

ESL: Electronic power control unit

Improving energy efficiency

The output signal (pause pulse) ensures that despite continuous controlling, the system is highly effective

Features

- Output controlling in electric auxiliary heating systems, electric heating elements in heating coils, fan coil units, etc., and heating elements for domestic hot water preparation
- Suitable for consumer loads that are controlled via one, two or three phases
- Y and Δ circuits are possible
- Analogue inputs for active standard signals of 0/2...10 V or 0/4...20 mA
- LED indicator

Technical data

Power supply

Power supply	230 V/400 V~/3 x 400 V
Tolerance in power supply	$\pm 20\%$, 50...60 Hz
Power consumption	Max. 5 VA
Max. power loss	20 W (ESL116F001) 40 W (ESL125F001)

Inputs/Outputs

Positioning signal y	0/2...10 V, $R_i > 100 \text{ k}\Omega$ 0/4...20 mA, $R_i < 170 \text{ k}\Omega$
Min. nominal current	2.0 A
cos φ	> 0.95
Period	Approx. 45 s

Ambient conditions

Admissible ambient temperature	0...65 °C (0...40 °C for nominal current)
Admissible ambient humidity	5...95% rh, no condensation
Storage and transport temperature	-25...65 °C

Construction

Fitting	In cabinet, on top-hat rail as per EN 60715
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Standards and directives

Type of protection	IP 20 (EN 60529)
Protection class	I (IEC 60730-1)
Over-voltage categories	II (IEC 60730-1)

CE conformity according to

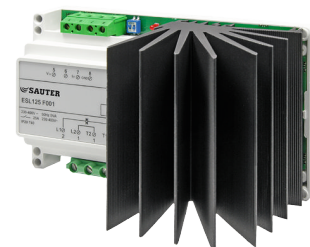
EMC directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

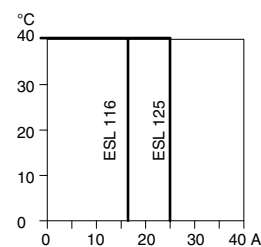
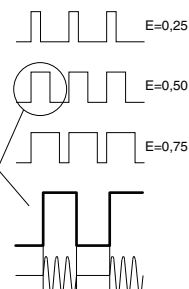
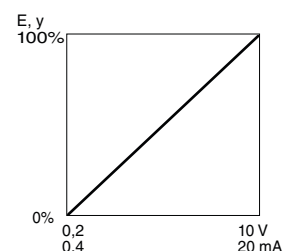
Type	Voltage	Circuit	Switch rating	Nominal current	Number of ESLs	Weight
ESL116F001	230 V~	Single phase	3.7 kW	16 A	1	0.5 kg
	400 V~	double phase	6.4 kW		1	
	3 x 400 V~	Y, Δ circuit	11.0 kW		2	
	3 x 400 V~	Δ circuit	19.0 kW		3	
ESL125F001	230 V~	Single phase	5.8 kW	25 A	1	0.8 kg
	400 V~	double phase	10.0 kW		1	
	3 x 400 V~	Y, Δ circuit	17.3 kW		2	
	3 x 400 V~	Δ circuit	30.0 kW		3	



ESL116F001



ESL125F001



Description of operation

The ESL power control unit has a characteristic $E = f(y)$. Various positioning signals (0/2...10 V; 0/4...20mA) can be used here. With the ESL, the heating output is controlled quasi-continuously, i.e. the heating coil is switched on/off in pulses. The control part and the output part are electrically isolated using an opto-coupler. The circuit-breaker is a Triac. The switching time is triggered by the zero crossing of the sine wave voltage. This prevents radio interference. If the output signal is activated, this is indicated by an LED. If the temperature of the heat sink is too high, the heating coil or the output signal is switched off. If the temperature of the heat sink falls below a limit, the output signal is activated again. This prevents the ESL from overheating and being damaged.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

Engineering and fitting notes

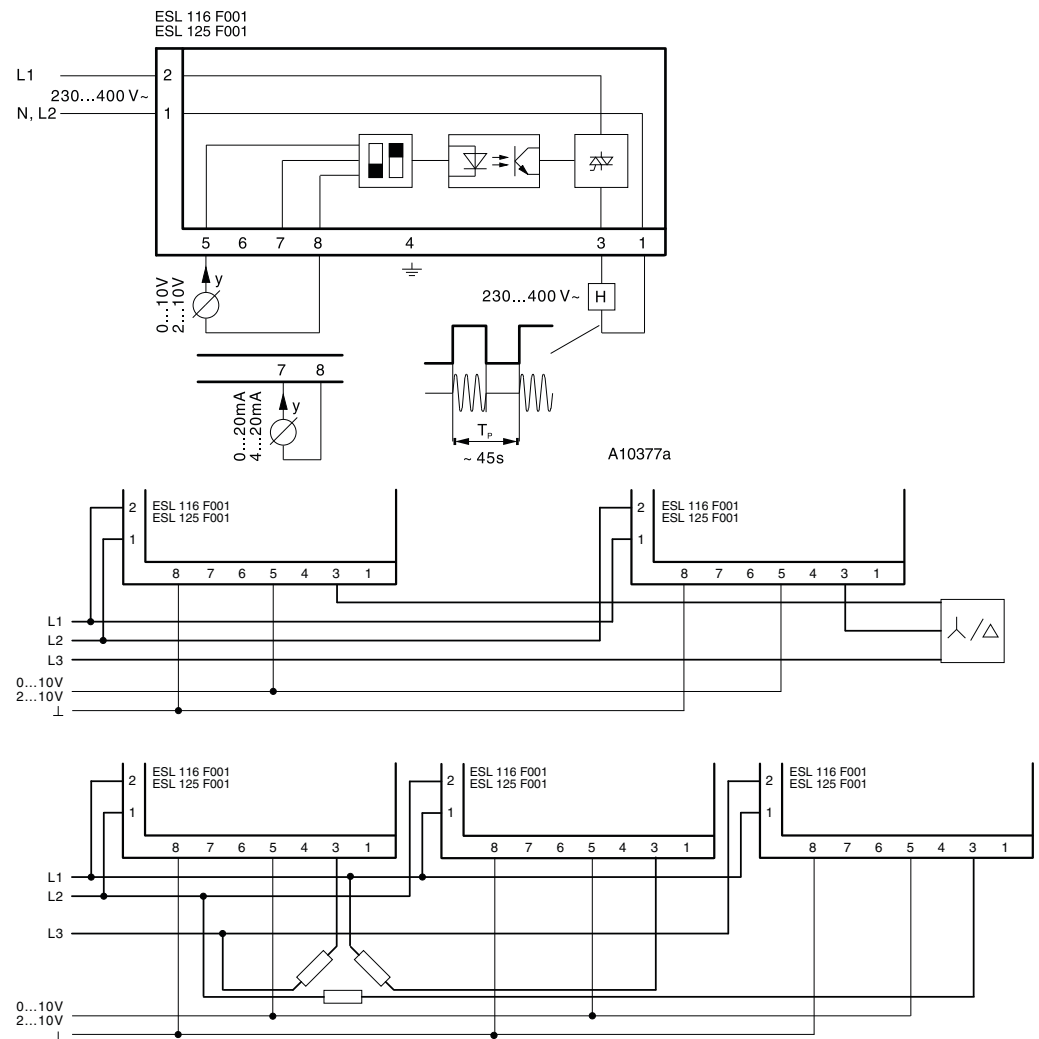
Multiple ESLs are necessary for three-phase current, depending on the circuitry (see the connection diagram).

Disposal

When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

Connection diagram



Dimension drawing

