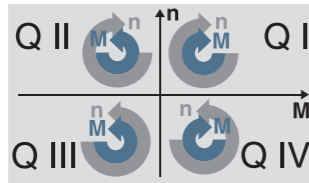


4-Q-DC Servoamplifier

4-quadrant DC amplifiers accelerate and decelerate brushed DC motors in both rotating directions. The power stages are controlled on a linear or pulsed basis.

4-Quadrant operation

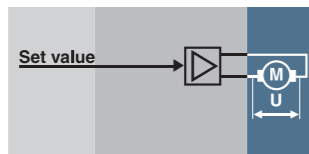
- Controlled acceleration and braking operation in both rotating directions (all 4 quadrants)



Operating modes

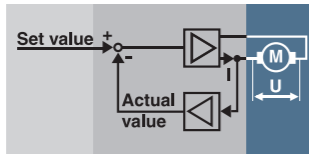
Voltage regulator

The motor is fed with a controlled voltage proportional to the set speed value. Load changes are not compensated.



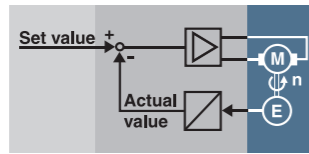
IxR compensation

As with voltage regulator however, load changes are additionally compensated. Suitable for average speed constancy demands.



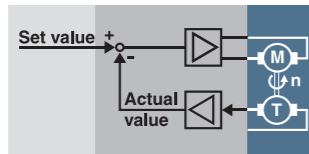
Encoder – Speed control

The speed controller compares the digital speed signal with the set value and adjusts the speed dynamically if there is a difference. Excellent control with long service life.



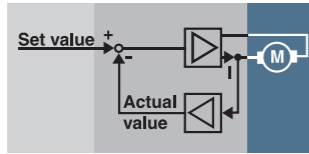
DC tacho – Speed control

Classical speed control using analogue actual value measurement. High speed dynamic possible.



Current control

The current controller keeps the motor current (torque) at the predetermined set value. Suitable for applications with a superior position controller.



LSC 4-Q-DC Servoamplifier



The LSC 30/2 (Linear Servo Controller) is a linear 4-Quadrant Servoamplifier used to control permanent magnet activated DC motors up to approx. 50 watts.

Linear power stage

Ideally suited for small outputs power, low electromagnetic emission, no motor choke required.

Operating modes

Voltage regulator, IxR compensation, encoder speed control, DC tacho speed control or current control adjustable with a switch from outside.

Design

Robust metal housing with variable installation options on assembly plate or 19" rack.

Set value input

Via external potentiometer, external set value voltage or using internal potentiometer.

Easy start-up procedure

Pluggable screw type terminal block, simple set-up with potentiometer, robust designed PI controller.

Electrical Data	LSC 30/2
Supply voltage V_{CC}	12 - 30 VDC
Max. output voltage	$V_{CC} - 5 V$
Max. output current I_{max}	2 A
Continuous output current I_{cont}	2 A
Mechanical Data	
Weight	approx. 330 g
Dimensions (LxWxH)	103x100x34 mm
Mounting	Flange for M4-screws

Order Number

250521 LSC 30/2 4-Q-DC Servoamplifier in modular housing

ADS 4-Q-DC Servoamplifier



The ADS is a powerful pulse-width modulated (PWM) Servoamplifier for controlling permanent magnet activated DC motors of 10 – 500 watts. Available in modular housing as Standard and Power Version.

Pulsed output stage

Suitable for controlling low and high output power. 95% efficiency thanks to state-of-the-art MOSFET technology.

Operating modes

IxR compensation, encoder speed control, DC tacho speed control or current control adjustable with a switch from outside.

Design

Robust metal housing in module form offers several mounting options.

Excellent control characteristics

Stable speed behaviour when set value and disturbance variable change, fast current controller.

Protection circuit

Protected against over current, overheating and short-circuit of motor cable.

Set value input

External potentiometer or external set value voltage.

Electrical Data	ADS 50/5	ADS 50/10
Supply voltage V_{CC}	12 - 50 VDC	12 - 50 VDC
Max. output voltage	$0.9 \times V_{CC}$	$0.9 \times V_{CC}$
Max. output current I_{max}	10 A	20 A
Continuous output current I_{cont}	5 A	10 A
Mechanical Data		
Weight (approx.)	400 g	400 g
Dimensions (LxWxH)	180x103x26 mm	180x103x26 mm
Mounting	Flange for M4-screws	

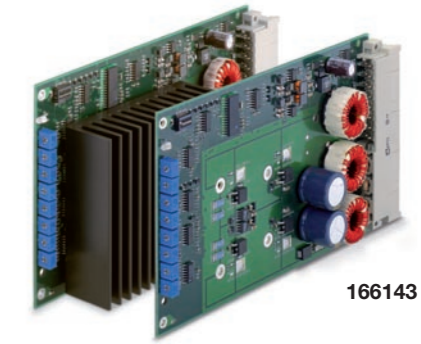
Order Numbers

145391 ADS 50/5 4-Q-DC Servoamplifier Standard Version in module housing
201583 ADS 50/10 4-Q-DC Servoamplifier Power Version in module housing

Accessories

235811 DSR 70/30 Shunt regulator

ADS_E 4-Q-DC Servoamplifier



The ADS_E is a powerful pulse-width modulated (PWM) Servoamplifier for controlling permanent magnet activated DC motors of 10 – 500 watts. Available in Eurocard format as Standard and Power Version.

Pulsed output stage

Suitable for controlling low and high output power. 95% efficiency thanks to state-of-the-art MOSFET technology.

Operating modes

IxR compensation, encoder speed control, DC tacho speed control or current control adjustable with a switch from outside.

Design

Standardized Eurocard version (with accessories) for the installation in a 19"-Rack or in a plug-in card system.

Excellent control characteristics

Stable speed behaviour when set value and disturbance variable change, fast current controller.

Protection circuit

Protected against over current, overheating and short-circuit of motor cable.

Set value input

External potentiometer or external set value voltage.

Electrical Data	ADS_E 50/5	ADS_E 50/10
Supply voltage V_{CC}	12 - 50 VDC	12 - 50 VDC
Max. output voltage	$0.9 \times V_{CC}$	$0.9 \times V_{CC}$
Max. output current I_{max}	10 A	20 A
Continuous output current I_{cont}	5 A	10 A
Mechanical Data		
Weight (approx.)	175 g	410 g
Dimensions (LxWxH)	160x100x16 mm	160x100x30.5 mm
Mounting	Rack-Installation	

Order Numbers

166143 ADS_E 50/5 4-Q-DC Servoamplifier Standard Version in Eurocard format
168049 ADS_E 50/10 4-Q-DC Servoamplifier Power Version in Eurocard format

Accessories

167850 Front panel 3HE, 5TE to ADS_E 50/5
168910 Front panel 3HE, 7TE to ADS_E 50/10
166873 Backplane with screw terminals

Details on controllers can be found in the catalogue and under www.maxonmotor.com

4-Q-DC Servoamplifier Data



LSC 30/2 4-Q-DC Servoamplifier
Linear 4-quadrant servoamplifier for permanent magnet activated DC motors up to approx. 50 watts.

ADS 50/5 4-Q-DC Servoamplifier
Powerful PWM servoamplifier for permanent magnet activated DC motors from 10 to approx. 250 watts output power. Available as Standard Version in module housing.

Operating modes

IxR compensation, voltage regulator, encoder speed control, DC tacho speed control, current control

IxR compensation, encoder speed control, DC tacho speed control, current control

Electrical Data

Operating voltage V_{CC}	12 - 30 VDC	12 - 50 VDC
Max. output voltage	$V_{CC} - 5 V$	$0.9 \times V_{CC}$
Max. output current I_{max}	2 A	10 A
Continuous output current I_{cont}	2 A	5 A
Switching frequency of power stage		50 kHz
Max. efficiency		95 %
Built-in motor choke		150 μH / 5 A
Input		
Set value	Configurable, -10 ... +10 V, -3.9 ... +3.9 V	-10 ... +10 V
Enable	«Disable» Disable min. $V_{CC} - 1 V$, Enable max. GND + 1 V	«Enable» +4 ... +50 V
DC tacho	min. 2 VDC, max. 50 VDC	min. 2 VDC, max. 50 VDC
Encoder signals	Channel A and channel B, max. 100 kHz, TTL	Channel A, A\, B, B\, max. 100 kHz, TTL
Output		
Status reading «Ready»	Open collector, max. 30 VDC ($I_L < 20 mA$)	Open collector max. 30 VDC ($I_L < 20 mA$)
Monitor current «Monitor I»		-10 ... +10 VDC (short circuit protected)
Monitor speed «Monitor n»		-10 ... +10 VDC (short circuit protected)
Voltage outputs		
Auxiliary voltages	+3.9 VDC, -3.9 VDC, max. 2 mA	+12/-12 VDC, max. 12 mA (short circuit protected)
Encoder supply voltage	+5 VDC, max. 80 mA	+5 VDC, max. 80 mA
Trim potentiometer		
	IxR compensation, Offset, n_{max} , I_{max} , gain	IxR compensation, Offset, n_{max} , I_{max} , gain
Protective functions		
	Heat monitoring of power stage	Protected against thermal overload, overcurrent and short-circuit of motor cables
Indicator		
	Green LED = READY, red LED = ERROR	Bi-colour LED, green = READY, red = ERROR
Ambient temperature / Humidity range		
Operation	0 ... +45°C	-10 ... +45°C
Storage	-40 ... +85°C	-40 ... +85°C
No condensation	20 ... 80 %	20 ... 80 %
Mechanical Data		
Weight	Approx. 330 g	Approx. 400 g
Dimensions (L x W x H)	103 x 100 x 34 mm (see page 284)	180 x 103 x 26 mm (see page 284)
Mounting threads	Flange for M4-screws	Flange for M4-screws
Connections	See page 284	See page 284

Order Number

250521 LSC 30/2, 4-Q-DC Servoamplifier in module housing

145391 ADS 50/5, 4-Q-DC Servoamplifier Standard Version in module housing

Accessories

235811 DSR 70/30 Shunt regulator