

MDC-1860BB/1810BB/1820BB

- *Display selected from user's choice*
- *Flexible installation suiting your needs*
- *Best suited for ocean going mid-size vessels*
- *Select from 6 kW, 12 kW or 25 kW power output, 4 ft or 6 ft type aerial*

MDC-1860BB: 4 ft / 6 ft, 6 kW

MDC-1810BB: 4 ft / 6 ft, 12 kW

MDC-1820BB: 4 ft / 6 ft, 25 kW

FEATURES

• Free choice display

Unlike conventional radar systems we deliver only the antenna and control box. The display can be any size and any type, as long as the resolution grade is SXGA.

KODEN'S BLACK BOX COLOR RADAR is a COTS based system where the choice is yours!

• Hands-free operation

A newly developed auto tuning and video processing system sets the operator free from cumbersome adjustments such as setting up tuning, STC, gain, etc. With a hands free operation the navigator can concentrate on other tasks on the bridge.

• High definition picture

High definition is available even on the short-range scales, 1/2 NM down to 1/8 NM. This is a powerful feature for harbor and docking operations.

• Collision assessment

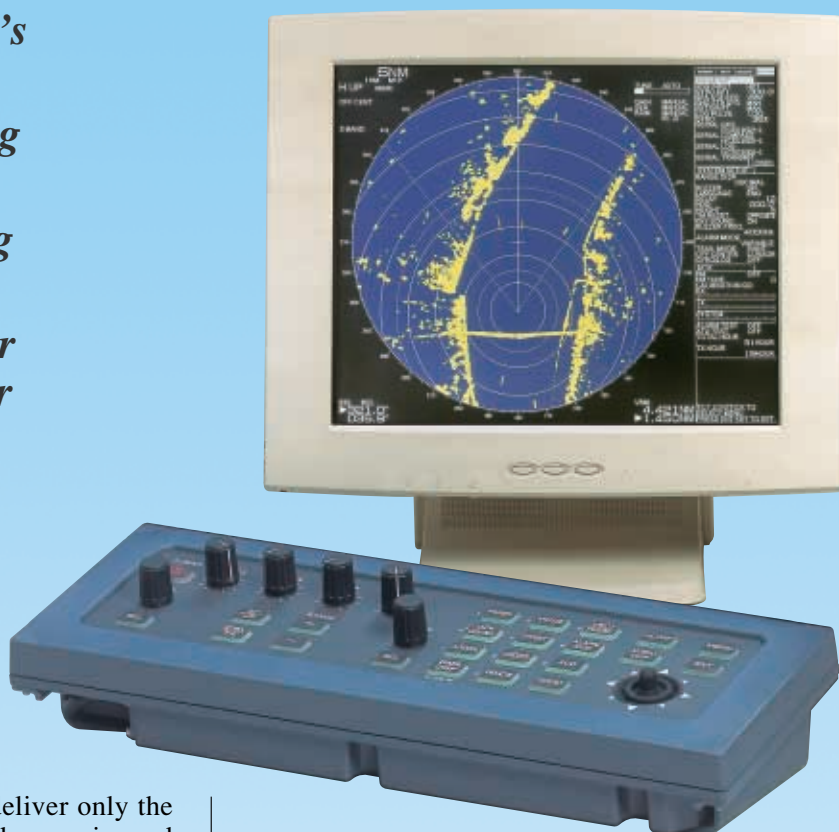
Using a built-in EPA (Electronic Plotting Aid) other ship's movement is displayed in vector form. This feature provides a direct and logical assessment of collision risk and urges the operator to take early maneuvering operations.

• Picture offset to any point

Within 2/3 of the screen radius, the picture can be offset to any point on the screen to gain more viewing range.

• Map functions

Artificial lines and marks can be created and overlaid on the radar screen to represent coastlines, boundaries, etc.



• Alarm zone

A user-definable fan-shaped zone provides monitoring and alerting functions for ships entering and leaving the specified area. This feature becomes part of the ATA (Automatic Tracking Aid) functions when the optional ATA module is fitted.

• Monitor display (Option)

An external monitor display can be fitted on request, providing multiple radar operations from different locations on board the ship, one on the bridge the other in the captain's cabin, for instance.

• Analog RGB output

Radar picture can be supplied to an external monitor or a VDR (Video Data Recorder) through the display's rear panel.

• Serial interface

The IEC 61162-1 serial interface is fitted to connect an external navigation device to display navigational information such as ship's position, speed, course, etc.

• Tracking data output

With the ATA module installed, all tracked ship's data can be output to an external device such as an electronic plotter unit.

SPECIFICATIONS

Antenna unit

	MDC-1860BB	MDC-1810BB	MDC-1820BB
Aerial length	4 feet / 6 feet		
Peak power output	6kW	12 kW	25 kW
Frequency	9410 ± 30 MHz		
Beam width	Horizontal 1.8°/1.2° Vertical 22°		
Side lobes	Within ± 10° Better than -23 dB Outside ± 10° Better than -30 dB		
Rotation	24 rpm		
Transmission pulse	S(Short pulse) 0.08 μs / 2000 Hz		
M1(Medium 1 pulse)	0.25 μs / 1500 Hz		0.3 μs / 1300 Hz
M2(Medium 2 pulse)	0.5 μs / 1000 Hz		0.6 μs / 800 Hz
L(Long pulse)	1.0 μs / 500 Hz		1.2 μs / 500 Hz, 400Hz(96 nm)
IF center frequency	60 MHz		
IF bandwidth	15 MHz (S, M1) / 3 MHz (M2, L)		
Noise figure	Better than 6 dB		
Operation in wind	100 knots as relative		
Water proofing grade	IPX6 (IEC60529)		

Processor unit

Display device	Any size, any type, resolution must be SXGA grade		
Effective diameter	269 mm for 18-inch display, subject to change according to the display size		
Resolution	1280 x 1024 pixels (SXGA)		
Video level	8 levels		
Presentation modes	Head-up, north-up, course-up and true motion		
Range scales (nm)	1/8, 1/4, 1/2, 3/4, 1.5, 3, 6, 12, 24, 48, 64, 72(12 kW), 96(25 kW)		
Rings interval (nm)	1/16, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8, 16, 12(12 kW), 16(25 kW)		
Off-centering	Sweep origin can be moved to any point within 2/3 of the screen radius.		
Trail display interval	Every scan, 15 sec, 30 sec, 1 min, 3 min, 6 min, 12 min and OFF		
Alarm	Entry alarm (alarm range (Minimum 0.5 NM), depth and bearing can be varied)		
EPA	Up to 10 targets can be plotted, 5 points for one target each		
ATA (Option)	Display of acquire/track data of up to 10 targets and Guard Zone are available. Display of guard zone is also available (any alarm range, width and bearing can be set).		
Data available for EPA and ATA	Speed, course, CPA, TCPA, distance, bearing and age (time elapsed since the first plot, applicable to EPA only).		
Minimum detectable range	20 meters at 1/8 nm range		
Range resolution	20 meters at 1/8 nm range		
Range data accuracy	70 meters or 1% of the range scale selected, whichever is the greater.		
Bearing data accuracy	±1° maximum		
Navigation data display	Data of own ship's position (latitude/longitude)		
Input data format	IEC 61162-1/NMEA-0183 ver.2.3 (BWC, GGA, GLC, GLL, HDT, RMB, RTE, VBW, VDR, VHW, VTG, WPL)		
Power supply	10.8 VDC to 41.6 VDC for RB717A/718A 21.6 VDC to 41.6 VDC (24 V/32 V, -10%, +30%) for RB719A		
Power consumption	170 W nominal at 24 VDC input		

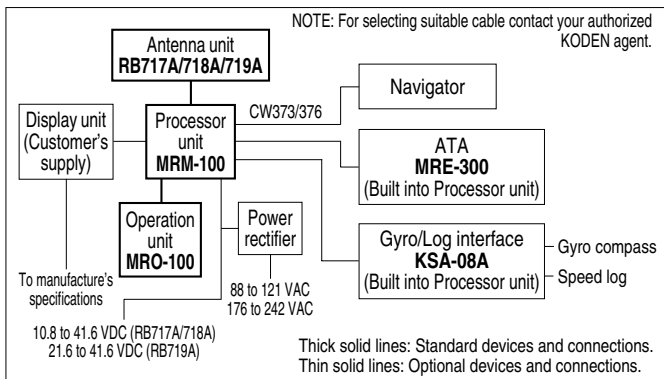
ATA module MRE-300(Option)

Acquisition	Manual
Tracking	Automatic
Number of targets tracked	Up to 10 targets
Numerical data output	Distance, bearing, speed, CPA and TCPA
Alarm	Collision alarm and lost alarm
On screen display	Symbols (acquired target, tracked target, target with data display and lost target), target number and vectors.
Display mode	Relative and True
Tracking distance range	Up to 40.0 nm
ATA data output	To be taken via the DATA 1 connector on the display rear panel. Signal level: RS422, Data format: IEC 61162-1

Environmental conditions

	Antenna	Processor unit
Operating temperature	-25°C to +55°C	-15°C to +55°C
Storage temperature	+70°C	

CONNECTIONS



EQUIPMENT LIST

Standard equipment

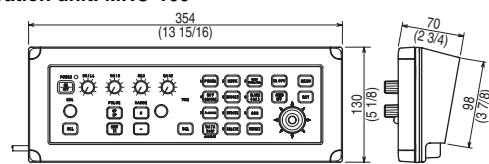
Antenna unit	Aerial	RW701A-04	4 feet
		RW701A-06	6 feet
	Transceiver	RB717A	6 kW
		RB718A	12 kW
		RB719A	25 kW
Processor unit		MRM-100	
Operation unit		MRO-100	
Connecting cable		242J159098B	15 m (49 3/16 ft) with connectors on both ends
DC power cable		CW-256	3 m (16 3/8 ft) with 5-pin connector one end
Spare parts kit		RF725A/MRD-100.SP	
Installation material		M12-BOLT.KIT	For antenna unit
		RF725A/MRD-100.KIT	For display unit
Operation manual		MDC-1800BBSER.OM.E	

Optional items

ATA	MRE-300	Built into processor unit
AIS interface	AIS-100	Built into processor unit
Gyro interface	KSA-08A	Built into processor unit
Navigator connecting cable	CW-373	With 6-pin connector attached on both ends
	CW-376	With 6-pin connector one end flying leads other end
Rectifier	PS-010	With 2 spare fuses (5 A)
AC power cable	VV-2D8	Flying leads on both ends
Connecting cable	242J159098C	20m with connector attached on both ends
in extra length	242J159098D	30m with connector attached on both ends

DIMENSIONS AND WEIGHT

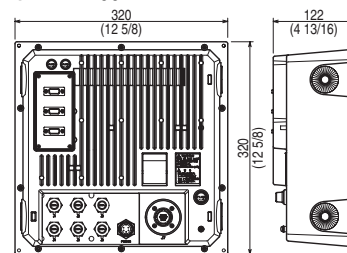
Operation unit: MRO-100



Unit: mm (inch)

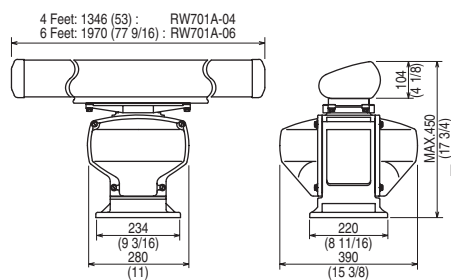
Weight:
2 kg (4.5 lb)

Processor unit: MRM-100



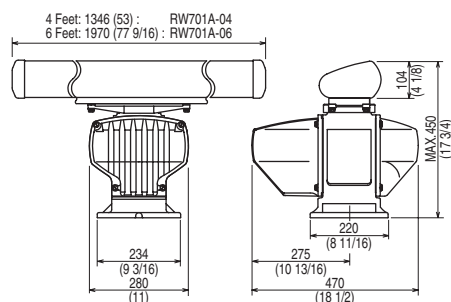
Weight:
5.5 kg (12.1 lb)

Antenna unit: RB717A/RB718A with RW701A-04/06



Weight:
23 kg (51 lb)
with RW701A-04
25 kg (56 lb)
with RW701A-06

Antenna unit: RB719A with RW701A-04/06



Weight:
27 kg (60 lb)
with RW701A-04
29 kg (64 lb)
with RW701A-06

* Specifications subject to change without notice.

KODEN

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Certified to ISO 9001 (TUV PRODUCT SERVICE)



Safety
precaution

To ensure proper and safe use of the equipment,
please carefully read and follow the instructions in
the OPERATION MANUAL.

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