

Motorized Capacitor

Introduction Stepper Motors



Document Information

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Overview of Service Bulletins for Integrated Drives (ID)

- SB-60** Overview of Integrated Drives
- General product description
 - Drive unit product lines and related capacitor series
 - Function levels and configurations
 - Description of module components
 - Technical specifications
 - Overview of the product range
 - Type designation
- SB-61** Drive Unit
- Drive unit product lines
 - Description of the drive unit components
- SB-62** Introduction to Stepping Motors
- Principal function of stepper motors
 - Control system of the drive unit
- SB-63** Electrical Installation ID-400
- Stepping driver control signals and connections for EXPERT ID
- SB-64** Electrical Installation ID-1200
- Stepping driver control signals and connections for EXPERT ID
- SB-65** Electrical Installation ID-2800
- Stepping driver control signals and connections for EXPERT ID
- SB-66** Electrical Installation ID-5400
- Stepping driver control signals and connections for EXPERT ID
- SB-67** Step/Direction; Clockwise / Counter clockwise (CW/CCW) Interface
- Stepping driver signals
 - Stepping driver timing diagram
- SB-68** Software Protocol Interface RS-232
- Specification of the interface
 - Frame structure
 - Communication protocol between the ID and the host system
- SB-69** Software Protocol Interface RS-485
- Specification
 - Frame structure
 - Communication protocol between the ID and the host system
- SB-72** Safety Aspects of Integrated Drives
- Capacitor
 - Electrical Insulation between ID and Capacitor

DATA SHEETS are available for each Integrated Drive

1 Introduction to stepper motors

Stepper motors are digitally tuned motors for precise positioning. They allow an exact control of the rotation angle and an exact control of the revolution. Because of this they are useful for many applications.

1.1 Function of stepper motors

A stepper motor is a brushless, synchronous electro motor that can divide a full rotation into a number of steps. The Integrated system typically uses 200 steps. It is possible to drive in micro steps but is available only on request (maximal resolution of 16 micro steps per full step). In the micro step mode, the maximum speed will be reduced proportionally to the micro step resolution.

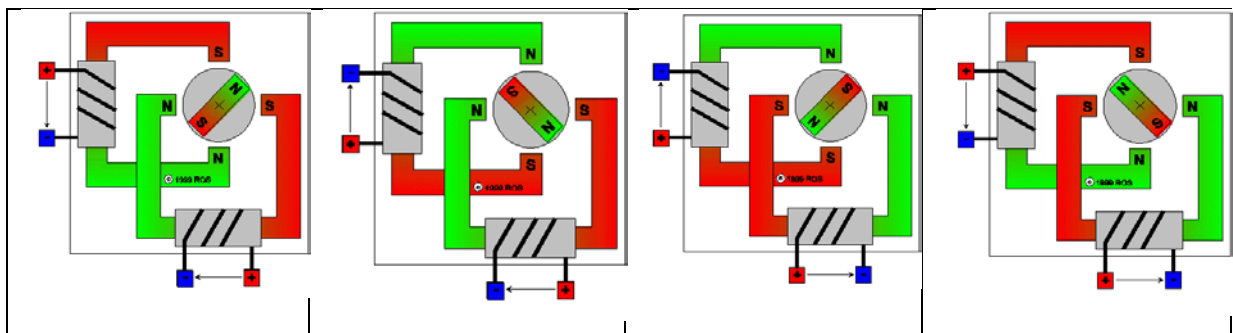


Fig. 1: Example of single steps during one turn

1.2 Control system of the driver unit



Fig. 2: Schematic of a motor controller

The Controller is an IC design or a software program which controls the positioning and revolution of the stepping motor by tuning the frequency and number of impulses.

The Driver is a circuit that runs the stepping motor. The driver provides the motor current, in the required sequence.