



Eurotherm®

Essential power control expertise

EPack™ Lite-2PH 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-2PH 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 a cost-effective solution for the control of 3 phase non variable resistive, primary transformer and short wave infrared loads. The 2 legs control is particularly adapted to the control of balanced loads, directly, or through transformers. Burst firing avoids generation of harmonics and reduces the consumption of reactive power.

- 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

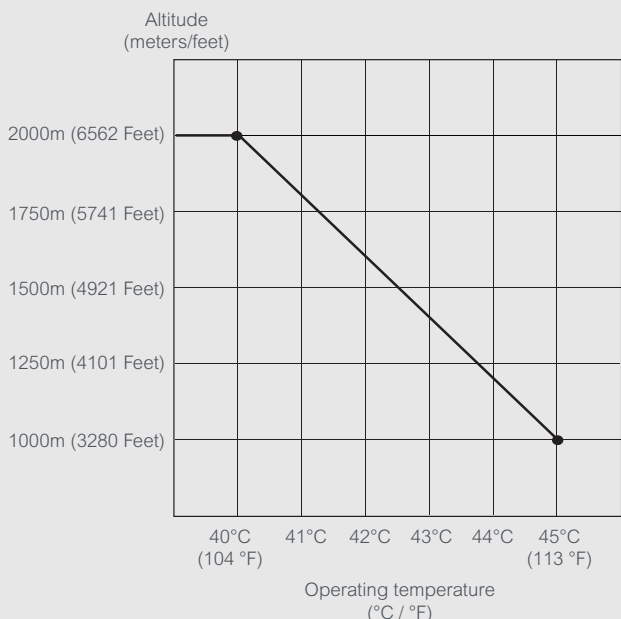
- Large voltage capability from 100V to 500V adjustable in the same variant
- Fast start up with 'Quick Start' or 'Clone Code' features
- Adjustable control mode V^2 or I^2 control or open loop
- Wide range of firing modes: variable modulation burst firing, fixed modulation period & logic
- Built-in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

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 **WATLOW®**
Powered by Possibility

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  | 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  | 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 |  <p>The graph plots Altitude (meters/feet) on the y-axis against Operating temperature (°C / °F) on the x-axis. The y-axis ranges from 1000m (3280 Feet) to 2000m (6562 Feet) with grid lines every 250m. The x-axis ranges from 40°C (104°F) to 45°C (113°F) with grid lines every 1°C. A solid line connects the point (45°C, 1000m) to (40°C, 2000m), indicating that the maximum operating temperature decreases linearly with increasing altitude.</p> |

| Mechanical details | | | | |
|--------------------|-------------------|----------------|----------------|-------------------|
| Unit | Height | Width | Depth | Weight |
| 16 to 32A | 229.5mm / 9.035in | 117mm / 4.61in | 192mm / 7.56in | 2.53 kg / 5.58lb |
| 40 to 63A | 229.5mm / 9.035in | 117mm / 4.61in | 227mm / 8.94in | 2.97 kg / 6.55lb |
| 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

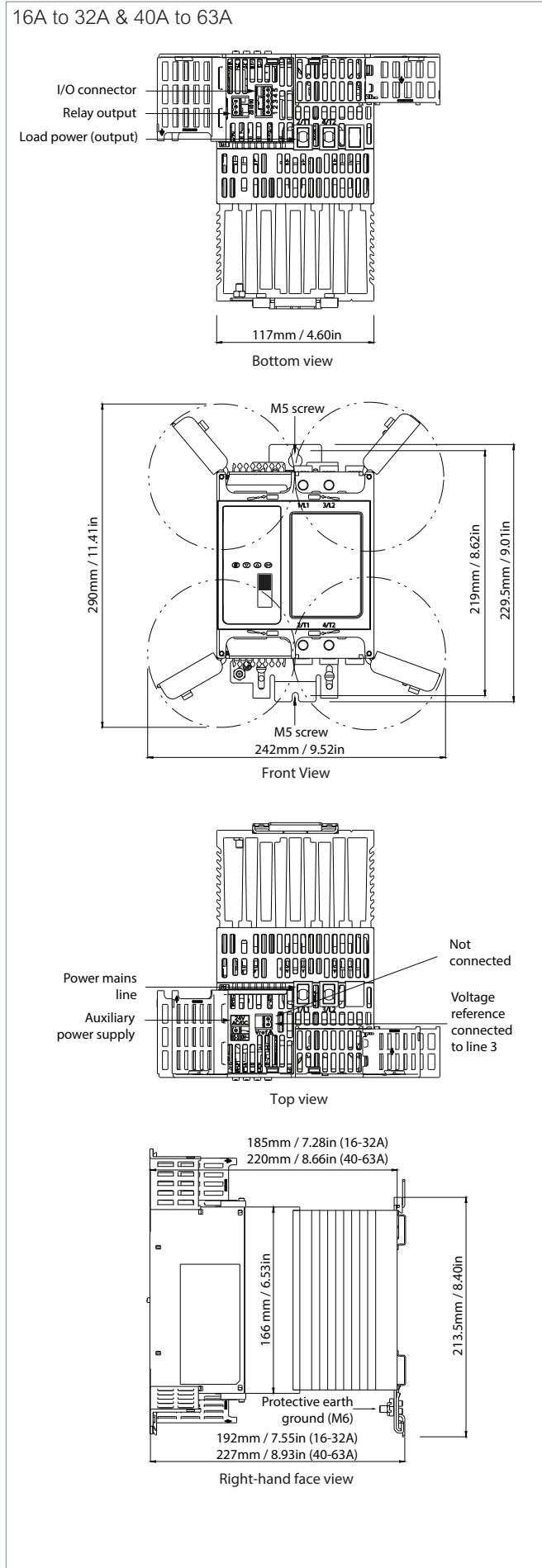
| Fuses | | |
|-------------------------|--------------------------|--------------------------------------|
| Current rating | Fuse holder size | Unit |
| ≤25A without MS | 10x38mm / 13/32x1-1/2in | 88.5x17.5x64.5mm / 3.48x0.69x2.54in |
| ≤25A with MS | 14x51mm / 9/16x2in | 110.8x26.5x76.5mm / 4.36x1.04x3.01in |
| 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 | |

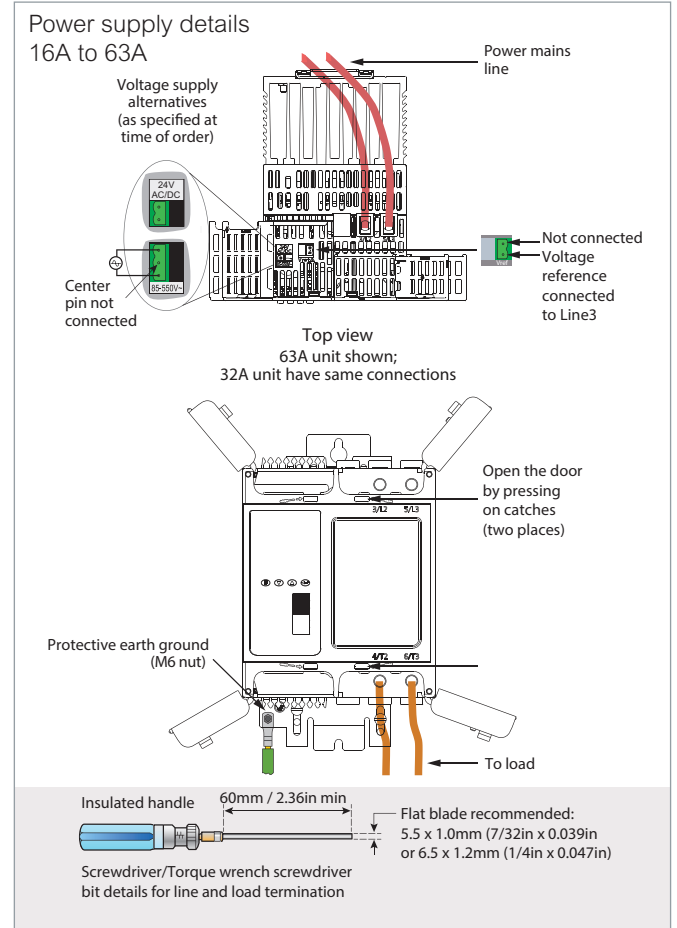
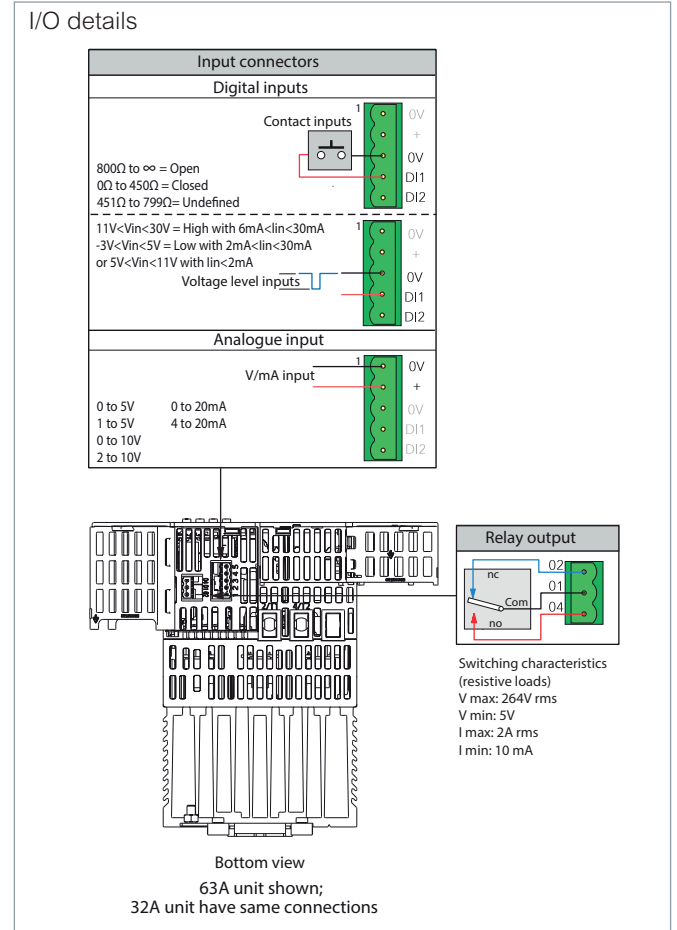
| Control | |
|-----------------------------|--|
| Auxillary power supply | 100V to 500V +10%/–15% or 24V ac/dc (±20%) |
| Control setpoint | Analog or Logic input |
| Analog input signal | |
| Voltage | Range: 0-5V, 1-5 V, 0-10V or 2-10V Impedance: 140 kOhms typical (0-10V signal) |
| Current | Range: 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 | Variable Modulation Burst firing (FC1, C16, C64), Fixed modulation period (2 seconds fixed), 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

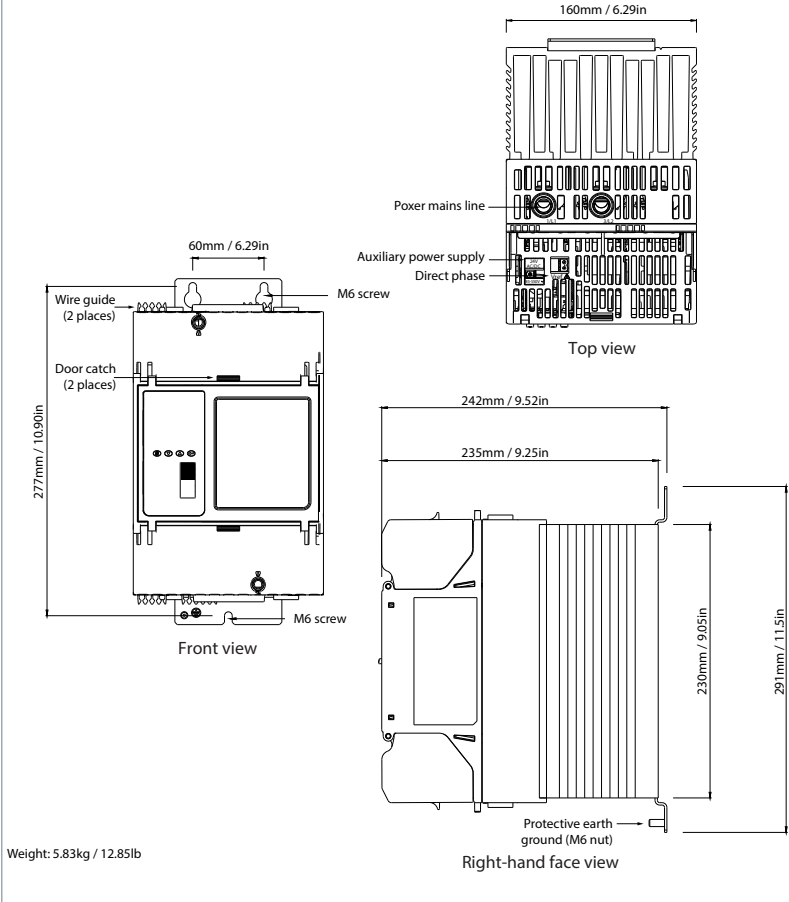


Connector details (pinout)



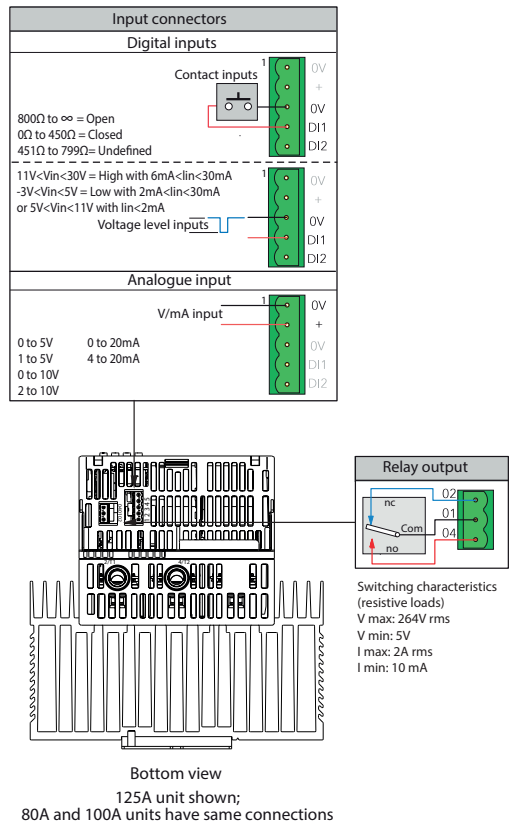
Mechanical details

80A to 100A

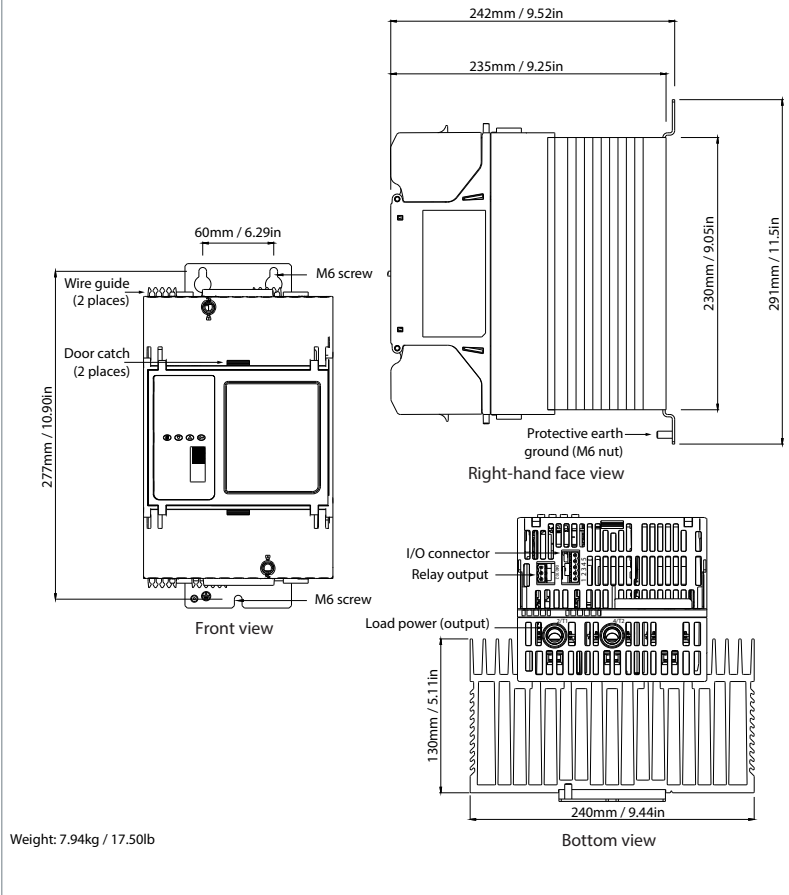


Connector details (pinout)

I/O details

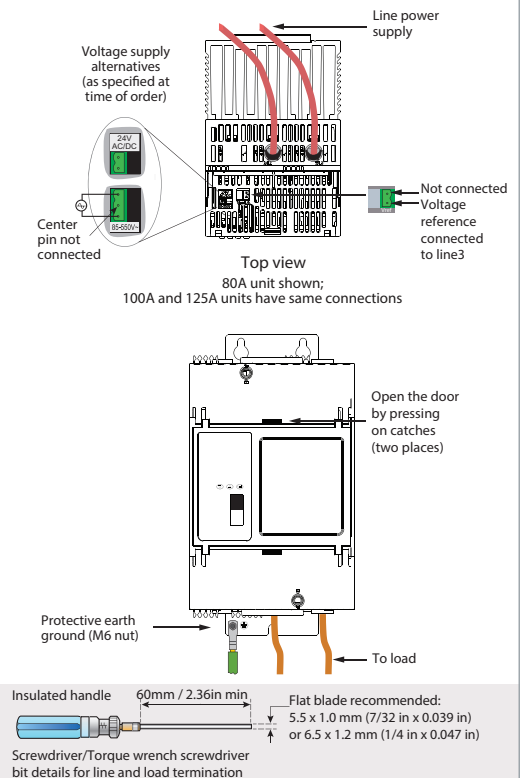


125A



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

| | | | | | | | | |
|----------------|---|---|-----|---|---|---|---|---|
| EPACK-LITE-2PH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | XXX | | | | | |

| | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|-----|
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | | | | | | | | | | | XXX |

| Model | |
|----------------|------------------|
| EPACK LITE-2PH | 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 |
| USW3 | US extended warranty |

| 6 Custom labelling | |
|--------------------|----------------------|
| XXXXXX | 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 |

| 12 Load type | |
|--------------|---------------------|
| XX | Resistive |
| TR | Transformer primary |

| 13 Heater type | |
|----------------|---------------------|
| XX | Resistive |
| SWIR | Short wave infrared |

| 14 Firing mode | |
|----------------|--|
| 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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