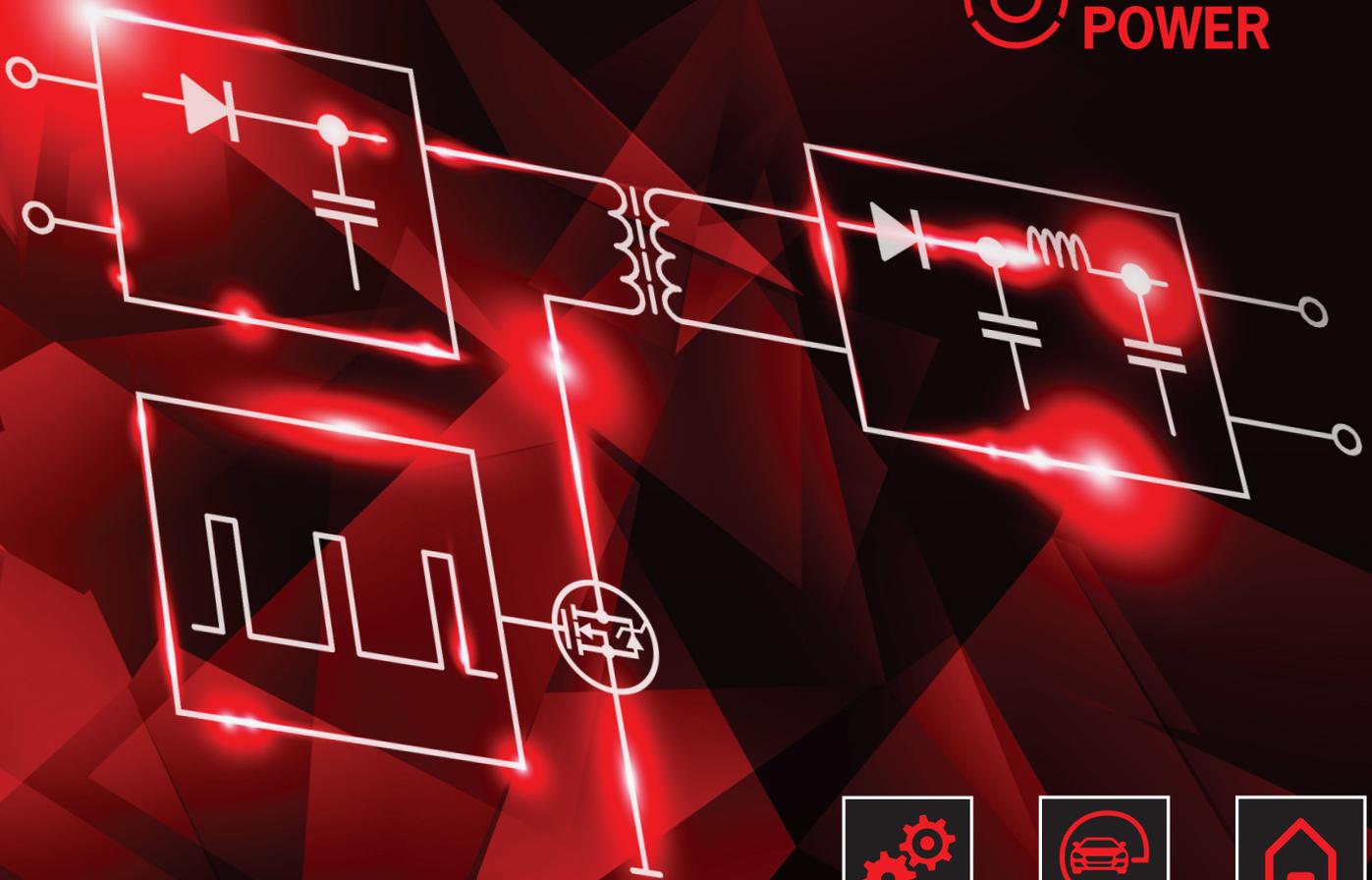


Committed to excellence

**RUTRONIK**  
**POWER**



Industrial

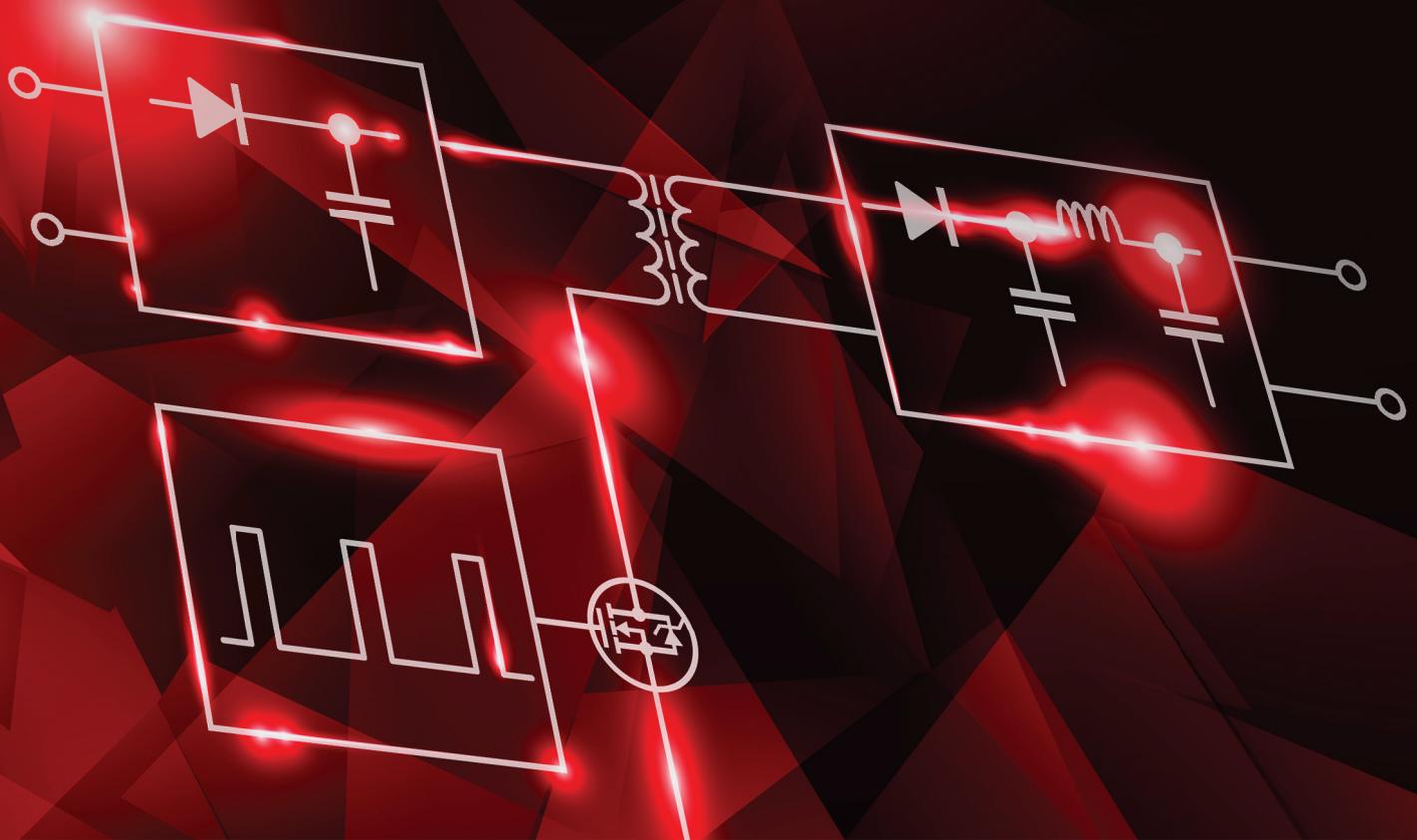


eMobility



Home  
Appliance

**EFFICIENT. ROBUST. SCALABLE.**



## Our Product Portfolio

	Semiconductors		Displays & Boards
	Passive Components		Storage Technologies
	Electromechanical Components		Wireless Technologies

## Committed to excellence

### Consult – Know-how. Built-in.

[The technical competence from Rutronik](#)

Worldwide and individual consulting on the spot: by competent sales staff, application engineers and product specialists.

### Components – Variety. Built-in.

[The product portfolio from Rutronik](#)

Wide product range of semiconductors, passive and electromechanical components, storage, displays & boards and wireless technologies for optimum coverage of your needs.

### Logistics – Reliability. Built-in.

[The delivery service from Rutronik](#)

Innovative and flexible solutions: from supply chain management to individual logistics systems.

### Quality – Security. Built-in.

[Quality management without compromise](#)

The integrated management system (IMS) encompasses quality control, environmental protection and occupational health and safety.

## Follow us

	<a href="https://www.facebook.com/rutronik">https://www.facebook.com/rutronik</a>
	<a href="https://twitter.com/Rutronik">https://twitter.com/Rutronik</a>
	<a href="https://www.youtube.com/user/Rutronik24">https://www.youtube.com/user/Rutronik24</a>
	<a href="https://rutronik-tec.com">https://rutronik-tec.com</a>

Get your Rutronik App:



# RUTRONIK POWER

## The Markets are Changing

Changing markets demand new solutions. Many markets are saturated, and products are being ever more replaceable and increasingly offering similar functionality thanks to growing standardization. Technological, regulatory and economic challenges along with growing functional complexity are a reality of numerous market segments, particularly for the industrial, automation, automotive and white goods (electronic household appliances for private and commercial use) segments.

## Trends in High-Performance Electronics

In addition to the trends in the market segments, there are also developments that are affecting the entire high-performance electronics sector. The most important of these developments are “digital power” also with the related topics of “functional safety” and “robustness”. These have direct effects on operating conditions, technology and manufacturing methods.

### Digital Power

One “power future trend” is that of “digital power”, also referred to as “intelligent digital power”. In electrical engineering, this buzzword refers to digitally controlled or monitored power supply units. In conventional switched-mode power supply units, an analog switch controls and monitors the output voltage. In digital power supply units, a microcontroller or DSP handles one or several of these functions. The control process is integrated into the controller at software level. One of the major advantages of digitally controlled switched power supply units over analog solutions is the option of being able to intervene in the control process at any time and to adapt it to the current needs of the power supply. While this increases the level of effectiveness of the digital PSU compared to an analog variant, this does also increase the amount of technical development work required, which is reflected in the costs. Digital technology aims to satisfy the needs of the now ever more complex power supply systems.

### Functional Safety and Robustness

Innovations that do not take safety into account cannot endure, which is why high functional safety and robustness are essential. In a robustness validation, for example, the reliability of electronic components is assessed by comparing the specific product requirements against the actual service life, taking into account the increase in efficiency.

The fundamental concept behind functional safety is the strategy for reducing actual risks. The goal is to create a safe system in that every reasonable measure has been taken to avoid damage to property and danger to people, ensuring traditional safety measures.

### Effects

These trends cover many industries and are directly related to operating conditions, technologies and manufacturing processes. In other words, changes to operating conditions or other techniques or manufacturing processes will also mean the involvement of different requirements imposed upon the installed components. This can be more clearly illustrated in the example of energy storage. If the conditions in which a battery is operated or if new technologies or manufacturing processes are implemented, this gives rise to new requirements imposed upon the charging strategy or the battery management system.

The operating parameters are of critical importance to the service life of an energy storage facility within an application. While developers often have no influence on the operating conditions, there is scope for optimization in the battery management system, although this scope is often used inadequately. As a result, operating conditions are changed without implementing the battery management system accordingly. In this connection, the most frequent recorded electrical failures are due to defective or discharged starter batteries. Specifically in the automotive industry, such battery failures were mainly found in luxury vehicles until the year 2000. The main cause was the growth in electronic component use and other electricity consumers in the vehicles, because even in a parked vehicle, the starter battery is constantly being discharged by the monitoring and control electronics. While the currents involved here – referred to as “standby currents” – are low, the battery can suffer from deep discharge if left dormant for long periods of time. For manufacturers, this raises the question of whether this know-how needs to be developed internally or whether the market might offer a suitable solution.



## The Answer – RUTRONIK POWER

RUTRONIK POWER is much more than a complete portfolio of power components for various voltage classes and different applications. RUTRONIK POWER also offers a selection of components for a variety of applications suitable for the respective circuit.

This means that under every position in the block diagram, there are products from multiple selected suppliers in the respective product segments. RUTRONIK accommodates as broad a range of requirements as possible here – whether low-cost or high-performance. For example, for a motor control circuit in the power range of 2KW, RUTRONIK offers appropriately designed IGBT modules, gate drivers as well as microcontrollers, driver modules, heatsinks and plug connectors.

For power semiconductors, RUTRONIK caters for everything today, from discrete to high-integration components, power ICs and power modules. As a broadline distributor, RUTRONIK offers all other components in addition to its power semiconductors, not only active but also electromechanical and passive components. The spectrum ranges from simple plug connectors to supercaps. This covers around 98% of the PCB. This also applies to other product segments such as high-current connectors supporting up to 1,000A and supercaps supporting up to 3,400 farad/cell.

But RUTRONIK POWER is much more than a broad selection of components. The decisive difference lies in RUTRONIK compiling relevant expertise, not only for individual products and technologies, but also on their compatibility with one another. This helps to guarantee extensive support – with development at application level by professionally qualified Field Application Engineers (FAEs), Product Managers at component level and supply at the end of a product lifecycle lasting several years. FAEs are particularly important for technical customer support. RUTRONIK's experts advise and support activities ranging from the design-in process, the product evaluation and application development, the strategic marketing of product groups for which theoretical assistance is necessary, down to the development of logistics solutions with comprehensive system solutions that are optimized to the customer's needs. RUTRONIK POWER focuses less on individual components and more on the overall solution.

RUTRONIK gives absolute priority not only to reducing the prevailing complexity of the offer-range but also to providing support at the product development stage at application level with relevant technical expertise and vertical system solutions based on suitable components.

## The Advantages

RUTRONIK POWER serves as a single source for all components, from individual components to a basis for operational applications. But RUTRONIK POWER does not compete with its customers with its own components and applications, because the extensive range is combined into complete, vertically integrated system solutions. The product portfolio consists of decided manufacturers who are leaders in their respective fields and with some of whom the company has worked for decades. This ensures an extensive and consistent transfer of knowledge from the very start, both between the supplier and Rutronik as well as a collective exchange of expertise with the customer, for example concerning seminars, webinars and professional conferences.

The bundling of expertise and experience in the RUTRONIK POWER team guarantees that the customer receives extensive advice in respect of the overall application, the market and its requirements. RUTRONIK's experts have a profound understanding of all relevant factors, with specialists from a variety of fields supporting each other, enabling the benefit of synergies across teams to be utilized more effectively, because market segments overlap in numerous aspects – and customers benefit from such coordinated consulting. This understanding of not only the customer's requirements but also the technical options and the market conditions enables a precisely tailored solution to be developed – not off the shelf, but customized specifically to the customer's needs. The RUTRONIK POWER team consists of specialists from the active power semiconductors, passive, electromechanical and embedded segments, utilizing the company's extensive product portfolio.

### ACTIVE

- Power Semiconductors

### PASSIVE

- Resistors
- Inductivities
- Capacitors

### EMECH

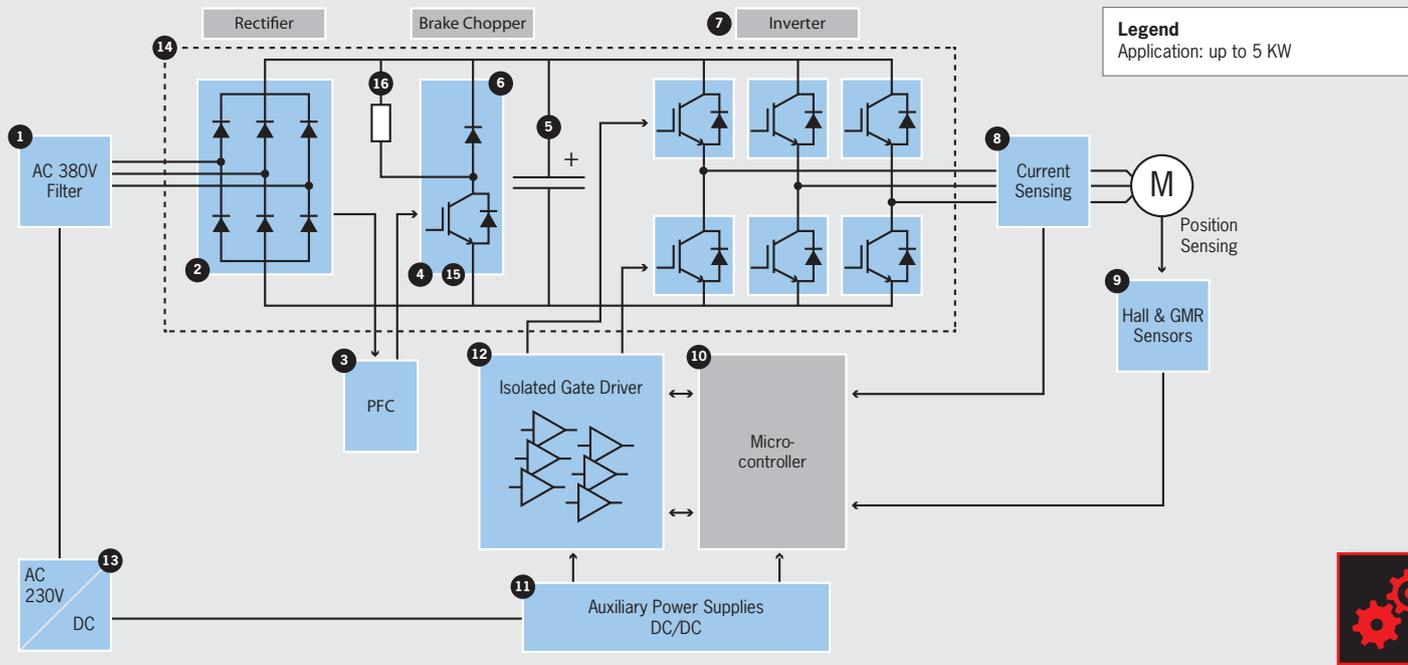
- Connectors & Cables
- Relays, batteries, fuses, switches, heat management

### EMBEDDED

- Power Supplies

Working with the customer and with its suppliers, RUTRONIK develops forward-looking approaches, thereby contributing to research and development at application level. This is why RUTRONIK provides tools for certified applications that stand out not only with their extraordinary functionality, quality and robustness but also with their energy efficiency.

And this is exactly what RUTRONIK POWER is there for.



### Industrial Application – Frequency Inverter

No	Type	Active								Passive								
		Diodes	Infineon	Littelfuse	Recom	Rohm	STMicro-electronics	Vishay	AVX	KEKO Varicon	Littelfuse	KRAH	Murata	Pulse	Rubycon	Sumida	Vishay	WIMA
2	Rectifier (Bridge)		X					X										
	AC/DC PWM-PFC Controller							X										
3	Diode	X	X					X	X									
	MOSFet		X					X	X	X								
	Rectifier	X		X				X	X									
4	IGBT Module (Brake Chopper)		X															
6	Diode	X	X					X										
	Rectifier	X							X	X								
	IGBT		X						X									
7	IGBT Module		X	X					X	X								
	MOSFet		X						X	X	X							
8	Sensor	X	X					X										
	Hall Switch	X	X					X										
	Magnetic Position Sensor	X	X					X										
10	Microcontroller		X						X									
	DC/DC Converter (Module)					X												
	DC/DC Switching Converter	X	X					X	X									
11	Diode	X	X					X	X									
	LDO	X	X					X	X									
	MOSFet	X	X					X	X	X								
	Rectifier	X		X				X	X	X								
	Gate Driver	X	X					X	X									
12	Gate Driver (Isolated)		X					X	X									
	Motor Control IC		X					X	X									
	AC/DC Converter Module					X												
13	Diode (Protection)	X	X	X				X	X	X								
	Diode (Schottky)	X		X				X	X	X								
	IGBT Module		X	X														
14	IPM		X					X	X									
	TIM		X															
15	IGBT		X						X									

No	Type	Active								Passive													
		AVX	KEKO Varicon	Littelfuse	KRAH	Murata	Pulse	Rubycon	Sumida	Vishay	WIMA	AVX	KEKO Varicon	Littelfuse	KRAH	Murata	Pulse	Rubycon	Sumida	Vishay	WIMA		
1	Filter					X	X																
	Resistor (liquid-cooled)				X																		
	Resistor (wire-wound)				X																		
2	Varistor	X	X	X																			
	Capacitor (Foil)																						X
	Capacitor (Electrolyte)																						
3	Capacitor (Foil)																						X
	Inductor					X	X			X													
5	Capacitor (Electrolyte)									X													
	Capacitor (Foil)									X												X	X
6	Resistor																					X	

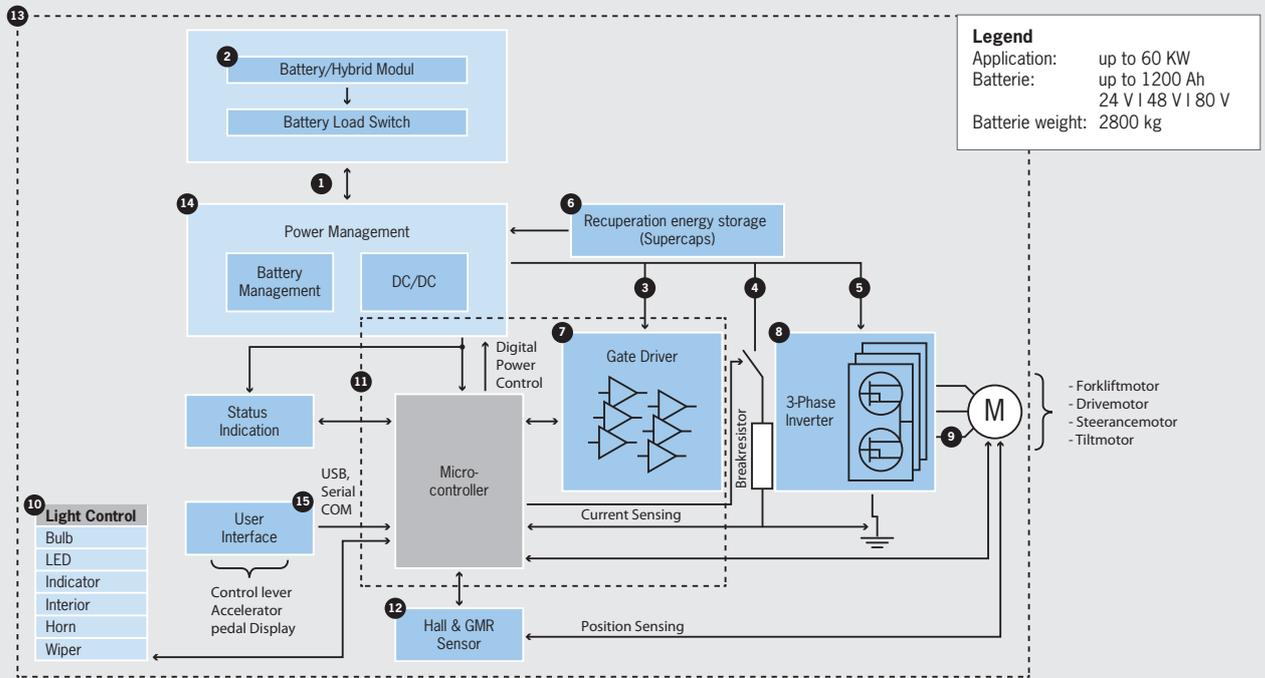
No	Type	Passive								E-Mech								
		AVX	KEKO Varicon	Littelfuse	KRAH	Murata	Pulse	Rubycon	Sumida	Vishay	WIMA	Amphenol FCI	ASSMANN WSW	JAE	Littelfuse	Omron		
7	Inductor					X												
	Power Transformer						X			X								
	Resistor										X							
8	Current Transformer					X	X			X								
	Capacitor (Foil)																	X
9	Varistor	X	X	X														
	Capacitor (Foil)																	X
10	Varistor	X	X	X														
11	Capacitor (Foil)																	X
12	Resistor (wire-wound)					X												
13	Capacitor (Foil)																	X
16	Resistor (liquid-cooled)					X												
	Resistor (wire-wound)					X												

No	Type	E-Mech										
		Amphenol FCI	ASSMANN WSW	JAE	Littelfuse	Omron	Amphenol FCI	ASSMANN WSW	JAE	Littelfuse	Omron	
1	Fuse					X						
2	Heatsink (Extruded profile)		X									
3	Heatsink (Extruded profile)		X									
4	Heatsink (Extruded profile)		X									
5	Heatsink (Extruded profile)		X									
6	Heatsink (Extruded profile)		X									
	Heatsink		X									
	Heatsink (Extruded profile)		X									
	Heatsink (SMD and copper)		X									
	Heatsink (Stamped finger shaped)		X									
	Connector	X										
	Heatsink (Cross cut CPU)		X									
8	Heatsink (Round pin fin CPU)		X									
	Heatsink (Stamped CPU)		X									
	Connector			X								
	Heatsink (Cross cut CPU)		X									
	Heatsink (Round pin fin CPU)		X									
	Heatsink (Stamped CPU)		X									
9	Connector			X								
	Heatsink (Cross cut CPU)		X									
	Heatsink (Round pin fin CPU)		X									
	Heatsink (Stamped CPU)		X									
10	Heatsink (Cross cut CPU)		X									
	Heatsink (Round pin fin CPU)		X									
	Heatsink (SMD and copper)		X									
	Heatsink (Stamped CPU)		X									
11	Heatsink (Extruded profile)		X									
13	Heatsink (Extruded profile)		X									
14	Relay											X

Embedded		No	Type	FSP
		13	Power Supply	X



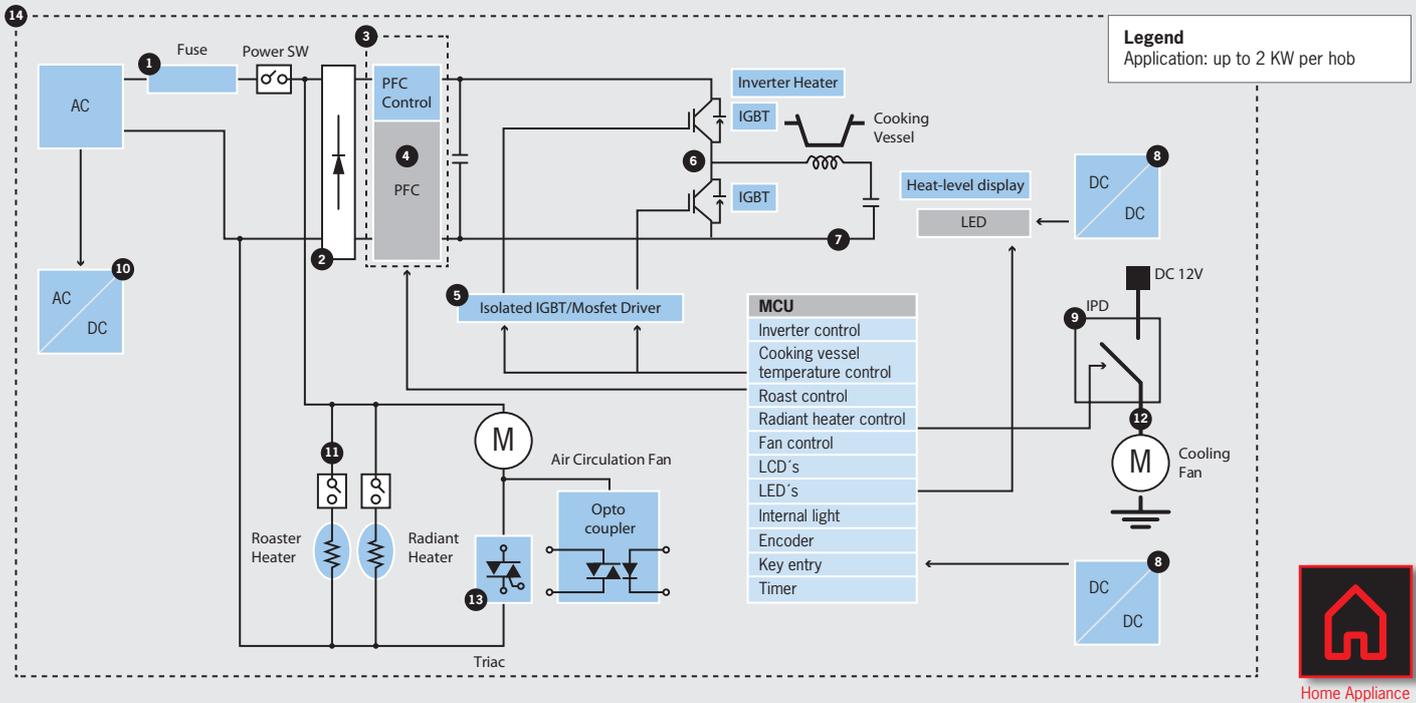
## eMobility Application – Forklift Vehicle

No	Type	Diodes	Infineon	Littelfuse	Rohm	STMicro-electronics	Vishay
2	DC-DC Converter		X			X	
	MOSFet (N-Channel)	X	X		X	X	X
	Gate Driver		X		X		
7	Gate Driver (Isolated)		X		X	X	
	Motor Control IC		X		X	X	
	IGBT		X			X	
8	IGBT (Modul)		X				
	MOSFet (N-Channel)	X	X		X	X	X
9	Diode (Protection)	X		X	X	X	X
	LED Driver	X	X		X	X	
	MOSFet (Protected)	X	X		X	X	
	Transistor (Bipolar)	X			X		
	Transistor (Digital)	X			X		
11	Motor Control IC (Embedded Power)		X		X		
12	Sensor	X	X				
13	Diode (Protection)	X		X	X	X	X
14	PWM/PFC Controller		X		X	X	
15	Diode (Protection)	X		X	X	X	X

No	Type	Amphenol FCI	ASSMANN WSW	JAE	Littelfuse	Omron
1	Connector	X				
2	Heatsink (Extruded profile)		X			
	Switch				X	
3	Heatsink (Extruded profile)		X			
	Relay					X
4	Heatsink		X			
	Heatsink (SMD and copper)		X			
5	Connector	X		X		
	Heatsink (Extruded profile)		X			
6	Connector	X		X		
	Heatsink (Extruded profile)		X			
	Heatsink (Round pin fin CPU)		X			
	Heatsink (SMD and copper)		X			
	Heatsink (Stamped finger shaped)		X			
8	Heatsink (Extruded profile)		X			
9	Connector	X		X		
	Heatsink (Round pin fin CPU)		X			
	Heatsink (SMD and copper)		X			
	Heatsink (Stamped finger shaped)		X			
11	Connector			X		

No	Type	AVX	Keko Varicon	Littelfuse	KRAH	Murata	Nesscap	Pulse	Rubycon	Sumida	Vishay	WIMA
1	Resistor										X	
	Varistor	X	X	X								
2	Capacitor (Foil)										X	X
	Resistor										X	
3	Varistor	X	X	X								
4	Varistor	X	X	X								
	Resistor										X	
5	Varistor	X	X	X								
6	Capacitor (EDLC)						X					X
	Varistor	X	X	X								
7	MLCC	X				X					X	
	Resistor				X							
	Capacitor (Electrolyte)								X			
8	Capacitor (Foil)								X		X	X
	MLCC	X				X					X	
	Resistor										X	
9	Varistor	X	X	X								
10	Capacitor (Foil)										X	
	Varistor	X	X	X								
	Filter					X		X		X		
13	Resistor										X	
	Transformer					X		X		X		

Embedded	No	Type	FSP
		13	Power Supply



## Home Appliance Application – Induction Hob

No	Type	Diodes	Infineon	Littelfuse	Recom	Rohm	STMicro-electronics	Vishay
2	Rectifier (Bridge)							X
	Diode	X	X			X	X	
3	IGBT and PFC Module							X
	Rectifier	X		X			X	X
4	MOSFet		X			X	X	X
5	Gate Driver (Isolated)		X			X	X	
6	IGBT		X				X	
	DC/DC Converter Module				X			
	LDO	X	X			X	X	
8	Regulator (Boost)	X				X	X	
	Regulator (Buck)	X				X	X	
	Regulator (Buck-Boost)	X				X		
9	MOSFet (Protected)	X	X			X	X	
	Slew Rate Controlled Load Switch	X						
	AC/DC Converter		X			X	X	
10	AC/DC Converter Module				X			
	Rectifier	X		X			X	X
13	Triac			X			X	
14	Diode (Protection)	X	X	X		X	X	X
	Diode (Schottky)	X		X		X	X	X

No	Type	AVX	KEKO Varicon	Littelfuse	KRAH	Murata	Pulse	Rubycon	Sumida	Vishay	WIMA
1	Varistor	X	X	X							
2	Varistor	X	X	X							
	Capacitor (Foil)							X			X
3	Capacitor (Electrolyte)									X	X
	Inductors					X	X		X	X	
5	Varistor	X	X	X							
	Resistor									X	
7	Varistor	X	X	X							
	Capacitor (Foil)									X	X
8	Capacitor (Electrolyte)							X			
	Capacitor (Foil)									X	X
9	Varistor	X	X	X							
	Capacitor (Electrolyte)		X	X				X			
10	Capacitor (Foil)										X
	Varistor	X	X	X							
12	Resistor				X						
14	Capacitor (Foil)									X	

No	Type	ASSMANN WSW	AVX	Littelfuse	Omron
1	Fuse			X	
	Heatsink (Extruded profile)	X			
2	Heatsink (Extruded profile)	X			
	Heatsink	X			
3	Heatsink (SMD and copper)	X			
	Heatsinks (Extruded in standard length)	X			
	Heatsink (Cross cut CPU)	X			
5	Heatsink (Stamped CPU)	X			
	Heatsinks (Round pin fin CPU)	X			
6	Connector		X		
7	Heatsinks (Attachable)	X			
8	Heatsink (Extruded profile with solder pins)	X			
9	Heatsink (Extruded profile)	X			
10	Heatsink (Extruded profile)	X			
	Connector		X		
11	Heatsinks (Attachable)	X			
	Relay				X
12	Connector		X		
<b>Embedded</b>		No	Type	<b>FSP</b>	
14	Power Supply			X	



## Germany – Headquarters

Rutronik Elektronische Bauelemente GmbH | Industriestraße 2 | 75228 Ispringen / Pforzheim  
Tel. +49 (0) 7231 801-0 | Fax +49 (0) 7231 82282 | E-Mail: [rutronik@rutronik.com](mailto:rutronik@rutronik.com) | [www.rutronik.com](http://www.rutronik.com)**Berlin**  
Justus-von-Liebig-Straße 7  
12489 Berlin  
Tel. +49 30 8 09 27 16-0**Frankfurt**  
Frankfurter Straße 151 c  
63303 Dreieich  
Tel. +49 6103 2 70 03-0**Hannover**  
Rendsburger Straße 32  
30659 Hannover  
Tel. +49 511 228507-0**Nürnberg**  
Südwestpark 10/12  
90449 Nürnberg  
Tel. +49 911 688 68-0**Dresden**  
Radeburger Straße 172  
01109 Dresden  
Tel. +49 351 20 53 30-0**Freiburg**  
Basler Landstraße 8  
79111 Freiburg  
Tel. +49 761 61 16 77-0**Mannheim**  
Amselstraße 33  
68307 Mannheim  
Tel. +49 621 76 21 26-0**Ostwestfalen**  
Brockweg 133  
33332 Gütersloh  
Tel. +49 5241 2 32 71-0**Erfurt**  
Flughafenstraße 4  
99092 Erfurt  
Tel. +49 361 2 28 36-30**Hamburg**  
Neue Gröningerstraße 10  
20457 Hamburg  
Tel. +49 40 3 59 60 06-20**München**  
Landsberger Straße 392  
81241 München  
Tel. +49 89 88 99 91-0**Ratingen**  
Gothaer Straße 2  
40880 Ratingen  
Tel. +49 2102 99 00-0RUSOL GmbH & Co. KG  
Industriestraße 2  
75228 Ispringen  
Tel. +49 (0) 7231 801-2910  
[rusol@rusol.com](http://rusol@rusol.com)  
[www.rusol.com](http://www.rusol.com)

## European branches:

**Austria**  
Rutronik Elektronische  
Bauelemente Ges. m. b. H.  
Durisolstraße 11  
4600 Wels  
Tel. +43 7242 4 49 01 **France**  
Rutronik S.A.S  
6, Mail de l'Europe  
78170 La Celle St Cloud  
Tel. +33 1 30 08 33 00  
[rutronik\\_sas@rutronik.com](mailto:rutronik_sas@rutronik.com) **Netherlands**  
Rutronik Elektronische  
Bauelemente GmbH  
Papland 4a  
4206 CL Gorinchem  
Tel. +31 183 64 60-50 **Slovakia**  
Rutronik Elektronische  
Bauelemente GmbH, o.z.  
Lazovná 11  
97401 Banská Bystrica  
Tel. +421 48 472 23-00 **Belgium**  
Rutronik Belgium BVBA  
Keppekouter 1  
Ninovesteenweg 198  
9320 Erembodegem-Aalst  
Tel. +32 53 60 65 90**Bordeaux**  
Tel. +33 5 57 26 40 00  
**Grenoble**  
Tel. +33 4 76 61 00 90  
**Le Mans**  
Tel. +33 2 43 78 16 97  
**Lyon**  
Tel. +33 4 72 76 80 00 **Norway**  
Rutronik Elektronische  
Bauelemente GmbH  
Olav Helsetts vei 6  
0694 Oslo  
Tel. +47 22 76 79 20 **Slovenia**  
Rutronik Elektronische  
Bauelemente GmbH  
Motnica 5, 1236 Trzin  
Tel. +386 1 5 61 09 80 **Bulgaria**  
Rutronik Elektronische  
Bauelemente GmbH  
Blvd. Nikola Vapzarov 35  
Business Center Lozenec  
Floor 1, Office N° 1B  
1407 Sofia  
Tel. +35 92 974 86 46**Poitiers**  
Tel. +33 5 49 52 88 88  
**Rennes**  
Tel. +33 2 23 45 14 40  
**Strasbourg**  
Tel. +33 3 88 78 12 12 **Poland**  
Rutronik Polska Sp. z o.o.  
ul. Bojkowska 37  
44-101 Gliwice  
Tel. +48 32 461 20 00  
**Gdynia**  
ul. Batorego 28-32  
81-366 Gdynia  
Tel. +48 58 7 83 20-20 **Spain**  
Rutronik España S.L.  
**Barcelona**  
C/ Marqués de Sentmenat 54 - 58,  
3a Planta - 1o, 08029 Barcelona  
Tel. +34 93 4 44 24 12 **Czech Republic**  
Rutronik Elektronische  
Bauelemente CZ s.r.o. **Hungary**  
Rutronik Magyarország Kft.  
Aliz utca 1  
1117 Budapest  
Tel. +36 1 371 06 66**Warsaw**  
ul. Broniewskiego 3  
01-785 Warszawa  
Tel. +48 22 462 70-50**Madrid**  
Ctra. Canillas 134 - 1a Planta - 9B  
28043 Madrid  
Tel. +34 91 3 00 55 28**Brno**  
Slavičkova 1a  
63800 Brno  
Tel. +420 5 4 54 24-681 **Italy**  
Rutronik Italia S.r.l.  
21, Via Caldera  
Centro Direzionale S.Siro  
20153 Milano (MI)  
Tel. +39 02 4 09 51-1  
[italia\\_MI@rutronik.com](mailto:italia_MI@rutronik.com) **Portugal**  
Rutronik Elektronische  
Bauelemente GmbH  
Av. General Humberto Delgado  
Porta 8, 1º Andar, Sala R  
4760-012 V. N. Famalicão  
Tel. +351 252 3 12-336**San Sebastián**  
Pº Ubarburu, 71 - 1ºE  
20115 Astigarraga/Guipuzcoa  
Tel. +34 943 40 45 28**Prague**  
Na Pankraci 1638/43  
140 00 Praha 4  
Tel. +420 2 33 34 31 20**Ancona**  
Tel. +39 071 2 91 62 18  
**Bologna**  
Tel. +39 051 6 46 32 00  
**Florence**  
Tel. +39 055 8 82 73 32 **Romania**  
Rutronik Elektronische  
Bauelemente GmbH  
Martin Luther Str. no. 2, 3rd floor  
300054 Timișoara  
Tel. +40 25 64 01 240 **Sweden**  
Rutronik Nordic AB  
Kista Science Tower  
Färögatan 33  
16451 Kista  
Tel. +46 8 50 55 49 00 **Denmark**  
Rutronik Elektronische  
Bauelemente GmbH  
Herstedøstervej 27-29  
2620 Albertslund  
Tel. +45 7020 19 63**Padua**  
Tel. +39 049 8 69 78 00  
**Rome**  
Tel. +39 06 228 782-1  
**Turin**  
Tel. +39 011 9 02 20 00**București**  
Tel. +40 314 25 38 39 **Switzerland**  
Rutronik Elektronische  
Bauelemente AG  
**Volketswil**  
Brunnenstrasse 1  
8604 Volketswil  
Tel. +41 44 9 47 37 37 **Estonia**  
Rutronik Elektronische  
Bauelemente GmbH  
Vaksali 17A  
50410 Tartu  
Tel. +372 7370951 **Lithuania**  
Rutronik Elektronische  
Bauelemente GmbH  
Raudondvario pl.76  
47182 Kaunas  
Tel. +370 37 26 17 80 **Russia**  
Rutronik  
Beteiligungsgesellschaft mbH  
Levoberejnaya sreet 12  
Hotel Soyuz, office 314  
125445 Moscow  
Tel. +7(499) 963 31 84**Yverdon-les-Bains**  
Rue Galilée 15,  
1400 Yverdon-les-Bains  
Tel. +41 24 4 23 91 40 **Turkey**  
in foundation  
Tel. +49 7231 801-1751  
[rutronik\\_tr@rutronik.com](mailto:rutronik_tr@rutronik.com) **Finland**  
Rutronik Elektronische  
Bauelemente GmbH  
Malminkaari 5  
00700 Helsinki  
Tel. +358 9 32 91 22 00 **Serbia**  
Rutronik Elektronische  
Bauelemente GmbH  
YUBC Bul. Mihajla  
Pupina 10z/IV, 11070 Beograd  
Tel. +381 11 311 33 66-3 **United Kingdom & Ireland**  
Rutronik UK Ltd.  
1-3 The Courtyard, Calvin Street  
The Valley, Bolton  
BL1 8PB, Lancashire, UK  
Tel. +44 1204 363311

## International branches:

**USA**  
Rutronik Inc.  
3 Summit Park Drive, Suite 535  
75228 Ispringen  
Tel.: +1 216 328 8900 **Mexico**  
Rutronik Mexico S.A. DE C.V.  
Av. Armando Birlaing Shaffler  
No. 2001 Piso 8 A-II  
Corp. Central Park Torre 1, Centro Sur  
76090 QUERETARO, Qro.  
Tel. +52 442 103 1800 **China**  
Rutronik Electronics (Shenzhen)  
Co., Ltd**Shenzhen**  
Room 807, Excellence Bldg.,  
No. 98, Fuhua 1 Road  
Futian Distr., Shenzhen  
Tel. +86 755 8240 7106**Shanghai**  
Room 1710, Dongchen Tower  
No. 60, Mudan Road  
Pudong New Distr., Shanghai  
Tel. +86 216 8869 910**Chengdu**  
Room no. 407, 4F  
No. 31 Zong Fu Street  
610016 Chengdu  
Tel. +86 28 8651 2214 **Hong Kong**  
Rutronik Electronics Asia HK Ltd.**Hong Kong**  
54/F, Hopewell Centre  
183 Queens Road East, Wan Chai  
Hong Kong  
Tel. +852 5337 0119 **Taiwan**  
Rutronik Electronics Asia HK Ltd.  
**Taipei** (Taiwan representative office)  
8F, No. 367, Fuxing N. Rd.,  
Songshan Dist, Taipei City,  
10543 Taiwan  
Tel. +886 (2) 2175 2936 **Thailand**  
Rutronik Elektronische  
Bauelemente GmbH  
2/1 Soi Rom Klao 25/2  
Rom Klao Road, Khlongsamprawet  
Ladkrabang, 10520 Bangkok  
Tel. +66 2 737 6423