



# Ingress Protection (IP) Technology

- Protects fans from hazardous, environmental applications, increasing overall performance, durability, and reliability
- Protection ratings against dust and water ingress
- Meet IEC 60529 IP criteria

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# Ingress Protection (IP) Technology

## Advanced Cooling Solutions – Durable, Reliable, Weatherproof

### Ingress Protection (IP) withstands harsh environments and hazards

Outdoor environment applications expose fans to water, dust particles, unexpected corrosion, and high humidity, which can cause electrical devices to work improperly. Delta's environment proof (IP fan) fans are designed to withstand these elements for a longer life and higher performance.

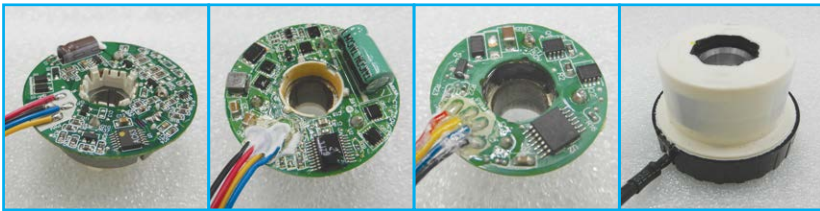
### IP fans undergo the most rigorous testing against harsh environments, including:

- Rain and flooding
- Salt fog and moisture
- Severe dust and dirt exposure

### IP Code and IP55/IP56 Protection

The IP Code classifies and rates the degrees of protection against the intrusion of solid objects, such as hands and fingers, as well as dust, accidental contact, and moisture or water.

The enclosures are critical to life and efficient operation of any fan, and are built to withstand these intrusions. To ensure greater lifespans and durability, Delta provides IP55 and higher protection ratings as an industry standard.



NONE (IP50)

GLUE (IP52)

DEPOSITION (IP55)

POTTING (IP56)

IP Test	None	Glue	Deposition	Potting
IP50	PASS	PASS	PASS	PASS
IP51		PASS	PASS	PASS
IP52		PASS	PASS	PASS
IP53			PASS	PASS
IP54			PASS	PASS
IP55			PASS	PASS
IP56				PASS



### IEC 60529 of Access to Hazardous Parts and Protection Against Water Ingress

Characteristic Numeral	First Characteristic Numeral Protection rating against dust	Second Characteristic Numeral Protection rating against water jets
0	Non-protected.	Non-protected.
1	Protected against access to hazardous parts with the back of a hand.	Protected against vertically falling water drops.
2	Protected against access to hazardous parts with a finger.	Protected against vertically falling water drops when enclosure is tilted up to 15°.
3	Protected against access to hazardous parts with a tool.	Protected against spraying water.
4	Protected against access to hazardous parts with a wire.	Protected against splashing water.
5	Dust-protected (Dust shall not penetrate in quantity to interfere with satisfactory operation of the apparatus or to impair safety).	Protected against water jets.
6	Dust-tight (No ingress of dust).	Protected against powerful water jets.
7		Protected against the effects of temporary immersion in water.
8		Protected against the effects of temporary immersion in water.

## Delta IP54 Axial Fans

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
THB1248B-AXHG	120x120x25	36.0~75.0	48	ball	0.4	19.2	5300	59	186.57	0.96	-10 ~ +70
EFB1548HG-TP14	172x150x51	36 ~ 60	48	ball	0.49	23.52	4000	60	302	0.94	-10 ~ +70

## Delta IP54 Blowers

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
KFB1748VHTAYP	175x175x69	26.0~57.0	48	ball	0.72	34.56	3100	66	334.02	1.32	-10 ~ +70
TCA1748ATXHD	175x175x69	36.0~60.0	48	ball	1.6	76.8	4000	70.8	428.00	1.95	-25 ~ +70
KFB2348HHUAYQ	225x225x99	36.0~60.0	48	ball	2.2	105.6	2600	71	735.08	1.99	-10 ~ +70

## Delta IP55 Axial Fans

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
AFB0412HHA-TA5F	40x40x10	7.0~13.8	12	ball	0.05	0.6	7000	31.5	8.15	0.19	-10 ~ +70
AFB0412SHB-T500	40x40x15	7.0~13.8	12	ball	0.25	3	11000	41.5	14.83	0.6	-10 ~ +70
EFB0424VHD-TZW2	40x40x20	14.0~27.6	24	ball	0.09	2.16	9000	32.5	10.10	0.42	-10 ~ +70
THA0412AD-TZW3	40x40x20	7.0~15.0	12	ball	0.43	5.16	15600	52	20.56	1.39	-25 ~ +70
FFB0412UHN-TYYK	40x40x28	5.5~13.2	12	ball	0.65	7.8	18500	58.5	27.05	2.11	-10 ~ +70
EFB0512HA12H	50x50x10	10.8~12.6	12	ball	0.1	1.2	5500	30	11.4	0.17	-10 ~ +70
AFB0512VHD-TZW4	50x50x20	7.0~13.8	12	ball	0.16	1.92	7000	40.5	20.30	0.3	-10 ~ +70
AFB0524VHD-TZW5	50x50x20	14.0~27.6	24	ball	0.1	2.4	7000	40.5	20.3	0.3	-10 ~ +70
AFB0612SH-TA50	60x60x25	4.0~13.8	12	ball	0.27	3.24	6000	44.5	34.15	0.42	-10 ~ +70
AFB0612DH-TZUT	60x60x25	7.0~13.2	12	ball	0.84	10.08	9000	55	50.40	0.93	-10 ~ +70
AFB0624EH-TA50	60x60x25	14.0~27.6	24	ball	0.24	5.76	6800	46.5	38.35	0.54	-10 ~ +70
AFB0624SH-TYTH	60x60x25	14.0~27.6	24	ball	0.17	4.08	6000	44.5	34.15	0.42	-10 ~ +70
AFB0612SHE-T500	60x60x38	7.0~13.8	12	ball	0.68	8.16	8000	50	46.17	0.79	-10 ~ +70
PFB0612GHE-T500	60x60x38	7.0~13.2	12	ball	0.85	10.2	10000	57.5	55.62	1.44	-10 ~ +60
PFB0612SHE-TZM8	60x60x38	7~13.2	12	ball	0.48	5.76	8000	50.5	43.57	0.92	-10 ~ +60
PFB0624SHE-TZNY	60x60x38	14.0~26.4	24	ball	0.28	6.72	8000	50.5	43.57	0.92	-10 ~ +60
PFB0612UHE-T50F	60x60x38	7.0~13.2	12	ball	1.4	16.8	12000	61.5	67.85	2.13	-10 ~ +60
PFB0624GHE-TD88	60x60x38	14.0~26.4	24	ball	0.48	10.32	10000	57.5	55.62	1.44	-10 ~ +60
AFB0812HH-T500	80x80x25	7.0~13.8	12	ball	0.2	2.4	3250	34	37.43	0.18	-10 ~ +70
AFB0824HH-T500	80x80x25	14.0~27.6	24	ball	0.09	2.16	3250	34	37.43	0.18	-10 ~ +70
FFB0812VH-T500	80x80x25	4.0~13.2	12	ball	0.34	4.08	4000	45.4	54.56	0.29	-10 ~ +60
AFB0812SH11J	80x80x25	7.0~13.8	12	ball	0.34	4.08	4000	40	46.62	0.27	-10 ~ +70
FFB0824SH-TZW1	80x80x25	20.4~26.4	24	ball	0.24	5.76	4500	48.6	67.02	0.39	-10 ~ +70
PFB0812DHE-T500	80x80x38	5.5~13.2	12	ball	2.75	33	9000	65	132.6	2.03	-10 ~ +60
PFB0812UHE-T500	80x80x38	7.0~13.2	12	ball	1.55	18.6	7500	61	107.3	1.37	-10 ~ +60
PFB0824UHE-T500	80x80x38	14.0~26.4	24	ball	0.77	18.48	7500	61	107.03	1.37	-10 ~ +60
PFB0812DHE-TYNT	80x80x38	10.8~13.2	12	ball	2.75	33	9000	66	132.6	2.03	-10 ~ +60
PFB0824DHE-T50F	80x80x38	14.0~26.4	24	ball	1.35	32.4	9000	65	132.60	2.03	-10 ~ +60
AFB0912H-TA50	92x92x25	5.0~13.8	12	ball	0.21	2.52	2800	37	59.89	0.19	-10 ~ +70
AFB0912SH-TZUG	92x92x25	5.0~12.6	12	ball	0.75	9	4800	53	102.59	0.53	-10 ~ +70
AFB0924SH-TZUH	92x92x25	14.0~26.4	24	ball	0.4	9.6	4800	53	102.59	0.53	-10 ~ +70
AFB0924HH-A367	92x92x25	14.0~26.4	24	ball	0.18	4.32	3300	42.5	72.74	0.26	-10 ~ +70
AFB0912GHE-TA50	92x92x38	7.0~13.8	12	ball	1.65	19.8	5400	60	143.87	0.8	-10 ~ +70
FFB0924EHE-T500	92x92x38	14.0~27.6	24	ball	0.5	12	4800	55	110.18	0.66	-10 ~ +60
FFB0924VHE-T50R	92x92x38	14.0~27.6	24	ball	0.28	6.72	3800	47.5	85.46	0.41	-10 ~ +70
FFB0948SHE-T500	92x92x38	28.0~56.0	48	ball	0.2	9.6	4400	52.5	100.29	0.57	-10 ~ +60
PFB0912DHE-T500	92x92x38	7.0~13.2	12	ball	3.1	37.2	8000	66.5	175.03	1.82	-10 ~ +60
PFB0912EHE-T500	92x92x38	7.0~13.2	12	ball	0.68	8.16	4800	54	103.67	0.69	-10 ~ +60
PFB0912UHE-T500	92x92x38	7.0~13.2	12	ball	1.96	23.52	7000	64	153.52	1.45	-10 ~ +60
PFB0924DHE-T500	92x92x38	14.0~26.4	24	ball	1.45	34.8	8000	66.5	175.03	1.82	-10 ~ +60
AFB1212SH-T500	120x120x25	7.0~13.8	12	ball	0.53	6.36	3400	46.5	113.11	0.43	-10 ~ +60
AFB1212VH-T500	120x120x25	7.0~13.8	12	ball	0.4	4.8	3100	44.5	103.75	0.37	-10 ~ +60
AFB1224SH-T500	120x120x25	14.0~27.6	24	ball	0.28	6.72	3400	46.5	113.11	0.43	-10 ~ +60
FFB1224HH-T500	120x120x25	14.0~26.4	24	ball	0.28	6.72	3100	49.7	114.73	0.29	-10 ~ +60
AFB1212VHE-T50F	120x120x38	4.0~13.2	12	ball	0.6	7.2	3200	48	129.6	0.42	-10 ~ +60
AFB1212GHE-TZR6	120x120x38	6.0~12.8	12	ball	2.45	29.4	5200	62	240.96	1.08	-10 ~ +70

## Delta IP55 Axial Fans

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
AFB1224HHE-T500	120x120x38	7.0~27.6	24	ball	0.3	7.2	2900	44	120.07	0.35	-10 ~ +60
FFB1224EHE212	120x120x38	14.0~27.6	24	ball	1	24	4000	59	190	0.7	-10 ~ +50
AFB1248VHE-T9LN	120x120x38	34.0~56.0	48	ball	0.31	14.88	4100	55.5	190.48	0.69	-40 ~ +70
PFB1248UHE309	120x120x38	36.0~72.0	48	ball	1.1	52.8	5500	66.5	252.85	1.41	-10 ~ +60
AFB1224SHE-T500	120x120x38	7.0~27.6	24	ball	0.5	12	3700	53	151.85	0.57	-10 ~ +60
AFB1224SHE-T50F	120x120x38	7.0~27.6	24	ball	0.5	12	3700	53	151.85	0.57	-10 ~ +60
AFB1224VHE-TC5F	120x120x38	7.0~27.6	24	ball	0.5	12	3700	53	151.85	0.57	-10 ~ +70
AFB1248HE-T500	120x120x38	28.0~56.0	48	ball	0.12	5.76	2600	41	105.94	0.3	-10 ~ +60
AFB1248SHE-TC50	120x120x38	24.0~56.0	48	ball	0.31	14.88	4100	55.5	190.48	0.69	-10 ~ +70
AFB1248SHEDC4	120x120x38	36.0~59.0	48	ball	0.13	6.24	2300	40	103.24	0.26	-10 ~ +70
FFB1224XHE-TM50	120x120x38	14.0~26.4	24	ball	3.25	78	6300	73.5	264.62	1.7	-10 ~ +70
PFB1212GHE-T50F	120x120x38	8.0~13.2	12	ball	2.7	32.4	4800	64	217.80	1.08	-10 ~ +60
PFB1212UHE-T50F	120x120x38	8.0~13.2	12	ball	4	48	5500	66.5	252.85	1.41	-10 ~ +60
PFB1224GHE286	120x120x38	14.0~26.4	24	ball	1.35	32.4	4800	64	217.80	1.08	-10 ~ +60
PFB1224UHE-T50F	120x120x38	14.0~26.5	24	ball	2	48	5500	66.5	252.85	1.41	-10 ~ +60
EFB1512HG-T50F	172x150x51	8.0~14.0	12	ball	1.35	16.2	3350	55	251.79	0.69	-10 ~ +70
EFB1512HHG-T500	172x150x51	8.0~14.0	12	ball	1.79	21.48	3700	57.5	279.60	0.8	-10 ~ +70
EHB1548SHG-C126	172x150x51	32.0~80.0	48	ball	0.88	42.24	4900	66.5	347.08	1.49	-40 ~ +80
EFB1724VHG-T500	172x172x51	12.0~28.0	24	ball	0.97	23.28	4000	57	302.29	0.94	-10 ~ +70
EFC1748DG-TYSG	172x172x51	28.0~53.0	48	ball	1.23	59.04	5500	63.4	415.66	1.771	-10 ~ +70

## Delta IP55 Blowers

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
BFB0405HHA-TZP4	40x40x10	4.0~5.5	5	ball	0.16	0.8	8500	34.5	3.00	0.56	-10 ~ +70
BFB0512HH-T50F	51x51x15	10.0~13.8	12	ball	0.21	2.52	6500	45	4.59	0.87	-10 ~ +70
BFB0724H-T500	75x75x30	14.0~27.6	24	ball	0.12	2.88	2900	38	11.3	0.48	-10 ~ +70
BFB1012L-TA5R	97x94x33	4.0~13.2	12	ball	0.37	4.44	2700	49.5	23.17	0.58	-10 ~ +60
TCA1048AB0C	100x100x25	36.0~60.0	48	ball	0.39	18.72	6700	65	68.67	1.9	-10 ~ +70
BFB1212VH-TA50	120x120x32	5.5~13.8	12	ball	1.47	17.64	3100	57	42.47	1.85	-10 ~ +60
BFB1224H-T50R	120x120x32	7.0~27.6	24	ball	0.35	8.4	2500	51	29.00	0.83	-10 ~ +60
BFB1224GH-TA50	120x120x32	14.0~27.6	24	ball	1.6	38.4	4400	65	60.39	4.09	-10 ~ +60

## Delta IP56 Fans

Part Number	Dimension (mm)	Operating Voltage Range (VDC)	Voltage (VDC)	Bearing Type	Current (A)	Power (W)	Speed (RPM)	Noise (dB-A)	Air Flow (CFM)	Air Pressure (in H2O)	Operating Temperature (°C)
AFB0612H-EP	60x60x25	5.0~13.8	12	ball	0.14	1.68	4250	34	22.63	0.21	-10 ~ +70
PFB0812UHE-EP	80x80x38	10.2~13.8	12	ball	0.99	11.88	6550	57.5	91.87	0.97	-25 ~ +60
PFB0848UHE12C	80x80x38	36.0~60.0	48	ball	0.23	11.04	6400	58	89.09	0.95	-40 ~ +70
AFB0912HHF-EP	92x92x32	7.0~13.0	12	ball	0.2	2.4	3000	38	60.01	0.21	-10 ~ +60
PFB0948GHED6W	92x92x38	36.0~60.0	48	ball	0.35	16.8	6000	60.5	123.58	1.02	-10 ~ +70
FFC0948BY7T	92x92x38	36.0~75.0	48	ball	0.17	8.16	3900	49.5	86.40	0.35	-25 ~ +70
AFB1224EHE-EP	120x120x38	21.6~26.4	24	ball	0.85	20.4	4600	58.5	212.57	0.84	-10 ~ +70
PFB1248UHE-EP	120x120x38	30.0~60.0	48	ball	0.88	42.24	5300	66	243.66	1.31	-40 ~ +70
EFB1324SHE-EP	127x127x38	18.0~28.0	24	ball	0.75	18	4600	58.5	200.00	0.76	-10 ~ +70
FFB1424VHG-EP	140x140x51	18.0~26.4	24	ball	1	24	3200	58.5	252.11	0.64	-10 ~ +70
AFB1548VH-CD8G	172x150x25	42.0~60.0	48	ball	0.65	31.2	5000	65	305.043	1.2	-40 ~ +70
EFB1524VHG-EP	172x150x51	20.4~27.6	24	ball	1.02	24.48	4000	60	302.29	0.94	-10 ~ +70
EFB1548VHGD8N	172x150x51	36.0~72.0	48	ball	0.56	26.88	4000	60	302.29	0.94	-20 ~ +65
KFB2348HHU-EP	225x225x99	36.0~60.0	48	ball	2.2	105.3	2600	71	735.08	1.99	-25 ~ +70

Design and specifications are subject to change without notice.

Rev. 08/2017