

**SPECIFICATIONS OF CLASS B AIS TRANSPONDER
FA-70**

1 GENERAL

- 1.1 Type Class B AIS Transponder
- 1.2 RX capacity 2250 report/minute, 1 channel
 4500 report/minute, 2 channel
- 1.3 RX system SOTDMA or CSTDMA (user select),
 dual wave simultaneous reception
- 1.4 Synchronous framing UTC direct or UTC indirect (SOTDMA)
 UTC direct (CSTDMA)
- 1.5 Operating mode Autonomous, Assigned, polled/interrogation response
- 1.6 Frequency switching Automatic
- 1.7 DSC receiving Time sharing system
- 1.8 Initialization Within 2 minutes after power-on
- 1.9 Prevention of abnormal TX Auto-suspended for detecting TX more than 1 second
- 1.10 Regulations IEC 62287-1/2

2 TRANSMITTER

- 2.1 Frequency range 156.025 MHz to 162.025 MHz (F1D)
- 2.2 Output power 5 W or 1W (SOTDMA), 2 W (CSTDMA)
- 2.3 Modulation GMSK
- 2.4 Channel interval 25 kHz
- 2.5 Frequency deviation ±500 Hz
- 2.6 Spurious emission 9 kHz to 1 GHz, -36 dBm or less
 1 GHz to 4 GHz, -30 dBm or less
- 2.7 Transmission interval
 SOTDMA 5 s (SOG>23 kn), 15 s (14<SOG≤23 kn), 30 s (2<SOG≤14 kn),
 3 min. (SOG≤2 kn)
 CSTDMA 30 s (SOG>2 kn), 3 min. (SOG≤2 kn)

3 AIS RECEIVER

- 3.1 Frequency range 156.025 MHz to 162.025 MHz (F1D)
- 3.2 Oscillator frequency 1st local oscillator: f+ (46.35/58.05 MHz),
 2nd local oscillator: 45.9/57.6 MHz
- 3.3 Intermediate frequency 1st: 46.35/58.05 MHz, 2nd: 450 kHz
- 3.4 Receiving method Double super heterodyne
- 3.5 Sensitivity -107 dBm or less (PER20% or less)
- 3.6 Error at high input level -77 dBm (PER2% or less), -7 dBm (PER10% or less)
- 3.7 Co-channel rejection -10 dB or more
- 3.8 Adjacent channel selectivity 70 dB or more
- 3.9 Spurious response 70 dB or more
- 3.10 Inter-modulation 65 dB or more
- 3.11 Sensitivity suppression 86 dB or more (±5 MHz, ±10 MHz)

4 DSC RECEIVER (TIMESHARING SYSTEM)

4.1	Frequency	156.525 MHz (CH70)
4.2	Sensitivity	-107 dBm (BER1% or less)
4.3	Error at high input level	-7 dBm (BER1% or less)
4.4	Co-channel rejection	-10 dB or more
4.5	Adjacent channel selectivity	70 dB or more
4.6	Spurious response	70 dB or more
4.7	Inter-modulation	65 dB or more
4.8	Sensitivity suppression	84 dB or more

5 VHF SPLITTER

5.1	Rx function	
	Frequency range	155 MHz to 164 MHz
	Insertion loss	0 dB typical
5.2	Tx function	
	Frequency range	155 MHz to 164 MHz
	Insertion loss	1 dB or less
	Input power	25 W max.
	Power detection	0.1 W or more

6 GPS RECEIVER

6.1	Number of channel	GPS: 12 channels parallel, SBAS: 2 channels, 14 satellites
6.2	Receiving frequency	1575.42 MHz, C/A code
6.3	Position accuracy	GPS: 13 m approx. (2drms, HDOP≤4)
6.4	Tracking velocity	1000 kn
6.5	Position fixing time	90 s approx.
6.6	Update interval	1 s
6.7	DGPS data correcting	By AIS information

7 INTERFACE

7.1	Number of port	
	Serial	2 ports, IEC61162-1, 4800/38400 bps
	NMEA2000	1 port, External power required 12-24VDC (9-32V), LEN=1@9V
	USB	1 port, USB2.0, Full speed, for maintenance
	Contact closure	1 port, for silent switch
7.2	Data sentence	
	Input	ABM*, ACK, AIQ, BBM*, HDT, SSD, THS, VSD
	Output	ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTG
		*: SOTDMA only
7.3	Output P sentence	
	PFEC	pidat
7.4	NMEA2000 PGN	
	Input	059392/904, 060160/416/928, 065240, 126208, 127250
	Output	059392/904, 060928, 126208/464/992/993/996/998, 127258, 129025/026/029/038/039/040/041/540,

129792/793/794/795*/796/797/798,
129801/802/803/804*/805/806/807/809/810/811/812*/813*
*: SOTDMA only

8 POWER SUPPLY

12-24 VDC (9.6-31.2 V): 1.8-0.9 A (TX), 0.3-0.2 A (RX)

9 ENVIRONMENTAL CONDITIONS

9.1 Ambient temperature

Antenna unit -25°C to +70°C

Transponder -15°C to +55°C

9.2 Relative humidity 93% or less at +40°C

9.3 Degree of protection

Antenna unit IP56

Transponder IP55

9.4 Vibration IEC 60945 Ed.4

10 UNIT COLOR

10.1 Antenna unit N9.5

10.2 Transponder N1.0