Eurotherm®

EFit

SCR Power Controller

… the perfect fit for simple applications

Uncompromising process performance in a cost effective format

Easy to integrate and commission, yet highly cost effective, the EFit power controller provides no compromise control for resistive and infrared heating elements. Ideal for all heating applications and fully compliant to international quality, immunity, and emissions standards, EFit achieves outstanding stable, precise control in the most demanding industrial environments, even when cabinet space is at a premium.

The perfect fit for simple heating applications

Some Industrial processes such as heat treatment require precise temperatures in order to comply with regulations and it is imperative that the workpiece temperature is kept within specific limits. This can be difficult to achieve in industrial plants where the operation of large machinery can cause fluctuations in the voltage supply. In the case of resistive heaters a variation of 10% in the supply voltage will generate a 20% variation in the power to the load, resulting in undesirable temperature fluctuations. EFit contains built in compensation that continues to apply stable power with better than ±2% linearity at the boundaries of the load, even during fluctuations in the supply. The result is a reliable, repeatable heating process and high quality end products compliant to demanding heat treatment standards.

Connect Easily

- No configuration
- Compact installation
- Global standardisation

Control precisely

- Eliminate voltage fluctuations
- Achieve tight tolerances
- Optimise energy use

Improve processes

- Minimise downtime
- Maximise throughput
- Reduce cost of ownership

eurotherm.com/efit

WATLOW®
Powered by Possibility

The perfect fit

Connect Easily

Straightforward connection and commissioning, combined with a compact format to maximise use of cabinet space makes EFit the perfect fit for power control in both new and retrofit applications.

Easy Installation

- Nothing to configure – plug and play
- Nothing to fix – just clip onto DIN rail
- Minimal connection – pre-wireable plug in connectors

Easy Integration

- Compact dimensions reduce cabinet costs
- Integrates worldwide – global standard approvals and international voltages
- Consistent form factor – same height and depth across the range
- Ideal form and fit drop in replacement for Eurotherm TE10A

Control Precisely

EFit offers built in power stabilisation and a variety of firing modes for different types of load, which lead to energy savings and higher quality end products when compared to more basic power controllers.

Reduce hidden energy costs

- No wasted energy – built in compensation provides stable power control even during power fluctuations, eliminating unexpected changes in heater temperature
- Better power factor – save hidden energy costs with dedicated firing modes for each type of load, including a variety of burst modes that provide an efficient alternative to Phase Angle, such as advanced single cycle firing to reduce flicker in short-wave infrared heaters

Consistently high quality end products that comply to standards

- No scrap or rework – linearity better than ±2% of range, accurately controls heaters and maintains the correct load temperature

Improve Processes

Designed to give a fast stable response even in heavy industrial environments, EFit will enable you to run continuously optimised heating processes with minimum down time. This faster throughput improves OEE (Overall Equipment Effectiveness), helping you achieve your KPIs (Key Performance Indicators).

Increase throughput

- Maximise utilisation of plant equipment thanks to fast stable control response

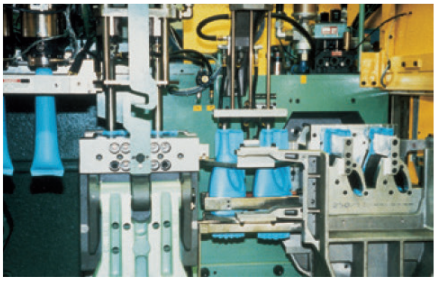
Reduce down time

- Reliably operates in heavy industrial conditions – high immunity to electromagnetic disturbances
- Robust – operates in high temperature, humidity and altitude environments

Standardise Globally

EFit power controllers offer peace of mind for installers working in a global environment where industry regulations form an essential part of the engineering supply chain.

- Conformity to cUL directive (Canada and USA)
- CCC exempt: product not listed in catalogue of products subject to compulsory certification
- China RoHS
- CE compliance to power controller product standards



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

Technical Specification

General

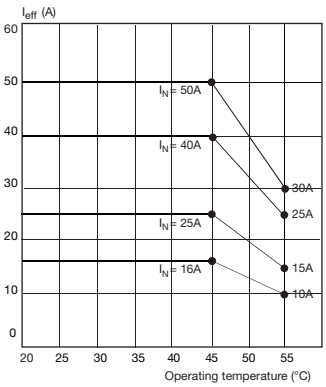
Directive:	EMC directive 2004/108/EC Low Voltage Directive 2006/95/EC
Safety specification:	EN 60947-4-3:2000 (2000-01-12) + EN 60947-4-3:2000/A1:2006 (2006-12-08) + EN 60947-4-3:2000/A2:2011 (2011-09-02)
EMC emissions specification:	EN 60947-4-3:2000 (2000-01-12 + EN 60947-4-3:2000/A1:2006 (2006-12-08)) + EN 60947-4-3:2000/A2:2011 (2011-09-02) Class A product
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)
Vibration tests:	EN60947-1 annex Q category E
Shock tests:	EN60947-1 annex Q category E

Approvals

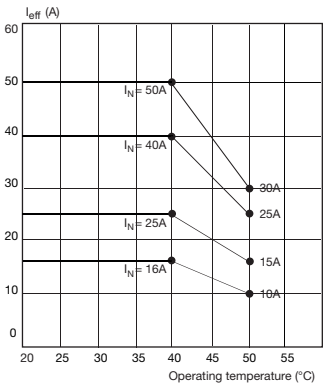
	cUL:	UL60947-4-1A and UL60947-1
	CE:	EN60947-4-3 and EN 60947-1 A certificate of conformity can be provided on simple request
	CCC exempt:	Product not listed in catalogue of products subject to China Compulsory Certification
	RoHS	Restriction of Hazardous Substances compliant
Protection:	CE:	IP20, According to EN60529
	UL:	Open type

Condition of use

Atmosphere:	Non-corrosive, non-explosive, non-conductive
Degree of pollution:	Degree 2
Storage temperature:	–25°C to 70°C (maximum)
Operatoring 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)



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.

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
	AC56a:	Transformer Primary
	AC55b:	Short wave infra-red
Power terminals:		Safe cage type, cable size 1.5 to 16mm² tightening torque 2.3Nm (20.4 lb.In)
Safety earth screw terminal:		Cable size 1.5 to to 16mm² tightening torque 2.3Nm (20.4 lb.In)

Control

Supply of electronics:	Self powered product: 100V ac to 500V ac
Auxiliary supply:	115V ac or 230V ac Auxiliary supply must be in phase with the line. The control circuit shall be protected by a ATM2 fuse rated 600V ac/dc, 2A, 100kA
Control setpoint:	Either analogue (analogue input or potentiometer) or logic
Analogue input signal:	
DC voltage:	0-5V, 0-10V, Input impedance 100k ohms
DC current:	4-20mA 250 ohms Burden resistor 250 ohms
Potentiometer:	A '5V user' voltage is available between terminals 5 and 7 to be used with an external potentiometer of 10Kohm. One potentiometer per unit should be used
Logic:	Contact for On/Off logic operation
Control terminals:	Plug-in connector 0.5 to 2.5mm² (24 to 12AWG) cables Tightening torque 0.6 Nm (5.31 lb.In)

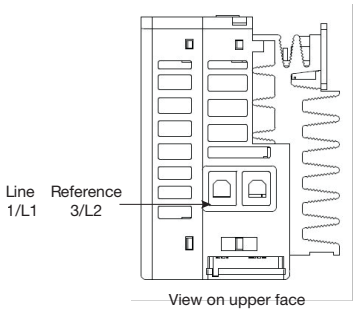
Control Performance

Linearity:		Better than ±2% of the full range
Stability:		Better than ±2% of the full range with constant resistance Automatic compensation for supply fluctuation (variation: between –10% and +10% of the nominal voltage)
Firing modes:	Burst:	Burst variable (16 periods) Single cycle Advanced single cycle
	Phase angle:	With or without current limit

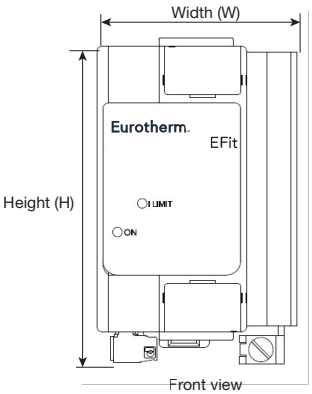
Mechnical Details

Mode	Height	Width	Depth	Weight	Mounting
16A	115mm	52.5mm	92.5mm	0.55kg	DIN rail
25A	115mm	70mm	92.5mm	0.7kg	DIN rail
40A	115mm	105mm	92.5mm	0.9kg	DIN rail
50A	115mm	122.5mm	92.5mm	1.2kg	DIN rail

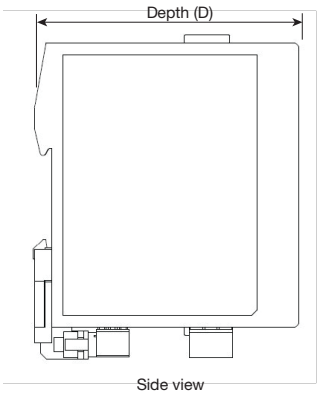
Mounting: DIN rail



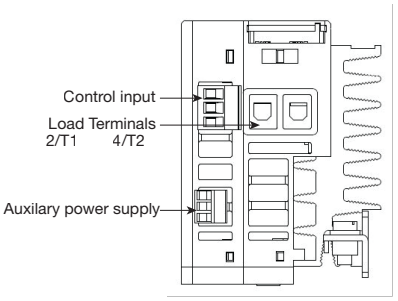
View on upper face



Front view

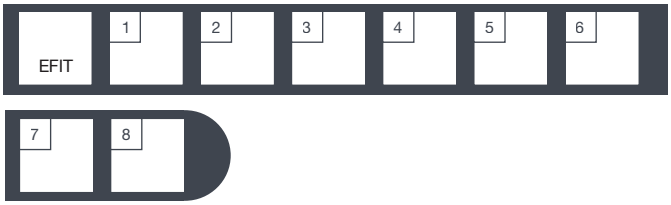


Side view



View on lower face

Order Codes



Basic Product

EFIT	Basic SCR Power Controller

1 Current

16A	16 amps
25A	25 amps
40A	40 amps
50A	50 amps

2 Voltage

100V	100 volts
115V	115 volts
200V	200 volts
230V	230 volts
240V	240 volts
277V	277 volts
380V	380 volts
400V	400 volts
415V	415 volts
440V	440 volts
480V	480 volts
500V	500 volts

3 Input

0V5	0–5V dc
4mA20	4–20mA
0V10	0–10V

4 Firing Mode

FC	Fast cycle
FC1	Single cycle
SCA	Advanced single cycle
PA	Phase angle

5 Language

ENG	English
ERA	French
GER	German

6 Supply

SELF	Self-powered
115V	Auxiliary 115V
230V	Auxiliary 230V

7 Current Limit

XX	Without current limit
CL	With current limt (only with Phase angle)

8 Fuse

NOFUSE	Without fuse
MSFUSE	Fuse with microswitch
FUSE	Fuse without microswitch

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Document Number HA032125 Issue 3

Published July 2023

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