



Actisense NMEA 2000 Gateway NGW-1 (issue 1.09)

NGW-1 firmware version 2.183 (and newer)

This is a short description of the **NMEA 0183 to NMEA 2000** conversions that are currently available.

All sentences will be fully configurable (which conversions, transmit rates, etc.) from the PC 'Config Tool' software, via the NMEA 2000 bus (using an Actisense NGT-1), and also via the NGW-1 serial/USB connection. This makes for a simple and comprehensive product that can be used to connect between NMEA 0183 and NMEA 2000 networks. Planned: Translation has been determined possible. TBA: To Be Announced.

Conversions / translations that were available in firmware versions prior to 2.183 are coloured **Green**.

New conversions/translations added to firmware version 2.183 (and newer) are coloured **Blue** so they can be seen easily.

NMEA 0183 Formatter	Description	NMEA 2000 PGN(s)
APB	Heading/Track Controller (Autopilot) Sentence "B"	129283 only
DBT	Depth Below Transducer	128267
DPT	Depth	128267
GGA	Global Positioning System Fix Data	126992, 129025, 129029, 129033, 129539
GLL	Geographic Position - Latitude / Longitude	126992, 129025, 129029, 129033
GSA	GNSS DOP and Active Satellites	129029, 129539
GSV	GNSS Satellites in View	129540
HDG	Heading, Deviation and Variation	127250, 127258
HDM	Heading, Magnetic	127250
HDT	Heading, True	127250
HSC	Heading Steering Command	127237
MTW	Water Temperature	130310, 130311, 130312
MWD	Wind Direction and Speed	130306
MWV	Wind Speed and Angle (Relative & Theoretical)	130306
RMA	Recommended Minimum Specific - Loran-C Data	(disabled by default) 127258, 129025, 129026, 129029
RMB	Recommended Minimum Navigation Information	(disabled by default) 129283 only
RMC	Recommended Minimum Specific - GNSS Data	126992, 127250, 127258, 129025, 129026, 129029, 129033
ROT	Rate Of Turn	127251
RPM	Revolutions	127488 (Single engine instance only)
RSA	Rudder Sensor Angle	127245 (Single rudder instance only)
VBW	Dual Ground / Water Speed	130578
VDR	Set and Drift	129291
VHW	Water Speed and Heading	127250, 128259
VLW	Dual Ground / Water Distance	128275
VTG	Course Over Ground and Ground Speed	129026
VDM (!)	AIS VHF Data-link Messages: 1, 2, 3, 4, 5, 18, 19 & 24	129038, 129793, 129794, 129039, 129040, 129809, 129810 Special firmware only: contact ARL for download details
VDO (!)	AIS VHF Data-link Own-vessel report: 1, 2, 3, 5, 18, 19 & 24	129038, 129794, 129039, 129040, 129809, 129810
VWR	Relative wind direction and speed	130306
XTE	Cross-Track Error, Measured	129283
ZDA	UTC Time and Date (plus local Time Zone offset)	126992, 129029, 129033
ACK	Acknowledge Alarm	Planned
ALR	Set Alarm State	Planned
BWC	Bearing and Distance to Waypoint - Great Circle	Planned
BWR	Bearing and Distance to Waypoint - Rhumb Line	Planned
MDA	Meteorological Composite	Planned
RTE	Routes RTE - Routes	Planned
TXT	Text Transmission	Planned
WCV	Waypoint Closure Velocity	Planned
WPL	Waypoint Location	Planned
XDR	Transducer Measurements	Planned
ZFO	UTC and Time from Origin Waypoint	Planned
ZTG	UTC and Time to Destination Waypoint	Planned
ABK	AIS Addressed and Binary Broadcast Acknowledgement	TBA
ABM (!)	AIS Addressed Binary and Safety Related Message	Planned
ACA	AIS Regional Channel Assignment Message	TBA
AIR	AIS Interrogation Request	TBA
BBM (!)	AIS Broadcast Binary Message	Planned
SSD	AIS Ship Static Data	Planned
VSD	AIS Voyage Static Data	Planned
DSC (*IMO)	Digital Selective Calling Information	TBA
DTM (*IMO)	Datum Reference	TBA
FSI (*IMO)	Frequency Set Information	TBA
HMR (*IMO)	Heading Monitor Receive	TBA
HMS (*IMO)	Heading Monitor Set	TBA
HTC (*IMO)	Heading/Track Control Command	TBA
HTD (*IMO)	Heading/Track Control Data	TBA
OSD (*IMO)	Own Ship Data	TBA
RSD (*IMO)	Radar System Data	TBA
SFI (*IMO)	Scanning Frequency Information	TBA
TTM (*IMO)	Tracked Target Message	TBA



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NMEA 2000 PGN	Description	NMEA 0183 Formatter(s)
126992	System Time	GGA, GLL, RMC, ZDA
127237	Heading / Track Control	HSC
127245	Rudder	RSA
127250	Vessel Heading	HDG, HDM, HDT, VHW
127251	Rate Of Turn	ROT
127258	Magnetic Variation	HDG, RMA, RMC
127488	Engine Parameters, Rapid Update	RPM
128259	Speed, Water referenced	VHW
128267	Water Depth	DBT, DPT
128275	Distance Log	VLW
129025	Position, Rapid Update	GGA, GLL, RMA, RMC
129026	COG and SOG, Rapid Update	RMA, RMC, VTG
129029	GNSS Position Data	GGA, GLL, GSA, RMA, RMC, ZDA
129033	Time & Date	GGA, GLL, RMC, ZDA
129283	Cross-Track Error	APB, RMB, XTE
129539	GNSS DOPs	GGA, GSA
129540	GNSS Satellites in View	GSV
130306	Wind Data	MWD, MWV (Relative & Theoretical), VWR
130310	Water Temperature	MTW
130311	Water Temperature	MTW
129291	Set And Drift	(disabled by default) VDR
130578	Dual Ground/Water Speed	(disabled by default) VBW
Planned	Bearing & Distance to Waypoint, Great Circle	BWC
Planned	Bearing & Distance to Waypoint, Rhumb Line	BWR
Planned	Meteorological Composite	MDA
Planned	Routes	RTE
Planned	Waypoint Closure Velocity	WCV
Planned	Waypoint Location	WPL
Planned	Transducer Measurements	XDR
Planned	UTC and Time from Origin Waypoint	ZFO
Planned	UTC and Time to Destination Waypoint	ZTG
TBA	AIS Addressed and binary broadcast ack	ABK
TBA	AIS Addressed binary and safety related message	ABM (!)
TBA	AIS Regional Channel Assignment Message	ACA
TBA	AIS Interrogation Request	AIR
TBA	AIS Broadcast Binary Message	BBM (!)
TBA	AIS Ship Static Data	SSD
TBA	AIS VHF Data-link Message	VDM (!)
TBA	AIS VHF Data-link Own-vessel report	VDO (!)
TBA	AIS Voyage Static Data	VSD
TBA	Digital Selective Calling Information	DSC (*IMO)
TBA	Datum Reference	DTM (*IMO)
TBA	Frequency Set Information	FSI (*IMO)
TBA	Heading Monitor Receive	HMR (*IMO)
TBA	Heading Monitor Set	HMS (*IMO)
TBA	Heading/Track Control Command	HTC (*IMO)
TBA	Heading/Track Control Data	HTD (*IMO)
TBA	Own Ship Data	OSD (*IMO)
TBA	Radar System Data	RSD (*IMO)
TBA	Scanning Frequency Information	SFI (*IMO)
TBA	Tracked Target Message	TTM (*IMO)