

Autopilot System Input / Output Specifications

Inputs:-

Outputs:-

Supply Voltage Range	18 – 40Vdc
Power Consumption	10W
Illumination Max	2W

Mag Heading Input Port	
Navitron HSC etc.	Coil Type HSC 1 or HSC 2
Resolution	0.25°

Gyro / Mag Heading Input Port		
Channel 1 / 2	Mag	Gyro
IEC 61162-1 or -2 (Gyro /Mag and 4800 / 38400 baud Selectable)	\$XXHDM	\$XXTHS
	\$XXHDG	\$XXHDT
	\$XXHCC	\$XXHDM
	\$XXTHS	\$XXHDG
	\$XXHDT	\$XXHCC
	\$XXROT	\$XXROT
Heading Input Resolution 0.1°		

Step by Step ('S' Type) Heading Input Port	
Voltage	5Vdc Only
Steps / Degree	3, 6, 12 or 24
Max Consumption	2mA / Line

Follow Up rate (Minimum)	
All Heading Input Types	30° / Sec

IEC 61162-1 or -2 Speed or Pulse Input data	
Speed Over Ground (SOG)	\$XX VBW \$XX VTG
Speed Through Water (STW)	\$XX VBW \$XXVHW
200/400 ppNm	5-24V p/p STW in only

Draft Input Data	
Analogue	4 – 20mA

Track Steer Data Input Port	
IEC 61162-1 or -2 Track Data from track Control System (Priority as shown)	\$XX HTC \$XX APB \$XX HSC

Op. Temp. Range	-20 to +60 °C
-----------------	---------------

Compass Safe Distance	
Control Unit	0.5m
Distribution Unit	1.5m

Mechanical Data	Control Unit	Distribution Unit
Width	204mm	300mm
Height	132mm	300mm
Depth – (behind bezel for Control Unit)	49mm	120mm
Weight	1.8kg	9.5kg
IEC 60945 Equipment Category	Protected	Protected

IEC 61162-1 or -2 Heading Data (Isolated RS422)			
Update Rate	Selectable at 1Hz, 10Hz, 20Hz, 40Hz or 50Hz		
	Hz	Mag	Gyro
Sentence Types (Mag/Gyro versus Update Rate)	1	\$HCHDM	\$HEHDT
		\$HCHDG	\$AGHDT
		\$APHDM	\$HETHS
	10	\$APHDG	\$AGTHS
		\$HCHDM (5Hz)	\$HEHDT
20	\$HCHDG	\$HETHS	
	40	\$HCHDM	\$HEHDT
	50	\$HCHDG	\$HETHS
Resolution	0.1°		
Autopilot Status Data	1	\$APRSA	\$AGRSA
		\$APHTD	\$AGHTD

Furuno AD10 Heading Data	
Update Rate	Selectable @ 5Hz or 40Hz
Resolution	Selectable @ 0.166 or 0.1°
Signal Amplitude	Isolated 5Vdc (RS422)
Output	20mA Max (Source/Sink)

Step by Step heading Data	
Steps per degree	Selectable @ 3, 6, 12 or 24
Signal Amplitude	5Vdc
Maximum Rate	Selectable 8, 16 or 24°/Sec
Z out	470R

Analogue Steering Machine / Thruster Outputs	
Triple ±10Vdc Analogue Outputs	Z out 200R
Triple 4-20mA Outputs	Max Voltage / Load Res 20Vdc / 1K Ω

Twin Solid State Solenoid Switching (Rudder A / B)	
Polarity	Comm. +ve / -ve Selectable
Max Rating	5A @ 11-110Vdc Max

System Alarms	
Main Power Fail	Watch Alarm Timeout
Back Up Power Fail	OHA Limit
Heading Data Fail	CCA Limit
Track Data Fail	Course Change
Steering Fail	Track Heading Change
Distribution Unit Fail	Remote Control Engaged
Limit Switch Status	Rudder Ref Unit Fail
CCA Data Fail	Control Unit Fail
Alarm Contacts are available (rated 3A) for BNWAS BNC, Off Heading, Power Fail and System Fail.	

IEC 61162-1 or -2 CAM / BAM Interface		
Sentence Received	\$xxACN	
Sentences Transmitted	Mag	Gyro
	\$APALC,	\$AGALC,
	\$APALF,	\$AGALF,
	\$APHBT,	\$AGHBT,
	\$APEVE	\$AGEVE,
\$APARC	\$AGARC	

