

3.4.3 Priority Handling of Sensor Sentence

The following table shows the priority handling of NMEA sentences. The sentences, which are treated with higher priority, are listed first.

Positioning System	Source	Priority
HIGH		
Time of Position		
Latitude/Longitude	GNS	
Position accuracy	GLL	
	GGA	
	RMC	
Rate of Turn(ROT)	ROT	
Reference Datum	DTM	
Speed over Ground	VBW	
	VTG	
	OSD	
	RMC	
Heading	HDT	
	OSD	
RAIM Indicator	GBS	
LOW		

Supported NMEA-0183 Sentences

DTM - Reference

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      1      2 3      4 5      6 7      8      9
      |      | |      | |      | |      |      |
$--DTM,ccc,a,x.x,a,x.x,a,x.x,ccc*hh<CR><LF>

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Field Numbers:

- 1) Local datum code (W84,W72,S85,P90,999-user defined, IHO datum code)
- 2) Local datum subdivision code
- 3) latitude offset, minutes
- 4) N or S (North or South)
- 5) longitude offset, minutes
- 6) E or W (East or West)
- 7) altitude offset, meters
- 8) Reference datum code ((W84,W72,S85,P90)
- 9) CRC

Used Fields: 1,8

- 1: Local datum code
- 8: Reference datum code

GGA - Positioning System Fix Data

Time, Position and fix related data form GPS receiver.

											11					
1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	

\$--GGA,hhmmss.ss,llll.ll,a,yyyy.yy,a,x,xx,x.x,x.x,M,x.x,M,x.x,xxxx*hh

Field Numbers:

- 1) UTC
- 2) Latitude
- 3) N or S (North or South)
- 4) Longitude
- 5) E or W (East or West)
- 6) GPS Quality Indicator,
0 - fix not available,
1 - GPS fix,
2 - Differential GPS fix
- 7) Number of satellites in view, 00 - 12
- 8) Horizontal Dilution of precision
- 9) Antenna Altitude above/below mean-sea-level (geoid)
- 10) Units of antenna altitude, meters
- 11) Geoidal separation, the difference between the WGS-84 earth ellipsoid and mean-sea-level (geoid), \- \ means mean-sea-level below ellipsoid
- 12) Units of geoidal separation, meters
- 13) Age of differential GPS data, time in seconds since last SC104 type 1 or 9 update, null field when DGPS is not used
- 14) Differential reference station ID, 0000-1023
- 15) CRC

Used Fields: 1,2,3,4,5,6,7

1:UTC 2:Lat 3:LaInd 4:Lon
5:LoInd 6:Acc 7:Sat

GLL - Position - Latitude/Longitude

1	2	3	4	5	6	7	8

\$--GLL,llll.ll,a,yyyy.yy,a,hhmmss.ss,A,a*hh<CR><LF>

Field Numbers:

- 1) Latitude
- 2) N or S (North or South)
- 3) Longitude
- 4) E or W (East or West)
- 5) Universal Time Coordinated (UTC)
- 6) Status A - Data Valid, V - Data Invalid
- 7) Mode indicator
- 8) CRC

Used Fields: 1,2,3,4,5,6,7

1:Lat 2:LaInd 3:Lon 4:LoInd
5:UTC 6:Valid 7:Acc

GNS - Fix Data

1	2	3	4	5	6	7	8	9	10	11	12	13

\$--GNS,hhmmss.ss,llll.ll,a,yyyy.yy,a,c--c,xx,x.x,x.x,x.x,x.x,x.x*hh
Field Numbers:

- 1) UTC
- 2) Latitude
- 3) N or S (North or South)
- 4) Longitude
- 5) E or W (East or West)
- 6) Mode indicator
- 7) Total number of satellites in use,00-99
- 8) HDROP
- 9) Antenna altitude, meters, re:mean-sea-level(geoid)
- 10) Goeidal separation meters
- 11) Age of diferential data
- 12) Differential reference station ID
- 13) CRC

Used Fields: 1,2,3,4,5,6,7
1:UTC 2:Lat 3:LaInd 4:Lon
5:LoInd 6:Acc 7:Sat

RMC - Minimum Navigation Information

1	2	3	4	5	6	7	8	9	10	11	12	13

\$--RMC,hhmmss.ss,A,llll.ll,a,yyyy.yy,a,x.x,x.x,ddmmyy,x.x,a,a*hh<CR><LF>
Field Numbers:

- 1) UTC Time
- 2) Status, V = Navigation receiver warning
- 3) Latitude
- 4) N or S
- 5) Longitude
- 6) E or W
- 7) Speed over ground, knots
- 8) Course over Ground, degrees true
- 9) Date, ddmmyy
- 10) Magnetic Variation, degrees
- 11) E or W
- 12) Mode Indicator
- 13) CRC

Used Fields: 1,2,3,4,5,6,7,8,9,10,11,12
1:UTC 2:Valid 3:Lat 4:LaInd 5:Lon 6:LoInd
7:SOG 8:COG 9:Date 10:MagV 11:MagIn 12:Acc

VBW - Ground/Water Speed

1	2	3	4	5	6	7

\$--VBW,x.x,x.x,A,x.x,x.x,A*hh<CR><LF>
Field Numbers:

Used Fields: 1,5,6,7,8,9
1:COG 5:SOG 6:SOGIn 7:SOG 8:SOGIn 9:Valid

OSD - Ship Data

1	2	3	4	5	6	7	8	9	10

\$--OSD,x.x,A,x.x,a,x.x,a,x.x,x.x,a*hh<CR><LF>
Field Numbers:

- 1) Heading, degrees true
- 2) Status, A = Data Valid
- 3) Vessel Course, degrees True
- 4) Course Reference
- 5) Vessel Speed
- 6) Speed Reference
- 7) Vessel Set, degrees True
- 8) Vessel drift (speed)
- 9) Speed Units
- 10) CRC

Used Fields: 1,2,3,4,5,6,9
1:HDT 2:HDTVal 3:COG 4:COGRef
5:SOG 6:SOGRef 9:SOGInd

HDT - True Heading

1	2	3

\$--HDT,x.x,T*hh<CR><LF>
Field Numbers:

- 1) Heading Degrees, true
- 2) T = True
- 3) CRC

Used Fields: 1,2
1:HDT 2:HDTRu

ROT - Rate of Turn

1	2	3

\$--ROT,x.x,A*hh<CR><LF>

Field Numbers:

- 1) Rate Of Turn, degrees per minute, \- \ means bow turns to port
- 2) Status, A means data is valid
- 3) CRC

Used Fields: 1,2

1:ROT 2:Valid

Versions of NMEA Sentences

RMC

v2.30 - \$GPRMC,122500.00,A,5330.1234,N,01001.2345,E,11.2,352.2,120202,2.0,E,A

v2.20 - \$GPRMC,122500.00,A,5330.1234,N,01001.2345,E,11.2,352.2,120202,2.0,E

GLL

v2.30 - \$GPGLL,5330.1234,N,01001.2345,E,141800.00,A,A

v2.00 - \$GPGLL,5330.1234,N,01001.2345,E,141800.00,A

v1.50 - \$GPGLL,5330.1234,N,01001.2345,E

GGA

v2.00 - \$GPGGA,092854,5330.1234,N,01001.2345,E,1,3,1.2,65.2,M,45.1,M,,

v1.50 - \$GPGGA,092854,5330.1234,N,01001.2345,E,1,3,1.2,65.2,M,45.1,M

VBW

v2.30 - \$VDVBW,11.00,01.00,A,12.00,02.00,A,,V,,V

v2.20 - \$VDVBW,11.00,01.00,A,12.00,02.00,A

VTG

v2.30 - \$GPVTG,350.0,T,,M,10.0,N,,K,A

v2.20 - \$GPVTG,350.0,T,,M,10.0,N,,K

OSD

v2.30 - \$INOSD,359.9,A,5.2,B,12.6,B,150.0,1.2,N

v2.20 - \$INOSD,359.9,A,5.2,B,12.6,B,150.0