

# 7100S

MODEL



## Single Phase Solid State Contactor for use with Short Wave Infrared or Resistive Loads

### Specification Sheet

#### Ideal for :

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

#### Features :

- Current range; from 16 to 250 amps at 45°C
- Voltage up 500V
- Inputs: Logic (AC or DC) or Analogue 4-20mA which gives time proportional output
- Intelligent half cycle firing available when driven by a Eurotherm REMIO interface unit
- Suitable for SWIR or resistive loads
- Overtemperature shutdown for 250A fan cooled units
- Options include:  
Thyristor short circuit alarm  
Overtemperature alarm  
Diagnostic load failure detection and digital communications (up to 100A)

A range of single phase solid state contactors for use with short wave infrared (SWIR) and Low Temperature Coefficient resistive loads.

#### Ratings

7100S units offer a cover a current range from 16 to 250amps. The voltage rating can go to a maximum rating of 500 volts.

#### Inputs

These units, with integral heat sinks, are driven by either DC or AC Logic signals depending on the order code. Also an analogue 4-20mA input can be specified which gives a linear time proportional output. The DC Logic input can be supplied by a Eurotherm REMIO interface unit which can give intelligent half cycle firing to reduce flicker in SWIR lamps.

#### Fusing

In all cases the output is zero voltage switching. High speed fuses are mounted external to the unit for 100 amps and below, internal above 100 amps. They can be ordered as part of the 7100S order code. Spare fuses or complete fuse and fuseholder assemblies can also be ordered separately.

#### Alarms

The 7100S has an optional thyristor short circuit and total load failure alarm.

An overtemperature shut down is provided for the 250A fan cooled unit. An optional overtemperature alarm is also available.

Diagnostic Load Failure detection is an option which alarms on the loss of one or more parallel heating elements (resistive or SWIR). The sensitivity is one out of six. It is auto-setting via a front panel push button.

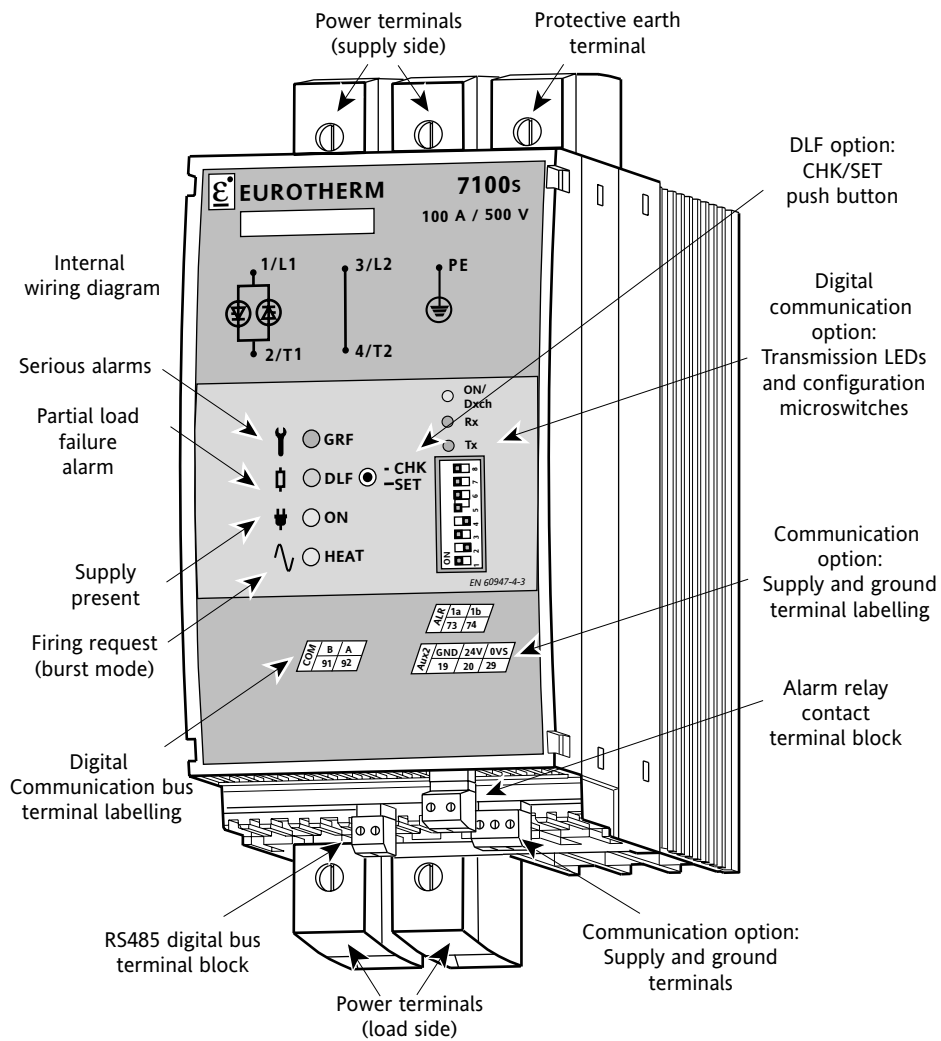
#### Digital communications

The MODBUS communications option allows digital control of the unit and interrogation of the alarm and firing status.

#### International approvals

CE (EN60947-4-3); UL and cUL available up to 63A

# 7100s



Example of 7100S layout

## Signal connections

Terminal Block	Terminal		
	No.	Label	Purpose
LDC	11	0V	Logic
	12	LD	4.5 - 32Vdc
HAC	11	A1	Logic
	12	A2	85-253Vac
ATP	11	0V	Analogue
	12	R1	4 - 20mA
ALR	71	1a	DLF or GRF
	72	1b	NC Alarm relay
	73	1a	DLF or GRF
	74	1b	NO Alarm Relay

Terminal Block	Terminal		
	No.	Label	Purpose
Fan	16	230	Fan supply
	17	115	230Vac or
	18	N	115Vac
Ext	21	L2	2nd Phase or
	22	-	N for reference
Com	91	A	Modbus
	92	B	Communications
Aux2	19	24V	Comms auxiliary
	20	0V5	Supply
	29	GND	

## TECHNICAL SPECIFICATION

Additional information and documentation available on [www.eurotherm.co.uk](http://www.eurotherm.co.uk)

### POWER

Current 16, 25, 40, 63, 80, 100, 125, 160, 200, 250amps single phase at 45 Deg. C  
 Voltage 100Vac to 500VAC (+10%, -15%)  
 Frequency 47 to 63 Hz

**AUXILIARY SUPPLY** No Auxiliary supply is required as the 7100S derives its own internal, synchronised supply

**FAN SUPPLY** None required up to 200 amps (natural convection). For 250 amp units; 115V or 230V (10VA)

**LOAD** Single Phase industrial load:

Use category AC-51 Resistive load with low temperature coefficient  
 AC-55b Short wave infrared elements up to 100 amps. The load can be switched line to neutral or line to line - select appropriate voltage

**FUSES** High speed fuses are external for thyristor ratings up to and including 100 amps, internal above 100amps  
 The fuses can be called up as part of the ordering code (High speed fuses not recommended for SWIR loads)

**INPUT** DC Logic (LDC) 4.5 to 32 VDC (ON > 4.5V, OFF < 2V) or (ON > 9mA, OFF < 0.5mA) 32VDC maximum.  
 AC Logic (HAC) 100 to 230VAC (ON > 85VAC, OFF < 10VAC) 253VAC maximum. Impedance 7KΩ at 50 Hz  
 DC analogue (ATP) 4-20mA (10VDC max.)

**FIRING MODE** For Logic inputs the firing is ON/OFF with zero voltage switching. Intelligent half cycle firing available if input is from a Eurotherm REMIO interface unit.  
 For analogue 4-20mA input the firing mode is Fast Cycle firing. The cycle time at 50% demand is 0.6 seconds (0.3 seconds ON and 0.3 seconds OFF). Output linearity better than + or - 2%. Open loop control (no supply voltage compensation)

**INDICATION** Green LED for supply 'ON'. Green LED for Heat 'ON'. Plus a range of diagnostic indicators

### ALARMS (OPTION)

Serious alarms (GRF) Unit overtemperature thyristor short circuit, load open circuit signalled by set LED and relay contact  
 Diagnostic alarms (DLF) Partial load failure signalled by DLF LED and relay contact. The DLF option includes serious alarm monitoring (GRF)  
 Sensitivity: Detects the failure of at least one heating element for up to six LTCL or four SWIR identical elements connected in parallel

### ENVIRONMENT

Temperature Operating: 0 to 45 Deg. C. (2,000 metres maximum altitude). Storage: -10 to 70 Deg. C  
 Humidity 5 to 95% Non condensing, non streaming  
 Pollution Pollution degree 2  
 Enclosure protection. IP20 without additional protection  
 Cooling Natural convection up to 200 amps, fan cooled for 250amps  
 Heat dissipation 1.3W per amp (≤2W if internal fuse)  
 Over-voltage Installation category II

### DIGITAL COMMUNICATION

Optional Modbus communication running at 9600 or 19200 baud, allows the units to be controlled and monitored by a supervisory system

### 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>

**PRODUCT STANDARD** The 7100S 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

7100S units installed and used according to user instructions and comply with the requirements of the European Low Voltage Directive 73/23EEC (93/68 EEC) and product standards. This enables the installation in which the products are used to be declared compliant with the EMC directive, as regards the 7100S units.

### WARRANTY

2 years

### PHYSICAL DATA

Rating (A)	H(mm)	W(mm)		D(mm)		Max. Weight Kg Options
		Basic	Options	Basic	Options	
16	164	35	52.5	110	135	0.56
25	164	35	52.5	110	165	0.7
40	164	52.5	52.5	140	165	0.9
63	164	70	70	160	185	1.45
80-100	226	96	96	164	189	1.85
125-200	424	144	144	285	285	5.6
250	424	144	144	285	285	6.0

**ORDERING CODE**

7100S	1	2	3 XXXX	4	5	6	7	8
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9	10	11	12	13	14	15 NONE
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<b>1 Current</b> <b>16A</b> 16 amps <b>25A</b> 25 amps <b>40A</b> 40 amps <b>63A</b> 63 amps <b>80A</b> 80 amps <b>100A</b> 100 amps <b>125A</b> 125 amps <b>160A</b> 160 amps <b>200A</b> 200 amps <b>250A</b> 250 amps	<b>2 Voltage</b> <b>127V</b> 127 volts <b>230V</b> 230 volts <b>277V</b> 277 volts <b>500V</b> 500 volts	<b>3</b> XXXX <b>4 Fan Supply</b> <b>16A-200A</b> XXXX None <b>250A</b> <b>115V</b> 115 volt supply <b>230V</b> 230 volt supply	<b>5 Fuse</b> <b>FUSE</b> Fuse without microswitch <b>MSFU</b> Fuse with microswitch <b>NONE</b> No fuse	<b>7 Manual Language</b> <b>ENG</b> English <b>FRA</b> French <b>GER</b> German	<b>8 Options</b> <b>NONE</b> (end of code) <b>YES</b> (specify further code)
			<b>6 Input</b> <b>On/off firing</b> DC logic signal <b>LDC</b> 4.5Vdc to 32 Vdc AC logic signal <b>HAC</b> 85 Vac to 253 Vac <b>Burst firing</b> Analogue DC signal <b>ATP</b> 4mA to 20 mA		

**Options (If Options 'Yes')**

<b>9 Alarm option</b> <b>GRF</b> Thyristor short circuit or load open circuit <b>DLF</b> Partial load failure + GRF <b>NONE</b> No alarms	<b>10 Load type (for DLF)</b> For DLF option: <b>SWIR</b> Short wave infrared elements <b>LTCL</b> Low temperature coefficient load XXXX Without DLF option	<b>11 Alarm Relay Contacts</b> GRF or DLF option: <b>NC</b> Closed on alarm <b>NO</b> Open on alarm <b>XX</b> Without alarm option	<b>12 Comms Option</b> <b>NONE</b> No comms <b>MOP</b> Modbus Comms	<b>13 Baud Rate</b> XXXX No comms <b>9K6</b> 96Kbaud <b>19K2</b> 192Kbaud	<b>14 Certificate option</b> <b>NONE</b> No certificate of conformity <b>CFMC</b> Certificate of conformity
<b>15</b> NONE					

**SPARE FUSE**

**SPARE FUSE AND HOLDER**

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

Current rating amps	Fuse rating amps	Fuse number	Fuse Trip with Indicator
16	20	CH260024	CS176513U020
25	32	CH260034	CS176513U032
40	50	CH330054	CS176513U050
63	80	CS173087U080	CS176461U080
80	100	CS173087U100	CS176461U100
100	125	CS173246U125	CS173246U125
125	160		CS176762U160
160	250		CS176762U250
200	315		CS176762U315
250	315		CS176762U315

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