

Relay C

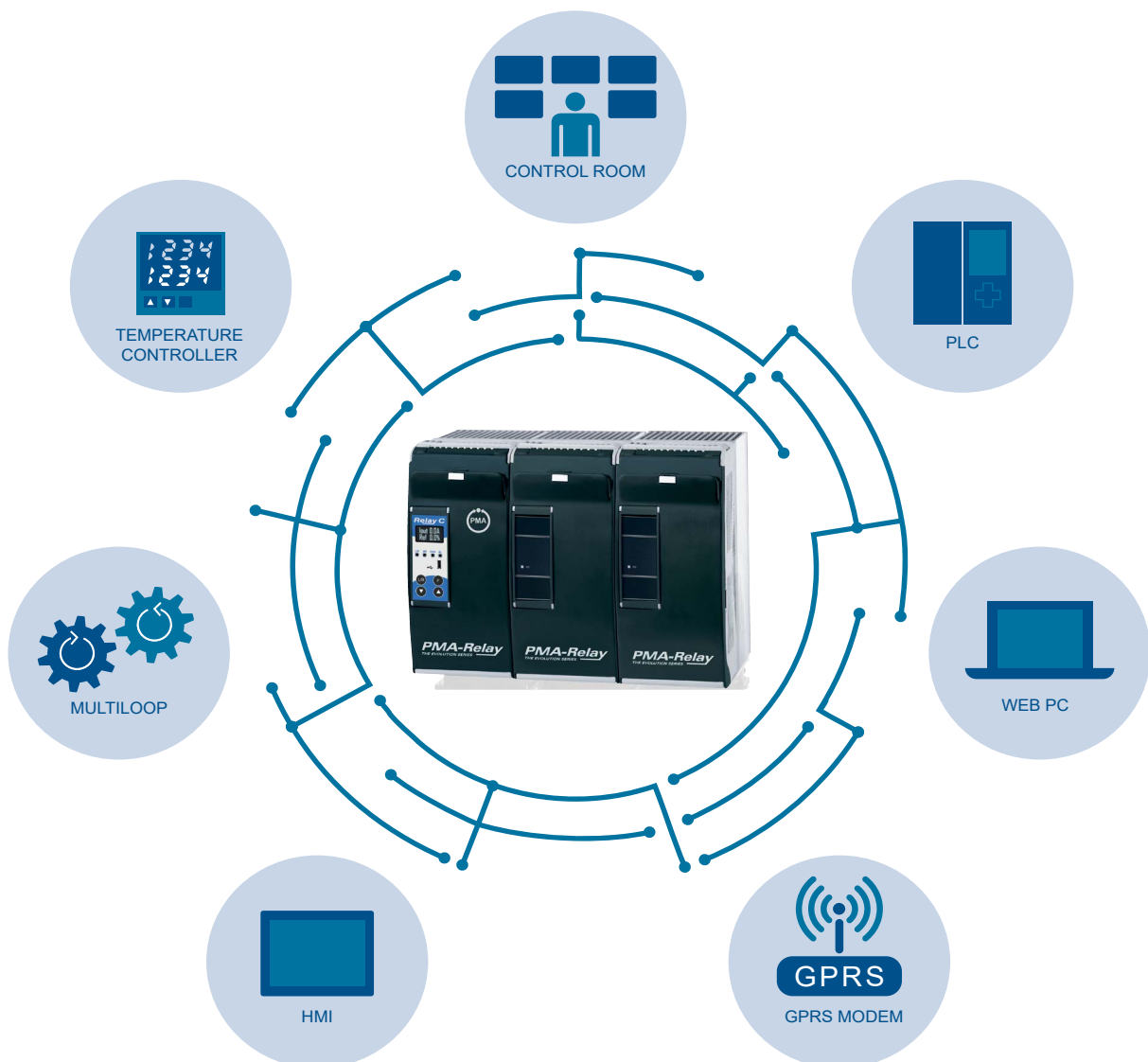
Advanced Power Controller



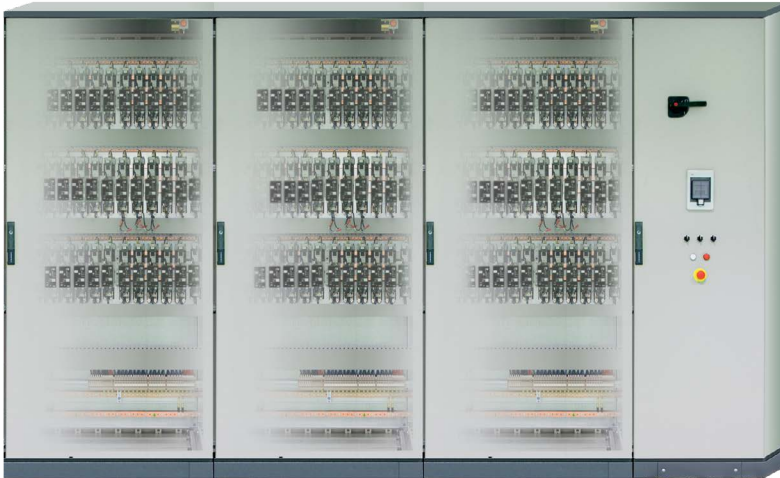
Product Overview

Relay C is a universal product range based on powerful microprocessor technology. Available from 30A to 800A and single phase (1PH) plus 2PH & 3PH to drive 3 phase loads. Its key benefit is its connectivity with the outside world, through the most popular Field Bus Protocols. Its universality allows inputs, all firing and control modes to be configured via your personal computer and the Configurator Software.

- Internal Fuses on complete range from 30 to 800A
- 100 kA Short Circuit Current (SCCR) up to 600V
- Voltage Supply 480-600-690V
- OLED Display for easy Diagnostic & Configuration
- All Firing & Control Mode available
- All popular Field Bus available
- Remote Service
- cULus® 508 listed and cUL® listed



Traditional System



Relay C System



Relay C Power Controller range

Current Range from 35 to 800A

Controlled Phases 1-2 or 3 Phases suitable to drive Normal Resistance, Cold Resistance and transformers

Voltage 480V, 600V and 690V

Features and Benefits

Integrated with every Relay C is the semiconductor fuses, thyristors and current transformers. Designed and built as a single unit not only helps reduce the overall space and labour time to mount and connect separate fuses but also ensures that all testing is carried out correctly and guaranteed to the figures stated. The 100 KA short circuit current rating (SCCR) is very important and complies fully with NEC 110.10 regulation. Full documentation available upon request.

- Robust SCR designed to meet rugged industrial environment requirements
- Easy access to fuses and thyristors by simply opening front panel door
- Circuit boards are mounted directly to the front panel door for easy access
- cUL 508 Listed up to 700A included

OUR PRODUCT DIMENSIONS ARE SMALL BECAUSE:

- Fuses are mounted inside the thyristor unit
- Heat sinks have a very high efficiency thermal resistance (low value °C/W)
- Internal fuses results in longer heat sinks and increased heat sink efficiency
- Improved air ventilation aids fuse cooling

Relay C Family Size and Dimensions



SR9 H 121 x W 72 x D 185 - 1,15kg.



SR10 H 121 x W 108 x D 185 - 1,76kg.



SR11 H 121 x W 144 x D 185 - 2,4kg.



SR12 H 269 x W 93 x D 170 - 3,4kg.



SR13 H 269 x W 186 x D 170 - 6,8kg.



SR14 H 269 x W 279 x D 170 - 10,2kg.

SR15 H 273 x W 93 x D 170 - 3,6kg.

SR16 H 273 x W 186 x D 170 - 7,0kg.

SR17 H 273 x W 279 x D 170 - 10,6kg.



S11 H 440 x W 137x D 270 - 10,5kg.



S12 H 520 x W 137 x D 270 - 15kg.



S13/S14 H 440/520 x W 262 x D 270 - 18/22kg.



S15 H 560 x W 137x D 270 - 17,2kg.



S16 H 560 x W 275 x D 270 - 34,4kg.



S17 H 560 x W 411 x D 270 - 51,6kg.

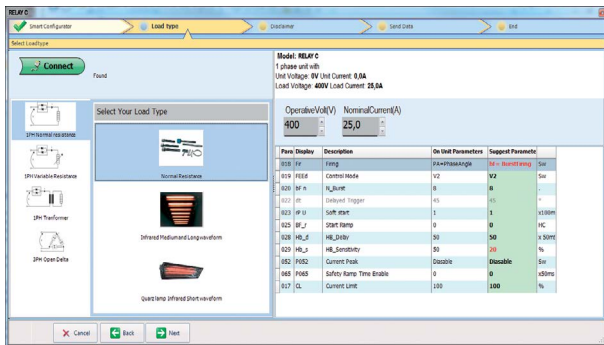
Features and Dimensions

DESCRIPTION		RELAY C 1PH		RELAY C 2PH		RELAY C 3PH		
		CODE		RC1	RC2	RC3		
LOAD TYPE	Max voltage 480V		●		●		●	
	Max voltage 600V		●		●		●	
	Max voltage 690V		●		●		●	
	Single phase		●					
	3 phase load star no neutral or delta				●		●	
	3 phase load star with neutral						●	
	3 phase load open delta		● (1)					
INPUT TYPE	SSR 4:30VDC		●		●		●	
	4:20 mA		●		●		●	
	0:10 Vdc		●		●		●	
	Potentiometer		●		●		●	
FIRING	Single Cycle		●					
	Half Cycle		●					
	Burst Firing		●		●		●	
	Phase Angle		●				●	
	Delayed Triggering		●				●	
	Zero Crossing		●		●		●	
CONTROL MODE	Open Loop		●		●		●	
	Voltage		●		●		●	
	Voltage square		●		●		●	
	Current		●		●		●	
	Current Square		●		●		●	
	Power V x I		●		●		●	
OPTIONS	Current Limit CL		○				○	
	Heater Break Alarm + SCR Short Circuit		○		○		○	
	Logging		○		○		○	
	Totalizer		○		○		○	
COMM.	Modbus® RTU		○		○		○	
	Profibus® DP + 1 Modbus® RTU		○		○		○	
	2 Profinet® IO + 1 Modbus® RTU		○		○		○	
	2 Modbus® TCP + 1 Modbus® RTU		○		○		○	
CURRENT	CURRENT		SIZE		SIZE		SIZE	
			600V Max	690V	600V Max	690V	600V Max	690V
	30				SR10		SR11	
	35		SR9		SR10		SR11	
	40		SR9		SR10		SR11	
	60		SR12	S11	SR13	S11	SR14	S11
	90		SR15	S11	SR16	S11	SR17	S11
	120		SR15	S11	SR16	S13	SR17	S13
	150		SR15	S11	SR16	S13	SR17	S13
	180		SR15	S11	SR16	S13	SR17	S13
	210		SR15	S11	SR16	S13	SR17	S13
	300		S12	S12	S14	S14	S14	S14
	400		S12	S12	S14	S14	S14	S14
	450				S14	S14	S14	S14
	500		S12	S12	S14	S14	S14	S14
	600		S12	S12	S14	S14	S17	S17
	700		S12	S12	S14	S14	S17	S17
800		S15	S15	S16	S16	S17	S17	

● Standard ○ Option ■ CE standard + cUL® as an option ■ CE Only Note (1): Use n° 3 Relay-C 1PH

Agency Approval and Regulatory: cULus 508 Listed File E231578; cUL® Listed to C22.2 No. 14; CE EMC Directive 2014-30-EU, EN 60947-4-3 Class A Emissions; CE Safety Directive 2014-35-EU, EN 60947-4-1, -4-3; RoHS 2011-65-EU; W.E.E.E 2012-19-EU

Configurator Software



FAST TUNE

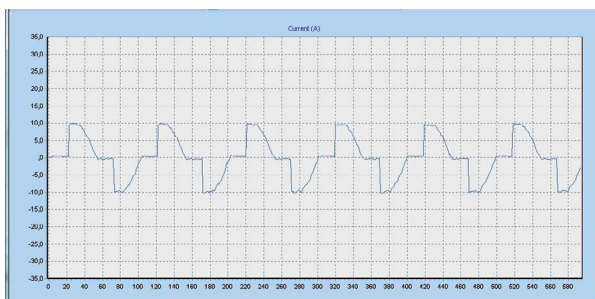
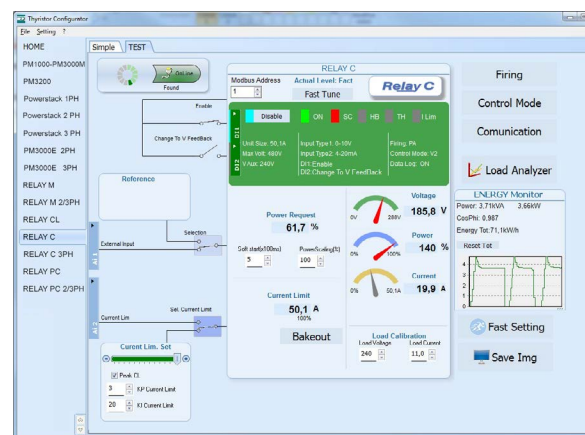
The all new powerful Thyristor Configurator Software allows you to configure Relay Family products quickly and easily by using the FAST MODE. Simply select your application and the load type picture appears automatically, providing a list of suggested parameter settings. Depending on your application requirements, you can accept or make manual adjustments and when ready, download direct to the thyristor unit.

TEST UNIT

The TEST page is very useful when installing & commissioning Relay Family products as well as finding process issues or fine tuning at a later stage.

You can read, write, enable and disable key values and parameters to test your load. Examples include; reading voltage, current and power values, or current limit status, changing input types between analog or SSR, control (feedback) modes V, I and VxI, or select firing types half cycle, single cycle, burst firing, delayed triggering, phase angle and soft start.

The new 'Load Analyzer' (a small oscilloscope) can be activated from this page, see below.



LOAD ANALYZER

Provides real-time information of the output waveform, where you can select up to 10 process variables to help the operator determine if the waveform is in line with process expectations. Also useful for trouble shooting.

PROCESS VARIABLE LOGGING

In Relay C Storage: 16GB SD Memory Card with programmable Logging Intervals. Estimated storing 10 years.

On other Relay Family Products the logging intervals are a fix value.



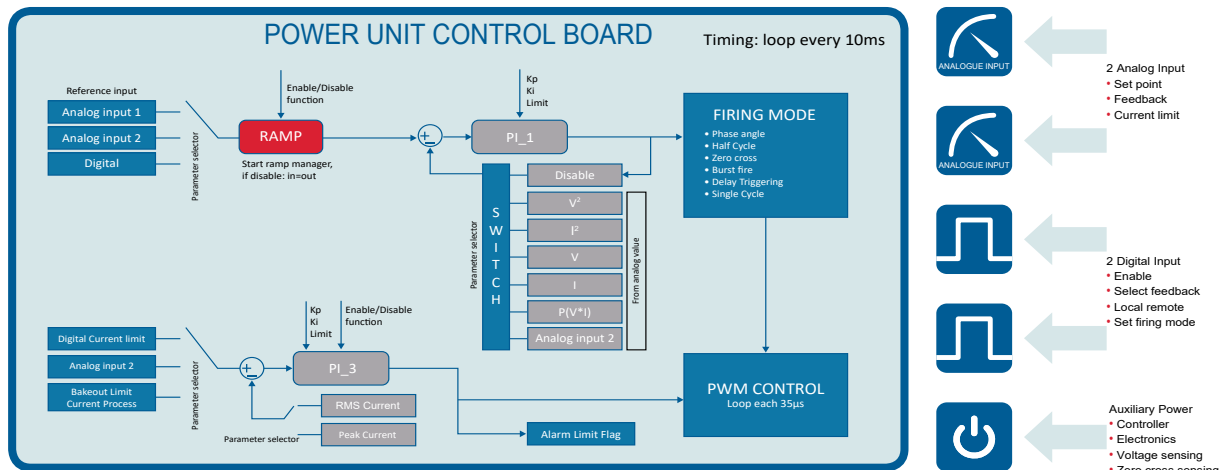
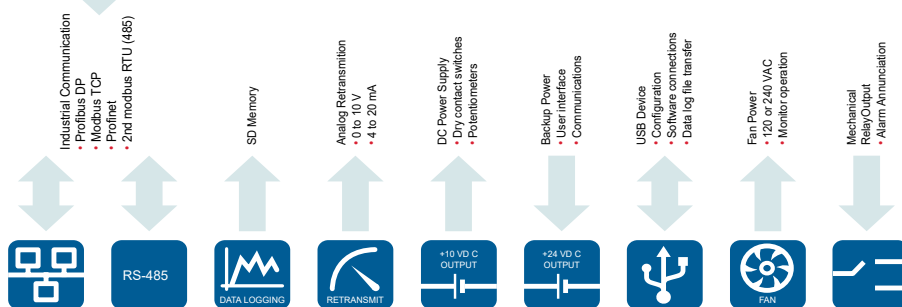
<p>Current Rating</p> <p>030 30A ⁽¹⁾ 035 35A ⁽¹⁾ 040 40A ⁽¹⁾ 060 60A ⁽¹⁾ 075 75A ⁽¹⁾ 090 90A 120 120A 150 150A 180 180A 210 210A 300 300A 400 400A 450 450A ⁽¹⁾ 500 500A 600 600A 700 700A 800 800A ⁽¹⁾</p>	<p>Aux. Voltage Supply</p> <p>1 90 to 135 VAC (100/120 VAC) 2 180 to 265 VAC (200/208/230/240 VAC) 3 238 to 330 VAC (277 VAC) 5 342 to 528 VAC (380/415/480 VAC) 6 540 to 759 VAC (600 VAC) 7 540 to 759 VAC (690 VAC)</p>	<p>Control Mode</p> <p>0 Open loop U Voltage Q Voltage square U² I Current A Current square I² W Power</p>	<p>Fan Voltage</p> <p>0 No fan - for 1phase and 2PH < 90A No fan - for 3 phase < 120A 1 Fan 110V - for 1 phase and 2PH < 90A Fan 110V - for 3 phase ≥ 120A 2 Fan 220V - for 1 phase and 2PH < 90A std. version Fan 220V - for 3 phase ≥ 120A std. version</p>	<p>Load Type</p> <p>0 Normal resistance ⁽¹⁾ 1 IRSW infrared short wave ⁽¹⁾ 2 MoSi2 heaters ⁽¹⁾ 3 SiC heaters ⁽¹⁾ 4 Transformer coupled with normal resistance ⁽¹⁾ 5 Transformer coupled with MoSi2 heaters ⁽¹⁾ 6 Transformer coupled with SiC heaters ⁽¹⁾ 7 Transformer coupled with UV lamp ⁽¹⁾</p>
<p>RC1 090 4 1 V D 0 0 0 0 2 1</p>	<p>Max Voltage</p> <p>4 480V 6 600V 7 690V</p>	<p>Input</p> <p>S SSR B 0:20 mA A 4:20 mA V 0:10V K 10kΩ Poti</p>	<p>Approvals</p> <p>0 CE L cUL + CE</p>	<p>Communication and Retransmission</p> <p>0 Nr. 1 Modbus RTU - no retransmission 1 Nr. 1 Modbus RTU - retransmission 4:20mA 2 Nr. 1 Modbus RTU - retransmission 0:10V 3 Nr. 2 Modbus RTU - no retransmission 4 Nr. 2 Modbus RTU - retransmission 4:20mA 5 Nr. 2 Modbus RTU - retransmission 0:10V 6 Nr. 2 Profibus DP + Nr.1 Modbus RTU - no retransmission 7 Nr. 2 Profibus DP + Nr.1 Modbus RTU - retransmission 4:20mA 8 Nr. 2 Profibus DP + Nr.1 Modbus RTU - retransmission 0:10V 9 Nr. 2 Profinet + Nr.1 Modbus RTU - no retransmission A Nr. 2 Profinet + Nr.1 Modbus RTU - retransmission 4:20mA B Nr. 2 Profinet + Nr.1 Modbus RTU - retransmission 0:10V C Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - no retransmission D Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - retransmission 4:20mA E Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - retransmission 0:10V</p>
<p>Model</p> <p>1 1 phase 2 2 phase 3 3 phase</p>	<p>Firing</p> <p>C Single cycle no soft start ⁽¹⁾ S Single cycle linear soft start ⁽¹⁾ H Half cycle no soft start ⁽¹⁾ L Half cycle linear soft start ⁽¹⁾ I Half cycle soft start for infrared lamp ⁽¹⁾ B Burst firing no soft start J Burst firing linear soft start ⁽¹⁾ P Phase angle no soft start ⁽¹⁾ E Phase angle soft start ⁽¹⁾ D Delayed triggering no soft start ⁽¹⁾ T Delayed triggering linear soft start ⁽¹⁾ Z Zero crossing no soft start R Zero crossing linear soft start ⁽¹⁾</p>	<p>Option</p> <p>0 No option 1 Energy totaliser 2 Datalogger 3 Datalogger + energy totaliser 8 Heater break alarm 9 Heater break alarm + energy totaliser A Heater break alarm + datalogger B Heater break alarm + datalogger + energy totaliser G Current limit ⁽¹⁾ H Current limit + energy totaliser ⁽¹⁾ I Current limit + datalogger ⁽¹⁾ J Current limit + datalogger + energy totaliser ⁽¹⁾ O Current limit + heater break alarm ⁽¹⁾ P Current limit + heater break alarm + energy totaliser ⁽¹⁾ Q Current limit + heater break alarm + datalogger ⁽¹⁾ R Current limit + heater break alarm + datalogger + energy totaliser ⁽¹⁾</p>		

(1) Not available for all combinations of part numbers. Please refer to the datasheet for further details

Communications

Wide range of communication protocols:

Keep your Relay C connected with the outside world via popular protocols including Modbus® RTU, Ethernet TCP, Profibus®, Profinet® and USB port for local data transfer.



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