

Eurotherm®

ESwitch

Power Switch

The solution that will help you to save money!

Easy replacement for mechanical contactors

Mechanical contactors controlling heating elements may operate three million times per year. The lifetime of these contactors is between 1 and 3 years; therefore they need to be replaced regularly during the typical life of an industrial machine.

ESwitch is an interesting solution to solve this problem. Because the contact is electronic, the lifetime is significantly extended. Its wiring is as simple as for a mechanical contactor and the mounting is very easy: just clip it on a DIN rail! It features a broad range of AC and DC command signals with a front face LED to display the input status to help commissioning and diagnostics.

Extend the life of your heaters

Tests performed by a well-known heater supplier have shown that heaters can last up to seven times longer when used with a solid state contactor. Faster on/off cycle times cause less thermal expansion and contraction and thus reduce breakage due to fatigue and thermo-mechanical stress. So by preserving the heating elements, ESwitch will allow you to maximize your ROI:

- Increase lifetime of heating elements
- Reduce downtime
- Minimise scrap
- Improve yield and productivity

By combining robustness, security of operations with simplicity of integration and use, ESwitch offers the best ratio of 'performance versus price' for the power switches market.

Easy

- No configuration
- Simplified installation
- Global standardisation

Robust

- Reduce maintenance costs
- Reduce downtime
- Reliable operation

Safe

- Partial Load Failure alarm
- Heating circuit dysfunction prevention
- Red light PLF detection

Ideal for

- Injection moulding
- Thermo-forming
- Multi-zone heating
- Autoclaves
- Ovens



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 **WATLOW®**
Powered by Possibility

Simple and performing

Easy

Whether replacing an existing product or designing a new process, ESwitch will make you gain time and money. Careful consideration have been given in the design of this power switch to simplify your life from installation to operation.



Easy to install

- Nothing to configure – plug and play product
- Nothing to fix – just clip onto DIN rail
- Minimal connection – pre-wireable plug in connector for the input signal and no need for electronics supply (self-powered)

Easy to integrate

- Compact dimensions to reduce cabinet costs
- Global standard approvals and international voltages allow for worldwide use.
- Consistent form factor – same height and depth across the range
- Ideal form and fit drop in replacement for Eurotherm TE10S

Easy to set up

- No adjustment except for the partial load failure option

Prevention and Safety

With the Partial Load Failure alarm, ESwitch brings an added information on the process control by preventing dysfunction in the heating circuit . As a matter of fact, the 'Partial Load Failure' (PLF) feature (in option) detects any loss of one or more parallel heating elements (resistive or SWIR). The discrimination is 1 element in 6 for single phase load



The PLF detection is indicated by:

- Red indicator light (LED) on front fascia
- Changes of the alarm relay state

Robust

Facing a more competitive market, you have to reduce your manufacturing costs while maintaining your quality requirements.



Thanks to its robustness and control performance, ESwitch will allow you to reach this dual goal with reducing downtime.

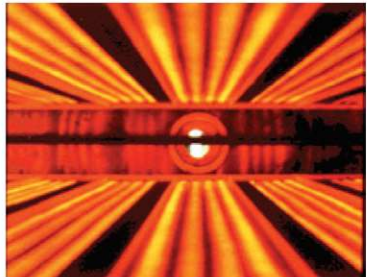
- No specific maintenance thanks to the use of power thyristor technology
- Robust – Reliable operation even under extremes environmental conditions: temperature (up to 55°C) – humidity (95%max) – altitude (2000m)

Compliance

The ESwitch solid state contactor offer peace of mind for all the industrial users: OEMs, integrators, maintenance engineers, site managers, working in a global environment where industry regulations form an essential part of the engineering supply chain.



- Conformity to cUL standard
- CE compliance
- China RoHS

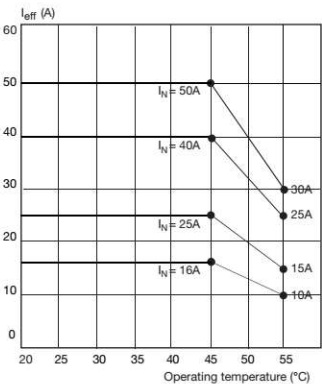


Let us show you how the benefits of ESwitch can save you time and money, visit www.eurotherm.com/eswitch

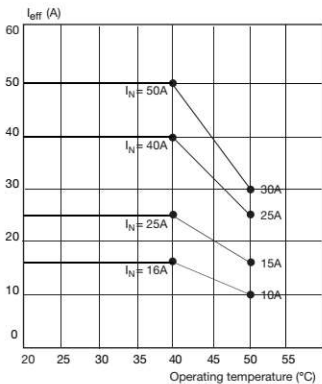


Technical Specification

General		Power	
Directive:	EMC directive 2004/108/EC Low Voltage Directive 2006/95/EC	Nominal current:	16 to 50A
Safety specification:	EN 60947-4-3:2000 (2000-01-12) + EN 60947-4-3:2000/A1:2006 (2006-12-08) + EN 60947-4-3:2000/A2:2011 (2011-09-02)	Nominal voltage:	100V to 500V (+10%/-15%). Refer to order code for more details
EMC emissions specification:	EN 60947-4-3:2000 (2000-01-12 + EN 60947-4-3:2000/A1:2006 (2006-12-08)) + EN 60947-4-3:2000/A2:2011 (2011-09-02) Class A product	Frequency:	47Hz to 63Hz
EMC immunity specification:	EN 60947-4-3:2000 (2000-01-12) EN 60947-4-3:2000/A1:2006 (2006-12-08) EN 60947-4-3:2000/A2:2011 (2011-09-02)	Short circuit protection:	High speed fuse (coordination Type 1)
Vibration tests:	EN60947-1 annex Q category E	Type of loads:	AC51: Pure resistive
Shock tests:	EN60947-1 annex Q category E	Power terminals:	Safe cage type, cable size 1.5 to 16mm² tightening torque 2.3Nm (20.4 lb.In)
Approvals		Safety earth screw terminal:	Cable size 1.5 to 16mm² tightening torque 2.3Nm (20.4 lb.In)
	cUL: UL60947-4-1A and UL60947-1 CE: EN60947-4-3 and EN 60947-1 A certificate of conformity can be provided on simple request CCC exempt: Product not listed in catalogue of products subject to China Compulsory Certification RoHS: Restriction of Hazardous Substances compliant Protection: CE: IP20, According to EN60529 UL: Open type	Control	
Condition of use	Atmosphere: Non-corrosive, non-explosive, non-conductive Degree of pollution: Degree 2 Storage temperature: -25°C to 70°C (maximum) Operating temperature: 0 to 45°C without derating Altitude: 1000m maximum at 45°C 2000m maximum at 40°C For higher temperature see de-rating curves below Humidity limits: 5% to 95% RH (non-condensing)	Supply of electronics:	Self powered product
		Command signal:	Logic signal either DC or AC
		Input:	Polarity insensitive, + and - can be crossed Command signal indication by green LED
		Voltage	Logic dc (LGC): 5 to 32V dc (ON >5V, OFF <2V) Logic ac (LAC): 30 to 55V ac, (ON >30V, OFF <5V) Logic ac (HAC): 85 to 264V ac, (ON >85V, OFF <10V)
		Current:	Logic dc (LGC): 10 to 20 mA dc (ON>8mA, OFF <0.5mA)
		Option	
		Partial load failure:	Detection of an increase in load impedance due to a failure or a disconnection of one part of the heating load.
		Discrimination:	1 element in 6 for single phase load
		Indication:	Red indicator light (LED) on front fascia



Current derating curves as a function of ambient temperature
 I_N = nominal current at 45°C)
for an altitude up to 1000m.



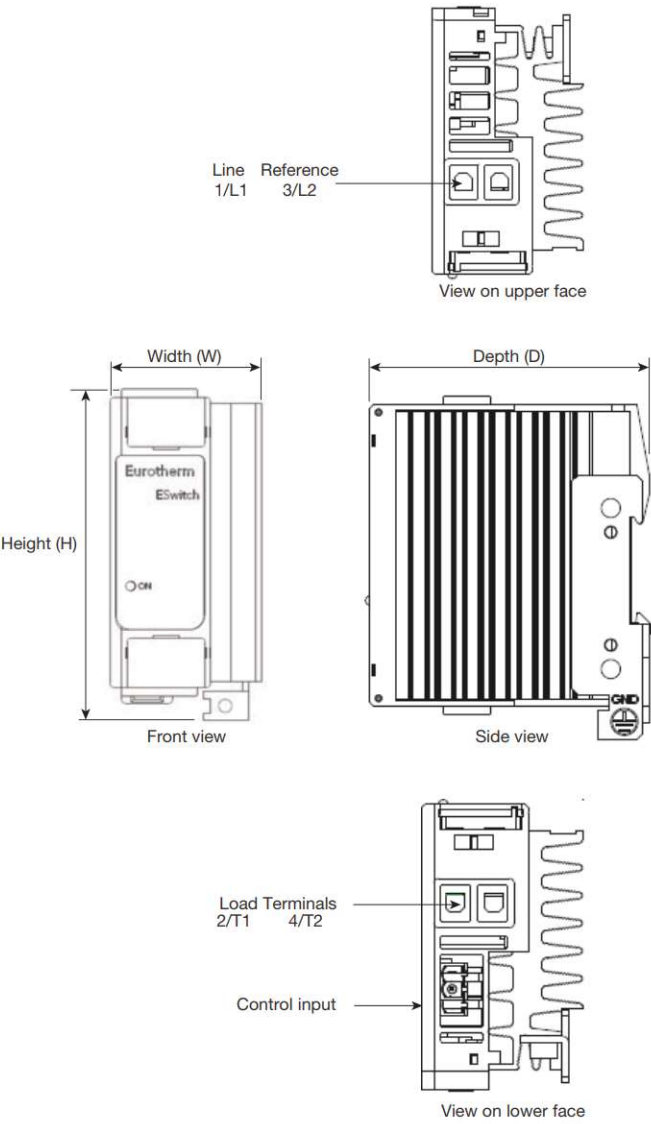
Current derating curves as a function of ambient temperature
 I_N = nominal current at 40°C)
for an altitude up to 2000m.



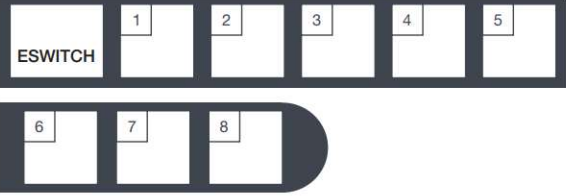
Mechanical Details

Model	Height	Width		Depth	Weight	Mounting
		without PLF	with PLF			
16A	115mm	36.8mm	52.5mm	92.5mm	0.55kg	DIN rail
25A	115mm	54.3mm	70mm	92.5mm	0.7kg	DIN rail
40A	115mm	89.3mm	105mm	92.5mm	0.9kg	DIN rail
50A	115mm	106.8mm	122.5mm	92.5mm	1.2kg	DIN rail

Mounting: DIN rail



Order Codes



Basic Product	
ESWITCH	Solid state contactor
1 Current	
16A	16 amps
25A	25 amps
40A	40 amps
50A	50 amps
2 Voltage	
120V	120 volts
240V	240 volts
500V	500 volts
3 Input Type	
LGC	Logic dc input (5-32V dc)
LAC	Low voltage ac (48V ac)
HAC	High voltage ac (100-240V ac)
4 Manual Language	
ENG	English
FRA	French
GER	German
SPA	Spanish
ITA	Italian

5 Partial Load Failure*	
-	Without partial load failure
PLF	Relay contact open on alarm
IPF	Relay contact closed on alarm
* Partial load failure only available with LGC input	
6 Fuse*	
NOFUSE	Without fuse
FUSE	Fuse without microswitch
MSFUSE	Fuse with microswitch
* According to the CE regulation it is mandatory to place a high-speed fuse in order to protect the thyristors: Do not use to protect the installation	
7 Standard/Special	
-	No Special
99	Special
8 Special description	
-	

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