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# ROBUST

## Electric fan heaters for demanding environments



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The Robust series of electric fan heaters is suitable for environments in which strict demands are made on safety, such as fire hazardous or corrosive environments.

- 4 models for environments with different degrees of aggressiveness
- Robust F for fire hazardous environments
- Robust C for corrosive environments
- Robust H for industrial applications (at ambient temperatures up to 70°C)
- Robust V for marine and offshore applications
- All models suitable for 50 and 60 Hz.

### Design

See the documentation for the relevant model, since the designs differ.

### Control

All models have built-in thermostat and output selector switch. For control by external accessories, see the documentation for the relevant model.



### Approvals

The fan heaters have been tested and approved by Intertek Semko in accordance with LVD Directive: EN 60335-1, EN 60335-2-30, SEMKO 111FF-1987 (only Robust F) and EMKO-TUB(61)N289/90 (only Robust F).  
EMC Directive: EN 61000-6-2, EN 61000-6-3 and EN 61000-6-3-11.  
EMF Directive: EN 62233

The Robust V is also approved in accordance with:  
DNV, Vibration test



# ROBUST F

## Electric fan heaters for fire hazardous environments

The Robust F has been tested and approved for use in premises that are classified as fire hazardous due to the amount of dust in them. Typical applications include livestock barns and woodworking premises.

- Approved for use in fire hazardous premises
- The low element temperature prevents ignition of dust
- Casing, heating elements, grille and legs/stand are made of stainless steel
- Degree of protection IP 65 - dust-tight and hose-proof

### Design

The casing is made of stainless sheet steel to EN 1.4016, the heating elements and the grille of acid-resistant stainless steel to EN 1.4404, and the legs/wall bracket of stainless steel to EN 1.4301. Built-in thermostat and output selector switch. Simple connection to the power supply by means of plug/socket (not 230V3~).

Degree of protection IP65 (dust-tight and hoseproof).



## Product range overview

Type		F2	F3	F6	F6N	F9	F9N
Power supply	V	230V~	230V~	400V3~	230V3~	400V3~	230V3~
Output	kW	2	3	6	6	9	9
Output steps	kW	0-1-2	0-2-3	0-3-6	0-3-6	0-4,5-9	0-4,5-9
Current	A	4.4 / 8.8	9.1 / 13.5	4.8 / 9.1	8 / 15.5	6.7 / 13.2	11.6 / 22.9
Air temp. rise through heater	°C	14	21	24	24	25	25
Thermostat	°C	0-35	0-35	0-35	0-35	0-35	0-35
Sound pressure level <sup>1)</sup>	dB(A)	48	48	53	53	55	55
Air flow rate	m³/h	400	400	700	700	1000	1000
Weight	kg	11	11	13	13	19	19
Width × Height × Depth	mm	300 × 375 × 360	300 × 375 × 360	300 × 375 × 360	300 × 375 × 360	375 × 445 × 432	375 × 445 × 432

<sup>1)</sup> Measured at a distance of 5 metres in front of the unit.

## Project design/ordering

### Descriptive text - Robust F

VEAB type Robust F electric fan heater with casing of stainless sheet steel to EN 1.4016, heating elements and grille of acid-resistant stainless steel to EN 1.4404, and legs/stand of stainless steel to EN 1.4301. Degree of protection IP65. Control by built-in thermostat and output selector switch.

# ROBUST C

## Electric fan heaters for corrosive environments

The Robust C has been developed specifically for wall mounting in corrosive environments such as car wash facilities, sewage treatment plants and industrial plants. The Robust C is of hose-proof design to degree of protection IP65.

- Approved for use in humid and corrosive environments
- Casing, heater elements and grille of acid-resistant stainless steel to EN 1.4404
- Legs/stand are made of stainless steel
- All models suitable for mobile applications or wall mounting
- Degree of protection IP65 - dust-tight and hose-proof

### Design

The casing, heater elements and grille are made of acid-resistant stainless steel to EN 1.4404, and the legs/wall bracket of stainless steel to EN 1.4301. Built-in thermostat and output selector switch. Connection to the power supply by means of plug/socket (not 230V~, 230V3~). Degree of protection IP65 (dust-tight and hose-proof).

### Accessories

An external type RTC/RTC4 control box with degree of protection IP65 can be connected to the Robust C.



## Product range overview

Type		C3	C6	C6N	C9	C9N	C15
Power supply	V	230V~	400V3~	230V3~	400V3~	230V3~	400V3~
Output	kW	3	6	6	9	9	15
Output steps	kW	0-2-3	0-3-6	0-3-6	0-4,5-9	0-4,5-9	0-7,5-15
Current	A	9.1 / 13.5	4.5 / 8.9	7.8 / 15.4	6.7 / 13.2	11.6 / 22.9	11.2 / 22
Air temp. through heater	°C	21	17	17	25	25	32
Thermostat	°C	0-35	0-35	0-35	0-35	0-35	0-35
Sound pressure level <sup>1)</sup>	dB(A)	48	55	55	55	55	62
Air flow rate	m³/h	400	1000	1000	1000	1000	1300
Weight	kg	11	19	19	19	19	22
Width	mm	300	375	375	375	375	375
Height	mm	375	445	445	445	445	445
Depth	mm	360	432	432	432	432	432

<sup>1)</sup> Measured at a distance of 5 metres in front of the unit.

## Project design/ordering

### Descriptive text - Robust C

VEAB type Robust C electric fan heater with casing, heater elements and grille of acid-resistant stainless steel to EN 1.4404, and legs/stand of stainless steel to EN 1.4301. Degree of protection IP65. Control by built-in thermostat and output selector switch. An external type RTC/RTC4 control box must be ordered separately, if required.



# ROBUST H

## Electric fan heaters for industrial applications

The Robust H is designed for applications and premises that need to be heated to a maximum of 70°C. The fans are used for applications such as drying and curing processes.

- Approved for high temperatures of up to 70°C
- Casing, heater elements, grille and legs/wall bracket of stainless steel
- All models suitable for mobile applications or wall mounting
- Degree of protection IP44 - splash-proof

### Design

The casing is made of stainless sheet steel to EN 1.4016, the heater elements and the grille of acid-resistant stainless steel to EN 1.4404, and the legs/wall bracket of stainless steel to EN 1.4301. Built-in output selector switch and thermostat. Connection to the power supply by means of plug/socket (not 230V3~). Degree of protection IP44 (splash-proof).

### Accessories

An external type RTH thermostat with degree of protection IP44 can be connected to the Robust H.



## Product range overview

Type		H6	H6N	H9
Power supply	V	400V3N~	230V3~	400V3N~
Output	kW	6	6	9
Output steps	kW	0-3-6	0-3-6	0-4,5-9
Current	A	4.5 / 8.9	7.8 / 15.4	6.7 / 13.2
Air temp. rise through heater	°C	17	17	25
Thermostat	°C	0-70	0-70	0-70
Sound pressure level <sup>1)</sup>	dBA	55	55	55
Air flow rate	m³/h	1000	1000	1000
Weight	kg	19	19	19
Width × Height × Depth	mm	375 × 445 × 432	375 × 445 × 432	375 × 445 × 432

<sup>1)</sup> Measured at a distance of 5 metres in front of the unit.

## Project design/ordering

### Descriptive text - Robust H

VEAB type Robust H electric fan heater with casing of stainless sheet steel to EN 1.4016, heater elements and grille of acid-resistant stainless steel to EN 1.4404, and legs/stand of stainless steel to EN 1.4301. Degree of protection IP44. Control by built-in thermostat and output selector switch. An external type RTH thermostat must be ordered separately, if required.

# ROBUST V

## Electric fan heaters for marine and offshore applications

The Robust V is designed for use onboard ship and in the offshore industry.

The heater elements are electrically insulated from the casing in order to avoid leakage currents.

- Tested and approved by Det Norske Veritas
- Tested for electrical safety and vibrations for use onboard ship
- Strengthened electrical insulation
- Stayed heater elements and strengthened motor mountings
- All models suitable for mobile applications or wall mounting
- Degree of protection IP44 - splash-proof



*The bracket is designed so that the fan heater can also be placed on the floor.*

### Design

The casing is made of stainless sheet steel to EN 1.4016, the grille of stainless steel to EN 1.4301, and the legs/wall bracket of electro-galvanized sheet steel painted with black epoxy paint. Robust V3, V3R and V3,6 has heater elements in acid-resistant stainless steel to EN 1.4404 and Robust V5N, V5 and V6 has heater elements in stainless steel to EN 1.4301. The elements are electrically insulated from the casing, which eliminates leakage currents. The element assembly and motor have strengthened mountings to withstand the vibrations onboard ship. Built-in thermostat and output selector switch. Degree of protection IP44 (splash-proof).

### Accessories

An external type RTC/RTC4 control box with degree of protection IP65 can be connected to the Robust V.

## Product range overview

Typ		V3R	V3	V3,6	V5N	V5	V6
Power supply	V	230V~	400V3~	440V3~	230V3~	400V3~	440V3~
Output	kW	3	3	3,6	5	5	6
Output steps	kW	0-2-3	0-1,5-3	0-1,8-3,6	0-2,5-5	0-2,5-5	0-3-6
Current	A	9,1 / 13,5	4,0 / 4,6	4,4 / 5,1	10,7 / 12,0	6,5 / 7,5	7,1 / 8,2
Air temp. rise through heater	°C	21	21	25	20	20	24
Thermostat	°C	0-35	0-35	0-35	0-35	0-35	0-35
Sound pressure level <sup>1)</sup>	dB(A)	48	48	48	53	53	53
Air flow rate	m <sup>3</sup> /h	400	400	400	700	700	700
Weight	kg	12	12	12	12	12	12
Width	mm	300	300	300	300	300	300
Height	mm	375	375	375	375	375	375
Depth	mm	360	360	360	360	360	360




<sup>1)</sup> Measured at a distance of 5 metres in front of the unit.

## Project design/ordering

### Descriptive text - Robust V

VEAB type Robust V electric fan heater with casing of stainless sheet steel to EN 1.4016, grille of stainless steel to EN 1.4301, and the legs/wall bracket of electro-galvanized sheet steel painted with black epoxy paint. Robust V3, V3R and V3,6 has heater elements in acid-resistant stainless steel to EN 1.4404 and Robust V5N, V5, V6 and V6T has heater elements in stainless steel to EN 1.4301. Degree of protection IP44. Control by built-in thermostat and output selector switch. An external type RTC/RTC4 control box must be ordered separately, if required.

## Accessories

	Product	Description	Degree of protection
	RTH For Robust H	External thermostat with 0 - 70° C temperature range  125x175x75mm	IP44
	RTC For Robust C and V	Control box for external control with thermostat and output selector switch.  125x175x75mm	IP65
	RTC4 For Robust C and V	Control box for external control with thermostat and output selector switch. Controls up to 4 units.  254x360x111mm	IP65