SLV300 Series Inverter Specification (Manual)

2006.10.31.

TBR Co.,Ltd.

1. Specification

1.1 Power rating

1.1.1 SLV312 Power rating

	Unit	220V Class
Output Power	kW	0.75
	kVA	1.2
Rated Output Current	A	5
Input Power	VAC	220±10%
	Freq.	1Phase, 50/60 Hz

1.1.2 SLV311 Power rating

	Unit	220V Class
Output Power	kW	2.2
	kVA	3
Rated Output Current	A	8
Input Power	VAC	220±10%
	Freq.	1Phase, 50/60 Hz

1.2 Specifications

Items		Specification
Control	Control Method	V/F Control
		Sensorless Vector Control
	Maximum Frequency	150Hz
	Switching Frequency	3~16kHz
	Frequency Resolution	0.01Hz
	Torque Boost	Manual Boost 0~50%
	Acc/Dec Time	0.1~100 Sec
	Acc/Dec Pattern	Linear
	Stall Prevention	Current Level 0~200%
	Interface	RS 232 Serial Port
Protection		Over Voltage, Over Current Over Heat, Low Voltage
Cooling		Fan Forced Cooling
Actuator Driver		Optional
Operation Condition	Ambient Temperature	-10 ~ +40 Degree
	Humidity	Below 98% RH
	Storage Temperature	-20 ~ +60 Degree
	Altitude	Lower than 1000m
Installed Power suply		+12VDC, Max. 1A

2. Parameter Specifications

2.1 Parameter Setting

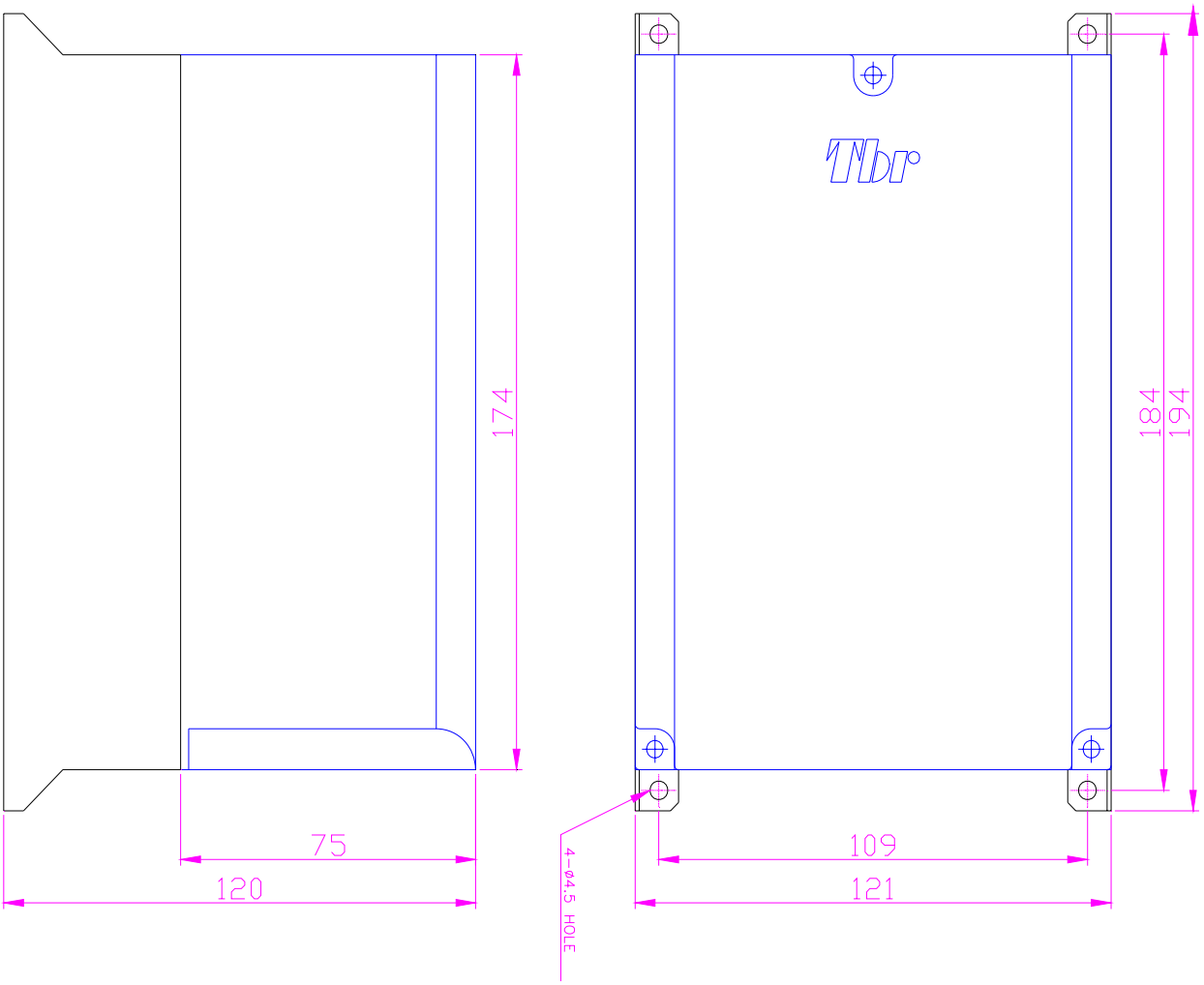
Inverter operation parameter is set at the TBR factory before out-going.
Optional parameter setting tools(PC loader and handy loader) are available for the us

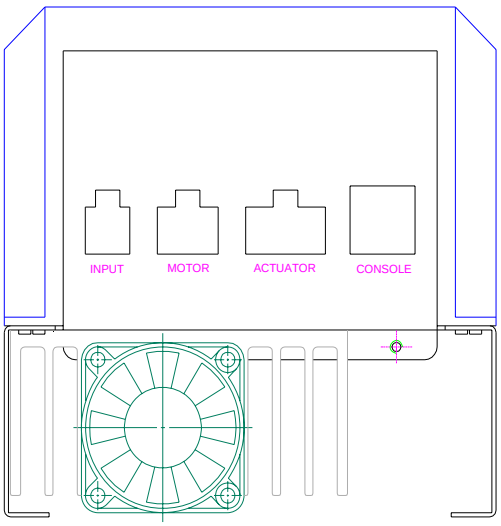
2.2 Parameter List

Group	Name	Contents	Default	1hp	3hp	Unit	Ref.
F Group							
F 01	wRefFreq0	Reference Frequency	20	20	20	Hz	
F 02	wAccTime1	Accel time Set	7.5	10	10	Sec	
F 03	wDecTime1	Dece time Set	15	15	15	Sec	
F 04	wRefDir	Reference Drive Direction Select	0	0	0	-	0 : Forward, 1: Reverse
F 05	wFreqSrc	Frequency Reference Mode Selec	0	0	0	-	0 : Analog, 1 : Keypad, 2 : Communication
F 06	wRunSrc	Drive Reference Mode Select	0	0	0	-	0 : Terminal, 1 : Keypad, 2 : Dop
F 07	wStopMode	Stop Mode Select	1	1	1	-	0 : Decel Stop, 1 : Freerun
F 08	wVFMode	Inverter Control Mode Select	1	1	1	-	0 : V/F Mode, 1 : Sensorless Vector
F 09	wFreqLLmt	Reference Frequency Low Limit	0.5	0.5	0.5	Hz	
F 10	wFreqHLmt		0	0	0	Hz	
F 11	wStartFreq	Start Frequecy Set	0.5	0.5	0.5	Hz	Start Frequency
F 12	wMaxFreq	Maximum Frequency Set	150	150	150	Hz	Maximum Frequency
F 13	wBaseFreq	Base Frequency Set	60	60	60	Hz	Base Frequecny
F 14	wBaseVPar	Inverter Output Voltage Set	220	190	180	V	V/F Mode, Inverter Output Voltage
F 15	wVoutGain	Output Voltage Gain Set	100	100	100	%	V/F Mode, Inverter Output Voltage Gain
F 16	wJogFreq		4.8	4.8	4.8	Hz	
F 17	wJogStop		0	0	0	-	
F 18	wBoostMode	Torque Boost Mode Select	0	0	0	-	0 : Manual Torque Boost, 1 : Auto Torque Boost
F 19	wBoostQty	Manual Torque Boost Voltage Set	3	3	3	%	Manual Torque Boosst Voltage Set
F 20	wBoostFreq	Manual Torque Boost Frequency S	10	10	10	Hz	Manual Torque Boost Frequency Set
F 21	wAsrPgain		70	70	70	-	
F 22	wAsrIgain		30	30	30	-	
F 23	wSpeedSearchOn		0	0	0	-	
F 24	wRestartMode		0	0	0	-	
F 25	wRestartOKTime		1.0	1.0	1.0	Sec	
F 26	wRestartDlyTime		1.0	1.0	1.0	Sec	
F 27	wMTHMode	Motor Thermal Mode Select					
F 28	wETHMode	Electro Thermal Mode Select	1	1	1	-	
F 29	wETHLevel	Electro Thermal Level Set	50	50	50	%	
F 30	wOLMode	Over Load Limit Mode Select	1	1	1	-	
F 31	wOLLevel	Current Limit Level Set	150	150	150	%	150%
F 32	soloist		2.5	2.5	2.5	Sec	
F 33	wInitMode	Initialize Mode Select	0	0	0	-	
F 34	wSoftLock		0	0	0	-	
F 35	wCarrierFreq	Carrier Frequency Set	16	16	16	Hz	16kHz
F 36	wMotorIRate	Motor Rated Currency	9	5	9	A	
F 37	wMotorPole	Motor Pole	4	4	4	-	
F 38	wRatedSlip	Motor Rated Slip	2.5	2.5	2.5	%	
F 39	wAutoTuneOn		0	0	0	-	
F 40	wMotorI0	Motor No Load Current	3	2.3	3	A	
F 41	wMotorR1	Motor 1'st Resistance	20	10	20	Ohm	
F 42	wMotorR2	Motor 2'nd Resistance	17	17	17	Ohm	
F 43	wMotorL	Motor 1'st Inductance	900	900	700	mH	
F 44	wMotorLsigma	Motor LeaKage Inductance	100	100	100	mH	
M Group							

M1	wInvType	Inverter Capacitor					
M7	wAi1End	Analog Input Offset					
M8	wAiIn1	Analog Input Gain					
M 18	wCurPIK	Current Control P Gain	300	300	300		
M 19	wCurPII	Current Control I Gain	50	50	50		
M 20	wSlipKp	Speed Control P Gain	300	300	300		
M 21	wSlipKi	Speed Control I Gain	500	500	500		

3. Outline Dimension



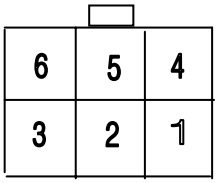


4. Inverter Connector Description

4.1 Motor Connector(Molex 5569, Molex 5557 Dual Row Connector)

Molex 5557b Is Inverter Side Connector, 5569 Is Motor Side Connector

Molex 5556 Is Climp, Female Pin, 6 Circuits Used

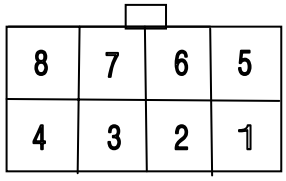


1. Motor Thermal Sensor Output #2 (125 Degree B-Contact)
2. Motor Thermal Sensor Output #1 (125 Degree B-Contact)
3. Not Used
4. Motor Output Power W Phase
5. Motor Output Power V Phase
6. Motor Output Power U Phase

4.2 Incline Actuator Connector(Molex 5569d,5557 Dual Row Connector)

Molex 5557b Is Inverter Side Connector, 5569 Is Incline Motor Side Connector

Molex 5556 Is Climp, Female Pin, 8 Circuits Used



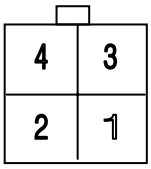
1. Incline Sensor Signal (Volume resister end #2)
2. Not Used
3. Incline Sensor Signal (Volume resister wiper)
4. Incline Sensor Signal (Volume resistor end #1)
5. Not Used
6. Incline Motor Power Output(Direction #1)
7. Incline Motor Power Output(Direction #2)
8. Incline Motor Power Output(Common)

Pin #1,3,4 are directly connected to the Incline volume resister sensor.

4.4 Power Input Connector(4pin)

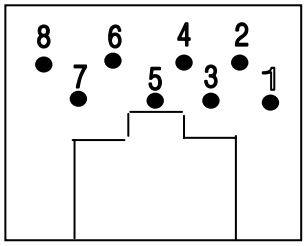
Molex 5557b Is Inverter Side Connector, 5569 Is Input Power Side Connector

Molex 5556 Is Climp, Female Pin, 4 Circuits Used



1. Not Used
2. Earth Ground(Internally connected to the inverter frame and case)
3. 1 Phase Power Input(220 VAC)
4. 1 Phase Power Input(220 VAC)

4.5 Console Connector(8pin) Used RJ45 Connector



1. Inverter Communication Interface Send Signal
2. Inverter Communication Interface Receive Signal
3. 5VDC Control Power
4. Incline Sensor Signal(Volume resister wiper)
5. 12VDC Control Power
6. 0VDC Ground
7. 12VDC Control Power
8. 0VDC Ground

5. Maintenance and Inspection

5.1 Cautions and Warnings

WARNING Don't touch any terminals while the power is being supplied. Otherwise, an electronic shock may occur.

WARNING Be sure to turn OFF the power supply. Wait for a specified time before starting maintenance or inspection work.

WARNING Don't allow anyone other than designated persons to perform maintenance, inspection, and parts replacement. Otherwise, an electric shock may occur.

WARNING Never disassemble the Inverter. Otherwise, injury or equipment damage may c

Cautions As semiconductor elements are used for the Inverter, handle the inverter caref Otherwise, equipment trouble may occur.

Cautions Don't change wiring, detach connectors or Digital Operator while the power is being supplied. Otherwise, equipment trouble may occur.

5.2 Daily Inspection

While the system is operating, check the following items.

* Check the motor for noise.
* Check for error heating.
* Check if the ambient temperature is too high.
* Check if the output current monitor display indicates a higher value than usual.
* Check if the cooling fan mounted to the bottom part of the Inverter is operating normally.

5.3 Regular Maintenance

Check the items below during regular maintenance.
Before starting inspection, always turn the power OFF, then wait at least one minute after all indicators on the front panel go OFF. Touching a terminal immediately after turning the power OFF may result in an electric shock.

* Check if electrically conductive dust or oil mist adheres to the connectors or interior of the Inverter.
* Check the Inverter mounting screws for looseness.
* Check if dust or dirt is accumulated between the heat sink and cooling fan.
* Check if dust is accumulated in the air vents.