

# RESTRICTED

BR 333(1)

Original

## DIGITAL CODERS, SHAFT POSITION, OPTICAL

### SUMMARY OF DATA

#### PURPOSE

The coders convert a mechanical shaft rotation (analogue) input to an electrical (digital) output.

#### BRIEF DESCRIPTION

The analogue to digital conversion is achieved by an optical system mounted in a cylinder. The angular position of the main shaft is coded in the form of a clear/opaque pattern on a glass disc. Light projected through the glass disc is received by a series of photo-electric cells via a radial slit to give a "light" or "no light" pattern corresponding to the binary number for the code employed, i.e. 1024, 512 or 32, relative to the angular shaft position. Encapsulated amplifier and lamp failure indicator/bias sub-assemblies are also mounted in the cylinder.

#### EQUIPMENT TYPES

- 5895-99-580-2410 Digital Coder, Shaft Position, Optical (1024 digits/360° Cyclic Progressive Binary (Gray) Code).
- 5895-99-580-2412 Digital Coder, Shaft Position, Optical (512 digits/360° Binary Code).
- 5895-99-580-2413 Digital Coder, Shaft Position, Optical (32 digits/360° Binary Code).

#### POWER REQUIREMENTS

The following power supplies are connected to each coder via a 5895-99-580-1106 Plug 25-way.

- 11 V  $\pm$  0.5 V dc 0.92 A from a stabilised -24 V dc supply.
- 6 V  $\pm$  0.5 V dc 350 mA.
- + 6 V  $\pm$  0.2 V dc 10 mA.
- 0-0.4 V dc 0.96 mA Common Earth.

#### REMARKS

A new range of Digital Coders, Shaft Position, Optical has been introduced into naval service incorporating a Sealed Optics System.

NSN 7740-99-523-5040 Coder, Digital Data (1024 digits/360° Cyclic Progressive Binary (Gray) Code). This coder is mechanically and electrically interchangeable with NSN 5895-99-580-2410.

NSN 5895-99-525-0588 Coder, Digital Data (512 digits/360° Binary Code). Mechanically and electrically interchangeable with NSN 5895-99-580-2412.

NSN 5895-99-525-0589 Coder, Digital Data (32 digits/360° Binary Code). Mechanically and electrically interchangeable with NSN 5895-99-580-2413.

#### HANDBOOK

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