

Power-Line® (TDF)

Features & Benefits

- **Direct Drive Twin Fan (Run & standby)**
- **Backward Curved Radial Impellers**
- **Performance range up to 3.5m³/s**
- **Static Pressure Development up to 500pa**
- **Speed Controllable**
- **Quality assured to BS EN ISO 9001**
- **Performance listed to BS 848 Part 1**

The TDF range are twin backward curved radial impellers (Run & Standby) designed for induct installations.

Casings

Robustly constructed from aluzinc sheet steel, fitted with proprietary flanges at each end in accordance with DW142.

Impellers

Aerodynamically designed backward curved constructed a moulded GRP reinforced Polypropylene to suit the performance requirements.

The rotor of the external rotor motor forms the hub of the impeller. Rotors and impellers are factory matched and statically and dynamically balanced on precision machines according to VDI2060 quality class Q6.3.

Motors

Maintenance free external rotor motors with generously dimensioned sealed for life ball bearings encapsulating a high temperature lubricant. The bearings allow for the fan to be mounted at any angle.

Insulation is Class B with the enclosure IP44 according to DIN 40050. The electrical design corresponds to VDE 0530/12.84. The motors are suitable for operation in atmosphere up to 95% RH and ambients up to 40°C.

Motors are wound to suit either 240V 50HZ 1PH or 415V 50HZ 3PH electrical supply. All motors are fitted with Hot Spot protection by means of a thermal contact switch incorporated in the motor windings to prevent motor damage due to overloading. As the motors have a special torque-speed characteristic they are ideally suited for speed control by voltage reduction.

Performance

Performance figures given have been tested using installation Type 'D' in accordance with BS848 Part 1 1980 and BS848 Part 2 1985. The aerodynamic performance data being to tolerance Class 'C' as recommended by BSI C.A.M.E Scheme, Certification No CM005.

Sound Levels

Sound Levels are measured in a reverberent chamber in accordance with BS848 Part 2. Sound level measurements are taken with the fan operating at 20% of its maximum pressure development.

Published dBA figures are sound pressure levels measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the real sound level experienced will depend on the acoustic characteristics of the area being served.

Quality Assurance

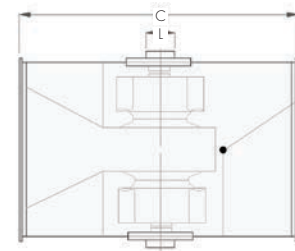
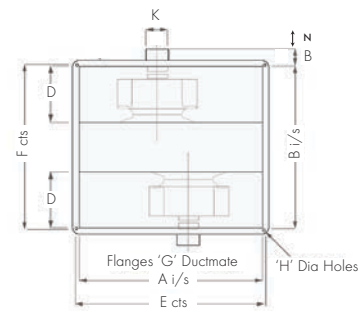
Design and manufacture is in accordance with Quality Assured to BS EN ISO9001



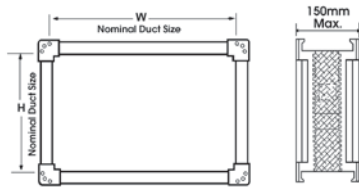
Fan Dimensions (mm)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	N	Max Weight Kg
320	500	655	900	230	525	680	25	9	50	150	130	220	65
380	550	745	1015	260	585	780	35	11	50	160	130	240	75
420	625	830	1130	295	600	865	35	11	50	230	230	220	103
480	700	925	1250	325	735	960	35	11	65	230	230	300	112
520	775	1055	1385	355	810	1090	35	11	50	230	230	350	145
600	850	1200	1530	400	885	1235	35	11	55	230	230	400	180

Note: For motor removal allow D+] minimum clearance



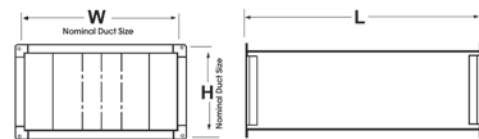
Power Line TDF Flexible Connections



Dimensions (mm)

Unit Code	W	H	Ductmate
320	500	655	25
380	550	745	35
420	625	830	35
480	700	925	35
520	775	1055	35
600	850	1200	35

Power Line TDF Attenuators

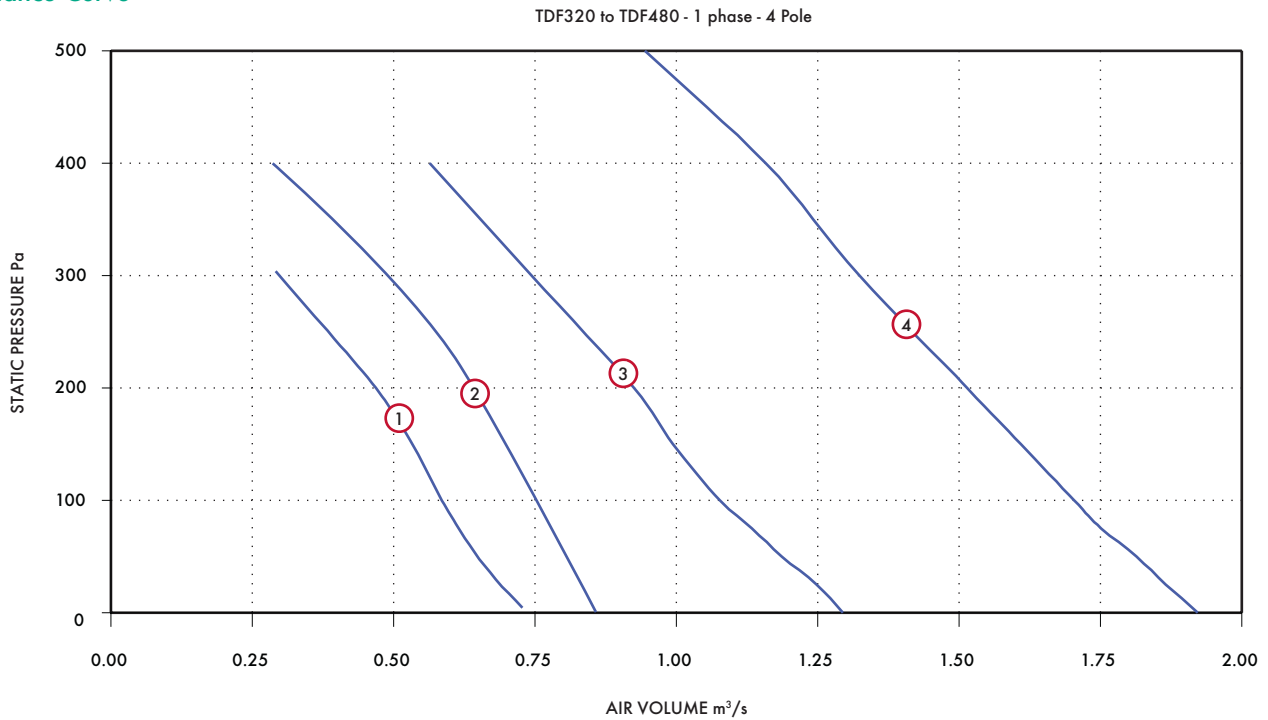


Unit Code

RUTDS	W	L	H	Ductmate	Weight
320	500	900	655	25	30
380	550	1200	745	35	62
420	625	1200	830	35	70
480	700	1500	925	35	96
520	775	1500	1055	35	110
600	850	1800	1200	35	150

Vent-Axia Power-Line (TDF)

Performance Curve



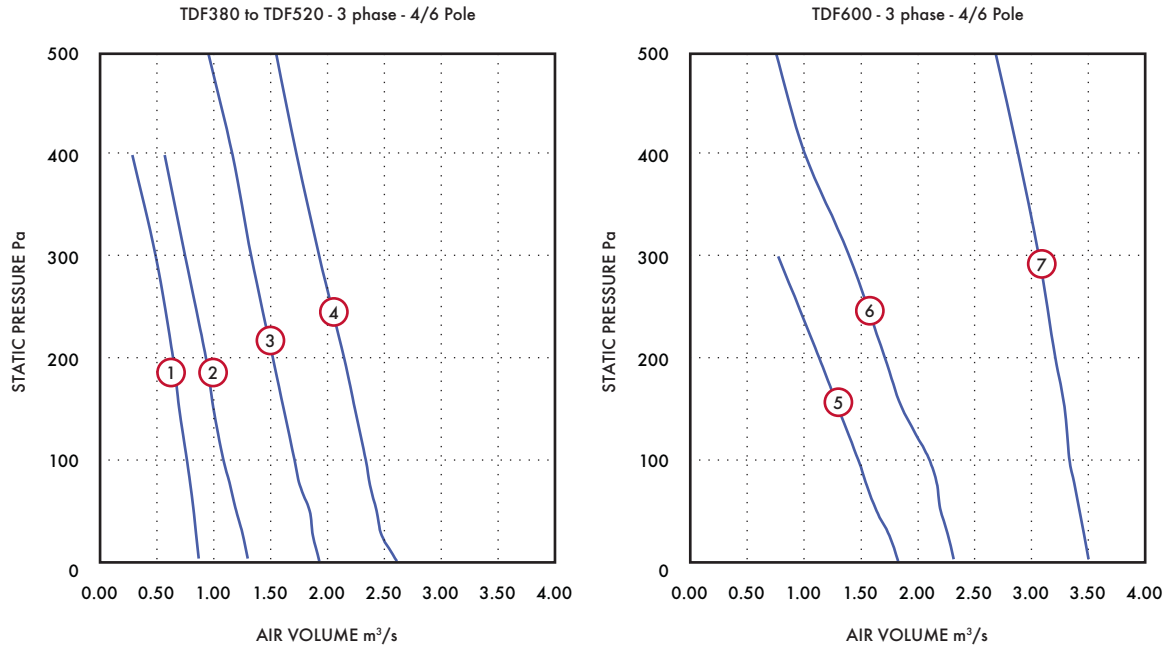
Performance Guide

Size	Phase			Curve Ref.	m³/s at Pa										Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
	Motor	Pole	rpm		0	25	50	75	100	150	200	300	400	500				
TDF320	1	4	1375	1	0.731	0.684	0.646	0.613	0.584	0.532	0.465	0.294		0.31	1.35	3.7	58	
TDF380	1	4	1365	2	0.869	0.845	0.822	0.793	0.763	0.696	0.642	0.491	0.285	0.52	5	2.2	59	
TDF420	1	4	1280	3	1.301	1.254	1.192	1.14	1.083	0.977	0.931	0.750	0.57	0.74	7	3.2	61	
TDF480	1	4	1360	4	1.928	1.871	1.843	1.757	0.71	1.615	1.52	1.33	1.164	0.95	1.3	15	5.7	66

Sound Power Level Spectra dB (re 10⁻¹² Watts)

Size	Pole	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
TDF320	4	65	84	79	77	73	70	65	58	58
TDF380	4	66	84	78	79	75	71	66	59	59
TDF420	4	74	91	83	81	76	72	69	65	61
TDF480	4	76	95	88	86	81	76	76	71	66

Performance Curve



Performance Guide

Size	Phase		rpm	Curve Ref.	m³/s at Pa								Motor kW	S.C. Amps	F.L.C. Amps	dBa @ 3m
	Motor	Pole			0	50	100	150	200	300	400	500				
TDF380	3	4	1365	1	0.869	0.822	0.763	0.696	0.642	0.491	0.285	0.46	2.5	0.85	59	
TDF420	3	4	1280	2	1.301	1.192	1.083	0.997	0.931	0.75	0.57	0.69	3.4	1.3	61	
TDF480	3	4	1360	3	1.928	1.843	1.71	1.615	1.52	1.33	1.164	1.25	9.2	2.3	66	
TDF520	3	4	1345	4	2.612	2.432	2.337	2.242	2.147	1.928	1.729	1.8	10	3.4	67	
TDF520	3	6	865	5	1.824	1.634	1.472	1.301	1.13	0.769		0.69	3.6	1.5	55	
TDF600	3	4	1425	7	3.515	3.431	3.345	3.303	3.220	3.075	2.893	4.1	29	6.8	70	
TDF600	3	6	925	6	2.33	2.21	2.107	1.858	1.719	1.404	1.016	1.2	8	2.6	56	

Sound Power Level Spectra dB (re 10⁻¹² Watts)

Size	Pole	63	125	250	500	1k	2k	4k	8k	dBa @ 3m
TDF380	4	66	84	78	79	75	71	66	59	59
TDF420	4	74	91	83	81	76	72	69	65	61
TDF480	4	76	95	88	86	81	76	76	71	66
TDF520	4	80	96	89	86	83	78	72	66	67
TDF520	6	80	81	78	80	71	62	60	52	55
TDF600	4	83	99	94	90	87	85	75	70	70
TDF600	6	84	86	80	77	73	66	61	56	56

Vent-Axia Power-Line (TDF)

Power-Line Silencers Type TDS

Unit Code TDS	Attenuation across Sound Spectrum H _z							
	63	125	250	500	1K	2K	4K	8K
320	3	8	17	24	32	32	25	20
380	6	12	23	32	45	45	33	28
420	6	10	20	31	43	43	33	27
480	4	9	17	27	36	36	24	13
520	3	7	14	22	27	21	15	10
600	4	8	15	24	30	26	14	8

For sound breakout through the fan casing the above figures may be reduced by 15dB across the frequency band 125 to 8k

Accessories

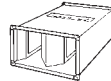
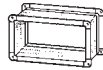


Size W x H	Fan Stock Ref.	Transformer Speed Controller Stock Ref.	*eDemand Controller			
			Auto	Voltage	1/3 Phase	3 Phase
			Changeover Stock Ref.	Control Stock Ref.	Inverter Stock Ref.	Inverter Stock Ref.
500 x 655	TDF32014	10314103	444180	444164	-	-
550 x 745	TDF38034	10314301	444179	444166	444177	444172
625 x 830	TDF42014	10314105	444180	444164	-	-
625 x 830	TDF42034	10314304	444179	444166	444177	444172
700 x 925	TDF48014	10314107	444180	444165	-	-
700 x 925	TDF48034	10314304	444179	444166	444177	444173
775 x 1055	TDF52034	10314304	444179	444166	444177	444173
775 x 1055	TDF52036	10314304	444179	444166	444177	444172
850 x 1200	TDF60034	10314307	444179	444167	-	444175
850 x 1200	TDF60036	10314304	444179	444166	444177	444173

Accessories



Size W x H	**ITC Man /Auto Ch'over Cont. Stock Ref.	**ITC-DS 12/24hr Auto Ch'over Stock Ref.	RVC Remote Visual Indicator Stock Ref.	RSC Remote Setback Cont. Stock Ref.	Weather Proof Treatment Stock Ref.
500 x 655	10314200	10314210	10314220	10314230	ECP2
550 x 745	10314200	10314210	10314220	10314230	ECP2
625 x 830	10314200	10314210	10314220	10314230	ECP3
700 x 925	10314200	10314210	10314220	10314230	ECP3
775 x 1055	10314200	10314210	10314220	10314230	ECP3
850 x 1200	10314200	10314210	10314220	10314230	ECP4



Size W x H	Mounting Feet & AVs (Set of 4) Stock Ref.	Flexible Connection Stock Ref.	Matching Attenuator Stock Ref.	Acoustic Jacket Stock Ref.	Discharge Cowl Stock Ref.	Roof Canopy Stock Ref.
500 x 655	PAVM1	TFC320	RUTDS320	TAJ320	-	TRC320
550 x 745	PAVM2	TFC380	RUTDS380	TAJ380	TDW380	TRC380
625 x 830	PAVM3	TFC420	RUTDS420	TAJ420	TDW420	TRC420
700 x 925	PAVM3	TFC480	RUTDS480	TAJ480	TDW480	TRC480
775 x 1055	PAVM3	TFC520	RUTDS520	TAJ520	TDW520	TRC520
850 x 1200	PAVM3	TFC600	RUTDS600	TAJ600	TDW600	TRC600

**Not suitable for use with eDemand controllers. For compatible changeover panel, see Accessories and Controllers Section.