

# **Cooling Systems** for Power Transformers

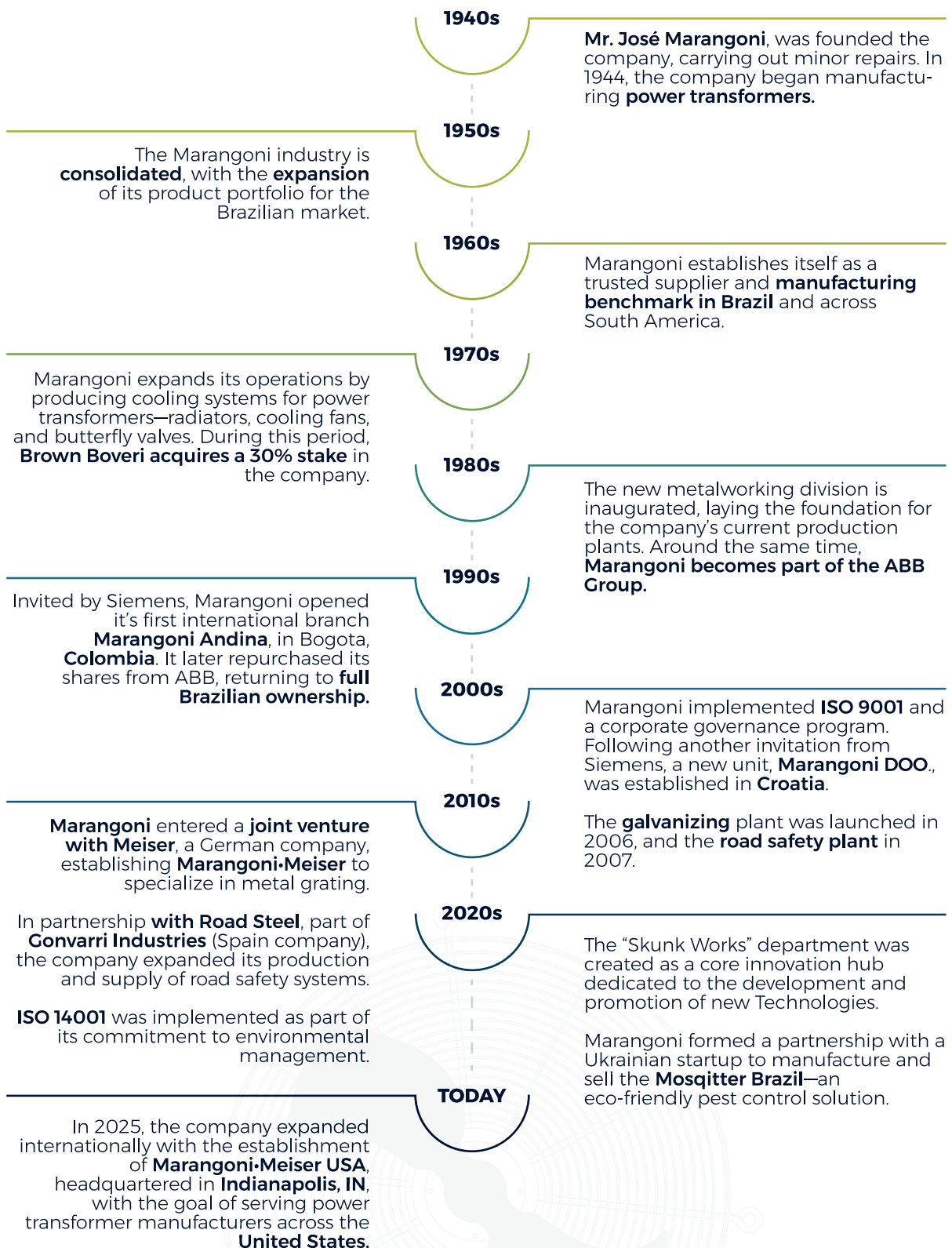


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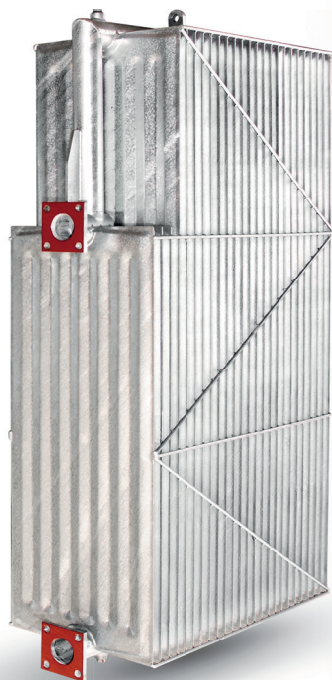


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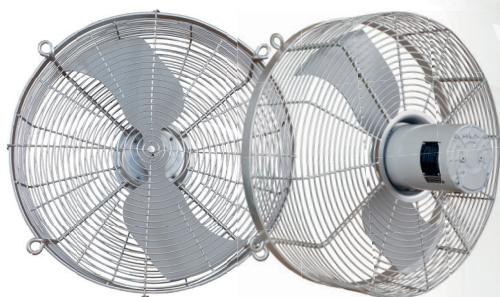
Since 1944  
More than **80 years** of history



# Cooling Systems for Power Transformers



Radiators



Cooling Fans



Butterfly Valves

# COOLING FANS

## General Characteristics and Requirements

<b>Service conditions:</b>	According to IEC 60076-1 and IEEE C57.12.00 or unusual service conditions agreed between the purchaser and supplier.
<b>Standard:</b>	IEC 60076-22-6 and IEEE C57.12.36 or unusual service conditions agreed between the purchaser and supplier.
<b>Duty Type:</b>	Continuous operation S1
<b>Mounting Position:</b>	Horizontal and Vertical.
<b>Corrosion Class:</b>	C4 acc. to ISO 12944-2 or another special requests.
<b>Overall Dimension:</b>	See detail in datasheets and drawings.
<b>Technical Parameters:</b>	See the datasheets.

### MOTOR CONSTRUCTION

<b>Motor:</b>	According to NEMA MG 1 (UL Certification); 1-phase or 3-phase motor with internal automatic reset overload protections sensing both temperature and current.
<b>Frame:</b>	NEMA 48 with stainless steel shaft Total enclosed motor
<b>Winding Insulation:</b>	Class F
<b>Winding Temperature Rise:</b>	Class B for longer motor life acc. to IEC 60085
<b>Max Ambient Temperature:</b>	+131°F (+55°C) or another special requests.
<b>Motor degree protection:</b>	IP54 enclosure according to IEC 60529 or another special requests
<b>Final Coat Standard:</b>	ANSI 70 GRAY
<b>Bearings:</b>	Double sealed ball bearings
<b>Connection Hole:</b>	1/2" NPT
<b>Drain Plugs:</b>	The motor includes strategically positioned drain holes for both horizontal and vertical operation, according to instructions supplied with each fan.

Model	RPM	CFM(l)	dB(A)
CF19	850	2758	51.5
	1140	2936	56
	1750	4806	63.5
CF19+	1140	6230	64
CF23	850	4225	52
	1140	6094	58.5
	1750	8156	66.5
CF26	850	4010	47.5
	1140	6164	56.5
	1750	8355	68
CF27	850	5419	50.9
	1140	7294	60
	1750	10510	71.5

+ (plus): optimized air flow - better performance.

### FAN BLADE

<b>Blade:</b>	Each blade assembly is manufactured as a single piece of aluminum
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### GUARDS AND HOUSING

<b>Protection:</b>	Acc. to IEC 60529 IP20 and OSHA requirements.
<b>Finishing:</b>	Hot-Dip Galvanizing ASTM A123 and/or EN 1461 or Stainless Steel in special requests

CFM(l): Actual AirFlow in CFM as measured with Horizontal Airflow on discharge side of one transformer radiator.

SOUND PRESSURE: Values represent the average of 5 readings obtained at 2 meters with free discharge and do not include any corrections.

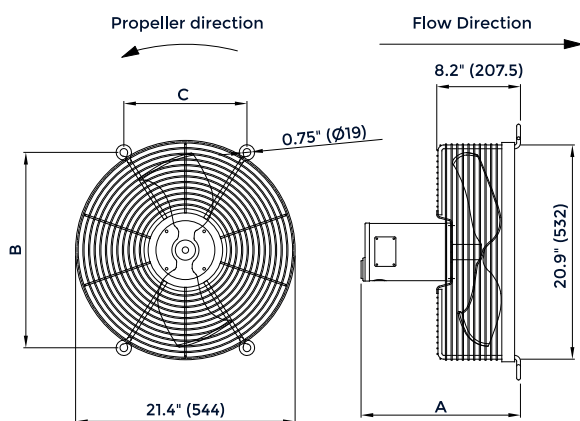
NOTICE: The performance data provided represents typical values and is not guaranteed. Variations may occur due to standard manufacturing tolerances.

# COOLING FANS CF19 and CF19+

## General Characteristics and Requirements

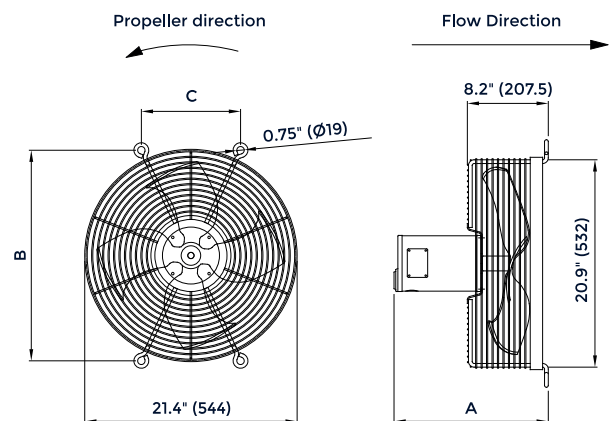
Part Number	Freq. (Hz)	Phase	Voltage (V)	Air Flow CFM (l)	Sound Pressure db(A)	Poles	Speed	Power HP (kW)	Dimension "A"
CF19 4115P01	60	1	115-120 /208-240	2758	51.5	8	850	1/8 (.09kW)	14.9" (379)
CF19 4115P03	60	1	115-120 /208-240	2936	56	6	1140	1/6 (.12kW)	14.9" (379)
CF19 4115P06	60	1	115-120 /208-240	4806	63.5	4	1750	1/4 (.19kW)	14.1" (359)
CF19+ 4116P01	60	1	115-120 /208-240	6230	64	6	1140	1/3 (.25kW)	15.5" (394)
CF19 4115P02	60	3	208-240 /460-480	2758	51.5	8	850	1/8 (.09kW)	14.9" (379)
CF19 4115P04	60	3	208-240 /460-480	2936	56	6	1140	1/6 (.12kW)	13.7" (349)
CF19 4115P05	60	3	575-600	2936	56	6	1140	1/6 (.12kW)	13.7" (349)
CF19 4115P07	60	3	208-240 /460-480	4806	63.5	4	1750	1/2 (.37kW)	14.9" (379)
CF19 4115P08	60	3	575-600	4806	63.5	4	1750	1/2 (.37kW)	14.9" (379)
CF19+ 4116P02	60	3	208-240 /460-480	6230	64	6	1140	1/3 (.25kW)	14.9" (379)
CF19+ 4116P03	60	3	575-600	6230	64	6	1140	1/3 (.25kW)	14.9" (379)

### CF19



Dimensions	Inch (mm)
Dimension "B"	19" (483)
Dimension "C"	12" (305)
Ø External	21.4" (544)
Ø Holes	0.75" (19)

### CF19+



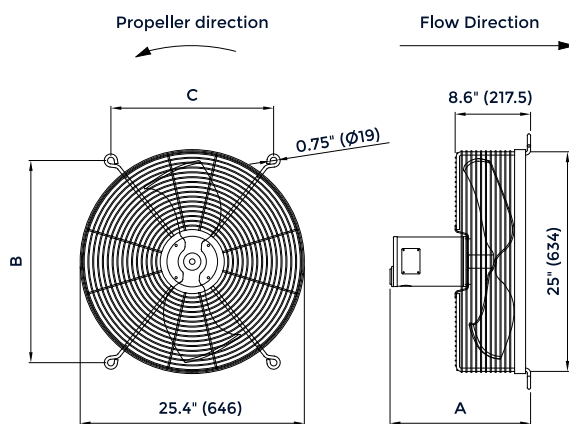
Dimensions	Inch (mm)
Dimension "B"	21.25" (540)
Dimension "C"	10" (254)
Ø External	21.4" (544)
Ø Holes	0.75" (19)

# COOLING FANS CF23

## General Characteristics and Requirements

Part Number	Freq. (Hz)	Phase	Voltage (V)	Air Flow CFM (l)	Sound Pressure db(A)	Poles	Speed	Power HP (kW)	Dimension "A"
CF23 4117P01	60	1	115-120 /208-240	4225	52	8	850	1/8 (.09kW)	15.3" (389)
CF23 4117P03	60	1	115-120 /208-240	6094	58.5	6	1140	1/6 (.12kW)	15.3" (389)
CF23 4117P06	60	1	115-120 /208-240	8156	66,5	4	1750	1/2 (.37kW)	15.3" (389)
CF23 4117P02	60	3	208-240 /460-480	4225	52	8	850	1/8 (.09kW)	15.3" (389)
CF23 4117P04	60	3	208-240 /460-480	6094	58.5	6	1140	1/6 (.12kW)	14.1" (359)
CF23 4117P05	60	3	575-600	6094	58.5	6	1140	1/6 (.12kW)	14.1" (359)
CF23 4117P07	60	3	208-240 /460-480	8156	66.5	4	1750	1/2 (.37kW)	15.3" (389)
CF23 4117P08	60	3	575-600	8156	66.5	4	1750	1/2 (.37kW)	15.3" (389)

### CF23



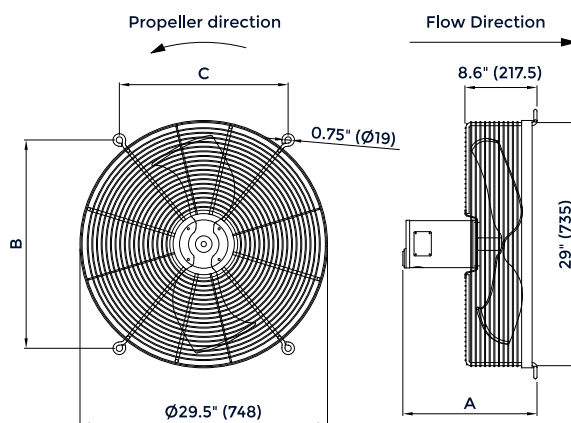
Dimensions	Inch (mm)
Dimension "B"	23" (584)
Dimension "C"	18.5" (470)
Ø External	25.4" (646)
Ø Holes	0.75" (19)

# COOLING FANS CF26

## General Characteristics and Requirements

Part Number	Freq. (Hz)	Phase	Voltage (V)	Air Flow CFM (l)	Sound Pressure db(A)	Poles	Speed	Power HP (kW)	Dimension "A"
CF26 4119P01	60	1	115-120 /208-240	4010	47.5	8	850	1/8 (.09kW)	15.3" (389)
CF26 4119P03	60	1	115-120 /208-240	6164	56.5	6	1140	1/6 (.12kW)	15.3" (389)
CF26 4119P06	60	1	115-120 /208-240	8355	68	4	1750	1/2 (.37kW)	15.3" (389)
CF26 4119P02	60	3	208-240 /460-480	4010	47.5	8	850	1/8 (.09kW)	15.3" (389)
CF26 4119P04	60	3	208-240 /460-480	6164	56.5	6	1140	1/6 (.12kW)	14.1" (359)
CF26 4119P05	60	3	575-600	6164	56.5	6	1140	1/6 (.12kW)	14.1" (359)
CF26 4119P07	60	3	208-240 /460-480	8355	68	4	1750	1/2 (.37kW)	15.3" (389)
CF26 4119P08	60	3	575-600	8355	68	4	1750	1/2 (.37kW)	15.3" (389)

### CF26



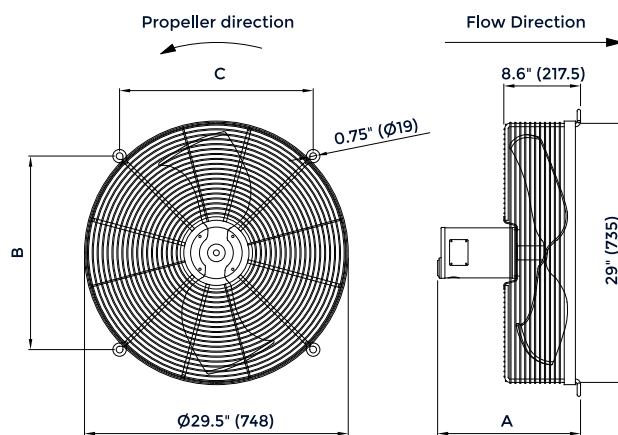
Dimensions	Inch (mm)
Dimension "B"	24.75" (629)
Dimension "C"	20.06" (510)
Ø External	29.5" (748)
Ø Holes	0.75" (19)

# COOLING FANS CF27

## General Characteristics and Requirements

Part Number	Freq. (Hz)	Phase	Voltage (V)	Air Flow CFM (l)	Sound Pressure db(A)	Poles	Speed	Power HP (kW)	Dimension "A"
CF27 4120P01	60	1	115-120 /208-240	5419	50.9	8	850	1/8 (.09kW)	15.3" (389)
CF27 4120P03	60	1	115-120 /208-240	7294	60	6	1140	1/3 (.25kW)	15.9" (404)
CF27 4120P06	60	1	115-120 /208-240	10510	71.5	4	1750	1 (.75kW)	15.9" (404)
CF27 4120P02	60	3	208-240 /460-480	5419	50.9	8	850	1/8 (.09kW)	15.3" (389)
CF27 4120P04	60	3	208-240 /460-480	7294	60	6	1140	1/3 (.25kW)	15.3" (389)
CF27 4120P05	60	3	575-600	7294	60	6	1140	1/3 (.25kW)	15.3" (389)
CF27 4120P07	60	3	208-240/ 460-480	10510	71.5	4	1750	1 (.75kW)	15.9" (404)
CF27 4120P08	60	3	575-600	10510	71.5	4	1750	1 (.75kW)	15.9" (404)

### CF27



Dimensions	Inch (mm)
Dimension "B"	21.6" (549)
Dimension "C"	21.6" (549)
Ø External	29.5" (748)
Ø Holes	0.75" (19)

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