Servo Controller
581443 (9035-00)

LabVolt Series

Datasheet

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General Description

The Servo Controller incorporates a state-of-the-art 32-bit microcontroller coupled to a power amplifier specially designed for brushed and brushless dc motor control. The Servo Controller connects to a host computer via a USB connection and is fully configurable for various types of open- and closed-loop control applications. The controller allows three methods of control:

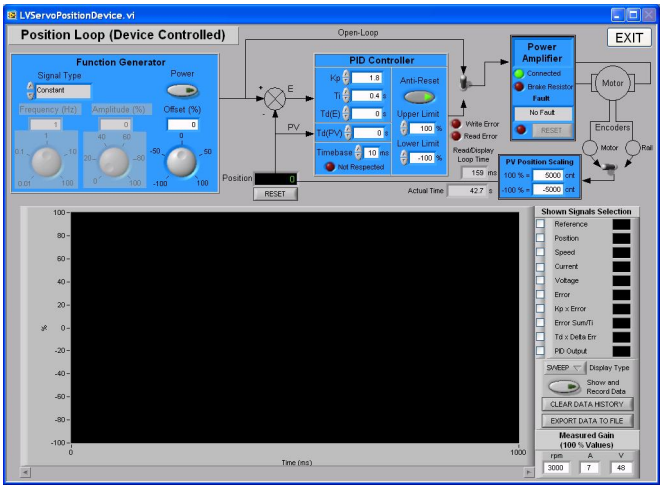
- Direct control from the 32-bit microcontroller

- PC-based control using LABVIEW or MATLAB/SIMULINK

- Using an optional analog controller

The control algorithm can be performed either by the microcontroller to ensure fast response and smooth closed-loop control or by a computer. The connections to mechanical devices are made easy using two quick-connect cables: one for motor control and one for feedbacks (single or dual). The controller also comprises four analog inputs and four analog outputs for monitoring and/or control. A DMA controller insures that observation and control can be performed simultaneously.

The Servo Controller is equipped with a built-in 48 V dc power supply to provide power to the training system and a six-IGBT bridge to power the external motor. A CD-ROM containing various applications and data for the Servo Controller is also included. The LABVIEW runtime application allows speed and position (open- or closed-loop) control using either the hardware controller (Device mode) or LABVIEW (Host mode) for the control algorithms. This application allows basic servo control and data acquisition on the Servo Controller.



Open-source LABVIEW and MATLAB/SIMULINK application files, as well as the controller firmware, are also available on this CD-ROM. Resource files will be updated and/or added as new applications, control strategies, and mechanical options are developed. These files are also available free of charge at www.labvolt.com in the Downloads section of this system.

Specifications

Parameter	Value
Power Requirements	
Voltage	88-264 V ac
Frequency	47-63 Hz
Current	5 A
Microcontroller Type	
Type	STM32 ARM-based 32 bit MCU
Operating Frequency	72 MHz
Memory	20 kbytes RAM, 64 kbytes Flash ROM
A/D Converters (2)	12-bits, 1 µs settling time
Digital to Analog Converters	12 bits, 8.5 µs settling time
Connections	USB 1.1 or 2.0 and JTAG directly to microcontroller
Built-In Power Supply	
Voltage	48 V

Parameter	Value
Current	6.7 A
Power Amplifier	
Type	6 IGBT bridge
Bridge Maximum Voltage	48 V
IGBT Maximum Current	9 A
Analog Outputs (4)	±10 V
Accessories	
	1 m quick-connect motor cable (1)
	1 m quick-connect feedback cable (1)
	2 m power cord (1)
	2 m USB interconnection cable (1)
	1.5 m ground lead (1)
	Resource CD-ROM (1)
Personal Computer Requirements	A currently available personal computer with USB 2.0 ports, running under one of the following operating systems: Windows® 7 or Windows® 8.
Physical Characteristics	
Dimensions (H x W x D)	184 x 267 x 175 mm (7.25 x 10.50 x 6.88 in)
Net Weight	4.1 kg (9 lb)

Reflecting the commitment of Festo Didactic to high quality standards in product, design, development, production, installation, and service, our manufacturing and distribution facility has received the ISO 9001 certification.

Festo Didactic SE

Rechbergstrasse 3
73770 Denkendorf
Germany

P. +49(0)711/3467-0
F. +49(0)711/347-54-88500

Festo Didactic Inc.

607 Industrial Way West
Eatontown, NJ 07724
United States

P. +1-732-938-2000
F. +1-732-774-8573

Festo Didactic Ltée/Ltd

675 rue du Carbone
Québec QC G2N 2K7
Canada

P. +1-418-849-1000
F. +1-418-849-1666

www.labvolt.com

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