LEROY SOMER®

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UNIDRIVE SP DID

Universal variable speed drive

V/F control - Open loop vector control - Closed loop vector control

Servo for motors from 0.3 to 1.5 kW - 4 pole 400V 3-phase

UNIDRIVE SP DID

Laboratory universal variable speed drive 400V 3-phase 1.5 kW

FOREWORD

The professional and technological training in electro-technical disciplines requires the use of equipment representative of industrial applications allowing study of electric motor operation and control in real situations.
Based on the industrial variable speed drive, DIGIDRIVE has been adapted for training use.

Supplied in an enclosure, it comprises the control and protection devices of the variable speed drive for a direct use with a motor belonging from our 0.3 or 1.5 kW range.

Training applicable:
Engineering Degree,
Technical qualification.

DESCRIPTION

The UNIDRIVE SP universal speed drive is designed to supply asynchronous and brushless motors.
It may be configured in one of 4 operating modes:

- Open loop flux vector control
The speed drive controls the magnetising current and the active current separately using a standard asynchronous motor. The rotor speed and position are calculated in order to control the motor torque and speed.

- Closed loop flux vector control
The use of flux vector control requires an asynchronous motor fitted with an incremental encoder, it allows a better control of the motor torque and speed over a wider speed range (including zero speed).

- V/F open loop control
The speed drive controls the voltage and the frequency simultaneously at the asynchronous motor terminals. This operating mode is used for special applications, such as several motors supplied by a single speed drive, etc.

- SERVO mode for brushless motors
SERVO mode is used with a brushless motor (motor with permanent magnets on the rotor) equipped with an incremental encoder or resolver to achieve high dynamic performance for driving shafts, for instance.

The UNIDRIVE SP allows operation in all 4 quadrants of the torque-speed plane. During operation in recovery mode, the energy supplied by the motor is dissipated in resistors.

PRESENTATION

The unit provides all control and protection devices necessary for safe operation.
The user is protected by a magneto-thermal switch controlled on the front panel.
In order to keep the front panel clear, the power part is wire on safety terminals (Ø 4mm) located on the left side of the unit.
Only the connections for command and control are made on the front panel.
Programming keys and the display are accessible on the front panel.
The access to special adjustments is made by a PC computer through the RJ45 socket located on the front panel (cable provided with the unit).

MAIN POSSIBILITIES

- speed and torque control
- gearbox with 8 digital speeds in the 2 opposite directions
- preset of acceleration/deceleration ramp for each speed (ex : machine tool pin)
- control of 2 different motors
- modification of analogue I/O presets
- modification of digital I/O presets
- use of an “AND” or “OR” logic function
- use of a threshold on an internal variable
- access to the external value regulation by the UNIDRIVE SP DID
- connection the various existing field bus
- “machine flow” display

ELECTRICAL SPECIFICATIONS

3-phase AC supply 380 to 480V +/-10% 50/60Hz +/-2%
Maximum available motor power rating (4 poles) 1,5kW under 400V 3-phase - 50/60 Hz - 4.2A
Other features: Refer to the industrial UNIDRIVE SP brochure.

Size : Width: 0.43 m - Height: 0.30 m - Depth: 0.25 m
Weight : 9.5 kg

Complying with the requirements of the CE marking
Complying with the Low Voltage Directive
Complying with the Electromagnetic Compatibility Directive
- Immunity: EN 50082-2 in conduit
- Source: EN 50081-2

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