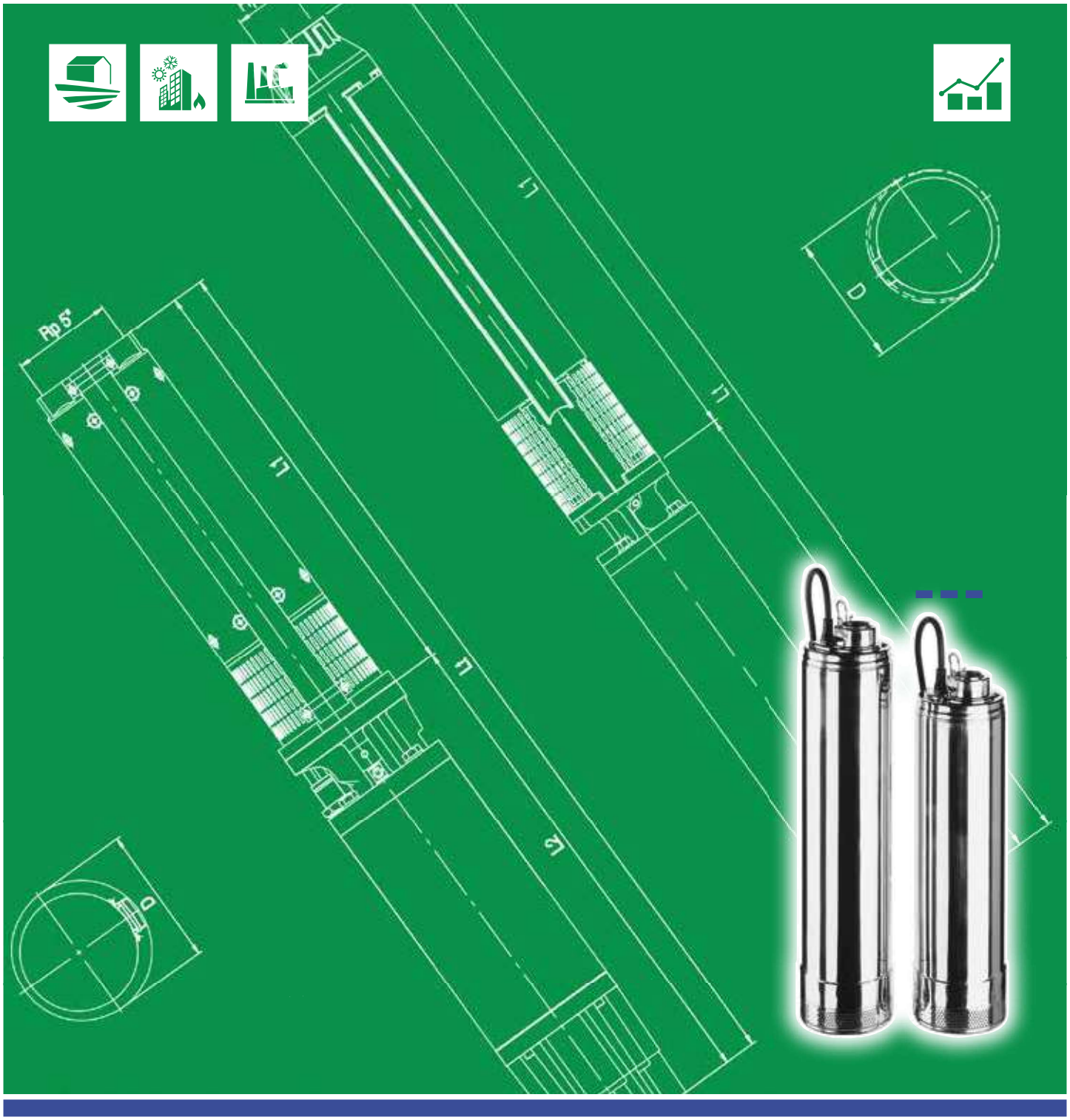
EBARA

Japanese Technology since 1912

IDROGO

Data Book 50Hz



CONTENTS

50Hz

Rev. M

	Page
- SPECIFICATIONS	**200**
SELECTION CHART	201
TYPE KEY AND CURVE SPECIFICATIONS	202
PERFORMANCE CURVE IDROGO 40	203
PERFORMANCE CURVE IDROGO 80	204
- CONSTRUCTIONS	**300**
SECTIONAL VIEW	300-301
QUANTITY FOR MODEL	302
MECHANICAL SEAL	303
BEARINGS	304
- DIMENSIONS AND WEIGHT	**400**
PUMP	400
PACKING	401
- TECHNICAL DATA	**500**
MOTOR DATA	500
- INSTALLATION	**600**

SPECIFICATION 50Hz

Rev. M

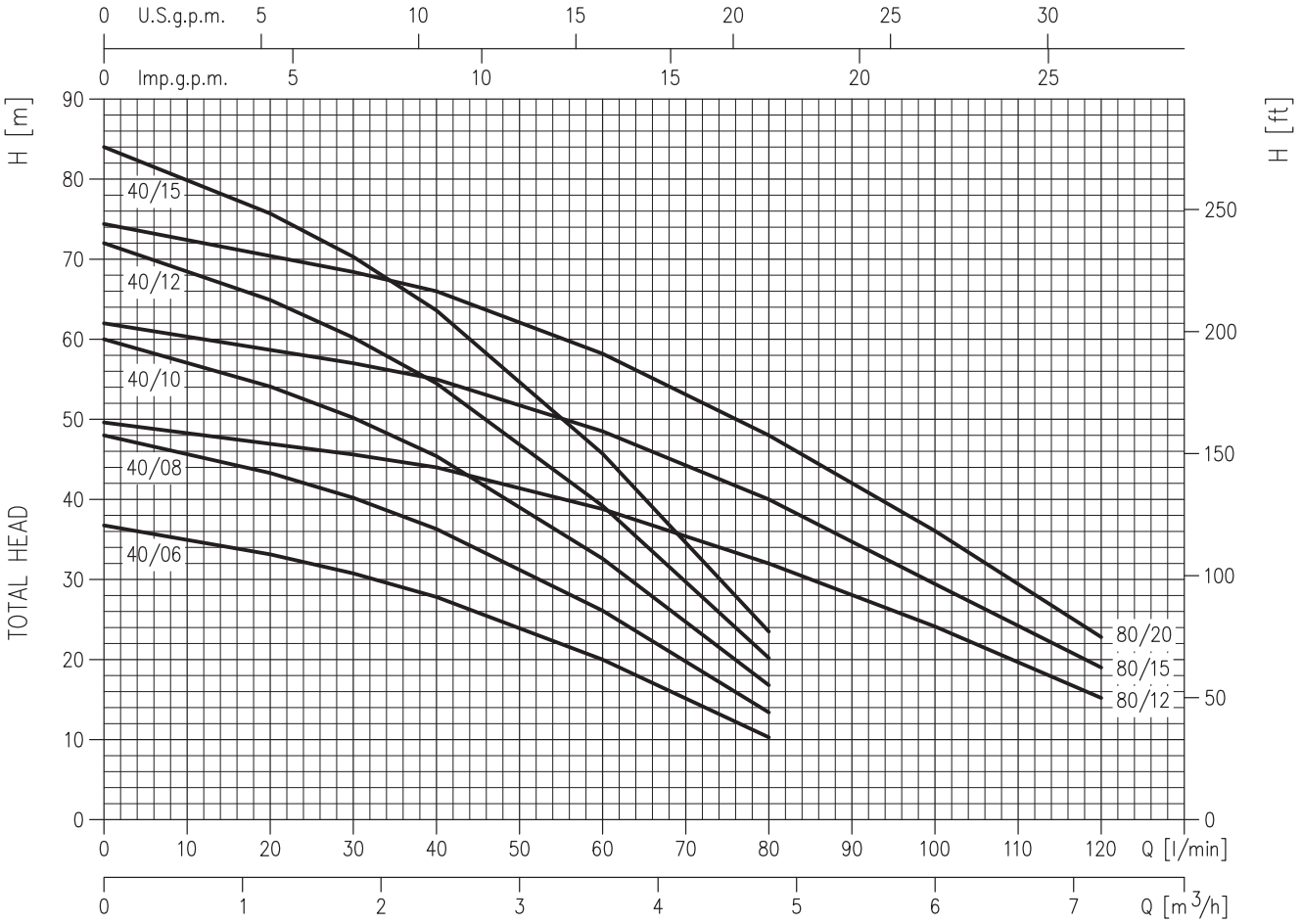
PUMP			
Liquid Handled	Type of liquid		Clean water
	Temperature		max. +40 for standard models
			max. +23 for drinking water (DW) models
	Max solids size	[mm]	2,5
Maximum working pressure		[MPa]	1
Maximum immersion		[m]	2 (with power cable length 5 m) 10 (with power cable length 20 m for version with float switch) 17 (with power cable length 20 m)
Construction	Impeller		Closed centrifugal type (multiple stages)
	Shaft seal type		Double mechanical seal
	Bearing		Sealed ball bearing
Pipe Connection	Suction-Flange	[mm]	Strainer
	Discharge-Flange	[inch]	G1¼ UNI ISO 228
Material	Casing		EN 1.4301 (AISI 304)
	Casing cover		EN 1.4301 (AISI 304)
	Impeller		PPE+PS glass fiber reinforced
	Diffuser		PPE+PS glass fiber reinforced
	Shaft seal		Pump side: SiC/ Carbon /NBR or SiC/ Carbon /EPDM
			Motor side: Carbon/Ceramic/NBR
	Shaft		EN 1.4057 (AISI 431)
	Lubricating liquid		White mineral oil: Esso Marcol 152 (90 cc)
Applicable standard of test			ISO 9906 Annex A

MOTOR				
Type			Submersible dry type	
			Single Phase	Three Phase
No. of Poles			2	
Rotation speed		[min^{-1}]	≈2800	
Insulation Class			Class F	
Protection degree (CEI EN 60034-5)			IP 68	
Power rating		[kW]	0.45 ÷ 1.1	0.6 ÷ 1.5
		[HP]	0.6 ÷ 1.5	0.8 ÷ 2
Frequency		[Hz]	50 Hz	
Voltage		[V]	230 ±10%	230/400 ±10%
Capacitor			Built in	-
Over load protection			Built in	Provided by the user
Float Switch			Optional	-
Float Switch Cable	Material		H07RN-F	-
	Size		3G1	-
Upper bearing bracket			Aluminium	
Lower bearing bracket			Brass	
Motor frame			AISI 304	
Power cable	material		H07RN-F	
	size		3 G 1.5	4G1
	length	[m]	20 (5 for 40/06) 20 for all DW models	
Type of cable entry			Cable Gland	

SELECTION CHART

50Hz

Rev. M



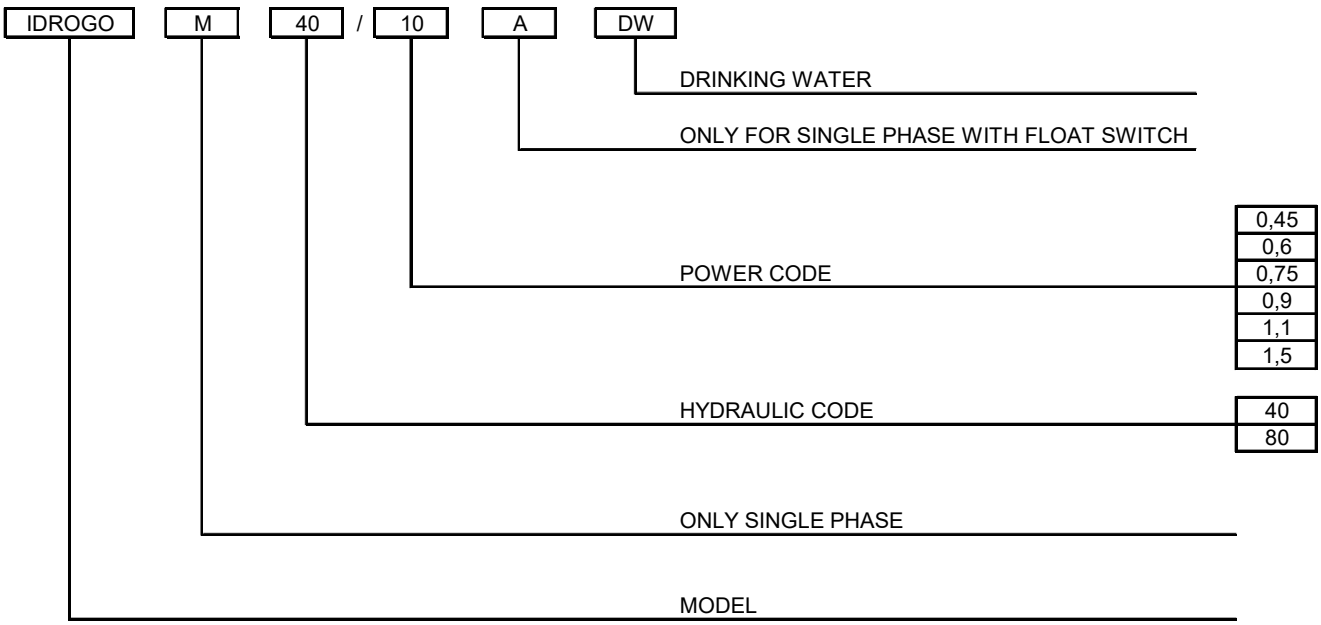
Pump type		Power		Q=Capacity							
				l/min	0	20	30	40	60	80	100	120
Single Phase	Three Phase	[kW]	[HP]	m^3/h	0	1,2	1,8	2,4	3,6	4,8	6	7,2
				H=Total manometric head in meters								
IDROGO M40/06	-	0,45	0,6	36,8	33,1	30,8	27,8	20	10,3	-	-
IDROGO M40/08	IDROGO 40/08	0,6	0,8	48	43,3	40,2	36,3	26,1	13,4	-	-
IDROGO M40/10	IDROGO 40/10	0,75	1	60	54,1	50,2	45,4	32,6	16,8	-	-
IDROGO M40/12	IDROGO 40/12	0,9	1,2	72	64,9	60,2	54,5	39,2	20,2	-	-
IDROGO M40/15	IDROGO 40/15	1,1	1,5	84	75,7	70,3	63,6	45,7	23,5	-	-
IDROGO M80/12	IDROGO 80/12	0,9	1,2	49,6	-	45,6	44	38,8	32	23,2	15,2
IDROGO M80/15	IDROGO 80/15	1,1	1,5	62	-	57	55	48,5	40	28	19
-	IDROGO 80/20	1,5	2	74,4	-	68,4	66	58,2	48	34,8	22,8

TYPE KEY AND CURVE SPECIFICATIONS

50Hz

Rev. M

TYPE KEY



ONLY for DW version models:
Approvals for drinking water application

KIWA & DM174/2004 (ICIM) approved product

PERFORMANCE CURVE SPECIFICATIONS

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 ν = 1 mm^2/s (1 cSt)
The NPSH curve is an average curve obtained in the same conditions of performance curves.
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:

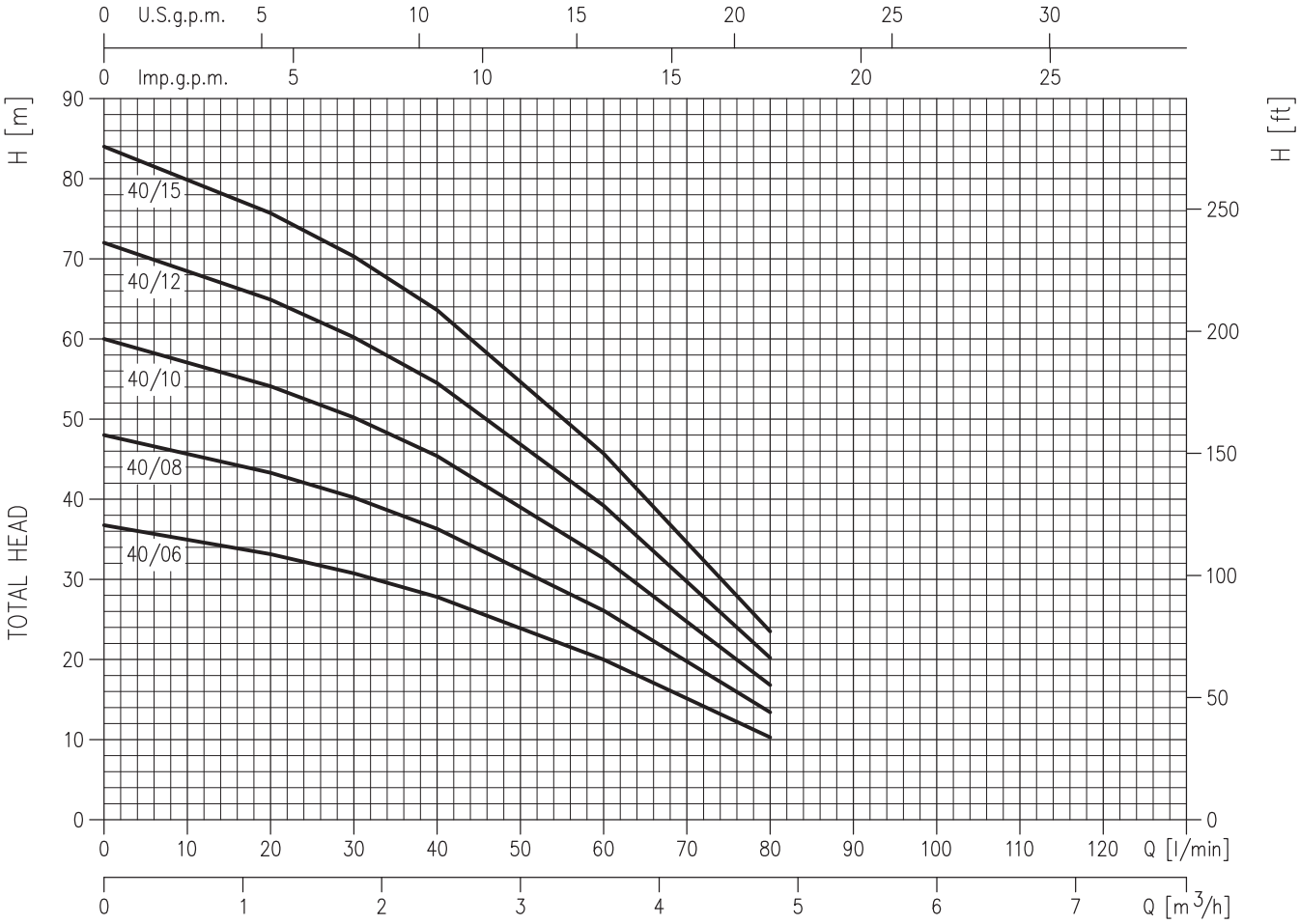
Q = volume flow rate
H = total head

PERFORMANCE CURVE

50Hz

Rev. M

IDROGO 40/06 (0.45 kW) - Impeller diameter = 104
IDROGO 40/08 (0.60 kW) - Impeller diameter = 104
IDROGO 40/10 (0.75 kW) - Impeller diameter = 104
IDROGO 40/12 (0.90 kW) - Impeller diameter = 104
IDROGO 40/15 (1.10 kW) - Impeller diameter = 104



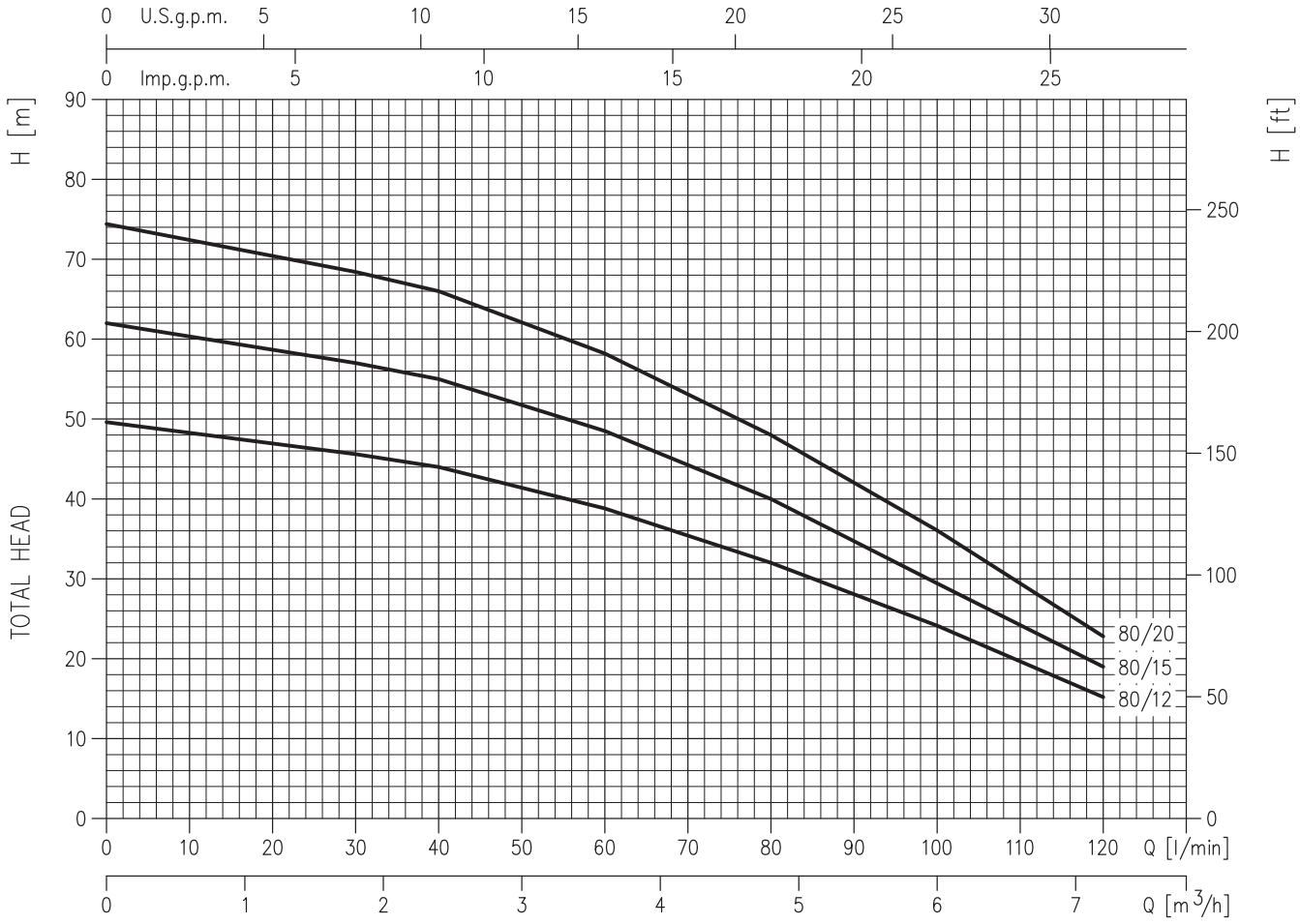
Rotation speed ≈ 2800 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

50Hz

Rev. M

IDROGO 80/12 (0.9 kW) - Impeller diameter = 102
IDROGO 80/15 (1.1 kW) - Impeller diameter = 102
IDROGO 80/20 (1.5 kW) - Impeller diameter = 102



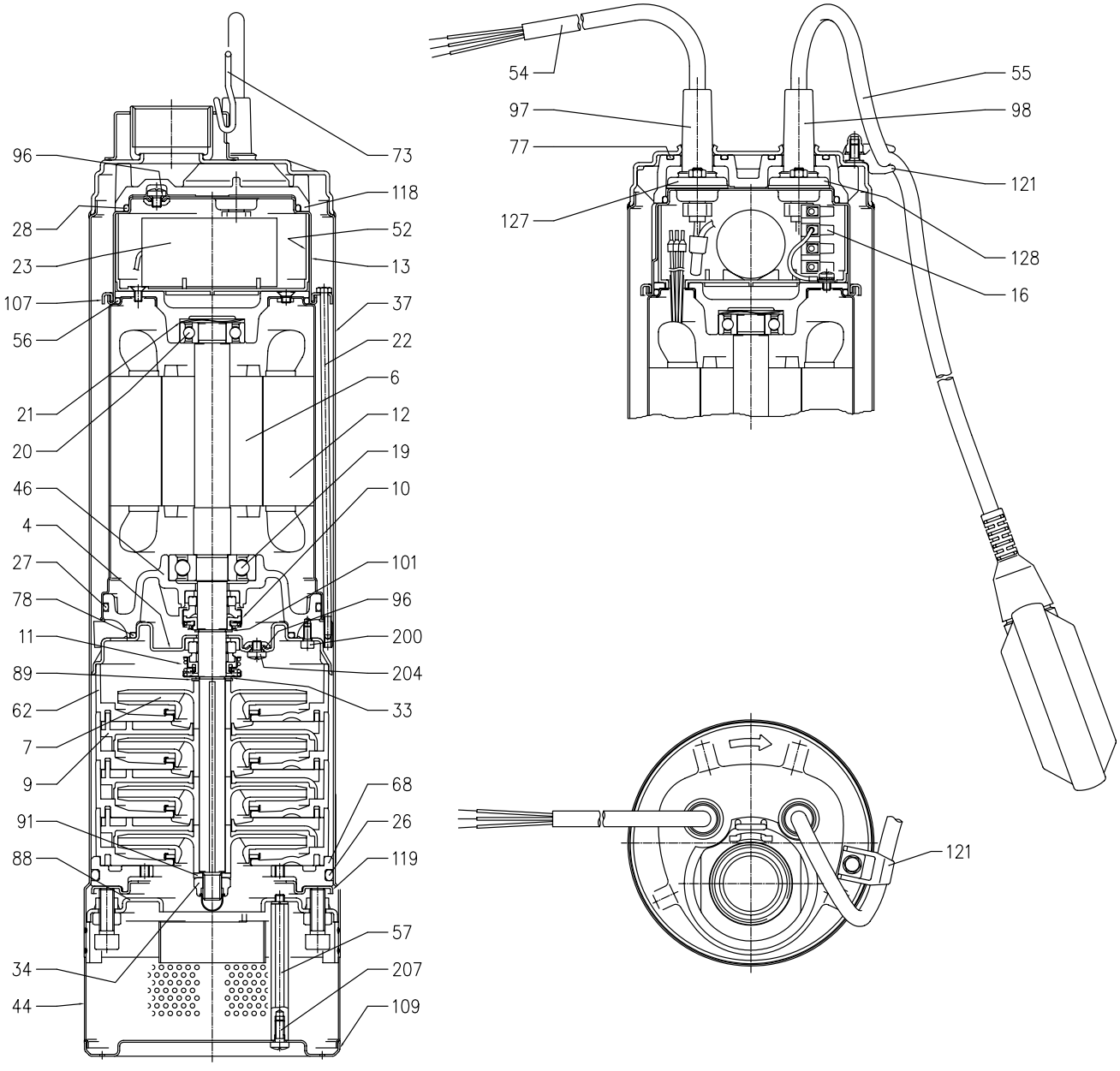
Rotation speed ≈ 2800 min^{-1}
Test standard: ISO 9906 – Annex A

CONSTRUCTION

50Hz

Rev. M

SECTIONAL VIEW



CONSTRUCTION

50Hz

Rev. M

N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY
4	Casing cover	EN 1.4301 (AISI 304)			1
6	Shaft with rotor	EN 1.4057 (AISI 431)			1
7	Impeller	PPE+PS glass fiber reinforced			[4]
9	Diffuser	PPE+PS glass fiber reinforced			[4]
10	Motor side mechanical seal [3]	Carbon/Ceramic/NBR	See page 303		1
11	Pump side mechanical seal [3]	SiC/Carbon/NBR	See page 303		1
12	Motor frame with stator	-			1
13	Motor cover	EN 1.4301 (AISI 304)			1
16	Terminal	-			1
19	Lower side ball bearing	-			1
20	Upper side ball bearing	-			1
21	Adjiusting ring	Steel C70			1
22	Tie rod	EN 1.4301 (AISI 304)			3
23	Capacitor [1]	-			1
26	O ring	NBR	Ø120,7X5,34	OR 201	1
27	O ring	NBR	Ø110,7X3,53	OR 4437	1
28	O ring	NBR	Ø88,5X3,53	OR 4350	1
33	Seeger ring	EN 1.4301 (AISI 304)			1
34	Impeller nut	EN 1.4301 (AISI 304)	M10X1.5	DIN 986	1
37	External pump casing	EN 1.4301 (AISI 304)			1
44	Strainer	EN 1.4301 (AISI 304)	Ø136,5X49X0,8		1
46	Bearing housing	Brass			1
52	Terminal insulating box	PA66 glass fibre reinforced class V-0			1
54	Power cable	-			1
55	Float switch [2]	-			1
56	"O" ring	NBR	Ø98,02X3,53		1
57	Bolt	EN 1.4305 (AISI 303)			2
62	Stage housing	PPE+PS glass fiber reinforced			[4]
68	Lower spacer	PPE+PS glass fiber reinforced			1
73	Lifting holder	EN 1.4301 (AISI 304)			1
77	O ring	NBR	Ø25,8X3,53		2
78	O ring	NBR	Ø82,14X3,53		2
88	Fixing flange	EN 1.4301 (AISI 304)			1
89	Washer	EN 1.4301 (AISI 304)			1
91	Washer	EN 1.4301 (AISI 304)	Ø10,2X20X2		1
96	O ring	NBR	Ø4.48X1.78	OR 2018	3
97	Cable entry	NBR	Ø15X20		1
98	Cablre entry [2]	NBR	Ø15X20		1
101	Seeger ring	EN 1.4021 (AISI 420)	Ø15	UNI 7435	1
107	Retainer ring	EN 1.4301 (AISI 304)	Ø119X1,2		1
109	Strainer cover	EN 1.4301 (AISI 304)	Ø136		1
118	Upper spacer	PPE+PS glass fiber reinforced			1
119	Flange	EN 1.4301 (AISI 304)			1
121	Support for float switch [2]	PPE+PS glass fiber reinforced			1
127	Cable connector	EN 1.4301 (AISI 304)			1
128	Cable connector	EN 1.4301 (AISI 304)			1
200	Screw	Stainless steel A2 UNI 7323	M4x8	ISO 4762	3
204	Screw	Stainless steel A2 UNI 7323	M5x6	UNI 7687	3
207	Screw	Stainless steel A2 UNI 7323	M5x12	UNI 7687	2

[1] Only for single phase
[2] Only for single phase with float switch
[3] See constructions mechanical seal page 303
[4] See table below

CONSTRUCTION

50Hz

Rev. M

QUANTITY FOR MODEL

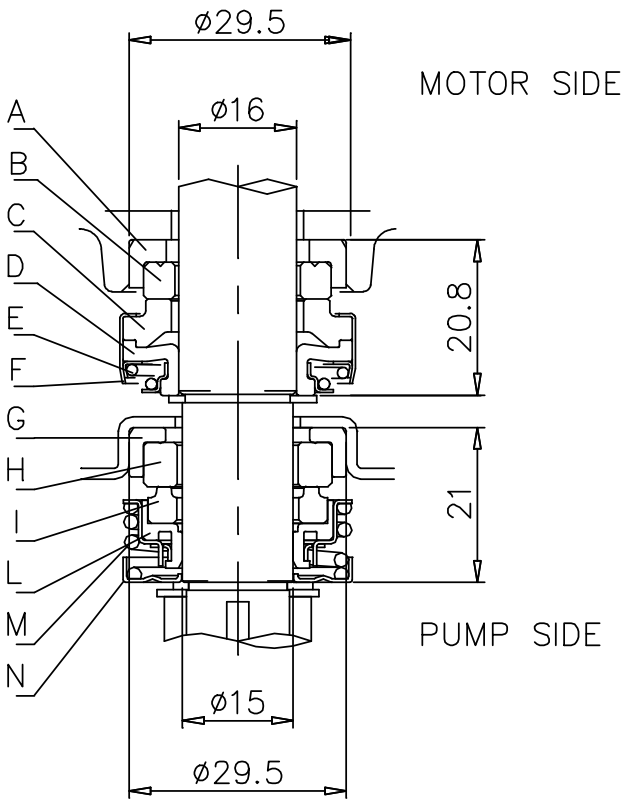
Pump type		N°7 Impeller	N°9 Diffuser	N°62 Stage housing
Single Phase	Three Phase			
IDROGO M40/06	-	3	3	4
IDROGO M40/08	IDROGO 40/08	4	3	4
IDROGO M40/10	IDROGO 40/10	5	4	5
IDROGO M40/12	IDROGO 40/12	6	5	6
IDROGO M40/15	IDROGO 40/15	7	6	7
IDROGO M80/12	IDROGO 80/12	4	3	4
IDROGO M80/15	IDROGO 80/15	5	4	5
-	IDROGO 80/20	6	5	6

CONSTRUCTION

50Hz

Rev. M

MECHANICAL SEAL



REF	PART NAME	MATERIAL Standard version	MATERIAL DW version
A	Rubber seat	NBR	NBR
B	Stationary ring	Cearmic	Cearmic
C	Rotary ring	Carbon	Carbon
D	Rotary seal	NBR	NBR
E	Coil spring	AISI 304	AISI 304
F	Seal cover	AISI 304	AISI 304
G	Rubber seat	NBR	EPDM
H	Stationary ring	Silicon carbide	Silicon carbide
I	Rotary ring	Carbon	Carbon
L	Rotary seal	NBR	EPDM
M	Coil spring	AISI 304	AISI 304
N	Seal cover	AISI 304	AISI 304

Approvals for drinking water application

KIWA & DM174/2004 (ICIM) approved product

BEARINGS

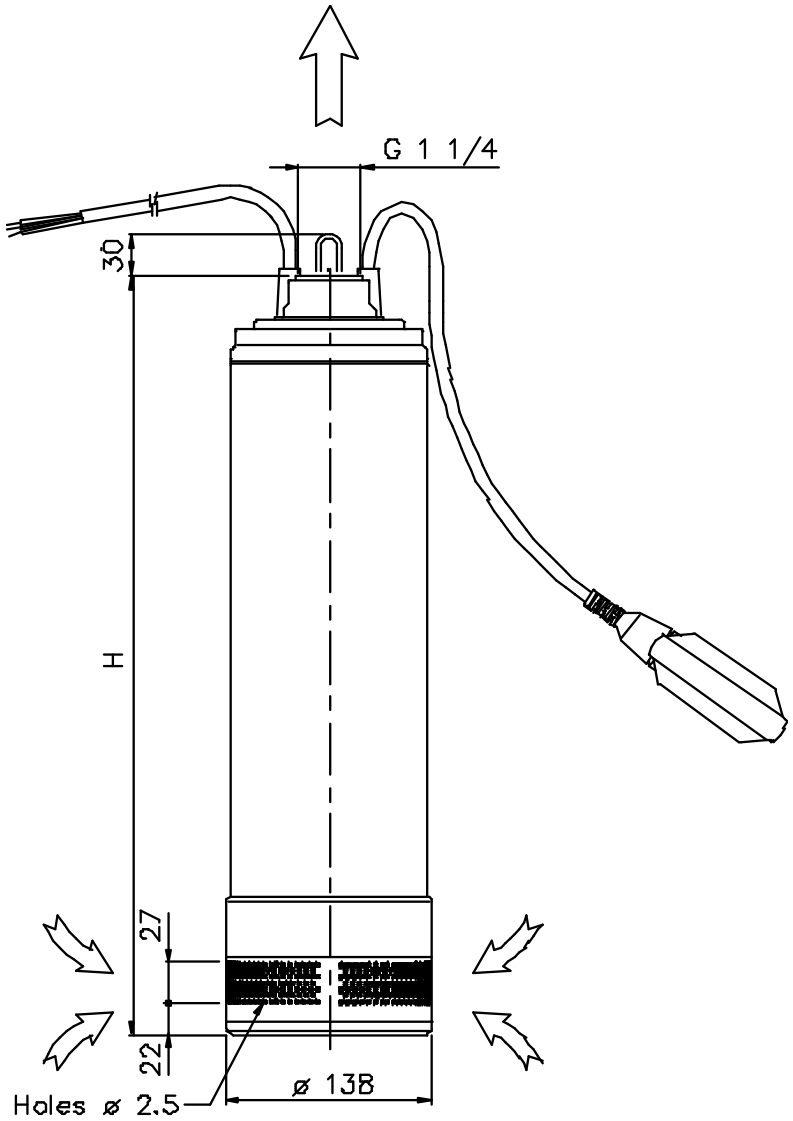
Pump type		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
IDROGO M40/06	-	6303 ZZ	6202 ZZ
IDROGO M40/08	IDROGO 40/08	6303 ZZ	6202 ZZ
IDROGO M40/10	IDROGO 40/10	6303 ZZ	6202 ZZ
IDROGO M40/12	IDROGO 40/12	6303 ZZ	6202 ZZ
IDROGO M40/15	IDROGO 40/15	6303 ZZ	6202 ZZ
IDROGO M80/12	IDROGO 80/12	6303 ZZ	6202 ZZ
IDROGO M80/15	IDROGO 80/15	6303 ZZ	6202 ZZ
-	IDROGO 80/20	6303 ZZ	6202 ZZ

DIMENSIONS AND WEIGHT

50Hz

Rev. M

PUMP



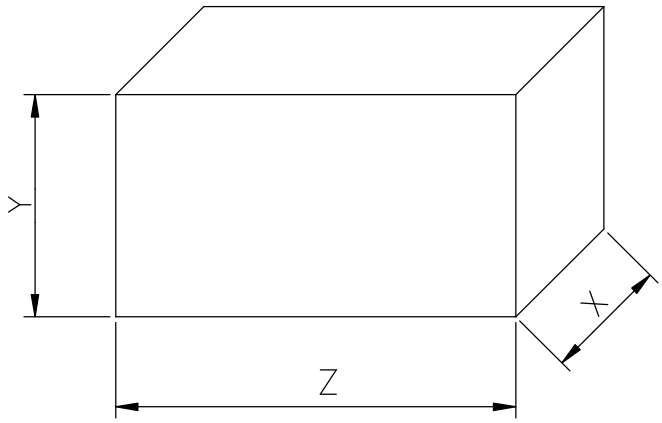
Pump type		H [mm]
Single Phase	Three Phase	
IDROGO M40/06	-	513
IDROGO M40/08	IDROGO 40/08	513
IDROGO M40/10	IDROGO 40/10	539
IDROGO M40/12	IDROGO 40/12	590
IDROGO M40/15	IDROGO 40/15	616
IDROGO M80/12	IDROGO 80/12	540
IDROGO M80/15	IDROGO 80/15	564
-	IDROGO 80/20	590

DIMENSIONS AND WEIGHT

50Hz

Rev. M

PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
IDROGO 40/06 M	-	200	200	620	13	-
IDROGO 40/08 M	IDROGO 40/08	200	200	620	14.6	14.8
IDROGO 40/10 M	IDROGO 40/10	200	200	620	16	16.1
IDROGO 40/12 M	IDROGO 40/12	200	200	700	17.2	17.4
IDROGO 40/15 M	IDROGO 40/15	200	200	700	18.3	18.3
IDROGO 80/12 M	IDROGO 80/12	200	200	620	16.5	16.4
IDROGO 80/15 M	IDROGO 80/15	200	200	700	17.7	17.4
-	IDROGO 80/20	200	200	700	-	18

TECHNICAL DATA

50Hz

Rev. M

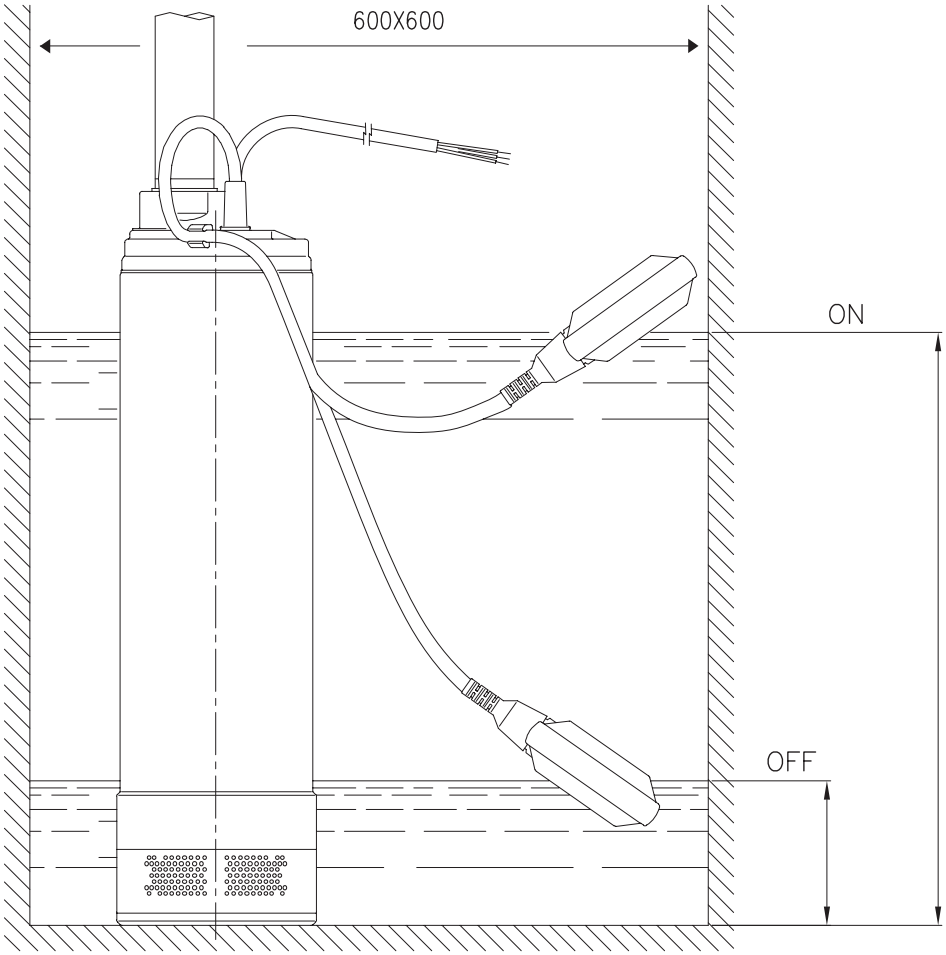
MOTOR DATA

Pump type		Power		Capacitor Single Phase		Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	[μF]	[V]	Single Phase	Three Phase	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V
IDROGO M40/06	-	0.45	0.6	16	450	0.82	-	3.8	-	-	16	-	-
IDROGO M40/08	IDROGO 40/08	0.6	0.8	16	450	1	0.95	4.3	3.3	1.9	16	17.3	10
IDROGO M40/10	IDROGO 40/10	0.75	1	20	450	1.25	1.18	5.7	3.8	2.2	20	20.8	12
IDROGO M40/12	IDROGO 40/12	0.9	1.2	20	450	1.42	1.33	6.8	4.2	2.4	23	24.2	14
IDROGO M40/15	IDROGO 40/15	1.1	1.5	31.5	450	1.6	1.55	7.3	5.2	3	25	28.6	16.5
IDROGO M80/12	IDROGO 80/12	0.9	1.2	20	450	1.33	1.22	6.4	4.0	2.3	23	24.2	14
IDROGO M80/15	IDROGO 80/15	1.1	1.5	31.5	450	1.62	1.52	7.5	5.4	3.1	25	28.6	16.5
-	IDROGO 80/20	1.5	2	-	-	-	1.9	-	6.1	3.5	-	28.6	16.5

INSTALLATION

50Hz

Rev. M



Pump type Single Phase	ON [mm]	OFF [mm]
IDROGO 40/06 M	560	180
IDROGO 40/08 M		
IDROGO 40/10 M	590	190
IDROGO 40/12 M	660	220
IDROGO 40/15 M	730	240
IDROGO 80/12 M	590	190
IDROGO 80/15 M	640	210

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