

Development of Non-Battery Back-up Absolute Sensor "ABS-R"

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1. Introduction

The sensors used in the servo motor can be classified into the incremental sensor and the absolute sensor. Of these, the absolute sensor for the absolute position recognition has an optical system sensor and a resolver system sensor. The back-up battery is required by both sensors for the operation while the main power is turned off.

Sanyo produces the mechanical type absolute sensor "ABS-M" as a non-battery absolute sensor; this is a combination of the resolver sensor and gear, and has been widely used in mainly robot application by many users.

We developed "ABS-R" using advanced resolver sensor technology and the following two element technologies:

- (1) Use of magnetic bubble memory and, development and utilization of absolute sensor which makes the external back-up battery unnecessary while main power is off.
- (2) Development and utilization of self-diagnosis function of position data.

These functions were developed in response to market needs, and will enable the servo drive system to be widely used in the robot industry.

2. Outline of "ABS-R"

- 2.1 Operating Principle
- 2.2 Types
- 2.3 Features

3. Outline of Detecting Numbers of Rotation Using a Magnetic Bubble Element

4. Outline of Logic for Detecting Abnormalities in Position Data

- 4.1 Background of Development
- 4.2 Outline of Abnormality Detection Logic

5. Conclusion



"ABS-R"