Technical Data Sheet

RIDA750-SW / Sine Wave Inverter

750W / Wide Range

DC/AC Inverter

FEATURES

- Sine Wave Output Voltage
- Selectable Output Frequency: 50/60Hz
- High Input-Output Isolation 3000Vrms
- Remote Inhibit
- Input and Output Alarm
- Railway Version EN50155, RIA12 (optional)
- Fire and Smoke: EN45545-2 Approved



Dimensions 130.0 x 270.0 x 50.0 mm (5.12" x 10.63" x 1.97")

APPLICATION



SAFETY & EMC

- The inverter follows LVD Directive 2014/35/EU and EMC Directive 2014/30/EU.
- The inverter is CE compliant. EMC radiation must be evaluated and tested in the complete system since mounting and wiring have a large influence on radiation behaviour.

DESCRIPTION

The RIDA750-SW series is a 750W pure sinewave DC-AC inverter designed for industrial and railway applications. It provides galvanic isolation, high reliability, and configurable output frequency (50/60Hz). The unit supports a wide input voltage range depending on the model (12–110 VDC) and delivers either 120VAC or 230VAC output with low distortion (THD <2%). Engineered for demanding environments, it features over-temperature, over-current, overload, and reverse-polarity protection, as well as remote inhibit control and isolated alarm contacts. The robust aluminium enclosure integrates forced-air cooling and complies with EN50155, EN45545-2, EN61373, and EMC directives. With a compact form factor (292×130×50 mm), the inverter provides up to 750VA, maintains high efficiency (up to 89%), and supports installation flexibility through multiple mounting accessories. It is suitable for applications requiring stable AC power from DC networks, especially in rolling stock and harsh industrial systems.

MODELS

Part Number	Input Voltage nom. [VDC]	Input Current Max. [A]	Output Voltage nom. [VAC]	Output Current Max. [A]	Output Power Max [W]
RIDA750-12-120-SW	12	56.4A	120	3.75	450
RIDA750-24-120-SW	24	51.9A		6.26	750
RIDA750-36-120-SW	36	34.5A		6.26	750
RIDA750-48-120-SW	48	25.4A		6.26	750
RIDA750-72-120-SW	72	16.9A		6.26	750
RIDA750-110-120-SW	110	11.1A		6.26	750
RIDA750-12-230-SW	12	55.7A	230	2.0	450
RIDA750-24-230-SW	24	51.9A		3.26	750
RIDA750-36-230-SW	36	34.5A		3.26	750
RIDA750-48-230-SW	48	25.4A		3.26	750
RIDA750-72-230-SW	72	16.9A		3.26	750
RIDA750-110-230-SW	110	11.1A		3.26	750

Several references subject to special MOQs and lead times

RIDA750- - -SW-

Nominal power
Nominal input
Nominal output

PRJ Adjusted al low voltage: 110/220Vac
PRI Reverse Inhibit
PRB Industrial version
PRT Railway version according to EN50155
PRU Railway version according to EN50155 and RIA12*

*RIA12 version only available for RIDA750-24-230-SW-PRU and RIDA750-110-230-SW-PRU

Accessories must be ordered in a separate order line

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RIDA750-SW / Sine Wave Inverter

750W / Wide Range

DC/AC Inverter

BASIC CHARACTERISTICS				
Parameter	**Conditions**	**Min.**	**Typ.**	**Max.**
INPUT				
Rated Input Voltage	RIDA750-12-120-SW - RIDA750-12-230-SW		12VDC	
	RIDA750-24-120-SW - RIDA750-24-230-SW		24VDC	
	RIDA750-36-120-SW - RIDA750-36-230-SW		36VDC	
	RIDA750-48-120-SW - RIDA750-48-230-SW		48VDC	
	RIDA750-72-120-SW - RIDA750-72-230-SW		72VDC	
	RIDA750-110-120-SW - RIDA750-110-230-SW		110VDC	
Input Voltage Range	RIDA750-12-120-SW - RIDA750-12-230-SW	9.5VDC[1]		15.0VDC
	RIDA750-24-120-SW - RIDA750-24-230-SW	16.8VDC		30.0VDC
	RIDA750-36-120-SW - RIDA750-36-230-SW	25.0VDC		45.0VDC
	RIDA750-48-120-SW - RIDA750-48-230-SW	33.6VDC		60.0VDC
	RIDA750-72-120-SW - RIDA750-72-230-SW	50.4VDC		90.0VDC
	RIDA750-110-120-SW - RIDA750-110-230-SW	77.0VDC		138.0VDC
Input Current (Imin with No Load)	RIDA750-12-120-SW - RIDA750-12-230-SW	0.80A		55.7A
	RIDA750-24-120-SW - RIDA750-24-230-SW	0.46A		51.9A
	RIDA750-36-120-SW - RIDA750-36-230-SW	0.36A		34.5A
	RIDA750-48-120-SW - RIDA750-48-230-SW	0.27A		25.4A
	RIDA750-72-120-SW - RIDA750-72-230-SW	0.17A		16.9A
	RIDA750-110-120-SW - RIDA750-110-230-SW	0.12A		11.1A
Max Input Ripple	Vrms, 100Hz			5%
Efficiency	RIDA750-12-120-SW		84%	
	RIDA750-24-120-SW		86%	
	RIDA750-36-120-SW		87%	
	RIDA750-48-120-SW		87%	
	RIDA750-72-120-SW		87%	
	RIDA750-110-120-SW		88%	
	RIDA750-12-230-SW		85%	
	RIDA750-24-230-SW		86%	
	RIDA750-36-230-SW		87%	
	RIDA750-48-230-SW		88%	
	RIDA750-72-230-SW		88%	
	RIDA750-110-230-SW		89%	
OUTPUT				
Rated Output Voltage	RIDA750-12-120-SW - RIDA750-24-120-SW - RIDA750-36-120-SW – RIDA750-48-120-SW - RIDA750-72-120-SW - RIDA750-110-120-SW		120VAC	
	RIDA750-12-230-SW - RIDA750-24-230-SW - RIDA750-36-230-SW - RIDA750-48-230-SW - RIDA750-72-230-SW - RIDA750-110-230-SW		230VAC	
Output Voltage Range	RIDA750-12-120-SW - RIDA750-24-120-SW - RIDA750-36-120-SW – RIDA750-48-120-SW - RIDA750-72-120-SW - RIDA750-110-120-SW	110VAC		120VAC
	RIDA750-12-230-SW - RIDA750-24-230-SW - RIDA750-36-230-SW - RIDA750-48-230-SW - RIDA750-72-230-SW - RIDA750-110-230-SW	220VAC		230VAC
Output Voltage Adjustment Range	Default	120VAC		230VAC
	PRJ option	110VAC		220VAC
Output Current Range	RIDA750-12-230-SW		2.0A	
	RIDA750-24-230-SW – RIDA750-36-230-SW – RIDA750-48-230-SW – RIDA750-72-230-SW – RIDA750-110-230-SW		3.26A	
	RIDA750-12-120-SW		3.75A	
	RIDA750-24-120-SW - RIDA750-36-120-SW – RIDA750-48-120-SW - RIDA750-72-120-SW – RIDA750-110-120-SW		6.26A	
Output Current Peak 10ms	RIDA750-12-230-SW - RIDA750-24-230-SW - RIDA750-36-230-SW - RIDA750-48-230-SW - RIDA750-72-230-SW - RIDA750-110-230-SW			10A
	RIDA750-12-120-SW - RIDA750-24-120-SW - RIDA750-36-120-SW – RIDA750-48-120-SW - RIDA750-72-120-SW - RIDA750-110-120-SW			16A

NOTE [1]: Start up voltage ≤ 10.2V. Undervoltage shutdown < 9.5V

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Parameter	Conditions	Min.	Typ.	Max.
Max. Output Power	RIDA750-12-120-SW			450W 750VA
	RIDA750-12-230-SW			450W 750VA
	RIDA750-24-120-SW - RIDA750-36-120-SW – RIDA750-48-120-SW - RIDA750-72-120-SW - RIDA750-110-120-SW - RIDA750-24-230-SW - RIDA750-36-230-SW - RIDA750-48-230-SW - RIDA750-72-230-SW - RIDA750-110-230-SW			750W 750VA
Output Rated Frequency		50Hz		60Hz
Output Frequency Range		49.75Hz		60.25Hz
Load regulation			4%	
Line Regulation	ΔVin -20…+25%		0.4%	
	ΔVin -30…+25%		10%	
	ΔVin -10…+25% for 12Vin Models		1%	
	ΔVin -20…+25% for 12Vin Models		10%	
Output Wave Distortion THD	16 samples average			2%
Output Voltage HF Ripple				20Vpp

ENVIRONMENTAL CONDITIONS

Parameter	Conditions	Min.	Typ.	Max.
Operating Temperature Range	At Full Power	-40°C		+55°C
	At 62.5% load	-40°C		+70°C
Storage Temperature Range		-40°C		+85°C
Humidity	No condensing	5%		95%
Storage and Transportation	No condensing	5%		95%
Operating Altitude	Above sea level			1800m
Cooling	Forced ventilation with variable speed internal fan			
MTBF	IEC 61709, SN29500 @40°C	200000h		

SAFETY AND PROTECTIVE FUNCTIONS

Parameter	Conditions	Min.	Typ.	Max.
Dielectrics withstand voltage (50Hz, 1 min)	Input - Output		3000Vrms	
	Input – P.E.		1500Vrms	
Isolation (50Hz, 1 min)	Output – P.E.		1500Vrms	
Over-current protection (OCP)	Internal fuse for 36V, 48V, 72V and 110V input models			
Over-temperature protection (OTP)	Shutdown with automatic recovery			
Output overloads	< 10A		Linear	
Output overloads	> 10A		Triggered	

CONTROL

Parameter	Conditions
Remote inhibit input	OFF Applying 4÷24VDC, Impedance > 3.3kΩ
Input and output alarm	Isolated contact relay open when alarm (<0.1A at 150VDC)

CERTIFICATIONS

Environmental	
Compliance	**Standard / Criterion**
RoHS Restriction of the use of certain hazardous substances in electrical and electronic equipment	2015/863/EU SI 2012 No. 3032
CE	CE
UKCA	UKCA
Fire & Smoke	EN 45545-2:2013 + A1:2015
Shock and vibration	EN 61373: 2010 Category 1 Class B

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RECOM
DC/AC Inverter

CERTIFICATIONS	
Safety	
Compliance	**Standard / Criterion**
Low voltage the electrical equipment (safety) regulations	2014/35/EU SI 2016 No 1101
Safety. Audio/video, information and communication technology equipment	EN 62368-1: 2018 + A11:2020
Railway applications. Electronic equipment used on rolling stock material	EN 50155: 2017

CERTIFICATIONS	
EMC Compliance	
Compliance	**Standard / Criterion**
EMC Electromagnetic compatibility regulations	2014/30/EU SI 2016 No 1091
Generic emission standard	EN 61000-6-4: 2019
Generic immunity standard	EN IEC 61000-6-2:2019
Railway applications. EMC Rolling stock equipment	EN 50121-3-2: 2016
Railway applications. EMC of the signaling and telecommunications apparatus	EN 50121-4: 2016
Protection of electronic equipment from transients & surges in DC Control Systems	RIA-12*

*Optional on request

CERTIFICATIONS	
Shock and Vibration	
Compliance	**Standard / Criterion**
Shock and vibration	EN 61373: 2010 Category 1 Class B

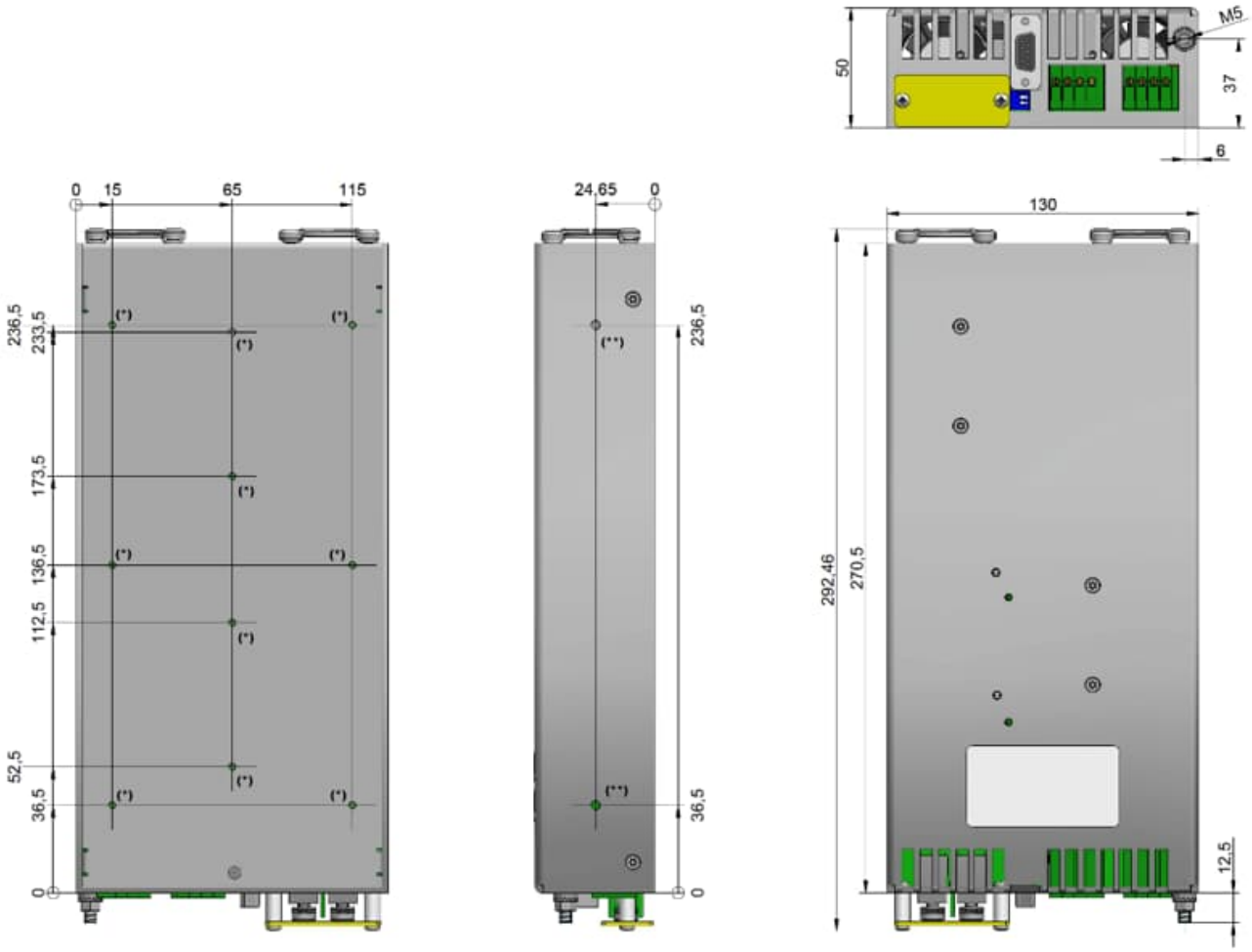
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MECHANICAL DATA

Parameter	Conditions	Min.	Typ.	Max.
Weight			1950g / 4.30lb	
Enclosure Material	Aluminium			
Length			270mm / 10.63inc	
Width			130.0mm / 5.12inc	
Height			50mm / 1.97inc	

DIMENSIONS

Drawing dimensions in mm



(*) M3 threaded hole. Maximum screw depth: 3mm (For DIN rail clips)
(**) M4 threaded hole. Maximum screw depth: 4.5mm (For fixing)

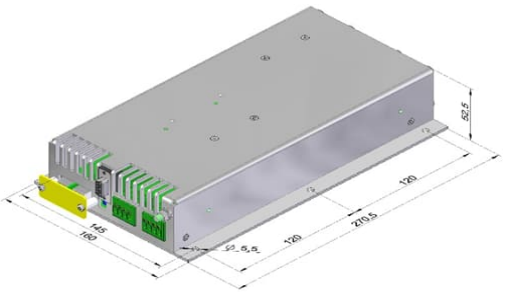
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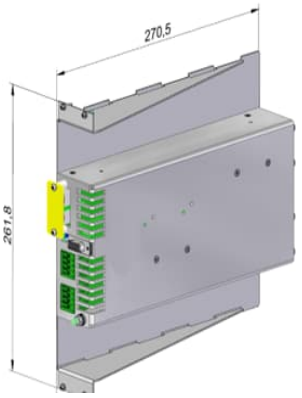
ACCESSORIES

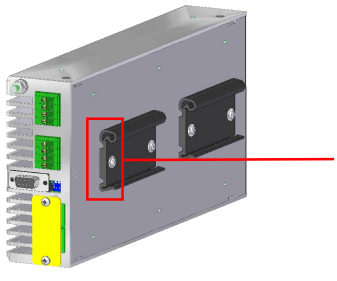
DIN RAIL CLIP	NOTES	CODE
DIN RAIL CLIP	Screws included. Order 2 units per inverter	PR9135
Mounting base	Screws included	PR9265
Mechanical Interface for subrackof 6U 11Te	Screws included	PR9366

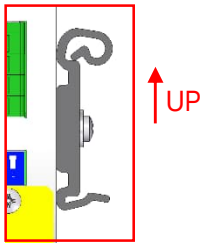
PR9135 **PR9265** **PR9366**

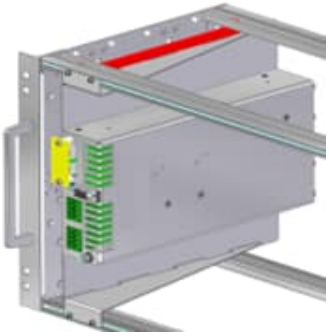




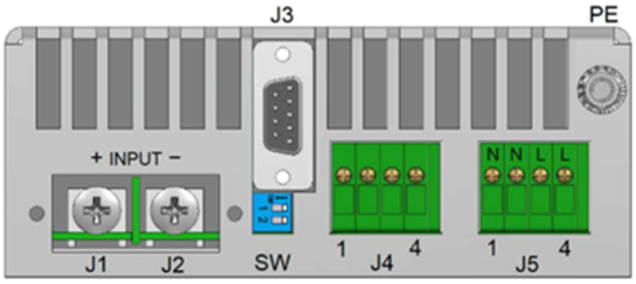








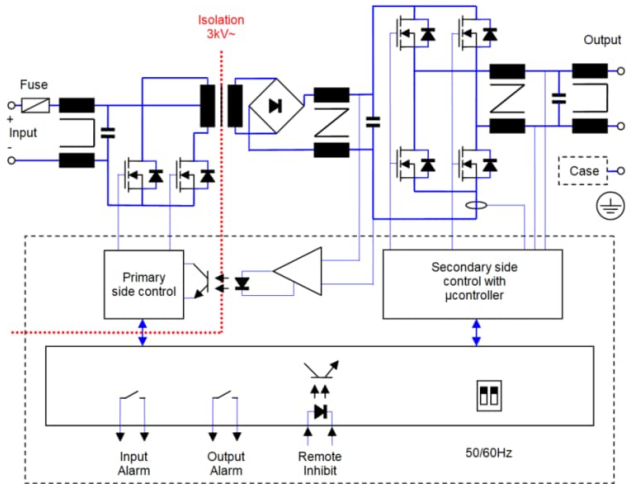
CONNECTIONS



Connector	Terminal	Notes
J1	+Vin	Terminals M5 Rec. Torque 4 Nm
J2	-Vin	
J5-1, 2	N Output	Cables Up to 2.5mm²
J5-3, 4	L Output	
J4-1	+Inhibit	
J4-2	-Inhibit	
J4-3, 4	N/C	
J3-1	Input Alarm	DB9
J3-2	Input Alarm	
J3-4	Output Alarm	
J3-5	Output Alarm	
SW-1		On 60 Hz, Off 50 Hz
SW-2		N/A
PE		Stud M5 Rec. Torque 3.8 Nm

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BLOCK DIAGRAM



DESCRIPTION

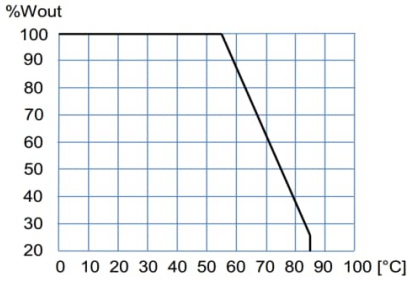
The RIDA750-SW series is a single-phase pure sinewave DC-AC inverter with galvanic isolation between input and output.

- The following items can be set on the unit:
- The output frequency can be set through the dip-switch 1.
- The unit can be remotely activated or deactivated through the remote inhibit input.

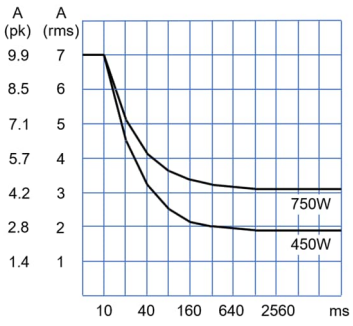
Protections of the RIDA750-SW series:

- Reverse-polarity protection of the input by fuse.
- Input under voltage: The unit shuts down when the input voltage is below its limit (see the limits on the models table)
- Overloads protection: The output has protection of maximum average power and maximum peak current. The unit shuts downs when the operation curve limit is exceeded by more than one second. Every 2 seconds after shutdown, the unit tries to restart up to 3 times. If the overload persists, the unit remains shut down until an input reconnection

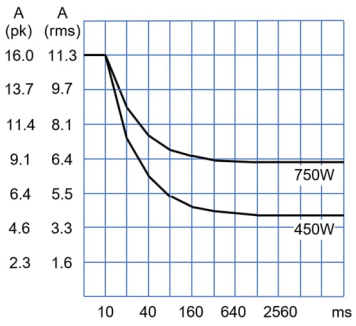
POWER DERATING VS AMBIENT TEMPERATURE



OPERATION CURVE LIMIT



Models of 230V output



Models of 120V output

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INSTALLATION

The device includes 10 M3 threaded holes that allows different mounting positions. For other mounting solutions see the accessories.

- Make connections as shown in the table;
- The default output frequency is 50Hz. For 60Hz simply actuate the dip-switch as indicated in the figure;
- The inverter does not include protection against prolonged reactive overload conditions. Therefore, the maximum apparent power output (VA) should not be exceeded;
- The EMC output filter is connected to the case, which causes a leakage current lower than 1mA. To prevent any touch current, connect the case to earth by means of any mounting holes.

For safety reasons, the following requirements must be met:

- Provide the equipment with some kind of protective enclosure that complies with the electrical safety directives in effect within the country where the equipment is installed;
- Add an external fuse of 60A and 50A for the models of input voltage 12V and 24V respectively;
- Use cables of adequate cross-section to connect inputs and outputs. The following table lists the maximum currents and the minimum cross-section for the cables used for each power connection:

	Input 12VDC	Input 24VDC	Input 36VDC	Input 48VDC	Input 72VDC	Input 110VDC	Output 120VAC	Output 230VAC
Max. Current	60A	50A	33A	25A	17A	12A	6.7A	3.5A
Cable Cross-Section	10mm²	10mm²	6mm²	2.5mm²	2.5mm²	1.5mm²	1mm²	0.75mm²

- The inverter must be installed at a secure location out of reach of the user. This is to prevent dangers such as accidental touching of HV components or skin burns on the hot housing;
- The inverter should be installed at a dry location, safe from splashing water, dirt and stone chipping;
- The tightness of the inverter can only be guaranteed if all signal wires to the signal connectors are assembled and connected to a tight unit on both sides. If this is not the case for a cable or wire, it must be sealed separately;
- The mechanical fixture is to be designed in such a way that the device is installed in a fixed position and with as little vibrations as possible;
- All cable connections must be secured with strain relief elements near the device (not included in the scope of delivery);
- Cable connections must have sufficient play and must not meet sharp-edged components;

WARRANTY AND GUARANTEE

The warranty corresponds to the regulations in our currently valid general terms and conditions.

INSTRUCTIONS REGARDING DISPOSAL

A basic requirement for the re-use and recycling of used electronic devices is the correct disposal. With the implementation of the electric and electronic device regulation, electronic devices may no longer be disposed of along with ordinary household waste but must be separately collected and recorded by a specialist service.
Disposal through a specialist service significantly helps to avoid dangers to people and nature. Therefore, in the case of disposal, we recommend contacting a recognized specialist disposal service.

REQUIREMENTS ON THE OPERATION PERSONNEL

All courses of action described in this manual may only be carried out by a qualified electrician! Specialist staff are defined as electricians who have had

- specific professional training
- have knowledge and experience in the field of electronics
- as well as knowledge of relevant provisions and dangers

for which they can provide proof. Furthermore, they must be able to assess the work assigned to them independently, identify possible dangers, and establish necessary protection measures.

The product information and specifications may be subject to changes even without prior written notice. The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.

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