

Project Title - Daniel Smith – CC179825

Project Address - 60 Old Barrack Road Saxmundham Road, IP12 4ER

Scope of Works - Install of ventilation system for new proposed kitchen.

Client - Elite Foodservice Design

Date Issued – 15/02/2024

Prepared By - Simon Locke-Wheaton

This document has been prepared to detail the proposed ventilation system for 60 Old Barrack Road Saxmundham Road, IP12 4ER

With this proposal the following documents can be found.

1. Extent of existing and proposed works and EMAQ+ odour assessment
2. Elevation drawings of external and internal ventilation services
3. Proposed Plant data sheets.



CK Direct

15 Tresham Road

Orton Southgate

Peterborough

PE2 6SG

Proposed Ventilation Services



The premises plan to install a new back of house kitchen which will require a kitchen extraction system designed in accordance with BESA DW172 2018 2nd Edition and EMAQ Control of Odour and Noise from Commercial Kitchen Exhaust Systems.

The extract system will have a stainless-steel wall mounted extract canopy manufactured by CK Direct. The canopy shall be served by an extract ventilation system with all plant on the kitchen rear external wall.



The canopy shall have a set of grease separators for the removal of the initial grease from the cooking process before it enters the duct system.

The extract air shall be pulled through the canopy to the duct system.

The odour control has been specified on the EMAQ risk assessment scoring process.



Dispersion – Poor - Score 15
Proximity of Receptors – Far - Score 1
Size of Kitchen -Small - Score 1
Cooking type – Low - Score 1

Total Score 18 - Low odour control required. – Non recommended

The extract duct shall terminate via weather louvre from a external fan box on the rear kitchen wall.



CK Direct

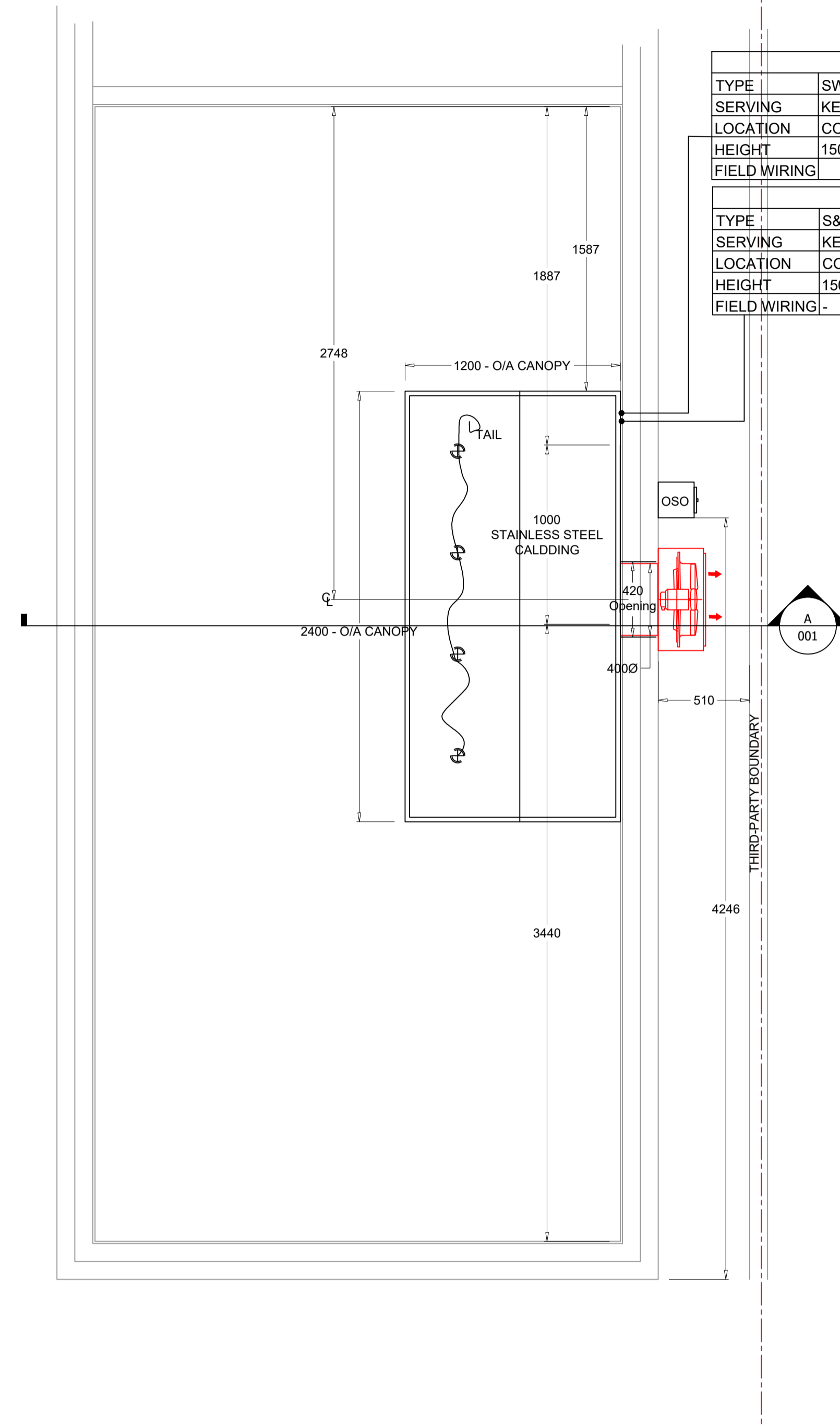
15 Tresham Road

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Peterborough

PE2 6SG

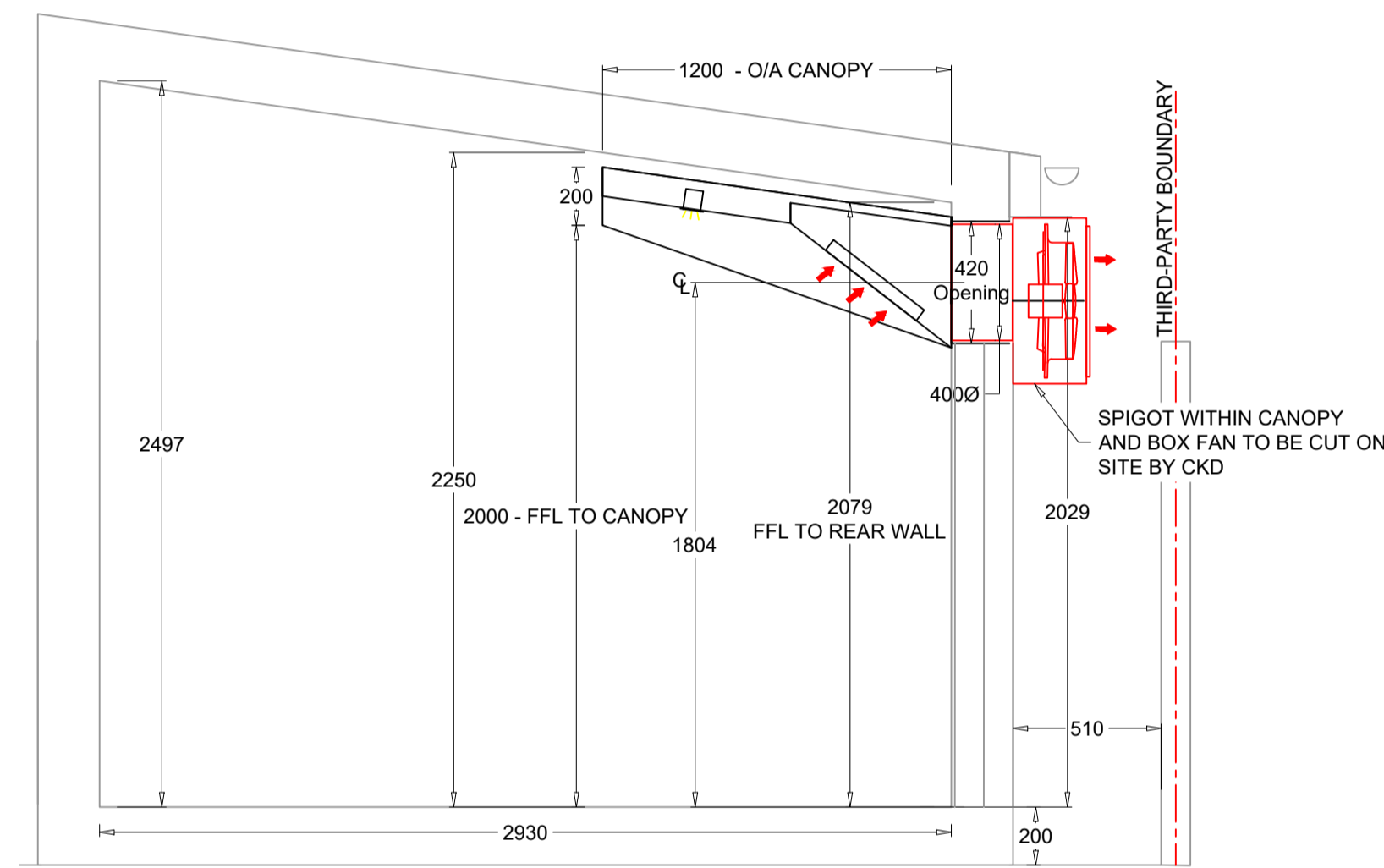
1 PLAN - INTERNAL VIEW
SCALE - 1:20



BY SITE ELECTRICIAN	
TYPE	SWITCHED FUSE SPUR
SERVING	KEF - 01
LOCATION	CONTROLS WALL
HEIGHT	1500 FFFL
FIELD WIRING	

BY CK DIRECT	
TYPE	S&P SPEED CONTROLLER 1PH
SERVING	KEF - 01
LOCATION	CONTROLS WALL
HEIGHT	1500MM FFFL
FIELD WIRING	

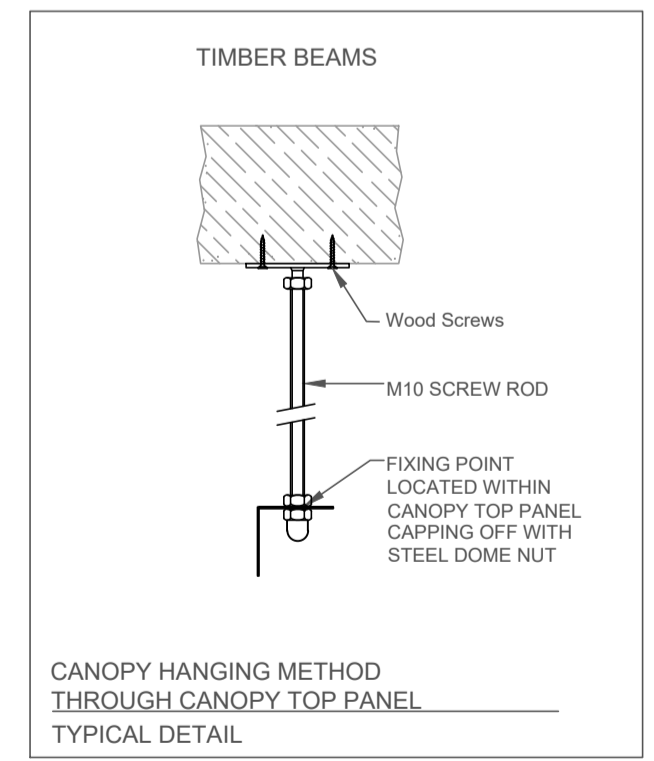
2 SECTION VIEW A-A
SCALE - 1:20



Canopy Details	
Model	Extract Only Wall Canopy
Size	2400mm x 1200mm 200/450mm
Extract Rate and Pressure Drop	120Pa
Extract Spigots	400mm dia
Supply Rate and Pressure Drop	N/A
Supply Spigots	N/A
Filters	4no. 395mm x 395 type 2 filters
Lighting	9W LED Downlight IP65 COOL White & Chrome Bezel

Fan Details	
Kitchen Extract	
Model	s&p 400 Plate fan - HCB/4-400
Air Flow Rate	0.9m ³ /s
Spigots Air Flow Rate	0.9m ³ /s

INSTALLATION NOTES
 • REVIEW ALL DETAILS BEFORE STARTING INSTALLATION



ckDirect
 Tel: 01733 230378
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Colour Line Legend	Key Parts Legend
— Kitchen Extract	VCD - Volume Control Damper
— Kitchen Ambient MUA	KEF - Kitchen Extract Fan
— Kitchen Tempered MUA	KMF - Kitchen MUA Fan
— General Extract	MUF - MUA Filter
— General Supply Air	ACP - Access Cleaning Panel
— Toilet Extract	FDP - Fire Damper
— Toilet Supply	ATT - Attenuator
	FDC - Flexible Duct Connector
	AVM - Anti-Vibration Mounts

Revision Information		Drawing No and Revision		CC179825-DRG-001-R1	APPROVAL
Revision No	Revision Date	Revision Information			
R1	15/02/2024	First Issue			

Client	Elite Foodservice Design
Drawing Title	ventilation Services & setting out

Project Address	60 Old Barrack Road
Project Title	Dan Smith Woodbridge

Issue Date	15/02/2024
Scale - Paper Size	1:20 - A1
Drawn By	Simon Locke-Wheaton



Range of low profile plate mounted axial fans fitted with plastic impellers with fiberglass, single phase motor (HCFB) or three phase motor (HCFT), IP65 (1), Class F insulation (2), equipped with thermal protection (3).

(1) Ø 800, 900 and 1000 models are IP55.

(2) Working temperatures from -40°C up to +70°C. Except models 4-710 suitable up to +55°C and models Ø 800 to 1000 suitable for usage in environments from -20°C to +40°C.

(3) Except models 800 to 1000.

Motors

Available, depending upon the model, with single or three phase motors in 2, 4 or 6 poles.

All motors are speed controllable by autotransformer except 2 pole and /4-630, 710, T/800, T/900 and T/1000.

Three phase models are speed controllable by inverter.

Electrical supplies:

Single phase 220-240V-50Hz.

[Capacitor located inside the wiring terminal box].

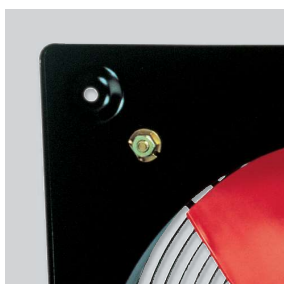
Three phase 220-240/380-415V-50Hz or 380-415V-50Hz.

[See characteristic chart].



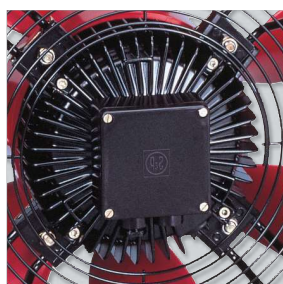
Compact design

Compact design created by the combination of the motor with the factory matched direct drive wrap around impeller hub.



Corrosion resistance

Mounting plate, motor support and finger proof guard protected by cataforesis primer and black polyester paint finish. Stainless steel screws.



Terminal box

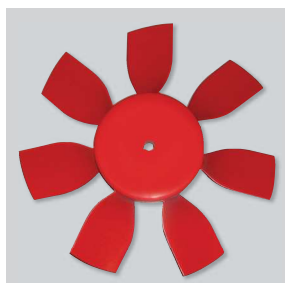
Wiring terminal box with cable gland PG-11.

Additional information

Standard air direction: form (A) configuration. (Motor over Impeller).

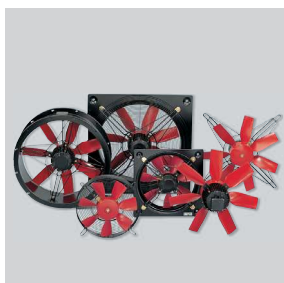
On request

Inlet finger proof guard for models Ø 800 to 1000.



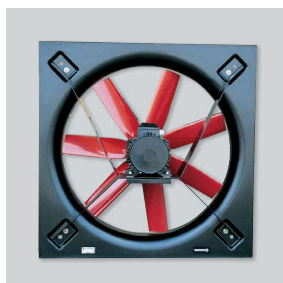
Impeller dynamically balanced

Impellers are dynamically balanced, according to ISO 1940 standard, giving vibration free operation.



Manufacturing variations

Multiple manufacturing variations, depending on the type of installation and use conditions.



Configuration for models Ø 800 to 1000

Special design of motor over impeller, which provides compactness and tightness IP55.



Range of low profile plate mounted axial fans fitted with aluminium impellers and single phase motor (HCBB) or three phase motor (HCBT), IP65 (1), Class F insulation (2), equipped with thermal protection (3).
 (1) Models 800, 900 and 1000 are IP55.
 (2) Working temperatures from -40°C up to +70°C. Except models 4-710 suitable up to +55°C and models Ø 800, 900 and 1000 suitable for usage in environments from -20°C to +40°C.
 (3) Except models Ø 800 to 1000.

Motors

Available, depending upon the model, with single or three phase motors in 4 or 6 poles. All motors are speed controllable by autotransformer except models /4-630, B/710, T/4-710, T/800, T/900 and T/1000. Three phase models are speed controllable by inverter.

Electrical supplies:

Single phase 220-240V-50Hz.
 (Capacitor located inside the wiring terminal box).
 Three phase 220-240/380-415V-50Hz or 380-415V-50Hz.
 (See characteristic chart).

Additional information

Standard air direction: form (A) configuration. (Motor over Impeller).

On request

Inlet finger proof guard for models Ø 800 to 1000.

Specific applications



Versions



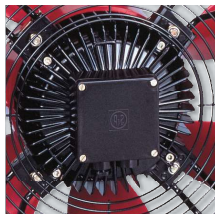
PROTECTION



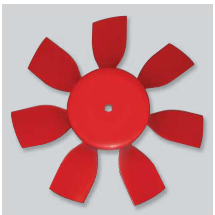
Compact design
 Compact design created by the combination of the motor with the factory matched direct drive wrap around impeller hub.



Corrosion resistance
 Mounting plate, motor support and finger proof guard protected by cataforesis primer and black polyester paint finish. Stainless steel screws.



Terminal box
 Wiring terminal box with cable gland PG-11.



Impeller dynamically balanced
 Impellers are dynamically balanced, according to ISO 1940 standard, giving vibration free operation.



Manufacturing variations Multiple manufacturing variations, depending on the type of installation and use conditions.



Configuration for models Ø 800 to 1000
 Special design of motor over impeller, which provides compactness and tightness IP55.

ATEX Versions HCBT

On request, explosion proof versions in accordance with ATEX Directive, for three phase models.

- Motors IP55, Class F
- ATEX Flameproof-Gas
 In standard ATEX version flameproof motors are without thermal protection.
 If used with frequency inverter, flameproof motors with a PTC-type thermal protection must be specified at order.
 For models 800 to 1000mm
 ⓧ II 2G Ex d IIB T4
 ⓧ II 2G Ex d IIB+H2 T4 (with Ex d IIC T4)
- ATEX Increased safety-Gas
 Except models HCBB/ 4-250, HCBB/ 6-355, HCBB/ 6-400
 Available model HCBB/ 6-400 with 230/400 V motor
 Available models to HCBB-1000
 ⓧ II 2G Ex e II T3
- ATEX Dust
 In standard ATEX version, ATEX motors for dust are without thermal protection.
 If used with frequency inverter, ATEX motors for dust with a PTC-type thermal protection must be specified at order.
 For models 800 to 1000mm
 Suspended flammable particles and non-conductive dust:
 ⓧ II 3D Ex tc IIB T125°C
 Conductive dust:
 ⓧ II 3D Ex tc IIC T125°C (with IP65 motor)

Working temperatures for ATEX versions:

- 20°C to +55°C
 models HCBB/4-315 to HCBB/4-710
 models HCBB/6-450 to HCBB 6-710
 - 20°C to +40°C
 model HCBB/4-800 to 1000
 model HCBB/6-800 to 1000
- To select HCBB ATEX refer to Easyvent.

Note electrical data may vary for ATEX motors.

TECHNICAL CHARACTERISTICS WITH ALUMINIUM IMPELLERS

Before making any electrical connection ensure that the voltage and frequency of the mains electrical supply matches that of the fan data plate label.

Model	Speed (r.p.m.)	Diameter (mm)	Maximum absorbed power (W)	Maximum current (A)		Sound pressure level* (dB(A))	Maximum airflow (m ³ /h)	Weight (kg)	Speed controller		Inverter control	
				230 V	400 V				REB	RMT**	VFTM**	VFKB**
SINGLE PHASE 4 POLE												
HCBB/4-250/H	1325	250	84	0,4	–	49	1.130	5	REB-1	–	–	–
HCBB/4-315/H	1235	315	124	0,7	–	55	2.220	7	REB-1	–	–	–
HCBB/4-355/H	1385	355	193	0,9	–	59	3.590	8	REB-2,5	–	–	–
HCBB/4-400/H	1360	400	315	1,5	–	62	4.830	9	REB-2,5	–	–	–
HCBB/4-450/H	1410	450	626	2,8	–	65	7.180	13	REB-5	–	–	–
HCBB/4-500/H	1370	500	762	3,3	–	68	8.850	16	REB-5	–	–	–
HCBB/4-560/H	1390	560	1433	6,5	–	70	13.400	22	REB-10	–	–	–
HCBB/4-630/H	1360	630	1879	8,3	–	71	16.720	25	–	–	–	–
SINGLE PHASE 6 POLE												
HCBB/6-355/H	900	355	84	0,4	–	48	2.230	8	REB-1	–	–	–
HCBB/6-400/H	845	400	112	0,5	–	51	3.010	9	REB-1	–	–	–
HCBB/6-450/H	935	450	191	0,8	–	54	4.400	13	REB-2,5	–	–	–
HCBB/6-500/H	915	500	244	1,1	–	57	5.620	16	REB-2,5	–	–	–
HCBB/6-560/H	930	560	449	1,9	–	59	8.950	22	REB-2,5	–	–	–
HCBB/6-630/H	915	630	588	2,9	–	62	10.950	25	REB-5	–	–	–
THREE PHASE 4 POLE												
HCBT/4-250/H	1330	250	81	0,3	0,2	49	1.120	5	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/4-315/H	1330	315	125	0,5	0,3	55	2.380	7	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/4-355/H	1380	355	181	0,8	0,5	59	3.530	8	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/4-400/H	1340	400	283	1,2	0,7	62	5.020	9	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/4-450/H	1350	450	547	1,7	1,0	65	6.800	13	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/4-500/H	1390	500	809	2,7	1,6	68	9.140	16	–	RMT-2,5	VFTM-Tri 0,55	VFKB-45
HCBT/4-560/H	1390	560	1287	4,0	2,3	70	12.950	22	–	RMT-2,5	VFTM-Tri 0,75	VFKB-45
HCBT/4-630/H	1385	630	1736	5,4	3,1	73	16.840	25	–	–	VFTM-Tri 1,1	VFKB-45
HCBT/4-710/H	1350	710	2554	7,6	4,4	74	22.400	27	–	–	VFTM-Tri 2,2	VFKB-45
HCBT/4-800/L-X-1,5	1410	800	2632	7,3	4,2	78	23.290	37	–	–	VFTM-Tri 1,5	VFKB-45
HCBT/4-800/H-X-3	1440	800	4595	12,8	7,4	84	33.100	52	–	–	VFTM-Tri 4	VFKB-48
HCBT/4-900/L-X-3	1450	900	3909	12,0	6,9	82	34.270	62	–	–	VFTM-Tri 3	VFKB-48
HCBT/4-900/H-X-5,5	1455	900	7893	–	13,4	87	46.270	96	–	–	VFTM-Tri 5,5	–
HCBT/4-1000/L-X-3	1415	1000	5048	14,2	8,2	86	39.910	67	–	–	VFTM-Tri 4	VFKB-48
HCBT/4-1000/H-X-7,5	1470	1000	8675	–	14,6	93	53.700	101	–	–	VFTM-Tri 7,5	–
THREE PHASE 6 POLE												
HCBT/6-355/H	900	355	91	0,3	0,2	48	2.270	8	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-400/H	840	400	120	0,5	0,3	51	3.050	9	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-450/H	925	450	198	0,9	0,5	54	4.620	13	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-500/H	905	500	282	1,1	0,6	57	6.190	16	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-560/H	895	560	401	1,4	0,8	59	8.650	22	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-630/H	910	630	596	2,3	1,3	62	10.950	25	–	RMT-1,5	VFTM-Tri 0,37	VFKB-45
HCBT/6-710/H	950	710	953	4,7	2,7	65	15.350	27	–	RMT-5	VFTM-Tri 1,5	VFKB-45
HCBT/6-800/L-X-0,55	940	800	1025	3,3	1,9	73	17.600	31	–	–	VFTM-Tri 0,75	VFKB-45
HCBT/6-800/H-X-0,75	935	800	1309	4,2	2,4	75	20.630	36	–	–	VFTM-Tri 1,1	VFKB-45
HCBT/6-900/L-X-1,1	960	900	1341	4,8	2,8	74	23.700	54	–	–	VFTM-Tri 1,5	VFKB-45
HCBT/6-900/H-X-1,5	955	900	2289	7,3	4,2	78	32.300	57	–	–	VFTM-Tri 1,5	VFKB-45
HCBT/6-1000/L-X-1,1	940	1000	1855	5,9	3,4	79	28.810	56	–	–	VFTM-Tri 1,5	VFKB-45
HCBT/6-1000/H-X-1,5	940	1000	2392	7,7	4,4	83	34.300	60	–	–	VFTM-Tri 2,2	VFKB-45

* Sound pressure level measured in free field conditions at a distance equivalent to three times the diameter of the impeller with a minimum of 1,5 meters.

** Three phase speed controllers (RMT) or inverter control (VFKB/VFTM): three phase 400V.

REFERENCE

H	C	F	T	/	4	-	4	0	0	/	H	A				8	9	
1	2	3	4		5		6				7							

- 1 - H:** Compact plate axial fan.
- 2 - C:** Series designation.
- 3 - Impeller type:**
 - F:** Ø 250-Ø 630 Fixed blade plastic impeller.
 - Ø 710 - Ø 1000 Aluminium impeller hub + adjustable plastic blade impellers.
 - G:** Adjustable plastic blade impellers.
 - B:** Ø 250-Ø 400 Fixed blade aluminium impeller Ø 450 - Ø 1000 Adjustable blade aluminium impeller.
- 4 - Electrical supply:**
 - B:** Single phase.
 - T:** Three phase.
- 5 - Number of poles:**
 - 2:** (approx. 2900 rpm - 50 Hz)
 - 4:** (approx. 1400 rpm - 50 Hz)
 - 6:** (approx. 900 rpm - 50 Hz)
- 6 - Nominal diameter of impeller (mm).**
- 7 - Pitch angle.**
 - H:** High.
 - I, L:** Low.
- 8 - Direction of air:**
 - A:** Motor over impeller.
- 9 - Special construction:**
 - X:** Motor support without inlet finger guard.
 - L:** Weatherproof protected.
- C:** Condensation drain holes on motor.
- EX:** Explosion proof versions in accordance to ATEX Directive, for three phase models:
 - EXE: Increased safety Ex II2G EExII T3
 - EXD: Flame proof, only for models 800 and 1000 Ex II2G EExd IIB T5 or EExd IIC T4
- G:** Special corrosion treatment for agricultural applications.
- TF:** With anticorrosive Teflon paint finish.

SUPPLY VOLTAGES AND FREQUENCIES



Mains supply voltage	Motor type	Connection	Speed
SINGLE PHASE 220V 50Hz, 240V 50Hz	230V 50Hz	See wiring diagram	High
THREE PHASE 220V 50Hz 240V 50Hz	230/400V 50Hz	Δ	High
		Y	Low*
THREE PHASE 380V 50Hz 415V 50Hz	230/400V 50Hz	Y	High
		Δ	High
	400V 50Hz	Y	Low*

* From sizes 450 up to 630 mm diameter.

ACOUSTIC CHARACTERISTICS

The sound levels shown in the technical characteristic chart and performance curves, correspond to the value of sound pressure dB(A), measured in free field conditions at a distance equivalent to three times the diameter of the impeller with a minimum of 1.5 meters.

Sound power level spectrum in dB(A) at the corresponding frequency band in Hz and the point of maximum flow.

Model	63	125	250	500	1000	2000	4000	8000	LwA
HCGB/2-315	50	61	68	70	72	69	64	58	77
HCGT/2-315	55	66	73	75	77	74	69	63	82
HCGB/2-355	55	66	73	75	77	74	69	63	82
HCGT/2-355	55	70	69	77	82	78	73	66	85

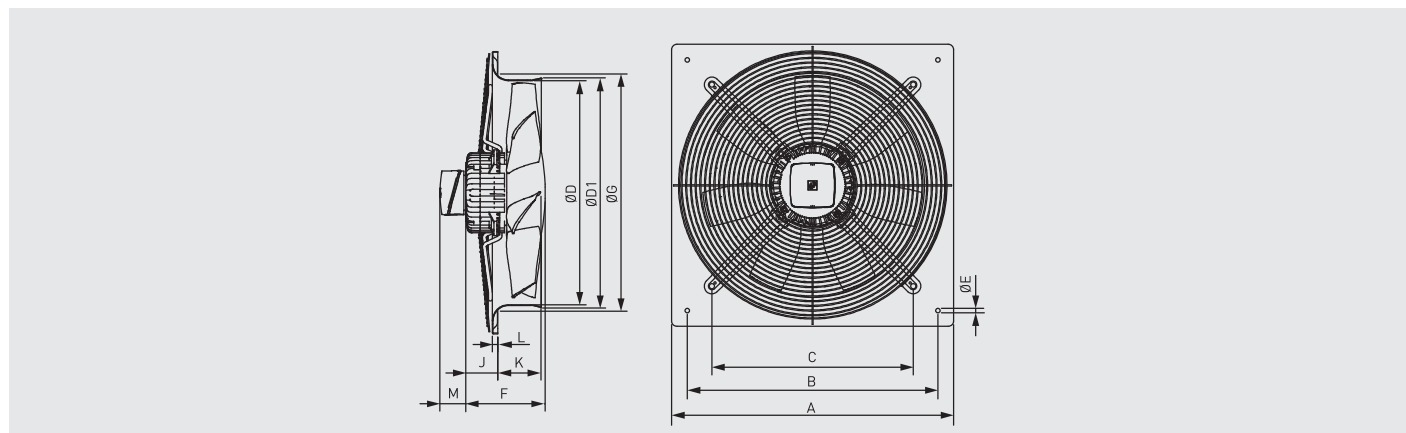
Model	63	125	250	500	1000	2000	4000	8000	LwA
/4-250/H	31	45	52	57	58	57	52	44	63
/4-315/H	42	53	60	62	64	61	56	50	69
/4-355/H	43	58	57	65	70	66	61	54	73
/4-400/H	48	61	62	68	73	69	66	57	76
/4-450/H	46	65	62	68	75	74	69	62	79
/4-500/H	49	68	68	74	78	76	72	65	82
/4-560/H	57	70	74	78	80	78	74	67	85
/4-630/H	57	72	76	81	85	82	79	72	89
/4-710/H	58	75	83	85	87	85	81	72	92
/4-800/L	58	77	87	93	93	89	83	76	97
/4-800/H	64	83	93	99	99	95	89	82	103
/4-900/L	59	81	91	97	98	94	88	80	102
/4-900/H	64	86	96	102	103	99	93	85	107
/4-1000/L	62	85	95	101	102	98	93	84	106
/4-1000/H	69	92	102	107	109	105	100	90	113

Model	63	125	250	500	1000	2000	4000	8000	LwA
/6-315/H	32	43	50	52	54	51	46	40	59
/6-355/H	32	47	46	54	59	55	50	43	62
/6-400/H	37	50	51	57	62	58	55	46	65
/6-450/H	35	54	51	57	64	63	58	51	68
/6-500/H	38	57	57	63	67	65	61	54	71
/6-560/H	46	59	63	67	69	67	63	56	74
/6-630/H	46	61	65	70	74	71	68	61	78
/6-710/H	49	66	74	76	78	76	72	63	83
/6-800/L	52	71	81	87	87	83	77	70	91
/6-800/H	54	73	83	89	89	85	79	72	93
/6-900/L	51	73	83	89	90	86	80	72	94
/6-900/H	55	77	87	93	94	90	84	76	98
/6-1000/L	56	78	89	94	96	92	86	77	100
/6-1000/H	60	83	93	99	100	96	91	82	104

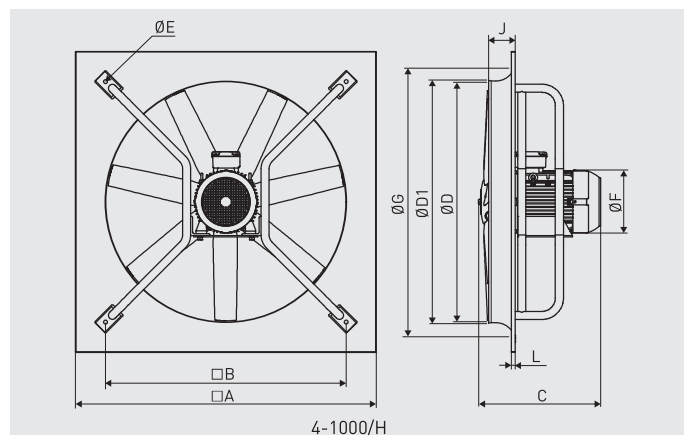
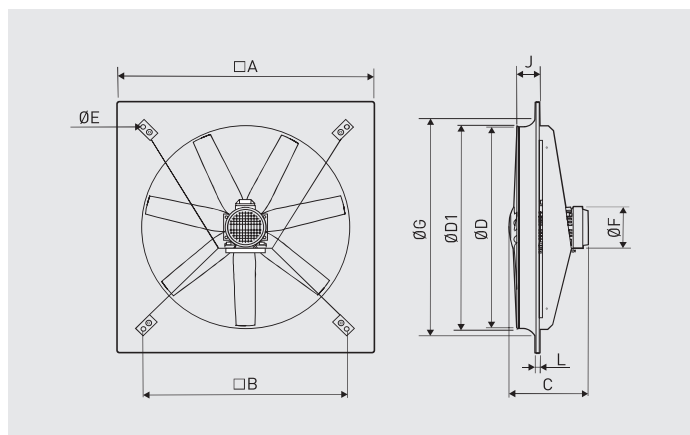
PLATE MOUNTED AXIAL FLOW FANS COMPACT HCFB / HCFT - HCBB / HCBT Series



DIMENSIONS (mm)

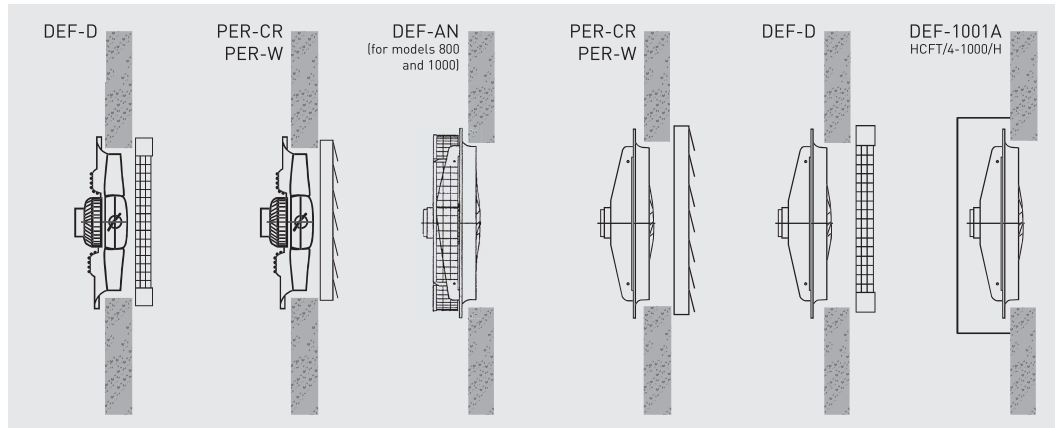
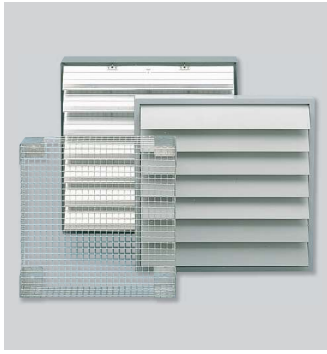


Model	A	B	C	Ø D	Ø D1	Ø E	F			Ø G	J			K	L	M	
							Number of poles				Number of poles					Three phase	Single phase
							/2	/4	/6		/2	/4	/6				
250	315	260	220	254	261	10		122		294		59	53	12	60	65	
315	400	330	280	315	320	10	129	122	122	329	45	32	32	68	12	60	65
355	450	380	315	355	363	10	129	129	129	371	45	45	45	75	12	60	65
400	500	420	355	400	410	10		129	129	422		40,5	40,5	78	12	60	65
450	560	480	400	450	457	10		150	150	476		48	48	91	12	60	65
500	630	560	450	500	512	10		150	150	536		44,5	44,5	97	12	60	65
560	710	630	510	560	570	10		218,5	150	596		110,5	42	98,5	12	60	65
630	800	710	580	630	640	12		218,5	150	674		110,5	41	103	12	60	65
710	900	800	636	710	720	12		220	218,5	733		114	134	91,5	16,5	60	65



Modelo	A	B	Ø D	Ø D1	Ø E	J	Ø G	C				Ø F			
								/4		/6		/4		/6	
								L	H	L	H	L	H	L	H
800	1000	800	800	810	18	92	926	363	442	318	363	180	200	160	180
900	1120	900	900	910	18	120	1060	442	512	400	400	200	280	200	200
1000	1250	1000	1000	1010	18	110	1154	442	-	345	400	200	-	200	200
4-1000/H	1250	1000	1000	1010	16	110	1154	-	512	-	-	-	280	-	-

MOUNTING ACCESSORIES



Model HCFB/HCFT HCBB/HCBT	Wire Protection Guards		Exhaust Side Louvre Shutters		
	Outlet	Inlet	Plastic	Aluminium	ATEX version*
250	DEF-250 D	-	PER-250 W	PER-250 CR	PER-315 Ex
315	DEF-325 D	-	PER-355 W	PER-355 CR	PER-315 Ex
355	DEF-375 D	-	PER-355 W	PER-355 CR	PER-355 Ex
400	DEF-450 D	-	PER-400 W	PER-400 CR	PER-400 Ex
450	DEF-450 D	-	PER-450 W	PER-450 CR	PER-450 Ex
500	DEF-525 D	-	PER-500 W	PER-500 CR	PER-500 Ex
560	DEF-630 D	-	PER-560 W	PER-630 CR	PER-560 Ex
630	DEF-630 D	-	PER-630 W	PER-630 CR	PER-630 Ex
710	DEF-800 D	-	PER-710 W	PER-710 CR	PER-710 Ex
800	DEF-800 D	DEF-800 AN	PER-800 W	PER-800 CR	-
/4-900/H	DEF-1000 D	DEF-900 AN	PER-1000 W	PER-1000 CR	-
/4-900/L	DEF-1000 D	DEF-901 AN	PER-1000 W	PER-1000 CR	-
/6-900	DEF-1000 D	DEF-901 AN	PER-1000 W	PER-1000 CR	-
1000	DEF-1000 D	DEF-1000 AN	PER-1000 W	PER-1000 CR	-
/4-1000 / H	DEF-1000 D	DEF-1001 AN	PER-1000 W	PER-1000 CR	-

* Three phase speed controllers (RMT) or inverter control (VFKB/VFTM): three phase 400V.

ELECTRICAL ACCESSORIES



REB-1N / REB-2,5N
 Single phase electronic speed controllers.



**REB-5
 REB-10**
 Single phase electronic speed controllers.



RMT
 Three phase auto transformer speed controllers.



REB-4 Auto
 Electronic single phase speed controllers with temperature sensor. For agricultural applications.



VFTM TRI IP54
 Adjustable frequency drive for three phase motors from 0,37 to 15 kW. 230 V or 400 V.



VFKB IP65
 Adjustable frequency drives for three phase motors from 0,37 to 4 kW 230 V or 400 V.



COM D/S
 To connect three phase fans with 400 V motor. For three phase models.