MIETZSCH

GmbH Lufttechnik Dresden

User information

RADIAL FANS

VRE-EC SERIES – direct driven

with electronically commutated (EC) motor

Radial fans
VRE-EC Series

For use in all areas of ventilation technology

High chemical resistance through use of plastics
and motor outside the flow conveyed
(PVC, PPs, PE, PVDF, GFRP, electrically conductive plastics)

High efficiency and low noise emission

Electronically commuted motor (EC motor with integrated EC controller)

Volumetric flow rate	up to 6,500 m³/h
Pressure increase	up to 900 Pa

Performance scaling using 5 sizes (larger types on request)

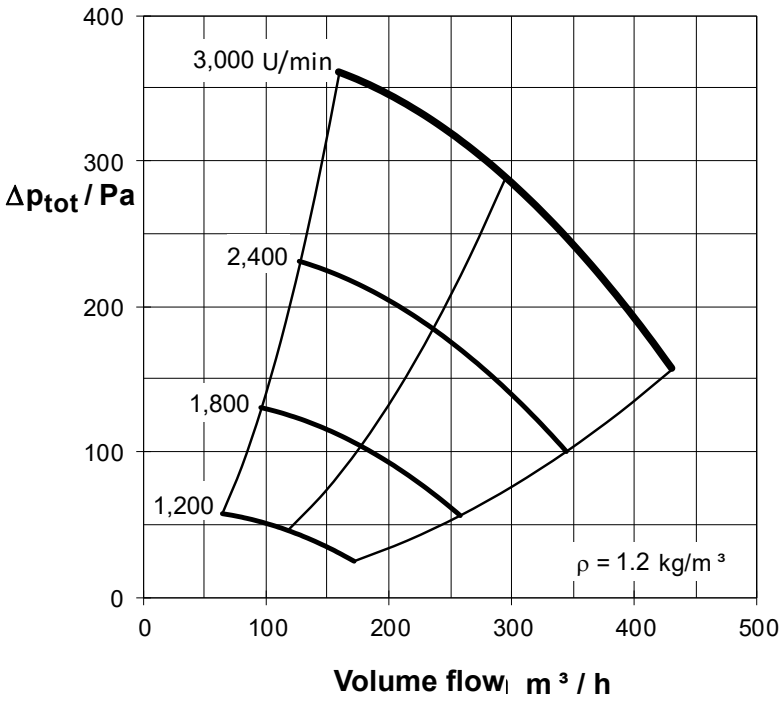
Casing position L and R

Versatile casing connections

Extensive range of ventilation and electrical accessories

Radial fans with EC-Motor
VRE100/731W3000-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE100/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

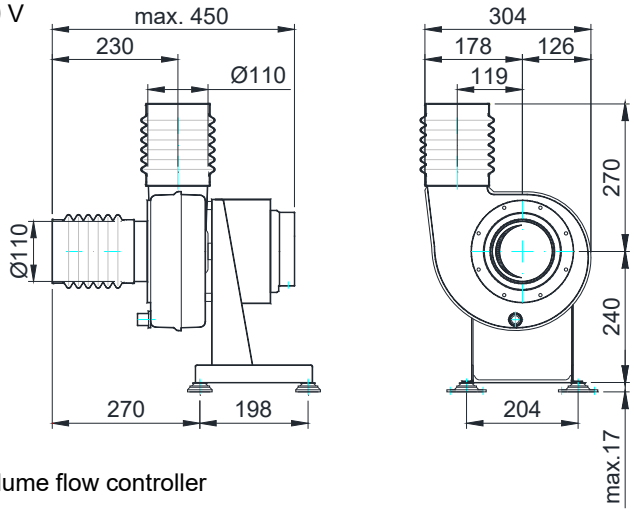
VRE100/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE100/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE100/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE100/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	$L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	1,200				46	58	35	39	54	50	50	51	40	33
VRE 100/731	rated voltage	1,800			9.0	46	65	44	49	61	58	57	57	46	38
W3000-EC	1~230 V/50 Hz	2,400				48	67	48	55	62	61	60	56	47	38
	IP 54	3,000	1.49	0.036		52	69	53	61	63	64	62	56	47	37

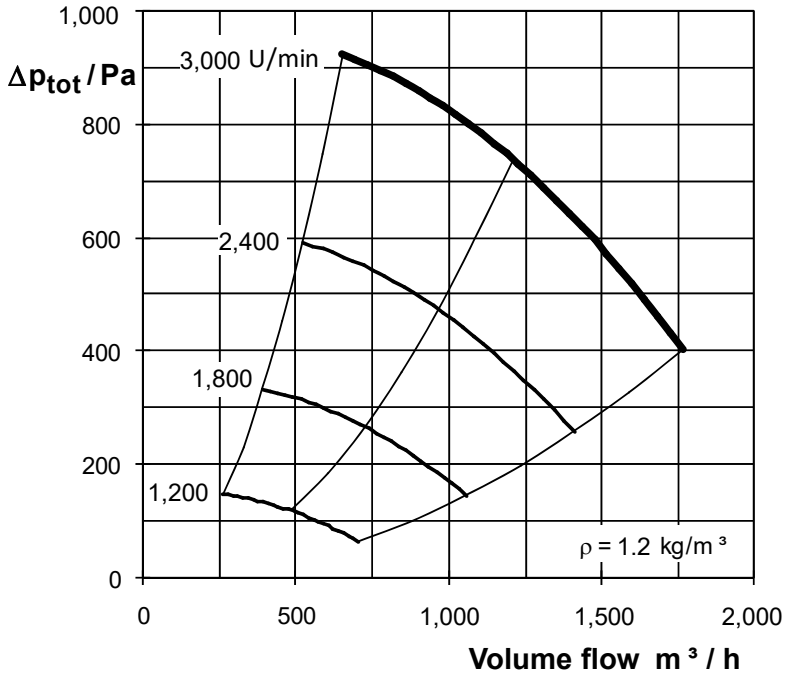
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

$L_{WA\text{-}Okt}$ = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE160/731W3000-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE160/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

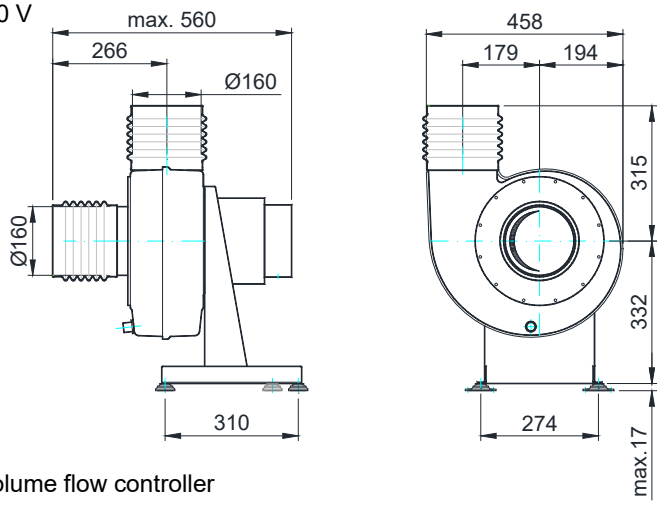
VRE160/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE160/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE160/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE160/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	L_{WA-Okt} / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	1,200				41	60	43	55	51	53	54	52	39	22
VRE 160/731	rated voltage	1,800			17.6	49	67	49	61	59	62	61	57	49	33
W3000-EC	1~230 V/50 Hz	2,400				56	74	55	65	65	72	67	61	55	44
	IP 55	3,000	2.70	0.50		61	79	58	67	69	78	71	63	60	51

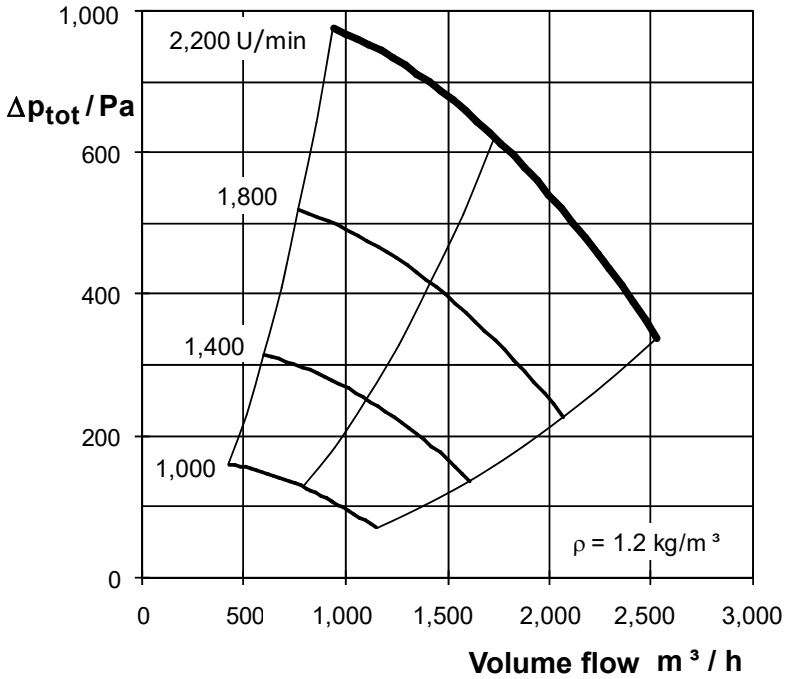
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

L_{WA-Okt} = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE200/731W2200-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE200/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

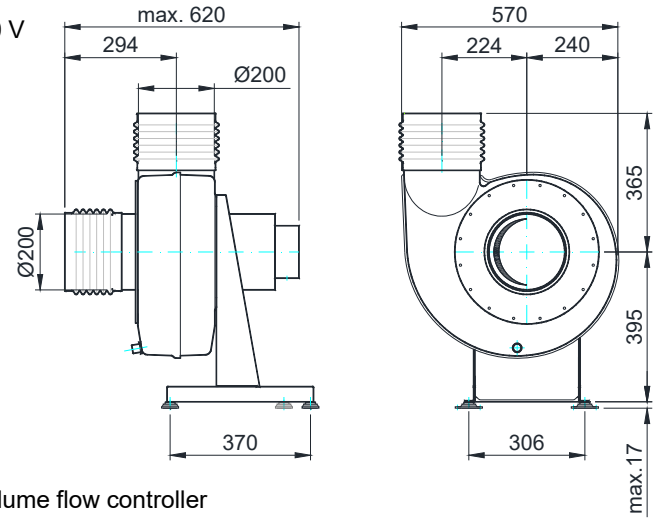
VRE200/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE200/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE200/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE200/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	$L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	1,000				46	64	47	55	55	57	58	55	43	27
VRE 200/731	rated voltage	1,400			25.0	51	68	52	60	61	63	62	59	49	35
W2200-EC	3~400 V/50 Hz	1,800				55	74	56	64	66	69	67	63	55	42
	IP 55	2,200	1.40	0.54		60	79	59	67	70	75	72	66	59	48

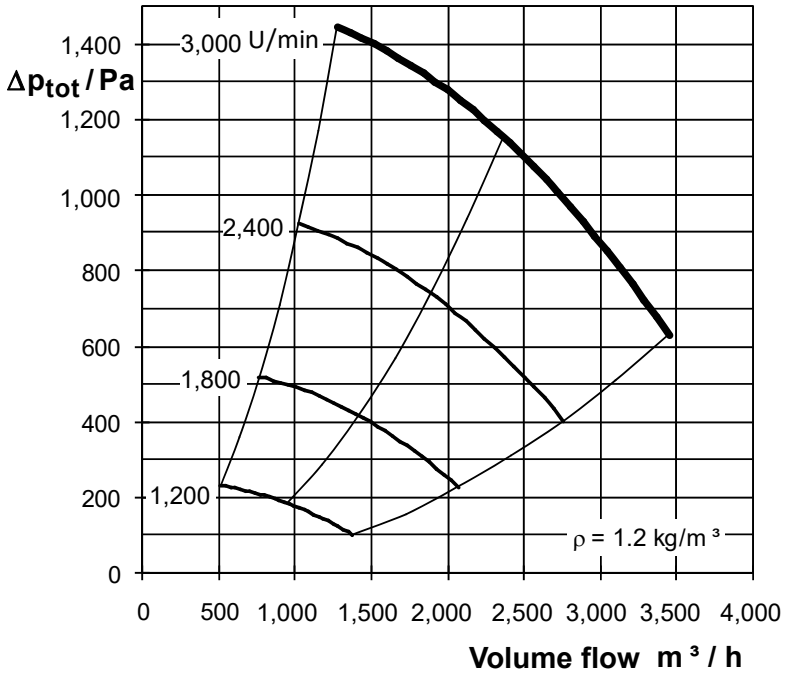
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

$L_{WA\text{-}Okt}$ = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE200/731W3000-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE200/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

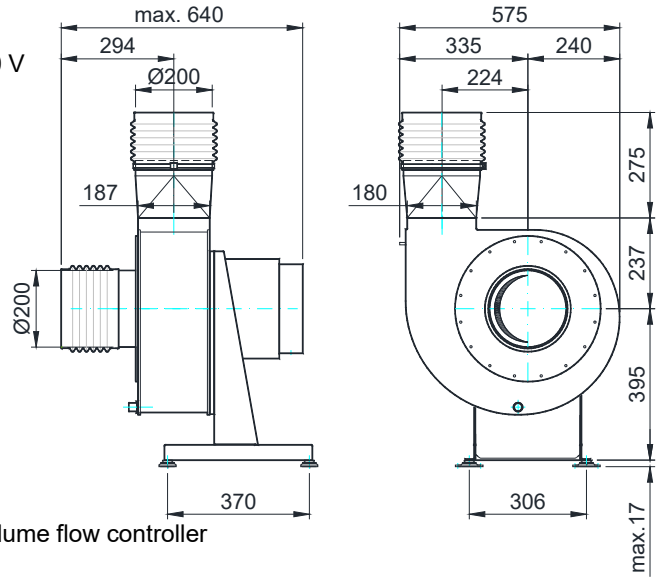
VRE200/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE200/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE200/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE200/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	$L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	1,200				49	66	50	58	58	60	60	57	46	31
VRE 200/731	rated voltage	1,800			31.0	55	74	56	64	66	69	67	63	55	42
W3000-EC	3~400 V/50 Hz	2,400				62	81	60	69	72	77	74	67	61	50
	IP 55	3,000	2.60	1.33		68	86	62	71	76	83	79	70	65	56

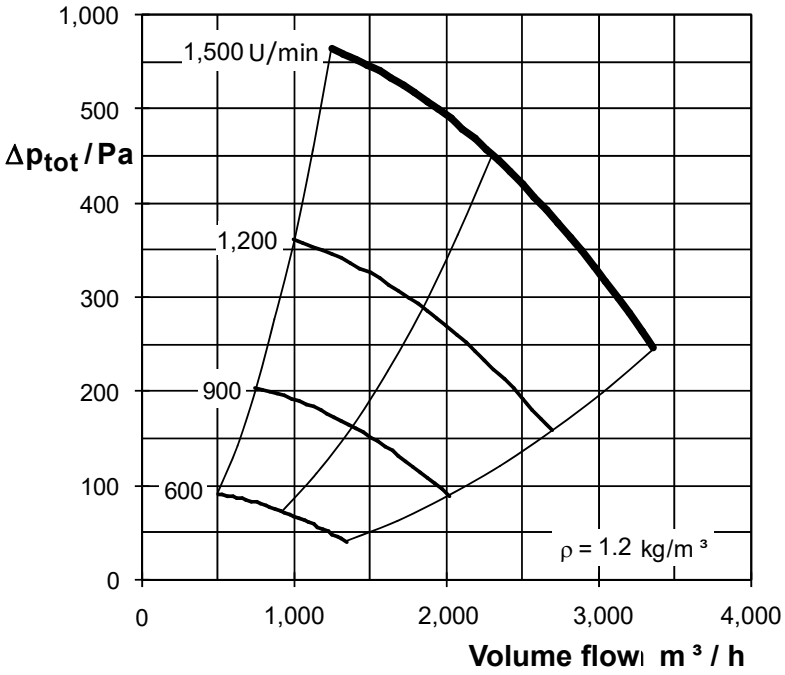
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

$L_{WA\text{-}Okt}$ = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE250/731W1500-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE250/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

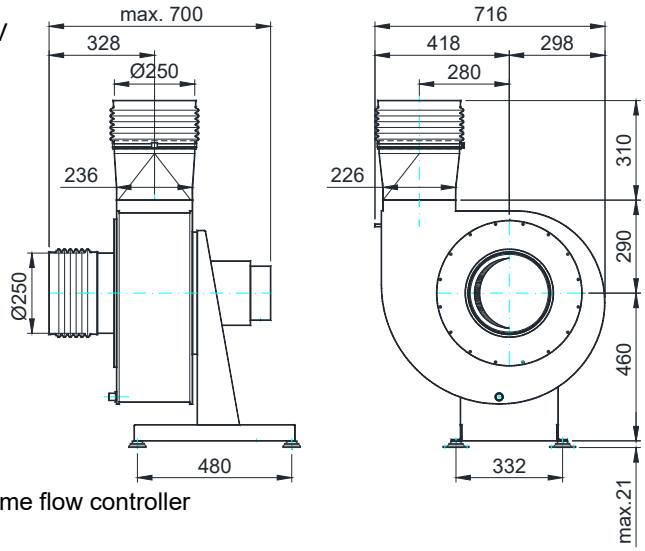
VRE250/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE250/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE250/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE250/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	L_{WA-Okt} / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	600				39	55	41	48	45	50	48	40	26	17
VRE 250/731	rated voltage	900			40.0	46	63	50	55	55	57	59	52	43	27
W1500-EC	1~230 V/50 Hz	1,200				51	69	54	59	63	64	64	58	52	36
	IP 55	1,500	3.40	0.52		56	74	60	63	69	70	67	63	57	44

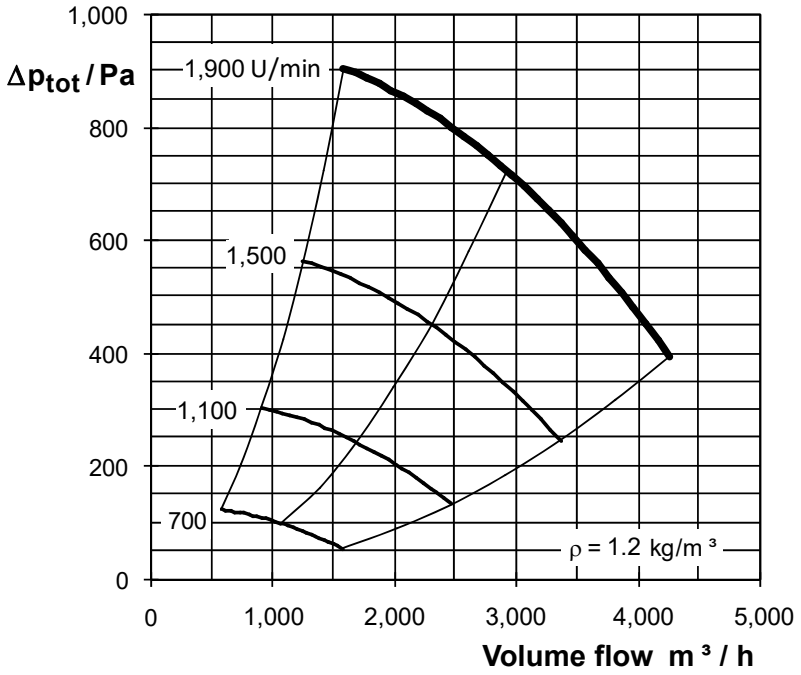
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

L_{WA-Okt} = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE250/731W1900-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE250/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

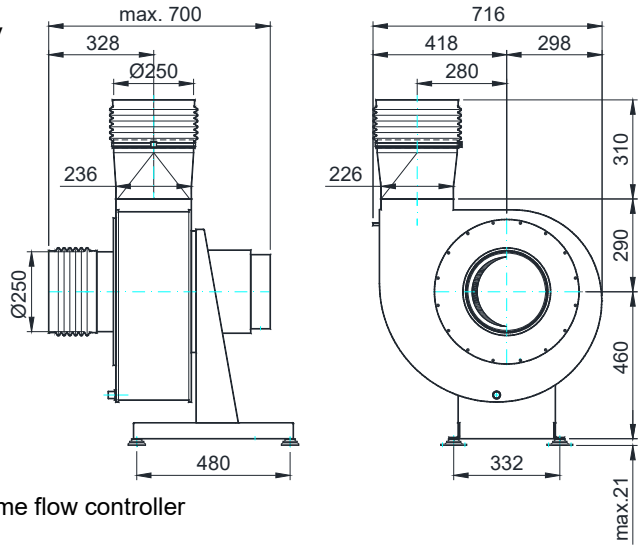
VRE250/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE250/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE250/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE250/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	L_{WA-Okt} / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	700				42	59	46	53	50	55	52	44	30	21
VRE 250/731	rated voltage	1,100			44.0	50	67	53	58	60	61	62	56	50	33
W1900-EC	3~400 V/50 Hz	1,500				56	74	60	63	69	70	67	63	57	44
	IP 55	1,900	2.60	1.03		61	79	65	68	74	75	72	68	61	48

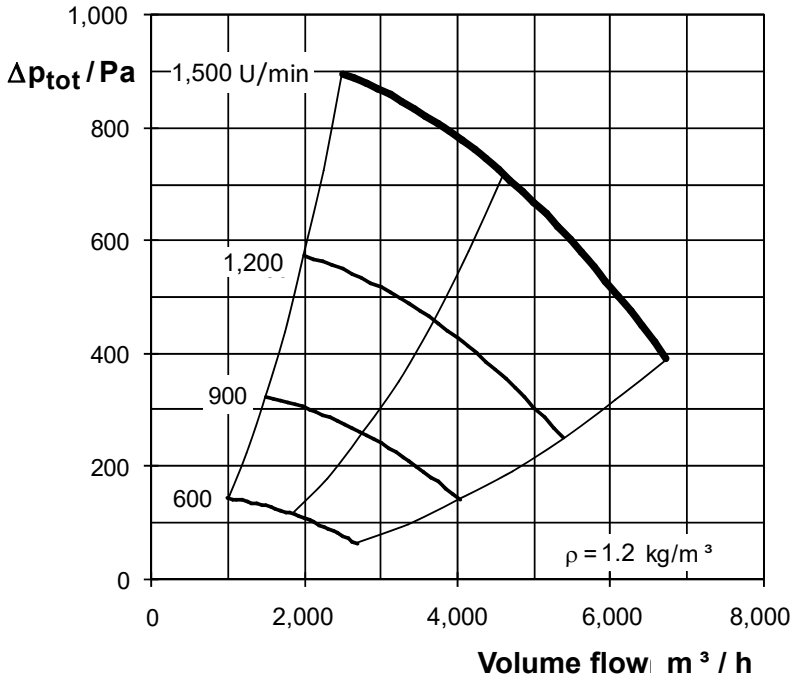
L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

L_{WA-Okt} = A - weighted octave-band sound power level in duct

Radial fans with EC-Motor
VRE315/731W1500-EC

LEISTUNGSSCHAUBILD



Working range

- Stable regime in entire characteristic range
- Parallel connection possible
- 100 % control by in motor integrated EC controller
- Permissible temperature -25°C ... 40°C

Design features

- welded impeller with 8 vanes curved backward
- deep-drawn casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

DESIGNS

VRE315/731-EC **Standard design**
Operation with maximum speed , with external signal 0 ... 10 V or via external potentiometer POT10K
I/O switch

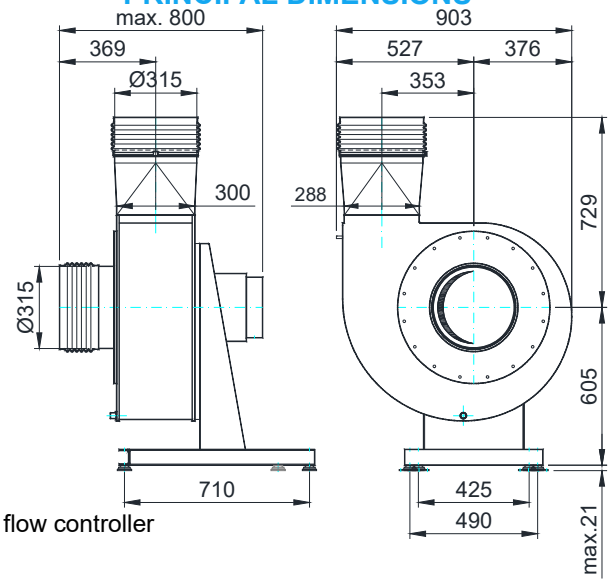
VRE315/731-EC-DS **Speed rate setting**
Speed control with potentiometer, installed on the fan,
I/O switch

VRE315/731-EC-ZS **Time control**
Control device for base and demand ventilation
Clock timer with daily and weekly program
Changeover MANUAL/AUTOMATIC

VRE315/731-EC-DR **Pressure control**
With pressure measuring probe, pressure transmitter and pressure controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

VRE315/731-EC-VR **Volume flow control**
For orifice plate (separate), with pressure transmitter and volume flow controller
External control of a second rated value,
Start/Stop switch, Manual/Normal operation

PRINCIPAL DIMENSIONS



MOTOR / MOTOR PROTECTION

- Drive by electronically commutated external rotor motor (EC controller integrated in EC motor)
- Motor protection integrated to motor (fault signal relay, opens at error (normally closed), max. 2A-250V AC)
- Input 0 ... 10 V DC
- Voltage source 10V max. 10mA (for potentiometer)
- EMC emitted interference according to IEC 61000-6-4 (industrial environments)

PERFORMANCE DATA

fan type	motor type	speed rpm	nominal current A	electrical power kW	weight kg	L_{A3m} dB(A)	L_{WA} dB(A)	L_{WA-Okt} / dB(A) 63	125	250	500	1000	2000	4000	8000
	EC-Motor	600				45	61	48	54	53	55	53	48	41	34
VRE 315/731	rated voltage	900			80.0	52	70	58	63	64	65	63	59	54	43
W1500-EC	3~400 V/50 Hz	1,200				58	76	63	67	71	71	69	64	60	48
	IP 55	1,500	2.50	1.58		63	81	66	70	76	75	73	68	63	52

L_{A3m} = A - weighted sound pressure level at distance of 3 m from fan center

L_{WA} = A - weighted sound power level in duct

L_{WA-Okt} = A - weighted octave-band sound power level in duct

No.	Qty.	Item		Unit price €	Total price €

Plastic radial fan - direct drive

Mietzsch Lufttechnik - VRE / W – EC series

Object:

Impeller optionally made of PVC / PPs welded / GFRP laminated, with balancing quality G 6.3 as per ISO 1940, mounted overhung on the motor shaft

Balancing quality and vibration level of the fan comply with ISO 14694

Spiral casing optionally made of PVC / PPs, single-sided suction, with condensate drain
Shaft passage: without seal / GD technically gastight

Direct drive with EC motor with integrated EC controller, motor outside of the flow
- Motor protection is integrated into the motor
  (fault signal relay, open in case of fault (normally closed), max. 2A-250VAC)
- Input 0-10VDC, power source 10V max. 10 mA (for potentiometer > 1kΩ)
- EMV fault signal as per EN 61000-6-4 (industrial sector)

Stable welded steel base for receiving the fan and motor
Corrosion protection: galvanised / varnished, including vibration isolators

Safety requirements as per VDMA 24 167

VRE _ _ _ / 731 W _ _ _ _ - EC - _ _ - _ _ - _ _ _ _ - _ _ _ _

Nominal size
Nominal speed
EC motor with integrated EC controller
Special designs
Casing position/direction of rotation
Casing / impeller material

Volumetric flow rate	:	_____	m^3/h
Total pressure increase	:	_____	Pa
Temperature of flow medium	:	_____	°C
Motor power	:	_____	kW
Voltage / frequency	:	_____	V ____ Hz
Nominal motor current	:	_____	A
Fan speed	:	_____	rpm
Noise level L_{A3m}	:	_____	dB(A)
Weight	:	_____	kg

Flow medium / intended use:

Accessories and special equipment

- Suction side casing connection: ELA-elast. connector round / KOF compensator with flange
- Pressure side casing connection: ELA-elast. connector / KOF compensator with flange
- Condensate drain: Drill hole with seal / nozzle with cap or screw cap
- Splinter protection: Soft foil / made of soft foil with wire mesh
- Weather protection for the motor
- Cleaning hatch
- Repair switch: loose / mounted, 3-pole with auxiliary contact & 6-pole with auxiliary contact
- Engine protection switch: loose / mounted
- Miscellaneous

Our program of products and services

Roof fans
of all-plastic design, horizontally or vertically blowing out with many assembly accessories

Radial fans
of thermoplastic material and FRP, direct and belt driven
up to about 150 000 m³/h and 6 500 Pa

Special fans
duct fans, built-in devices, mobile radial fans, Venturi injectors

Explosion-proof fans
according to ATEX for zone 1 and zone 2

Air technology systems and components
pipes, ducts, fittings, flaps, gas-tight shutoff flaps, exhaust air hoods, deflector hoods, suction hoods and many more of plastic material, complete air technology systems for industry and craft, air cleaning plants, laboratory and process exhaust systems

Central ventilation systems
in housing construction, special-purpose fans, exhaust elements, controlling and regulating devices

Noise protection
rectangular and cylindrical sound attenuators, silencing casings in corrosion-proof design

Exhaust gas cleaning
droplet eliminators and moisteners, gas scrubbers for separation of gaseous dangerous substances, dust filter

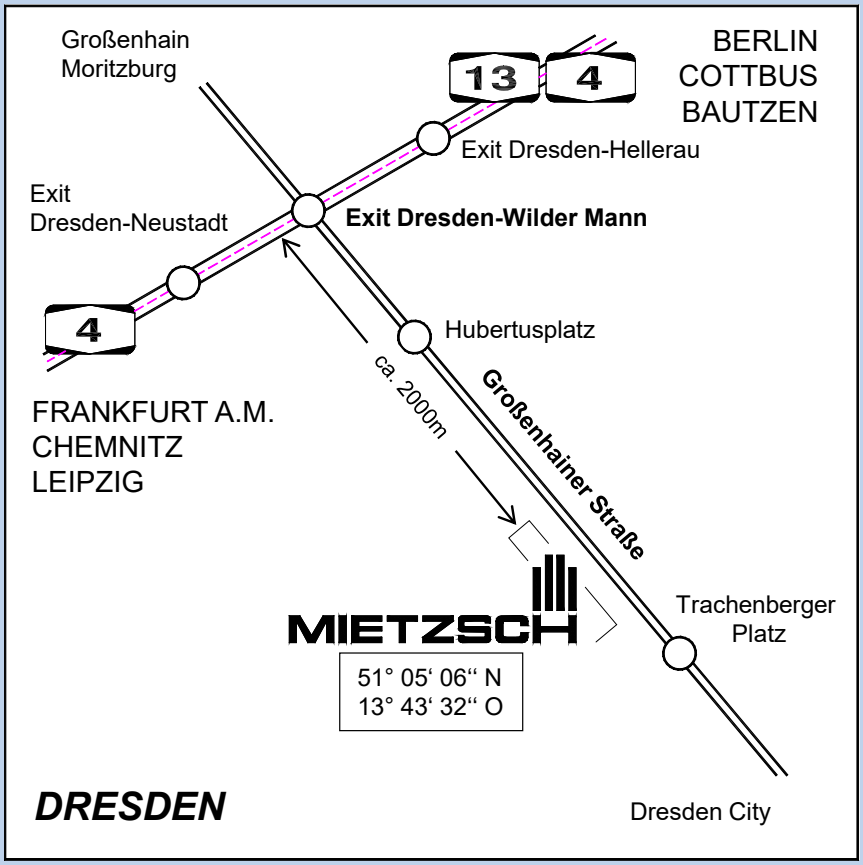
Heat exchangers
for heat recovery from moist and aggressive exhaust air

Tanks
of thermoplastic material for liquids endangering water, according to water resources regulations

Controlling and regulating elements and systems
switches, motor protection devices, speed controllers, frequency inverter, fan controls, flow supervision

Special designs
devices, linings, special components etc. of plastic material

Engineering performances
planning, calculation, and design, ventilation measurement on standardized test stands, low and high temperature test in company-own climatic test chambers



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