

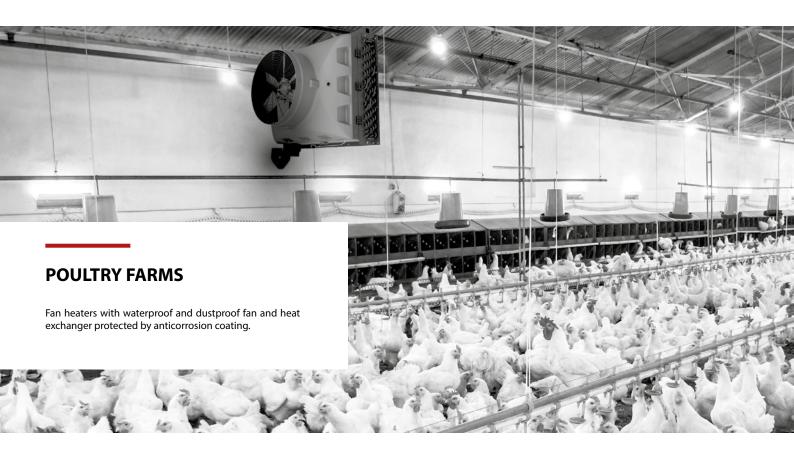


# AIR HEATING OF AGRICULTURAL FACILITIES

Fan heaters AGRO



# FAN HEATERS FOR SPECIAL PURPOSE BUILDINGS



**AGRO HT** 



**AGRO SP** 



**AGRO ST** 



### **TECHNICAL DATA**

	AGRO HT3	AGRO HT5	AGRO SP	AGRO ST
Heating capacity(1) [kW]	19,2–117	26,8–158	8,7–56,2	6,6–43
Air flow [m³/h]	10 000	9 000	4600	3700
Max. air stream range [m]	48/15(2)	43/15(2)	28/12(2)	21
Installation	horizontal/vertical	horizontal/vertical	horizontal/vertical	vertical
Power supply [V/Hz]	3x400/50	3x400/50	230/50	230/50

 $<sup>^{(1)}</sup>$  min: temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max: temperature of heating medium 90/70°C, air temperature at the inlet 0°C  $^{(2)}$  horizontal range of device without outside diffuser / vertical range of device with outside diffuser



# **AGRO HT**



# **AGRO HP**



	AGRO HT3	AGRO HT5	AGRO HP
Heating capacity(1) [kW]	19,2–117	26,8-158	8,7–56,2
Air flow [m³/h]	10 000	9 000	4600
Max. air stream range [m]	48/15(2)	43/15(2)	28/12(2)
Installation	horizontal/vertical	horizontal/vertical	horizontal/vertical
Power supply [V/Hz]	3x400/50	3x400/50	230/50

 $<sup>^{(1)}</sup>$  min: temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max: temperature of heating medium 90/70°C, air temperature at the inlet 0°C  $^{(2)}$  horizontal range of device without outside diffuser / vertical range of device with outside diffuser

# CONSTRUCTION OF AGRO HEATING DEVICES

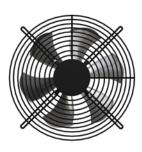
## RELIABILITY

Appropriate construction, durable materials together with highend components ensure long-lasting and effective AGRO units operation in severe conditions of agrarian buildings.



### HIGHLY-EFFICIENT FAN

Waterproof and dustproof fans with IP66 (AGRO ST/SP/HP) or IP 55 (AGRO HT) allows to maintain the nominal capacity of the fan even when the exchanger is slightly dirty.



#### HEAT EXCHANGER

This item has strenghtened fins with increased spacing between them. It is protected by an epoxy coating (AGRO ST/SP) or coated with special cataphoretic anticorrosive layer (AGRO HP/HT) with increased immunity, among others for ammonia. Cataphoretic coating is technologically the most advanced method of anticorrosive surface treatment for metal products.





### I EASY CLEANING

Easy access to the unit's interior speed up the maintenance and service operations. Hinged construction and special opening clamps make it possible to use the unit as an air mixer.





#### 6-SIDED AIR DIFFUSER

Use of diffuser enables steady air distribution in entire volume of the room. Warm air stream is not blowing directly towards the animals.



#### ROTARY CONSOLE

Enables rotation of the unit and easy installation on vertical surfaces, poles, pillars, etc.



# WATER HEATERS **AGRO HT**





Heating capacity(1) [kW]





Weight [kg]



Casing

**ABS** plastic



Air flow [m³/h]

9 000-10 000



 $Colour^{\scriptscriptstyle{(2)}}$ **Red-black** 

(1) min: temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max: temperature of heating medium 90/70°C, air temperature at the inlet 0°C

### **APPLICATION**

Poultry farms, piggeries and other big cubature buildings with considerable pollution of air with solid particles, high humidity and corrosive environment. AGRO HT fan heaters are designed for horizontal installation with rotary console and vertical installation with outside grille, where height does not exceed 2 m.

#### **CHARACTERISTIC**

Fan heater in plastic casing with long heating range and with heat exchanger coated with special cataphoretic anticorrosive layer. Hinged construction enables you to mix the air in summer. Quick access to the unit's interior thanks to buckles. Dustproof and waterproof fan IP55.

#### **AVAILABLE TYPES OF UNITS:**

- AGRO HT 3 with 3-row heat exchanger with cataphoretic anticorrosive layer.
- AGRO HT 5 with 5-row heat exchanger with cataphoretic anticorrosive layer.

# **TECHNICAL DATA**

# Fan heater

AGRO HT	AGRO HT 3	AGRO HT 5
Air flow [m³/h]	10 000	9 000
Heating capacity <sup>(1)</sup> [kW]	19,2–117	26,8–158
Power supply [V/Hz]	3x400/50	3x400/50
Max. current consumption [A]	1,6	1,6
Max. power consumption [W]	630	630
IP/ Insulation class	55/F	55/F
Max. acoustic pressure level <sup>(2)</sup> [dB(A)]	72,8	72,8
Max. air stream range [m]	48 <sup>(3)</sup> /15 <sup>(4)</sup>	43 <sup>(3)</sup> /15 <sup>(4)</sup>
Max. heating water temperature [°C]	95	95
Max. operating pressure [MPa]	1,6	1,6
Weight of unit [kg]	73	85
Weight of unit filled with water [kg]	83	102
Connector	1"	1"

<sup>(1)</sup> min. - temperature of heating medium 40/30°C, air temperature at the supply to the device 20°C;

<sup>(2)</sup> RAL 3020 and RAL 9005

max. - temperature of heating medium 90/70 $^{\circ}$ C, air temperature at the supply to the device 0 $^{\circ}$ C

<sup>(2)</sup> acoustic pressure level has been measured 5 m from the unit in a 1500 m³ space with a medium sound absorption coefficient

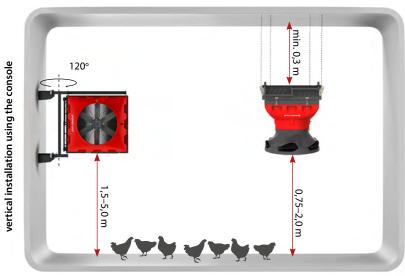
<sup>(3)</sup> range of horizontal isothermal air stream, at 0,5 m/s velocity limit

<sup>(4)</sup> range of horizontal isothermal air stream, at 0,5 m/s velocity limit with outlet diffuser



# **INSTALLATION**

installation under the  $ceiling^{\scriptscriptstyle{(1)}}$ 



 $<sup>^{(1)}</sup>$  Installation under the ceiling of AGRO HT with 6-sided air outlet

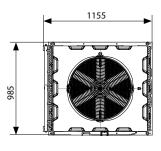


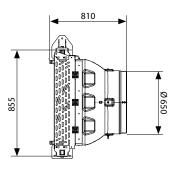
#### **Rotary console**

AGRO HT

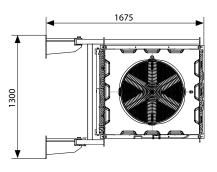
Rotary console enables  $120^\circ$  rotation of the device which lets you direct the air stream in any direction. Additionally, the console ensures easy access to the unit from any side.

### DIMENSIONS





AGRO HT



 For CAD drawings and documentation for all available versions of AGRO fan heaters visit www.flowair-agro.com





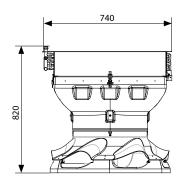




# **ACCESSORIES**

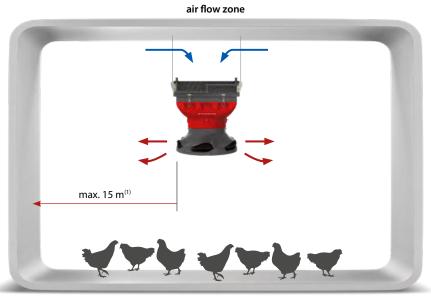
### AGRO HT AIR DIFFUSER

Material: plastic Weight: 8,6 kg AGRO HT 6-sided air outlet distributes the air when heater is installed under the ceiling



**AGRO HT+ AIR DIFFUSER** 

#### AIR FLOW ZONE AGRO HT WITH DIFFUSER

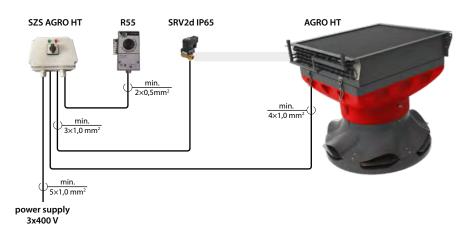


 $^{\mbox{\tiny (1)}}$  Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

# BENEFITS OF USING AGRO HT AIR DIFFUSER:

- steady temperature distribution,
- better quality of bedding,
- lower level of humidity in the room.

# **CONTROL SYSTEM**



The R55 thermostat controls valve and fan operation by AGRO HT control box.

#### **FEATURES OF SZS AGRO HT:**

- fan's rotation direction "left-right" change ability,
- on/off regulation,
- work and failure signalisation,
- security against wrong phase sequency, assymetry and backup phase.

#### **ELEMENTS:**

- SZS AGRO HT control box,
- R55 thermostat controls valve IP55,
- SRV2d-1 IP65 two-way valve 1" with actuator IP65.

Possibility of regulation with microclimate controller (not in FLOWAIR's offer).

# **HEATING CAPACITIES**

	Tw	1/Tw2	= 90/7	0°C		Tw1/Tw2 = 80/60°C					Tw	1/Tw2	= 70/5	0°C		Tw	1/Tw2	= 60/4	0°C		Tw1/Tw2 = 50/40°C					
Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2		
[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]		
					AGRO HT 3 = 10 000 m <sup>3</sup> /h																					
0	117,0	5156	98,0	32,5	0	102,0	4454	77,0	28,0	0	86,3	3760	50,0	24,0	0	70,9	3074	42,0	19,5	0	65,0	5630	128,0	18,0		
5	108,0	4778	85,0	35,5	5	93,2	4085	66,0	31,5	5	78,0	3400	48,0	27,0	5	62,7	2722	34,0	23,0	5	57,0	4937	101,0	21,0		
10	100,0	4404	74,0	38,5	10	84,9	3723	56,0	34,5	10	69,9	3047	40,0	30,0	10	54,8	2376	26,0	25,5	10	49,2	4258	77,0	24,0		
15	91,7	4043	63,0	42,0	15	76,8	3368	47,0	37,5	15	61,9	2699	32,0	33,0	15	46,9	2035	20,0	28,5	15	41,5	3592	57,0	27,0		
20	83,6	3686	53,0	45,0	20	68,9	3019	38,0	40,5	20	54,1	2358	25,0	36,0	20	39,1	1697	14,0	31,5	20	33,9	2937	39,0	30,0		
25	75,7	3335	44,0	48,0	25	61,1	2676	31,0	43,5	25	46,4	2021	19,0	39,0	25	31,4	1362	10,0	34,5	25	26,5	2292	25,0	33,0		
30	67,8	2991	36,0	51,0	30	53,4	2339	24,0	46,5	30	38,7	1688	14,0	42,0	30	23,6	1024	5,5	37,0	30	19,1	1652	14,0	36,0		
35	60,2	2652	29,0	54,0	35	45,8	2006	18,0	49,0	35	31,1	1356	9,0	45,0	35	15,4	668	2,5	40,0	35	11,6	1004	6,0	38,5		
										А	GRO H	T 5 = 9	000 m³	/h												
0	158,0	6964	120,0	48,5	0	138,0	6034	95,0	42,0	0	117,0	5115	73,0	36,0	0	96,9	4206	52,0	30,0	0	87,7	7597	157,0	27,0		
5	146,0	6451	105,0	51,0	5	126,0	5535	81,0	44,5	5	106,0	4629	61,0	38,0	5	86,0	3731	42,0	32,0	5	77,0	6667	123,0	29,0		
10	135,0	5950	90,0	53,0	10	115,0	5047	69,0	46,5	10	95,3	4153	50,0	40,5	10	75,3	3265	33,0	34,0	10	66,5	5758	94,0	31,0		
15	124,0	5460	77,0	55,0	15	104,0	4569	57,0	49,0	15	84,6	3687	40,0	42,5	15	64,7	2807	25,0	36,0	15	56,2	4869	70,0	33,0		
20	113,0	4981	65,0	57,5	20	93,6	4102	47,0	51,0	20	74,1	3229	31,0	44,5	20	54,3	2355	18,0	38,0	20	46,2	3997	49,0	35,0		
25	102,0	4512	54,0	59,5	25	83,1	3643	38,0	53,0	25	63,7	2779	24,0	46,5	25	43,9	1906	12,0	40,0	25	36,3	3139	31,0	37,0		
30	91,9	4052	45,0	61,5	30	72,9	3193	30,0	55,0	30	53,5	2334	17,0	48,0	30	33,5	1451	8,0	41,0	30	26,4	2289	18,0	39,0		
35	81,7	3600	36,0	63,0	35	62,7	2750	23,0	57,0	35	43,5	1891	12,0	50,0	35	22,4	971	3,0	43,0	35	16,4	1424	8,0	41,0		

V – air flow PT – heating capacity

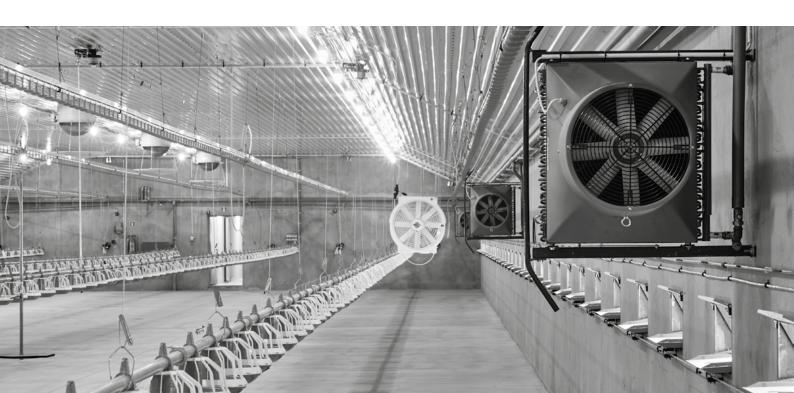
Tp1 – inlet air temperature

Tp2 – outlet air temperature

Tw1 – inlet water temperature

Tw2 – outlet water temperature
Qw – water stream flow in the heat exchanger

 $\Delta pw\,$  – water pressure drop in the heat exchanger



# WATER HEATERS AGRO SP/HP





Heating capacity(1) [kW]











Air flow [m<sup>3</sup>/h]

4600



Colour<sup>(2)</sup>

Grey

 $^{(1)}$  min: temperature of heating medium 40/30°C, air temperature at the inlet 20°C, max: temperature of heating medium 90/70°C, air temperature at the inlet 0°C  $^{(2)}$  casing RAL 9006

# APPLICATION

Poultry farms (AGRO SP), piggeries (AGRO HP) and other big cubature buildings with considerable pollution of air with solid particles, high humidity and corrosive environment. AGRO SP/HP fan heaters are designed for horizontal installation with rotary console or vertical installation with outside grille, where height does not exceed 1,5 m.

## CHARACTERISTIC

Fan heater equipped with heat exchanger in epoxidized version (AGRO SP) or coated with special cataphoretic anticorrosive layer (AGRO HP). Plastic casing with long heating range. Hinged construction enables you to mix the air in summer. Quick access to the unit's interior thanks to buckles. Dustproof and waterproof fan IP66.

#### AVAILABLE TYPES OF UNITS:

- AGRO SP with 3-row, aluminium-copper heat exchanger covered with protective coating resistant to corrosion.
- AGRO HP with 3-row, aluminium-copper heat exchanger covered with cataphoretic anticorrosive layer which guarantees increased resistance to many corrosives.

# **TECHNICAL DATA**

# Fan heater

AGRO SP/HP

#### AGRO SP/HP

Air flow [m³/h]	4600
Heating capacity <sup>(1)</sup> [kW]	8,7–56,2
Power supply [V/Hz]	230/50
Max. current consumption [A]	2,5
Max. power consumption [W]	360
IP/ Insulation class	66/F
Max. acoustic pressure level <sup>(2)</sup> [dB(A)]	68,7
Max. air stream range [m]	28(3)/12(4)
Max. heating water temperature [°C]	95
Max. operating pressure [MPa]	1,6
Weight of unit [kg]	27,3
Weight of unit filled with water [kg]	31,0

 $<sup>^{(1)}</sup>$  min. - temperature of heating medium 40/30°C, air temperature at the supply to the device 20°C; max. - temperature of heating medium 90/70°C, air temperature at the supply to the device 0°C

<sup>(2)</sup> acoustic pressure level has been measured 5 m from the unit in a 1500 m³ space with a medium sound absorption coefficient

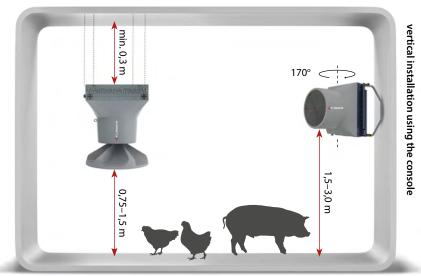
 $<sup>^{\</sup>mbox{\tiny (3)}}$  range of horizontal isothermal air stream, at 0,5 m/s velocity limit

<sup>(4)</sup> range of horizontal isothermal air stream, at 0,5 m/s velocity limit with outlet diffuser



# **INSTALLATION**

installation under the  $ceiling^{\scriptscriptstyle (1)}$ 



(1) Installation under the ceiling of AGRO SP/HP with 6-sided air outlet

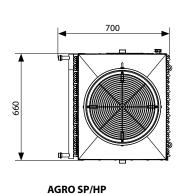


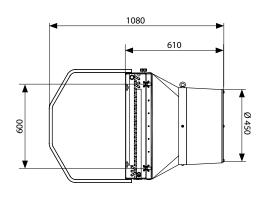
#### **Rotary console**

AGRO SP/HP

Rotary console AGRO SP/HP enables  $170^\circ$  rotation of the device which lets you direct the air stream in any direction. Additionally, the console ensures easy access to the unit from any side.

# **DIMENSIONS**





 For CAD drawings and documentation for all available versions of AGRO fan heaters visit www.flowair-agro.com





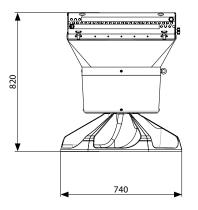




# **ACCESSORIES**

# AGRO SP/HP AIR DIFFUSER

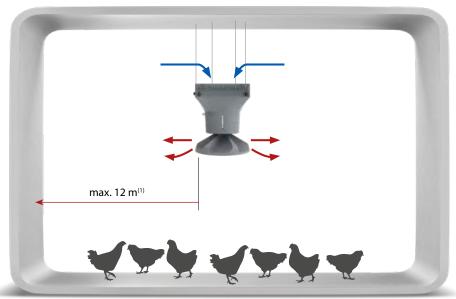
Material: plastic Weight: 1,6 kg AGRO SP/HP 6-sided air outlet distributes the air when heater is installed under the ceiling



AGRO SP/HP + AIR DIFFUSER

# AIR FLOW ZONE AGRO SP/HP WITH DIFFUSER

air flow zone



 $^{\mbox{\tiny (1)}}$  Range of horizontal isothermal air stream, at 0,5 m/s velocity limit

# BENEFITS OF USING AGRO SP/HP AIR DIFFUSER:

- steady temperature distribution,
- better quality of bedding,
- lower level of humidity in the room.

# **CONTROL SYSTEM**

## ON/OFF REGULATION

Fan heater is controlled by a room thermostat, which turns ON the unit when measured temperature drops below the set temperature.

#### **FEATURES:**

- low thermal inertia.
- low investment costs,
- easy to use,
- independent regulation of every single unit,
- gradual regulation of air flow.

The R55 thermostat controls valve and fan operation. Fan speed regulator TRa enables 5-step fan speed regulation.

# SRV2d IP65 TRa min. 3x1,5 mm² min. 3x1,5 mm² power supply ~230 V

AGRO SP/HP

#### **ELEMENTS:**

- R55 room thermostat with increased protection degree IP55,
- TRa 5-step fan speed regulation,
- SRV2d IP65 two-way valve with actuator.

# **HEATING CAPACITIES**

	Tw	1/Tw2	= 90/70	o°C		Tw	1/Tw2	= 80/60		Tw1/Tw2 = 70/50°C					Tw	1/Tw2	= 60/40	o°C		Tw	Tw1/Tw2 = 50/40°C			
Tp1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2
[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]
	AGRO SP/HP = 3700 m³/h																							
0	56,2	2480	21,0	34,0	0	48,6	2140	16,0	29,5	0	41,0	1800	12,0	25,0	0	33,4	1450	10,0	20,5	0	31,2	2710	26,0	19,0
5	52,0	2290	18,0	37,0	5	44,5	1950	14,0	32,5	5	36,9	1620	10,0	28,0	5	29,4	1280	8,0	23,0	5	27,2	2370	21,0	22,0
10	47,8	2110	16,0	40,0	10	40,4	1780	12,0	35,5	10	33,0	1440	10,0	31,0	10	25,5	1110	8,0	26,0	10	23,4	2030	16,0	24,5
15	43,8	1930	13,0	43,0	15	36,4	1600	10,0	38,5	15	29,1	1270	8,0	33,5	15	21,6	940	6,0	29,0	15	19,6	1710	12,0	27,5
20	39,8	1750	11,0	46,0	20	32,6	1430	10,0	41,0	20	25,3	1110	8,0	36,5	20	17,9	780	4,0	31,5	20	15,9	1380	10,0	30,5
25	35,9	1580	9,0	49,0	25	28,7	1260	8,0	44,0	25	21,5	940	6,0	39,5	25	14,1	610	4,0	34,5	25	12,3	1070	7,0	33,0
30	32,1	1420	9,0	51,5	30	25,0	1100	7,0	47,0	30	17,8	780	4,0	42,0	30	10,3	450	4,0	37,0	30	8,7	750	6,0	36,0
35	28,4	1250	7,0	54,5	35	21,3	940	5,0	49,5	35	14,1	620	4,0	44,5	35	6,4	280	2,0	39,5	35	5,0	440	4,0	38,5

V – air flow

PT – heating capacity

Tp1 – inlet air temperature

Tp2 – outlet air temperature

Tw1 – inlet water temperature

Tw2 – outlet water temperature

Qw – water stream flow in the heat exchanger

 $\Delta pw\,$  – water pressure drop in the heat exchanger

# **WATER HEATERS AGRO ST**





Heating capacity [kW](1)



Weight [kg]

21,8



**Powder-painted** steel with anti-corrosive coating



Air flow [m³/h]

3700

Colour<sup>(2)</sup> Grey

 $^{(1)}$  min: temperature of heating medium 40/30°C, air temperature at the inlet 20°C,

## **APPLICATION**

Poultry farms and other big cubature buildings with considerable pollution of air with solid particles, high humidity and corrosive environment. AGRO ST fan heaters are designed for horizontal installation with rotary console.

## **CHARACTERISTIC**

Fan heater equipped with special fan with protection degree IP66 and aluminium-copper heat exchanger covered with protective coating resistant to corrosion. It is equipped with adjustable air blades and drip tray with drain plug for easy cleaning.

# **TECHNICAL DATA**

# Fan heater

AGRO ST	AGRO ST
Air flow [m <sup>3</sup> /h]	3700
Heating capacity <sup>(1)</sup> [kW]	6,6–43
Power supply [V/Hz]	230/50
Max. current consumption [A]	1,8
Max. power consumption [W]	350
IP/ Insulation class	66
Max. acoustic pressure level <sup>(2)</sup> [dB(A)]	65,5
Max. air stream range <sup>(3)</sup> [m]	21
Max. heating water temperature [°C]	130
Max. operating pressure [MPa]	1,6
Weight of unit [kg]	21,8
Weight of unit filled with water [kg]	23,9

<sup>(1)</sup> min. - temperature of heating medium 40/30°C, air temperature at the supply to the device 20°C;

max: temperature of heating medium 90/70 °C, air temperature at the inlet 0 °C  $^{\scriptscriptstyle{(2)}}$  casing RAL 7016 and air blades RAL 7040

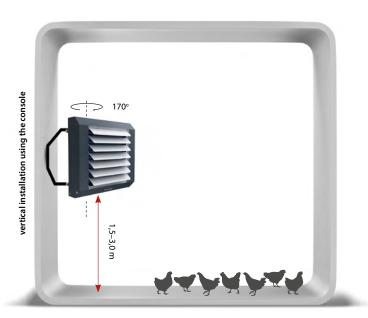
max. - temperature of heating medium 90/70°C, air temperature at the supply to the device 0°C

<sup>(2)</sup> acoustic pressure level has been measured 5 m from the unit in a 1500 m<sup>3</sup> space with a medium sound absorption coefficient

<sup>(3)</sup> range of horizontal isothermal air stream, at 0,5 m/s velocity limit



# **INSTALLATION**

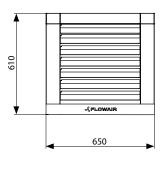




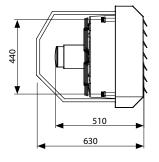
#### Rotary console AGRO ST

Rotary console AGRO ST enables  $170^\circ$  rotation of the device which lets you direct the air stream in any direction. Additionally, the console ensures easy access to the unit from any side.

# DIMENSIONS







 For CAD drawings and documentation for all available versions of AGRO fan heaters visit www.flowair-agro.com









# **CONTROL SYSTEM**

# ON/OFF REGULATION

Fan heater is controlled by a room thermostat, which turns ON the unit when measured temperature drops below the set temperature.

#### **FEATURES:**

- low thermal inertia,
- low investment costs,
- easy to use,
- independent regulation of every single unit,
- gradual regulation of air flow.

The R55 thermostat controls valve and fan operation. Fan speed regulator TRa enables 5-step fan speed regulation.

# SRV2d IP65 R55 TRa min. 3×1,5 mm² min. 3×1,5 mm² power supply ~230 V

#### **ELEMENTS:**

- R55 room thermostat with increased protection degree IP55,
- TRa 5-step fan speed regulation,
- SRV2d IP65 two-way valve with actuator.

# **HEATING CAPACITIES**

	Tw	1/Tw2	= 90/70	0°C		Tw1/Tw2 = 80/60°C					Tw1/Tw2 = 70/50°C						1/Tw2	= 60/40	0°C		Tw	Tw1/Tw2 = 50/40°C			
Tp1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2	Тр1	PT	Qw	Δpw	Tp2	Tp1	PT	Qw	Δpw	Tp2	
[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	[°C]	[kW]	[l/h]	[kPa]	[°C]	
	AGRO ST = 3700 m <sup>3</sup> /h																								
0	43,0	1890	20,0	32,5	0	37,2	1630	16,0	28,0	0	31,3	1370	13,0	23,5	0	25,4	1110	11,0	19,0	0	23,8	2070	26,0	18,0	
5	39,7	1750	17,0	35,5	5	34,0	1490	15,0	31,0	5	28,2	1230	11,0	26,5	5	22,4	980	9,0	22,0	5	20,8	1810	21,0	21,0	
10	36,6	1610	15,0	38,5	10	30,9	1360	13,0	34,0	10	25,1	1100	10,0	29,5	10	19,4	840	7,0	25,0	10	17,8	1550	18,0	24,0	
15	33,5	1470	15,0	41,5	15	27,8	1220	11,0	37,0	15	22,2	970	8,0	32,5	15	16,4	720	7,0	28,0	15	15,0	1300	13,0	27,0	
20	30,4	1340	12,0	44,5	20	24,9	1090	10,0	40,0	20	19,2	840	6,0	35,5	20	13,5	590	5,0	31,0	20	12,1	1050	10,0	30,0	
25	27,5	1210	10,0	47,5	25	21,9	960	8,0	43,0	25	16,3	710	6,0	38,5	25	10,7	460	5,0	34,0	25	9,3	810	6,0	33,0	
30	24,5	1080	10,0	50,5	30	19,1	840	6,0	46,0	30	13,5	590	5,0	41,5	30	7,8	340	3,0	36,5	30	6,6	570	4,0	35,5	
35	21,7	950	8,0	53,5	35	16,2	710	6,0	49,0	35	10,7	470	5,0	44,0	35	4,8	210	3,0	39,0	35	3,8	330	3,0	38,0	

V – air flow

PT - heating capacity

Tp1 – inlet air temperature

Tp2 – outlet air temperature Tw1 – inlet water temperature

Tw2 – outlet water temperature

Qw – water stream flow in the heat exchanger

Δpw – water pressure drop in the heat exchanger



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