

Adaptable power control

EPack-3PH compact SCR power controllers Three phase 3 leg control

Designed for fast integration and optimum efficiency



Product at a glance

OEMs and system integrators need to be able to react quickly to customer needs while maximizing resources. Whether replacing an existing product or designing a new process, the design of the EPack™ power controller has been carefully considered for fast and easy panel installation, commissioning and integration into wider systems, lowering equipment costs, and manufacturing times for you and your customers.

End users continually need to improve operational efficiency and productivity. EPack power controllers can deliver real savings, significantly reducing your energy costs. Get the best from your operations; quick and easy to install, integrate and commission. A compact size doesn't compromise powerful and versatile features that minimize costs and improve productivity and quality.

> See [EPack™ compact SCR power controllers brochure HA031554](#) to discover how EPack can add value to your business

EPack 3-PH is the ideal solution for the control of all kinds of loads. The control of each phase ensures accurate control, even if the loads are unbalanced). The currents and voltage measures also allow a high level of diagnostics, which can be used for alarm management as well as monitoring (impedance, energy counter, reactive power).

Key features:

- Nominal load current from 1 amp to 125 amps
- Voltage up to 500V
- Compact DIN Rail and bulkhead mounting
- Configurable via Eurotherm iTools (PC software) or front panel
- Plug and play Ethernet communications with Zero configuration networking (zeroconf)
- V^2 , I^2 or True power control
- Controls comprehensive range of loads: resistive, infrared, transformer primary, molybdenum disilicide, silicon carbide,...
- Energy usage measurement
- Advanced load diagnostics
- Integrated dual port Ethernet switch for "daisy chained" communications
- Modbus® TCP, Ethernet IP or Profinet protocols
- Defend OEM knowledge and IP (OEM Security)

Specifications

| General | |
|-----------------------------|---|
| Directive | EMC directive 2014/30/EU Low Voltage Directive 2014/35/EU |
| Safety specification | EN60947-4-3:2014 |
| EMC emissions specification | EN60947-4-3:2014 - Class A product |
| EMC immunity specification | EN60947-4-3:2014 |
| Vibration tests | EN60947-1 annex Q category E |
| Shock tests | EN60947-1 annex Q category E |
| Approvals | |
| Europe | CE according to EN60947-4-3:2014 (identical to IEC60947-4-3:2014) |
| US & Canada | UL60947-4-1 CAN/CSA C22.2 NO.60947-4-1-14 with SCCR at 100kA |
| China | Product not listed in catalogue of products subject to China Compulsory Certification (CCC) |
| Russian & Baltic countries | EAC and Pattern approval pending |
| Protection | CE: IP20 according to EN60529 UL: open type |

| Condition of use | |
|---------------------|--|
| Atmosphere | Non-corrosive, non-explosive, non-conductive |
| Degree of pollution | Degree 2 |
| Storage temperature | -25°C to 70°C (maximum) |
| Usage temperature | 0 to 45°C at 1000m 0 to 40°C at 2000m |
| Altitude | 1000m maximum at 45°C 2000m maximum at 40°C |
| Derating curves | <p>Altitude (meters)</p> <p>Operating temperature (°C)</p> |

| Mechanical details | | | | |
|--------------------|----------|--------|--------|---------|
| Unit | Height | Width | Depth | Weight |
| 16 to 32A | 229.5 mm | 140 mm | 192 mm | 3.06 kg |
| 40 to 63A | 229.5 mm | 140 mm | 227 mm | 3.51 kg |
| 80 to 100A | 291 mm | 160 mm | 242 mm | 5.83 kg |
| 125A | 291 mm | 240 mm | 242 mm | 7.94 kg |

| Current rating | Fuse without microswitch | | Fuse with microswitch | |
|----------------|--------------------------|------------------------|-----------------------|------------------------|
| | Fuse holder size | Dimensions (H x W x D) | Fuse holder size | Dimensions (H x W x D) |
| ≤25A | 10x38 | 88,5x52,5x64,5 | 14x51 | 110,8x79,5x76,5 |
| 32A | 14x51 | 110,8x79,5x76,5 | 14x51 | 110,8x79,5x76,5 |
| 40A | 14x51 | 110,8x79,5x76,5 | 14x51 | 110,8x79,5x76,5 |
| 50A | 22x58 | 127,5x105x76,5 | 22x58 | 127,5x105x76,5 |
| 63A | 22x58 | 127,5x105x76,5 | 22x58 | 127,5x105x76,5 |
| 80A | 27x60 | 149,4x120x93,5 | 27x60 | 149,4x120x93,5 |
| 100A | 27x60 | 149,4x120x93,5 | 27x60 | 149,4x120x93,5 |
| 125A | 27x60 | 149,4x120x93,5 | 27x60 | 149,4x120x93,5 |

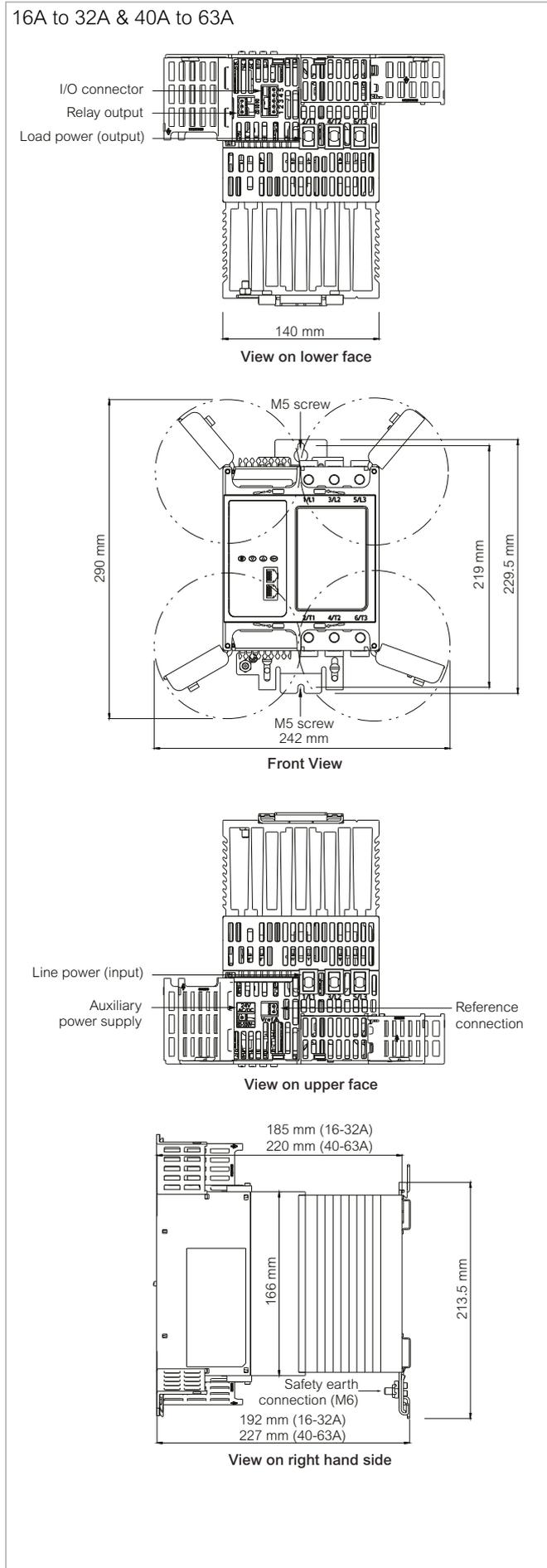
| Power | |
|-----------------|--|
| Nominal current | 1 to 125 amps |
| Nominal voltage | 100V to 500V +10%/–15% |
| Accuracy | +2% of full scale - from 100 to 500V +10%/–15% |
| Frequency | 47Hz to 63Hz |
| Protection | High speed fuses |
| Type of loads | |
| AC51 | Resistive or slightly inductive load (cos phi>0.8) |
| AC-56a | Transformer Primary or MOSI (e.g. Molybdenum disilicide) Time temperature dependant loads (e.g.Silicon Carbide) |

| Control | |
|-----------------------------|--|
| Auxiliary power supply | 100V to 500V +10%/–15% or 24 ac/dc (±20%) |
| Control setpoint | Analogue 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 three units wired in series to be driven from a single controller's analogue output |
| Resolution | 11 bits |
| Linearity | ±0.1% of Scale |
| Firing mode | Variable Modulation Burst firing (default 16 cycles), Fix modulation period (default 2 seconds, Logic mode, Phase angle |
| Control mode | V ⁻ control, I ⁻ control, True Power control, Open loop with feed forward and Trim modes, Threshold limit or by transfer V ⁻ <-> I ⁻ or P <-> I ⁻ |
| Configurable digital inputs | Input 1: enable by default Input 2: setpoint, alarm acknowledgment, 10V supply, ... |
| Voltage inputs | Active level (high): 11V<Vin<30V with 6mA<Iin<30mA Non-active level (low): -3V<Vin<5V with 2mA<Iin<30mA or 5V<Iin<11V with Iin<2mA PLC compatible inputs, types 1 & 2 according to IEC 61131-2 |
| Contact closure inputs | Source current: 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: thyristor short circuit, open circuit, fuse blown, missing main, chop off |

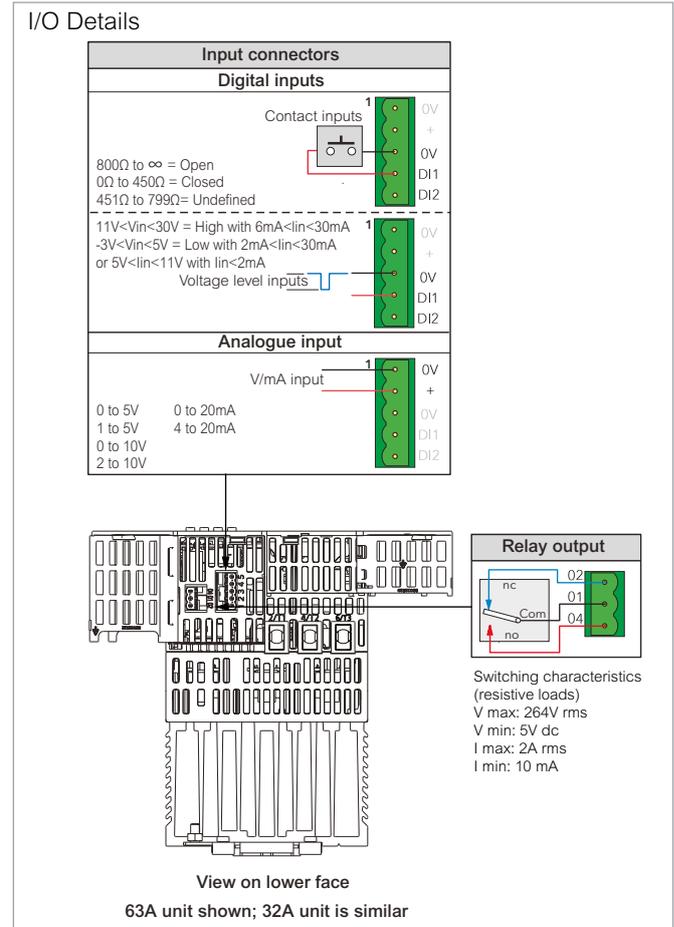
| Communications | |
|----------------|---|
| Connection | Dual port Ethernet - RJ45 Integrated switch |
| Protocols | Modbus TCP, Ethernet IP or Profinet |
| Baud rate | 10/100 full or half duplex |

| Display | |
|------------|--|
| Technology | TFT |
| Size | 1.5" |
| Messages | Messages for configuration, monitoring and diagnostics |

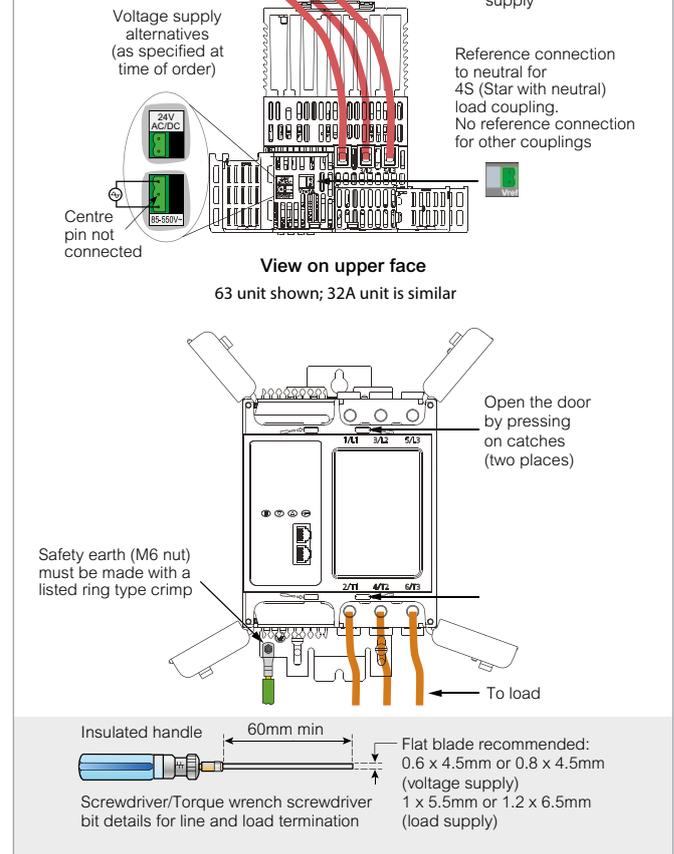
Mechanical details



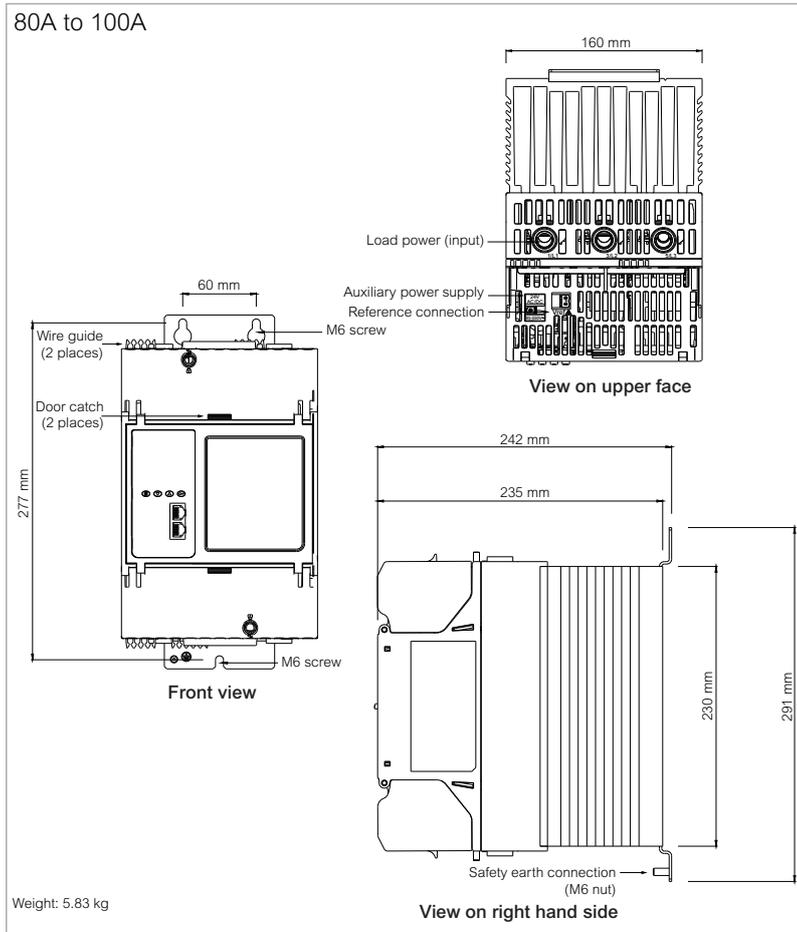
Connector details (pinout)



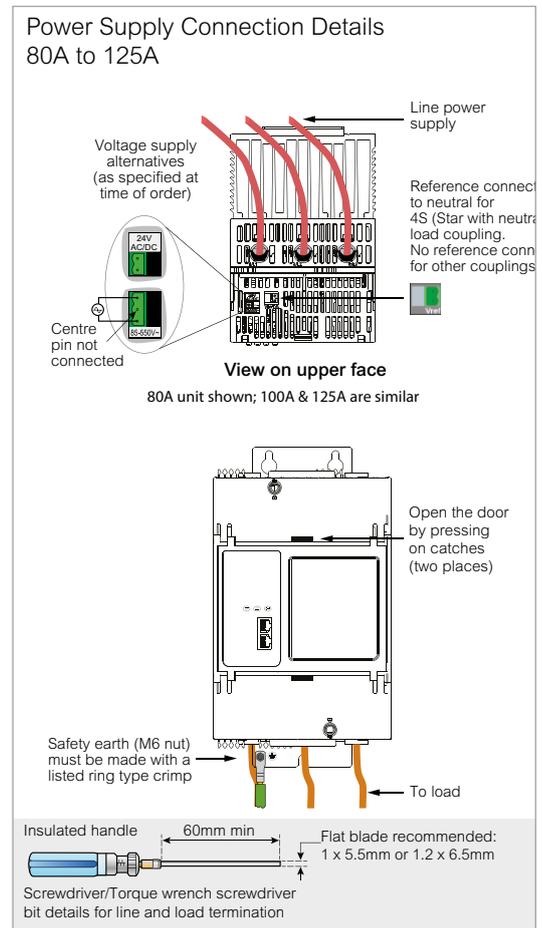
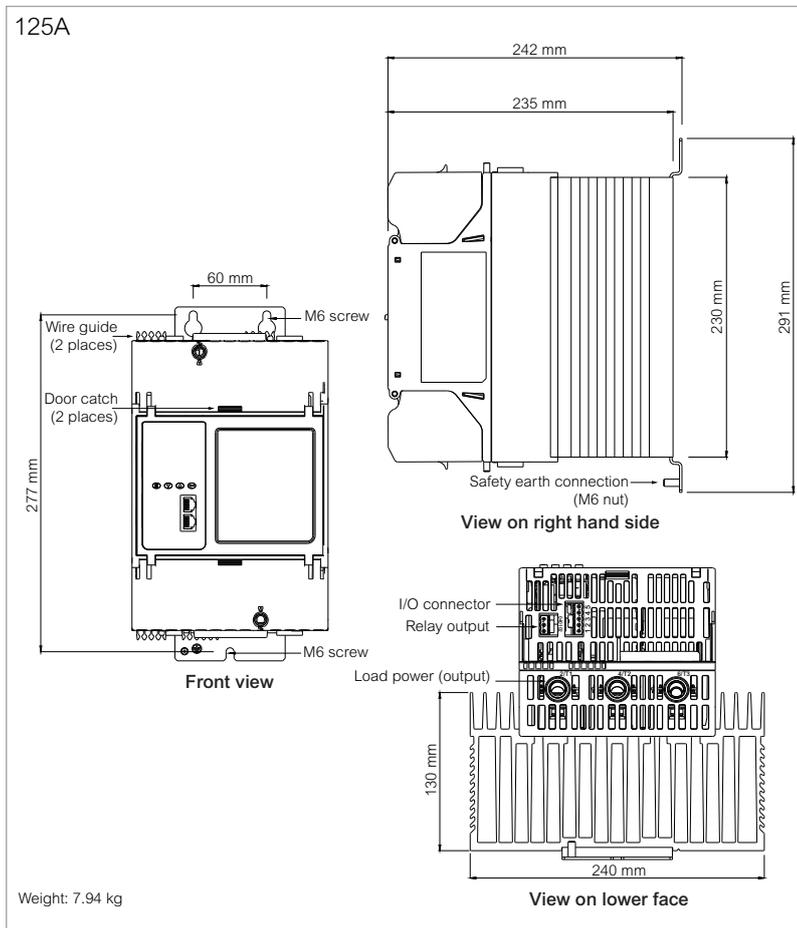
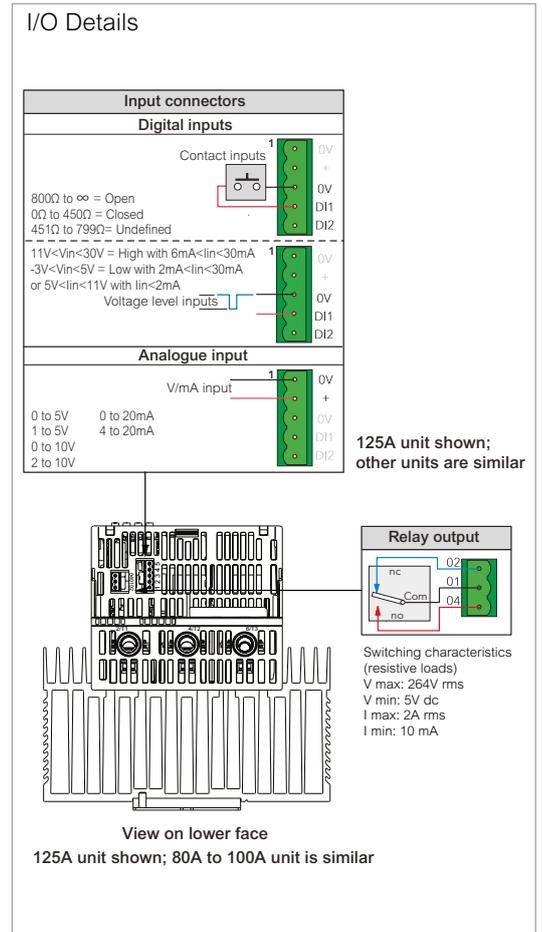
Power supply details



Mechanical details



Connector details (pinout)



Order Codes

The EPACK power controller is ordered using a short code for hardware and chargeable software options and an optional extended code section configuration of commissioning options.

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

EPACK controllers may be upgraded with additional chargeable options at any time using a software key order code.

Product coding

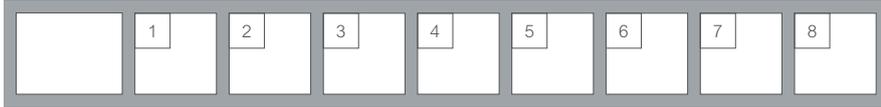


| Model | |
|--------------------------|---|
| EPACK-3PH | Power Controller |
| 1 Maximum current | |
| 16A | 16 amps |
| 25A | 25 amps |
| 32A | 32 amps |
| 40A | 40 amps |
| 50A | 50 amps |
| 63A | 63 amps |
| 80A | 80 amps |
| 100A | 100 amps |
| 125A | 125 amps |
| 2 Auxiliary Power Supply | |
| 500V | 500V max |
| 24V | 24V ac/dc |
| 3 Reserved | |
| XXX | Reserved |
| 4 Control Option | |
| V2 | V ² control (standard) |
| I2 | I ² control |
| V2CL | V ² control with current limitation by threshold |
| PWRCL | Power control with current limit |
| 5 Transfer Option | |
| XXX | - |
| TFR | I ² Transfer |
| 6 Energy Option | |
| XXX | - |
| EMS | Energy measurement |

| 7 Comms Option | |
|---------------------|-------------------------------------|
| TCP | Modbus TCP (standard) |
| IP | Ethernet/IP |
| PN | Profinet |
| 8 OEM Security | |
| XXX | None |
| OEM | OEM Security |
| 9 Warranty | |
| XXX | Standard Warranty |
| WL005 | 5 Year Warranty |
| USWL3 | US Extended Warranty |
| 10 Custom Labelling | |
| XXX | Standard (Eurotherm) |
| FXXXX | Special Label |
| 11 Graphical wiring | |
| XXX | None |
| GWE | Graphical Wiring Editor |
| 12 Fuse | |
| XXX | Without |
| HSP | High Speed fuse without microswitch |
| HSM | High Speed fuse with microswitch |
| 13 Configuration | |
| XXXXX | Default |
| LC | Long code |

| Optional configuration | |
|-----------------------------|---|
| 14 Nominal load current | |
| nnnA | 1 - Value field 1 |
| 15 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 |
| 16 Load configuration | |
| 3S | Star without neutral |
| 3D | Delta |
| 4S | Star with neutral |
| 6D | Open delta |
| 17 Load type | |
| XX | Resistive |
| TR | Transformer primary |
| 18 Heater type | |
| XX | Resistive |
| MOSI | Molybdenum disilicide |
| CSI | Silicon Carbide |
| SWIR | Short Wave Infra-Red |
| 19 Firing mode | |
| PA | Phase Angle |
| IHC | Intelligent Half cycle |
| BF | Variable Modulation |
| | Burst firing (default 16 cycles) |
| FX | Fix modulation period (default 2 seconds) |
| LGC | Logic mode |
| 20 Analog Input Function | |
| XX | None |
| SP | Setpoint |
| HR | Setpoint limit |
| IL | Current limit |
| TS | Current transfer span |
| 21 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 |
| 22 Digital Input 2 Function | |
| XX | None |
| LG | Setpoint for logic mode |
| AK | Alarm acknowledgement |
| RS | Remote Setpoint selection |
| FB | Fuse Blown |
| SU | 10V supply |
| 23 Reserved | |
| XXX | Reserved |

Software upgrade options



| 1 Serial number instrument | |
|----------------------------|---------------|
| nnnn | Serial number |

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

| 3 Control option | |
|------------------|---|
| XXX | no change |
| V2-V2CL | Upgrade V ² to V ² CL |
| V2-I2 | Upgrade V ² to I ² |
| V2-PWRCL | Upgrade V ² to PWRCL |
| I2-V2CL | Upgrade I ² to V ² CL |
| V2CL-PWRCL | Upgrade V ² CL to PWRCL |
| I2-PWRCL | Upgrade I ² to PWRCL |

| 4 Transfer option | |
|-------------------|-------------------------|
| XXX | No change |
| TFR | I ² Transfer |

| 5 Energy option | |
|-----------------|--------------------|
| XXX | No change |
| TFR | Energy measurement |

| 6 Comms option | |
|----------------|-------------|
| XXX | No change |
| IP | Ethernet IP |
| PN | Profinet |

| 7 Graphical wiring | |
|--------------------|-------------------------|
| XXX | No change |
| GWE | Graphical wiring editor |

| 8 OEM security | |
|----------------|--------------|
| XXX | No change |
| OEM | OEM Security |