Operation and installation manual

SOLIVIA Gateway M1 G2

The manual is subject to change.
Please check our website at www.solar-inverter.com
for the most up-to-date manual version.

EN

Table of Contents

1 About this Manual

Congratulations on the purchase of the SOLIVIA Gateway M1 G2.
These directions will help you become familiar with this product. Please observe the safety regulations of the individual countries. Careful handling of your product will contribute to its service life durability and reliability.

1.1 Purpose of this Manual

This manual is part of the product and is only valid for the SOLIVIA Gateway M1 G2.
Keep this manual in a safe place.
Read this manual carefully and follow the instructions given in this manual. This manual contains important information for installing and operating the gateway.

Observe and follow the information for safe use (please refer to Chapter 3).

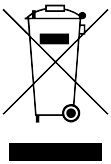
Both the installer and the operator must have access to this manual and must be familiar with the safety instructions.

1.2 Warnings and Symbols

Here, you will find explanations for the warnings and symbols used in this manual:

DANGER	Indicates a hazardous situation. If not prevented, an accident **will** result in death or serious injury to humans.
WARNING	Indicates a hazardous situation. If not prevented, an accident **could** result in death or serious injury to humans.
CAUTION	Indicates a hazardous situation. If not prevented, an accident **could** result in moderate or minor injury to humans.
NOTICE	Indicates a hazardous situation, that could result in property damage.
	This symbol warns of the dangers of electric shock due to high electrical voltage.
	This symbol warns against a general danger.

In order to avoid damage to property or personal injury, only qualified, trained electricians may work on the equipment. The qualified electrician must familiarise himself/ herself with this manual.



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new once, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

2 Intended Use

The SOLIVIA gateway is the interface between your SOLIVIA inverter and the SOLIVIA Monitor web portal. It transmits all relevant data from your SOLIVIA inverter (for example the supplied AC energy of the day, the actual AC power, some error bytes etc.) to the SOLIVIA Monitor web portal. It allows you continuous monitoring of your PV system from anywhere that you have internet access.

The SOLIVIA gateway must be used indoors with IP20 environmental conditions.
The SOLIVIA gateway must only be operated according to its intended use.

3 General Safety Instructions

Please observe the safety regulations of the individual countries. Careful handling of your product will contribute to its service life durability and reliability. These are essential pre-requisites for maximum yield from your product.

- Inappropriate handling can lead to physical injury and material damage!
- Do not remove warning labels that have been attached to the SOLIVIA gateway by the manufacturer.
- Observe all points in this installation and operation manual!
- Repair work on the device may be carried out by the manufacturer only.
- For a safe and normal operation of the SOLIVIA gateway, it is absolutely necessary that the gateway is installed and operated according to this manual (see IEC 62109-5.3.3).
- Delta Energy Systems is not responsible for damage caused by failure to observe the operation and installation instructions in this manual.

4 Scope of Delivery

- SOLIVIA Gateway M1 G2
- AC power plug (3 adapters for usage in different countries)
- Operation and installation manual
- Label

5 Planning

5.1 Items / Tools Required for Installation

Following items and tools are required for installation but are not included to the SOLIVIA gateway box. Please make sure to have them available before starting installation.

- 1 standard twisted pair Ethernet cable

NOTICE

The Ethernet cable should meet or exceed the standard CAT5 and should not exceed a length of 100 m. These standard twisted pair Ethernet cable can be purchased for your installation at many electronics and office supply retailers. The gateway requires a shielded cable STP, FTP, S/FTP or S/STP.

- 1 RS485 communication interface cable

NOTICE

The RS485 cable should meet the protection class IP65. We recommend using the RS485 cable from Harting (Part Number: 09 45 145 1560). Cable lengths should not exceed 1200 m if Baud rate is 19200 (default value). The required cable quality is the same as for the Ethernet connection: at least shielded (STP, FTP, S/FTP or S/STP) CAT5 cable or better.

- 2 screws are required to mount the gateway directly to the wall:
  - » Nominal diameter: 4 mm
  - » Maximum head diameter: 9 mm
  - » Maximum height of head: 3 mm
- Screwdriver (if gateway should be mounted to the wall); size of the screwdriver depends on used screws

5.2 Further Requirements

NOTICE

The SOLIVIA gateway must be installed only indoors according to protection class IP20.

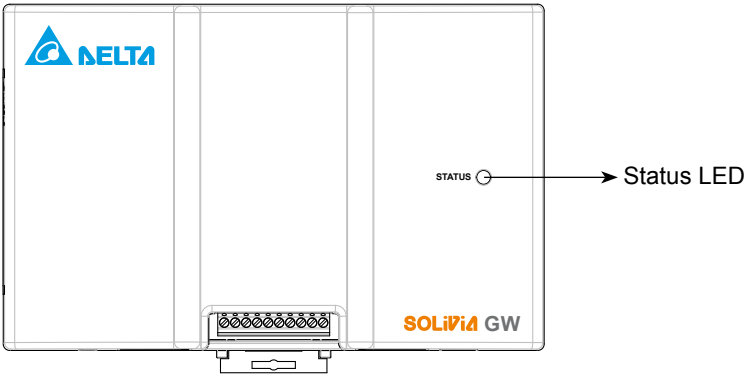
If more than one SOLIVIA solar inverter will be connected in a chain, ensure that each inverter has a unique ID assigned in the solar inverter user interface.

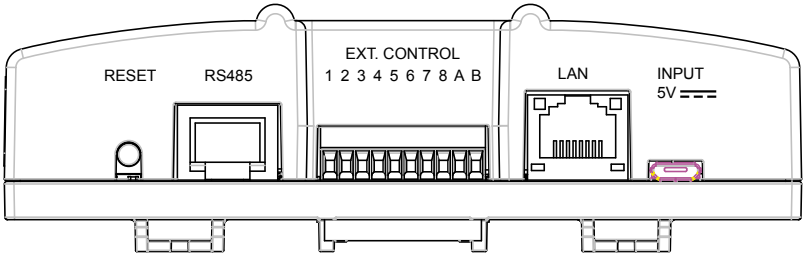
- Please check the SOLIVIA solar inverter manual for instructions on how to select the inverter ID.
- The gateway must have an AC power outlet within 2 meters of the gateway.

NOTICE

Please make sure, that DHCP is activated at your router, so that the IP address of your gateway is automatically found. If DHCP is disabled at your router the gateway uses the default IP configuration. For further information, please refer to Chapter 10.3

6 Connector Positions





CONNECTOR NAME	DESCRIPTION
RESET	For detailed information, please refer to Chapter 7.8
RS485	Connection of your SOLIVIA inverter with the SOLIVIA gateway.
EXT. CONTROL	Ripple control receivers control the power management (power limitation) and the power factor (cos ϕ).
LAN	Connection of your SOLIVIA gateway with an internet connected network point.
INPUT 5V	Gateway power supply connector.

7 Installation Procedure

7.1 Registration

First register for a SOLIVIA Monitor user account on the web at: http://register.solivia-monitor.com. After registering you will receive, via email, a user name, a password, and a link to a Configuration Wizard that will allow you to set up and monitor your site from the SOLIVIA Monitor web portal. Complete the Configuration Wizard setup before installing the monitoring hardware. In this way, you can go to the web portal after the hardware installation and verify everything is working correctly.

NOTICE

At the install site, verify the internet connection is active by connecting a laptop to the internet connected network point and pointing a web browser to www.solar-inverter.com.

7.2 Mounting

Mount the SOLIVIA gateway with the appropriate AC power location specified in Chapter 5.2. You have either the possibility to mount the SOLIVIA gateway on a DIN rail or directly to the wall.

7.2.1 Mounting on a DIN Rail

The gateway can be mounted on the following DIN Rails:

- DIN Rail according to EN60715 TH35-15
- DIN Rail according to EN60715 TH35-7.5

The gateway should be installed horizontally with connectors on the bottom.

To mount, snap the gateway on the DIN rail as shown in Figure 1:

1. Pull the gateway's DIN rail latch OUT.
2. Tilt the unit slightly upwards, hook the top end onto the DIN rail and push downwards until stopped.
3. Position the bottom front end against the DIN rail until it has snapped onto the DIN rail.
4. Push the gateway's DIN rail latch IN to lock.

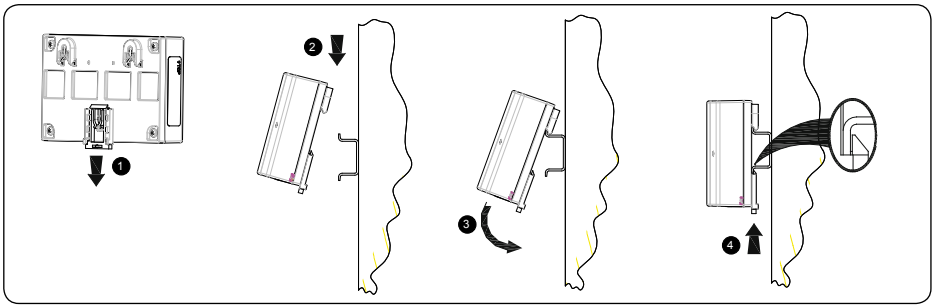


Figure 1: Mounting the gateway on a DIN rail

To dismount, pull the gateway's DIN rail latch OUT. Then, tilt the bottom part of the unit out, push the unit up and pull out from the DIN rail.

7.2.2 Mounting Directly to the Wall

Mount the gateway with appropriate screws to the wall
Use the 2 screws specified in Chapter 5.1 to mount the gateway with the DIN Rail to the wall. Center-to-center distance between the two boreholes is 70 mm.

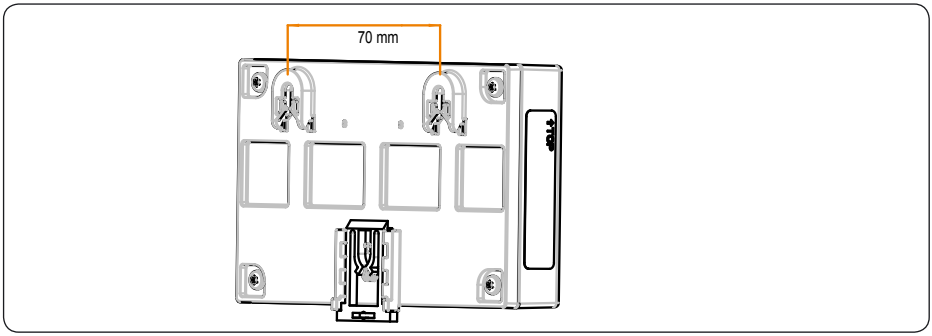


Figure 2: Mounting the gateway directly to the wall

7.3 RS485 Connection

Connect a standard CAT cable between the RS485 connector on the SOLIVIA gateway and the RS485 connector on the SOLIVIA solar inverter. See step 1 in figure 4 below.

7.4 Ethernet Connection

Connect an Ethernet network cable between the SOLIVIA gateway and the internet connected network point. See step 2 in figure 4.

7.5 Connection of the Ripple Control Receivers

You are able to connect the digital inputs to a given function. This concerns the control of the power the inverter feeds to the grid (power management) and of the power factor (reactive power control).

If your local public grid supplier requires a remote power derating capability, this can be implemented by using a ripple control receiver. Please connect the ripple control receiver as shown in figure 3. After the configuration as shown in Chapters 10.5 and 10.6 the public grid supplier is capable to remotely limit the maximum power the SOLIVIA solar inverters provide to the public grid.

The ripple control receiver that controls the power management (power limitation) has to be connected to the inputs 1 to 4. The receiver that controls the power factor (cos phi) has to be connected to the inputs 5 to 8.

After connection of the ripple control receiver(s) the gateway has to be configured in order to do the required control of the SOLIVIA solar inverters. For further information, please refer to Chapters 10.5 and 10.6.

Of course it is also possible to connect only one ripple control receiver, i. e. the one that controls the power management.

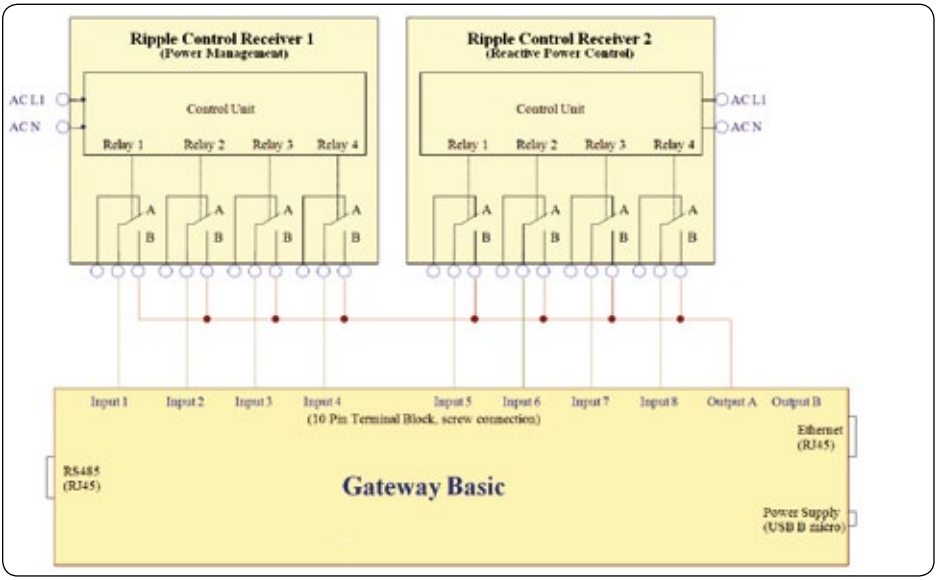


Figure 3: Ripple control receivers circuit diagram

NOTICE

The cables connecting the SOLIVIA gateway with the ripple control receiver(s) should meet the following specifications:

- Max. conductor cross-section: 0.5 mm^2 (AWG20)
- Min. conductor cross-section: 0.14 mm^2 (AWG26)
- Tightening torque: 0.12 – 0.15 Nm
- Max. cable length: 2 m

7.6 Power Connection

Connect the power source to the SOLIVIA gateway (Step 3 in figure 4) and check the SOLIVIA gateway LED. If the setup is correct, the Status LED will be solid green for approx. 5 seconds. For further information, please refer to Chapter 8.

Verify that your setup is successful by going to the SOLIVIA Monitor web portal at: http://www.solivia-monitor.com and log in to view your PV system.

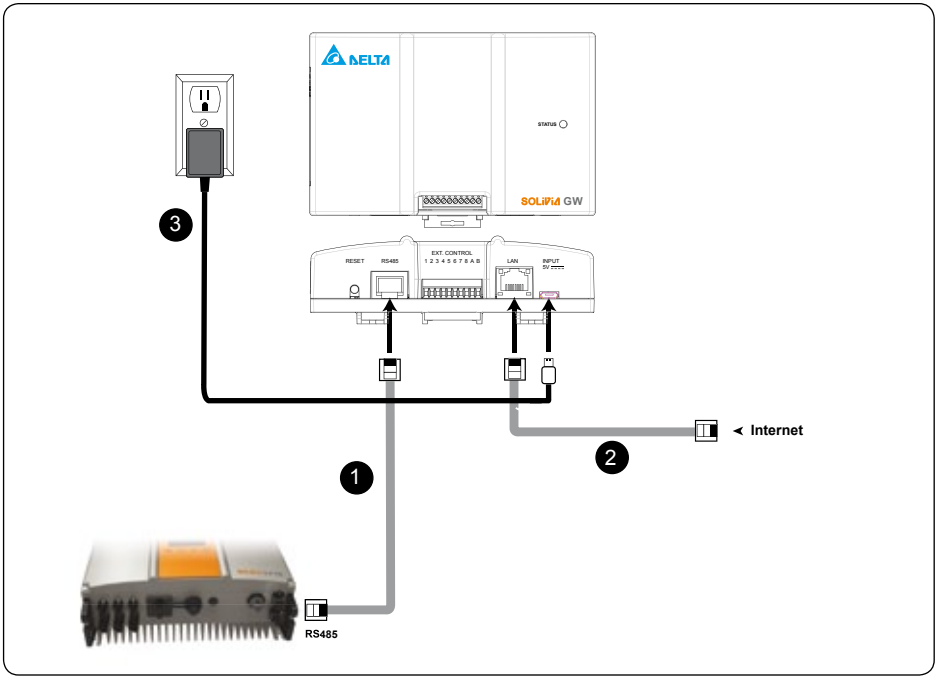


Figure 4: Connection diagram

WARNING

Risk of death or heavy injury due to dangerous voltage

- ► Repairs on defective cables should be done by qualified electricians only!
- ► Only recommended and / or commercially available cables should be used.

7.7 Installation Feedback

NOTICE

This function works only for SOLIVIA solar inverters of the 4th generation!

After installation, the gateway checks the connection to the Ethernet and to the inverter.

- If the Ethernet connection (connection to the internet resp. web portal) works, the gateway sends a message to the inverter. The following message appears on the display of the inverter: "Portal Connection ok".
- If the Ethernet connection is not working, the following message appears on the display of the inverter: "No Portal Connection":

Both messages will be displayed for 120 sec.

If the message "No Portal Connection" appears on the display, please check the Ethernet connection of the gateway and your internet connection.
If no message appears on the display, please check the RS485 connection between gateway and inverter and ensure that all inverters have unique RS485 bus IDs.

8 LED Status

The gateway has one single LED visible on top of the housing of the gateway. After power up, it immediately starts scanning for connected inverters. So the LED is constantly ON (no blinking) until the scan is finished.

After that the LED change to one of the following behaviors:

COLOR AND CONDITION	DESCRIPTION
Constantly ON (no blinking)	Neither Ethernet nor inverter connection.
Fast blinking (300 ms)	Ethernet connection but no inverter connection.
Slow blinking (1 s)	No Ethernet connection but inverter connection.
Hinking 200 ms on, 1800 ms off	Ethernet as well as inverter connection is online.
Extremely fast blinking	Indicates for one second that the reset button has been pressed.

9 Troubleshooting RS485 / Ethernet Communication

If one connection (Ethernet or RS485) works, try to exchange the cables. If now the other interface works it is very likely that one cable is broken.

10 Configuration through Web Server

The HTTP-server implements a browser interface allowing you to configure the gateway and to display several information. The features are:

- Log in
- Configuration
- Display information about inverters

10.1 Access the Configuration Web Server

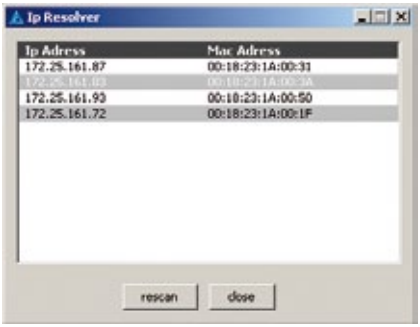
To access the configuration tool, you have to install the software program "IP Resolver" that you can download from our website: www.solar-inverter.com.

NOTICE

Please make sure, that your internet connection is active!

Once installed, start the program by double-click.

The following window will open:



In case that the IP address is not immediately found, click on the "rescan" button. Then, double-click on the IP address in the "IP Resolver" to open the web server.

The log in window will open:

If your network do not work with DHCP, please proceed as follows:

1. Configure your computer settings manually to 192.168.0.199
2. Open your web browser
3. Insert IP http://192.168.0.200/
4. Now go to Chapter 10.3 to see how you configure the IP of the SOLIVIA gateway.

10.2 First Log in

If you log in to the configuration web server for the first time, please enter the following log in data:

- Default Username: Delta
- Default Password: 000000

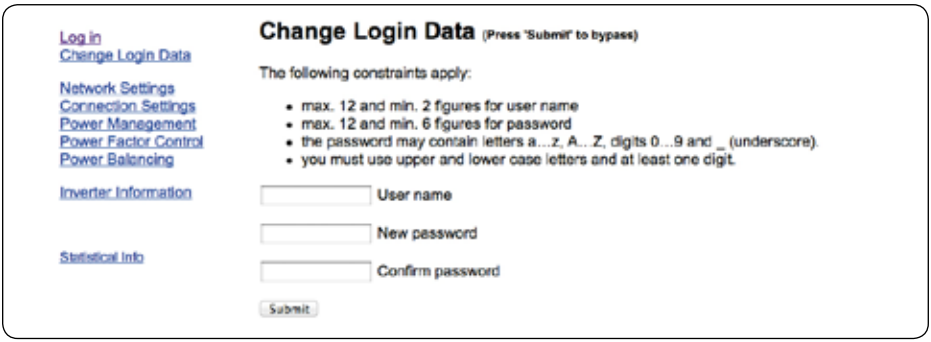
Then, click the "Log in" button.

NOTICE

If you leave the server untouched for more than five minutes, it is logged out automatically and any access will provide the log in page.

As you log in for the first time, you will be asked to change your log in data for security reasons.

The following window will automatically open:

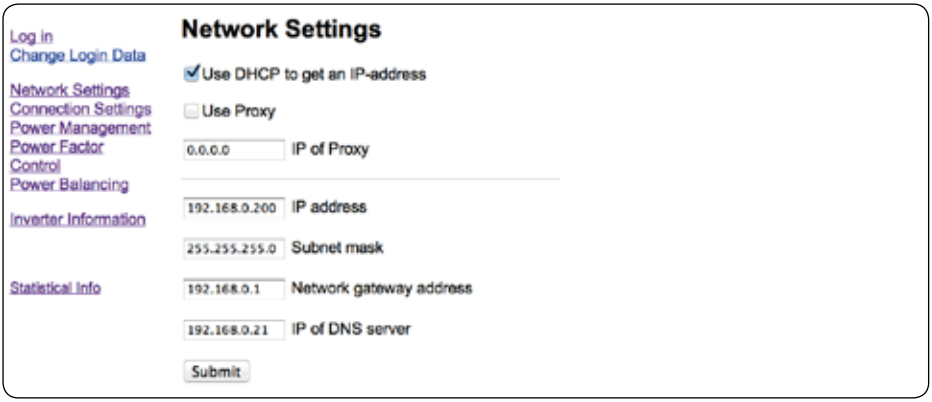


- Change your log in data by following the instructions given and click on the "Submit" button.
- After submitting your new data, the following message will confirm your changes: "Operation successfully completed!"

10.3 Network Settings

If your router is not supporting DHCP, you will have to enter the IP address of your SOLIVIA gateway manually.

Click on "Network Settings" on the left side to open the following window where you can enter your network parameters:

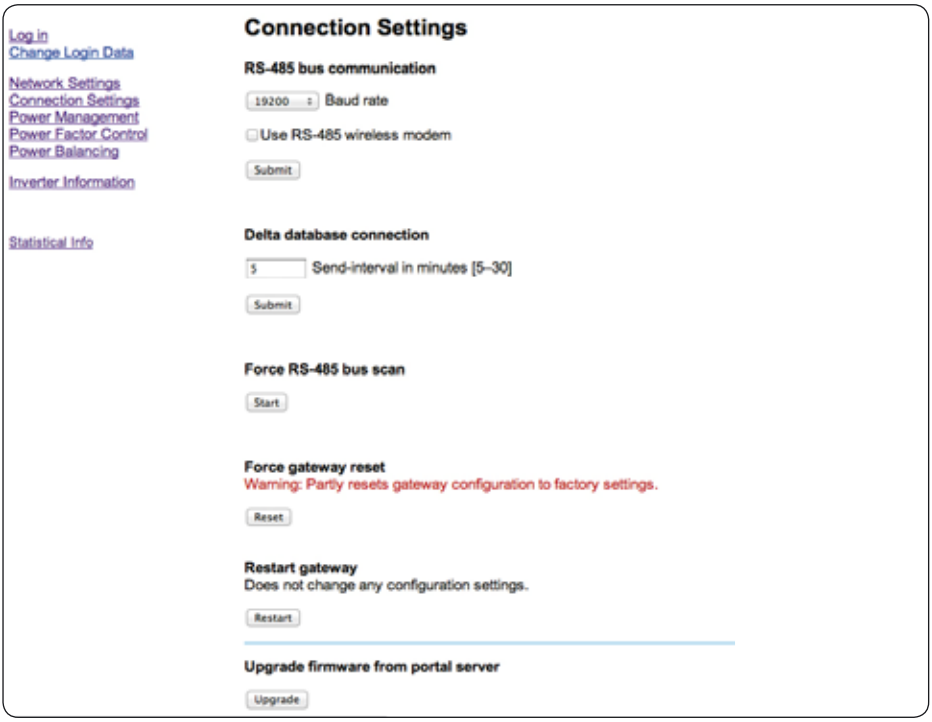


NOTICE

By default the gateway is configured to get its IP address from a DHCP server.

To confirm your entering, click the "Submit" button.

10.4 Connection Settings



10.4.1 RS485 Bus Communication

Here you can set the baud rate of the gateway for the RS485 communication. The value should match the one of the inverter(s). The baud rate "19200" is set by default.

NOTICE

Please note, that the RS485 cable lengths is depending on the baud rate. Cable lengths should not exceed 1200 m if baud rate is 19200 (default value).

10.4.1.1 Wireless RS485 Modem

If you are using a RS485 wireless modem, please check the box.

10.4.2 Delta Database Connection

Every few seconds, the gateway is retrieving data from the SOLIVIA solar inverters. The gateway stores these data and sends the average values to the database. Here you can define the intervals in minutes of how often the average values and parameters are sent to the database. By default, 15 minutes is set.

10.4.3 Force RS485 Bus Scan

The gateway does not know the number and addresses of connected inverters in advance. It is assumed that each inverter connected to the bus already has its unique address in the range [1, 254]. Address 0 is not allowed and 255 is the value used for broadcasts.

NOTICE

Please check the SOLIVIA inverter user manual for instructions on how to select the inverter ID.

Usually the list of inverters gets only longer. Every inverter that was once detected by the gateway will remain in this list. By pressing the "Start" button the list will be cancelled and the RS485 bus will be scanned for connected inverters.

The gateway is designed to connect to a maximum of 32 devices.

10.4.3.1 List of Connected SOLIVIA Solar Inverters

At power-up, start-up and each day at about noon the gateway scans the RS485 bus for all connected SOLIVIA solar inverters.

- Start from address 1 up to address 254. Address 0 is invalid and address 255 is the broadcast address.

During the usual operation the gateway collects only the data of the inverters in the inverter list. If a new inverter is connected at e.g. 2:00 pm, this inverter will only be recognized after a new scan (latest the next day at about noon).

10.4.4 Force Gateway Reset

To reset the gateway to production settings press either the reset switch for more than 5 seconds or click on the "Reset" button. After reset of the gateway, the default values shall become used again requiring a new configuration if needed.

All the inverter data are cleared, the device is reset and a new RS485 bus scan starts, ending with a flash store. The settings of Power Balancing, Power Management, Power Factor Control, Baud-rate and send interval remain unchanged.

10.4.5 Restart Gateway

By pressing the "Restart" button the gateway will be restarted. This restart has no impact on any configurations set before.

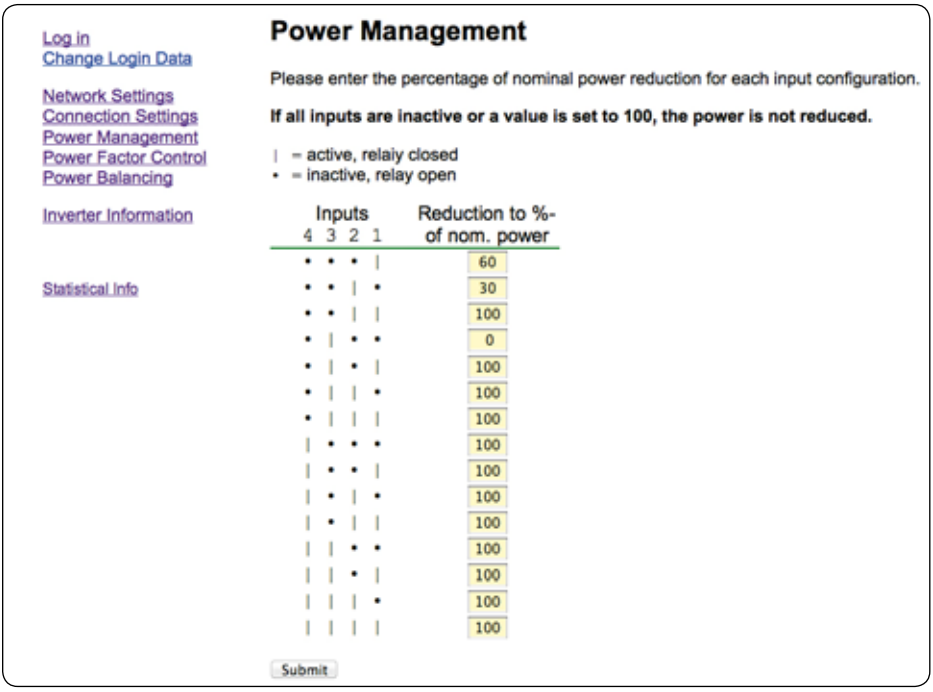
10.5 Digital Inputs

The SOLIVIA gateway gives a voltage to the output A and measures the inputs 1 to 8. In this way the SOLIVIA gateway can detect the state of the relays of the ripple control receivers. The information which relay shall control what parameter has to be communicated by the public grid supplier.
Example: Information from the public grid supplier: If relay 2 is closed then the power factor (cos ϕ) shall be set to 0.93 capacitive, if relays 1 and 2 are closed then the power factor shall be set to 0.98 inductive.

If the reactive power control receiver is connected to the SOLIVIA gateway as shown in figure 3 (Chapter 7.5) then the “Power Factor Control” should be configured like in figure 5.

10.5.1 Power Management [1)]

There are four binary inputs that control the maximum power the inverter may feed into the grid.



Power management is at 100 % for all relay state combination except 60 % for relay 1, 30 % for relay 2, and 0 % for relay 3 (default settings).

10.5.2 Power Factor Control [1)]

The power factor configuration page allows the definition of 15 values for the cos φ, either inductive or capacitive. If all inputs are inactive the cos φ is 1.00.
The values are entered in the form 0.xx, e.g. 0.95 and a checkbox decides whether it is leading current (capacitive) or not.

NOTICE

Please remember to save the configurations by pressing the “Submit” button.

1) This chapter is only relevant for countries, in which your public grid supplier requires a power reduction (power management), power factor control and/or power balancing.

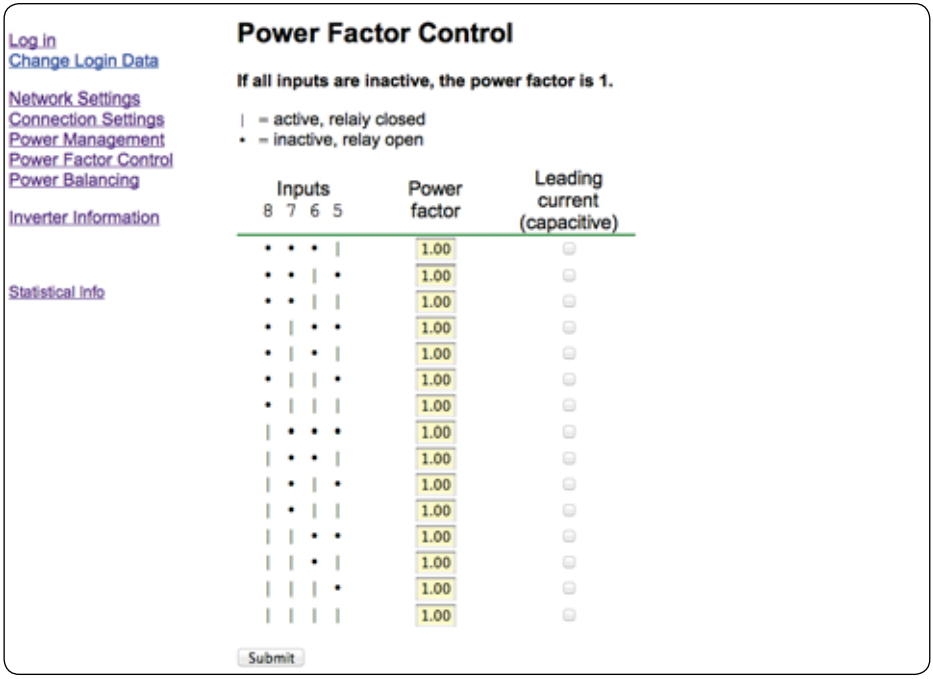


Figure 5: Power factor control configuration page

10.6 Power Balancing [1)]

The German Low Voltage Directive VDE-AR-N-4105 requires a symmetrical power feed into all three lines of the AC grid. The allowed phase unbalance in Germany is 4.6 kVA. Other countries may have the same or similar requirements. Please observe the specific regulations of your country.

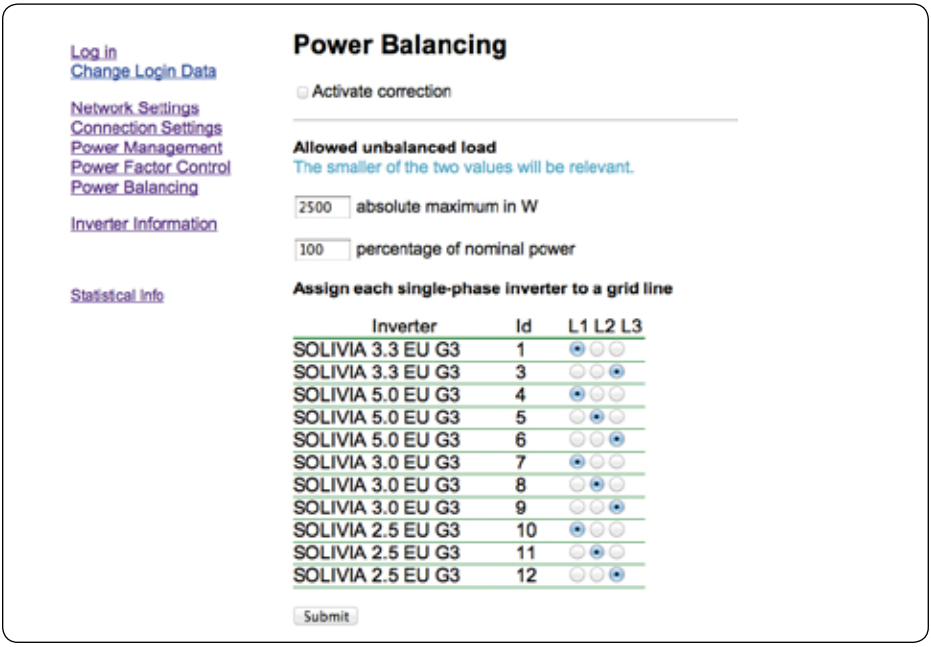
If the power injected into the public grid is not evenly shared over the three phases, the gateway is able to balance this unsymmetry.

10.6.1 Configuration

Following configurations can be set:

- Activate or deactivate the balancing
- Set the maximum allowed unbalance
- Assign the single-phase inverters to a line (L1, L2, L3)

1) This chapter is only relevant for countries, in which your public grid supplier requires a power reduction (power management), power factor control and/or power balancing.



10.6.1.1 Feature Activation

By default the feature is off. For countries without restrictions nothing has to be done.

10.6.1.2 Power Balancing Requested from the Public Grid Supplier

The default value is 4.6 kVA due to the German regulation. This value can be changed to other values without restriction.

10.6.1.3 Grid Assignment

For each inverter found during the bus scan, you can choose to which line (L1, L2 or L3) the device is connected.

NOTICE

Please note that the gateway web server will show you a warning if the sum of the nominal powers on the three phases differs by more than the maximum unbalanced load. Even with this warning the balancing works. However this warning is a strong indication that the mapping of the inverters to the public grid phases should be reviewed carefully!

There is no possibility to check the right mapping of the inverters to the phase except the electrician verifies the cabling of each inverter. Thus the installer should be reminded to put attention to this issue.

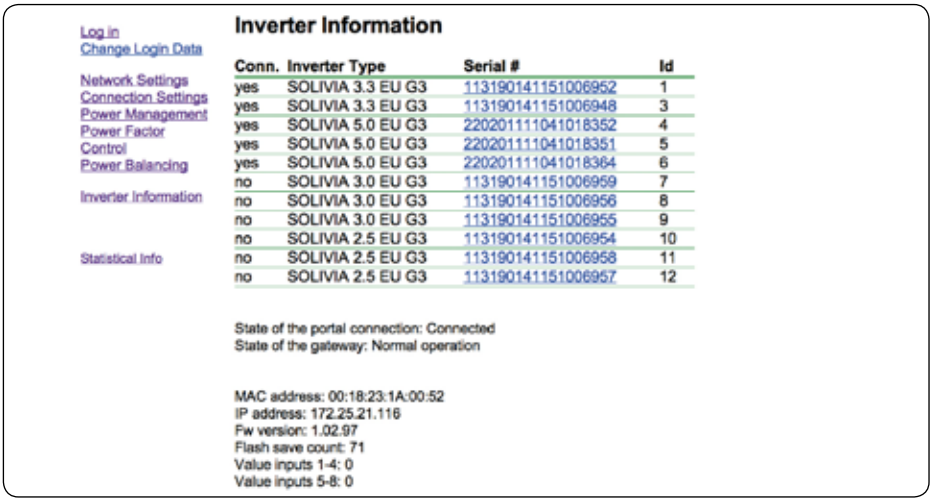
10.6.2 Balancing

The gateway balances the power per phase after every data polling cycle:

- The gateway requests every inverter for the current data.
- After the last inverter of the bus has sent its information, the gateway calcuculates the power of each line.
- The gateway calculates the current unbalance.
- The gateway selects the inverters to be power reduced.
- The gateway calculates the reduction factor that is needed to balance the power.
- The gateway sends the power control command to the specific inverters.

The gateway reduces the power as little as possible. This means that the power balancing is not reducing the unbalance to 0 kVA, a reduction is only needed until the adjusted unbalance limit is adhered.

10.7 Inverter Information



Here you can find the complete list of all SOLIVIA solar inverters that were once detected by the gateway. The list contains the following information:

- Connection of the solar inverter
  - » yes = connected
  - » no = not connected
- Inverter type
- Serial # of the SOLIVIA solar inverter
- ID (of the solar inverter)

Beside these information, you can read out the states of the portal connection and of the gateway, the MAC and IP address, the firmware (FW) version as well as the count of the flash saves.

By clicking a serial number you get detailed information about an inverter.

11 Delta Service Software

The Delta Service Software enables the installer to adapt settings, realize firmware upgrades and other updates besides supporting him in detecting error sources, like e. g. over- or undervoltage -without any need to open the inverter. The memory from every inverter can be stored and readout with the software in order to facilitate maintenance and on-site service. Detailed information of every inverter can be monitored and if necessary adapted.

The SOLIVIA gateway replaces the service software kit, that consists out of a Delta RS485 special cable and a USB to RS485 converter. Therefore, beside the gateway and the software itself, which can be downloaded from our website free of charge, no further equipment nor tools are necessary.

Proceed as follows:

1. Connect a RS485 cable between the RS485 connector on the SOLIVIA gateway and the RS485 connector on the SOLIVIA inverter.
2. Connect an Ethernet network cable between the SOLIVIA gateway and the internet ready network port.
3. Donwload the software from our website free of charge.
4. Start the service software program.

NOTICE

Please make sure, that your internet connection is active!

For further information about the SOLIVIA service software, please refer to our website at www.solar-inverter.com.

12 Reset Button

The reset button offers two different functionalities. Please also refer to Chapter 10 for further information on the below mentioned configuration parameters.

1. Keep the reset button pressed > 5 seconds and < 20 seconds
   - » LED blinks very fast for one second to indicate the reset has been recognized.
   - » Does a soft reset of the configuration parameters.
   - » Baud rate, interval time, power management, and unbalanced settings are not changed (except that “use unbalanced” is switched off). The other parameters are reset to default:
     - ✓ DHCP active
     - ✓ Proxy not active
     - ✓ Wireless RS485 modem not active
     - ✓ Unbalanced correction not active
     - ✓ Default IPs in subnet 192.168.0.200
     - ✓ Proxy IP 0.0.0.0
     - ✓ Default password (000000) and username (Delta)
   - » Inverter list is cleared

2. Keep the reset button pressed > 20 seconds
   » LED blinks very fast for one second to indicate the reset has been recognized.
   » All Parameters are reset to their default (factory settings), i.e.:
      ✓ All network settings
      ✓ Baud rate 19200
      ✓ Interval 15 min
      ✓ Power management is at 100 % for all relay state combination except 60 % for relay 1, 30 % for relay 2, and 0% for relay 3
      ✓ Unbalanced load = 4.6 kVA
      ✓ Clear all unbalanced configuration
      ✓ Clear all power factor (cos phi) configuration
   » This reset might require the reconfiguration from your public grid supplier.

13 Product Specification

RS485 INTERFACE

Max. in/output voltage	± 5 V
Output current	≤ 250 mA
Input current	≤ 42 mA

ETHERNET INTERFACE (LAN)

Max. in/output voltage	± 3 V
Output current	≤ 20 mA
Input current	≤ 20 mA

POWER SUPPLY (INPUT 5 V DC)

Max. input voltage	+8 V
Min. input voltage	+4 V
Max. input current	≤ 600 mA (3 W @ 5V)
Nom. input current	approx. 185 mA (1 W @ 5 V)

RIPPLE CONTROL RECEIVER INTERFACE [1)]

Input voltage (ports 1 to 8)	≤ 3.5 V
Input current (ports 1 to 8)	≤ 1 mA
Output voltage (ports A+B)	≤ 3.5 V
Output current (ports A+B)	≤ 20 mA

AMBIENT CONDITIONS

Operating temperature range	0 °C to 40 °C
Storage temperature range	-40 °C to 80 °C
Relative humidity	0 % to 90 %

POWER SUPPLY UNIT [2)]

PSU voltage range	4 V to 8 V
Max. output power	≥ 3 W (LPS certified)
Max. output current	≥ 600 mA (LPS certified)

1) EXT. CONTROL
2) Use only the power supply adapter supplied with and suited for the SOLIVIA gateway

14 Certificates

This Class (B) digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe (B) est conforme à la norme NMB-003 du Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

According to 47 CFR, Parts 2, 15 of the FCC Rules and Canada standard ICES-003 Issue 4

For product must be test and
Authorized under a Declaration of Conformity

Identification of product:

Basic Gateway

Model: SOLIVIA GW WEB MONITOR GATEWAY M1 G2

This Class B digital device complies with 47 CFR Parts 2 and 15 of the FCC rules and Canada standard ICES-003 Issue 4. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Manufacturer/Importer information:

Delta Products Corporation
(Company name)
4405 Cushing Parkway, Fremont, CA 94538
(Address)
510-668-5100
(Telephone No.)

and was made by

Graham Hunter
(Surname, forename)
Vice President of Sales, Power Supplies
(Position in manufacturer's company)

Fremont	March 9, 2012	
(City)	(Date)	(Legally valid signature)

C/WORD/DOC/990416

Sing Etac Services Pty Ltd
ABN 941339000008
33 Mackeller Avenue Wheelers Hill Vic 3150
Australia
Phone +61 3 95451418 Fax + 61 3 95451418

Ref #: 12CTICK001

C-Tick Mark Conformity Declaration

For the following equipment:

Basic Gateway
(Model Name)

SOLIVIA GW WEB MONITOR GATEWAY M1 G2
(Model Designation)

Herewith is confirmed to comply with the requirements set out in the regulation to Electromagnetic Compatibility. For the evaluation regarding the electromagnetic compatibility, the following standards were applied:

AS/NZS CISPR 22 & CISPR 11

The following manufacturer is responsible for this declaration:
Company name: Delta Electronics (Thailand) Public Co., Ltd
Address: 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z) Pattana 1 Rd., Tambol Phraksa, Amphur Muang, Samutprakarn 10280, THAILAND

The following importer is responsible for this declaration:
Company name: Sing Etac Services Pty Ltd
Address: 33 Mackeller Avenue Wheelers Hill Vic 3150, Australia

Person responsible for making this declaration:

Christina Chen Sok Kian
(Name)

Director
(Position/Title)

March 9, 2012
(Date)

(Legal Signature)

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
S 50222664

Blatt *Page*
0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis** *Latest expiration date (day/mo/yr)*
1203011191	ZTH1-soj- 19005769 001	20.02.2017

Genehmigungsinhaber *License Holder*
Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9 Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Rd.
Tambol Phraksa, Amphur Muang,
Samutprakarn 10280
Thailand

Fertigungsstätte *Manufacturing Plant*
Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9 Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Rd.
Tambol Phraksa, Amphur Muang,
Samutprakarn 10280
Thailand

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 60950-1:2006+A11+A1+A12
ZEK 01.4-08/11.11

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product *(Product Identification)*

Lizenzentgelte - Einheit
License Fee - Unit

Datenverarbeitungs-Gerät (Basic Gateway)

Bezeichnung (Type Designation)	: SOLIVIA GW WEB MONITOR GATEWAY M1 G2	10
Nennspannungen (Rated Voltages)	: DC 5V	
Nennströme (Rated Currents)	: 185mA	
max. Umgebungstemperatur (max. Ambient Temperature)	: 40°C	
Schutzklasse (Protection Class)	: III	

Fortsetzung Blatt (continued on page) 0002

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ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Produkt und Fertigungsstätte erfüllen § 20 und § 21 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation.
Product and production fulfill par § 20 and § 21 of the Product Safety Law.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. A. Zimmer

Ausstellungsdatum *Date of Issue* : 21.02.2012 (day/mo/yr)

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-042448

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Basic Gateway
Name and address of the applicant Nom et adresse du demandeur	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9 Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Rd., Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand
Name and address of the manufacturer Nom et adresse du fabricant	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9 Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Rd., Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand
Name and address of the factory Nom et adresse de l'usine	See additional page(s)
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : DC 5V; 185mA; Class III
Trade mark (if any) Marque de fabrique (si elle existe)	Trademark of DELTA ELECTRONICS, INC.
Model/type Ref. Ref. de type	SOLIVIA GW WEB MONITOR GATEWAY M1 G2
Additional information (if necessary) Information complémentaire (si nécessaire)	Testing location: TMP
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005+A1 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	19005768 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
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Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 21.02.2012

Signature: Dipl.-Ing. A. Zimmer

CE

SPORTON LAB.

Certificate No: EC221006

CERTIFICATE

EQUIPMENT: Basic Gateway
MODEL NO. : SOLIVIA GW WEB MONITOR GATEWAY M1 G2
APPLICANT : Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.),
Pattana 1 Rd., Tambol Phraksa,
Amphur Muang Samutprakarn 10280, Thailand

SPORTON LAB.

I HEREBY CERTIFY THAT:

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN ACCORDANCE WITH THE PROCEDURES GIVEN IN **EUROPEAN COUNCIL DIRECTIVE 2004/108/EC.** THE EQUIPMENT WAS ***PASSED*** THE TEST PERFORMED ACCORDING TO
European Standard EN 55022:2010 Class B, CISPR 22:2008 Class B, CISPR 11:2003/A1:2004/A2:2006 Class B, EN 61000-3-2:2006/A2:2009, EN 61000-3-3:2008, EN 55024:2010 and CISPR 24:2010 (IEC 61000-4-2:2008 ED. 2.0, IEC 61000-4-3:2010 ED. 3.2, IEC 61000-4-4:2010 ED. 2.1, IEC 61000-4-5:2005 ED. 2.0, IEC 61000-4-6:2008 ED. 3.0, IEC 61000-4-8:2009 ED. 2.0, IEC 61000-4-11:2004 ED. 2.0) and Australian Standard AS/NZS CISPR 22:2009 Class B.
THE TEST WAS CARRIED OUT ON **Mar. 06, 2012** AT **SPORTON INTERNATIONAL INC.** LAB.

Alex Chen
Q.A Dept. Director

SPORTON INTERNATIONAL INC. 6F, No.106, Sec.1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

E3E9-2FBC-48C4-D97E

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 *Trade Name or Registrant*	DELTA ELECTRONICS(THAILAND) PUBLIC CO., LTD.
기기 명칭 *Equipment Name*	SOLIVIA Gateway
기본모델명 *Basic Model Number*	SOLIVIA GW WEB MONITOR GATEWAY M1 G2
파생모델명 *Series Model Number*	
등록번호 *Registration No.*	KCC-REM-DTE-SOLIVIAGWM1G2
제조자/제조(조립)국가 *Manufacturer/Country of Origin*	DELTA ELECTRONICS(THAILAND) PUBLIC CO., LTD. / 중국 중국
등록연월일 *Date of Registration*	2012-03-30
기타 *Others*	해외공장추가:Delta Electronics Power(Dongguan) Co.,Ltd.

위 기기는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.

It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2012년(Year) 03월(Month) 30일(Date)

국립전파연구원장

Director General of Radio Research Agency
Korea Communications Commission Republic of Korea

※ 적합등록 방송통신기자재는 반드시 "적합성평가표시"를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.

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