



# technical data page 1

Liste 17\_1 80Grad

quotation item  
KRV 201910975-00 - 1.02

designation

date  
15.11.2019 / srj

fan type MXE016-008030-00	BU serial no. 1	comm. no.
your order no.	type of control valve	codeword Anfrage

fan type MXE016-008030-00

OP 1\*

type of connection		ducted
operating condition		inlet operation
handled gas		clean air
designated volume flow		61 m <sup>3</sup> /min
designated static pressure increase		170 daPa
humidity		0 g/kg
gas constant	R	287 J/(kg K)
coefficient of adiabatic compressibility Kappa	K	1,4 -
inlet temperature	t1	30 °C
discharge temperature	t2	32 °C
altitude	h	0 m
abs. atmos. pressure	P0	101,33 kPa
athmos. density	ρ0	1,165 kg/m <sup>3</sup>
density at inlet	ρ1	1,146 kg/m <sup>3</sup>
volume flow	V1	61 m <sup>3</sup> /min
total pressure increase	Δpt	172 daPa
dynamic pressure	pd2	9 daPa
dynamic pressure	pd1	10 daPa
static pressure increase	Δpst	173 daPa
shaft power	PW	2,3 kW
impeller speed	nI	2875 rpm
rec. motor power	PM	3 kW
motor synchronous speed	nM	2920 rpm
tip speed	u2	60 m/s

C-weighted meas.surf.sound pressure level at 1m distance with		
both sides ducted	LpCm	69 dB(C)
free inlet	LpC5	90 dB(C)
free discharge	LpC6	91 dB(C)
A-weighted total sound power level		
inlet	LwAi1	93 dB(A)
discharge	LwAi2	94 dB(A)
correct.value A-weight.dB(A)	dLkA	8 dB(A)
A-weighted meas.surf.sound pressure level at 1m distance with		
both sides ducted	LpAm	62 dB(A)
free inlet	LpA5	84 dB(A)
free discharge	LpA6	84 dB(A)
superficial dimension	Ls-k	14 dB
characteristic curve type	Δp/Pw	6/6 -
efficiency at total pressure increase	ηtot	75,3 %
efficiency at static pressure increase	ηstat	75,4 %

\* BP 1 : BP1

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

3.0.0.8

Tolerances dependent on class of accuracy in accordance to DIN 24166 in range of efficiency  
 $\eta \geq 0,9 \times \eta_{max}$ . Coordination for class of accuracy (G.KI.) 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/m<sup>2</sup> = 0,1 mbar = 1,0197 mmWC

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



# FAN CHARACTERISTIC CURVE

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MXE016-008030-00

BU serial no.  
1

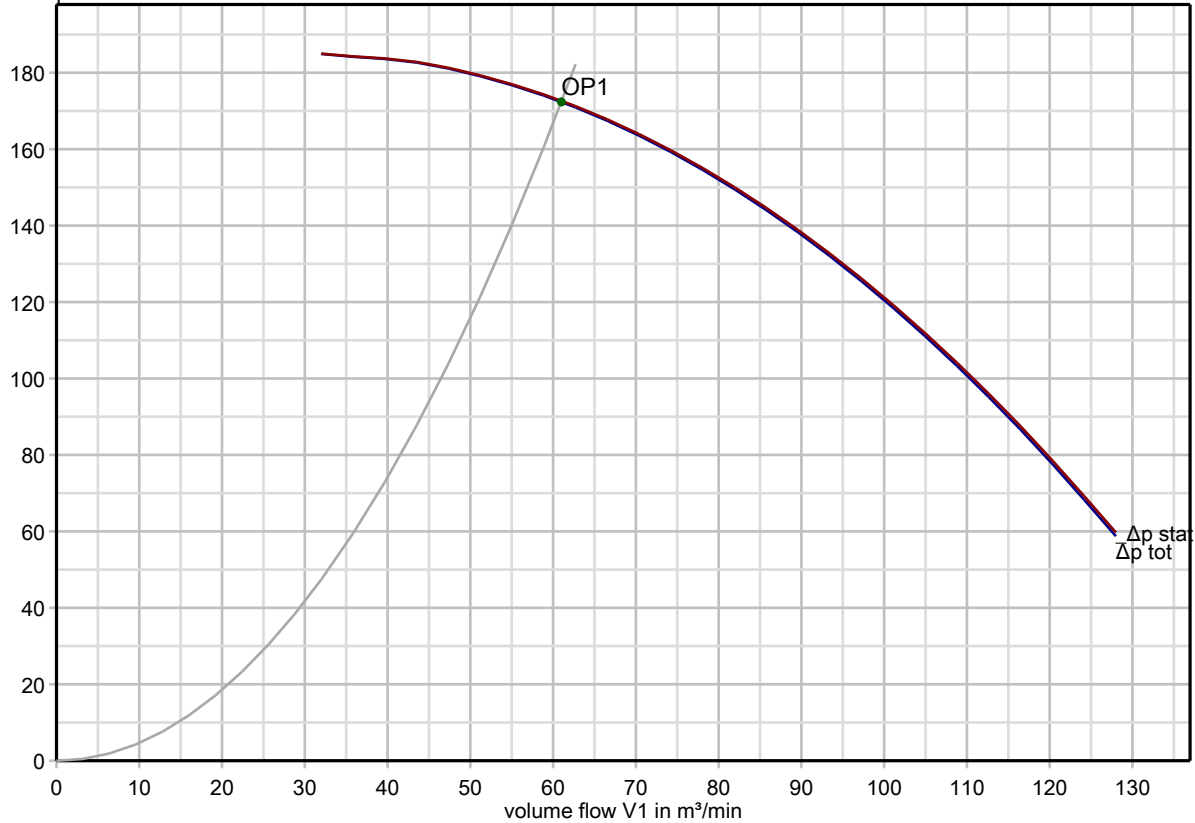
comm. no.

your order no.

type of control  
valve

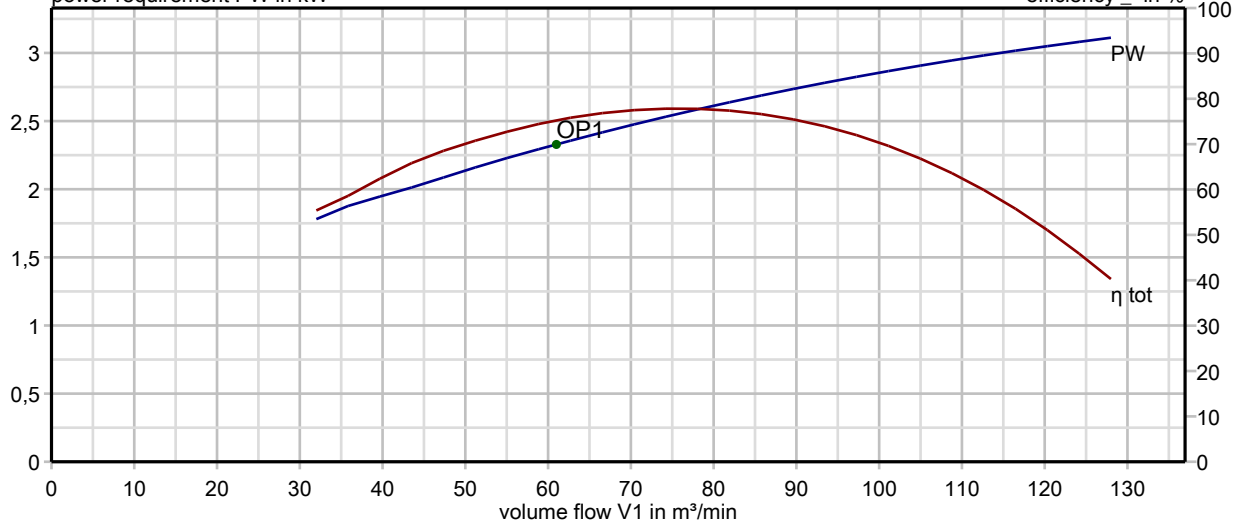
codeword  
Anfrage

pressure increase in daPa



power requirement PW in kW

efficiency  $\eta_{tot}$  in %



	NP	OP 1	OP 2	OP 3	OP 4	OP 5	OP 6
volume flow V1		61					
total pressure increase $\Delta p_t$		172					
density at inlet $\rho_1$		1,146					
impeller speed n1		2875					
inletguidevane/damp.							

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class of accuracy	1	2	3
$\Delta p_t$ and V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw and Lp [dB]	+ 3	+ 4	+ 6



# SOUND DATA

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fan type MXE016-008030-00	BU serial no. 1	comm. no.
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technical data of fan at  $\rho=1,146 \text{ kg/m}^3$  (OP 1 BP1) :

total pressure increase	$\Delta p_t$	172 daPa	volume flow	V1	61,00 m <sup>3</sup> /min
impeller speed	nl	2875 rpm	shaft power	PW	2,3 kW
no. of blades	z	9 -	main residual frequency	f	431 Hz
drive motor	PM	3 kW	motor speed	nM	2920 rpm

sound data:

superficial dimension	Ls-k	14,4 dB	corr. value A-weighting	dLkA	7,5 dB(A)
A-weighted total sound power level at inlet:	LwAi1	93,3 dB(A)	at discharge	LwAi2	93,7 dB(A)
A-weighted free inlet resp. free discharge sound pressure level at 1m distance from hemisphere radius					
at inlet:	LpA5	84,1 dB(A)	at discharge	LpA6	84,5 dB(A)
A-weighted external sound power level				LwAa	76,8 dB(A)
A-weighted meas. surf. sound pressure level				LpA	62,4 dB(A)
A-weight. meas. surface sound pressure level of drive			LpAMo		67,0 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	+2 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	1,5	0,3	0,1	0,0	0,0	dB
relative octave spectrum	dLw-okt	-4,6	-5,4	-7,1	-9,8	-13,3	-17,7	-23,1	-29,3	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	96,4	95,6	93,9	92,8	88,0	83,4	78,0	71,7	dB
	Lwi1-okt	96,0	95,2	93,5	92,4	87,6	83,0	77,6	71,3	dB
	LwAi2-okt	70,2	79,5	85,3	89,6	88,0	84,6	79,0	70,6	dB(A)
	LwAi1-okt	69,8	79,1	84,9	89,2	87,6	84,2	78,6	70,2	dB(A)
A-weighted external sound power level	LwAa-okt	53,3	62,6	68,4	72,7	71,2	67,7	62,1	53,7	dB(A)
A-weighted meas. surf. sound pressure level	LpA-okt	38,9	48,2	54,0	58,3	56,8	53,3	47,7	39,3	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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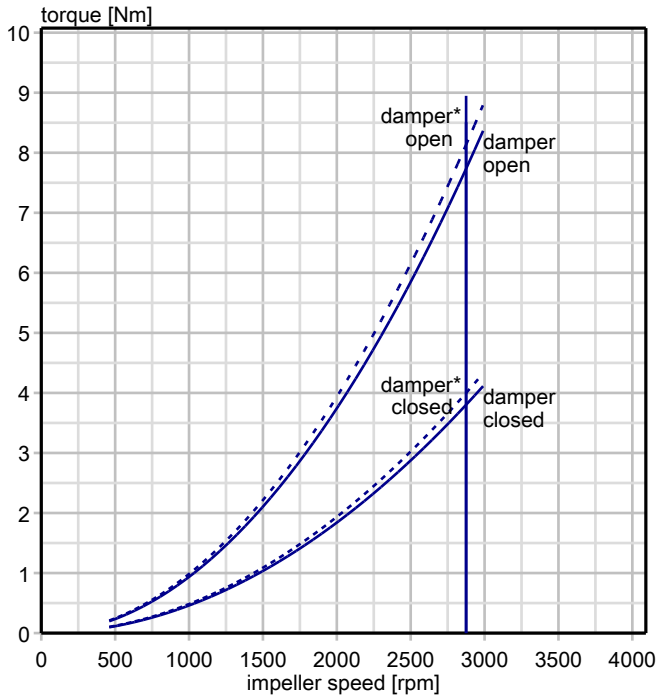
class of accuracy	1	2	3
$\Delta p_t$ and V1 [%]	+/- 2,5	+/- 5	+/- 10
PW [%]	+ 3	+ 8	+ 16
Lw and Lp [dB]	+ 3	+ 4	+ 6

# TORQUE DIAGRAM

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design point : OP1 ———

V1	=	61 m <sup>3</sup> /min
Δpt	=	172 daPa
PW	=	2,3 kW
n1	=	2875 rpm
ρ1	=	1,146 kg/m <sup>3</sup>
J (imp.)	=	0,257 kgm <sup>2</sup>

\*OP1 - - - - -

V1	=	61 m <sup>3</sup> /min
Δpt	=	181 daPa
PW	=	2,4 kW
n1	=	2875 rpm
ρ1	=	1,205 kg/m <sup>3</sup>
J (imp.)	=	0,257 kgm <sup>2</sup>

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



# COASTING CURVE

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fan type  
MXE016-008030-00

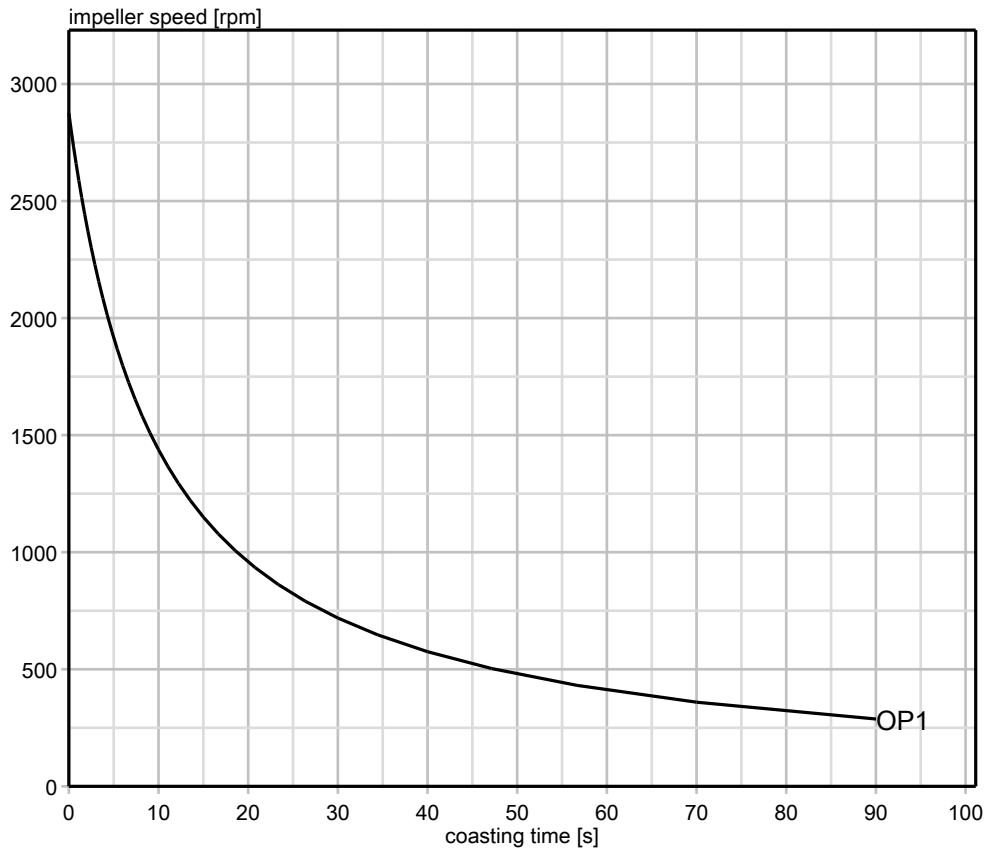
BU serial no.  
1

comm. no.

your order no.

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valve

codeword  
Anfrage



The coasting time depends on the mass moment of inertia and on the present ventilation load moment on disconnecting the motor  
The coasting time refers to coasting of the fan when it is disconnected from electric supply.

shaft power	PW	OP1	
impeller speed	nl	2,3	kW
fan torque	fan torque	2875	rpm
massmoment of inertia	J (imp.)	7,735	Nm
massmoment of inertia		0,257	kgm <sup>2</sup>
referred to motor shaft	J fan mot	0,257	kgm <sup>2</sup>

	OP1		
speed	100%	2875 rpm	after 0,0 s
	75%	2156 rpm	after 3,3 s
	50%	1438 rpm	after 10,0 s
	25%	719 rpm	after 30,0 s
	10%	288 rpm	after 90,0 s

For drive belt only. The JVM figure changes quadratically to the speed alteration.

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class of accuracy	1	2	3
$\Delta p_t$ and V1 [ % ]	+/- 2,5	+/- 5	+/- 10
PW [ % ]	+ 3	+ 8	+ 16
Lw and 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	9,8	Nm
torque Y	7,4	Nm
torque Δ	27,5	Nm
load torque in NP	9,1	Nm
load torque closed damper	4,6	Nm
moment of inertia relative to nM	0,3	kgm <sup>2</sup>
start-up time in NP Y	21,2	s
start-up time closed damper Y	14,3	s
start-up time in NP Δ	3,4	s
start-up time closed damper Δ	3,1	s
theoretical starting time	4,8	s
mass inertia ratio I <sub>v</sub> /I <sub>m</sub>	48,4	-

Δ-start-up possible (DOL start-up)

YΔ-start-up possible (star-delta start-up)

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