

Product Data Sheet EPower™ Controller

Characteristics Power Controller 1-2-3-4 phases

Range name: Power Controller

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The EPower™ Advanced SCR Power Controller is a modular multi-channel SCR power controller unit. The EPower current ratings cover ranges from 50 Amps up to 630 Amps (compact variants) and from 800 Amps to 4000 Amps (MC EPower with HPower variants). The voltage rating can go up to a maximum of 690 volts depending on current variants.

Its single-driver module can support up to four independent control loops. The driver module offers a wide choice of options boards with the support of 7 Fieldbus protocols over Ethernet and serial industrial communications, flexible I/O, and Predictive Load Management (PLM).

Eurotherm iTools PC-based configuration software is used for commissioning and advanced programming, this is available free of charge from the Eurotherm website.

Environmental sustainability (50A - 630A)

UKCA/EU RoHS directive	UKCA/EU RoHS declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS regulation	China RoHS declaration
Environmental disclosure	Product environmental profile
Circularity profile	End of Life information

Note: Refer to the EPower™ Controller product information page on the Eurotherm website for details (www.eurotherm.com).

Installation categories (all range)

	Installation Category	Rated impulse withstand voltage (Uimp)	Rated insulation voltage (Ui)	Maximum value of rated operational voltage to earth
Communications	II	0.5kV	50V	50V
Standard and optional IO	II	0.5kV	50V	50V
Driver module power supply & auxiliary (fan) supply	II	2.5kV	230V	300V
Relays	III	4kV	230V	300V
Power modules (up to 600V)	III	6kV	600V	600V
Power modules (up to 690V)	II	6kV	690V	600V

Driver (all range)

Driver module power supply & auxiliary (fan) Supply	
Rated control supply voltage (Us)	100 to 240V ac (+10% - 15%)
Frequency range	47 to 63Hz
Power requirement	60W + power module fans (15W each for 400/500/630A power modules; 10W each for 160A/250A modules)

EMC (all range)

Standard	EN60947-4-3:2014
This product has been designed for environment A (Industrial). Use of this product in environment B (domestic, commercial, and light industrial) may cause unwanted electromagnetic disturbances in which cases the user may be required to take adequate mitigation measures.	

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Operator interface (all range)

Display	Four lines of up to 10 characters each. Display pages can be used to view process variable values and to view and edit the configuration of the unit. Editing of the configuration is better carried out using configuration software (iTools). In addition to the standard displays, up to four 'custom' pages can be defined which allow bargraph displays, text entry etc.
Character format	Seven high x five wide yellow-green LCD dot matrix array
Push buttons	Four push buttons provide page and item entry and scroll facilities
LED indicators (beacons)	Three indicators (PWR, LOC and ALM) are supplied to indicate that power is applied, that Local Control is selected and that there is one or more active alarm, respectively.

Standard inputs/outputs (SK1) (all range)

All figures are with respect to driver module 0V, unless otherwise stated.

Number of inputs/outputs	
Number of analog inputs	2
Number of analog outputs	1
Number of digital inputs/outputs	2 (each configurable as an input or an output)
10V (Potentiometer) supply	1
Update rate	Twice the mains frequency applied to power module 1. Defaults to 83.2Hz (12ms) if no power applied to power module 1 or if supply frequency lies outside the range 47 to 63Hz.
Termination	Removable 10-way connector (5.08mm pitch)

Analog inputs (all range)

Input types	Each input is configurable as one of: 0 to 10V, 1 to 5V, 2 to 10V, 0 to 5V, 0 to 20mA, 4 to 20mA
Absolute maxima + terminal	±16V or ±40mA
- terminal	±1.5V or ±300mA

Analog outputs (all range)

Output types	Each output is configurable as one of: 0 to 10V, 1 to 5V, 2 to 10V, 0 to 5V, 0 to 20mA, 4 to 20mA
Absolute maxima + terminal	(-0.7V or -300mA) or (+16V or +40mA)
0V terminal	±2A

10V supply (potentiometer supply) (all range)

Output voltage	10.3V ± 0.3V @ 5.5mA
Short circuit o/p current	15mA max
Ambient temperature drift	±0.012%/ °C (typ); ±0.04%/ °C (max)
Absolute maxima Pin 1	(-0.7V or -300mA) or (+16V or +40mA)

Relay specification (all range)

Contact life resistive loads	100,000 operations (de-rate with inductive loads as per figure)
High power use current	<2A (resistive loads)
Voltage	<264V RMS (UL: Voltage 250Vac)
Low power use current	>1mA
Voltage	>1V
Contact configuration	Single pole change-over (one set of common, normally open, and normally closed contacts)
Termination relay 1 (standard)	3-way connector on underside of Driver Module (see Electrical Installation in the EPower User Guides - HA179769, HA179891)
Watchdog relay (standard)	3-way connector on underside of Driver Module (see Electrical Installation in the EPower User Guides - HA179769, HA179891)
Relays two to four (option)	12-way option module connector (see Electrical Installation in the EPower User Guides - HA179769, HA179891)
Installation category	Installation category III, assuming that nominal phase to earth voltage is ≤ 300V RMS. Isolation between different relays' contacts is double isolation, in accordance with the installation category and phase to earth voltage specified above.
Absolute maximum switching capability	<2A at 240V RMS (resistive loads)

Note: Normally closed and normally open refer to the relay when the coil is not energized.