



PRADO

AUTOMAÇÃO INDUSTRIAL



SERIE HV 480

High performance vector control inverter

Contents

Basic Specification

Feature

Industry-specific

Model and specifications

Core Algorithm

Open loop general proposal

High Performance Vector Control



Basic specifications

Voltage	Power
Single phase AC220V	0.75kw~2.2kw
Three phase AC220V	0.75kw~110kw
Three phase AC380V~480V	0.75kw~200kw

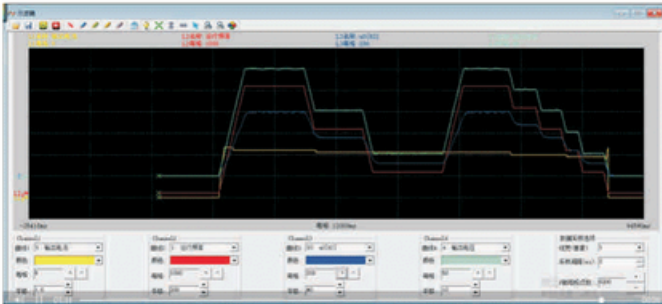
Based on listening and understanding of customers' requirement, HV 480 supports full range of input voltage , complete functions for different countries and applications.



High performance vector control inverter

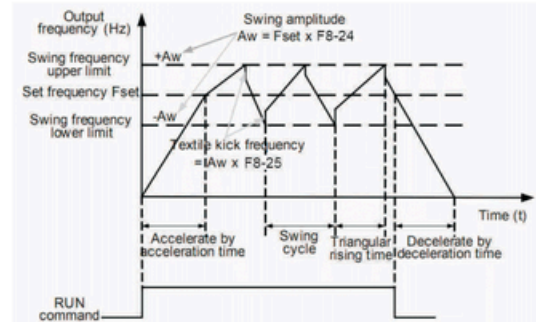
Product advantages

Commissioning software on PC



Monitor operating status via PC, optimize, modify, back up and copy data parameters

Built-in swing frequency function



Textile & chemical fiber industries which need to traverse and winding function

Copy parameter by LCD Keyboard



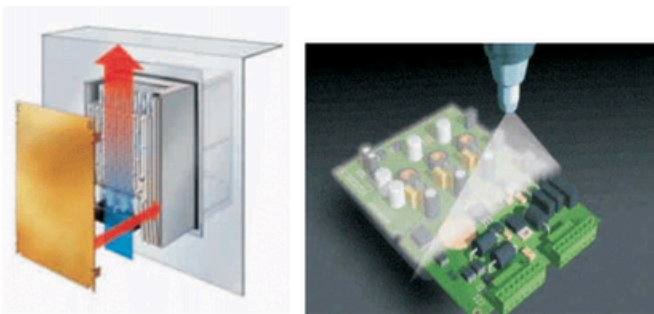
Easy copy of parameters between devices

Multiple communication control methods as options



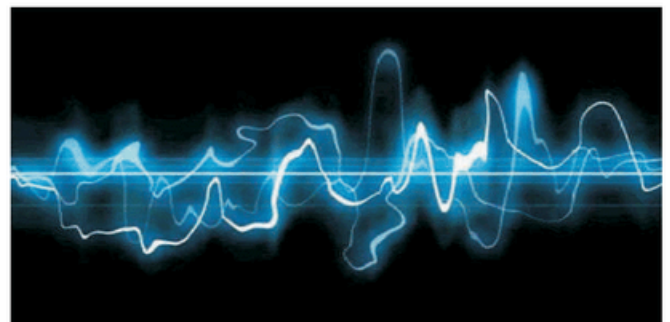
Can be matched with various mainstream control systems

Long-life design



The independent air duct design and three layers of protective paint ensure that the product can run stably for a long time in harsh environments

Multiple EMC solutions



We offer complete EMC solutions including:
 Built-in EMC filter, External filter and reactor
 Built-in filter capacitor
 External input / output reactor, input / output filter, harmonic filter, sine filter, etc.

Model Definition

HV480 - 7R5 G 3					
①		②		③ ④	
① HV 480 Series Inverter		③ Code		Inverter Type	
		G		General Type	
		P		Fan / Pump Type	
② NO.		Adaptati		④ Code	
R75		0.75kW		Inverter Type	
7R5		7.5kW		1 Single phase 220V	
011		11kW		2 Three phase 220V	
018		18.5kW		3 Three phase 380V-440V	
110		110kW		4 Three phase 460V-480V	
200		200kW			

HV480 series inverter specifications

Frequency inverter model	Input current (A)	Output current (A)	Adaptive motor (KW) (HP)		Power supply capacity (KVA)
G1 input voltage range: Single-phase AC220V±15%, 50 / 60 Hz					
HV480-R75G1	11.0	4.0	0.75	1	3.0
HV480-1R5G1	18.0	7.0	1.5	2	4.8
HV480-2R2G1	27.0	9.6	2.2	3	7.1
G2 input voltage range: Three-phase AC220V±15%, 50 / 60 Hz					
HV480-R75G2	5	3.8	0.75	1	3
HV480-1R5G2	5.8	5.1	1.5	2	4.0
HV480-2R2G2	10.5	9.0	2.2	3	5.9
HV480-004G2	14.6	13.0	3.7	5	8.9
HV480-5R5G2	26	25	5.5	7.5	17
HV480-7R5G2	35	32	7.5	10	21
HV480-011G2	46.5	45	11	15	30
HV480-015G2	62	60	15	20	40
HV480-018G2	76	75	18	25	57
HV480-022G2	92	91	22	30	69
HV480-030G2	113	112	30	40	85
HV480-037G2	157	150	37	50	114
HV480-045G2	180	176	45	60	134
HV480-055G2	214	210	55	75	160
HV480-075G2	307	304	75	100	231
HV480-093G2	385	377	90	125	250
HV480-110G2	430	426	110	150	280

High performance vector control inverter

HV480 series inverter specifications

Frequency inverter model	Input current (A)	Output current (A)	Adaptive motor (KW) (HP)		Power supply capacity (KVA)
G3 input voltage range: Three-phase AC 380~440 (-15%~+10%), 50 / 60 Hz					
HV480-R75G3	3.4	2.1	0.75	1	1.5
HV480-1R5G3	5.0	3.8	1.5	2	3.0
HV480-2R2G3	5.8	5.1	2.2	3	4.0
HV480-004G3	10.5	9.0	4.0	5	5.9
HV480-5R5G3	14.6	13.0	5.5	7.5	8.9
HV480-7R5G3	20.5	17.0	7.5	10	11
HV480-011G3	26	25	11	15	17
HV480-015G2	35	32	15	20	21
HV480-018G3	42	37	18.5	25	45
HV480-022G3	50	45	22	30	54
HV480-030G3	68	60	30	40	60
HV480-037G3	83	75	37	50	63
HV480-045G3	102	91	45	60	81
HV480-055G3	124	112	55	75	97
HV480-075G3	169	150	75	100	127
HV480-093G3	203	176	90	125	150
HV480-110G3	248	210	110	150	179
HV480-132G3	256	253	132	175	192
HV480-160G3	307	304	160	220	231
HV480-185G3	350	340	185	245	242
HV480-200G3	385	377	200	270	250
G4 input voltage range: Three-phase AC 460~480 (-15%~+10%), 50 / 60 Hz					
HV480-R75G4	3.4	2.1	0.75	1	1.5
HV480-1R5G4	5.0	3.8	1.5	2	3.0
HV480-2R2G4	5.8	5.1	2.2	3	4.0
HV480-004G4	10.5	9.0	4.0	5	5.9
HV480-5R5G4	14.6	13.0	5.5	7.5	8.9
HV480-7R5G4	20.5	17.0	7.5	10	11
HV480-011G4	26	25	11	15	17
HV480-015G4	35	32	15	20	21
HV480-018G4	42	37	18.5	25	45
HV480-022G4	50	45	22	30	54
HV480-030G4	68	60	30	40	60
HV480-037G4	83	75	37	50	63
HV480-045G4	102	91	45	60	81
HV480-055G4	124	112	55	75	97
HV480-075G4	169	150	75	100	127
HV480-093G4	203	176	90	125	150
HV480-110G4	248	210	110	150	179
HV480-132G4	256	253	132	175	192
HV480-160G4	307	304	160	220	231
HV480-185G4	350	340	185	245	242
HV480-200G4	385	377	200	270	250

Specificaion

Items	Description	
	Highest frequency	Vector control: 0 ~ 300 Hz V/F control: 0 : 3200Hz
	Carrier frequency	0.5kHz~16kHz The carrier frequency can be automatically adjusted according to the load characteristics
	Input frequency resolution	Digital setting: 0.01 Hz analog setting: highest frequency * 0.025 %
	Control mode	1: Open loop vector control 2: V/F control
	Pull-in torque	Model g machine: 0.5 Hz / 150 %
	Speed control range	1:100
	Speed stabilization accuracy	±0.5%
	Torque control accuracy	±5%
	Overload capacity	G: 150 % rated current 60s; 180 % rated current 3s.
	Torque increase	Automatic torque increase; The manual torque is increased by 0.1 % - 30.0 %
	V/F curve	Three ways: linear; Multipoint type; N - power V/F curve (power 1.2, power 1.4, power 1.6, power 1.8, power 2)
	V/F separation	Two methods: full separation and half separation
Basic function	Acceleration and deceleration curve	Straight line or S curve acceleration and deceleration mode. Four kinds of acceleration and deceleration times, The acceleration and deceleration time range is 0.0 to 6500.0 S.
		DC brake
	Inching	Inching frequency range: 0.00 Hz ~ 50.00 Hz. Inching acceleration and deceleration time 0.0s ~ 6500.0 s
	Simple PLC, multi-stage speed operation	Up to 16 - speed operation via built-in PLC or control terminal
	Built - in PID	Closed-loop control system capable of conveniently realize process control
	Automatic voltage regulation (AVR)	When the grid voltage changes, the output voltage can be automatically kept constant
	Over voltage and over-loss rate control	Automatically limit the current and voltage during operation to prevent frequent over current and over voltage trips.
	Fast current limiting function	Minimize over-current faults and protect the normal operation of the frequency inverter
	Torque limitation and control	The " excavator" feature automatically limits the torque during operation to prevent frequent over current trips; Open loop vector mode can realize torque control

High performance vector control inverter

Specification

Items	Description	
Individualized performance	Outstanding performance	Using high performance current vector control technology to realize asynchronous motor control
	Stop at once	When the instantaneous power failure occurs, the load feedback energy compensates for the voltage drop and the frequency inverter will continue to operate for a short period of time
	Fast current limiting	Avoiding frequent over current faults of the frequency inverter
	Timing control	Timing control function: set the time range from 0.0 min to 6500.0 min
	Switch between two motors	Two sets of motor parameters can realize switching control of two motors
	Bus support	Supports a variety of fieldbus: RS - 485, CANopen
Running	Command source	Operation panel setting, control terminal setting, serial communication port setting. Can be switched in various ways
	Frequency source	Multiple frequency sources: digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. Can be switched in various ways
	Auxiliary frequency source	Various auxiliary frequency sources. Can flexibly realize auxiliary frequency fine tuning and frequency synthesis
	Input terminal	Standard 7 digital input terminals, of which 1 supports high-speed pulse input of up to 100 khz; Three analog input terminals, one supporting only 0 ~ 10v voltage input, one supporting 0 ~ 10v voltage input or 4 ~ 20mA current input, 1 analog input terminal, supporting - 10 ~ 10v voltage input
	Output terminals	1 high-speed pulse output terminal (optional open collector type), supporting square wave signal output of 0 ~ 100 khz 1 digital output terminal 1 relay output terminal 2 analog output terminals to support 0 ~ 20ma current output or 0 ~ 10v voltage output
Environment	Place of use	Dust - free, metal dust, corrosive gases, flammable gases, oil fog, salt fog, water vapor, dripping direct sunlight - free indoor
	Altitude	Below 1,000 meters
	Ambient temperature	-10℃ ~ 40℃
	Humidity	Less than 90 % RH without condensation
	Vibration	Less than 0.5g
	Storage temperature	-25℃ ~ 65℃
	Protection grade	Ip20

Dimensions and mounting dimensions

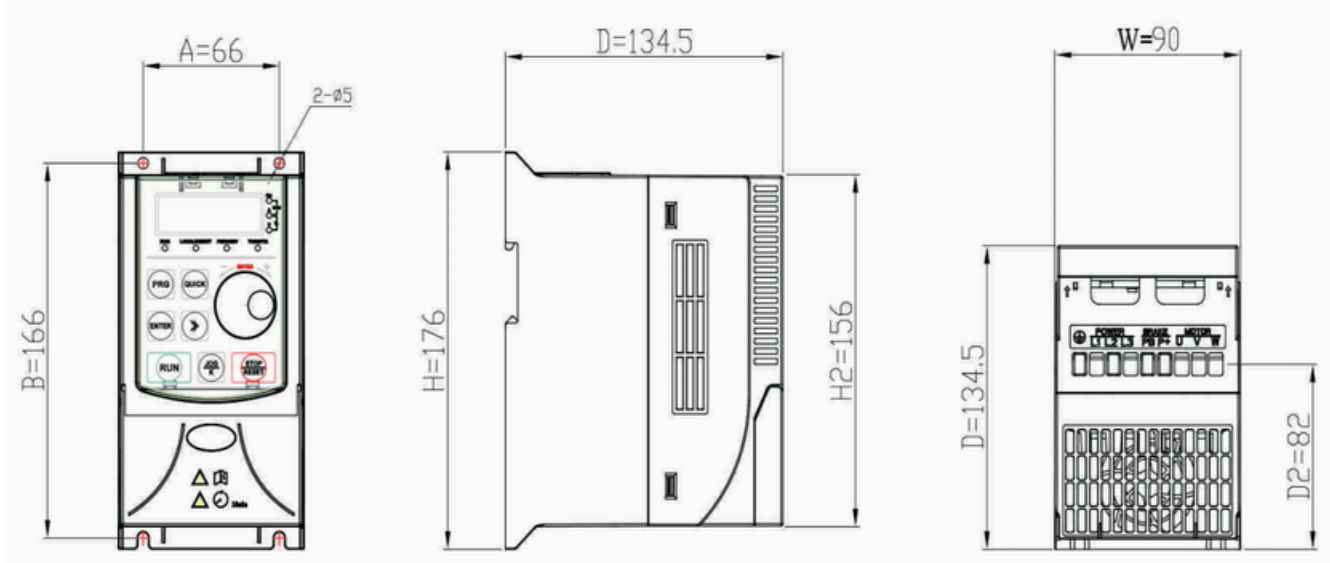


Fig 1(R75G3-2R2G3)

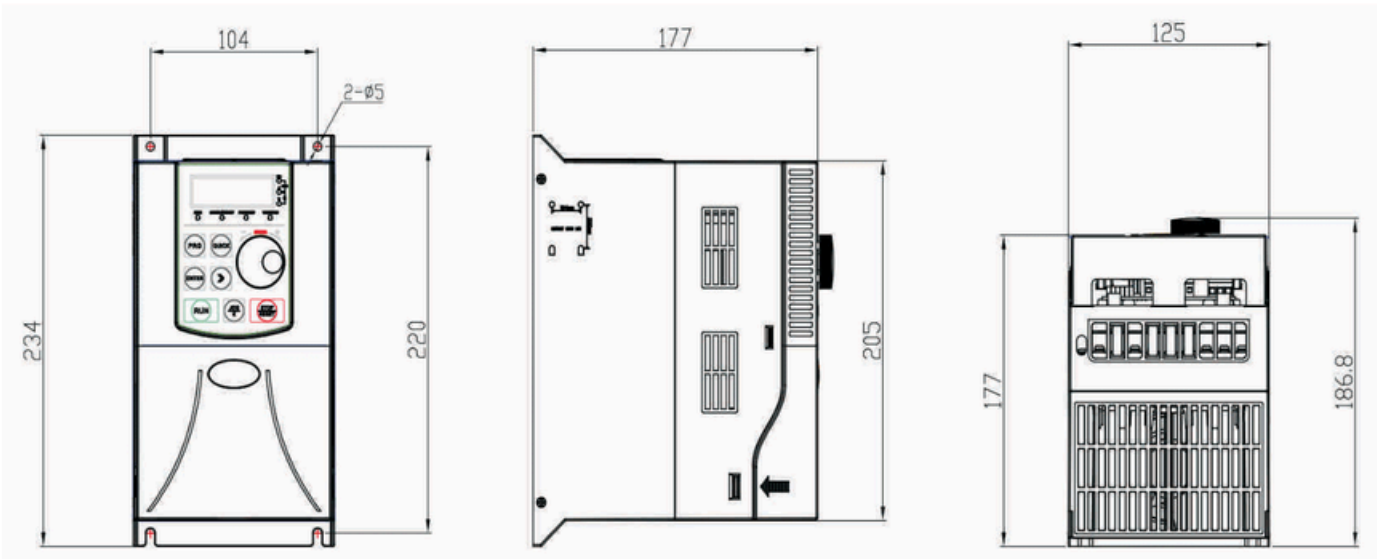


Fig 2(004G3-7R5G3)

High performance vector control inverter

Dimensions and mounting dimensions

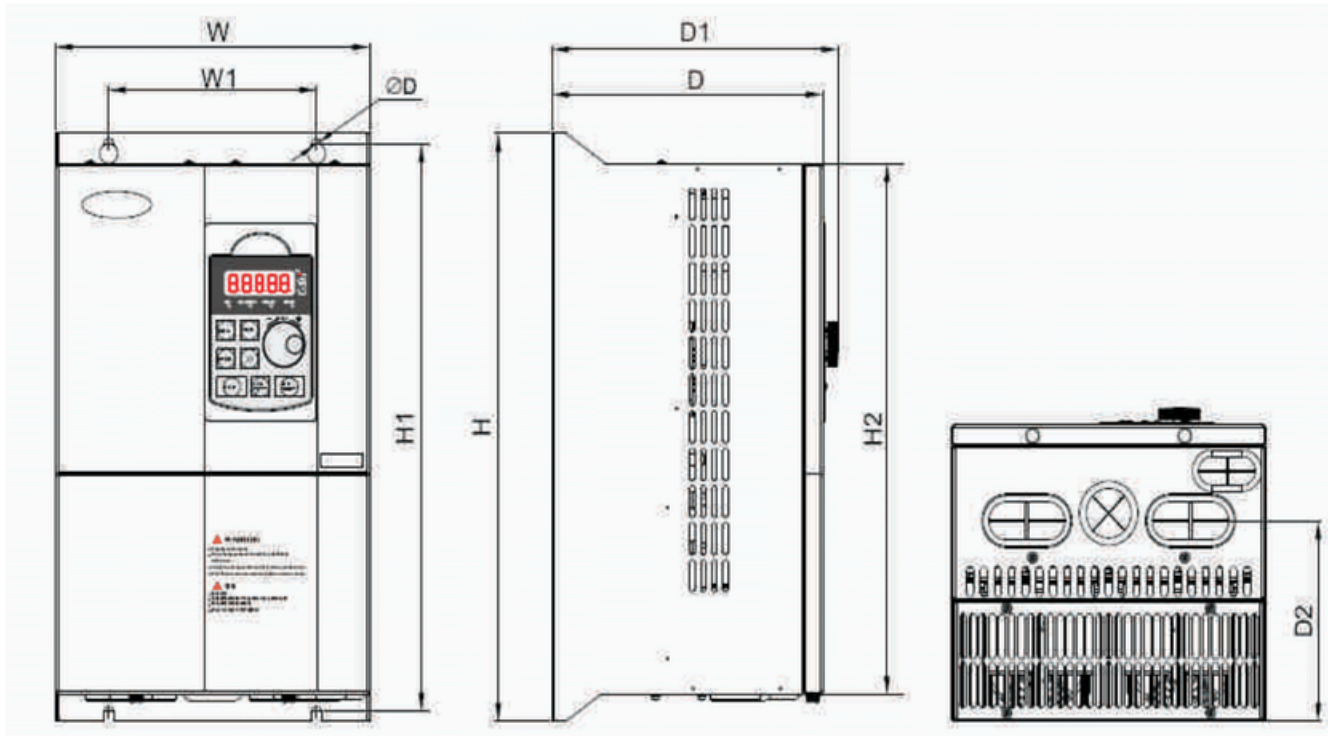


Fig 3(011G3-200G3)

List of dimensions and mounting dimensions

Inverter Specification	External dimension (mm)			Installation hole location (mm)					Mounting aperture (mm)	Figure
	W	H	D	W1	H1	D1	H2	D2		
G1 input voltage range: Single-phase AC220V±15%, 50 / 60 Hz										
HV480-R75G1	101	152	117	89	140	128		84	5	1
HV480-1R5G1										
HV480-2R2G1	125	220	166	110	205	177		124	6.5	1
G2 input voltage range: Three-phase AC220V±15%, 50 / 60 Hz										
HV480-R75G2	125	186	160	113	174	170		113	5	1
HV480-1R5G2										
HV480-2R2G2	160	248	138	148	236	193		128	5	2
HV480-004G2										
HV480-5R5G2	195	330	185	150	315	197	284	130	6	3
HV480-7R5G2										
HV480-011G2	227	338	196	150	375	206	350	133	7	3
HV480-015G2	255	435	202	150	425	213	400	140	7	3
HV480-018G2										
HV480-022G2	307	557	266	230	537	278	501	204	9	3
HV480-030G2										

List of dimensions and mounting dimensions

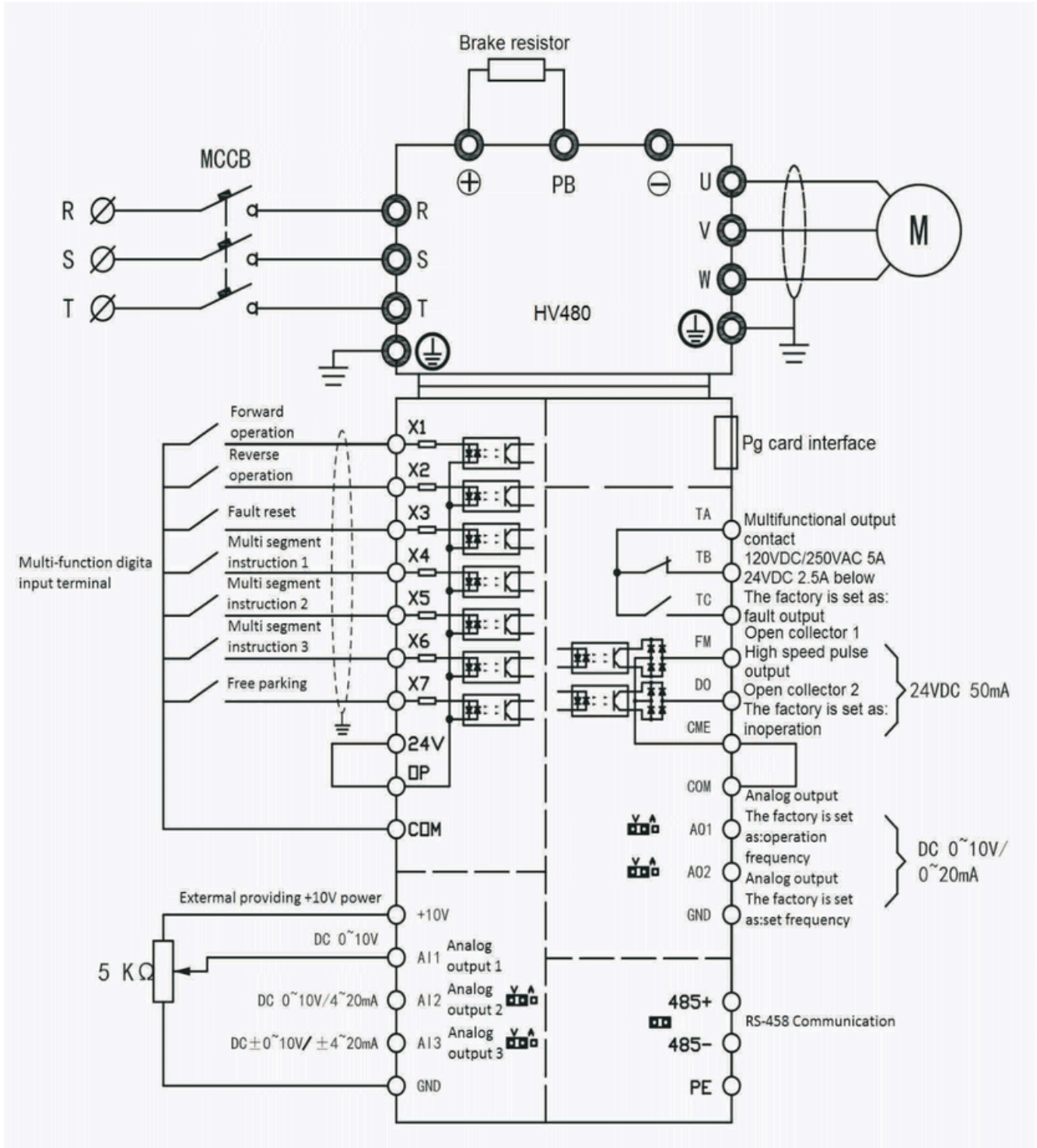
Inverter Specification	External dimension (mm)			Installation hole location (mm)					Mounting aperture (mm) d	Figure Fig
	W	H	D	W1	H1	D1	H2	D2		
G2 input voltage range: Three-phase AC220V±15%, 50 / 60 Hz										
HV480-037G2	377	628	280	240	600	292	568	228	9	3
HV480-045G2										
HV480-055G2										
HV480-075G2	500	788	350	270	762	357	728	266	13	3
HV480-093G2	540	900	348	320	867	358	828	278	13	3
HV480-110G2										
G3 input voltage range: Three-phase AC 380~440 (-15%~+10%), 50 / 60 Hz										
HV480-R75G3	125	186	160	113	174	170		113	5	1
HV480-1R5G3										
HV480-2R2G3										
HV480-004G3	160	248	138	148	236	193		128	5	2
HV480-5R5G3										
HV480-7R5G3										
HV480-011G3	195	330	185	150	315	197	284	130	6	3
HV480-015G3										
HV480-018G3	227	338	196	150	375	206	350	133	7	3
HV480-022G3										
HV480-030G3	255	435	202	150	425	213	400	140	7	3
HV480-037G3										
HV480-045G3	307	557	266	230	537	278	501	204	9	3
HV480-055G3										
HV480-075G3	377	628	280	240	600	292	568	228	9	3
HV480-093G3										
HV480-110G3										
HV480-132G3	500	788	350	270	762	357	728	266	13	3
HV480-160G3										
HV480-185G3	540	900	348	320	867	358	828	278	13	3
HV480-200G3										

High performance vector control inverter

List of dimensions and mounting dimensions

Inverter Specification	External dimension (mm)			Installation hole location (mm)					Mounting aperture (mm)	Figure
	W	H	D	W1	H1	D1	H2	D2		
G4 input voltage range: Three-phase AC 460~480 (-15%~+10%), 50 / 60 Hz										
HV480-R75G4	125	186	160	113	174	170		113	5	1
HV480-1R5G4										
HV480-2R2G4										
HV480-004G4	160	248	138	148	236	193		128	5	2
HV480-5R5G4										
HV480-7R5G4										
HV480-011G4	195	330	185	150	315	197	284	130	6	3
HV40-015G4										
HV480-018G4	227	338	196	150	375	206	350	133	7	3
HV480-022G4										
HV480-030G4	255	435	202	150	425	213	400	140	7	3
HV480-037G4										
HV480-045G4	307	557	266	230	537	278	501	204	9	3
HV480-055G4										
HV480-075G4	377	628	280	240	600	292	568	228	9	3
HV480-093G4										
HV480-110G4										
HV480-132G4	500	788	350	270	762	357	728	266	13	3
HV480-160G4										
HV480-185G4	540	900	348	320	867	358	828	278	13	3
HV480-200G4										

Standard wiring diagram of frequency inverter



Note:
For all G1 models, G2 4.0kw and below models, G3 and G4 7.5kw and below models, there are no A12/A13, no A02, no X6/X7, no FM output.