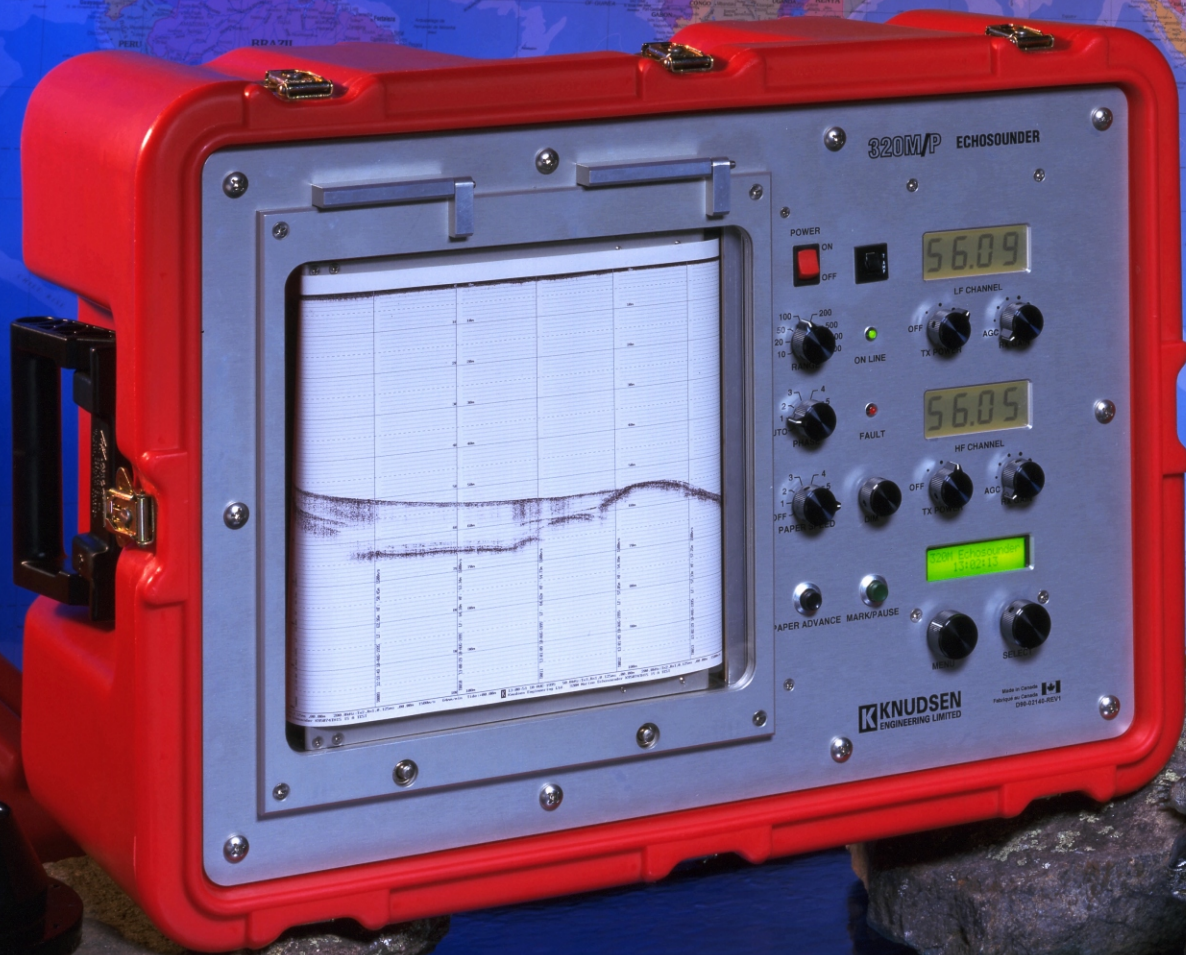


K **KNUDSEN**
ENGINEERING LIMITED

320MP
ECHOSOUNDER

The 320MP Echosounder
Splashproof version of the proven 320M



Rugged, full-featured echosounder
Splashproof operation, waterproof transit
Ideal for use in open-boat conditions
Hydrographic Survey
Pre and Post Dredge Operations
Single / Dual Frequency, 3.5 to 250 kHz
Automatic or Manual Control
High Resolution, 32 Greyscale Printer
Software Flexibility Ensures Product Longevity
Interface - GPS, Heave, Datalogger, SCSI, Windows®

The 320MP is a splashproof version of the proven 320M Marine Echosounder.

Using either the high or low frequency channel, or both simultaneously, the 320MP produces a high resolution record accurately depicting bottom profiles and sediment layers with 32 shades of grey. The thermal printer uses easily loaded 21.6cm (8.5") plastic film for permanent, high-quality records. The annotated depth grid is printed with reverse shading for clarity.

Digitized water depth is shown on two large 4-digit LCD displays, visible in direct sunlight and backlit for night operation. Serial RS-232 depth data is continuously available in NMEA format as well as user-defined string formats, and in operator-selectable time and position tagged formats.

An LCD menu display with simple 2-button control provides access to parameters such as sound velocity, draft, TX blanking, serial port assignment, time and date setting, and others, as well as a variety of self-test, communication and configuration features. All settings are retained in non-volatile memory and recalled on power-up.

Three RS-232 ports support communication with personal computers, NMEA input and output devices, GPS receivers, sound velocity sensors, heave sensors, remote depth displays and survey data loggers.

The standard 320MP firmware includes drivers for these devices. Field-upgradeable software ensures systems remain current.

In addition to traditional "hands-on" operation, an optional upgrade allows the 320MP to be operated remotely through the built-in SCSI interface and Windows application software.

Technical Specifications (subject to change without notice):

Main Ranges:	Metres,	Feet or Fathoms
	10	Scale: 1 : 50
	20	1 : 100
	50	1 : 250
	100	1 : 500
	200	1 : 1000
	500	1 : 2500
	1000	1 : 5000
	2000	1 : 10000
	5000	(available via SCSI and serial only)

- Phased Ranges:** Multiple 50% overlapped phases of each range (20% overlap optional), manual or automatic selection.
- Paper Speed:** 7 settings.
- Frequencies:** 3.5 kHz to 250 kHz. Standard frequencies include - 3.5, 12, 24, 28, 30, 33, 50, 200, 210 kHz.
- Depth Display:** Two LCD (backlit) 4-digit displays for high and low frequency.
- Power:** 4 selectable levels up to 2kW on a single frequency or 1 kW on dual frequency.
- Resolution:** 1 cm (0-99.99), 1 dm (100-999.9), 1 m (>1000)
1/100 ft (0-99.99), 1/10 ft (100-999.9), 1 ft (>1000)
1/100 fm (0-99.99), 1/10 fm (100-999.9), 1 fm (>1000)
- Record width:** 20 cm (7.9") Paper width: 21.6 cm (8.5").
- Sound Velocity:** 1300 - 1700 m/s Resolution: 1 m/s
4265 - 5577 ft/s Resolution: 1 ft/s
710 - 929 fm/s Resolution: 1 fm/s
- Clock:** Internal battery backed time and date clock.
- Draft:** 0 - 100 m Resolution: 1 cm
0 - 328.08 ft Resolution: 0.01 ft
0 - 54.68 fm Resolution: 0.01 fm
- Annotation:** Internal: date, time, GPS position.
External: from RS-232 port.
- Pulse Length:** Automatically selected, with operator override.
- Printer:** Self-test, manual or automatic contrast, high resolution of 1600 pixels per line in a 32 step grey scale, LED status indicators, paper advance control.
- Gain Controls:** AGC, TVG and manual receive gain for each frequency.
- TX Blanking:** 0 - 300 m. Resolution: 0.1 m
0 - 984.3 ft. Resolution: 0.1 ft
0 - 164.0 fm Resolution: 0.1 fm
- Serial Ports:** Three RS-232 ports, 300-38,400 baud, optional RS-422.
- SCSI Port:** Standard, 50 pin Micro D
(SCSI communications for 320M only available by purchasing the optional SCSI upgrade kit) *Note: Contact manufacturer for PC requirements.*
- Heave:** TSS and Seatex compatible.
- Position:** Compatible with all popular GPS receivers.
- Power Supply:** 12 to 36 VDC.
85 - 240 VAC adaptor available.
- Dimensions:** W 584 x H 413 x D 362 mm. (23" x 16.3" x 14.3")
- Weight:** 18 kg. (40 lb)
- Units:** Metres, Feet or Fathoms
- Options:** Windows SCSI SounderSuite Software
Single frequency (upgradeable to dual frequency)
Transducer multiplexer
Transducers (many are available)
Transducer 'over the side' mounting brackets
Remote Display
On-site training/installation



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