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

Eurotherm®

by Schneider Electric

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

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)

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.

Compliance -

The ESwitch solid state contactor offer peace of mind for all the industrial users: OEMs,

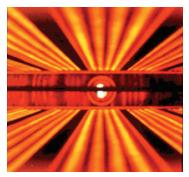


integrators, maintenance engineers, site managers, working in a global environment where industry regulations form an essential part of the engineering supply chain.

- · Conformity to cUL standard
- CE compliance
- China RoHS















Technical Specification

General

Directive: EMC directive 2004/108/EC Low Voltage Directive 2006/95/EC Safety: 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)

EN 60947-4-3:2000 (2000-01-12) **FMC** emissions:

+ EN 60947-4-3:2000/A1:2006 (2006-12-08)

+ EN 60947-4-3:2000/A2:2011 (2011-09-02)

Class A product

EN 60947-4-3:2000 (2000-01-12) EMC immunity:

EN 60947-4-3:2000/A1:2006 (2006-12-08) EN 60947-4-3:2000/A2:2011 (2011-09-02)

EN60947-1 annex Q category E

Vibration tests: Shock tests: EN60947-1 annex Q category E

Approvals

cUL: UL60947-4-1 and UL60947-1 CE: EN60947-4-3 and EN 0947-1

A certificate of conformity can be provided

on simple request

CCC exempt: Product not listed in catalogue of products

subject to China Compulsory Certification

China RoHS: Restriction of Hazardous Substances compliant

(China only)

Protection: CE: IP20, According to EN60529

UL: Open type

Condition of use

Atmosphere: Degree of pollution:

Storage temperature: Operating temperature: Altitude:

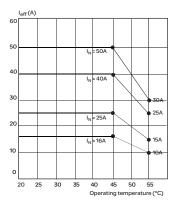
Non-corrosive, non-explosive, non-conductive

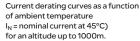
-25°C to 70°C (maximum) 0 to 45°C without derating 1000m maximum at 45°C 2000m maximum at 40°C

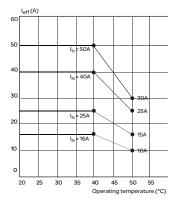
For higher temperature see de-rating curves

below

5% to 95% RH (non-condensing) Humidity limits:







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

Power

Nominal current: 16 to 50A

Nominal voltage: 100V to 500V (+10%/-15%). Refer to

order code for more details

Frequency: 47Hz to 63Hz

Short circuit protection: High speed fuse (coordination Type 1)

Type of loads: AC51: Pure resistive

Power terminals: Safe cage type, cable size 1.5 to 16mm²

tightening torque 2.3Nm (20.4 lb.ln)

Safety earth screw terminal: Cable size 1.5 to to 16mm²

tightening torque 2.3Nm (20.4 lb.ln)

Control

Supply of electronics: Self powered product Command signal: Logic signal either DC or AC

Polarity insensitive, + and - can be crossed Input:

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)

Logic dc (LGC): 10 to 20 mA dc (ON>8mA, OFF <0.5mA) Current

Option

Partial load failure:

Detection of an increase in load impedance due

to a failure or a disconnection of one part of the

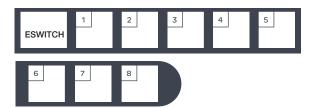
heating load.

Discrimination: 1 element in 6 for single phase load Indication: Red indicator light (LED) on front fascia



Mechnical Details Height Weight without with PLF PLF 52.5mm 115mm 36.8mm 92.5mm 0.55kg DIN rail 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 Line Reference 3/L2 View on upper face Width (W) Depth (D) Eurotherm Φ Height (H) OON

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

(

Side view

View on lower face

Logic dc input (5-32V dc)
Low voltage ac (48V ac)
High voltage ac
(100-240V ac)

Manual Language

ENG FRA	English French
GER	German
SPA	Spanish
ITA	Italian

5 Partial Load Failure*

- PLF IPF	Without partial load failure Relay contact open on alarm Relay contact closed on
	alarm

* Partial load failure only available with

6 Fuse*

NOFUSE	
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

99 Special	- No Special 99 Special	
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Special description

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Front view

Load Terminals 2/T1

Control input

4/T2



Scan for local contacts

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