



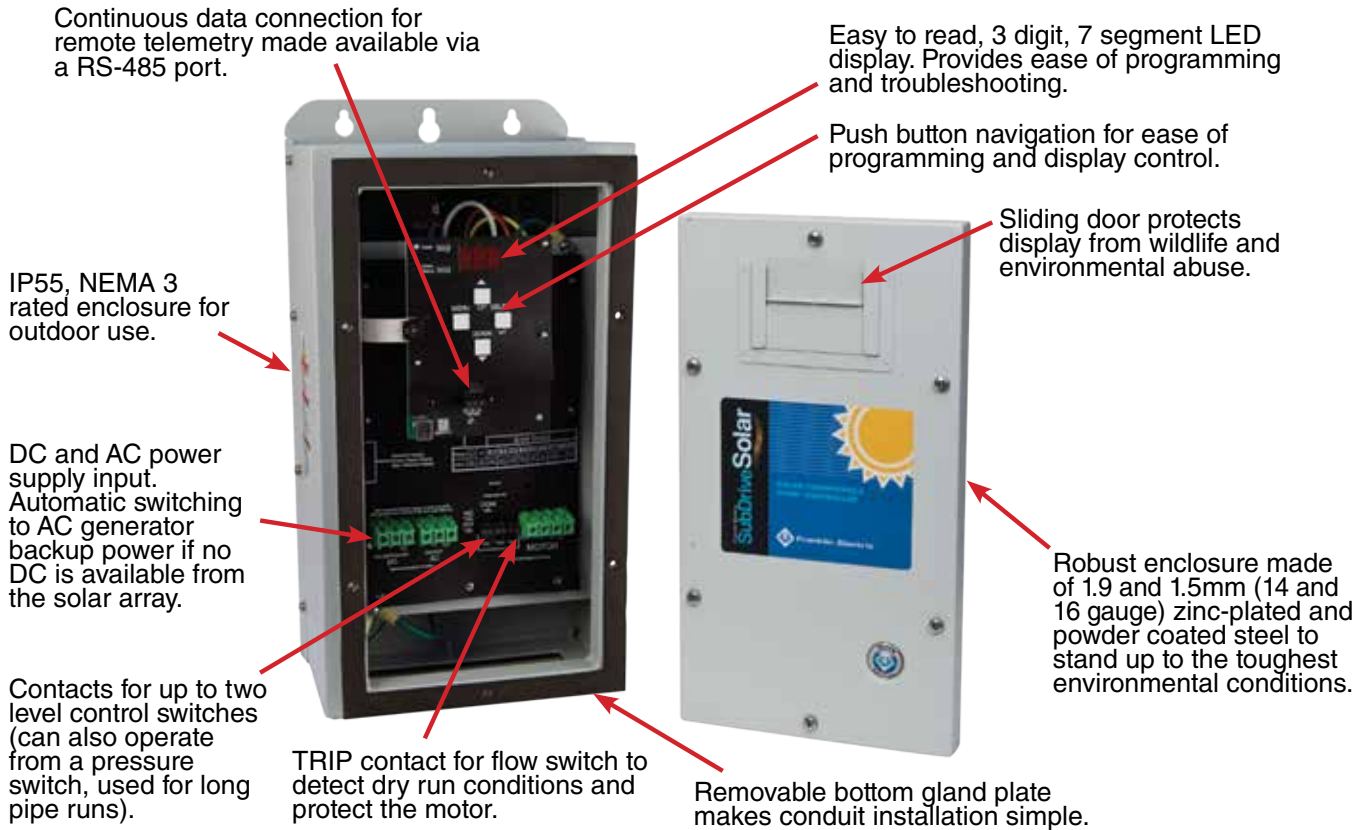
SubDrive SOLAR PAK

SOLAR PUMPING SYSTEM
LOW POWER



SubDrive SOLARPAK

SOLAR PUMPING SYSTEM



Applications

- Livestock watering
- Tank/Cistern filling
- Wildlife refuge & game farms
- Rural water supply for villages & homesteads
- Irrigation systems
- Fountains
- Vineyards
- Renewable energy projects
- Mining water transfer
- Water from bores, rivers, dams & creeks

Built-in Diagnostics and Protection

The SubDrive Solar QuickPAK products include diagnostic features and built-in protection from potentially harmful conditions.

- | | |
|----------------|-------------------------|
| ■ Surge | ■ Short circuit |
| ■ Underload | ■ Overheated controller |
| ■ Undervoltage | ■ Dry run |
| ■ Locked pump | ■ Reverse polarity |
| ■ Open circuit | |



All-in-One Package

The SubDrive SolarPAK is the System Solution to your solar pumping requirements. Using Franklin quality components, our technical expertise in groundwater pumping, and innovative thinking based on global market inputs, we have developed a rugged, high-output system which tackles the challenges of remote and harsh environments. No other system delivers the features, benefits, and reliability of SubDrive SolarPAK in just one package!

The SubDrive SolarPAK includes:

- Franklin Electric 4" submersible motor
- Franklin Electric 4" Solar pump
- SubDrive Solar controller
- Flow switch with 10m cable
- Variety of flow rates available in: 18, 25, 30, 45, 70, 100, 150, and 270 lpm
- Motor and drive ratings available in: 0.55, 1.1 and 2.2 kW

Features

- High flow system for faster tank fill and significant water output
- Proven motor and pump technology and reliability
- Robust IP55, NEMA 3 drive enclosure minimizes impact of wildlife, insects, dust, and weather
- DC and AC power inputs with auto-switching to generator back-up
- Seven segment controller display shows real-time input watts and system status
- Remote telemetry capability through a RS-485 continuous data port
- MPPT – Max Power Point Tracking for maximizing efficiency of input power
- Soft start feature prevents water hammer and increases system life
- Allows use of new solar array or retrofit to existing array (subject to size and performance check)
- Simple installation and no required maintenance
- Built-in diagnostics and protection
- C-tick and UL approved
- **OBSERVANT™** compatible for remote access and control



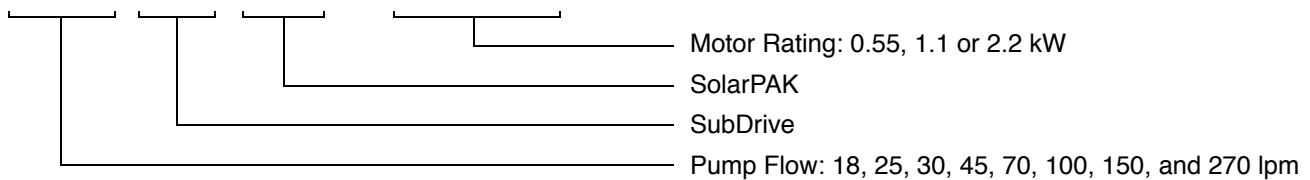
Ordering Information

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Model Number Description

XXX SD SP - X.XKW

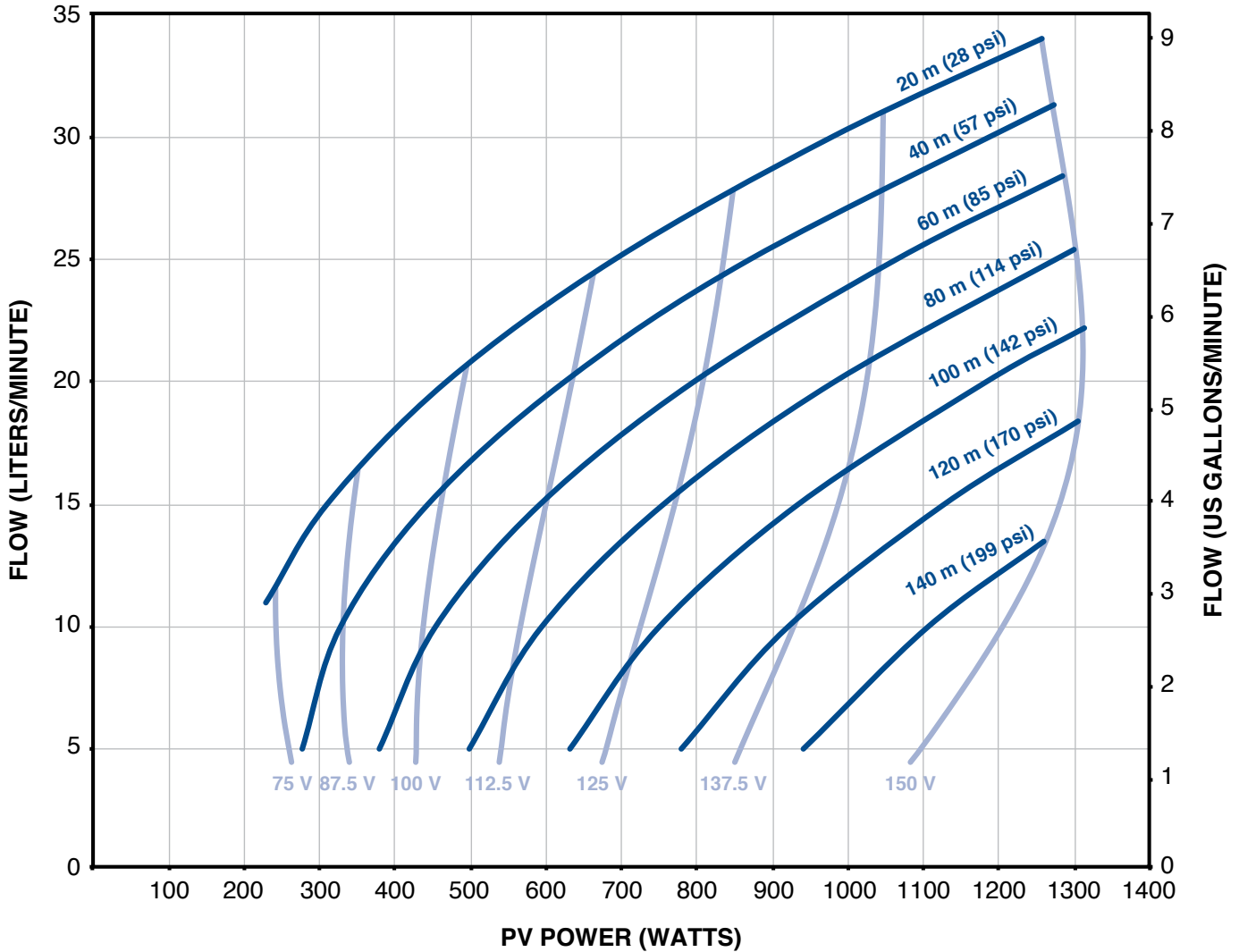


- A 10 metre cable for use with the flow switch is included in the controller packaging
 - 316SS motors for 1.1 kW and 2.2 kW available on request
 - 100, 150 and 270 LPM pump ends are supplied with external 2" BSP Check valve.
- For River, Dam and Creek applications, install 316SS motors with mechanical seals are recommended.

Pump Performance

18SDSP-0.55KW

SubDrive Solar 0.55 kW, 18 lpm Pump End, 0.55 kW Motor



PV Power (Watts)												
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Head (m)	Flow (LPM)											
20		14	18	21	23	25	27	29	30	32	33	
40		8	13	17	19	22	24	25	27	29	30	
60			6	12	15	18	20	22	24	25	27	
80				5	10	13	16	18	20	22	24	25
100						8	12	14	16	18	20	22
120							6	9	12	14	16	18
140									7	10	12	

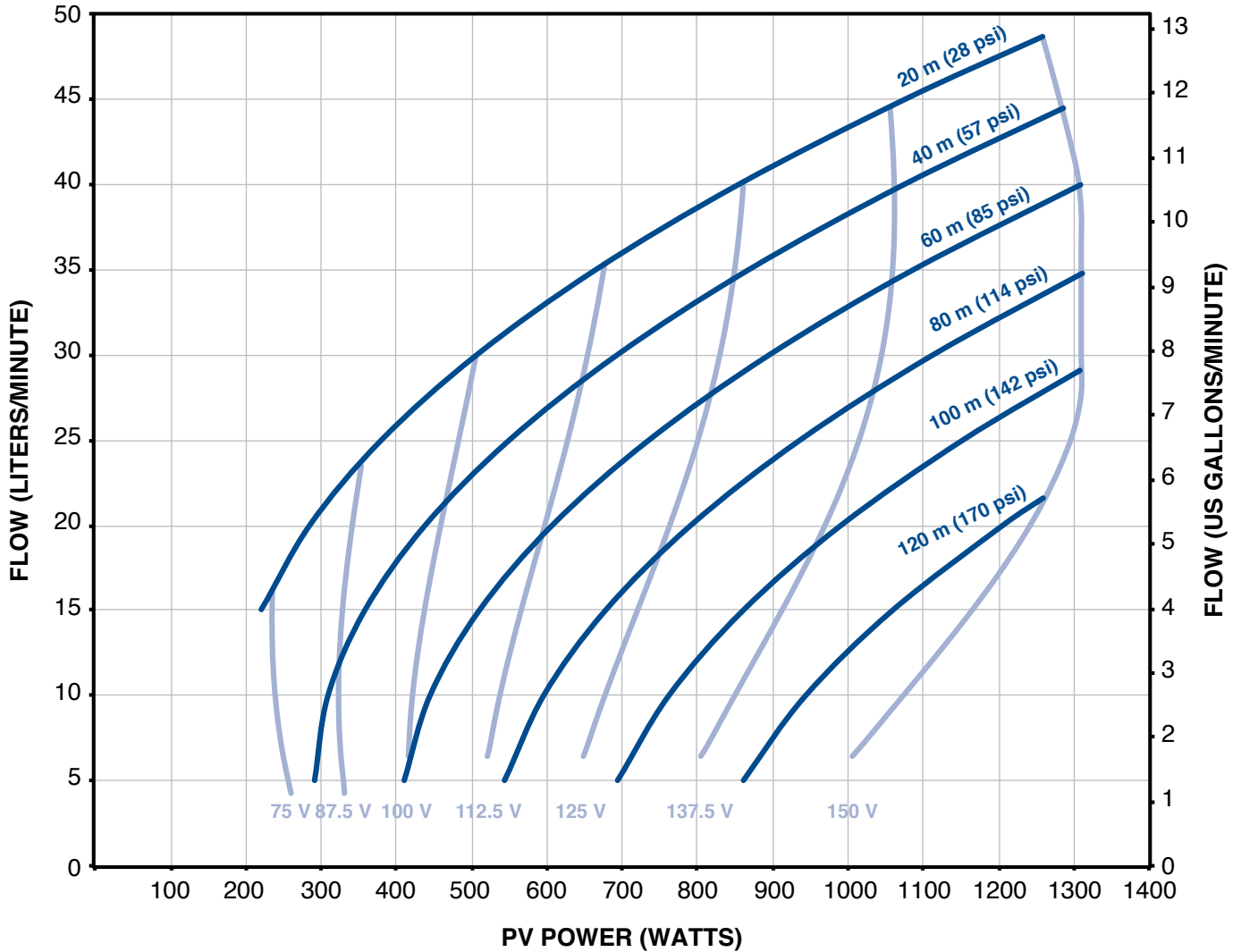
* 1 bar = 10.2 meters of head

**Refer to Drive Specifications table on page 18 for PV source power and voltage recommended operating ranges

Pump Performance

25SDSP-0.55KW

SubDrive Solar 0.55 kW, 25 lpm Pump End, 0.55 kW Motor



PV Power (Watts)												
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Head (m)	Flow (LPM)											
20		21	26	30	33	36	39	41	43	45	47	
40		7	18	23	27	30	33	36	38	41	43	
60				14	20	24	27	30	33	35	37	40
80					10	16	20	24	27	30	32	34
100						5	12	17	20	23	26	29
120								7	12	16	20	

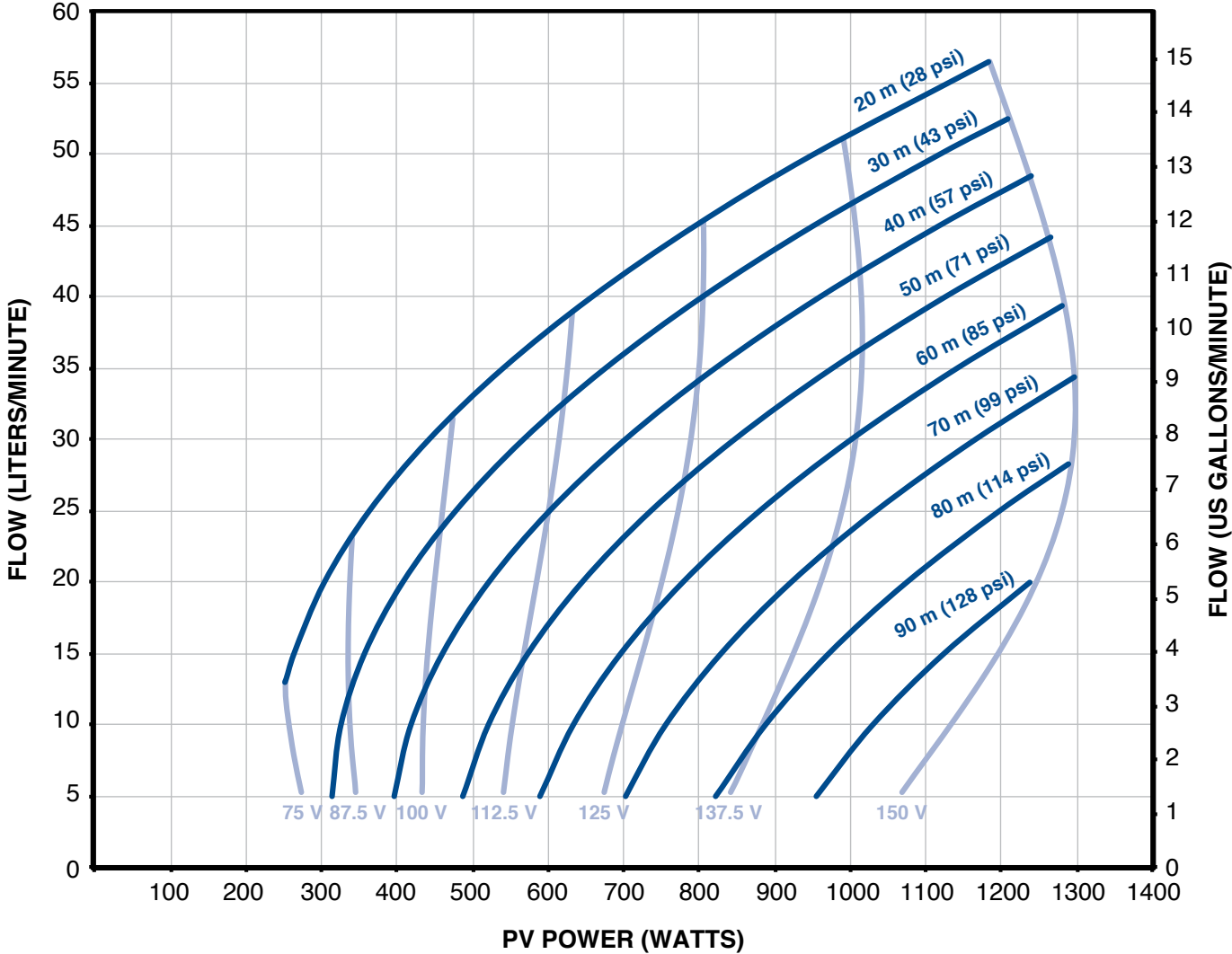
* 1 bar = 10.2 meters of head

**Refer to Drive Specifications table on page 18 for PV source power and voltage recommended operating ranges

Pump Performance

30SDSP-0.55KW

SubDrive Solar 0.55 kW, 30 lpm Pump End, 0.55 kW Motor



PV Power (Watts)												
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Head (m)	Flow (LPM)											
20		20	27	33	38	42	45	48	51	54		
30			19	26	32	36	40	43	46	49	52	
40			6	18	25	30	34	38	41	44	47	
50				7	17	23	28	32	36	39	42	
60					6	15	21	26	30	34	37	
70							13	19	23	27	31	34
80								11	16	21	25	
90									8	14	18	

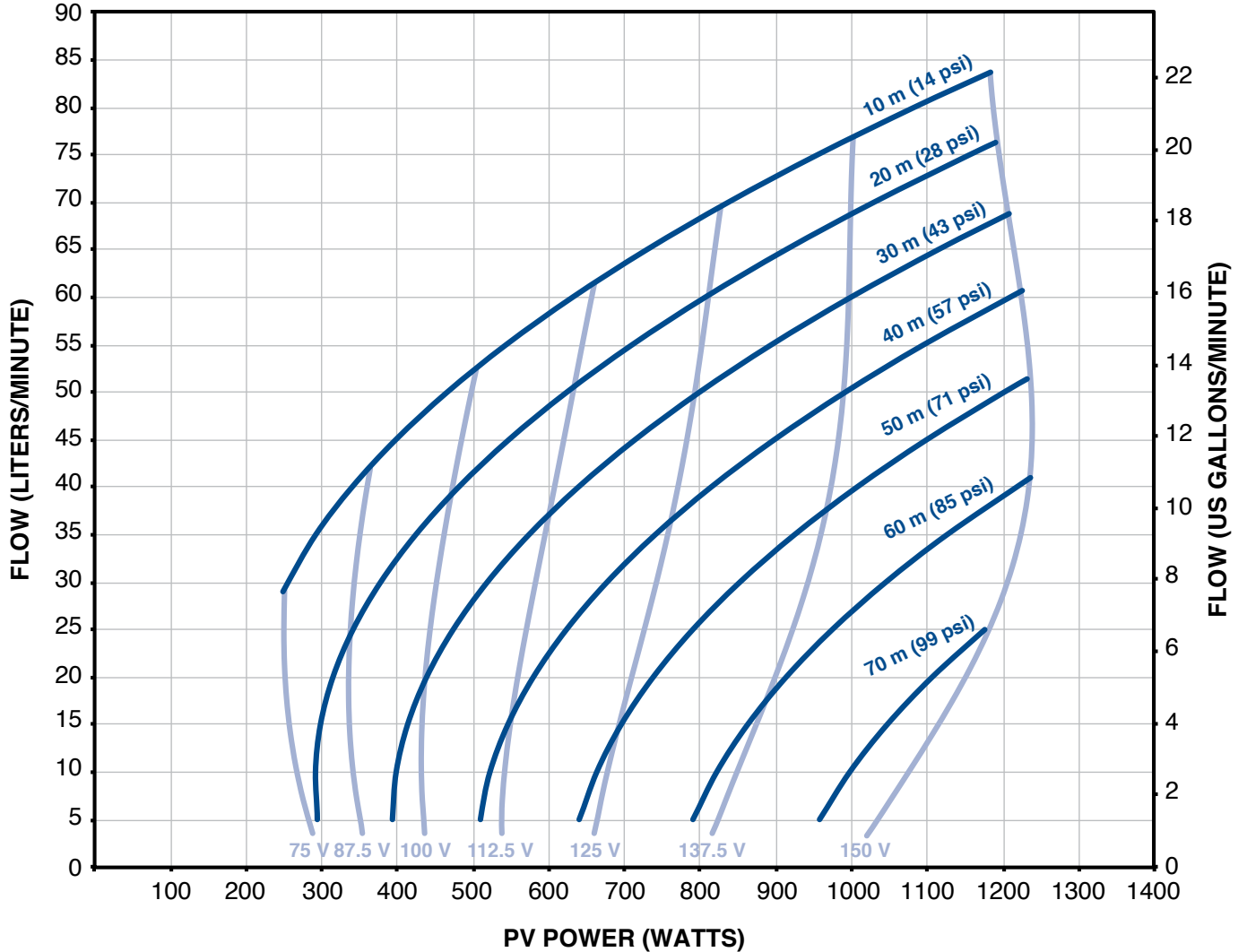
* 1 bar = 10.2 meters of head

**Refer to Drive Specifications table on page 8 for PV source power and voltage recommended operating ranges

Pump Performance

45SDSP-0.55KW

SubDrive Solar 0.55 kW, 45 lpm Pump End, 0.55 kW Motor

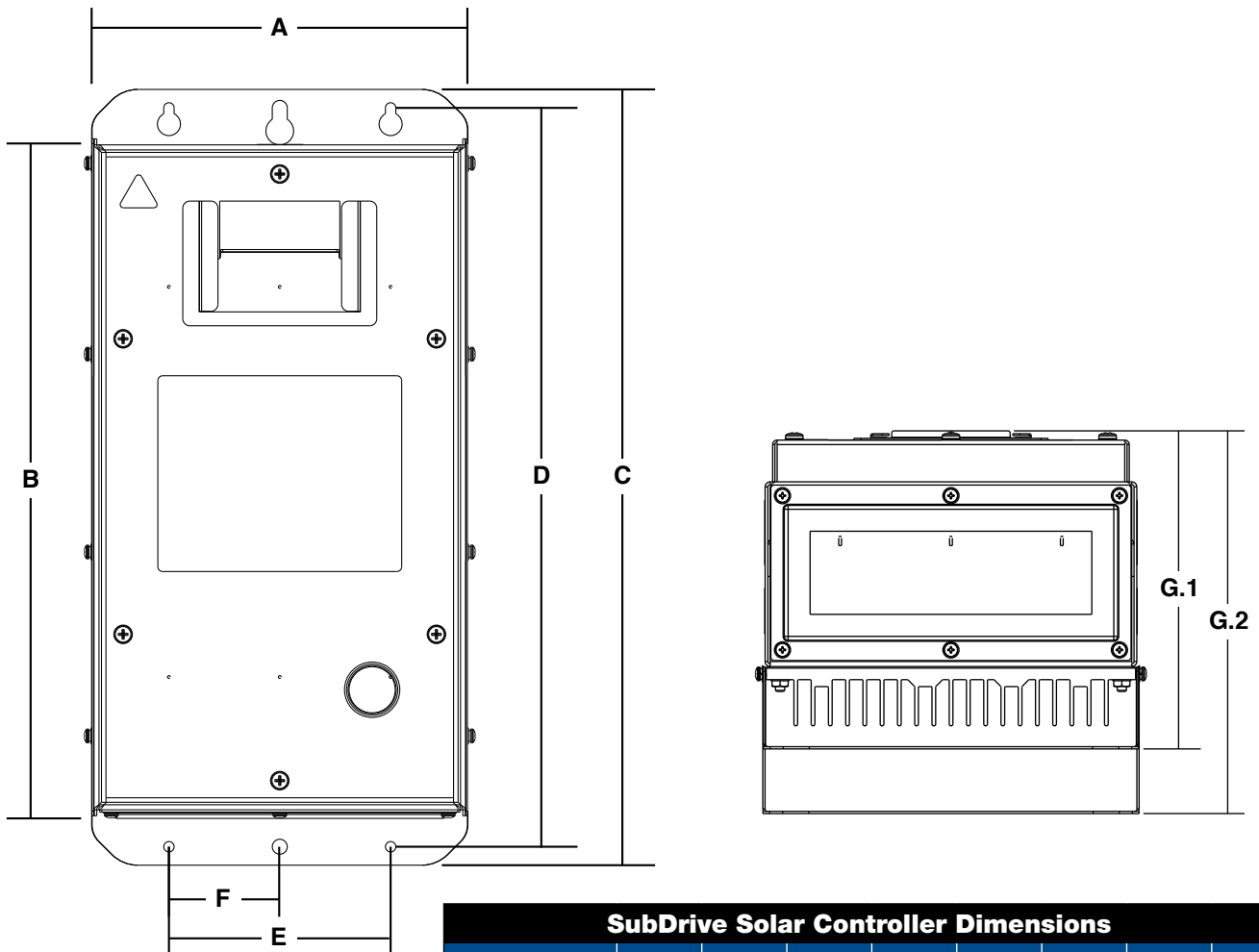


PV Power (Watts)												
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Head (m)	Flow (LPM)											
10		36	45	52	58	64	68	73	77	81		
20		16	32	42	48	54	60	64	69	73		
30			11	28	37	44	50	55	60	64	68	
40					22	32	39	45	50	55	59	
50						16	26	33	40	45	50	
60							7	19	27	34	39	
									10	20		

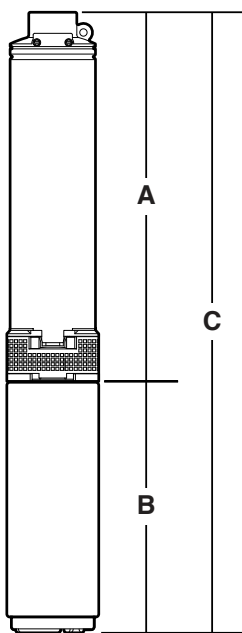
* 1 bar = 10.2 meters of head

**Refer to Drive Specifications table on page 8 for PV source power and voltage recommended operating ranges

Dimensions



SubDrive Solar Controller Dimensions								
	A	B	C	D	E	F	G.1	G.2
Centimeters	25.9	46.4	53.4	50.8	15.2	7.6	22.1	26.5
Inches	10.2	18.3	21.0	20.0	6.0	3.0	8.7	10.4



Solar PMA Dimensions															
LPM	USGPM	kW	HP	Stages	A		B		C		Discharge	PE Weight		PMA Weight	
					mm	inches	mm	inches	mm	inches		kg	lbs	kg	lbs
18	5	0.55	0.75	18	574	22.6	270	10.6	844	33.2	1 1/4"	5	12	15	33
25	7	0.55	0.75	13	467	18.4	270	10.6	737	29.0	1 1/4"	5	11	15	32
30	10	0.55	0.75	8	373	14.7	270	10.6	643	25.3	1 1/4"	4	8	13	29
45	15	0.55	0.75	6	329	13.0	270	10.6	599	23.6	1 1/4"	3	7	13	28
18	5	1.1	1.5	30	866	34.1	298	11.7	1164	45.8	1 1/4"	9	19	22	48
30	10	1.1	1.5	18	642	25.3	298	11.7	940	37.0	1 1/4"	7	16	20	45
45	15	1.1	1.5	15	521	20.5	298	11.7	819	32.2	1 1/4"	7	15	20	44
70	25	1.1	1.5	10	488	19.2	298	11.7	786	30.9	1 1/4"	5	10	18	39
150	45	1.1	1.5	7	593	23.3	298	11.7	891	35.1	2"	7	16	20	45
270	90	1.1	1.5	5	575	22.6	298	11.7	873	34.4	2"	7	15	20	44
25	7	2.2	3	30	866	34.1	408	16.1	1274	50.2	1 1/4"	9	20	28	61
30	10	2.2	3	18	645	25.3	408	16.1	1053	41.4	1 1/4"	7	16	26	57
45	15	2.2	3	15	521	20.5	408	16.1	929	36.6	1 1/4"	7	15	25	56
70	25	2.2	3	10	488	19.2	408	16.1	896	35.3	1 1/4"	5	10	23	51
150	45	2.2	3	7	593	23.3	408	16.1	1001	39.4	2"	7	16	26	57
270	90	2.2	3	5	575	22.6	408	16.1	983	38.7	2"	7	15	25	56

Note: Maximum diameter across cable guard is 99.1 mm (3.90") on all models.

Drive Specifications

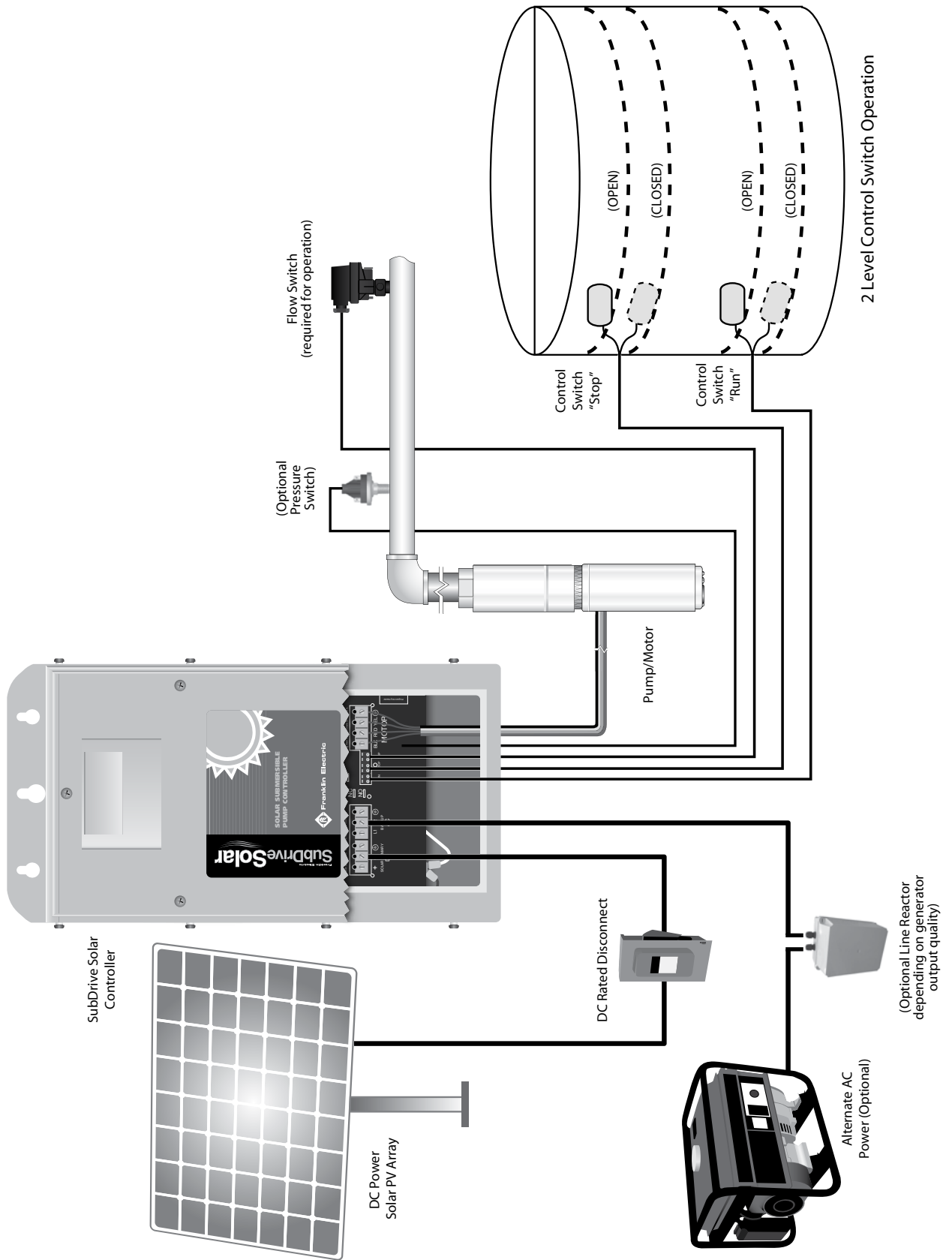
SubDrive Solar Controller Specifications							
	0.55 kW model		1.1 kW model		2.2 kW model		
Controller Model No.	5870300553		5870301113		5870301223		
Output							
Output voltage, max	100 V AC, 3-phase		200 V AC, 3-phase		200 V AC, 3-phase		
Max Amps (RMS)	8.6 A, each phase		6.8 A, each phase		12.5 A, each phase		
Output Frequency	30-60 Hz		30-58 Hz		30-68 Hz		
Efficiency at Max Power	96%		96%		96%		
PV source							
Input Voltage, at mpp	*95 - 330 V DC		**190 – 330 V DC		**190 – 330 V DC		
Max Amps Input	8.7 A DC, continuous		7 A DC, continuous		12 A DC, continuous		
Power at mpp	up to 1400 watts		Up to 2000 watts		up to 3500 watts		
Alternate AC Generator							
Input voltage	230 V AC, single phase		230 V AC, single phase		230 V AC, single phase		
Max Amps (RMS)	9.6 A		16 A		25 A		
Power and VA capability	Follow instruction manual for proper generator sizing data		Follow instruction manual for proper generator sizing data		Follow instruction manual for proper generator sizing data		
For Use With							
Franklin Electric Motor	234902----		234504----		234306----		
SubDrive Solar Pumps (BSPP)	LPM	Stages	Model No.	Stages	Model No.	Stages	Model No.
	18	18	90020504	30	90020508	30	-
	25	13	90020704	30	-	30	90020711
	30	8	90021004	18	90021011	18	90021011
	45	6	90021504	15	90021511	15	90021511
	70	-	-	10	90022511	10	90022511
	100	-	-	10	90023511	10	90023511
	150	-	-	7	90024511	7	90024511
270	-	-	5	90029011	5	90029011	
Controller Size	L X W X D		L X W X D		L X W X D		
Centimeters	(53.34 X 25.87 X 21.87 cm)		(53.34 X 25.87 X 21.87 cm)		(53.34 X 25.87 X 26.31 cm)		
Inches	(21.00" X 10.19" X 8.61")		(21.00" X 10.19" X 8.61")		(21.00" X 10.19" X 10.36")		
Controller Weight							
	19 kg (41 lbs)		19 kg (41 lbs)		22 kg (47 lbs)		
Operating Conditions							
Temperature Range	-25 °C to 50 °C (40 °C max when using AC generator)		-25 °C to 50 °C (40 °C max when using AC generator)		-25 °C to 50 °C (40 °C max when using AC generator)		
Relative Humidity Range	0 to 100% Condensing		0 to 100% Condensing		0 to 100% Condensing		

* Drive will attempt to start the pump/motor at 95 V DC, and attempt to continue operation down to 75 V DC.

** Drive will attempt to start the pump/motor at 190 V DC, and attempt to continue operation down to 150 V DC.

Absolute maximum open circuit voltage input to the controller = 410 Voc for all controller models.

System Quick Install Guide



SubDrive SolarPAK Selector:

Franklin's user-friendly SubDrive SolarPAK Selector helps you determine the optimal system for your solar project. Simply input your location, duty requirements, and solar panel characteristics (if known) and the system will automatically recommend the SolarPAK model and array configuration best for your application.

The screenshot shows the Franklin Electric SubDrive SolarPAK Selector interface. It includes input fields for location (Degrees Latitude: 41, Degrees Longitude: -85), input requirements (Total Dynamic Head: 19 Meters), and output requirements (Solve for: Volume, Water Volume / Day: 44 m³). A bar chart displays solar hours by month, with an average of 4.16 hours. The interface also features a 'SolarPAK Options' section with tabs for 'Recommended + Alternative' and 'All Product', showing a list of models including the selected 150SDSP-1.1KW. Below this, there is an 'Overview' section for the 150SDSP-1.1KW model, which includes a product image, part number (90034520), minimum array requirements (Vmp: 272V), LPM (176), and power (1511 Watts).

* Above screen shot is illustrative only and is subject to continuous improvement

The Franklin Electric SubDrive Solar Selector and other information on our series of solar products can be found on Franklin Electric's Solar Website:

www.franklin-electric.com/solar

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