

SYNCHRONOUS CLOCK SYSTEM MK 2

SUMMARY OF DATA

PURPOSE

The clock system allows Greenwich Mean Time and/or Zone time to be displayed throughout a ship or submarine by means of normal dial clock displays and digital displays. These clocks are slaves to a master control unit from which all time adjustments and corrections are made. The system is capable of supplying up to 35 dial clocks and 70 digital clocks.

BRIEF DESCRIPTION

The dial clocks require two phase-related pulse trains for their operation. The pulse trains are generated from a quartz crystal oscillator. It provides a 10 MHz frequency standard which is divided down by a counter chain into 9 waveform outputs. Eight of the outputs are combined in a logic circuit to form 7 single phase pulse trains which, when operated upon by the front panel control switches, give 7 selected outputs to the Reversible Counter board. This board is controlled such that two phase-related trains are produced from a selected input, one phase leading or lagging the other by 90°. The resulting pulse trains drive the clock's 4-phase stepper motors via push-pull linear amplifiers. The front panel control switches alter the rate of the pulse trains so that different functions can be carried out by the clocks, eg FAST FWD, SLOW FWD etc. Backward rotation is also possible, achieved by making one pulse train lag the other by 90° when for a forward condition it was leading by 90°.

The digital clocks require their information in the form of data bits. These are provided by the Generator, Clock Pulse which accepts suitable outputs from the Control Secondary Clocks and converts them into coded information for onward transmission to the digital clocks.

MAJOR UNITS

<u>NSN</u>	<u>Description</u>
6605-99-524-3115	Cabinet
6605-99-524-3116	Rack
6605-99-529-1051	Generator, Clock Pulse
6605-99-524-3117	Control Secondary Clocks
6605-99-524-3121	Power Supply Unit
5920-99-524-3125	Fuse and Distribution Panel
6605-99-524-3126	Clock, Synchronous
6605-99-523-8774	Clock, Slave Illuminated
6605-99-525-3846	Clock, Secondary
6605-99-527-8509	Indicator Digital Display (VCS No 286)
6605-99-527-8510	Indicator Digital Display (Bulkhead mounted)

POWER REQUIREMENTS

Power Supply Unit	115 V 60 Hz 1φ 200 W
Indicator Digital Display (VCS No 286)	115 V 60 Hz 1φ 30 W
Indicator Digital Display (Bulkhead)	115 V 60 Hz 1φ 30 W
Clock, Slave Illuminated	Illumination Only 24 V ac/dc 10 W

PHYSICAL DATA

	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Weight</u>
Cabinet	76.2 cm (30 in)	55.9 cm (22 in)	31 cm (12.25 in)	97.0 kg (214 lb)
Rack	63.5 cm (25 in)	48.5 cm (19 in)	25.4 cm (10 in)	55 kg (122 lb)
Indicator Digital Display (VCS No 286)	15.2 cm (6 in)	15.2 cm (6 in)	15.2 cm (6 in)	3.2 kg (7 lb)
Indicator Digital Display (Bulkhead)	15.8 cm (6.125 in)	38.1 cm (15 in)	11.6 cm (4.625 in)	4.1 kg (9 lb)
Clock Secondary	15.2 cm (6 in)	15.2 cm (6 in)	15.2 cm (6 in)	1.8 kg (4 lb)
		<u>Diameter</u>		
Clock Synchronous		14.0 cm (5.5 in)	10.2 cm (4 in)	1.8 kg (4 lb)
Clock Slave Illuminated		19.0 cm (7.5 in)	12.7 cm (5 in)	2.3 kg (5 lb)

RESTRICTED

BR 333(1)
Original

HANDBOOK

BR 345

INSTALLATION SPECIFICATION

C19/70/R1

ESTABLISHMENT LIST

C3005-3013