

**EBARA**

**SPECIFICATIONS**

50 Hz

Rev. G

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## SPECIFICATIONS

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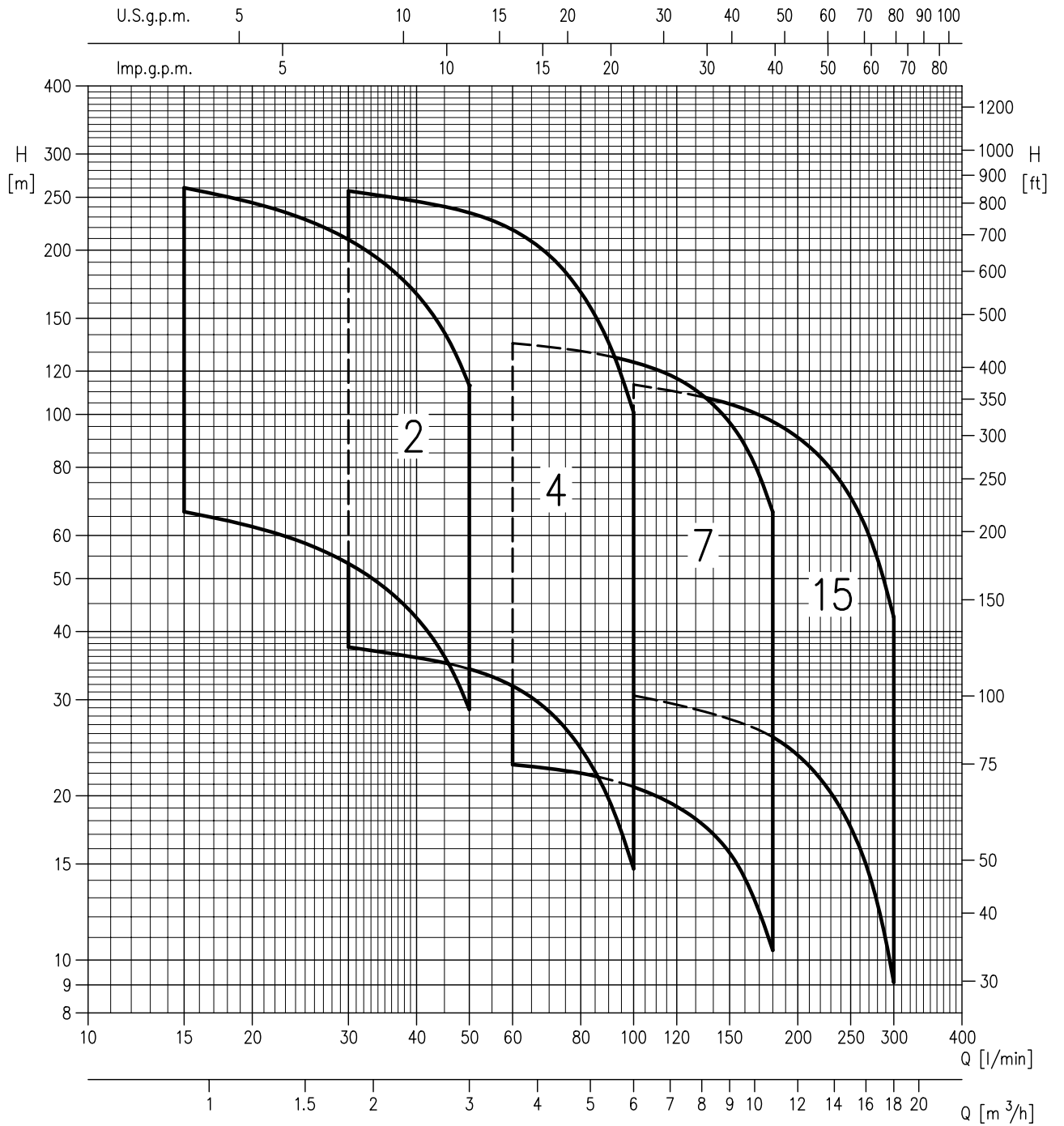
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	Maximum 30
	Sand content	Maximum : 50 parts per million
	Chlorine ion density	Maximum : 500 parts per million
Construction	Impeller	Closed centrifugal type
	Bearing	Sleeve type - tungsten carbide
Pipe connection	Suction	N/A
	Discharge	G1 1/4 ( 4BHS2 ) - G 1 1/2 ( 4BHS4 ) - G 2 (4BHS7-4BHS15) UNI ISO 228
Material	Impeller	EN 1.4301 (AISI 304)
	Intermediate casing	EN 1.4301 (AISI 304)
	Suction casing	EN 1.4301 (AISI 304)
	Discharge casing	EN 1.4301 (AISI 304)
	Shaft	EN 1.4401 (AISI 316)
	Liner ring	EPDM / EN 1.4301 (AISI 304)
	Valve	EN 1.4301 (AISI 304)
"O" ring	NBR	
Applicable standard of test		ISO 9906 Grade 2

MOTOR					
Type	Submersible oil filled (type O)		Submersible water filled (type W)		
	Single phase	Three phase	Single phase	Three phase	
Power rating	[kW]	0.55÷2.2	0.55÷5.5	0.55÷2.2	0.55÷5.5
	[HP]	0.75÷3.0	0.75÷7.5	0.75÷3.0	0.75÷7.5
No. of Poles	2				
Rated speed	Refer to each characteristic performance rotation speed as rated speed				
Insulation class	F		B		
Protection degree	IP 58				
Maximum immersion [m]	150				
Starts / hours	30				
Start type	Direct on line				
Frequency [Hz]	50 Hz				
Voltage [V]	230(+6-10%)	400(+6-10%)	230(±6%)	400(±6%)	
Capacitor for start and run	Fitted in starter box	-	Fitted in starter box	-	
Over load protection	Fitted in starter box	Provided by the user	Fitted in starter box	Provided by the user	
Sealing liquid	Oil type: Marcol 82 (Esso)		Propylene Glycol 50% water solution		
Motor bracket	Brass		Brass with nickel plate		
Casing material	EN 1.4301 (AISI 304)				
Power cable material	EPDM/Cross Seald Polyethylene				
Power cable size [mm <sup>2</sup> ]	4x1.5				
Power cable length [m]	L=1.75 (up to 2.2 kW) / L=2.5 (for 3 and 4 kW) / L=4 (for 5.5kW)				
Flange mount	NEMA standard				

**SELECTION CHART**

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**SELECTION CHART**

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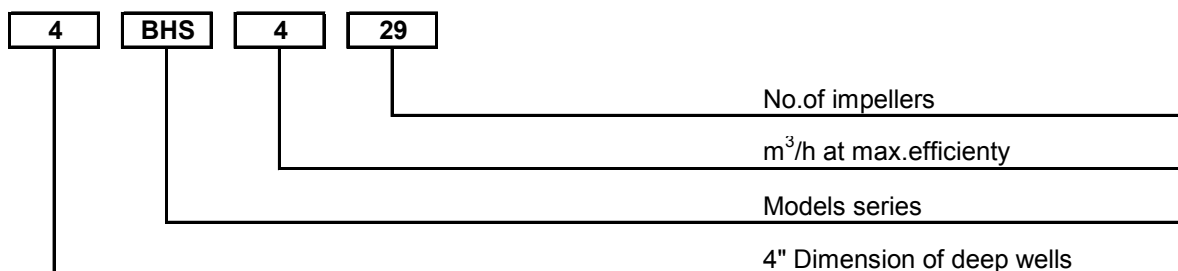
Pump Type 4BHS		Power		Q=Capacity															
				l/min.	0	15	20	30	40	50	60	80	100	120	150	180	220	260	300
Single phase	Three phase	kW	HP	m <sup>3</sup> /h	0	0.9	1.2	1.8	2.4	3.0	3.6	4.8	6	7.2	9	10.8	13.2	15.6	18
				H=Total manometric head in meters															
4BHS2 13/5M	4BHS2 13/5	0.55	0.75	75.5	66.5	62.5	53.5	42.5	28.6	-	-	-	-	-	-	-	-	-	-
4BHS2 18/7M	4BHS2 18/7	0.75	1.0	104.0	92.0	86.0	74.0	58.5	39.6	-	-	-	-	-	-	-	-	-	-
4BHS2 27/11M	4BHS2 27/11	1.1	1.5	157.0	138.0	129.0	111.0	88.0	59.5	-	-	-	-	-	-	-	-	-	-
4BHS2 36/15M	4BHS2 36/15	1.5	2.0	209.0	184.0	172.0	148.0	117.0	79.0	-	-	-	-	-	-	-	-	-	-
4BHS2 44/22M	4BHS2 44/22	2.2	3.0	255.0	224.0	211.0	180.0	143.0	97.0	-	-	-	-	-	-	-	-	-	-
4BHS2 51/22M	4BHS2 51/22	2.2	3.0	296.0	260.0	244.0	209.0	166.0	112.0	-	-	-	-	-	-	-	-	-	-
4BHS4 7/5M	4BHS4 7/5	0.55	0.75	43.0	-	-	37.5	35.8	34.2	31.8	24.4	14.7	-	-	-	-	-	-	-
4BHS4 10/7M	4BHS4 10/7	0.75	1.0	61.5	-	-	53.5	51.0	49.0	45.5	34.9	21.0	-	-	-	-	-	-	-
4BHS4 15/11M	4BHS4 15/11	1.1	1.5	92.5	-	-	80.5	77.0	73.0	68.0	52.5	31.5	-	-	-	-	-	-	-
4BHS4 20/15M	4BHS4 20/15	1.5	2.0	123.0	-	-	107.0	102.0	97.5	91.0	70.0	42.0	-	-	-	-	-	-	-
4BHS4 24/22M	4BHS4 24/22	2.2	3.0	148.0	-	-	128.0	123.0	117.0	109.0	84.0	50.5	-	-	-	-	-	-	-
4BHS4 29/22M	4BHS4 29/22	2.2	3.0	178.0	-	-	155.0	148.0	142.0	132.0	101.0	61.0	-	-	-	-	-	-	-
/	4BHS4 36/30	3.0	4.0	221.0	-	-	193.0	184.0	176.0	163.0	126.0	75.5	-	-	-	-	-	-	-
/	4BHS4 48/40	4.0	5.5	295.0	-	-	257.0	246.0	234.0	218.0	168.0	101.0	-	-	-	-	-	-	-
4BHS7 4/7M	4BHS7 4/7	0.75	1.0	24.6	-	-	-	-	-	22.8	22.0	20.8	19.1	15.7	10.4	-	-	-	-
4BHS7 7/11M	4BHS7 7/11	1.1	1.5	43.0	-	-	-	-	-	39.9	38.5	36.3	33.5	27.5	18.2	-	-	-	-
4BHS7 10/15M	4BHS7 10/15	1.5	2.0	61.5	-	-	-	-	-	57.0	55.0	52.0	48.0	39.3	26.0	-	-	-	-
4BHS7 12/22M	4BHS7 12/22	2.2	3.0	74.0	-	-	-	-	-	68.5	66.0	62.5	57.5	47.0	31.3	-	-	-	-
4BHS7 14/22M	4BHS7 14/22	2.2	3.0	86.0	-	-	-	-	-	80.0	77.0	72.5	67.0	55.0	36.5	-	-	-	-
/	4BHS7 18/30	3.0	4.0	113.0	-	-	-	-	-	106.0	102.0	97.5	91.0	75.5	52.0	-	-	-	-
/	4BHS7 23/40	4.0	5.5	144.0	-	-	-	-	-	135.0	131.0	125.0	116.0	96.5	66.0	-	-	-	-
4BHS15 7/15M	4BHS15 7/15	1.5	2.0	38.5	-	-	-	-	-	-	-	30.5	29.3	27.7	25.6	21.5	16.0	9.1	
4BHS15 10/22M	4BHS15 10/22	2.2	3.0	55.0	-	-	-	-	-	-	-	43.5	42.0	39.5	36.6	30.7	22.9	13.0	
/	4BHS15 13/30	3.0	4.0	71.5	-	-	-	-	-	-	-	59.0	57.5	54.5	50.5	43.5	34.1	22.1	
/	4BHS15 17/40	4.0	5.5	93.5	-	-	-	-	-	-	-	77.0	75.0	71.0	66.0	57.0	44.5	28.9	
/	4BHS15 25/55	5.5	7.5	138.0	-	-	-	-	-	-	-	114.0	110.0	105.0	97.0	83.5	65.5	42.5	

## TYPE KEY

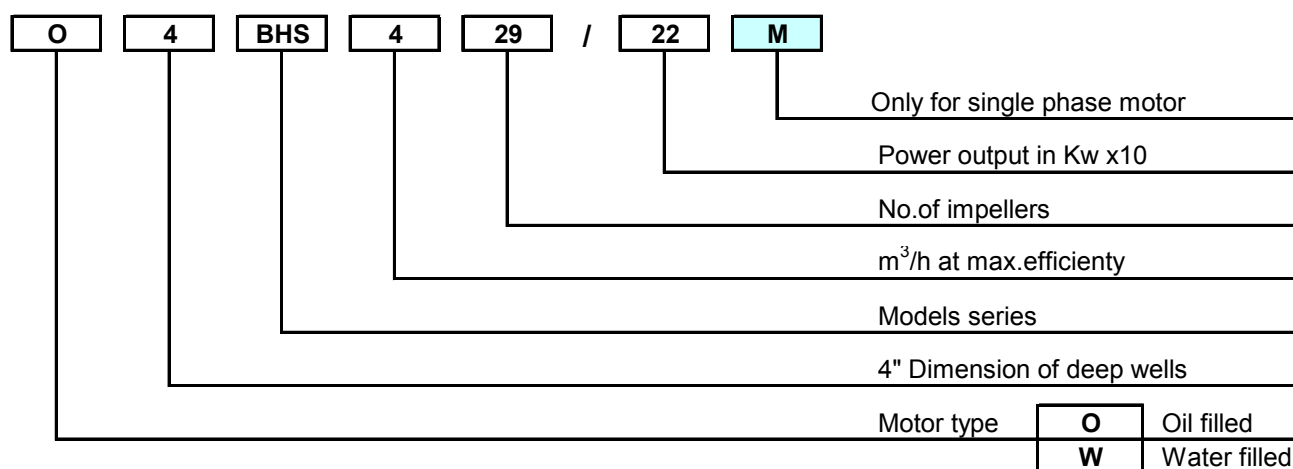
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EXAMPLE ( pump without motor ) :



EXAMPLE ( pump with motor ) :



## PERFORMANCE CURVES

The specifications below qualify the curves shown on the following pages.

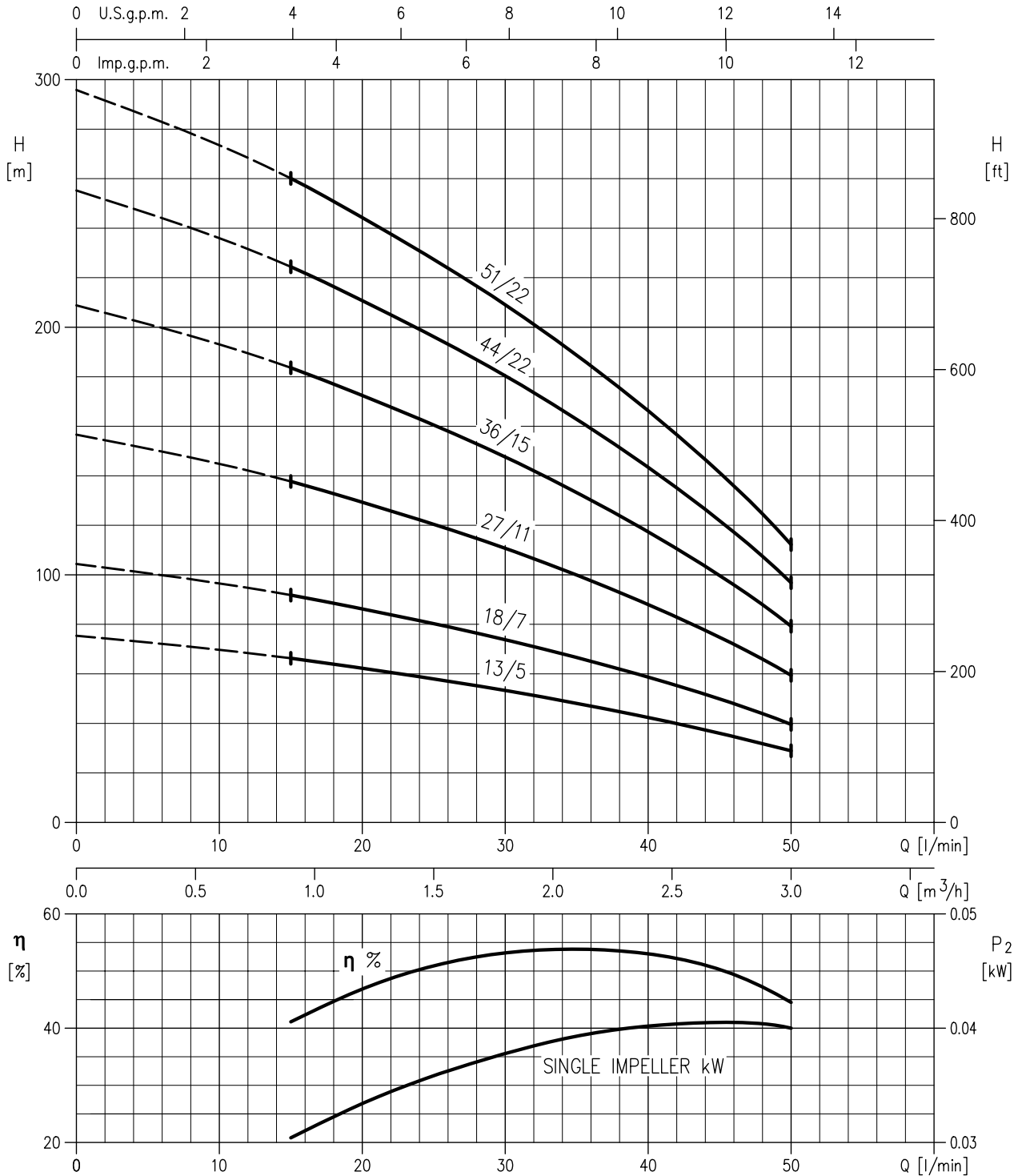
- ◆ Tolerances according to ISO 9906 Annex A
- ◆ The curves refer to effective speed of asynchronous motors at 50 Hz
- ◆ Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)  
During the pump selection, consider to get a safety margin of at least 0.5 m.
- ◆ The continuous curves indicate the recommended working range. The dotted curve is only a guide.
- ◆ In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.
- ◆ Symbols explanation:
  - Q = volume flow rate
  - H = total head
  - P<sub>2</sub> = pump power input (shaft power)
  - $\eta$  = pump efficiency

PERFORMANCE CURVE

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**4BHS2**  
Impeller diameter = 70.5 mm



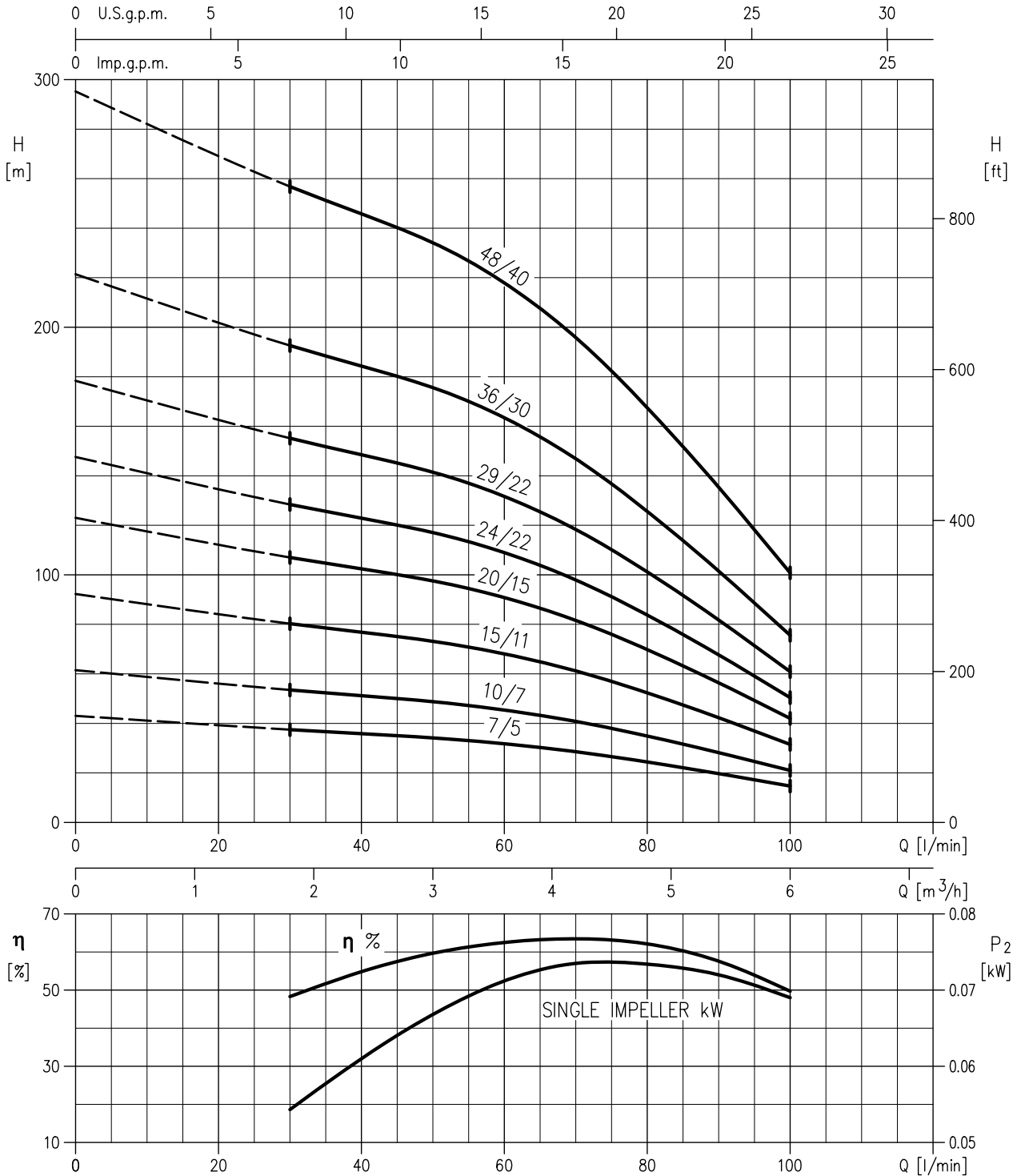
Rotation speed ≈ 2850 min<sup>-1</sup>

PERFORMANCE CURVE

50 Hz

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**4BHS4**  
Impeller diameter = 72 mm



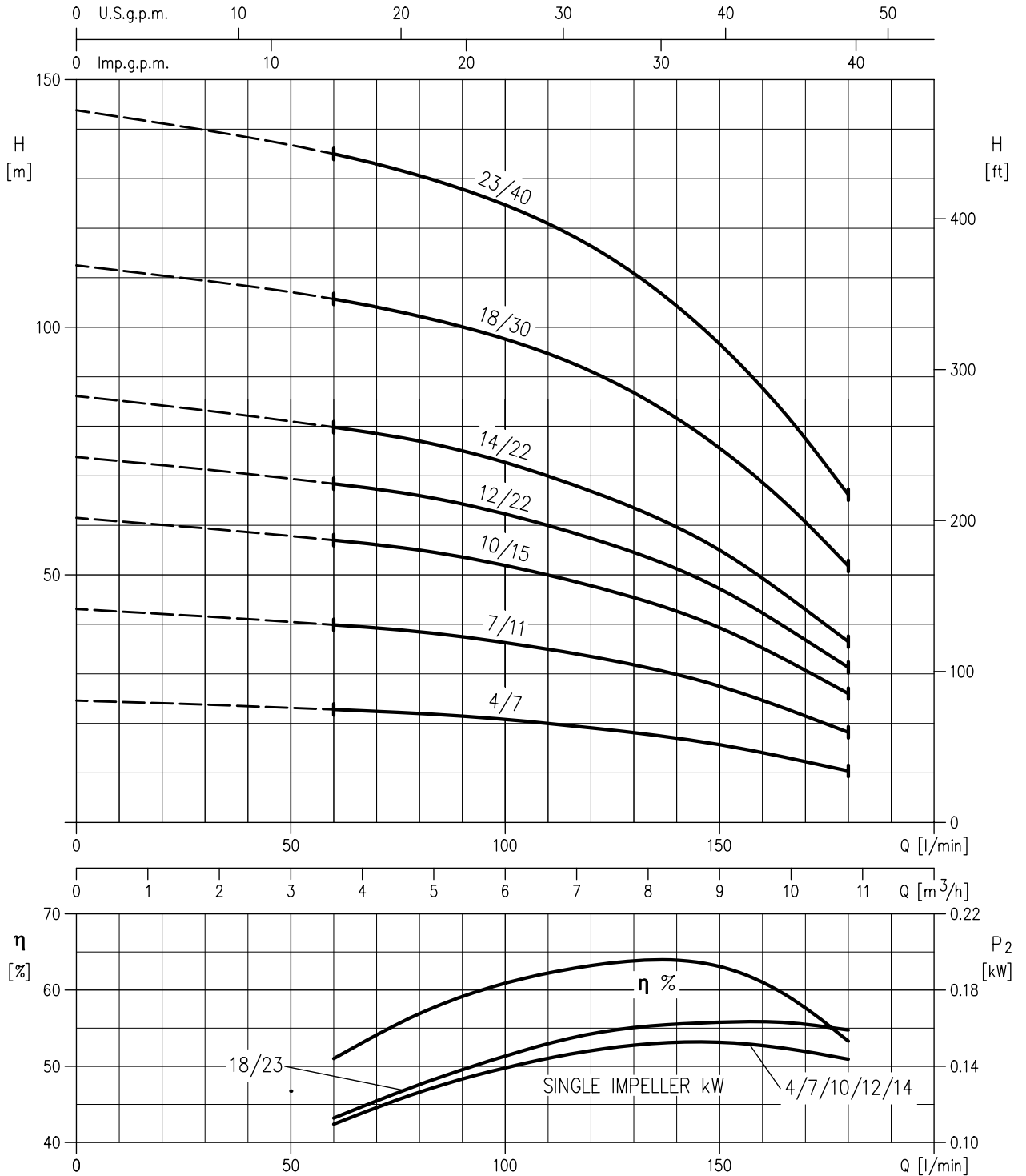
Rotation speed ≈ 2850 min<sup>-1</sup>

PERFORMANCE CURVE

50 Hz

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**4BHS7**  
Impeller diameter = 74 mm



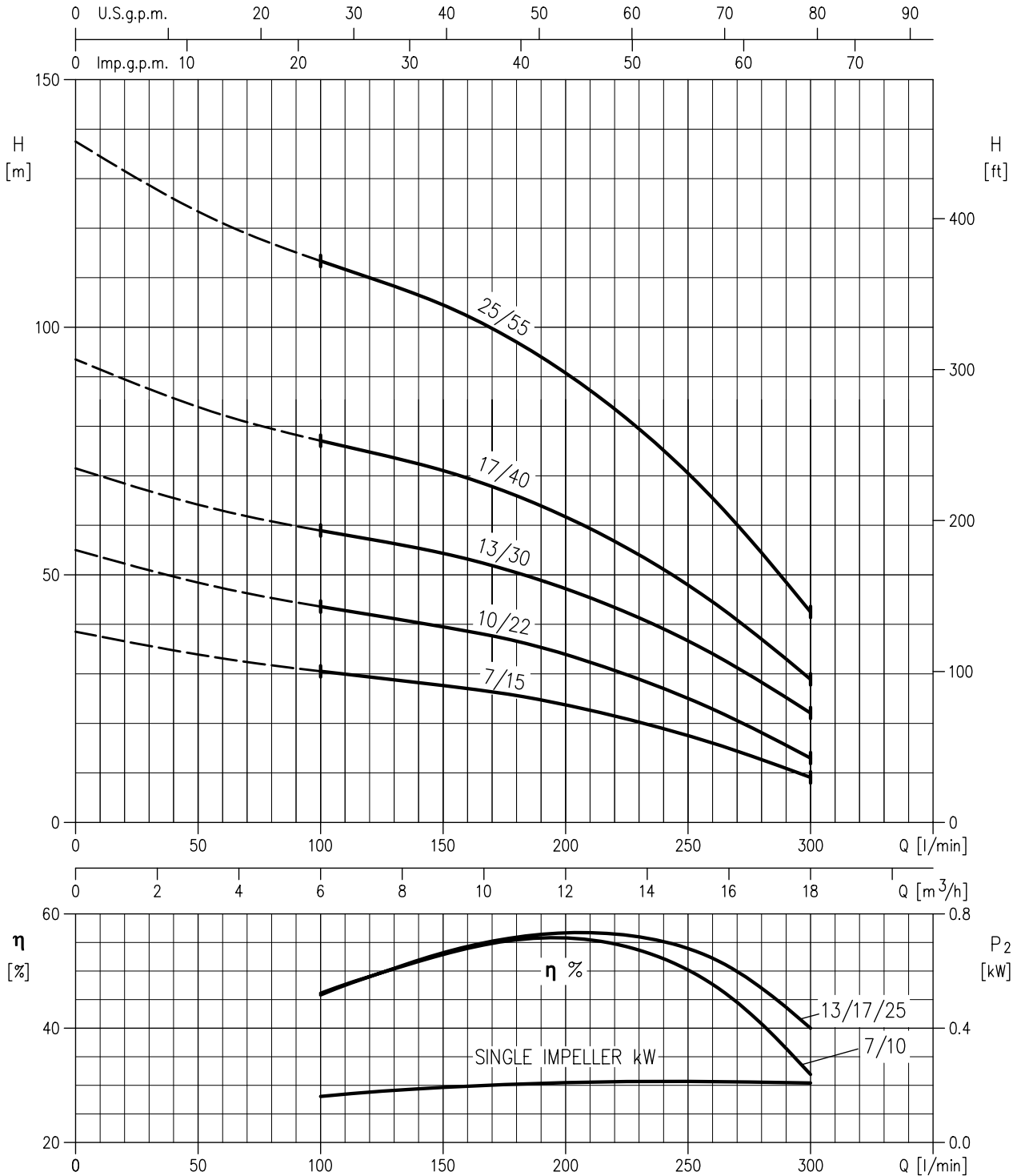
Rotation speed ≈ 2850 min<sup>-1</sup>

PERFORMANCE CURVE

50 Hz

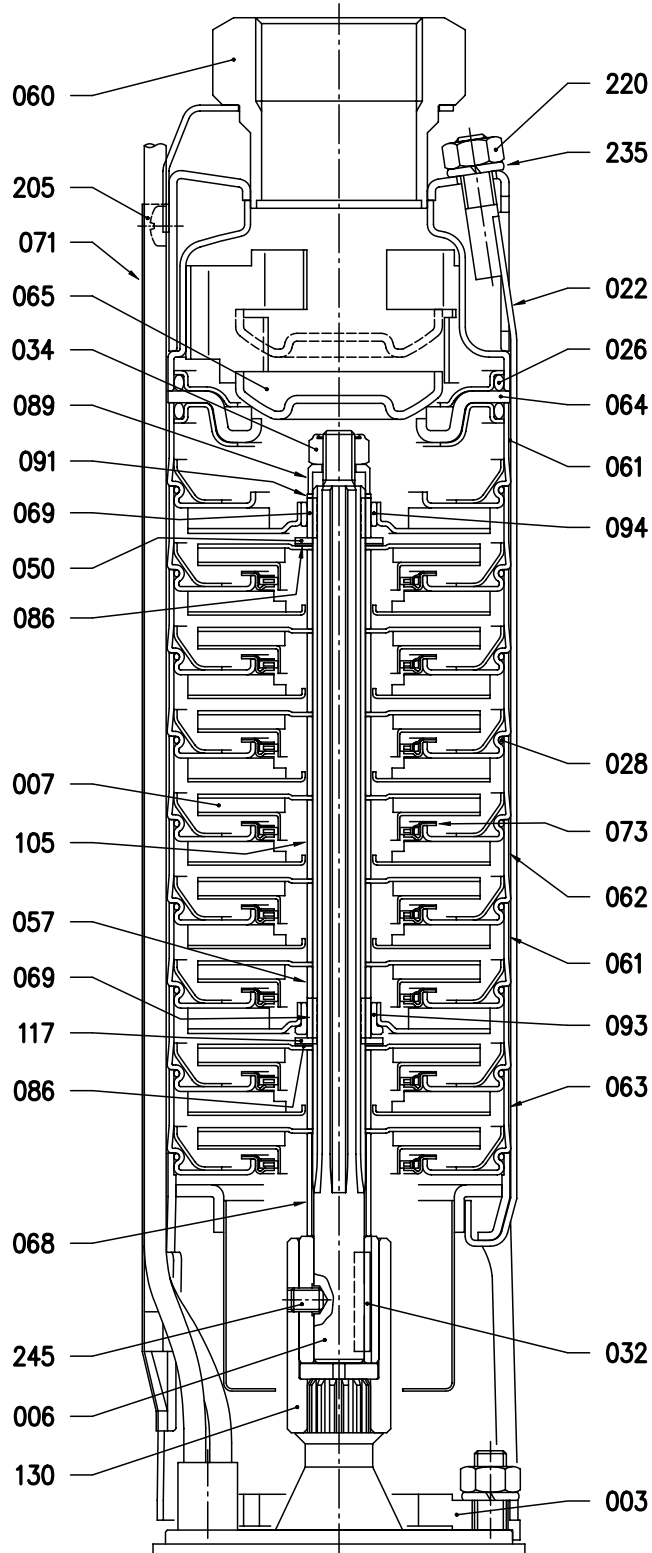
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**4BHS15**  
Impeller diameter = 72 mm



Rotation speed ≈ 2850 min<sup>-1</sup>

SECTIONAL VIEW



**CONSTRUCTIONS**

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Pos.	PART.NAME	DIMENSIONS	MATERIAL	Q.TY
003	Bracket		EN 1.4301 (AISI 304)	1
006	Pump shaft		EN 1.4401 (AISI 316)	1
007	Impeller		EN 1.4301 (AISI 304)	[*]
022	Strap		EN 1.4301 (AISI 304)	4
026	"O" ring	3 x 74.5	NBR	2
028	"O" ring	1.85 x 78.4	NBR	[*]
032	Key	A 4 x 4 x 25 UNI 6604	EN 1.4401 (AISI 316)	1
034	Impeller nut self locking	M8	EN 1.4301 (AISI 304)	1
050	Washer		EN 1.4301 (AISI 304)	[*]
057	Bearing spacer		EN 1.4301 (AISI 304)	[*]
060	Discharge casing		EN 1.4301 (AISI 304)	1
061	Intermediate casing bearing		EN 1.4301 (AISI 304)	[*]
062	Intermediate casing		EN 1.4301 (AISI 304)	[*]
063	Intermediate casing suction		EN 1.4301 (AISI 304)	1
064	Valve seat		EN 1.4301 (AISI 304) + NBR	1
065	Valve		EN 1.4301 (AISI 304)	1
068	Spacer		EN 1.4301 (AISI 304)	1
069	Shaft sleeve		Tungsten carbide	[*]
071	Cable cover		EN 1.4301 (AISI 304)	1
073	Liner ring		EN 1.4301 (AISI 304) + EPDM	[*]
086	Spacer		EN 1.4301 (AISI 304)	[*]
089	Washer		EN 1.4301 (AISI 304)	1
091	Spacer		EN 1.4301 (AISI 304)	[*]
093	Axial bearing		Tungsten carbide	1
094	Radial bearing		Tungsten carbide	[*]
105	Spacer		EN 1.4301 (AISI 304)	[*]
117	Friction ring		Tungsten carbide	1
130	Coupling		EN 1.4301 (AISI 304)	1
205	Screw	M5 x 6 UNI 7687	EN 1.4301 (AISI 304)	2
220	Nut	M8 UNI 5588	EN 1.4301 (AISI 304)	4
235	Washer	8,4 UNI 1751	EN 1.4301 (AISI 304)	4
245	Set screw	M6 x 8 UNI 5923	EN 1.4301 (AISI 304)	1

[\*] See table pag.302

**CONSTRUCTIONS**

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Pump type	Quantity for model											
	N°007	N°028	N°050	N°057	N°061	N°062	N°069	N°073	N°086	N°091	N°094	N°105
4BHS2 13	13	14	/	0	1	12	1	13	1	1	0	12
4BHS2 18	18	19	1	1	2	16	2	18	2	1	1	16
4BHS2 27	27	28	1	1	2	25	2	27	2	1	1	25
4BHS2 36	36	37	2	2	3	33	3	36	3	1	2	33
4BHS2 44	44	45	3	3	4	40	4	44	4	1	3	40
4BHS2 51	51	52	3	3	4	47	4	51	4	1	3	47
4BHS4 7	7	8	/	0	1	6	1	7	1	1	0	6
4BHS4 10	10	11	/	0	1	9	1	10	1	1	0	9
4BHS4 15	15	16	/	0	1	14	1	15	1	1	0	14
4BHS4 20	20	21	1	1	2	18	2	20	2	1	1	18
4BHS4 24	24	25	1	1	2	22	2	24	2	1	1	22
4BHS4 29	29	30	2	2	3	26	3	29	3	1	2	26
4BHS4 36	36	37	2	2	3	33	3	36	3	1	2	33
4BHS4 48	48	49	3	3	4	44	4	48	4	1	3	44
4BHS7 4	4	5	/	0	1	4	1	4	/	/	0	3
4BHS7 7	7	8	/	0	1	6	1	7	/	/	0	6
4BHS7 10	10	11	/	0	1	9	1	10	/	/	0	9
4BHS7 12	12	13	1	1	2	10	2	12	/	/	1	10
4BHS7 14	14	15	1	1	2	12	2	14	/	/	1	12
4BHS7 18	18	19	1	1	2	16	2	18	/	/	1	16
4BHS7 23	23	24	2	2	3	20	3	23	/	/	2	20
4BHS15 7	7	8	/	0	1	6	1	7	/	/	0	6
4BHS15 10	10	11	1	1	2	8	2	10	/	/	1	8
4BHS15 13	13	14	1	1	2	11	2	13	/	/	1	11
4BHS15 17	17	18	2	2	3	14	3	17	/	/	2	14
4BHS15 25	25	26	3	3	4	21	4	25	/	/	3	21

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Pump type	N° impeller	Intermediate casing with bearing					
		Quantity for model		Position *			
		axial	radial				
4BHS2 13	13	1	/				14th
4BHS2 18	18	1	1	5th			19th
4BHS2 27	27	1	1	5th			28th
4BHS2 36	36	1	2	5th	20th		37th
4BHS2 44	44	1	3	5th	20th	35th	45th
4BHS2 51	51	1	3	5th	20th	35th	52th
4BHS4 7	7	1	/				8th
4BHS4 10	10	1	/				11th
4BHS4 15	15	1	/				16th
4BHS4 20	20	1	1	5th			21th
4BHS4 24	24	1	1	5th			25th
4BHS4 29	29	1	2	5th	20th		30th
4BHS4 36	36	1	2	5th	20th		37th
4BHS4 48	48	1	3	5th	20th	35th	49th
4BHS7 4	4	1	/				5th
4BHS7 7	7	1	/				8th
4BHS7 10	10	1	/				11th
4BHS7 12	12	1	1	4th			13th
4BHS7 14	14	1	1	4th			15th
4BHS7 18	18	1	1	4th			19th
4BHS7 23	23	1	2	4th	16th		24th
4BHS15 7	7	1	/				8th
4BHS15 10	10	1	1	3th			11th
4BHS15 13	13	1	1	3th			14th
4BHS15 17	17	1	2	3th	12th		18th
4BHS15 25	25	1	3	3th	12th	21th	26th

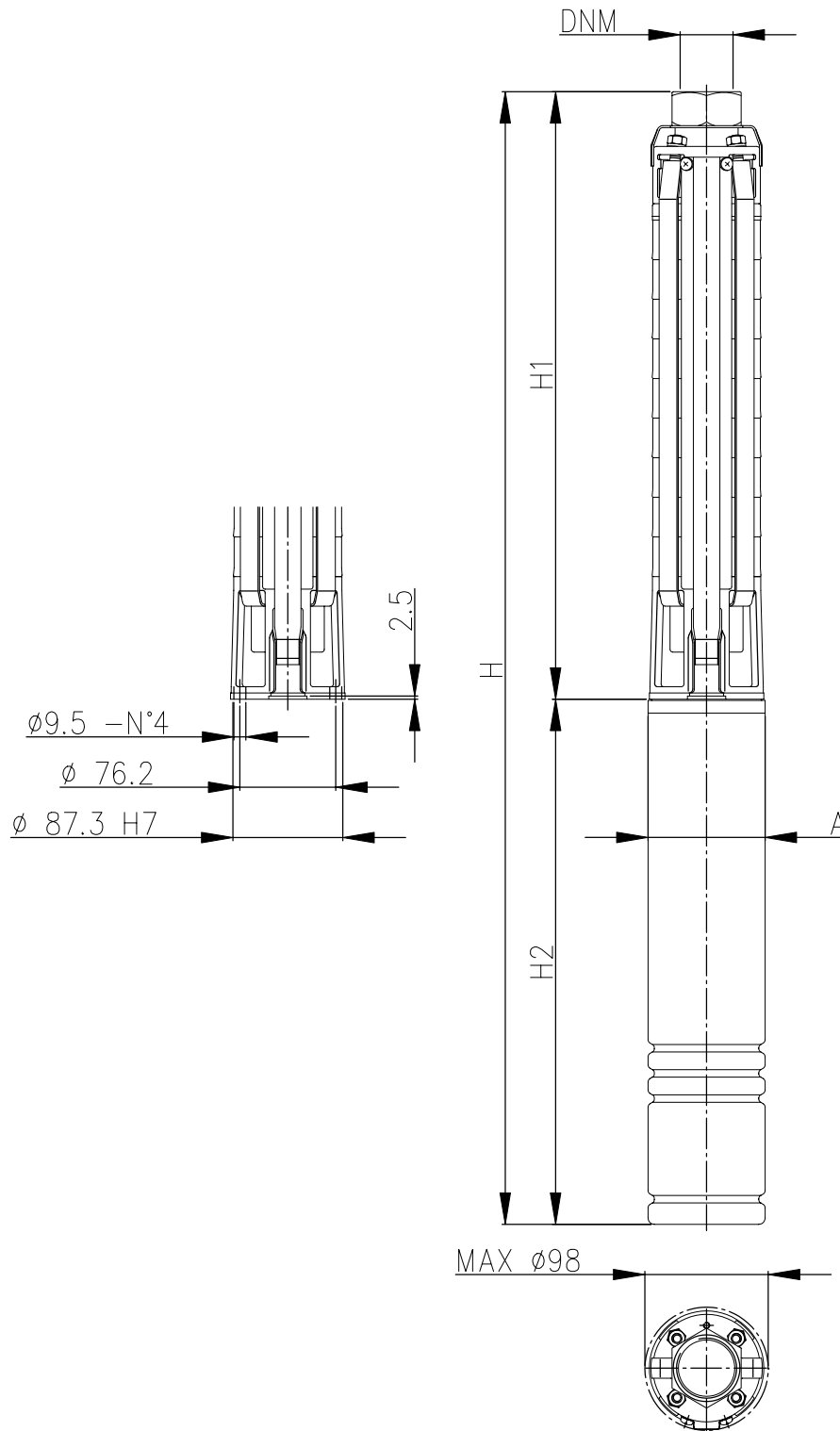
\* the first intermediate suction casing is used as reference for the position of the bearing

axial bearing

DIMENSIONS

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**DIMENSIONS**

50 Hz

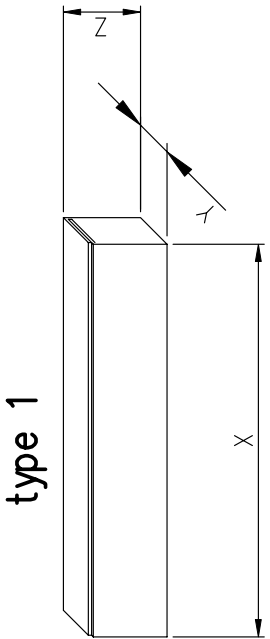
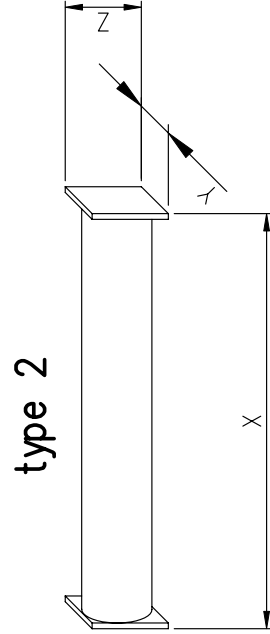
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Pump type	Power		Pump without motor		Pump with oil filled motor						Pump with water filled motor					
	kW	HP	DNM	H1 [mm]	single phase			three phase			single phase			three phase		
					A [mm]	H2 [mm]	H [mm]	A [mm]	H2 [mm]	H [mm]	A [mm]	H2 [mm]	H [mm]	A [mm]	H2 [mm]	H [mm]
4BHS2 13/5	0,55	0.75	G 1 1/4	489	97	325	814	97	325	814	91	248	737	91	228	717
4BHS2 18/7	0,75	1.0	G 1 1/4	594	97	350	944	97	325	919	91	283	877	91	248	842
4BHS2 27/11	1,1	1.5	G 1 1/4	783	97	385	1168	97	350	1133	91	339	1122	91	283	1066
4BHS2 36/15	1,5	2.0	G 1 1/4	972	97	420	1392	97	385	1357	91	350	1322	91	307	1279
4BHS2 44/22	2,2	3.0	G 1 1/4	1140	97	470	1610	97	420	1560	91	437	1577	91	339	1479
4BHS2 51/22	2,2	3.0	G 1 1/4	1287	97	470	1757	97	420	1707	91	437	1724	91	339	1626
4BHS4 7/5	0,55	0.75	G 1 1/2	368	97	325	693	97	325	693	91	248	616	91	228	596
4BHS4 10/7	0,75	1.0	G 1 1/2	431	97	350	781	97	325	756	91	283	714	91	248	679
4BHS4 15/11	1,1	1.5	G 1 1/2	536	97	385	921	97	350	886	91	339	875	91	283	819
4BHS4 20/15	1,5	2.0	G 1 1/2	641	97	420	1061	97	385	1026	91	350	991	91	307	948
4BHS4 24/22	2,2	3.0	G 1 1/2	725	97	470	1195	97	420	1145	91	437	1162	91	339	1064
4BHS4 29/22	2,2	3.0	G 1 1/2	830	97	470	1300	97	420	1250	91	437	1267	91	339	1169
4BHS4 36/30	3,0	4.0	G 1 1/2	977	97	/	/	97	544	1521	91	/	/	91	394	1371
4BHS4 48/40	4,0	5.5	G 1 1/2	1229	97	/	/	97	574	1803	91	/	/	91	543	1772
4BHS7 4/7	0,75	1.0	G 2	373	97	350	723	97	325	698	91	283	656	91	248	621
4BHS7 7/11	1,1	1.5	G 2	468	97	385	853	97	350	818	91	339	807	91	283	751
4BHS7 10/15	1,5	2.0	G 2	562	97	420	982	97	385	947	91	350	912	91	307	869
4BHS7 12/22	2,2	3.0	G 2	625	97	470	1095	97	420	1045	91	437	1062	91	339	964
4BHS7 14/22	2,2	3.0	G 2	688	97	470	1158	97	420	1108	91	437	1125	91	339	1027
4BHS7 18/30	3,0	4.0	G 2	814	97	/	/	97	544	1358	91	/	/	91	394	1208
4BHS7 23/40	4,0	5.5	G 2	972	97	/	/	97	574	1546	91	/	/	91	543	1515
4BHS15 7/15	1,5	2.0	G 2	552	97	420	972	97	385	937	91	350	902	91	307	859
4BHS15 10/22	2,2	3.0	G 2	678	97	470	1148	97	420	1098	91	437	1115	91	339	1017
4BHS15 13/30	3,0	4.0	G 2	804	97	/	/	97	544	1348	91	/	/	91	394	1198
4BHS15 17/40	4,0	5.5	G 2	972	97	/	/	97	574	1546	91	/	/	91	543	1515
4BHS15 25/55	5,5	7.5	G 2	1308	97	/	/	97	644	1952	91	/	/	91	653	1961

PACKING AND WEIGHT

50 Hz

Rev. G



Pump type	Pump without motor						Pump with oil filled motor						Pump with water filled motor												
	Single phase			Three phase			Single phase			Three phase			Single phase			Three phase									
	X [mm]	Y [mm]	Z [mm]	weight [kgf]	type	X [mm]	Y [mm]	Z [mm]	weight [kgf]	type	X [mm]	Y [mm]	Z [mm]	weight [kgf]	type	X [mm]	Y [mm]	Z [mm]	weight [kgf]	type					
4BHS2 13/5	495	100	100	6.6	1	1035	100	100	14.2	1	1035	100	100	13.6	1	800	100	100	15.1	1	800	100	100	14.4	1
4BHS2 18/7	640	100	100	8.3	1	1035	100	100	17	1	1035	100	100	15.9	1	1035	100	100	18.3	1	1035	100	100	16.9	1
4BHS2 27/11	800	100	100	11	1	1300	100	100	21.3	1	1300	100	100	19.7	1	1300	100	100	22.8	1	1300	100	100	20.5	1
4BHS2 36/15	1035	100	100	13.8	1	1530	100	100	25.8	1	1530	100	100	24.2	1	1530	100	100	27.5	1	1530	100	100	24.9	1
4BHS2 44/22	1300	100	100	16.5	1	1810	110	110	32	2	1810	110	110	30.7	2	1810	110	110	32.9	2	1810	110	110	30.3	1
4BHS2 51/22	1300	100	100	18.7	1	1950	110	110	34.2	2	1950	110	110	32.9	2	1950	110	110	35.1	2	1810	110	110	32.5	2
4BHS4 7/5	495	100	100	4.4	1	800	100	100	12	1	800	100	100	11.4	1	800	100	100	12.9	1	800	100	100	12.2	1
4BHS4 10/7	495	100	100	5.5	1	800	100	100	14.2	1	800	100	100	13.1	1	800	100	100	15.5	1	800	100	100	14.1	1
4BHS4 15/11	640	100	100	7.2	1	1035	100	100	17.5	1	1035	100	100	15.9	1	1035	100	100	19	1	1035	100	100	16.7	1
4BHS4 20/15	640	100	100	8.3	1	1300	100	100	20.3	1	1300	100	100	18.7	1	1300	100	100	22	1	1035	100	100	19.4	1
4BHS4 24/22	800	100	100	9.9	1	1300	100	100	25.4	1	1300	100	100	24.1	1	1300	100	100	26.3	1	1300	100	100	23.7	1
4BHS4 29/22	1035	100	100	11.5	1	1530	100	100	27	1	1530	100	100	25.7	1	1530	100	100	27.9	1	1300	100	100	25.3	1
4BHS4 36/30	1035	100	100	14.3	1	/	/	/	/	/	1810	110	110	33.3	2	/	/	/	/	/	1530	100	100	31.6	1
4BHS4 48/40	1300	100	100	17.6	1	/	/	/	/	/	1950	110	110	37.6	2	/	/	/	/	/	1950	110	110	38.8	2
4BHS7 4/7	495	100	100	4.2	1	800	100	100	12.9	1	800	100	100	11.8	1	800	100	100	14.2	1	800	100	100	12.8	1
4BHS7 7/11	495	100	100	5	1	1035	100	100	15.3	1	1035	100	100	13.7	1	1035	100	100	16.8	1	800	100	100	14.5	1
4BHS7 10/15	640	100	100	6.6	1	1035	100	100	18.6	1	1035	100	100	17	1	1035	100	100	20.3	1	1035	100	100	17.7	1
4BHS7 12/22	640	100	100	7.7	1	1300	100	100	23.2	1	1300	100	100	21.9	1	1300	100	100	24.1	1	1035	100	100	21.5	1
4BHS7 14/22	800	100	100	8.3	1	1300	100	100	23.8	1	1300	100	100	22.5	1	1300	100	100	24.7	1	1300	100	100	22.1	1
4BHS7 18/30	1035	100	100	9.9	1	/	/	/	/	/	1530	100	100	28.9	1	/	/	/	/	/	1530	100	100	27.2	1
4BHS7 23/40	1035	100	100	11.5	1	/	/	/	/	/	1810	110	110	31.5	2	/	/	/	/	/	1810	110	110	32.7	2
4BHS15 7/15	640	100	100	5.8	1	1035	100	100	17.8	1	1035	100	100	16.2	1	1035	100	100	19.5	1	1035	100	100	16.9	1
4BHS15 10/22	800	100	100	7.3	1	1300	100	100	22.8	1	1300	100	100	21.5	1	1300	100	100	23.7	1	1300	100	100	21.1	1
4BHS15 13/30	1035	100	100	8.7	1	/	/	/	/	/	1530	100	100	27.7	1	/	/	/	/	/	1530	100	100	26	1
4BHS15 17/40	1035	100	100	10.7	1	/	/	/	/	/	1810	110	110	30.7	2	/	/	/	/	/	1810	110	110	31.9	2
4BHS15 25/55	1530	100	100	14.4	1	/	/	/	/	/	2110	110	110	36.8	2	/	/	/	/	/	2110	110	110	40.6	2

**OIL FILLED MOTOR**

Output power		Single phase 230 V				Three phase 400 V			
[kW]	HP	Input [kW]	IN [A]	IA [A]	Power factor	Input [kW]	IN [A]	IA [A]	Power factor
0.55	0.75	0.97	4.5	13.6	0.94	1.04	2	7	0.75
0.75	1	1.32	6	18.5	0.96	1.33	2.6	10	0.74
1.1	1.5	1.83	8.2	26	0.97	1.74	3.4	14	0.74
1.5	2	2.48	11	34	0.98	2.29	4.6	17	0.72
2.2	3	3.27	14.8	48	0.96	3.26	6.2	24	0.76
3	4	/	/	/	/	4.32	8	34	0.78
4	5.5	/	/	/	/	5.51	10.2	47	0.78
5.5	7.5	/	/	/	/	7.88	14.4	58	0.79

**WATER FILLED MOTOR**

Output power		Single phase 230 V				Three phase 400 V			
[kW]	HP	Input [kW]	IN [A]	IA [A]	Power factor	Input [kW]	IN [A]	IA [A]	Power factor
0.55	0.75	0.93	4.3	17.7	0.94	0.82	1.6	7.4	0.74
0.75	1	1.28	5.7	22.7	0.98	1.07	2	7	0.77
1.1	1.5	1.78	8.4	33.9	0.92	1.51	2.8	16	0.78
1.5	2	2.34	10.7	41.7	0.95	2.11	3.9	20.7	0.78
2.2	3	3.28	14.7	61.8	0.97	2.93	5.5	29.8	0.77
3	4	/	/	/	/	4	7.5	42	0.77
4	5.5	/	/	/	/	5.28	9.9	57	0.77
5.5	7.5	/	/	/	/	7.07	12.6	77.2	0.81

**OIL FILLED MOTORS CABLE SELECTION**

EXAMPLE : MOTOR 0.75 kW 230 V CABLE LENGTH 75 m - 4x2,5 mm<sup>2</sup>

**Single phase 230 V**

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	38	57	76	95	152	-	-	-
0.75	1	30	45	60	75	120	174	-	-
1.1	1.5	22	33	43	53	85	127	210	-
1.5	2	-	23	31	38	63	92	154	246
2.2	3	-	-	22	28	45	67	112	180

**Three phase 400 V**

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	164	246	328	-	-	-	-	-
0.75	1	133	200	266	333	-	-	-	-
1.1	1.5	97	146	195	244	390	-	-	-
1.5	2	72	109	145	180	290	435	-	-
2.2	3	51	78	103	130	207	310	516	-
3	4	41	62	83	104	167	250	416	-
4	5.5	31	46	62	77	124	186	310	496
5.5	7.5	-	33	45	56	90	135	225	360

(\*) Maximum cable length with a voltage drop of 3% at 30°C ambient temperature.

If the operating voltage  $U_i$  in the installation is different from the nominal voltage  $U_n$ , it is possible to calculate the permissible maximum length  $L_{max}$ , with the given table length  $L_{tab}$ , with the following formula:

$$L_{max} = L_{tab} (U_i / U_n)^2$$

## TECHNICAL DATA

50 Hz

Rev. G

### WATER FILLED MOTORS CABLE SELECTION

EXAMPLE : MOTOR 0.75 kW 230 V CABLE LENGTH 73 m - 4x2,5 mm<sup>2</sup>

#### Single phase 230 V

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	39	58	77	97	155	-	-	-
0.75	1	29	44	58	73	117	175	-	-
1.1	1.5	20	30	40	50	79	119	198	-
1.5	2	-	23	31	39	62	93	156	249
2.2	3	-	-	23	28	45	68	113	181

#### Three phase 400 V

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	223	335	446	-	-	-	-	-
0.75	1	167	251	335	418	-	-	-	-
1.1	1.5	120	179	239	299	478	-	-	-
1.5	2	86	129	172	215	343	515	-	-
2.2	3	61	91	122	152	243	365	609	-
3	4	45	67	89	112	179	268	446	-
4	5.5	34	51	68	85	135	203	338	541
5.5	7.5	-	40	53	66	106	159	266	425

(\*) Maximum cable length with a voltage drop of 3% at 30°C ambient temperature.

If the operating voltage  $U_i$  in the installation is different from the nominal voltage  $U_n$ , it is possible to calculate the permissible maximum length  $L_{max}$ , with the given table length  $L_{tab}$ , with the following formula:

$$L_{max} = L_{tab} (U_i / U_n)^2$$