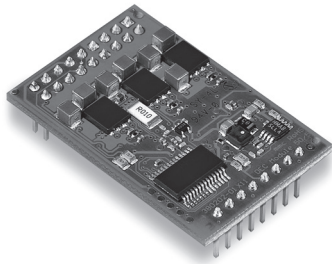


## DEC Module 50/5 1-Q-EC Amplifier



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

### Operating modes

Digital speed control or open loop speed control operation can be preset by a digital signal.

### Excellent price/performance ratio

Reasonably priced 1-Q-EC amplifier optimised for OEM applications in small appliances.

### OEM Module

Miniaturized open electronics board. Connector arrays arranged in a 2.54 mm (0.1") pattern support easy connectivity and integration into the motherboard.

### Functionality

Direction of rotation preset by a digital signal. The motor shaft can be enabled or disabled. Adjustable maximum current limitation. Set value speed input through external analog voltage. Speed can be monitored through the speed monitor output. Status indicator with "Ready"-Output.

### Protection circuit

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

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## 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.

### 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.

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

Operating modes	Speed controller, open loop speed controller	Speed controller, open loop speed controller, current controller
<b>Electrical Data</b>		
Operating voltage $V_{CC}$	6 - 50 VDC (optional 5.0 VDC)	10 - 50 VDC
Max. output voltage	$0.95 \times V_{CC}$	$0.95 \times V_{CC}$
Max. output current $I_{max}$	10 A	10 A
Continuous output current $I_{cont}$	5 A	5 A
Switching frequency of power stage	46.8 kHz	39 kHz
Band width current controller		15 Hz
Max. speed (1 pole pair)	80 000 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	"Current Limit" external resistor against GND	
Enable	"Enable" +2.4...50 V	"/Disable" +2.4...50 V
Direction	"Direction" +2.4...50 V	"Direction" +2.4...50 V
Stop / Brake		"/Brake" +2.4...50 V
Configurable		"AUX" digital input / 5 VDC output
<b>Output</b>		
Monitor	"Monitor n", digital, (5 V)	
Status reading "Ready"	"Ready", digital, (5 V)	
<b>Voltage outputs</b>		
Hall sensors supply voltage $V_{CC}$ Hall	+5 VDC, max. 35 mA	+7...12 VDC, max. 30 mA
Auxiliary voltages		
<b>Possible adjustments</b>	Input "Mode 0" and "Mode 1"	DIP switch
<b>Trim potentiometer</b>		Speed 1, Speed 2 / Ramp, $I_{max}$ , gain
<b>Indicator</b>		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	$T > 100^{\circ}\text{C}$	$T > 100^{\circ}\text{C}$
Dynamic current limit		
Under- / Overvoltage protection	Switches off when $V_{CC} < 6$ V or $V_{CC} > 56$ 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. 9 g	Approx. 155 g
Dimensions (L x W x H)	43.18 x 27.94 x 12.7 mm (see page 301)	95 x 75 x 24 mm (see page 301)
Mounting threads	mountable on socket terminal strips pitch 2.54 mm	Flange for M3-screws
<b>Connections</b>	See page 301	See page 301
<b>Article numbers</b>		
	<b>380200</b> DEC Module 50/5 1-Q-EC Amplifier	<b>230572</b> DEC 50/5 1-Q-EC Amplifier

Accessories	
	<b>370652</b> DEC Module Eva-Board

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