

escodrives.com

Frequency inverter **Series S3**

For Power Rating from 0,37 - 37kW



Compact, robust, reliable

esco presents the new **escodrive**s frequency inverter.

The escodrive frequency inverter series S3 impresses with its wide range of applications, simple operation and the numerous accessories. In the power range from 0.37kW to 37kW we offer a compact and robust product for the optimization of your applications.

Simply switch on and the **escodrive**s S3 is ready to start!

The precise motor control is already set in the factory setting.

Intelligent macro functions reduce the programming effort significantly.

With only 60 parameters complex settings are realized.



Power supply	Recommended motor rating (kW)												
	0,37	0,75	1,5	2,2	4	5,5	7,5	11	15	18,5	22	30	37
1ph- 200-240V	[Bar chart showing motor ratings up to 11 kW]												
3ph- 200-240V	[Bar chart showing motor ratings up to 18.5 kW]												
3ph- 380-480V	[Bar chart showing motor ratings up to 37 kW]												

Main features

- ✓ Integrated EMC filter C1
- ✓ Integrated PI control
- ✓ Integrated braking chopper from 2.2kW
- ✓ Dual Analog Inputs
- ✓ Bluetooth® connectivity with the optional **escodrive**s Stick
- ✓ Model for single-phase motors up to 10,5A available
- ✓ Models in the range 3 x 220V available
- ✓ Only four different sizes for the entire power range
- ✓ Application macros for industrial-, fan- and pump operations
- ✓ ModbusRTU® und CANopen® as standard
- ✓ Real-time display of all relevant values
- ✓ Sensorless Vector Control (Induction Motor, Permanent Magnet Motor, Synchronous-Reluctance Motor, Brushless DC Motor, Line-Start-Permanent Magnet Motor)

esco – Your strong partner for electric drive system solutions

- Competent consulting and engineering
- Approved and future-proof technology
- Complete drive projects with products offering highest quality and best performance
- Europe-wide pre and after-sales service
- Extensive stock

A future-oriented partnership at the service of the customer

esco antriebstechnik gmbh stands for modern concepts of electrical and mechanical drive technology. The future-oriented company is part of the **esco** group, which operates throughout the world.

The esco delivery program:

Electric drive technology

Frequency inverter
Soft Starter

Automation and Control technology:

Touch panel and panel PCs
PLC
SCARA robots

Mechanical drive technology

Service, consulting and system solutions



Simple Installation

DIN rail and keyhole mounting options

Fast Connection

Rising clamp terminals with captive screws

Quick Reference

Integrated help card

Modbus CANopen

on-board as standard

escodrives STICK

Rapid parameter cloning as well as wireless connection to the escodrives Tools software

Application Macros

Switch between Industrial, Pump and Fan mode to optimise the escodrives S3 for your application.

Simple Commissioning

With just 14 basic parameters and application macro functions providing rapid set-up, escodrives S3 minimises start-up time.

escodrives for Single Phase Motors

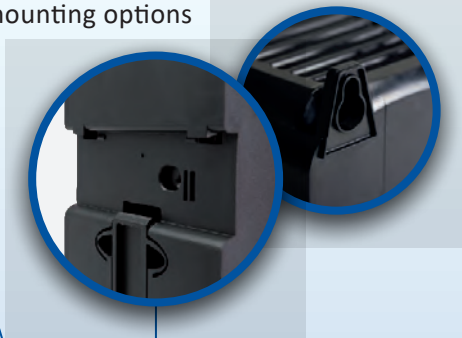
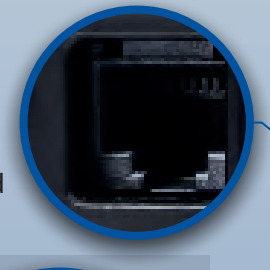
Revolutionary motor control for the application of Capacitor or Shaded-Pole Single Phase induction motors.

Intuitive Keypad Control

A significant reduction of the required time than usual for parameterization.

IP66-Model

With a waterproof ABS enclosure in the power range from 0,4 kW to 22 kW



Applikation Macros

Switch modes at the touch of a button to optimize **escodrivives** S3 for your applications.



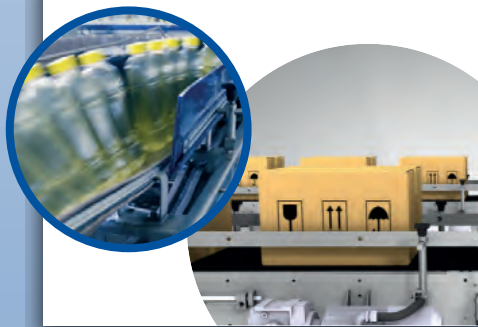
Industrial Mode

The Industrial Mode optimises the **escodrivives** S3 for load characteristics of typical industrial applications.

Applications included:

- ✓ Conveyors
- ✓ Mixers
- ✓ Lifting & Crane applications
- ✓ Packaging machines
- ✓ Machine tools
- ✓ Compressor applications

- Sensorless Vector, equipped with a high starting torque and excellent speed control.
- Controlled deceleration after power black-out
- Braking chopper integrated



Pump Mode

The Pump Mode makes energy efficient pump control easier than ever.

Applications included:

- ✓ Dosing pumps
- ✓ Submersible pumps
- ✓ Transfer pumps
- ✓ Cooling pumps
- ✓ Fountains

- Constant or variable torque
- PI Control
- Energy saving control
- PTC input
- Standby function



Fan Mode

The Fan Mode forms the basis for the integration of the **escodrivives** S3 into your HVAC applications.

Applications included:

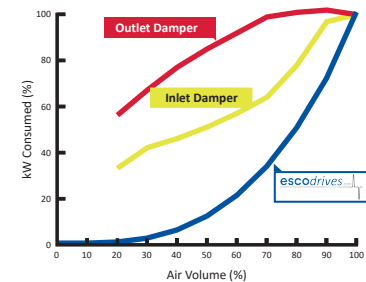
- ✓ Air Handling units
- ✓ Ventilation fans
- ✓ Transfer pumps
- ✓ Air curtains
- ✓ Exhaust & Supply Air units

- Energy saving control
- Catch on the fly
- Power failure bypass
- PI Control
- Automatic Restart



Instant Power Savings

The graph below shows the enormous saving potential when using the **escodrivives** S3 in a speed-controlled ventilation system compared to a conventional damper control.



Sensorless Vector Control for all Motor Types

Induction Motors

Permanent Magnet Motors

Brushless DC Motors

Synchronous Reluctance Motors

Line-Start-Permanent-Magnet Motors

Precise and reliable control of motors of all energy efficiency classes (IE1 to IE4 motors)

Options and Accessories



escodrive Stick

escodrive Stick EDS3STICK-BT
Rapid Commissioning Tool

- Allows copying, backup and restore of drive parameters
- Provides Bluetooth wireless interface to a PC running **escodrive Tools**



External Remote Keypads

escodrive Pad EDS3PAD
Remote Keypad with OLED display and multilingual plain text

- escodrive Port** EDS3OP
Remote Keypad with LED display
- Up to 2 Pads / Ports per frequency inverter
 - Up to 63 frequency inverter on 1 Pad / Port



RJ45 Accessories

T-Adapter EDS3RJ45-TADAPT
RS485 - 3-Way-Adapter RJ45

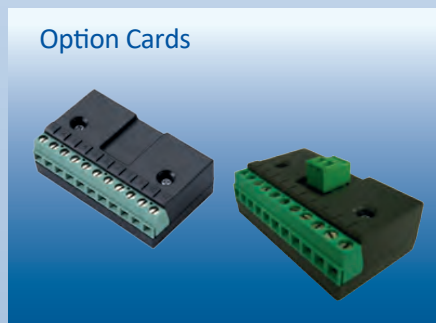
- | | |
|-----------------|----------------------------|
| EDS3CAB0050 | RJ45 cable 0.5m |
| EDS3CAB0100 | RJ45 cable 1.0m |
| EDS3CAB0300 | RJ45 cable 3.0m |
| EDS3RJ45-TADAPT | RS485 – 3-Way-Adapter RJ45 |



Networking possibilities

EtherNet Modul EDS3ETHERNET

- ODVA compliant EtherNet/IP - Modbus Translator Device
- Integrated Switch
- Compatible with RSLogix and CoDeSys – PLCs
- Additional Fieldbus communication interfaces available PROFIBUS®, PROFINET®, etc.



Option Cards

Dual Relay Output Card EDS3RELOUT
+24V, DI1, DI2, DI3/AI2, +10V, AI1, 0V, Relais 1, Relais 2

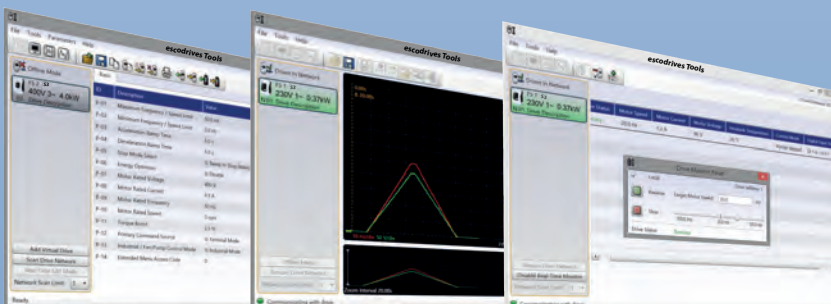
HVACO Card EDS3HVAC
+24V, DI1, DI2, DI3/AI2, +10V, AI1, 0V, Relay 1, Relay 2, AO



Additional accessories

For EMVC filters, Input / Output filters, Reactors and Braking resistors please contact your **escodrive** distributor.

escodrive Tools



Drive commissioning and parameter back-up

- Real-time parameter editing
- Simultaneous programming and monitoring of up to 63 frequency inverter
- Parameter upload, download und storage
- Real-time scope function and data logging
- Connection to the PC via cable or via **escodrive** Bluetooth Stick

Compatible with:
Windows XP, Windows Vista, Windows 7, Windows 8, Windows 8.1 & Windows 10

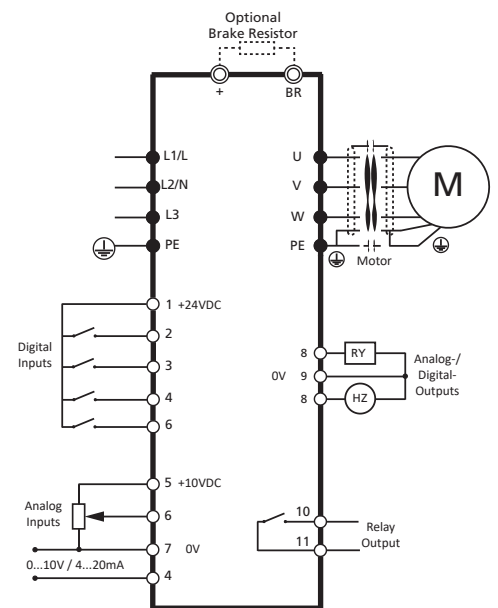
Technical Data ED-S3 (Protection class IP20)																
Model	200V - 240V 1 Phase Input				380 - 480V 3 Phase Input											
	Power Rating [kW]	0,37	0,75	1,5	2,2	0,75	1,5	2,2	4	5,5	7,5	11	15	18,5	22	30
Output Current [A]	2,3	4,3	7	10,5	2,2	4,1	5,8	9,5	14	18	24	30	39	46	61	72
Supply Voltage, Supply Frequency	1 Ph. 200V ... 240V (+10%), 50/60Hz (±5%)				3 Ph. 380V ... 480V (+10%), 50/60Hz (±5%)											
Output Voltage	0,0V to max. input voltage															
Overload Capacity	150% for 60s, 175% for 2,5s															
Output Frequency	0 ... 500Hz (resolution 0,1Hz)															
Programming	Keypad	Integrated keypad as standard, optional remote control panels														
	Display	7-Segment LED														
	PC Software	escodrives Tools														
Reglerfunktionen	Control Method	Linear V/F characteristic, energy saving function, sensorless vector control for all Motor Types (IM, PM, BLDC; SynRM, LSPM)														
	PWM Carrier Freq.	4-32kHz effective														
	Stopping Mode	Ramp to stop: User Adjustable 0,1 - 600 secs, Coast to stop														
	Braking Chopper					integr.				integrated						
	Skip Frequency	individually adjustable incl. Hysteresis														
Setpoint Control	Analog	0 - 10V, 10 - 0V; 0 - 20mA, 20 - 0mA; 4 - 20mA, 20 - 4mA														
	Digital	Potentiometer, Keypad, Modbus RTU, CANopen, fixed frequencies, various fieldbus connections (optional)														
Power Supply	24VDC (100mA), Short Circuit Protected, 10VDC (10mA) for Potentiometer															
Programmable Inputs	4 (2)x Digital, 2 (1)x Analog selectable															
Digital Inputs	8 - 30 VDC internal or external supply, Response time <4ms															
Analog Inputs	Resolution: 12 bits, Response time: <4ms, Accuracy: ±2% full scale, Parameter adjustable scaling and offset															
Programmable Outputs	1x Analog/ 1x Digital selectable, 1 Relay															
Relay Outputs	Maximum Voltage: 250VAC / 6A; 30VDC / 5A; optionally expandable															
Analog Outputs	0 ... 10V, max. 20mA															
EMC Filter	integrated (IEC 61800-3 Kategorie C1)															
Safety functions	Fire Mode (NO/NC) Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus), Emergency stop, Quick stop															
Protection class	IP20															
Ambient Conditions	Storage Temperature: -40°C to +60°C; Operating: -10°C to +40°C; Humidity: 95% Max, non condensing															
Conformance	CE, cULus, RCM															

Dimensions and Weight

	Model	Power Rating (kW)	Dimension (mm)			Weight (kg)
			W	H	D	
200V - 240V 1-phase	EDS3S-2004PL	0,37	83	173	123	1,0
	EDS3S-2007PL	0,75	83	173	123	1,0
	EDS3S-2015PL	1,5	83	173	123	1,0
	EDS3S-2022PL	2,2	110	221	150	1,7
	EDS3-4007PL	0,75	83	173	123	1,0
380V - 480V 3-phase	EDS3-4015PL	1,5	83	173	123	1,0
	EDS3-4022PL	2,2	110	221	150	1,7
	EDS3-4037PL	4	110	221	150	1,7
	EDS3-4055PL	5,5	131	261	175	3,2
	EDS3-4075PL	7,5	131	261	175	3,2
	EDS3-4110PL	11	131	261	175	3,2
	EDS3-4150PL	15	171	420	212	9,1
	EDS3-4185PL	18,5	171	420	212	9,1
	EDS3-4220PL	22	171	420	212	9,1
	EDS3-4300PL	30	222	486	226	18,1
	EDS3-4370PL	37	222	486	226	18,1



Switch example (depending on model)



(For double Inputs and Outputs, the requested function is adjustable via parameters)



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