

7300S

MODEL



True Three Phase Solid State Contactor for use with Short Wave Infrared or Resistive Loads

Specification Sheet

- **Current range from 16 to 160 amps at 45°C**
- **Voltage up to 500V**
- **CE, UL, cUL approvals**
- **Inputs:**
 - AC or DC
 - Analogue 4-20mA
- **Suitable for SWIR or resistive loads**
- **Overtemperature shutdown for fan cooled units (over 100 amps)**
- **Alarm options include:**
 - Thyristor short circuit
 - Overtemperature
 - Diagnostic load failure detection

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

Ratings

The current ratings of the 7300S cover the range from 16 to 160 amps. The voltage rating extends to a maximum 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.

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 7300S order code. Spare fuses or complete fuse and fuseholder assemblies can also be ordered separately.

Alarm

The 7300S has an optional thyristor short circuit and total load failure alarm.

An overtemperature shut down is provided for fan cooled units (over 100 amps). 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 maximum one out of four. It is auto-setting via a front panel push button.

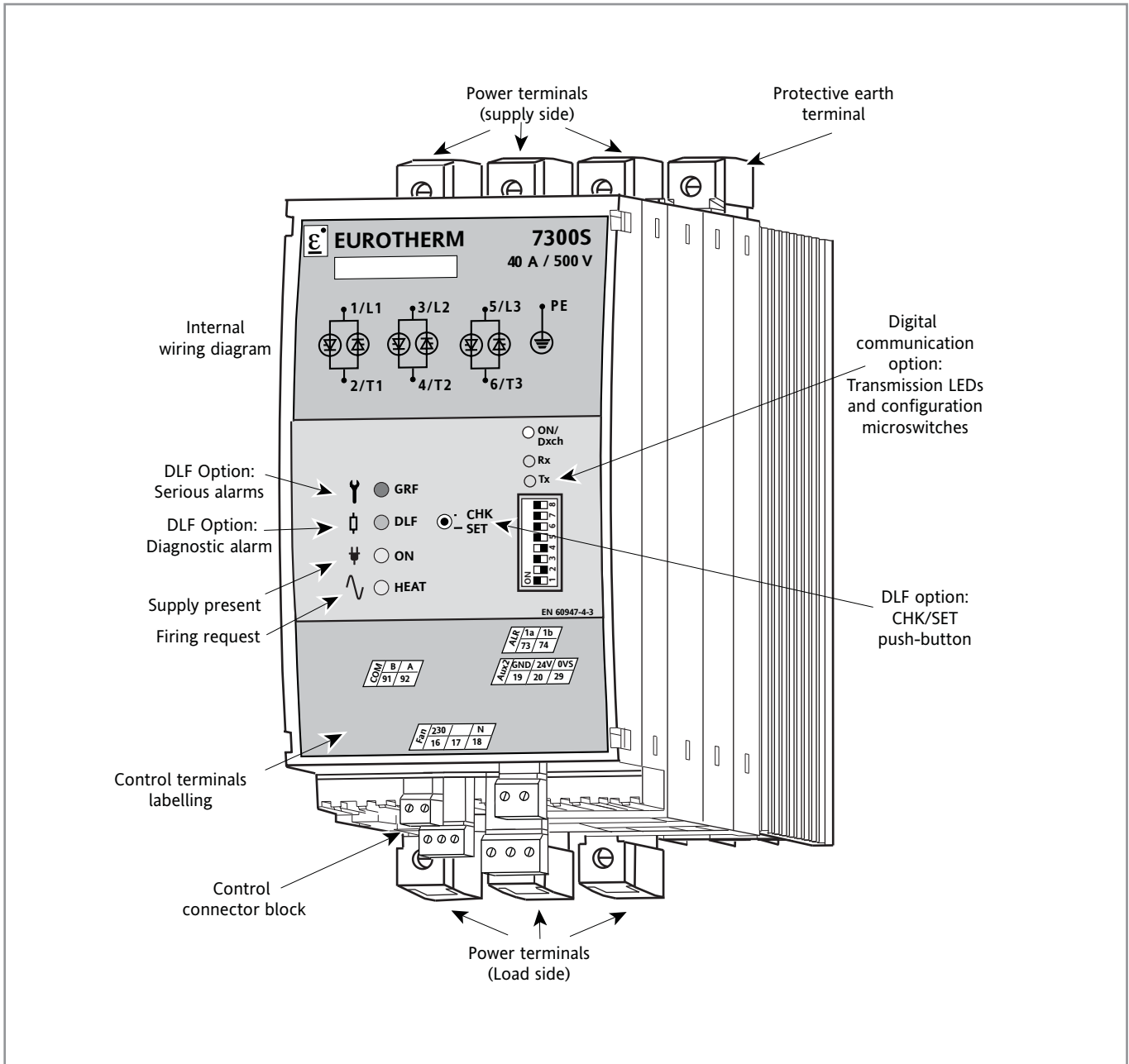
Digital communications

The Modbus communications option allows digital control of the unit, interrogation of the alarms, firing status, voltage feedback loop, adjustable burst firing and on line configuration.

International approvals

CE (EN60947-4-3), UL and cUL (file number E86160)

Example of 7300S 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
	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 115Vac
	18	N	
Ext	21	L2	Neutral reference (code 4S and DLF)
	22	-	
COM	91	A	MODBUS Communications
	92	B	
AUX2	19	24V	Comms auxiliary Supply
	20	0VS	
	29	GND	

SPECIFICATION

Power

Nominal current:	16 A to 160 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
Fan supply:	≥125A 115VAC or 230VAC (10mA)
Dissipated power	
Per amp per phase:	1.3W (approx). 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 for units ≤ 100A
Load configuration:	Star with neutral (4S) Star without neutral (3S) Closed delta (3D) Open delta (6D)

Control

Control type	
Analogue:	4-20mA
DC Logic:	4.5 to 32VDC maximum (ON >4.5, OFF <3V or ON >9mA, OFF <0.5mA)
AC Logic:	100 to 230VAC maximum (ON >85VAC, OFF <10VAC) impedance 7KΩ@90HZ

Firing mode

Firing:	For Logic inputs the firing is ON/OFF with zero voltage switching. 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)
---------	---

Physical data

Rating (A)	H(mm)	W(mm)	D(mm)			
			Basic	Comms	DLF	DLF + Comms
16-40	220	96	164	189	214	239
63-100	305	144	295	295	372	372
125-160	498	144	295	295	372	372

Digital communication

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

Alarm options

Diagnostic alarms (DLF)

Serious alarms:	Unit overtemperature, thyristor short circuit and load open circuit signalled by set LED and relay contact
Partial load failure:	Detects the failure of at least 1 element out of 4 in 3S, 4S, 6D configuration and 1 element out of 3 in 3D configuration signalled by DLF LED and relay contact

Alarm relay

Available with alarm options. 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 40A:	Two symmetric DIN rail EN50022 or bulkhead mounting (4 x M4 screws)
Rating from 63 to 100A:	Bulkhead mounting (4 x M4 screws)
Rating from 125 to 160A:	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 ² - AWG10
40 and 63 amp:	16mm ² - AWG6
80 and 100 amp:	35mm ² - AWG2
125 to 160 amp:	120mm ² - AWG4/0

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

ORDERING CODE

7300S	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	

1 Current	2 Voltage	4 Load Configuration	6 Input	7 Manual Language
16A 16 amps 25A 25 amps 40A 40 amps 63A 63 amps 80A 80 amps 100A 100 amps 125A 125 amps 160A 160 amps	200V 200 volts 230V 230 volts 277V 277 volts 400V 400 volts 460V 460 volts 480V 480 volts 500V 500 volts	3S Star without neutral 4S Star with neutral 3D Closed delta 6D Open delta	On/off firing LDC DC logic signal 4.5Vdc to 32Vdc HAC AC logic signal 85Vac to 253Vac Burst firing ATP Analogue DC signal 4mA to 20mA With communication option NONE No logic or analogue input	ENG English FRA French GER German
3 Fan	5 Fuse	8 Options		
XXXX ≤100A : no fan ≥125A : fan 115V 115v supply 230V 230V	FUSE Fuse without microswitch MSFU Fuse with microswitch NONE No fuse	NONE No options <i>End of code</i> YES Selection of options		

Options (if Options 'YES')

9 Alarm option	10 Load Type	11 Alarm Relay Contact	12 Communication Option	14 Certification option
DLF Partial load failure + Serious alarms NONE No alarms	For DLF option: SWIR Short wave infrared elements LTCL Low temperature coefficient load XXXX Without DLF option	DLF option: NC Closed on alarm NO Open on alarm XX Without alarm option	MOP Digital communication protocol: Modbus® NONE No communication	NONE No certificate of conformity CFMC Certificate of conformity
			13 Transmission Speed	15
			(Communications option other than NONE) Transmission speed: 9K6 9.6kbaud 19K2 19.2kbaud XXXX No communication	NONE

FUSE AND FUSEHOLDER (Triple unit)

Current rating amps	Fuse and holder assembly	Fuse and Holder with Microswitch
16	FU3038/16A/00	MSFU3451/16A/00
25	FU3038/25A/00	MSFU3451/25A/00
40	FU3451/40A/00	MSFU3451/40A/00
63	FU3258/63A/00	MSFU3258/63A/00
80	FU3258/80A/00	MSFU3258/80A/00
100	FU3760/100A/00	MSFU3760/100A/00

SPARE FUSE (3 per unit)

Current rating amps	Fuse number	Fuse Trip with Indicator
16	CH260034	CS176513U032
25	CH260034	CS176513U032
40	CH330054	CS176513U050
63	CS173087U080	CS176461U080
80	CS173087U100	CS176461U100
100	CS173246U160	CS173246U160
125		CS176762U160
160		CS176762U315

Eurotherm: International sales and service

AUSTRALIA Sydney
 T (+61 2) 9838 0099
 E info.au@eurotherm.com

AUSTRIA Vienna
 T (+43 1) 7987601
 E info.at@eurotherm.com

BELGIUM & LUXEMBOURG Moha
 T (+32) 85 274080
 E info.be@eurotherm.com

BRAZIL Campinas-SP
 T (+5519) 3707 5333
 E info.br@eurotherm.com

DENMARK Copenhagen
 T (+45 70) 234670
 E info.dk@eurotherm.com

FINLAND Abo
 T (+358) 22506030
 E info.fi@eurotherm.com

FRANCE Lyon
 T (+33 478) 664500
 E info.fr@eurotherm.com

GERMANY Limburg
 T (+49 6431) 2980
 E info.de@eurotherm.com

HONG KONG & CHINA
 T (+85 2) 28733826
 E info.hk@eurotherm.com

Guangzhou Office
 T (+86 20) 8755 5099
 E info.cn@eurotherm.com

Beijing Office
 T (+86 10) 6567 8506
 E info.cn@eurotherm.com

Shanghai Office
 T (+86 21) 6145 1188
 E info.cn@eurotherm.com

INDIA Chennai
 T (+91 44) 24961129
 E info.in@eurotherm.com

IRELAND Dublin
 T (+353 1) 4691800
 E info.ie@eurotherm.com

ITALY Como
 T (+39 031) 975111
 E info.it@eurotherm.com

KOREA Seoul
 T (+82 31) 2738507
 E info.kr@eurotherm.com

NETHERLANDS Alphen a/d Rijn
 T (+31 172) 411752
 E info.nl@eurotherm.com

NORWAY Oslo
 T (+47 67) 592170
 E info.no@eurotherm.com

POLAND Katowice
 T (+48 32) 2185100
 E info.pl@eurotherm.com

SPAIN Madrid
 T (+34 91) 6616001
 E info.es@eurotherm.com

SWEDEN Malmo
 T (+46 40) 384500
 E info.se@eurotherm.com

SWITZERLAND Wollerau
 T (+41 44) 7871040
 E info.ch@eurotherm.com

UNITED KINGDOM Worthing
 T (+44 1903) 268500
 E info.uk@eurotherm.com
www.eurotherm.co.uk

U.S.A. Leesburg VA
 T (+1 703) 443 0000
 E info.us@eurotherm.com
www.eurotherm.com

ED54

© Copyright Eurotherm Limited 2007

Invensys, Eurotherm, the Eurotherm logo, Chessell, EurothermSuite, Mini8, Eycen, Eyris and Wonderware are trademarks of Invensys plc, its subsidiaries and affiliates. All other brands may be trademarks of their respective owners.

All rights are strictly reserved. No part of this document may be reproduced, modified, or transmitted in any form by any means, nor may it be stored in a retrieval system other than for the purpose to act as an aid in operating the equipment to which the document relates, without the prior written permission of Eurotherm Limited.

Eurotherm Limited pursues a policy of continuous development and product improvement. The specifications in this document may therefore be changed without notice.

The information in this document is given in good faith, but is intended for guidance only. Eurotherm Limited will accept no responsibility for any losses arising from errors in this document.