General

The 3G3MV is a miniature frequency inverter incorperating an open loop vector control function, which ensures a torque output that is 150% of the rated motor torque at an output frequency of 1Hz. Furthermore, the 3G3MV suppresses the revolution fluctuation caused by the load.

Incorporates a high-speed current limit function, thus suppressing overcurrent caused by high torque and ensuring smooth operation of the motor.

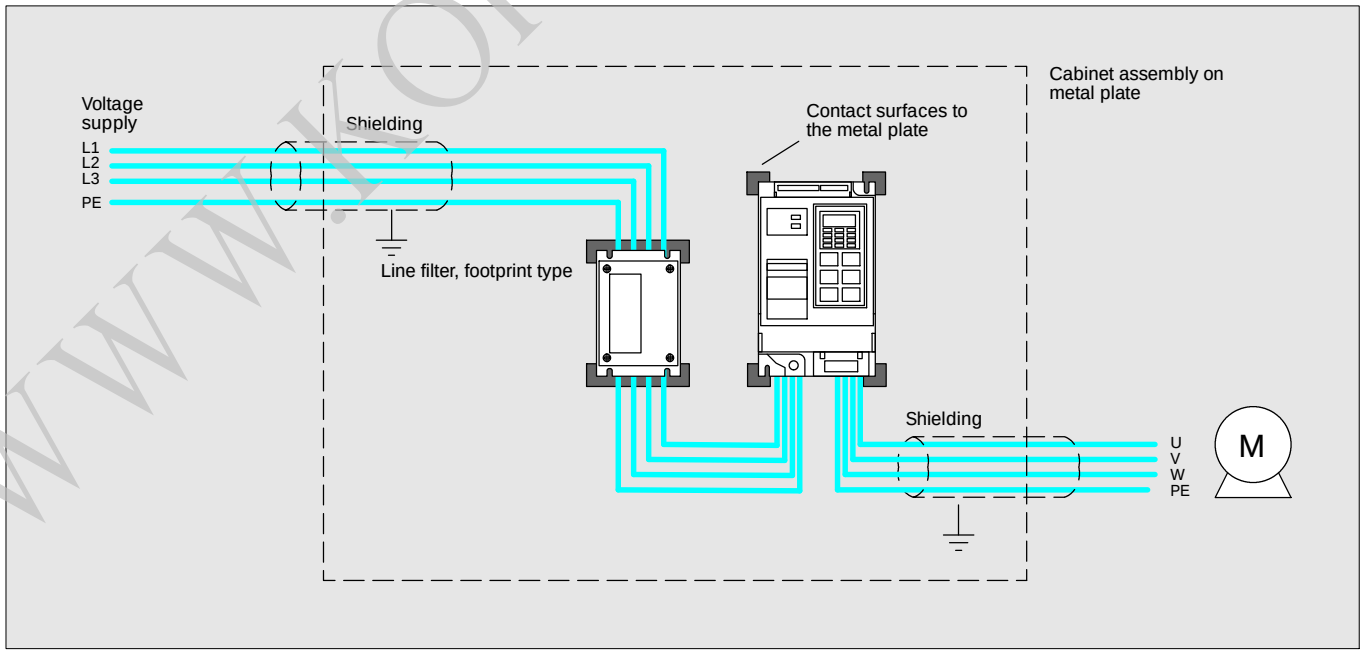
Flexibility is an important feature: the reference value default is selected through 4..20 mA, 0..10 V or a pulse train that is speed proportional in its frequency. The multi-function inputs can be set to either PNP or NPN. Plug-in are available for different options.

Features

- exceptionally compact design
- integrated reference value potentiometer
- integrated modbus interface
- optional field bus cards
  (I.E. DeviceNet)
- 16 fixed frequencies
- 6 multifunction digital inputs
- 3 multifunctional digital outputs
- 1 multifunctional analog output
- 1 multifunctional analog input
- Approval: CE, UL, CSA

System architecture

To comply with relevant EMC guidelines it is imperative for frequency inverters to be operated with line filters.



Product overview

	Max. motor output	Output current	Product number
Single phase 230 V			
	0,12 kW	0,8 A	**3G3MV-AB001**
	0,25 kW	1,6 A	**3G3MV-AB002**
	0,55 kW	3,0 A	**3G3MV-AB004**
	1,1 kW	5,0 A	**3G3MV-AB007**
	1,5 kW	7,0 A	**3G3MV-AB015**
	2,2 kW	11 A	**3G3MV-AB022**
	4,0 kW	17,5 A	**3G3MV-AB040**
Three-phase 230 V			
	0,12 kW	0,8 A	**3G3MV-A2001**
	0,25 kW	1,6 A	**3G3MV-A2002**
	0,55 kW	3,0 A	**3G3MV-A2004**
	1,1 kW	5,0 A	**3G3MV-A2007**
	1,5 kW	7,0 A	**3G3MV-A2015**
	2,2 kW	11 A	**3G3MV-A2022**
	4,0 kW	17,5 A	**3G3MV-A2040**
	5,5 kW	25 A	**3G3MV-A2055**
	7,5 kW	33 A	**3G3MV-A2075**
Three-phase 400 V			
	0,25 kW	1,2 A	**3G3MV-A4002**
	0,55 kW	1,8 A	**3G3MV-A4004**
	1,1 kW	3,4 A	**3G3MV-A4007**
	1,5 kW	4,8 A	**3G3MV-A4015**
	2,2 kW	5,5 A	**3G3MV-A4022**
	3,0 kW	7,2 A	**3G3MV-A4030**
	4,0 kW	9,2 A	**3G3MV-A4040**
	5,5 kW	14,8 A	**3G3MV-A4055**
	7,5 kW	18 A	**3G3MV-A4075**

Accessories

Line filter, braking resistors, ferrite rings, DIN track mounting bracket

Inverter	Product number			
	Line filter (mountable under-neath)	Braking resistors	Ferrite rings	DIN track mounting bracket
3G3MV-AB001	3G3MV-PFI1010-E	3G3IV-PERF150WJ401	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-AB002	3G3MV-PFI1010-E	3G3IV-PERF150WJ401	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-AB004	3G3MV-PFI1010-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-AB007	3G3MV-PFI1020-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/1	3G3IV-PZZ08122B
3G3MV-AB015	3G3MV-PFI1020-E	3G3IV-PERF150WJ101	3G3IV-PFO OC/2	3G3IV-PZZ08122B
3G3MV-AB022	3G3MV-PFI1030-E	3G3IV-PERF150WJ700	3G3IV-PFO OC/2	3G3IV-PZZ08122C
3G3MV-AB040	3G3MV-PFI1040-E	3G3IV-PERF150WJ620	3G3IV-PFO OC/2	3G3IV-PZZ08122D
3G3MV-A2001	3G3MV-PFI2010-E	3G3IV-PERF150WJ401	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-A2002	3G3MV-PFI2010-E	3G3IV-PERF150WJ401	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-A2004	3G3MV-PFI2010-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/1	3G3IV-PZZ08122A
3G3MV-A2007	3G3MV-PFI2010-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/1	3G3IV-PZZ08122B
3G3MV-A2015	3G3MV-PFI2020-E	3G3IV-PERF150WJ101	3G3IV-PFO OC/2	3G3IV-PZZ08122B
3G3MV-A2022	3G3MV-PFI2020-E	3G3IV-PERF150WJ700	3G3IV-PFO OC/2	3G3IV-PZZ08122C
3G3MV-A2040	3G3MV-PFI2030-E	3G3IV-PERF150WJ620	3G3IV-PFO OC/2	3G3IV-PZZ08122C
3G3MV-A2055	3G3MV-PFI2050-E	3G3IV-PERF500WJ360T	3G3IV-PFO OC/2	-
3G3MV-A2075	3G3MV-PFI2050-E	3G3IV-PERF101WJ360T	3G3IV-PFO OC/2	-
3G3MV-A4002	3G3MV-PFI3005-E	3G3IV-PERF150WJ751	3G3IV-PFO OC/1	3G3IV-PZZ08122B
3G3MV-A4004	3G3MV-PFI3005-E	3G3IV-PERF150WJ751	3G3IV-PFO OC/1	3G3IV-PZZ08122B
3G3MV-A4007	3G3MV-PFI3010-E	3G3IV-PERF150WJ751	3G3IV-PFO OC/2	3G3IV-PZZ08122B
3G3MV-A4015	3G3MV-PFI3010-E	3G3IV-PERF150WJ401	3G3IV-PFO OC/2	3G3IV-PZZ08122B
3G3MV-A4022	3G3MV-PFI3010-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/2	3G3IV-PZZ08122B
3G3MV-A4030	3G3MV-PFI3020-E	3G3IV-PERF150WJ201	3G3IV-PFO OC/2	3G3IV-PZZ08122C
3G3MV-A4040	3G3MV-PFI3020-E	3G3IV-PERF150WJ101	3G3IV-PFO OC/2	3G3IV-PZZ08122C
3G3MV-A4055	3G3MV-PFI3030-E	3G3IV-PERF500WJ360T	3G3IV-PFO OC/2	-
3G3MV-A4075	3G3MV-PFI3030-E	3G3IV-PERF101WJ360T	3G3IV-PFO OC/2	-

Miscellaneous

Description	Product number
Multi function analog input cable	3G3MV-PCN-CN2

Accessories (continued)

Miscellaneous

	Description	Product number
	**Option card holder**	**on demand**
	**Option cards** - CAN-Bus - DeviceNet - Interbus S - PROFIBUS DP	**on demand**

Technical data

230 V class

Single phase: 3G3MV-AB			AB001	AB002	AB004	AB007	AB015	AB022	AB040		
Three phase: 3G3MV-A2			A2001	A2002	A2004	A2007	A2015	A2022	A2040	A2055	A2075
Maximum allowed motor output		kW	0,12	0,25	0,55 (0,4*)	1,1 (0,75*)	1,5 (1,1*)	2,2	4,0	5,5	7,5
Output data	Inverter output	kVA	0,3	0,6	1,1	1,9	3,0	4,2	6,7	9,5	13,0
	Output rated current	A	0,8	1,6	3,0	5,0	8,0	11,0	17,5	25,0	33,0
	Max. output voltage		proportional to the input voltage: 0..240 V								
	Output frequencies		400 Hz								
Supply	Rated input voltage and frequency		200..240 V, 50/60 Hz								
	Max. voltage variation		-15 % to +10 %								
	Max. frequency variation		± 5 %								
Weight	A2/AB type	kg	0,6/0,6	0,6/0,7	0,9/1,0	1,1/1,5	1,4/1,5	1,5/2,2	2,1/2,9	4,6	4,8

400 V class

Three phase, 3G3MV-A4			A4002	A4004	A4007	A4015	A4022	A4030	A4040	A4055	A4075
Maximum allowed motor output		kW	0,25	0,55	1,1	1,5	2,2	3,0	4,0	5,5	7,5
Output data	Inverter output	kVA	0,9	1,4	2,6	3,7	4,2	5,5	7,0	11,0	14,0
	Output rated current	A	1,2	1,8	3,4	4,8	5,5	7,2	9,2	14,8	18,0
	Max. output voltage		proportional to the input voltage: 4..400 V								
	Output frequencies		400 Hz								
Supply	Rated input voltage and frequency		380..460 V, 50/60 Hz								
	Max. voltage variation		-15 % to +10 %								
	Max. frequency variation		± 5 %								
Weight		kg	1,0	1,1	1,5	1,5	1,5	2,1	2,1	4,8	4,8

* With single phase connection for MV-A2 type.

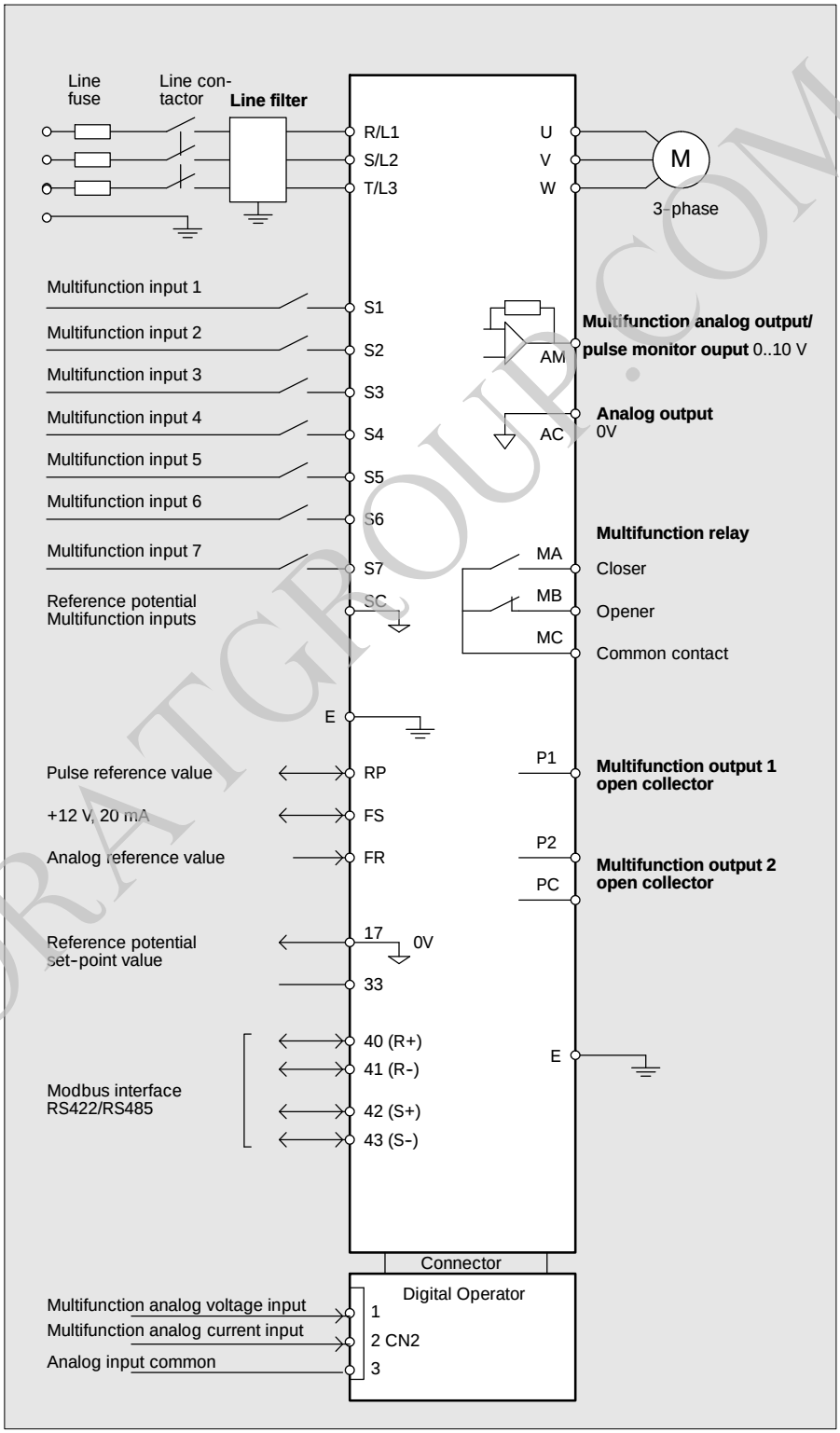
Technical data (continued)

General data

Control functions	Control method		Sinusoidal PWM, can be switched between v/f control and voltage vector control
	Output frequency range		0,1..400 Hz
	Frequency precision		digital reference value: ±0,01 % (-10..+50 °C)
			analog reference value: ±0,5% (25 ±10 °C)
	Resolution of frequency reference value		digital reference value: 0,01 Hz (<100 Hz), 0.1 Hz (>100 Hz)
			analog reference value 1/1000 of maximum frequency
	Resolution of output frequency		0,01 Hz
	Overload capacity		150%/60 s
	Frequency reference value		0..10 V (20 kW), 4-20 mA (250 W), 0-20 mA (250 W)
			pulse signal
	Braking torque (short-time peaks)	up to 200 W	150%
		550W, 1,1 kW	100%
		1,5 kW	50%
		>1,5 kW	20%
			Sustained braking torque approx. 20% without, 150% with external braking resistor
Protective functions	Motor overload protection		electronically adjustable motor protection
	Instantaneous overcurrent protection		stops at approx: 250% of rated output current
	Overload protection		stops at 150% of rated current for 1 min.
	Overvoltage protection		stops when main circuit DC voltage is approx 410 V
	Undervoltage protection		stops when main circuit DC voltage is approx 160 V
	Momentary power interruption compensation selection		stops for 15 ms or more by setting the inverter to momentary power interruption mode, operation can be continued if power is restored within approx 0.5 sec.
	Cooling fin overheating		electronic protection
	Ventilator control		electronic protection against blocking
	Grounding protection		protection of rated output current
Functions	Digital inputs		7 multifunction digital input
	Digital outputs		1 relay output, 2 open collector outputs, multifunction
	Analog input		1 multifunction analog input
	Analog output		1 multifunction analog output
	Braking and acceleration times		0,01..6000 s
	Display		frequency, current or reference value by selection
			error and status LED
Ambient conditions	Type of protection		IP20, wall installation
	Cooling		separate cooler for 0,75 kW (200 V), 1,5 kW (400 V)
	Ambient temperature	open installation:	-10 °C to 50 °C
		wall installation:	-10 °C to 40 °C
	Air humidity		95% (without condensation)
	Storage temperature		-20 °C to +60 °C
	Assembly		cabinet, free of dust and corrosive gases
	Position height		1000 mA
	Vibration resistance		1 *g* at <20 Hz, 0,2 *g* at <50 Hz

Connections diagram

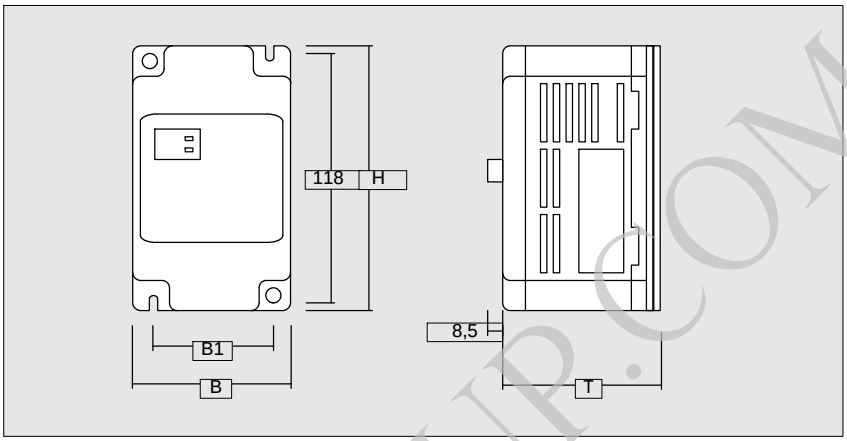
(Connect L2/L3 with single-phase equipment)



Dimensions (mm)

3G3MV-AB_

B	B1	T	H	Product number
68	56	76	128	001
68	56	89	128	002
68	56	138	128	004
108	96	140	128	007
108	96	156	128	015
140	128	163	128	022
170	158	180	128	040



3G3MV-A2_

B	B1	T	H	Product number
68	56	76	128	001
68	56	76	128	002
68	56	108	128	004
68	56	128	128	007
108	96	131	128	015
108	96	140	128	022
140	128	143	128	040
180	164	170	260	055
180	164	170	260	075

3G3MV-A4_

B	B1	T	H	Product number
108	96	92	128	002
108	96	110	128	004
108	96	140	128	007
108	96	156	128	015
108	96	156	128	022
140	128	143	128	030
140	128	143	128	040
180	164	170	260	055
180	164	170	260	075

Line filter 3G3MV-PFI_

B	B1	H	H1	T	Product number
71	51	169	156	45	1010E
111	91	169	156	50	1020E
144	120	174	161	50	1030E
174	150	174	161	50	1040E
82	62	194	181	50	2010E
111	91	169	156	50	2020E
144	120	174	161	50	2030E
184	150	304	288	56	2050E
111	91	169	156	45	3005E
111	91	169	156	45	3010E
144	120	174	161	50	3020E
184	150	304	288	56	3030E