

Product Data Sheet ACi 4410 HHU

ebmpapst

The engineer's choice



ACi 4410 HHU

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1 General

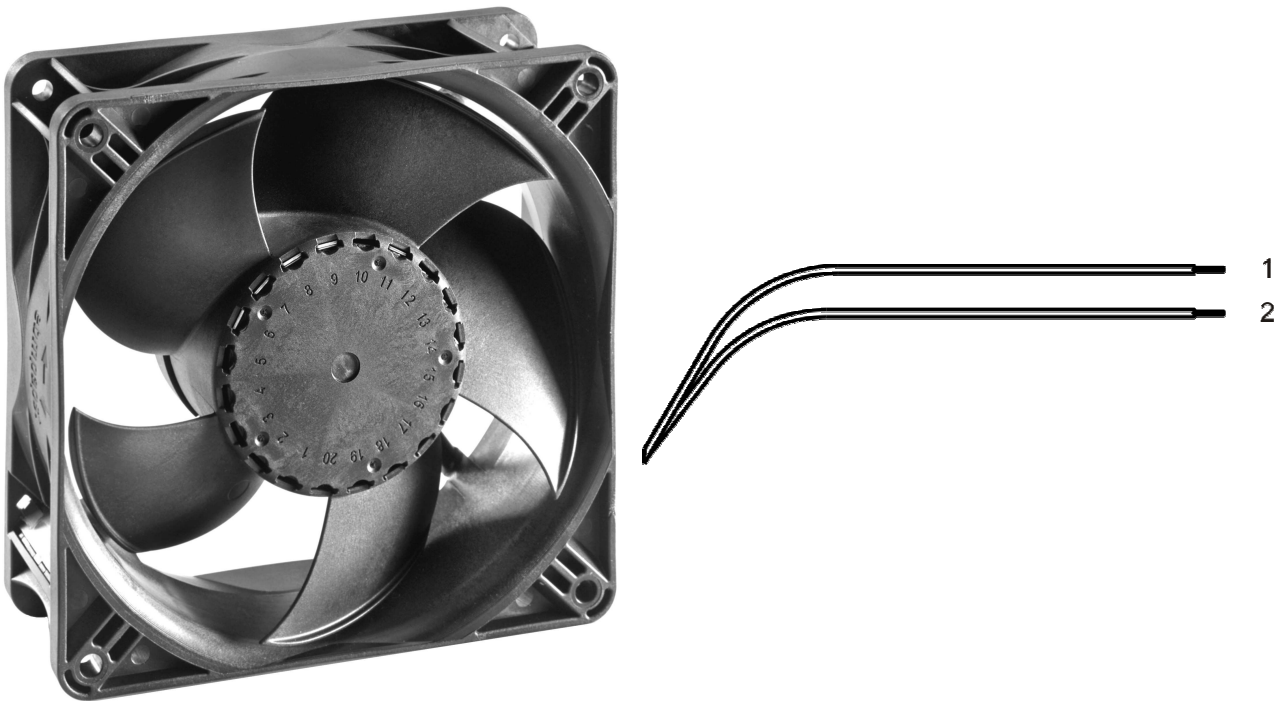
| | |
|-------------------------------------|------------------------|
| Fan type | Fan |
| Rotating direction looking at rotor | Clockwise |
| Airflow direction | Air outlet over struts |
| Bearing system | Ball bearing |
| Mounting position - shaft | Any |

2 Mechanics**2.1 General**

| | | |
|---|---|--|
| Width | 120,0 mm | |
| Height | 120,0 mm | |
| Depth | 38,0 mm | |
| Diameter | 0,0 mm | |
| Mass | 0,275 kg | |
| Housing material | Plastic | |
| Impeller material | Plastic | |
| Max. torque when mounted across both mounting flanges | Wire outlet corner: 50 Ncm Remaining corners: 80 Ncm | |
| Screw size | ISO 4762 - M4 degreased, without an additional brace and without washer | |
| Rotor protrusion max. | 0,6 mm | |

2.2 Connections

| | | |
|-----------------------|-------------|--|
| Electrical connection | Cable | |
| Lead wire length | L = 310 mm | |
| Tolerance | + - 20 mm | |
| Tube length | See drawing | |
| Tolerance | | |
| Wire size (AWG) | 20 | |
| Insulation diameter | | |
| Plug | See drawing | |
| Contact | See drawing | |



| Wire | Color | Operation |
|------|-------|-----------|
| 1 | brown | L |
| 2 | black | N |

3 Operating Data

3.1 Electrical Interface - Input

External voltage supply for input and output signals must be SELV conform.

3.2 Electrical Operating Data

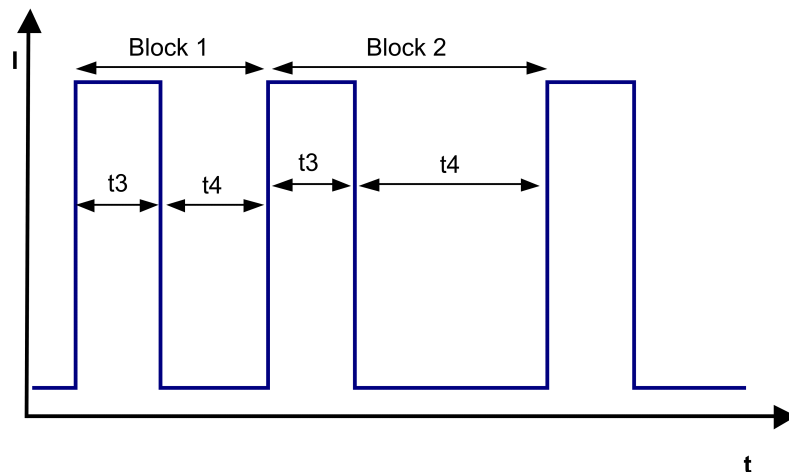
Measurement conditions: Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$: corresp. to free air flow (see chapter aerodynamics)
 I: corresp. to arithm. mean current value

| Features | Condition | Symbol | Values | | | |
|----------------------------------|----------------|-----------|------------------------|------------------|------------------|--|
| Voltage range Tolerance | | U | | | | |
| Nominal voltage | | U_N | | 115 V | 115 V | |
| Frequency | | f | 50 Hz / 60 Hz | | | |
| Power consumption Tolerance | $\Delta p = 0$ | P | 4,4 W +- 20 % | | | |
| Current consumption Tolerance | $\Delta p = 0$ | I_{RMS} | | 67 mA +- 20 % | 67 mA +- 20 % | |
| Speed Tolerance | $\Delta p = 0$ | n | 3.300 1/min +- 10 % | | | |

3.3 Electrical Features

| | | |
|-------------------------|------------------|--|
| Electronic function | Speed-Controlled | |
| Locked rotor protection | Auto restart | |



3.4 Aerodynamics

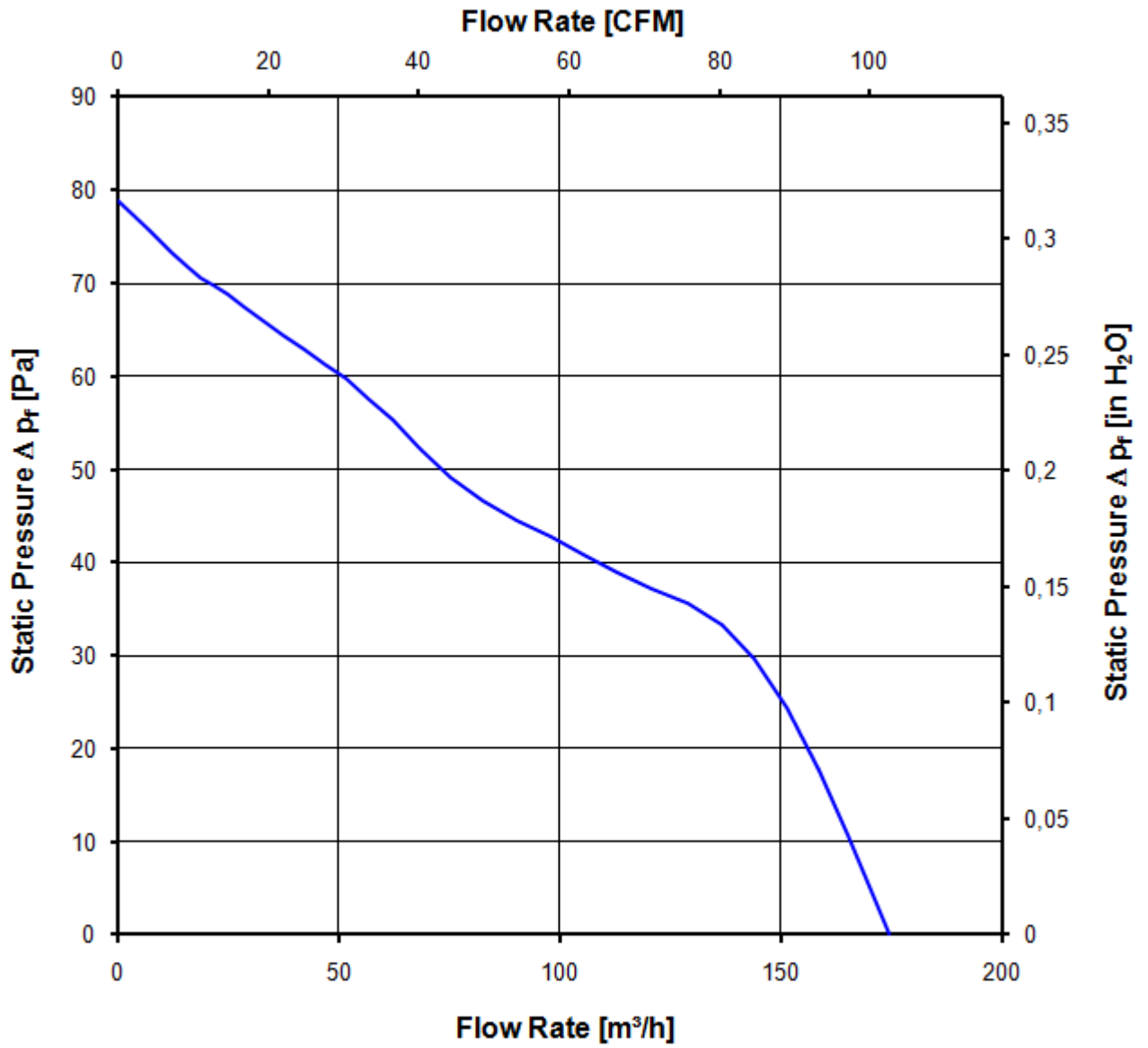
Measurement conditions: Measured with a double chamber intake rig acc. to DIN EN ISO 5801.
 Normal air density = 1,2 kg/m³; Temperature 23°C +/- 3°C;
 In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.
 The information is only valid under the specified test conditions and may be changed by the installation conditions. If there are deviations from the standard test conditions, the characteristic values must be checked under the installed conditions.

a) Operation condition:
 3.300 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V

| | |
|---|-------------------------|
| Max. free-air flow ($\Delta p = 0 / \dot{v} = \text{max.}$) | 175,0 m ³ /h |
| Max. static pressure ($\Delta p = \text{max.} / \dot{v} = 0$) | 78 Pa |

b) Operation condition:
 3.300 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V

| | |
|---|--|
| Max. free-air flow ($\Delta p = 0 / \dot{v} = \text{max.}$) | |
| Max. static pressure ($\Delta p = \text{max.} / \dot{v} = 0$) | |



3.5 Sound Data

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.
 Sound power level: Acc. to DIN 45635 part 38 (ISO 10302)
 Measured in a semianchoic chamber with a background noise level of $L_p(A) < 5 \text{ dB}(A)$
 For further measurement conditions see chapter aerodynamics.

a) Operation condition: 3.300 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V

| | | |
|---|--------------------|--|
| Optimal operating point | 142,0 m3/h @ 27 Pa | |
| Sound power level at the optimal operating point | 5,5 bel(A) | |
| Sound pressure level at free air flow, measured in rubber bands | 43,0 dB(A) | |

b) Operation condition: 3.300 1/min at free air flow Frequency: 50 Hz Nominal voltage: 115 V

| | | |
|---|--|--|
| Optimal operating point | | |
| Sound power level at the optimal operating point | | |
| Sound pressure level at free air flow, measured in rubber bands | | |

4 Environment

4.1 General

| | | |
|--|--------|--|
| Min. permitted ambient temperature TU min. | -40 °C | |
| Max. permitted ambient temperature TU max. | 75 °C | |
| Min. permitted storage temperature TL min. | -40 °C | |
| Max. permitted storage temperature TL max. | 80 °C | |

4.2 Climatic Requirements

| | | |
|--------------------------------|---|--|
| IP-protection type (certified) | IP 65 (for fan only, not for connector if applicable) **) | |
| Humidity requirements | humid temperature, cyclic; according to DIN EN 60068-2-38, 10 cycle and condensation water check; according to DIN EN ISO 6270-2, 14 days | |
| Salt fog requirements | salt fog, cyclic, in operation; according to DIN EN 60068-2-52, 3 cycle | |

Permitted application area:

The product is for the use in open and unsheltered areas. Direct exposure to water as well as saline ambient conditions are allowed provided that this does not prevent the normal operation.

Pollution degree 3 (according DIN EN 60664-1)

It occurs conductive pollution or dry non-conductive pollution which becomes conductive due to condensation.

**) The specification of the IP protection refers to the conditions mentioned in certification of the fan. The above mentioned short description of the protection scope is not final. For detailed information of the respective protection scope and definitions, see certification as well as DIN EN 60529 (protection by housings) and ISO 20653 (for vehicles) with the letter K.

Short description of the IP-protection type:

Solid particle Protection: Dust tight.

Protection against deliberate contact: Protected against contact to hazardous parts with a wire.

Protection against water: Protected against water jets.

5 Safety

5.1 Electrical Safety

A verification of thermal conditions (normal and abnormal operation) as well as the protection against electric shock, ingress of solid foreign objects and water has to be done in conjunction with the appliance.

| | |
|---------------------------|--------------|
| Test voltage HV type test | 3000 V |
| Unit test voltage | VAC |
| Time type test HV | 1 s |
| Insulation resistance | RI > 10 MOhm |
| Protection class | built-in fan |

5.2 Approval Tests

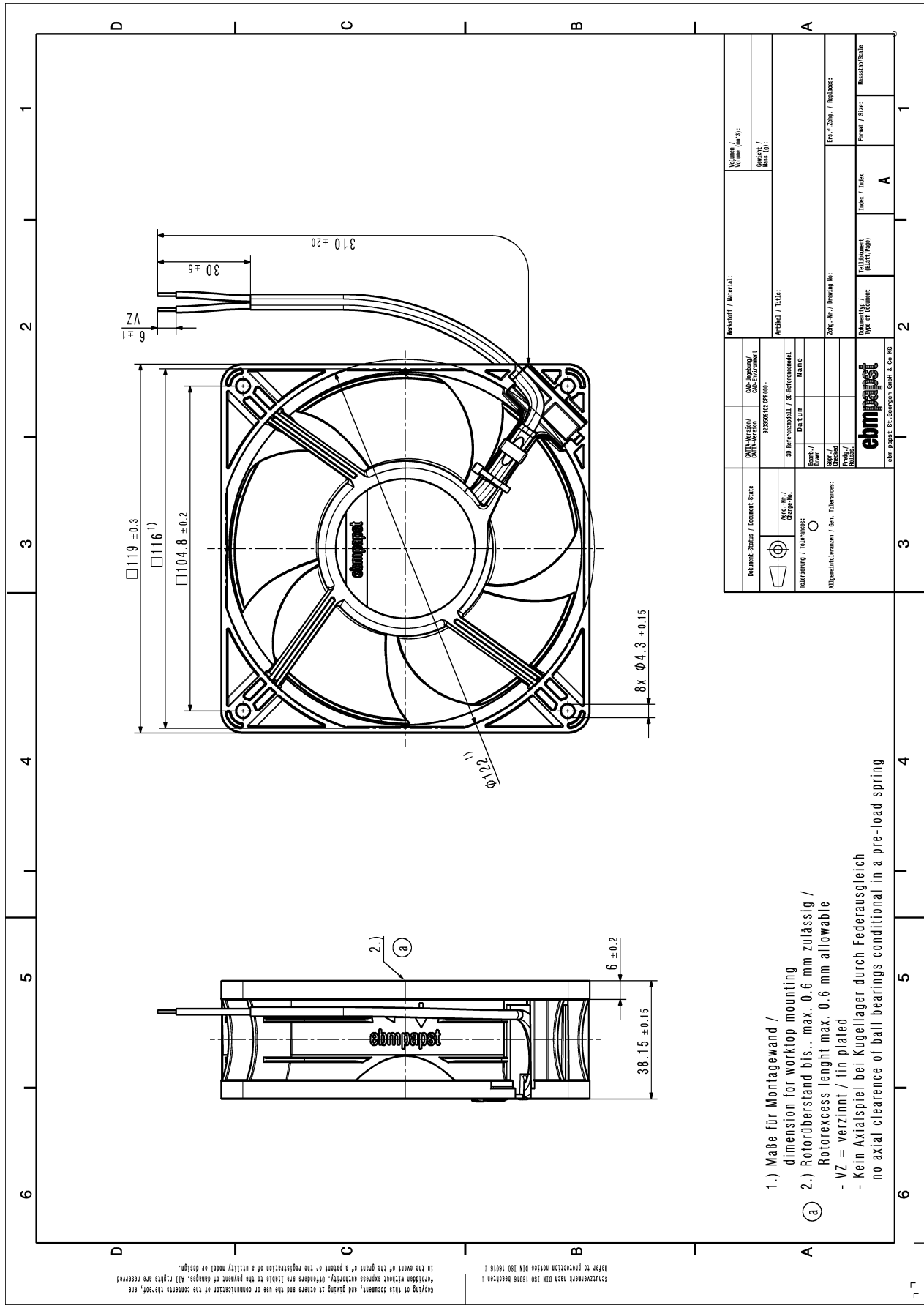
| | | |
|-----|---|---|
| CE | EC Declaration of Conformity | Yes |
| EAC | Eurasian Conformity | Yes |
| UL | Underwriters Laboratories | Yes / UL507, Electric Fans |
| VDE | Association for Electrical, Electronic and Information Technologies | Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment |
| CSA | Canadian Standards Association | Yes / C22.2 No. 113 Fans and Ventilators |
| CCC | China Compulsory Certification | Yes / GB 12350 Safety Requirements for small Power Motors |

6 Reliability

6.1 General

| | | |
|--|-----------|--|
| Life expectancy L10 at TU = 40 °C | 65.000 h | |
| Life expectancy L10 at TU max. | 30.000 h | |
| Life expectancy L10 acc. to IPC 9591 at TU = 40 °C | 110.000 h | |

SHENZHEN HONOR ELECTRONICS CO., LTD. (HONOR ELECTRONICS)
 Refer to production order DMI 150 16018 B0018
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- 1.) Maße für Montagewand / dimension for worktop mounting
- 2.) Rotorüberstand bis... max. 0.6 mm zulässig / Rotorexcess height max. 0.6 mm allowable
- VZ = verzinkt / tin plated
- Kein Axialspiel bei Kugellager durch Federausgleich / no axial clearance of ball bearings conditional in a pre-load spring

| | | | | | |
|---|--|--|--|---|--|
| Dokument-Status / Document-Status Zeichnung / Drawing Datum / Date Version / Version Änderung / Change Änderung / Change | | CAD-System / CAD-System CAD-Software / CAD-Software 3D-Referenzmodell / 3D-Referenzmodell Name / Name Datum / Date Version / Version Änderung / Change | | Werkstoff / Material Volumen / Volume (cm³) Gewicht / Mass (g) | |
| Toleranzung / Tolerances Allgemeintoleranzen / gen. Tolerances: | | Artikel / Title Zeichnungs-Nr. / Drawing No. | | Fert. Zöng. / Replaces: | |
| Zeichnungs-Nr. / Drawing No. 900306100 EP169 | | Datum / Date Version / Version Änderung / Change | | Zeichnungs-Typ / Type of Document Zeichnung / Drawing Maßstab / Scale | |
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