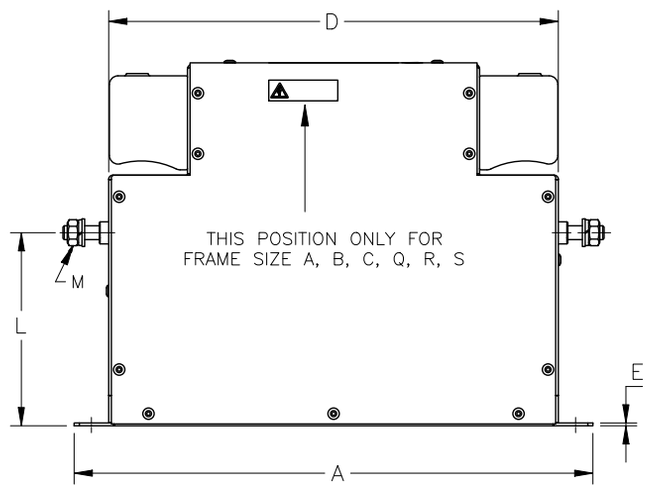
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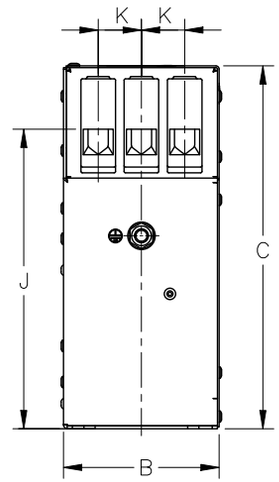


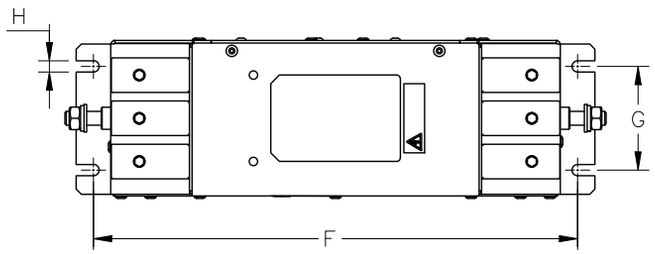
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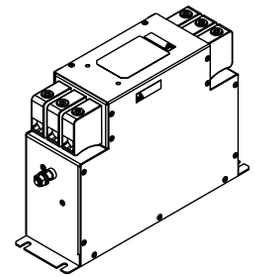


FN3288 filter



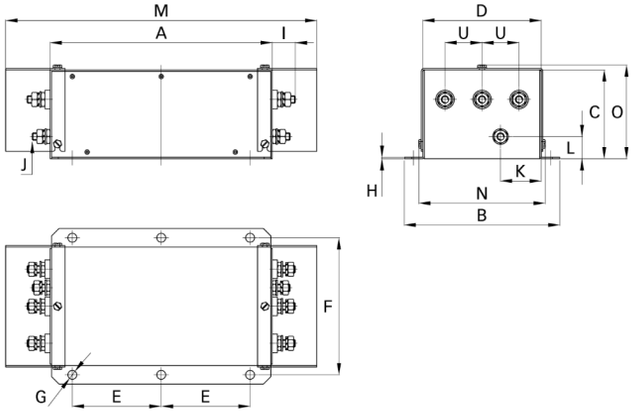




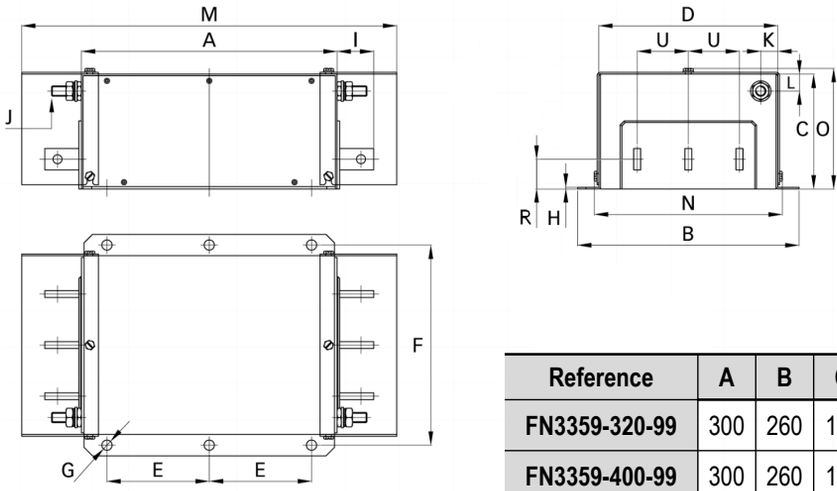


Reference	A	B	C	D	E	F	G	H	J+/-2	K	L+/-1	M
FN3288-80-34-C35-R65	290	80	205	250	1.2	270	50	6.5	172	22	110	M6
FN3288-100-35-C35-R65 **FN3288-125-35-C35-R65**	300	90	210	260	1.5	280	60	6.5	173	25	112	M8
FN3288-160-40-C35-R65	310	100	225	270	1.5	290	70	6.5	183	28	110	M10
FN3288-230-40-C35-R65	350	105	240	310	1.5	330	70	6.5	190	30.5	125	M10

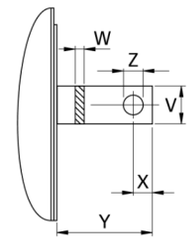
FN3359 filter



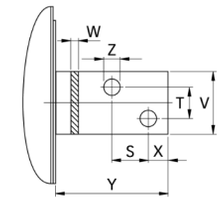
Reference	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	U
FN3359-250-28	300	230	125	180	120	205	Ø12	2	33	M10	62.5	35	420	191	132	55



FN3359-320 to FN3359-1000



FN3359-1600



Reference	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R	S	T	U	V	W	X	Y	Z
FN3359-320-99	300	260	115	210	120	235	Ø12	2	43	M12	20	20	440	221	122	37	-		60	25	6	15	40	Ø10.5
FN3359-400-99	300	260	115	210	120	235	Ø12	2	43	M12	20	20	440	221	122	37			60	25	6	15	40	Ø10.5
FN3359-600-99	300	260	135	210	120	235	Ø12	2	43	M12	20	20	440	221	142	37			60	25	8	15	40	Ø10.5
FN3359-800-99	350	280	170	230	145	255	Ø12	3	53	M12	25	25	510	241	177	68			60	40	8	20	50	Ø14
FN3359-1000-99	350	280	170	230	145	255	Ø12	3	53	M12	25	25	510	241	177	68			60	40	8	20	50	Ø14
FN3359-1600-99	400	300	160	250	170	275	Ø12	3	93	M12	25	25	n.a.	n.a.	n.a.	68	26	26	60	60	10	17	93	Ø14

Voltage	Reference	Dimensions								Weight (kg)
		A	B1	B2	C1	C2	D	E	F	
Three-phase 400 VAC	AX-RAI06110025-DE	120	-	70	-	120	80	52	5.5	1.78
	AX-RAI03690037-DE									
	AX-RAI02700055-DE									
	AX-RAI01620090-DE									
	AX-RAI01110130-DE									
	AX-RAI00810180-DE			80		120	80	62	5.5	2.35
	AX-RAI00580240-DE									
	AX-RAI00440300-DE									
	AX-RAI00360390-DE	180		75		195	140	55	6	5.5
	AX-RAI00300450-DE									
	AX-RAI00131000-DE			95		205		75		9.1
	AX-RAI00091350-DE			105						11.7
	AX-RAI00081600-DE	240		110		275	200	75		16.0
	AX-RAI00052500-DE									
	AX-RAI00062700-DE		140		210			85		18.6
	AX-RAI00035610-DE	300	150		260			105		44.0
	AX-RAI00028250-DE	420	240		360		300	150	8	100
	AX-RAI00029500-DE	480	310		410	400		195	10	160
	AX-RAI00011K10-DE							195		160
	AX-RAI00011K30-DE		330					215		180

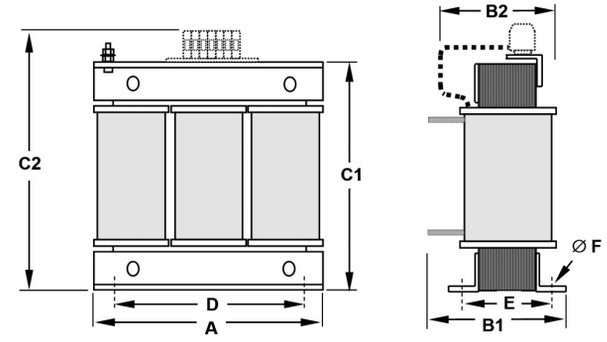


Figure 1

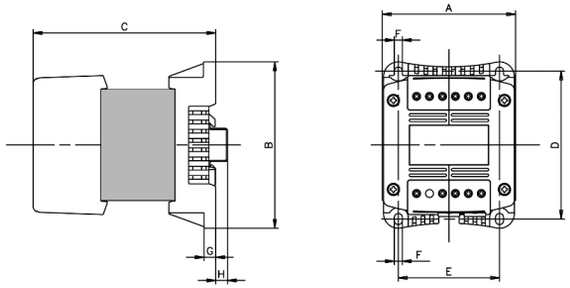
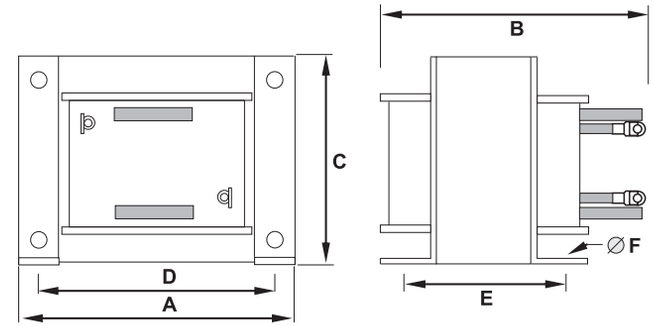


Figure 2



Voltage	Reference	Fig	Dimensions (mm)								Weight (kg)
			A	B	C	D	E	F	G	H	
400 V	AX-RC50000015-DE	1	84	113	96	101	66	5	7,5	2	1,22
	AX-RC30000025-DE		84	113	96	101	66	5	7,5	2	1,22
	AX-RC16000040-DE		84	113	105	101	66	5	7,5	2	1,60
	AX-RC12000055-DE		84	113	116	101	66	5	7,5	2	1,95
	AX-RC07000090-DE		84	113	126	101	66	5	7,5	2	2,40
	AX-RC04000130-DE		84	113	126	101	66	5	7,5	2	2,40
	AX-RC03500180-DE		120	152	136	135	94	7	9,5	-	5,20
	AX-RC02200250-DE		120	152	146	135	94	7	9,5		6,00
	AX-RC01800340-DE		150	177	160	160	115	7	2		11,40
	AX-RC01400410-DE		150	177	160	160	115	7	2		11,40
	AX-RC01200490-DE		150	177	160	160	115	7	2		11,40
	AX-RC00860710-DE	2	195	161	163	185	88	10	-		17
	AX-RC00700880-DE		195	196	163	185	123	10			25
	AX-RC00581070-DE		240	188	200	228	109	12			34
	AX-RC00471310-DE		240	188	200	228	109	12			34
	AX-RC00231780-DE		240	188	200	228	109	12			34
	AX-RC00202140-DE		240	198	200	228	119	12			38
	AX-RC00162610-DE		240	228	200	228	149	12			48
	AX-RC00143130-DE		240	228	200	228	149	12			48
	AX-RC00123800-DE		300	230	256	250	160	12			49
	AX-RC00094750-DE		300	230	256	250	160	12			49
	AX-RC00085240-DE		300	250	256	250	180	12			79
	AX-RC00075890-DE		300	250	256	250	180	12			79

Figure 3

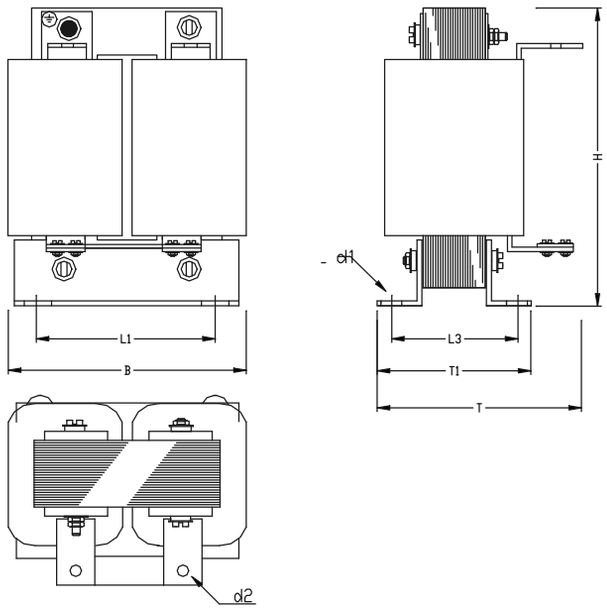


Figure 4

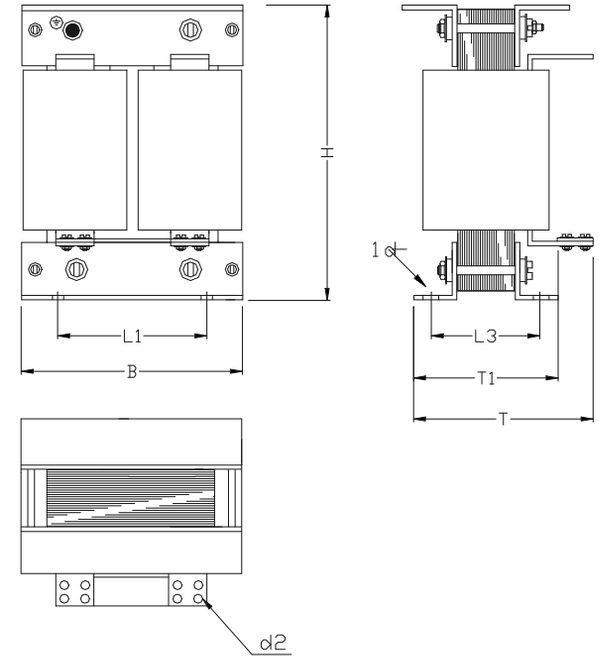


Figure 5

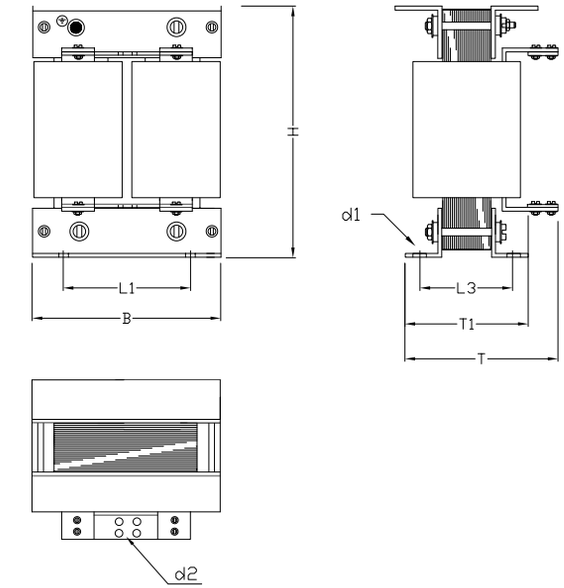
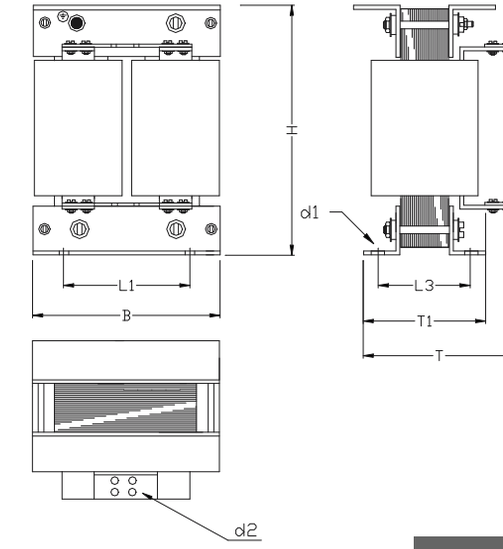
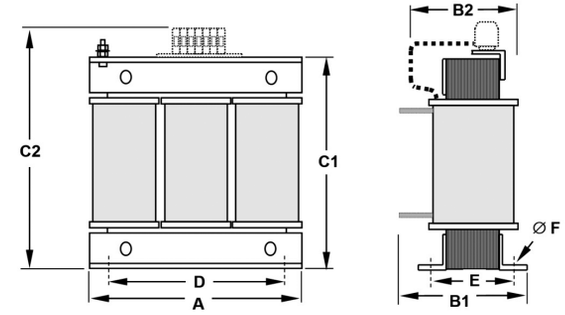


Figure 6



Voltage	Reference	Fig	B	T	T1	H	L1	L3	d1	d2	Ground	Weight (kg)
400V	DCRE4-280	3	200	220	194	335	140	162	11x15	14	M8	32,5
	DCRE4-315		200	250	209	330	140	177	11x15	14	M8	42.5
	DCRE4-355		200	250	209	330	140	177	11x15	14	M8	42.5
	DCRE4-400	4	280	240	188	400	240	146	11x15	2x11	M10	44.1
	DCRE4-450		280	260	208	400	240	166	11x15	2x11	M10	56
	DCRE4-500	5	290	280	208	400	240	166	11x15	4x10	M10	57.5
	DCRE4-630	6	280	320	243	400	240	201	11x15	4x10	M10	79
	DCRE4-710		280	320	243	500	240	201	11x15	4x10	M10	100
	DCRE4-800		320	350	284	610	270	244	13x18	4x11	M10	155

Voltage	Reference	Dimensions (mm)								Weight (kg)
		A	B1	B2	C1	C2	D	E	F	
400 V	AX-RAO16300038-DE	120	-	80	-	120	80	62	5.5	2.35
	AX-RAO11800053-DE									
	AX-RAO07300080-DE	180		85		195	140	55	6	5.5
	AX-RAO04600110-DE									
	AX-RAO03600160-DE					210				6.5
	AX-RAO02500220-DE			95				65		9.1
	AX-RAO02000320-DE	240		110		275	200	75		16.0
	AX-RAO01650400-DE									
	AX-RAO01300480-DE									
	AX-RAO00800750-DE			120		281		85		18.6
	AX-RAO00680900-DE	240		150				110		27
	AX-RAO00531100-DE	300		125		350		105		27.9
	AX-RAO00401490-DE		170	-	270	-		125		44
	AX-RAO00331760-DE									44
	AX-RAO00262170-DE	360	230		315		300	150	8	56.8
	AX-RAO00212600-DE				370					80.5
	AX-RAO00173250-DE	480	275		400		370	165	10	136
	AX-RAO00134440-DE		305				400	195		165
	AX-RAO00115250-DE		335					225		215



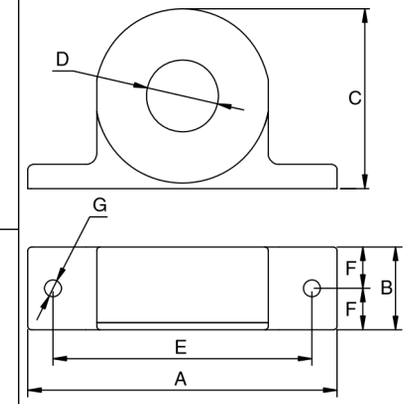
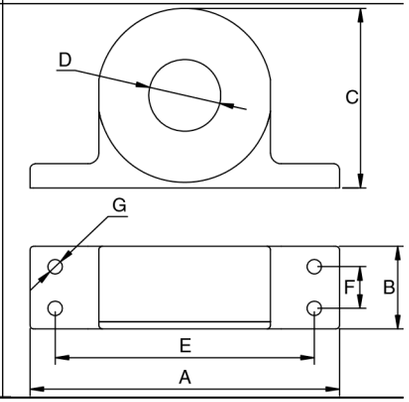
Reference	D(diameter)	Motor (kW)	Dimensions (mm)							Weight	
			A	B	C	D	E	F	G (diameter)		
AX-FER2102-PE	21	<2.2	86	24	50	21	70	12	4	0.09	
AX-FER2815-PE	28	<15	106	25	65	28	90	12.5	4	0.22	
AX-FER5045-PE	50	<45	150	51	112	50	125	30	5	0.53	

Fig 1

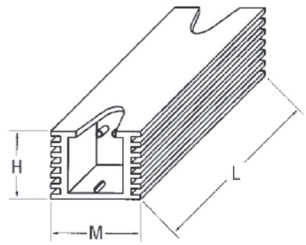


Fig 2

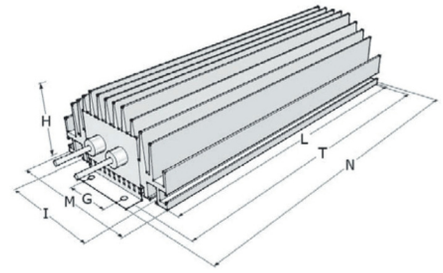
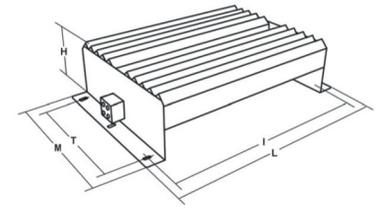
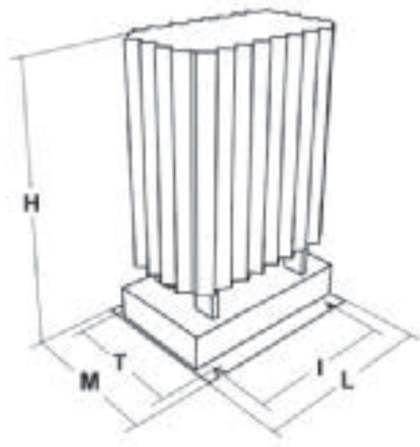


Fig 3

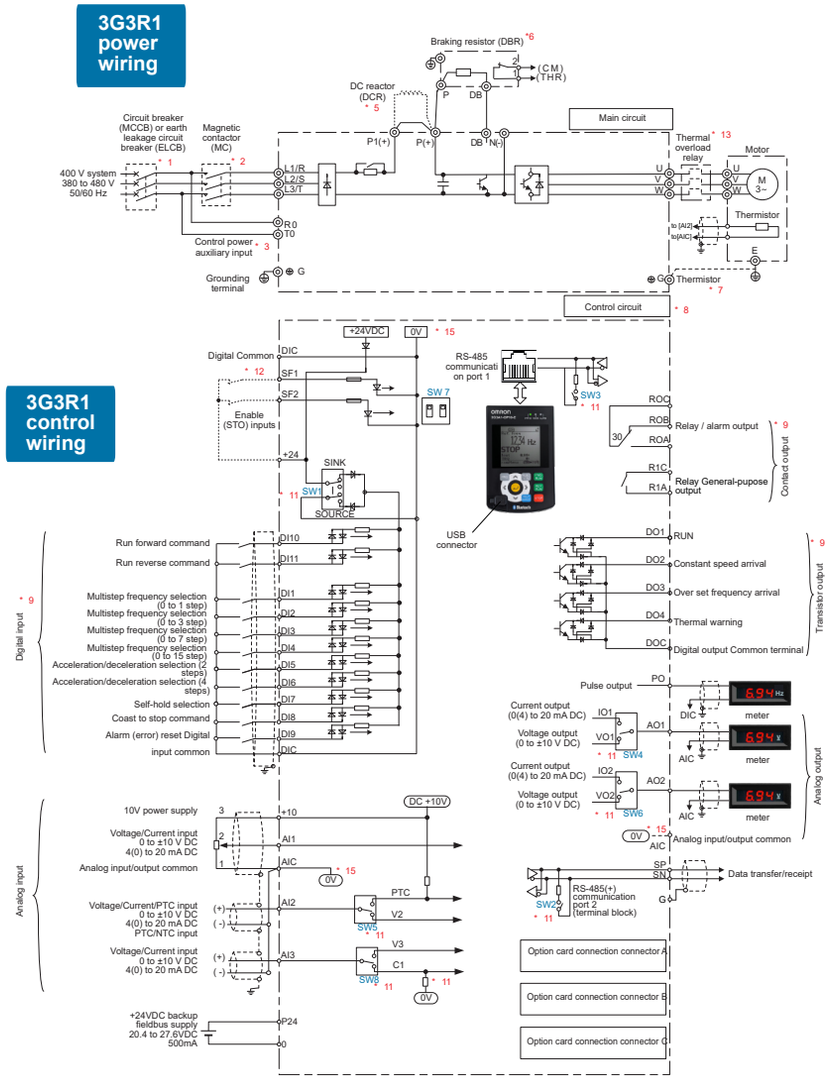


Type	Fig	Dimensions (mm)							Weight (kg)
		L	H	M	I	T	G	N	
AX-REM00K6xxx-IE	1	320	27	36	309	-	-	-	0.73
AX-REM00K9xxx-IE	2	200	61	100	74.5	216	40	230	1.41
AX-REM03K5xxx-IE	3	365	115	230	350	170	-	-	8



Type	Dimensions (mm)					Weight (kg)
	L	H	M	I	T	
AX-REM19K6xxx-IE	206	350	140	190	50	8.1
AX-REM38K9xxx-IE	306	350	140	290	50	14.5

Standard connections

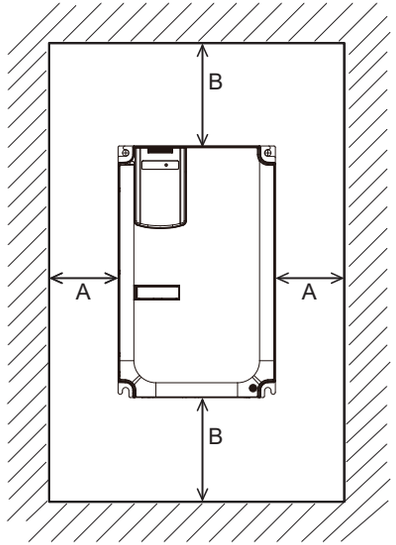


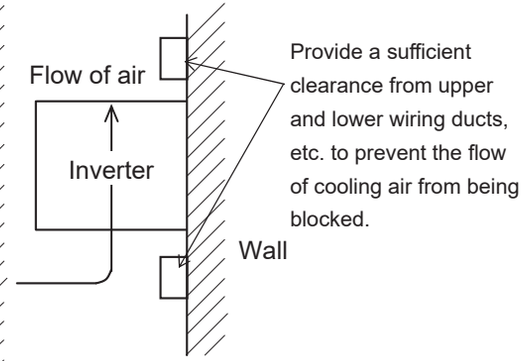
Main Circuit

Terminal	Name	Function
L1/R, L2/S, L3/T	Main supply terminals	Used to connect a power supply
R0, L0	Control power auxiliary input	Used to connect a power supply
U, V, W	Inverter output terminal	Used to connect a motor
P(+), DB	Braking resistor connection terminal	To connect a braking resistor
P1, P(+)	DC reactor connection terminals	Remove the short-circuit to connect to the optimal DC reactor
P(+), N(-)	DC link bus connection terminals	Connect optional regenerative braking unit if braking torque produced by internal braking transistor is not enough
⏚ G	Ground terminal	Connect the terminal to ground

Type	Terminal	Name	Function (Signal level)
Digital input signals	DI1	Multi-Function Digital Input 1 (Multi-speed 1)	Voltage levels between input and the DIC: Source ON voltage: 22V Min 27V Max OFF voltage 0V Min 2V Max Sink ON voltage: 0V Min 2V Max OFF voltage 22V Min 27V Max Maximum 27 VDC Load current (DI1 to DI5, DI9 to DI11)): 2.5 Min 5mA Max (At 27V) Load current (DI6 to DI7): 3 to 16mA (at 27V) Impedance: 5.4 kΩ DI6 and DI7 can be setup as pulse train input Max 100 kHz for complementary output Max 30 kHz for open collector
	DI2	Multi-Function Digital Input 2 (Multi-speed 2)	
	DI3	Multi-Function Digital Input 3 (Multi-speed 3)	
	DI4	Multi-Function Digital Input 4 (Multi-speed 4)	
	DI5	Multi-Function Digital Input 5 (Accel/decel selection 2 step)	
	DI6	Multi-Function Digital Input 6 (Accel/decel selection 4 step)	
	DI7	Multi-Function Digital Input 7 (Self-hold selection)	
	DI8	Multi-Function Digital Input 8 (Coast to stop)	
	DI9	Multi-Function Digital Input 9 (Alarm reset)	
	D10	Run forward command	
	D11	Run reverse command	
	DIC	Input Signal common	Common terminal for the digital input and pulse monitor terminal
Pulse output	PO	Pulse monitor	25 to 6000 p/s 50% duty
Safety digital inputs	SF1	Safe input 1	Voltage levels between input and the DIC ON voltage: 22V to 27V OFF voltage: 0V to 2V Maximum 27VDC Load current: 2.5 to 10mA (at 27V) Impedance: 6.6 kΩ
	SF2	Safe input 2	
Analog output	AO1	Analog monitor 1	0 to +/- 10V 0 to 20 mA 4 to 20 mA
	AO2	Analog monitor 2	
	AIC	Analog common	This is common for Analog input/output signals
comms	SP	RS-485 com port 2	Modbus RTU half duplex Max distance: 500 m Max speed: 115.2 kbps
	SN		

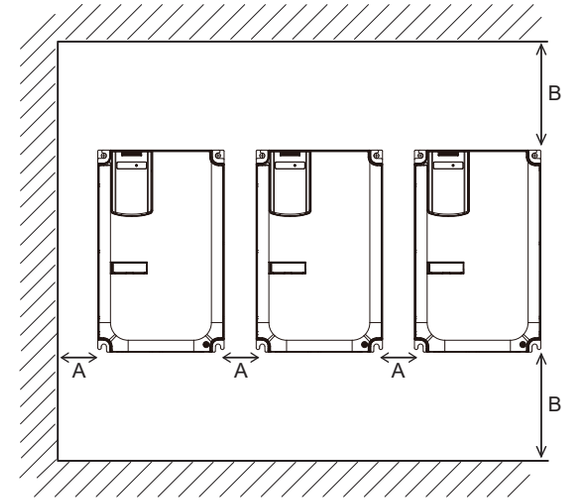
Type	Terminal	Name	Function (signal level)
Analog input signals	+10	Power supply for analog input	Power supply for frequency setting (+10 VDC) (Potentiometer: 1 to 5 kΩ) Connect a potentiometer of 1/2 W or higher.
	AI1	Analog voltage input	Allowable input voltage range: -15 to 10VDC Impedance: 22kΩ
	AI2	Analog current/voltage input (C1/V3)	4(0) to 20 mA DC/0 to 100% (normal operation) 20 to 4(0) mA DC/0 to 100% (inverse operation) Input impedance: 250 Ω The maximum input is +30 mA DC Allowable input voltage range: -15 to 10VDC Impedance: 22kΩ
	AI3	Analog voltage (V2)	Allowable input voltage range: -15 to 10VDC Impedance: 22kΩ
		PTC thermistor (PTC)	PTC (Positive Temperature Coefficient) thermistor is connected for motor protection. Set SW5 to the "PTC/NTC" side.
	AIC	Analog input common	Common terminal for analog input signals Terminal isolated from the terminals DIC and DOC
Relay output	ROA	Fault Relay output terminal NO	Relay output 250 VAC, 0,3 A 48 VDC, 0.5 A
	ROB	Fault Relay output terminal NC	
	ROC	Fault Relay output common	
	R1A	General purpose relay output	
	R1C	General purpose relay common	
Multi-function photocoupler outpus	DO1	Multi-Function transistor output 1	Open collector output across DO1-DOC Max Voltage 48 VDC and 50mA
	DO2	Multi-Function transistor output 2	
	DO3	Multi-Function transistor output 3	
	DO4	Multi-Function transistor output 4	
	DOC	Output signal common	
Power supply	+24	Programmable controller signal power supply terminal	Rated voltage 24Vdc Max 100 mA
	P24	Auxiliary power supply input for control circuit. P24 terminal is insulated from +24 terminal	24 VDC (20.4 to 27.6 VDC) and 500 mA max.
	0		

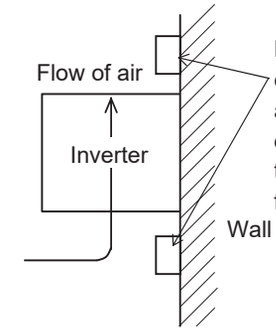




Provide a sufficient clearance from upper and lower wiring ducts, etc. to prevent the flow of cooling air from being blocked.

With 3G3R1-A4004 to A4220, only in the case of an ambient temperature of 40 °C (104°F) or below is it possible to install inverters and converters closely together horizontally.





Provide a sufficient clearance from upper and lower wiring ducts, etc. to prevent the flow of cooling air from being blocked.

Type of inverter	Surronding space		
3G3R1-□□□□	A mm/in	B mm/in	C mm/in
A4004 to A4015	50 (1.97)	100 (3.9)	0 (0)
A4022 to A4220	10 (0.39)		
B4300 to B422K	50 (1.97)		100 (3.9)
B428K to B463K		150 (5.9)	150 (5.9)

C: Space in front of inverter unit

Fuse Size for Semiconductor type

Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND	Semiconductor fuse reference, manufacturer: Mersen / Bussmann (Eaton) UL=100kA
Three-phase 400V	0.4	3G3R1-A4004	HHD	PC30UD69V50■ / 170M3458
	0.75	3G3R1-A4007		PC30UD69V50■ / 170M3458
	1.5	3G3R1-A4015		PC30UD69V50■ / 170M3459
	2.2	3G3R1-A4022		PC30UD69V63■ / 170M3460
	3.7	3G3R1-A4037		PC30UD69V63■ / 170M3461
	5.5	3G3R1-A4055	HHD	PC30UD69V100■ / 170M3462
	7.5		HND	
	7.5	3G3R1-A4075	HHD	PC30UD69V100■ / 170M3462
	11		HND	
	11	3G3R1-A4110	HHD	PC30UD69V125■ / 170M3463
	15		HND	
	15	3G3R1-A4150	HHD	PC30UD69V160■ / 170M34664
	18.5		HND	
	18.5	3G3R1-A4185	HHD	PC30UD69V160■ / 170M3464
	22		HND	
	22	3G3R1-A4220	HHD	PC30UD69V200■ / 170M3465
	30		HND	
	30	3G3R1-B4300	HHD	PC30UD69V315■ / 170M3467
	37		HD/HND	
	45		ND	
	37	3G3R1-B4370	HHD	PC30UD69V315■ / 170M3468
	45		HD/HND	
	50		ND	
	45	3G3R1-B4450	HHD	PC30UD69V350■ / 170M3469
	55		HD/HND	
	75		ND	
	55	3G3R1-B4550	HHD	PC30UD69V400■ / 170M3469
	75		HD/HND	
	90		ND	
	75	3G3R1-B4750	HHD	PC30UD69V350■ / 170M3469
	90		HD	
	110		HND/ND	
	90	3G3R1-B4900	HHD	PC30UD69V350■ / 170M3469
	110		HD	
	132		HND/ND	
	110	3G3R1-B411K	HHD	PC30UD69V400■ / 170M3470
	132		HD	
	160		HND/ND	PC30UD69V450■ / 170M3470

Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND	Semiconductor fuse reference, manufacturer: Mersen / Bussmann (Eaton) SCCR=100kA
Three-phase 400V	132	3G3R1-B413K	HHD	PC30UD69V500■ / 170M3472
	160		HD	
	200		HND/ND	
	160	3G3R1-B416K	HHD	PC30UD69V550■ / 170M3473
	200		HD	PC30UD69V630■ / 170M3473
	220		HND/ND	
	200	3G3R1-B420K	HHD	PC31UD69V700■ / 170M4467
	220		HD	
	280		HND/ND	
	220	3G3R1-B422K	HHD	PC31UD69V800■ / 170M4468
	250		HD	
	315		HND/ND	
	280	3G3R1-B428K	HHD	PC32UD69V1000■ / 170M5466
	315		HD	
	355		HND	
	400		ND	
	315	3G3R1-B431K	HHD	PC32UD60V1100■ / 170M5467
	355		HD	
	400		HND	
	450		ND	
	355	3G3R1-B435K	HHD	PC33UD69V1250■ / 170M5468
	400		HD	
	500		HND	PC33UD69V1250■ / -
	560		ND	PC33UD69V1400■ / -
	400	3G3R1-B440K	HHD	PC33UD60V1500■ / 170M5468
	450		HD	
	560		HND	PC33UD60V1500■ / -
	630		ND	PC33UD60V1600■ / -
	500	3G3R1-B450K	HHD	PC33UD55V2000■ / 170M6469
	560		HD	
	630		HND	PC33UD55V2000■ / -
	710		ND	
	630	3G3R1-B463K	HHD	
	710		HD/HND	
	800		ND	

Fuse size for Class CC, J or T types

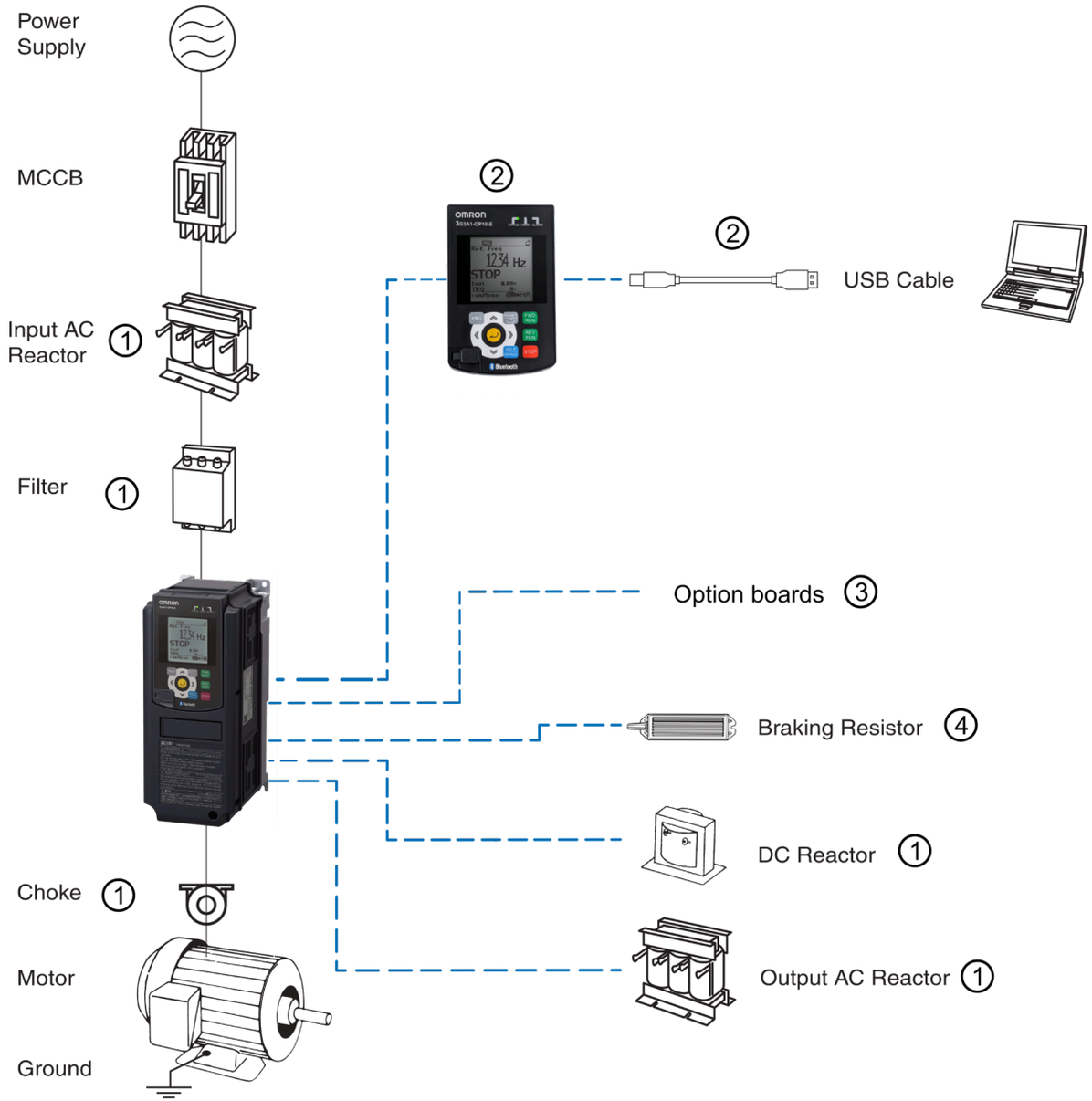
Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND modes	Class CC, J or T fuse rating [Max. A] SCCR=100kA
Three-phase 400V	0.4	3G3R1-A4004	HHD	3
	0.75	3G3R1-A4007		6
	1.5	3G3R1-A4015		10
	2.2	3G3R1-A4022		15
	3.7	3G3R1-A4037		20
	5.5	3G3R1-A4055	HHD	30
	7.5		HND	40
	7.5	3G3R1-A4075	HHD	40
	11		HND	60
	11	3G3R1-A4110	HHD	60
	15		HND	70
	15	3G3R1-A4150	HHD	70
	18.5		HND	90
	18.5	3G3R1-A4185	HHD	90
	22		HND	100
	22	3G3R1-A4220	HHD	100
	30		HND	125
	30	3G3R1-B4300	HHD	125
	37		HD/HND	175
	45		ND	200
	37	3G3R1-B4370	HHD	175
	45		HD/HND	200
	50		ND	250
	45	3G3R1-B4450	HHD	200
	55		HD/HND	250
	75		ND	250
	55	3G3R1-B4550	HHD	250
	75		HD/HND	250
	90		ND	300
	75	3G3R1-B4750	HHD	250
	90		HD	300
	110		HND/ND	350
	90	3G3R1-B4900	HHD	300
	110		HD	350
	132		HND/ND	400
	110	3G3R1-B411K	HHD	350
	132		HD	400
	160		HND/ND	500

Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND modes	Class CC, J or T fuse rating [Max. A] SCCR=100kA
Three-phase 400V	132	3G3R1-B413K	HHD	400
	160		HD	500
	200		HND, ND	600
	160	3G3R1-B416K	HHD	500
	200		HD	600
	220		HND/ND	700
	200	3G3R1-B420K	HHD	600
	220		HD	700
	280		HND/ND	1000
	220	3G3R1-B422K	HHD	700
	250		HD	800
	315		HND/ND	1000
	280	3G3R1-B428K	HHD	1000
	315		HD	1000
	355		HND	1200
	400		ND	1200
	315	3G3R1-B431K	HHD	1000
	355		HD	1200
	400		HND	1200
	450		ND	1600
	355	3G3R1-B435K	HHD	1200
	400		HD	1200
	500		HND	1600
	560		ND	1800
	400	3G3R1-B440K	HHD	1200
	450		HD	1400
	560		HND	1800
	630		ND	2000
	500	3G3R1-B450K	HHD	1600
	560		HD	1800
	630		HND	2000
	710		ND	2200
	630	3G3R1-B463K	HHD	2000
	710		HD/HND	2200
	800		ND	2500

Size for Inverse Time Circuit Breaker type

Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND modes	Inverse time circuit breaker rating [Max. A] SCCR=100kA
Three-phase 400V	0.4	3G3R1-A4004	HHD	15
	0.75	3G3R1-A4007		15
	1.5	3G3R1-A4015		15
	2.2	3G3R1-A4022		15
	3.7	3G3R1-A4037		20
	5.5	3G3R1-A4055	HHD	30
	7.5		HND	40
	7.5	3G3R1-A4075	HHD	40
	11		HND	50
	11	3G3R1-A4110	HHD	50
	15		HND	70
	15	3G3R1-A4150	HHD	70
	18.5		HND	80
	18.5	3G3R1-A4185	HHD	80
	22		HND	100
	22	3G3R1-A4220	HHD	100
	30		HND	125
	30	3G3R1-B4300	HHD	125
	37		HD/HND	150
	45		ND	175
	37	3G3R1-B4370	HHD	150
	45		HD/HND	175
	50		ND	225
	45	3G3R1-B4450	HHD	175
	55		HD/HND	225
	75		ND	225
	55	3G3R1-B4550	HHD	225
	75		HD/HND	225
	90		ND	250
	75	3G3R1-B4750	HHD	225
	90		HD	250
	110		HND/ND	400
	90	3G3R1-B4900	HHD	250
	110		HD	400
	132		HND/ND	400
	110	3G3R1-B411K	HHD	400
	132		HD	400
	160		HND/ND	500

Power supply voltage	Standard applicable motor (kW)	Inverter model	HHD/HD HND/ND modes	Inverse time circuit breaker rating [Max. A] SCCR=100kA
Three-phase 400V	132	3G3R1-B413K	HHD	400
	160		HD	500
	200		HND/ND	600
	160	3G3R1-B416K	HHD	500
	200		HD	600
	220		HND/ND	600
	200	3G3R1-B420K	HHD	600
	220		HD	600
	280		HND/ND	800
	220	3G3R1-B422K	HHD	600
	250		HD	800
	315		HND/ND	1000
	280	3G3R1-B428K	HHD	800
	315		HD	900
	355		HND	1000
	400		ND	1200
	315	3G3R1-B431K	HHD	1000
	355		HD	1000
	400		HND	1200
	450		ND	1200
	355	3G3R1-B435K	HHD	1000
	400		HD	1200
	500		HND	1600
	560		ND	1600
	400	3G3R1-B440K	HHD	1200
	450		HD	1200
	560		HND	1600
	630		ND	2000
	500	3G3R1-B450K	HHD	1600
	560		HD	1600
	630		HND	2000
	710		ND	2000
	630	3G3R1-B463K	HHD	2000
	710		HD/HND	2000
	800		ND	2500


Power Supply
MCCB
Input AC Reactor ①
Filter ①
Choke ①
Motor
Ground
②
②
USB Cable
Option boards ③
Braking Resistor ④
DC Reactor ①
Output AC Reactor ①

Voltage	Specifications								Model
	HHD		HND		HD		ND		
	Max motor (kW)	Rated current (A)	Max motor (kW)	Rated current (A)	Max motor (kW)	Rated current (A)	Max motor (kW)	Rated current (A)	
Three phase 400 V	0.4	1.5	-	-	-	-	-	-	3G3R1-A4004
	0.75	2.5	-	-	-	-	-	-	3G3R1-A4007
	1.5	4.2	-	-	-	-	-	-	3G3R1-A4015
	2.2	6.0	-	-	-	-	-	-	3G3R1-A4022
	3.7	9.0	-	-	-	-	-	-	3G3R1-A4037
	5.5	13.5	7.5	17.5	-	-	-	-	3G3R1-A4055
	7.5	18.5	11	23	-	-	-	-	3G3R1-A4075
	11	24.5	15	35	-	-	-	-	3G3R1-A4110
	15	32	18.5	41	-	-	-	-	3G3R1-A4150
	18.5	39	22	45	-	-	-	-	3G3R1-A4185
	22	45	30	60	-	-	-	-	3G3R1-A4220
	30	60	37	75	37	75	45	85	3G3R1-B4300
	37	75	45	91	45	91	55	105	3G3R1-B4370
	45	91	55	112	55	112	75	139	3G3R1-B4450
	55	112	75	150	75	150	90	179	3G3R1-B4550
	75	150	90	217	90	180	110	217	3G3R1-B4750
	90	180	110	261	110	217	132	261	3G3R1-B4900
	110	216	132	290	132	261	160	290	3G3R1-B411K
	132	260	160	361	160	325	200	376	3G3R1-B413K
	160	325	200	415	200	377	220	431	3G3R1-B416K
	200	377	220	547	220	432	280	547	3G3R1-B420K
	220	432	250	610	250	477	315	610	3G3R1-B422K
	280	520	315	650	315	585	400	739	3G3R1-B428K
	315	585	355	740	355	650	450	840	3G3R1-B431K
	355	650	500	960	400	740	560	1039	3G3R1-B435K
	400	740	560	1040	450	840	630	1169	3G3R1-B440K
	500	960	630	1170	560	1040	710	1385	3G3R1-B450K
	630	1170	710	1386	710	1386	800	1480	3G3R1-B463K

Drive			EMC line filter	
Voltage	Model 3G3R1-□	Duty	Reference	Current (A)
Three-phase 400 V	4004/4007	All	AX-FIR4003-SE	3.1
	4015/4022	All	AX-FIR4009-SE	8.2
	4037	All	AX-FIR4013-SE	13.0
	4055/4075	All	AX-FIR4033-SE	33.0
	4110	All	AX-FIC4061-SE	61.0
	4150/4185	All	AX-FIR4061-SE	61.0
	4220	All	AX-FIR4078-SE	78.0
	4300	HHD	FN3288-80-34-C35-R65	80
		HND/HD	FN3288-100-35-C35-R65	100
		ND	FN3288-125-35-C35-R65	125
	4370	HHD	FN3288-100-35-C35-R65	100
		HND/HD	FN3288-125-35-C35-R65	125
		ND	FN3288-160-40-C35-R65	160
	4450	HHD	FN3288-125-35-C35-R65	125
		HND/HD	FN3288-160-40-C35-R65	160
		ND	FN3288-160-40-C35-R65	160
	4550	HHD	FN3288-125-35-C35-R65	125
		HND/HD	FN3288-160-40-C35-R65	160
		ND	FN3288-230-40-C35-R65	230
	4750	HHD	FN3288-160-40-C35-R65	160
		HND/HD	FN3288-230-40-C35-R65	230
		ND	FN3288-230-40-C35-R65	230
	4900	HHD	FN3288-160-40-C35-R65	160
		HND	FN3359-250-28	250
		HD	FN3288-230-40-C35-R65	230
		ND	FN3359-250-28	250
	411K	HHD	FN3359-250-28	250
		HND/HD	FN3359-400-99	400
		ND	FN3359-400-99	400
	413K	HHD	FN3359-250-28	250
		HND/HD	FN3359-400-99	400
		ND	FN3359-400-99	400

Drive			EMC line filter	
Voltage	Model 3G3R1-□	Duty	Reference	Current (A)
Three-phase 400	416K	All	FN3359-400-99	400
	420K	HHD	FN3359-400-99	400
		HND/HD	FN3359-600-99	600
		ND	FN3359-600-99	600
	422K	HHD	FN3359-400-99	400
		HND/HD/ND	FN3359-600-99	600
	428K	HHD	FN3359-600-99	600
		HND/HD	FN3359-800-99	800
		ND	FN3359-800-99	800
	431K	HHD	FN3359-600-99	600
		HND/HD/ND	FN3359-800-99	800
	435K	HHD	FN3359-800-99	800
		HND/HD	FN3359-1000-99	1000
		ND	FN3359-1000-99	1000
	440K	HHD	FN3359-800-99	800
		HND/HD	FN3359-1000-99	1000
		ND	FN3359-1600-99	1600
	450K	HHD	FN3359-1000-99	1000
		HND/HD	FN3359-1600-99	1600
		ND	FN3359-1600-99	1600
	463K	All	FN3359-1600-99	1600

Type	Rating	Reference	mH	A	Losses W
3G3R1-A4004	HHD	AX-RC50000015-DE	50.00	1.5	
3G3R1-A4007	HHD	AX-RC30000025-DE	30.00	2.5	
3G3R1-A4015	HHD	AX-RC16000040-DE	16.00	4	
3G3R1-A4022	HHD	AX-RC12000055-DE	12.00	5.5	
3G3R1-A4037	HHD	AX-RC07000090-DE	7.00	9	
3G3R1-A4055	HHD	AX-RC04000130-DE	4.00	13	
	HND	AX-RC03500180-DE	3.50	18	
3G3R1-A4075	HHD	AX-RC03500180-DE	3.50	18	
	HND	AX-RC02200250-DE	2.20	25	
3G3R1-A4110	HHD	AX-RC02200250-DE	2.20	25	
	HND	AX-RC01800340-DE	1.80	34	
3G3R1-A4150	HHD	AX-RC01800340-DE	1.80	34	
	HND	AX-RC01400410-DE	1.40	41	
3G3R1-A4185	HHD	AX-RC01400410-DE	1.40	41	
	HND	AX-RC01200490-DE	1.20	49	
3G3R1-A4220	HHD	AX-RC01200490-DE	1.20	49	Pending
	HND	AX-RC00860710-DE	0.86	71	
3G3R1-B4300	HHD	AX-RC00860710-DE	0.86	71	
	HD/HND	AX-RC00700880-DE	0.70	88	
	ND	AX-RC00581070-DE	0.58	107	
3G3R1-B4370	HHD	AX-RC00700880-DE	0.70	88	
	HD/HND	AX-RC00581070-DE	0.58	107	
	ND	AX-RC00471310-DE	0.47	131	
3G3R1-B4450	HHD	AX-RC00581070-DE	0.58	107	
	HD/HND	AX-RC00471310-DE	0.47	131	
	ND	AX-RC00231780-DE	0.23	178	
3G3R1-B4550	HHD	AX-RC00471310-DE	0.47	131	
	HD/HND	AX-RC00231780-DE	0.23	178	
	ND	AX-RC00202140-DE	0.20	214	
3G3R1-B4750	HHD	AX-RC00231780-DE	0.23	178	
	HD/HND	AX-RC00202140-DE	0.2	214	
	ND	AX-RC00162610-DE	0.16	261	

Type	Rating	Reference	mH	A	Losses W
3G3R1-B4900	HHD	AX-RC00202140-DE	0.2	214	
	HD/HND	AX-RC00162610-DE	0.16	261	
	ND	AX-RC00143130-DE	0.14	313	
3G3R1-B411K	HHD	AX-RC00162610-DE	0.16	261	
	HD/HND	AX-RC00143130-DE	0.14	313	
	ND	AX-RC00123800-DE	0.12	380	
3G3R1-B413K	HHD	AX-RC00143130-DE	0.14	313	
	HD/HND	AX-RC00123800-DE	0.12	380	
	ND	AX-RC00094750-DE	0.09	475	Pending
3G3R1-B416K	HHD	AX-RC00123800-DE	0.12	380	
	HD/HND	AX-RC00094750-DE	0.09	475	
	ND	AX-RC00085240-DE	0.08	524	
3G3R1-B420K	HHD	AX-RC00094750-DE	0.09	475	
	HD/HND	AX-RC00085240-DE	0.08	524	
	ND	AX-RC00075890-DE	0.07	589	
3G3R1-B422K	HHD	AX-RC00085240-DE	0.08	524	
	HD/HND	AX-RC00075890-DE	0.07	589	
	ND	DCRE4-280C	0.069	649	433
3G3R1-B428K	HHD	AX-RC00075890-DE	0.07	589	Pending
	HD/HND	DCRE4-280C	0.069	649	433
	ND	DCRE4-315C	0.061	739	433
3G3R1-B431K	HHD	DCRE4-280C	0.069	649	433
	HD/HND	DCRE4-315C	0.061	739	433
	ND	DCRE4-355C	0.054	833	500
3G3R1-B435K	HHD	DCRE4-315C	0.061	739	433
	HD/HND	DCRE4-355C	0.054	833	500
	ND	DCRE4-400C	0.048	938	520
3G3R1-B440K	HHD	DCRE4-355C	0.054	833	500
	HD/HND	DCRE4-400C	0.048	938	520
	ND	DCRE4-450C	0.043	1056	585
3G3R1-B450K	HHD	DCRE4-400C	0.048	938	520
	HD/HND	DCRE4-450C	0.043	1056	585
	ND	DCRE4-500C	0.039	1173	580
3G3R1-B463K	HHD	DCRE4-630C	0.031	1477	790
	HD/HND	DCRE4-710C	0.028	1666	930
	ND	DCRE4-800C	0.035	1876	1210

1 Input AC reactor (Considering DC reactor is installed)

Type	Rating	Reference	mH	A	Losses W
3G3R1-A4004	HHD	AX-RAI06110025-DE	06.11	2.5	Pending
3G3R1-A4007	HHD	AX-RAI06110025-DE	06.11	2.5	
3G3R1-A4015	HHD	AX-RAI03690037-DE	03.69	3.7	
3G3R1-A4022	HHD	AX-RAI02700055-DE	02.70	5.5	
3G3R1-A4037	HHD	AX-RAI01620090-DE	01.62	9	
3G3R1-A4055	HHD	AX-RAI01110130-DE	01.11	13	
	HND	AX-RAI00810180-DE	00.81	18	
3G3R1-A4075	HHD	AX-RAI00810180-DE	00.81	18	
	HND	AX-RAI00580240-DE	00.58	24	
3G3R1-A4110	HHD	AX-RAI00580240-DE	00.58	24	
	HND	AX-RAI00440300-DE	00.44	30	
3G3R1-A4150	HHD	AX-RAI00440300-DE	00.44	30	
	HND	AX-RAI00360390-DE	00.36	39	
3G3R1-A4185	HHD	AX-RAI00360390-DE	00.36	39	
	HND	AX-RAI00300450-DE	00.30	45	
3G3R1-A4220	HHD	AX-RAI00300450-DE	00.30	45	
	HND	AX-RAI00131000-DE	00.13	100	
3G3R1-B4300	HHD, HD/HND, ND	AX-RAI00131000-DE	00.13	100	
3G3R1-B4370	HHD	AX-RAI00131000-DE	00.13	100	
	HD/HND, ND	AX-RAI00091350-DE	00.09	135	
3G3R1-B4450	HHD, HD/HND, ND	AX-RAI00091350-DE	00.09	135	
3G3R1-B4550	HHD	AX-RAI00091350-DE	00.09	135	
	HD/HND	AX-RAI00081600-DE	00.08	160	
	ND	AX-RAI00081600-DE	00.08	160	

Type	Rating	Reference	mH	A	Losses W
3G3R1-B4750	HHD	AX-RAI00081600-DE	0.08	160	Pending
	HD/HND, ND	AX-RAI00052500-DE	0.05	250	
3G3R1-B4900	HHD, HD/HND, ND	AX-RAI00052500-DE	0.05	250	
3G3R1-B411K	HHD	AX-RAI00052500-DE	0.05	250	
	HD/HND, ND	AX-RAI00062700-DE	0.06	270	
3G3R1-B413K	HHD	AX-RAI00062700-DE	0.06	270	
	HD/HND, ND	AX-RAI00035610-DE	0.03	561	
3G3R1-B416K	HHD, HD/HND, ND	AX-RAI00035610-DE	0.03	561	
3G3R1-B420K	HHD, HD/HND, ND	AX-RAI00035610-DE	0.03	561	
3G3R1-B422K	HHD	AX-RAI00035610-DE	0.03	561	
	HD/HND, ND	AX-RAI00028250-DE	0.02	825	
3G3R1-B428K	HHD, HD/HND, ND	AX-RAI00028250-DE	0.02	825	
3G3R1-B431K	HHD, HD/HND, ND	AX-RAI00028250-DE	0.02	825	
3G3R1-B435K	HHD	AX-RAI00028250-DE	0.02	825	
	HD/HND	AX-RAI00029500-DE	0.02	950	
	ND	AX-RAI00029500-DE	0.02	950	
3G3R1-B440K	HHD, HD/HND, ND	AX-RAI00029500-DE	0.02	950	
3G3R1-B450K	HHD	AX-RAI00029500-DE	0.02	950	
	HD/HND, ND	AX-RAI00011K10-DE	0.01	1100	
3G3R1-B463K	HD/HND, ND	AX-RAI00011K30-DE	0.01	1300	

Type	Rating	Inom (A)	Reference	mH	A	Losses W
3G3R1-A4004	HHD	1.5	AX-RAO16300038-DE	16.3	3.8	33
3G3R1-A4007	HHD	2.5	AX-RAO16300038-DE	16.3	3.8	33
3G3R1-A4015	HHD	4.2	AX-RAO11800053-DE	11.8	5.3	40
3G3R1-A4022	HHD	6	AX-RAO07300080-DE	7.3	8	63
3G3R1-A4037	HHD	9	AX-RAO04600110-DE	4.6	11	66
3G3R1-A4055	HHD	13.5	AX-RAO03600160-DE	3.6	16	72
3G3R1-A4055	HND	17.5	AX-RAO02500220-DE	2.5	22	77
3G3R1-A4075	HHD	18.5	AX-RAO02500220-DE	2.5	22	77
3G3R1-A4075	HND	23	AX-RAO02000320-DE	2	32	151
3G3R1-A4110	HHD	24.5	AX-RAO02000320-DE	2	32	151
3G3R1-A4110	HND	35	AX-RAO01650400-DE	1.65	40	173
3G3R1-A4150	HHD	32	AX-RAO02000320-DE	2	32	151
3G3R1-A4150	HND	41	AX-RAO01300480-DE	1.3	48	202
3G3R1-A4185	HHD	39	AX-RAO01650400-DE	1.65	40	173
3G3R1-A4185	HND	45	AX-RAO01300480-DE	1.3	48	202
3G3R1-A4220	HHD	45	AX-RAO01300480-DE	1.3	48	202
3G3R1-A4220	HND	60	AX-RAO00800750-DE	0.8	75	223
3G3R1-B4300	HHD, HND, HD	60	AX-RAO00800750-DE	0.8	75	223
3G3R1-B4300	ND	85	AX-RAO00680900-DE	0.68	90	253
3G3R1-B4370	HHD	75	AX-RAO00800750-DE	0.8	75	223
3G3R1-B4370	HND, HD, ND	91	AX-RAO00531100-DE	0.53	110	269
3G3R1-B4450	HHD	91	AX-RAO00531100-DE	0.53	110	269
3G3R1-B4450	HND, HD, ND	112	AX-RAO00401490-DE	0.4	149	332
3G3R1-B4550	HND, HD, ND	150	AX-RAO00331760-DE	0.33	176	363
3G3R1-B4550	ND	179	AX-RAO00262170-DE	0.26	217	389
3G3R1-B4750	HHD	150	AX-RAO00331760-DE	0.33	176	363
3G3R1-B4750	HND, HD, ND	217	AX-RAO00262170-DE	0.26	217	389
3G3R1-B4900	HHD	180	AX-RAO00262170-DE	0.26	217	389
3G3R1-B4900	HND	261	AX-RAO00173250-DE	0.17	325	598
3G3R1-B4900	HD	217	AX-RAO00262170-DE	0.26	217	389
3G3R1-B4900	ND	261	AX-RA000212600-DE	0.21	260	553
3G3R1-B411K	HHD	216	AX-RAO00262170-DE	0.26	217	389
3G3R1-B411K	HND	290	AX-RAO00173250-DE	0.17	325	598

Type	Rating	Inom (A)	Reference	mH	A	Losses W
3G3R1-B411K	HD	261	AX-RA000212600-DE	0.21	260	553
3G3R1-B411K	ND	290	AX-RAO00173250-DE	0.17	325	598
3G3R1-B413K	HHD	260	AX-RA000212600-DE	0.21	260	553
3G3R1-B413K	HND	361	AX-RAO00134440-DE	0.13	440	713
3G3R1-B413K	HD	325	AX-RAO00173250-DE	0.17	325	598
3G3R1-B413K	ND	376	AX-RAO00134440-DE	0.13	440	713
3G3R1-B416K	HHD	325	AX-RAO00173250-DE	0.17	325	598
3G3R1-B416K	HND, HD, ND	415	AX-RAO00134440-DE	0.13	440	713
3G3R1-B420K	HHD	377	AX-RAO00134440-DE	0.13	440	713
3G3R1-B420K	HND	547	-	-	-	-
3G3R1-B420K	HD	432	AX-RAO00134440-DE	0.13	440	713
3G3R1-B420K	ND	547	-	-	-	-
3G3R1-B422K	HHD	432	AX-RAO00134440-DE	0.13	440	713
3G3R1-B422K	HND	610	-	-	-	-
3G3R1-B422K	HD	477	AX-RAO00115250-DE	0.11	525	748
3G3R1-B422K	ND	610	-	-	-	-
3G3R1-B428K	HHD	520	AX-RAO00115250-DE	0.11	525	748
3G3R1-B428K	HND	650				
3G3R1-B428K	HD	585				
3G3R1-B428K	ND	739				
3G3R1-B431K	HHD	585				
3G3R1-B431K	HND	740				
3G3R1-B431K	HD	650				
3G3R1-B431K	ND	840				
3G3R1-B435K	HHD	650				
3G3R1-B435K	HND	960				
3G3R1-B435K	HD	740				
3G3R1-B435K	ND	1039				
3G3R1-B440K	HHD	740	Under development			
3G3R1-B440K	HND	1040				
3G3R1-B440K	HD	840				
3G3R1-B440K	ND	1169				
3G3R1-B450K	HHD	960				
3G3R1-B450K	HND	1170				
3G3R1-B450K	HD	1040				
3G3R1-B450K	ND	1385				
3G3R1-B463K	HHD	1170				
3G3R1-B463K	HND	1386				
3G3R1-B463K	HD	1386				
3G3R1-B463K	ND	1480				

1 Chokes

Diameter	Description	Model
21	For 2.2 KW motors or below	AX-FER2102-PE
28	For 15 KW motors or below	AX-FER2815-PE
50	For 45 KW motors or below	AX-FER5045-PE

2 Accessories

Cable

Description	Functions	Model
USB cable	Use a commercially available USB cable that is double-shielded, gold-plated and supports USB 2.0. The Mini B type USB cable can be used.	AX-CUSBM002-E
USB to RJ45 cable	Allows to connect directly to the inverter RJ45 port where the digital operator is connected	3G3A1-PC03 RS-485

Digital operator

Description	Functions	Model
LCD operator	Digital operator for R1 inverter USB Mini B type port MicroSD support	3G3A1-OP10-E

3 Option boards

Option type	Reference	Description	Details
Encoder board	OPC-PG	Encoder board for complementary or open collector interface	Pulse resolution: 20 to 60000 ppr, A, B and Z-phase input Max 100 KHz for complementary Max 30 KHz for open collector
	OPC-PG2	Encoder board for 5V line driver	Line driver (RS-422) Max 100 Khz Power supply output: 5VDC, 200mA
	OPC-PG22	Dual encoder input board for 5V line driver	2x Line driver (RS-422) Max 100 kHz Power supply output: 5VDC, 300 mA Require 2 option slots
	OPC-PMPG2	Encoder board for 5V for PM motor control	Output pulse count 20 to 3000 P/R (Note 1) Max. response frequency 100 kHz Line driver method (26C31, 26LS31 or equivalent) SOURCE current +20 mA (max.) SINK current -20 mA (max.) Magnetic pole position detection method: 3-bit code (U-, V-, W-phase) method Max. wire length (Note 3) 100 m PG power supply +5 VDC ±10%/300 mA or less (Note 2)
I/O Interface	OPC-DI	R1 Digital input interface card (16 digital inputs)	0 to 27 VDC max 5mA
	OPC-DO	R1 Digital output interface card (8 digital outputs)	On level 2VDC Off level 27 VDC 50 mA
	OPC-AIO	R1 Analog Input interface card (one ±10 VDC input/one 4 to 20mA DC input)	One analog voltage input (0 to ±10 V) Impedance 22kOhms, max 15 VDC •One analog current input (4 to 20 mA) Impedance 250 Ohms, max 250 mA •One analog voltage output (0 to ±10 V) •One analog current output (4 to 20 mA)
	OPC-AO	R1 Analog Output interface card (two analog current output: 4 to 20 mA DC)	
	OPC-RY	R1 Additional relay output card (2 relay outputs terminals)	250 VAC 0.3mA 48 VDC 0.5 mA
	OPC-RY2	R1 Relay output interface card (7 relay outputs can be added)	
	OPC-PT	R1 Resistance Temperature Detector Input Card	JPt100, Pt100, Ni100, Pt1000, Ni1000 / Three-wire JPt100, Pt100, Ni100 : 1 mA Pt1000, Ni1000 : 0.5 mA

Description	Functions	Number licenses	Media	Model
Sysmac Studio Standard Edition Ver.1.68	The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including NJ/NX-series CPU Units, NY-series Industrial PC, EtherCAT Slaves, and HMI. Sysmac Studio runs on the following OS: Windows 7 (32-bit/64-bit version)/Windows 8.1 (32-bit/64-bit version) Windows 10 (32-bit/64-bit version)/Windows 11 (64-bit version) This software provides functions of the Vision Edition. Refer to your local OMRON website for details such as supported models and functions.	(Media only)	Sysmac Studio (32 bit) DVD	SYSMAC-SE200D
		(Media only)	Sysmac Studio (64 bit) DVD	SYSMAC-SE200D-64
		1 license	-	SYSMAC-SE201L
Sysmac Studio Drive Edition Ver.1.68	Sysmac Studio Drive Edition is a limited license that provides selected functions required for C6, 1S-series Servo, G5-series Servo and M1/R1 Series Inverter System settings. Because this product is a license only, you need the Sysmac Studio Standard Edition DVD media to install it.	1 license		SYSMAC-DE001L
Omron Drives Mobile App	Windows and Android application that allows to communicate through USB with the option LCD operator for copy and paste parameter . Available in Google Play Store and Microsoft Store.	Free		Omron Drives

Type	Built-in Braking transistor						Built-in resistor		External resistor				
	Activation level	Minimum resistance	Max braking time	Max ED (%)	Max braking time (s)	Max braking power	Ohms	Watts	Type AX-	Ohms	KW	Duty	Max time On
3G3R1-A4004	760	200	Continuous	100%	Continuous	180%	720	30	-				
3G3R1-A4007		200	Continuous	100%	Continuous	180%	470	40					
3G3R1-A4015		150	70	70%	70	180%	160	80					
3G3R1-A4022		150	70	70%	70	180%	160	80					
3G3R1-A4037		96	70	70%	70	180%	160	80					
3G3R1-A4055		64	50	50%	50	180%	80	90					
3G3R1-A4075		48	50	50%	50	180%	80	90					
3G3R1-A4110		32	50	50%	50	180%	-		REM00K6100-IE	100	0.6	100%	Continous
3G3R1-A4150		24	50	50%	50	180%			REM00K9070-IE	70	0.9	100%	Continous
3G3R1-A4185		16	50	50%	50	180%			REM03K5035-IE	35	3.5	100%	Continous
3G3R1-A4220		16	50	50%	50	180%			REM03K5035-IE	35	3.5	100%	Continous
3G3R1-B4300		10	Continuous	100%	Continuous	150%			REM38K0012-IE	12	38	10%	30s
3G3R1-B4370		9	Continuous	100%	Continuous	150%			REM38K0012-IE	12	38	10%	30s
3G3R1-B4450		8	Continuous	100%	Continuous	150%			REM38K0012-IE	12	38	10%	30s
3G3R1-B4550		6.5	Continuous	100%	Continuous	150%			2x REM19K0020-IE	10	38	10%	30s
3G3R1-B4750		4.7	Continuous	100%	Continuous	150%			2× REM38K0012-IE	6	76	10%	30s

Type	External braking chopper					Recommended resistor				
	Type AX-BCR	Activation level	Continous current	Peak current	Minimum resistance	Type	Ohms	KW	Duty	Max time On
3G3R1-B4900	4070130-TE	450 to 800V	70	130	5.5	2 × REM38K0012-IE	6	76	10%	30s
3G3R1-B411K	4090240-TE		90	240	3.2	3 × REM38K0012-IE	4	114	10%	30s
3G3R1-B413K	4090240-TE		90	240	3.2	3 × REM38K0012-IE	4	114	10%	30s
3G3R1-B416K	4090240-TE		90	240	3.2	3 × REM38K0012-IE	4	114	10%	30s
3G3R1-B420K	4100330-TE		100	330	2.3	Calculate according to applicaiton				
3G3R1-B422K	4100330-TE		100	330	2.3					
3G3R1-B428K	4110500-TE		110	500	1.5					
3G3R1-B431K	4110500-TE		110	500	1.5					
3G3R1-B435K	4110500-TE		110	500	1.5					
3G3R1-B440K	4110500-TE		110	500	1.5					
3G3R1-B450K	4110500-TE		110	500	1.5					
3G3R1-B463K	4110500-TE		110	500	1.5					

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. I223E-EN-01A

In the interest of product improvement, specifications are subject to change without notice.