



DECS 50/5 1-Q-EC amplifier
1-quadrant amplifier for the control of sensorless EC motors with a maximum output of 250 watts.



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

Operating modes

Speed controller (sensorless)

Speed controller, open loop speed controller

Electrical Data

Operating voltage V_{cc}	10 - 50 VDC	5 - 24 VDC
Max. output voltage	$0.8 \times V_{cc}$	V_{cc}
Max. output current I_{max}	8 A	2 A
Continuous output current I_{cont}	5 A	1 A
Switching frequency of power stage	50 kHz	39 kHz
Max. efficiency		
Band width current controller		
Max. speed (1 pole pair)	80 000 rpm	120 000 rpm
Built-in motor choke per phase		150 μ H / 1 A
Input		
Set value	«Speed» 0 ... 5 V (1024 steps)	«Speed» 0 ... 5 V (1024 steps)
Current limit		
Enable	«Enable» + 3,5 ... +50 VDC	«/Disable» TTL, CMOS (5 V)
Direction	«Direction» + 3,5 ... +50 VDC	«Direction» TTL, CMOS (5 V)
Stop / Brake	«Brake» + 3,5 ... +50 VDC	«/Brake», TTL, CMOS (5 V)
Configurable		
Output		
Monitor	«Monitor n», (+5 VDC)	«Monitor n», digital (5 V)
Status reading «Ready»	«Ready» max. +50 VDC	
Voltage outputs		
Hall sensors supply voltage V_{cc} Hall		4.5 ... 5 VDC, max. 30 mA
Auxiliary voltages	5 VDC	
Possible adjustments	DIP switch	Jumpers
Trim potentiometer	Speed, I_{max}	Speed, I_{max}
Indicator	Green LED = READY; red LED = ERROR	Green LED
Protective functions		
Blockage protection	Switches off after 5 unsuccessful starting attempts	Motor current limitation if motor shaft is blocked for longer than 1.5 s
Heat monitoring of power stage	$T > 90^{\circ}\text{C}$	
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 $V_{cc} < 9.5 \text{ V}$ or $V_{cc} > 59 \text{ V}$	
Ambient temperature / Humidity range		
Operation	-10 ... +45°C	-10 ... +45°C
Storage	-40 ... +85°C	-40 ... +85°C
No condensation	20 ... 80%	20 ... 80%
Mechanical data		
Weight	Approx. 40 g	Approx. 20 g
Dimensions (L x W x H)	73,4 x 50,8 x 21 mm (see page 288)	57 x 36 x 24 mm (see page 288)
Mounting threads	4 Hexagonal distance pins with M3 inner thread	4 Hexagonal distance pins with M3 inner thread
Connections	See page 288	See page 288
Order Number		

343253 DECS 50/5 1-Q-EC amplifier sensorless

DEC 24/1 1-Q-EC Amplifier

318305 DEC 24/1 with FPC pitch 0.5 mm

249630 DEC 24/1 with FPC pitch 1.0 mm

249631 DEC 24/1 with a pin connector pitch 2.5 mm

249632 DEC 24/1 with screw type terminal block pitch 2.54 mm

Accessories

309687 DSR 50/5 Shunt regulator