



# Solar-Powered Deep Well Pump 4TYG Series



**Your Trusted Partner for  
Renewable Energy Water Supply Systems**



In the field of use and drinking water, Alarko submersible pumps are:

- Ready to use at any time
- Great on return on investment

**UNINTERRUPTED AND PERSONAL SOLE SOURCE OF WATER**



Alarko submersible pumps have an edge when using it as a booster pump for storing domestic water for various purposes in all buildings from houses to skyscrapers

**HIGHLY FUNCTIONAL**



Alarko submersible pumps are used for supplying process and domestic water in industrial plants and businesses with the following characteristics

- High efficiency,
- Long service life

**AN IDEAL INVESTMENT**



Alarko submersible pumps are used in the field of gardening and agriculture, from a small house garden to the irrigation of tens of thousands of acres of agricultural land

**TRUSTWORTHY FRIEND**



Alarko submersible pumps are needed more than ever especially in the tourist season in tourist facilities

**RELIABLE WATER SOURCE**



Alarko submersible pumps

- Outstanding technology
- Cost efficiency
- High quality continuous service
- Fast spare part supply system

**UNRIVALED**



**Solar-Powered Deep Well Pump  
ALARKO 4TYG**

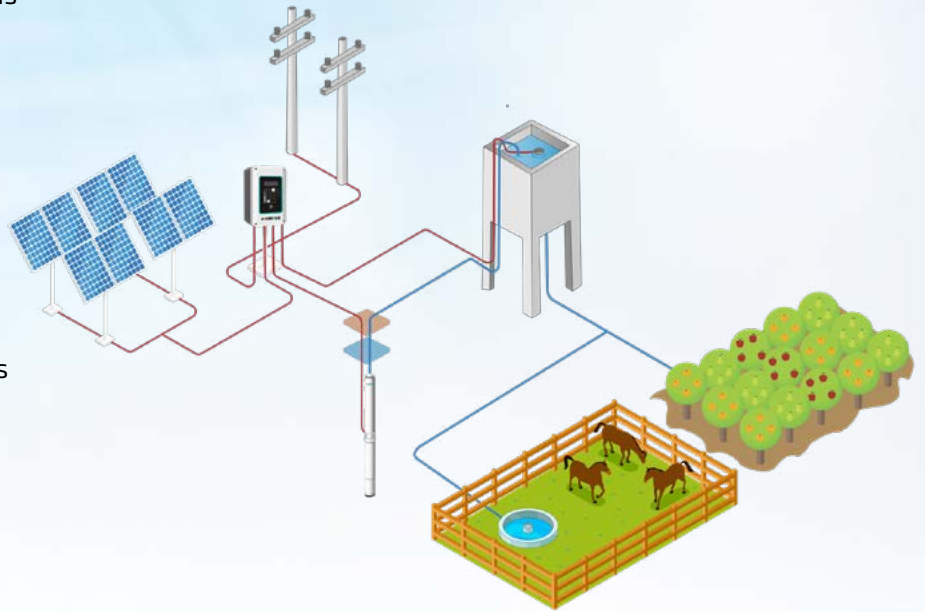


- **Permanent Magnet Synchronous Motor with VFD technology and increased efficiency by 15 to 20%; energy savings and low operating costs with less solar panel requirement.**
- **Stable and reliable operation with pressure regulating membrane.**
- **External controller.**



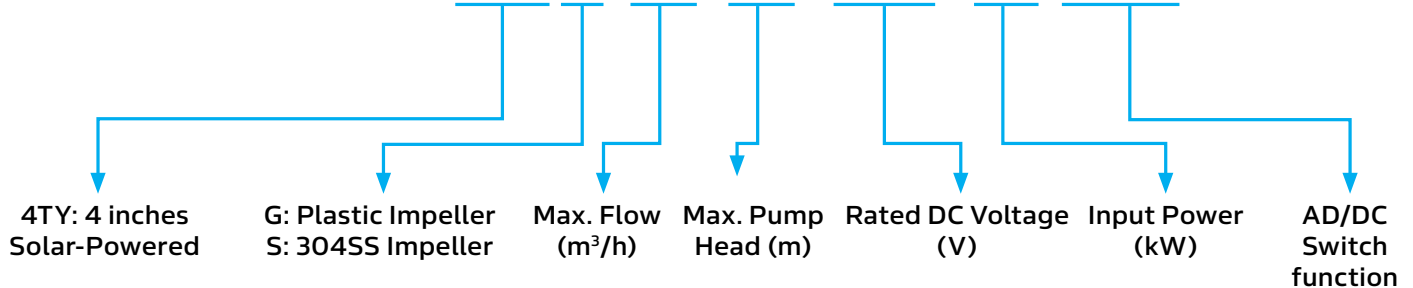
## AREAS OF USE:

- For the irrigation of agricultural lands and greenhouses.
- For the supply of drinking water for breeding in livestock
- For water supply and storage purposes, in villages, schools, hospitals, military facilities, workshops and factories, pools and ponds
- For buildings, villas for individual water supply and irrigation purposes
- For hotels, camping areas by means of water supply in tourism facilities



## Order Notation

**4TYG 5-138-310-2 A/D**



## Operating Conditions

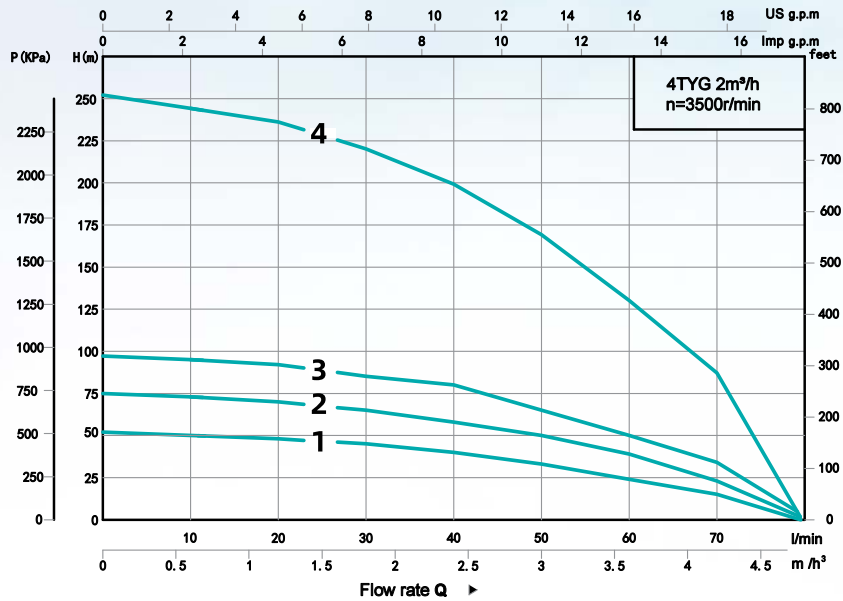
- Maximum ambient temperature <40°C
- Maximum allowed amount of sand: 100 g/m<sup>3</sup>
- Hydrogen sulfide content up to 1.5 mg/L,
- Chloride ion content up to 400 mg/L
- The ambient pH is between 6.5 and 8.5
- Max submersion depth:  
70 m below the static water table

## Performance Range

Flow : 0 m<sup>3</sup>/h-24 m<sup>3</sup>/h  
 Pump Head : 10-250 m  
 Power : 0.9 kW - 3.4 kW

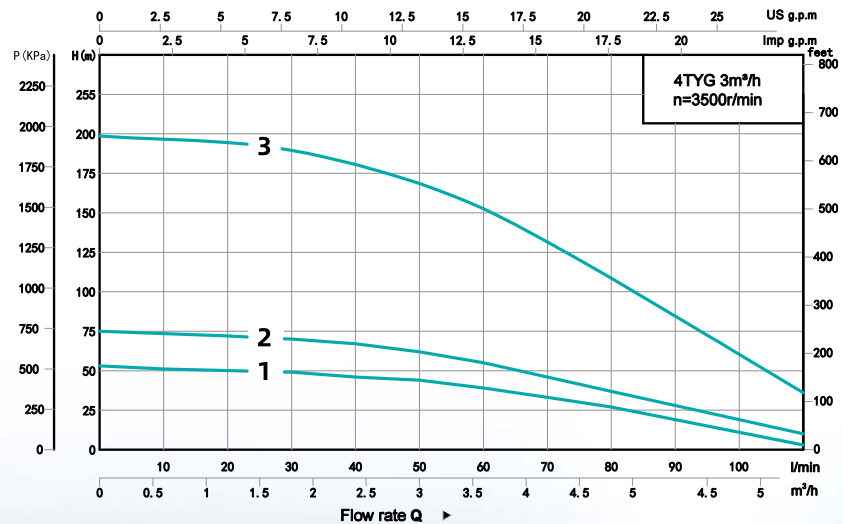
**Performance Curves and Tables**

**4TYG 5**



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow										Recommended Solar Panel Power (W)
						m³/h	0	0,6	1,2	1,8	2,4	3	3,6	4,2		
1	47YG 5-52-72-0,9	0,9	60-90	5	52	H(m)	52	50	48	45	40	33	24	15	≥1200	
2	47YG 5-75-96-1,1	1,1	100-140	5	75		75	73	70	65	58	50	39	23	≥1400	
3	4TYG 5-94-120-1,3	1,3	120-160	5	94		94	92	89	82	77	62	47	31	≥700	
4	4TYG 5-258-310-3,4 A/D	3,4	300-405	5	258		258	250	242	226	205	175	136	93	≥4400	

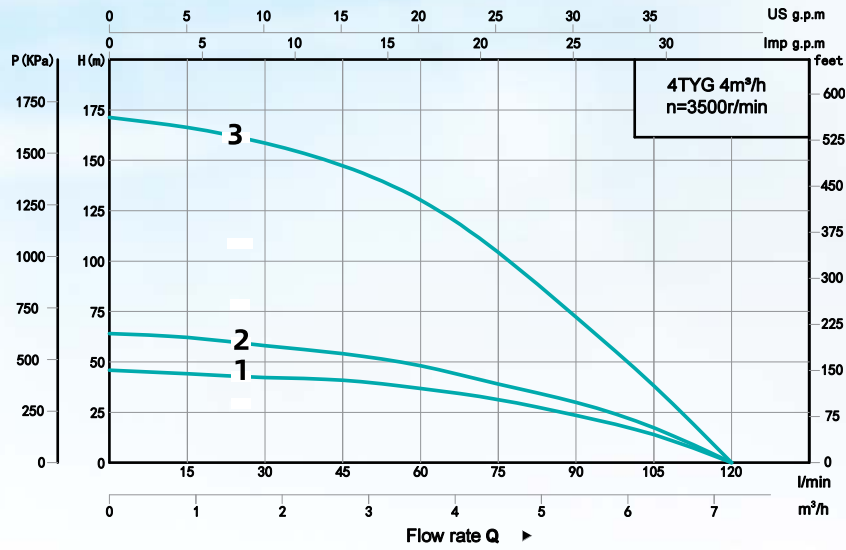
**4TYG 6,5**



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow										Recommended Solar Panel Power (W)	
						m³/h	0	0,6	1,2	1,8	2,4	3	3,6	4,2	4,8		5,4
1	4IYG 6,5-53-96-1,1	1,1	100-140	6,5	53	H(m)	51,2	51	50	49	46	44	33	33	27	19	≥1400
2	4TVG 6,5-75-120-1,3	1,3	120-160	6,5	75		75	72,2	72	70	67	62	46	46	37	28	≥1700
3	4IYG 6,5-195-310-3,4 A/D	3,4	300-405	6,5	195		194	193	191	186	177	165	128	128	105	81	≥4400

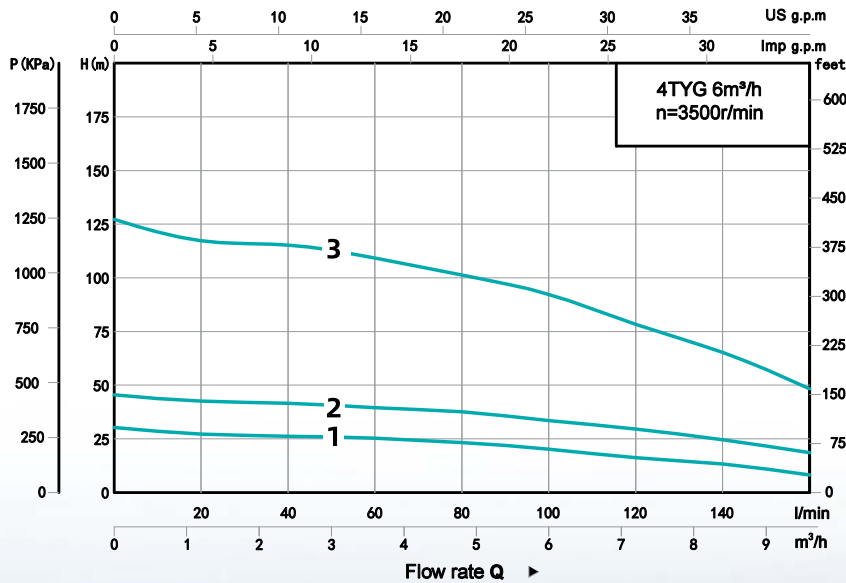
## Performance Curves and Tables

### 4TYG 8



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow											Recommended Solar Panel Power (W)									
						m³/h		0		0,9		1,8		2,7		3,6		4,5		5,4		6,3		7,2		
						l/min	0	0	15	30	45	60	75	90	105	120		120	163	158	151	139	124	101	74	38
1	41YG 8-42-96-1,1	1,1	100-140	8	42	H(m)	42	39	38	37	33	29	23	16	7	≥1400										
2	41YG 8-64-120-1,3	1,3	120-160	8	64	64	61	58	56	51	45	36	25	12	≥1700											
3	4TYG8-171-310-3,4A/D	3,4	300-405	8	171	171	163	158	151	139	124	101	74	38	≥4400											

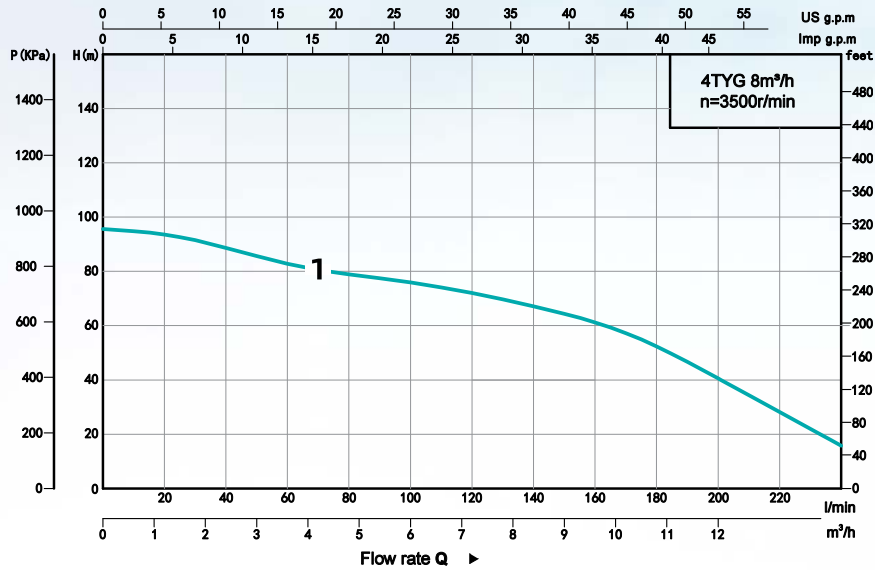
### 4TYG 12



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow														Recommended Solar Panel Power (W)								
						m³/h		0		1,2		2,4		3,6		4,8		6			7,2		8,4		9,6		4,2	
						l/min	0	20	40	60	80	100	120	140	160	70	128	118	116		110	102	93	79	66	49	81	
1	47YG 12-32-96-1,1	1,1	100-140	12	32	H(m)	32	29	28	27	25	22	20	15	10	19	≥1400											
2	4TYG12-42-120-1,2	1,2	120-160	12	42	42	39	38	36	34	30	26	21	15	28	≥1500												
3	41YG12-128-310-3,4A/D	3,4	300-405	12	128	128	118	116	110	102	93	79	66	49	81	≥4400												

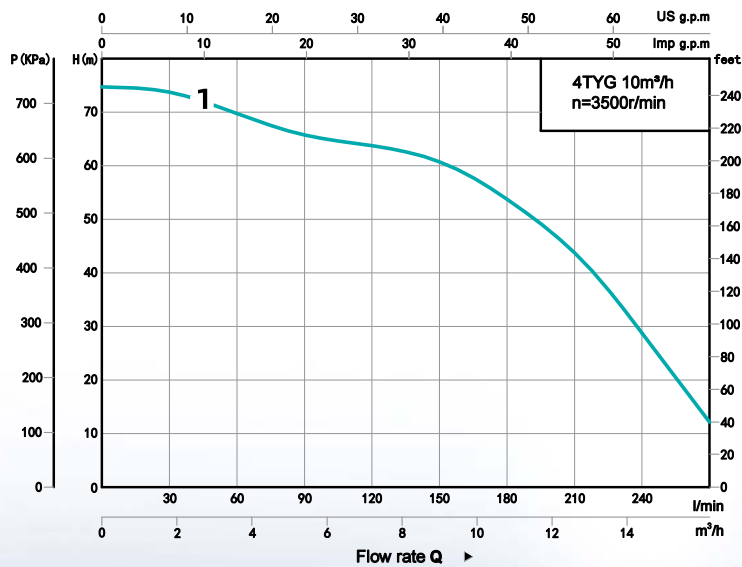
**Performance Curves and Tables**

**4TYG 15**



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow												Recommended Solar Panel Power (W)
						m³/h	0	1,2	2,4	3,6	4,8	6	7,2	8,4	9,6	10,8	12	
1	4TYG15-94-310-3,4A/D	3,4	300-405	15	94	H(m)	94	92	87	81	77	74	70	65	59	50	38	≥4400

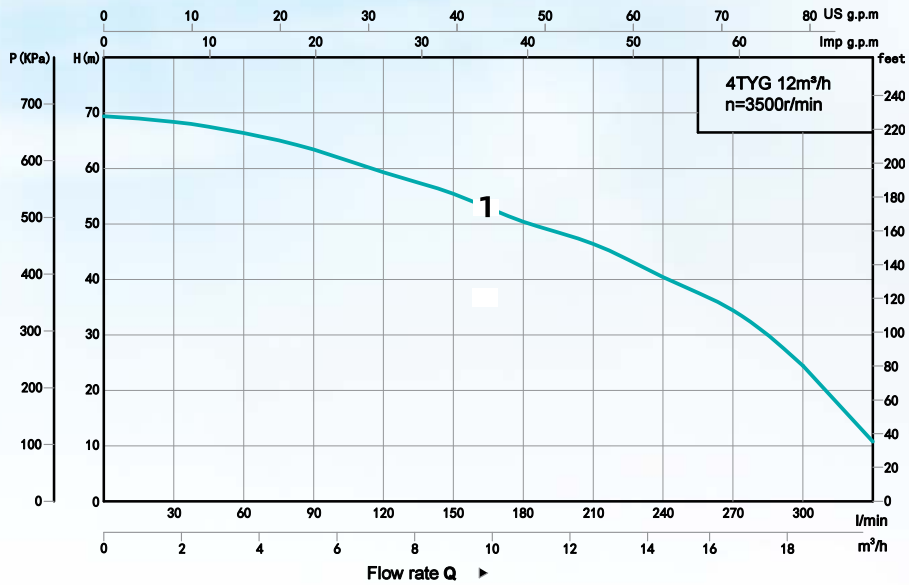
**4TYG 17,5**



No.	Model	Input Power PI (kW)	Best DC Range Voc(V)	Max. Flow m³/h	Max. Pump Head m	Flow										Recommended Solar Panel Power (W)
						m³/h	0	1,8	3,6	5,4	7,2	9	10,8	12,6	14,4	
1	4TYG17,5-74-310-3,4A/D	3,4	300-405	17,5	74	H(m)	74	73	69	65	63	60	53	43	28	≥4400

## Performance Curves and Tables

### 4TYG 22

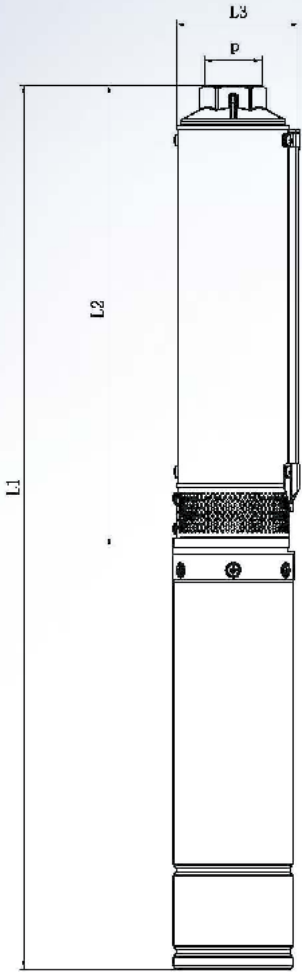


No.	Model	Input Power P <sub>I</sub> (kW)	Best DC Range Voc(V)	Max. Flow m <sup>3</sup> /h	Max. Pump Head m	Flow															Recommended Solar Panel Power (W)
						m <sup>3</sup> /h	0	1,8	3,6	5,4	7,2	9	10,8	12,6	14,4	16,2	18				
1	4TYG 22-68-310-3,4 A/D	34	300-405	22	68	H(m)	68	67	65	62	57	54	49	45	39	33	23	≥4400			





## Technical Specifications



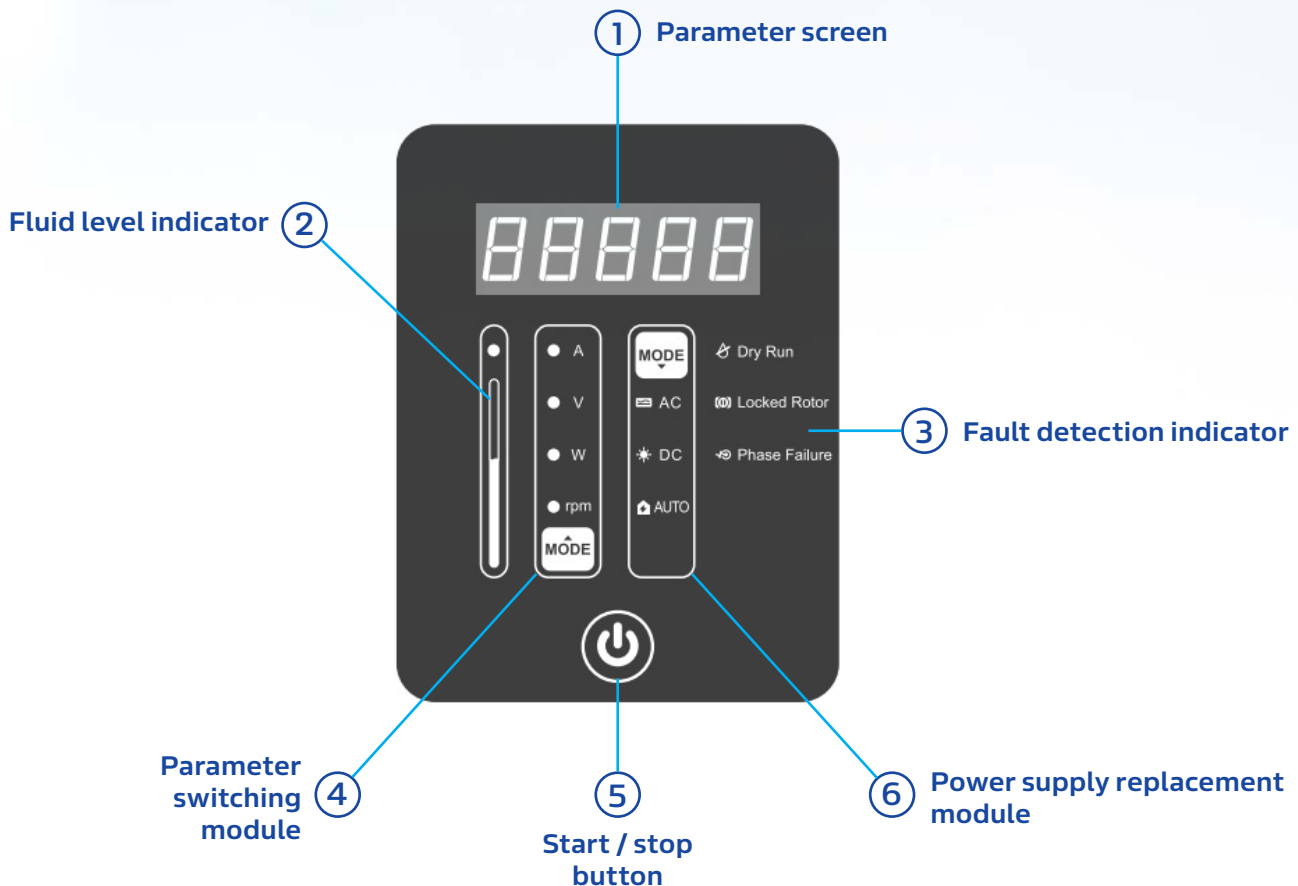
Model	P Pipe Connection (Inch)	Dimensions			Gross Weight (kg)	Package size (mm)
		L1 (mm)	L2 (mm)	L3 (mm)		
4TYG5-52-72-0.9	G1-1/4	610	286,5	102	14,0	1030x255x125
4TYG5-75-96-1.1	G1-1/4Z	665	336,5	102	15,0	1090x255x125
4TYG5-94-120-1.3	G1-1/4	723	387,5	102	15,0	1130x255x125
4TYG 5-138-310-2-A/D	G1-1/4	828	481,5	102	24,0	1370x290x195
4TYG 5-180-310-2.6-A/D	G1-1/4	938	581,5	102	25,0	1480x290x195
4TYG 5-258-310-3.4-A/D	G1-1/4	1170	790,5	102	29,0	1710x290x195
4TYG6,5-31-72-0.75	G1-1/4	561	237,5	102	14,0	970x255x125
4TYG6,5-53-96-1,1	G1-1/4	618	289,5	102	14,0	1030x255x125
4TYG6,5-75-120-1,3	G1-1/4	677	341,5	102	15,0	1090x255x125
4TYG 6,5-98-310-2-A/D	G1-1/4	740	393,5	102	23,0	1280x290x195
4TYG 6,5-132-310-2.6-A/D	G1-1/4	828	471,5	102	24,0	1370x290x195
4TYG 6,5-195-310-3.4-A/D	G1-1/4	1007	627,5	102	27,0	1550x290x195
4TYG8-30-72-0.75	G1-1/4	570	246,5	102	14,0	990x255x125
4TYG8-42-96-1.1	G1-1/4	604	275,5	102	14,0	1030x255x125
4TYG8-64-120-1.3	G1-1/4	669	333,5	102	15,0	1090x255x125
4TYG 8-85-310-2-A/D	G1-1/4	738	391,5	102	23,0	1280x290x195
4TYG 8-117-310-2.6-A/D	G1-1/4	835	478,5	102	24,0	1370x290x195
4TYG 8-171-310-3.4-A/D	G1-1/4	1073	693,5	102	27,5	1610x290x195
4TYG12-32-96-1.1	G1-1/2	580	251,5	102	14,0	990x255x125
4TYG12-42-120-1.2	G1-1/2	618	282,5	102	14,0	1030x255x125
4TYG 12-64-310-2-A/D	G1-1/2	702	355,5	102	22,0	1240x290x195
4TYG 12-86-310-2.6-A/D	G1-1/2	778	421,5	102	23,0	1320x290x195
4TYG 12-128-310-3.4-A/D	G1-1/2	967	587,5	102	26,0	1510x290x195
4TYG15-28-120-1.1	G2	609	273,5	102	14,0	1030x255x125
4TYG 15-46-310-2-A/D	G2	696	349,5	102	22,0	1240x290x195
4TYG 15-65-310-2.6-A/D	G2	782	425,5	102	23,5	1320x290x195
4TYG 15-94-310-3.4-A/D	G2	954	574,5	102	26,0	1490x290x195
4TYG 17,5-36-310-2-A/D	G2	659	312,5	102	21,5	1200x290x195
4TYG 17,5-54-310-2.6-A/D	G2	744	387,5	102	23,0	1280x290x195
4TYG 17,5-74-310-3.4-A/D	G2	878	498,5	102	25,0	1420x290x195
4TYG 22-48-310-2.6-A/D	G2	815	458,5	102	24,0	1350x290x195
4TYG 22-68-310-3.4-A/D	G2	935	555,5	102	26,0	1470x290x195



## Solar Panel Controller

Specially designed 4 TYG external controllers can perform automatic start/stop to ensure safe operation of the pump under various operating conditions and can protect the pump against different conditions such as reverse connection, water cut, overheating, overvoltage, low voltage, blockage, electrical leakage, default phase, etc.

The controller also has an MPPT function to ensure that the system is running at its most efficient point for a long time. The control panel provides parameters such as current, voltage, speed and power, and also shows the cause of the failure, fluid level and manually or automatically changes the AC or DC power supply.

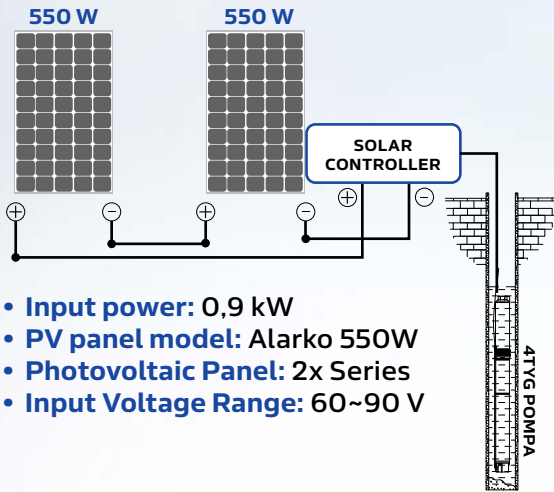


### External controller:

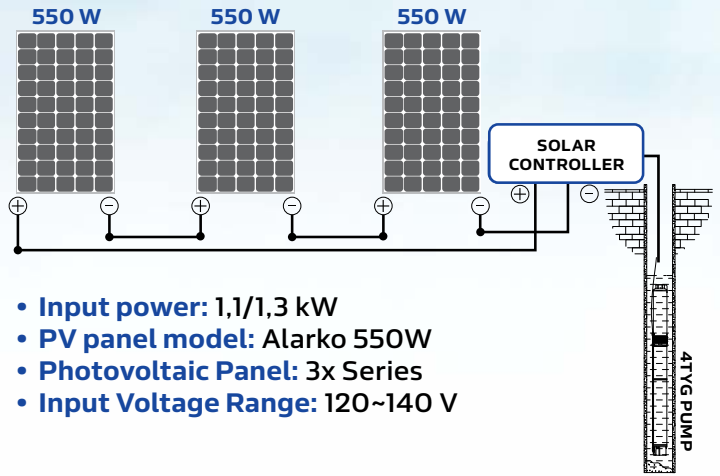
1. IP 44 controller housing for outdoor use;
2. MPPT technology maximizes power usage from PV modules;
3. Easy-to-use LED display panel monitors power, voltage and rpm operating status;
4. VFD technology: It works automatically according to actual needs to achieve the goal of constant pressure and energy savings.
5. Soft start eliminates impact current, resulting in a long service life;
6. Powerful protection functions: Overcurrent, overvoltage, locked rotor, phase failure and dry run protection functions;
7. Float-controlled available for automatic operation;
8. AC/DC automatic or manual switching (only available for models with input power PI above 1.3 KW).



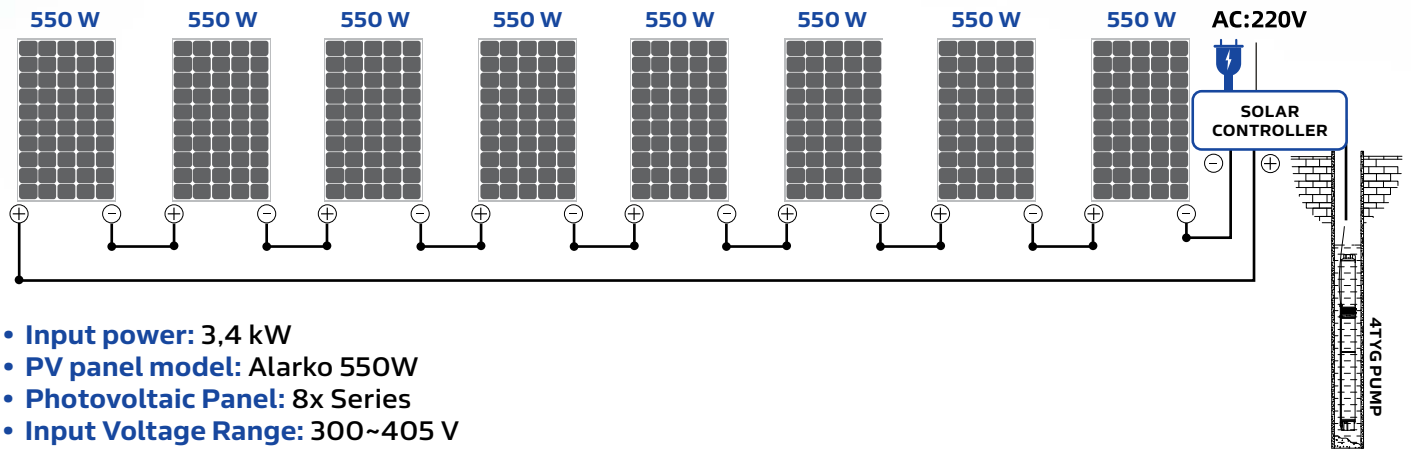
**Connection to the Photovoltaic Panel**



- Input power: 0,9 kW
- PV panel model: Alarko 550W
- Photovoltaic Panel: 2x Series
- Input Voltage Range: 60~90 V



- Input power: 1,1/1,3 kW
- PV panel model: Alarko 550W
- Photovoltaic Panel: 3x Series
- Input Voltage Range: 120~140 V



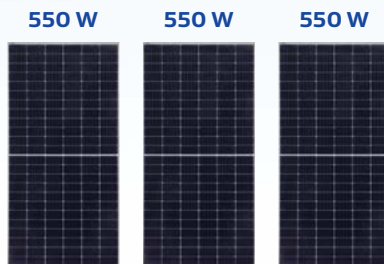
- Input power: 3,4 kW
- PV panel model: Alarko 550W
- Photovoltaic Panel: 8x Series
- Input Voltage Range: 300~405 V



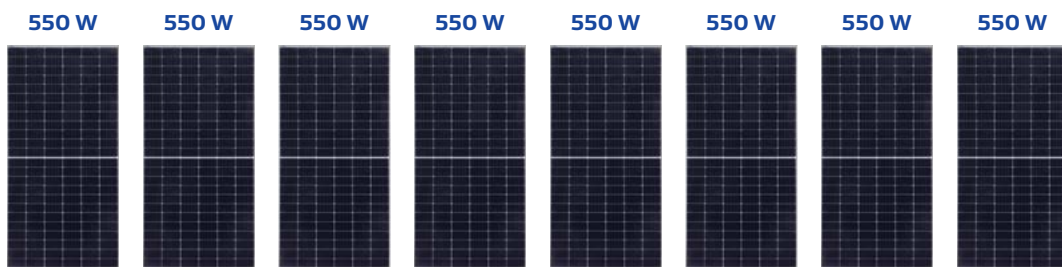
## Photovoltaic Panel Selection



Model	Rated Q (m <sup>3</sup> /h)	Rated Hm (m)	Voc (V)	Rated Current (I)
4TYG5-52-72-0,9	1,8	45	60-90	11



Model	Rated Q (m <sup>3</sup> /h)	Rated Hm (m)	Voc (V)	Rated Current (I)
4TYG5-75-96-1,1	1,8	65	100-140	11
4TYG5-94-120-1,3	1,8	82	120-160	11
4TYG6,5-75-120-1,3	3	62	120-160	11
4TYG8-42-96-1,1	3,6	33	100-140	11
4TYG8-64-120-1,3	3,6	51	120-160	11
4TYG12-42-120-1,2	4,8	34	120-160	11



Model	Rated Q (m <sup>3</sup> /h)	Rated Hm(m)	Voc(V)	Rated Current (I)
4TYG 5-258-310-3,4-A/D	1,8	226	300-405	12
4TYG 6,5-195-310-3,4-A/D	3	165	300-405	12
4TYG 8-171-310-3,4-A/D	3,6	139	300-405	12
4TYG 12-128-310-3,4-A/D	4,8	102	300-405	12
4TYG 15-94-310-3,4-A/D	6	74	300-405	12
4TYG 17,5-74-310-3,4-A/D	7,2	63	300-405	12
4TYG 22-68-310-3,4-A/D	9	54	300-405	13

**Note 1:** All the panel assemblies recommended above are connected to each other in series.

**Note 2:** Ask for advice for installations in cold climates.

**Note 3:** The panel groups above can be used with single-sided or double-sided Alarko panels.



# eco-friendly and high-efficiency products for a better world



We are investing in the future with our Alarko environmentally friendly products. We use efficient and environmentally friendly products. We are aware that products with high energy efficiency are national budget and environmentally friendly. We fight against global warming with products using renewable energy. We turned our face towards green. We think green.

Note: Manufacturer reserves the right to change any product specifications without notice.

**ALARKO**



**ALARKO CARRIER  
SANAYİ VE TİCARET A.Ş.**

GOSB - Gebze Organize Sanayi Bölgesi, Şahabettin Bilgisu Cad.

No:1604 Gebze 41480 KOCAELİ - TÜRKİYE

Phone: +90 262 648 60 00

Fax: +90262 648 60 08

[www.alarko-carrier.com.tr](http://www.alarko-carrier.com.tr)

[info@alarko-carrier.com.tr](mailto:info@alarko-carrier.com.tr)