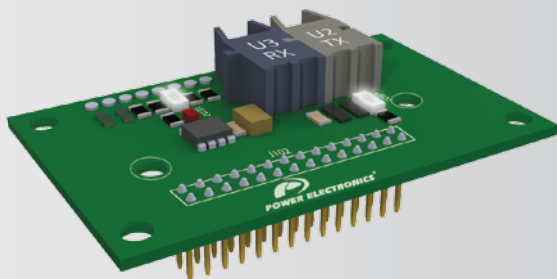


SD 700 Series

ACCESSORIES



Communication Network
Optical Fiber Communication

SD 700

Series

ACCESSORIES

Communication Network

Optical Fiber Communication

Edition: February 2012

SD70BC05AI Rev. A

SAFETY SYMBOLS

Always follow safety instructions to prevent accidents and potential hazards from occurring.



This symbol means improper operation may result in serious personal injury or death.



Identifies shock hazards under certain conditions. Particular attention should be given because dangerous voltage may be present. Maintenance operation should be done by qualified personnel.



Identifies potential hazards under certain conditions. Read the message and follow the instructions carefully.

Edition of February 2012

This publication could present technical imprecision or misprints. The information here included will be periodically modified and updated, and all those modifications will be incorporated in later editions.

To consult the most updated information of this product you might access through our website www.power-electronics.com where the latest version of this manual can be downloaded.

Revisions

Date	Revision	Description
06 / 02 / 2012	A	First edition

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SAFETY INSTRUCTIONS

IMPORTANT!

- Safety instructions showed in this manual are useful to teach user how to use the product in a correct and safety way with the purpose of preventing possible personal injuries or property damages.
- Safety messages included here are classified as it follows:



WARNING

Be sure to take ESD (Electrostatic Discharge) protection measures when you touch the board.

Otherwise, the optional board may get damaged due to static charges.

Implement wiring change on the optional board after checking that the power supply is off.

Otherwise, there is a danger of connecting error and damage to the board.

Be sure to connect correctly the optional board to the inverter.

Otherwise, there is a danger of connecting error and damage to the board.

Be sure to install a termination resistor (120Ω, 1/4W) at the end of the network.

Do not remove the cover while the power is applied or the unit is in operation.

Otherwise, electric shock could occur.

Do not run the inverter with the front cover removed.

Otherwise, you may get an electric shock due to the high voltage terminals or exposure of charged capacitors.

Do not remove the cover except for periodic inspections or wiring, even if the input power is not applied.

Otherwise, you may access the charged circuits and get an electric shock.

Wiring and periodic inspections should be performed at least 10 minutes after disconnecting the input power and after checking the DC Link voltage is discharged with a meter (below 30VDC).

Otherwise, you may get an electric shock.

Operate the switches with dry hands.

Otherwise, you may get an electric shock.

Do not use cables with damaged insulation.

Otherwise, you may get an electric shock.

Do not subject the cables to the abrasions, excessive stress, heavy loads or pinching.

Otherwise, you may get an electric shock.



CAUTION

Install the inverter on a non-flammable surface. Do not place flammable material nearby.

Otherwise, fire could occur.

Disconnect the input power if the inverter gets damaged.

Otherwise, it could result in a secondary accident or fire.

After the input power is applied or removed, the inverter will remain hot for a couple of minutes.

Touching hot parts may result in skin burns.

Do not apply power to a damaged inverter or to an inverter with parts missing even if the installation is complete.

Otherwise, fire or accident could occur.

Do not allow lint, paper, wood chips, dust, metallic chips or other foreign matter into the drive.

Otherwise, fire or accident could occur.



WARNINGS

RECEPTION

- Material of Power Electronics is carefully tested and perfectly packed before leaving the factory.
 - In the event of transport damage, please ensure that you notify the transport agency and POWER ELECTRONICS: 902 40 20 70 (International +34 96 136 65 57) or your nearest agent, within 24hrs from receipt of the goods.
-

UNPACKING

- Make sure received merchandise corresponds with delivery note, models and serial numbers.
 - Each optional board is supplied with a technical manual.
-

RECYCLING

- The packing of the drives must be recycled. For this reason it is necessary to separate different materials (plastics, paper, cardboard, wood ...) and settle them in corresponding containers.
 - The residual parts of electrical devices must be collected in a selective manner in order to warranty the correct environmental treatment.
-

CONNECTION PRECAUTIONS

- To ensure correct operation of the inverter it is recommended to use a SCREENED CABLE for the control wiring.
 - For EMERGENCY STOP, make sure supply circuitry is open.
 - Do not disconnect motor cables if input power supply remains connected. The internal circuits of the SD700 Series will be damaged if the incoming power is connected and applied to output terminals (U, V, W).
 - It is not recommended to use a 3-wire cable for long distances. Due to increased leakage capacitance between conductors, over-current protective feature may operate malfunction.
-

- Do not use power factor correction capacitors, surge suppressors, or RFI filters on the output side of the inverter. Doing so may damage these components.
 - Always check whether the DC Link LED is OFF before wiring terminals. The charge capacitors may hold high-voltage even after the input power is disconnected. Use caution to prevent the possibility of personal injury.
-

TRIAL RUN

- Verify all parameters before operating the inverter. Alteration of parameters may be required depending on application and load.
 - Always apply voltage and current signals to each terminal that are within levels indicated within this manual. Otherwise, damage to the optional board may result.
-

EARTH CONNECTION

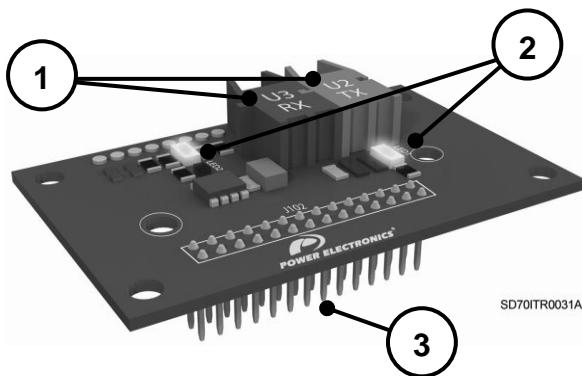
- The inverter is a high frequency switching device, and leakage current may flow. Ground the inverter to avoid electrical shock. Use caution to prevent the possibility of personal injury.
 - Connect only to the dedicated ground terminal of the inverter. Do not use the case or the chassis screw for grounding.
 - When installing, grounding wire should be connected first and removed last.
 - The earth cable must have a minimal cross sectional area that meets local country electrical regulations.
 - Motor ground must be connected to the drive ground terminal and not to the installation's ground. We recommend that the section of the ground connection cable should be equal or higher than the active conductor.
 - Installation ground must be connected to the inverter ground terminal.
-

1. DESCRIPTION

The Optical Fiber communication board permits the SD700 series communicate through Fiber Optic hardware.

- Communication without noise.
- Inverter can be controlled and monitored by PLC sequence program or any master module.
- Multiple inverters can be connected to one communication cable with simple and easy installation, saving wiring, maintenance cost and time.

The SD700 Standard communication protocol is Modbus-RTU, so the Modbus address specified in the Software and Programming manual are valid. Thanks to this optional board:



1. Optical fiber sockets
2. Status LEDs
3. Inverter Connector

2. TECHNICAL CHARACTERISTICS

2.1. Packing list

The Optical Fiber Board kit is delivered with the following content:

- 1 x Optical Fiber Board.
- 1 x 4m optical fiber wire.
- 2 x mounting poles M3x12 (M0191).
- 2 x screws M3 (M0127).
- 1 x Technical Manual.

2.2. Specifications

- Compatibility: SD700 307IM cardboard or later versions.
- Baud rate: 125 kbps to 1Mbps.
- Type of communication: half-duplex asynchronous serial communication.
- 2 Status LEDS.

3. INSTALLATION AND CONNECTION

3.1. Installation

The Optical Fiber communication board is designed for the SD700 series. It is directly connected in the connector J102 of the control cardboard of the inverter. This cardboard provides a robust and economic communication hardware Optical fiber solution, avoiding external gateways.

Install the cardboard according to the mounting image. Make sure to install correctly the connectors and the fastening system.



CAUTION

Motor controllers of Power Electronics operate with AC and DC high voltage.

Make sure the power supply has been disconnected and wait for at least 10 minutes to guarantee that DC Link voltage is discharged, before installing the Optical fiber board. Otherwise, you may get personal injuries or an accident could occur.

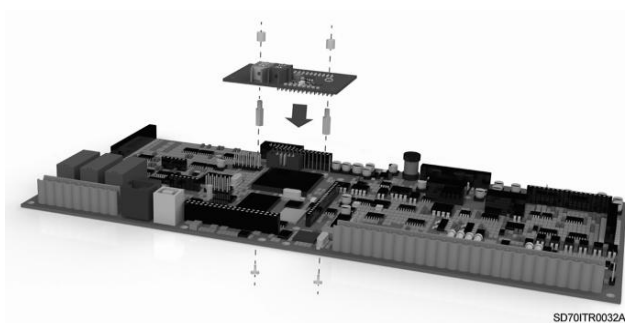
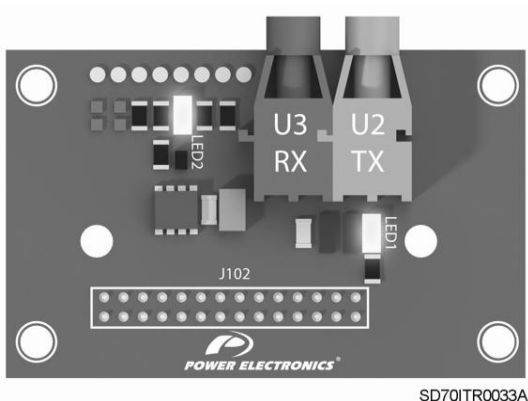


Figure 3.1 Installation of Optical Fiber board to the inverter

3.2. Description of Connectors and LEDs

The following figure describes the cardboard pin, connectors and leds.



SD70ITR0033A

Figure 3.2 Location of connectors on the Optic Fiber board

CONNECTOR / LED	DESCRIPTION
VFD Connector (J102)	Through it, the optical fiber board is connected to the VFD.
Optical fiber connector (U3 RX)	Optic transmitter for data reception.
Optical fiber connector (U2 TX)	Optic transmitter for data emission.
LED1 (Green)	Flashing when there is data transmission.
LED2 (Green)	Active when it is power supplied.

3.3. Master Slave Connection

There are two ways to connect VFDs between them, closed loop and open loop. In the case of closed loop, master knows that the transmission has been received by all slaves. In the case of open loop, master don't receive slave feedback, the time must be set to "0" in the group [G4.6.5].

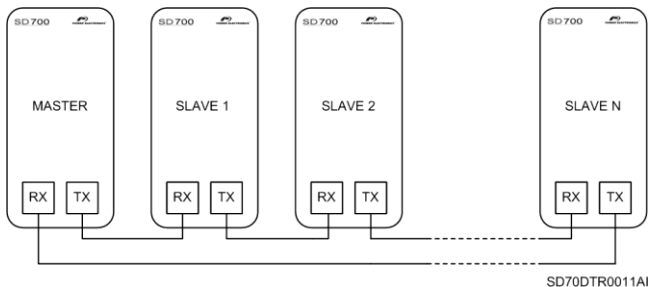


Figure 3.3 Master slaves connection in closed loop

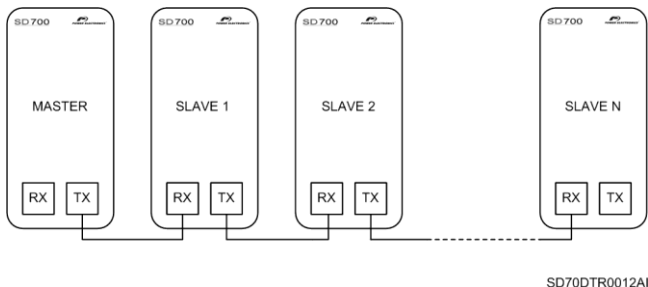


Figure 3.4 Master slaves connection in open loop

4. CONFIGURATION

Once the board has been connected to the inverter, it can be configured by using the SD700 graphic or alphanumeric display. Consult Power Electronics for updated Software and Programming manual and Software versions.

Firstly it is necessary to configure the communication and baud rate control that will enable the optical fiber specific subgroup G4.6.

Display	Name / Description	Range	Function	Set on RUN																
1 COM. CONTROL= 0	G20.0.1 / Communication control	0-6	<p>Set the value according to communications network controlling the drive</p> <table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Modbus</td> </tr> <tr> <td>1</td> <td>Profibus</td> </tr> <tr> <td>2</td> <td>Modbus TCP</td> </tr> <tr> <td>3</td> <td>Ethernet IP</td> </tr> <tr> <td>4</td> <td>CanOpen</td> </tr> <tr> <td>5</td> <td>Devicenet</td> </tr> <tr> <td>6</td> <td>OFC</td> </tr> </tbody> </table> <p>Note: This parameter is only functional after the boot up</p>	OPT.	FUNCTION	0	Modbus	1	Profibus	2	Modbus TCP	3	Ethernet IP	4	CanOpen	5	Devicenet	6	OFC	YES
OPT.	FUNCTION																			
0	Modbus																			
1	Profibus																			
2	Modbus TCP																			
3	Ethernet IP																			
4	CanOpen																			
5	Devicenet																			
6	OFC																			
1 B/R F.O= 0	G20.5.1 / Baud Rate Optical Fiber	125kbps 250kbps 500kbps 1Mbps	<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>125kbps</td> </tr> <tr> <td>1</td> <td>250kbps</td> </tr> <tr> <td>2</td> <td>500kbps</td> </tr> <tr> <td>3</td> <td>1Mbps</td> </tr> </tbody> </table> <p>This parameter is used to set the baud rate of the optical fiber. Normally we work in 1 Mbps to use the physical format of the optical fiber. Otherwise it is inadvisable to work with a baud rate higher than 500 kbps when we use electric physical support (CANOpen or DeviceNet boards).</p>	OPT.	FUNCTION	0	125kbps	1	250kbps	2	500kbps	3	1Mbps	YES						
OPT.	FUNCTION																			
0	125kbps																			
1	250kbps																			
2	500kbps																			
3	1Mbps																			

4.1. Subgroup G4.6 - Optical Fiber Parameters Setting

In this group we can find the management of the reception and transmission of the received data by the bus. Some parameters are labelled with Master or Slave that refers.

4.1.1. Subgroup G4.6.1 – “1 FIBER MODE=”

The Optical fiber permits three communication modes:

Display	Name / Description	Range	Function	Set on RUN		
1 FIBER MODE= 0	G4.6.1 / Fiber Mode	0-2	This parameter is used to select the drive role in the optical fiber network. We can select three options:		YES	
			OPT.	FUNCT.		DESCRIPTION
			0	Master		The equipment will make the functions of master in the network.
			1	Slave		The equipment will act as a slave, taking orders of the master and transmitting its status.
2	None	The equipment will be independent in the network, it hasn't slave or master function.				

4.1.2. Subgroup G4.6.3 – “Input O.F.”

In this subgroup we can select the options that will be received and used by the slave.

Display	Name / Description	Range	Function	Set on RUN												
5 Control= 0	G4.6.3.5 / Control	0-2	This parameter receives both the Start order and the Run status coming from the master. This status will be sent to the subgroups G4.1.1 and G4.1.2, allowing the slave to start with the Start order or the Run status of the master.	YES												
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCT.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>NONE</td> <td>The equipment will not take into account the START order or the RUN status. If we select FIBER in G4.1.1 or G4.1.2, the variable speed drive will not start.</td> </tr> <tr> <td>1</td> <td>START</td> <td>The Start order of the master will be sent to the FIBER option in the groups G4.1.1 and G4.1.2. It means that if we select the fiber option in the control mode while the master has a Start order, the slave will start.</td> </tr> <tr> <td>2</td> <td>RUN</td> <td>The RUN status of the master will be sent to the FIBER option in G4.1.1 and G4.1.2. When the fiber option is selected in a control mode and the master is in RUN, the slave will start and won't stop till the RUN has been disappeared of the master.</td> </tr> </tbody> </table>		OPT.	FUNCT.	DESCRIPTION	0	NONE	The equipment will not take into account the START order or the RUN status. If we select FIBER in G4.1.1 or G4.1.2, the variable speed drive will not start.	1	START	The Start order of the master will be sent to the FIBER option in the groups G4.1.1 and G4.1.2. It means that if we select the fiber option in the control mode while the master has a Start order, the slave will start.	2	RUN	The RUN status of the master will be sent to the FIBER option in G4.1.1 and G4.1.2. When the fiber option is selected in a control mode and the master is in RUN, the slave will start and won't stop till the RUN has been disappeared of the master.
			OPT.		FUNCT.	DESCRIPTION										
			0		NONE	The equipment will not take into account the START order or the RUN status. If we select FIBER in G4.1.1 or G4.1.2, the variable speed drive will not start.										
1	START	The Start order of the master will be sent to the FIBER option in the groups G4.1.1 and G4.1.2. It means that if we select the fiber option in the control mode while the master has a Start order, the slave will start.														
2	RUN	The RUN status of the master will be sent to the FIBER option in G4.1.1 and G4.1.2. When the fiber option is selected in a control mode and the master is in RUN, the slave will start and won't stop till the RUN has been disappeared of the master.														

Display	Name / Description	Range	Function	Set on RUN						
6 FAULT= 0	G4.6.3.6 / Control (MASTER)	0-1	<p>When this option is selected in the master drive and the system is working in closed ring mode, the master will STOP and show "F76 SLAVE O.F", if one or more slaves are faulted. Otherwise the master will continue running.</p> <table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> </tr> <tr> <td>1</td> <td>Yes</td> </tr> </tbody> </table>	OPT.	FUNCTION	0	No	1	Yes	YES
OPT.	FUNCTION									
0	No									
1	Yes									
7 SPIN STP= 0	G4.6.3.7 / SPIN STOP (Slave)	0-1	<p>If we select this option, when the master will fault for any reason, all the slaves will stop automatically through a spin stop.</p> <table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> </tr> <tr> <td>1</td> <td>Yes</td> </tr> </tbody> </table>	OPT.	FUNCTION	0	No	1	Yes	YES
OPT.	FUNCTION									
0	No									
1	Yes									

4.1.3. Subgroup G4.6.5 – T/O F.O

Display	Name / Description	Range	Function	Set on RUN										
5 T/O F.O= 99	G4.6.5 / Time Out Optical fiber (SLAVE)	99-9990	<p>Permits Open loop and close loop mode selection. Additionally for close loop mode, enables to establish the timeout response for slave. If the master does not receive response within the time selected the slave sets "F77 OPT FIB TO" fault.</p> <table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>Open loop enable</td> </tr> <tr> <td>0.100s</td> <td>Close loop enable 0.1 s</td> </tr> <tr> <td>...</td> <td></td> </tr> <tr> <td>9.990s</td> <td>Slave timeout response</td> </tr> </tbody> </table> <p>Otherwise, and also in the open loop, the option of "listener" slave is available. In this option, the slave only pays attention on the bus communications and does not make any action. This mode has been created to work with CANOpen and DeviceNet boards.</p>	OPT.	FUNCTION	OFF	Open loop enable	0.100s	Close loop enable 0.1 s	...		9.990s	Slave timeout response	YES
OPT.	FUNCTION													
OFF	Open loop enable													
0.100s	Close loop enable 0.1 s													
...														
9.990s	Slave timeout response													

4.2. General Parameter setting

The Optical fiber control needs additional setting in the following groups.

4.2.1. Subgroups G3.1 References

Within this subgroup it permits to establish the slave communication mode.

Display	Name / Description	Range	Function	Set on RUN										
1 F.O REF1 SPD= LOCAL	G3.1 / Reference source 1 of speed (SLAVE)	NONE AI1 AI2 AI1+AI2 FIB_1 LOCAL MREF P MOT PID AI3 COMMS S FIB_2	It allows selecting the source 1 or 2 for the speed reference.	YES										
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>NONE</td> <td>Reference source 1 has not been selected.</td> </tr> <tr> <td>AI1</td> <td>Reference will be introduced through the Analogue Input 1.</td> </tr> <tr> <td>AI2</td> <td>Reference will be introduced through the Analogue Input 2.</td> </tr> <tr> <td>AI1+AI2</td> <td>Reference will be the sum of the signals introduced through the Analogue Inputs 1 and 2.</td> </tr> </tbody> </table>		OPT.	FUNCTION	NONE	Reference source 1 has not been selected.	AI1	Reference will be introduced through the Analogue Input 1.	AI2	Reference will be introduced through the Analogue Input 2.	AI1+AI2	Reference will be the sum of the signals introduced through the Analogue Inputs 1 and 2.
			OPT.		FUNCTION									
			NONE		Reference source 1 has not been selected.									
			AI1		Reference will be introduced through the Analogue Input 1.									
			AI2		Reference will be introduced through the Analogue Input 2.									
			AI1+AI2		Reference will be the sum of the signals introduced through the Analogue Inputs 1 and 2.									
			FIB_1		The drive speed reference will be the same as the master current speed.									
			LOCAL		Reference will be given by keypad and will be set in 'G3.3'Local Speed Reference'.									
			MREF		Multi-Reference. Different references activated by the digital inputs. It will be necessary to configure the digital inputs. See 'G4.1 → Digital Inputs'.									
PMOT	Motorized potentiometer with or without reference memory.													
PID	It will take as reference the value set in the parameters of the PID function.													
AI3	Reference will be introduced through the Analogue Input 3.													
COMMS	The reference will be introduced through the communications.													
FIB_2	The drive speed reference will be the master motor current speed (%).													
2 F.O REF2 SPD= AI1	G3.2 / Reference source 2 of speed (SLAVE)			YES										

Display	Name / Description	Range	Function	Set on RUN										
4 F.O REF1 TQ = LOCAL	G3.4 / Torque Source reference 1 (SLAVE)		Allows to select supply 1 or supply 2 of the torque reference.	YES										
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>NONE</td> <td>The supply reference 1 has not been selected.</td> </tr> <tr> <td>AI1</td> <td>The reference will be introduced through the analogue input 1.</td> </tr> <tr> <td>AI2</td> <td>The reference will be introduced through the analogue input 2.</td> </tr> <tr> <td>AI1 +AI2</td> <td>The reference will be the addition of the signals introduced through the Analogue Inputs 1 and 2.</td> </tr> </tbody> </table>		OPT.	FUNCTION	NONE	The supply reference 1 has not been selected.	AI1	The reference will be introduced through the analogue input 1.	AI2	The reference will be introduced through the analogue input 2.	AI1 +AI2	The reference will be the addition of the signals introduced through the Analogue Inputs 1 and 2.
			OPT.		FUNCTION									
			NONE		The supply reference 1 has not been selected.									
AI1	The reference will be introduced through the analogue input 1.													
AI2	The reference will be introduced through the analogue input 2.													
AI1 +AI2	The reference will be the addition of the signals introduced through the Analogue Inputs 1 and 2.													
FIB_1	The drive torque reference will be the same as the master torque reference													
LOCAL	The reference will be introduced through keyboard and will be adjusted in G3.3 "Local Speed Reference".													
5 F.O REF2 TQ = LOCAL	G3.5 / Torque supply reference 2 (SLAVE)	NONE AI1 AI2 AI1 +AI2 FIB_1 LOCAL MREF RES PID AI3 COMMS FIB_2	MREF	Multi-reference. Different activated references by digital inputs. Digital inputs have to be configured. See S4.1 → Digital Inputs.	YES									
			RESERVED	Reserved										
			PID	Will assume as reference the value adjusted in the parameters of the PID.										
			AI3	Reference will be introduced through the Analogue Input 3.										
			COMMS	The reference will be introduced through the communications.										
			FIB_2	The drive torque reference will be the master motor current torque (%)										

4.2.2. Subgroups G4.1 Digital Inputs

Within these subgroups it permits to establish the slave communication mode.

Display	Name / Description	Range	Function	Set on RUN																		
1 F.O CNTRL MODE1= LOCAL	G4.1.1 / Main Control Mode	0-4	It allows user to set the control mode for the drive commands (Start/Stop, Reset ...) depending on the parameter G4.6.3.5.	YES																		
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCT.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>NONE</td> <td>Control mode 1 is not operative.</td> </tr> <tr> <td>1</td> <td>LOCAL</td> <td>Drive control is done by keypad.</td> </tr> <tr> <td>2</td> <td>REMOTE</td> <td>Drive controlled through control terminals.</td> </tr> <tr> <td>3</td> <td>SERIAL COMMS</td> <td>Drive controlled through communication bus.</td> </tr> <tr> <td>4</td> <td>FIBER</td> <td>Control mode through optical fiber</td> </tr> </tbody> </table>		OPT.	FUNCT.	DESCRIPTION	0	NONE	Control mode 1 is not operative.	1	LOCAL	Drive control is done by keypad.	2	REMOTE	Drive controlled through control terminals.	3	SERIAL COMMS	Drive controlled through communication bus.	4	FIBER	Control mode through optical fiber
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			0		NONE	Control mode 1 is not operative.																
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			2		REMOTE	Drive controlled through control terminals.																
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1	LOCAL	Drive control is done by keypad.																				
2	REMOTE	Drive controlled through control terminals.																				
3	SERIAL COMMS	Drive controlled through communication bus.																				
4	FIBER	Control mode through optical fiber																				
2 F.O CNTRL MODE2= REMOTE	G4.1.2/ Alternative Control Mode	0-4	It allows user to set the secondary control mode for the drive commands (Start/Stop, Reset ...) depending on the parameter G4.6.3.5. Enabled in the case of master's fault.	YES																		
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCT.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>NONE</td> <td>Control mode 1 is not operative.</td> </tr> <tr> <td>1</td> <td>LOCAL</td> <td>Drive control is done by keypad.</td> </tr> <tr> <td>2</td> <td>REMOTE</td> <td>Drive controlled through control terminals.</td> </tr> <tr> <td>3</td> <td>SERIAL COMMS</td> <td>Drive controlled through communication bus.</td> </tr> <tr> <td>4</td> <td>FIBER</td> <td>Control mode through optical fiber</td> </tr> </tbody> </table>		OPT.	FUNCT.	DESCRIPTION	0	NONE	Control mode 1 is not operative.	1	LOCAL	Drive control is done by keypad.	2	REMOTE	Drive controlled through control terminals.	3	SERIAL COMMS	Drive controlled through communication bus.	4	FIBER	Control mode through optical fiber
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4	FIBER	Control mode through optical fiber																				

4.2.3. Subgroup G10.14 Limits

Display	Name / Description	Range	Function	Set on RUN									
14 T/I LIM SP= 0	G10.14 / Current and torque limit	0-1	Permits to disable the current and torque limitation algorithm.	YES									
			<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCT.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> <td>Enable.</td> </tr> <tr> <td>1</td> <td>Yes</td> <td>Disable, consider the levels set in G10.5, G10.7 and G10.9 to be able to trig when the current or torque is higher than these levels during the time preset in G10.6 for current and G10.10 for torque.</td> </tr> </tbody> </table>		OPT.	FUNCT.	DESCRIPTION	0	No	Enable.	1	Yes	Disable, consider the levels set in G10.5, G10.7 and G10.9 to be able to trig when the current or torque is higher than these levels during the time preset in G10.6 for current and G10.10 for torque.
			OPT.		FUNCT.	DESCRIPTION							
0	No	Enable.											
1	Yes	Disable, consider the levels set in G10.5, G10.7 and G10.9 to be able to trig when the current or torque is higher than these levels during the time preset in G10.6 for current and G10.10 for torque.											

4.2.4. Subgroup G19.1.1 IGBT Control

Display	Name / Description	Range	Function	Set on RUN																		
1 TYPE CTRL= 0	G19.1.1 / Selection of control type	0-4	<table border="1"> <thead> <tr> <th>OPT.</th> <th>FUNCT.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>V/Hz</td> <td>Scalar control mode. Drive carries out the control applying a voltage / frequency ramp to the motors.</td> </tr> <tr> <td>1</td> <td>PEVE</td> <td>Automatic compensation of stator voltage using the PEVE algorithm to improve the torque delivery.</td> </tr> <tr> <td>2</td> <td>CLsp</td> <td>Closed loop speed control mode. Makes a full control of the motor speed. Needs encoder.</td> </tr> <tr> <td>3</td> <td>CLtq</td> <td>Makes a full control of motor torque. Needs encoder.</td> </tr> <tr> <td>4</td> <td>Oltq</td> <td>Open loop torque for the synchronization of 2 motors. This option must be enabled in slaves.</td> </tr> </tbody> </table>	OPT.	FUNCT.	DESCRIPTION	0	V/Hz	Scalar control mode. Drive carries out the control applying a voltage / frequency ramp to the motors.	1	PEVE	Automatic compensation of stator voltage using the PEVE algorithm to improve the torque delivery.	2	CLsp	Closed loop speed control mode. Makes a full control of the motor speed. Needs encoder.	3	CLtq	Makes a full control of motor torque. Needs encoder.	4	Oltq	Open loop torque for the synchronization of 2 motors. This option must be enabled in slaves.	YES
			OPT.	FUNCT.	DESCRIPTION																	
			0	V/Hz	Scalar control mode. Drive carries out the control applying a voltage / frequency ramp to the motors.																	
			1	PEVE	Automatic compensation of stator voltage using the PEVE algorithm to improve the torque delivery.																	
			2	CLsp	Closed loop speed control mode. Makes a full control of the motor speed. Needs encoder.																	
			3	CLtq	Makes a full control of motor torque. Needs encoder.																	
4	Oltq	Open loop torque for the synchronization of 2 motors. This option must be enabled in slaves.																				

5. COMMISSIONING

SD700 series VFDs have multiple applications depending on the process needs.

In the following we will describe a master – slave configuration of two motors connected in the same axe. The configuration is done considering that the master establishes the speed and the slave ensures that both motors make the same torque in the axe. (Configuration speed master and torque slave).

Parameter	Master VFD setting	Slave VFD setting
G20.0.1	6: OFC	6: OFC
G20.5.1	3: 1Mbps	3: 1Mbps
G4.1.1	0: Master	1: Slave
G4.6.3.5	No effect.	1: START
G4.6.3.6	1: Yes	1: Yes
G4.6.3.7	1: Yes	1: Yes
G4.6.5	0.100s	0.100s
G3.1	LOCAL	FIB_1
G4.1.1	2: REMOTE	4: FIBER
G10.14	1: Yes	1: Yes
G19.1.1	0: V/Hz	4: Oltq

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CHINA	Power Electronics Beijing • Room 606, Yiheng Building • No 28 East Road, Beisanhuan • 100013, Chaoyang District • BEIJING • R.P. CHINA Tel. (+86 10) 6437 9197 • Fax (+86 10) 6437 9181
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KOREA	Power Electronics Asia HQ Co • Room #305, SK Hub Primo Building • 953-1, Dokok-dong, Gangnam-gu • 135-270 • SEOUL • KOREA Tel. (+82) 2 3462 4656 • Fax (+82) 2 3462 4657
INDIA	Power Electronics India • No 25/4, Palaami Center, • New Natham Road (Near Ramakrishna Mutt), • 625014 • MADURAI Tel. (+91) 452 452 2125 • Fax (+91) 452 452 2125
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