

NMEA Library

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Contents

1	NMEA	1
2	Class Index	3
2.1	Class List	3
3	Class Documentation	5
3.1	NMEA Class Reference	5
3.1.1	Constructor & Destructor Documentation	5
3.1.1.1	NMEA	5
3.1.1.2	NMEA	6
3.1.2	Member Function Documentation	6
3.1.2.1	begin	6
3.1.2.2	getAltitude	6
3.1.2.3	getAltitudeUnits	6
3.1.2.4	getBearing	6
3.1.2.5	getDay	6
3.1.2.6	getEllipsoidHeight	6
3.1.2.7	getEllipsoidHeightUnits	7
3.1.2.8	getHour	7
3.1.2.9	getLatitude	7
3.1.2.10	getLongitude	7
3.1.2.11	getMinute	7
3.1.2.12	getMonth	7
3.1.2.13	getSatellites	7
3.1.2.14	getSecond	7
3.1.2.15	getSpeed	8
3.1.2.16	getYear	8
3.1.2.17	isLocked	8
3.1.2.18	isUpdated	8
3.1.2.19	process	8
	Index	9

Chapter 1

NMEA

Arduino library for decoding and parsing [NMEA](#) GPS messages

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

NMEA	5
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Chapter 3

Class Documentation

3.1 NMEA Class Reference

Public Member Functions

- [NMEA](#) ()
- [NMEA](#) (Stream &dev)
- void [begin](#) ()
- void [process](#) ()
- double [getLatitude](#) ()
- double [getLongitude](#) ()
- double [getBearing](#) (bool mag=false)
- double [getSpeed](#) (bool knots=false)
- double [getAltitude](#) ()
- char [getAltitudeUnits](#) ()
- double [getEllipsoidHeight](#) ()
- char [getEllipsoidHeightUnits](#) ()
- uint8_t [getSatellites](#) ()
- uint8_t [getDay](#) ()
- uint8_t [getMonth](#) ()
- uint16_t [getYear](#) ()
- uint8_t [getHour](#) ()
- uint8_t [getMinute](#) ()
- uint8_t [getSecond](#) ()
- bool [isLocked](#) ()
- bool [isUpdated](#) ()

3.1.1 Constructor & Destructor Documentation

3.1.1.1 NMEA::NMEA ()

Default constructor

This constructor defaults the [NMEA](#) parser to using the Serial object.

3.1.1.2 NMEA::NMEA (Stream & dev)

Device specific constructor

This allows you to pass a specific serial object to the parser. It is your responsibility to ensure that the serial object is configured for 38400 baud (or the baud of your GPS module) and has had "begin" called on it.

3.1.2 Member Function Documentation

3.1.2.1 void NMEA::begin ()

Initialize the processor

Pre-configures any required variables. Calling this before any processing is done is required.

3.1.2.2 double NMEA::getAltitude ()

[getAltitude\(\)](#)

Returns the current height above sea level. The units are not defined, but can be obtained with the [getAltitudeUnits\(\)](#) function.

3.1.2.3 char NMEA::getAltitudeUnits ()

[getAltitudeUnits\(\)](#)

Returns the units used for the height above sea level. Usually 'M' for meters.

3.1.2.4 double NMEA::getBearing (bool mag = false)

[getBearing\(magnetic\)](#)

Returns the current calculated bearing or heading. If true is passed as a parameter it returns the bearing to magnetic north. If false is passed, or no parameter is used, it returns the bearing to true north.

3.1.2.5 uint8_t NMEA::getDay ()

[getDay\(\)](#)

Returns the current day of the month (1 ... 31).

3.1.2.6 double NMEA::getEllipsoidHeight ()

[getEllipsoidHeight\(\)](#)

Returns the height above a WGS84 ellipsoid. The units are not defined, but can be obtained with the [getEllipsoidHeightUnits\(\)](#) function.

3.1.2.7 `char NMEA::getEllipsoidHeightUnits ()`

[`getEllipsoidHeightUnits\(\)`](#)

Returns the units used for the height above a WGS84 ellipsoid. Usually 'M' for meters.

3.1.2.8 `uint8_t NMEA::getHour ()`

[`getHour\(\)`](#)

Returns the current hour of the day (0 ... 23).

3.1.2.9 `double NMEA::getLatitude ()`

[`getLatitude\(\)`](#)

Returns the current latitude in degrees

3.1.2.10 `double NMEA::getLongitude ()`

[`getLongitude\(\)`](#)

Returns the current longitude in degrees

3.1.2.11 `uint8_t NMEA::getMinute ()`

[`getMinute\(\)`](#)

Returns the current minutes (0 ... 59).

3.1.2.12 `uint8_t NMEA::getMonth ()`

[`getMonth\(\)`](#)

Returns the current month number (1 ... 12).

3.1.2.13 `uint8_t NMEA::getSatellites ()`

[`getSatellites\(\)`](#)

Returns the number of currently locked satellites.

3.1.2.14 `uint8_t NMEA::getSecond ()`

[`getSecond\(\)`](#)

Returns the current seconds (0 ... 59).

3.1.2.15 `double NMEA::getSpeed (bool knots = false)`

`getSpeed(knots)`

Returns the current calculated speed. If true is passed as a parameter it returns the speed in Knots. If false is passed, or no parameter is used, it returns the speed in kilometers per hour.

3.1.2.16 `uint16_t NMEA::getYear ()`

`getYear()`

Returns the current year (2000 ... 2099).

3.1.2.17 `bool NMEA::isLocked ()`

`isLocked()`

Returns true if the receiver is locked on, false otherwise.

3.1.2.18 `bool NMEA::isUpdated ()`

`isUpdated()`

Returns true if the processor has received and processed a new valid message. Resets the updated flag internally.

3.1.2.19 `void NMEA::process ()`

Process incoming messages

This function is the main heart of the [NMEA](#) processor. It receives characters from the serial device, identifies the frame wrapper characters, and stores the frame data into a buffer. When the frame is complete it calls the relevant decoder function to handle the data.

This function must be called frequently to process the data.

The documentation for this class was generated from the following files:

- NMEA.h
- NMEA.cpp

Index

begin
NMEA, 6

getAltitude
NMEA, 6
getAltitudeUnits
NMEA, 6
getBearing
NMEA, 6
getDay
NMEA, 6
getEllipsoidHeight
NMEA, 6
getEllipsoidHeightUnits
NMEA, 6
getHour
NMEA, 7
getLatitude
NMEA, 7
getLongitude
NMEA, 7
getMinute
NMEA, 7
getMonth
NMEA, 7
getSatellites
NMEA, 7
getSecond
NMEA, 7
getSpeed
NMEA, 7
getYear
NMEA, 8

isLocked
NMEA, 8
isUpdated
NMEA, 8

NMEA, 5
begin, 6
getAltitude, 6
getAltitudeUnits, 6
getBearing, 6
getDay, 6
getEllipsoidHeight, 6
getEllipsoidHeightUnits, 6
getHour, 7
getLatitude, 7
getLongitude, 7

getMinute, 7
getMonth, 7
getSatellites, 7
getSecond, 7
getSpeed, 7
getYear, 8
isLocked, 8
isUpdated, 8
NMEA, 5
NMEA, 5
process, 8
process
NMEA, 8