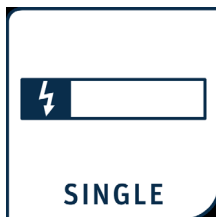


Operating Instructions



F01046y



passivBAR

Series RG52 Passive Discharge Bar

BA-en-2081-2402



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Dear customer,

The discharge bar passiveBAR of the RG52 series are designed to passively discharge static disruptions during production. They are suitable for eliminating charges at moving surfaces, especially metal foils or composite materials coated with conductive materials, for which the use of active discharging systems is prohibited.

The optimized tip layout ensures a high field concentration at the grounding tips and thereby a highly effective corona discharge. The discharge bars compensate for different surface discharge profiles on the materials. Resistively isolated grounding tips prevent propagating brush discharges, regardless of the strength of the charge.

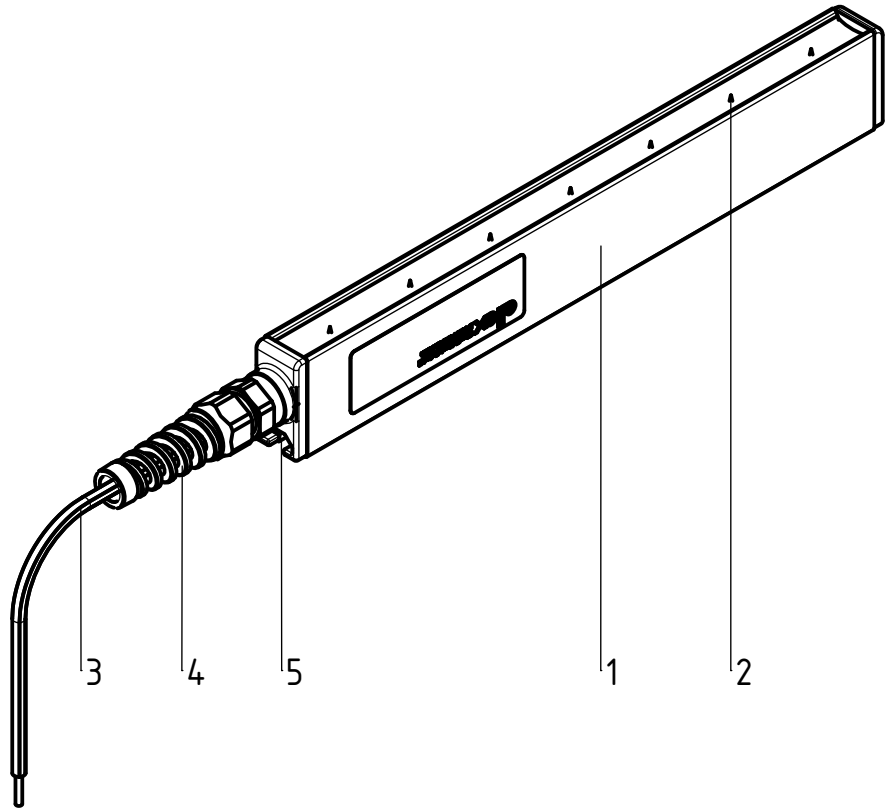
The advantages of the RG52 discharge bars:

- high passive discharging power due to optimized tip layout
- reliable safety due to resistively isolated grounding tips
- continuous assembly slotting guarantees flexible installation
- no health hazards in case of electric shocks when touching individual tips
- suitable for use in explosion-hazard areas

Please read the operating instructions carefully before operating the unit. This will help you prevent personal injuries and damage to property.

Please give us a call if you have any suggestions, proposals or ideas for improvements. We greatly appreciate the feedback from the users of our appliances.

1. Outline of appliance



*Fig. 1:
Overview of the
RG52
discharge bar*

- 1 Bar profile*
- 2 Resistively isolated grounding tips*
- 3 Ground cable*
- 4 Bend-resistand screw connection*
- 5 Assembly groove at the rear*

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2. Safety

The units have been designed, built and tested using state-of-the-art engineering, and have left the factory in a technically and operationally safe condition. If used improperly, the units may nevertheless be hazardous to personnel and may cause injury or damage. Read the operating instructions carefully and observe the safety instructions.

For warranty conditions, please refer to the General Terms and Conditions (GTC), see www.eltex.de.

2.1 Proper Use

The Series RG52 discharge bars must be used only for discharging static charges from material surfaces. Other uses are not permitted.

The discharge bar is a simple electrical device within the meaning of the DIN EN 60079-11 standard and may therefore be used in explosion hazard areas (zone 1).

The manufacturers will not assume any liability and warranty if the units are used improperly or used outside the intended purpose.

Modifications or changes made to the devices are not permitted.

Use only original Eltex spare parts and equipment.

2.2 Identification of risks and hazards

Possible risks and hazards resulting from the use of the units are referred to in these operating instructions by the following symbols:



Warning!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in serious personal injuries.



Caution!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in damage to property.

2.3 Work and operational safety



Warning!

Carefully observe the following notes and the complete [chapter 2 "Safety", page 7!](#)

- Before carrying out any work involving the bars, the machine which has the units fitted must not be in operation (see [chapter 4 "Maintenance", page 13](#), [chapter 5 "Troubleshooting", page 14](#)).
- Any work involving the units must be carried out by qualified electricians (see [chapter 4 "Maintenance", page 13](#), [chapter 5 "Troubleshooting", page 14](#)).
- The bars passively absorb energy from the moving substrate web. The ground connection cable must be grounded. If the cable is not grounded / mounted, the charge applies with full power at the free end. This may cause a spark discharge and may lead to a risk of injury (see [chapter 4 "Maintenance", page 13](#)).
- The bar must be mounted such that mechanical damage to the bar tips is ruled out (see [chapter 3.1 "Assembling the discharge bar", page 10](#)).
- When routing the cable, select the attachment points such that mechanical damage to the cable (e.g. chafing against rotating machine parts) is ruled out (see [chapter 3.1 "Assembling the discharge bar", page 10](#)).
- To attach the cables, use only sliding nuts and bolts made of plastic (see [chapter 3.1 "Assembling the discharge bar", page 10](#)).
- The distance of the emission points to the conductive, earthed printing press area should be greater than to the substrate to be discharged (see [chapter 3.2 "Locating the discharge bar", page 12](#)).
- In bilateral discharging, the bars must not be mounted in opposition to each other. The distance between both bars should be greater than twice the bar distance from the web (see [chapter 3.2 "Locating the discharge bar", page 12](#)).
- Check the units and the cables at regular intervals and before startup for any damage. Any damaged components must be repaired or replaced before continuing to operate the unit, or the units must be disabled.
- When cleaning the bars do not soak the bars and the high voltage cable in solvent and do not damage the emission tips; allow the solvent to evaporate completely before restarting the unit (see [chapter 4 "Maintenance", page 13](#), [chapter 5 "Troubleshooting", page 14](#)).
- Make sure that the bars are clean at all times.
Dirt results in malfunctions and in premature wear of the units.

Warning!

If the passive discharge bar RG52 is used in explosion hazard areas, improper maintenance of the bar tips may lead to gas discharges.



- Do not touch the emission tips - risk of injury.
- Mechanical or electrical modifications of the discharge bars are not permitted. Shortening the grounding cable on the connecting side is permitted.

2.4 Contact protection

The site of installation and/or use of the units is outside the control of Eltex, contact protection against inadvertent contact of the bars by personnel as specified by the employer's liability insurance association may have to be provided (e.g. DGUV V3 in Germany).

2.5 Inspection of the protective resistors - contact protection

The function and the appearance of the protective resistors must be inspected at regular intervals. The inspection intervals are specified in the accident prevention regulations, as amended (e.g. in Germany DGUV V3).

The function of the series resistors must be checked using a suitable measuring device. The test voltage must be 1,000V. The measured resistance between the ground connection cable and the individual emission tip must not fall below 120 MOhm and not exceed 180 MOhm.

2.6 Technical advance

The manufacturer reserves the right to make changes to the technical specifications without prior notice in order to adapt the units to state-of-the-art engineering. Eltex will provide the latest information on any changes or modifications in the operating instructions on request.

3. Installation and assembly

3.1 Assembling the discharge bar

Attach the Series RG52 discharge bars to the machine wall, using flame-retardant GRP assembly material. For easier installation we recommend using the assembly material offered by Eltex. Fig. 2 shows the installation principle.

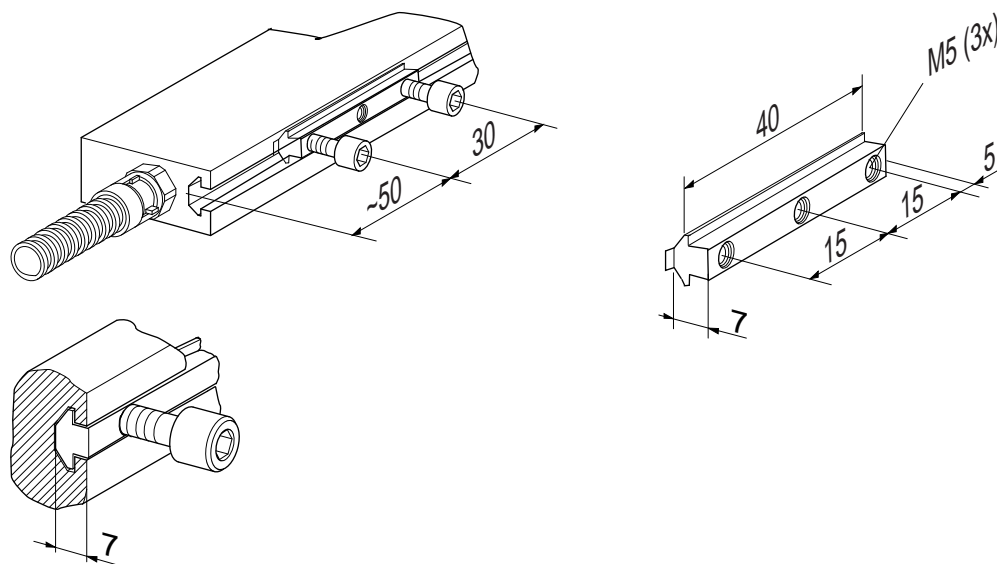


Fig. 2:
Assembling the
discharge bar

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The profiled assembly section of the discharge bar is grooved. The sliding nuts pushed into this groove serve as bolt attachments for the GRP material, allowing the discharge bars to be installed.

Max. bolt depth 6.5 mm

Torque 0.4 Nm

Secure bolts (e.g. Loctite 243)



Caution!

Use only sliding nuts and bolts made of plastic!

below 1 meter total length: 2 per bar

below 2 meters total length: 3 per bar

below 3 meters total length: 4 per bar

below 4 meters total length: 5 per bar

below 5 meters total length: 6 per bar

below 6 meters total length: 7 per bar

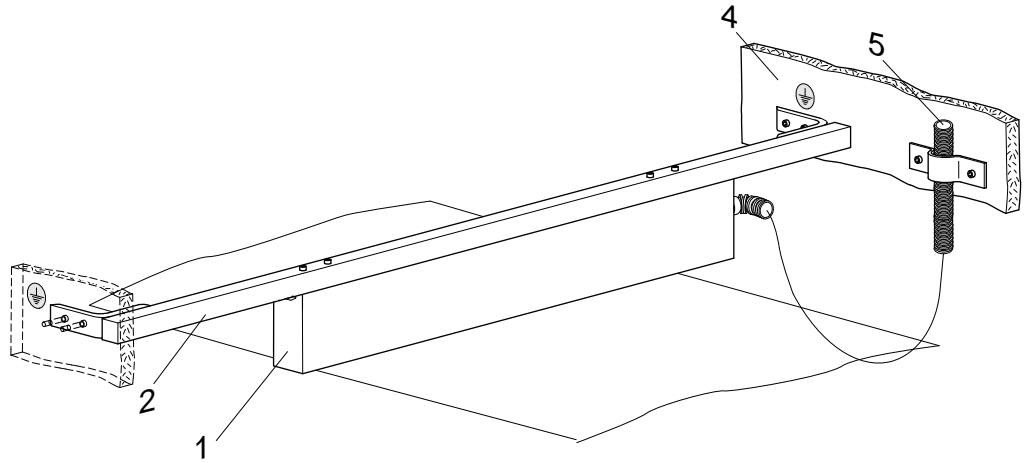
An optional alternative is attaching the bars using a GRP round rod.

Fig. 4 shows an assembly example. The bar is attached to the GRP round rod via plastic holders plugged into the installation groove. Longer bars require an additional angle bracket bolted to the GRP rod to prevent the bar from sagging.

Plastic holders

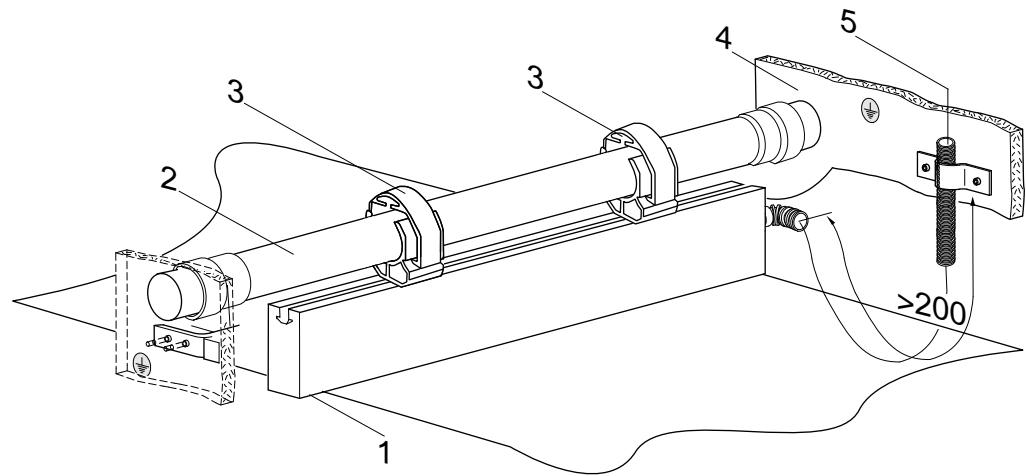
- below 1 meter total length: 3 per bar
- below 2 meters total length: 5 per bar
- below 3 meters total length: 7 per bar
- below 4 meters total length: 9 per bar
- below 5 meters total length: 11 per bar
- below 6 meters total length: 13 per bar

*Fig. 3:
Assembly example
RG52 with GRP
rod and steel
brackets for
attachment to the
machine wall*



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*Fig. 4:
Assembly RG52
with GRP round
rod*



Z00334y

- 1 bar
- 2 GRP rod
- 3 plastic holder
- 4 machine wall
- 5 grounding cable



Warning !

For safety in operation, please note the following:

- The bar must be mounted such that mechanical damage to the bar tips is ruled out.
- When routing the cable, select the attachment points such that mechanical damage to the cable (e.g. chafing against rotating machine parts) is ruled out.
- To attach the cables, use only sliding nuts and bolts made of plastic.

3.2 Locating the discharge bar

The best possible discharge results are achieved if the bar is located in areas with minimum web capacities. In practical terms this means placing the bar with maximum distances from the machine environment, i.e. no discharging against the idler roller.

A rough guideline:



A space with the radius R of the bar distance to the web ought to be kept free of any conductive material (Fig. 5). The distance of the emission points to the conductive, earthed printing press area should be greater than to the substrate to be discharged.

Depending on application, the distance between discharge bar and substrate ought to be 5...30 mm.

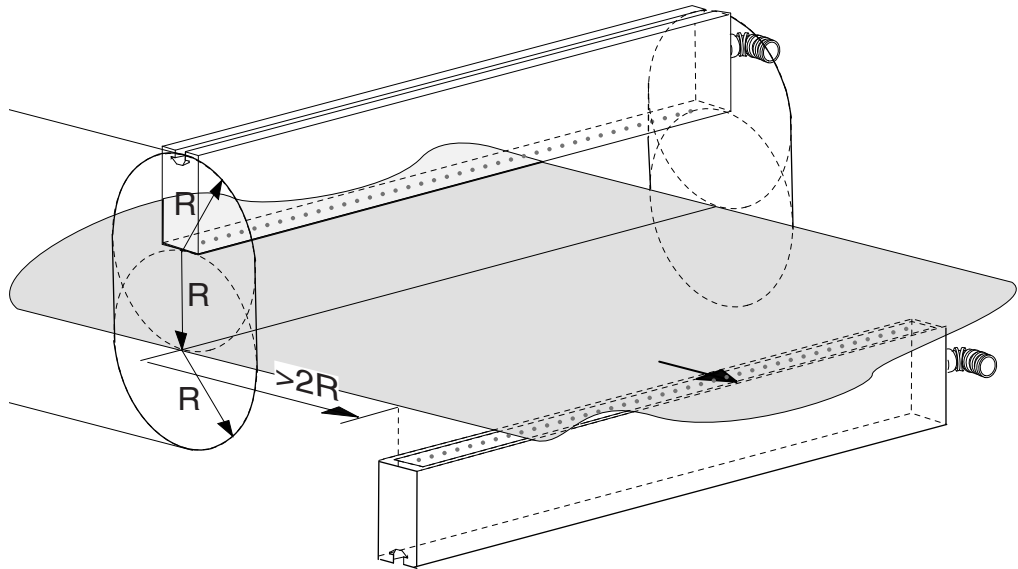


Fig. 5:
Zone free of conductive material with the dimensions R



In bilateral discharging, the bars must not be mounted in opposition to each other. The distance between both bars should be greater than twice the bar distance from the web.

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4. Maintenance



Warning!

Electric shock hazard!

- The machine which has the bars fitted must not be in operation.
- The bars passively absorb energy from the moving substrate web. The ground connection cable must be grounded. If the cable is not grounded / mounted, the charge applies with full power at the free end. This may cause a spark discharge and may lead to a risk of injury.
- Repairs and maintenance work must be carried out by qualified electricians.

To ensure the trouble-free function of the discharge bars, clean the bars regularly depending on pollution with compressed air free of oil and water (max. 6×10^5 Pa and standard compressed air pistol) and a brush with soft plastic bristles (see [chapter 8 "Spare parts and accessories", page 17](#)).

Clean grease, ink, glue, paper dust, etc. off the discharge bar using a suitable solvent (benzine). Do not soak the bars and the connecting cable in solvent!



Caution!

Do not damage the emission tips when cleaning. Brush only in longitudinal direction.



Warning!

Risk of deflagration!

Allow the solvent to evaporate completely before restarting the unit.

Inspection of the protective resistors - contact protection

The function and the appearance of the protective resistors must be inspected at regular intervals. The inspection intervals are specified in the accident prevention regulations, as amended (e.g. in Germany DGUV V3).

The function of the series resistors must be checked using a suitable measuring device. The test voltage must be 1,000V. The measured resistance between the ground connection cable and the individual emission tip must not fall below 120 MOhm and not exceed 180 MOhm.

5. Troubleshooting



Warning!

Electric shock hazard!

- The machine which has the bars fitted must not be in operation.
- The bars passively absorb energy from the moving substrate web. The ground connection cable must be grounded. If the cable is not grounded / mounted, the charge applies with full power at the free end. This may cause a spark discharge and may lead to a risk of injury.
- Repairs and maintenance work must be carried out by qualified electricians.

Malfunction:

Effectiveness of the application declining.

Cause:

Dirty discharge bars.

Measure:

Clean bar with compressed air and a brush. Clean grease, ink, oil, etc. off the bar with a suitable solvent (benzine).



Caution!

Do not leave the discharge bar to soak in the solvent!



Warning!

Risk of deflagration!

Allow the solvent to evaporate completely before restarting the unit.

6. Technical specifications

Discharge bar RG52	
Bar element	glass-fibre-reinforced plastic GRP
Encapsulation material	polyurethane, UL-94 V-0
Emission tips	stainless steel
Installation material	plastic sliding nuts
Operating ambient temperature	0...+80 °C (+32...+176° F)
Ambient humidity	max. 70 % RH, non-dewing
Dimensions	profile: 16 x 32 mm, max. length: 5,980 mm see Fig. 6
Weight	approx. 0.75 kg/m



7. Dimensions

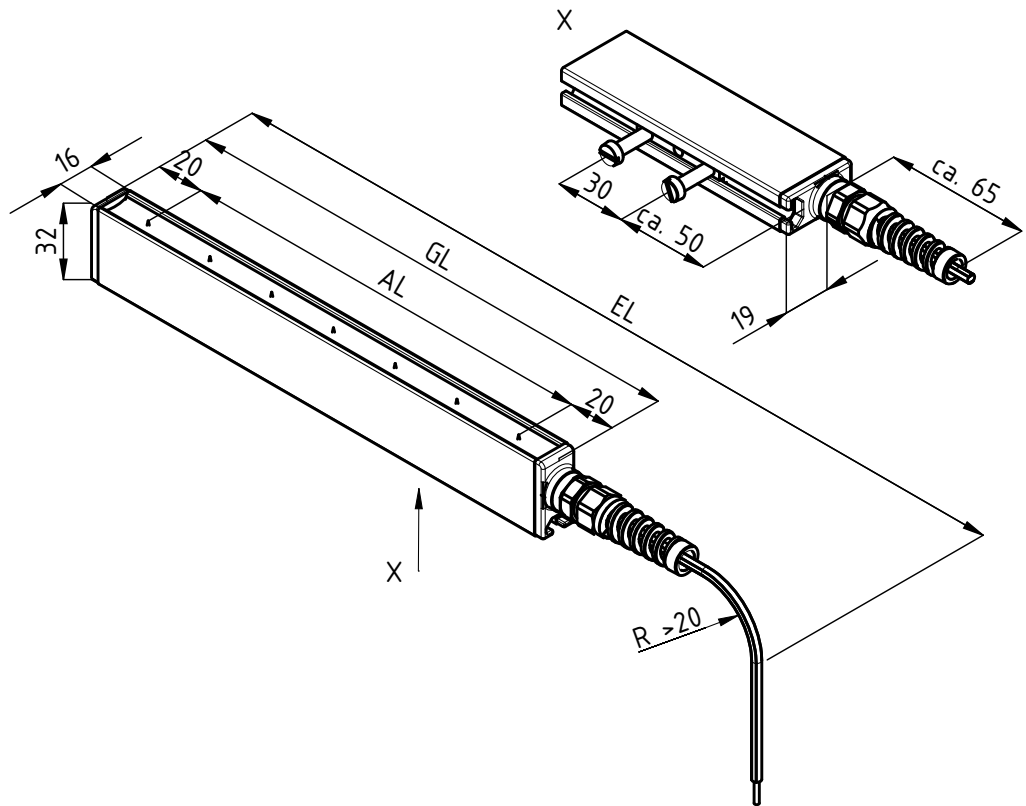


Fig. 6:
RG52
discharge bar

EL = installation length
 AL = active length
 GL = total length
 X = view

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8. Spare parts and accessories

Article	Article No.
Mounting material for bars:	
Slide nut with screws and washers	105826
Plastic countersunk screw, M5x8	101020
Plastic countersunk screw, M5x10	KSR00030
Plastic countersunk screw, M5x30	108525
Plastic cheese-head screw, M5x10	KSR00012
Plastic cheese-head screw, M5x16	KSR00013
Plastic cheese-head screw, M5x20	KSR00014
Plastic cheese-head screw, M5x25	KSR00015
Plastic cheese-head screw, M5x35	KSR00016
Plastic cheese-head screw, M5x50	KSR00017
Adapter plate, with screws 2 x M5 by 1 x M8	101807
Adapter plate for version S01with screws 2 x M5 by 1 x M8	101824
GRP round rod Ø 20 mm	HAGFK/ __
Bar holder for round rod	101075
Attachment clip for round rod	MCH02434
GRP reinforcement angle bracket	102568
Kit - Bar holder:	
Bar holder with clamps	HA01/ __
Bar holder with perforated plate	HA02/ __
Bar holder for frame attachment	HA03/ __
Bar holder for shaft attachment	HA04/ __
Bar holder with assembly angle bracket	HA50/ __
Cleaning brush with handle	RBR22
Volt Stick	109136
Operating Instructions (specify language)	BA-xx-2081

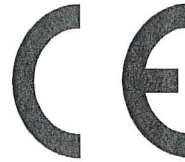
Please specify the article number when ordering.

EU-Declaration of Conformity

CE-2081-en-2011



Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

Passive Discharging Bar RG52 (according to Eltex reference code)

complies with the following directives and standards.

Relevant EU-Directive:

2014/34/EU

Directive: Equipment or Protective System intended for use in potentially explosive Atmospheres

Harmonized standard applied:

EN 60079-11:2012

Explosive atmospheres – Equipment protection by intrinsic safety “i”

Relevant EU-Directive:

2014/35/EU

Low Voltage Directive

Harmonized standard applied:

EN 60204-1:2018

Safety of machinery – Electrical equipment of machines – General requirements

Relevant EU-Directive:

2011/65/EU

RoHS Directive

in the version effective at the time of delivery.

Eltex-Elektrostatik-Gesellschaft mbH keep the following documents for inspection:

- proper operating instructions
- plans
- other technical documentation

Weil am Rhein, 16.11.2020
Place/Date



Lukas Hahne, managing director

UKCA Declaration of Conformity

CA-2081-en-2208

Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

Passive Discharging Bar RG52 (according to Eltex reference code)

complies with the following directives and standards.

Applicable Regulation:

S.I. 2016 No. 1107

Equipment and Protective Systems Intended for use in Potentially
Explosive Atmospheres Regulations

Used Designated Standard:

BS EN 60079-11:2012

Applicable Regulation:

S.I. 2016 No. 1101

Electrical Equipment (Safety) Regulations

Used Designated Standard:

BS EN 60204-1:2018

Applicable Regulation:

S.I. 2012 No. 3032

RoHS Regulations

in the version effective at the time of delivery.

Eltex-Elektrostatik-Gesellschaft mbH keep the following documents for inspection:

- proper operating instructions
- plans
- other technical documentation

Weil am Rhein, 30.08.2022
Place/Date



Lukas Hahne, Managing Director

Eltex offices and agencies

The addresses of all
Eltex agencies can be
found on our website at
www.eltex.de



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