OBSERVATOR
instruments

OMC-140 Multifunctional NMEA display

Supplement SD logging and load / Discharge Manual

Version 1.10s 2017

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Revisions:

1.10s (March 2017)	First issue	Supplement

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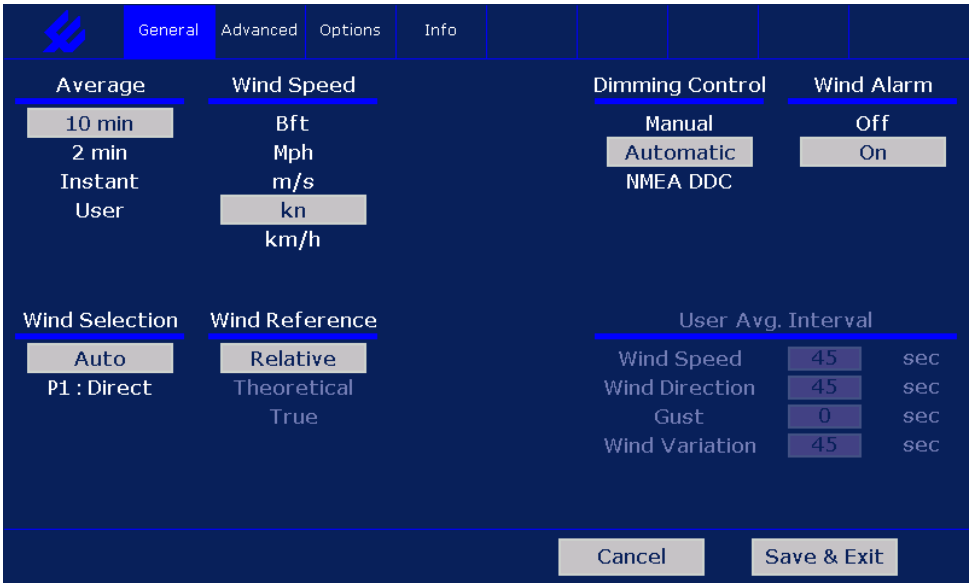
1 Introduction

This supplement contains information concerning the latest additions (firmware 001.000B023) specific for the OMC-140 replacement of the OMC-146 load / discharge wind display.
These changes will be included in the next edition of the standard OMC-140 manuals.
Use this as supplement in addition to the standard manual.

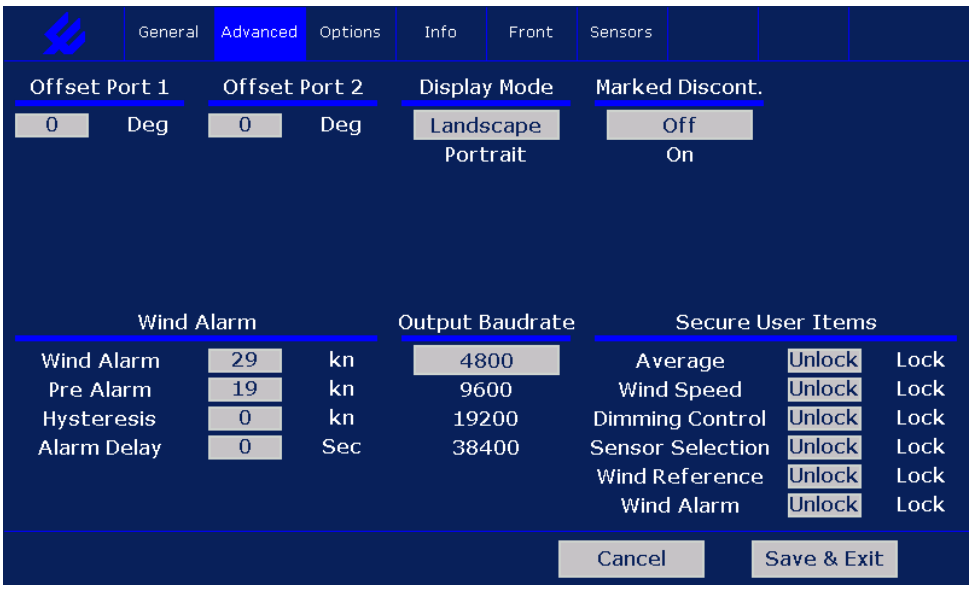
2 Wind Speed Alarm function

2.1 Configuration via Touch screen

- The Wind Alarm On/Off selection has been moved to the General tab.
  This enables the operator to switch easily between sailing and load-discharge mode.

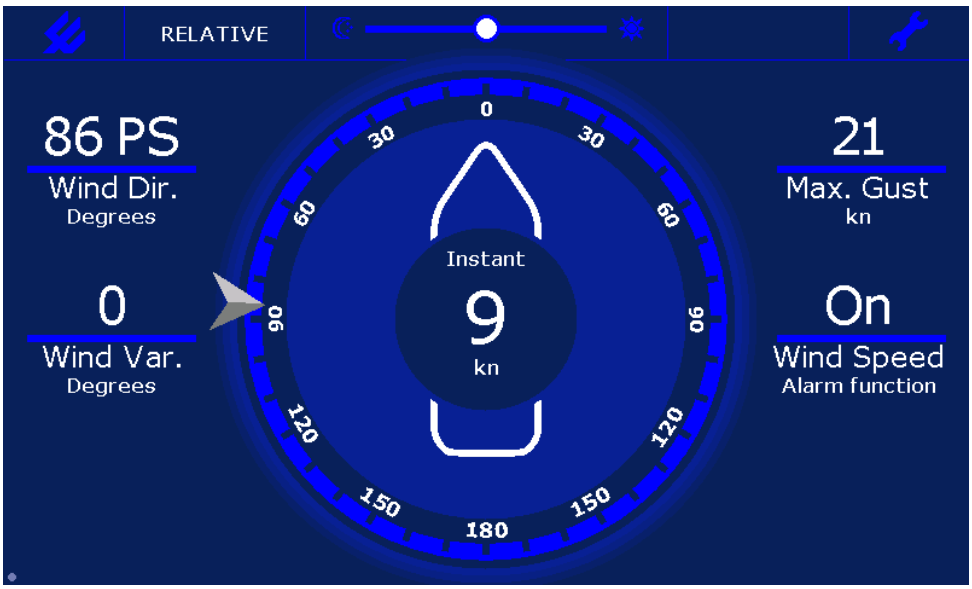


- Settings of the Alarm levels is still done in the Advanced tab:



- The Wind Speed Alarm button can be ‘locked ‘. When locked, the operator won’t be able to change the status in the General tab.

- In the Front tab a ‘Wind Speed Alarm function’ can be selected to indicate on the main screen the status of the Wind Alarm Speed function.



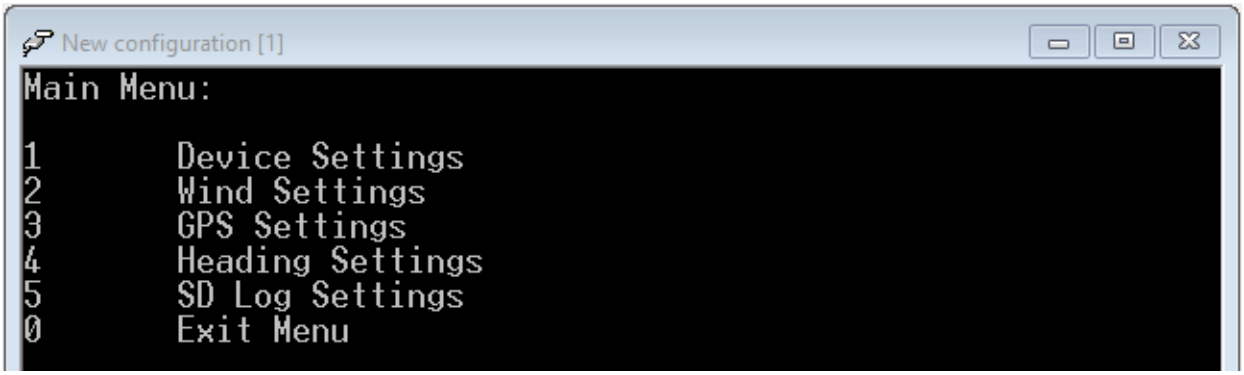
3 Data log function

3.1 Introduction

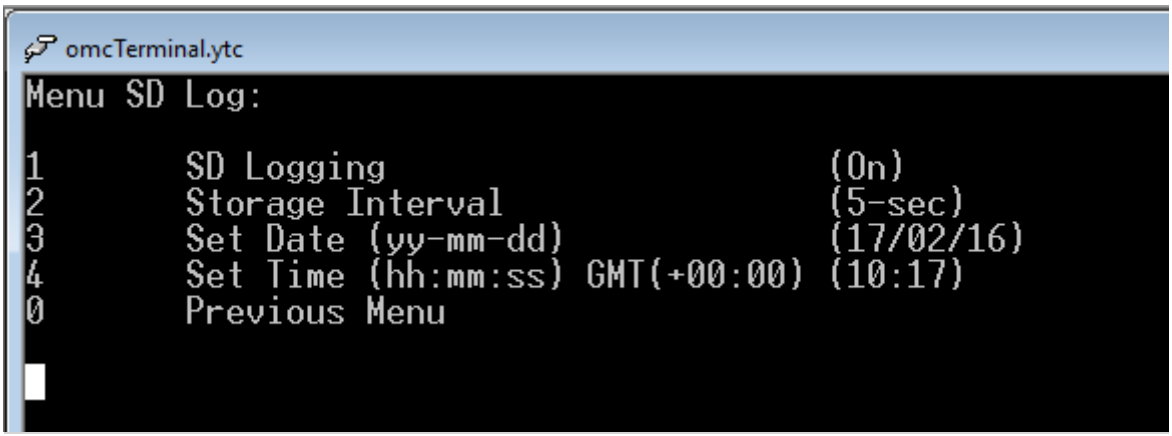
In firmware version 1.00B22 the data log function is included. From this version and up all relevant data can be logged on a Micro SD card and will be stored per day in .txt files.
The format is compatible with the Observator data loggers and can be read by OMC-Data-Online or imported in for example Microsoft Excel.

3.2 Data log function settings

The data log function can be enabled using the USB menu, for USB menu connection details see OMC-140 installation manual.



All log related functions are in the menu **5 SD Log Settings.**



1. SD logging — *On* or *Off*
2. Storage interval — 10 minute, 2 minute or 5 second interval
3. Set Date — Option to correct the date
   Format: =yy/mm/dd (the '=' must be included!)
4. Set Time GMT — Option to correct the time:
   Format: =hh:mm:ss (the '=' must be included!)
   * GPS message at noon (if available)

* Once SD logging is selected *On* GGA message is available; time will be daily synchronized with the UTC time. Since date is not in the GGA message this will not be synchronized like the time!

3.3 Storage

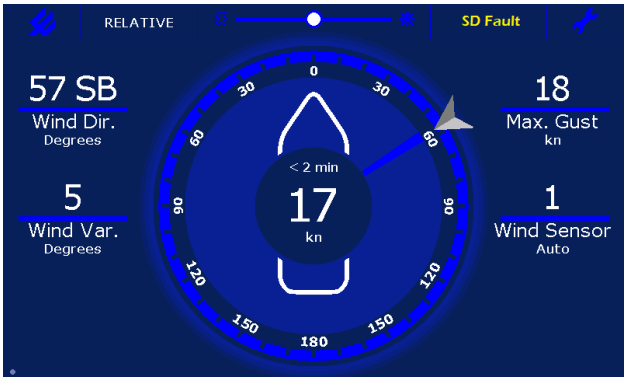
Once an SD card is inserted and the SD logging function is set *On* in the USB menu, data will be logged. All relevant NMEA received data will be stored, see paragraph 3.6 Parameters for more details.

The storage interval can be selected in the USB menu only (changing interval on touch screen doesn't change SD settings).
The wind data is the average, minimum and maximum over interval set in the USB-menu unless an alarm is active.
When an alarm is active the storage interval will be set to 5s. When the alarm is resolved the original set interval will be used again.

All other data is the raw or actual data of the moment it is stored.

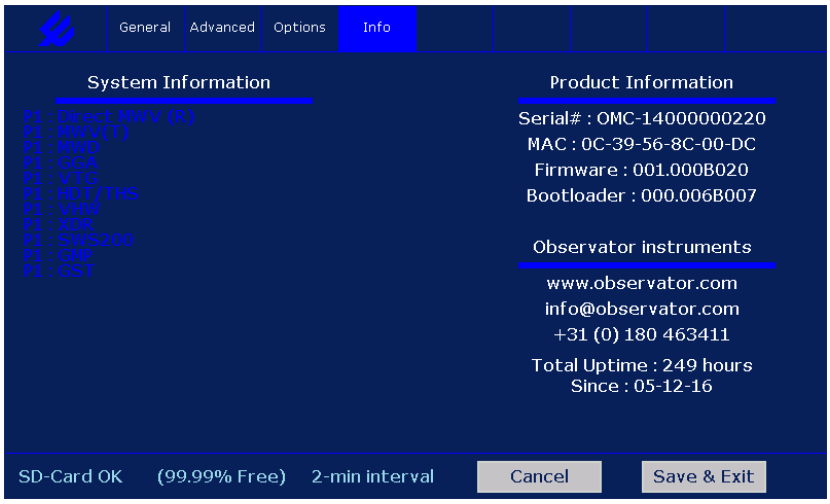
3.4 Functional information

In case the display is not able to write to the SD card, the user is notified with the following message in the main screen: 'SD fault'.



On the *info tab* page the following information is available in the bottom line:

SD card status:	SD-Card OK	
	Insert SD-Card	SD-card missing, not accessible or full Please insert or replace an SD-card
Available space	in percentage	It will take one Storage interval before the correct value is displayed (after card-insertion or power cycle).
Storage Interval	5 seconds, 2 minutes or 10 minutes.	



3.5 SD card

- **Only use the supplied SanDisk Ultra micro SD card.**
- **If you do need to replace the card, use a simular SanDisk Ultra card Not all SD cards are suitable fort he OMC-140 display! Contact Observator if in doubt.**
- **If you do need to format a SD card: use SD-formatter from the SD Association (www.SDcard.org) instead of the standard Windows format function!**

3.6 Parameters

The following parameters will be logged if they are available:

Parameter	Parameter number	Tag name	Parameter units	tag codes
Display average interval	0	AvgInterval	s	AVGi
Relative average wind speed	1	AvgWndspdR	m/s	AWvR
Relative average wind direction	2	AvgWnddirR	deg	AwdR
Relative max gust	3	GustmaxR	m/s	MxGR
Relative min Gust	4	GustminR	m/s	MmGR
Relative Wind direction variation	5	WindvarR	deg	VWdR
Theoretical average wind speed	6	AvgWndspdT	m/s	Awvt
Theoretical average wind direction	7	AvgWnddirT	deg	Awdt
Theoretical max gust	8	GustmaxT	m/s	MxGt
Theoretical min Gust	9	GustminT	m/s	MmGt
Theoretical Wind direction variation	10	WindvarT	deg	VWdt
True average wind speed	11	AvgWndspdTrue	m/s	AwvT
True average wind direction	12	AvgWnddirTrue	deg	AwdT
True max gust	13	GustmaxTrue	m/s	MxGT
True min Gust	14	GustminTrue	m/s	MmGT
True Wind direction variation	15	WindvarTrue	deg	VWdT
UTC Time	16	UTC	hhmmss	UTC
Latitude	17	GE_LATITUDE	deg	LAT
Longitude	18	GE_LONGITUDE	deg	LON
Number of satellites	19	SAT Count		SCNT
Course Over Ground	20	Cog	deg	COG
Speed Over Ground	21	Sog	kn	SOG
Heading	22	Heading	deg	HDT
Speed through water	23	Shpspeed	kn	Vshp
Air temperature	24	Temp	C	TMPa

Dewpoint	25	Dewpnt	C	TMPd
Humidity	26	Hum	%	HUM
QFE baro	27	QFE	Bar	QFE
QNH baro	28	QNH	Bar	QNH
Water temperature	29	Wtrtemp	C	TMPw
Measured Baro	30	Baro	Bar	BPrs
Display status*	31	Status		S140

*Display status:
0 No faults
1 Wind Alarm active
2 Deviation alarm active
4 Time synchronized

The numbers can be add (example: 5 = Wind alarm active and time synchronized).

3.7 Data Format

The data is stored in an identical format as used by Observator data loggers. So the data can be imported in OMC-Data Online.

Data is stored in .txt file per day.
The file starts with a header followed by data lines.
The header contains the parameter to parameter number link and other data required for OMC-Data online.

Data is stored per data line format:

D; dd/mm/yy hh:mm:ss;parameter-number;data;status……parameter-number; data;status [CR] [LF]

Example:

T;0;1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27;28;29;30;31;
Timestamp;AvgInterval;AvgWndspdR;AvgWnddirR;GustmaxR;GustminR;WindvarR;AvgWndspdT;AvgWinddirTR;GustmaxT;GustminT;WindvarT;AvgWndspdTrue;AvgWnddirTrue;GustmaxTrue;GustminTrue;WindvarTrue;UTC;GE_LATITUDE;GE_LONGITUDE;SAT_Count;Cog;Sog;Heading;Shpspeed;Temp;Dewpnt;Hum;QFE;QNH;Wtrtemp;Baro;Status;
yy/mm/dd hh:mm:ss;s;m/s;deg;m/s;m/s;deg;m/s;deg;m/s;m/s;deg;m/s;deg;m/s;m/s;deg;hhmmss;deg;
deg;;deg;kn;deg;kn;C;C;%;Bar;Bar;C;Bar;;
Time;AVGi;AWvR;AWdR;MxGR;MmGR;VWdR;Awvt;Awdt;MxGt;MmGt;VWdT;AWvT;AWdT;MxGT;MmGT;VWdT;UTC;LAT;LON;SCNT;COG;SOG;HDT;Vshp;TMPa;TMPd;HUM;QFE;QNH;TMPw;BPrs;S140;
S;Device serial number:OMC-14000000203;
D;17/02/16 15:54:02;0;600;0;1;8.5;0;2;49.9;0;3;9.7;0;3;7.2;0;5;10;0;16;155401;0;17;-240.717;0;18;01627.293;0;19;12;0;20;1.0;0;21;100.0;0;31;0;0;
D;17/02/16 15:56:02;0;600;0;1;8.5;0;2;49.9;0;3;9.7;0;3;7.2;0;5;10;0;16;155401;0;17;-240.717;0;18;01627.293;0;19;12;0;20;1.0;0;21;100.0;0;31;0;0;

4 Menu structure Touch screen

 Opens settings menu

General

Dimming Control:

- Manual
- Automatic
- NMEA DDC

Sensor selection:

- Auto
- Sensor 1
- Sensor 2

Average *(Wind only)*

- 10 minute
- 2 minute
- Instant
- User (settings from User Average Interval)

Wind Speed *(Wind only)*

- Bft
- Mph
- m/s
- kn
- km/h

Wind Reference *(Wind only)*

- Relative
- Theoretical
- True

User Average Interval *(Wind only)*

- Wind Speed
- Wind Direction
- Gust
- Wind Variation

Wind Alarm (On / Off) ***(Wind only)***

Advanced

Keypad

085	Shows Operator available codes'
0851	Terminal input 1
0852	Terminal input 2
0851234	Demo Mode
0852984	Factory reset
1382	Advanced Mode

Offset Sensor 1 *(Wind only)*

Offset Sensor 2 *(Wind only)*

Display Mode

Landscape
Portrait

Marked Discontinuity (On / Off) *(Wind only)*

Wind Alarm (settings) *(Wind only)*

Wind Alarm
Pre Alarm
Hysteresis
Alarm Delay

Output Baudrate
4800
9600
19200
38400

Secure User Items

Average	(un)lock	*(Wind only)*
Wind Speed	(un)lock	*(Wind only)*
Dimming Control	(un)lock	
Sensor Selection	(un)lock	
Wind Reference	(un)lock	*(Wind only)*
Wind Alarm	**(un)lock**	***(Wind only)***

5 Menu Structure Terminal Mode

5 SD Log settings

Menu SD Log:

1	SD Logging	(On)
2	Storage Interval	(5-sec)
3	Set Date (yy-mm-dd)	(17/02/16)
4	Set Time (hh:mm:ss) GMT(+00:00)	(11:28)
0	Previous Menu	