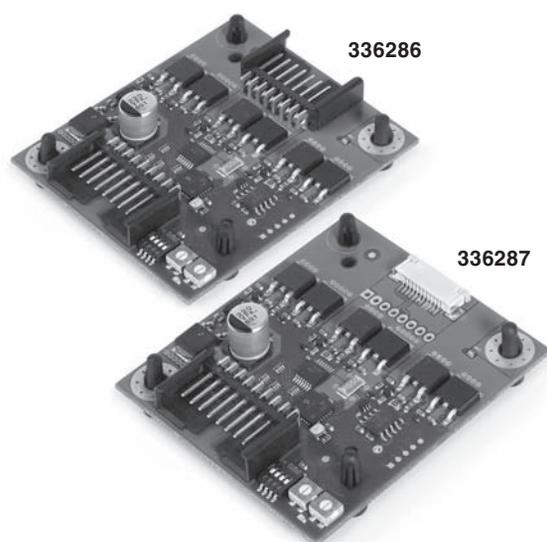


## DEC 24/3 1-Q-EC Amplifier

NRND See page 13  
Not recommended for New Design



The DEC 24/3 (Digital EC Controller) is a 1-quadrant amplifier for controlling EC motors with Hall sensors with a maximum output of 72 watts.

Technical data page 387  
Dimensions and connections page 388

## DEC 50/5 1-Q-EC Amplifier



The DEC 50/5 (Digital EC Controller) is a 1-quadrant amplifier for controlling EC motors with Hall sensors with a maximum output of 250 watts.

Technical data page 387  
Dimensions and connections page 388

### Operating modes

Digital speed control or open loop speed control operation can be selected with a built-in DIP switch.

### Flexible

Wide supply voltage range 5 - 24 VDC.  
Two variants for direct connection of different maxon EC motors.

### Small design

Open and compact electronics board. Easy mounting with hexagonal distance pins with inside thread.

### All-round functionality

Direction can be predetermined with a logic signal. Motor shaft can be disabled or slowed down as required. Adjustable maximum current limitation. Status indicator with green LED.

### Flexible set value input

Set value input either through internal potentiometer or external, analog voltage. Different speed ranges can be selected using built-in DIP switches.

### Operating modes

Digital speed control, open loop speed control or current control can be selected with built-in DIP switch.

### Small design

Robust and compact modular metallic housing offers various mounting options.

### Easy start-up procedure

Plug-in terminal clamp, no extensive adjustment necessary.

### All-round functionality

Direction can be set with a logic signal. Motor shaft can be disabled or slowed down as required. Adjustable maximum current limitation. Operating status display with red and green LED.

### Flexible set value input

Set value input either through internal potentiometer or external analog voltage. Two preset speeds switchable. Speed ramp can be adjusted.

### Protection circuit

The power amplifier is protected against thermal overload and the control inputs against overvoltage.

# 1-Q-EC Amplifier Data

**NRND** See page 13  
Not recommended for New Design



**DEC 24/3** 1-Q-EC Amplifier  
1-quadrant amplifier for controlling EC motors with Hall sensors with a maximum output of 72 watts.



**DEC 50/5** 1-Q-EC Amplifier  
1-quadrant amplifier for controlling EC motors with Hall sensors with a maximum output of 250 watts.

maxon special program

Operating modes	Speed controller, open loop speed controller	Speed controller, open loop speed controller, current controller
<b>Electrical Data</b>		
Operating voltage $V_{CC}$	5 - 24 VDC	10 - 50 VDC
Max. output voltage	$V_{CC}$	$0.95 \times V_{CC}$
Max. output current $I_{max}$	6 A	10 A
Continuous output current $I_{cont}$	3 A	5 A
Switching frequency of power stage	39 kHz	39 kHz
Band width current controller		15 Hz
Max. speed (1 pole pair)	120 000 rpm	120 000 rpm
Built-in motor choke per phase		
<b>Input</b>		
Set value	"Speed" 0...+5 V (1024 steps)	"Speed" 0...+5 V (1024 steps)
Current limit		
Enable	"Enable" +2.4...24 V	"/Disable" +2.4...50 V
Direction	"Direction" +2.4...24 V	"Direction" +2.4...50 V
Stop / Brake	"Brake" +2.4...24 V	"/Brake" +2.4...50 V
Configurable		"AUX" digital input / 5 VDC output
<b>Output</b>		
Monitor	"Monitor n", digital, (5 V)	
Status reading "Ready"		
<b>Voltage outputs</b>		
Hall sensors supply voltage $V_{CC}$ Hall	+5 VDC, max. 30 mA	+7...12 VDC, max. 30 mA
Auxiliary voltages	+5 VDC, max. 10 mA	
<b>Possible adjustments</b>	DIP switch	DIP switch
<b>Trim potentiometer</b>	Speed, $I_{max}$	Speed 1, Speed 2 / Ramp, $I_{max}$ , gain
<b>Indicator</b>	Green LED	Green LED = READY; red LED = ERROR
<b>Protective functions</b>		
Blockage protection	Motor current limitation if motor shaft is blocked for longer than 1.5 s	Motor current limitation if motor shaft is blocked for longer than 1.5 s
Heat monitoring of power stage		$T > 100^{\circ}\text{C}$
Dynamic current limit	$I_{max} = 2 \cdot I_{cont}$ is limited to $0.9 \cdot I_{cont}$ after 1 s	
Under- / Overvoltage protection	Switches off when $V_{CC} < 4.5$ V	
<b>Ambient temperature and humidity range</b>		
Operation	-10...+45°C	-10...+45°C
Storage	-40...+85°C	-40...+85°C
No condensation	20...80%	20...80%
<b>Mechanical Data</b>		
Weight	Approx. 28 g	Approx. 155 g
Dimensions (L x W x H)	65 x 58 x 18 mm (see page 388)	95 x 75 x 24 mm (see page 388)
Mounting threads	4 Hexagonal distance pins with M3 inner thread	Flange for M3-screws
<b>Connections</b>	See page 388	See page 388
<b>Part Numbers</b>		

**DEC 24/3** 1-Q-EC Amplifier  
**336287** DEC 24/3 with FPC pitch 1.0 mm  
**336286** DEC 24/3 with a pin connector pitch 2.5 mm

**230572** DEC 50/5 1-Q-EC Amplifier

## Accessories