ESP32NMEA2K

2021/12/12

Conversions NMEA2000->NMEA0183

DIN: Seasmart, on for all messages if enabled in config

For XDR mappings refer to XdrMappings.md

N2K	NMEA0183	Hint	Implemented (X: 20211113) (I: 202112xx) (Y:202303xx) (XDR: xdr mappings)
65311 Magnetic Variation (Raymarine Proprietary)			
126992 System Time	ZDA, GLL	See also PGN 129033	X only ZDA
127233 Man Overboard Notification (MOB)	MOB		
127237 Heading/Track Control	APB,HSC	Use PGN 129284, 129283 if possible	
127245 Rudder	RSA	Two rudders supported?	X: one rudder
127250 Vessel Heading	HDG, HDM, HDT		X
127251 Rate of Turn	ROT		I
127258 Magnetic Variation			X
127488 Engine Parameters, Rapid Update	RPM, XDR		XDR RPM: I
127489 Engine Parameters, Dynamic	XDR		XDR
127493 Transmission Parameters, Dynamic			
127501 Binary Status Report			
127505 Fluid Level	XDR		XDR
127508 Battery Status	XDR		XDR
128259 Speed, Water referenced	VHW	Also may be used in RMC, VTG	X
128267 Water Depth	DBT, DBS,DBK,DPT		X

128275 Distance Log	VLW		X
129025 Position, Rapid Update	GLL	Also use PGN 126992 or 129029	X: no GLL, only used in RMC
129026 COG & SOG, Rapid Update	VTG	Also used in RMC	X
129029 GNSS Position Data	GGA, GLL, RMC		X: no GLL, RMC in fixed interval
129033 Local Time Offset			X
129044 Datum	DTM		
129283 Cross Track Error	XTE		I
129284 Navigation Data	RMB		I
129285 Navigation		Route/WP information — Waypoint names from this message are used in RMB and APB sentences	
129291 Set & Drift, Rapid Update	VDR		
129539 GNSS DOPs	GSA	PGN 129540 is also required	X
129540 GNSS Sats in View	GSV		X
130066 Route and WP Service, Route/WP, List Attributes	RTE		
130067 Route and WP Service — Route, WP Name & Position	WPL		
130074 Route and WP Service — WP List, WP Name & Position	WPL		
130306 Wind Data	MWD, MWV, VWR		X: no VWR, 20250305: add VWR
130310 Environmental Parameters	XDR, MTW, ~~MDA~~		X: MTW XDR
130311 Environmental Parameters	XDR, MTW~~, MDA~~		XDR MTW: 202410xx
130312 Temperature	XDR, MTW~~, MDA~~	MTW can be filtered by temp instance id	XDR MTW: 202410xx
130313 Humidity	XDR, ~~MDA~~		XDR

130314 Actual Pressure	XDR, ~~MDA~~		XDR
130316 Temperature, Extended Range	XDR, ~~MTW, MDA~~		XDR
130578 Vessel Speed Components	VBW		
129038 AIS Class A Position Report	VDM, VDO	AIS VHF messages 1, 2 and 3	X
129039 AIS Class B Position Report	VDM, VDO	AIS VHF message 18	X
129040 AIS Class B Extended Position Report	VDM, VDO	AIS VHF message 19	
129041 AIS Aids to Navigation (AtoN) Report	VDM, VDO	AIS VHF message 21	
129793 AIS UTC and Date Report	VDM, VDO	AIS VHF messages 4 and 11	
129794 AIS Class A Static and Voyage Related	VDM, VDO	AIS VHF message 5	X
129798 AIS SAR Aircraft Position Report	VDM, VDO	AIS VHF message 9	
129802 AIS Safety Related Broadcast Message	VDO, VDM	AIS VHF Message 14	
129809 AIS Class B «CS» Static Data Report	VDM, VDO	Part A AIS VHF message 24	X
29810 AIS Class B «CS» Static Data Report	VDM, VDO	Part B AIS VHF message 24	X

Conversions NMEA0183→NMEA2000

NMEA0183	NMEA2000	Hint	Implemented (X: 20211113) (I: 202112xx) (XDR: xdr mappings)
APB	129283 Cross Track Error	Also used in PGN 129284	
DPT,DBT,DBS,DBK	128267 Water Depth		X, DBS,DBT,DBK 202504xx
DTM	129044 Datum		
GGA	129029 GNSS Position Data	ZDA or RMC are required	X
GLL	129025 Position, Rapid Update		X
GSA	129539 GNSS DOPs		X
GSV	129540 GNSS Sats in View		X
HDG	127250 Vessel Heading		X
HDM,HDT	127250 Vessel Heading	Use variation and deviation from HDG	X
MDA	30311 Environmental Parameters, 130306 Wind Data Relative air humidity, air and water temperature, atmospheric pressure, wind data		
MOB	127233 Man Overboard Notification (MOB)		
MTW	130311 Environmental Parameters		
MWD	130306 Wind Data		X
MWV	130306 Wind Data	Theoretical wind sent as ground referenced to True North; calculated using COG/SOG	X
MTW	130310 Outside Env	Only Water Temp	Y
RMB	29283 Cross Track Error,129284 Navigation Data 129285 Navigation Data – Route/WP	Maintain internal list of waypoints	X

	information		
RMC	26992 System Time 127258 Magnetic Variation 129025 Position, Rapid Update 129026 COG & SOG		X
RSA	127245 Rudder		X: only one rudder (instance 0)
RTE	130066 Route and WP Service — Route/WP-List Attributes, 130067 Route and WP Service — Route - WP Name & Position		
ROT	127251 Rate of Turn		I
VBW	130578 Vessel Speed Components		
VHW	128259 Speed, Water referenced 127250 Direction, magnetic 127250 Direction, true		X Y Y
VDR	29291 Set & Drift, Rapid Update		
VLW	128275 Distance Log		
VTG	29026 COG & SOG, Rapid Update		X
VWR, VWT	130306 Wind Data		X: no VWT
WPL	130074 Route and WP Service — WP List — WP Name & Position		
XTE	129283 Cross Track Error		I
ZDA	126992 System Time, 129033 Local Time Offset		X
VDO, VDM	129038 AIS Class A Position Report 129039 AIS Class B Position Report 129040 AIS Class B		X: 129038, 129039, 129794,129809,129810

	Extended Position Report 129041 AIS Aids to Navigation (AtoN) Report 129793 AIS UTC and Date Report 129794 AIS Class A Static and Voyage Related Data 129798 AIS SAR Aircraft Position Report 129809 AIS Class B «CS» Static Data Report, Part A 129810 AIS Class B «CS» Static Data Report, Part B		
XDR	Transducers	127505, 127508, 130312, 130314, 130313, 127489, 127488	XDR