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**Calibration Specification for Photoelectric Shaft Encoders
(English Translation)**

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Photoelectric shaft encoder calibration specification

1 Scope

This specification is applicable to the calibration of photoelectric shaft encoders (hereinafter referred to as encoders) with a resolution of 0.1"~30".

2 Citations

This specification refers to the following documents.

JJF 1001-1998 General measurement terms and definitions JJF 1059-1999 Measurement Uncertainty Evaluation and Representation JJF 1094-2002 Measuring instrument characteristic evaluation JB/T 9942-1999 grating angular displacement sensor JB/T 10034-1999 grating angular displacement measuring system JJG472-1997 Multi-tooth indexing table national metrological verification procedures Use of this specification should be done with the current valid version of the above cited documents.

3 Terms and definitions Zero error of the encoder.

The zero error of the encoder refers to the angular position of the encoder when it returns to its zero position from different positions in the positive and negative directions.

The maximum amount of change.

4 Overview

The encoder is mainly used as a measuring element with a grating disk or a code wheel for measuring the rotation angle. It can be used as an angle alone the measuring instrument can also be used as a corner measuring component of a certain equipment or instrument. The principle and structure of the encoder are shown in Figure 1.

Show. According to the indexing error, the encoder can be divided into 7 levels.

5 Measurement characteristics 5.1 division error the indexing error requirements of the encoders at all levels are shown in Table 1.

5.2 Angle repeatability the angular repeatability requirements of the encoders of each stage are shown in Table 1.

5.3 encoder zero error the zero error of the encoder is specified in the manufacturer's product standard and can also be determined by the user as needed.

5.4 Angle return error the angular return error of the encoder is specified in the manufacturer's product standard, and can also be determined by the user according to the needs.

set.