

EUROTHERM® FLEXIBLE SOLUTIONS

7000

SERIES POWER UNITS...



... a choice for all load configurations

An innovative series for all power control applications

The 7000 Series incorporates industrial solid state contactors and thyristor units, to suit virtually all types of loads:

- from simple to sophisticated
- single-phase or three-phase loads
- extensive range of current ratings
- compatible with all industrial voltage supplies
- simple and quick to install, commission and maintain
- reliable and easy to use

7000 Series

A CHOICE FOR ALL LOAD CONFIGURATIONS

7100 for single-phase loads

7200 for 2 leg control of 3 phase loads

7300 for true 3-phase loads

THREE LEVELS OF FUNCTIONALITY

To meet your specific needs, the 7000 Series is designed with three levels of functionality:

Load controller 7000L

Solid state contactors for economical, high performance control of simple resistive loads

Smart controller 7000S

Intelligent solid state contactors for total safety in control of resistive or short wave infrared (SWIR) loads

Advanced controller 7000A

Sophisticated thyristor units which may be adapted to drive virtually all Load types and can be easily integrated into complete control architectures



LOAD CONTROLLER... Single-phase, solid state contactors

The 7000L solid state contactors are used with single-phase low temperature coefficient resistive loads. The range of current ratings extends from 16A to 100A and voltages up to 500V.

Simple and direct implementation

These units provide effective replacements for electromechanical power relays:

- fast switching
- no wear
- quiet operation

Compliance with EMC directive relating to electrical and electromagnetic interference is standard on the 7000L

Simple and reliable

- self-powered units
- no commissioning required
- resistive loads

7000L Range

7100L



SMART CONTROLLERS... Intelligent solid state contactors

The 7000S intelligent solid state contactors are used with single and three-phase loads as well as low temperature coefficient, resistive or short wave infrared loads. The range of current ratings extends from 16A to 250A and voltages up to 500V.

Quick and reliable diagnostics to maintain productivity levels

On the fascia, information about:

- the condition of the load
- the state of the thyristor including overheating
- the presence of the power supply

Easy commissioning and adjusting

- self-powered units
- over-temperature security for fan cooled units

Fault detection clearly indicated for a better efficiency

Front fascia LEDs shows the unit status in real time:

- diagnostic load fault detection
- short circuit thyristor fault detection
- load failure detection
- over-temperature alarm (fan cooled units)
- digital communications

7000S Range

7100S



7200S



7300S



ADVANCED CONTROLLERS... Power thyristor units

The 7000A power thyristor units are used with single-phase and three-phase loads of virtually all types. The range of current ratings extends from 16A to 250A and voltages up to 500V.

7000A Range

7100A



7200A



7300A



An adaptable power unit

- choice of input
- choice of control mode
- choice of firing mode
- alarms adaptable to the load
- over-temperature shutdown of fan cooled units (>100 amps)

All types of electrical loads

- high temperature coefficient
- resistive load
- variable resistance over time
- transformer primaries
- inductive loads

Clear alarm information

- short circuit thyristor detection
- load failure detection
- over-temperature alarm (fan cooled units)

Advanced diagnosis for a real time monitoring

- diagnostic load fault detection
- high performance alarm strategy
 - supply faults
 - thyristor and load faults
- signaling of faults
 - front panel LEDs
 - alarm contacts
- digital communications (7300A)

Real-world applications

SHORT WAVE INFRARED

The power components are designed to drive short wave infrared (SWIR) sources as well as low temperature coefficient resistive loads.

An additional option 'Diagnostic load Fail' allows you to immediately know the status of the load.

Applications:

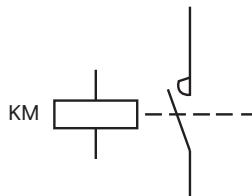
Plastic
Paper drying
Car paint drying



REPLACEMENT OF ELECTROMECHANICAL CONTACTORS

These units provide effective replacements for electromechanical power relays, they offer you many benefits:

- no noise
- no wear
- fast switching
- quiet operation
- simple and reliable
- self-powered units
- no commissioning required
- better control
- increase of the heater element life



PLANT MONITORING

The 7000S and 7000A series offer:

- high performance alarm strategy including:
 - supply faults
 - thyristor faults (thyristors in short circuit)
 - load faults (partial or total load failure)
 - over-temperature
- signaling of faults:
 - front panel LEDs
 - alarm contact

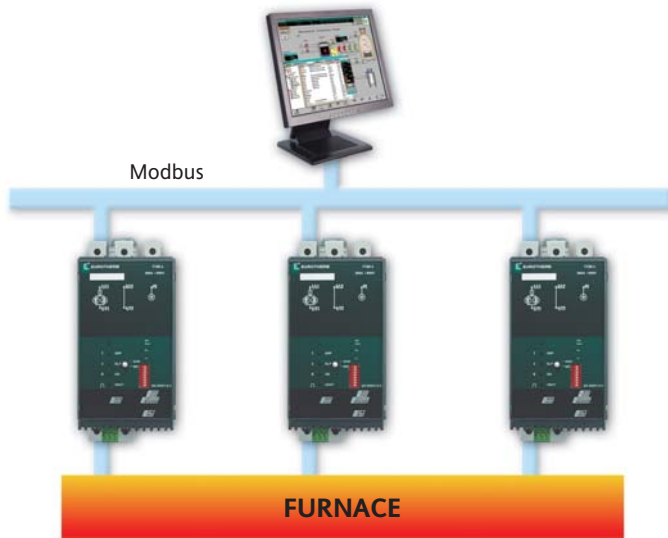
BENEFITS: scrap reduction and process optimization



MULTIZONE HEATING

Digital communications offer a significant Return on Investment

- saving time in configuration:
iTools configurator can clone the configuration of a unit and download it in an other unit
- reduced wiring
- centralised driving of the power units
- monitoring of the plant
- integration into complete control architecture

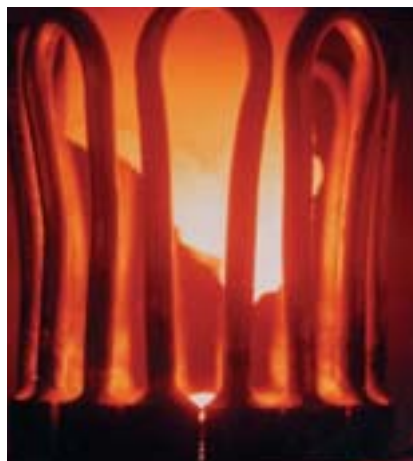


HIGH POWER APPLICATION

The 7000S and 7000A series offer a wide range of current ratings, from 16A up to 250A in single phase, up to 200A in two phase and up to 160A in three phase control.

Load types for 7000S range:
resistive and short wave infrared.

Load type for 7000A range:
resistive, short wave infrared
and inductive loads.



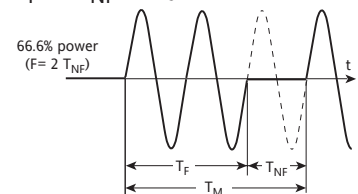
COMPLEX LOADS

With many firing and control modes (U2, I2, UxI), the 7000A series suits virtually all load types and applications:

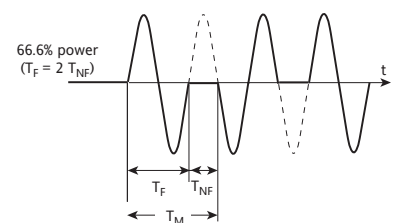
- burst firing for resistive loads with low temperature coefficient
- single cycle (e.g. short wave infrared)
- phase angle (e.g. inductive loads, high temperature coefficient loads)

Our experts team will provide you advices with the choice of the firing modes.

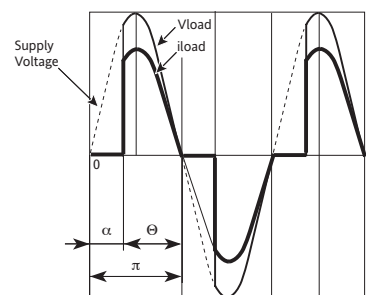
- **Standard single-cycle**
(T_F or $T_{NF} = 1$ cycle)



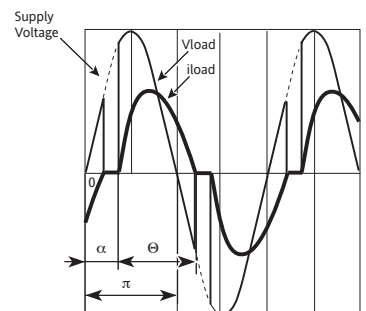
- **Advanced single-cycle**
($T_{NF} = 0.5$ cycles: T_M reduced)



- **Phase angle for resistive load**



- **Phase angle for inductive load**



Selection guide and technical specifications



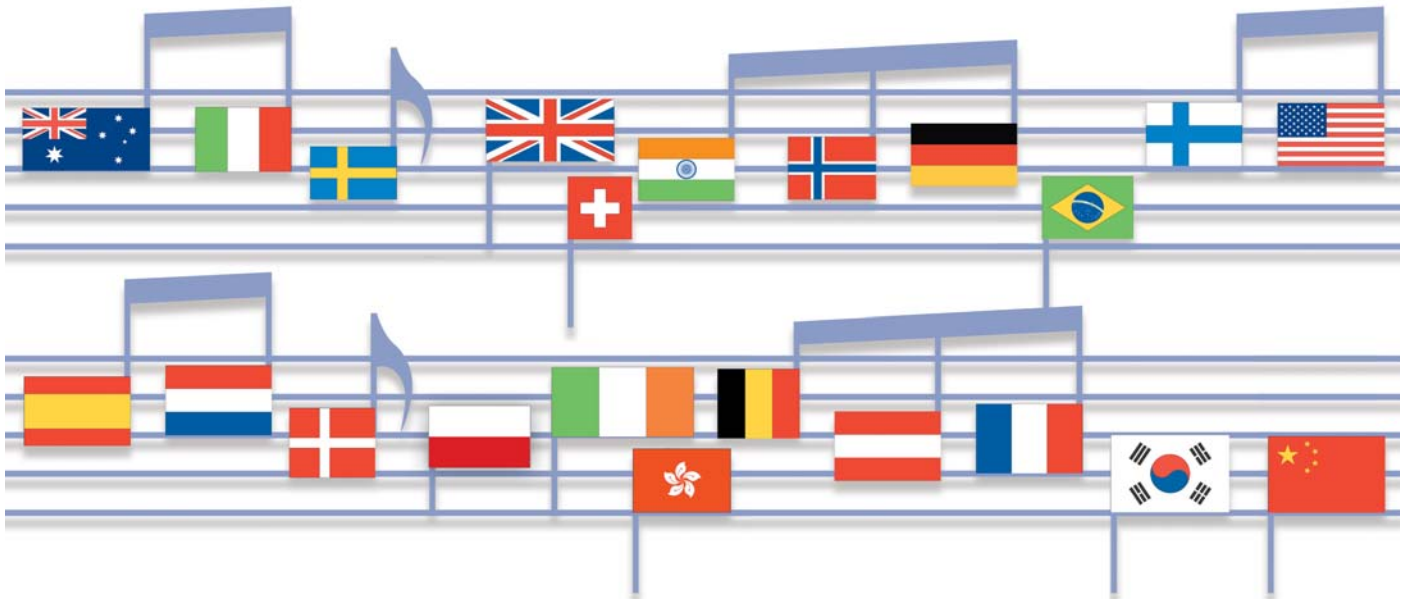
	7100L	7100S	7200S
Current	16A to 100A	16A to 250A	16A to 200A
Voltage	48V to 500V	100V to 500V	200V to 500V
Frequency	47-63Hz	47-63Hz	47-63Hz
Operating temperature	45°C	45°C	45°C
Fan cooled		250A unit	from 125A
Electronic supply	Self Supply	Self Supply	Self Supply
LOAD CONFIGURATION			
Single phase	Yes	Yes	
3 phase load in delta or star w/o neutral			Yes
3 phase load star with neutral			
3 phase load in open delta			
LOAD TYPE			
Resistive with low temperature coefficient	Yes	Yes	Yes
Short wave infrared		Yes, 100A max.	
Resistive with high temperature coefficient			
Inductive loads / Transformer primary			
INPUT TYPE			
Logic	DC(5-32V), AC(100-230V)	DC(5-32V), AC(100-230V)	DC(5-32V), AC(100-230V)
Analogue	7100S 200A / 500V	4-20mA	4-20mA
Local potentiometer			
Digital input (with communication)		Yes (logic input excluded)	Yes (logic input excluded)
FIRING MODES			
Zero crossing	Yes	Yes	Yes
Burst firing		Yes	Yes
Single cycle		With communication	
Advanced single cycle		With communication	
Burst with first firing delay			
Phase angle			
CONTROL AND CURRENT LIMITATION OPTIONS			
Open loop- PA only			
Voltage feedback (V2)		With communication	With communication
Current feedback (I2) - PA only			
Current limit (Transfer V2<->I2) - PA only			
Power feedback (VxI)			
ALARM OPTIONS			
Total Load Failure & Thyristor short circuit		Yes	Yes
Partial load failure		Yes	Yes
Over-temperature (as standard)		≥250A	≥125A
Overload			
Alarm output		Relay	Relay
COMMUNICATIONS			
Protocols		Modbus RTU	Modbus RTU
MECHANIC			
Mounting	DIN Rail / Bulkhead	DIN Rail (Up to 100A) / Bulkhead	DIN Rail (Up to 63A) / Bulkhead
Fuse	External	External ≤100A Internal ≥125A	External ≤100A Internal ≥125A
Direct channel wiring (Phase or Neutral)	External	Internal up to 100A	Internal up to 100A
STANDARDS			
CE	Yes	Yes	Yes
EN60947-4-3 Compliance	Yes	Yes	Yes
UL / cUL	Yes, 63A max. and pending	Yes, 63A max. and pending	Pending
IP Protection	IP20	IP20	IP20



7300S	7100A	7200A	7300A
16A to 160A	16A to 250A	16A to 200A	16A to 160A
200V to 500V	100V to 500V	200V to 500V	200V to 500V
47-63Hz	47-63Hz	47-63Hz	47-63Hz
45°C	45°C	45°C	45°C
from 125A	250A unit	from 125A	from 125A
Self Supply	Self or External supply (115V or 230V)	Self or External supply (115V or 230V)	Self or External supply (115V or 230V)
	Yes		
Yes		Yes	Yes
Yes			Yes
Yes			Yes
Yes	Yes	Yes	Yes
Yes, ≤100A	Yes	Yes, ≤100A	Yes
	Yes		Yes
	Yes		Yes
DC(5-32V), AC(100-230V)	0-5V, 0-10V, 0-20mA, 4-20mA	0-5V, 0-10V, 0-20mA, 4-20mA	0-5V, 0-10V,0-20mA,4-20mA
4-20mA	Yes (0-5V input)	Yes (0-5V input)	Yes (0-5V input)
Yes (logic input excluded)			Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
With communication	Yes	Yes	Yes
With communication	Yes	Yes	Yes
	Yes		Yes
	Yes		Yes
With communication	Yes	Yes	Yes
	Yes		Yes
	Yes, 100A max.		Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
≥125A	≥250A	≥125A	≥125A
	Yes, 100A max		Yes
Relay	Relay	Relay	Relay
Modbus RTU			Modbus RTU
DIN Rail (Up to 40A) / Bulkhead	DIN Rail (Up to100A) / Bulkhead	DIN Rail (Up to 63A) / Bulkhead	DIN Rail (Up to 40A) / Bulkhead
External ≤100A	External ≤100A	External ≤100A	External ≤100A
Internal ≥125A	Internal ≥125A	Internal ≥125A	Internal ≥125A
N/A	Internal up to 100A	Internal up to 100A	N/A
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes, 100A max. and pending	Pending	Yes
IP20	IP20	IP20	IP20

Eurotherm: International sales and service

Understanding and providing local support is a key part of Eurotherm's business. Complementing worldwide Eurotherm offices are a whole range of partners and a comprehensive technical support team, to ensure you get a service you will want to go back to.



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