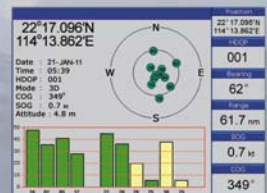
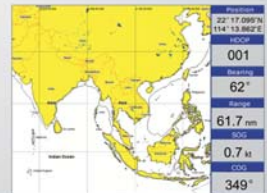


ONWA®

MODEL KP-6299A/6299B



- Built-in AIS Receiver (6299B) or AIS Class B Transponder (6299A)
- High resolution TFT day-view LCD display
- SD-cards slot for C-Map MAX and user data
- C-Map MAX and K-Chart Selectable
- Tide table and Celestial display
- Versatile display mode include
 - Plotter Screen
 - Nav.Data
 - Satellite Information
 - AIS Display
 - Compass Screen
- GOTO track navigation
- Map orientation select
- Proximity waypoints alarms
- Perspective View
- Palette
 - Normal
 - Daylight - exposed to sunlight
 - Night - in dark environment
 - NOAA- paper chart colors
- Wind speed and direction display by optional sensor input
- AIS guard zone with CPA and TCPA alarm



KP-6299A/6299B

SPECIFICATION OF KP-6299A/6299B

PLOTTER CHARACTERISTICS

Waypoints/Icons:	15,000 waypoints with name, symbol, 10 proximity waypoint
Routes:	waypoint up to 200 points each, plus MOB and Track Navigation or Goto Track modes
Tracks:	30,000 point automatic track log; 15 saved track (up to 2000 track points each) let you retrace your path in both directions
Alarms:	XTE, Anchor drag, arrival, speed, voltage, proximity waypoint and time, AIS alarm.
Palette:	Normal Daylight exposed to sunlight Night in dark environment NOAA paperchart colors
Tides:	Tide data
Projection:	Mercator projection
Position format:	Lat/Lon
Basemap:	Built-in Onwa K-Chart
External Map:	SD Cards slot for C-Map MAX
User data storage:	Internal backup of user settings, or external SD-card
Plot Interval:	1s to 99h or 0.01 nm to 9.99nm
Plotting scales:	0.01nm to 1,000nm
Nav Datat:	Inputs: \$--DBT, \$--DPT, \$--GGA, \$--GLL, \$--GSA, \$--GSV, \$--HDG, \$--HDM, \$--HDT, \$--MTW, \$--RMB, \$--RMC, \$--VTG, \$--ZDA, \$--VWR, \$--VWT, \$--MWD, \$--VPW, Outputs: \$--AAM, \$--APB, \$--BOD, \$--BWC, \$--GGA, \$--GLL, \$--RMB, \$--RMC, \$--VTG, \$--XTE, \$--ZDA Outputs for autopilot: \$--AAM, \$--APB, \$--BOD, \$--VTG
PERSPECTIVE VIEW:	On/off

Power Supply 10.5 to 35VDC, current drain <500mA at 12V

Physical

Size:	228mm(H)X138mm(W)X79mm(D)
Weight:	0.9kg
Display:	5.6-inches Color TFT day-view LCD 640 X 480 pixels
Waterproofing:	Display unit: IPX5 Antenna unit: IPX6
Temperature range:	Display unit: -15°C to +55°C Antenna unit: -25°C to +70°C

AIS Characteristics

Transmitter x 1	(For KP-6299A ONLY)
Receiver x 2	(one time shared between AIS/CDSC)
Frequency :	156.025 to 162.025 MHz in 25KHz steps
Output power :	2 watts typical (For KP-6299A only)
Channel bandwidth :	25KHz
Channel step :	25KHz
Modulation modes :	25KHz GMSK (AIS, TX AND RX) 25KHz AFSK (DSC, RX only)
Bit rate :	9600 b/s ± 50 ppm (GMSK) 1200 b/s ± 50 ppm (FSK)
RX sensitivity :	Sensitivity - 107dBm 25 KHz Message error rate less than :2% Co-channel 10dB IMD 62dB Bloching 84dB

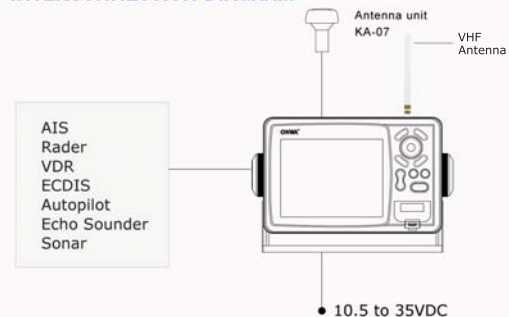
EQUIPMENT LIST

- Standard
1. Display unit
 2. GPS Antenna unit with 10m cable
 3. Operator manual
 4. Installation materials and standard spare parts

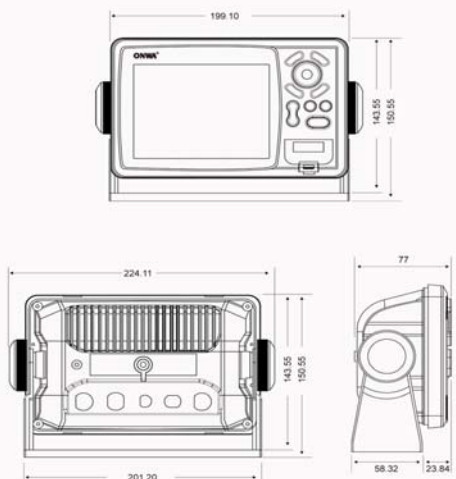
GPS RECEIVER CHARACTERISTICS

Receiver:	50 parallel channel GPS receiver continuously Tracks and uses up to 50 satellites to compute and update your position
Acquisition times:	Cold start: 27 seconds average Warm start: 27 seconds average Hot start: 1 seconds average
Update rate:	1/second, continuous
Accuracy:	Position: 2.5 meters(95%) without S/A Velocity: 0.1 Meter/sec without S/A Time: ±100ns synchronized to GPS time
Dynamics:	Altitude: 50,000m Max Velocity: 500 m/s Acceleration: 4g Max
Datum:	WGS 84 & Others
Interfaces:	NMEA 0183 input and output, RS232 and RS422 output
Antenna:	KA07

INTERCONNECTION DIAGRAM

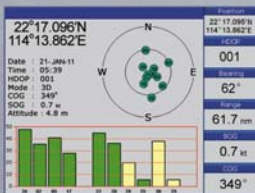
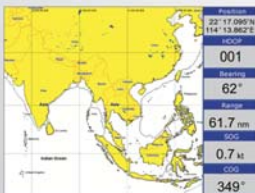
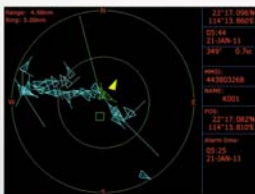


DISPLAY UNIT



ONWA®

MODEL KP-8299A/8299B



- Built-in AIS Receiver (8299B) or AIS Class B Transponder (8299A)
- High resolution TFT day-view LCD display
- SD-cards slot for C-Map MAX and user data
- C-Map MAX and K-Chart Selectable
- Tide table and Celestial display
- Versatile display mode include
 - Plotter Screen
 - Nav.Data
 - Satellite Information
 - AIS Display
 - Compass Screen
- GOTO track navigation
- Map orientation select
- Proximity waypoints alarms
- Palette
 - Normal
 - Daylight - exposed to sunlight
 - Night - in dark environment
 - NOAA- paper chart colors
- Wind speed and direction display by optional sensor input
- AIS guard zone with CPA and TCPA alarm

KP-8299A/8299B

SPECIFICATION OF KP-8299A/8299B

PLOTTER CHARACTERISTICS

Waypoints/icons:	15,000 waypoints with name, symbol, 10 proximity waypoint
Routes:	waypoint up to 200 points each, plus MOB and Track Navigation or Goto Track modes
Tracks:	30,000 point automatic track log; 15 saved track (up to 2000 track points each) let you retrace your path in both directions
Alarms:	XTE, Anchor drag, arrival, speed, voltage, proximity waypoint and time, AIS alarm.
Palette:	Normal Daylight exposed to sunlight Night in dark environment NOAA paperchart colors
Tides:	Tide data
Projection:	Mercator projection
Position format:	Lat/Lon
Basemap:	Built-in Onwa K-Chart
External Map:	SD Cards slot for C-Map MAX
User data storage:	Internal backup of user settings, or external SD-card
Plot Interval:	1s to 99h or 0.01 nm to 9.99nm
Plotting scales:	0.01nm to 1,000nm
Nav Datal:	Inputs: \$--DBT, \$--DPT, \$--GGA, \$--GLL, \$--GSA, \$--GSV, \$--HDG, \$--HDM, \$--HDT, \$--MTW, \$--RMB, \$--RMC, \$--VTG, \$--ZDA, \$--VWR, \$--VWT, \$--MWD, \$--VPW Outputs: \$--AAM, \$--APB, \$--BOD, \$--BWC, \$--GGA, \$--GLL, \$--RMB, \$--RMC, \$--VTG, \$--XTE, \$--ZDA Outputs for autopilot: \$--AAM, \$--APB, \$--BOD, \$--VTG
PERSPECTIVE VIEW:	On/off

Power Supply 10.5 to 35VDC, current drain <600mA at 12V

Physical

Size:	290mm(H)X195.5mm(W)X99.5mm(D)
Weight:	2.43kg
Display:	8.0-inches ColorTFT day-view LCD 800 X 600 pixels
Waterproofing:	Display unit: IPX5 Antenna unit: IPX6
Temperature range:	Display unit: -15°C to +55°C Antenna unit: -25°C to +70°C

AIS Characteristics

Transmitter x 1	(For KP-8299A ONLY)
Receiver x 2	(one time shared between AIS/CDSC)
Frequency :	156.025 to 162.025 MHz in 25KHz steps
Output power :	2 watts typical(For KP-8299A only)
Channel bandwidth :	25KHz
Channel step :	25KHz
Modulation modes :	25KHz GMSK (AIS, TX AND RX) 25KHz AFSK (DSC, RX only)
Bit rate :	9600 b/s ± 50 ppm (GMSK) 1200 b/s ± 50 ppm (FSK)
RX sensitivity :	Sensitivity - 107dBm/25 KHz Message error rate less than :2% Co-channel 10dB IMD 62dB Bloching 84dB

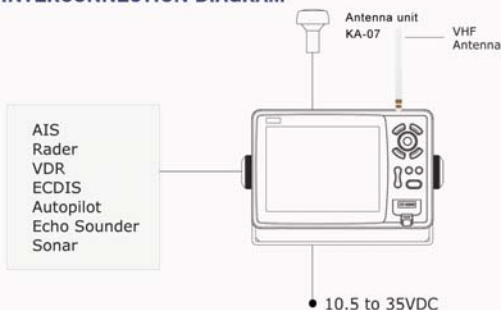
EQUIPMENT LIST

- Standard
1. Display unit
2. GPS Antenna unit with 10m cable
3. Operator manual
4. Installation materials and standard spare parts

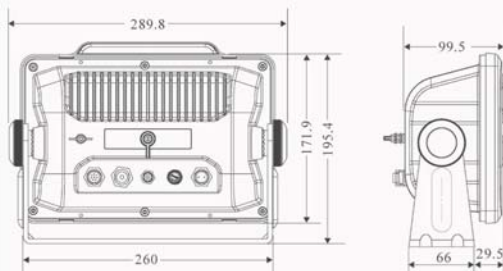
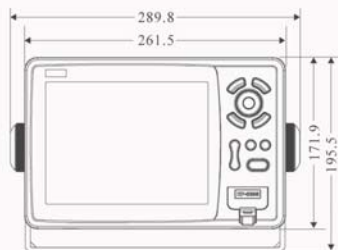
GPS RECEIVER CHARACTERISTICS

Receiver:	50 parallel channel GPS receiver continuously Tracks and uses up to 50 satellites to compute and update your position
Acquisition times:	Cold start: 27 seconds average Warm start: 27 seconds average Hot start: 1 seconds average
Update rate:	1/second, continuous
Accuracy:	Position: 2.5 meters(95%) without S/A Velocity: 0.1 Meter/sec without S/A Time: ±100ns synchronized to GPS time
Dynamics:	Altitude: 50,000m Max Velocity: 500 m/s Acceleration: 4g Max
Datum:	WGS 84 & Others
Interfaces:	NMEA 0183 input and output, RS232 and RS422 output
Antenna:	KA07

INTERCONNECTION DIAGRAM



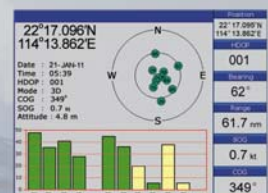
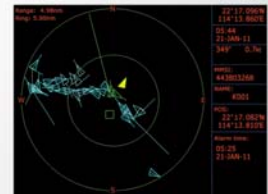
DISPLAY UNIT



ONWA®

MODEL KP-1299A/1299B

- Built-in AIS Receiver (1299B) or AIS Class B Transponder (1299A)
- High resolution TFT day-view LCD display
- SD-cards slot for C-Map MAX and user data
- C-Map MAX and K-Chart Selectable
- Tide table and Celestial display
- Versatile display mode include
 - Plotter Screen
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 - Satellite Information
 - AIS Display
 - Compass Screen
- GOTO track navigation
- Map orientation select
- Proximity waypoints alarms
- Perspective View
 - Normal
 - Daylight - exposed to sunlight
 - Night - in dark environment
 - NOAA- paper chart colors
- Wind speed and direction display by optional sensor input
- AIS guard zone with CPA and TCPA alarm



KP-1299A/1299B

SPECIFICATION OF KP-1299A/1299B

PLOTTER CHARACTERISTICS

Waypoints/icons:	15,000 waypoints with name, symbol, 10 proximity waypoint
Routes:	waypoint up to 200 points each, plus MOB and Track Navigation or Goto Track modes
Tracks:	30,000 point automatic track log; 15 saved track (up to 2000 track points each) let you retrace your path in both directions
Alarms:	XTE, Anchor drag, arrival, speed, voltage, proximity waypoint and time, AIS alarm.
Palette:	Normal Daylight exposed to sunlight Night in dark environment NOAA paperchart colors
Tides:	Tide data
Projection:	Mercator projection
Position format:	Lat/Lon
Basemap:	Built-in Onwa K-Chart
External Map:	SD Cards slot for C-Map MAX
User data storage:	Internal backup of user settings, or external SD-card
Plot Interval:	1s to 99h or 0.01 nm to 9.99nm
Plotting scales:	0.01nm to 1,000nm
Nav Datat:	Inputs: \$--DBT, \$--DPT, \$--GGA, \$--GLL, \$--GSA, \$--GSV, \$--HDG, \$--HDM, \$--HDT, \$--MTW, \$--RMB, \$--RMC, \$--VTG, \$--ZDA, \$--VWR, \$--VWT, \$--MWD, \$--VPW Outputs: \$--AAM, \$--APB, \$--BOD, \$--BWC, \$--GGA, \$--GLL, \$--RMB, \$--RMC, \$--VTG, \$--XTE, \$--ZDA Outputs for autopilot: \$--AAM, \$--APB, \$--BOD, \$--VTG
PERSPECTIVE VIEW:	On/off

Power Supply 10.5 to 35VDC, current drain <400mA at 24V

Physical

Size:	363.8mm(H)X267.9mm(W)X106mm(D)
Weight:	3.95kg
Display:	12.1-inches ColorTFT day-view LCD 800 X 600 pixels
Waterproofing:	Display unit: IPX5 Antenna unit: IPX6
Temperature range:	Display unit: -15°C to +55°C Antenna unit: -25°C to +70°C

AIS Characteristics

Transmitter x 1	(For KP-1299A ONLY)
Receiver x 2	(one time shared between AIS/CDSC)
Frequency :	156.025 to 162.025 MHz in 25KHz steps
Output power :	2 watts typical(For KP-1299A only)
Channel bandwidth :	25KHz
Channel step :	25KHz
Modulation modes :	25KHz GMSK (AIS, TX AND RX) 25KHz AFSK (DSC, RX only)
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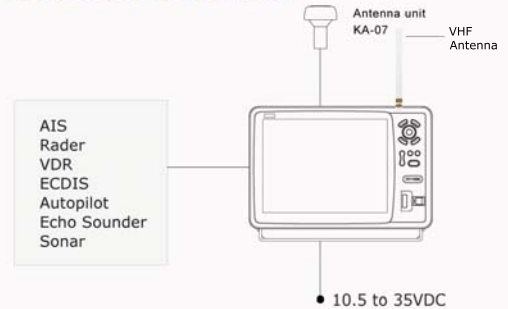
EQUIPMENT LIST

- Standard
1. Display unit
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3. Operator manual
4. Installation materials and standard spare parts

GPS RECEIVER CHARACTERISTICS

Receiver:	50 parallel channel GPS receiver continuously Tracks and uses up to 50 satellites to compute and update your position
Acquisition times:	Cold start: 27 seconds average Warm start: 27 seconds average
Update rate:	Hot start: 1 seconds average
Accuracy:	1/second, continuous Position: 2.5 meters(95%) without S/A Velocity: 0.1 Meter/sec without S/A
Dynamics:	Time: ±100ns synchronized to GPS time Altitude: 50,000m Max Velocity: 500 m/s
Datum:	Acceleration: 4g Max
Interfaces:	WGS 84 & Others NMEA 0183 input and output, RS232 and RS422 output
Antenna:	RS422 output

INTERCONNECTION DIAGRAM



DISPLAY UNIT

