

# 7200A

MODEL



## Two Leg Three Phase Thyristor Units for use with Short Wave Infrared or Resistive Loads

### Specification Sheet

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#### Ideal for :

- Glass lehrs
- Metal furnaces
- Ceramic furnaces
- Semi-conductor manufacture
- Ovens
- Thermo-forming
- SWIR heaters

#### Features :

- **Current range: from 16 to 200 amps at 45°C**
- **Voltage up to 500V**
- **Inputs**  
current:  
0-20mA or 4-20mA  
voltage:  
0-5V or 0-10V
- **Firing modes:**  
Burst firing  
Single cycle
- **Alarm options include:**  
Thyristor short circuit  
Load open circuit  
Partial load failure  
Thyristor over temperature  
(≥125 amps)

#### Ratings

The current ratings of the 7200A cover the range from 16 amps up to 200 amps, with units rated at 125 amps and above being fan cooled. The voltage rating extends to a maximum of 500 volts. These units consist of two thyristor controlled channels each rated at the specified current and voltage.

#### Inputs

The 7200A can accept analogue voltage: (0-5V or 0-10V) or current: (0-20mA or 4-20mA) inputs.

#### Firing Modes

The 7200A is available with a selection of firing modes to suit most three phase applications with resistive elements in 3-wire configuration. It is suitable for controlling resistive loads with low temperature coefficient and short wave infrared (SWIR).

#### Alarm

Optional alarms can warn of thyristor short circuit or load open circuit. It includes the partial load failure with automatic set up which can detect the loss of at least one for up to four parallel loads (DLF alarm).

Over temperature shutdown is provided with fan cooled units (above 125 amps) with optional alarm.

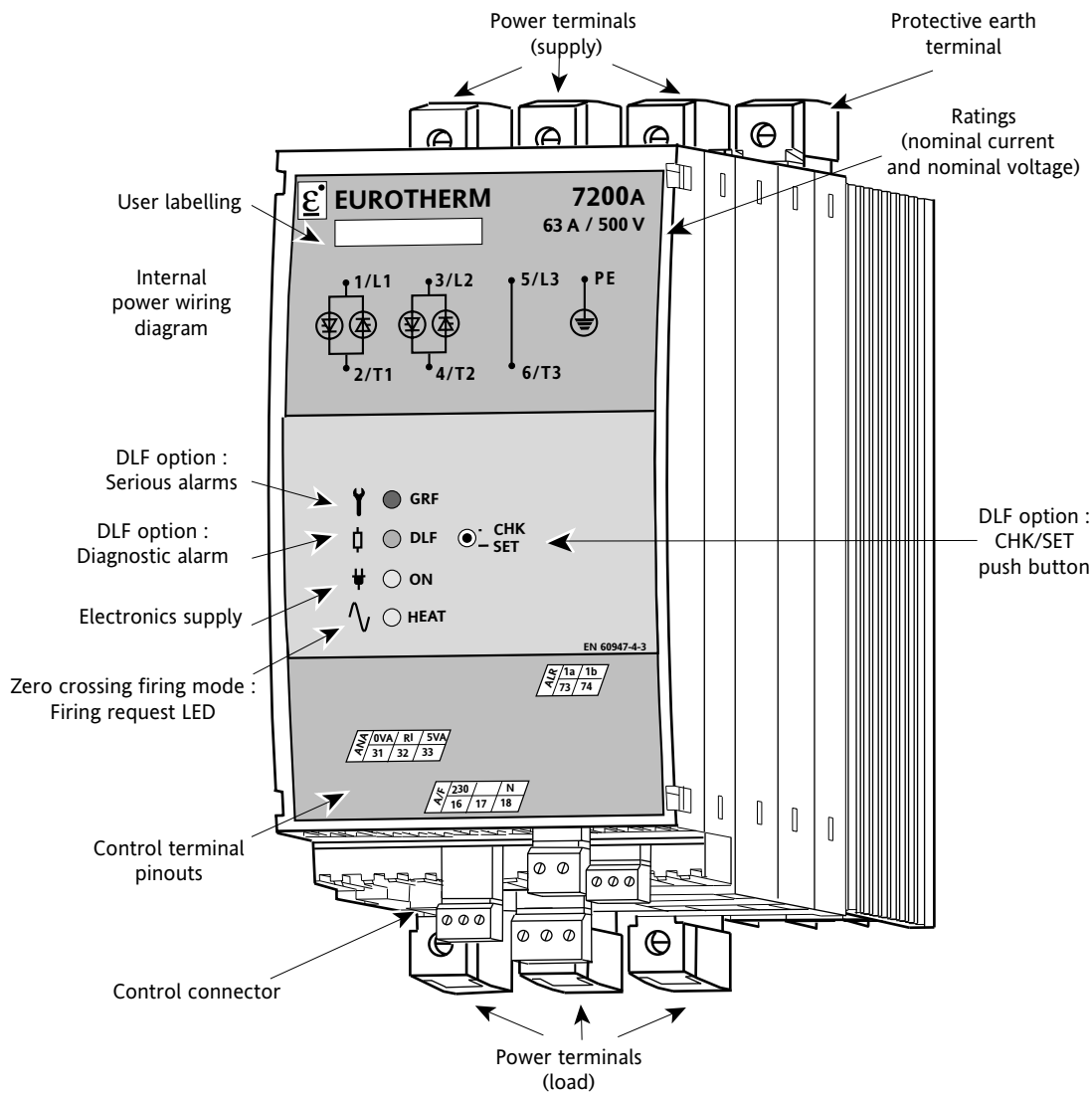
#### Fusing

High speed fuses are recommended for most applications except SWIR. The fuses are external for units up to and including 100 amps and internal above 100amps. Fuses are available either with or without microswitch indication.

#### International approvals

CE (EN60947-4-3)

# 7200A



Example of 7200A layout

## Signal connections

| Terminal Block | Terminal |       |  | Option           |
|----------------|----------|-------|--|------------------|
|                | No.      | Label | Purpose                                      |                  |
| ANA            | 31       | 0VA   | 0V analogue signal                           | Basic or Options |
|                | 32       | RI    | +analogue signal                             |                  |
|                | 33       | 5VA   | 5V user supply                               |                  |
| A/F            | 16       | 230   | Auxiliary 230V or                            |                  |
|                | 17       | 115   | 115V supply                                  |                  |
|                | 18       | 0V    | Neutral or 2 <sup>nd</sup> phase             |                  |
| ALR            | 71       | 1a    | Alarm relay contact (NC code)                | Alarms           |
|                | 72       | 1b    | Alarm relay contact (NO code)                |                  |
|                | 73       | 1a    | Alarm relay contact (NO code)                |                  |
|                | 74       | 1b    | Alarm relay contact (NO code)                |                  |
| MSF            | 75       | 3a    | Fuse with micro switch contact               | ≥125A            |
|                | 76       | 3b    | switch contact                               |                  |
| EXT            | 21       | L2    | Neutral or 2nd phase in case of alarm option | Alarm            |
|                | 22       | N/A   |  |                  |

## Safety specification

### PRODUCT STANDARD

The 7200A products comply with the terms of product standard EN 60947-4-3. Contactors and motor-starters- AC semiconductor controllers and contactors for non-motor loads.

### CE LABELLING

Complies with essential requirements of the European Low Voltage Directive 73/23 EEC dated 19 February 1973, modified by 93/68/EEC dated 22 July 1993 and the Electromagnetic Compatibility Directive 89/336/EEC dated 3 May 1989 modified by 92/31/EEC dated 28 April 1992 and 93/68/EEC dated 22/07/93.

**POWER**

Nominal Current 16 A to 200 A at 45°C ambient (see order code)  
 Nominal Voltage 200 VAC to 500 VAC (see order code)  
 Frequency 47 to 63 Hz  
 Auxiliary supply Self-powered from supply network, or external (115Vac or 230Vac +10%; -15%). Consumption: 10VA.  
 Dissipated power 1.3 W (approx): per amp per phase. Allow 2 W per amp per phase to include fuse dissipation  
 Cooling Rating ≤100A: Natural convection. Rating ≥125A: Fan-cooled.

**LOAD**

Three-phase industrial load:  
 Use category · AC-51 Resistive load with low temperature coefficient  
 · AC-55b Short wave infrared elements units ≤100A only  
 Load configuration · Star without neutral (3S)  
 · Closed delta (3D)

**CONTROL**

Control type Analogue  
 · Remote analogue setpoint: 0-5Vdc or 0-10Vdc (100 kΩ =input impedance), 0-20mA or 4-20mA (250Ω input impedance)  
 Control parameter · Standard: Load voltage squared (V<sup>2</sup>)  
 Linearity and stability Better than ±2% of full scale (balanced supply and load)

**FIRING MODE**

Firing at zero crossings · 'Burst mode' base time: 16 or 64 cycles  
 · 'Single cycle': base time 1 cycle

**LOAD MONITORING (OPTIONS)**

Diagnostic alarm (DLF) Serious Alarms: Unit overtemperature, short circuit and load open circuit, signalled by LED and relay contact.  
 Partial load failure detection: Detects the failure of at least : 1 element out of 4 in 3S configuration and 1 element out of 3 in 3D configuration, signalled by orange 'DLF' LED and alarm relay contact.

**ALARM RELAY**

Available with alarm option. The relay contact (0.25 A 230 Vac; 32 Vdc) is either open or closed on alarm depending on the code.

**ENVIRONMENT**

Temperature Use 0°C to 45°C at max. altitude of 2000m. Storage -10°C to 70°C  
 Pollution Degree 2 acceptable (defined by IEC 664)  
 Humidity RH 5% to 95% Non condensing

**INSTALLATION**

Mounting. Rating from 16 to 63A: Two symmetric DIN rail EN50022 or bulkhead mounting (4 x M4 screws)  
 Rating from 80 to 100A: Bulkhead mounting (4 x M4 screws)  
 Rating from 125 to 200A: Bulkhead mounting (4 x M6 screws)  
 Allow a minimum of 10mm between units. Units must be mounted with fins running vertically  
 Max. cable size. 16 and 25 amp: 6mm<sup>2</sup>. 40 and 63 amp: 16mm<sup>2</sup>. 80 and 100 amp: 35mm<sup>2</sup>. 125 to 200 amp: 120mm<sup>2</sup>

**PROTECTION**

Thyristor protection Varistor and RC snubber  
 High speed fuses: rating ≤100A: external (optional), rating ≥125A: internal. No fuse for short wave infrared elements if firing at zero crossings or in phase angle firing mode without current limit.

Electrical protection IP20 without adding additional protection. Overvoltage category II

**WARRANTY**

2 years.

**PHYSICAL DATA**

| Rating (A) | H(mm) | W(mm) | D(mm) |     |
|------------|-------|-------|-------|-----|
|            |       |       | Basic | DLF |
| 16-63      | 220   | 96    | 214   | 214 |
| 80-100     | 305   | 144   | 372   | 372 |
| 125-200    | 498   | 144   | 372   | 372 |

**ORDERING CODE**

|       |   |   |   |      |   |   |   |   |   |      |
|-------|---|---|---|------|---|---|---|---|---|------|
| 7200A | 1 | 2 | 3 | 4    | 5 | 6 | 7 | 8 | 9 | 10   |
|       |   |   |   |      |   |   |   |   |   |      |
|       |   |   |   | NONE |   |   |   |   |   | NONE |

|   |  |  |   |   |  |
|---|--|--|---|---|--|
| <b>1 Current</b>  | <b>2 Nominal Line to line Voltage</b>  | <b>3 Power supply for Electronics</b>  | <b>5 Load Configuration</b>   | <b>7 Firing Mode</b>  | <b>9 Manual Language</b>   |
| 16A 16 amps<br>25A 25 amps<br>40A 40 amps<br>63A 63 amps<br>80A 80 amps<br>100A 100 amps<br>125A 125 amps<br>160A 160 amps<br>200A 200 amps | 200V 127 volts<br>230V 230 volts<br>277V 277 volts<br>400V 500 volts<br>460V 460 volts<br>480V 480 volts<br>500V 500 volts | SELF Self-powered<br>115V 115 volt supply<br>230V 230 volt supply  | 3S Star without neutral<br>3D Closed delta                                  | C16 Burst 16 cycles<br>C64 Burst 64 cycles<br>FC1 Single-cycle  | ENG English<br>FRA French<br>GER German  |
|   |  | <b>4 Fan Power Supply</b>  | <b>6 Fuse</b>   | <b>8 Input</b>  | <b>10 Selected Options</b>   |
|   |  | 16A-100A<br>XXXX No fan<br>125A-200A<br>115V 115V fan and SELF electronics<br>230V 230V fan and SELF electronics | FUSE Fuse without microswitch<br>MSFU Fuse with microswitch<br>NONE No fuse | 0mA20 current from 0mA to 20mA<br>4mA20 current from 4mA to 20mA<br>0V5 Voltage from V to 5V<br>0V10 Voltage from 0V to 10V | NONE Without options:<br>V <sup>2</sup> control and End of code<br>YES With options:<br>Selection of options |

**Options (if Options 'YES')**

|   |   |  |           |   |           |
|---|---|--|-----------|---|-----------|
| <b>11 Load Monitoring</b>                                     | <b>12 Load Type</b>   | <b>13 Alarm Relay Contact</b>  | <b>14</b> | <b>15 Certification</b>                           | <b>16</b> |
| DLF Partial load failure and serious alarms<br>NONE No alarms | For DLF option:<br>SWIR Short infrared (with FC1 only)<br>LTCL Low temperature coefficient loads<br>XXXX Without DLF option | NC With alarm option: closed on alarm<br>NO open on alarm<br>XX Without alarm option | NONE      | NONE Without certificate<br>CFMC With certificate | NONE      |

**SPARE FUSE AND HOLDER (2 per unit)**

| Current rating amps | Fuse and holder assembly | Fuse and Holder with Microswitch |
|---------------------|--------------------------|----------------------------------|
| 16                  | FU1038/16A/00            | MSFU1451/16A                     |
| 25                  | FU1038/25A/00            | MSFU1451/25A                     |
| 40                  | FU1451/40A/00            | MSFU1451/40A                     |
| 63                  | FU2258/63A/00            | MSFU2258/63A                     |
| 80                  | FU2258/80A/00            | MSFU2258/80A                     |
| 100                 | FU2760/100A/00           | MSFU2760/100A                    |

**SPARE FUSE (2 per unit)**

| Current rating amps | Fuse number  | Fuse Trip with Indicator |
|---------------------|--------------|--------------------------|
| 16                  | CH260024     | CS176513U020             |
| 25                  | CH260034     | CS176513U032             |
| 40                  | CH330054     | CS176513U050             |
| 63                  | CS173087U080 | CS176461U080             |
| 80                  | CS173087U100 | CS176461U100             |
| 100                 | CS173087U125 | CS176461U125             |

**INTERNAL FUSES (2 per unit)**

| Current rating amps | Fuse Trip with Indicator |
|---------------------|--------------------------|
| 125                 | CS17672U160              |
| 160                 | CS17672U250              |
| 200                 | CS17672U315              |

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