

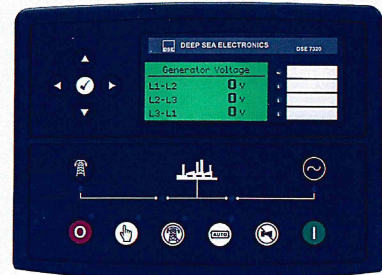
# Compatibility Declaration

Technoton confirm:

CANUp Genset  
telematics gateway

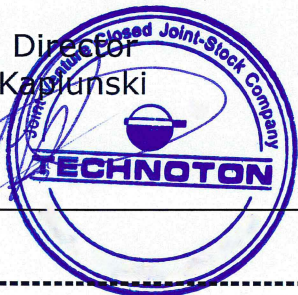
and

Deep Sea Electronics  
DSE 7320 MKII  
controller

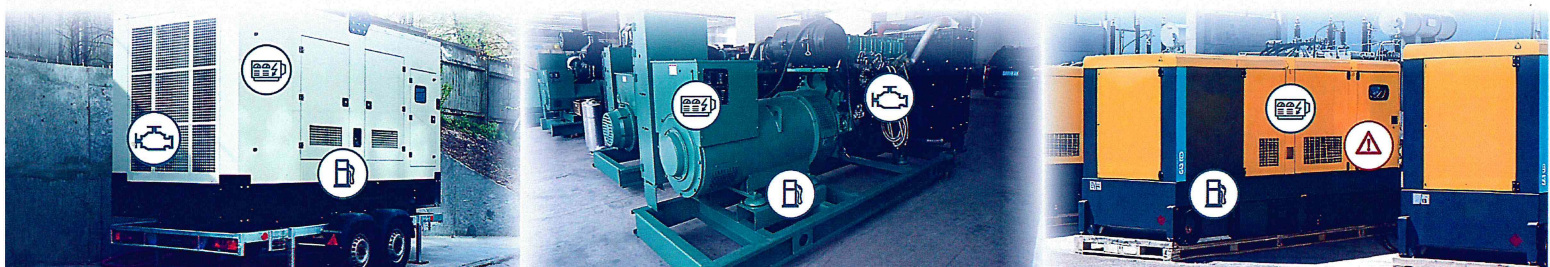


are compatible on the electrical characteristics and RS-485 data communication interface.

Technoton, Director  
Alexander Kaplunski



Based on test result report.  
Recommendations on connection and configuration - see Annex.



# Connection and Configuration Guidelines for DEEP SEA ELECTRONICS DSE 7320 MKII, CANUp27 Genset 2G and UNUM cloud software

Before starting, please read CANUp telematics gateway operation manual (available for download from the Technoton Document Center <https://docs.jv-technoton.com/eng/document-center/>).

Service CANUp software can be downloaded from: <https://jv-technoton.com/software-firmware/>

## 1. CANUp27 Genset 485 electrical connection steps:

- 1.1. Connect pin 2 (485B) of CANUp27 GS to pin 57 (485B) of Deep Sea;
- 1.2. Connect pin 6 (485A) of CANUp27 GS to pin 58 (485A) of Deep Sea;
- 1.3. Connect the brown wire (ground) of CANUp27 GS to the (-) terminal of the power supply;
- 1.4. Connect the orange wire (power) of CANUp27 GS to the (+) terminal of the power supply.

## 2. Connection diagram.

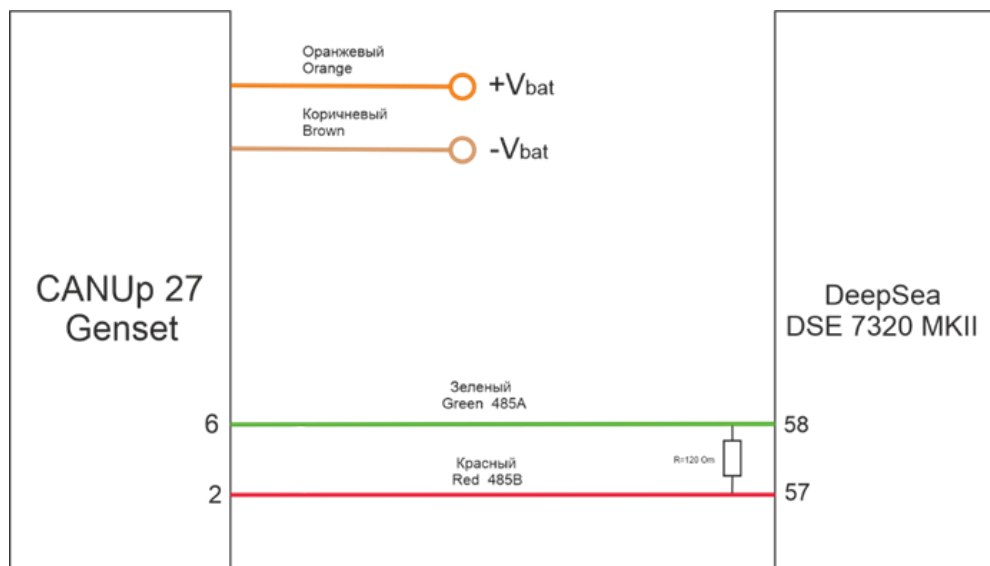


Figure 1. Connection diagram A

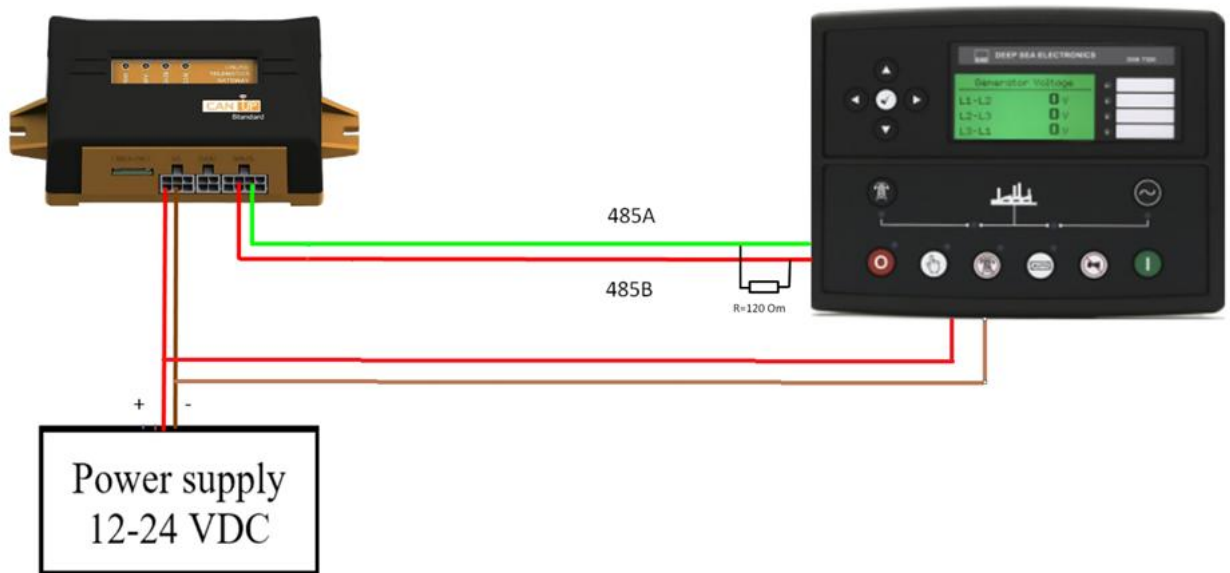


Figure 2. Connection diagram B

### 3. Equipment configuration.

#### 3.1. Configuring Deep Sea DSE 7320 MKII.

- Connect the controller to the Deep Sea Configurator Suite for configuration as shown in Figures 3-4.
- Set Port Usage to Gencomm.
- Set the device address to 10 and Baud rate to 115200.
- Save the settings.

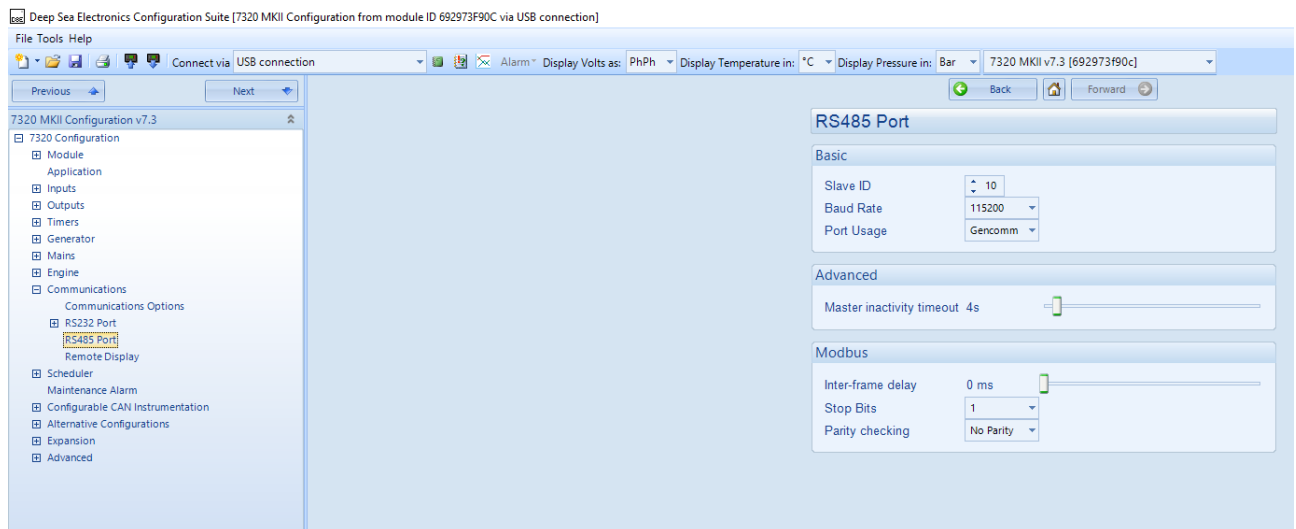


Figure 3. Configuring RS485 port in Deep Sea Configurator Suite

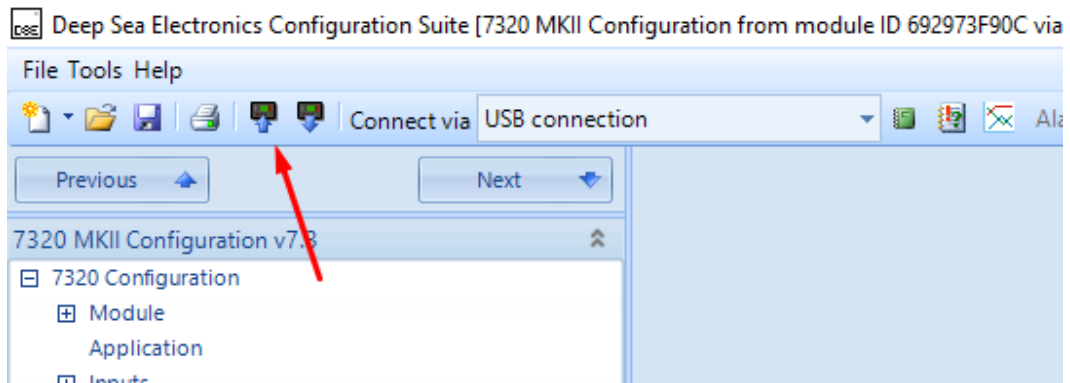


Figure 4. Saving the settings in Deep Sea Configurator Suite

### 3.2. Configuring the CANUp27 Genset 2G telematics gateway.

Configure the GPRS settings and AVL server data as shown in Figure 5 (copy the data from the server shown in Figure 12):

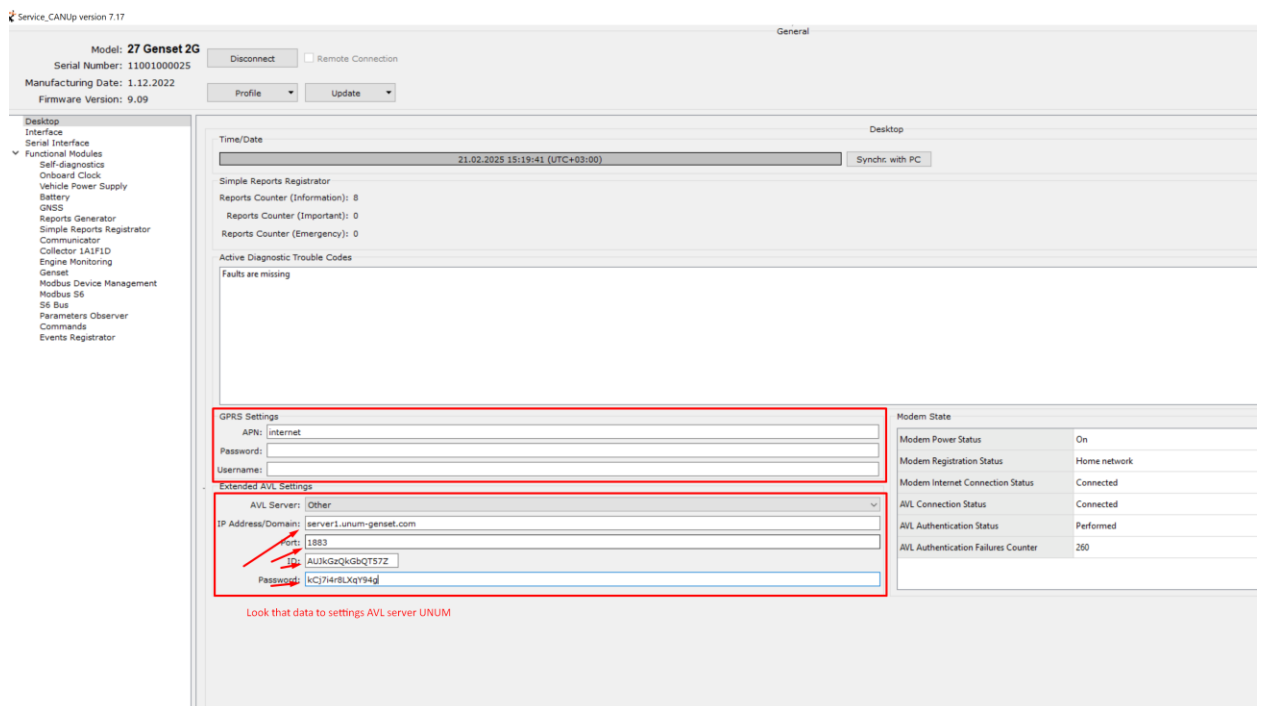


Figure 5. Configuring GPRS settings and AVL server data ("Extended AVL settings" menu) in CANUp

Set the CANUp27 address in the 485 bus to be different from the Deep Sea controller address. The Baud rate must match the Deep Sea settings as shown in Figure 6:

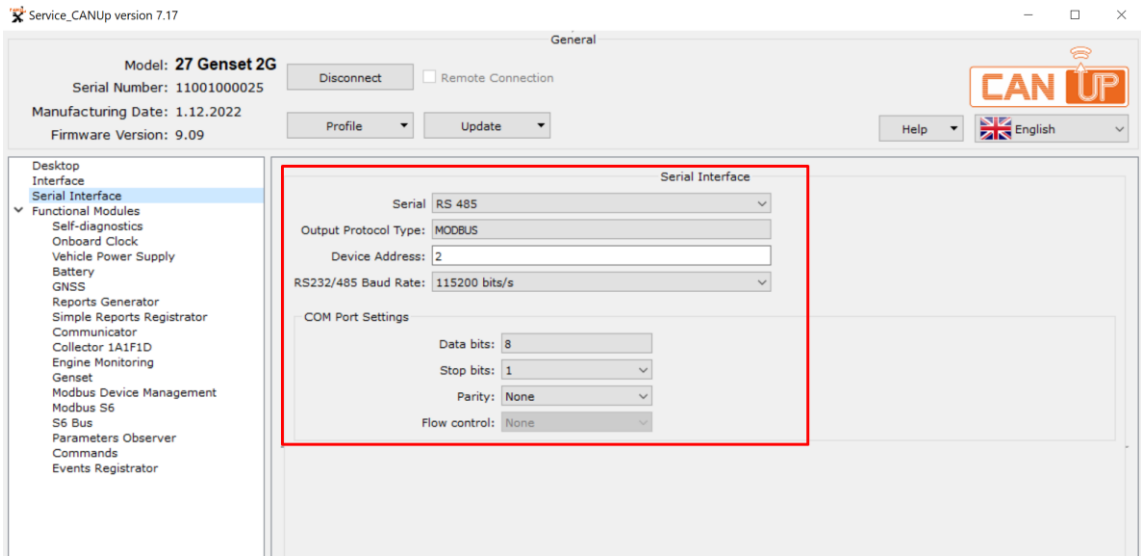


Figure 6. Setting CANUp address and baud rate in RS 485 bus in CANUp Service software.

Controller data transmission configuration is done in the Modbus S6 tab as shown in Figure 7.

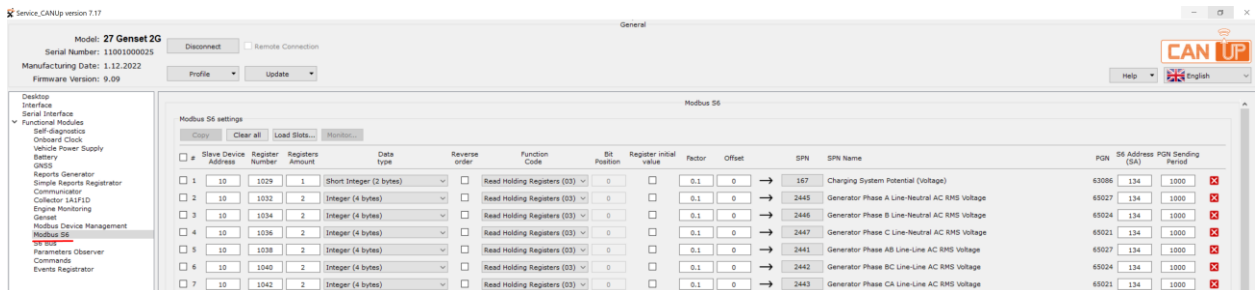


Figure 7. Modbus S6 tab in CANUp Service software

To transmit data to the server, configure the following parameters according to the Deep Sea register table (left) and the S6 Technoton database (right) as shown in Figure 8.

For selecting registers in Deep Sea, use the following approach:

**The controller's register array is divided into 256 pages, each containing up to 256 registers. The actual register address is calculated using the formula:**  

$$\text{register\_address} = \text{page\_number} * 256 + \text{register\_offset}.$$

#	Slave Device Address	Register Number	Registers Amount	Data type	Reverse order	Function Code	Bit Position	Register initial value	Factor	Offset	SPN	SPN Name	S6 Address (SA)	PGN	S6 Address Banding Period
1	10	1029	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	157	Charging System Potential (Voltage)	63086	134	1000
2	10	1032	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2445	Generator Phase A Line-Neutral AC RMS Voltage	65027	134	1000
3	10	1034	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2446	Generator Phase B Line-Neutral AC RMS Voltage	65024	134	1000
4	10	1036	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2447	Generator Phase C Line-Neutral AC RMS Voltage	65021	134	1000
5	10	1038	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2441	Generator Phase AB Line-Line AC RMS Voltage	65027	134	1000
6	10	1040	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2442	Generator Phase BC Line-Line AC RMS Voltage	65024	134	1000
7	10	1042	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2443	Generator Phase CA Line-Line AC RMS Voltage	65021	134	1000
8	10	1044	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2449	Generator Phase A AC RMS Current	65027	134	1000
9	10	1046	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2450	Generator Phase B AC RMS Current	65024	134	1000
10	10	1048	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2451	Generator Phase C AC RMS Current	65021	134	1000
11	10	1031	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2436	Generator Average AC Frequency	65030	134	1000
12	10	1544	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2460	Generator Total Apparent Power	65029	134	1000
13	10	1536	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2452	Generator Total Real Power	65029	134	1000
14	10	1552	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2456	Generator Total Reactive Power	65028	134	1000
15	10	1052	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2453	Generator Phase A Real Power	65026	134	1000
16	10	1054	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2454	Generator Phase B Real Power	65023	134	1000
17	10	1056	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2455	Generator Phase C Real Power	65020	134	1000
18	10	1030	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	589	Alternator Speed	65237	134	1000
19	10	1554	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.01	0	2465	Generator Phase A Power Factor	65025	134	1000
20	10	1555	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.01	0	2466	Generator Phase B Power Factor	65022	134	1000
21	10	1556	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.01	0	2467	Generator Phase C Power Factor	65019	134	1000
22	10	1557	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.01	0	2464	Generator Overall Power Factor	65028	134	1000
23	10	1666	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2448	Generator Average AC RMS Current	65030	134	1000
24	10	1546	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2457	Generator Phase A Reactive Power	65025	134	1000
25	10	1548	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2458	Generator Phase B Reactive Power	65022	134	1000
26	10	1550	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2459	Generator Phase C Reactive Power	65019	134	1000
27	10	1538	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2461	Generator Phase A Apparent Power	65026	134	1000
28	10	1540	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2462	Generator Phase B Apparent Power	65023	134	1000
29	10	1542	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	2463	Generator Phase C Apparent Power	65020	134	1000
30	10	1800	2	Integer (4 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	2468	Generator Total kW Hours Export	65018	134	1000
31	10	1558	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	0.1	0	3590	Generator Total Percent kW	64911	134	1000
32	10	48648	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521839	Stop LED	63591	134	1000
33	10	48649	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521840	Manual LED	63591	134	1000
34	10	48650	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521841	Test LED	63591	134	1000
35	10	48651	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521842	Auto LED	63591	134	1000
36	10	48652	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521843	Mains LED	63591	134	1000
37	10	48653	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521844	Mains Breaker LED	63591	134	1000
38	10	48654	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521845	Gen Breaker LED	63591	134	1000
39	10	48655	1	Short Integer (2 bytes)	<input type="checkbox"/>	Read Holding Registers (03)	0	0	1	0	521846	Gen LED	63591	134	1000

Figure 8. Parameter configuration, Deep Sea register table (left) and the S6 database (right)

### 3.3. Configure CANUp reports for sending to the cloud.

Add SPNs from the Modbus S6 tab to the Reports Generator for transmission to the UNUM server as shown in Figure 9.

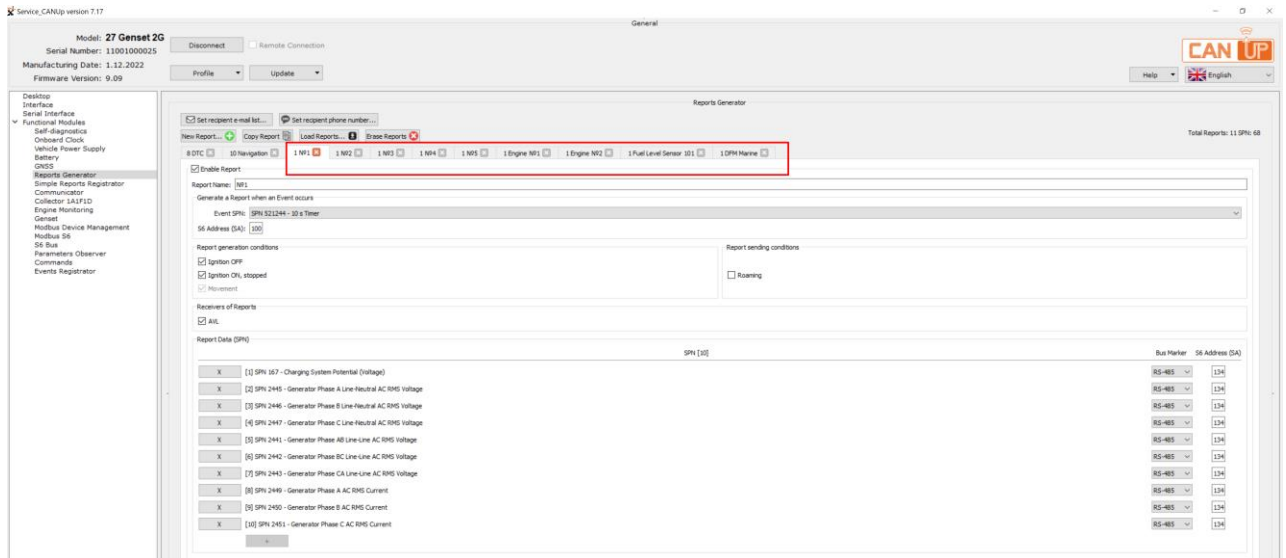


Figure 9. Adding SPNs to the Reports

Save the settings to CANUp.

Service\_CANUp version 7.17

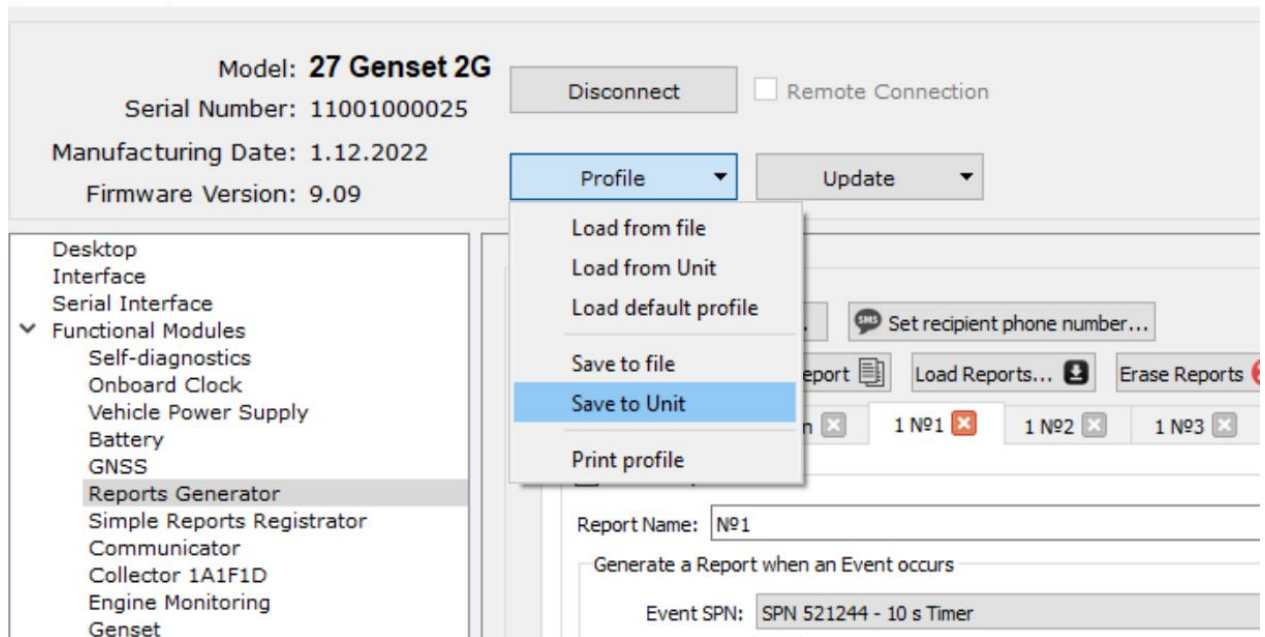


Figure 10. Saving the settings to CANUp

### 3.4. Configuring UNUM cloud software

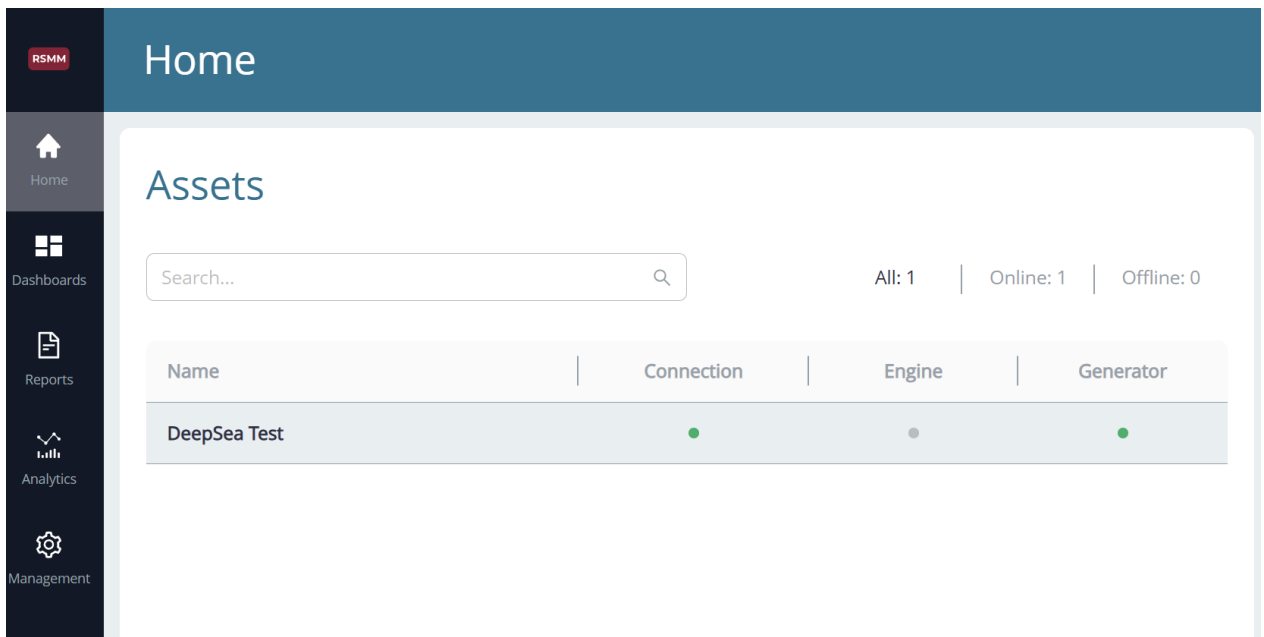


Figure 11. "DeepSea test" asset in UNUM cloud software

Register CANUp27 Genset in the UNUM cloud as shown in Figure 12. Transfer the identification data from the UNUM cloud to the Extended AVL settings menu (Figure 5) of CANUp telematics gateway.

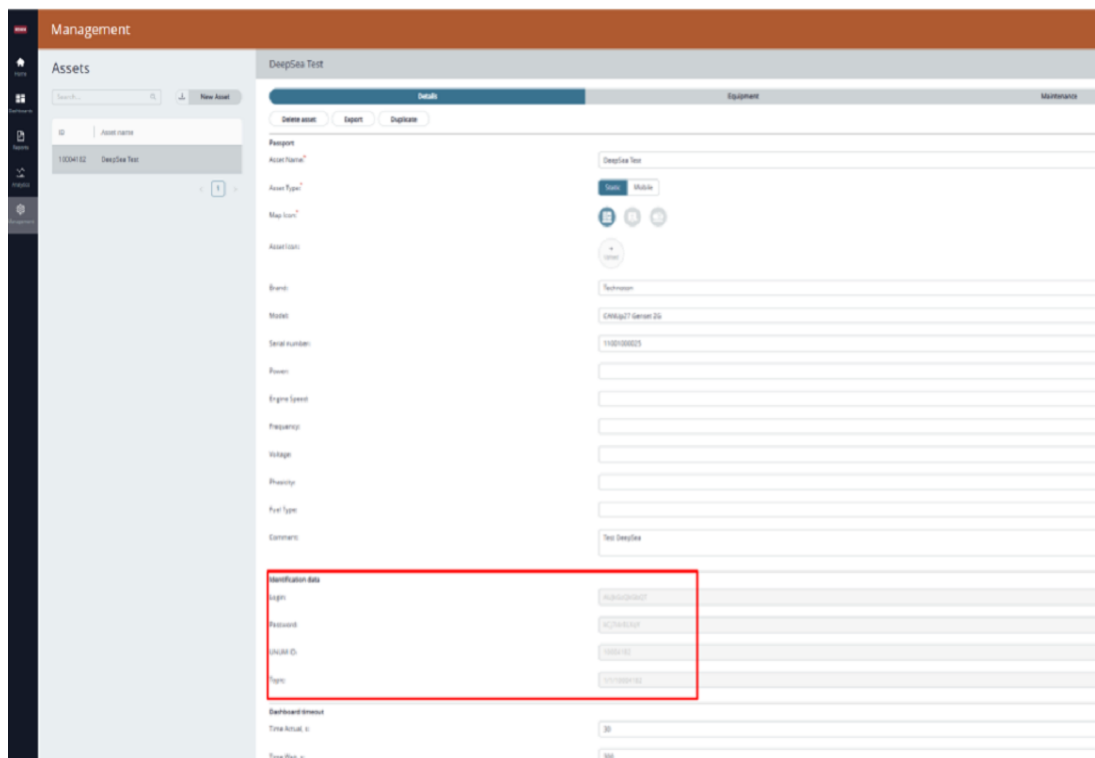


Figure 12. Registering CANUp in UNUM cloud software

Configure dashboards and verify remote control as shown in Figures 13-14.

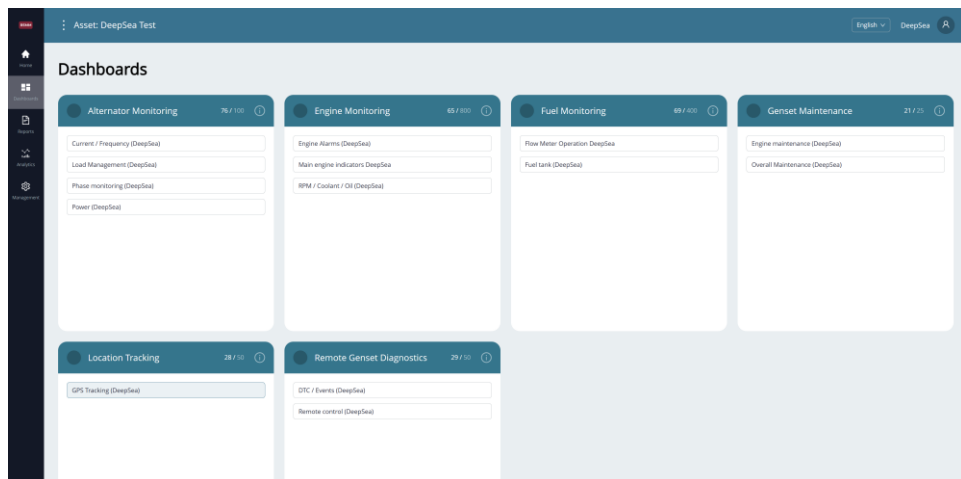


Figure 13. Dashboards in UNUM cloud software

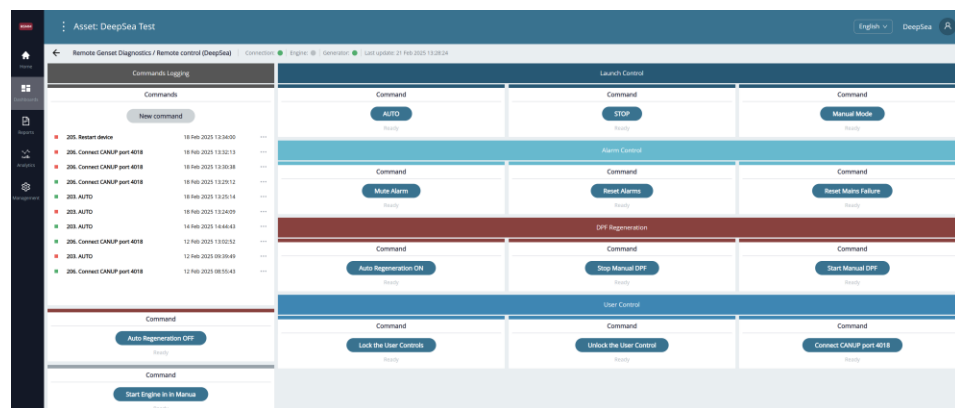


Figure 14. Remote control features in UNUM cloud software

Remote control command format as shown in Figure 15

The screenshot shows a web interface titled "Add / Edit widget" with a close button in the top right corner. The main area is divided into two sections. On the left is a preview of the "Command" widget, which is a white box with a blue "AUTO" button and the word "Ready" below it. On the right is the configuration panel. It includes a "Link to zone" dropdown menu set to "Launch Control", a "Select command" dropdown menu set to "203. Write to Modbus Register", and a "Command name" text input field containing "AUTO". Below these is a section titled "Enter the necessary data" with several input fields: "SA" (195), "DA" (100), "LT" (60), "521683 Register Number" (4104), "521684 Registers Amount" (2), "524008 Modbus Register. High Word" (35701), and "524009 Modbus Register. Low Word" (29834). An "Update" button is located in the top right of the configuration panel.

Figure 15. Remote control command widget

Remote control of the DSE controller via CANUp can be implemented through SMS. Example of SMS for **AUTO** mode shown in Figure 16:

The screenshot shows a blue rounded rectangular box containing an SMS message. The message text is: "+B1111;100;W16;5;10-4104,2,35701,2983 4/++".

Figure 16. SMS format for sending AUTO command

Upon successful command execution, you will receive confirmation as shown in Figure 17:

The screenshot shows a light gray rounded rectangular box containing an SMS confirmation message. The message text is: "Command (W16) executed successfully".

Figure 17. Confirmation SMS upon executing command

List of the commands in the controller documentation as shown in Figure 18

- **SYSTEM CONTROL KEYS**

Not all functions are supported by all modules. The Gencomm protocol includes a method of reading the list of supported functions from the connected controller. This is detailed in the full Gencomm Protocol Document, available from [support@deepseapl.com](mailto:support@deepseapl.com) upon request.

Function code	System control function	System control key (decimal)	Ones compliment of control key (65535-control key)
0	Select Stop mode	35700	29835
1	Select Auto mode	35701	29834
2	Select Manual mode	35702	29833
3	Select Test on load mode	35703	29832
4	Select Auto with manual restore mode	35704	29831
5	Start engine if in manual or test modes	35705	29830
6	Mute alarm	35706	29829
7	Reset alarms	35707	29828
8	Transfer to generator	35708	29827
9	Transfer to mains	35709	29826
10	Reset mains failure	35710	29825
11	Close Bus (Bus Tie Controller)	35711	29824
12	Open Bus (Bus Tie Controller)	35712	29823
13	Toggle Bus Open/Closed (Bus Tie Controller)	35713	29822
14	Scroll through mode selections (mode button on 330/331/334/335)	35714	29821
15	Enable selected mode (scroll button on 330/331/334/335)	35715	29820
16-31	Reserved		

Figure 18. DSE list of commands

To send a different command, replace two values from the controller table as shown:

```
+
+B1111;100;W16;5;10-4104,2 35701,2983
4/++
```

Figure 19. Values to be replaced for sending different SMS command

If configuration is correct, the data will be displayed in UNUM cloud software as follows:

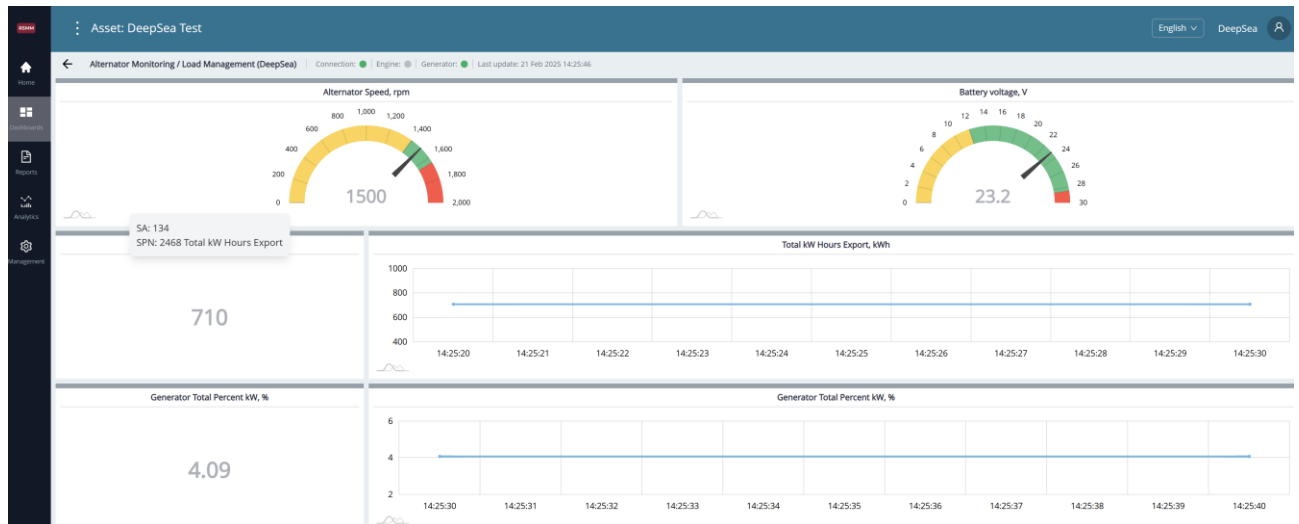


Figure 20. Data display example

**Configuration is successfully finished.**

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT TECHNTON

<https://www.jv-technoton.com/contacts>