

Living Energy

ROAL loves living, empowering human technologies, and working with energy, transforming them. We are more than an innovating company, we are people, values and knowledge and we produce more than products, we create innovative solutions. We are a community committed to enriching the efficiency of power conversion and delivering competitive value to our customers and our customer's customers. So our focus is clear and sensible: more and less.

Through our True Digital Management experience we deliver:

- more efficiency and less warming,
- more density and less space,
- more reliability and less worry,
- more living and less waste.

We search, we think, we care, we design, we aim for living energy.

Empowering Human Technologies

The advent of the microprocessor in switching power supply design is ushering in a whole new set of benefits for switching power supplies and the systems that deploy them. These new benefits include:

- optimized conversion efficiencies
- design flexibility
- improved reliability
- reduced cost of ownership

ROAL dedicates its R&D resources to this new technology and continues to leverage true digital power control into switch mode power supply designs.

Design & Reliability

ROAL's design and reliability approach recognizes that a product's final reliability starts from the very first design steps. Product time-to-market trends are shortening, forcing new, more targeted testing methods. Life test, burn-in and traditional test methods are no longer sufficient to identify product weaknesses or validate the life prediction.

With over 20 years experience designing and manufacturing switching power supplies, ROAL has fortified our expertise in sustainable electronic design with state-of-the-art equipment and instruments.

Research & Innovation

ROAL's innovations come not only from the desire to constantly design newer and more efficient products, but from listening, and responding, to the needs, wants and concerns of our customers, now and for their future. Listening for the future drives new topologies, technologies, and processes which enable us and our customers to meet the competitive challenges we face.

ROAL's innovations have received not only the ultimate approval of our customers, and their customers, but the successful application and granting of several patents in Digital Power Control circuitry and Digital Power Management systems.

ROAL's innovations are fostered by our creative, committed and knowledge team of designers.

ROAL Overview

ROAL Electronics is an innovations company with a significant intellectual property and products portfolio in Digital Power Control and Solid State Lighting (LED) Electronics.

ROAL's technology focus includes switch mode power supplies, LED drivers, HB LED Modules, and control / user interface electronics for commercial and consumer appliances.

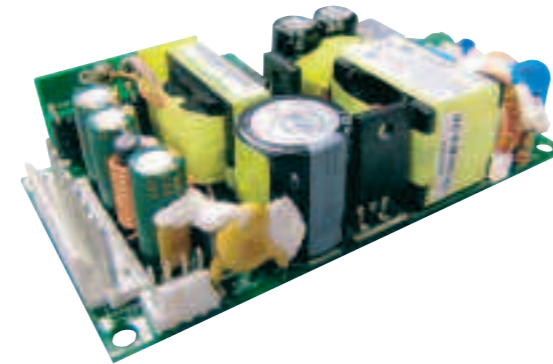
ROAL leverages the benefits of modern microprocessor technology by merging it with state of the art power electronics to advance new features and enhance the performance of its power products.

ROAL's advanced Digital Power Management (DPM) technology is accelerating the evolution of power electronics with Real-time monitoring, optimal conversion efficiencies, miniaturization, self diagnostic capability, and dynamic manipulation of controlled parameters.



SFA Series Power Supplies

160W High Efficiency, Small Form Factor



Offering 160W of regulated DC power from an industry standard 2x4x1 inch open-frame footprint, the SFA160 series consumes 46% less space in a system enabling designers to offer smaller systems or to integrate more advanced features into their system without compromising on system size. By converting energy at >90% efficiency, the SFA160 generates less heat facilitating high reliability, space saving designs.

FEATURES

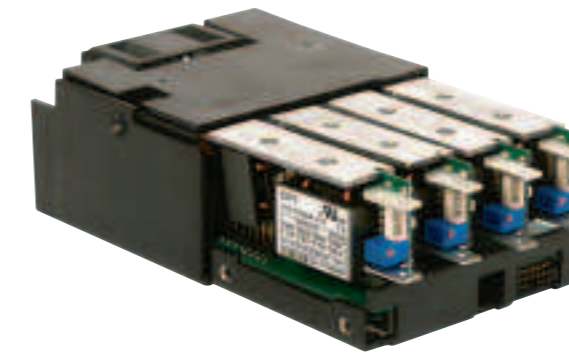
- 160W PFC power supply
- Very small form factor of 2 x 4 x 1"
- Extremely high efficiency >90% (typ)
- 5V, 12V, 24V & 48V outputs
- Universal input voltage range
- OVP and short circuit protection
- Over temperature protection
- Auxiliary fan +12V Output

MODEL NUMBER	V1	I1 CURRENT ¹⁾ CONVECTION	I1 CURRENT ²⁾ FAN COOLED	V2	I2 CURRENT CONVECTION
SFA160-US05	5V	14A	20A	12V	0.5A
SFA160-US12	12V	8.3A	13.3A	12V	0.5A
SFA160-US24	24V	4.2A	6.66A	12V	0.5A
SFA160-US48	48V	2.1A	3.33A	12V	0.5A

Note:
 1) The combined output power of V1 and V2 must not exceed 80W for 5V model or 100W for 12V, 24V and 48V models when convection cooled.
 2) The combined output power of V1 and V2 must not exceed 100W for 5V model or 160W for 12V, 24V and 48V at 500LFM.

RCA600 Series Configurable Power Supplies

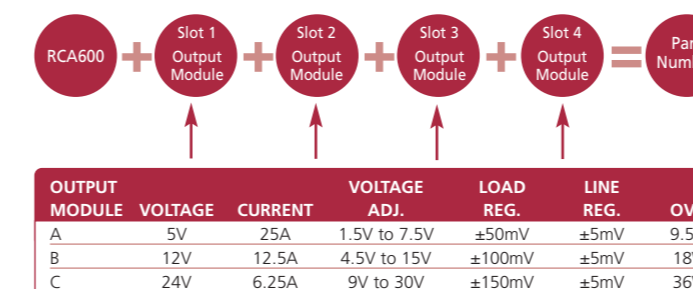
600W High Efficiency, Small Form Factor



The RCA600 is a modular, user configurable power supply offering unrivalled performance and flexibility. Delivering 600W from 600g, 5 x 3" 1U package, the RCA600 is the smallest commercially available configurable power solution. Each system consists of an input module together with up to four isolated output modules. The series carries UL60950 and EN60950 safety approvals and complies with EN61000-3, EN6100-4 and EN55022-B EMC standards.

FEATURES

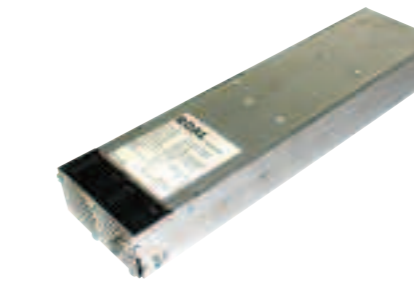
- Universal input voltage
- Active power factor correction
- High power density (25W/in³)
- 5 x 3" 1U footprint
- 600W output
- Field configurable
- High reliability
- High efficiency
- Remote voltage programming
- Remote current
- I²C control
- Parallel operation
- Accurate wired current share
- Current output signal
- N+1 redundancy compatible
- Global 5V 200mA bias supply
- RoHS-6 compliant



PART NO CONFIGURATION: e.g: RCA600ABCC is a 600W unit with 5V, 12V and 2 x 24V output modules

RAM Series 19" 1U Module

1.2kW to 1.5kW High Efficiency



The RAM series are high power 1U 19" inch rack format AC/DC power supplies. The basic module is a 1Ux2U hot-pluggable single output AC/DC power supply offering 12V at 96A. A second module outputs 48V at 30A. Both modules can be used as stand-alone devices, or can be plugged into a standard 1U 19" rack.

FEATURES

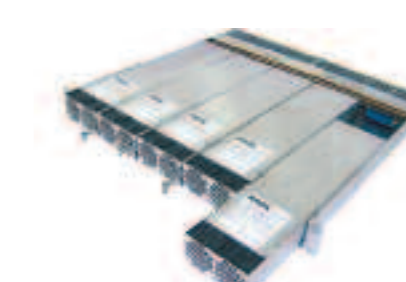
- Wide input voltage range
- 1500W output power
- Up to 21W/in³ power density
- Auto select power limits
- Efficiency >90%
- Active current sharing
- Internal ORing FETs
- LED's logic status indicators
- Output voltage digital adjustment
- No minimum load required
- Stand-by output voltage 12V, 300mA
- I²C serial communication protocol
- Hot plug capability
- N+1 redundancy
- Variable speed fan control
- Remote sense on main output
- Active multiphase digital PFC
- Patent No US6, 975, 524

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT ¹⁾ CURRENT	OUTPUT POWER
RAM1K2-US12	12V	96A	1.2kW
RAM1K5-US48	48V	30A	1.5kW

Note:
 1) At 230VAC input

RAR Series 19" 1U Rack

1.2kW to 7.5kW High Efficiency



The RAR series is a modular power system offering up to 480A at 12V and 150A at 48V from a 1U high 19" rack format. The rack can be configured to operate in N+1 redundant mode and can use a single or a triple phase AC source. All modules are hot-plug with internal ORing diodes. An optional digital control module interfaces with the external system through a PMBus and I²C interface. Up to 7 racks can be configured in parallel to offer 52.5kW (48V) from a 7U 19" rack.

FEATURES

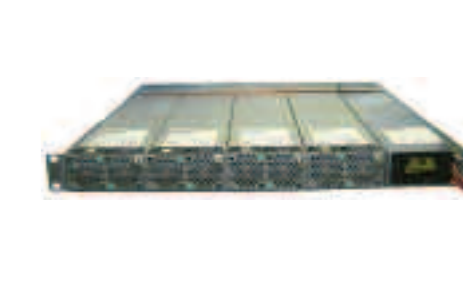
- 1U 19" form factor
- Efficiency >90%
- Up to 7500W per 1U x 19" rack
- Up to 6000W per 1U x 19" rack in 4+1 redundant mode
- Suitable for 3 phase input
- Active current sharing
- Internal ORing FETs
- LED's logic status indicators
- Output voltage digital adjustment
- I²C serial communication system
- PMBus communication protocol
- Optional digital control mode

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT POWER	*
RAR1K2-US12	12V	96A	1.2kW	1
RAR2K4-US12	12V	192A	2.4kW	2
RAR3K6-US12	12V	288A	3.6kW	3
RAR4K8-US12	12V	384A	4.8kW	4
RAR6K0-US12	12V	480A	6.0kW	5
RAR1K5-US48	48V	30A	1.5kW	1
RAR3K0-US48	48V	60A	3.0kW	2
RAR4K5-US48	48V	90A	4.5kW	3
RAR6K0-US48	48V	120A	6.0kW	4
RAR7K5-US48	48V	150A	7.5kW	5
RAMHP-CTRL	1U Control Module			

Chassis 1U x 19"
 * Number of modules

RAB Series Battery Chargers

1.5kW to 6.0kW High Efficiency



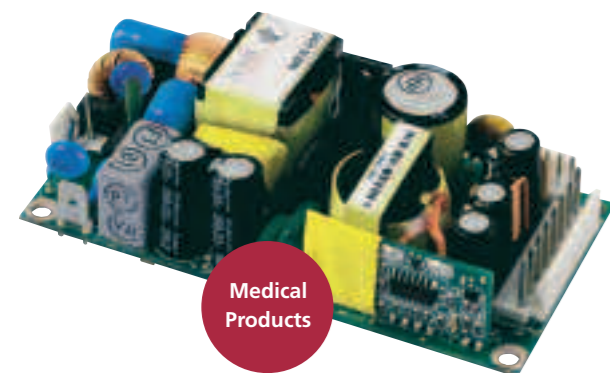
The RAB series is a modular high power battery charger system in a 1U 19 inch rack format. The basic module is a 1Ux2U hot-pluggable single output AC/DC power supply offering 48V at 30A. When configured in a rack, up to 4 modules can be paralleled to operate in a true current share mode to offer 6.0kW from a standard 1U 19" rack to charge a battery. Offering a hot-plug feature, the modules can also be configured to provide N+1 redundancy for mission critical applications

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT POWER	*
RAB1K5-US48	48V	30A	1.5kW	1
RAB3K0-US48	48V	60A	3.0kW	2
RAB4K5-US48	48V	90A	4.5kW	3
RAB6K0-US48	48V	120A	6.0kW	4

Chassis 1U x 19"
 * Number of modules

MFA Series Power Supplies

160W High Efficiency, Medical PSU



By combining medical safety certification and a high efficiency design, the ROAL MFA160 enables designers of medical and dental electronic equipment to embed a high power 160W AC/DC device into the end system. The MFA160 offers high efficiency >90%, conducted noise compliance to level B and a low leakage current. The series carries UL60601 and EN60950 safety approvals and complies with EN61000-3, EN61000-4 and EN55022-B EMC standards.

FEATURES

- 160W PFC power supply
- Very small form factor of 2 x 4 x 1"
- Extremely high efficiency >90% (typ)
- 5V, 12V, 24V & 48V outputs
- Universal input voltage range
- OVP and short circuit protection
- Over temperature protection
- Auxiliary fan +12V Output

MODEL NUMBER	V1	I1 CURRENT 1) CONVECTION	I1 CURRENT 2) FAN COOLED	V2	I2 CURRENT CONVECTION
MFA160-US05	5V	14A	20A	12V	0.5A
MFA160-US12	12V	8.3A	13.3A	12V	0.5A
MFA160-US24	24V	4.2A	6.66A	12V	0.5A
MFA160-US48	48V	2.1A	3.33A	12V	0.5A

Note:
 1) The combined output power of V1 and V2 must not exceed 80W for 5V model or 100W for 12V, 24V and 48V models when convection cooled.
 2) The combined output power of V1 and V2 must not exceed 100W for 5V model or 160W for 12V, 24V and 48V at 500LFM.

MCA600 Configurable Power Supplies

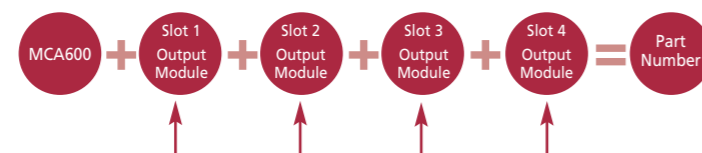
600W High Efficiency, Medical PSU



The MCA600 is a modular, user configurable power supply offering unrivalled performance and flexibility. Delivering 600W from 600g, 5 x 3" 1U package, the MCA600 is the smallest commercially available configurable medical power supply in the world. Each system consists of an input module together with up to four isolated output modules. The series carries UL60601 and EN60950 safety approvals and complies with EN61000-3, EN6100-4 and EN55022-B EMC standards.

FEATURES

- Universal input voltage
- Active power factor correction
- High power density (25W/in³)
- 5 x 3" 1U footprint
- 600W output
- Field configurable
- Medical safety approved
- High reliability
- High efficiency
- Remote voltage programming
- Remote current
- I²C control
- Parallel operation
- Accurate wired current share
- Current output signal
- N+1 redundancy compatible
- Global 5V 200mA bias supply
- RoHS-6 compliant



OUTPUT MODULE	VOLTAGE	CURRENT	VOLTAGE ADJ.	LOAD REG.	LINE REG.	OVP
A	5V	25A	1.5V to 7.5V	±50mV	±5mV	9.5V
B	12V	12.5A	4.5V to 15V	±100mV	±5mV	18V
C	24V	6.25A	9V to 30V	±150mV	±5mV	36V

PART NO CONFIGURATION: e.g: RCA600ABCC is a 600W unit with 5V, 12V and 2 x 24V output modules

► www.roallivingenergy.com ◀

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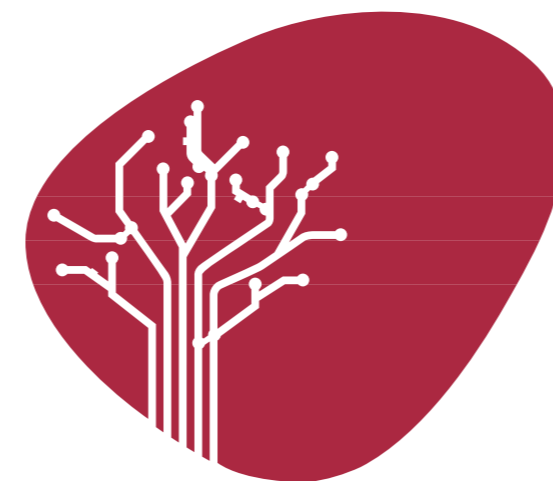
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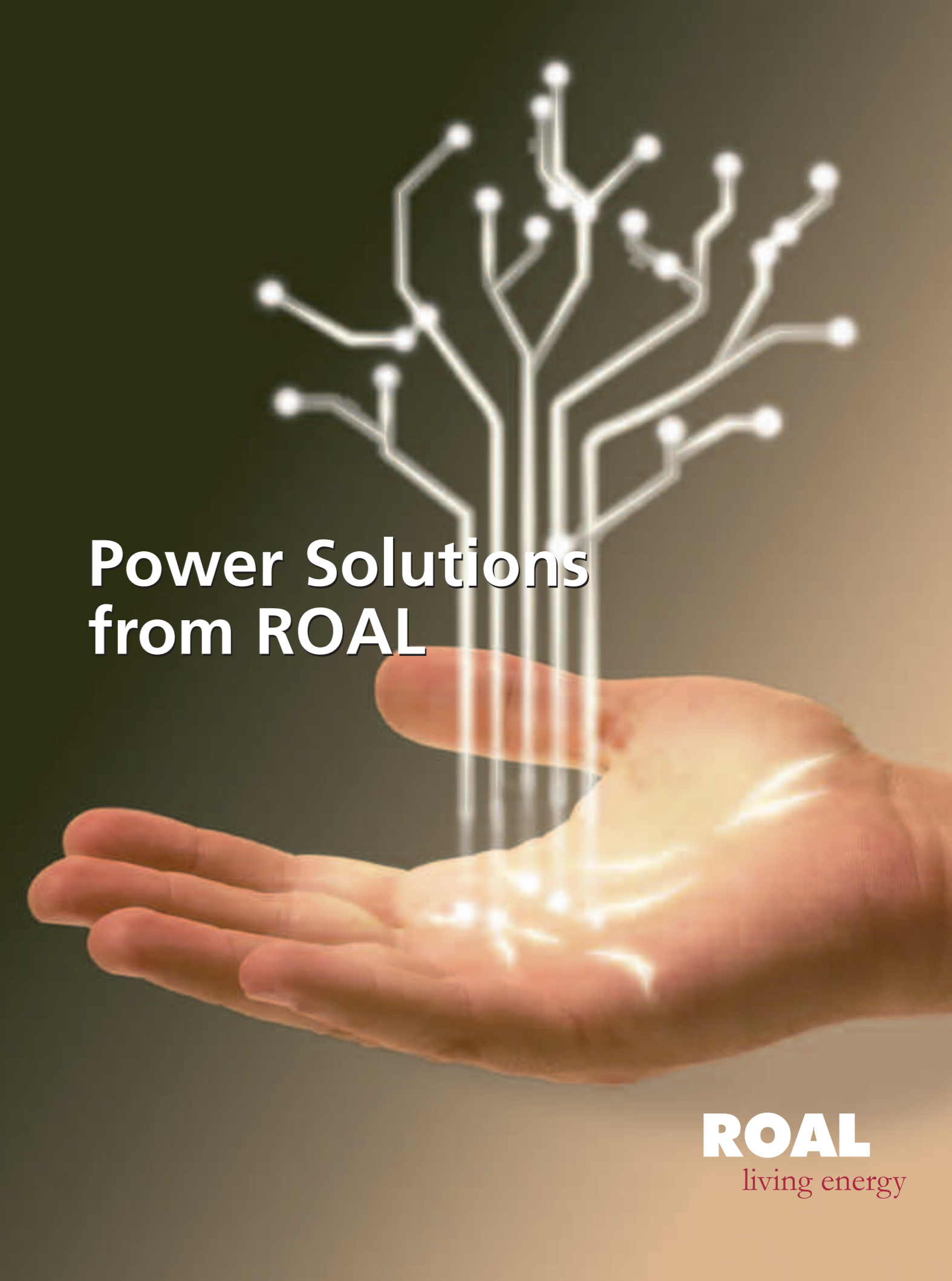
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