AC SERVO CONTROLLER DER 03/05

- Highly dynamical servo-controller in 3 RU form factor
- High peak currents for dynamical accelerations
- Digital controller - all functions and servo loops are digital
- All adjustments are digitally made - no potentiometers
- Data storage on maintenace free EEPROM
- Set value with analog voltage +/- 10V DC
- Incremental encoder output (Encodersimulation)
- Status indication through 7-segment display and Status outputs
- Adjustments direct through key on the front panel or via PC-software DSD-link
- Very compact design, only 128 x 60,5 mm (3RU/12HP)

esitron-electronic GmbH

Ernst-Zimmermann-Str. 18
D-88045 Friedrichshafen
Internet: www.esitron.de

Tel. +49(0)7541-6000-0
Fax +49(0)7541-6000-11
E-Mail: info@esitron.de

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DER 03/05 digital AC Servo-controller

The DER 03/05 is a highly dynamical servocontroller for current and rpm control of AC servo-motors with resolver. All functions and servo-loops are digital.
The unit is used as a module in a rack (3RU) or built into our compact system. Suitable power supply modules are available for rack mounting.
The 230 V AC supply voltage is fed to the integrated power supply unit (in the compact version), to the power supply module NM...3 or to power supply in the rack (up to 3A).
All necessary adjustments are made digital, i.e. there are no potentiometers which may vary. With the PROG-key on the front panel most important optimizations can be carried out. Those and all other alterations can be made through PC with optional software "DSD-Link"
The set value is defined by an analog +/-10 V DC signal.
Incremental outputs simulate an encoder with an adjustable number of 64 to 4096 steps per revolution.
Status indication is done with a 7-segment display and additional status outputs.
Data storage is realized with a maintenance free EEPROM without battery.

Overview

Type	$U_{N\ DC\text{-}Link\ Bus}$ VDC	$I_{N\ Continious}$ A_{eff}	I_{max} [1] A_{eff}	Motor inductance min [mH]
DER 03.A3.XX	325	2,5	5,0	4,8
DER 05.A3.XX	325	5,0	10,0	2,4

[1] Maximal currents can be drawn for minimal 5 seconds.

Power supply modules

Type	Supply voltage	$I_{N\ Continious}$ A_{RMS}	Braking power P_{max}	Modul-width
NM 3 - 0600	1x/3x 230 VAC	6	without ballast circuit	8 HP
NMB 3 - 15070	1x/3x 230 VAC	15	30W	8 HP

Technical Data:

General:

Ambient temperature:	0 ... +40°C at nominal power
Derating:	2%/K at temperatures >40° ... 50°C
Humidity:	5 - 85%, non condensing
Cooling:	Convection up to 2,5A continious current; >2,5A fan required
Dissipated heat:	ca. 9W per A_{RMS} continious current
Dimensions:	Circuit board: 100x160mm; Front panel: 3RU x 12HP (128x60,5mm)
Weight:	0,75kg
Connection:	H15 edge connector DIN41612; Sub-D connector
Power element:	Galvanic insulation from controller acc. VDE 0160, secification acc. to UL508C; short-circuit and short-circuit to ground proof for max. 2000 incidents.
DC-link voltage:	325 V DC, nominal
Overvoltage monitor:	400 V +/- 5 V
Undervoltage monitor:	15 V
Frequency:	9,5 kHz
Frequency of current ripple:	19 kHz
Form factor of output current:	< 1,02 at nominal current
Controller:	Complete galvanic insulation from controller, see above.
Supply voltage:	24V DC, unregulated (+20%, -10%)
Consumption:	ca. 15 W
Inrush current:	I_{max} = 2A (limited through thermistor)