

Movement by Perfection



The Royal League in ventilation, control and drive technology



[Product documentation](#)

Type  
**FN080-ZIQ.GL.A7P3**

Article number  
**185084**

## Product documentation

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### 1. Recitals

The Product Specifications contained in this document are final, unless otherwise stated by a separate provision in the "ZIEHL-ABEGG deviation list document" with respect to information provided by the customer (cp. separate Chapter: Attachment).

Other regulations between the parties, regardless of time, form or content, are not part of the subject matter of the contract and the agreement on characteristics/of features (Product Specifications) between the parties.

Compliance with the following specifications is mandatory to ensure the functionality and safety of the product. If the following specifications given especially but not limited for operating conditions, transport, storage, mounting, start-up, maintenance and repair are not observed, the product may not operate safely and may cause a hazard to the life and limb of users and third parties.

Deviations from the following requirements may therefore lead both to the loss of the statutory material defect liability rights and to the liability of the buyer for the product that has become unsafe due to the deviation from the specifications.

## 2. Product specification - Technical data

<b>Article number</b>	185084
<b>Type</b>	FN080-ZIQ.GL.A7P3
<b>Designation</b>	Axial fan with sickle blades
<b>Rated values</b>	3~380-480V 50/60Hz P <sub>1</sub> 3.10kW 4.80-3.80A 1100 min <sup>-1</sup> 65°C
<b>Electrical connection</b>	Integrated controller
<b>ErP Data</b>	Measurement category ErP: A Air flow q <sub>v</sub> on Eta opt: 18411 m <sup>3</sup> /h Pressure increase p <sub>fs</sub> on Eta opt: 250 Pa Input power P <sub>1</sub> on Eta opt: 2874 W Efficiency η <sub>statA</sub> : 48.2 % Efficiency grade: N <sub>actual</sub> = 51.6 / N <sub>target</sub> = 40* *ErP 2015
<b>Type of protection</b>	IP55
<b>Thermal class</b>	THCL155
<b>efficiency class</b>	IE5
<b>Connection diagram</b>	AP00001C
<b>Rating plate</b>	1x fixed
<b>Fitting position</b>	H/Vu/Vo
<b>Motor protection</b>	integrated active temperature management
<b>Impregnation</b>	Moisture and hot climate protection
<b>Condensation drain holes</b>	Condensation drain hole rotor open
<b>Quality of bearings</b>	ball bearing with long-time lubrication
<b>Material Rotor</b>	Aluminium
<b>Painting rotor</b>	Rotor 1 coat paint resistance class 1 (L-TI-0596)
<b>colour rotor</b>	RAL 5002 (ultramarine blue)
<b>painting stator</b>	Stator unpainted
<b>Material blades</b>	Aluminium
<b>Painting blades</b>	Blades unpainted
<b>Labelling UL/VDE</b>	E213826 ZC-155, MK152-0008
<b>IO-function</b>	BASIC-MODBUS
<b>Painting housing</b>	Bell mouth powder-coated resistance class 2 (L-TI-0585)
<b>Colour housing</b>	RAL 9005 (jet black)
<b>Painting mot.suspens</b>	Motor suspension powder-coated resistance class 2 (L-TI-0585)
<b>colour suspension</b>	RAL 9005 (jet black)
<b>Operating manual</b>	L-BAL-F078 <a href="http://www.ziehl-abegg.com/bal">www.ziehl-abegg.com/bal</a>
<b>Weight</b>	49,60 kg
<b>Min. operating temperature °C</b>	-35°C***

\*\*\* Operation mode:

Continuous operation with occasional starts (S1) according to DIN EN 60034-1:2011-02.

Occasional starting between -35 °C and -25 °C is permissible. Continuous operation below -25 °C only with special bearings for refrigeration applications on request.

### 3. Characteristic Curve

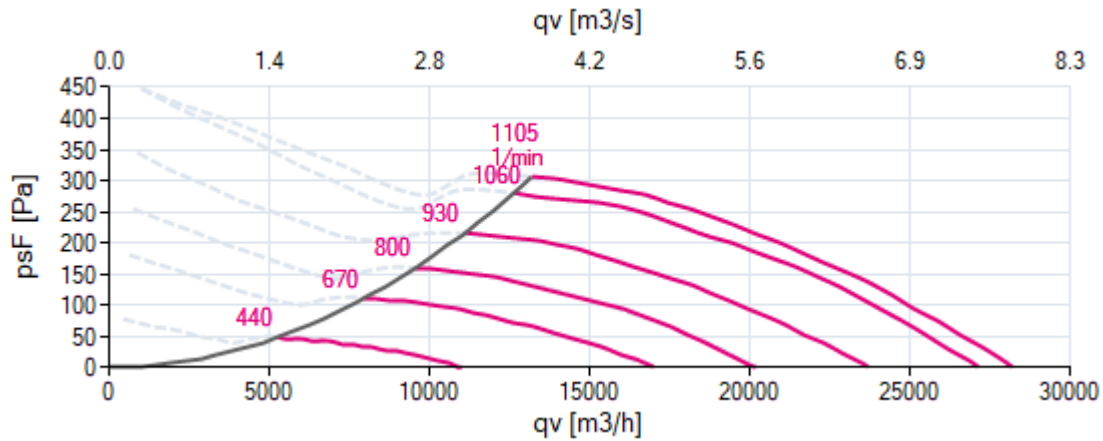
FN080-ZIQ.GL.A7P3

Measured in full nozzle without guard grille in air flow direction V in installation type A according to ISO5801

3~ 400V 50Hz

measurement density 1,16 kg/m<sup>3</sup>

#### Air performance



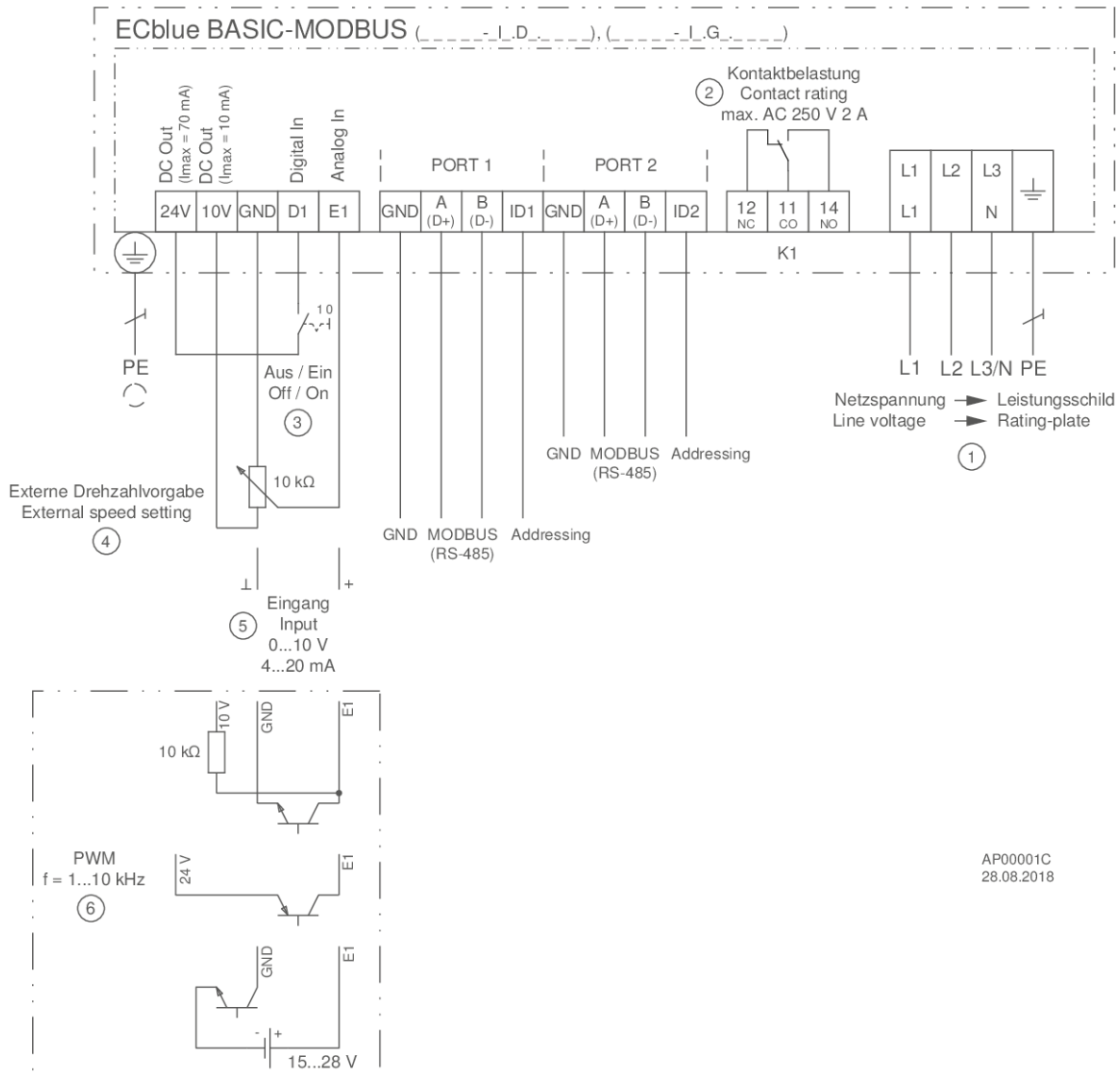
87611

Please note: It's not allowed to use this fan in the stall area!\*

\*In doubt please ask your responsible ZIEHL-ABEGG sales contact.



### 5. Connection diagram



## 6. Aerodynamics and Acoustics

### Measurement method

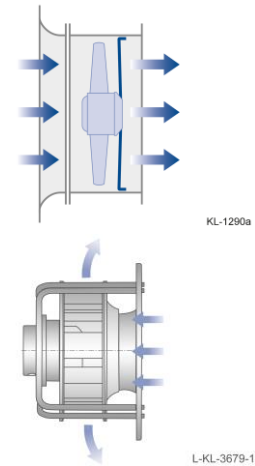
The characteristic map display shows the pressure increase  $\Delta p_{SF}$  in Pa as a function of the volume flow rate  $q_v$  in  $m^3/h$ .

### Technical conditions of supply

The specified performance data meet the respective requirements for accuracy

- AN2 for centrifugal impellers without motor
- AN3 for centrifugal fans with standard motors
- AN2 for centrifugal impellers with ECblue motors (except EC055)
- AN3 for centrifugal impellers with ECblue motor EC055 (see type key)
- AN3 for axial fans with ECblue motors
- AN4 for axial fans with AC external rotor motors

in line with **ISO 13348** and apply to the rated data and air performance curves at the rated voltage. The continuous line in the characteristic curve represents the optimum reliable operating range for fans.



Installation type A according to ISO

5801



Technology Centre (InVent)

### Fan test bench

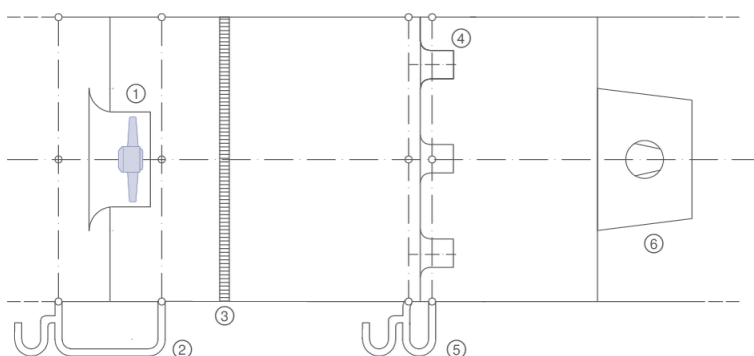
The fan characteristic curves are determined on a combined ventilation and sound test bench.

The characteristic curves are measured in compliance with **DIN EN ISO 5801** and **AMCA 210-99**. The sound power levels are measured in compliance with **DIN EN ISO 3745** and **ISO 13347-3** using the enveloping surface measuring method.

The figure below shows an example of the measuring setup. The fan is installed in the measuring chamber at free inlet and free exhaust (installation type A as per **DIN EN ISO 5801** or **AMCA 210-99**).

### Air density

The air density and humidity are conditioned during the measurement using heat exchangers and kept largely constant. The characteristic curves shown refer to the measuring density. The mean measuring density is  $1.16 \text{ kg/m}^3$ .



- ① Test fan
- ②  $p_{fs}$
- ③ Flow straightener
- ④ Nozzles
- ⑤  $\Delta p$  Differential pressure
- ⑥ Auxiliary fan



### Noise level data

The sound power levels are determined by using the enveloping surface method in compliance with **ISO 13347-3**, accuracy class 1 and/or **DIN EN ISO 3745**.

This is done by measuring the sound pressure level  $L_p$  of the individual third-octave bands at 12 points on the enveloping surface (Fig. 1a). The measured sound pressure levels for the third-octave bands are initially used to calculate the sound power level for the third-octave bands and then the suction side sound power level  $L_{W5}$ . To do this, the fans are installed with a free inlet (from the measuring chamber) and free exhaust (into the surrounding area). The standard measurements are carried out without the need for additional parts, e.g. guard grille. The measuring equipment used complies with **DIN EN 61672**.

Because of the different weighting of the third-octave sound power level, the A-evaluation, which is typically carried out, takes into account the subjective nature of human sound perception. The A-tested sound power level is the standard variable used to assess the sound characteristics of technical equipment.

### Calculation of pressure side sound power level and total sound power level

For axial fans, the pressure side sound power level is approximately equal to the suction side level. The total sound power level is calculated by adding up the power from the sound power levels of both the suction and the pressure side (see **DIN 45 635 Part 1, Appendix F, DIN EN ISO 3745**). Thus, it is approximately 3 dB higher than the suction side sound power level specified.

For centrifugal fans, as a rule, the A-weighted pressure side sound power level  $L_{W,DS}$  is about 5 dB higher than for the suction side. The overall sound power level  $L_{W,ges}$  is therefore about 6.5 dB higher than the suction side sound power level.

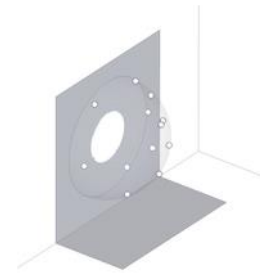


Fig.1a: Position of microphones



Fig. 1b: Fan test-bench

### Determination of total sound power level during the interaction of several sound sources

The total sound power level of several individual sound sources operating concurrently is calculated by adding the power of the individual levels in compliance with **DIN EN ISO 3745**. This equation is the basis for the diagrams in Fig. II and III.

To add up several sound sources with the same level, please see diagram (Fig. II) for complete level information; e.g. 6 identical sound sources operating concurrently results in a total level that is approx. 8 dB higher.

The total sound power level of two sound sources with different levels can be seen in diagram Fig. III. For example, two sound sources whose sound power levels differ by 4 dB produce a total sound power level that is around 1.5 dB higher than that of the louder sound source.

### Determination of sound pressure level

The A-tested sound pressure level  $L_{pA}$  for rooms with average absorption capacity for a distance of 1m from the fan axle is calculated by subtracting 7 dB from the A sound power level  $L_{WA}$ . In most cases, this assumption is correct and provides a sufficient level of accuracy. However, the sound characteristics can be hugely influenced by the individual installation situation.

Absorption of the sound pressure level, depending on the distance with partial reflection, is shown in Fig. IV.

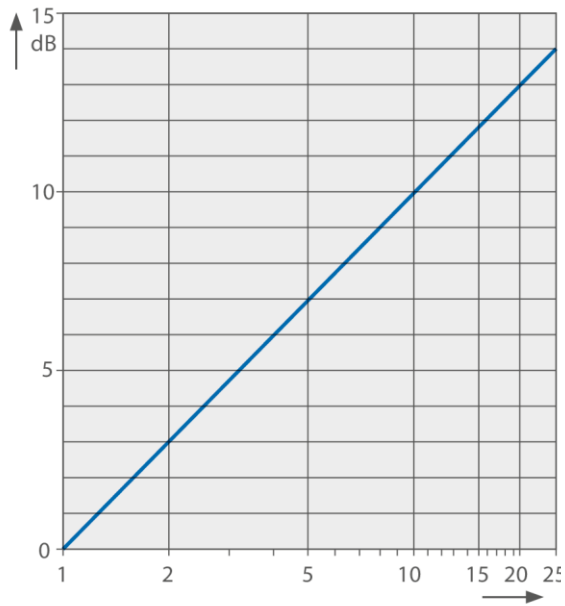


Fig. II: Addition of several sound sources

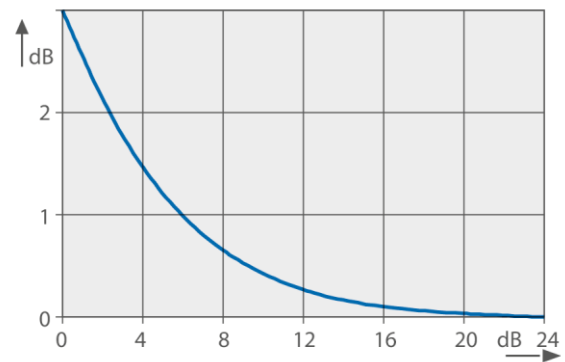


Fig. III: Sound sources of different levels

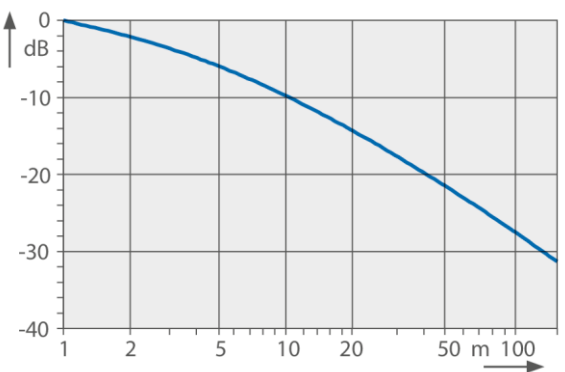


Fig. IV: Reduction of sound pressure level

## 7. EU-Declaration of conformity

### EU declaration of conformity

- Translation -  
(english)

ZA75-GB 2022/47 Index 019

**Manufacturer:** ZIEHL-ABEGG SE  
Heinz-Ziehl-Straße  
74653 Künzelsau  
Germany

**The manufacturer is solely responsible for issuance of the declaration of conformity.**

#### The products:

- External rotor motor MK.., MW..
- Axial fan DN.., FA.., FB.., FC.., FE.., FF.., FG.., FH.., FL.., FN.., FP.., FS.., FT.., FV.., VN.., VR.., ZC.., ZF.., ZG.., ZN..
- Centrifugal fan ER.., GR.., HR.., RA.., RD.., RE.., RF.., RG.., RH.., RK.., RM.., RR.., RZ.., WR..
- Cross-flow fan QG.., QK.., QR.., QT..

#### Motor type:

- Asynchronous internal or external rotor motor
- Asynchronous internal or external rotor motor with integrated frequency inverter
- Electronically commutated internal or external rotor motor
- Electronically commutated internal or external rotor motor (also with integrated EC controller)

**The above mentioned products of this declaration fulfil all relevant provisions of the following Directives of the Union:**

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- ErP Directive 2009/125/EC, in conjunction with Regulation (EU) no. 327/2011

**The following harmonized standards have been applied:**

- EN 60034-1:2010 + AC:2010
- EN 60204-1:2018
- EN 60529:1991 + A1:2000 + A2:2013 + AC:1993 + AC:2016 + AC:2019
- EN IEC 61000-6-2:2019
- EN IEC 61000-6-3:2021

Compliance with the ErP Directive 2009/125/EC does not refer to external rotor motors MK.., MW..

All ErP-relevant information comprises measurements which are determined using a standardised measurement set-up. More details can be obtained from the manufacturer.

Compliance with the EMC Directive 2014/30/EU refers only to those products when they are connected by mounting / operating instructions. If these products are integrated into a system or supplemented with other components (e.g. sensing controls) and operated, the manufacturer or operator is responsible of the overall system for compliance with the EMC Directive 2014/30/EU.

Künzelsau, 24.11.2022  
(Location, date of issue)

ZIEHL-ABEGG SE  
Moritz Krämer  
Director Product Development  
Ventilation Technology  
(name, function)



(signature)

ZIEHL-ABEGG SE  
Ralf Oesselke  
Director Projects & Series Development  
Ventilation Technology  
(name, function)



(signature)



### EC Declaration of Incorporation

- Translation -  
(english)

ZA87-GB 2022/17 Index 012

as defined by the EC Machinery Directive 2006/42/EC, Annex II B

#### The design of the partly completed machine:

- Axial fan DN..., FA..., FB..., FC..., FE..., FF..., FG..., FH..., FL..., FN..., FP..., FS..., FT..., FV..., VN..., VR..., ZC..., ZF..., ZG..., ZN...
- Centrifugal fan ER..., GR..., HR..., RA..., RD..., RE..., RF..., RG..., RH..., RK..., RM..., RR..., RZ..., WR...
- Cross-flow fan QD..., QG..., QK..., QR..., QT...

#### Motor type:

- Induction internal or external rotor motor (also with integrated frequency inverter)
- Electronically commutated internal or external rotor motor (also with integrated EC controller)

Complies with the requirements in Appendix I, Articles 1.1.2, 1.1.5, 1.4.1, 1.5.1 in EC Machinery Directive 2006/42/EC.

**Manufacturer:** ZIEHL-ABEGG SE  
Heinz Ziehl Straße  
74653 Künzelsau, Germany

#### The following harmonized standards have been applied:

EN 60204-1:2018	Safety of machinery – Electrical equipment of machines – Part 1: General requirements
EN ISO 12100:2010	Safety of machinery – General principles for design – Risk assessment and risk reduction
EN ISO 13857:2019	Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs
Note:	Compliance with EN ISO 13857:2019 relates only to the installed contact protection if it is part of the scope of delivery.

The special technical documents in accordance with Appendix VII B have been created and are available in full.

The following persons are authorized to compile the technical documents, address see above.

Upon reasonable request, the special documents shall be transmitted to the public authority. The transfer can be made electronically, on data carriers or on paper. All property rights remain with the aforementioned manufacturer.

**Start-up of this incomplete machine is prohibited until it is ensured that the machine in which it has been installed complies with the provisions of the EC Machinery Directive.**

Künzelsau, 27.04.2022  
(location, date of issue)

ZIEHL-ABEGG SE  
Tobias Gauss  
Deputy Head of Technics Ventilation Technology  
(name, function)



(signature)

ZIEHL-ABEGG SE  
Moritz Krämer  
Head of Electrical Systems  
(name, function)



(signature)

ZIEHL-ABEGG 



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## Intelligent control technology for any application

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