

fan type KXE100-001030-00	FK serial no. 1	comm. no. -
your order no.	type of control speed	codeword -

fan type KXE100-001030-00

		NP	OP 1*
		free inlet	ducted
		discharge operation	discharge operation
		clean air	clean air
designated volume flow			10 m ³ /min
designated total pressure increase			1000 daPa
humidity			0 g/kg
gas constant	R	287	287 J/(kg K)
coefficient of adiabatic compressibility Kappa	K	1,4	1,4 -
inlet temperature	t1	20	20 °C
discharge temperature	t2	40	40 °C
altitude	h	0	0 m
abs. atmos. pressure	P0	101,33	101,33 kPa
athmos. density	p0	1,205	1,205 kg/m ³
density at inlet	p1	1,205	1,205 kg/m ³
volume flow	V1	10	10 m ³ /min
total pressure increase	Δpt	1000	1000 daPa
dynamic pressure	pd2	10	10 daPa
dynamic pressure	pd1	7	7 daPa
static pressure increase	Δpst	997	997 daPa
shaft power	PW	4,2	4,2 kW
impeller speed	nI	2915	2915 rpm
rec. motor power	PM	7,5	7,5 kW
motor synchronous speed	nM	2950	2950 rpm
tip speed	u2	112	112 m/s

C-weighted meas.surf.sound pressure level at 1m distance with

both sides ducted	LpCk	84	84 dB(C)
free inlet	LpC5	97	97 dB(C)
free discharge	LpC6	109	109 dB(C)

A-weighted total sound power level

inlet	LwAi1	101	101 dB(A)
discharge	LwAi2	113	113 dB(A)
correct.value A-weight.dB(A)	dLkA	6	6 dB(A)

A-weighted meas.surf.sound pressure level at 1m distance with

both sides ducted	LpAk	80	80 dB(A)
free inlet	LpA5	93	93 dB(A)
free discharge	LpA6	104	104 dB(A)
superficial dimension	Ls-k	15	15 dB

characteristic curve type

Δp/Pw	1/1	1/1 -
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efficiency at total pressure increase

η _{tot}	39,8	39,8 %
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efficiency at static pressure increase

η _{stat}	39,6	39,6 %
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* BP 1 : Bp1

DN1 SFV1.0 EV1.0 RE1.0 AKZ1.0 AKZ2.0 AKZ1.0 ATEX

2.2.1.20

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency

η ≥ 0,9 x η_{max}. Coordination for class of accuracy (G.Kl.) see product specification.

At any rate, please pay attention to the techn. indications made in our Handbook of fans.

pressure units : 1 daPa = 10 Pa = 10 N/m² = 0,1 mbar = 1,0197 mmWC

class of accuracy	1	2	3
Δpt und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6



FAN CHARACTERISTIC CURVE

Liste 17_1 80Grad ES

quotation item
KRV 201905381-00 - 1.02

designation

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28.05.2019 / crb

fan type
KXE100-001030-00

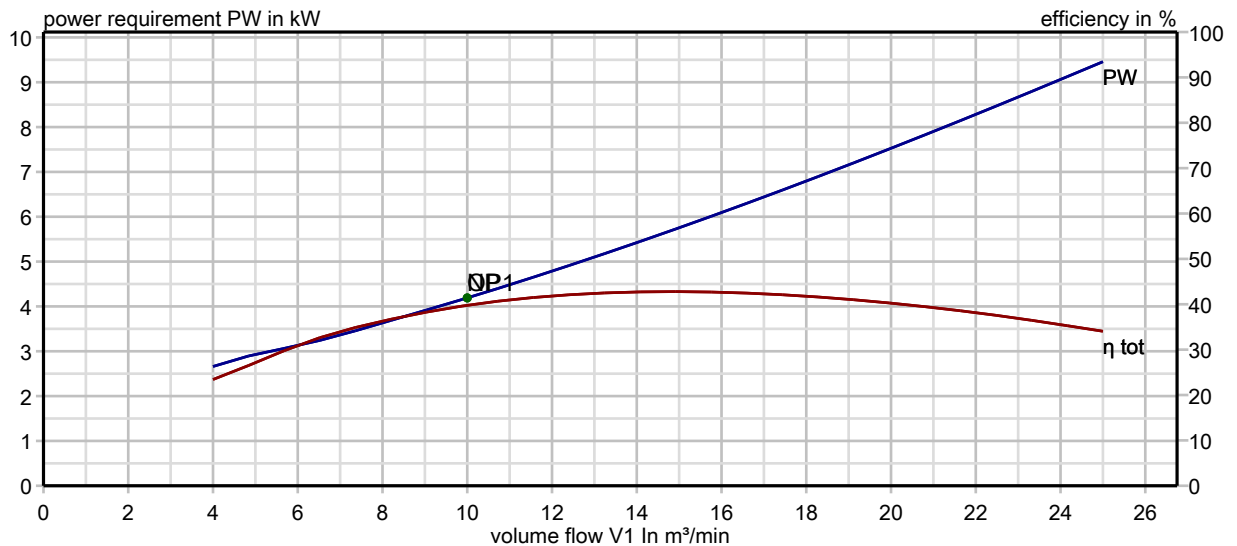
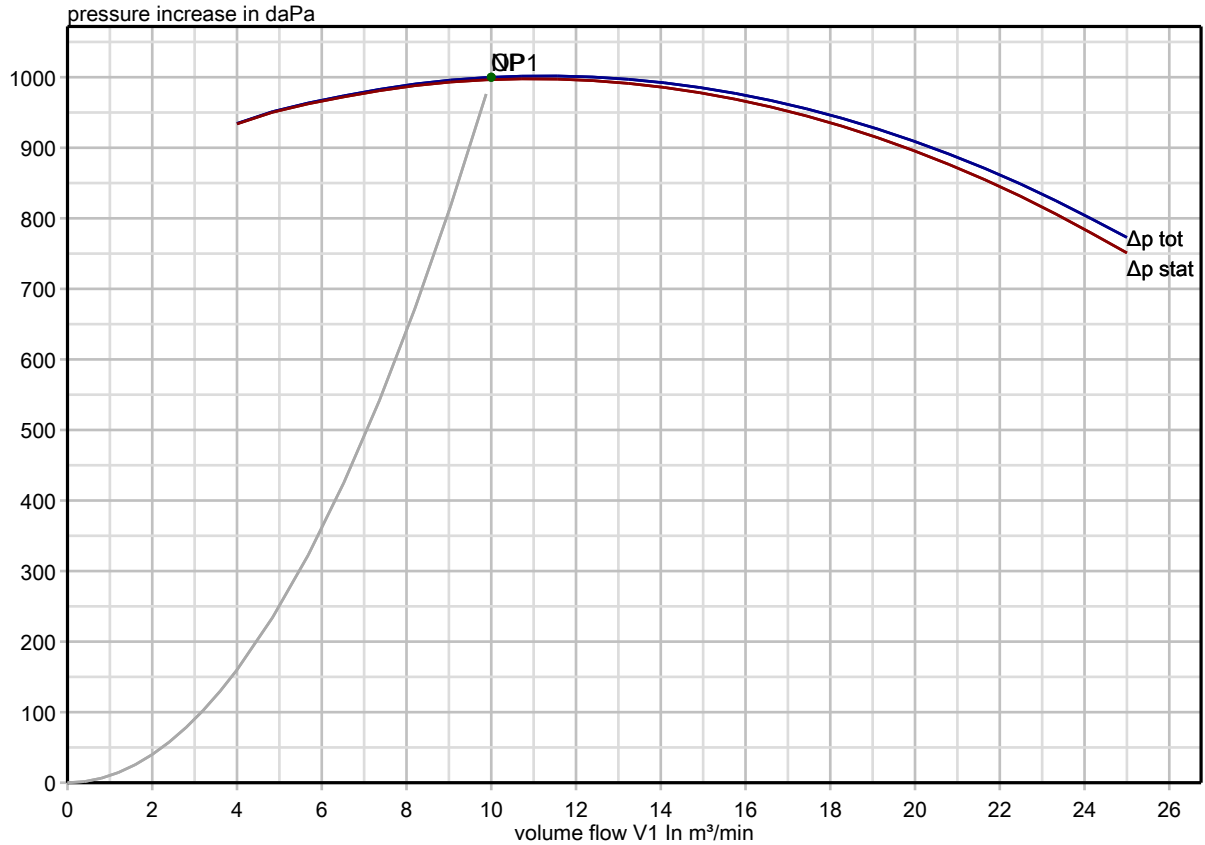
FK serial no.
1

comm. no.
-

your order no.

type of control
speed

codeword
-



		NP	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6
volume flow V1	m ³ /min	10	10					
total pressure increase Δpt	daPa	1000	1000					
density at inlet ρ1	kg/m ³	1,205	1,205					
impeller speed n1	rpm	2915	2915					
inletguidevane/damp.								

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class of accuracy	1	2	3
Δpt und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6



SOUND DATA

Liste 17_1 80Grad ES

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fan type KXE100-001030-00	FK serial no. 1	comm. no. -
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technical data of fan at $\rho-1 = 1,205 \text{ kg/m}^3$ (nominal point) :

total pressure increase	Δp_t	1000 daPa	volume flow	V1	10,00 m ³ /min
impeller speed	nl	2915 rpm	shaft power	PW	4,2 kW
no. of blades	z	13 -	main residual frequency	f	632 Hz
drive motor	PM	7,5 kW	motor speed	nM	2950 rpm

sound data:

superficial dimension	Ls-k	15,4 dB	corr. value A-weighting	dLkA	5,6 dB(A)
A-weighted total sound power level at inlet:	LwAi1	101,1 dB(A)	at discharge	LwAi2	113,0 dB(A)
A-weighted free inlet resp. free discharge sound pressure level at 1m distance from hemisphere radius					
at inlet:	LpA5	92,5 dB(A)	at discharge	LpA6	104,4 dB(A)
A-weighted external sound power level				LwAa	95,2 dB(A)
A-weighted meas. surf. sound pressure level				LpA	79,8 dB(A)
A-weight. meas. surface sound pressure level of drive			LpAMo		68,0 dB(A)
A-weight. meas. surface sound press.level fan and drive			LpAMo+LpA		dB(A)

octave spectrum

frequency	fm in Hz	63	125	250	500	1000	2000	4000	8000	Dim
main residual frequ.	dLD-okt	0,0	0,0	0,0	1,6	0,3	0,1	0,0	0,0	dB
relative octave spectrum	dLw-okt	-8,4	-5,8	-5,3	-7,0	-10,9	-17,0	-25,2	-35,6	dB
A-weighting	dLA	-26,2	-16,1	-8,6	-3,2	0,0	1,2	1,0	-1,1	dB
total sound power	Lwi2-okt	109,7	112,4	112,8	112,8	107,6	101,3	93,0	82,6	dB
	Lwi1-okt	97,9	100,5	101,0	100,9	95,7	89,4	81,1	70,7	dB
	LwAi2-okt	83,5	96,3	104,2	109,6	107,6	102,5	94,0	81,5	dB(A)
	LwAi1-okt	71,7	84,4	92,4	97,7	95,7	90,6	82,1	69,6	dB(A)
A-weighted external sound power level	LwAa-okt	65,8	78,5	86,4	91,8	89,8	84,7	76,2	63,7	dB(A)
A-weighted meas. surf. sound pressure level	LpA-okt	50,3	63,0	71,0	76,3	74,4	69,3	60,8	48,3	dB(A)

Remark : The rounding of the values to whole figures results necessarily in differences of further calculations.
At calculation of the sound pressure level a reduction of 3 dB for self shielding of the fan housing is to be taken into account.
LpA = LwAa - Ls - 3 dB(A)

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Δp_t und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6



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technical data of fan at $\rho=1,205 \text{ kg/m}^3$ (OP 1 Bp1) :

total pressure increase Δp_t	1000 daPa	volume flow V1	10,00 m ³ /min
impeller speed nl	2915 rpm	shaft power PW	4,2 kW
no. of blades z	13 -	main residual frequency f	632 Hz
drive motor PM	7,5 kW	motor speed nM	2950 rpm

sound data:

superficial dimension Ls-k	15,4 dB	corr. value A-weighting dLkA	5,6 dB(A)
A-weighted total sound power level at inlet: LwAi1	101,1 dB(A)	at discharge LwAi2	113,0 dB(A)
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at inlet: LpA5	92,5 dB(A)	at discharge LpA6	104,4 dB(A)
A-weighted external sound power level LwAa	95,2 dB(A)		
A-weighted meas. surf. sound pressure level LpA	79,8 dB(A)		
A-weight. meas. surface sound pressure level of drive LpAMo	68,0 dB(A)		
A-weight. meas. surface sound press.level fan and drive LpAMo+LpA	dB(A)		

sound correction value

speed correction dLn	0 dB	deviation of nominal point dLbp	0 dB
density correction dLt	0 dB	other corrections dLs	0 dB

octave spectrum

frequency	fm in Hz	63	125	250	500	1000	2000	4000	8000	Dim
main residual frequ. dLD-okt		0,0	0,0	0,0	1,6	0,3	0,1	0,0	0,0	dB
relative octave spectrum dLw-okt		-8,4	-5,8	-5,3	-7,0	-10,9	-17,0	-25,2	-35,6	dB
A-weighting dLA		-26,2	-16,1	-8,6	-3,2	0,0	1,2	1,0	-1,1	dB
total sound power	Lwi2-okt	109,7	112,4	112,8	112,8	107,6	101,3	93,0	82,6	dB
	Lwi1-okt	97,9	100,5	101,0	100,9	95,7	89,4	81,1	70,7	dB
	LwAi2-okt	83,5	96,3	104,2	109,6	107,6	102,5	94,0	81,5	dB(A)
	LwAi1-okt	71,7	84,4	92,4	97,7	95,7	90,6	82,1	69,6	dB(A)
A-weighted external sound power level LwAa-okt		65,8	78,5	86,4	91,8	89,8	84,7	76,2	63,7	dB(A)
A-weighted meas. surf. sound pressure level LpA-okt		50,3	63,0	71,0	76,3	74,4	69,3	60,8	48,3	dB(A)

Remark : The rounding of the values to whole figures results necessarily in differences of further calculations.
At calculation of the sound pressure level a reduction of 3 dB for self shielding of the fan housing is to be taken into account.
LpA = LwAa - Ls - 3 dB(A)

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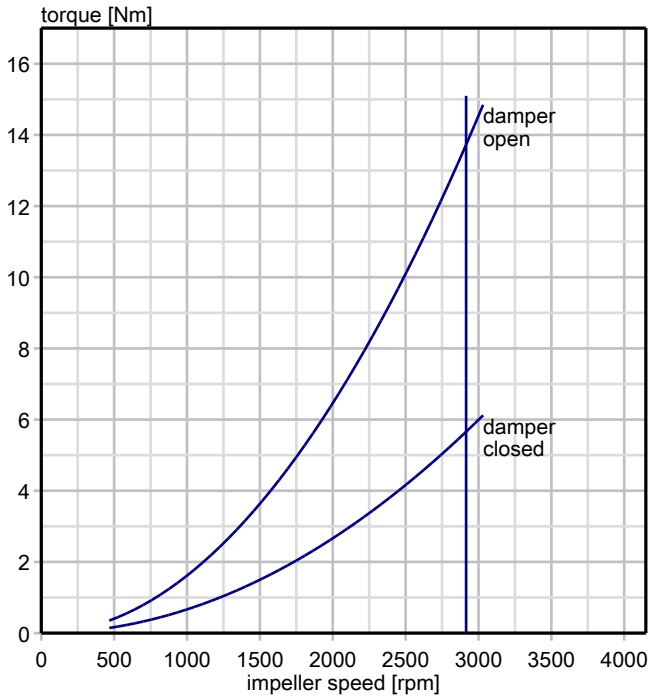
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Δp_t und V1 [%]	+/- 2,5	+/- 5	+/- 10
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Lw und Lp [dB]	+ 3	+ 4	+ 6

TORQUE DIAGRAM

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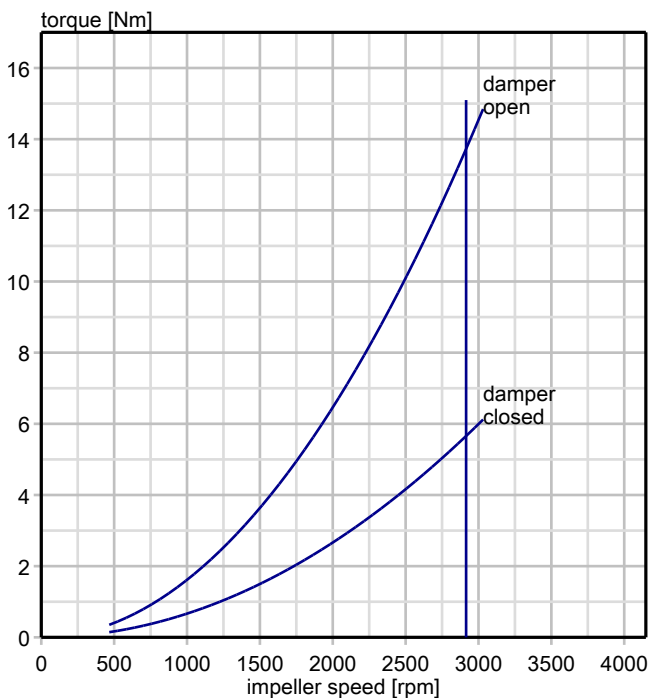
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nominal point : NP ———

V1	=	10 m ³ /min
Δpt	=	1000 daPa
PW	=	4,2 kW
n1	=	2915 rpm
ρ1	=	1,205 kg/m ³
J (imp.)	=	1,85 kgm ²



design point : OP1 ———

V1	=	10 m ³ /min
Δpt	=	1000 daPa
PW	=	4,2 kW
n1	=	2915 rpm
ρ1	=	1,205 kg/m ³
J (imp.)	=	1,85 kgm ²

class of accuracy	1	2	3
Δpt und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6



MOTOR DATA / START-UP

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The following data apply to the fan nominal point.

Start-up data

rated output motor torque	24,5	Nm
torque Y	12,6	Nm
torque Δ	46,6	Nm
load torque in NP	13,7	Nm
load torque closed damper	6,9	Nm
moment of inertia relative to nM	2,0	kgm ²
start-up time in NP Y	86,7	s
start-up time closed damper Y	62,5	s
start-up time in NP Δ	15,0	s
start-up time closed damper Δ	14,0	s
theoretical starting time	15,0	s
mass inertia ratio I _v /I _m	31,9	-

Please note the heavy-duty start for the Δ-start-up type. It is necessary to have the start-up behaviour checked by the motor producer.

Please note the heavy-duty start for the YΔ-start-up type. It is necessary to have the start-up behaviour checked by the motor producer.

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class of accuracy	1	2	3
Δpt und V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw und Lp [dB]	+ 3	+ 4	+ 6