DEEP SEA ELECTRONICS PLC

DSE892 SNMP Gateway Manual

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Author : Anthony Manton

Deep Sea Electronics Plc
Highfield House
Hunmanby
North Yorkshire
YO14 0PH
ENGLAND

Sales Tel: +44 (0) 1723 892099
Sales Fax: +44 (0) 1723 893303

E-mail : sales@deepseaplc.com
Website : www.deepseaplc.com

DSE892 SNMP Gateway Hardware Manual

Amendments since last publication

Amd. No.	Comments
1	First release

Typeface : The typeface used in this document is *Arial*. Care should be taken not to mistake the upper case letter I with the numeral 1. The numeral 1 has a top serif to avoid this confusion.

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1 BIBLIOGRAPHY

This document refers to and is referred to by the following DSE publications which can be obtained from the DSE website www.deepseaplc.com

DSE Part	Description
053-148	DSE892 installation instructions
057-178	DSE43xx Configuration Suite PC Software Manual
057-093	DSE44xx Configuration Suite PC Software Manual
057-172	DSE45xx Configuration Suite PC Software Manual
057-114	DSE60xx Configuration Suite PC Software Manual
057-096	DSE61xx Configuration Suite PC Software Manual
057-117	DSE71xx Configuration Suite PC Software Manual
057-077	DSE72xx / DSE73xx Configuration Suite PC Software Manual
057-160	DSE74xx Configuration Suite PC Software Manual
057-119	DSE8610 / DSE8620 / DSE8660 Configuration Suite PC Software Manual
057-131	DSE8680 Configuration Suite PC Software Manual
057-127	DSE8710 / DSE8760 Configuration Suite PC Software Manual
057-164	DSE8810 Configuration Suite PC Software Manual
057-174	DSE8860 Configuration Suite PC Software Manual

2 INTRODUCTION

This document details the installation requirements of the DSE892 SNMP Gateway. The manual forms part of the product and should be kept for the entire life of the product. If the product is passed or supplied to another party, ensure that this document is passed to them for reference purposes. This is not a *controlled document.* You will not be automatically informed of updates. Any future updates of this document will be included on the DSE website at www.deepseaplc.com

DSE892 SNMP Gateway is used to connect with an SNMP system to give monitoring and control functionality.

DSE892 SNMP Gateway communicates to the connected controller(s), monitoring the instrumentation and operating state. If this data changes, SNMP TRAP information is generated and sent to the SNMP Manager. Additionally emails can be configured to be set to one or two email addresses.

DSE892 SNMP Gateway also contains a protocol conversion function.

For details on configuring the ‘host controller’ you are referred to the relevant configuration software manual.

2.1 SNMP

Simple Network Management Protocol (SNMP) is an internet standard protocol for managing devices on IP networks. It is used to monitor network-attached devices for conditions that warrant administrative attention.

An administrative computer (SNMP manager) monitors a group of DSE controllers using a variety of connection methods (detailed elsewhere in this manual). Should an ‘event’ occur, the DSE892 Gateway reports information via SNMP to the manager.

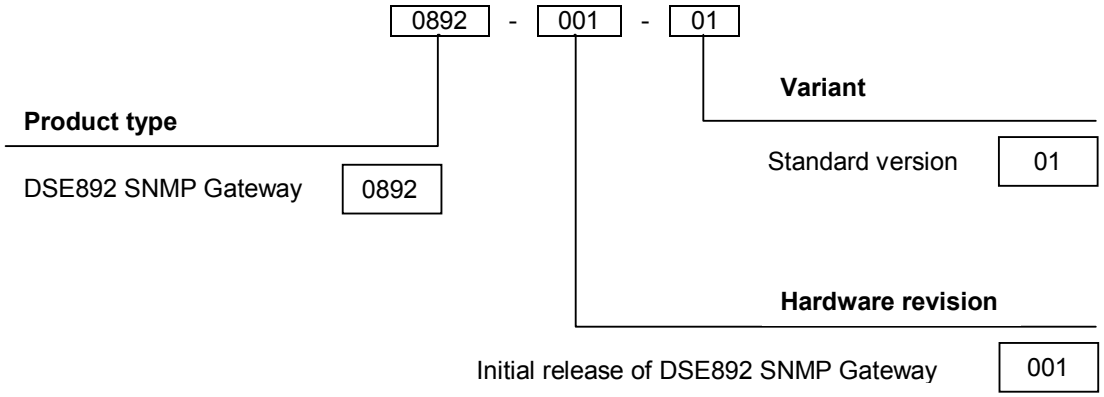
Many third party SNMP managers exist. DSE do not produce or supply SNMP managers.

2.2 MIB FILE

SNMP does not specify the type of information and functions supported by the managed device. This information is contained in the Management Information Base (MIB) file provided with the managed device.
As the DSE892 has flexible configuration, and therefore many alternatives of available information, the MIB file is created by the DSE892 Gateway when configuration is completed. This is covered elsewhere in this manual.

3 SPECIFICATIONS

3.1 PART NUMBERING



3.2 POWER SUPPLY

Minimum supply voltage	8V continuous, 4V for up to 5 minutes.
Cranking dropouts	Able to survive 0V for 100mS providing the supply was at least 8V before the dropout and recovers to 8 volts afterwards.
Maximum supply voltage	32V continuous (transient protection to 64V)
Power up current	3A transient inrush at initial power up.
Typical Operating current	630 mA @ 12 V DC, 315 mA @ 24V DC

3.3 CONFIGURABLE I/O

Number	4 configurable general purpose input / outputs Not currently fitted to the DSE892 – RESERVED for future use.
Rating	TBA

3.4 TERMINAL SPECIFICATION

Connection type	Screw terminal, rising clamp, no internal spring
Min cable size	0.5mm² (AWG 20)
Max cable size	2.5mm² (AWG 14)

3.5 USB HOST CONNECTOR

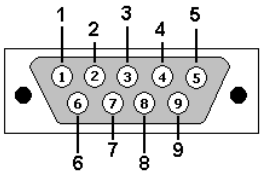
This USB type A socket provides support for connection to one DSE controller.
Use USB type A to USB type B cable.

NOTE: DSE stock a USB suitable cable for this purpose. Part number 016-125.

3.6 RS232 CONNECTOR

This socket provides support for connection to one DSE controller.

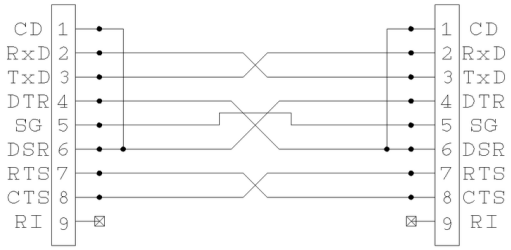
PIN No	NOTES
1	Received Line Signal Detector (Data Carrier Detect)
2	Received Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request To Send
8	Clear To Send
9	Ring Indicator



View looking into the male connector on the module

3.6.1 NULL MODEM CABLE WIRING

DSE Controller with RS232



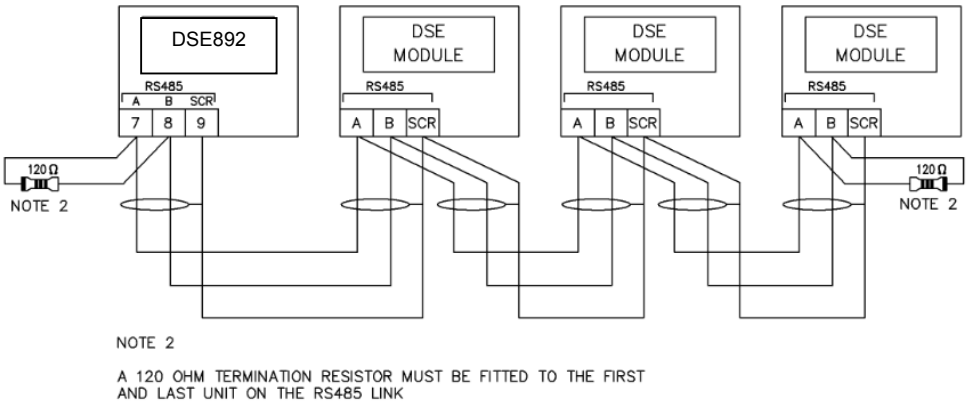
Null Modem Cable

DSE892 Gateway

3.7 RS485 CONNECTOR

This socket provides support for connection to a maximum of 16 (sixteen) DSE controllers in a daisy chain RS485 network.
Ensure termination resistors (120Ω) are fitted as shown to the ends of the link as per RS485 standard.

PIN No	NOTES
A (-)	Two core screened twisted pair cable. 120Ω impedance suitable for RS485 use. Recommended cable type - Belden 9841 Max distance 1200m (1.2km) when using Belden 9841 or direct equivalent.
B (+)	
SCR	

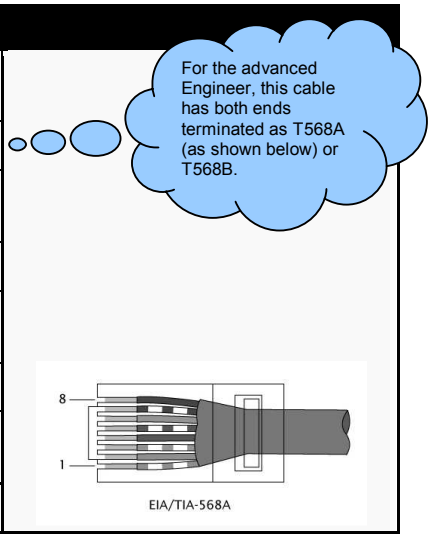


3.8 ETHERNET CONNECTOR

The DSE892 Gateway module is fitted with an autosensing ethernet socket.
This can be utilised in a number of ways. See section entitled “Typical Connection to DSE controllers”, subsection ” Via Ethernet” for further details.

10baseT/100baseT

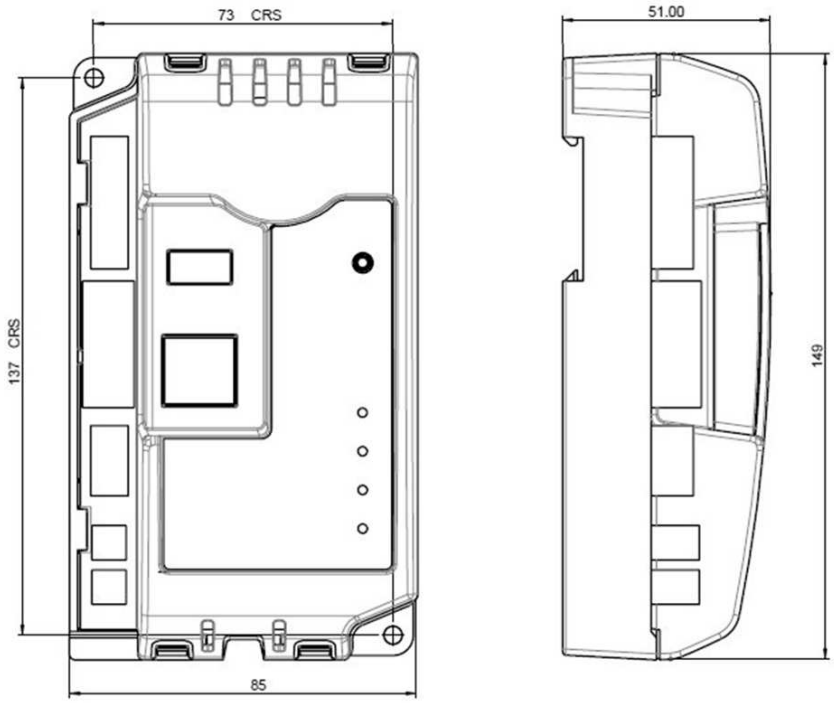
Pin	Connection 1 (T568A)	Connection 2 (T568A)
1	white/green stripe	white/green stripe
2	green solid	green solid
3	white/orange stripe	white/orange stripe
4	blue solid	blue solid
5	white/blue stripe	white/blue stripe
6	orange solid	orange solid
7	white/brown stripe	white/brown stripe
8	brown solid	brown solid



NOTE: DSE Stock a 2m (2yds) Ethernet Cable – Part number 016-137. Alternatively they can be purchased from any good PC or IT store.
As the Gateway is autosensing, either a ‘straight through’ or ‘crossover’ cable can be used. The diagram above shows a ‘straight though’ cable.

3.9 DIMENSIONS

Overall size	85 mm x 149 mm x 51 mm (3.35” x 5.85” x 2.01”)
Weight	120g (4.23 oz.)
Mounting type	DIN rail or chassis mounting
Din rail type	EN 50022 35mm type only
Mounting holes	M4 clearance
Mounting hole centres	73 mm x 137 mm (2.89” x 5.39”)



Dimensions in mm

3.10 APPLICABLE STANDARDS

BS 4884-1:1992	This document conforms to BS4884-1 1992 Specification for presentation of essential information.
BS 4884-2:1993	This document conforms to BS4884-2 1993 Guide to content
BS 4884-3:1993	This document conforms to BS4884-3 1993 Guide to presentation
BS EN 60068-2-1 (Minimum temperature)	-30°C (-22°F)
BS EN 60068-2-2 (Maximum temperature)	+70°C (158°F)
BS EN 60950	Safety of information technology equipment, including electrical business equipment
BS EN 61000-6-2	EMC Generic Immunity Standard (Industrial)
BS EN 61000-6-4	EMC Generic Emission Standard (Industrial)
BS EN 60529 (Degrees of protection provided by enclosures)	IP21
UL508 NEMA rating	Enclosure type 1 (indoor use only)
SNMP	DSE892 Gateway supports GET and SET functions conforming to SNMPv1 specification.

In line with our policy of continual development, Deep Sea Electronics, reserve the right to change specification without notice.

3.11 INSTALLATION

The DSE892 is designed to be mounted within a control panel, either on the panel DIN rail utilising the integral mounts, or chassis mounted, utilising the mounting holes. For dimension and mounting details, see the section entitled *Specification, Dimensions* elsewhere in this document.

3.12 USER CONNECTIONS

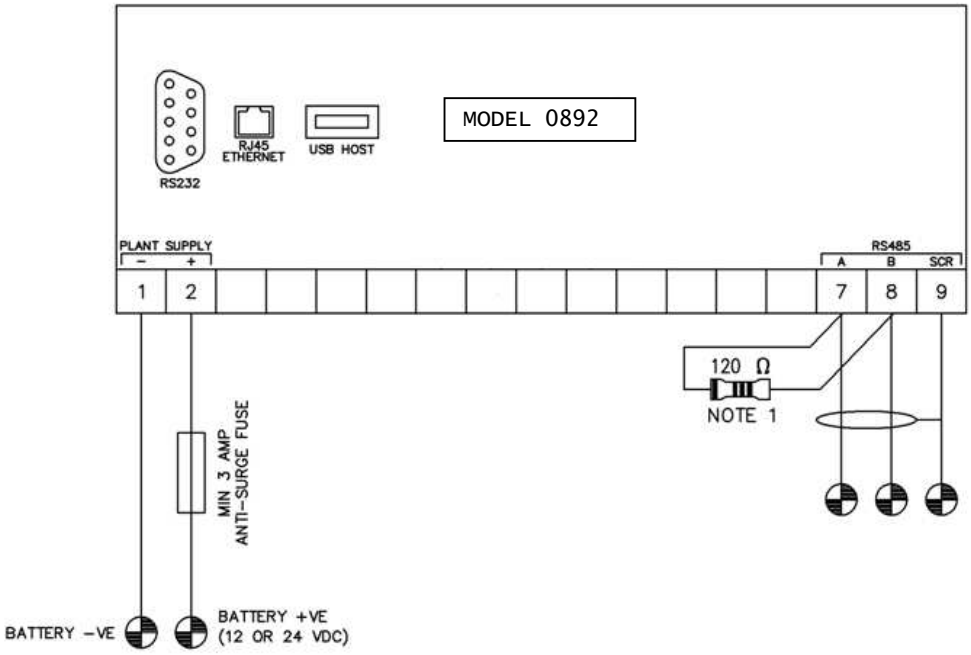
3.12.1 CONNECTOR A – DC SUPPLY AND CONFIGURABLE OUTPUTS

Terminal	Function	Recommended size
1	DC supply positive	1.0mm² (AWG18)
2	DC supply negative	1.0mm² (AWG18)
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	RESERVED	

3.12.2 CONNECTOR B – RS485

Terminal	Function	Recommended size
A	RS485 A	0.5mm² (AWG20)
B	RS485 B	0.5mm² (AWG20)
SCR	RS485 SCREEN	

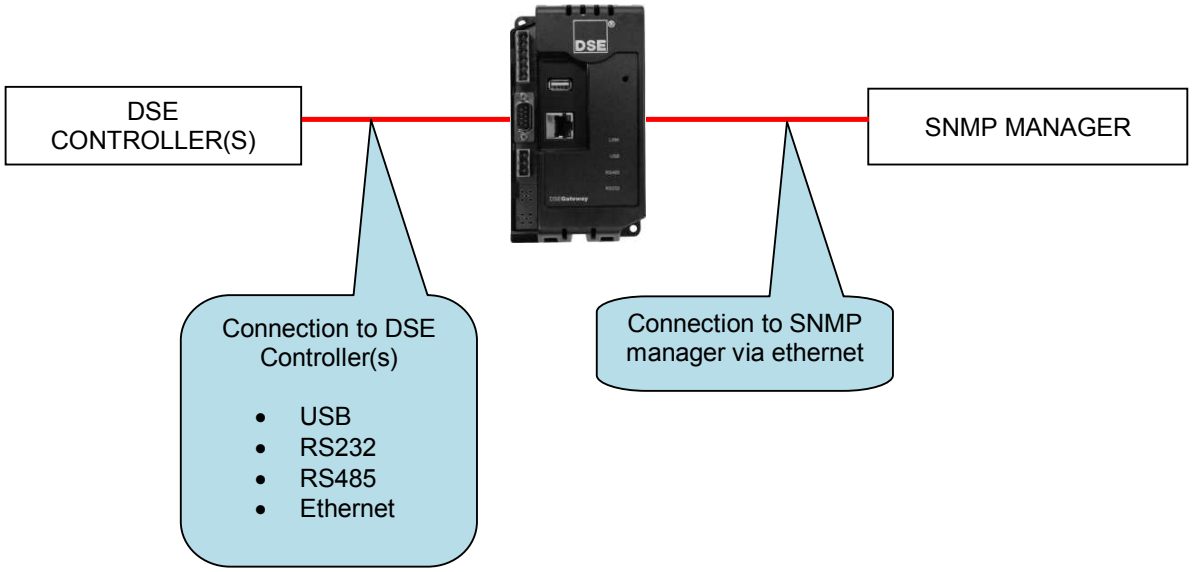
3.13 TYPICAL WIRING DIAGRAM



TERMINALS SUITABLE FOR 22–16 AWG (0.6mm^2 – 1.3mm^2) FIELD WIRING
TIGHTENING TORQUE = 0.8Nm (7lb–in)

NOTE 1
A 120 OHM TERMINATION RESISTOR MUST BE FITTED IF IT IS THE FIRST OR LAST DEVICE ON AN RS485 LINK

3.14 SYSTEM OVERVIEW



3.15 TYPICAL CONNECTION TO DSE CONTROLLERS

This section shows how to connect DSE controllers to the gateway device.

3.15.1 ADDING THE CONTROLLER TO THE DSE892

To ensure newly added controllers are recognised by the DSE892, the following steps must be followed. Failure to do so may result in communications failure, indicated by a RED communications port LED.

- The DSE892 is factory set to accept connection via the USB port. If this is not the port to be used, you must configure the DSE892 for the required port as detailed elsewhere in this document.
- Remove the DC supply from the DSE892 AND the connected controller(s).
- Connect the new controller to the chosen communications port.
- Apply the DC supply to the controller being connected (and any other controllers in the system).
- Reapply the DSE supply to the DSE892 Gateway.

3.15.2 DEVICE COMPATIBILITY

At the time of printing, the following devices are currently compatible with the DSE892. Other devices are being added as part of our ongoing development.

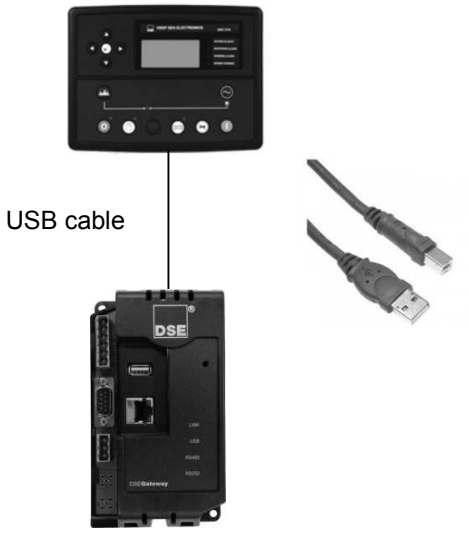
NOTE: Not all functions or instrumentation is available with all controllers. Refer to the Configuration Suite PC Software manual relevant to you controller for details of supported events and instrumentation.

Genset / Engine Controller	USB	RS232	RS485	Ethernet
DSE43xx	✓	N/A	N/A	N/A
DSE44xx	✓	N/A	N/A	N/A
DSE45xx	✓	N/A	N/A	N/A
DSE60xx	✓	N/A	N/A	N/A
DSE61xx	✓	N/A	N/A	N/A
DSE71xx	✓	N/A	N/A	N/A
DSE72xx	✓	N/A	N/A	N/A
DSE73xx	✓	✓	✓	N/A
DSE74xx	⊖	✓	✓	✓
DSE86xx	⊖	✓	✓	✓
DSE87xx	⊖	✓	✓	✓
DSE88xx	⊖	✓	✓	✓

3.15.3 USB (SINGLE CONTROLLER)

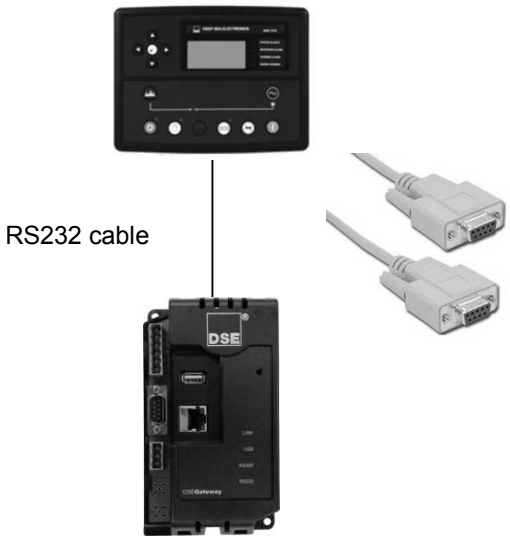
USB connection utilises a standard USB A – USB B cable.

NOTE: DSE Stock a 2m (2yds) USB Cable DSE Part No 016-125. Alternatively they can be purchased from any good PC or IT store.



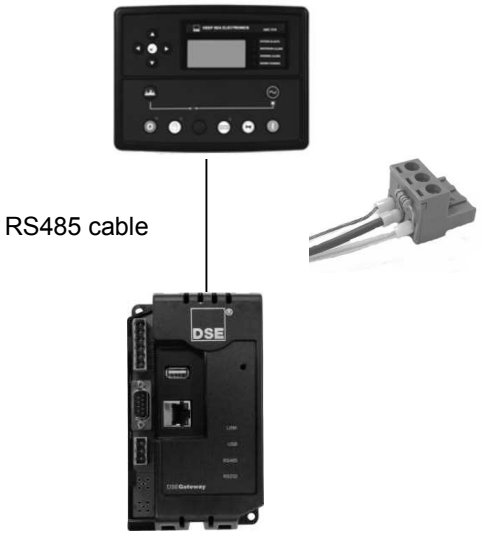
3.15.4 RS232 (SINGLE CONTROLLER)

RS232 connection utilises a standard RS232 Null modem (crossover) cable.



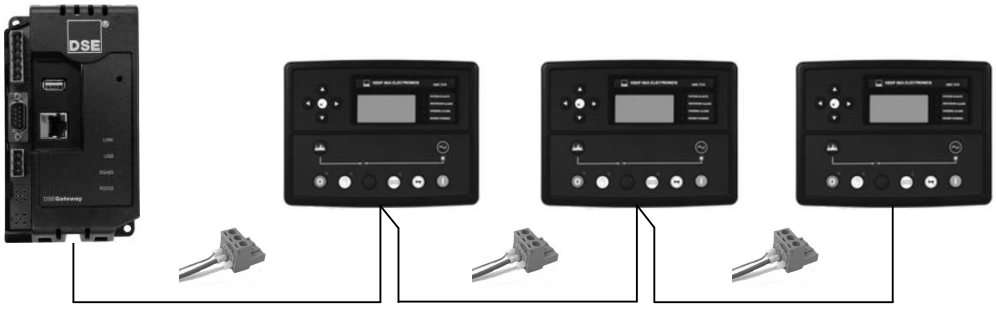
3.15.5 RS485 (SINGLE CONTROLLER)

RS485 connection utilises twisted pair RS485 cable with 120Ω termination resistors as per RS485 standard.



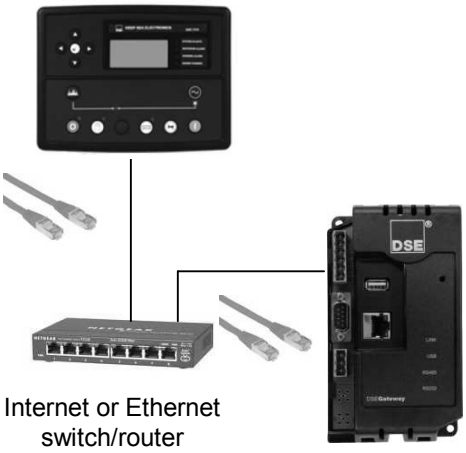
3.15.6 RS485 (MULTIPLE CONTROLLER)

RS485 connection utilises twisted pair RS485 cable with 120Ω termination resistors as per RS485 standard.



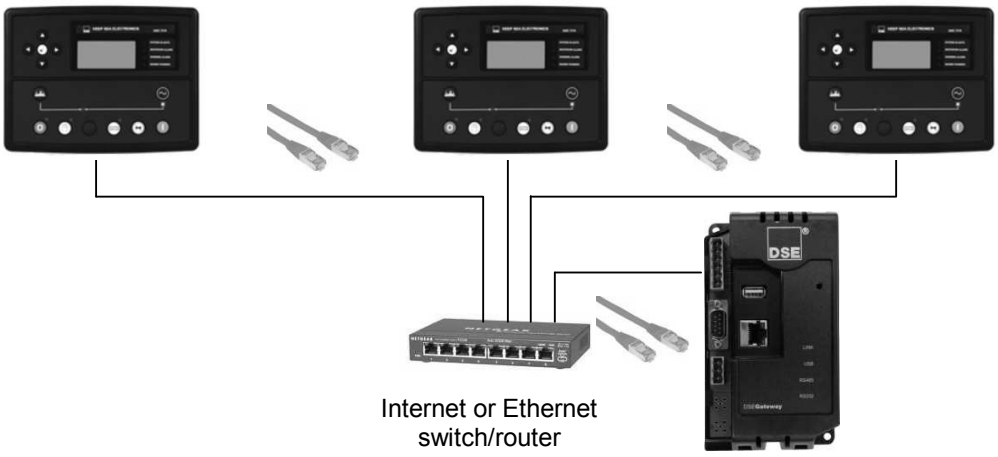
3.15.7 ETHERNET (SINGLE CONTROLLER)

Ethernet connection utilises a standard Ethernet cable with RJ45 connectors. You must use a multiport network router as the DSE892 requires an Ethernet connection to communicate with the SNMP manager.



3.15.8 ETHERNET (MULTIPLE CONTROLLER)

Ethernet connection utilises a standard Ethernet cable with RJ45 connectors.



3.16 TYPICAL CONNECTION TO SNMP MANAGEMENT SYSTEM

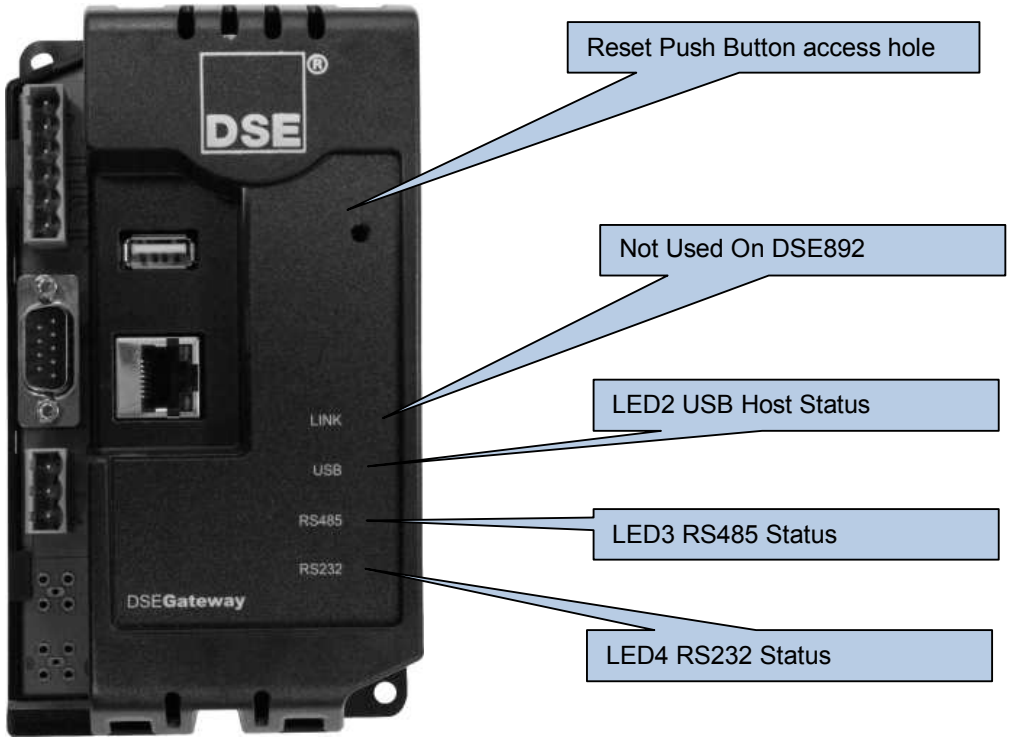
The DSE892 gateway communicates with third party SNMP systems confirming to SNMPv1 specification.

This connection is via Ethernet (or internet).

4 CONTROLS AND INDICATIONS

4.1 RESET PUSHBUTTON

The reset push button, accessible by removing the front cover or via the small hole and by using an insulated narrow point, is provided to set the device back to factory settings.



Press and hold the button to activate the reset sequence :

1. Press and HOLD the reset pushbutton.
2. All LEDs light YELLOW for a short time.
3. All LEDs extinguish for a short time.
4. LEDs illuminate one at a time – LED4, LED3, LED2, LED1.
5. All LEDs illuminate YELLOW.
6. Reset has completed and the reset push button can be released.

Once reset, the Gateway must be reconfigured
It's factory set IP address is *192.168.1.100*. Username: *Admin*, Password *Password1234*

4.2 LED INDICATIONS

LED	Function	Colour	Action
1	Server Status	RED	No connection to host server
		GREEN	Connected to host server
2	USB Host Status	RED	Bad Data
		GREEN	Data transfer OK
3	RS485 Status	RED	Bad Data
		GREEN	Data transfer OK
4	RS232 Status	RED	Bad Data
		GREEN	Data transfer OK

5 SETUP

The DSE892 is setup using a PC with web browser and a 'straight through' or 'crossover' network cable.

5.1 BROWSER COMPATIBILITY

5.1.1 GOOGLE CHROME

The management pages are optimised for Google Chrome web browser.

5.1.2 INTERNET EXPLORER

Internet Explorer 9

The management pages are optimised for Internet Explorer 9

Internet Explorer 8

'Google Chrome FRAME Plugin' must be installed, available from the internet.

Internet Explorer 7 and earlier

Internet Explorer 7 and earlier versions are not supported by the management pages.

5.1.3 MOZILLA FIREFOX

The management pages are optimised for Mozilla Firefox

5.1.4 SMARTPHONE BROWSERS

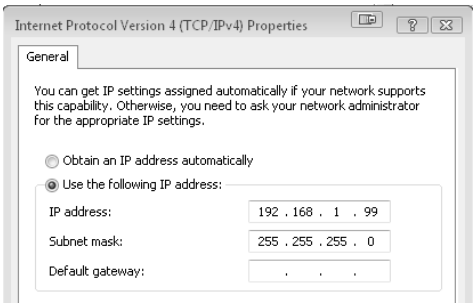
While not designed specifically to work with Smartphone webbrowsers, The management pages are work with any mobile browser fully compatible with Google Chrome, Internet Explorer 9 or Mozilla Firefox.

6 CONNECTING TO THE GATEWAY MANAGEMENT PAGES

You may wish to consult your company IT department before making changes to your PC network settings.

Connect the DSE892 ethernet port directly to your PC Ethernet port.
You can use either a 'straight through' or 'crossover' network cable.

Set the PC IP address as shown.



Using Google Chrome, Microsoft Internet Explorer or Mozilla Firefox, enter the IP address of the gateway.

Enter the username and password of the Gateway :

NOTE: Username and Password are both CASE SENSITIVE.

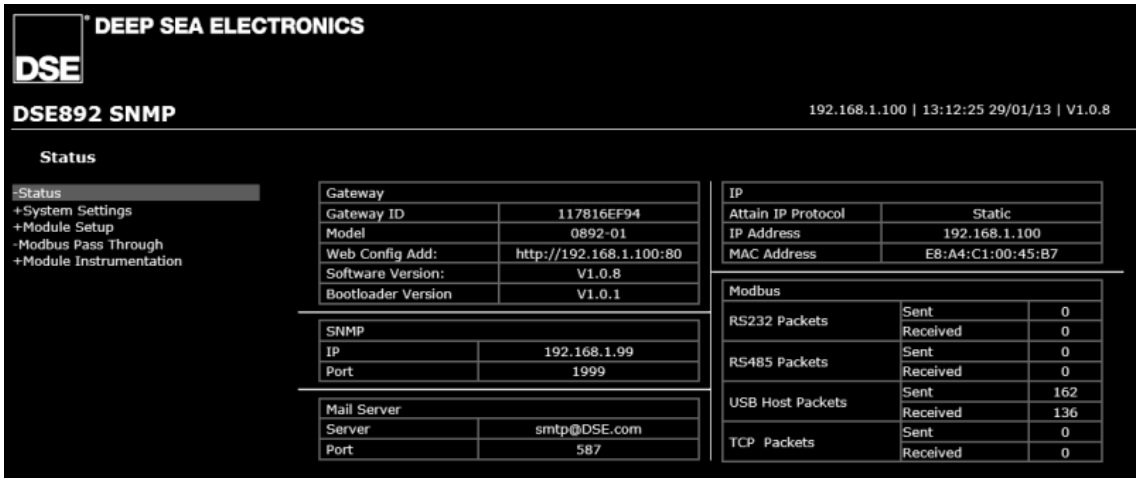
Factory Settings

IP Address	Username	Password
192.168.1.100	Admin	Password1234

6.1 STATUS

The Status pages show information that can be used for diagnostics and give a level of confidence that the system is working as expected.

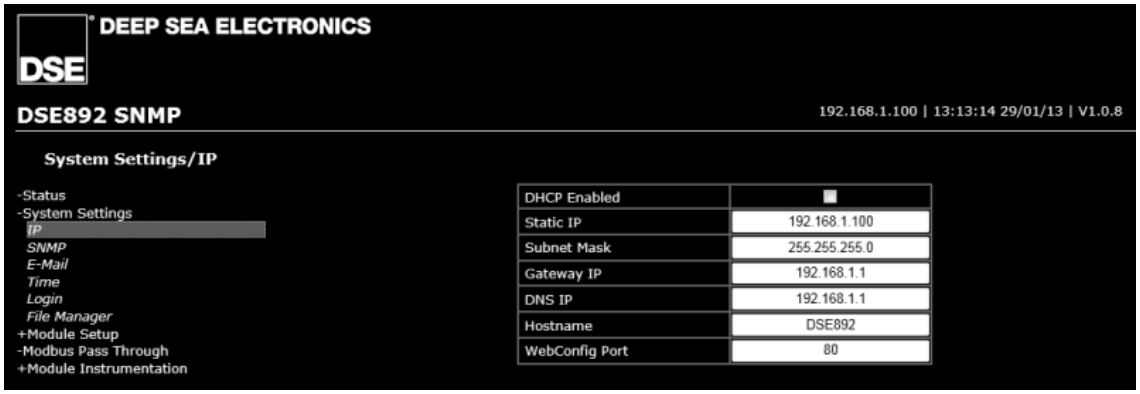
Along with DSE892 physical information, the displays also indicate the state of the various communication ports in use.



6.2 SYSTEM SETTINGS

Ensure you consult with the IT/Network manager of the site that the DSE892 is connected to before making any changes to these settings.

6.2.1 IP



Parameter	Description
DHCP Enabled	☑ = The Gateway will request network settings from a DHCP server. ☐ = The Gateway's network settings must be entered manually.
Static IP	(Factory setting 192.168.1.100)
Subnet mask	(Factory setting 255.255.255.0)
Gateway IP	IP address of the internet router that the DSE892 is connected to.
DNS IP	IP address of the Domain Name Service. Usually this is the same as the Gateway IP.
Hostname	Hostname of the device. Used to identify the Gateway on the network. Give this a meaningful name to assist the network IT manager to recognise the device on the network!
WebConfig Port	The port number that these configuration pages are served on.

6.2.2 SNMP

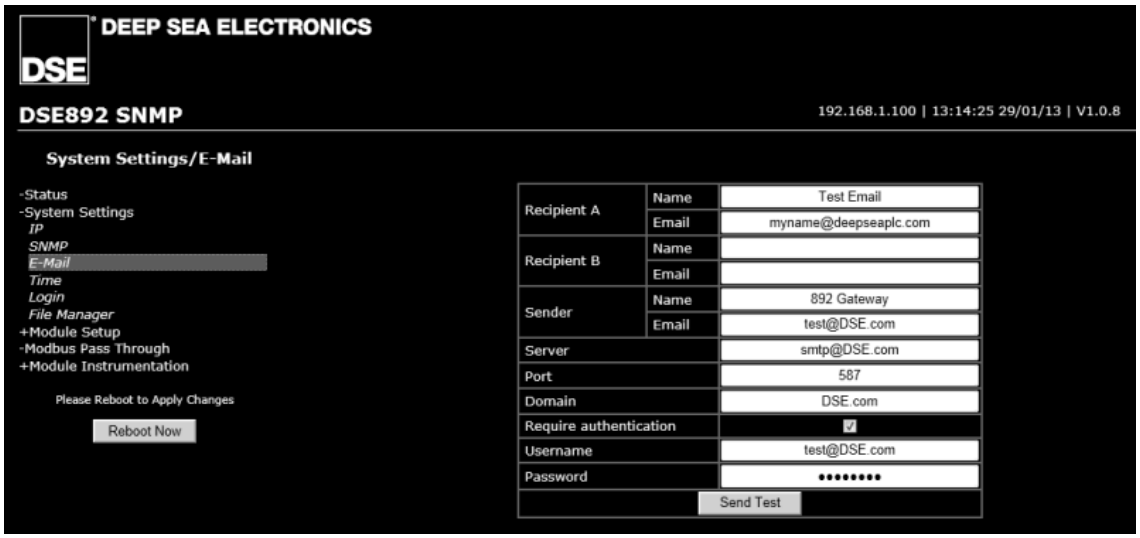
Ensure you consult with the IT/Network manager of the site that the DSE892 is connected to before making any changes to these settings.

Parameter	Description
IP Address Port	The IPV4 network location of the SNMP manager.

6.2.3 E-MAIL

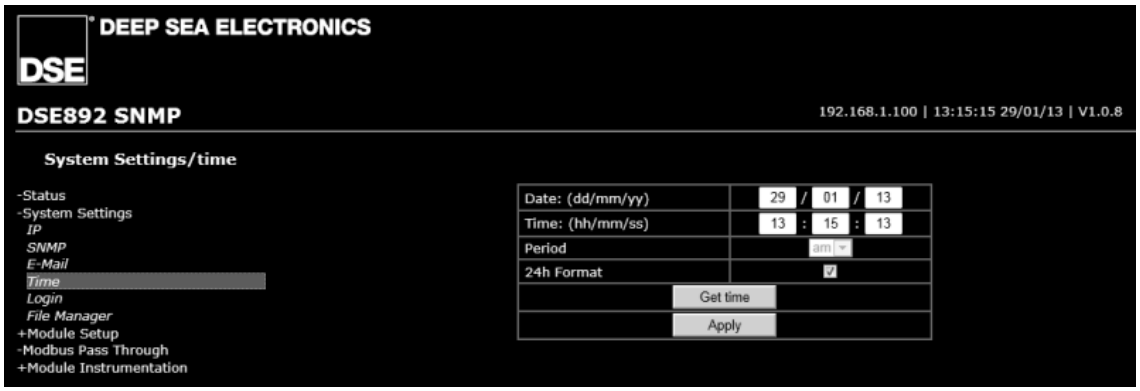
DSE892 is capable of sending an email to one or two addresses upon detection of an event in the managed devices.

Ensure you consult with the IT/Network manager of the site that the DSE892 is connected to before making any changes to these settings.



Parameter	Description
Recipient A Recipient B	Name and email address of the recipients. Where only one email is required, leave Name and Email blank for one recipient.
Sender	The Name and Email address that the email will appear to have been sent from.
Server	Network address of the SMTP server used to send emails.
Port	Which network TCP port is used to send SMTP emails. Typically port 587 is used for SMTP. Some legacy systems may still be configured to 25.
Domain	The network Domain Name where the DSE892 is part of a Domain system.
Require authentication	☑ = The SMTP server requires a username and password for access. ☐ = The SMTP server does not require authentication.
Username Password	Username and Password for the SMTP server (when required).
Send Test	Click to send a test email to the configured recipients.

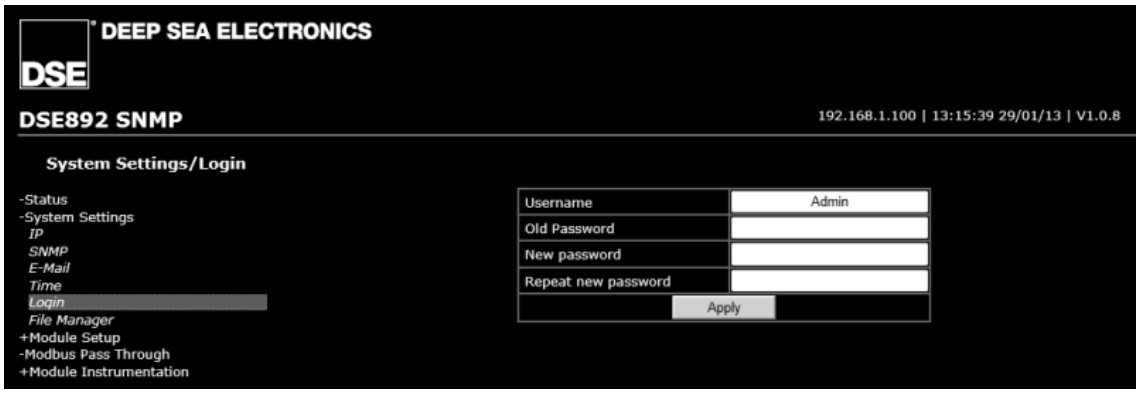
6.2.4 TIME



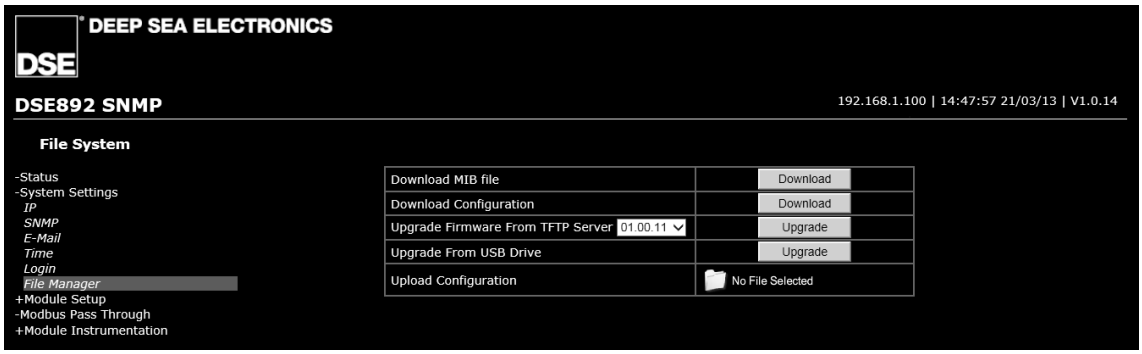
Parameter	Description
Date / Time	Set the date and time local to the site.
Period	am or pm (when 24h Format is not selected)
24h Format	☑ = Clock is displayed in 24 hr format ☐ = Clock is displayed in 12 hr format
Get Time	Gets the time from the PC and enters this into the Date and Time boxes above
Apply	Sends the values entered to the DSE892 Gateway.

6.2.5 LOGIN

This page allows the Username and Password of the DSE892 Gateway to be changed to suit user requirements.



6.2.6 FILE MANAGER



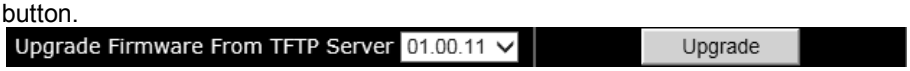
Parameter	Description
Download MIB file	Creates the DSE892 Gateway's MIB file. This file is used to configure the SNMP Manager.
Download Configuration	Creates a backup file of the Gateway's configuration.
Upgrade firmware from TFTP Server	See section entitled *Firmware Upgrade by TFTP* for full description.
Upgrade firmware from USB Drive	See section entitled *Firmware Upgrade by USB Memory Stick* for full description.
Upload Configuration	Allows the Gateway to be reconfigured using a previously save Configuration file.

6.2.6.1 FIRMWARE UPGRADE BY TFTP

When available, firmware upgrade files are available by *Over The* Air updates from Deep Sea Electronics TFTP site.

To do this :

- Ensure your DSE892 SNMP Gateway is correctly configured to access the internet via an external router. The DHCP is not configured, this requires correct DNS entries in the *System Settings* | *IP* section of the DSE892 configuration.
- Select the required version number from the 'drop down' list box and press the *Upgrade* button.



- The DSE892 connects to the TFTP server and begins the update. The status LEDs on the DSE892 will alternate to show the download is in progress. This may take several minutes.
- When complete, all LEDs illuminate yellow for one second after which the DSE892 will restart and resume normal operation.
- The version number of the DSE892 firmware is located at the top right of the management pages.

6.2.6.2 FIRMWARE UPGRADE BY USB MEMORY STICK

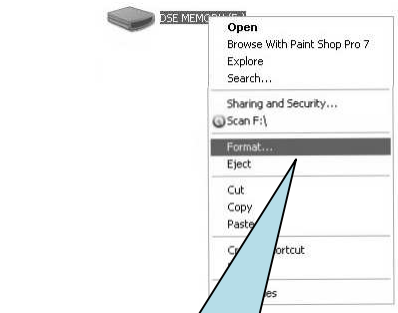
When available, firmware upgrade files are available from Deep Sea Electronics PLC website www.deepseaplc.com.

To do this you will need :

- Firmware update filed from DSE. This file must be called 0892-01.bin
- USB flash memory stick formatted to *FAT*.

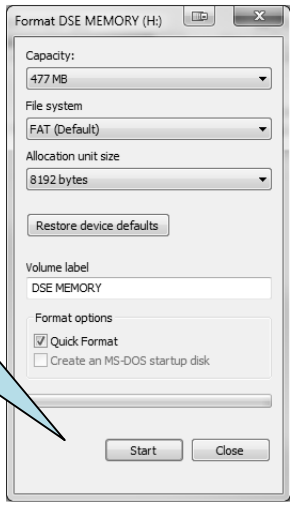
To Format a USB stick to the FAT File System :

- Insert memory stick into PC USB port.
- Browse to *Computer* in Windows Explorer. Identifty the memory stick, Right Click the device and select *Format.*
- Select FAT and click *Start*



Right Click *context menu* of USB flasm memory device

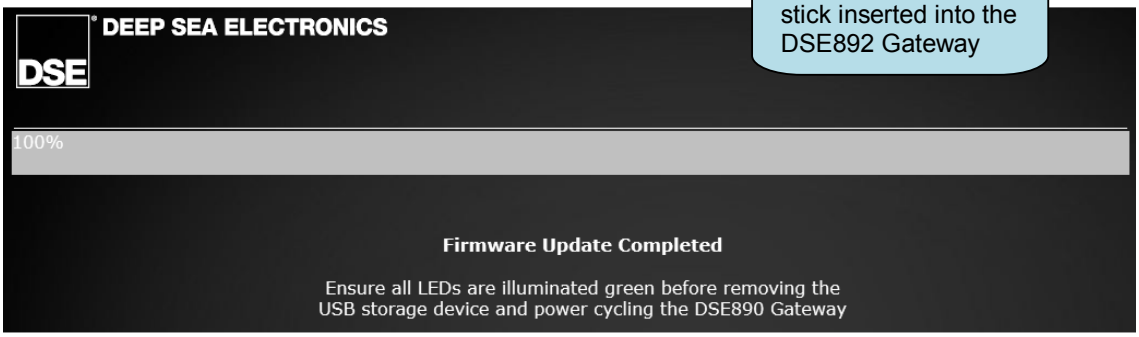
Format tool for USB flash memory. Ensure you have selected the correct disk before clicking *Start!*



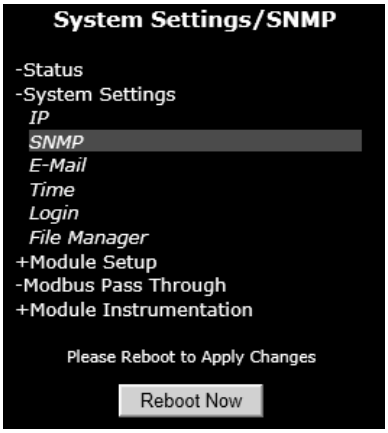
- Copy the firmware upgrade file onto the USB flash memory stick and insert this into the 'USB Host' socket of the DSE892 Gateway.

- Once inserted, click Upgrade. The module is restarted and the upgrade process begins. The PC screen shows the progress of the upgrade.
- Once complete, Check that all the LEDs are illuminated on the DSE892. This shows that the updgrade is successful.
- Next, remove the USB memory device and remove the DC power from the DSE892. Wait a few seconds, then reapply DSE power.

USB flash memory stick inserted into the DSE892 Gateway



6.2.6.3 REBOOT NOW



Some operations require the gateway to be rebooted (restarted). Examples of this are :

- Changes to the DSE892 *Username* or *Security Code*
- Changes to the *IP Setup or SNMP Setup*

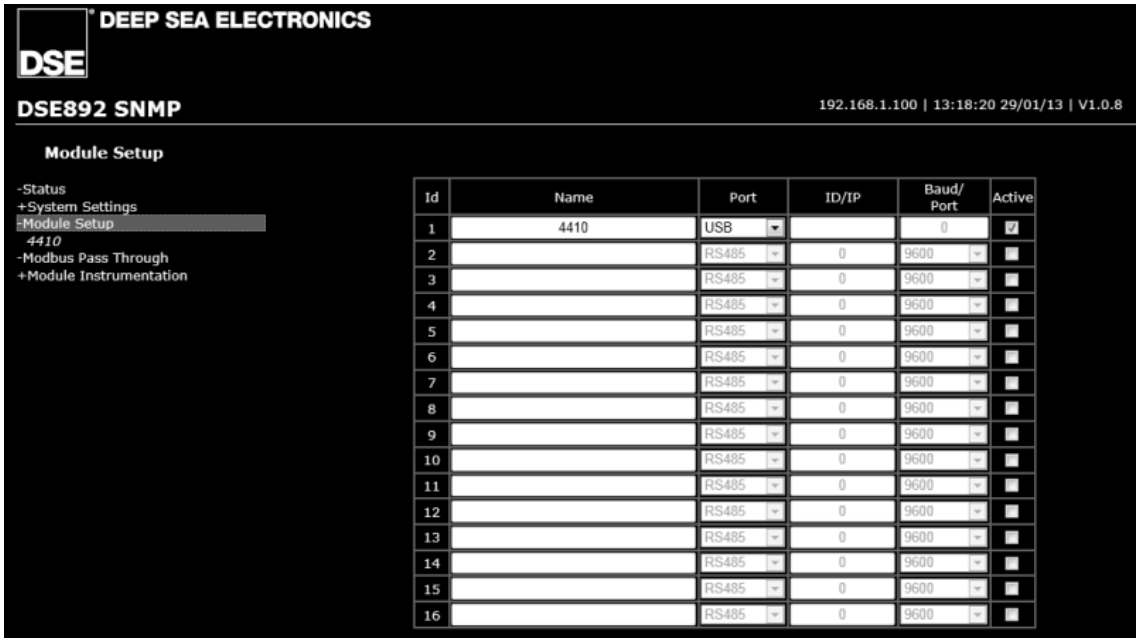
Where this is required, the message *Please Reboot to Apply Changes* appears under the navigation menu as shown to the left.
Press *Reboot Now* to restart the device.

The PC screen shows a progress bar as this process is undertaken.

6.3 MODULE SETUP

This page is used to configure the DSE892 Gateway's connections to DSE controllers.
Each connected controller has an entry in the table to configure which of the Gateway's ports are used for connection to that specific module.

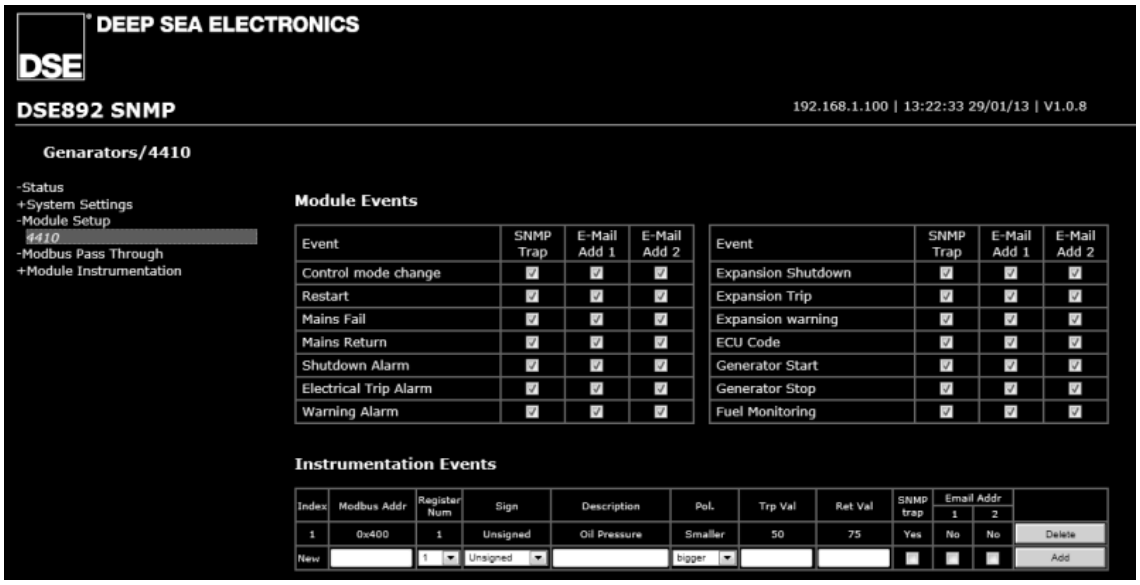
Multiple ports are able to be used at the same for complete flexibility of connection.



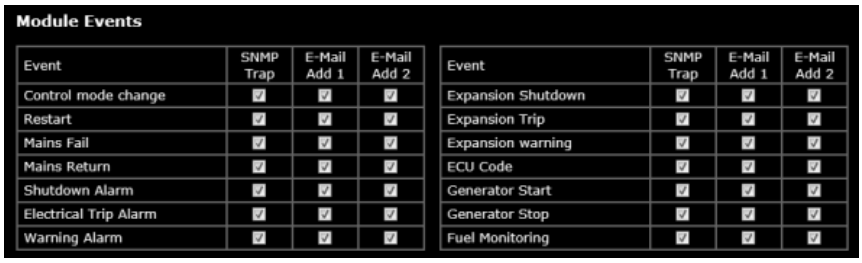
Parameter	Description
Name	Use a meaningful name for each connected controller. For example you could use the generator name. Example : Volvo TAD9 Genset2 Once entered, this name is used to create a new page to configure what the Gateway is to monitor in this application.
Port	Used to select which of the Gateway's ports are used for connection to this controller. *RS232* *RS485* *Ethernet* *USB*
ID/IP	When Port is set to *Ethernet* – IP address of the connected controller. When Port is set to *RS232/RS485* – Modbus Slave ID (Address) of the connected controller. When Port is set to *USB,* this item is not available.
Baud/Port	When Port is set to *Ethernet* – TCP port to use for Modbus (usually 502 where a single controller is connected to the Ethernet port of the Gateway) When Port is set to *RS232/RS485* – Baud rate of the selected port. When Port is set to *USB,* this item is not available.
Active	Allows the user to activate or deactivate a connection. Ensure any unused entries in the table are de-activate. Additionally any controllers no longer communicating with the Gateway must be de-activated for correct operation of the remaining connections. ☑ = Connection is active. ☐ = Connection is disabled.

6.3.1 MODULE PAGE

Each connection configured on the *Modbus Passthrough* page has it's own configuration page as detailed below. The *Name* of the connection is used to give a meaningful name to the *Module Configuration Page*.



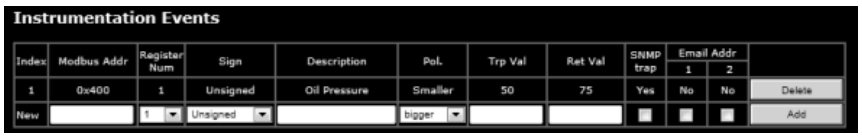
6.3.1.1 MONITORING EVENTS



Parameter	Description
Event	For details of supported Events in your connected controller you are referred to the relevant DSE Configuration Suite PC Software Manual.
SNMP Trap	☐ = This event will not generate an SNMP trap. ☑ = Where supported by the connected controller's event log, the Gateway generates an SNMP TRAP message upon activation of this event.
E-Mail Add 1 E-Mail Add 2	☐ = This event will not be sent to the email address. ☑ = Where supported by the connected controller's event log, the Gateway sends an email to the specified address(es) upon activation of this event.

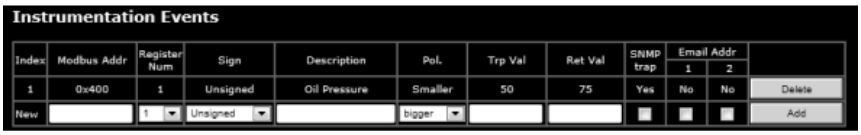
6.3.1.2 MONITORING INSTRUMENTATION

This section allows the monitoring of instrumentation values within the connected controller. When the values meet the configured condition, an action is made by the Gateway.



Parameter	Description
Modbus Addr	The modbus address of the register (instrument) being monitored. For details of available registers you are referred to the DSE Gencomm Document, available upon request from support@deepseaplc.com. The specified registered is read using Modbus Function Code 3 (Read Multiple Holding Registers).
Register Num	Number of Registers that make up the value being read. This information is obtained from the Gencomm Document. **1** = When the value to be read is a 16 bit value. **2** = When the value to be read is a 32 bit value.
Sign	Select whether the value being read is *Signed* or *Unsigned.* This information is obtained from the Gencomm Document.
Description	Give the value a meaningful name. For example this could be the name of the instrument in the connected controller (ie Oil Pressure)
Pol. Trip Val Ret Val	When Pol. Is set to : **Bigger** = When the value rises past the Trip Val setting, the configured actions are taken. The Value must fall below the Ret Val setting before the condition is considered to be back to normal. **Smaller** = When the value falls below the Trip Val setting, the configured actions are taken. The Value must rise above the Ret Val setting before the condition is considered to be back to normal.
SNMP Trap	☐ = This event is not monitored by the Gateway device. ☑ = Where supported by the connected controller's event log, the Gateway generates an SNMP TRAP message upon activation of this event.
E-Mail Add 1 E-Mail Add 2	☐ = This event is not monitored by the Gateway device. ☑ = Where supported by the connected controller's event log, the Gateway sends an email to the specified address(es) upon activation of this event.
Delete	Deletes this entry from the table of monitored addresses.
Add	Adds a new entry to the table of monitored addresses.

Example



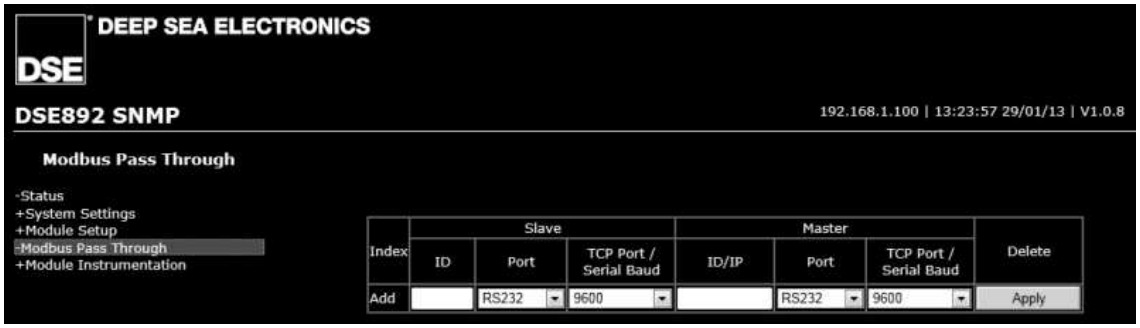
Modbus address 0x0400, a value consisting of a single 16 bit unsigned register is monitored.
This has been given a description of "Oil Pressure".
When the value rises past the *Trip Val* setting,of *50* an SNMP trap is generated, but no emails are sent. The Value must fall below the *Ret Val* setting of *75* before the condition is considered to be back to normal.

6.4 MODBUS

NOTE: This section is only used when setting up the DSEGateway® to operate as a communications protocol convertor. This section should be left with no entries if using the DSEGateway® purely as an SNMP or email notification system.

This page is used to configure the DSEGateway® as a Modbus Gateway to allow conversion across the various ports.

It can be used for example to set *USB* as a modbus master to connect to any DSE controller fitted with a USB port and supporting the DSE Configuration Suite SCADA function.



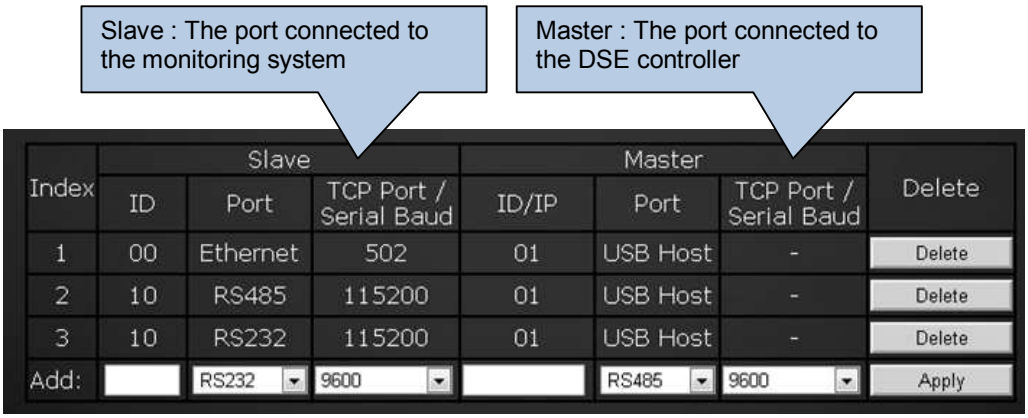
SLAVE (Settings of the DSEGateway®port this is connected to the monitoring device)

Parameter	Description
ID	Modbus slave address of the selected DSEGateway® port
Port	The incoming port of the DSEGateway® *RS232* *RS485* *Ethernet* USB
TCP Port/Serial Baud	When Port is set to *Ethernet* – TCP port to use for Modbus (usually 502) When Port is set to *RS232/RS485* – Baud rate of the selected port.

MASTER (Settings of the DSEGateway® port that is used to connect to the DSE controller)

Parameter	Description
ID	Modbus slave address of the connected DSE controller
Port	The outgoing port of the DSEGateway® *RS232* *RS485* *Ethernet* *USB*
TCP Port/Serial Baud	When Port is set to *Ethernet* – TCP port to use for Modbus (usually 502) When Port is set to *RS232/RS485* – Baud rate of the selected controller.

6.4.1 EXAMPLE OF MODBUS GATEWAY SETTINGS.



Index 1 is receiving modbus requests from the external monitoring system on Ethernet, TCP Port 502. This is being transferred to the DSE controller via the USB Host port on the DSEGateway®

Index 2 is receiving modbus requests from the external monitoring system on RS485, baud rate 11500, slave ID 10.
This is being transferred to the DSE controller via the USB Host port on the DSEGateway®

Index 3 is receiving modbus requests from the external monitoring system on RS232, baud rate 11500, slave ID 10.
This is being transferred to the DSE controller via the USB Host port on the DSEGateway®

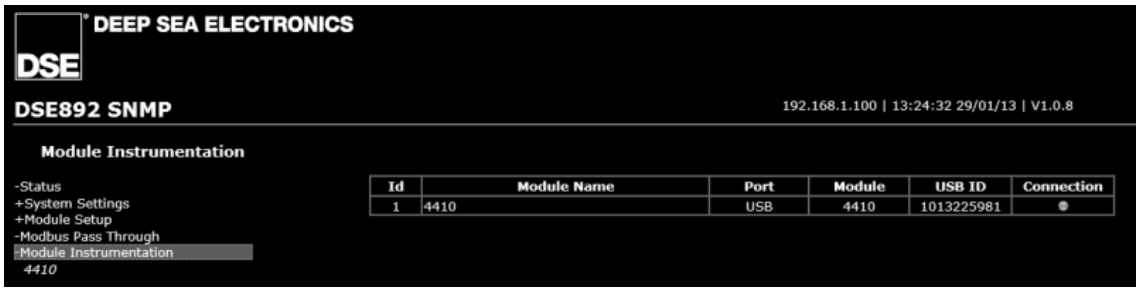
NOTE: RS485 is a single master system. This means that you must only create one entry for RS485 in the Slave column. Each entry in the Master column must communicate with controllers with unique Slave Id's.

NOTE: RS232 is a single master, single slave system. This means that you must only create one entry for the RS232 in the Master and Slave columns.

NOTE: Where multiple Ethernet connections are configured, each must utilise a unique port number.

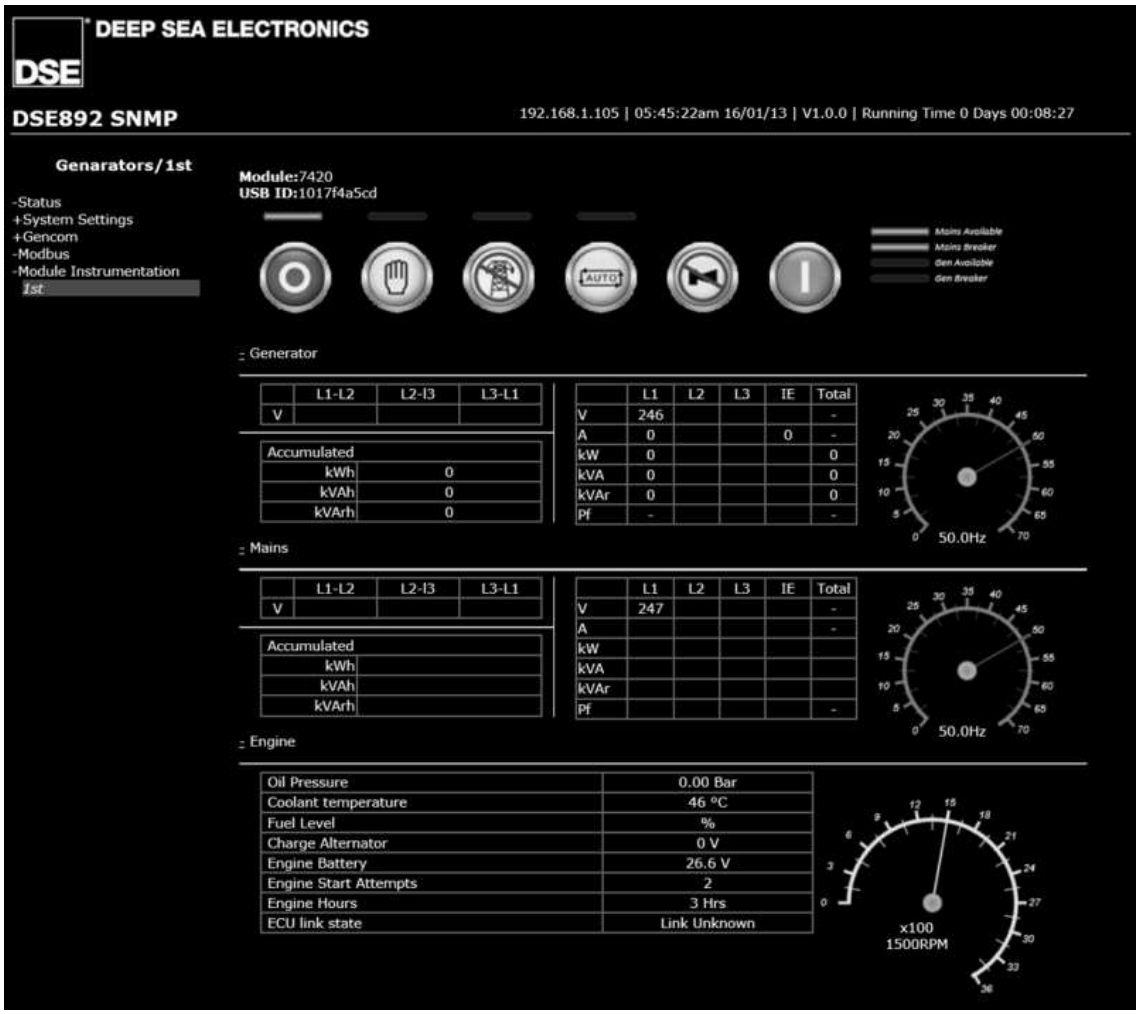
6.5 MODULE INSTRUMENTATION

Give status of the configured connections.
Each connection also has a detailed instrumentation page (shown overleaf). The name of each page is taken from the name of the connection in the Modbus Passthrough page.



6.5.1 DETAILED INSTRUMENTATION

NOTE: Only functions supported by the connected controller is shown. For a list of instrumentation and control mode buttons, you are reffered to the relevant controller's Operator Manual available from www.deepseaplc.com



7 FAULT DIAGNOSIS

Nature of Problem	Suggestion
Factory settings	IP Address : 192.168.1.100 Web Management Pages Port : 80 Username : Admin (case sensitive) Password : Password1234 (case sensitive)
I've forgotton my password and/or IP address	Press and hold the reset pushbutton. All LEDs illuminate yellow, then cycle and finally illuminate yellow again. Now release the button. The Gateway is now set back to factory settings.
Management pages cannot be accessed via remote connection	The factory set LAN IP address is 192.168.100. Management pages are accessible via web browser on port 80. Check router and firewall settings are configured correctly to match this information. Remember that accessing the DSE892 remotely from the WAN (Ethernet) will require you to enter the IP address of the broadband router into the PC browser. For easier trouble shooting, connect the DSE892 directly to a PC Ethernet port.
Management pages cannot be accessed via direct connection to PC	Check network connections. Check network settings. Ensure PC is on the same subnet as the DSE892. Default IP address of the Gateway is 192.168.1.100 – Set your PC to 192.168.1.99 then enter http://192.168.1.100 into your browser.
Communication port LEDs are flashing GREEN	This is normal. The ports flash green when data is successfully received from the connected controller.
Port LEDs illuminate RED for a few seconds at power up of the DSE892.	During the startup sequence, the status LED illuminate RED. This is normal and if port setup and connections are correct, change to GREEN once communication is underway.
Multiple LEDs remain RED	This means that at least one of the configured communications ports is not receiving data from the connected controller. Check all configured connections as for LED1, LED2 and LED3 detailed below.
LED1 – RS232 LED remains RED	This means RS232 communications is not successful. Check baud rate and slave ID settings of the DSE892 and connected controller. Check RS232 wiring is *Null Modem (crossover)* type. Max length of RS232 cable is 15m.
LED2 – RS485 LED remains RED	This means RS485 communications is not successful. Check baud rate and slave ID settings of the DSE892 and all connected controllers. Check RS485 cable is the correct type (recommended Belden 9841) with termination resistors correctly fitted at each end of the cable. Max length of RS485 cable is 1.2km where correct cable and termination resistors are fitted.

Nature of Problem	Suggestion
LED3 – USB LED remains RED	This means USB communications is not successful. Check settings of the DSE892. Check USB cable is USB A to USB B type cable. Maximum length of USB cable is 6 m unless third party powered USB extender is used.
LED4 - LINK LED remains OFF	LINK LED only illuminates during *Factory Reset* and firmware update procedure. At all other times, the LED will remain OFF.
SNMP Traps are not being received by the SNMP Manager	Check that any firewall between the DSE892 and the SNMP Manager is configured to allow through the traffic on the selected SNMP port.

8 MAINTENANCE, SPARES, REPAIR AND SERVICING

The module is designed to be *Fit and Forget*. As such, there are no user serviceable parts. In the case of malfunction you should contact your original equipment supplier (OEM).

If you require additional plugs from DSE, please contact our Sales department using the part numbers below.

Module Terminal Designation	Description	Part No.
1-6 	6 way 5.08mm	007-446
A B SCR	3 way 5.08mm	007-174

If you require antennae or USB cables, please contact our Sales department using the part numbers below.

Connection	Description	Part No.
USB	USB A to USB B (DSE892 to host controller)	016-125

8.1 WARRANTY

DSE provides limited warranty to the equipment purchaser at the point of sale. For full details of any applicable warranty, you are referred to your original equipment supplier (OEM).

8.2 DISPOSAL

8.2.1 WEEE (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT)

Directive 2002/96/EC
If you use electrical and electronic equipment you must store, collect, treat, recycle and dispose of WEEE separately from your other waste.

8.3 ROHS (RESTRICTION OF HAZARDOUS SUBSTANCES)

Directive 2002/95/EC:2006
To remove specified hazardous substances (Lead, Mercury, Hexavalent Chromium, Cadmium, PBB & PBDE´s)

Exemption Note: Category 9. (Monitoring & Control Instruments) as defined in Annex 1B of the WEEE directive will be exempt from the RoHS legislation. This was confirmed in the August 2005 UK´s Department of Trade and Industry RoHS REGULATIONS Guide (Para 11).

Despite this exemption DSE has been carefully removing all non RoHS compliant components from our supply chain and products.
When this is completed a Lead Free & RoHS compatible manufacturing process will be phased into DSE production.

This is a process that is almost complete and is being phased through different product groups.

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