

**SPECIFICATIONS OF MULTI FUNCTION DISPLAY  
TZTL15F**

**1 GENERAL**

- 1.1 Display 15.6-inch full-wide TFT color LCD, 1366 x 768 (WXGA)
- 1.2 Brightness 1000 cd/m<sup>2</sup> typical
- 1.3 Display colors 16,770,000 colors (plotter), 64 colors (echo), 16 colors (radar)

**2 PLOTTER FUNCTION**

- 2.1 Display mode Course plot, NAV data (includes instrument and engine data)
- 2.2 Projection Mercator
- 2.3 Usable area 85° latitude or below
- 2.4 Memory capacity Track: 30,000 points, Point/MOB: 30,000 point  
Route: 200 courses w/500 points each  
ARPA: 30 targets, AIS: 100 targets
- 2.5 GPS receiver
  - Receiving frequency 1575.42 MHz
  - Number of channel GPS: 56 ch, SBAS: 1 ch
  - Accuracy (approx.) GPS: 10 m (2drms, HDOP<4),  
WAAS: 3 m (2drms, HDOP<4), MSAS: 7 m (2drms, HDOP<4)
  - Ship's speed range 500 m/s max. (all satellites at -130dBm)
  - Position fixing time Cold start: 100 s typical
  - Position update interval 1 s

**3 RADAR FUNCTION**

- 3.1 Orientation mode Head-up, North-up (heading data required)

**4 SOUNDER INDICATION**

- 4.1 Output power 600 Wrms or 1 kWrms
- 4.2 Frequency 50/200 kHz alternative output
- 4.3 Display mode ACCU-FISH™, A-scope, Auto (Fishing/ Cruising),  
Temperature graph, Estimation of bottom composition

**5 OTHER FUNCTIONS**

- 5.1 Instrument display Instrument data required
- 5.2 Camera monitor NTSC/PAL data required
- 5.3 Language Chinese, Danish, English (USA/UK), Finnish, French, German, Greek, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish
- 5.4 AIS information AIS receiver required
- 5.5 DSC display Target data required
- 5.6 Alarm School of fish\*, School of fish for bottom lock\*, Anchor Watch, XTE, Speed\*, Sea surface temperature\*, Depth\*, CPA/TCPA\*, Hardware  
\*: option

- 5.7 Notification DSC receiving, Waypoint crossing, End of route, AIS target count, NAVpilot engagement (NAVpilot series required)

**6 INTERFACE**

- 6.1 Number of port
  - LAN 1 port, Ethernet 100Base-TX
  - NMEA2000 1 port (LEN=1), external power input required
  - USB 1 port, USB2.0
  - Video output 1 port, HDMI (720 p)
  - Video input 2 ports, NTSC/PAL
  - SD card slot 1 port, micro-SDXC
  - Contact closure 1 port, operator fitness signal (normal open)
- 6.2 Wireless LAN IEEE802.11b/g/n
  - Transmit frequency 2.412 to 2.462 GHz
  - Output power 12 dBm max.
- 6.3 NMEA0183 (V2.0) sentences (Ethernet)
  - Output AAM, APB, BOD, DBT, DPT, GGA, GLL, GNS, GSA, GSV, RMB, RMC, RTE, TTM, VDM, VTG, WPL, XTE, ZDA
- 6.4 NMEA2000 PGN
  - Input 065280, 126992/993/996, 127237/245/250/251/257/488/489/505, 128259/267, 129025/026/029/033/038/039/040/041/291/538/540, 129793/794/798/808/809/810, 130306/310/311/312/313/314/316, 130577/578/817/818/820/822/823/826/827/828/880
  - Output 126992/993/996, 127250/251/257/258, 128259/267/275, 129025/026/029/033/283/284/285, 130306/310/312/313/314/316

**7 POWER SUPPLY**

- 7.1 Multi function display 12-24 VDC: 3.6-1.8 A
- 7.2 Rectifier (option) 100-115/220-230 VAC, 1 phase, 50/60Hz

**8 ENVIRONMENTAL CONDITIONS**

- 8.1 Ambient temperature -15°C to +55°C
- 8.2 Relative humidity 95% or less at +40°C
- 8.3 Degree of protection IP56

**9 UNIT COLOR**

N2.5 (fixed)