> Start

NMEA 0183 Datensätze

Die Datensätze alphabetisch:
AAM | ABK | ACA | ACK | ACS | AIR | ALM | ALR | APA | APB | ASD | BEC | BOD | BWC | BWR | BWW | CUR | DBK | DBS | DBT | DCN | DPT | DSC | DSE | DSI | DSR | DTM | FSI | GBS | GGA | GLC | GLL | GMP | GNS | GRS | GST | GSA | GST | GSV | GTD | GXA | HDG | HDM | HDT | HMR | HMS | HSC | HTC | HTD | LCD | LRF | LRI | LR1 | LR2 | LR3 | MLA | MSK | MSS | MWD | MTW | MWV | OLN | OSD | ROO | RMA | RMB | RMC | ROT | RPM | RSA | RSD | RTE | SFI | SSD | STN | TLB | TLL | TRF | TTM | TUT | TXT | VBW | VDM | VDO | VDR | VHW | VLW | VPW | VSD | VTG | VWR | WCV | WNC | WPL | XDR | XTE | XTR | ZDA | ZDL | ZFO | ZTG

Allgemein: OSD |
Autopilot: APA | APB | ASD |
Decca: DCN |
D-GPS: MSK
Echolot: DBK | DBS | DBT |
Funk: FSI | SFI | TLL
Geschwindigkeit: VBW | VHW | VLW |
GPS: ALM | GBS | GGA | GNS | GSA | GSV |
Kurs: DPT | HDG | HDM | HDT | HSC | ROT | VDR |
Loran-C: GLC | LCD |
Maschine: RPM |
Navigation: RMA | RMB | RMC |
Omega: OLN |
Position: GLL | DTM
Radar: RSD | TLL | TTM |
Ruder: RSA |
Temperatur: MTW |
Transit: GXA | RTF |
Wegpunkte und Routen: AAM | BEC | BOD | BWC | BWR | BWW | ROO | RTE | VTG | WCV | WNC | WPL | XDR | XTE | XTR |
Wind: MWV | VPW | VWR |
Zeit: GDT | ZDA | ZFO | ZTG |

AAM - Waypoint Arrival Alarm

```
        1 2 3   4 5    6
        | | |   | |    |
$--AAM,A,A,x.x,N,c--c*hh<CR><LF>
```

Field Number:
1) Status, BOOLEAN, A = Arrival circle entered
2) Status, BOOLEAN, A = perpendicular passed at waypoint
3) Arrival circle radius
4) Units of radius, nautical miles
5) Waypoint ID
6) Checksum

ABK - UAIS Addressed and binary broadcast acknowledgement

```
        1         2 3   4 5
        |         | |   | |
$--ABK,xxxxxxxxx,a,x.x,x,x*hh<CR><LF>
```

Field Number:
1) MMSI of the addressed AIS unit
2) AIS chanel of receeption
3) ITU-R M.1371 Message ID
4) Message sequence number
5) Type of acknowledgement

ACA - UAIS Regional Channel Assignment Message
No more information yet.

ACK - Acknowledge Alarm

```
       1
       |
$--ACK,xxx*hh<CR><LF>
```

Field Number:
1) Unique alarm number (identifier) at alarm source

ACS - UAIS Channel management information Source
No more information yet.

AIR - UAIS Interrogation Request
No more information yet.

ALM - GPS Almanac Data

```
        1   2   3  4   5  6    7  8    9    10     11     12     13     14  15   16
        |   |   |  |   |  |    |  |    |    |      |      |      |      |   |    |
 $--
ALM,x.x,x.x,xx,x.x,hh,hhhh,hh,hhhh,hhhh,hhhhhh,hhhhhh,hhhhhh,hhhhhh,hhh,hhh,*hh<CR>
<LF>
```

Field Number:
1) Total number of messages
2) Message Number
3) Satellite PRN number (01 to 32)
4) GPS Week Number :
Date and time in GPS is computed as number of weeks from 6 January 1980 plus number of seconds into the week.
5) SV health, bits 17-24 of each almanac page
6) Eccentricity
7) Almanac Reference Time
8) Inclination Angle
9) Rate of Right Ascension
10) Root of semi-major axis
11) Argument of perigee
12) Longitude of ascension node
13) Mean anomaly
14) F0 Clock Parameter
15) F1 Clock Parameter
16) Checksum

ALR - Set Alarm State

No more information yet.

APA - Autopilot Sentence "A"

```
       1 2  3   4 5 6 7  8  9 10    11
       | |  |   | | | |  |  | |     |
$--APA,A,A,x.xx,L,N,A,A,xxx,M,c---c*hh<CR><LF>
```

Field Number:

1) Status
   V = LORAN-C Blink or SNR warning
   V = general warning flag or other navigation systems when a reliable fix is not available
2) Status
   V = Loran-C Cycle Lock warning flag
   A = OK or not used
3) Cross Track Error Magnitude
4) Direction to steer, L or R
5) Cross Track Units (Nautic miles or kilometers)
6) Status
   A = Arrival Circle Entered
7) Status
   A = Perpendicular passed at waypoint
8) Bearing origin to destination
9) M = Magnetic, T = True
10) Destination Waypoint ID
11) checksum

APB - Autopilot Sentence "B"

```
                                       13    15
       1 2 3   4 5 6 7 8   9 10   11  12|   14|
       | | |   | | | | |   | |    |   | |   | |
$--APB,A,A,x.x,a,N,A,A,x.x,a,c--c,x.x,a,x.x,a*hh<CR><LF>
```

Field Number:

1) Status
   V = LORAN-C Blink or SNR warning
   V = general warning flag or other navigation systems when a reliable fix is not available
2) Status
   V = Loran-C Cycle Lock warning flag
   A = OK or not used
3) Cross Track Error Magnitude
4) Direction to steer, L or R
5) Cross Track Units, N = Nautical Miles
6) Status
   A = Arrival Circle Entered
7) Status
   A = Perpendicular passed at waypoint
8) Bearing origin to destination
9) M = Magnetic, T = True
10) Destination Waypoint ID
11) Bearing, present position to Destination

12) M = Magnetic, T = True
13) Heading to steer to destination waypoint
14) M = Magnetic, T = True
15) Checksum

ASD - Autopilot System Data
No more information yet.

BEC - Bearing & Distance to Waypoint - Dead Reckoning

```
                                                        12
       1         2       3 4        5 6   7 8   9 10  11|    13
       |         |       | |        | |   | |   | |   | |    |
$--BEC,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x.x,T,x.x,M,x.x,N,c--c*hh<CR><LF>
```

Field Number:
1) UTCTime
2) Waypoint Latitude
3) N = North, S = South
4) Waypoint Longitude
5) E = East, W = West
6) Bearing, True
7) T = True
8) Bearing, Magnetic
9) M = Magnetic
10) Nautical Miles
11) N = Nautical Miles
12) Waypoint ID
13) Checksum

BOD - Bearing Origin to Destination

```
       1   2 3   4 5    6    7
       |   | |   | |    |    |
$--BOD,x.x,T,x.x,M,c--c,c--c*hh<CR><LF>
```

Field Number:
1) Bearing Degrees, TRUE
2) T = True
3) Bearing Degrees, Magnetic
4) M = Magnetic
5) TO Waypoint
6) FROM Waypoint
7) Checksum

BWC - Bearing and Distance to Waypoint, Latitude, N/S, Longitude, E/W, UTC, Status

```
                                                    11
       1         2       3 4        5 6   7 8   9 10  | 12   13
       |         |       | |        | |   | |   | |   | |    |
$--BWC,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x.x,T,x.x,M,x.x,N,c--c*hh<CR><LF>
```

Field Number:
1) UTCTime
2) Waypoint Latitude
3) N = North, S = South

4) Waypoint Longitude
5) E = East, W = West
6) Bearing, True
7) T = True
8) Bearing, Magnetic
9) M = Magnetic
10) Nautical Miles
11) N = Nautical Miles
12) Waypoint ID
13) Checksum

BWR - Bearing and Distance to Waypoint - Rhumb Line, Latitude, N/S, Longitude, E/W, UTC, Status

```
                                                      11
       1         2       3 4        5 6   7 8   9 10  | 12   13
       |         |       | |        | |   | |   | |   | |    |
$--BWR,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x.x,T,x.x,M,x.x,N,c--c*hh<CR><LF>
```

Field Number:
1) UTCTime
2) Waypoint Latitude
3) N = North, S = South
4) Waypoint Longitude
5) E = East, W = West
6) Bearing, True
7) T = True
8) Bearing, Magnetic
9) M = Magnetic
10) Nautical Miles
11) N = Nautical Miles
12) Waypoint ID
13) Checksum

BWW - Bearing - Waypoint to Waypoint

```
       1   2 3   4 5    6    7
       |   | |   | |    |    |
$--BWW,x.x,T,x.x,M,c--c,c--c*hh<CR><LF>
```

Field Number:
1) Bearing Degrees, TRUE
2) T = True
3) Bearing Degrees, Magnetic
4) M = Magnetic
5) TO Waypoint
6) FROM Waypoint
7) Checksum

CUR - Water Current Layer

No more information yet.

DBK - Depth Below Keel

```
       1   2 3   4 5   6 7
       |   | |   | |   | |
$--DBK,x.x,f,x.x,M,x.x,F*hh<CR><LF>
```

Field Number:
1) Depth, feet
2) f = feet
3) Depth, meters
4) M = meters
5) Depth, Fathoms
6) F = Fathoms
7) Checksum

DBS - Depth Below Surface

```
       1   2 3   4 5   6 7
       |   | |   | |   | |
$--DBS,x.x,f,x.x,M,x.x,F*hh<CR><LF>
```

Field Number:
1) Depth, feet
2) f = feet
3) Depth, meters
4) M = meters
5) Depth, Fathoms
6) F = Fathoms
7) Checksum

DBT - Depth below transducer

```
       1   2 3   4 5   6 7
       |   | |   | |   | |
$--DBT,x.x,f,x.x,M,x.x,F*hh<CR><LF>
```

Field Number:
1) Depth, feet
2) f = feet
3) Depth, meters
4) M = meters
5) Depth, Fathoms
6) F = Fathoms
7) Checksum

DCN - Decca Position (obsolete)

```
                                      11  13      16
       1  2  3   4 5  6   7 8  9   10| 12| 14  15| 17
       |  |  |   | |  |   | |  |   | | | | |   | | |
$--DCN,xx,cc,x.x,A,cc,x.x,A,cc,x.x,A,A,A,A,x.x,N,x*hh<CR><LF>
```

Field Number:
1) Decca chain identifier
2) Red Zone Identifier
3) Red Line Of Position
4) Red Master Line Status

5) Green Zone Identifier
6) Green Line Of Position
7) Green Master Line Status
8) Purple Zone Identifier
9) Purple Line Of Position
10) Purple Master Line Status
11) Red Line Navigation Use
12) Green Line Navigation Use
13) Purple Line Navigation Use
14) Position Uncertainity
15) N = Nautical Miles
16) Fix Data Basis
    1 = Normal Pattern
    2 = Lane Identification Pattern
    3 = Lane Identification Transmissions
17) Checksum

DPT - Depth of water

```
        1   2   3
        |   |   |
$--DPT,x.x,x.x*hh<CR><LF>
```

Field Number:
1) Depth, meters
2) Offset from transducer,
   positive means distance from tansducer to water line
   negative means distance from transducer to keel
3) Checksum

DSC - Digital Selective Calling Information
No more information yet.

DSE - Extended Digital Selective Calling
No more information yet.

DSI - Digital Selective Calling Transponder Initiate
No more information yet.

DSR - Digital Selective Calling Transponder Response
No more information yet.

DTM - Datum Reference

```
       1   2 3       4 5       6 7 8  9
       |   | |       | |       | | |  |
$--DTM,xxx,x,xx.xxxx,x,xx.xxxx,x,,xxx*hh<CR><LF>
```

Field Number:
1) Local datum code
   W84 - WGS84
   W72 - WGS72
   S85 - SGS85
   P90 - PE90
   999 - User defined
   IHO datum code

2) Local datum sub code
3) Latitude offset (minute)
4) Latitude offset mark (N: +, S: -)
5) Longitude offset (minute)
6) Longitude offset mark (E: +, W: -)
7) Altitude offset (m) Always null
8) Datum
   W84 - WGS84
   W72 - WGS72
   S85 - SGS85
   P90 - PE90
   ...
9) Checksum

FSI - Frequency Set Information

```
       1      2      3 4 5
       |      |      | | |
$--FSI,xxxxxx,xxxxxx,c,x*hh<CR><LF>
```

Field Number:
1) Transmitting Frequency
2) Receiving Frequency
3) Communications Mode (NMEA Syntax 2)
4) Power Level
5) Checksum

GBS - GPS Satellite Fault Detection

```
       1         2   3   4   5   6   7   8   9
       |         |   |   |   |   |   |   |   |
$--GBS,hhmmss.ss,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>
```

Field Number:
1) UTC time of the GGA fix addociated with this sentence
2) Expected error in latitude
3) Expected error in longitude
4) Expected error in altitude
5) Most likely failed satellite
6) Probability of missed detection for most likely failed satellite
7) Estimate of bias on most likely failed satellite
8) Standard deviation on bias estimate
9) Checksum

GGA - Global Positioning System Fix Data, Time, Position and fix related data fora GPS receiver.

```
                                                  11
       1         2       3 4        5 6 7  8   9  10 |  12 13  14   15
       |         |       | |        | | |  |   |   | |   | |   |    |
$--GGA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,x,xx,x.x,x.x,M,x.x,M,x.x,xxxx*hh<CR><LF>
```

Field Number:
1) Universal Time Coordinated (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) Checksum

GLC - Geographic Position, Loran-C

```
                                                  12    14
       1    2   3 4   5 6   7 8   9 10  11|   13|
       |    |   | |   | |   | |   | |   | |   | |
$--GLC,xxxx,x.x,a,x.x,a,x.x,a.x,x,a,x.x,a,x.x,a*hh<CR><LF>
```

Field Number:
1) GRI Microseconds/10
2) Master TOA Microseconds
3) Master TOA Signal Status
4) Time Difference 1 Microseconds
5) Time Difference 1 Signal Status
6) Time Difference 2 Microseconds
7) Time Difference 2 Signal Status
8) Time Difference 3 Microseconds
9) Time Difference 3 Signal Status
10) Time Difference 4 Microseconds
11) Time Difference 4 Signal Status
12) Time Difference 5 Microseconds
13) Time Difference 5 Signal Status
14) Checksum

GLL - Geographic Position - Latitude/Longitude

```
     1       2 3        4 5         6 7
     |       | |        | |         | |
$--GLL,llll.ll,a,yyyyy.yy,a,hhmmss.ss,A*hh<CR><LF>
```

Field Number:
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 , P - Precise
7) Checksum

GMP - GNSS Map Projection Fix Data

No more information yet.

GNS - GNSS fixed data

```
      1         2          3           4    5  6   7   8   9   10  11
       |         |          |           |    |  |   |   |   |   |   |
$--GNS,hhmmss.ss,llll.lll,a,yyyyy.yyy,a,c--c,xx,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>
```

Field Number:
1) UTC of position
2) Latitude, N/S
3) Longitude, E/W
4) Mode indicator
5) Total number of satllite in use,00-99
6) HDOP
7) Antenna altitude, metres, re:mean-sea-level(geoid)
8) Geoidal separation
9) Age of differential data
10) Differential reference station ID
11) Checksum

GRS - GNSS Range Residual

```
       1      2 3
       |      | |
$GPGRS,hhmmss,x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>
```

Field Number:
1) UTC time of GGA or GNS fix associated with this sentence
2) Mode
   0 = residuals were used to calculate the position given in the matching GGA or GNS.
   1 = residuals were computed after the GGA or GNS position was computed.
3) Range residuals in meters for sat. used in navigation solution. Order must match the order of the satellite ID numbers in GSA. When GRS is used GSA and GSV are generally required.

GSA - GPS DOP and active satellites

```
      1 2 3                    14 15  16  17  18
        | | |                    |  |   |   |   |
 $--GSA,a,a,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x*hh<CR><LF>
```

Field Number:
1) Selection mode
2) Mode
3) ID of 1st satellite used for fix
4) ID of 2nd satellite used for fix
...
14) ID of 12th satellite used for fix
15) PDOP
16) HDOP
17) VDOP
18) checksum

GST - GNSS Pseudorange Error Statistics

```
        1         2   3   4   5   6   7   8
        |         |   |   |   |   |   |   |
$--GST,hhmmss.ss,x.x,x.x,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>
```

1) UTC time of the GGA or GNS fix associated with this sentence.
2) RMS value of the standard deviation of the range inputs to the navigation process. Range inputs include preudoranges & DGNSS corrections.
3) Standard deviation of semi-major axis of error ellipse (meters)
4) Standard deviation of semi-minor axis of error ellipse (meters)
5) Orientation of semi-major axis of error ellipse (degrees from true north)
6) Standard deviation of latitude error (meters)
7) Standard deviation of longitude error (meters)
8) Standard deviation of altitude error (meters)
This message is used to support Receiver Autonomous Integrity Monitoring (RAIM). Pseudorange measurement error statistics can be translated in the position domain in order to give statistical measures of the quality of the position solution.
If only GPS, GLONASS, etc. is used for the reported position solution, the talker ID is GP, GL, etc., and the error data pertains to the individual system. If satellites from multiple systems are used to obtain the reported position solution, the talker ID is GN and the errors pertain to the combined solution.

GSV - Satellites in view

```
      1 2 3 4 5 6 7     n
        | | | | | | |     |
$--GSV,x,x,x,x,x,x,x,...*hh<CR><LF>
```

Field Number:
1) total number of messages
2) message number
3) satellites in view
4) satellite number
5) elevation in degrees
6) azimuth in degrees to true
7) SNR in dB
more satellite infos like 4)-7)
n) checksum

GTD - Geographic Location in Time Differences

```
        1   2   3   4   5  6
        |   |   |   |   |  |
$--GTD,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>
```

Field Number:
1) time difference
2) time difference
3) time difference
4) time difference
5) time difference
n) checksum

GXA - TRANSIT Position - Latitude/Longitude - Location and time of TRANSIT fix at waypoint (obsolete)

```
        1         2       3 4        5 6    7 8
        |         |       | |        | |    | |
```

```
$--GXA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c,X*hh<CR><LF>
```

Field Number:
1) UTC of position fix
2) Latitude
3) East or West
4) Longitude
5) North or South
6) Waypoint ID
7) Satelite number
8) Checksum

HDG - Heading - Deviation & Variation

```
       1   2   3 4   5 6
       |   |   | |   | |
$--HDG,x.x,x.x,a,x.x,a*hh<CR><LF>
```

Field Number:
1) Magnetic Sensor heading in degrees
2) Magnetic Deviation, degrees
3) Magnetic Deviation direction, E = Easterly, W = Westerly
4) Magnetic Variation degrees
5) Magnetic Variation direction, E = Easterly, W = Westerly
6) Checksum

HDM - Heading - Magnetic

```
      1   2 3
      |   | |
$--HDM,x.x,M*hh<CR><LF>
```

Field Number:
1) Heading Degrees, magnetic
2) M = magnetic
3) Checksum

HDT - Heading - True

```
       1   2 3
       |   | |
$--HDT,x.x,T*hh<CR><LF>
```

Field Number:
1) Heading Degrees, true
2) T = True
3) Checksum

HMR - Heading Monitor Receive
No more information yet.

HMS - Heading Monitor Set
No more information yet.

HSC - Heading Steering Command

```
        1   2 3   4  5
        |   | |   |  |
$--HSC,x.x,T,x.x,M,*hh<CR><LF>
```

Field Number:
1) Heading Degrees, True
2) T = True
3) Heading Degrees, Magnetic
4) M = Magnetic
5) Checksum

HTC - Heading/Track Control Command
No more information yet.

HTD - Heading/Track Control Data
No more information yet.

LCD - Loran-C Signal Data

```
       1    2   3   4   5   6   7   8   9   10  11  12  13  14
       |    |   |   |   |   |   |   |   |   |   |   |   |   |
$--LCD,xxxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx,xxx*hh<CR><LF>
```

Field Number:
1) GRI Microseconds/10
2) Master Relative SNR
3) Master Relative ECD
4) Time Difference 1 Microseconds
5) Time Difference 1 Signal Status
6) Time Difference 2 Microseconds
7) Time Difference 2 Signal Status
8) Time Difference 3 Microseconds
9) Time Difference 3 Signal Status
10) Time Difference 4 Microseconds
11) Time Difference 4 Signal Status
12) Time Difference 5 Microseconds
13) Time Difference 5 Signal Status
14) Checksum

LRF - UAIS Long-Range Function
No more information yet.

LRI - UAIS Long-Range Interrogation
No more information yet.

LR1 - UAIS Long-range Reply Sentence 1
No more information yet.

LR2 - UAIS Long-range Reply Sentence 2
No more information yet.

LR3 - UAIS Long-range Reply Sentence 3
No more information yet.

MLA - GLONASS Almanac Data
No more information yet.

MSK - MSK Receiver Interface (for DGPS Beacon Receivers)

```
       1     2  3   4  5 6
       |     |  |   |  | |
$--MSK,xxx.x,xx,xxx,xx,N*hh<CR><LF>
```

Field Number:
1) Frequency in kHz (283.5 to 325.0)
2) Frequency Selection
   M1 = Manual
   A1 = Automatic (field 1 empty)
3) MSK bit rate (100 or 200)
4) Bit Rate Selection
   M2 = Manual
   A2 = Automatic (field 3 empty)
5) Period of output of performance status message, 0 to 100 seconds ($CRMSS)
6) Checksum

MSS - MSK Receiver Status Signal
No more information yet.

MTW - Water Temperature

```
       1   2 3
       |   | |
$--MTW,x.x,C*hh<CR><LF>
```

Field Number:
1) Degrees
2) Unit of Measurement, Celcius
3) Checksum

MWD - Wind Direction and Speed
No more information yet.

MWV - Wind Speed and Angle

```
       1   2 3   4 5
       |   | |   | |
$--MWV,x.x,a,x.x,a*hh<CR><LF>
```

Field Number:
1) Wind Angle, 0 to 360 degrees
2) Reference, R = Relative, T = True
3) Wind Speed
4) Wind Speed Units, K/M/N
5) Status, A = Data Valid
6) Checksum

OLN - Omega Lane Numbers (obsolete)

```
       1          2          3          4
       |--------+ |--------+ |--------+ |
$--OLN,aa,xxx,xxx,aa,xxx,xxx,aa,xxx,xxx*hh<CR><LF>
```

Field Number:
1) Omega Pair 1
2) Omega Pair 1
3) Omega Pair 1
4) Checksum

OSD - Own 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 Number:
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) Checksum

R00 - Waypoints in active route

```
       1               n
       |               |
$--R00,c---c,c---c,....*hh<CR><LF>
```

Field Number:
1) waypoint ID
...
n) checksum

RMA - Recommended Minimum Navigation Information

```
                                                 12
       1 2       3 4        5 6   7   8   9   10  11|
       | |       | |        | |   |   |   |   |   | |
$--RMA,A,llll.ll,a,yyyyy.yy,a,x.x,x.x,x.x,x.x,x.x,x.x,a*hh<CR><LF>
```

Field Number:
1) Blink Warning
2) Latitude
3) N or S
4) Longitude
5) E or W
6) Time Difference A, uS
7) Time Difference B, uS
8) Speed Over Ground, Knots
9) Track Made Good, degrees true
10) Magnetic Variation, degrees

11) E or W
12) Checksum

RMB - Recommended Minimum Navigation Information

```
                                                          14
       1 2   3 4    5    6       7 8        9 10  11  12  13|
       | |   | |    |    |       | |        | |   |   |   | |
$--RMB,A,x.x,a,c--c,c--c,llll.ll,a,yyyyy.yy,a,x.x,x.x,x.x,A*hh<CR><LF>
```

Field Number:
1) Status, V = Navigation receiver warning
2) Cross Track error - nautical miles
3) Direction to Steer, Left or Right
4) TO Waypoint ID
5) FROM Waypoint ID
6) Destination Waypoint Latitude
7) N or S
8) Destination Waypoint Longitude
9) E or W
10) Range to destination in nautical miles
11) Bearing to destination in degrees True
12) Destination closing velocity in knots
13) Arrival Status, A = Arrival Circle Entered
14) Checksum

RMC - Recommended Minimum Navigation Information

```
                                                      12
       1         2 3       4 5        6 7   8   9    10  11|
       |         | |       | |        | |   |   |    |   | |
$--RMC,hhmmss.ss,A,llll.ll,a,yyyyy.yy,a,x.x,x.x,xxxx,x.x,a*hh<CR><LF>
```

Field Number:
1) UTC Time
2) Status, V = Navigation receiver warning, P = Precise
3) Latitude
4) N or S
5) Longitude
6) E or W
7) Speed over ground, knots
8) Track made good, degrees true
9) Date, ddmmyy
10) Magnetic Variation, degrees
11) E or W
12) Checksum

ROT - Rate Of Turn

```
       1   2 3
       |   | |
$--ROT,x.x,A*hh<CR><LF>
```

Field Number:
1) Rate Of Turn, degrees per minute, "-" means bow turns to port
2) Status, A means data is valid
3) Checksum

RPM - Revolutions

```
       1 2 3   4   5 6
       | | |   |   | |
$--RPM,a,x,x.x,x.x,A*hh<CR><LF>
```

Field Number:
1) Sourse, S = Shaft, E = Engine
2) Engine or shaft number
3) Speed, Revolutions per minute
4) Propeller pitch, % of maximum, "-" means astern
5) Status, A means data is valid
6) Checksum

RSA - Rudder Sensor Angle

```
       1   2 3   4 5
       |   | |   | |
$--RSA,x.x,A,x.x,A*hh<CR><LF>
```

Field Number:
1) Starboard (or single) rudder sensor, "-" means Turn To Port
2) Status, A means data is valid
3) Port rudder sensor
4) Status, A means data is valid
5) Checksum

RSD - RADAR System Data

```
                                                      14
       1   2   3   4   5   6   7   8   9   10  11 12 13|
       |   |   |   |   |   |   |   |   |   |   |  | | |
$--RSD,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,x.x,a,a*hh<CR><LF>
```

Field Number:
9) Cursor Range From Own Ship
10) Cursor Bearing Degrees Clockwise From Zero
11) Range Scale
12) Range Units
14) Checksum

RTE - Routes

```
       1   2   3 4    5           x    n
       |   |   | |    |           |    |
$--RTE,x.x,x.x,a,c--c,c--c, ..... c--c*hh<CR><LF>
```

Field Number:
1) Total number of messages being transmitted
2) Message Number
3) Message mode
   c = complete route, all waypoints
   w = working route, the waypoint you just left, the waypoint you're heading to then all the rest
4) Waypoint ID
x) More Waypoints
n) Checksum

SFI - Scanning Frequency Information

```
        1   2   3      4                     x
        |   |   |      |                     |
$--SFI,x.x,x.x,xxxxxx,c ..... xxxxxx,c*hh<CR><LF>
```

Field Number:
1) Total Number Of Messages
2) Message Number
3) Frequency 1
4) Mode 1
x) Checksum

SSD - UAIS Ship Static Data
No more information yet.

STN - Multiple Data ID

```
        1   2
        |   |
$--STN,x.x,*hh<CR><LF>
```

Field Number:
1) Talker ID Number
2) Checksum

TLB - Target Label
No more information yet.

TLL - Target latitude and longitude

```
        1  2          3           4    5         6 7 8
        |  |          |           |    |         | | |
$--TLL,xx,llll.lll,a,yyyyy.yyy,a,c--c,hhmmss.ss,a,a*hh<CR><LF>
```

Field Number:
1) Target number 00 - 99
2) Latitude, N/S
3) Longitude, E/W
4) Target name
5) UTC of data
6) Target status(see note)
L = lost,tracked target has beenlost
Q = query,target in the process of acquisition
T = tracking
7) Reference target=R,null otherwise
8) Checksum

TRF - TRANSIT Fix Data (obsolete)

```
                                                          13
        1         2      3       4 5        6 7   8   9   10  11  12|
        |         |      |       | |        | |   |   |   |   |   | |
$--TRF,hhmmss.ss,xxxxxx,llll.ll,a,yyyyy.yy,a,x.x,x.x,x.x,x.x,xxx,A*hh<CR><LF>
```

Field Number:
1) UTC Time
2) Date, ddmmyy
3) Latitude
4) N or S
5) Longitude
6) E or W
7) Elevation Angle
8) Number of iterations
9) Number of Doppler intervals
10) Update distance, nautical miles
11) Satellite ID
12) Data Validity
13) Checksum

TTM - Tracked Target Message

```
                                          11     13
       1  2   3   4 5   6   7 8   9   10|    12| 14
       |  |   |   | |   |   | |   |   | |    | | |
$--TTM,xx,x.x,x.x,a,x.x,x.x,a,x.x,x.x,a,c--c,a,a*hh<CR><LF>
```

Field Number:
1) Target Number
2) Target Distance
3) Bearing from own ship
4) Bearing Units
5) Target speed
6) Target Course
7) Course Units
8) Distance of closest-point-of-approach
9) Time until closest-point-of-approach "-" means increasing
10) "-" means increasing
11) Target name
12) Target Status
13) Reference Target
14) Checksum

TUT - Transmission of Multi-Language Text
No more information yet.

TXT - Text Transmission
No more information yet.

VBW - Dual 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 Number:
1) Longitudinal water speed, "-" means astern
2) Transverse water speed, "-" means port
3) Status, A = Data Valid
4) Longitudinal ground speed, "-" means astern
5) Transverse ground speed, "-" means port

6) Status, A = Data Valid
7) Checksum

VDM - AIS VHF Datalink Message. AIS NMEA sentence that contains data about another ship.
Information: http://gpsd.berlios.de/AIVDM.html

VDO - AIS VHF Datalink Own-vessel Message. AIS NMEA sentence that contains data about own ship.
Information: http://gpsd.berlios.de/AIVDM.html

VDR - Set and Drift

```
        1   2 3   4 5   6 7
        |   | |   | |   | |
$--VDR,x.x,T,x.x,M,x.x,N*hh<CR><LF>
```

Field Number:
1) Degress True
2) T = True
3) Degrees Magnetic
4) M = Magnetic
5) Knots (speed of current)
6) N = Knots
7) Checksum

VHW - Water speed and heading

```
        1   2 3   4 5   6 7   8 9
        |   | |   | |   | |   | |
$--VHW,x.x,T,x.x,M,x.x,N,x.x,K*hh<CR><LF>
```

Field Number:
1) Degress True
2) T = True
3) Degrees Magnetic
4) M = Magnetic
5) Knots (speed of vessel relative to the water)
6) N = Knots
7) Kilometers (speed of vessel relative to the water)
8) K = Kilometers
9) Checksum

VLW - Distance Traveled through Water

```
        1   2 3   4 5
        |   | |   | |
$--VLW,x.x,N,x.x,N*hh<CR><LF>
```

Field Number:
1) Total cumulative distance
2) N = Nautical Miles
3) Distance since Reset
4) N = Nautical Miles
5) Checksum

VPW - Speed - Measured Parallel to Wind

```
        1   2 3   4 5
        |   | |   | |
$--VPW,x.x,N,x.x,M*hh<CR><LF>
```

Field Number:
1) Speed, "-" means downwind
2) N = Knots
3) Speed, "-" means downwind
4) M = Meters per second
5) Checksum

VSD - UAIS Voyage Static Data

VTG - Track made good and Ground speed

```
        1   2 3   4 5  6 7   8 9
        |   | |   | |  | |   | |
$--VTG,x.x,T,x.x,M,x.x,N,x.x,K*hh<CR><LF>
```

Field Number:
1) Track Degrees
2) T = True
3) Track Degrees
4) M = Magnetic
5) Speed Knots
6) N = Knots
7) Speed Kilometers Per Hour
8) K = Kilometers Per Hour
9) Checksum

VWR - Relative Wind Speed and Angle

```
         1  2  3  4  5  6  7  8 9
         |  |  |  |  |  |  |  | |
$--VWR,x.x,a,x.x,N,x.x,M,x.x,K*hh<CR><LF>
```

Field Number:
1) Wind direction magnitude in degrees
2) Wind direction Left/Right of bow
3) Speed
4) N = Knots
5) Speed
6) M = Meters Per Second
7) Speed
8) K = Kilometers Per Hour
9) Checksum

WCV - Waypoint Closure Velocity

```
        1   2 3    4
        |   | |    |
$--WCV,x.x,N,c--c*hh<CR><LF>
```

Field Number:
1) Velocity

2) N = knots
3) Waypoint ID
4) Checksum

WNC - Distance - Waypoint to Waypoint

```
       1   2 3   4 5    6    7
       |   | |   | |    |    |
$--WNC,x.x,N,x.x,K,c--c,c--c*hh<CR><LF>
```

Field Number:
1) Distance, Nautical Miles
2) N = Nautical Miles
3) Distance, Kilometers
4) K = Kilometers
5) TO Waypoint
6) FROM Waypoint
7) Checksum

WPL - Waypoint Location

```
       1       2 3        4 5    6
       |       | |        | |    |
$--WPL,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>
```

Field Number:
1) Latitude
2) N or S (North or South)
3) Longitude
4) E or W (East or West)
5) Waypoint name
6) Checksum

XDR - Transducer Measurement

```
       1 2   3 4            n
       | |   | |            |
$--XDR,a,x.x,a,c--c, ..... *hh<CR><LF>
```

Field Number:
1) Transducer Type
2) Measurement Data
3) Units of measurement
4) Name of transducer
x) More of the same
n) Checksum

XTE - Cross-Track Error, Measured

```
       1 2 3   4 5  6
       | | |   | |  |
$--XTE,A,A,x.x,a,N,*hh<CR><LF>
```

Field Number:
1) Status
   V = LORAN-C Blink or SNR warning
   V = general warning flag or other navigation systems when a reliable

fix is not available
2) Status
V = Loran-C Cycle Lock warning flag
A = OK or not used
3) Cross Track Error Magnitude
4) Direction to steer, L or R
5) Cross Track Units, N = Nautical Miles
6) Checksum

XTR - Cross Track Error - Dead Reckoning

```
        1   2 3 4
        |   | | |
$--XTR,x.x,a,N*hh<CR><LF>
```

Field Number:
1) Magnitude of cross track error
2) Direction to steer, L or R
3) Units, N = Nautical Miles
4) Checksum

ZDA - Time & Date - UTC, day, month, year and local time zone

```
        1          2  3  4    5  6  7
        |          |  |  |    |  |  |
$--ZDA,hhmmss.ss,xx,xx,xxxx,xx,xx*hh<CR><LF>
```

Field Number:
1) Local zone minutes description, same sign as local hours
2) Local zone description, 00 to +- 13 hours
3) Year
4) Month, 01 to 12
5) Day, 01 to 31
6) Universal Time Coordinated (UTC)
7) Checksum

ZDL - Time and Distance to Variable Point

ZFO - UTC & Time from origin Waypoint

```
        1          2          3    4
        |          |          |    |
$--ZFO,hhmmss.ss,hhmmss.ss,c--c*hh<CR><LF>
```

Field Number:
1) Universal Time Coordinated (UTC)
2) Elapsed Time
3) Origin Waypoint ID
4) Checksum

ZTG - UTC & Time to Destination Waypoint

```
        1         2         3    4
        |         |         |    |
$--ZTG,hhmmss.ss,hhmmss.ss,c--c*hh<CR><LF>
```

Field Number:
1) Universal Time Coordinated (UTC)
2) Time Remaining
3) Destination Waypoint ID
4) Checksum

****

New found : (data fields unknown)

ABM - Addressed Binary Message
ALA - Set Detail Alarm Condition
ASM - Addressed Safety Message
BBM - Broadcast Binary Message
BSM - Broadcast Safety Message
ETL - Engine Telegraph Operation Status
EVE - General Event Message
FIR - Fire Detection
GAL - Galileo Almanac Data
GEN - Generic Status Information
GFA - GNSS Fix Accuracy and Integrity
HBT - Heartbeat Supervision Report
HSS - Hull Stress Surveillance System
NRM - NAVTEX Receiver Masl Command
TRC - Thruster Contro Data
TRD - Thruster Response Data
TTD - Tracked Target Date (Radar)
SNU - Loran - C SNR Status
WAT - Water Level Detection
WDC - Distance to Waypoint - Great Circle
WDR - Distance to Waypoint - Rhumb Line

NMEA 0183 Datensätze

Letzte Änderung 12.2013