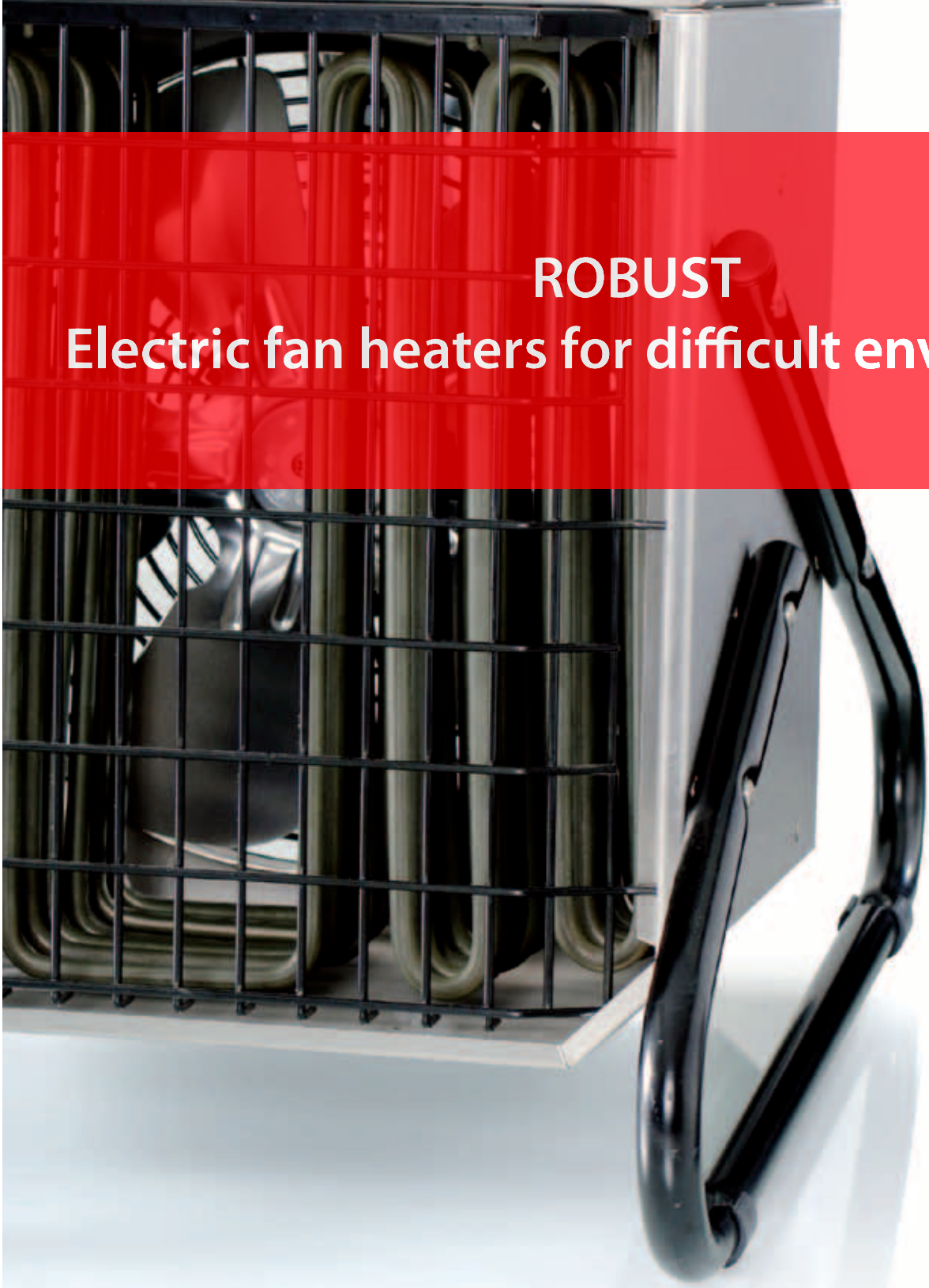




**ROBUST**

**Electric fan heaters for difficult environments**



# ROBUST

## Electric fan heaters for difficult environments

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.

- Four 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 for suitable for mobile applications or wall mounting

### 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 SEMKO in accordance with LVD Directive: EN 60335-1, EN 60335-2-30, EN 50366, 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 50366

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, heater 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 heater elements and the grille of acid-proof 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).

### Accessories

An external type RST start/stop switch with degree of protection IP65 can be connected to the Robust F.



## Overview of range

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 level <sup>1)</sup>	dBA	48	48	53	53	55	55
Air flow rate	m <sup>3</sup> /h	400	400	700	700	1000	1000
Weight	kg	11	11	13	13	19	19
Width × Height × Depth	mm	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260	375 × 445 × 295	375 × 445 × 295

<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, heater elements and grille of acid-proof stainless steel to EN 1.4404, and legs/wall bracket of stainless steel to EN 1.4301. Degree of protection IP65. Control by built-in thermostat and output selector switch. An external type RST start/stop switch must be ordered separately, if required.

# 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-proof stainless steel to EN 1.4404
- Degree of protection IP65 - dust-tight and hose-proof

### Design

The casing, heater elements and grille are made of acid-proof 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~ and 230V3~). Degree of protection IP65 (dust-tight and hose-proof).

### Accessories

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



## Overview of range

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 level <sup>1)</sup>	dBA	48	55	55	55	55	62
Air flow rate	m <sup>3</sup> /h	400	1000	1000	1000	1000	1300
Weight	kg	11	19	19	19	19	22
Width × Height × Depth	mm	300 × 375 × 260	375 × 445 × 295	375 × 445 × 295	375 × 445 × 295	375 × 445 × 295	375 × 445 × 295

<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-proof stainless steel to EN 1.4404, and legs/wall bracket of stainless steel to EN 1.4301. Degree of protection IP65. Control by built-in thermostat and output selector switch. An external type RTC 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
- 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-proof 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. Degree of protection IP44 (splash-proof).

### Accessories

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



## Overview of range

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	24	24	25
Thermostat	°C	0-70	0-70	0-70
Sound level <sup>1)</sup>	dBA	55	55	55
Air flow rate	m <sup>3</sup> /h	1000	1000	1000
Weight	kg	19	19	19
Width × Height × Depth	mm	375 × 445 × 295	375 × 445 × 295	375 × 445 × 295

<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-proof stainless steel to EN 1.4404, and legs/wall bracket 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
- Degree of protection IP44 - splash-proof



### 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-proof 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).

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

### Accessories

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

### Overview of range

Type		V3R	V3	V3,6	V5N	V5	V6
Power supply	V	230V~	400V3~/50 Hz	440V3~/60 Hz	230V3~	400V3~/50 Hz	440V3~/60 Hz
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 level <sup>1)</sup>	dBA	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 × Height × Depth	mm	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260	300 × 375 × 260

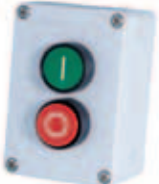


<sup>1)</sup> Measured at a distance of 5 metres in front of the unit.

## 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-proof stainless steel to EN 1.4404 and Robust V5N, V5 and V6 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 control box must be ordered separately, if required.

# Accessories

	Product	Description	Degree of protection
	RST For Robust F	External start/stop switch.	IP65
	RTH For Robust H	External thermostat with 0 - 70°C temperature range	IP44
	RTC For Robust C and V	Control box for external control with thermostat and output selector switch.	IP65



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