Eurotherm®

Essential power control expertise

EPack™ Lite-3PH Compact SCR Power Controllers

Benefits

The end user, the machine builder or the system integrator expects the best solutions in terms of performance, ease of use and reliability in order to control the energy delivered to their process.

Eurotherm EPack™ Lite-3PH Compact SCR Power Controllers offer a simplified feature set for fast commissioning without compromise on performance. They provide a high level of quality, accuracy and reliability to the process. The products are an ideal solution for the control of non variable resistive, primary transformer and short wave infrared loads. Synchronous control of each phase results in improved accuracy, even if the loads are unbalanced. The EPack Lite product combines simplicity of setup and operation in a compact format. The configurable firing modes allow close matching to load characteristics to optimise process

- Help maximize yield with accurate and repeatable control
- Fast integration and commissioning with user display
- Ease of operation and maintenance
- Simplified design reduces stock and spares holding

Unique features

- Large voltage capability from 100V to 500V adjustable in the same variant
- Fast start up with ‘Quick Start’ or ‘Clone Code’ features
- Adjustable control mode V^2 or I^2 control or open loop
- Wide range of firing modes: phase angle, intelligent half cycle, variable modulation burst firing, fixed modulation period & logic
- Built-in measurements: current, voltage, impedance and more
- Load fault detection up to 1 element of 6
- SCCR 100kA with fuse

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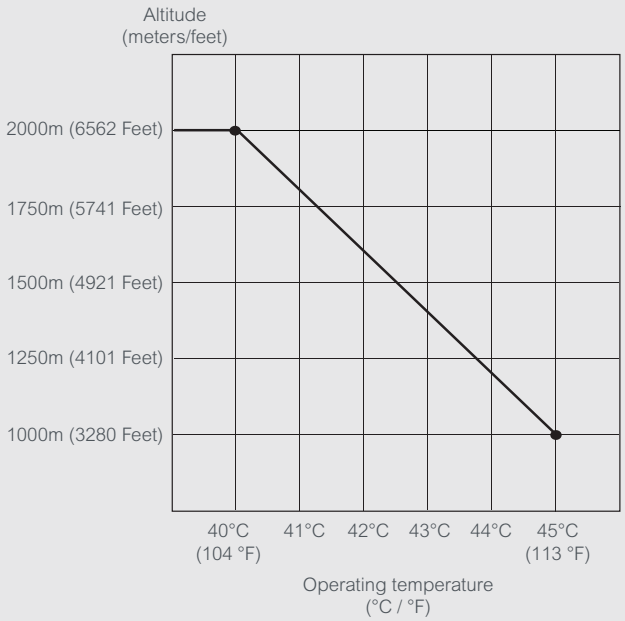
Specifications

General	
Safety specification	IEC / EN60947-4-3:2014
EMC emissions specification	IEC / EN60947-4-3:2014 - Class A product
EMC immunity specification	IEC / EN60947-4-3:2014
Vibration tests	IEC / EN60947-1 annex Q category E
Shock tests	IEC / EN60947-1 annex Q category E
Approvals	
European community CE	EN60947-4-3:2014: Low-voltage switchgear and controlgear - Part 4-3:Contactors and motor-starters - AC semiconductor controllers and contactors for non-motor loads (identical to IEC60947-4-3:2014)Declaration of Conformity available on request.
US & Canada c UL us LISTED	UL60947-4-1 CAN/CSA C22.2 NO.60947-4-1-14 Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters - U.L. File N° E86160
Australia	Regulatory Compliance Mark (RCM) to Australian Communication and Media Authority Based on compliance to EN60947-4-3:2014
China	Product not listed in catalog of products subject to China Compulsory Certification (CCC)
Protection	CE: IP20 according to EN60529 UL: open type

Environmental conditions	
Atmosphere	Non-corrosive, non-explosive, non-conductive
Degree of pollution	Degree 2 according to IEC60947-1
Storage temperature	–25°C (-13°F) to 70°C (158°F)
Temperature & Altitude	0 to 45°C at 1000m (32°F to 113°F at 3280 Feet) 0 to 40°C at 2000m (32°F to 104°F at 6562 Feet)
Derating curves	

Mechanical details				
Unit	Height	Width	Depth	Weight
16 to 32A	229.5mm / 9.035in	140mm / 5.51in	192mm / 7.56in	3.06 kg / 6.75lb
40 to 63A	229.5mm / 9.035in	140mm / 5.51in	227mm / 8.94in	3.51 kg / 7.74lb
80 to 100A	291mm / 11.5in	160mm / 6.30in	242mm / 9.53in	5.83 kg / 12.85lb
125A	291mm / 11.5in	240mm / 9.45in	242mm / 9.53in	7.94 kg / 17.50lb

Specifications

Fuses		
Current rating	Fuse holder Size	Unit
≤25A without MS	10x38mm / 13/32x1-1/2in	88.5x17.5x64.5mm / 3.48x0.69x2.54in
≤25A with MS	14x51mm / 9/16x2in	110.8x26.5x76.5mm / 4.36x1.04x3.01in
32A with or without MS	14x51mm / 9/16x2in	110.8x26.5x76.5mm / 4.36x1.04x3.01in
40A with or without MS	14x51mm / 9/16x2in	110.8x26.5x76.5mm / 4.36x1.04x3.01in
50A with or without MS	22x58mm / 2-9/32in	127.5x35x76.5mm / 5.02x1.38x3.01in
63A with or without MS	22x58mm / 2-9/32in	127.5x35x76.5mm / 5.02x1.38x3.01in
80A with or without MS	27x60mm / 1-1/16x2-3/8in	149.4x40x93.5mm / 5.88x1.57x3.68in
100A with or without MS	27x60mm / 1-1/16x2-3/8in	149.4x40x93.5mm / 5.88x1.57x3.68in
125A with or without MS	27x60mm / 1-1/16x2-3/8in	149.4x40x93.5mm / 5.88x1.57x3.68in

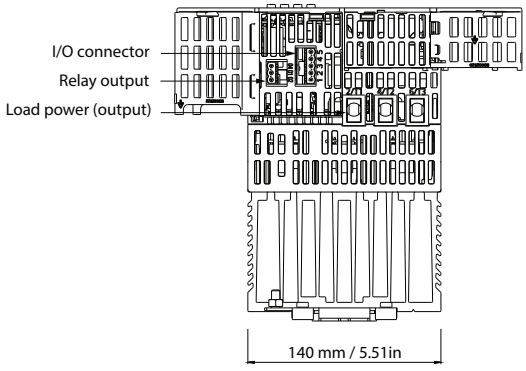
Power	
Nominal current	4 to 125 amps
Nominal voltage	From 100V to 500V +10%/–15%
Accuracy	+2% of full scale from 100V to 500V +10%/–15%
Frequency	47Hz to 63Hz
Short circuit protection	By external supplemental high speed fuses
Rated conditionnal short-circuit current	100kA (coordination type 2)
Utilization categories	
AC51	Resistive or slightly inductive load (cos phi>0.8)
AC-55b	Switching of incandescent lamps
AC-56a	Transformer Primary
Heater type	Low/high temperature coefficient: Carbon and SWIR

Control	
Auxillary power supply	100V to 500V +10%/–15% or 24V ac/dc (±20%)
Control setpoint	Analog or Logic input or Digital Comms
Analogue input signal	
Voltage	Range: 0-5V, 1-5 V, 0-10V or 2-10V Impedance: 140 k Ohms typical (0-10V signal)
Current	Range: 0-20mA or 4-20mA Input resistance: 100 ohms to allow for three units wired in series to be driven from a single controller's analogue output
Resolution	11 bits
Linearity ±0.1% of scale	±0.1% of Scale
Firing mode	Phase angle, Intelligent Half cycle (only for 4S & 6D load coupling), Variable Modulation Burst firing (default 16 cycles), Fixed modulation period (default 2 seconds), Logic mode
Control mode	V^2 control, I^2 control, Open loop with feedforward and Trim modes
Configurable digital inputs	Input 1: enable by default ; Input 2: setpoint in logic mode, alarm acknowledgment, 10V supply, ...
Voltage inputs	PLC compatible inputs type 1 & 2 according to IEC 61131-2 - Active level (high): 11V<Vin<30V with 6mA<Iin<30mA - Non-active level (low): -3V<Vin<5V with 2mA<Iin<30mA or 5V<Vin<11V with Iin<2mA
Contact closure inputs	- Current source: 10mA min; 15mA max - Open contact (non active) resistance: 800 Ohms to ∞ - Closed contact (active) resistance: 0 to 450 Ohms - Absolute Maximum ±30V or ±25mA
One alarm relay	Changeover relay 2A rms - 264V rms normally energised. (250V rms max for UL). This relay will be de-energised in case of serious alarms: short circuit thyristor, open circuit, fuse blown, missing main, chop off

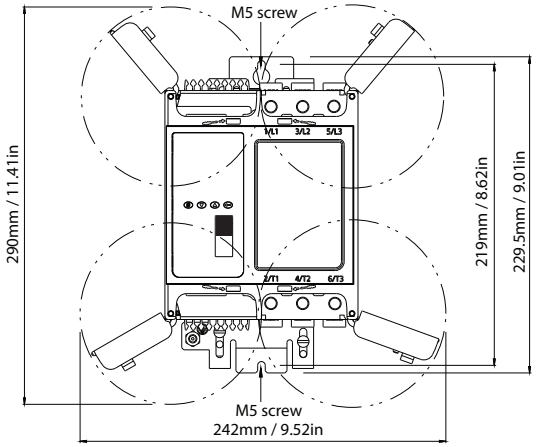
Display	
Technology	TFT
Size	1.4" diagonal (35.56mm)
Messages	Configuration, Monitoring and Diagnostics

Mechanical details

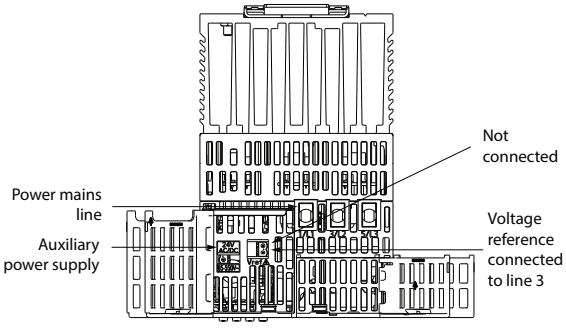
16A to 32A & 40A to 63A



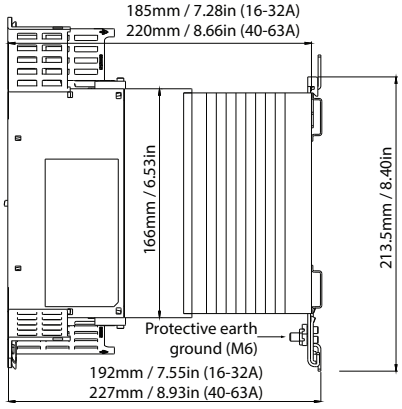
Bottom view



Front View



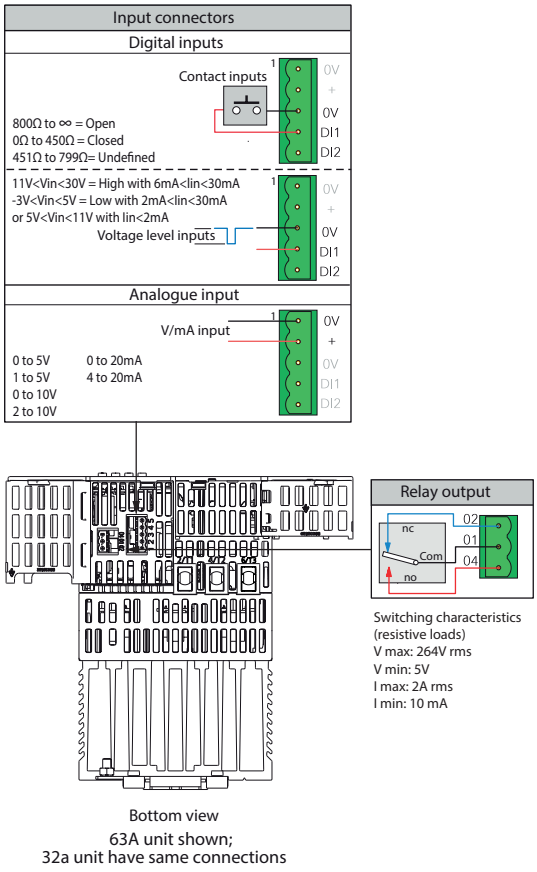
Top view



Right-hand face view

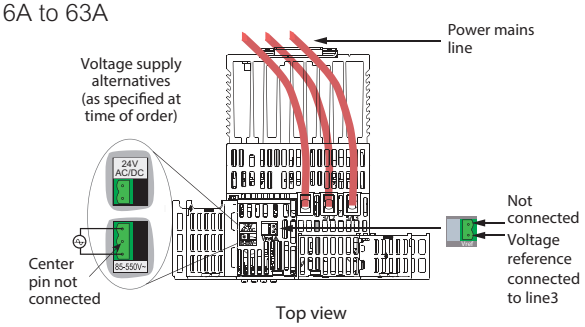
Connector details (pinout)

I/O details

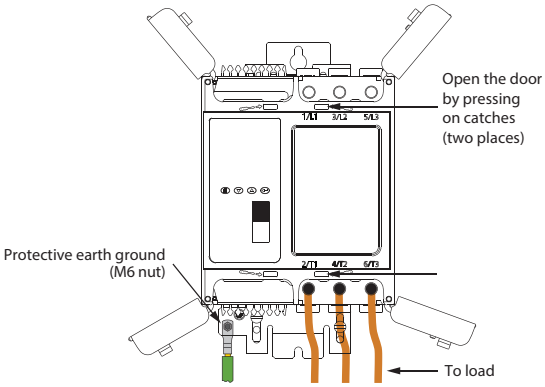


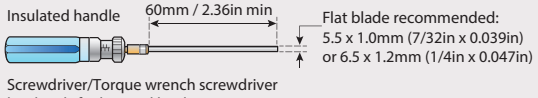
Bottom view
63A unit shown;
32a unit have same connections

Power supply details
16A to 63A



Top view
63A unit shown;
32A unit have same connections

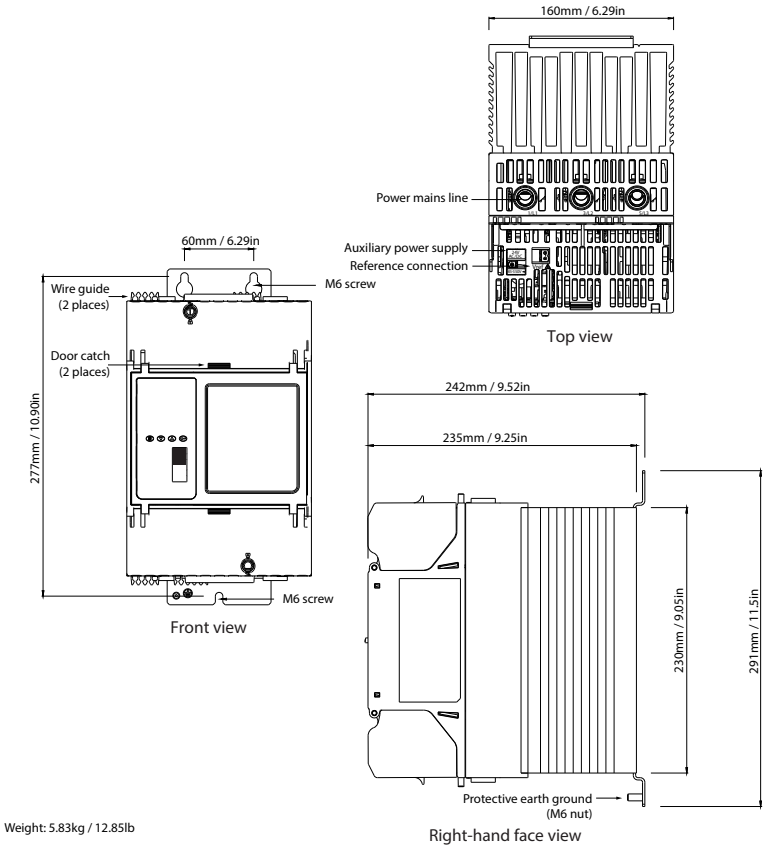




Screwdriver/Torque wrench screwdriver bit details for line and load termination

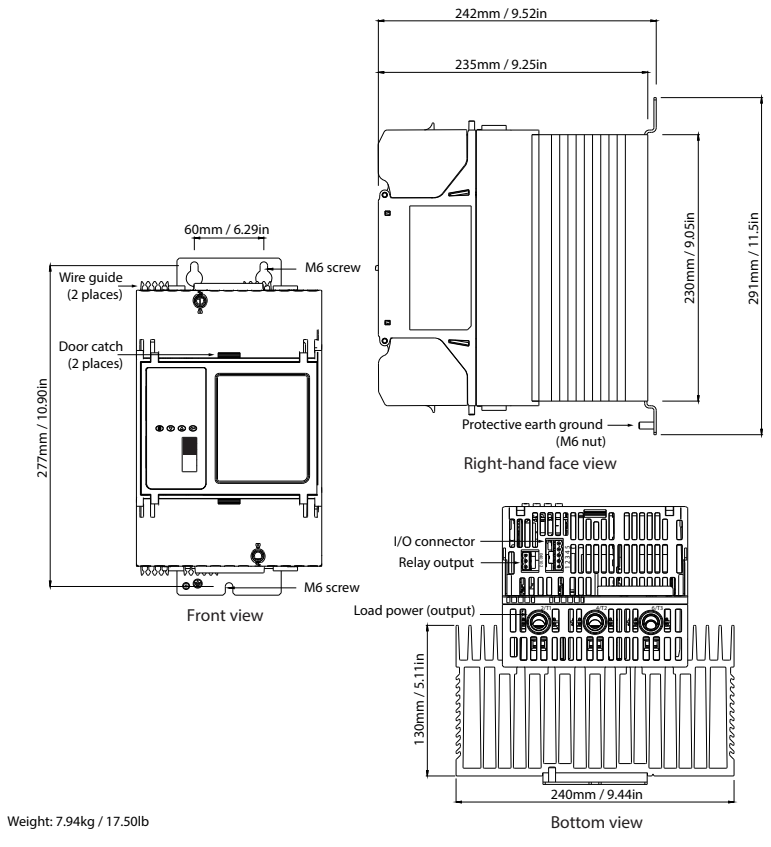
Mechanical details

80A to 100A



Weight: 5.83kg / 12.85lb

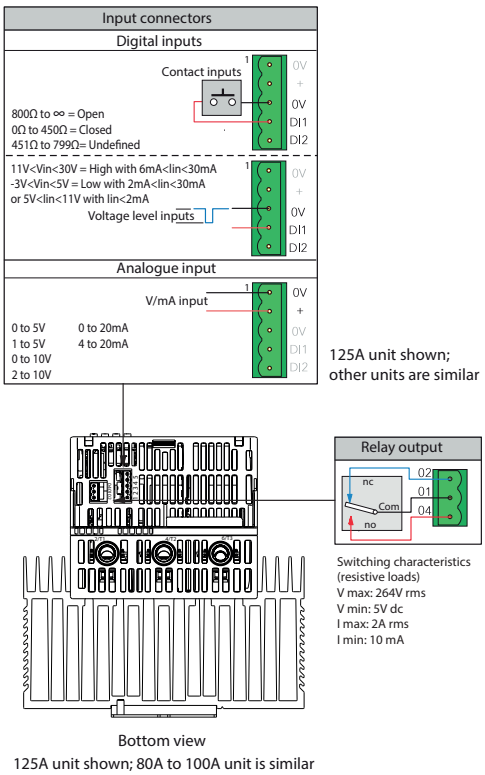
125A



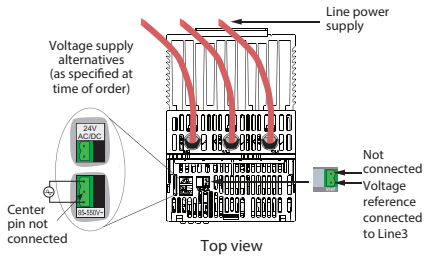
Weight: 7.94kg / 17.50lb

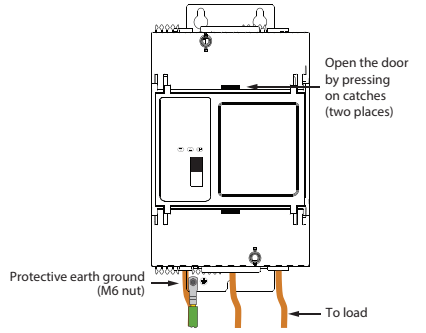
Connector details (pinout)

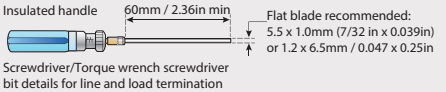
I/O Details



Power supply connection details 80A to 125A







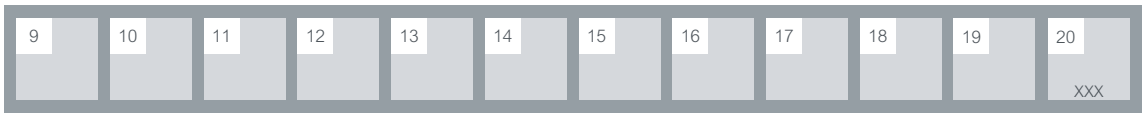
Order codes

The EPack Lite power controller is ordered using a short code for the chargeable options and an extended option configuration code for commissioning.

If the extended code is not used, the software configuration is completed using a quick start procedure.

Current rating of EPack Lite controllers may be upgraded at any time using a software key order code.

Product coding



Model	
EPACK LITE-3PH	Power controller

1	Maximum current
16A	16 amps
25A	25 amps
32A	32 amps
40A	40 amps
50A	50 amps
63A	63 amps
80A	80 amps
100A	100 amps
125A	125 amps

2	Auxillary power supply
500V	500V max
24V	24V ac/dc

3	Reserved
XXX	Reserved

4	Control option
V2	V^2 control (standard)
I2	I^2 control
OL	Open loop

5	Warranty
XXXXX	Standard warranty
WL005	5 Year warranty
USWL3	US extended warranty

6	Custom labelling
XXXXX	Standard (Eurotherm)
Fnnnn	Special label

7	Fuse
XXX	Without
HSP	High speed fuse without microswitch
HSM	High speed fuse with microswitch

8	Configuration
XXXXXX	Default
LC	Long code

Optional configuration

9	Nominal load current
nnnA	1 - Value field 1

10	Nominal line voltage
100V	100 volts
110V	110 volts
115V	115 volts
120V	120 volts
127V	127 volts
200V	200 volts
208V	208 volts
220V	220 volts
230V	230 volts
240V	240 volts
277V	277 volts
380V	380 volts
400V	400 volts
415V	415 volts
440V	440 volts
460V	460 volts
480V	480 volts
500V	500 volts

11	Load configuration
3S	Star without neutral
3D	Closed delta
4S	Star with neutral
6D	Open delta

12	Load type
XX	Resistive
TR	Transformer primary

13	Heater Type
XX	Resistive
SWIR	Short wave infrared

14	Firing Mode
PA	Phase angle
IHC	Intelligent half cycle
BF	Variable modulation burst firing (default 16 cycles)
FX	Fixed modulation period (default 2 seconds)
LGC	Logic mode

15	Burst min ON time
XXX	None
FC1	Single cycle 1 period min ON time
C16	Burst with 16 periods min ON time
C64	Burst with 64 periods min ON time

16	Analog input function
XX	None
SP	Setpoint

17	Analog input type
0V	0-10 volts
1V	1-5 volts
2V	2-10 volts
5V	0-5 volts
0A	0-20 mA
4A	4-20mA

18	Digital input 1 function
XX	None
FI	Firing enable
LG	Setpoint for logic mode
AK	Alarm acknowledgement
FB	Fuse blown

19	Digital input 2 function
XX	None
FI	Firing enable
LG	Setpoint for logic mode
AK	Alarm acknowledgement
FB	Fuse blown
SU	10V supply

20	Reserved
XXX	Reserved

Software upgrade options

1	Serial Number Instrument
nnnn	Serial number

2	Current Ratings Upgrade
XXX	No change
16A-25A	16A to 25A
16A-32A	16A to 32A
25A-32A	25A to 32A
40A-50A	40A to 50A
40A-63A	40A to 63A
50A-63A	50A to 63A
80A-100A	80A to 100A

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