

Technical brochure

# LTG Fans

Tangential fans

## Type TA / TE 60

Impeller diameter 60 mm



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#### COMMENT

Dimensions in this technical documentation are given in mm.

General tolerances according to DIN ISO 2768-cl apply.

## GENERAL

### An advantage for best heating, cooling, drying, blasting

Many production processes require an extended linear and absolutely even distribution of air or other gases over a certain area.

The special design of, High Performance Tangential Fans provides the optimum solution for these requirements.

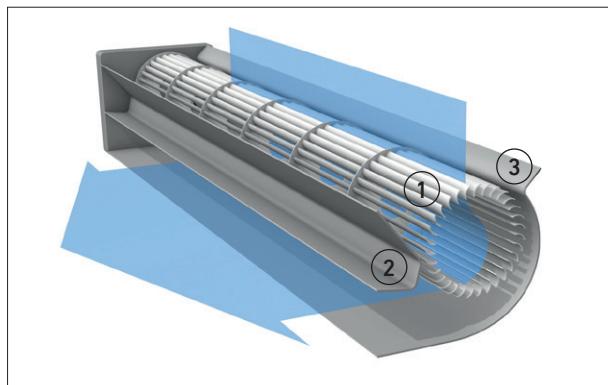
The robust design and the use of high quality materials assure a long life expectancy.

The way these fans work, allowing even air distribution without additional baffles and vanes, and the space-saving design, make the use of tangential fans very economic.

### FLOW PRINCIPLE

In a tangential fan, the air is drawn in over the entire length of the fan impeller. Inside the impeller, the airflow is diverted and accelerated by the vortex created by the rotation of the impeller.

The airstream then exists over the entire length of the impeller ① on the discharge side. The vortex ② separates the intake and discharge side of the fan at the narrowest point between the impeller and the vortex builder. Together with the fan scroll ③, the vortex directs the airflow. This results in an almost uniform laminar airflow over the entire outlet width of the fan.



① Impeller  
② Vortex inducer  
③ Fan scroll

### ADVANTAGES

- Uniform, extended airflow over large areas.
- Space-saving installation due to 90° or 180° airflow pattern.
- Fan length can be matched exactly to machine width.
- Airflow conditions remain the same even for wider machines (simplified design and drafting in case of modular systems).
- Fans perform well in any mounting position. Drive can be mounted on right or left hand side.
- Quiet operation due to optimised impeller and housing design.
- Long live expectancy due to robust design and location of bearings outside the hot air zone.

### APPLICATION OF LTG HIGH PERFORMANCE TANGENTIAL FANS

Agricultural technology, air conditioning technology, apparatus engineering, automotive industry, bakery technology, biomedical industry, building material industry, chemical industry, cleaning technology, control panel technology, dedusting technology, drying technology, electronic industry, environmental simulations, food industry, furnace technology, heat treatment technology, mechanical and plant engineering, medical technology, packaging industry, paper industry, pharmaceutical industry, power plant engineering, process engineering, railway technology, refrigeration technology, store design, surface technology, swimming pool technology, textile machinery design, tobacco industry, transportation cooling, wood industry...

### POSITION OF THE FAN

Standard arrangement is horizontal. With vertical arrangement the drive motor has to be at the bottom.

### INSTALLATION AND START UP

Fix the fans to a plane base frame without any distortion. For the fixation use only the bolt holes in the side elements. Make sure to observe the applicable safety codes before starting the fans.

### MOTOR ARRANGEMENT

With suction opening on top, viewed against the discharge opening, the driving motor is optional either right hand or left hand. The 2-pole motor variant is only available for the right hand side.

**RANGE OF TYPES**

<b>type</b>	<b>TA 60</b>	<b>TA h 60 with heating element</b>	<b>TE t 60 temperature resistant</b>
material impeller:	aluminium		stainless steel
material housing:	aluminium		aluminium
material side elements:	stainless steel		stainless steel
<b>service conditions</b>			
gas temperatures:	-40 °C bis +70 °C		-40 °C bis +300 °C
<b>ambient temperatures</b>			
drive side with motor:		-25 °C bis +40 °C	
counter side:		-40 °C bis +70 °C	
<b>Specification and design features</b>	tangential fan with close coupled, spray water protected drive motor motor right hand side = TAR motor left hand side = TAL      motor right hand side = TAR h motor left hand side = TAL h      motor right hand side = TER t motor left hand side = TEL t corrosion proof impeller impeller, spacers, shaft flange and side elements of stainless steel rigid bolted, corrosion proof casing of marine grade aluminium rigid bolted, corrosion proof casing of marine grade aluminium on the drive side the impeller is supported by an elastic coupling on the motor-shaft on the counter side the impeller is supported with vibration damped ball bearings on the counter side a ceramic shaft is used, which is mounted in the outer side part, motor and end bearing side in ball bearings designed for 20,000 operating hours low noise operation due to aerodynamic design of casing and impeller		

**MOTOR DATA**

The following drive types are possible:

	<b>AC motor</b>		<b>DC motor</b>
nominal voltage	230 V / 50 Hz	115 V / 50/60 Hz	24 V
power consumption	43 W	40/38 W	57 W
speed	2 200 min <sup>-1</sup>	1 800/2 500 min <sup>-1</sup>	2 430 min <sup>-1</sup>
insulation class	F	F	B
protection class	IP44	IP44	IP22
cable length	230 mm	230 mm	450 mm
standard conformity	DIN EN 60335-1	DIN EN 60335-1	EN 60034-1, EN 60204-1, EN 60335-1
approvals			UL/CSA (nur TAR 60)

## NOMENCLATURE

**TA R t 60 / 260 / N**

				Design:	N - Standard 24 V DC - Direct current 24 V US - Design 115 V/60 Hz E .... - Special design
Length of the air outlet opening in mm					
Impeller diameter in mm					
t: increased gas temperatures h: with mounted heating element					
Drive side: R - right L - left					
Type:	TA...	Material of impeller and housing: aluminum			
	TE...	Material of impeller and housing: stainless steel			

## TYPE TA, IMPELLER DIAMETER 60 MM



Fig.: Tangential fan Type TAR 60 (motor right hand side)

### SERVICE CONDITIONS

**Gas temperatures:** -40 °C up to +70 °C

**Ambient temperatures:**

Drive side with motor: -25 °C up to +40 °C

Counter side: -40 °C up to +70 °C

### SPECIFICATION AND DESIGN FEATURES

Tangential fan with close coupled, spray water protected drive motor.

Motor right hand side = TAR, motor left hand side = TAL

Corrosion proof impeller and rigid bolted casing. Impeller and casing in aluminum. Side elements of stainless steel.

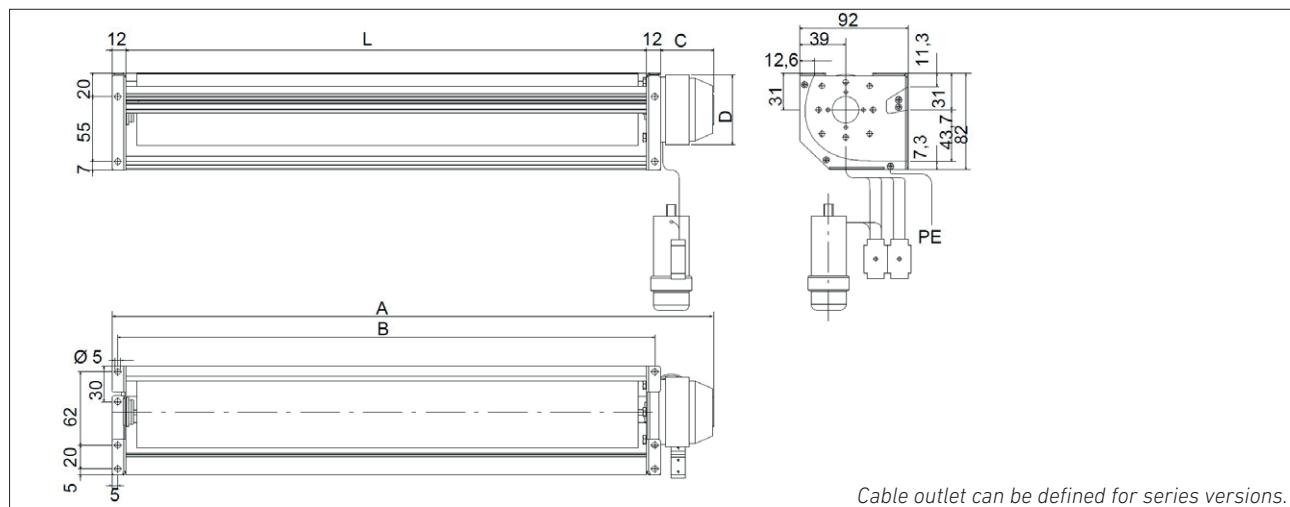
On the drive side the impeller is supported by an elastic coupling on the motor-shaft, on the counter side in vibration damped ball bearings. Bearing design life is 20 000 hours.

Low noise operation due to aerodynamic design of casing and impeller.

Motor connection according to wiring diagram page 17.

Drive types see page 4.

### DIMENSIONS



Type	Dimensions [mm]												Weight [kg] abt.				
	L	B	A			C			D			N / US	24 V DC	2p			
			N / US	24 V DC	2p	N / US	24 V DC	2p	N / US	24 V DC	2p	N / US	24 V DC	2p			
TA 60/145	145	159	216	224	217							0,86	0,99	0,86			
TA 60/195	195	209	266	274	267							0,94	1,06	0,94			
TA 60/260	260	274	331	339	332							1,04	1,17	1,04			
TA 60/315	315	329	386	394	387	47	55	48	59	72	48	1,12	1,25	1,12			
TA 60/385	385	399	456	464	457							1,22	1,35	1,22			
TA 60/440	440	454	511	519	512							1,31	1,43	1,31			
TA 60/530	530	544	600	608	601							1,35	1,47	1,35			
TA 60/615	615	629	685	693	686							1,50	1,63	1,50			

## TYPE TA h WITH HEATING ELEMENT, IMPELLER DIAMETER 60 MM

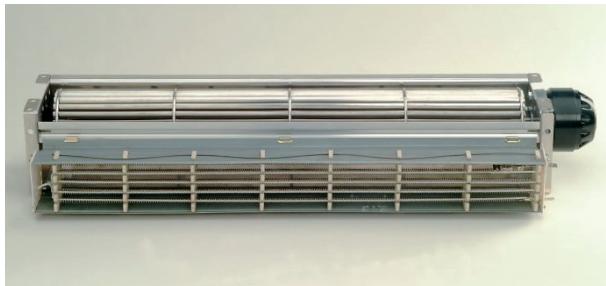


Fig.: Tangential fan Type TAR h 60 (motor right hand side)

### SERVICE CONDITIONS

**Gas temperatures:** -40 °C up to +70 °C

**Ambient temperatures:**

Drive side with motor: -25 °C up to +40 °C

Counter side: -40 °C up to +70 °C

### SPECIFICATION AND DESIGN FEATURES

Tangential fan with close coupled, spray water protected drive motor.

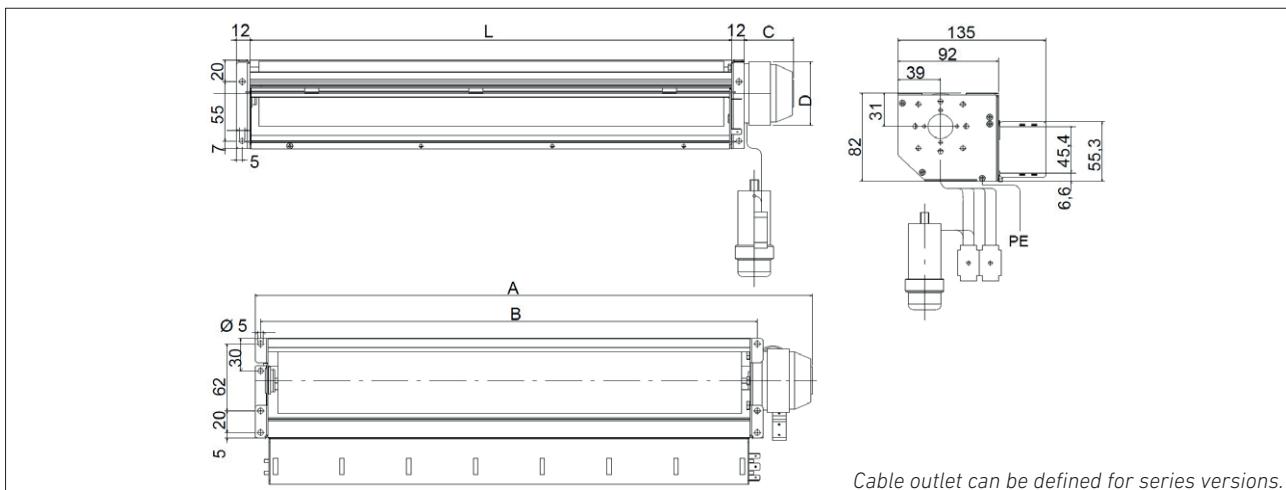
Motor right hand side = TAR, motor left hand side = TAL

Corrosion proof impeller and rigid bolted casing. Impeller and casing in aluminium.

On the drive side the impeller is supported by an elastic coupling on the motor-shaft, on the counter side in vibration damped ball bearings. Bearing design life is 20 000 hours. Low noise operation due to aerodynamic design of casing and impeller. The heating elements are provided with a heat protection and may be connected as shown in the chart (see next page). Motor connection according to wiring diagram page 17.

Drive types see page 4.

### DIMENSIONS



Cable outlet can be defined for series versions.

Type	L	B	Dimensions [mm]												Weight [kg] abt.		
			A			C			D			N / US	24 V DC	2p			
			N / US	24 V DC	2p	N / US	24 V DC	2p	N / US	24 V DC	2p	N / US	24 V DC	2p			
TA h 60/145	145	159	216	224	217										1,10	1,23	1,10
TA h 60/195	195	209	266	274	267										1,20	1,33	1,20
TA h 60/260	260	274	331	339	332										1,33	1,46	1,33
TA h 60/315	315	329	386	394	387	47	55	48	59	72	48				1,44	1,56	1,44
TA h 60/385	385	399	456	464	457										1,57	1,69	1,57
TA h 60/440	440	454	511	519	512										1,68	1,81	1,68
TA h 60/530	530	544	600	608	601										1,83	1,96	1,83
TA h 60/615	615	629	685	693	686										1,98	2,11	1,98

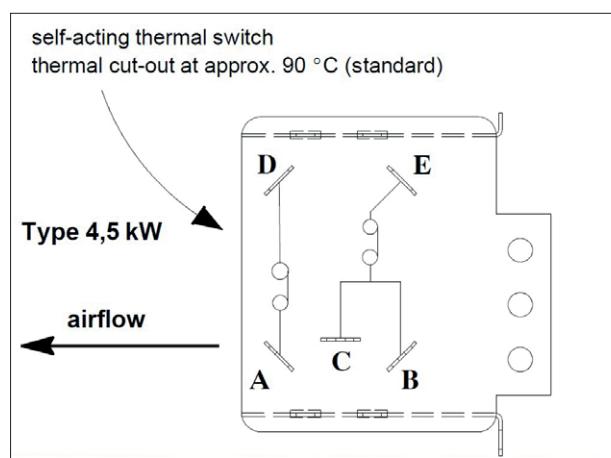
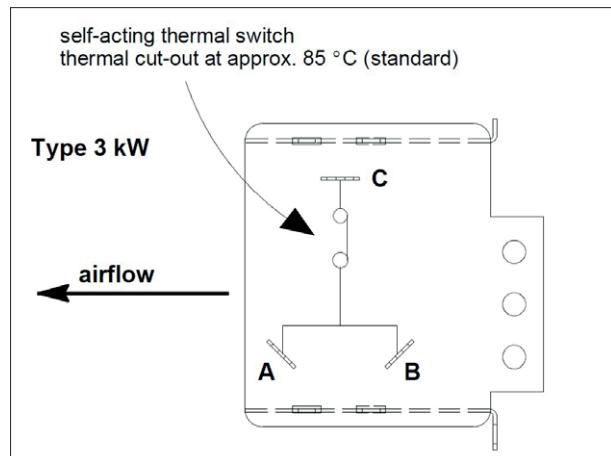
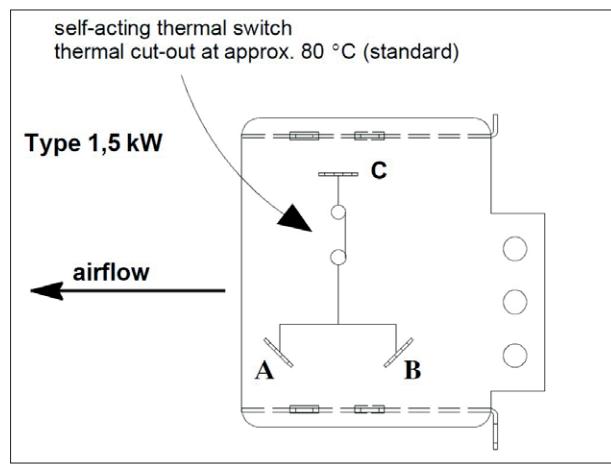
## TYPE TA h WITH HEATING ELEMENT, IMPELLER DIAMETER 60 MM

### WIRING DIAGRAM - HEATING ELEMENT

The thermostat will switch off the heating element whenever the standard limit is exceeded and resume operation when dropping below.

**Attention:** The thermostat is for self protection of heating. Do not use it for control and safety purposes!

They must be ensured through external measures on site by the customer.



Supply voltage: 230 V / 50 Hz

All performance data apply to a supply voltage of 230 V. For other supply voltages, please contact LTG Aktiengesellschaft.

### Heating element type 1,5 kW

Connection L	Connection N	Heating power
A	C	0,75 kW
B	C	0,75 kW
A + B	C	1,50 kW

### Heating element type 3 kW

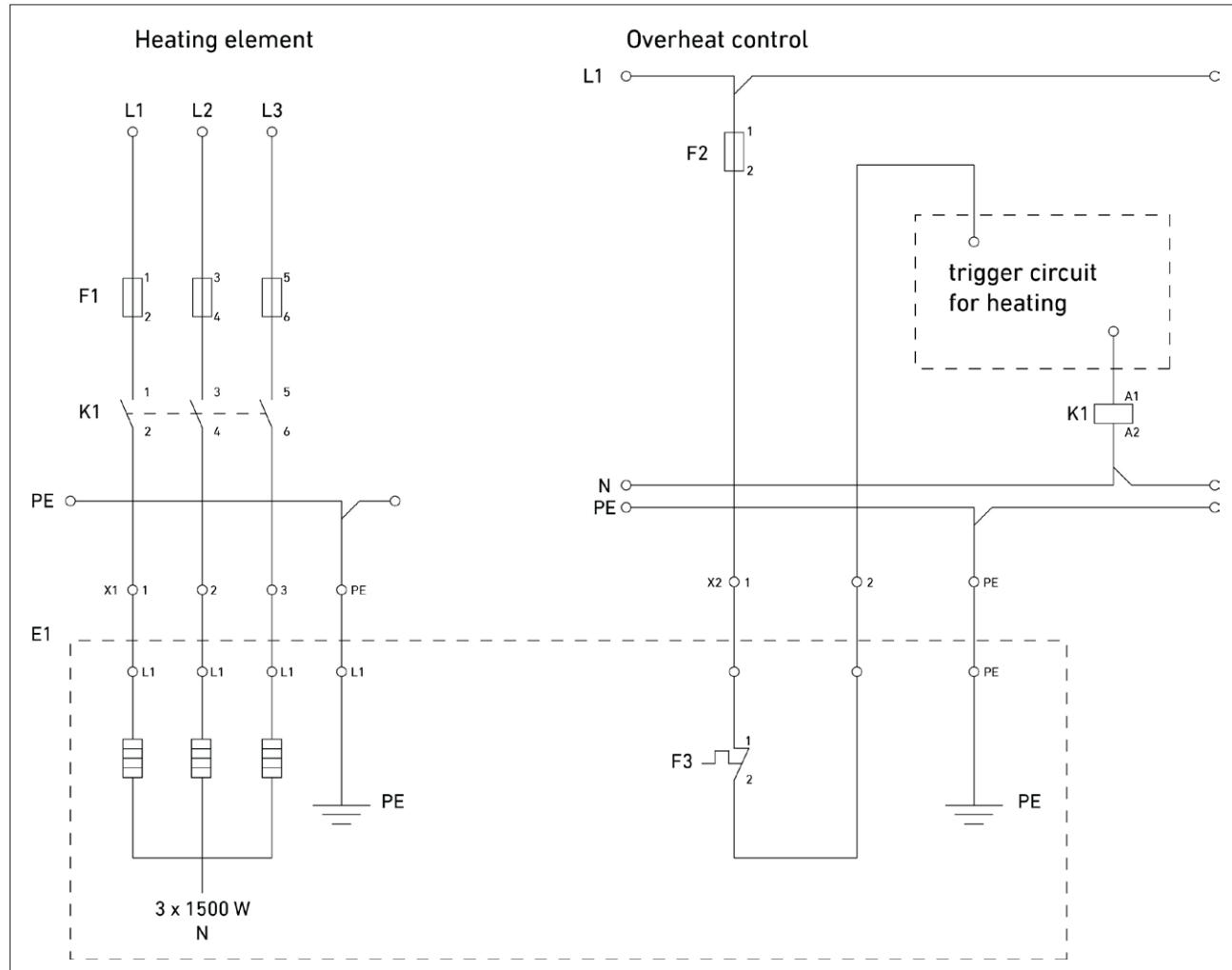
Connection L	Connection N	Heating power
A	C	1,50 kW
B	C	1,50 kW
A + B	C	3,00 kW

### Heating element type 4,5 kW

Connection L	Connection N	Heating power
A	D	1,50 kW
A + B	D + E	3,00 kW
A + B + C	D + E	4,50 kW

## TYPE TA h, WITH HEATING ELEMENT, IMPELLER DIAMETER 60 MM

ELECTRICAL WIRING DIAGRAM 3 PHASE - HEATING ELEMENT TA h 60 /.../ 3~..



Note: Thermoswitch listed separately

## TYPE TE t, IMPELLER DIAMETER 60 MM



Fig.: Tangential fan type TEt 60 (motor right hand side)

### SERVICE CONDITIONS

**Gas temperatures:** -40 °C up to +300 °C

**Ambient temperatures:**

Drive side with motor: -25 °C up to +40 °C

Counter side: -40 °C up to +70 °C

**Caution!** If necessary, additional convection cooling between the side elements is required!

### SPECIFICATION AND DESIGN FEATURES

Tangential fan with close coupled, spray water protected drive motor.

Motor right hand side = TERT,  
motor left hand side = TELt

Rigid bolted, corrosion proof casing of marine grade aluminium. Impeller, spacers, shaft flange and side elements of stainless steel.

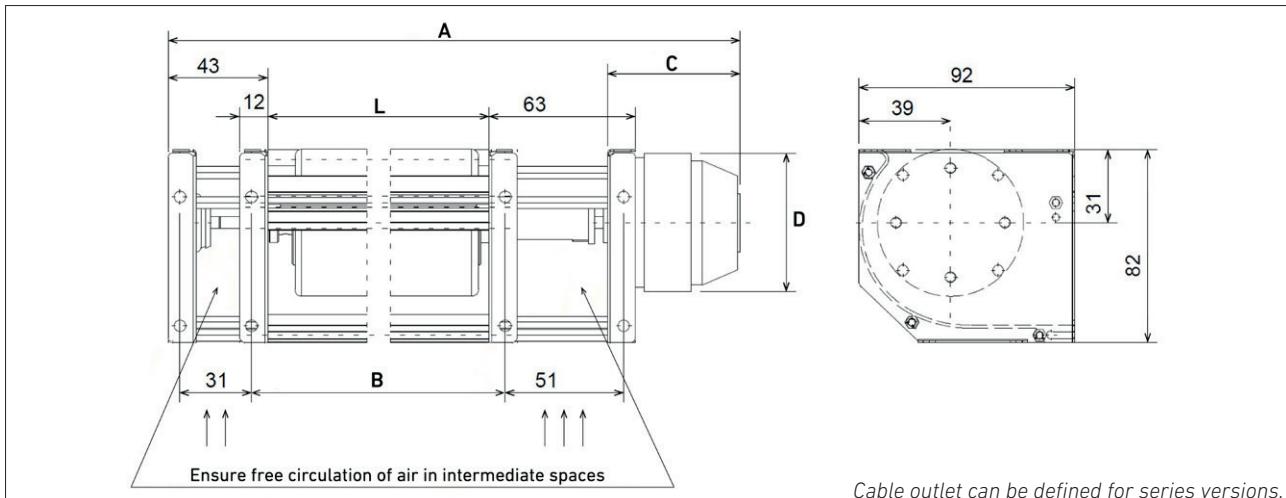
On the drive side the impeller is supported by an elastic coupling on the motor shaft, on the counter side a ceramic shaft is used, which is mounted in the outer side part. Motor and end bearing side in ball bearings, made for a service life of 20 000 hours.

Discharge openings have sealing planes to connect exactly to ducts and appliances. Low noise operation due to aerodynamic design of casing and impeller.

Motor connection according to wiring diagram page 17.

Drive types see page 4.

### DIMENSIONS



Type	Dimensions [mm]												Weight [kg] abt.			
	L	B	N / US	A		N / US	C		N / US	D		N / US	24 V DC	2p		
				24 V DC	2p		24 V DC	2p		24 V DC	2p					
TE t 60/145	145	159	285	293	286								1,18	1,31	1,18	
TE t 60/195	195	209	335	343	336								1,26	1,38	1,26	
TE t 60/260	260	274	400	408	401								1,36	1,49	1,36	
TE t 60/315	315	329	455	463	456	47	55	48	59	72	48		1,44	1,57	1,44	
TE t 60/385	385	399	525	533	526								1,54	1,67	1,54	
TE t 60/440	440	454	580	588	581								1,63	1,75	1,63	
TE t 60/530	530	544	670	678	671								167	1,79	167	
TE t 60/615	615	629	755	763	756								1,82	1,95	1,82	

## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

### FAN CURVES - IMPLEMENTATION N

The indicated curves are valid for an air density of  $\rho = 1,2 \text{ kg/m}^3$ , if operated with standard motor 230 V / 50 Hz.

The rating tests were done as laboratory tests according to EN ISO 5801:2008 with unrestricted inlet and discharge.

Measuring tolerances for  $\Delta p: \pm 2 \text{ Pa}$ ;

Measuring tolerances for  $L_{WA}: \pm 2 \text{ dB (A)}$

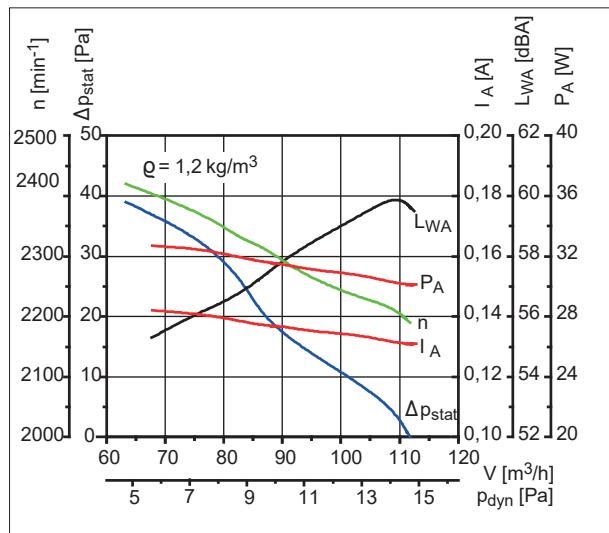
### ACOUSTICAL DATA

The acoustical data are for discharge side, tested in a reverberant field.

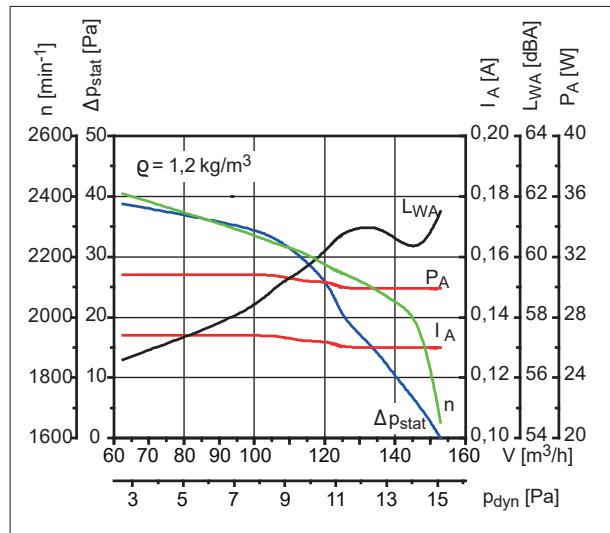
The A-weighted sound power level  $L_{WA}$  can be transformed into an A-weighted sound pressure level by the equation  $L_{PA} = L_{WA} - 10 \lg S/1 \text{ m}^2$ . For this the exact total panel area  $S$  can be used.

The sound pressure level in the free field in 1 m distance (full spheric sound radiation) is abt. 11 dB less than the sound power level.

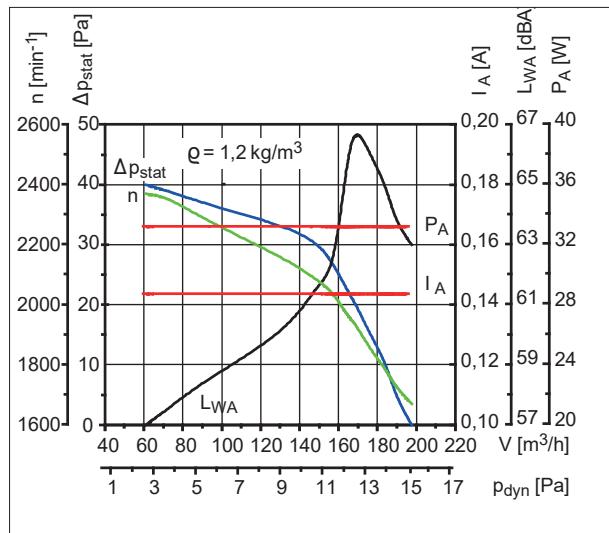
Fan curves for 230 V, 50 Hz



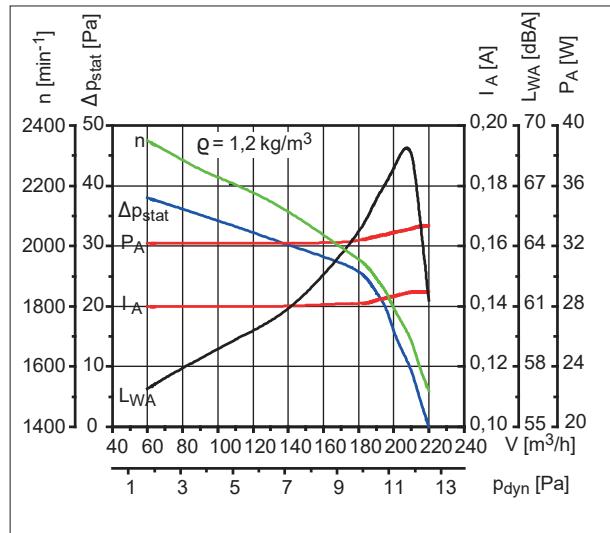
Fan curves for TA 60/145 N and TE t 60/145/N



Fan curves for TA 60/195 N and TE t 60/195/N



Fan curves for TA 60/260 N and TE t 60/260/N

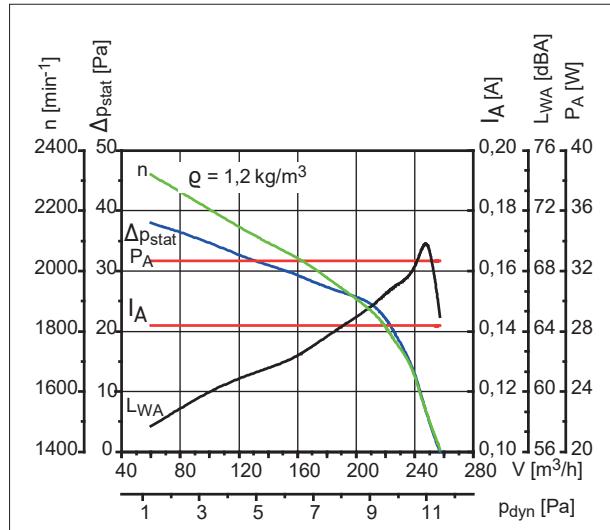


Fan curves for TA 60/315 N and TE t 60/315/N

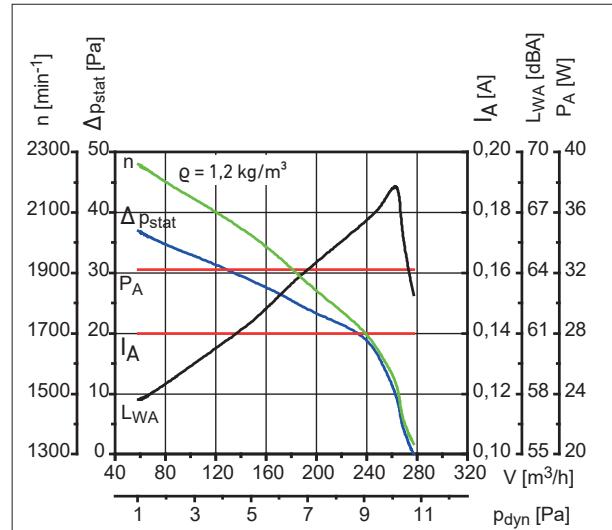
## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

Measuring tolerances for  $\Delta p: \pm 2$  Pa;

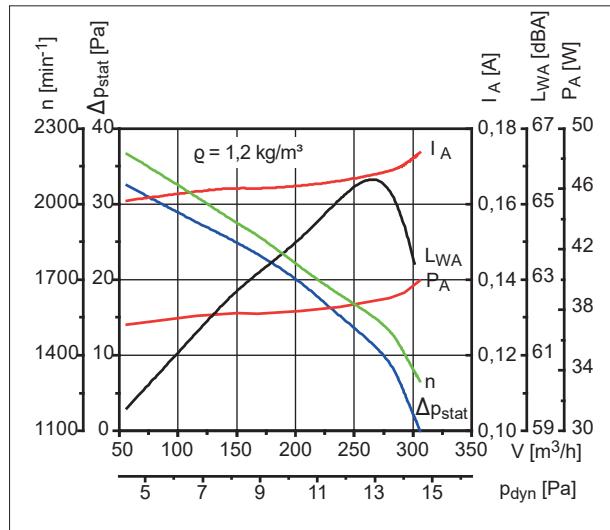
Measuring tolerances for  $L_{WA}: \pm 2$  dB (A)



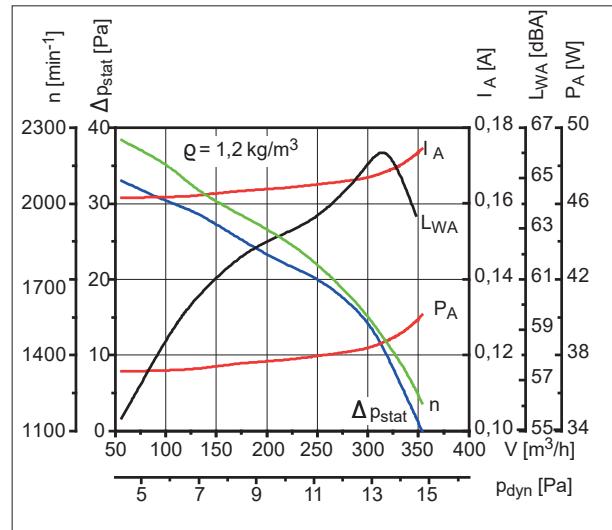
Fan curves for TA 60/385 N and TE t 60/385/N



Fan curves for TA 60/440 N and TE t 60/440/N



Fan curves for TA 60/530 N and TE t 60/530/N



Fan curves for TA 60/615 N and TE t 60/615/N

### Description

$\dot{V}$	[m³/h]	Air volume
$\Delta p_{stat}$	[Pa]	static pressure
$\Delta p_{dyn}$	[Pa]	dynamic pressure at the discharge area
$c$	[m/s]	velocity at the discharge area
$\varrho$	[kg/m³]	specific gravity
$\Delta p_{dyn} = \varrho/2 \cdot c^2$		dynamic pressure at the discharge area
$I_A = P_A / U$		full load amps

$n$	[min⁻¹]	speed
$U$	[V]	voltage
$f$	[Hz]	frequency
$I_A$	[A]	full load amps
$P_A$	[W]	power consumption
$L_{WA}$	[dBA]	A-weighted sound power level
$L_{PA}$	[dBA]	A-weighted sound power level
$S$	[m²]	panel area

## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

### FAN CURVES - IMPLEMENTATION 2-POLE

The indicated curves are valid for an air density of  $\varrho = 1,2 \text{ kg/m}^3$ , if operated with 2-pole motor 230 V / 50 Hz.

The rating tests were done as laboratory tests according to EN ISO 5801:2008 with unrestricted inlet and discharge.

Measuring tolerances for  $\Delta p$ :  $\pm 2 \text{ Pa}$ ;

Measuring tolerances for  $L_{WA}$ :  $\pm 2 \text{ dB(A)}$

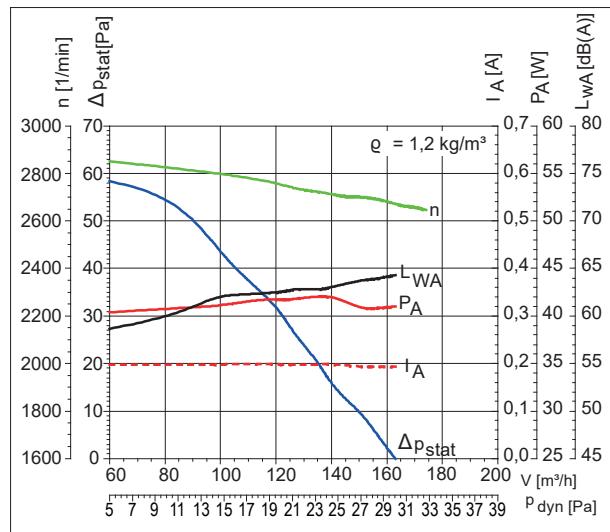
### ACOUSTICAL DATA

The acoustical data are for discharge side, tested in a reverberant field.

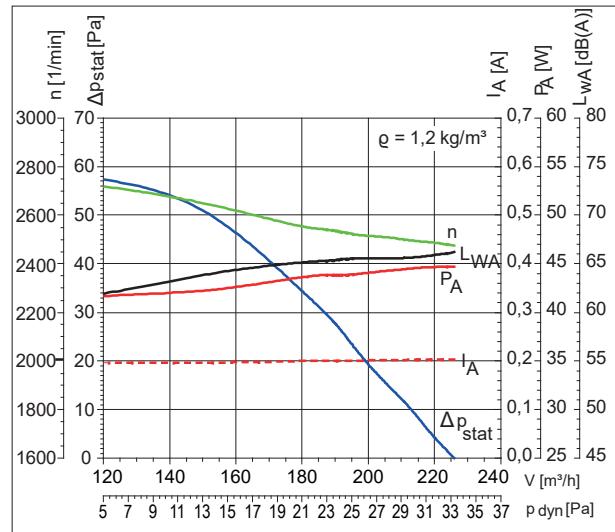
The A-weighted sound power level  $L_{WA}$  can be transformed into an A-weighted sound pressure level by the equation  $L_{PA} = L_{WA} - 10 \lg S/1 \text{ m}^2$ . For this the exact total panel area  $S$  can be used.

The sound pressure level in the free field in 1 m distance (full spheric sound radiation) is abt. 11 dB less than the sound power level.

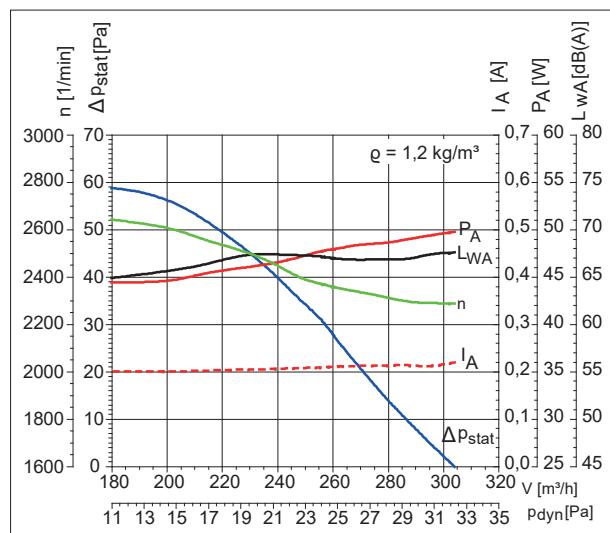
Fan curves for 230 V, 50 Hz, 2-pole



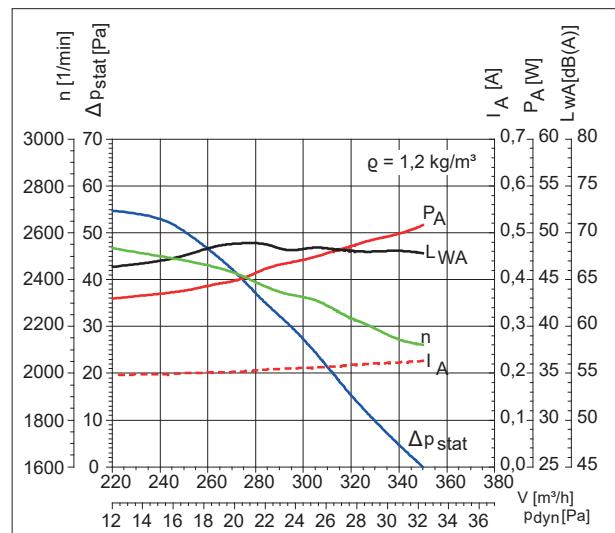
Fan curves for TA 60/145/2p and TE t 60/145/2p



Fan curves for TA 60/195/2p and TE t 60/195/2p



Fan curves for TA 60/260/2p and TE t 60/260/2p

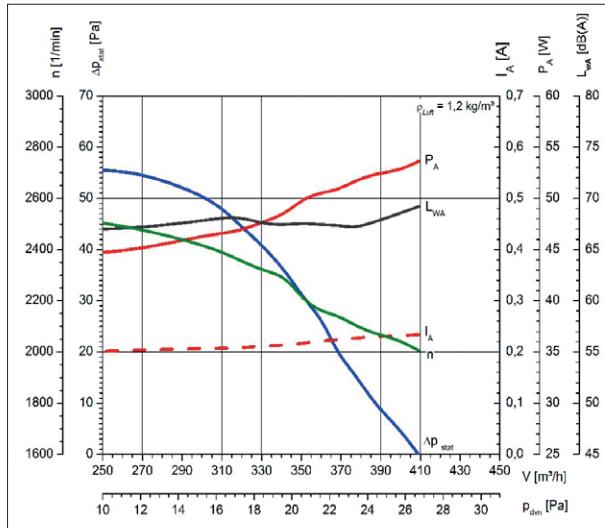


Fan curves for TA 60/315/2p and TE t 60/315/2p

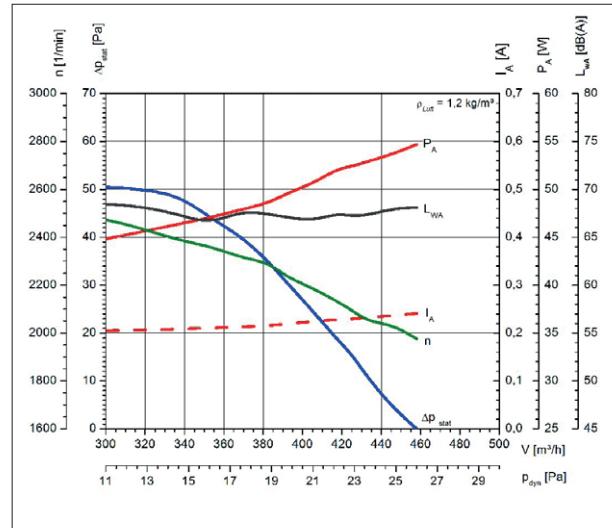
## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

Measuring tolerances for  $\Delta p: \pm 2 \text{ Pa}$ ;

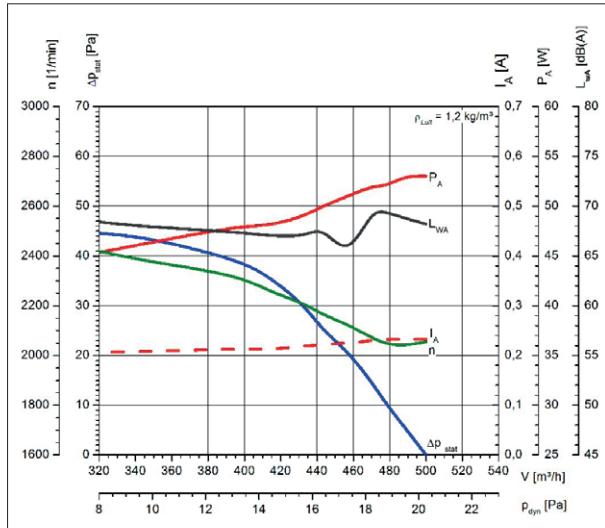
Measuring tolerances for  $L_{WA}: \pm 2 \text{ dB(A)}$



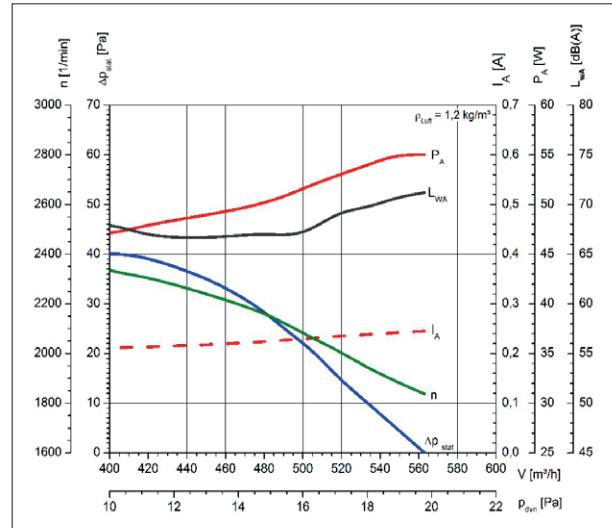
Fan curves for TA 60/385/2p and TE t 60/385/2p



Fan curves for TA 60/440/2p and TE t 60/440/2p



Fan curves for TA 60/530/2p and TE t 60/530/2p



Fan curves for TA 60/615/2p and TE t 60/615/2p

Description	
$\dot{V}$	[m³/h] Air volume
$\Delta p_{stat}$	[Pa] static pressure
$\Delta p_{dyn}$	[Pa] dynamic pressure at the discharge area
c	[m/s] velocity at the discharge area
$\varrho$	[kg/m³] specific gravity
$\Delta p_{dyn} = \varrho/2 \cdot c^2$	dynamic pressure at the discharge area
$I_A = P_A / U$	full load amps

n	[min⁻¹]	speed
U	[V]	voltage
f	[Hz]	frequency
$I_A$	[A]	full load amps
$P_A$	[W]	power consumption
$L_{WA}$	[dBA]	A-weighted sound power level
$L_{pA}$	[dBA]	A-weighted sound power level
S	[m²]	panel area

## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

### FAN CURVES - IMPLEMENTATION 24 V DC

The indicated curves are valid for an air density of  $\varrho = 1,2 \text{ kg/m}^3$  if operated with motor 24 V DC.

The rating tests were done as laboratory tests according to EN ISO 5801:2008 with unrestricted inlet and discharge.

Measuring tolerances for  $\Delta p$ :  $\pm 2 \text{ Pa}$ ;

Measuring tolerances for  $L_{WA}$ :  $\pm 2 \text{ dB (A)}$

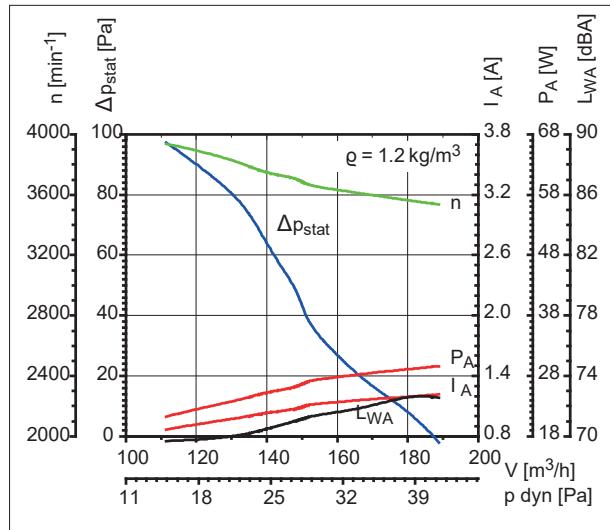
### ACOUSTICAL DATA

The acoustical data are for discharge side, tested in a reverberant field.

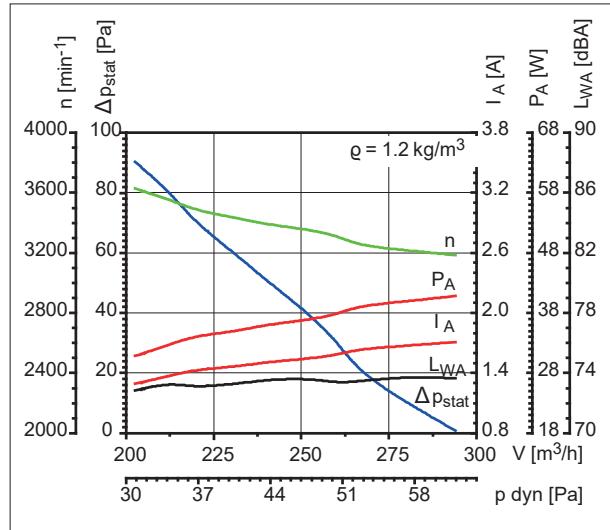
The A-weighted sound power level  $L_{WA}$  can be transformed into an A-weighted sound pressure level by the equation  $L_{PA} = L_{WA} - 10 \lg S/1 \text{ m}^2$ . For this the exact total panel area  $S$  can be used.

The sound pressure level in the free field in 1 m distance (full spheric sound radiation) is abt. 11 dB less than the sound power level.

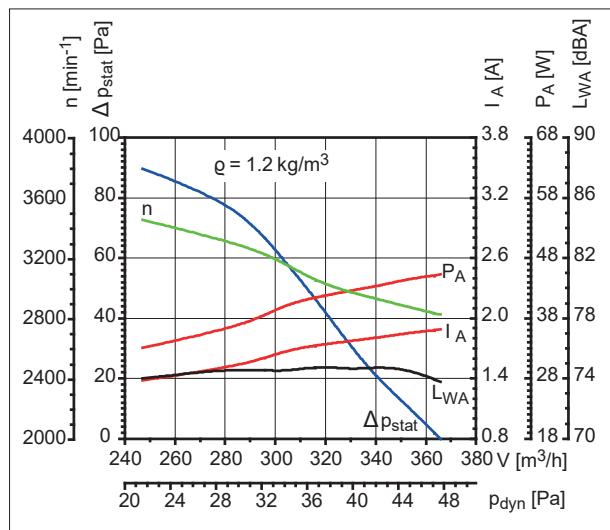
### Fan curves for 24 V DC



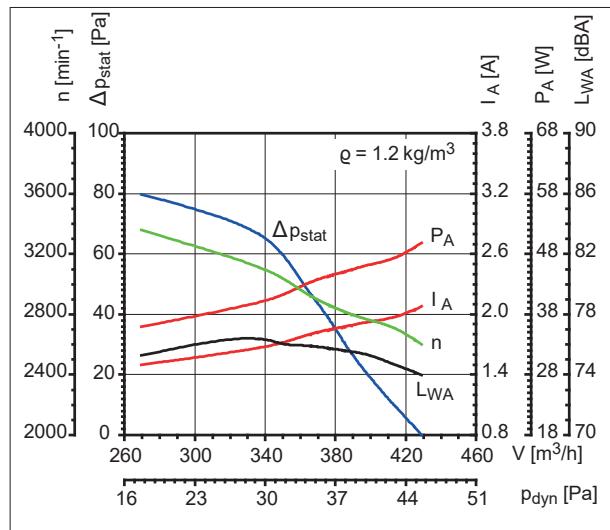
Fan curves for TA 60/145 24 V DC and TE t 60/145/24 V DC



Fan curves for TA 60/195 24 V DC and TE t 60/195/24 V DC



Fan curves for TA 60/260 24 V DC and TE t 60/260/24 V DC

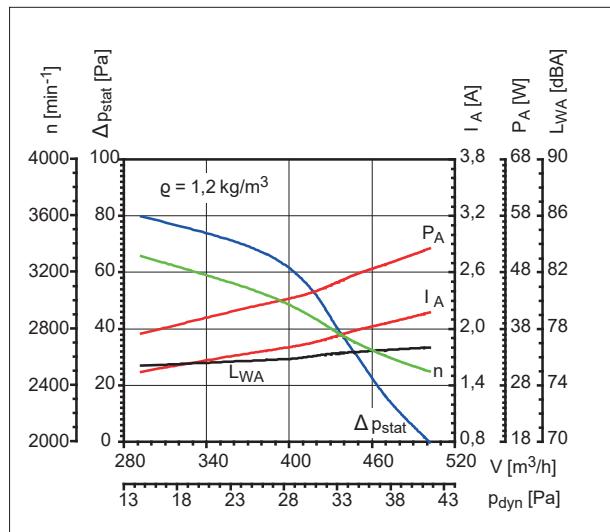


Fan curves for TA 60/315 24 V DC and TE t 60/315/24 V DC

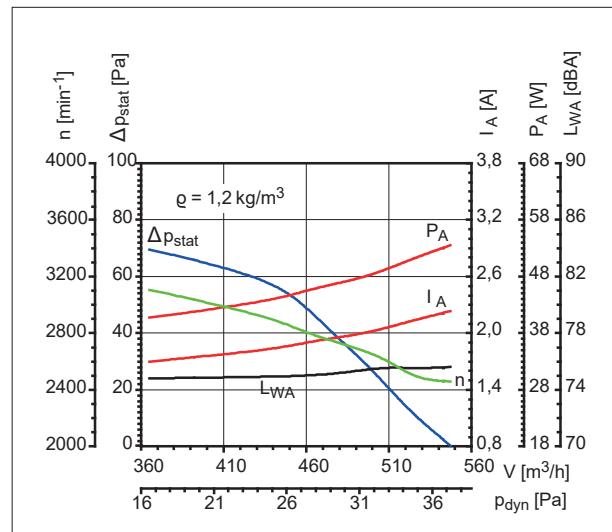
## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

Measuring tolerances for  $\Delta p \pm 2 \text{ Pa}$ ;

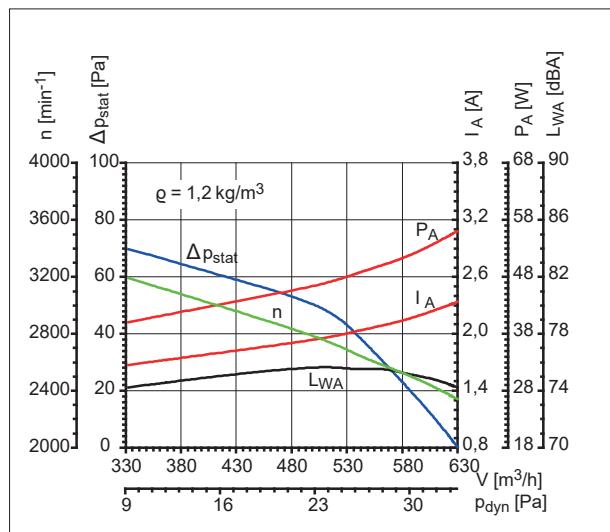
Measuring tolerances for  $L_{WA} \pm 2 \text{ dB(A)}$



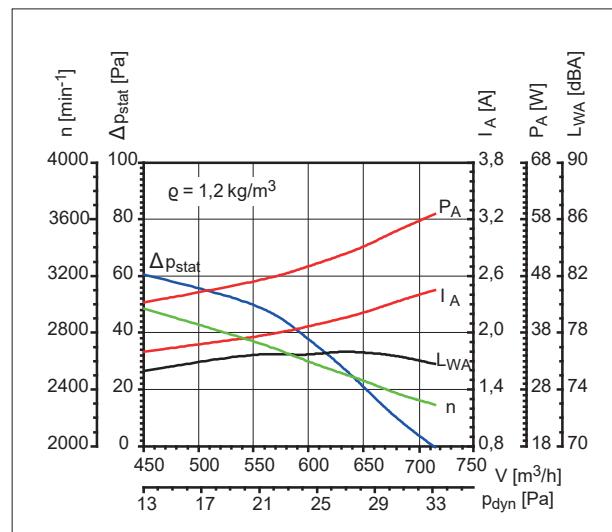
Fan curves for TA 60/385 24 VDC and TE t 60/385/24 V DC



Fan curves for TA 60/440 24 VDC and TE t 60/440/24 V DC



Fan curves for TA 60/530 24 VDC and TE t 60/530/24 V DC



Fan curves for TA 60/615 24 VDC and TE t 60/615/24 V DC

Description	
$\dot{V}$ [m³/h]	Air volume
$\Delta p_{stat}$ [Pa]	static pressure
$\Delta p_{dyn}$ [Pa]	dynamic pressure at the discharge area
$c$ [m/s]	velocity at the discharge area
$\rho$ [kg/m³]	specific gravity
$\Delta p_{dyn} = \rho/2 \cdot c^2$	dynamic pressure at the discharge area
$I_A = P_A / U$	full load amps

$n$ [min⁻¹]	speed
$U$ [V]	voltage
$f$ [Hz]	frequency
$I_A$ [A]	full load amps
$P_A$ [W]	power consumption
$L_{WA}$ [dB(A)]	A-weighted sound power level
$L_{pA}$ [dB(A)]	A-weighted sound power level
$S$ [m²]	panel area

## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

### FAN CURVES - IMPLEMENTATION US

The indicated curves are valid for an air density of  $\varrho = 1,2 \text{ kg/m}^3$  if operated with standard motor 115 V, 50/60 Hz.

The rating tests were done as laboratory tests according to EN ISO 5801:2008 with unrestricted inlet and discharge.

Measuring tolerances for  $\Delta p: \pm 2 \text{ Pa}$ ;

Measuring tolerances for  $L_{WA}: \pm 2 \text{ dB (A)}$

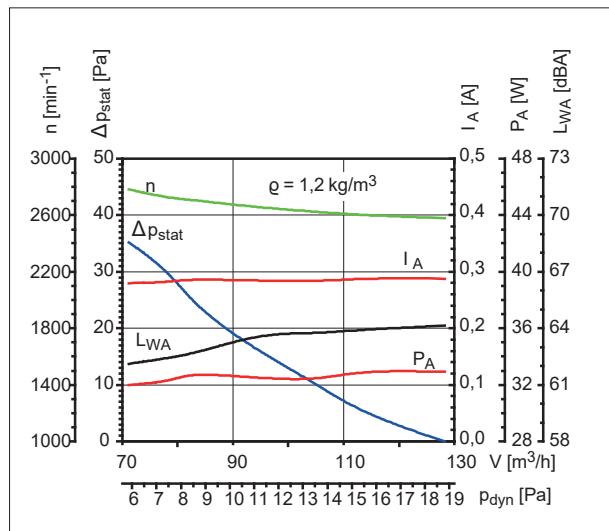
### ACOUSTICAL DATA

The acoustical data are for discharge side, tested in a reverberant field.

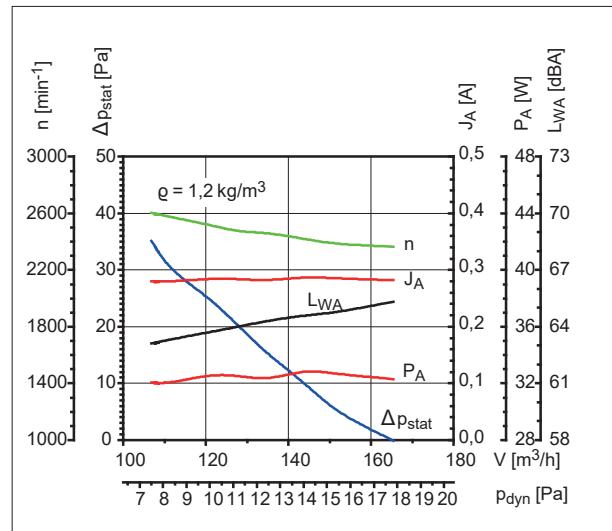
The A-weighted sound power level  $L_{WA}$  can be transformed into an A-weighted sound pressure level by the equation  $L_{PA} = L_{WA} - 10 \lg S/1 \text{ m}^2$ . For this the exact total panel area  $S$  can be used.

The sound pressure level in the free field in 1 m distance (full spheric sound radiation) is abt. 11 dB less than the sound power level.

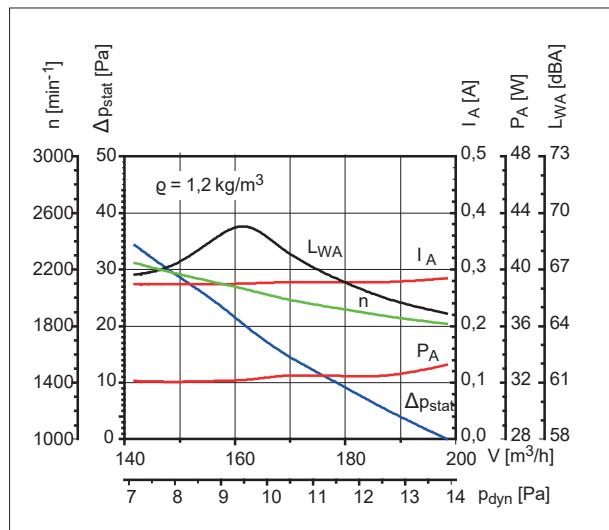
**Fan curves for 115 V, 60 Hz**



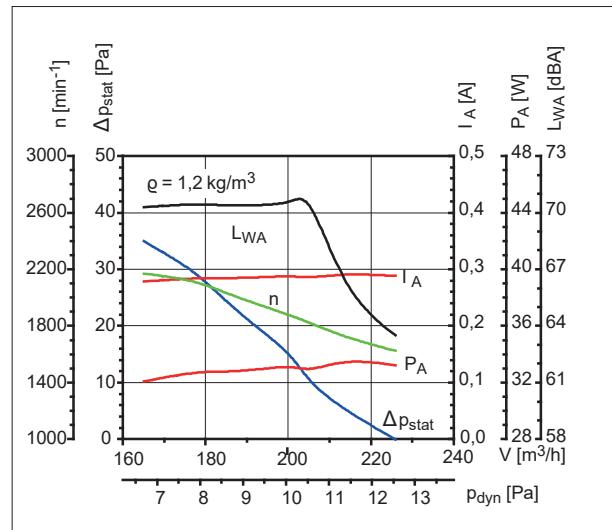
Fan curves for TA 60/145 US and TE t 60/145/US



Fan curves for TA 60/195 US and TE t 60/195/US



Fan curves for TA 60/260 US and TE t 60/260/US

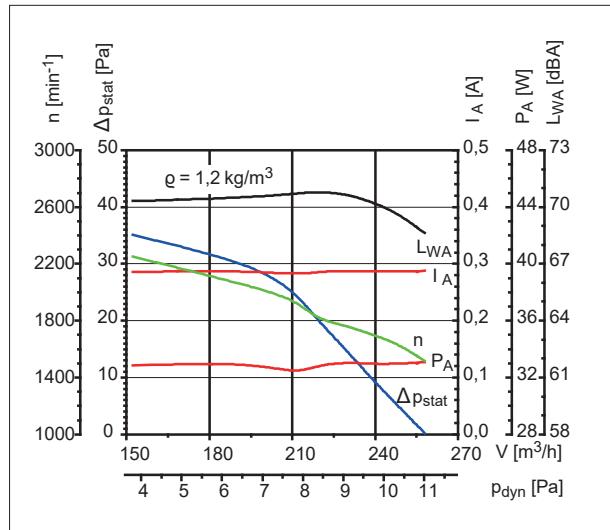


Fan curves for TA 60/315 US and TE t 60/315/US

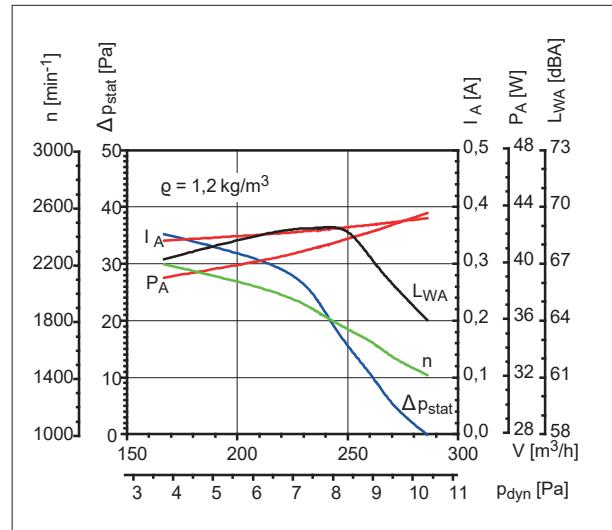
## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

Measuring tolerances for  $\Delta p$ :  $\pm 2 \text{ Pa}$ ;

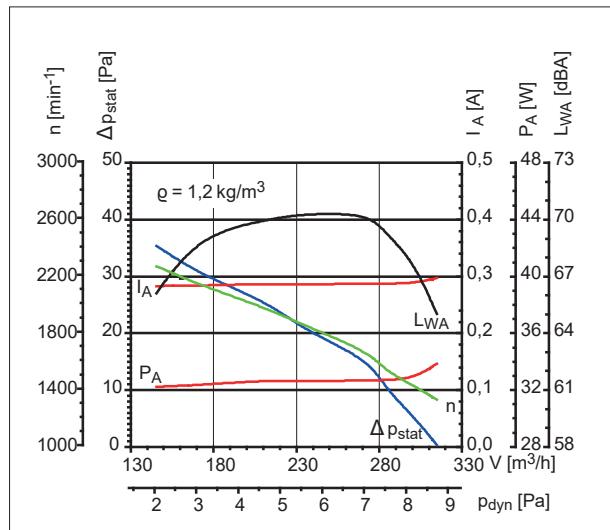
Measuring tolerances for  $L_{WA}$ :  $\pm 2 \text{ dB (A)}$



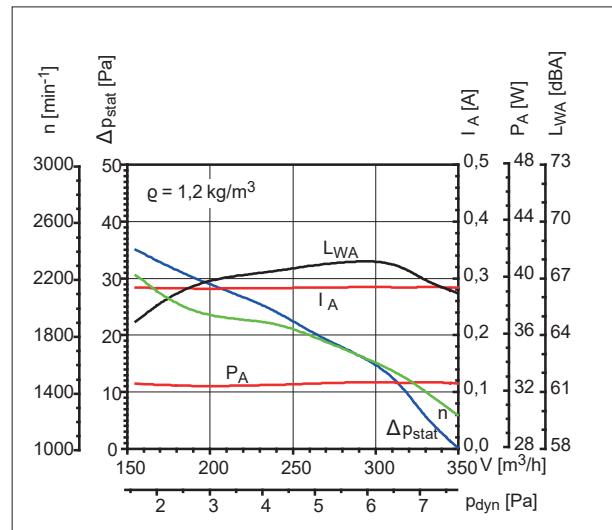
Fan curves for TA 60/385 US and TE t 60/385/US



Fan curves for TA 60/440 US and TE t 60/440/US



Fan curves for TA 60/530 US and TE t 60/530/US



Fan curves for TA 60/615 US and TE t 60/615/US

### Description

$\dot{V}$ [m³/h]	Air volume
$\Delta p_{stat}$ [Pa]	static pressure
$\Delta p_{dyn}$ [Pa]	dynamic pressure at the discharge area
c [m/s]	velocity at the discharge area
$\rho$ [kg/m³]	specific gravity
$\Delta p_{dyn} = \rho/2 \cdot c^2$	dynamic pressure at the discharge area
$I_A = P_A / U$	full load amps

n [min⁻¹]	speed
U [V]	voltage
f [Hz]	frequency
$I_A$ [A]	full load amps
$P_A$ [W]	power consumption
$L_{WA}$ [dBA]	A-weighted sound power level
$L_{PA}$ [dBA]	A-weighted sound power level
S [m²]	panel area

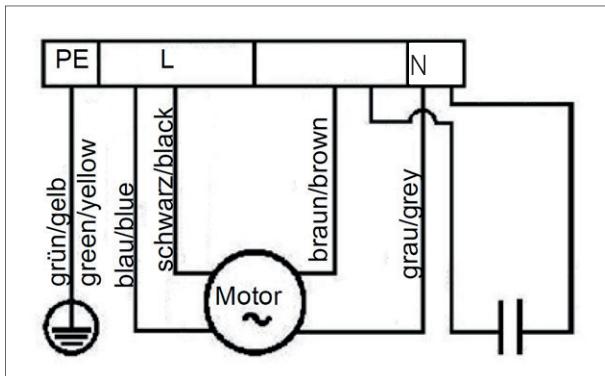
## TYPE TA AND TE t, IMPELLER DIAMETER 60 MM

### ELECTRICAL CONNECTIONS A/C MOTOR

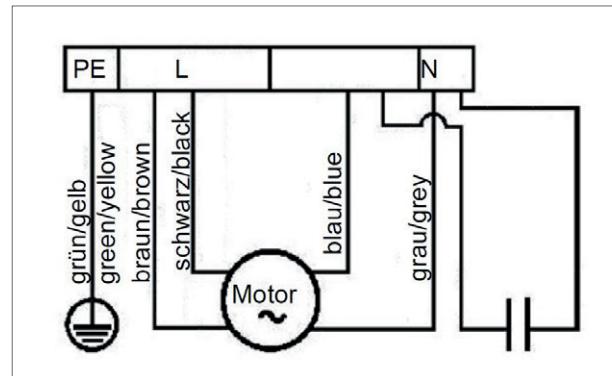
Driven by single-phase capacitor motor U = 230 V, f = 50 Hz, f = 50 Hz or U = 115 V, f = 50 Hz / 60 Hz, 4-pole version.

The motor is completely wired to the operating capacitor and provided with terminals (protection IP 10).

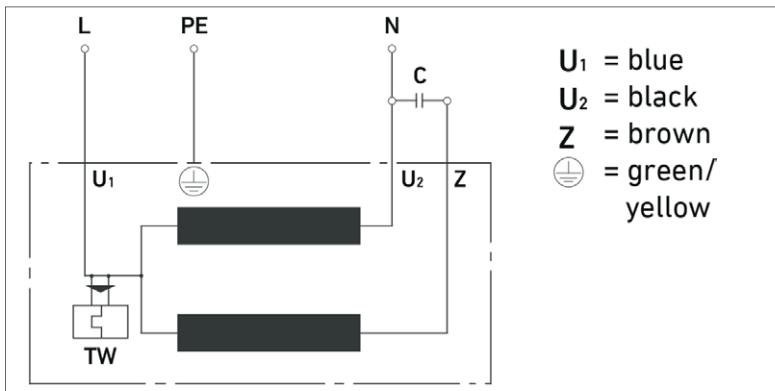
#### Wiring diagram



Wiring diagram TAR/TER ... N/US



Wiring diagram TAL/TEL ... N/US



- U<sub>1</sub>** = blue
- U<sub>2</sub>** = black
- Z** = brown
- = green/yellow

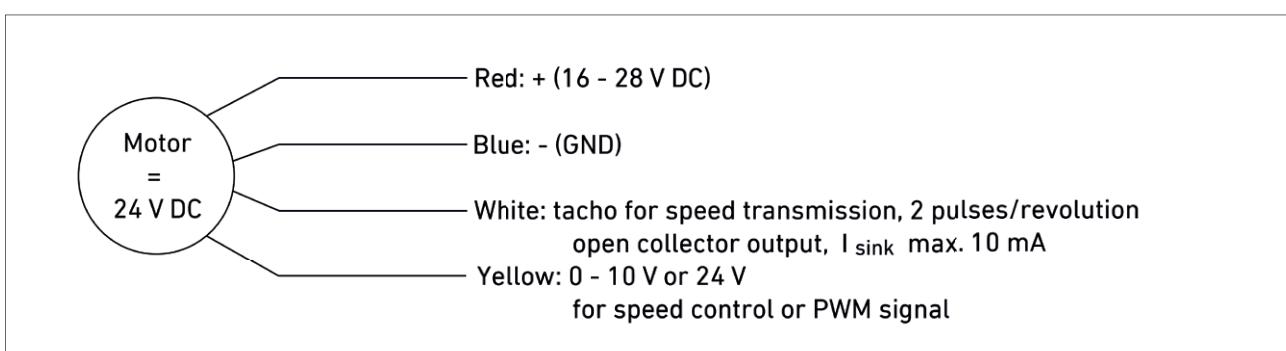
Wiring diagram TAR/TER ... 2p

### ELECTRICAL CONNECTIONS D/C MOTOR

For speed control a control signal may be connected to the yellow cable. An applied direct voltage of 0 V means that the motor is at a standstill, 10 V are the basic speed. For continuous operation at basic speed a voltage of 24 V is to be applied.

Connecting lead when supplied with 4-pole connector housing (Stocko EH 716-004-003-960) with the following configuration: 1=red / 2=white / 3=yellow / 4=blue.

Matching mating connector housing also included in supply.



Wiring diagram TA/TE ... 24 V DC

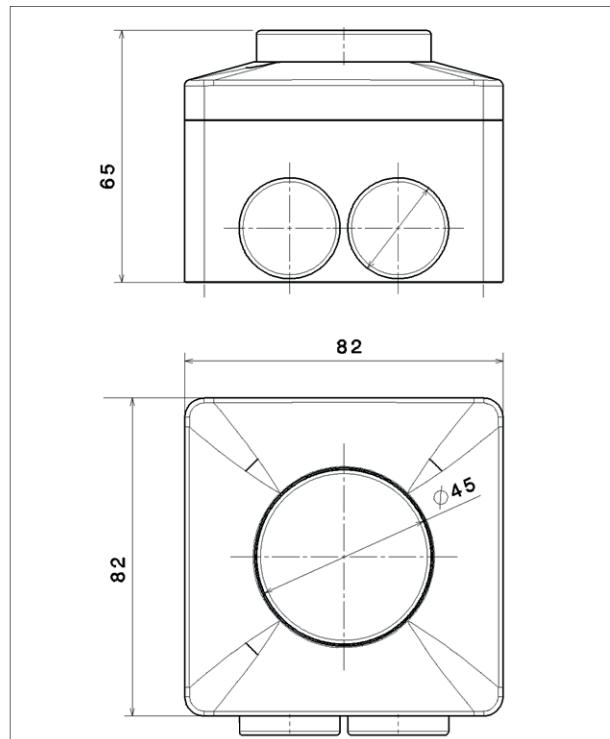
## SPEED CONTROLLERS - EQUIPMENT FOR IMPLEMENTATION N AND 2P

### DESCRIPTION

Infinitely variable speed control based on the phase-angle control. Good for our AC motors in 2-pole and 4-pole versions.

### TECHNICAL DATA

Infinitely adjustable speed range:	30...100 % infinitely variable
Maximal power:	1,5 A
Length/width/height:	82/82/65 mm
Protection class:	IP 44 / IP 54
Material:	Outer housing ASA, Inner housing PA
Maximal ambient temperatures:	35 °C



Dimensions speed controllers

## SELECTION

Application	Example	Your Data	Designations
Gas	Cold air		V [m³/h] air volume
Gas temperature	t [°C]	20	Δp <sub>stat</sub> [Pa] static pressure
ambient temperature drive side	t [°C]	25	Δp <sub>dyn</sub> [Pa] dynamic pressure
counter side	t [°C]	25	c [m/s] velocity at the discharge area
condensation	no		ρ [kg/m³] specific gravity
located at	recirculating airfan		Δp <sub>dyn</sub> = ρ/2 • c² dynamic pressure
drive side	right hand		I <sub>A</sub> = P <sub>A</sub> / U full load amps
arrangement	horizontal		n [min⁻¹] speed
<b>Drive motor</b>			U [V] voltage
power supply	3-phase		f [Hz] frequency
Voltage	U [V]	230	I <sub>A</sub> [A] full load amps
Frequency	f [Hz]	50	P <sub>A</sub> [W] power consumption
<b>Specified performance</b>			L <sub>WA</sub> [dBA] A-weighted sound power
air volume*	V [m³/h]	200	L <sub>pA</sub> [dBA] A-weighted sound power level
static pressure*	Δp <sub>stat</sub> [Pa]	25	S [m²] panel area
*at specific gravity	ρ [kg/m³]	1,2	
active impeller length	min. L max. L	300 400	
total length		500	
<b>Procedure</b>			
1. conditions of application fan type		cold air 20 °C TAR	
2. air volume achievable with length	V [m³/h]	200 315, 385, 440	
3. static pressure achievable with length	Δp <sub>stat</sub> [Pa]	25 315, 385, 440	
4. drive side		right hand	
<b>Selected</b>			
LTG Tangential fan type		TAR 60/385/N	
<b>Performance data</b>			
air volume	V [m³/h]	200	
static pressure	Δp <sub>stat</sub> [Pa]	25	
dynamic pressure	p <sub>dyn</sub> [Pa]	8,4	
exhaust velocity	c [m/s]		
speed	n [min⁻¹]	1 900	
<b>Electrical data</b>			
power input	P <sub>A</sub> [W]	33	
full load amps	I <sub>A</sub> [A]	0,143	
<b>Acoustical data</b>			
sound power level A-weighted	L <sub>WA</sub> [dB <sub>A</sub> ]		
sound pressure level in the free field in 1 m distance (full spheric sound radiation)			

### **COMFORT AIR TECHNOLOGY**

Air Conditioning Systems  
Air Diffusers  
Air Distribution

### **PROCESS AIR TECHNOLOGY**

Fans  
Filtration Technology  
Humidification Technology

### **ENGINEERING SERVICES**

Laboratory Test & Experiment  
Field Measurement & Optimization  
Simulation / Expertise  
R&D & Start-up

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