

SUBMERSIBLE BOREHOLE PUMPS AND MOTORS

S4 - 4GG - 40L



ALL THE INFORMATION YOU NEED IS ON

DNA is the DAB's software that allows you to find in a few seconds the pump model that best suite to your needs.

Frequent updating and easy of use

Ideal support tool for engineers, installers and dealers

Provides also spare parts lists and all DAB technical literature

It uses two different selection logic criteria, by hydraulic performances or by pump model as well

It can be used on line, or downloaded for PC installation, from the dna.dabpumps.com website

DNA[®]
PUMPS SELECTOR



DAB[®]
WATER • TECHNOLOGY

Cost-effective construction ensures low cost, high efficiency, better performance and reliability.

Abrasion resistant construction, floating impellers ensure optimum resistance to abrasion.

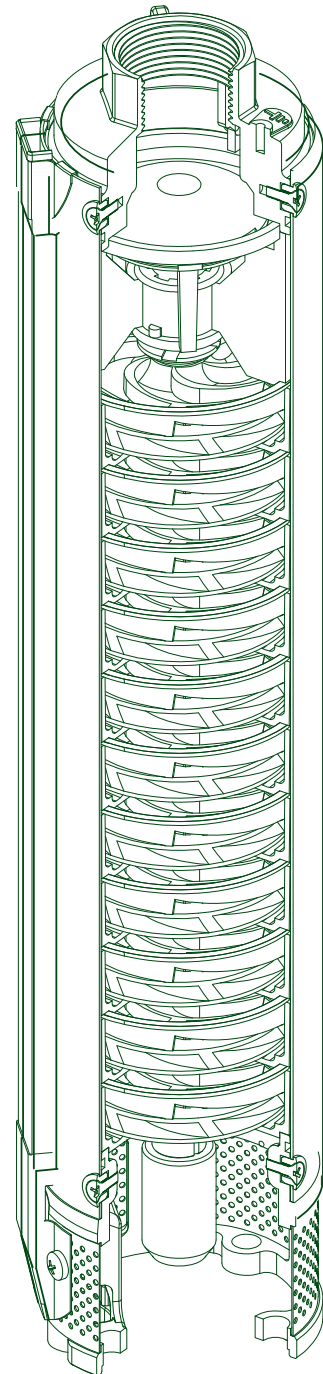
The delivery port and suction support are made of precision-cast stainless steel, guarantee resistance to corrosion, durability and a sturdy coupling to the motor.

The hexagonal pump shaft guarantees an effective impeller driving.

A non-return valve is fitted at the discharge to prevent back flow of water and alleviate water hammer to the pump, thus safeguarding impellers and diffusers which are made from ABS material.

S4 SERIES

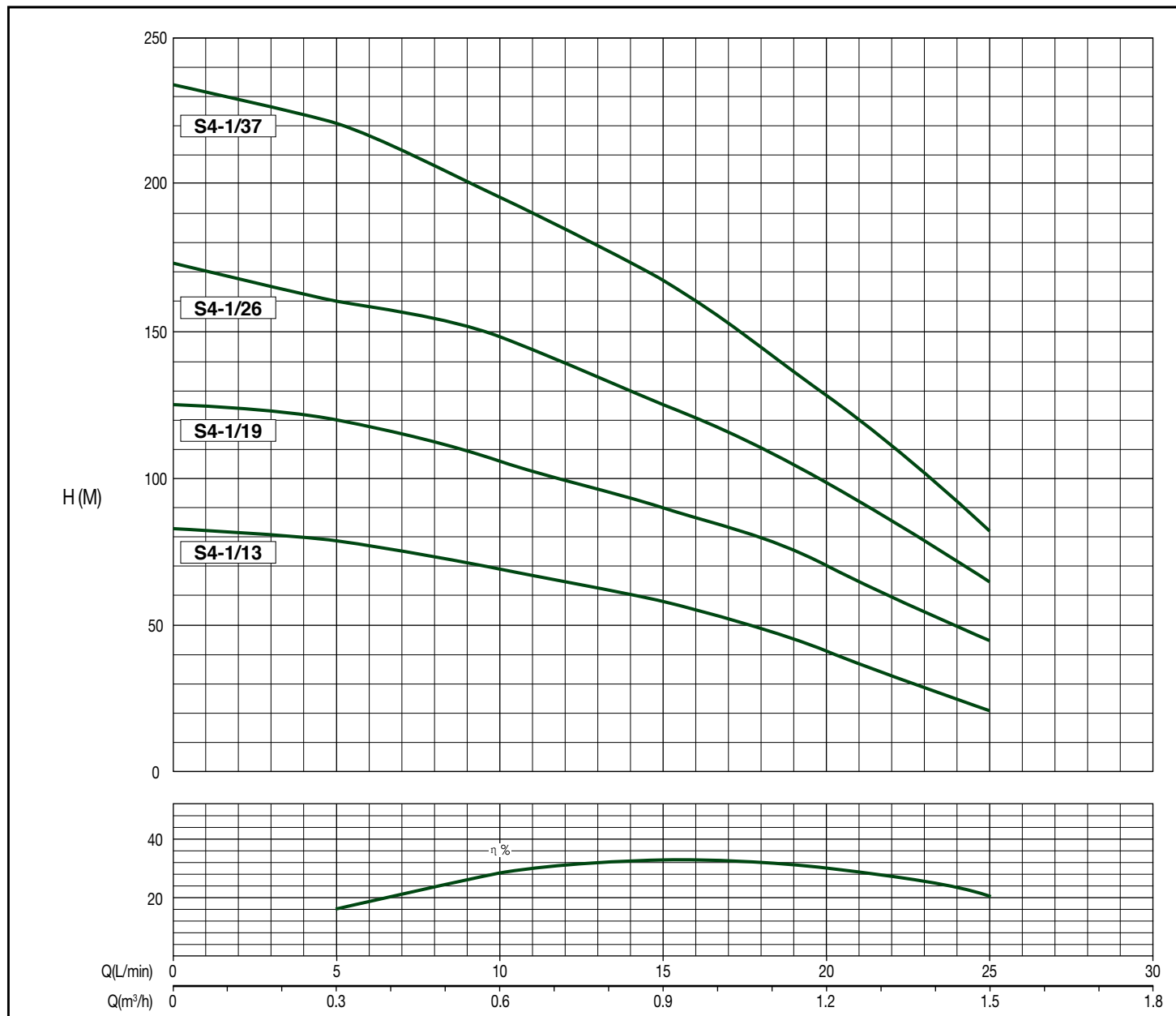
Specifications & Characteristics



S4-1 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 32mm



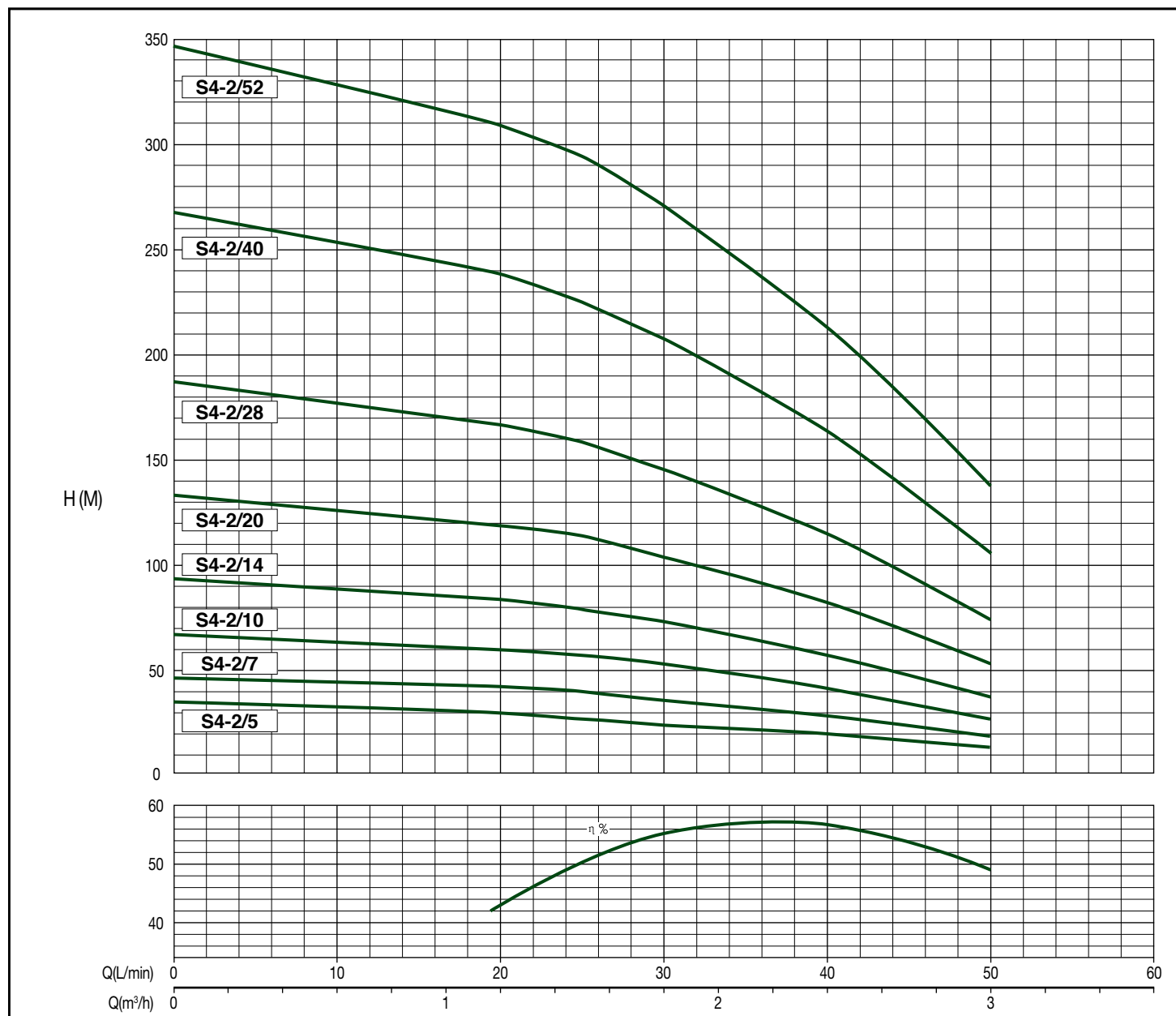
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY					
				l/min 0	5	10	15	20	25
				m³/h 0	0.3	0.6	0.9	1.2	1.5
H = TOTAL HEAD METERS COLUMN OF WATER									
S4-1/13	13	0.37	0.5	83	78	69	57	42	21
S4-1/19	19	0.55	0.7	125	120	106	90	70	45
S4-1/26	26	0.75	1	173	160	148	125	98	65
S4-1/37	37	1.1	1.5	233	221	196	167	128	82

S4-2 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 32mm



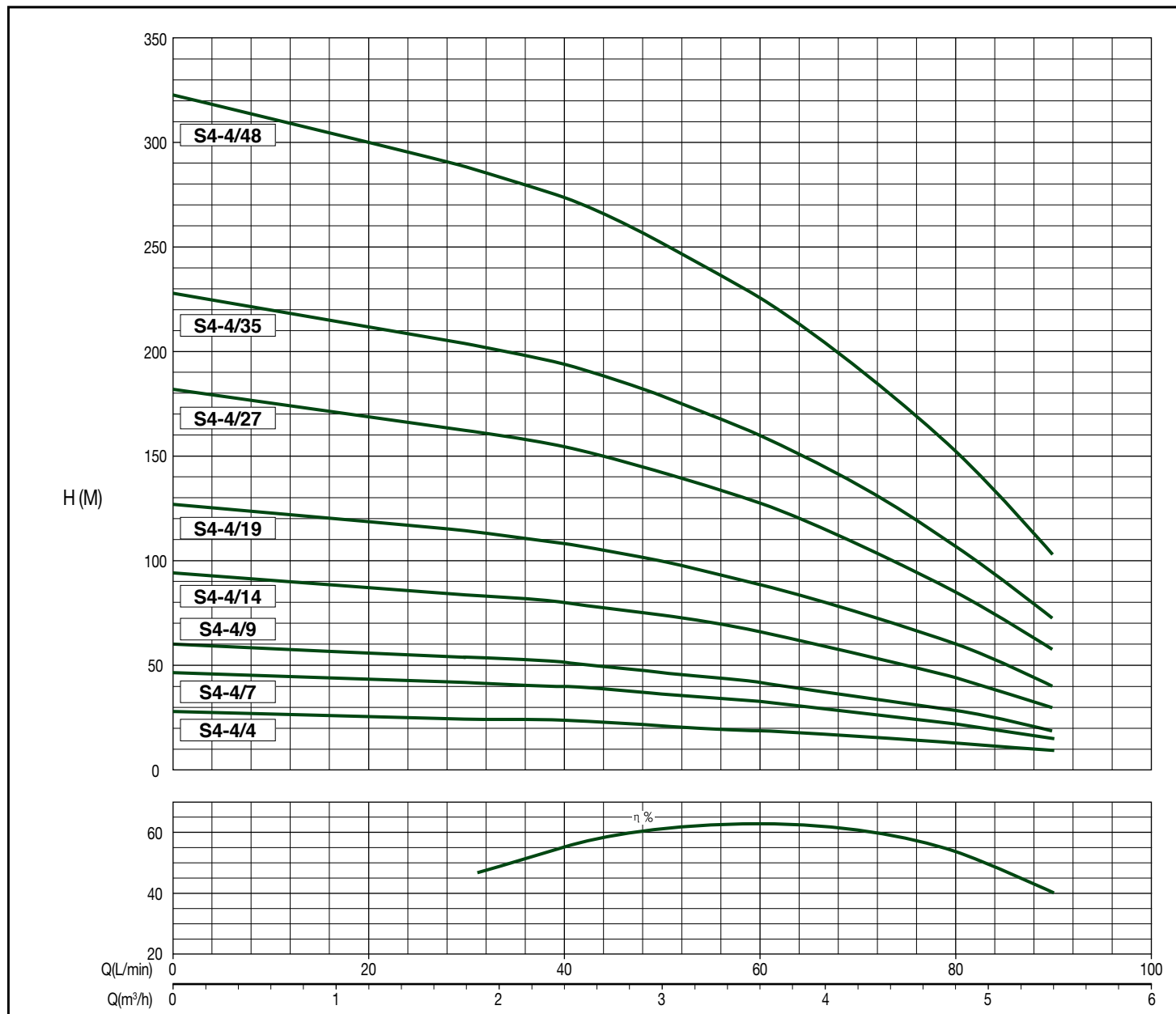
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY					
				l/min 0	20	25	30	40	50
				m³/h 0	1.2	1.5	1.8	2.4	3
H = TOTAL HEAD METERS COLUMN OF WATER									
S4-2/5	5	0.37	0.5	33	30	28	26	20	13
S4-2/7	7	0.37	0.5	47	42	40	36	29	19
S4-2/10	10	0.55	0.7	67	60	56	52	41	27
S4-2/14	14	0.75	1.0	93	83	79	73	57	37
S4-2/20	20	1.1	1.5	133	119	113	104	82	53
S4-2/28	28	1.5	2.0	187	167	158	146	115	74
S4-2/40	40	2.2	3.0	267	238	226	208	164	106
S4-2/52	52	3.0	4.0	347	309	294	271	213	138

S4-4 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 32mm



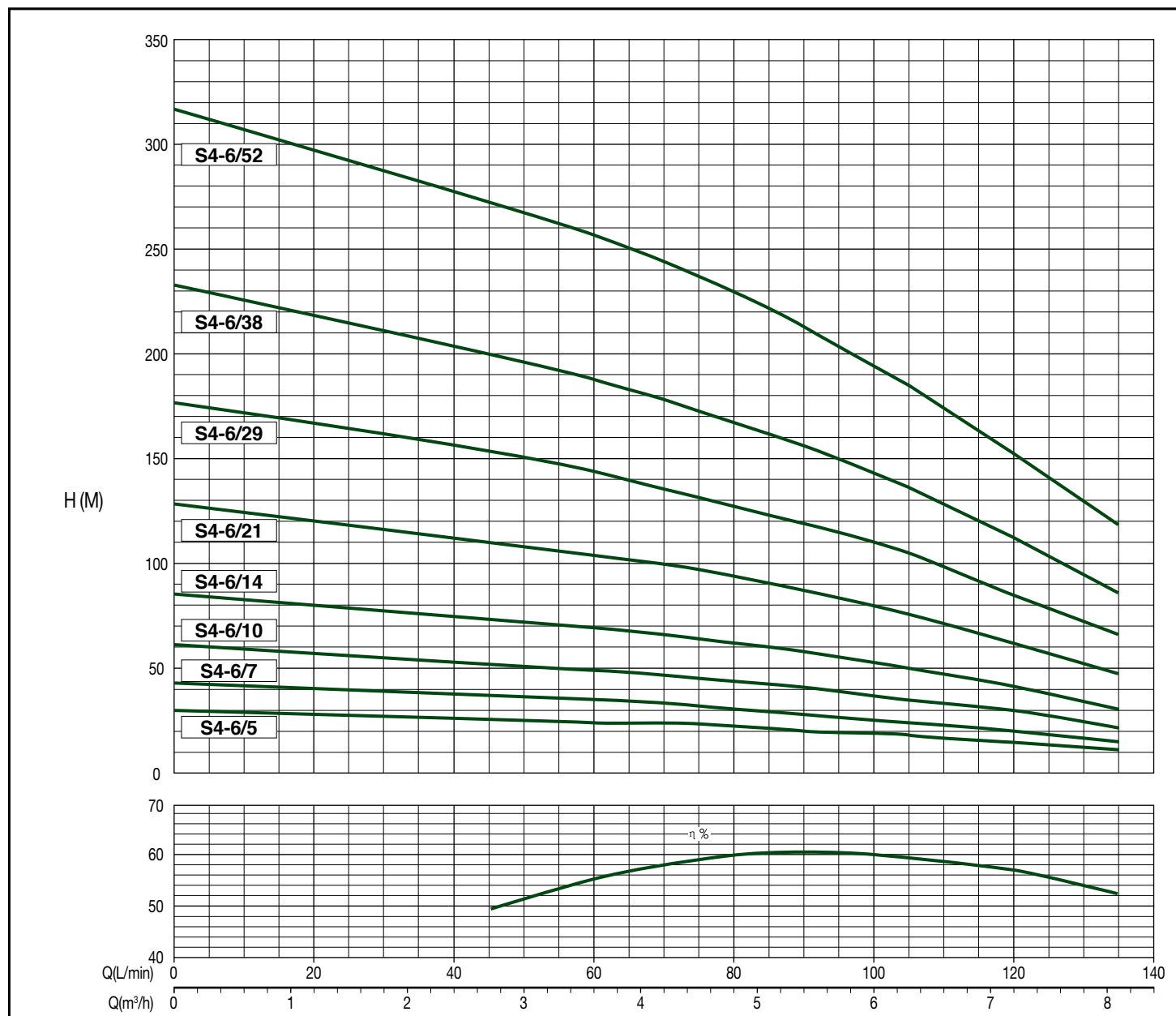
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY						
				l/min 0	30	40	50	60	80	90
				m³/h 0	1.8	2.4	3	3.6	4.8	5.4
H = TOTAL HEAD METERS COLUMN OF WATER										
S4-4/4	4	0.37	0.5	27	24	23	21	19	13	9
S4-4/7	7	0.55	0.7	47	42	40	37	33	22	15
S4-4/9	9	0.75	1.0	60	54	51	47	42	28	19
S4-4/14	14	1.1	1.5	94	84	80	74	66	44	30
S4-4/19	19	1.5	2.0	127	114	108	100	89	60	40
S4-4/27	27	2.2	3.0	181	162	154	142	127	85	57
S4-4/35	35	3.0	4.0	228	204	194	179	160	107	72
S4-4/48	48	4.0	5.0	322	288	274	252	226	151	102

S4-6 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 32mm



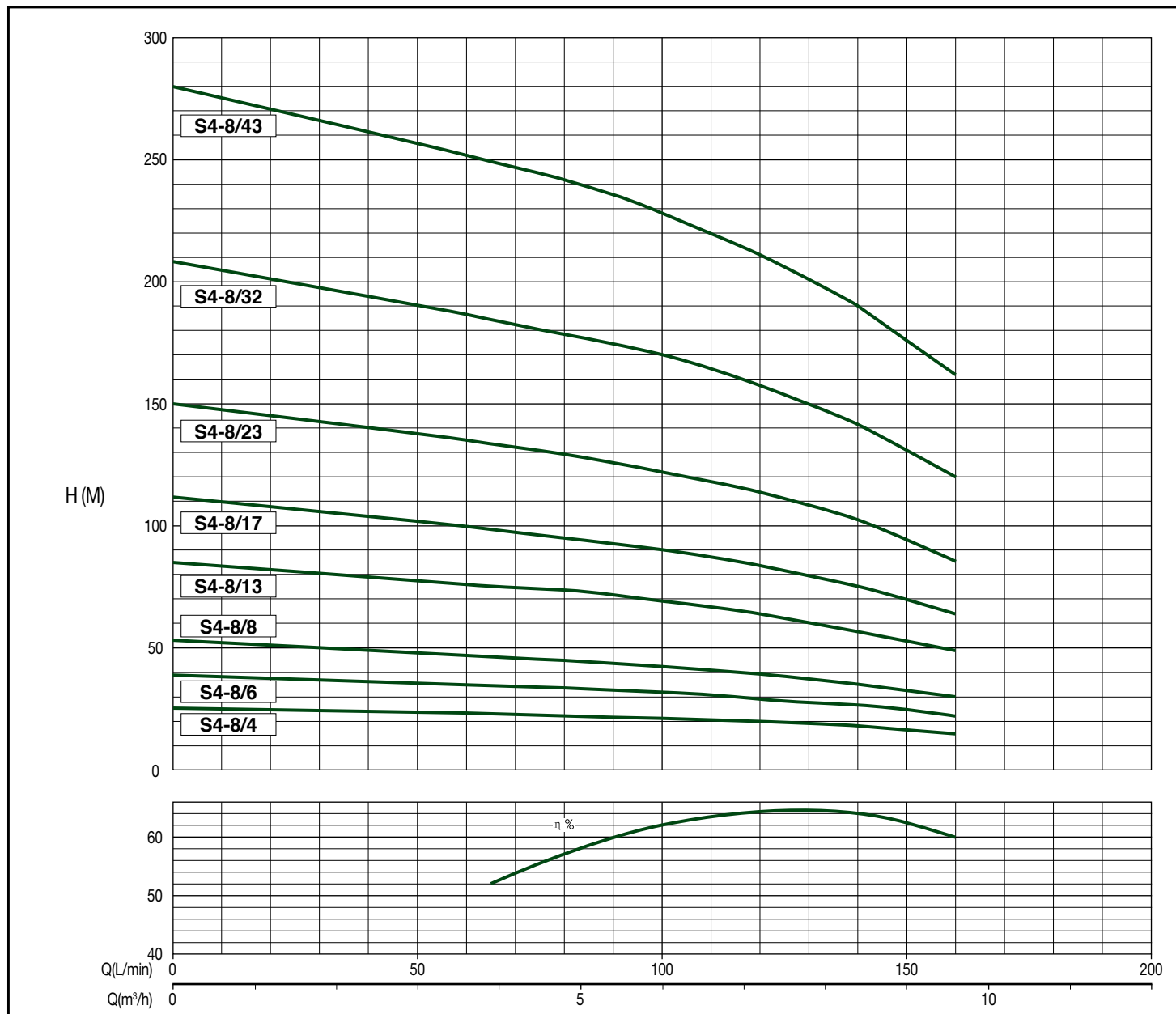
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY						
				l/min 0	60	75	90	105	120	135
				m³/h 0	3.6	4.5	5.4	6.3	7.2	8.1
H = TOTAL HEAD METERS COLUMN OF WATER										
S4-6/5	5	0.55	0.7	30	25	23	20	18	15	11
S4-6/7	7	0.75	1.0	43	35	32	28	24	20	15
S4-6/10	10	1.1	1.5	61	49	46	41	35	30	22
S4-6/14	14	1.5	2.0	85	69	64	57	50	41	31
S4-6/21	21	2.2	3.0	128	104	97	87	76	61	47
S4-6/29	29	3.0	4.0	177	143	132	119	105	85	66
S4-6/38	38	4.0	5.5	232	188	172	156	136	112	86
S4-6/52	52	5.5	7.5	317	257	235	213	185	152	118

S4-8 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 50mm



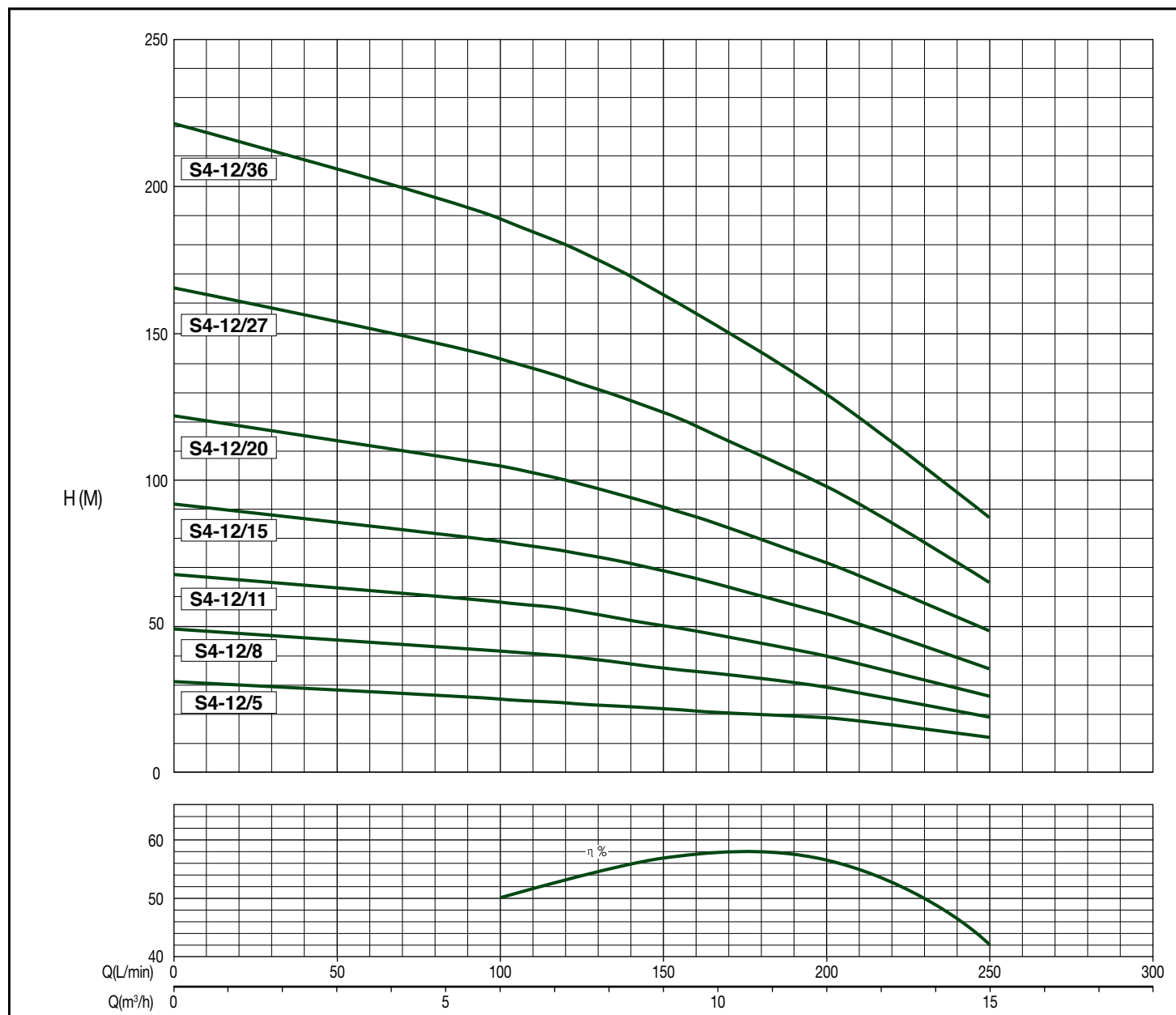
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY						
				l/min 0	60	80	100	120	140	160
				m³/h 0	3.6	4.8	6	7.2	8.4	9.6
H = TOTAL HEAD METERS COLUMN OF WATER										
S4-8/4	4	0.75	1.0	26	23	22	21	20	18	15
S4-8/6	6	1.1	1.5	39	35	34	32	29	27	22
S4-8/8	8	1.5	2.0	52	47	45	43	39	35	30
S4-8/13	13	2.2	3.0	85	76	73	69	64	57	49
S4-8/17	17	3.0	4.0	111	100	95	90	83	75	64
S4-8/23	23	4.0	5.5	150	135	129	122	113	102	86
S4-8/32	32	5.5	7.5	208	187	179	170	157	141	120
S4-8/43	43	7.5	10	280	252	241	228	211	190	161

S4-12 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 50mm



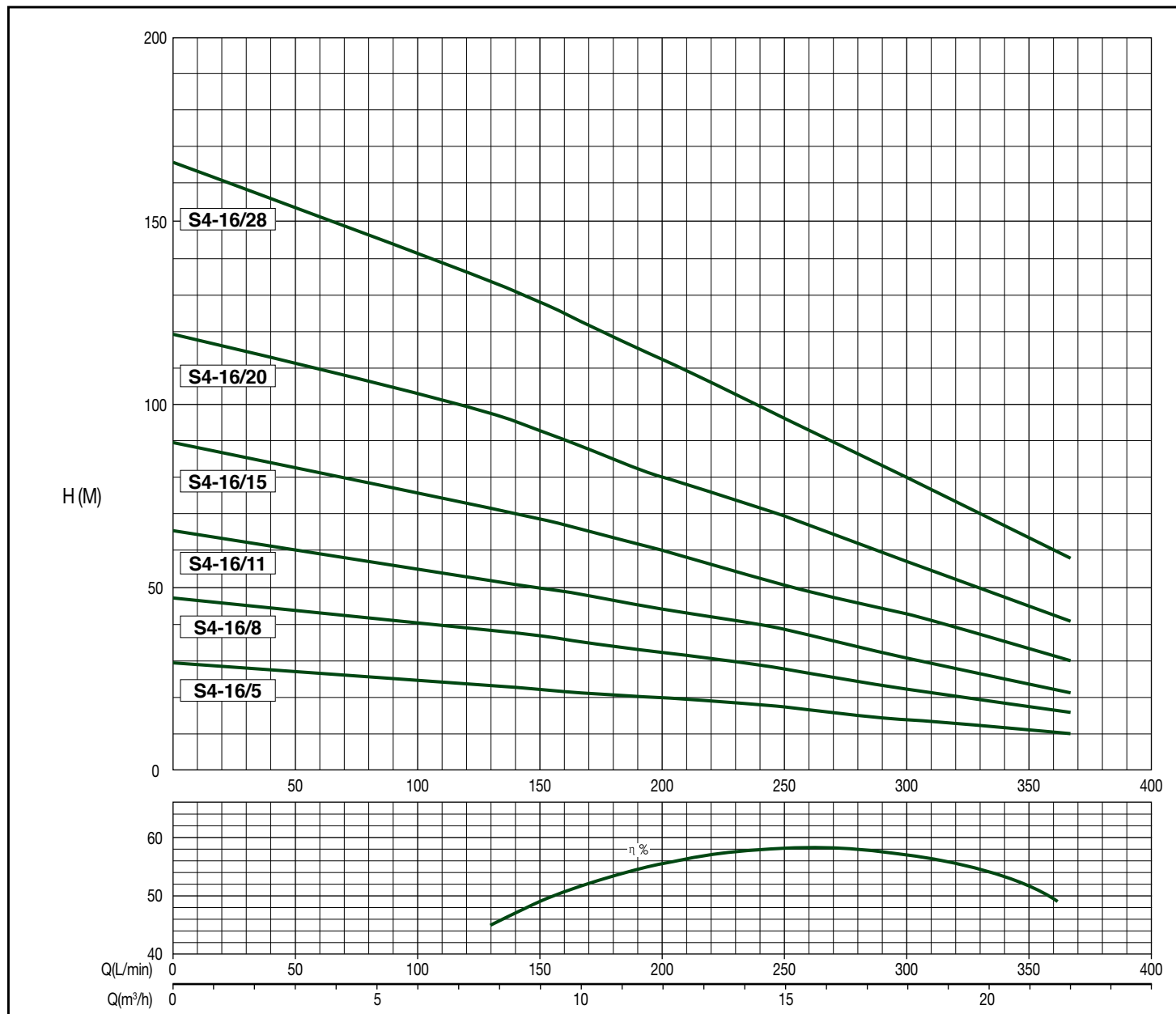
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY						
				l/min 0	100	120	140	160	200	250
				m³/h 0	6	7.2	8.4	9.6	12	15
H = TOTAL HEAD METERS COLUMN OF WATER										
S4-12/5	5	1.1	1.5	31	26	25	24	21	18	12
S4-12/8	8	1.5	2.0	49	42	40	38	34	29	19
S4-12/11	11	2.2	3.0	67	58	55	52	47	40	26
S4-12/15	15	3.0	4.0	92	79	75	71	65	54	36
S4-12/20	20	4.0	5.5	122	105	100	94	87	72	48
S4-12/27	27	5.5	7.5	165	142	135	127	117	98	65
S4-12/36	36	7.5	10	221	189	180	169	156	130	87

S4-16 SERIES

OPERATING CHARACTERISTICS AT 50Hz

Discharge 50mm



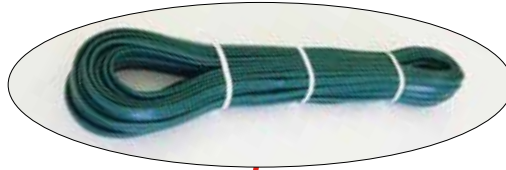
OPERATING CHARACTERISTICS AT 50Hz

PUMP TYPE	NO. OF STAGES	kW	Hp	Q = DELIVERY						
				l/min 0						
				140	160	200	250	300	367	
m³/h 0										
8.4						9.6	12	15	18	22
H = TOTAL HEAD METERS COLUMN OF WATER										
S4-16/5	5	1.5	2.0	29	23	22	20	17	14	10
S4-16/8	8	2.2	3.0	47	37	36	32	27	23	16
S4-16/11	11	3.0	4.0	65	51	49	44	38	31	22
S4-16/15	15	4.0	5.5	89	70	67	60	51	43	30
S4-16/20	20	5.5	7.5	118	97	89	80	69	57	41
S4-16/28	28	7.5	10	165	131	125	112	96	80	57

WATERPACK

CABLE

- 1.5mm² 4 core submersible insulated cable.
- SABS approved.



CONTROL BOX

- Pump protection and control for direct start up.
- Thermal protection with external manual reset.



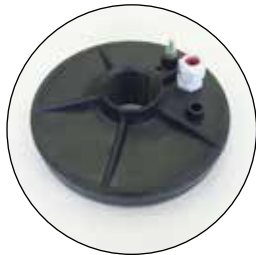
CABLE JOINT

- MX1 epoxy cable joint kit.



MALE ADAPTORS

- Mechanical compression fittings are designed to withstand working pressures of up to 16bar.



BASEPLATE

- 40mm base-plate with integrated cable gland.



WET-END

- Base and upper support made from precision-cast stainless steel with build in non-return valve.

MOTOR

- Tesla 4OL submersible motor made in AISI 304 stainless steel for parts in contact with water.
- Complete with removable lead out cable.



NYLON ROPE

- 6mm nylon safety rope.

WATERPACK	230 V	WET END	CABLE LENGTH	Q = DELIVERY										
				l/min 0	5	10	15	20	25	30	40	50		
				m ³ /h 0	0.3	0.6	0.9	1.2	1.5	1.8	2.4	3		
H = TOTAL HEAD METERS COLUMN OF WATER														
DAB 1	0.37kW	S4-1/13	50m	83	78	69	57	42	21					
DAB 2	0.37kW	S4-2/7	50m	47				42	40	36	29	19		
DAB 3	0.56kW	S4-2/10	70m	67				60	56	52	41	27		
DAB 4	0.75kW	S4-2/14	70m	93				83	79	73	57	37		

4GG - 4" SUBMERSIBLE MOTORS



4" Asynchronous two-poles submersible motor, **made in AISI 304 stainless steel** for parts in contact with water. Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a **mixture of water and glycol**. Squirrel-cage rotor mounted on Kingsbury self-centring thrust bearing. Stator housed in an airtight stainless steel casing (canned-type, resin filled) with both flanges and shell in AISI 304L stainless steel. Removable cable connector to allow fast and easy maintenance. The cable is certified ACS, WRAS and KTW. Motor suitable for use with variable frequency drive (30 Hz – 50 Hz). Capacitor and manually resettable overload protection located in the electric panel that can be supplied separately for the single-phase 50

Hz version. Overload protection must be provided by user for the three-phase version.

Flanging: NEMA - 4"
Protection level: IP 68
Insulation class: F

Voltage:
 single-phase 220-230 V / 50 Hz
 Three-phase 400 V / 50 Hz - 230 V / 50 Hz
Equipped with cable
 1,7 m for motor power up to 2,2 kW
 2,7 m for motor power up to 3 kW
 3,5 m for motor power of 7,5 kW



TECHNICAL DATA

MODEL	CODE	P2 (HP)	P2 (KW)	VOLTAGE 50 Hz	IN (A)	Is/In	Cs/Cn	P1 (W)	N (min ⁻¹)	Cos φ	η %	C (μF)	CABLE	
													Ø (mm ²)	LC (m)
4GG - 0,37 KW - 230 V - M	60122739	0,5	0,37	1x230 V ~	3,3	2,7	0,69	740	2820	0,97	50	16	4x1,5	1,7
4GG - 0,55 KW - 230 V - M	60122740	0,75	0,55	1x230 V ~	4,6	3,3	0,68	1000	2820	0,94	56	20	4x1,5	1,7
4GG - 0,75 KW - 230 V - M	60122741	1	0,75	1x230 V ~	6,2	3,2	0,66	1300	2820	0,92	58	25	4x1,5	1,7
4GG - 1,1 KW - 230 V - M	60122742	1,5	1,1	1x230 V ~	8,6	3,6	0,68	1820	2830	0,90	62	35	4x1,5	1,7
4GG - 1,5 KW - 230 V - M	60122743	2	1,5	1x230 V ~	11	3,7	0,62	2320	2830	0,91	65	40	4x1,5	1,7
4GG - 2,2 KW - 230 V - M	60122744	3	2,2	1x230 V ~	16	3,1	0,6	3460	2810	0,89	65	60	4x1,5	1,7
4GG - 0,37 KW - 400 V - T	60122746	0,5	0,37	3x400 V ~	1,4	3,8	3	710	2820	0,66	53	-	4x1,5	1,7
4GG - 0,37 KW - 230 V - T	60122745	0,5	0,37	3x230 V ~	2,7	3,7	3	710	2820	0,66	53	-	4x1,5	1,7
4GG - 0,55 KW - 400 V - T	60122748	0,75	0,55	3x400 V ~	1,9	4,2	3,1	920	2830	0,72	60	-	4x1,5	1,7
4GG - 0,55 KW - 230 V - T	60122747	0,75	0,55	3x230 V ~	3,3	4,2	3,1	920	2830	0,72	60	-	4x1,5	1,7
4GG - 0,75 KW - 400 V - T	60122750	1	0,75	3x400 V ~	2,4	5,0	3,2	1190	2830	0,73	63	-	4x1,5	1,7
4GG - 0,75 KW - 230 V - T	60122749	1	0,75	3x230 V ~	4,1	5,1	3,2	1190	2830	0,72	63	-	4x1,5	1,7
4GG - 1,1 KW - 400 V - T	60122752	1,5	1,1	3x400 V ~	3,4	4,1	3,3	1720	2830	0,76	64	-	4x1,5	1,7
4GG - 1,1 KW - 230 V - T	60122751	1,5	1,1	3x230 V ~	5,7	4,2	3,3	1720	2830	0,72	64	-	4x1,5	1,7
4GG - 1,5 KW - 400 V - T	60122754	2	1,5	3x400 V ~	4,4	4,3	3,4	2200	2830	0,72	68	-	4x1,5	1,7
4GG - 1,5 KW - 230 V - T	60122753	2	1,5	3x230 V ~	7,6	4,3	3,4	2200	2830	0,72	68	-	4x1,5	1,7
4GG - 2,2 KW - 400 V - T	60122756	3	2,2	3x400 V ~	5,9	4,4	3,2	3170	2820	0,78	71	-	4x1,5	1,7
4GG - 2,2 KW - 230 V - T	60122755	3	2,2	3x230 V ~	10,2	4,4	3,2	3170	2820	0,78	71	-	4x1,5	1,7
4GG - 3,0 KW - 400 V - T	60122758	4	3	3x400 V ~	8,3	4,6	3,3	4050	2840	0,71	74	-	4x1,5	2,7
4GG - 3,0 KW - 230 V - T	60122757	4	3	3x230 V ~	14,3	4,6	3,3	4050	2840	0,71	74	-	4x1,5	2,7
4GG - 4,0 KW - 400 V - T	60122760	5,5	4	3x400 V ~	10	5,6	3,4	5340	2850	0,79	75	-	4x1,5	2,7
4GG - 4,0 KW - 230 V - T	60122759	5,5	4	3x230 V ~	17,3	5,6	3,4	5340	2850	0,79	75	-	4x2	2,7
4GG - 5,5 KW - 400 V - T	60122762	7,5	5,5	3x400 V ~	14	5,5	3,4	7110	2850	0,74	77	-	4x1,5	2,7
4GG - 5,5 KW - 230 V - T	60122761	7,5	5,5	3x230 V ~	24,2	5,5	3,4	7110	2850	0,74	77	-	4x2	2,7
4GG - 7,5 KW - 400 V - T	60122763	10	7,5	3x400 V ~	17,4	4,8	2,9	9520	2850	0,080	79	-	4x2	3,5

P2: Nominal power
 Cs/Cn: Starting torque/Nominal torque
 η: Yield

V: Nominal voltage
 P1: Absorbed power
 C: Capacitor

In: Nominal current
 N: Rotations per minute - R.p.m
 Ø: Cable cross section

Is/In: Starting current/Nominal current
 Cos φ: Power factor
 LC: Cable length

40L - 4" SUBMERSIBLE MOTORS



4" Asynchronous two-poles submersible motor made from AISI 304 stainless steel for parts in contact with water. Cooling and lubrication of the ball bearings is provided by a **special FDA-approved liquid**. Stator housed in an external shell in AISI 304L (rewindable-type) connected with stainless steel pins to the upper support of the motor. Removable cable connector to allow fast and easy maintenance. The cable is certified ACS, WRAS and KTW.

Motor suitable for use with variable frequency drive (30 Hz – 50 Hz). Mechanical seal in ceramic-carbon. Capacitor and manually resettable overload protection located in the electric panel that can be supplied separately for the single-phase version. Overload protection must be provided by user for the three-phase version. The motor can be equipped with a PT100 temperature sensor.

Tesla
submersible motors

TECHNICAL DATA

MODEL	CODE	P2 (HP)	P2 KW	VOLTAGE 50 Hz	IN (A)	Is/In	Cs/Cn	P1 (W)	N (min ⁻¹)	Cos φ	η %	C (μF)	CABLE	
													Ø mm ²	LC (m)
40L - 0,37 KW - M	60168915	0,5	0,37	1x230 V ~	3,5	2,6	0,64	725	2800	0,9	51	16	4x1,5	1,7
40L - 0,55 KW - M	60168916	0,75	0,55	1x230 V ~	4,5	2,7	0,60	950	2800	0,92	58	20	4x1,5	1,7
40L - 0,75 KW - M	60168917	1	0,75	1x230 V ~	6,3	3,2	0,64	1275	2820	0,88	59	25	4x1,5	1,7
40L - 1,1 KW - M	60168918	1,5	1,1	1x230 V ~	8,5	2,9	0,54	1780	2800	0,91	62	35	4x1,5	1,7
40L - 1,5 KW - M	60168919	2	1,5	1x230 V ~	10,8	3,2	0,43	2160	2800	0,87	69	40	4x1,5	1,7
40L - 2,2 KW - M	60169099	3	2,2	1x230 V ~	14	3,2	0,57	3060	2800	0,87	78	60	4x1,5	1,7
40L - 0,37 KW - T	60168928	0,5	0,37	3x400 V ~	1,6	3,3	3,5	700	2820	0,63	53	-	4x1,5	1,7
40L - 0,37 KW - T	60168920	0,5	0,37	3x230 V ~	2,8	3,2	3,5	700	2820	0,63	53	-	4x1,5	1,7
40L - 0,55 KW - T	60168929	0,75	0,55	3x400 V ~	2,2	3,4	3,9	980	2820	0,64	56	-	4x1,5	1,7
40L - 0,55 KW - T	60168921	0,75	0,55	3x230 V ~	3,8	3,4	3,9	980	2820	0,64	56	-	4x1,5	1,7
40L - 0,75 KW - T	60168930	1	0,75	3x400 V ~	2,6	3,8	3,7	1200	2820	0,68	62	-	4x1,5	1,7
40L - 0,75 KW - T	60168922	1	0,75	3x230 V ~	4,5	3,8	3,7	1200	2820	0,68	62	-	4x1,5	1,7
40L - 1,1 KW - T	60168931	1,5	1,1	3x400 V ~	3,6	4,4	4,3	1700	2830	0,68	65	-	4x1,5	1,7
40L - 1,1 KW - T	60168923	1,5	1,1	3x230 V ~	6,2	4,5	4,3	1700	2830	0,68	65	-	4x1,5	1,7
40L - 1,5 KW - T	60168932	2	1,5	3x400 V ~	4,6	4,3	4,4	2160	2810	0,68	69	-	4x1,5	1,7
40L - 1,5 KW - T	60168924	2	1,5	3x230 V ~	7,9	4,4	4,4	2160	2810	0,68	69	-	4x1,5	1,7
40L - 2,2 KW - T	60167638	3	2,2	3x400 V ~	6	5,2	3,3	3050	2810	0,7	72	-	4x1,5	1,7
40L - 2,2 KW - T	60168925	3	2,2	3x230 V ~	10,4	5,2	3,3	3050	2810	0,7	72	-	4x1,5	1,7
40L - 3 KW - T	60167644	4	3	3x400 V ~	7,9	5,7	3,3	4000	2840	0,73	75	-	4x1,5	2,7
40L - 3 KW - T	60168926	4	3	3x230 V ~	13,6	5,7	3,3	4000	2840	0,73	75	-	4x1,5	2,7
40L - 4 KW - T	60167647	5,5	4	3x400 V ~	10,2	5,4	3,4	5260	2850	0,74	76	-	4x1,5	2,7
40L - 4 KW - T	60168927	5,5	4	3x230 V ~	17,6	5,4	3,4	5260	2850	0,74	76	-	4x2	2,7
40L - 5,5 KW - T	60169101	7,5	5,5	3x400 V ~	13,1	5,3	3,4	6900	2850	0,76	80	-	4x1,5	2,7
40L - 5,5 KW - T	60169103	7,5	5,5	3x230 V ~	22,6	5,4	3,4	6900	2850	0,76	80	-	4x2	2,7
40L - 7,5 KW - T	60169102	10	7,5	3x400 V ~	16,9	5,0	3	9030	2840	0,77	81	-	4x2	3,5

P2: Nominal power
Cs/Cn: Starting torque/Nominal torque
η: Yield

V: Nominal voltage
P1: Absorbed power
C: Capacitor


In: Nominal current
N: Rotations per minute - R.p.m
Ø: Cable cross section

Is/In: Starting current/Nominal current
Cos φ: Power factor
LC: Cable length

ACCESSORIES

CB - CONTROL SINTESI BOX


- Housing in shockproof thermoplastic with two cable clamps
- Luminous 2-pole main switch (power ON)
- Protection level: IP 43
- Starter capacitor
- Thermal cut-out protection with external manual reset

	MODEL	CODE	VOLTAGE 50 Hz	P2 NOMINAL		PROTECTION	CAPACITOR µF	DIMENSIONS mm	GROSS WEIGHT Kg
				KW	HP				
	CB 16/5	60149564	1x230 V ~	0,55	0,75	5 A	16	85 x 170 x 65	0,65
	CB 20/6	60149565	1x230 V ~	0,75	1	6 A	20	85 x 170 x 65	0,65
	CB 30/9	60149566	1x230 V ~	1,1	1,5	9 A	30	85 x 170 x 65	0,65
	CB 35/12	60148895	1x230 V ~	1,5	2	12 A	35	85 x 170 x 65	0,65
	CB 05/12	60140961	1 x 230V~	0,37	0,5	5 A	12	85 x 170 x 65	0,65
	CB 06/16	60140962	1 x 230V~	0,55	0,75	6 A	16	85 x 170 x 65	0,65
	CB 07/20	60140963	1 x 230V~	0,75	1	7 A	20	85 x 170 x 65	0,65

CBB - CONTROL BOOSTER BOX

Control panel for increasing the starting torque of the single-phase electric pumps with capacities ranging from 0.37 to 3.7 kW single-phase containing the microdisgiuntore for overload protection with manual reset, the starting capacitor and the run capacitor and terminal block for electrical connections.

Plug not included.
Degree of protection: IP 54
Ambient operating temperature: -10 °C + 40 °C
Wall mounting box in self-extinguishing thermoplastic material.


	MODEL	CODE	VOLTAGE 50 Hz	POWER MAX kW	MAX CURRENT A	RUN CAPACITOR µF	STARTING CAPACITOR µF	WEIGHT Kg
	CBB 05/16 (0,37 KW)	4616050	1 x 230 V	0,37	5	16	53-64	0,85
	CBB 06/20 (0,55KW)	4620060	1 x 230 V	0,55	6	20	53-64	0,85
	CBB 09/25 (0,75 KW)	4625090	1 x 230 V	0,75	9	25	100-130	1,5
	CBB 12/35 (1,1 KW)	4635120	1 x 230 V	1,1	12	35	100-130	1,1
	CBB 15/40 (1,5KW)	4640150	1 x 230 V	1,5	15	40	189-250	1,1
	CBB 20/60 (2,2 KW)	49050200	1 x 230 V	2,2	20	60	189-250	1,5
	CBB 32/90 (3,7 KW)	49090320	1 x 230 V	3,7	32	90	315-400	1,5

GUARDIAN

Electronic control unit for protection and control of the single-phase/three-phase motor/pump with direct starting.
Dry run protection of motor/pump not with level probe but with measurement of the cos factor of the motor.
Box in shockproof self-extinguishing thermoplastic with two cable glands.
Main switch.
Power input: single-phase 230 V + 10 % - 20 %, three-phase 400 V + 10 % - 20 %.
Four models available with power ratings of 0,5 - 15 HP.
Protection class IP54.

Starting capacitor for the single-phase version **(to be ordered separately)**.
Opto-coupled auxiliary input for control with connection of probes, pressure switch or float switch.
ON-OFF switch.
Functional features:
Overload protection.
Power loss protection (three-phase version).
Overvoltage protection.
Short circuit protection.
Dry run protection.

No capacitors included

	MODEL	POWER INPUT 50-60 Hz	RANGE HP	MAX CURRENT A	BOX DIMENSIONS			WEIGHT kg
					A	B	H	
	GUARDIAN ME	1 x 230V,	0,5 - 3	< 18	175	175	80	0,9
	GUARDIAN 1E	3 x 400V,	0,5 - 4	< 9	245	195	95	1
	GUARDIAN 2E	3 x 400V,	5,5 - 10	< 20	215	170	75	1,4
	GUARDIAN 3E	3 x 400V,	12,5 - 15	< 30	215	170	75	1,6

TECHNICAL APPENDIX

DETERMINATION OF THE CROSS SECTION OF THE POWER CABLE

SINGLE-PHASE 4" MOTOR (4GG)

CABLE SIZING TAKING INTO ACCOUNT A 3 % VOLTAGE DROP

MOTOR TYPE	NOMINAL POWER		NOMINAL VOLTAGE V	MOTOR NOMINAL CURRENT In (A)	Cos φ	Cable section: 4x ...mm ²							
	kW	HP				mm ²	1,5	2,5	4	6	10	16	25
						A max	23	30	41	53	74	99	131
Maximum length in metres (m)													
4"	0,37	0,5	1x230	3,3	3,3	65	108	172	257	428			
4"	0,55	0,75	1x230	4,6	4,6	48	80	127	190	316	502		
4"	0,75	1	1x230	6,2	6,2	36	60	96	144	239	379	585	
4"	1,1	1,5	1x230	8,6	8,6	27	44	71	106	176	279	430	
4"	1,5	2	1x230	11	11	21	34	55	82	136	216	333	
4"	2,2	3	1x230	16	16	15	24	39	58	95	151	233	
4"	3,7	5	1x230	25	25	-	14	23	35	58	91	142	

Free air installation at maximum temperature of 35 °C

THREE-PHASE 4" MOTOR (4GG)

CABLE SIZING TAKING INTO ACCOUNT A 3 % VOLTAGE DROP

MOTOR TYPE	NOMINAL POWER		NOMINAL VOLTAGE V	MOTOR NOMINAL CURRENT In (A)	Cos φ	Cable section: 4x ...mm ²							
	kW	HP				mm ²	1,5	2,5	4	6	10	16	25
						A max	23	30	41	53	74	99	131
Maximum length in metres (m)													
4"	0,37	0,5	3x230	2,7	0,66	178	296	471					
4"	0,55	0,75	3x230	3,3	0,72	134	222	354	528				
4"	0,75	1	3x230	4,1	0,72	108	179	285	425				
4"	1,1	1,5	3x230	5,7	0,76	73	122	194	290	478			
4"	1,5	2	3x230	7,6	0,72	58	96	154	229	377	593		
4"	2,2	3	3x230	10,2	0,78	40	66	106	158	261	411		
4"	3	4	3x230	14,3	0,71	31	52	83	123	203	319	486	
4"	4	5,5	3x230	17,3	0,79	23	39	62	92	152	240	367	
4"	5,5	7,5	3x230	24,2	0,74	-	29	47	70	116	182	277	
4"	0,37	0,5	3x400	1,4	0,66	597							
4"	0,55	0,75	3x400	1,9	0,72	404							
4"	0,75	1	3x400	2,4	0,72	320	531						
4"	1,1	1,5	3x400	3,4	0,76	214	356	567					
4"	1,5	2	3x400	4,4	0,72	174	290	462					
4"	2,2	3	3x400	5,9	0,78	120	200	318	475				
4"	3	4	3x400	8,3	0,71	94	156	248	370				
4"	4	5,5	3x400	10	0,79	70	116	186	277	457			
4"	5,5	7,5	3x400	14	0,74	53	89	141	211	347	547		
4"	7,5	10	3x400	17,4	0,8	-	66	105	157	260	410		

Free air installation at maximum temperature of 35 °C

TECHNICAL APPENDIX

INDICATIVE CHOICE OF THE ELECTRIC GENERATOR CAPABLE OF POWERING THE SUBMERSIBLE MOTOR

P2 - MOTOR POWER		GENERATOR			
		DOL (DIRECT START-UP)		SD (STAR-DELTA START-UP)	
kW	Hp	kW	kVA	kW	kVA
2,2	3	6	7,5	-	-
4	5,5	10	12,5	8	10
5,5	7,5	12,5	15,6	11	13,8
7,5	10	15	18,8	14	17,5
9,2	12,5	19	24	17	21
11	15	22,5	28	21	26
13	17,5	26,5	33	24	30
15	20	30	38	28	35
18,5	25	37	46	34	42,5
22	30	45	56	41	51
26	35	52	65	45	57
30	40	60	75	52	65
37	50	75	94	64	81
45	60	90	112	78	97
55	75	110	138	95	119
63	85	135	169	114	142
75	100	150	190	128	160
92	125	185	230	158	198
110	150	210	260	190	237
132	180	260	325	225	281
147	200	300	375	260	325
170	230	340	425	295	369
190	260	380	475	329	411
220	300	440	550	381	476
250	340	500	625	433	541

WINDING RESISTANCE TABLES

In case of single-phase motors, both the running (Rm) and the start-up (Ra) winding resistance are indicated.

SINGLE-PHASE MOTORS

MODEL	P2		V	Rm	Ra
	HP	kW	V	Ω	Ω
4GG - 4GX	0,5	0,37	230	8,8	18,8
	0,75	0,55	230	5,6	13,5
	1	0,75	230	3,5	6,7
	1,5	1,1	230	2,5	5,4
	2	1,5	230	1,9	5,0
	3	2,2	230	1,6	3,7
5	3,7	230	0,9	1,7	

SINGLE-PHASE MOTORS

MODEL	P2		V	Rm	Ra
	HP	kW	V	Ω	Ω
40L	0,5	0,37	230	9,3	20,3
	0,75	0,55	230	6,5	13,7
	1	0,75	230	4,0	8,6
	1,5	1,1	230	3,0	6,1
	2	1,5	230	2,3	5,0
	3	2,2	230	1,6	3,7

THREE-PHASE MOTORS

MODEL	P2		V	R
	HP	kW	V	Ω
4GG - 4GX	0,5	0,37	230	11,7
	0,5	0,37	400	35,0
	0,75	0,55	230	8,5
	0,75	0,55	400	25,6
	1	0,75	230	5,8
	1	0,75	400	17,3
	1,5	1,1	230	4,3
	1,5	1,1	400	13,0
	2	1,5	230	3,0
	2	1,5	400	8,9
	3	2,2	230	2,0
	3	2,2	400	6,0
	4	3	230	1,4
	4	3	400	4,2
	5,5	4	230	1,1
	5,5	4	400	3,3
	7,5	5,5	230	0,8
7,5	5,5	400	2,4	
10	7,5	400	2,0	

THREE-PHASE MOTORS

MODEL	P2		V	R
	HP	kW	V	Ω
40L	0,5	0,37	230	14,2
	0,5	0,37	400	42,5
	0,75	0,55	230	8,5
	0,75	0,55	400	25,5
	1	0,75	230	6,3
	1	0,75	400	18,0
	1,5	1,1	230	3,8
	1,5	1,1	400	11,7
	2	1,5	230	2,7
	2	1,5	400	8,3
	3	2,2	230	2
	3	2,2	400	6,2
	4	3	230	1,6
	4	3	400	4,7
	5,5	4	230	1
	5,5	4	400	3
	7,5	5,5	230	0,9
7,5	5,5	400	2,6	
10	7,5	400	1,9	