

BA-BelAir-ST 3.1 - 05/2016**RDA 21-....-ST****RDA 31-....-ST**

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1. Revision index

Table 1-1: Revision index

Revision	Modification
BA-BelAir-ST 3 – 08/2011	
BA-BelAir-ST 3.1 - 05/2016	
BA-BelAir-ST 3.2 - 06/2021	Introduction of new timer for RDA31 and associated standardisation of control wiring and functional description for RDA21 / RDA31. Wiring diagrams of all types added. Corrections in form and contend.

2. Regarding this manual



This operating manual is a supplement to the Operating Manual for Roof Fans and must be observed in conjunction with that manual.

It provides further descriptions and information on transport, installation and designated use as well as issues relating to maintenance and service.

2.1 Validity

This operating manual only applies to the fans mentioned on the front page.

2.2 Target Group

This operating manual is intended for operators and qualified professionals trained in the installation, commissioning, operation, maintenance and decommissioning of fans.

2.3. Other Applicable Documents

- ▶ In addition to reading these instructions, due notice should also be taken of the following documents and specifications on the roof fan:
 - IEC 60364/
 - DIN VDE 0100
 - DIN EN 60204-1
 - DIN EN 61000-3
 - DIN EN ISO 13857
 - DIN EN ISO 12100-1; -2
 - DIN EN ISO 13732-1
 - EN 50081-1
 - Type plate
 - Technical catalog
 - Low Voltage Directive 2006/95/EC
 - EMC Directive 2004/108/EC

3. Designated Use

3.1. Operating Data / Maximum Ratings

ATTENTION

The fan will be damaged if overloaded.

- ▶ Please comply with the threshold values.

The technical specifications can be found on the type plate, technical data sheet and technical catalog.

The roof fans are suitable for extracting dust-free air and other non-corrosive gases or vapors.

Permissible conveyed medium temperatures

Table 3-1: Maximum Values

RDA series	Perm. temperature of conveyed medium	Max. ambient temperature at drive motor
21-1819-2E-ST	-20°C to +50°C	+50°C
21-1819-4E-ST	-20°C to +50°C	+50°C
21-1822-2E-ST	-20°C to +40°C	+40°C
21-1822-4E-ST	-20°C to +50°C	+50°C
21-2225-2E-ST	-20°C to +50°C	+50°C
21-2225-4E-ST	-20°C to +50°C	+50°C
31-2528-4E-ST	-20°C to +50°C	+50°C
31-2528-6E-ST	-20°C to +50°C	+50°C
31-2531-4E-ST	-20°C to +50°C	+50°C
31-2531-6E-ST	-20°C to +40°C	+40°C
31-3535-4E-ST	-20°C to +50°C	+50°C
31-3535-6E-ST	-20°C to +50°C	+50°C
31-3540-4E-ST	-20°C to +50°C	+50°C
31-3540-6E-ST	-20°C to +50°C	+50°C
31-3545-4E-ST	-20°C to +40°C	+40°C
31-3545-6E-ST	-20°C to +40°C	+40°C

4. Safety

4.1 Information on Machine Safety

The units in the RDA-ST series are machines as defined in the EC Machinery Directive. They have the CE mark and are delivered along with an EC Declaration of Conformity. The risks and necessary safety measures of the machine were assessed using VDMA Worksheet 24167: Fans; safety requirements.

Note Use the Operating Manual for Roof Fans.

5. Product Description

5.1. General Information on Roof Fans

All the roof fans are delivered ready for connection. They are delivered protected by an outlet guard on the discharge side conforming to DIN EN ISO 13857. Inlet guards are not fitted as standard.



Rotating impeller in the fan!

Separate from body parts, cut injuries.

- ▶ Attach the guard in accordance with DIN EN ISO 13857 (accessories).
- ▶ Connect the channel.

5.2. BelAir timer ST - time-controlled ventilation system

For ventilating rooms at fixed, freely programmable time intervals via a central exhaust air duct.

The system is fully wired.

Connect to the mains in accordance with chapter "6 Electrical Connection".

If required, changes can be made to the second, preset speed level.

The selected weekly cycle must be programmed.

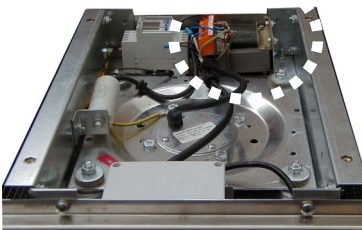
Function

- 2 programmable speed levels
- Weekly program with 42 programmable switch points
The number of programs is not uniform (delete, if necessary)
- Automatic summer/winter time changeover

5.3. Autotransformer

5.3.1. ETO 10-5E

Transformer in accordance with DIN-VDE 0550-1 with fitted terminal strip with 7 tapings.



5.3.2. Performance Characteristics

- ▶ 7 tapings
- ▶ Voltage levels: 230/180/160/140/120/100/80 V
- ▶ Electrical connection: 230V, 50Hz
- ▶ Nominal output current:
ETO 10-0018-5E: 1.8; ETO 10-0040-5E: 4.0A; ETO 10-0070-5E: 7.0A

5.4. Programmable Timer

5.4.1. Description

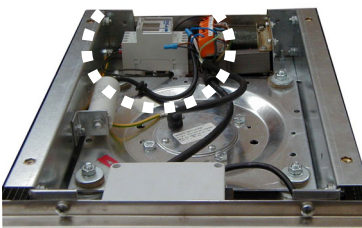
Fans in the series RDA 21-...-E-ST and RDA 21-...-E-ST are equipped with clock timers of type "PROTEC.class PDSU22" as standard.

The manual containing programming instructions is included with the fan.

Note the following configuration of both switching channels when programming the timer:

- Channel 1 (C1) = start/stop fan
- Channel 2 (C2) = change speed levels (operate only when channel 1 is switched on)

Both speed levels are freely selectable and adjustable at the autotransformer terminals.



5.4.2. Example of a Program Schedule

Mon, Tue, Wed, Thu, Fri	6.00 C1= ON	22.00 C1= OFF
Mon, Tue, Wed, Thu, Fri, Sat	00.00 C1= ON	1.00 C1= OFF
Mon, Tue, Wed, Thu, Fri	8.00 C2= ON	9.00 C2= OFF
Mon, Tue, Wed, Thu, Fri, Sat, Sun	17.00 C2= ON	20.00 C2= OFF
Mon, Tue, Wed, Thu, Fri, Sat, Sun	00.00 C2= ON	1.00 C2= OFF
Sat, Sun	8.00 C1= ON	22.00 C1= OFF
Sat, Sun	11.00 C2= ON	13.00 C2= OFF

5.4.3. Workflow of the Example Program

Mon, Tue, Wed, Thu, Fri from 6.00 to 22.00, basic ventilation at the low speed level, high speed level is intermittently switched to during the main usage times (8.00 – 9.00 and 17.00 – 20.00).

On weekends, basic ventilation is activated at low speed level between 8.00 – 22.00 and a high speed level is additionally activated during the main usage times between 11.00 – 13.00.

Forced ventilation is carried out at a high speed level every day between 00.00 – 1.00.

6. Electrical Connection

6.1. Safety Instructions for Electrical Connection



DANGER

Live wires!

Electric shock.

- ▶ Switch off the power supply.
- ▶ Safety instructions and protective measures can be found in chapter 4.
- ▶ Observe the legal regulations: EN 60204.

6.2. Connecting the Motor

ATTENTION

Motor connection

The fan can be damaged if it is incorrectly connected.

- ▶ Only connect in accordance with the wiring diagram (see section 6.3).

The preset speed levels can be changed at the transformer by swapping the brown wires.

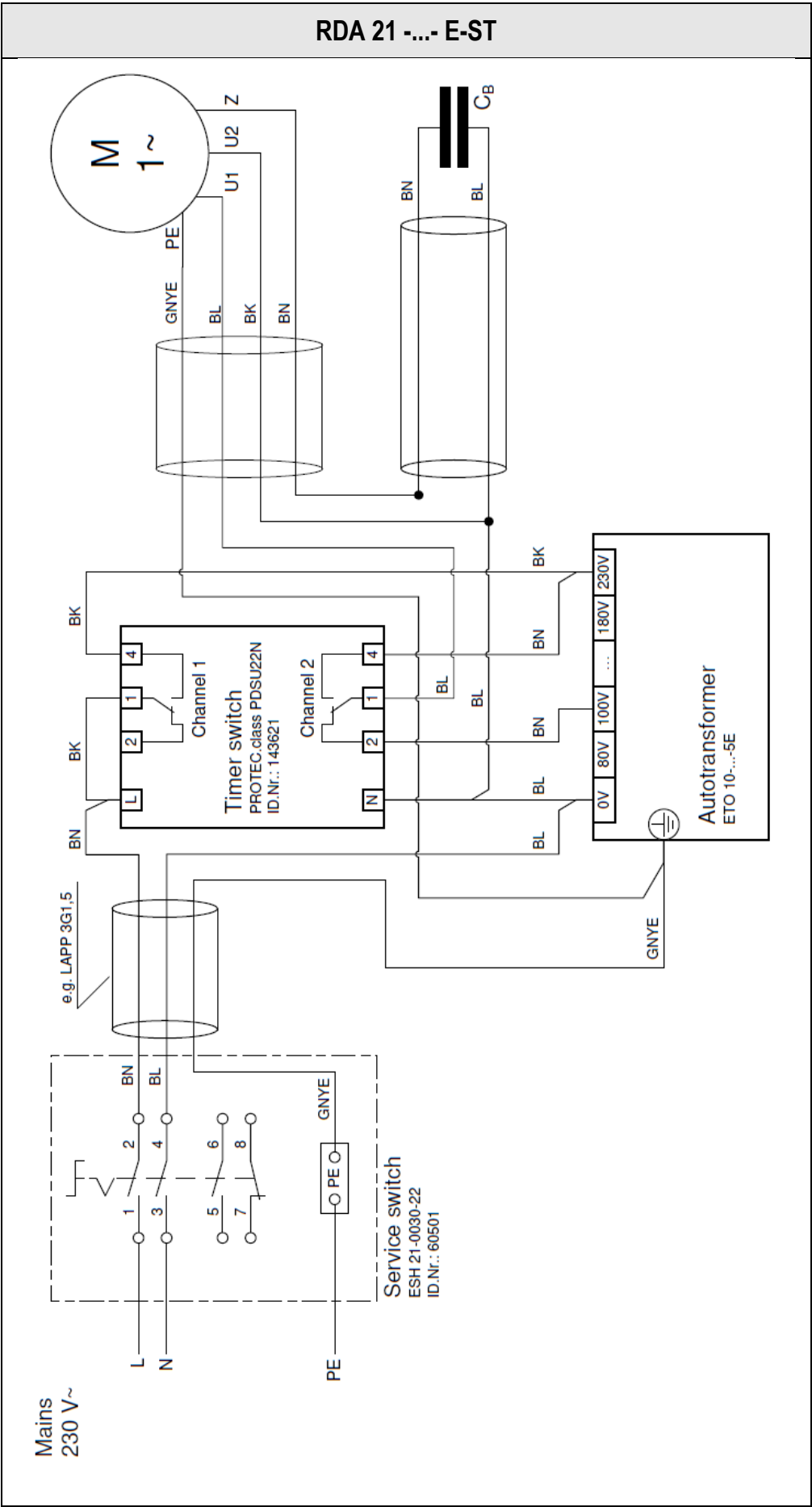
ATTENTION

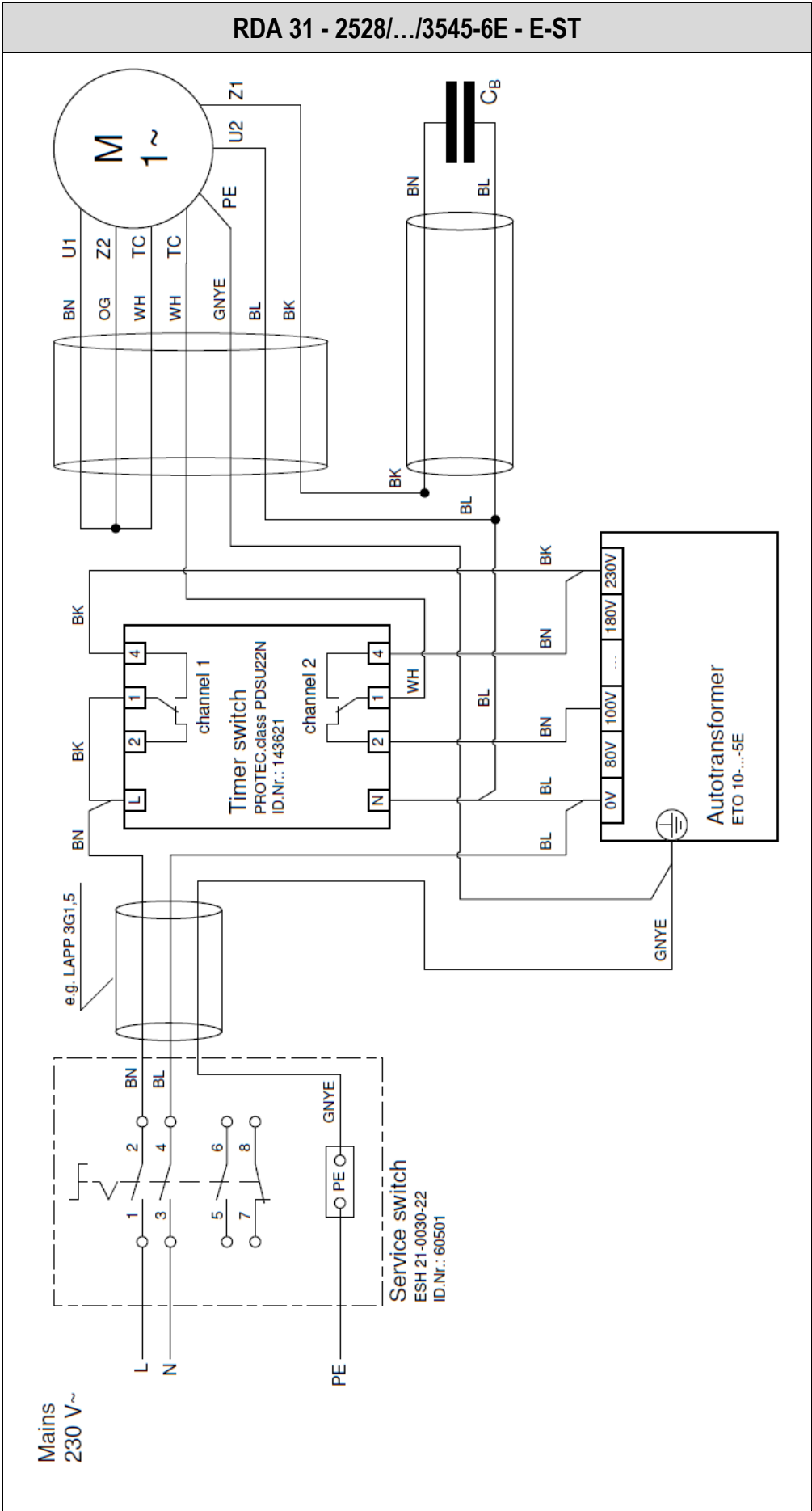
The electrical installation of the fan and components may only be carried out by specially trained personnel observing the operating manuals, the Low Voltage Directive 2006/95/EC and any local regulations provided by energy supply companies.

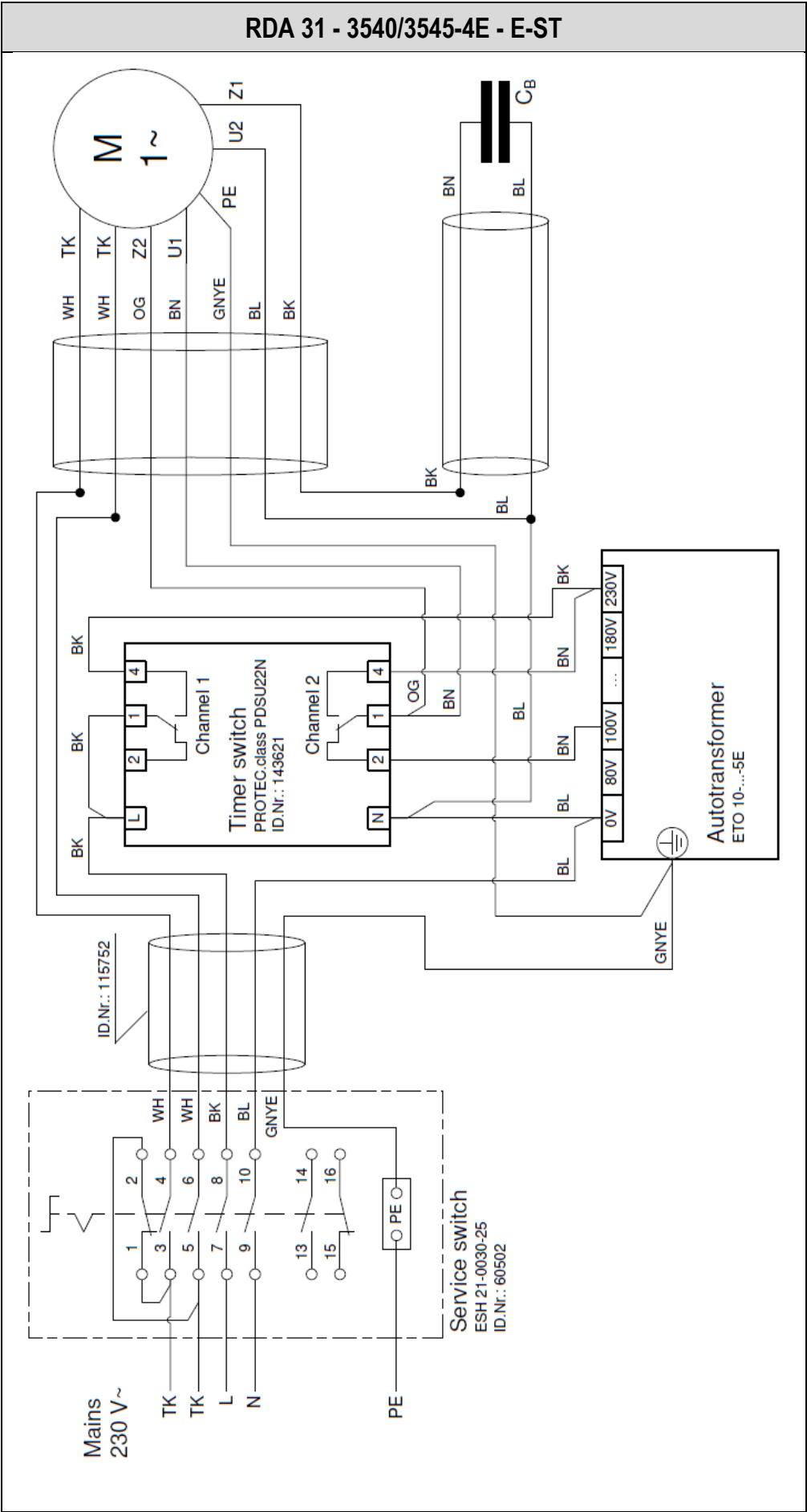
ATTENTION

Nicotra Gebhardt GmbH shall not accept any liability or provide any warranty cover in respect of primary or secondary damage arising as a consequence of unauthorized tampering with the internal cabling of the system.

6.3. Connection Wiring Diagram







7. Service, Spare Parts and Accessories

7.1 Ordering Spare Parts

- ATTENTION** ► Use only genuine spare parts supplied by Nicotra Gebhardt GmbH as featured in the list of spare parts.

The use of spare parts supplied by other manufacturers may compromise the safety of the equipment.

The requirements for CE conformity are no longer met if spare parts supplied by other manufacturers are fitted.

Nicotra Gebhardt GmbH shall not accept any liability or provide any warranty cover in respect of primary or secondary damage arising as a consequence of using spare parts supplied by other manufacturers.

Order spare parts online - www.gebhardt.de/Partshop

7.2 Accessories

Nicotra Gebhardt GmbH has a wide range of accessories for economic and efficient use of the fans. Accessories are optional and always need to be ordered separately. Spare parts should be selected on the basis of the technical specifications or via our electronic selection program. Accessories are supplied with separate operating or installation instructions unless their installation or use are self-explanatory.

8. Annex

8.1. Further documentation provided by Nicotra Gebhardt GmbH

Table 14 1: Further documentation

Type of Documentation	File Location
Operating Manual for Roof Fans	http://www.nicotra-gebhardt.com/upload/download-center/instruction/OI_REF_DE.pdf
Maintenance and inspection recommendations	http://www.nicotra-gebhardt.com/cms/upload/download-center/maintenance-instruction/MI_REF_DE.pdf

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