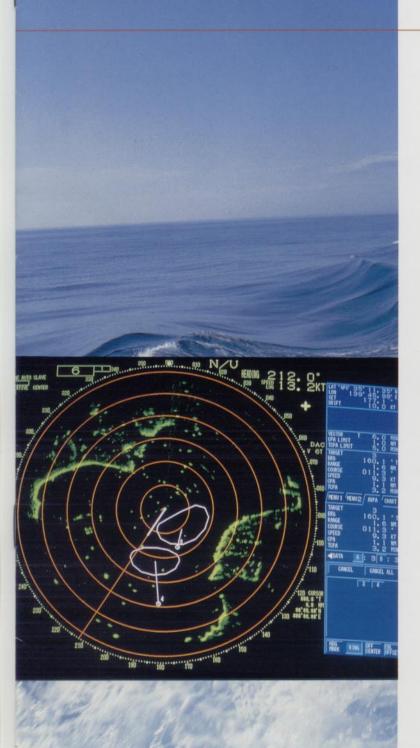


TOKIMEC INC.

MARINE RADAR BR-3440







Discover the performance of the BR-3440. An advanced new multi-functional radar. The BR-3440 is a futuristic marine radar system designed with the needs of next-generation bridge systems in mind.

The built-in ARPA which conforms to IMO standards offers extensive support for the gathering of navigation area information, for assessing of the information, accurately reading conditions and for making navigational decisions.

Radar system without ARPA can also be selected. The BR-3440 is the key to providing safe navigation and reducing manning in ship operation.

Features

Clear high-grade screen

- The latest signal processing technology is used to moderately reduce the sea, rain and snow clutter, and provide operators with accurate image.
- · The high-resolution display provides easier-to-view images in both short and long ranges.

Ergonomic panel layout

- To increase user-friendliness the basic operations are designed to be controlled from the switches and control knobs on the operation panel.
- Track ball-based, interactive menus are provided to call up the various functions to speed up and simplify operation.

Extensive ARPA functions

- · The newly developed dangerous area of collision (DAC) display provides easy confirmation of the safety course.
- · ARPA information output function is also standard feature.

Adaptable to integrated bridge systems

- In addition to functioning as a sensing system for a centralized ship management, an optional BR-3440 function allows operators to confirm safety course on the screen before altering course.
- The BR-3440 is equipped with all the necessary features for supporting centralized bridge monitoring for Integrated bridge systems.

Extensive Options

- Plotter: records and display own ship's track, possible to display with radar images.

- Chart interface : superimposes electronic reference chart (ERC) when accompanied by plotter.

- Pilot control unit : allows setting of auto pilot courses on operation panel, enables automatic course-holding.

- Adaptive interface : connects other radar systems for use as ARPA-equipped remote display unit.

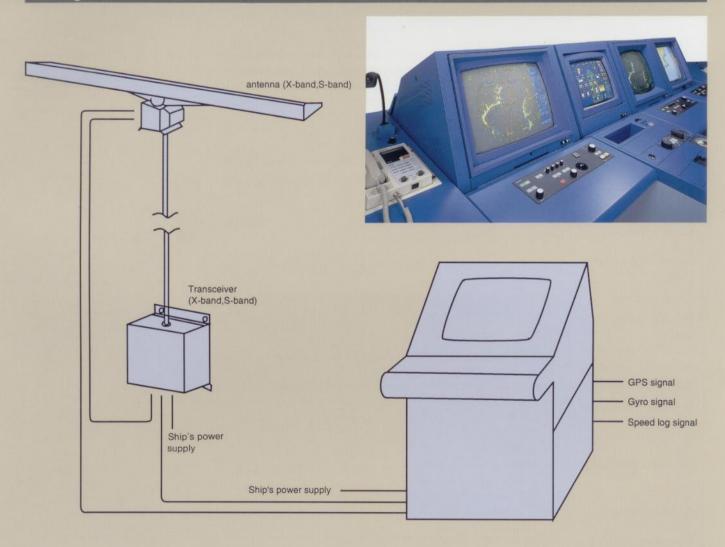
NAV line: offers display editing and recording of navigation lines on the screen.

- Radar interswitch: switching unit to be used when two radar systems are installed.

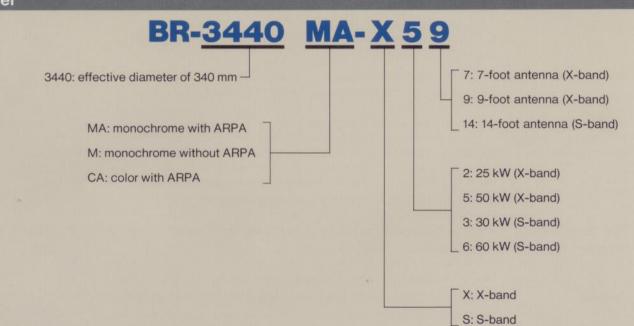
- Performance monitor: available in active and passive models, used to check the performance of radar system both

transmitting and receiving sides.

Configurational outline



Model



Specification

Model	X-band						S-band					
Function	BR-3440CA -X57 BR-3440MA-X57 BR-3440M -X57		BR-3440CA -X59 BR-3440MA-X59 BR-3440M -X59		BR-3440CA -X27 BR-3440MA-X27 BR-3440M -X27		BR-3440CA -X29 BR-3440MA-X29 BR-3440M -X29		BR-3440CA -S614 BR-3440MA-S614 BR-3440M -S614		BR-3440CA -S314 BR-3440MA-S314 BR-3440M -S314	
Display type	raster scan PPI											
, ,,,,	BR-3440 CA effective dia. 340mm or more, color											
CRT	BR-3440 MA effective dia. 340mm or more, monochrome (green) BR-3440 M effective dia. 340mm or more, monochrome (green)											
Bearing display	head-up, north-up, course-up											
Range scale (nm)	0.125	0.25	0.5	0.75	1.5	3	6	12	24	36	48	96
Range ring interval (nm)	0.05	0.05	0.1	0.25	0.25	0.5	1	2	4	6	8	16
Range accuracy	±1 % of scale in use or 35 m, whichever is the greater											
Variable range ring (nm)	0~96											
Variable range ring accuracy	±1 % of scale in use or 35 m, whichever is the greater											
Range descrimination	40 m or less (30 m when minimum pulse width is used)											
Minimum detectable range	30 m or less											
Rearing discriminator	Bearing discriminator 1.5° or less (X-band 7-foot) 1.4° or less (X-band 9-foot) 1.9° or less (S-band 14-foot)											
bearing discriminator												
Bearing accuracy	better than 1.0°											
Resolution	horizontal 1280 x vertical 1024 dots											
Refresh	60 Hz non-interlace											
Video display	process video (8 level gradations)											
2 (EBL1 and EBL2)												
Bearing cursor	4-digit numerical display EBL2 is also used for offset/parallel (within PPI screen)											
Manual plotting	electronic mark display (max. 20 points)											
Bearing graduation	Indication of 360° in 1° step on CRT, bold at every 5°, numerical indication at every 10°											
Bearing input	360X or 90X synchro signal, step(1step=1/6°) signal selectable by dip switch or serial signal of TOKIMEC specification (RS422)											
True motion display function	operative in 0.125~96 nm range (up to 70 % of effective radius can be set in 0.125~48 nm ranges, whereas about 1 nm in 96 nm range)											
Controls	Power, ON/Standby, Range \pm , Dimmer, Alarm, EBL1, EBL2, EBL control, VRM1, VRM2, VRM control, TUNE, GAIN, SEA, RAIN, BRIGHTNESS and CONTRAST other items selected from menu using track-ball cursor and SET switch.											

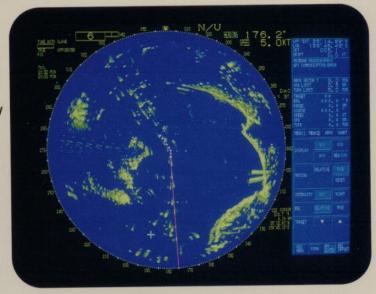
	Model		X-b	S-band								
Fı	unction	BR-3440CA -X57 BR-3440MA-X57 BR-3440M -X57	BR-3440CA -X59 BR-3440MA-X59 BR-3440M -X59	BR-3440CA -X27 BR-3440MA-X27 BR-3440M -X27	BR-3440CA -X29 BR-3440MA-X29 BR-3440M -X29	BR-3440CA -S614 BR-3440MA-S614 BR-3440M -S614	BR-3440CA -S314 BR-3440MA-S314 BR-3440M -S314					
Ai	ntenna											
	Beam width horizontal (degree)	1.0	0.8	1.0	0.8	1.8	1.8					
	vertical (degree)	21	21	21	21	25	25					
	Sidelobe level		main beam -27 main beam -30 m									
	Rotations	0.367s ⁻¹ (22min ⁻¹)										
Tr	ransmitter											
	Frequency	9375 MHz	±30 MHz	9410 MHz	±30 MHz	3050 MHz ±25 MHz						
	Output peak	50	kW	25	kW	60 kW 30 kW						
	Repetition frequency and pulse width		0.5	32 32 16 16	00	Pulse width (μs) 0.06 0.15 0.3 0.5 1.0						
Re	eceiver		TH MARKET									
	RF and IF amplification	microwave integrated circuit (MIC) and logarithmic amplifier										
	Intermediate frequency	60 MHz 24 MHz (at pulse width 0.06 or 0.08 μs) 10 MHz (at pulse width 0.15 or 0.3 μs) 5 MHz (at pulse width 0.5 or 1.0 μs)										
	Intermediate frequency and band width											
	Noise figure	better than 6dB	n 6dB, over all									
	Tuning method	automatic frequency control (AFC) and manual with bar graph										
Po	ower supply											
	Power supply and power Consumption	transceiver unit (w/antenna) AC 100/110/115 V or 220 V 3ϕ 50/60 Hz display section (image processor) AC 100/110/115 V or 220 V 1ϕ 50/60 Hz 1.5 kVA (X-band no wind) or 1.8 kVA (S-band no wind)										
	Power supply variation	ower supply variation ±10 % of rated input										
Cer	tification standards	Minister of Posts and Telecommunications, class 1 radar (with radar plotting function)										
AF	Target	acquisition: up to 20 targets, automatic with guard ring or manual Tracking: 0.1~36 nm (range scale 3~96 nm) 0.1~24 nm (range scale 0.125~1.5 nm) ARPA data: target identify mark 1,2,3···20 vector (1~60 min. true or relative), DAC, history tail (5 points at 1~6 minutes interval, true and relative) numerical display of range, true bearing, true course, true speed, CPA and TCPA										
	Alarm	visual and audible THREAT, LOST target, sense of failure										
	Trial manoeuvre	simulation func- (informed with 1		ion to the target v	varies when own s	ship will be chang	ged					

Sample display



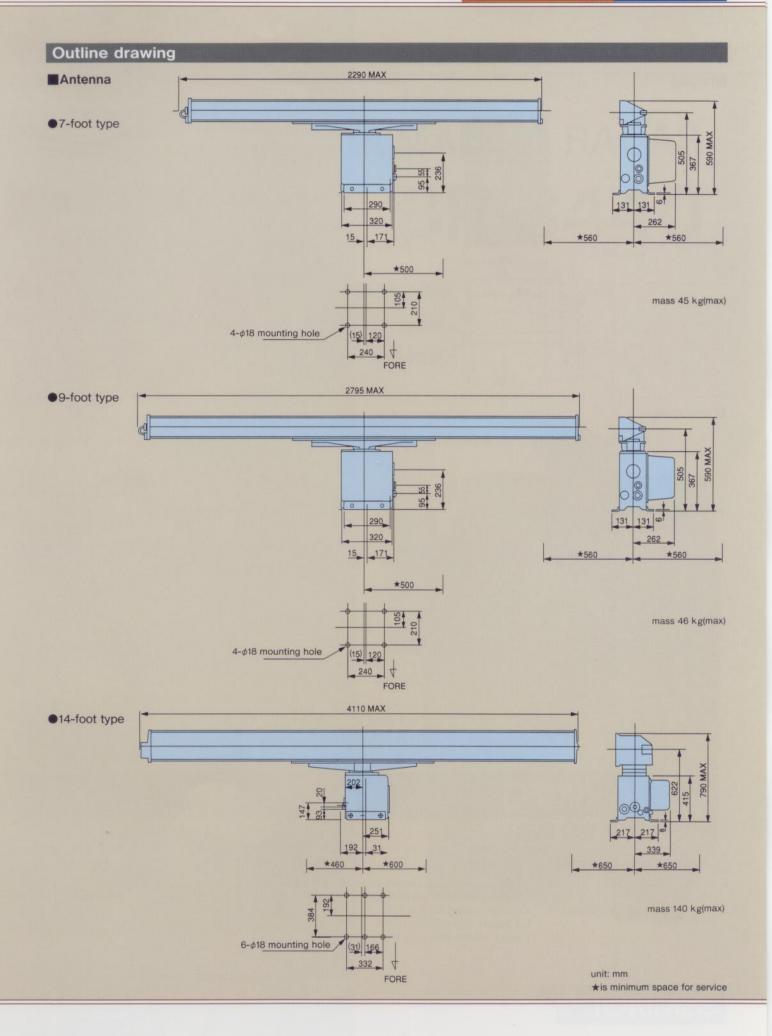
DAC display

Echo trail display





plotter (in course up mode) with chart display



Outline drawing *****700 925 Display 840 450 Mass 220 kg 750 35 665 650 50 4-φ24 mounting hole 285 350 cable inlet 565 unit: mm terminal of earth 100 ★is minimum space for service FORE mounting dimensions ■Transceiver ●25 kW/50 kW X-band ●30 kW/60 kW S-band waveguide flange waveguide flange front cover front cover 4-φ18 mounting hole 4-φ18 mounting hole 590 630±1 665 590 380±1 380±1 *****500 305 *****500. cable cramp cable cramp Mass 25 kg(Max) Mass 20 kg(Max) terminal of earth terminal of earth Before operating this equipment. Design and specifications are subject to change you should first thoroughly read without prior notice, and without any obligation on the part of the manufacturer. CAUTION the operation manual.

TOKIMEC

TOKIMEC INC.

www.tokimec.co.jp/marine/

Control Division I

Head Office

2-16-46, Minami-Kamata, Ohta-ku, Tokyo 144-8551, JAPAN

Phone 81-3-3737-8631 Fax 81-3-3737-8666

TOKIMEC U.S.A., INC.

445 South Figueroa St., Suite 3770 Los Angeles, California 90071 U.S.A. Phone 1-213-689-4747 Fax 1-213-689-0303