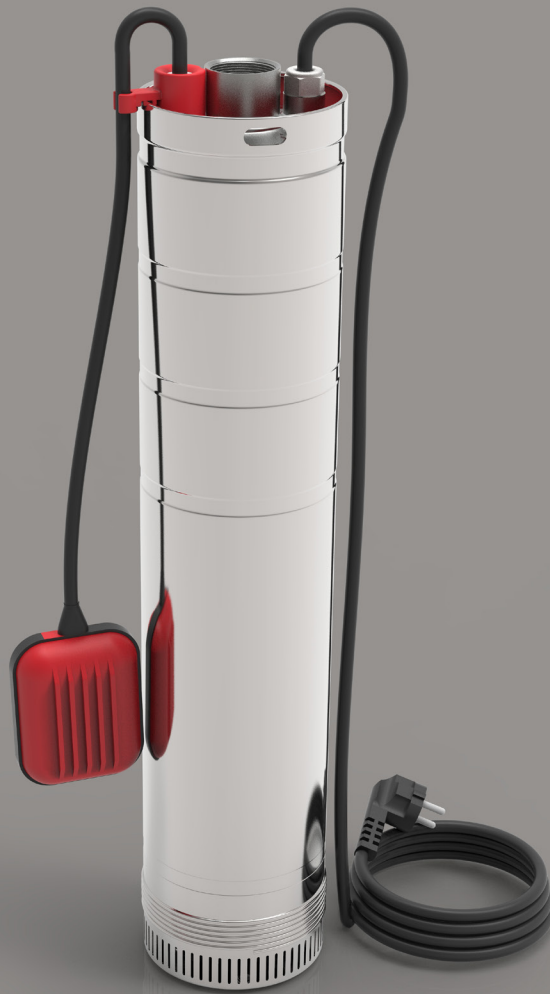


# FROG

50 Hz - 60 Hz



**5" SUBMERSIBLE MONOBLOCK  
ELECTROPUMPS**



Made in Italy

## TECHNICAL SPECIFICATIONS

### POWERS

3 m<sup>3</sup>/h: from 0,6 Hp to 2 Hp single-phase / three-phase 50 Hz  
 from 0,8 Hp to 2 Hp single-phase / three-phase 60 Hz  
 5 m<sup>3</sup>/h: from 0,8 Hp to 2 Hp single-phase / three-phase 50 Hz  
 from 1,2 Hp to 2 Hp single-phase / three-phase 60 Hz

### VOLTAGE

Single-phase: 230 V / 50 Hz - 220 V / 60 Hz  
 Three-phase: 230;400 V / 50 Hz - 220;380 V / 60 Hz

## CONSTRUCTION FEATURES

**CONNECTION SYSTEM** by means of connector.

**PUMP OUTLET** made in AISI 304 stainless steel.

**ASYNCHRONOUS MOTOR COOLED BY PUMPED LIQUID**

**SLEEVE** made in 304L stainless steel (Low carbon) to avoid possible corrosions of the welding.

**DOUBLE MECHANICAL SEAL** with interposed oil chamber.

**B-CLASS CONDENSER**, meeting long-lasting features (three times a standard condenser).

**IMPELLERS AND DIFFUSERS** made in techno-polymer:

- higher performance;
- higher resistance to sand.

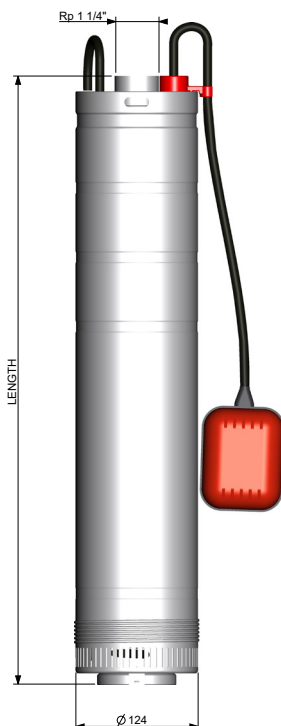
**INTAKE FILTER** made in 304 stainless steel.

**REMOVABLE CABLE CONNECTOR** H07RN-F type.

**AUTOMATIC VERSIONS WITH REMOVABLE FLOAT SWITCH** for applications at great depths (40 m).

**100% TESTED**, all the electropumps are electrically and hydraulically tested at the end of the line.

## DIMENSIONS



## OPERATING LIMITS

### PROTECTION

IP 68

### INSULATION CLASS

F

### VOLTAGE TOLERANCE

-10% / +10%

### PUMPED LIQUID TEMPERATURE

0°C – 35°C

### MAX. STARTS / HOUR

40

### MAX. AMOUNT OF SAND TOLERATED IN WATER

50 g/m<sup>3</sup>

### MAX. IMMERSION DEPTH

40m

### SINGLE-PHASE VERSION

Featuring a condenser with overload protection and automatic resetting system.

### 3-20S, 5-20S, 3-20S6, 5-20S6 AND THREE-PHASE SERIES

Not feature overload protection.

## VERSIONS UPON REQUEST

Different thrust load  
 Different voltage  
 Version with KTW, WRAS, ACS type-approved cable  
 Versions with or without float switch  
 External capacitor (*minimum quantity required*)

## ACCESSORIES

Cable lengths: 10 m or 20 m  
 Sacrificial anode  
 Float switch with removable connector  
 FROG disassembly kit  
 Electrical plug of different standards

## MODELS

50Hz Model		60Hz Model		Dimension		Cable Length [m]
Single-phase 230 V	Three-phase 230/400 V	Single-phase 220 V	Three-phase 220/380 V	Length [mm]	Weight [kg]	
FROG 3 - 06S	FROG 3 - 06T	-	-	439	14	10
FROG 3 - 08S	FROG 3 - 08T	FROG 3 - 08S6	FROG 3 - 08T6	495	15,5	
FROG 3 - 10S	FROG 3 - 10T	FROG 3 - 10S6	FROG 3 - 10T6	521	16,5	
FROG 3 - 12S	FROG 3 - 12T	FROG 3 - 12S6	FROG 3 - 12T6	590	19	
FROG 3 - 15S	FROG 3 - 15T	FROG 3 - 15S6	FROG 3 - 15T6	616	20	
FROG 3 - 20S	FROG 3 - 20T	FROG 3 - 20S6	FROG 3 - 20T6	698	23,5	
FROG 5 - 08S	FROG 5 - 08T	-	-	469	16	
FROG 5 - 12S	FROG 5 - 12T	FROG 5 - 12S6	FROG 5 - 12T6	515	17,5	
FROG 5 - 15S	FROG 5 - 15T	FROG 5 - 15S6	FROG 5 - 15T6	541	18,5	
FROG 5 - 20S	FROG 5 - 20T	FROG 5 - 20S6	FROG 5 - 20T6	620	20,5	

## FLOAT SWITCH WITH “PLUG IN & PLUG OUT” SYSTEM

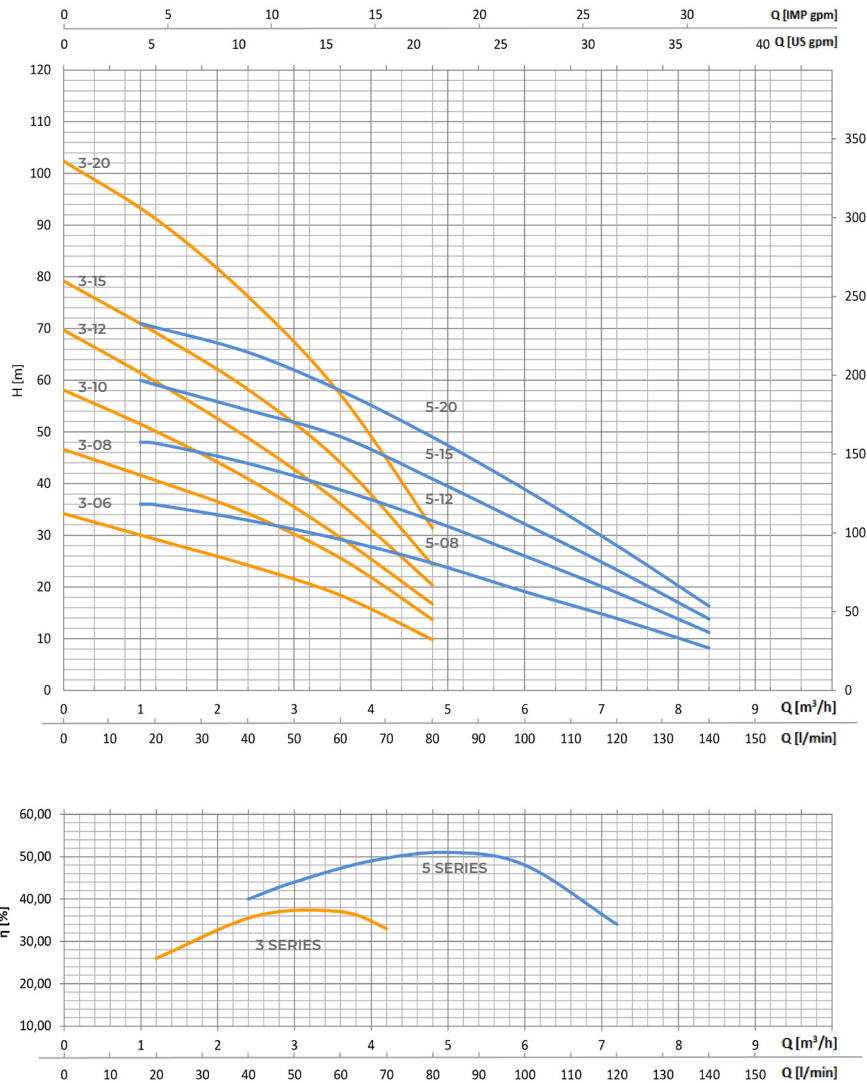
- Guarantees a perfect sealing
- Gives the option of using/selling the electropump with or without float switch just connecting or disconnecting it
- Reduces stock because electropump can be bought with or without float switch
- Allows a fast and safe maintenance cause superior pump side can be completely removed



SCAN TO  
see how to install the  
float switch correctly.



## OPERATING CURVES FROG - 50Hz



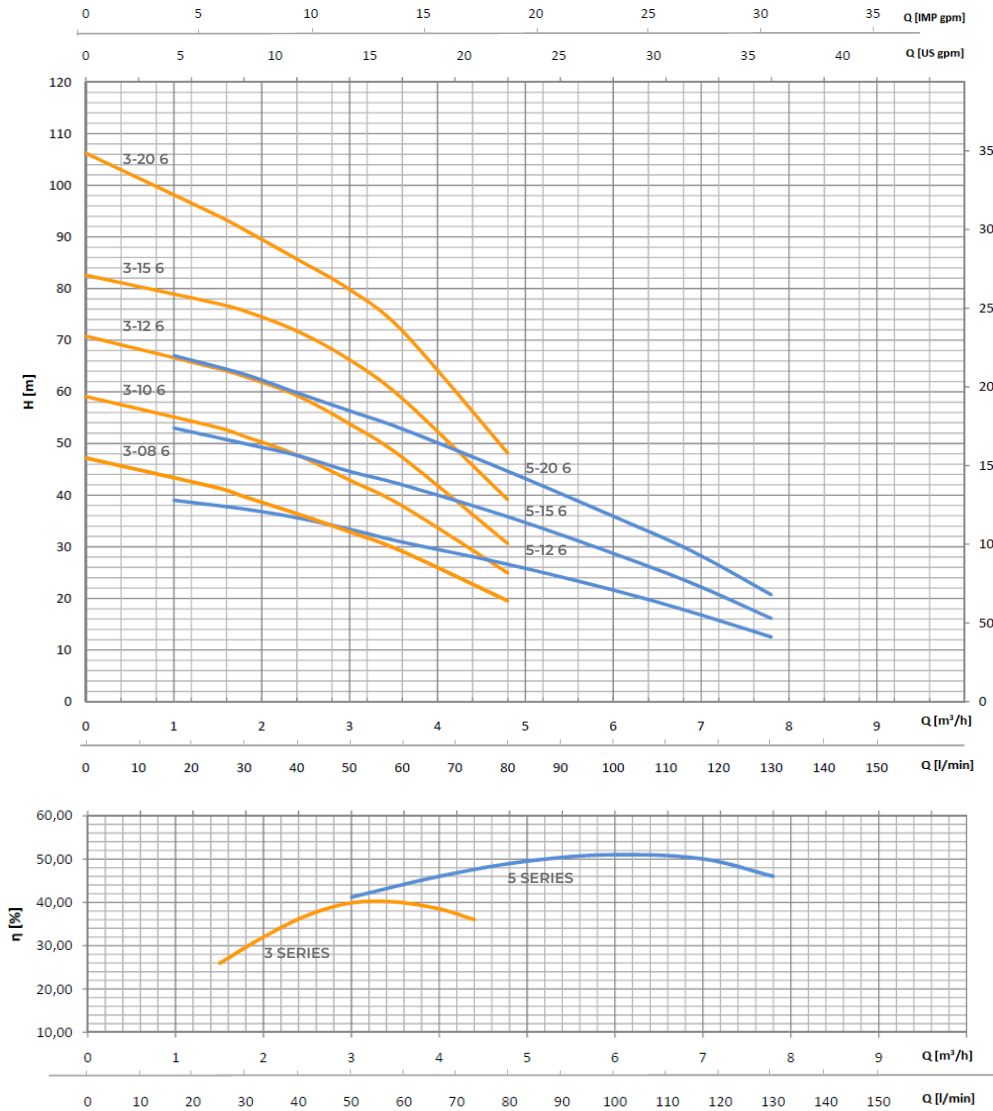
## HYDRAULIC PERFORMANCE TABLE FROG - 50Hz

Type		P <sub>2</sub>		N. of Stage	Q (Flow Rate)								
Single-phase 230 V	Three-phase 230/400 V	[Hp]	[kW]		[l/min]	0	20	40	60	80	100	120	140
					[m <sup>3</sup> /h]	0	1,2	2,4	3,6	4,8	6	7,2	8,4
H (Total Head) [m]													
FROG 3 - 06S	FROG 3 - 06T	0,6	0,45	3	34,2	29,2	24,2	18,4	9,8	-	-	-	
FROG 3 - 08S	FROG 3 - 08T	0,8	0,6	4	46,6	40,6	34,2	25,6	13,7	-	-	-	
FROG 3 - 10S	FROG 3 - 10T	1	0,75	5	58,1	50,1	40,9	29,6	16,7	-	-	-	
FROG 3 - 12S	FROG 3 - 12T	1,2	0,9	6	69,7	59,7	48,8	36,1	20,4	-	-	-	
FROG 3 - 15S	FROG 3 - 15T	1,5	1,1	7	79,2	69,2	58,2	44,1	24,3	-	-	-	
FROG 3 - 20S	FROG 3 - 20T	2	1,5	9	102,4	91,2	76,2	57,3	31,4	-	-	-	
FROG 5 - 08S	FROG 5 - 08T	0,8	0,6	3	37,2	35,9	32,9	29,2	24,6	19,1	13,9	8,2	
FROG 5 - 12S	FROG 5 - 12T	1,2	0,9	4	49,6	47,8	43,9	38,8	32,8	26	18,9	11,2	
FROG 5 - 15S	FROG 5 - 15T	1,5	1,1	5	61,5	59,1	54,2	49,1	40,9	32,2	23,3	13,8	
FROG 5 - 20S	FROG 5 - 20T	2	1,5	6	74,4	70,2	65,4	58	49	38,9	28	16,3	

## ELECTRICAL DATA FROG - 50Hz

Type	P <sub>1</sub> [kW] (Max Absorbed Power)	I [A] (Max Absorbed Current)	Capacitor 450 V [μF]	Type	P <sub>1</sub> [kW] (Max Absorbed Power)	I [A] (Max Absorbed Current)	
						230 V	400 V
Single-phase 230 V				Three-phase 230/400 V			
FROG 3 - 06S	0,81	3,7	20	FROG 3 - 06T	0,82	2,4	1,4
FROG 3 - 08S	1	5,1	25	FROG 3 - 08T	1,04	2,9	1,9
FROG 3 - 10S	1,22	5,7	25	FROG 3 - 10T	1,3	3,8	2,2
FROG 3 - 12S	1,4	6,5	35	FROG 3 - 12T	1,32	4,5	2,6
FROG 3 - 15S	1,65	7,6	35	FROG 3 - 15T	1,51	4,8	2,9
FROG 3 - 20S	2,15	9,8	40	FROG 3 - 20T	2,05	5,7	3,5
FROG 5 - 08S	1,1	5,2	25	FROG 5 - 08T	1,12	4	2,1
FROG 5 - 12S	1,32	6,4	35	FROG 5 - 12T	1,29	4,4	2,5
FROG 5 - 15S	1,7	8	35	FROG 5 - 15T	1,64	4,9	3
FROG 5 - 20S	1,95	9,4	40	FROG 5 - 20T	1,92	5,7	3,7

## OPERATING CURVES FROG - 60Hz



## HYDRAULIC PERFORMANCE TABLE FROG - 60Hz

Type		P <sub>2</sub>		N. of Stage	Q (Flow Rate)										
Single-phase 220 V	Three-phase 220/380 V	[Hp]	[kW]		[l/min]	0	25	30	40	50	60	80	100	115	130
					[m³/h]	0	1,5	1,8	2,4	3	3,6	4,8	6	6,9	7,8
					H (Total Head) [m]										
FROG 3-08S6	FROG 3-08T6	0,8	0,6	4	47,2	41,4	39,7	36,4	32,9	29,1	19,5	-	-	-	-
FROG 3-10S6	FROG 3-10T6	1	0,75	5	59,1	53,1	51,4	47,8	42,9	37,9	24,9	-	-	-	-
FROG 3-12S6	FROG 3-12T6	1,2	0,9	6	70,8	64,5	63	59,3	53,8	47,3	30,6	-	-	-	-
FROG 3-15S6	FROG 3-15T6	1,5	1,1	7	82,6	77,1	75,1	71,8	66,2	58,7	39,1	-	-	-	-
FROG 3-20S6	FROG 3-20T6	2	1,5	9	106,2	94,1	91,4	85,7	79,8	71,8	48,1	-	-	-	-
FROG 5-12S6	FROG 5-12T6	1,2	0,9	4	45,4	42,6	37,3	35,6	33,4	30,9	26,6	21,6	17,3	12,5	-
FROG 5-15S6	FROG 5-15T6	1,5	1,1	5	56,7	53,8	50	47,7	44,6	42	35,8	28,7	22,9	16,1	-
FROG 5-20S6	FROG 5-20T6	2	1,5	6	68	66,2	63,4	59,8	56,3	52,8	44,6	35,9	29,1	20,7	-

## ELECTRICAL DATA FROG - 60Hz

Type	P <sub>1</sub> [kW] (Max Absorbed Power)	I [A] (Max Absorbed Current)	Capacitor 450 V [μF]	Type	P <sub>1</sub> [kW] (Max Absorbed Power)	I [A] (Max Absorbed Current)	
						220 V	380 V
<b>Single-phase 220 V</b>				<b>Three-phase 220/380 V</b>			
FROG 3-08S6	1,05	4,8	25	FROG 3-08T6	1,06	2,9	1,7
FROG 3-10S6	1,24	5,9	25	FROG 3-10T6	1,31	3,6	2,1
FROG 3-12S6	1,42	7,1	35	FROG 3-12T6	1,37	3,9	2,3
FROG 3-15S6	1,67	8	35	FROG 3-15T6	1,56	4,4	2,6
FROG 3-20S6	2,16	10,1	40	FROG 3-20T6	2,08	5,4	3,2
FROG 5-12S6	1,34	6,3	35	FROG 5-12T6	1,31	3,6	2,1
FROG 5-15S6	1,72	7,3	35	FROG 5-15T6	1,67	4,4	2,6
FROG 5-20S6	1,91	9,7	40	FROG 5-20T6	1,89	4,9	2,9



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