



Press release

Accuracy classes are a measure of manufacturing accuracy

Accurate production for correct fan values

At ebm-papst, innovation and quality are at the forefront of our activities. Documented performance data and the correct choice of fan are only part of the story. It is also crucial to ensure that the fan is constructed in such a way that it actually delivers the specified performance level in operation, regardless of the production date.

A certain amount of tolerance is inevitable with any technical product, for example on account of dimensional deviations in components and assemblies (e.g. enamelled wire diameters or electronic components). Tolerance limits can be set and action can be taken to ensure that these are not exceeded. This is the job of a company's Quality Assurance department. And the greater the possible deviations and the resultant performance deficits, the greater the safety allowance required when selecting fans. DIN 24166 – "Fans; Technical delivery conditions" therefore defines accuracy classes and permits deviations from the documented performance characteristics. The so-called limiting deviations are divided into Classes 0 to 3. E.g. the standard allows accuracy class 3 for fans smaller than 10 kW (Fig. 1).

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Performance characteristics	Limiting deviation in class			
	0 (AN1)	1 (AN2)	2 (AN3)	3 (AN4)
Air flow q_v	±1 %	±2.5 %	±5 %	±10 %
Static pressure increase Δp_{stat}	±1 %	±2.5 %	±5 %	±10 %
Drive performance P_{ed}	±2 %	+3 %	+8 %	+16 %
Static efficiency η_{stat}	-1 %	-2 %	-5 %	- (-12 %)
Sound power level db(A)	+3dB(A) (+2dB(A))	+3dB(A)	+4dB(A)	+6dB(A)

* – ISO 13348 with other designations and slightly different values

Figure 1: Accuracy class as per DIN 24166 (ISO 13348)*

Top class RadiPac

At the end of the production process, all RadiPac fans are checked in the as-delivered condition for any performance deviations.

This quality assurance procedure involves recording all the electrical performance data and confirming compliance with the permissible manufacturing tolerances. Based on a size 500 RadiPac fan, analysis shows that ebm-papst attains accuracy class 1 (Fig. 2). For air handling unit manufacturers, this means that the figures given for the fan in the catalogue and Product Selector must not differ from the actual drive performance by more than 2 % and from the total efficiency by more than 1 %.



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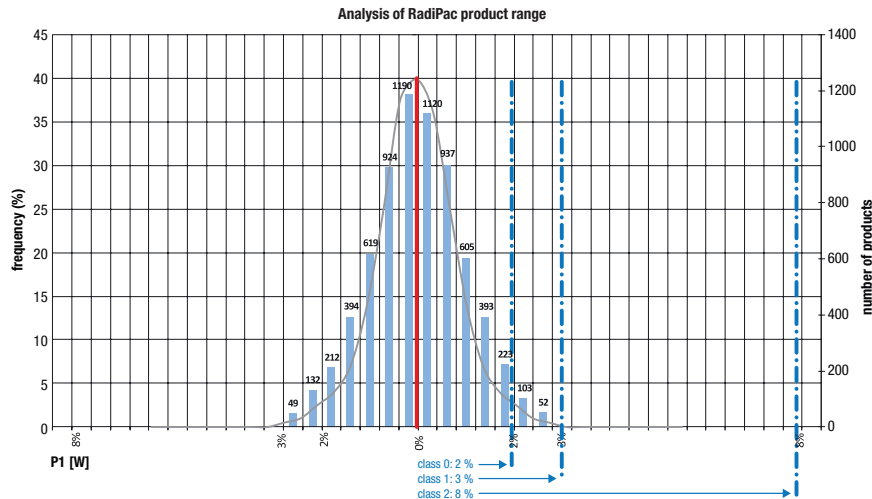


Figure 2: The accuracy classes define production-related deviations from fan performance data. Accordingly the RadiPac product range attains Class 1. Analysis is based on performance measurements on 6,953 fans.

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Planning reliability

Comparison of the product documentation and the actual product delivered reveals that in practice the power consumption of the fan will be lower and the total efficiency level higher than the documented figures. Hence there is no risk of any unpleasant surprises when the air handling system goes into operation, and there is also no need for any precautionary over-dimensioning of the fan.

Reliability and trust are vital to any partnership. Customers must be able to rely entirely on their suppliers - and ebm-papst is well aware of this responsibility. Both the fans and the associated documentation are quality products in which planners and operators of air handling units can always place their trust.

About ebm-papst

The ebm-papst group is the world's leading manufacturer of fans and motors and is a pioneer and pacesetter for ultra-efficient EC technology. ebm-papst fans and motors are represented in many industries, including ventilation, air-conditioning and refrigeration technology, household appliances, heating engineering, in IT/telecommunications, in medical technology and in applications in automotive and commercial vehicles engineering. ebm-papst EC motor technology, and the market leader's engineering and logistics expertise will add value to your business.

Find out more about ebm-papst A&NZ on www.ebmpapst.com.au.