PRODUCT CATALOG

geoquip

WATER SOLUTIONS

HIGH EFFICIENCY

4" High Efficiency System

4" High Efficiency Solar System

Franklin Electric

Geoquuip Water Solutions Ltd. www.geoquipwatersolutions.com Tel: +44(0)1473 462046

INDEX

NOTE: Franklin Electric Europa GmbH reserves the right to amend specification without prior notice

For the most up-to-date product information, visit franklinwater.eu.

4" HIGH EFFICIENCY SYSTEM (HES) OVERVIEW – UP TO 4 KW

Packaged Submersible Borehole System with energy savings up to 21 %*

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

- Up to 15 points (21 %) improved motor efficiency*
- Excellent partial load behaviour (SKU reduction)
- Due to the high motor efficiency, amps are significantly reduced, which might lead to smaller drop lead cross size and thus cost saving
- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
- Power factor corrected input (No power compensation needed)

EASY INSTALLATION

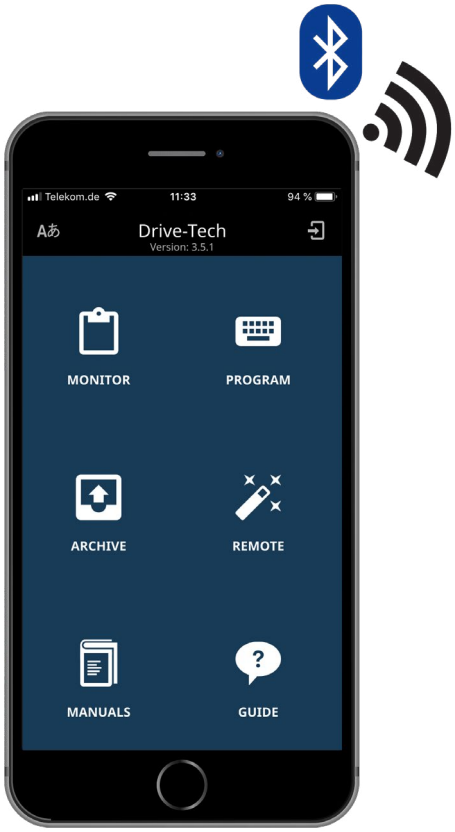
- Easy system set-up due to Franklin Electric App in combination with tailored pre-settings

INCREASED LIFETIME

- Incorporated Soft start and protection features (no additonal investment)
- Speed control (Optimum aggregate operation - pump matches system any time)

UP-TO-DATE CONNECTIVITY

- Factory-featured with Bluetooth 4.0 Connectivity
- Remote control and maintenance via Mobile App



APPLICATIONS

* in comparison to current asynchronous technology

Franklin Electric

4" HIGH EFFICIENCY SYSTEM (HES) OVERVIEW

Packaged Submersible Borehole System with energy savings up to 21 %*

SPECIFICATION

- Motor range: 1.1 / 2.2 / 3.0 / 4.0 kW (50 Hz - 3000 rpm)
- Motor range: 1.2 / 2.5 / 3.4 / 4.6 kW (60 Hz - 3600 rpm)
- System Power Supply: 220 V - 400 V ± 10 %
- Frequency: 50 Hz - 60 Hz ± 2 %
- Nominal ambient temperature: motor: 30 °C, electronics: 50 °C (> 40 °C with derating)
- Vertical and horizontal motor operation
- Protection: motor: IP68, insulation class B
  drive: IP66/65
  filter: IP00
- 230 V kits without additional output filter

OPTIONS

- Special Voltages
- Higher-graded material: 316SS
- Sinus output filters in IP00 (400 V)
- VFD IP21 for 400 V systems (on request)
- Solar

PACKAGED DEAL

- 4" synchronous submersible NEMA motor
- 4" submersible pump
- Variable frequency drive
- Matching output filter for 400 V systems

FULLY SUPPORTED

- Fully supported by the Technical Support Professionals and Field Service Engineers

* in comparison to current asynchronous technology

4" HIGH EFFICIENCY SOLAR SYSTEM (HES) OVERVIEW - UP TO 4 KW

High Efficiency Submersible Borehole Solar System in the range of 0.55 - 4.0 kW

FEATURES & BENEFITS

SUPERIOR EFFICIENCY

- One-stop shop and perfectly matching components guarantee first-class performance/efficiency
  Less panels, more water respectively
- Integrated voltage "boost" (up to 2.2 kW) significantly reduces number of solar panels
- Direct DC feeding
- MPPT algorithm maximizes system performance

UP-TO-DATE CONNECTIVITY

- Factory-featured with Bluetooth 4.0 Smart Connectivity
- Remote control and maintanance via Mobile App

PACKAGED DEAL

- 4" synchronous submersible NEMA Solar motor
- 4" submersible pump
- Variable frequency drive

FULLY SUPPORTED

- Fully supported by the Technical Support
  Professionals and Field Service Engineers

SPECIFICATION

- Motor range: 1.1 / 2.2 / 3.0 / 4.0 kW (50 Hz)
- Motor range: 1.2 / 2.5 / 3.4 / 4.6 kW (60 Hz)
- System Power Supply: ≤ 2,2 kW: 90 - 400 V DC / AC Backup: 90 - 265 V
  ≥ 3,0 kW: 160 - 650 V DC / AC Backup: 190 - 520 V
- Backup Power supply / Direct AC feeding to maximize system runtime
- Top class protection with Electronics in IP66 / 65
  No cabinet - no cooling fan / dust filter - no maintanance

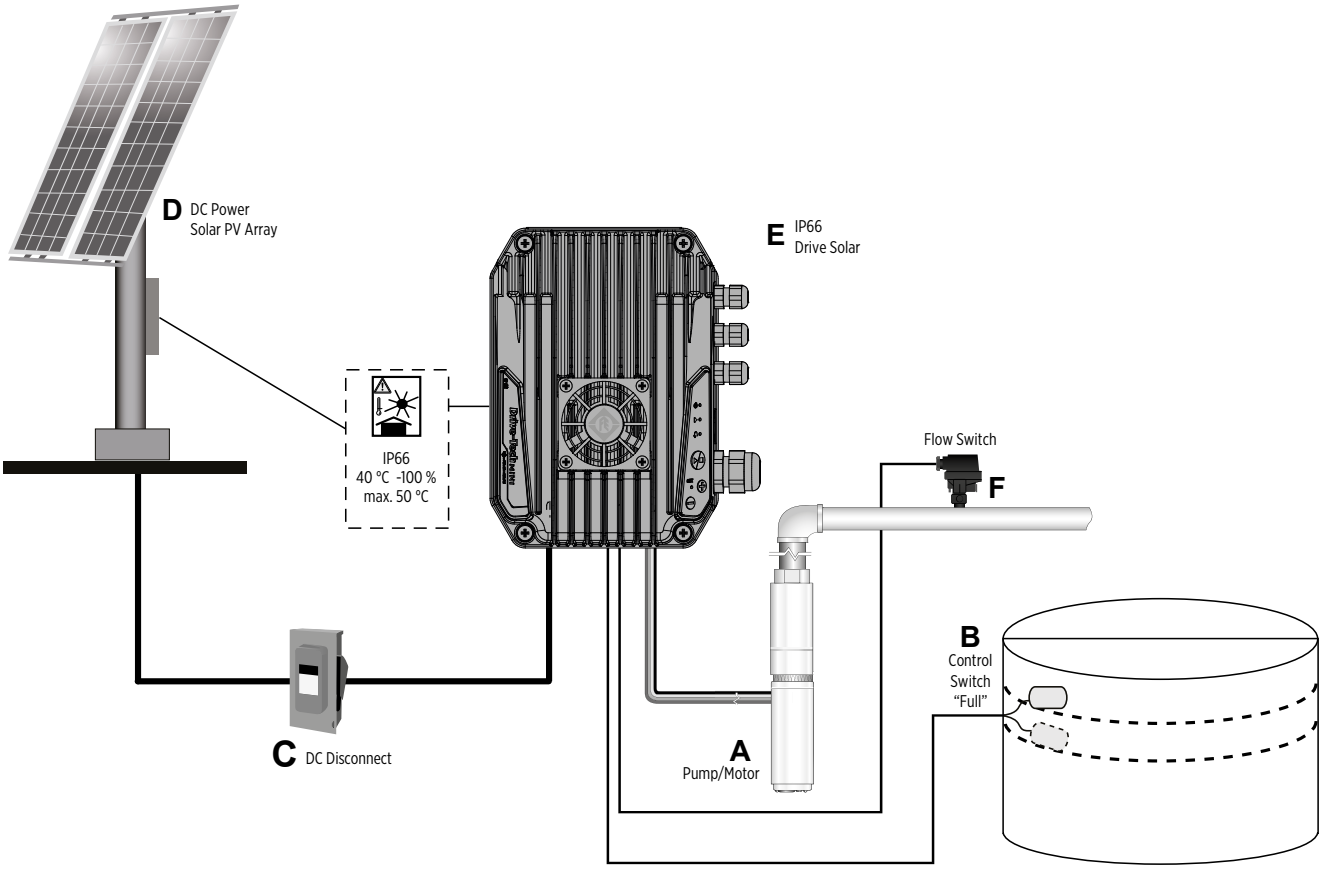
OPTIONS

- Special Voltages
- Higher-graded material: 316SS

4" HIGH EFFICIENCY SOLAR SYSTEM (HES) OVERVIEW

High Efficiency Submersible Borehole Solar System in the range of 0.55 - 4.0 kW

SOLAR SYSTEM INSTALLATION



A. High Efficiency Motor and Pump
B. Level Control Switch, not included (separate order 308 170 209)
C. DC Disconnect, not included (separate order 13 A/800V DC: 308 170 313, 25 A/800V DC: 308 170 325)
D. Solar Array, not included
E. Drive-Tech mini Solar inverter
F. Flow-Switch, optional (separate order 226 019 101)

Please see next page for more details on the system components.

OPTIONAL SYSTEM COMPONENTS

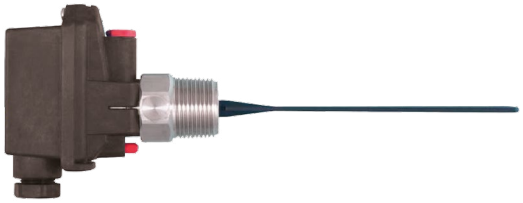
LEVEL SWITCH

Description	Model number	
A level switch is a device used to detect the level of liquid within a tank.	308 170 209	

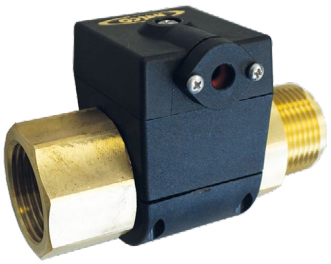
DC DISCONNECT

Description	Model number	
To disconnect the drive even under load safely from the solar generator, Franklin Electric offers suitable DC disconnect switches for all different power ratings.	13 A/800V DC 308 170 313 25 A/800V DC 308 170 325	

FLOW PADDEL SWITCH

Description	Model number	
▪ The flow switch utilizes the force of liquid flow to propel its paddle and to detect the incoming flow or movement of the existing liquid in the pipe. ▪ For Flow rates above 4 m^3/h; Connection: G1"	226 019 101	

INLINE FLOW SWITCH

Description	Model number	
▪ The Inline Flow Switch operates magnetically. ▪ The piston within the switch body should be a free fit and spring back to its off position as soon as flow stops. ▪ For flow rates up to 4 m^3/h; Connection: G1"	226 014 101	

4" HIGH EFFICIENCY SYSTEM (HES) PUMP KITS OVERVIEW

PACKAGES SOLAR PUMP KITS

High Efficiency System		Solar Controller		Solar Pump (BSPP)				Motor		
Model	Order No.	Drive Model	Part No.	m^3/h	Stages	Pump	Part No.	P_N [kW]	U_N [V]	Part No.
1/19 4HES 220 0.75 kW Solar	308071119S	DTm Solar 2.005 MP	314000165	1	19	4" VS 1/19	602011901050063	1,1	3x 220V	2340716700L
1/26 4HES 220 1.1 kW Solar	308071126S	DTm Solar 2.011 MP	314000166	1	26	4" VS 1/26	602012601050063	1,1	3x 220V	2340716700L
2/20 4HES 220 1.1 kW Solar	308071220S			2	20	4" VS 2/20	602022001050063			
4/14 4HES 220 1.1 kW Solar	308071414S			4	14	4" VS 4/14	602041401050063			
2/27 4HES 220 2.2 kW Solar	308072227S	DTm Solar 2.015 MP	314000167	2	27	4" VS 2/27	602022701050063	2,2	3x 220V	2340726700L
4/27 4HES 220 2.2 kW Solar	308072427S			4	27	4" VS 4/27	602042701050063			
6/13 4HES 220 2.2 kW Solar	308072613S			6	13	4" VS 6/13	602061301060063			
6/19 4HES 220 3.0 kW Solar	308073619S	Drive-Tech 3.030 MP	314000161	6	19	4" VS 6/19	602061901060063	3,0	3x 220V	2340736700L
4/44 4HES 220 4.0 kW Solar	308074444S	Drive-Tech 3.030 MP	314000161	4	44	4" VS 4/44	602044401050063	4,0	3x 220V	2340746700L
6/34 4HES 220 4.0 kW Solar	308074634S			6	34	4" VS 6/34	602063401060063			
8/23 4HES 220 4.0 kW Solar	308074823S			8	23	4" VS 8/23	602082301060063			
10/08 4HES 220 4.0 kW Solar	308074108S			10	18	4" VS 10/18	602121801060063			

PACKAGES GRID PUMP KITS 220 V AC

High Efficiency System		Controller		Pump (BSPP)				Motor	
Model	Order No.	Drive Model	Part No.	m^3/h	Stages	Pump	Part No.	P_N [kW]	Part No.
1/26 4HES 220 1.1 kW	308071126	Drive-Tech MINI 2.011	002149112	1	26	4" VS 1/26	602012601050063	1,1	2340716700L
2/20 4HES 220 1.1 kW	308071220			2	20	4" VS 2/20	602022001050063		
4/14 4HES 220 1.1 kW	308071414			4	14	4" VS 4/14	602041401050063		
2/27 4HES 220 2.2 kW	308072227	Drive-Tech MINI 2.015	002149152	2	27	4" VS 2/27	602022701050063	2,2	2340726700L
4/27 4HES 220 2.2 kW	308072427			4	27	4" VS 4/27	602042701050063		
6/13 4HES 220 2.2 kW	308072613			6	13	4" VS 6/13	602061301060063		
6/19 4HES 220 3.0 kW	308073619	Drive-Tech 3.030 MP	314000161	6	19	4" VS 6/19	602061901060063	3,0	2340736700L
4/44 4HES 220 4.0 kW	308074444	Drive-Tech 3.030 MP	314000161	4	44	4" VS 4/44	602044401050063	4,0	2340746700L
6/34 4HES 220 4.0 kW	308074634			6	34	4" VS 6/34	602063401060063		
8/23 4HES 220 4.0 kW	308074823			8	23	4" VS 8/23	602082301060063		
10/08 4HES 220 4.0 kW	308074108			10	18	4" VS 10/18	602121801060063		

Motor lead length: ≤ 2,2: 1,5 m; ≥ 3: 2,5 m
316SS kits with additional digit "B" (e.g. 308062001 B)
Brakish water kits with additional digit "D" (e.g. 308062001 D)

4" HIGH EFFICIENCY SYSTEM (HES) PACKAGE OVERVIEW

PACKAGES GRID PUMP KITS 380 V AC WITH DV/DT FILTER

High Efficiency System		Controller		Pump (BSPP)				Motor		Output Filter	
Model	Order No.	Drive Model	Part No.	m³/h	Stages	Pump	Part No.	P_N [kW]	Part No.	Type	Part No.
2/27 4HES 380 2.2 kW	308062227	Drive-Tech MINI 4.011	314000162	2	27	4" VS 2/27	602022701050063	2,2	2340626700L	dV/dt	314005134
4/27 4HES 380 2.2 kW	308062427			4	27	4" VS 4/27	602042701050063				
6/13 4HES 380 2.2 kW	308062613			6	13	4" VS 6/13	602061301060063				
6/19 4HES 380 3.0 kW	308063619	Drive-Tech MINI 4.022	314000163	6	19	4" VS 6/19	602061901060063	3,0	2340636700L	dV/dt	314005134
4/44 4HES 380 4.0 kW	308064444	Drive-Tech MINI 4.040	314000164	4	44	4" VS 4/44	602044401050063	4,0	2340643421L	dV/dt	314005134
6/34 4HES 380 4.0 kW	308064634			6	34	4" VS 6/34	602063401060063				
8/23 4HES 380 4.0 kW	308064823			8	23	4" VS 8/23	602082301060063				
10/08 4HES 380 4.0 kW	308064108			10	18	4" VS 10/18	602121801060063				

PACKAGES GRID PUMP KITS 380 V AC WITH SINUS FILTER

High Efficiency System		Controller		Pump (BSPP)				Motor		Output Filter	
Model	Order No.	Drive Model	Part No.	m³/h	Stages	Pump	Part No.	P_N [kW]	Part No.	Type	Part No.
2/27 4HES 380 2.2 kW-Sin	308062091	Drive-Tech MINI 4.011	314000162	2	27	4" VS 2/27	602022701050063	2,2	2340626700L	sinus	314005135
4/27 4HES 380 2.2 kW-Sin	308062092			4	27	4" VS 4/27	602042701050063				
6/13 4HES 380 2.2 kW-Sin	308062093			6	13	4" VS 6/13	602061301060063				
6/19 4HES 380 3.0 kW-Sin	308063091	Drive-Tech MINI 4.022	314000163	6	19	4" VS 6/19	602061901060063	3,0	2340636700L	sinus	314005135
4/44 4HES 380 4.0 kW-Sin	308064091	Drive-Tech MINI 4.040	314000164	4	44	4" VS 4/44	602044401050063	4,0	2340643421L	sinus	314005135
6/34 4HES 380 4.0 kW-Sin	308064092			6	34	4" VS 6/34	602063401060063				
8/23 4HES 380 4.0 kW-Sin	308064093			8	23	4" VS 8/23	602082301060063				
10/08 4HES 380 4.0 kW-Sin	308064094			10	18	4" VS 10/18	602121801060063				

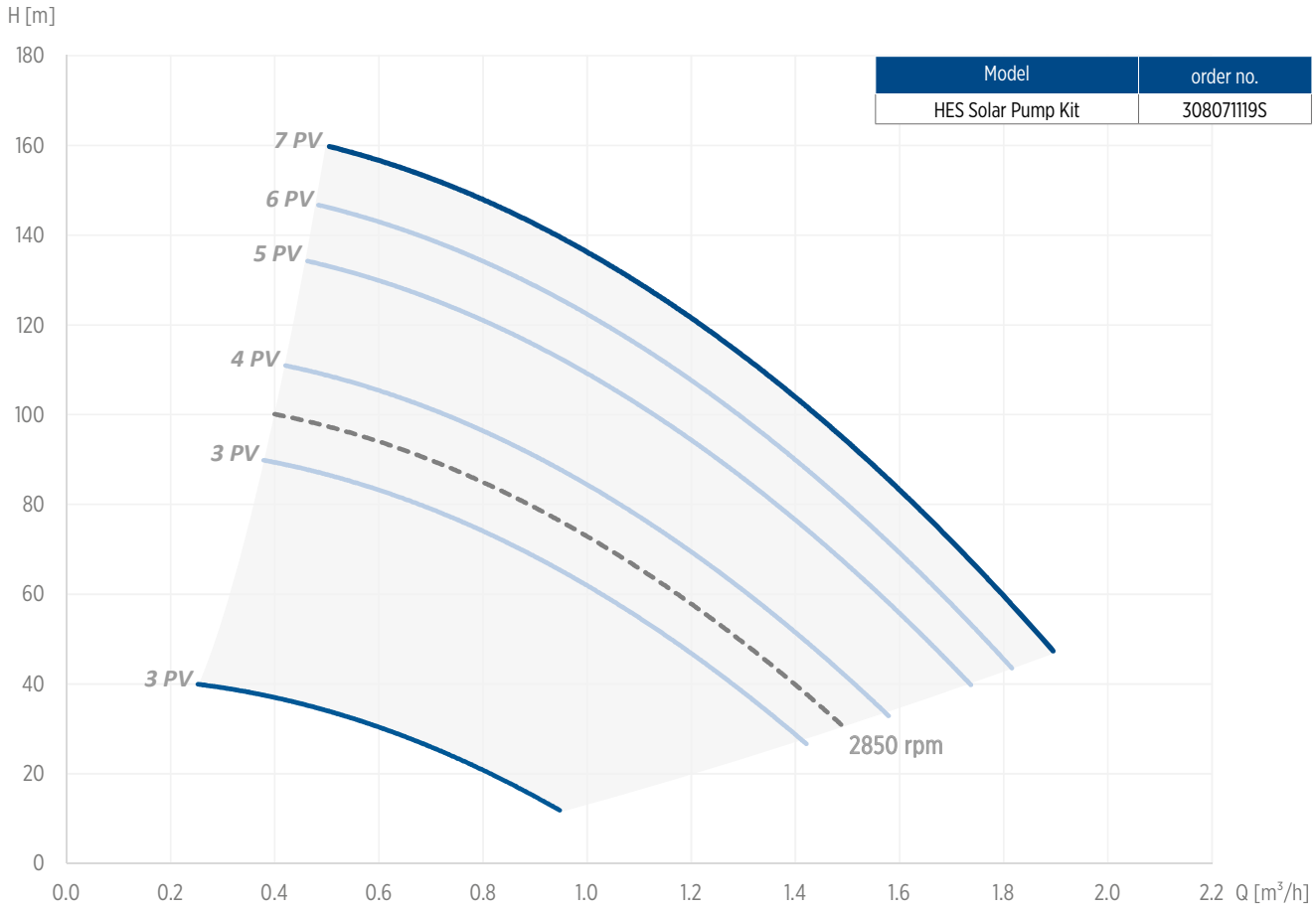
Motor lead length: ≤ 2,2: 1,5 m; ≥ 3: 2,5 m
316SS kits with additional digit "B" (e.g. 308062001 B)
Brakish water kits with additional digit "D" (e.g. 308062001 D)

4" HES PACKAGE 0.55 - 0.75 KW

VS 1/19 - 230 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select						rpm [min⁻¹]
	3	3	4	5	6	7	2850
	Flow - cubic meter / hour [m³/h]						
10	1,00	1,60	1,80	2,00	2,10	2,15	1,70
20	0,80	1,50	1,70	1,90	2,00	2,10	1,60
30	0,60	1,40	1,60	1,80	1,95	2,05	1,50
40	0,25	1,30	1,50	1,70	1,85	1,95	1,40
50		1,20	1,40	1,65	1,75	1,85	1,30
60		1,00	1,30	1,55	1,65	1,80	1,20
70		0,90	1,20	1,45	1,60	1,70	1,10
80		0,70	1,10	1,35	1,50	1,65	0,90
90		0,40	0,90	1,25	1,40	1,55	0,75
100			0,70	1,15	1,30	1,45	0,40
110			0,50	1,00	1,15	1,35	
120				0,80	1,05	1,20	
130				0,60	0,90	1,15	
140					0,70	0,95	
150					0,50	0,75	
160						0,55	



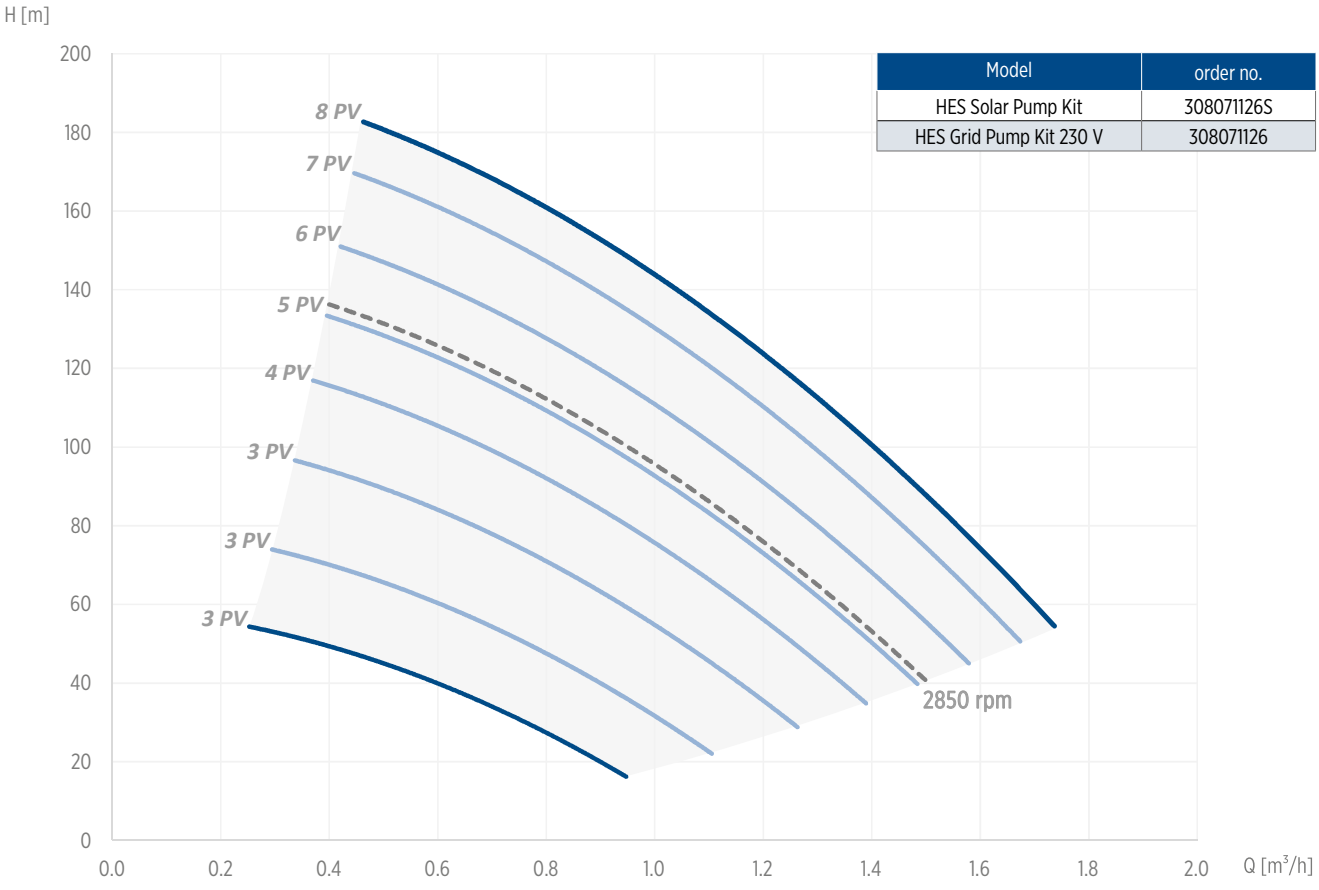
Model	order no.
HES Solar Pump Kit	308071119S

4" HES PACKAGE 0.55 - 1.1 KW

VS 1/26 - 230 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select								rpm [min⁻¹]
	3	3	3	4	5	6	7	8	2850
	Flow - cubic meter / hour [m³/h]								
40	0,66	0,88	1,15	1,35	1,50	1,60	1,75	1,85	1,50
50	0,40	0,75	1,05	1,25	1,40	1,55	1,65	1,75	1,45
60		0,62	0,95	1,15	1,30	1,45	1,60	1,70	1,35
70		0,40	0,80	1,05	1,20	1,35	1,55	1,65	1,25
80			0,65	0,95	1,10	1,30	1,45	1,55	1,15
90			0,50	0,85	1,05	1,20	1,35	1,50	1,10
100				0,70	9,00	1,10	1,30	1,40	0,95
110				0,55	0,80	1,00	1,20	1,30	0,85
120					0,65	0,90	1,15	1,25	0,70
130					0,45	0,75	1,00	1,15	0,50
140						0,65	0,90	1,05	
150						0,45	0,75	0,95	
160							0,60	0,80	
170							0,45	0,65	



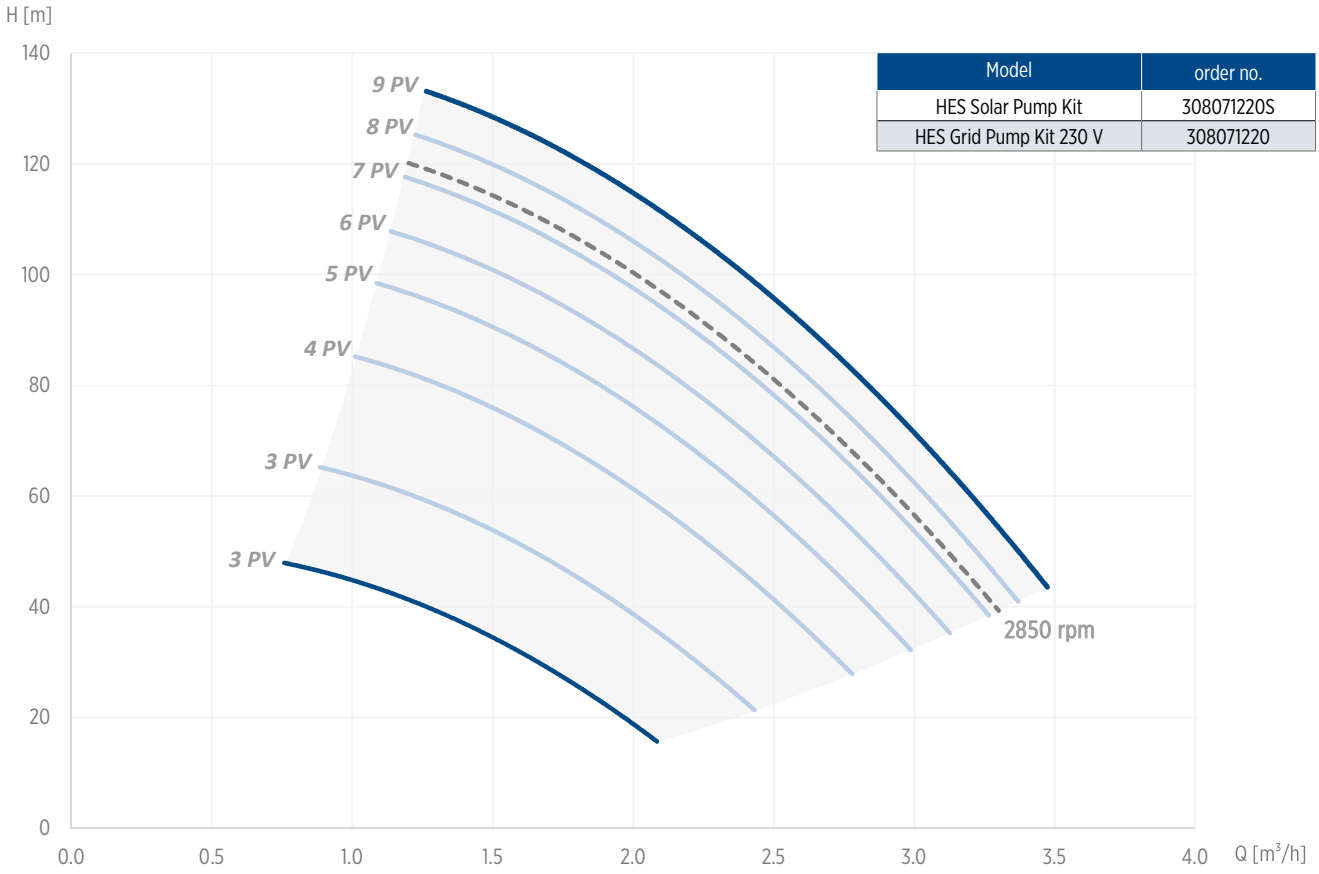
Model	order no.
HES Solar Pump Kit	308071126S
HES Grid Pump Kit 230 V	308071126

4" HES PACKAGE 0.55 - 1.1 KW

VS 2/20 - 230 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select								rpm [min⁻¹]
	3	3	4	5	6	7	8	9	2850
	Flow - cubic meter / hour [m³/h]								
10	2,25	2,70	3,10	3,40	3,50	3,70	3,80	3,90	3,60
20	2,00	2,40	2,90	3,20	3,40	3,50	3,70	3,80	3,50
30	1,65	2,30	2,70	3,00	3,20	3,40	3,50	3,70	3,30
40	1,25	2,00	2,50	2,80	3,00	3,20	3,30	3,50	3,10
50		1,60	2,30	2,60	2,80	3,10	3,20	3,40	2,90
60		1,20	2,00	2,40	2,70	2,90	3,00	3,20	2,80
70			1,70	2,20	2,40	2,70	2,80	3,00	2,50
80			1,30	1,90	2,20	2,50	2,60	2,80	2,30
90				1,60	1,90	2,20	2,40	2,60	2,00
100				1,00	1,60	1,90	2,20	2,40	1,70
110					1,10	1,60	1,90	2,10	1,20
120						1,10	1,50	1,80	
130							1,00	1,50	



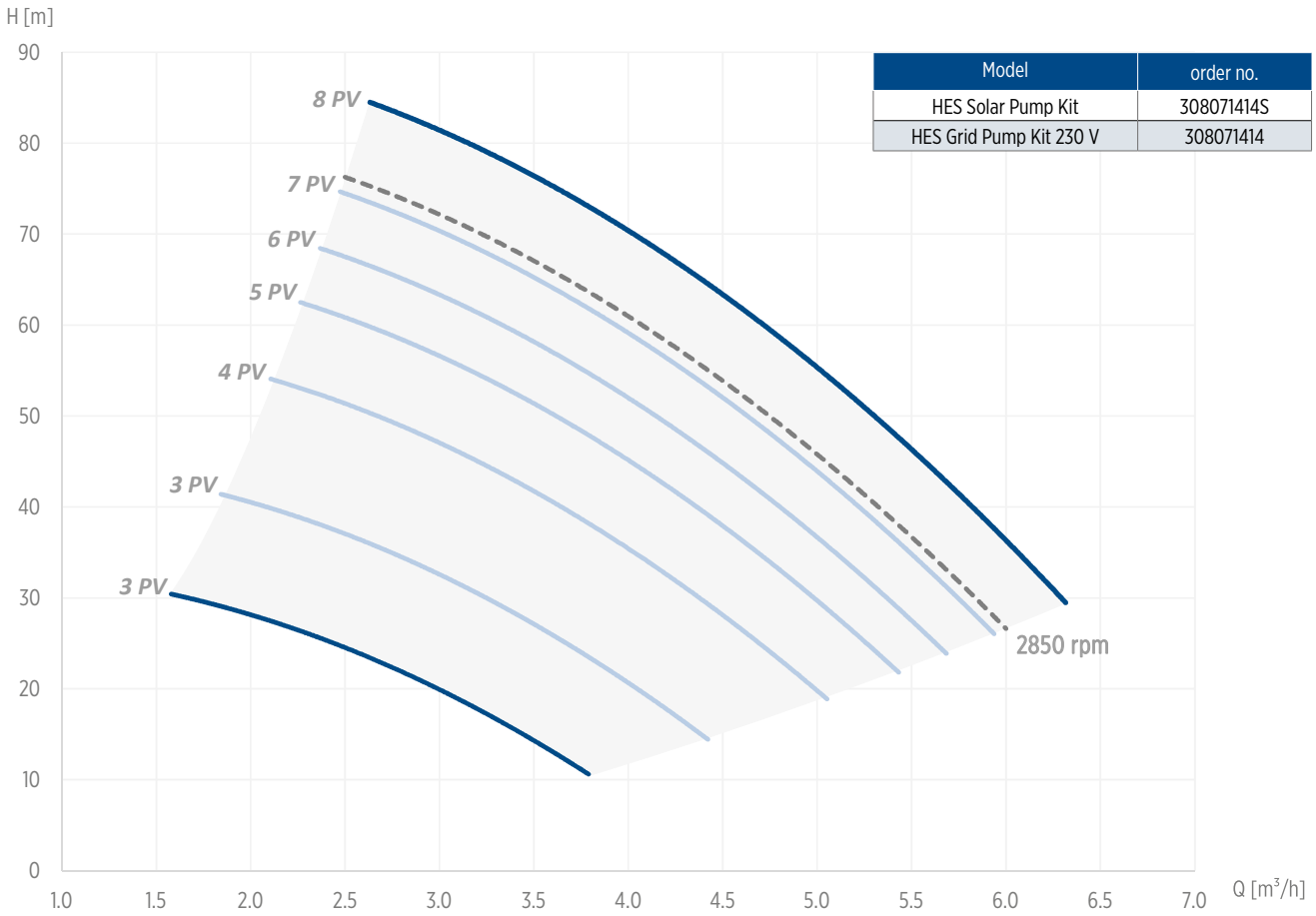
Model	order no.
HES Solar Pump Kit	308071220S
HES Grid Pump Kit 230 V	308071220

4" HES PACKAGE 0.55 - 1.1 KW

VS 4/14 - 230 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select							rpm [min⁻¹]
	3	3	4	5	6	7	8	2850
	Flow - cubic meter / hour [m³/h]							
10	3,75	4,70	5,50	6,00	6,40	6,70	7,00	6,80
15	3,50	4,30	5,30	5,70	6,20	6,50	6,90	6,60
20	3,00	4,00	5,00	5,50	5,90	6,30	6,70	6,40
25	2,50	3,60	4,70	5,20	5,60	6,10	6,50	6,20
30	1,70	3,30	4,40	5,00	5,30	5,80	6,30	5,90
35		2,70	4,00	4,60	5,10	5,60	6,10	5,70
40		2,20	3,60	4,30	4,80	5,30	5,80	5,40
45			3,20	4,00	4,50	5,00	5,50	5,10
50			2,70	3,60	4,20	4,70	5,30	4,80
55			2,10	3,20	3,70	4,40	5,00	4,50
60				2,60	3,30	4,10	4,70	4,20
65				2,00	2,80	3,60	4,40	3,70
70					2,20	3,20	4,00	3,30
75						2,70	3,60	2,80
80							3,20	
85							2,70	



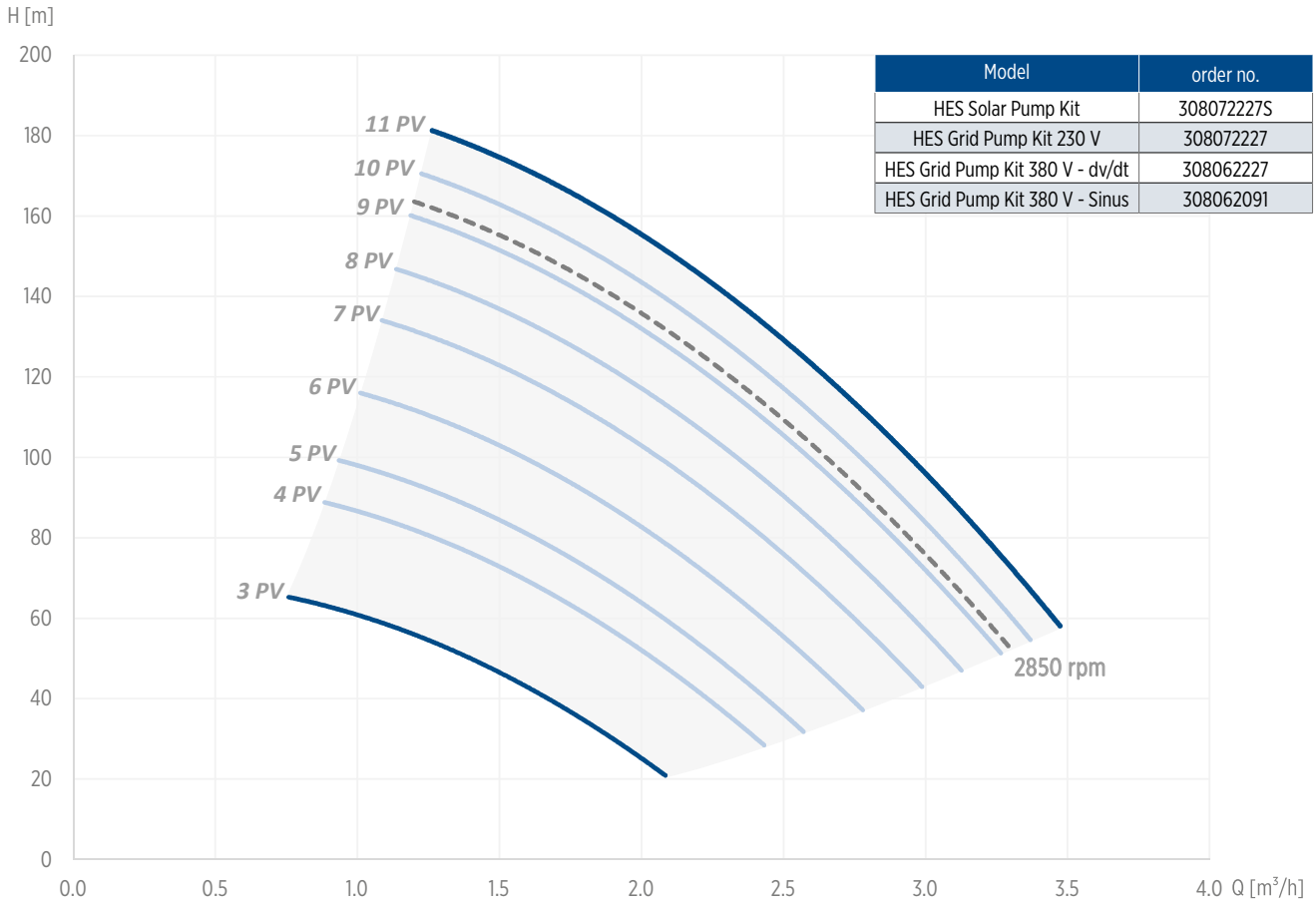
Model	order no.
HES Solar Pump Kit	308071414S
HES Grid Pump Kit 230 V	308071414

4" HES PACKAGE 1.1 - 2.2 KW

VS 2/27- 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min⁻¹]
	3	4	5	6	7	8	9	10	11	2850
	Flow - cubic meter / hour [m³/h]									
40	1,60	2,20	2,50	2,70	3,00	3,20	3,40	3,50	3,70	3,45
50	1,30	2,00	2,20	2,60	2,90	3,10	3,30	3,40	3,60	3,35
60	1,00	1,80	2,10	2,40	2,70	3,00	3,20	3,30	3,50	3,25
70		1,60	1,90	2,20	2,60	2,80	3,00	3,20	3,30	3,10
80		1,30	1,60	2,10	2,40	2,70	2,90	3,10	3,20	2,95
90		0,90	1,30	1,90	2,30	2,50	2,80	2,90	3,10	2,85
100			1,00	1,60	2,10	2,30	2,60	2,80	3,00	2,70
110				1,30	1,80	2,20	2,40	2,60	2,80	2,50
120				0,90	1,60	2,00	2,30	2,50	2,70	2,40
130					1,30	1,70	2,00	2,30	2,50	2,20
140						1,40	1,80	2,10	2,30	1,90
150							1,60	1,90	2,10	1,70
160							1,20	1,60	1,90	1,30
170								1,30	1,70	
180									1,30	



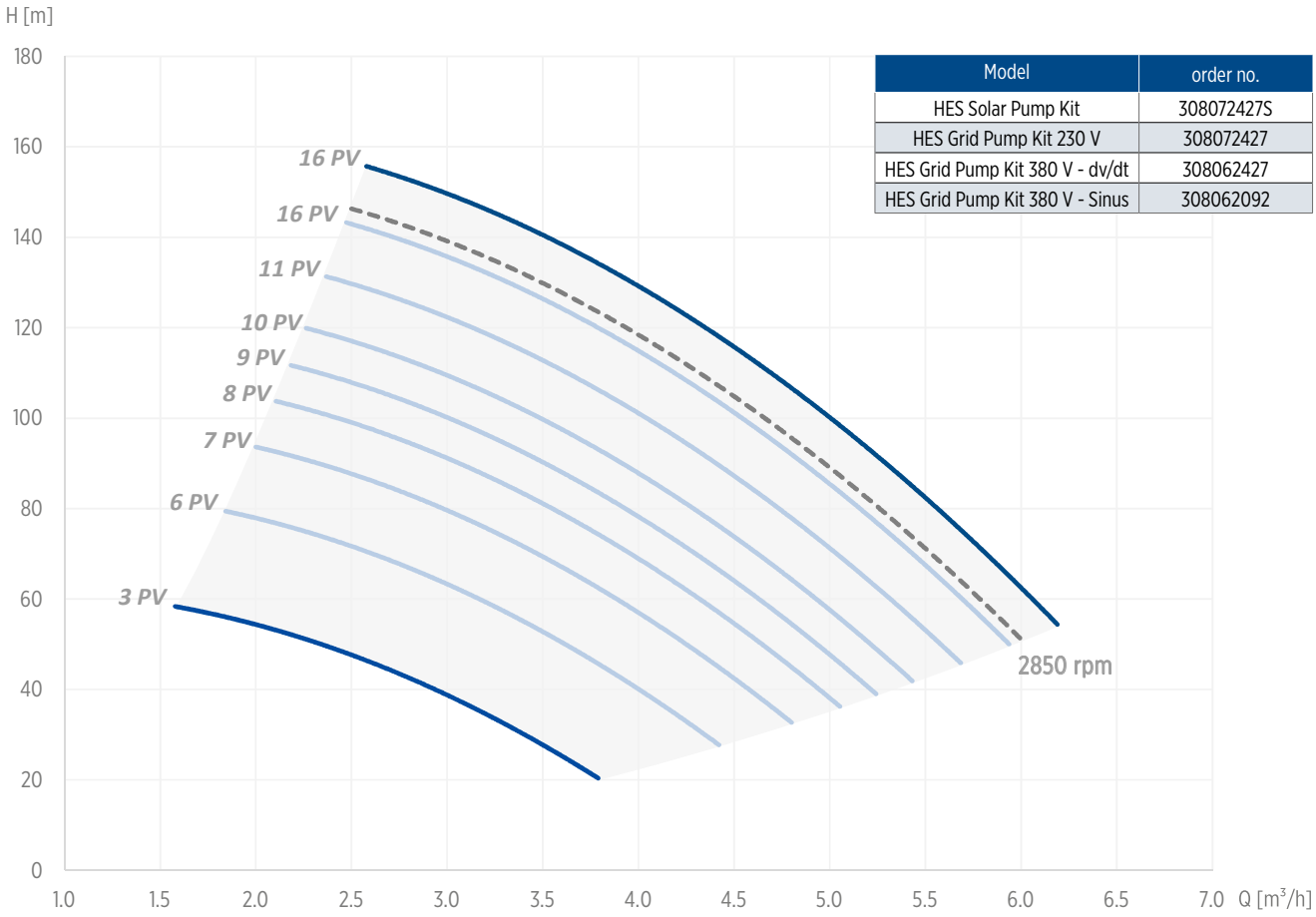
Model	order no.
HES Solar Pump Kit	308072227S
HES Grid Pump Kit 230 V	308072227
HES Grid Pump Kit 380 V - dv/dt	308062227
HES Grid Pump Kit 380 V - Sinus	308062091

4" HES PACKAGE 1.1 - 2.2 KW

VS 4/27 - 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min⁻¹]
	3	6	7	8	9	10	11	16	16	2850
	Flow - cubic meter / hour [m³/h]									
40	3,00	4,01	4,58	4,95	5,22	5,48	5,83	6,17	6,50	6,40
50	2,45	3,62	4,25	4,65	4,94	5,22	5,58	5,94	6,34	6,10
60	1,50	3,17	3,89	4,32	4,63	4,93	5,32	5,69	6,12	5,75
70		2,62	3,48	3,96	4,30	4,63	5,04	5,44	5,88	5,60
80		1,79	2,98	3,55	3,94	4,29	4,74	5,16	5,63	5,35
90			2,34	3,07	3,52	3,92	4,41	4,87	5,37	5,00
100				2,44	3,02	3,49	4,05	4,55	5,00	4,70
110					2,35	2,98	3,63	4,19	4,70	4,35
120						2,27	3,14	3,80	4,40	4,00
130							2,49	3,33	3,67	3,50
140								2,73	3,16	3,00
150									2,49	



Model	order no.
HES Solar Pump Kit	308072427S
HES Grid Pump Kit 230 V	308072427
HES Grid Pump Kit 380 V - dv/dt	308062427
HES Grid Pump Kit 380 V - Sinus	308062092

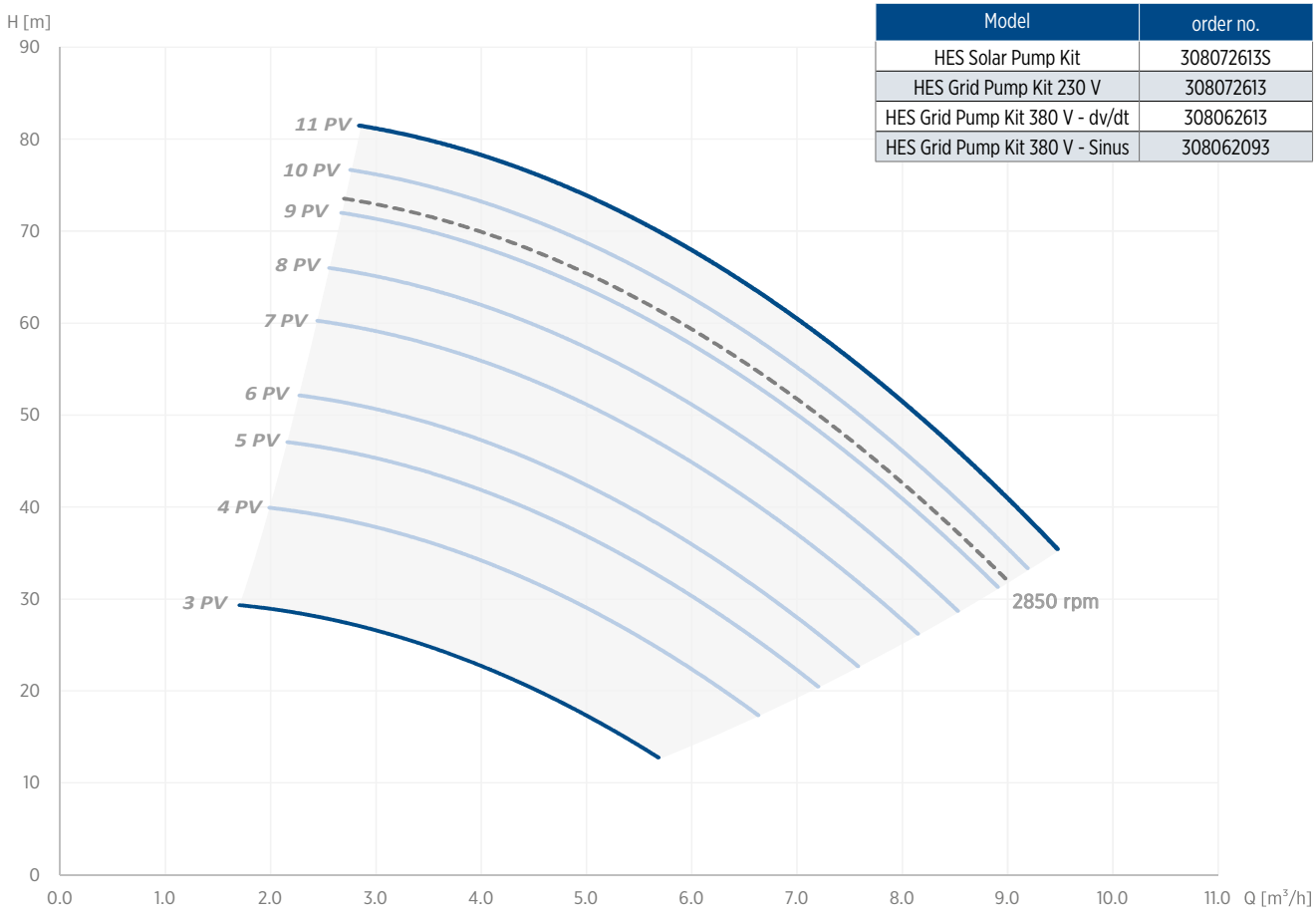
4" HES PACKAGE 1.1 - 2.2 KW

VS 6/13- 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min⁻¹]
	3	4	5	6	7	8	9	10	11	2850
	Flow - cubic meter / hour [m³/h]									
20	4,50	6,30	7,20	7,90	8,80	9,20	9,75	10,00	10,55	9,90
25	3,50	5,60	6,80	7,30	8,25	8,90	9,20	9,70	10,20	9,35
30	1,80	4,90	6,00	6,90	7,90	8,35	9,00	9,25	9,85	9,20
35		3,90	5,50	6,20	7,40	7,95	8,50	9,00	9,50	8,75
40		2,00	4,55	5,45	6,75	7,40	8,00	8,60	9,00	8,25
45			3,50	4,50	6,00	6,90	7,70	8,10	8,65	7,90
50				3,20	5,20	6,15	7,00	7,65	8,00	7,25
55					4,50	5,50	6,50	7,00	7,50	6,75
60					2,55	4,50	5,75	6,40	7,00	5,00
65						3,50	4,90	5,70	6,54	5,15
70							3,50	4,90	5,85	3,70
75								3,95	5,00	
80									3,50	

Model	order no.
HES Solar Pump Kit	308072613S
HES Grid Pump Kit 230 V	308072613
HES Grid Pump Kit 380 V - dv/dt	308062613
HES Grid Pump Kit 380 V - Sinus	308062093

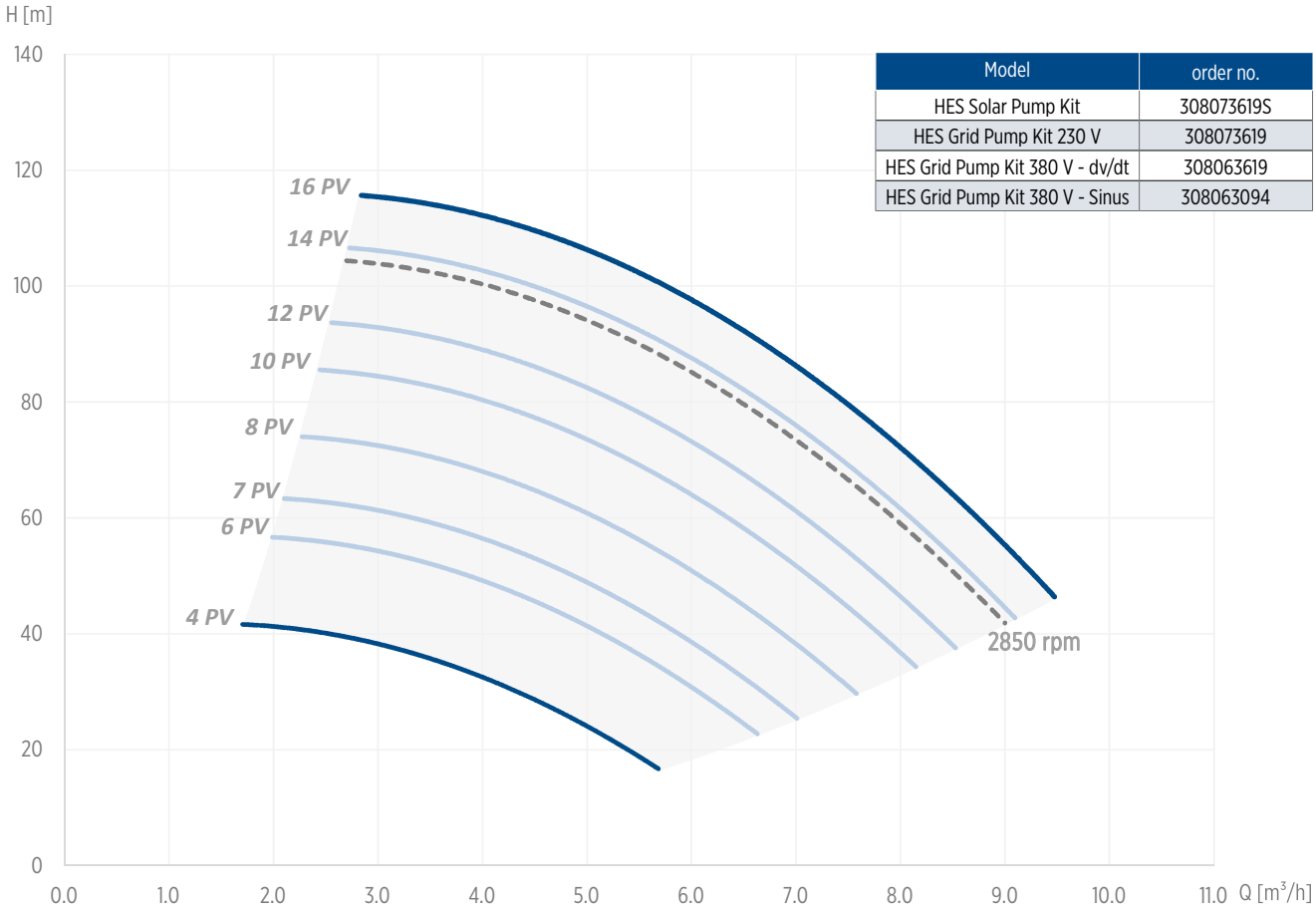


4" HES PACKAGE 2.2 - 3.0 KW

VS 6/19- 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select								rpm [min⁻¹]
	4	6	7	8	10	12	14	16	2850
	Flow - cubic meter / hour [m³/h]								
30	4,50	6,07	6,68	7,56	8,40	8,95	9,75	10,27	9,60
40	2,50	5,15	5,88	6,88	7,80	8,39	9,24	9,80	9,10
50		3,88	4,88	6,08	7,13	7,78	8,70	9,29	8,60
60			3,34	5,10	6,36	7,09	8,10	8,74	8,00
70				3,64	5,41	6,29	7,44	8,14	7,35
80					4,08	5,30	6,68	7,47	6,55
90						3,82	5,77	6,70	5,60
100							4,50	5,76	4,40
110								4,44	



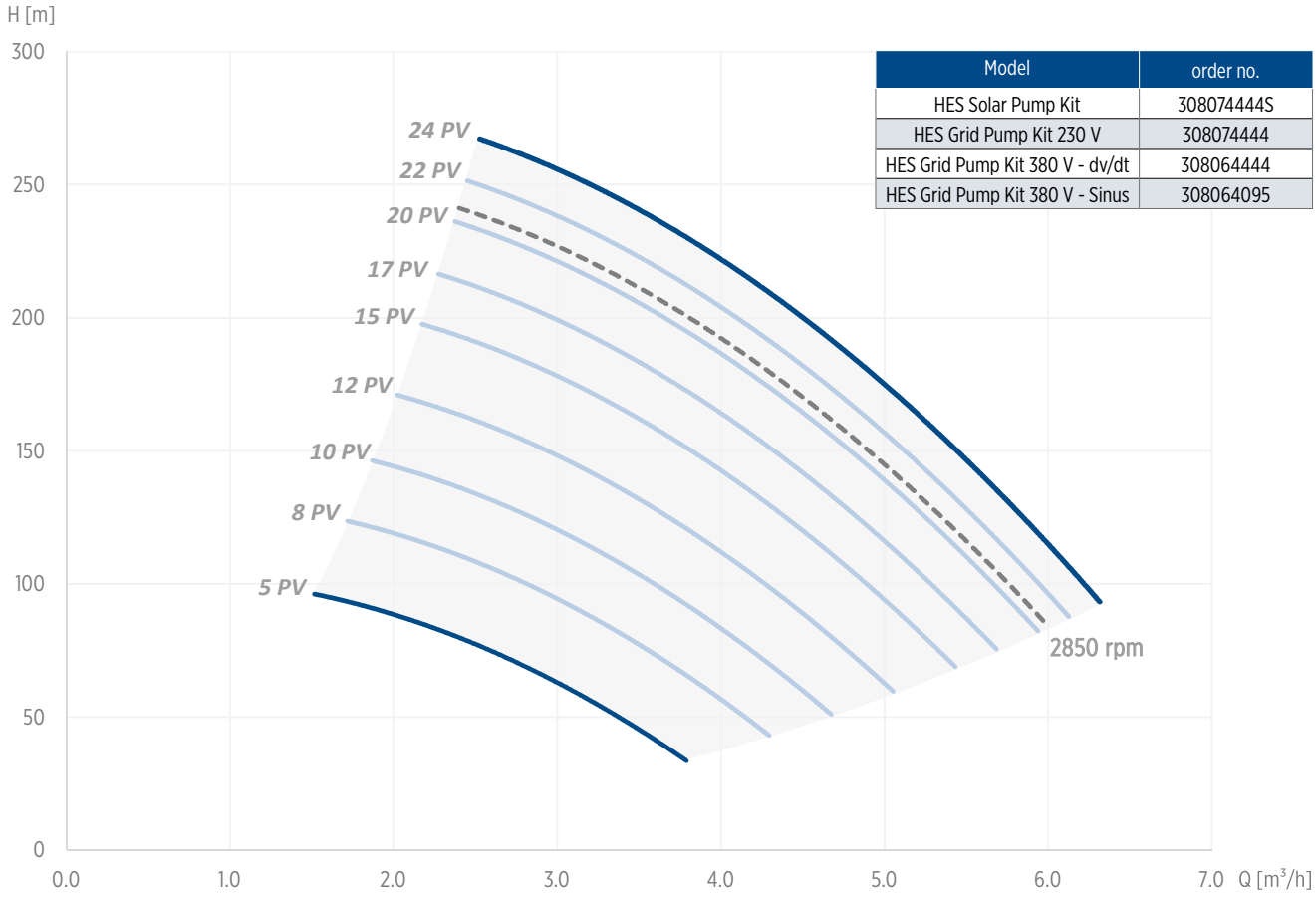
Model	order no.
HES Solar Pump Kit	308073619S
HES Grid Pump Kit 230 V	308073619
HES Grid Pump Kit 380 V - dv/dt	308063619
HES Grid Pump Kit 380 V - Sinus	308063094

4" HES PACKAGE 3.0 - 4.0 KW

VS 4/44 - 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select								rpm [min⁻¹]
	8	10	12	15	17	20	22	24	2850
	Flow - cubic meter / hour [m³/h]								
100	3,10	3,59	4,27	4,89	5,29	5,67	5,95	6,22	6,00
110	2,76	3,31	4,05	4,70	5,11	5,51	5,79	6,08	5,70
120	2,37	3,01	3,81	4,51	4,93	5,34	5,64	5,93	5,50
130	1,85	2,65	3,56	4,29	4,74	5,17	5,47	5,77	5,45
140		2,22	3,27	4,07	4,54	4,99	5,30	5,61	5,15
150		1,60	2,95	3,83	4,33	4,80	5,13	5,45	4,95
160			2,58	3,57	4,11	4,60	4,95	5,28	4,75
170			2,10	3,28	3,87	4,39	4,75	5,10	4,65
180				2,95	3,61	4,17	4,55	4,91	4,50
190				2,56	3,32	3,93	4,34	4,72	4,00
210					2,60	3,38	3,86	4,29	3,50
220					2,10	3,06	3,59	4,06	3,20
230						2,68	3,29	3,81	2,80
240							2,95	3,53	
250							2,54	3,22	
260								2,86	



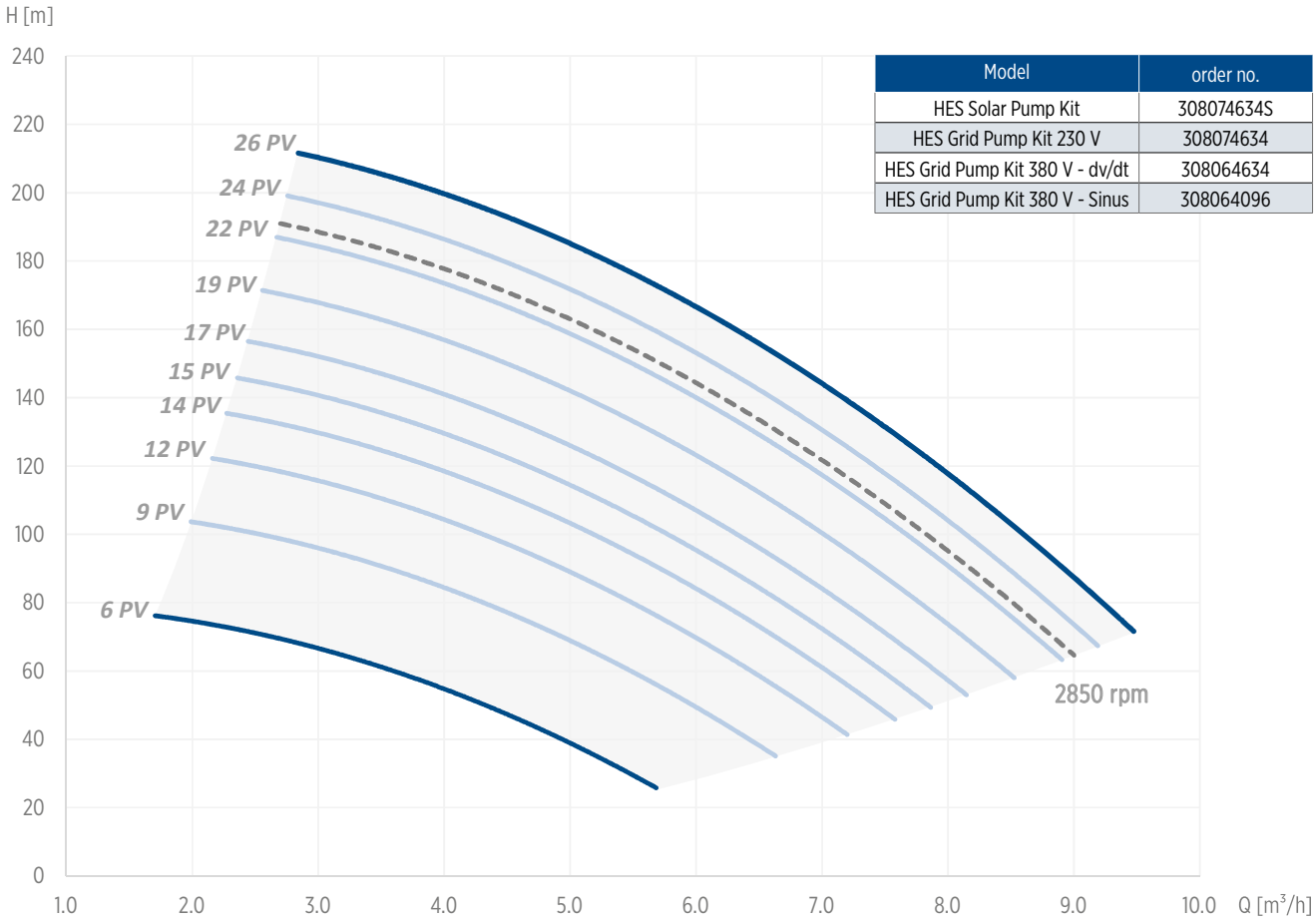
Model	order no.
HES Solar Pump Kit	308074444S
HES Grid Pump Kit 230 V	308074444
HES Grid Pump Kit 380 V - dv/dt	308064444
HES Grid Pump Kit 380 V - Sinus	308064095

4" HES PACKAGE 3.0 - 4.0 KW

VS 6/34- 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min⁻¹]
	9	12	14	15	17	19	22	24	26	2850
	Flow - cubic meter / hour [m³/h]									
50	5,97	6,86	7,43	7,84	8,25	8,78	9,31	9,70	10,00	9,45
60	5,48	6,44	7,04	7,48	7,91	8,46	9,01	9,41	9,80	9,15
70	4,94	5,99	6,63	7,10	7,55	8,13	8,69	9,11	9,60	8,85
80	4,32	5,49	6,19	6,69	7,16	7,78	8,37	8,80	9,20	8,50
90	3,56	4,94	5,72	6,25	6,76	7,41	8,03	8,48	9,00	8,20
100	2,55	4,31	5,19	5,78	6,33	7,02	7,67	8,14	8,65	7,85
110		3,55	4,59	5,26	5,86	6,60	7,29	7,79	8,20	7,45
120		2,50	3,89	4,66	5,34	6,15	6,89	7,42	8,00	7,00
130			2,98	3,97	4,76	5,66	6,47	7,03	7,50	6,65
140				3,08	4,08	5,12	6,00	6,61	7,10	6,10
150					3,22	4,50	5,50	6,15	6,75	5,65
160					1,84	3,76	4,93	5,66	6,30	5,00
170						2,75	4,27	5,11	5,90	4,40
180							3,45	4,47	5,30	3,55
190							2,23	3,71	4,85	2,30
200								2,65	4,00	



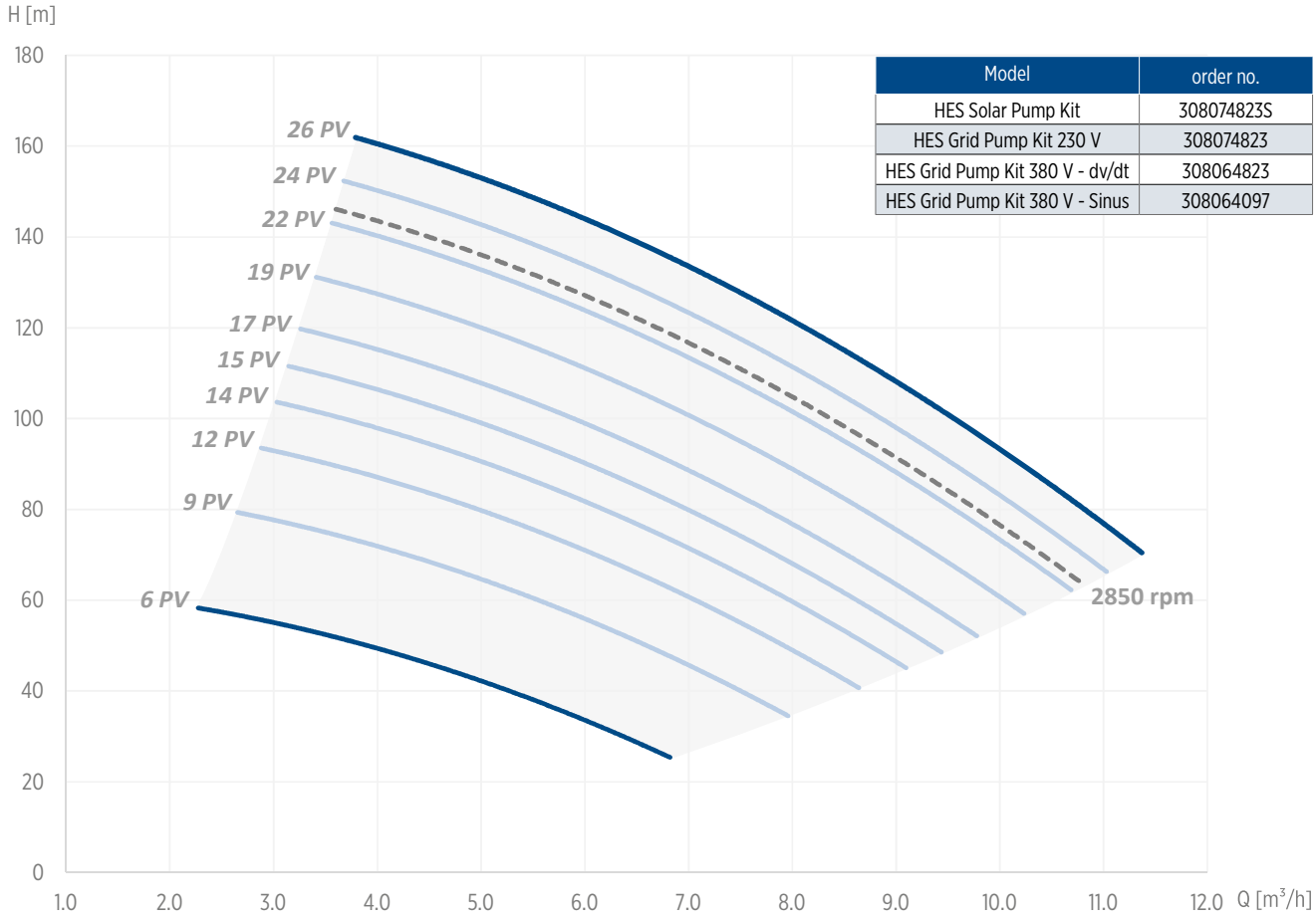
Model	order no.
HES Solar Pump Kit	308074634S
HES Grid Pump Kit 230 V	308074634
HES Grid Pump Kit 380 V - dv/dt	308064634
HES Grid Pump Kit 380 V - Sinus	308064096

4" HES PACKAGE 3.0 - 4.0 KW

VS 8/23 - 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min-1]
	9	12	14	15	17	19	22	24	26	2850
	Flow - cubic meter / hour [m³/h]									
50	6,60	7,92	8,74	9,34	9,92	10,67	11,40	11,94	12,50	11,60
60	5,55	7,07	7,98	8,62	9,24	10,05	10,82	11,39	12,00	11,00
70	4,28	6,11	7,13	7,85	8,52	9,39	10,21	10,81	11,40	10,40
80	2,51	4,97	6,18	6,99	7,74	8,68	9,56	10,20	10,80	9,79
90		3,54	5,07	6,02	6,87	7,91	8,87	9,55	10,40	9,10
100			3,68	4,88	5,89	7,07	8,12	8,86	9,60	8,30
110				3,43	4,73	6,12	7,31	8,11	8,90	7,50
120					3,22	5,01	6,39	7,29	8,00	6,59
130						3,61	5,34	6,38	7,40	5,50
140							4,00	5,33	6,50	4,15
150								4,00	5,50	



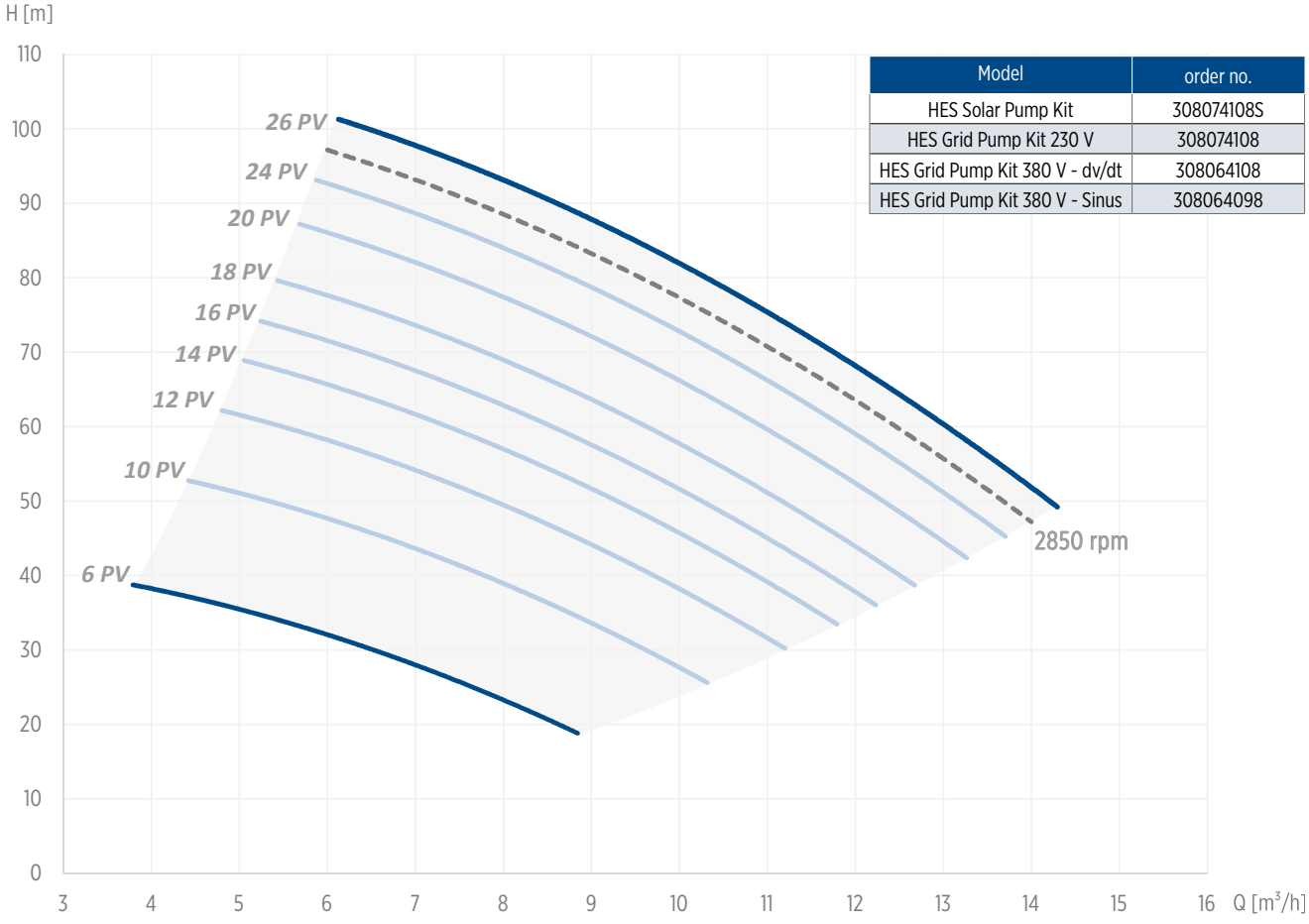
Model	order no.
HES Solar Pump Kit	308074823S
HES Grid Pump Kit 230 V	308074823
HES Grid Pump Kit 380 V - dv/dt	308064823
HES Grid Pump Kit 380 V - Sinus	308064097

4" HES PACKAGE 3.0 – 4.0 KW

VS 10/18- 230 V / 380 V - 3 PH

Standard Polycrystalline PV-Panel 270 Wmp (STC Condition 1000 W/m²)

Head [m]	PV-Panel Select									rpm [min⁻¹]
	10	12	14	16	18	20	22	24	26	2850
	Flow - cubic meter / hour [m³/h]									
30	9,62	11,23	12,25	12,99	13,72	14,67	15,37	16,06	16,29	15,85
35	8,75	10,50	11,58	12,37	13,13	14,12	14,85	15,56	15,80	15,25
40	7,79	9,71	10,88	11,71	12,51	13,55	14,30	15,04	15,30	14,87
45	6,68	8,85	10,12	11,01	11,86	12,95	13,73	14,50	14,70	14,25
50		7,90	9,29	10,26	11,17	12,32	13,14	13,95	14,20	13,65
55		6,81	8,39	9,45	10,43	11,65	12,52	13,36	13,64	13,10
60		5,49	7,37	8,56	9,63	10,95	11,87	12,75	13,00	12,35
65			6,18	7,56	8,76	10,19	11,18	12,11	12,40	11,90
70				6,41	7,79	9,37	10,44	11,44	11,70	11,40
75				4,98	6,67	8,47	9,64	10,72	11,00	10,50
80					5,32	7,46	8,77	9,94	10,30	9,75
85						6,29	7,80	9,10	9,50	8,90
90							6,68	8,17	8,60	7,90
95								7,11	7,60	6,85
100								5,85	6,40	5,50



Model	order no.
HES Solar Pump Kit	308074108S
HES Grid Pump Kit 230 V	308074108
HES Grid Pump Kit 380 V - dv/dt	308064108
HES Grid Pump Kit 380 V - Sinus	308064098

4" HIGH EFFICIENCY SYSTEM (HES) PACKAGE OVERVIEW

PACKAGES 220 V AC

High Efficiency System		Controller		Solar Pump (BSPP)				Motor			Output Filter	
HES Model	Order No.	Drive Model	Part No.	m^3/h	Stages	Pump	Part No.	P_N [kW]	U_N [V]	Part No.	Filter Type	Order No.
HES 0,55 - 1,1 kW	308071001	Drive-Tech MINI 2.011	002149112	-	-	-	-	1,1	3x 220V	2340716700L	-	-
HES 1,1 - 2,2 kW	308072001	Drive-Tech MINI 2.015	002149152	-	-	-	-	2,2	3x 220V	2340726700L	-	-
HES 2,2 - 3,0 kW	308073001	Drive-Tech 3.030 MP	314000161	-	-	-	-	3,0	3x 220V	2340736700L	-	-
HES 3,0 - 4,0 kW	308074001	Drive-Tech 3.030 MP	314000161	-	-	-	-	4,0	3x 220V	2340743421L	-	-

PACKAGES 380 V AC

High Efficiency System		Controller		Solar Pump (BSPP)				Motor			Output Filter*	
HES Model	Order No.	Drive Model	Part No.	m^3/h	Stages	Pump	Part No.	P_N [kW]	U_N [V]	Part No.	Filter Type	Order No.
HES 1,1 - 2,2 kW	308062001	Drive-Tech MINI 4.011	314000162	-	-	-	-	2,2	3x 380V	2340626700L	dv/dt	314005134
	308062002			-	-	-	-				sinus	314005135
HES 2,2 - 3,0 kW	308063001	Drive-Tech MINI 4.022	314000163	-	-	-	-	3,0	3x 380V	2340636700L	dv/dt	314005134
	308063002			-	-	-	-				sinus	314005135
HES 3,0 - 4,0 kW	308064001	Drive-Tech MINI 4.040	314000164	-	-	-	-	4,0	3x 380V	2340643421L	dv/dt	314005134
	308064002			-	-	-	-				sinus	314005135

PACKAGES SOLAR

High Efficiency System		Solar Controller		Solar Pump (BSPP)				Motor			Output Filter	
HES Model	Order No.	Drive Model	Part No.	m^3/h	Stages	Pump	Part No.	P_N [kW]	U_N [V]	Part No.	Filter Type	Order No.
HES Solar 0,55-0,75 kW	308071002S	DTm Solar 2.005 MP	314000165	-	-	-	-	1,1	3x 220V	2340716700L	-	-
HES Solar 0,55 - 1,1 kW	308071001S	DTm Solar 2.011 MP	314000166	-	-	-	-	1,1	3x 220V	2340716700L	-	-
HES Solar 1,1 - 2,2 kW	308072001S	DTm Solar 2.015 MP	314000167	-	-	-	-	2,2	3x 220V	2340726700L	-	-
HES Solar 2,2 - 3,0 kW	308073001S	Drive-Tech 3.030 MP	314000161	-	-	-	-	3,0	3x 220V	2340736700L	-	-
HES Solar 3,0 - 4,0 kW	308074001S	Drive-Tech 3.030 MP	314000161	-	-	-	-	4,0	3x 220V	2340743421L	-	-

Motor lead length: ≤ 2,2: 1,5 m; ≥ 3: 2,5 m
316SS kits with additional digit "B" (e.g. 308062001 B)
Brakish water kits with additional digit "D" (e.g. 308062001 D)

*For lead lenghts up to 120 m use dv/dt filter, for > 120 m use sinus filter

4" 3~ ENCAPSULATED PM MOTOR

SPECIFICATION

- 4" NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ - Franklin encapsulation system
- Factory filled with Franklin's non-toxic water soluble fill solution
- High-capacity *Kingsbury type* water lubricated thrust bearing
- Field replaceable lead using Franklin's exclusive *Water Bloc* technology
- Pressure-equalizing diaphragm
- High efficiency electrical design for low operation costs
- All motors manufactured in ISO 9001 & 14001 certified plants and 100% tested
- Drinking water approvals

- Ratings: 0.55 kW - 3.0 kW; Thrust load 4 kN
- Ratings: 3.0 kW - 4.0 kW; Thrust load 6.5 kN
- Voltage: 220 V / 400 V
- Voltage tolerance: -10% / +6% (50 Hz)
- Nominal ambient temperature: 30 °C with 0.08 m/s cooling flow
- Protection IP68 / insulation class B
- Frequency of starts: max. 20 ; with 3 min. rest period
- Special lead lengths on request
- Vertical and horizontal operation
- All motors with factory installed leads, Motor lead length: ≤ 2,2: 1,5 m; ≥ 3: 2,5 m

STAINLESS STEEL 304

STAINLESS STEEL 316

3~ 304SS / 316SS MODEL NUMBERS 220 V / 100 HZ

P_N [kW]	U_N [V]	Thrust F [N]	Digit 1 - 6	Digit 7 - 10	
				Standard 304SS	Standard 316SS
				Single pack with lead*	Single pack with lead*
0,55 - 1,1	220	4000	234 071	6700L	6800L
1,1 - 2,2	220	4000	234 072	6700L	6800L
2,2 - 3,0	220	4000	234 073	6700L	6800L
3,0 - 4,0	220	6500	234 074	3421L	3521L

3~ 304SS / 316SS MODEL NUMBERS 380 V / 100 HZ

P_N [kW]	U_N [V]	Thrust F [N]	Digit 1 - 6	Digit 7 - 10	
				Standard 304SS	Standard 316SS
				Single pack with lead*	Single pack with lead*
1,1 - 2,2	380	4000	234 062	6700L	6800L
2,2 - 3,0	380	4000	234 063	6700L	6800L
3,0 - 4,0	380	6500	234 064	3421L	3521L

Brakish water models available on demand

4" 3~ ENCAPSULATED PM MOTOR

PERFORMANCE DATA 220 V - 50 HZ

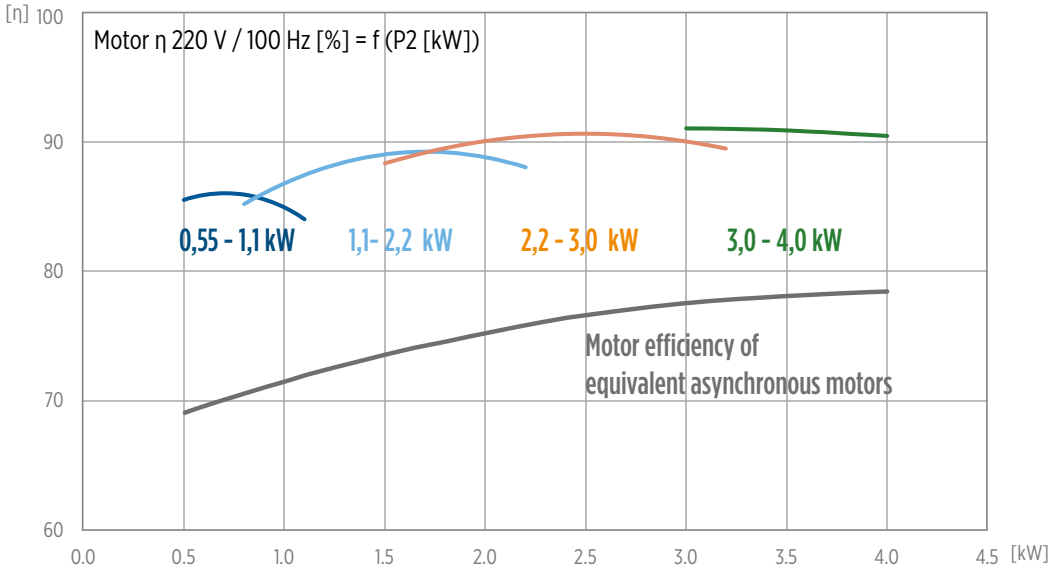
System model number	Motor MDL	P_N [kW]	Thrust F [N]	U_N [V]	n [min-1]	I_N [A]	I_A/I_N [A]	η [%]	cos φ (Pf.) [%]	T_N [Nm]	T_A/T_N* [Nm]
308 071 001	234 071	0,55	4000	220	3000	1,8	1	85,1	0,95	1,8	1
		0,75				2,4		85,6	0,97	2,4	
		1,1				3,8		83,5	0,99	3,5	
308 072 001	234 072	1,1	4000	220	3000	3,4	1	86,4	0,96	3,5	1
		1,5				4,8		88,0	0,97	4,8	
		2,2				7,0		87,0	0,99	7,0	
308 073 001	234 073	2,2	4000	220	3000	6,9	1	90,3	0,96	7,0	1
		3,0				9,4		90,2	0,97	9,6	
308 074 001	234 074	3,0	6500	220	3000	10,2	1	90,7	0,94	9,6	1
		3,7				12,0		91,0	0,96	11,8	
		4,0				13,0		91,0	0,97	12,7	

PERFORMANCE DATA 380 V - 50 HZ

System model number	Motor MDL	P_N [kW]	Thrust F [N]	U_N [V]	n [min-1]	I_N [A]	I_A/I_N [A]	η [%]	cos φ (Pf.) [%]	T_N [Nm]	T_A/T_N* [Nm]
308 062 00X	234 062	1,1	4000	380	3000	2,2	1	86,4	0,95	3,5	1
		1,5				2,8		88,0	0,96	4,8	
		2,2				4,0		87,0	0,97	7,0	
308 063 00X	234 063	2,2	4000	380	3000	4,0	1	89,6	0,95	7,0	1
		3,0				5,4		90,0	0,97	9,6	
308 064 00X	234 064	3,0	6500	380	3000	5,7	1	89,7	0,96	9,6	1
		3,7				6,7		90,2	0,97	11,8	
		4,0				7,3		90,2	0,98	12,7	

Performance data are based on measurements with Franklin Electric original equipment.
*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

EFFICIENCY CURVE AT 3000 RPM



4" 3~ ENCAPSULATED PM MOTOR

WINDING RESISTANCE 220 V / 100 HZ

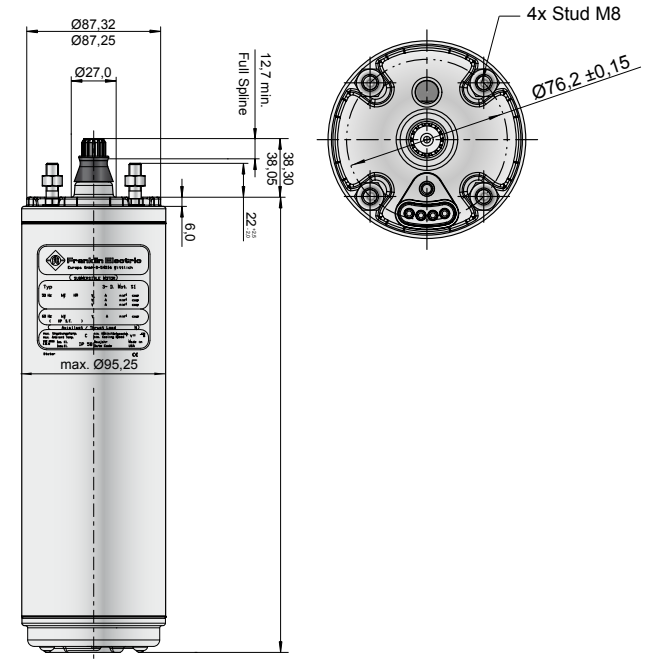
P_N [kW]	U_N [V]	Stator Ref.	U - V (Ohm)	Rotor Ref.
0,55 - 1,1	220	327 460 945	7,7 - 8,14	178 172 901
1,1 - 2,2	220	327 461 945	2,30 - 2,40	178 172 903
2,2 - 3,0	220	327 462 945	1,45 - 1,54	178 172 904
3,0 - 4,0	220	327 463 902	0,78 - 0,82	178 173 921

WINDING RESISTANCE 380 V / 100 HZ

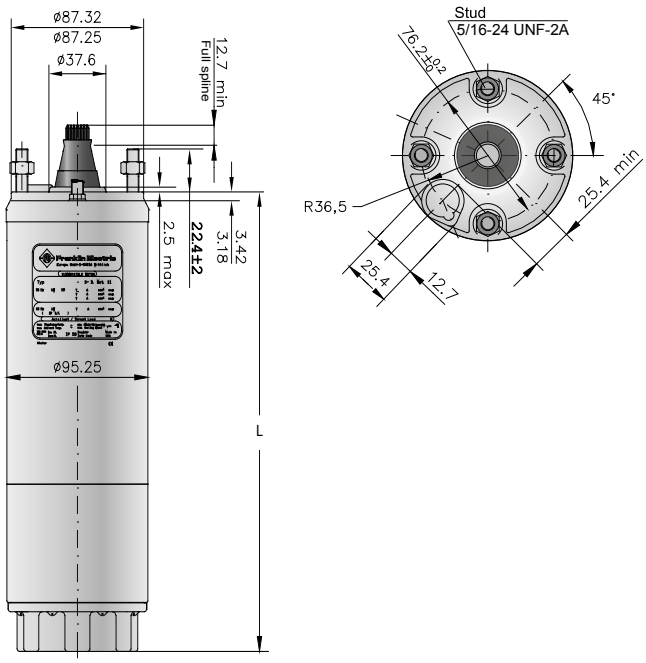
P_N [kW]	U_N [V]	Stator Ref.	U - V (Ohm)	Rotor Ref.
1,1 - 2,2	380	327 451 945	8,0 - 8,4	178 172 903
2,2 - 3,0	380	327 452 945	4,4 - 4,62	178 172 904
3,0 - 4,0	380	327 453 902	2,7 - 2,9	178 173 921

MOTOR DIMENSIONS

0,55 kW - 3,0 kW [4000 N]



3,0 - 4,0 kW [6500 N]

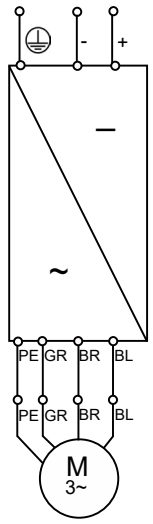


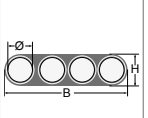
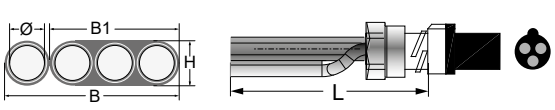
P_N [kW]	U_N [V]	Thrust F [N]	L [mm]	M [kg]	Motor with lead in single pack	
					[mm]	[kg]
0,55 - 1,1	220	4000	218	5,2	530 x 100 x 110	6
1,1 - 2,2	220	4000	263	7,2	530 x 100 x 110	8
2,2 - 3,0	220	4000	353	9,2	560 x 100 x 110	10
3,0 - 4,0	220	6500	429	15,2	560 x 100 x 110	16
1,1 - 2,2	380	4000	263	7,2	560 x 100 x 110	8
2,2 - 3,0	380	4000	353	9,2	560 x 100 x 110	10
3,0 - 4,0	380	6500	429	15,2	796 x 100 x 110	16

tolerances according to NEMA MG 1-18.388

4" 3~ ENCAPSULATED PM MOTOR

ELECTRICAL CONNECTION 3~ MOTORS DOL

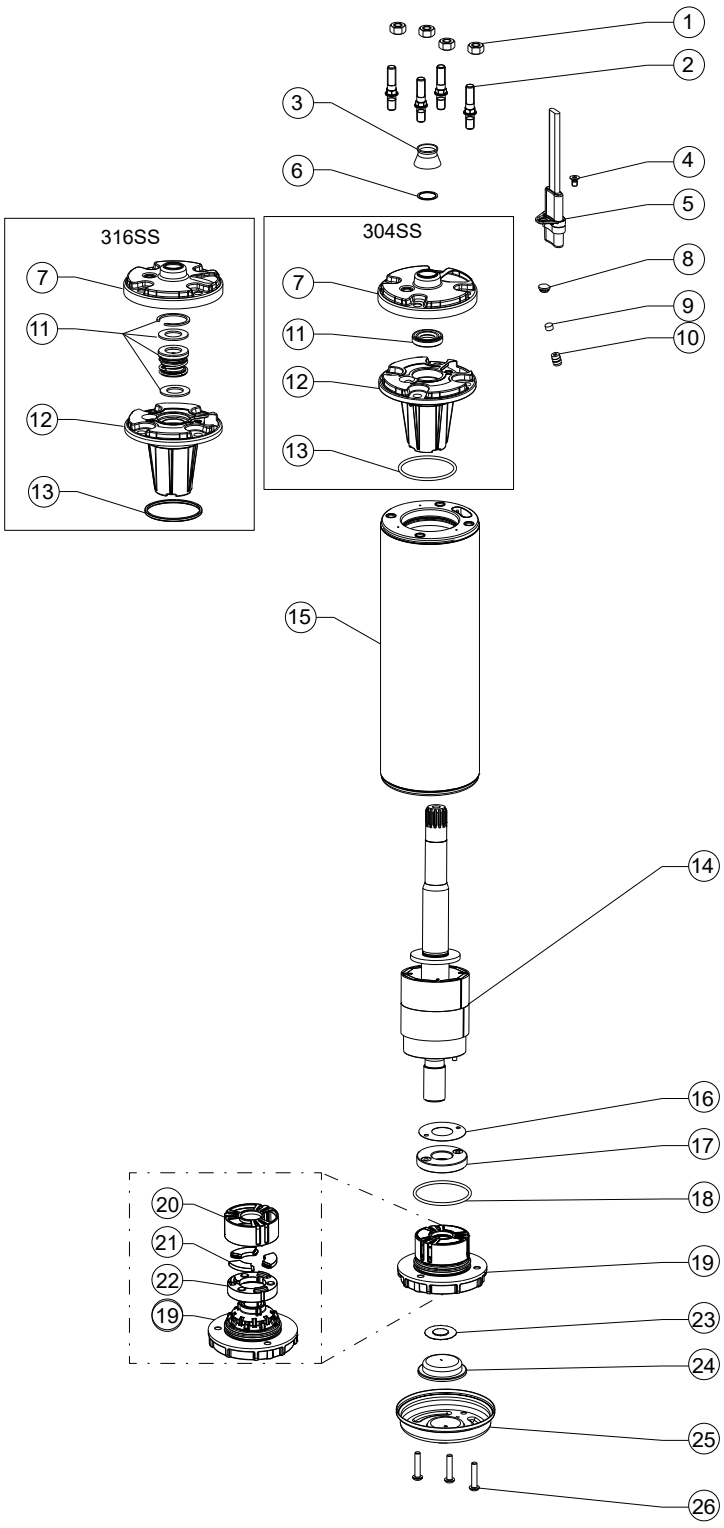


3~ PM motors DOL	Motor lead*						
	0.55 kW - 3.0 kW [4000 N]			3.0 - 4.0 kW [6500 N]			
	Ø [mm²]	B [mm]	H [mm]	Ø [mm²]	B [mm]	B1 [mm]	H mm]
	4 x 1,5	14,6 ± 0,3	5,1 ± 0,3	3 x 1,5 + 1G 1,5	16,8	10,7	5,0
							
	L [m]*	304SS / 316SS		L [m]*	304SS / 316SS		
	1,5	310 178 501		2,5	310 113 502		
	2,5	310 178 502		5	310 113 505		
	5	310 178 505		10	310 113 510		
	10	310 178 510		15	310 113 515		
	15	310 178 515		20	310 113 520		
	20	310 178 520					

For special lead lengths, please consult Franklin Electric.
*Cables are designed for submerged operation. For air operation, please consult Franklin Electric.

4" 3~ ENCAPSULATED PM MOTOR SPARE PARTS 0.55 - 3.0 KW / 4000 N

MOTOR PARTS DESCRIPTION



Pos.	Part Description	Qty.	Part number
1	Nut M8	4	Kit C
2	Stud M8	4	Kit C
3	Protector (Spline)	1	Kit B
4	Screw (Motor lead)	1	Kit C
5	Motor lead	1	see page 27
6	Washer	1	Kit B
7	Top Endbell, Cover	1	Kit
8	Plug	1	Kit B
9	Filter	1	Kit B
10	Valve	1	Kit
11	Shaft Seal	1	Kit B
12	Top Endbell	1	Kit
13	O-Ring	1	Kit B
14	Rotor	1	see page 29
15	Stator	1	see page 29
16	Level washer	1	Kit A
17	Thrust Disc Assy	1	Kit A
18	O-Ring	1	Kit B
19	Bottom Endbell	1	A1
20	Bearing Cage	1	Kit A
21	Segments	3	Kit A
22	Rocking Disc	1	Kit A
23	Diaphragm washer	1	Kit B
24	Diaphragm	1	Kit B
25	Bottom Endbell Cover 304SS	1	156 414 201
	Bottom Endbell Cover 316SS		156 414 301
26	Screw, Cover	3	Kit C

4" 3~ ENCAPSULATED PM MOTOR SPARE PARTS 3.0 - 4.0 kW / 6500N

OVERVIEW SPARE PARTS KITS 4000N

P_N [kW]	0.55 - 3.0 kW		
Kit A1	Upper end bell 304SS (Pos. 7 - 13)	incl. Pos. 7 - 13	308 462 901
	Upper end bell 316SS (Pos. 7 - 13)		308 462 951
Kit A2	Lower end bell incl. Thrust Bearing Kit 4000N	incl. Pos. 16 - 22	308 464 911
Kit B	Seal Kit Standard 304SS	incl. Pos. 3, 6, 8, 9, 11, 13, 18, 23	308 650 201
	Seal Kit Standard 316SS		308 650 251
Kit C	Fastener Kit 304SS	incl. Pos. 1, 2, 4, 26	308 656 201
	Fastener Kit 316SS		308 656 251

SPARE PARTS STATOR AND ROTOR 0.55 - 3.0 kW / 220 V

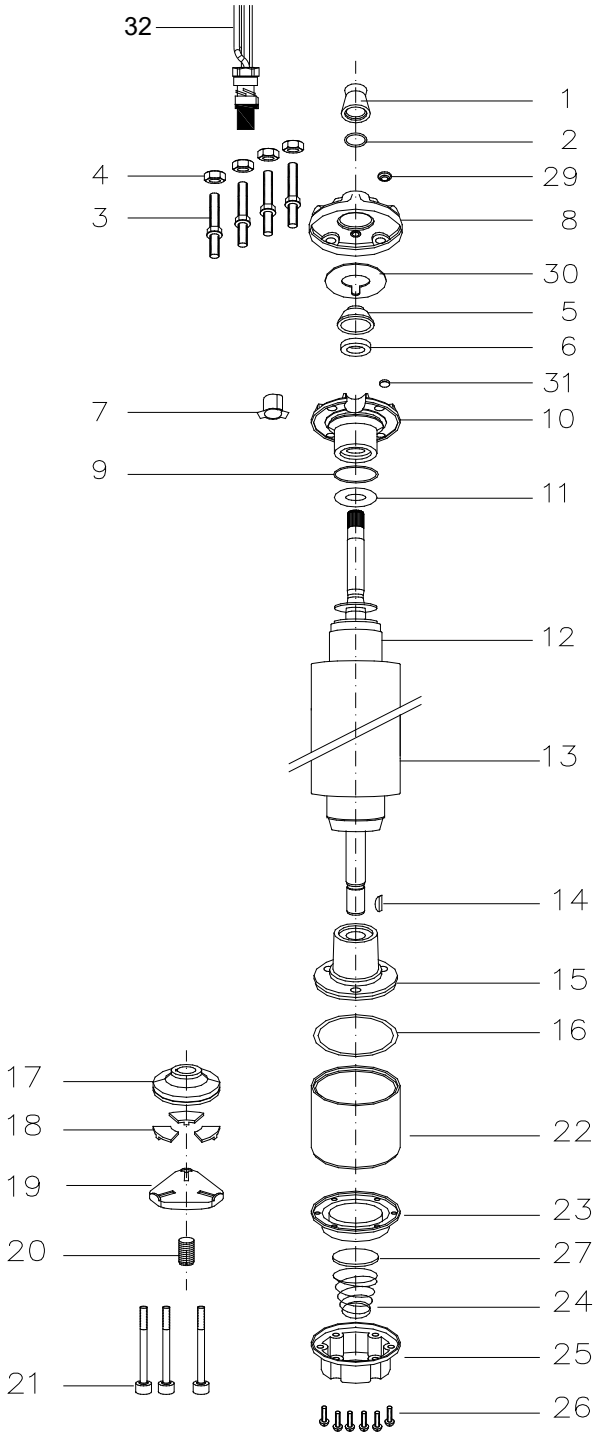
P_N [kW]	U_N [V]	Thrust F [N]	Model no. Motor		Model no. Stator	Model no. Rotor
			304SS	316SS		
0,55 - 1,1	220	4000	6700L	6800L	327 460 945	178 172 901
1,1 - 2,2	220	4000	6700L	6800L	327 461 945	178 172 903
2,2 - 3,0	220	4000	6700L	6800L	327 462 945	178 172 904

SPARE PARTS STATOR AND ROTOR 1.1 - 3.0 kW / 380 V

P_N [kW]	U_N [V]	Thrust F [N]	Model no. Motor		Model no. Stator	Model no. Rotor
			304SS	316SS		
1,1 - 2,2	380	4000	6700L	6800L	327 451 945	178 172 903
2,2 - 3,0	380	4000	6700L	6800L	327 452 945	178 172 904

4" 3~ ENCAPSULATED PM MOTOR SPARE PARTS 3.0 - 4.0 kW / 6500N

MOTOR PARTS DESCRIPTION



Pos.	Part Description	Qty.	Part No.
1	Protector, Spline	1	Kit B
2	Washer	1	Kit B
3	Stud	4	Kit C
4	Nut	4	Kit C
5	Seal cover	1	Kit D
6	Shaft Seal	1	Kit B+D
7	Connector boss	1	Kit D
8	Top Endbell, Cover	1	Kit D
9	O-Ring	1	Kit B+D
10	Top Endbell	1	Kit D
11	Upthrust washer	1	Kit
12	Rotor	1	see page 31
13	Stator	1	see page 31
14	Woodruff key	1	275 250 104
15	Bottom Endbell	1	Kit
16	O-Ring	1	Kit B
17	Thrust disc	1	Kit A
18	Segment	1	Kit A
19	Leveling disc	1	155 660 101
20	Screw, adj.	1	151 048 102
21	Screw	3	Kit C
22	Thrust housing	1	177 378 901
23	Diaphragm	1	Kit B
24	Spring	1	151 449 101
25	Cover, Diaphragm	1	155 647 101
26	Screw	6	Kit C
27	Cup spring, Diaphragm	1	151 448 101
29	Sealing stopper	1	Kit B+D
30	Seal	1	Kit D
31	Filter	1	Kit B+D
32	Motor lead	1	see page 27

4" 3~ ENCAPSULATED PM MOTOR SPARE PARTS 3.0 - 4.0 kW / 6500N

OVERVIEW SPARE PARTS KITS MOTORS 6500N

P_N [kW]	End bell upper (Pos. 10)	End bell, lower (Pos. 15)	Upthrust washer (Pos. 11)
3,0 - 4,0	308 233 509	177 379 921	308 268 104
Kit A	Thrust Bearing Kit 6500N	incl. pos. 17, 18	308 700 301
Kit B	Seal Kit	incl. pos. 1, 2, 6, 9, 16, 23, 29, 31	308 900 352
Kit D	Screw Kit	incl. pos. 3, 4, 21, 26	308 658 351

SPARE PARTS STATOR AND ROTOR 3.0 - 4.0 kW / 220 V

P_N [kW]	U_N [V]	Thrust F [N]	Model no. Motor		Model no. Stator	Model no. Rotor
			304SS	316SS		
3,0 - 4,0	220	6500	3421L	3521L	327 463 902	178 173 921

SPARE PARTS STATOR AND ROTOR 3.0 - 4.0 kW / 380 V

P_N [kW]	U_N [V]	Thrust F [N]	Model no. Motor		Model no. Stator	Model no. Rotor
			304SS	316SS		
3,0 - 4,0	380	6500	3421L	3521L	327 453 902	178 173 921

4" SUBMERSIBLE PUMP VS4

APPLICATIONS

- Municipal water works, fountains and waste water
- Water distribution and pressure boosting
- Irrigation and sprinkler systems, water treatment plants, filtration and reverse osmosis
- Industrial cooling and processing
- Mining industry, drainage and dewatering
- Fire-fighting equipment
- Water supply to and from tanks, reservoir and wells
- Lifting and distribution of a wide range of liquids
- Autoclave and cistern charge and discharge
- Turf and landscape
- Greenhouses and nurseries
- Residential and farm wells and drainage
- Food industry
- General industry

FEATURES

- Compact, reliable and suited to operate in horizontal position
- Built-in check valve to protect the pump against water hammer risk
- Floating impellers to grant a better performance and longer life for the pump against abrasion
- The hydraulic design is such to enhance the overall efficiency thus reducing energy consumption and making the pumping systems more cost effective

SPECIFICATION

- Flow: up to 24 m^3/h at 50 Hz
- Head: up to 278 m at 50 Hz
- Pumped liquid: chemically and mechanically non aggressive
- Water temperature range: from 0 °C to 40 °C
- Maximum allowable amount of sand 100 g/m^3, solid dimension max. 2 mm
- Maximum pump diameter (including cable guard): 95 mm
- Outlet diameter: 1" ¼ for VS 1-2-3-4, 2" for VS 6-7-8-10-15
- Pump can work continuously in vertical or horizontal position

VARIABLE SPEED DRIVE (VFD)

FEATURES

- Supports induction and permanent magnet motors
- Top class protection IP66/65 enclosure class
- Optimized for submersible permanent magnet motor feeding first class performance
- Bluetooth Connectivity
- Mobile App

TECHNICAL SPECIFICATION

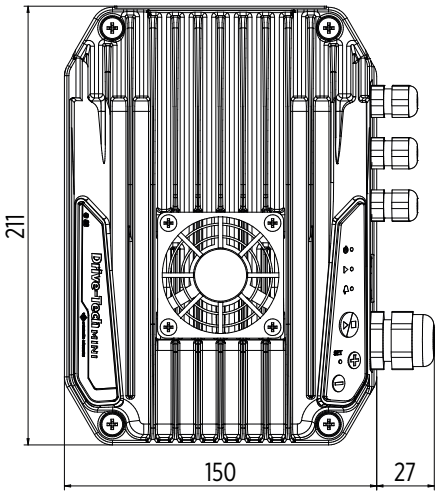
Power Supply	Input Voltage U_{IN}	≤ 2,2 kW: 90 - 265 V / 90 - 400 V DC
		≥ 3,0 kW: 160 - 850 V DC
	Input frequency f_{IN}	50 - 60 Hz (+/- 2 %)
	Starts per hour	20; with min. 3 min rest period
Motor connection	Output voltage	0 - U_N
	Output current	I_N at rated ambient temperature
	Output frequency	0 -f_N resolution 0,01 Hz
Enclosure	Protection Degree	IP 66 / 65
Control characteristics	Switching frequency	2 - 8 kHz, default setting 4 kHz
Ambient conditions	Operation temperature	-10 - 50 °C (> 40 °C with derating)
	Storage temperature	-30 - 70 °C
	Altitude	Max. altitude at rated current: 3000 m (> 1000 m with derating)
EMC	Immunity & Emisions	Complies with EN61800-3, Category C2 - first and second environment
Communication	RS 485	Standard: ModBus RTU
	Bluetooth	SMART (4,0) for monitoring and programming
I/O connections	Digital Input	4 x
	Analog Input	4 x (2 x 4-20 mA / 2 x 0-10 V DC)
	Digital Output	2 x

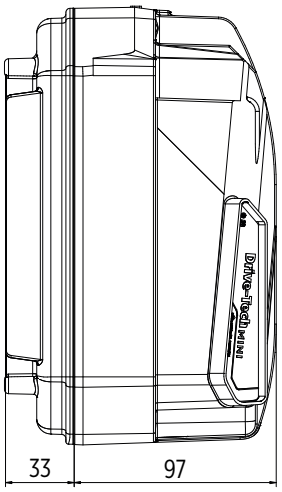
VARIABLE SPEED DRIVE (VFD)

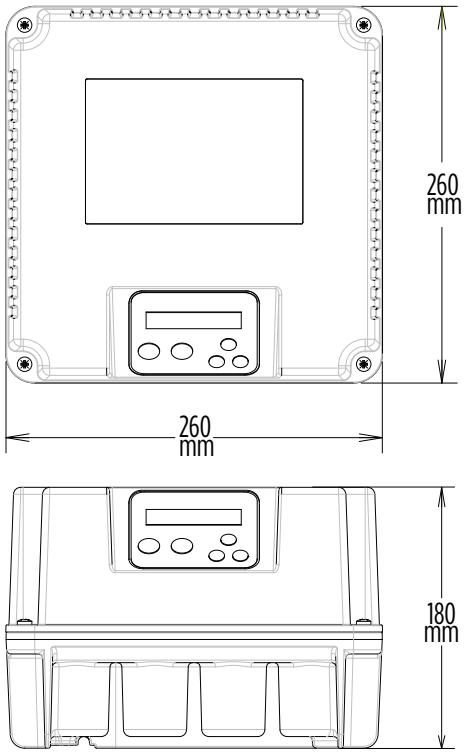
MODEL NUMBERS AND DIMENSIONS 220 - 400 V / 50-60 HZ

System Model Number	Drive MDL	Drive Type	IP Type	Voltage [V]	I_N [A]	Dimensions W x H x D [mm]	Weight [kg]
308 071 001	002 149 112	Drivte-Tech MINI 2.011	66	1 x 230	5	150x 130 x 211	2,8
308 072 001	002 149 152	Drivte-Tech MINI 2.015	66	1 x 230	8	150x 130 x 211	2,8
308 073 001	314 000 161	Drive-Tech 3.030 MP	65	3 x 230	14	260 x 180 x 260	8,2
308 074 001	314 000 161	Drive-Tech 3.030 MP	65	3 x 230	14	260 x 180 x 260	8,2
308 062 001	314 000 162	Drive-Tech MINI 4.011	66	3 x 400	4	150x 130 x 211	2,8
308 062 002	314 000 162	Drive-Tech MINI 4.011	66	3 x 400	4	150x 130 x 211	2,8
308 063 001	314 000 163	Drive-Tech MINI 4.022	66	3 x 400	6	150x 130 x 211	2,8
308 063 002	314 000 163	Drive-Tech MINI 4.022	66	3 x 400	6	150x 130 x 211	2,8
308 064 001	314 000 164	Drive-Tech MINI 4.040	66	3 x 400	9	150x 130 x 211	2,8
308 064 002	314 000 164	Drive-Tech MINI 4.040	66	3 x 400	9	150x 130 x 211	2,8
308 071 002S	314 000 165	Drive-Tech MINI Solar 2.005 MP	66	1 x 220	3	150 x 130 x 211	2,8
308 071 001S	314 000 166	Drive-Tech MINI Solar 2.011 MP	66	1 x 230	5	150x 130 x 211	2,8
308 072 001S	314 000 167	Drive-Tech MINI Solar 2.015 MP	66	1 x 230	8	150x 130 x 211	2,8
308 073 001S	314 000 161	Drive-Tech 3.030 MP	65	3 x 230	14	260 x 180 x 260	8,2
308 074 001S	314 000 161	Drive-Tech 3.030 MP	65	3 x 230	14	260 x 180 x 260	8,2

DIMENSIONAL DATA



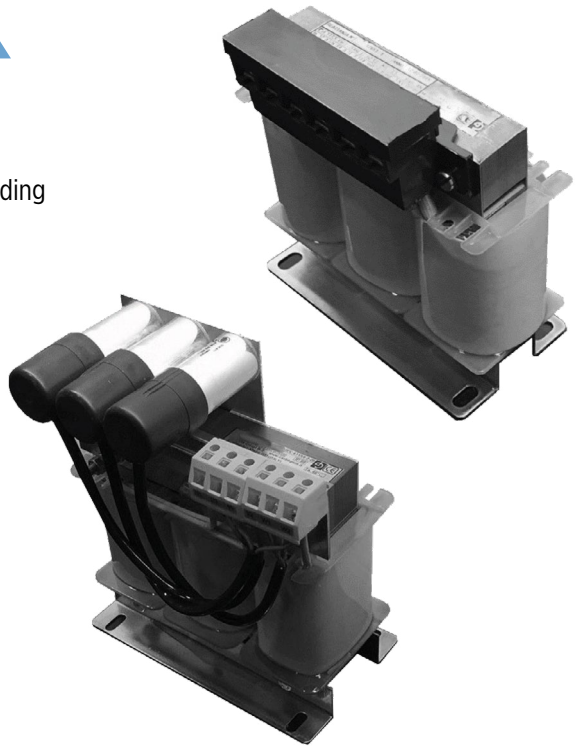




OUTPUT FILTER

SPECIFICATION

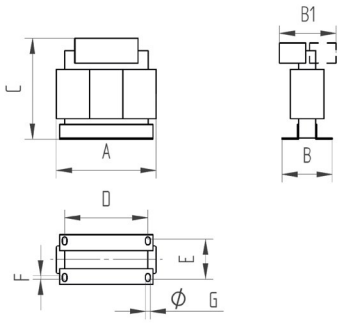
- dV/dt filter for lead lengths up to 120 m
  (for lead lengths >120 m please consult Franklin Electric)
- Filter available in IP00
- Optimized for submersible permanent magnet motor feeding
- Voltage: 380 - 500 V
- Frequency: 0 - 120 Hz
- Switching Frequency: 4 kHz
- Ambient Temperature: < 40 °C
- Special voltages on request
- Sinus filter in IP00 for lead length >120 m
  and/or special applications on request

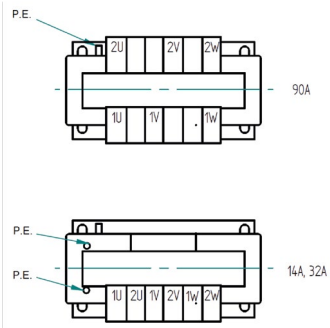


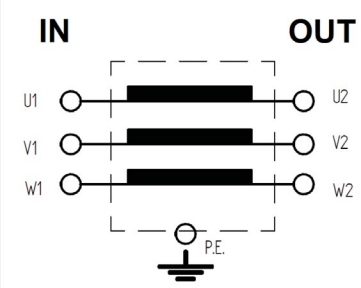
MODEL DATA DV/DT OUTPUT FILTER 400/500 V

Protection Class IP00*									
System model number	Filter order number	I_N [A]	Dimensions [mm]						weight [kg]
			A	B (B1)	C	D	E	F	G	
308 062 001	314005134	14	120	67	115	100	60	5	5,5	2,7
308 063 001										
308 064 001										

Filter outlines





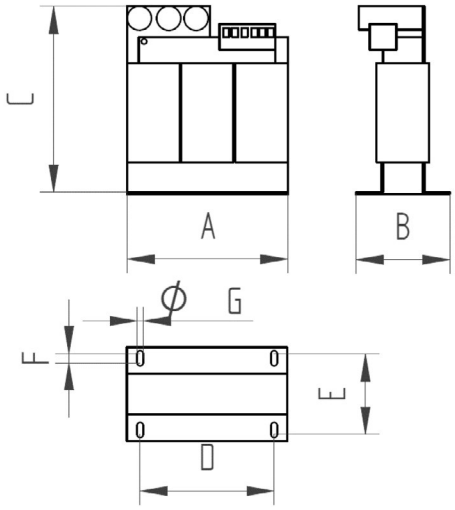


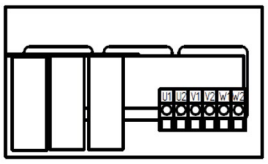
OUTPUT FILTER

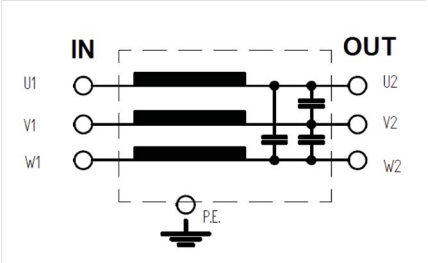
MODEL DATA SINUS OUTPUT FILTER 400/500 V

Protection Class IP00*									
System model number	Filter order number	I_N [A]	Dimensions [mm]						weight [kg]
			A	B (B1)	C	D	E	F	G	
308 062 002	314005135	14	180	105	210	150	90	10	6,5	10
308 063 002										
308 064 002										

Filter outlines



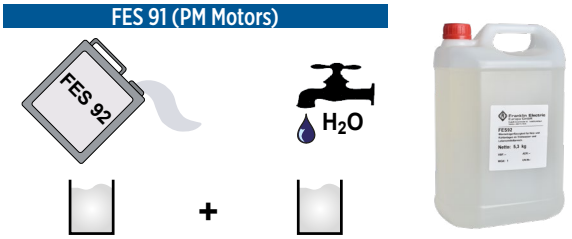




*For IP54 rating the recommended enclosure size is 20 liter.

ACCESSORIES

MOTOR FILLING LIQUID

Description	Model number	
Motor filling liquid FES92	308 353 941	FES 91 (PM Motors) 

MOTOR FILLING KIT

Description	Model number	
This kit contains all necessary tools to check and replenish Franklin Electric submersible motors with filling liquid (fill solution/concentrate must be ordered separately).	308 726 103	

LEAD TERMINATION KIT 4"

Description	Model number	
Standard 304SS	308 090 901	
316SS	308 090 911	
Strain Relief 304SS	308 090 902	

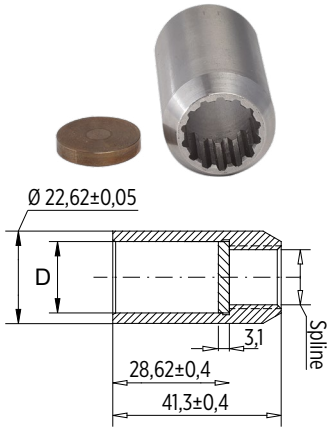
ACCESSORIES

DOUBLE PLUG LEAD FOR TERMINATION KIT 4"

Description		Material	Lenght [m]	Model number	
Motors up to 4000 N	without strain relief	316SS	1,5	308 090 901	
	without strain relief	316SS	2,5	308 090 911	

Description		Material	Lenght [m]	Model number	
Motors up to 6500 N	without strain relief	304SS	1,5	310 111 001	
	without strain relief	316SS	1,5	310 111 501	
	with strain relief	304SS	1,5	310 112 001	
	with strain relief	316SS	1,5	-	
	without strain relief	304SS	2,5	310 111 002	
	without strain relief	316SS	2,5	310 111 502	
	with strain relief	304SS	2,5	310 112 002	
	with strain relief	316SS	2,5	-	

4" MOTOR/PUMP COUPLING

Description	Mat.	Model number	Dimensions Ø D [mm]	
4" Motor/Pump coupling	316SS	308 712 904	Max. 17,50 / Min. 17,48	

CATALOG REVISION CHANGE NOTES

Rev. No.	Changes	Page
01	System graphic solar operation changed (flow switch deleted as condition)	16
	Flow switch in System Accessories	15
	Update Accessories	21/22
02	4" High Efficiency System (HES) Package Overview added	6
	4" HES Packages added	11 - 22
	Change in : Technical Specification / Input Voltage: >3,0kW: 160 – 850V DC	33
03	Change in table: VS 4/27-230V/380V-3PH PV-Panel Select	16
	Change in table: VS 10/18- 230 V / 380 V - 3 PH	22
	Change Perf Curves	16 / 22

Franklin Electric

308-018-812 EN_REV.03_11-2019

Geoquuip Water Solutions Ltd. www.geoquipwatersolutions.com Tel: +44(0)1473 462046