Life Is On | Eurotherm by Schneider Electric

Adaptable power control

EPack-2PH compact SCR power controllers
Three phase 2 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 2-PH is the latest generation of power controllers designed to be a cost effective solution for the control of 3 phase loads. The 2 leg 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.

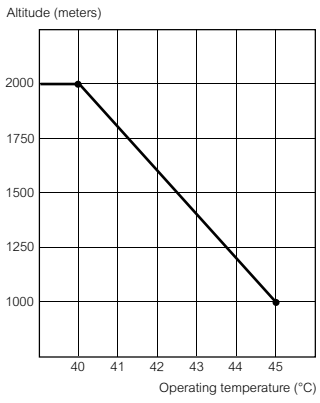
The scalability and configurability of EPack fits with the requirements of each application. A wide range of alarms can quickly identify a controller detected fault which reduces downtime.

Key features:

- Nominal load current from 1 amp to 125 amps
- Voltage up to 500V
- Compact DIN Rail and bulkhead mounting
- Configurable via front panel or Eurotherm software (iTools)
- 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, silicon carbide, ...
- Energy usage measurement
- Advanced load diagnostics
- Integrated dual port Ethernet switch for "daisy chained" communications
- Modbus® TCP or Ethernet IP 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	

Mechanical details				
Unit	Height	Width	Depth	Weight
16 to 32A	166 mm	117 mm	185 mm	2.53 kg
40 to 63A	166 mm	117 mm	220 mm	2.97 kg
80 to 100A	238 mm	160 mm	233 mm	5.83 kg
125A	238 mm	240 mm	233 mm	7.94 kg

	Fuse without microswitch		Fuse with microswitch	
Current rating	Fuse holder size	Dimensions (H x W x D)	Fuse holder size	Dimensions (H x W x D)
≤25A	10x38	81x35x68	14x51	110x53x94
32A	14x51	97x53x86	14x51	110x53x94
40A	14x51	97x53x86	14x51	110x53x94
50A	22x58	128x70x90	22x58	128x70x96.5
63A	22x58	240x76x107	22x58	240x106x107
80A	27x60	240x76x107	27x60	240x106x107
100A	27x60	240x76x107	27x60	240x106x107
125A	27x60	240x76x107	27x60	240x106x107

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)

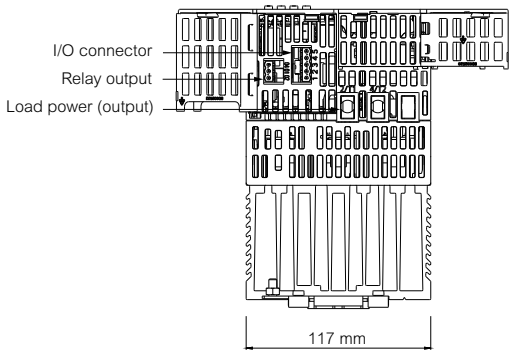
Control	
Auxillary power supply	100V to 500V +10%/–15% or 24 ac/dc (±20%)
Control setpoint	Analogue or logic input or digital comms
Analogue input signal	
Voltage	Range: 0-5V, 1-5 V, 0-10V or 2-10V Impedance: 140 k Ohms typical (0-10V signal)
Current	Range: 0-20mA or 4-20mA Input resistance: 100 ohms to allow for 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
Control mode	V^2 control, I^2 control, True Power control, Open loop with feed forward and Trim modes, Threshold limit or by transfer V^2 <-> I^2 or P <-> I^2
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 Maxima ±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

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

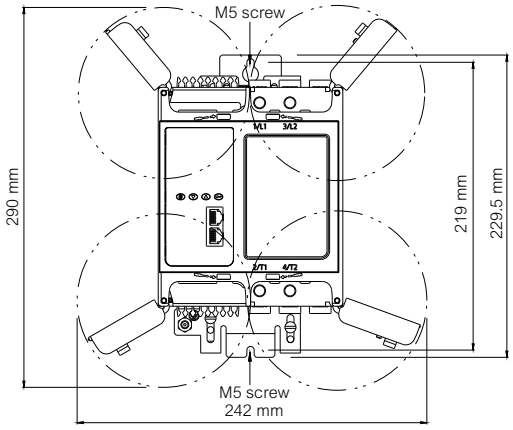
Display	
Technology	TFT
Size	1.5"
Messages	Messages for configuration, monitoring and diagnostics

Mechanical details

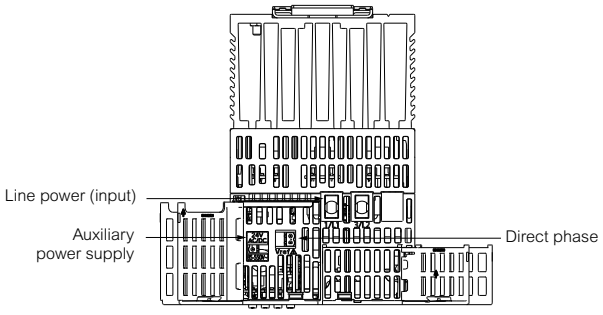
16A to 32A & 40A to 63A



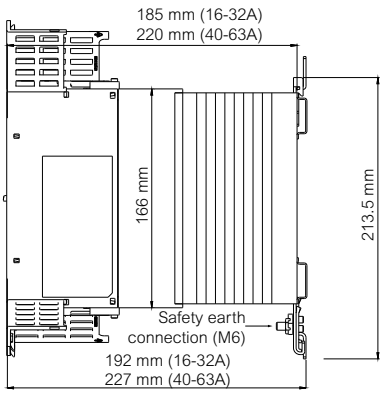
View on lower face



Front View



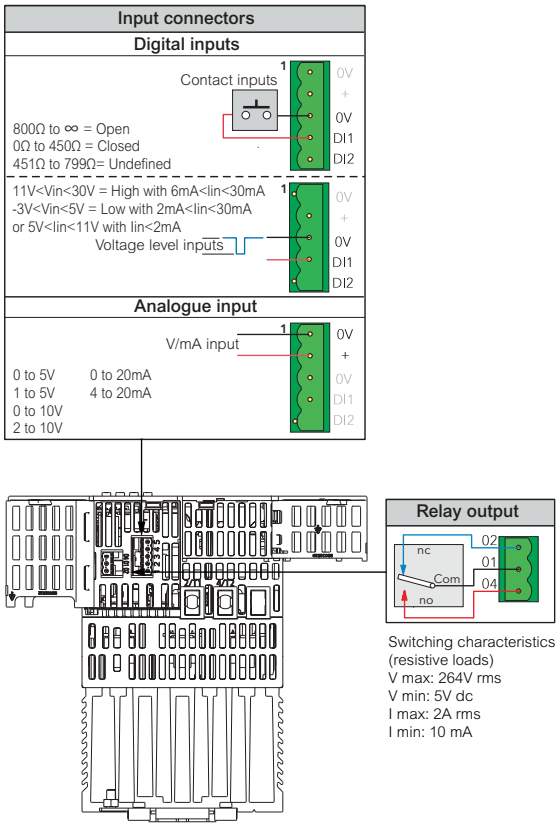
View on upper face



View on right hand side

Connector details (pinout)

I/O Details

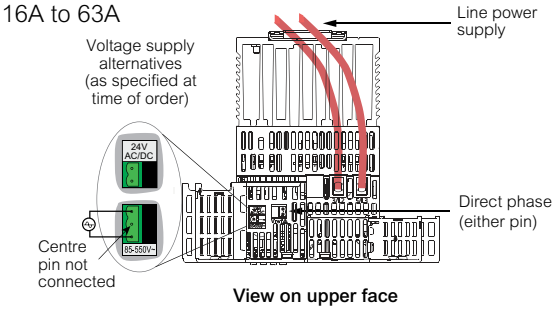


Switching characteristics
(resistive loads)
V max: 264V rms
V min: 5V dc
I max: 2A rms
I min: 10 mA

View on lower face

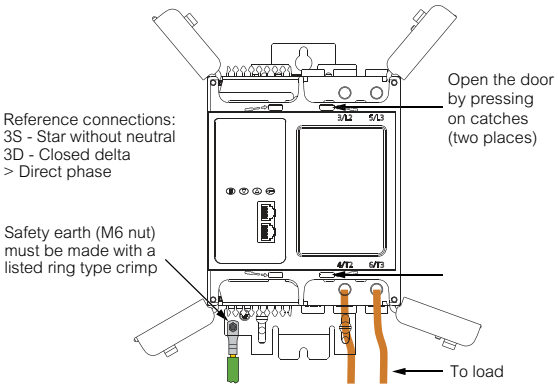
63A unit shown; 32A unit is similar

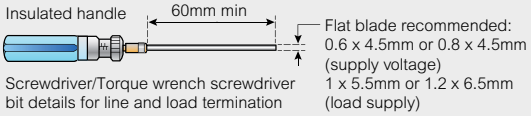
Power supply details
16A to 63A



View on upper face

63 unit shown; 32A unit is similar

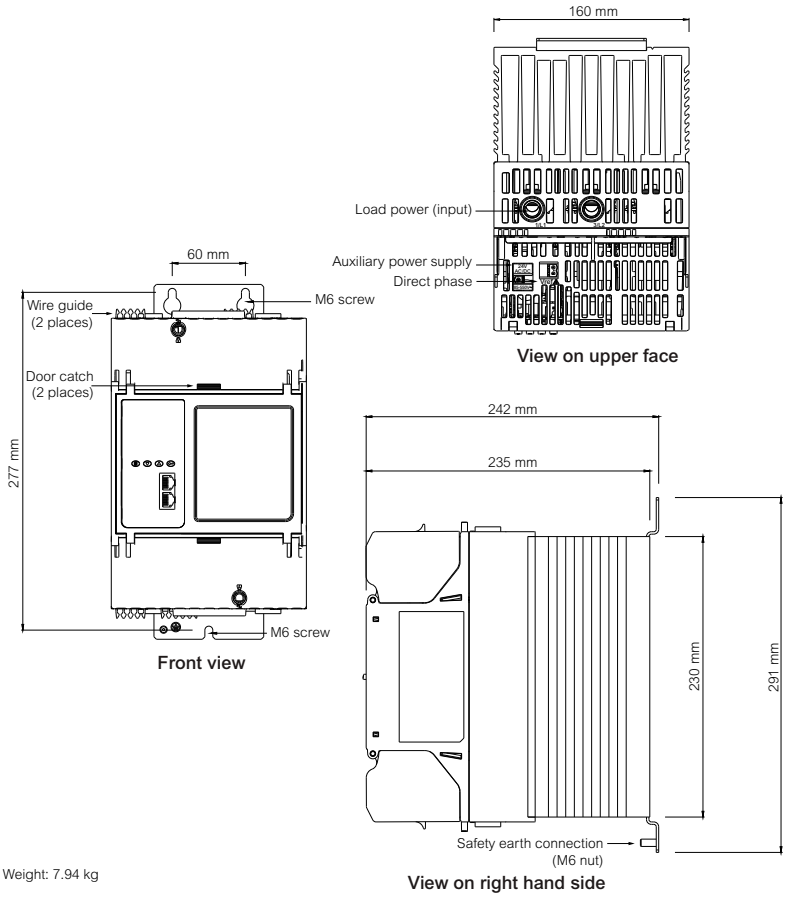




Screwdriver/Torque wrench screwdriver bit details for line and load termination

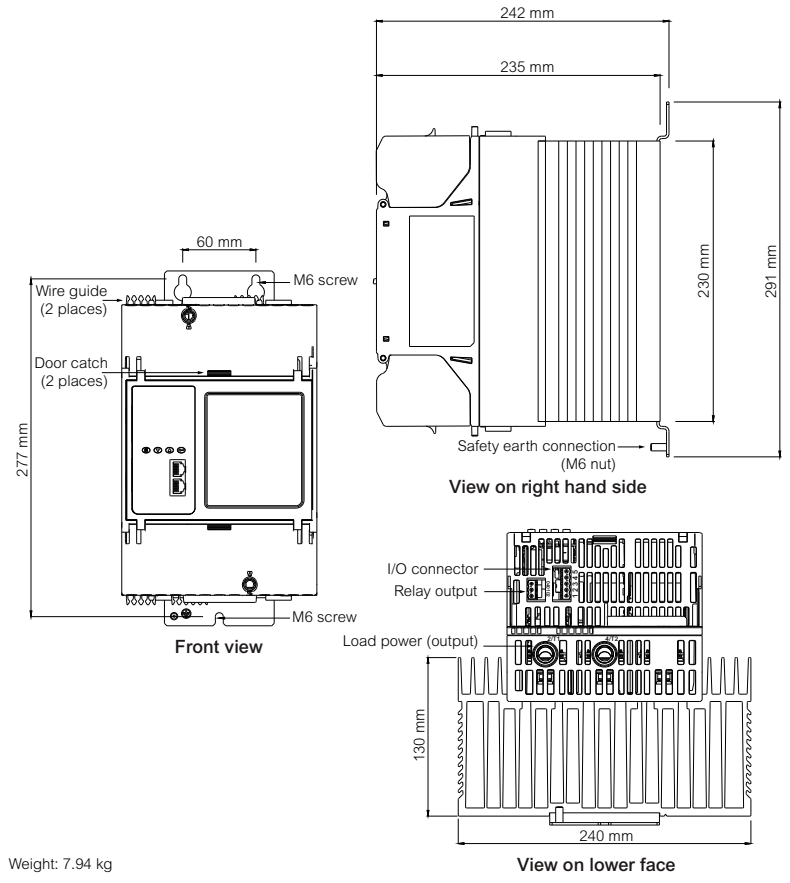
Mechanical details

80A to 100A



Weight: 7.94 kg

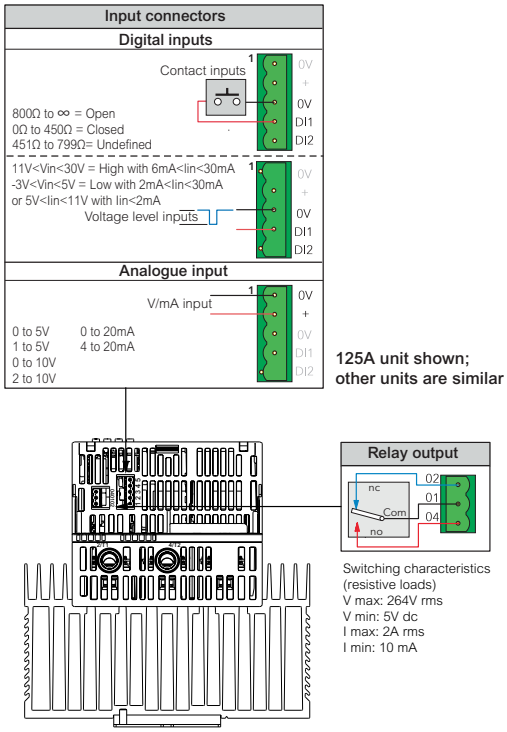
125A



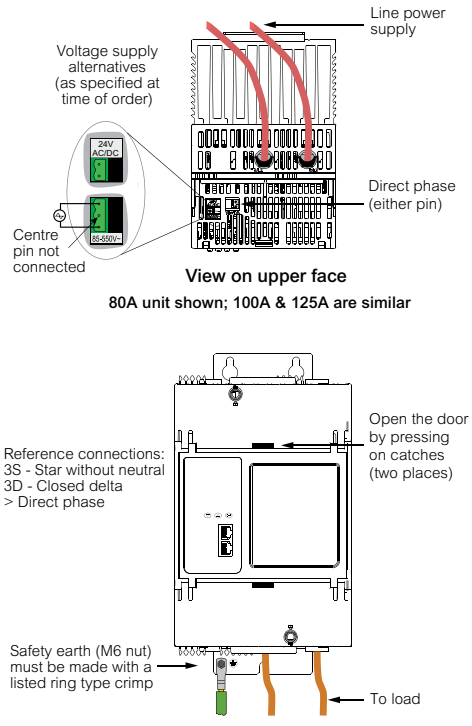
Weight: 7.94 kg

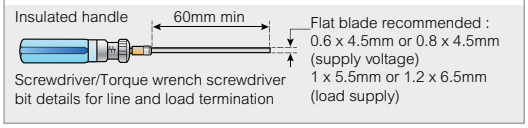
Connector details (pinout)

I/O Details



Power Supply Connection Details 80A to 125A





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

EPACK-2PH	1	2	3	4	5	6	7	8	9	10	11	12	13
			XXX										

14	15	16	17	18	19	20	21	22	23
									XXX

Model	
EPACK-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
PWR	Power control

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

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	Closed delta

17	Load type
XX	Resistive
TR	Transformer primary

18	Heater type
XX	Resistive
CSI	Silicon Carbide
SWIR	Short Wave Infra-Red

19	Firing mode
BF	Variable Modulation Burst firing (default 16 cycles)
FX	Fix modulation period (default 2 seconds)
LGC	Logic mode

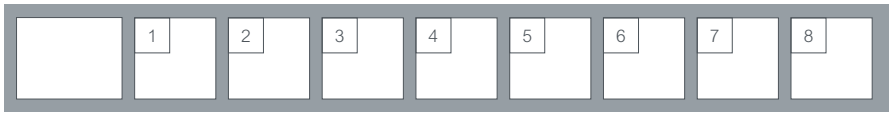
20	Analog Input Function
XX	None
SP	Setpoint
HR	Setpoint limit
TS	Current transfer span

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-I2	Upgrade V^2 to I^2
V2-PWR	Upgrade V^2 to PWR
I2-PWR	Upgrade I^2 to PWR

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

7	Graphical wiring
XXX	No change
GWE	Graphical wiring editor

8	OEM security
XXX	No change
OEM	OEM Security

Faraday Close, Durrington
Worthing, West Sussex, BN13 3PL
Phone: + 44 (01903 268500
www.eurotherm.co.uk

Life Is On | Eurotherm by Schneider Electric

Document Number HA032852 Issue 1 © 2017 Schneider Electric. All rights reserved. All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies.