OPTIMA

Stainless Steel Domestic Sump Pumps

CONTENTS

50Hz

FEATURES AND APPLICATIONS

50Hz

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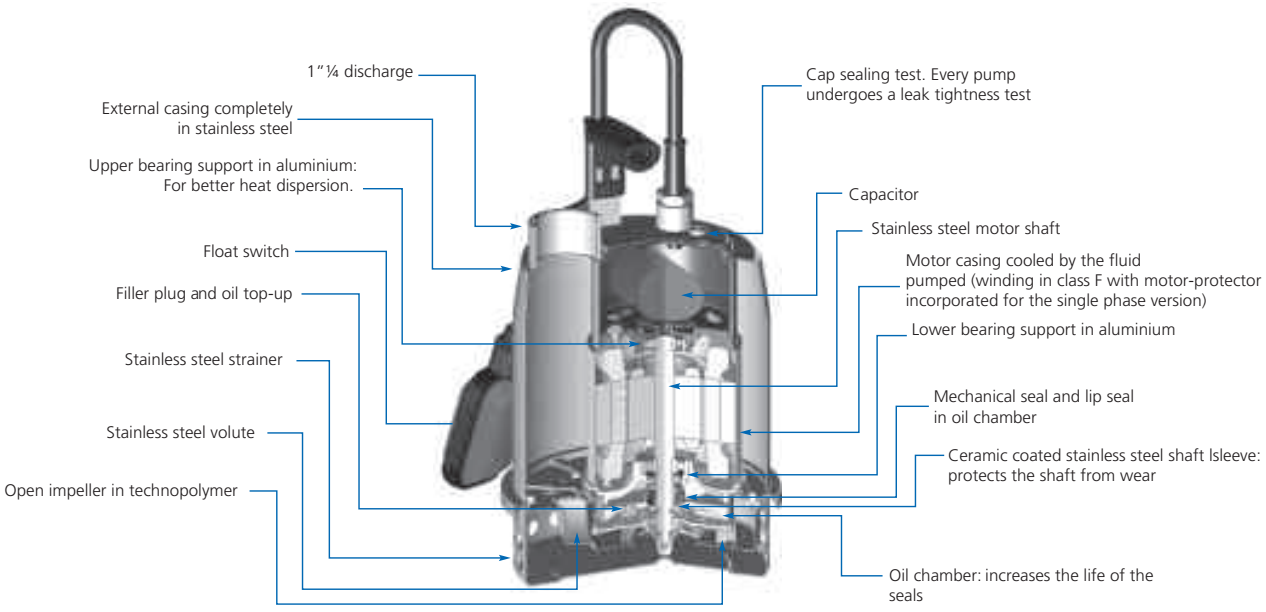
Optima MA

Optima MS

Submersible electric pumps for clean water manufactured in AISI 304 Stainless Steel, with technopolymer impeller. Suitable for many light weight dewatering applications including: draining wells, basements, cellers etc. Emptying of tanks & drums, general transfer of clean water.

Features:



EX PLODED VIEW

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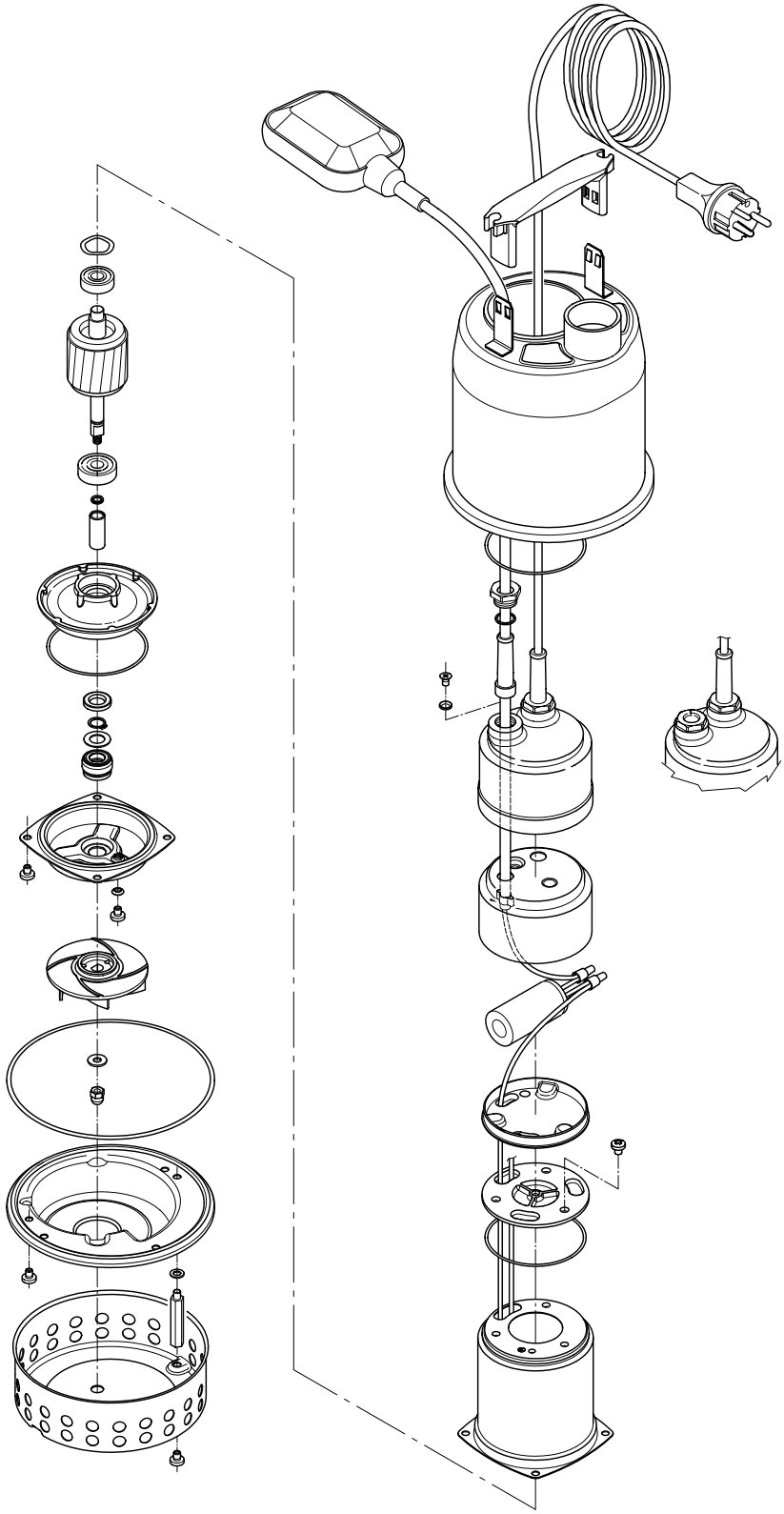

PUMP AND MOTOR SPECIFICATIONS 50Hz

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PUMP			
Liquid Handled	Type of liquid		Clear water (Clean water for MS version)
	Max temperature	[°C]	50
	Max solids size	[mm]	10
Maximum immersion		[m]	5
Construction	Impeller		Semi-open centrifugal type
	Shaft seal type		Oil lubricated mechanical seal (pump side) + lip seal (motor side)
	Bearing		Sealed ball bearing
Pipe Connection	Suction		Strainer
	Discharge nozzle	[inch]	G1¼": UNI ISO 228
Material	Pump casing		AISI 304
	Impeller		PPE + PS Glass fiber reinforced
	Shaft seal		Mechanical seal: Ceramic/Carbon/NBR Lip seal: NBR
	Casing cover		AISI 304
	Shaft		AISI 303 + AISI 303 ceramic coated shaft sleeve
	Lubricating liquid		White mineral oil: Esso Marcol 152
Applicable standard of test			ISO 9906 – Annex A

MOTOR			
Type			Submersible dry type
			Single Phase
No. of Poles			2
Rotation speed		[min^{-1}]	≈2800
Insulation Class			F
Protection degree			IP 68
Power rating		[kW]	0.25
		[HP]	0.33
Frequency		[Hz]	50
Voltage		[V]	230 ±10%
Capacitor			Built in
Over load protection			Built in
Casing material			AISI 304
Switch	float		MA version (no maintenance required)
	magnetic		MS version (maintenance required)
Float/magnetic switch cable	material		H07RN-F
	size		3G1
Power cable	length	[m]	5 (only for internal usage)
	material		H05RN-F
	size		3G0.75
Cable entry			Cable Gland

PERFORMANCE CURVE

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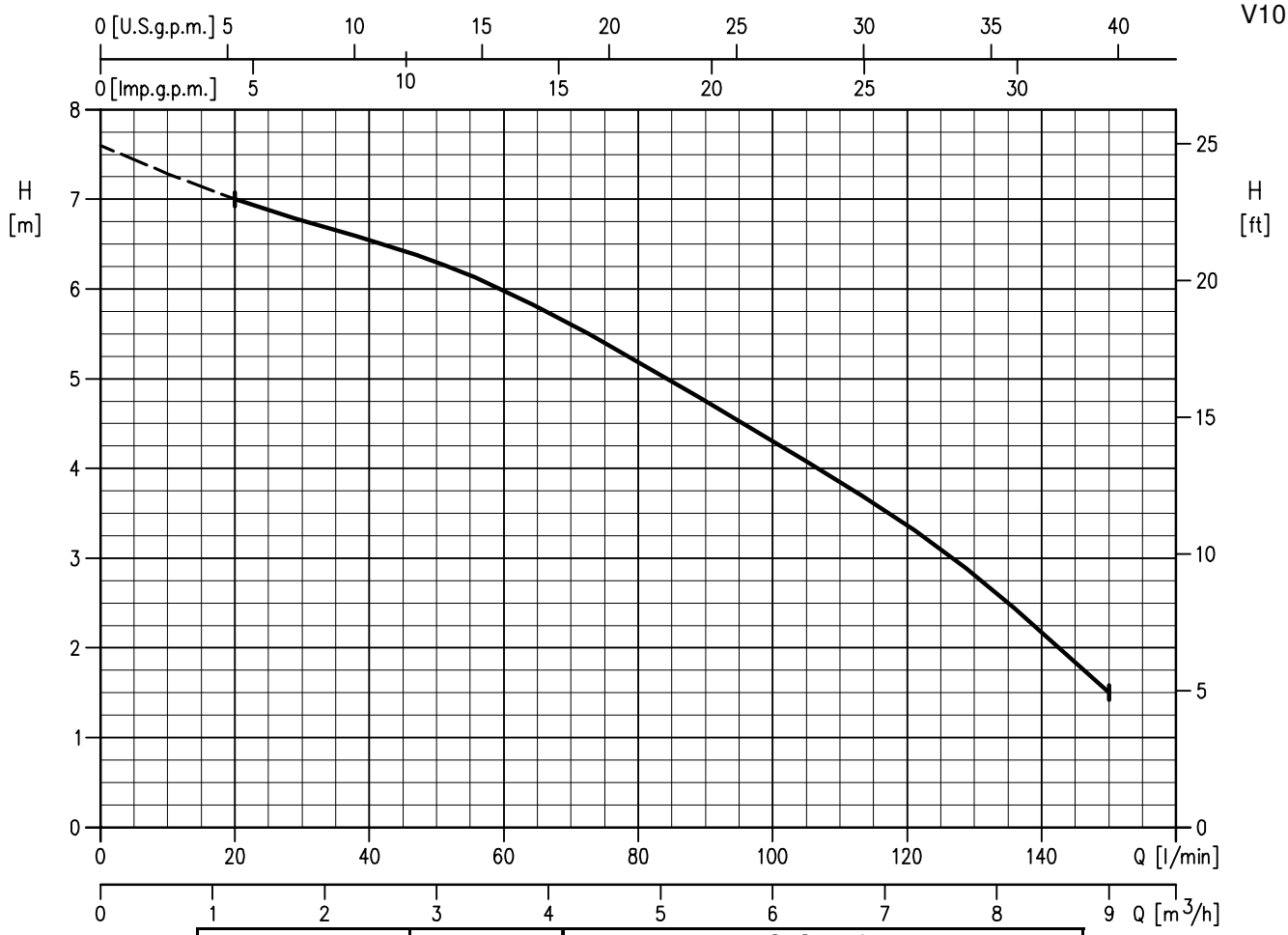


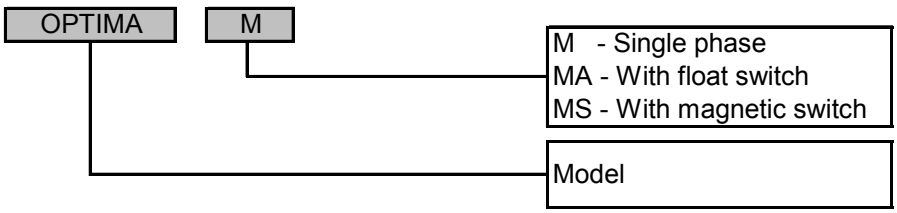
Type pumps	Power		Q=Capacity						
			l/min 0	20	50	75	100	125	150
Single Phase	kW	HP	m³/h 0	1.2	3	4.5	6	7.5	9
			H=Total manometric head in meters						
OPTIMA M	0.25	0.33	7.6	7.0	6.3	5.4	4.3	3.1	1.5

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)
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

TYPE KEY



CONSTRUCTION

50Hz

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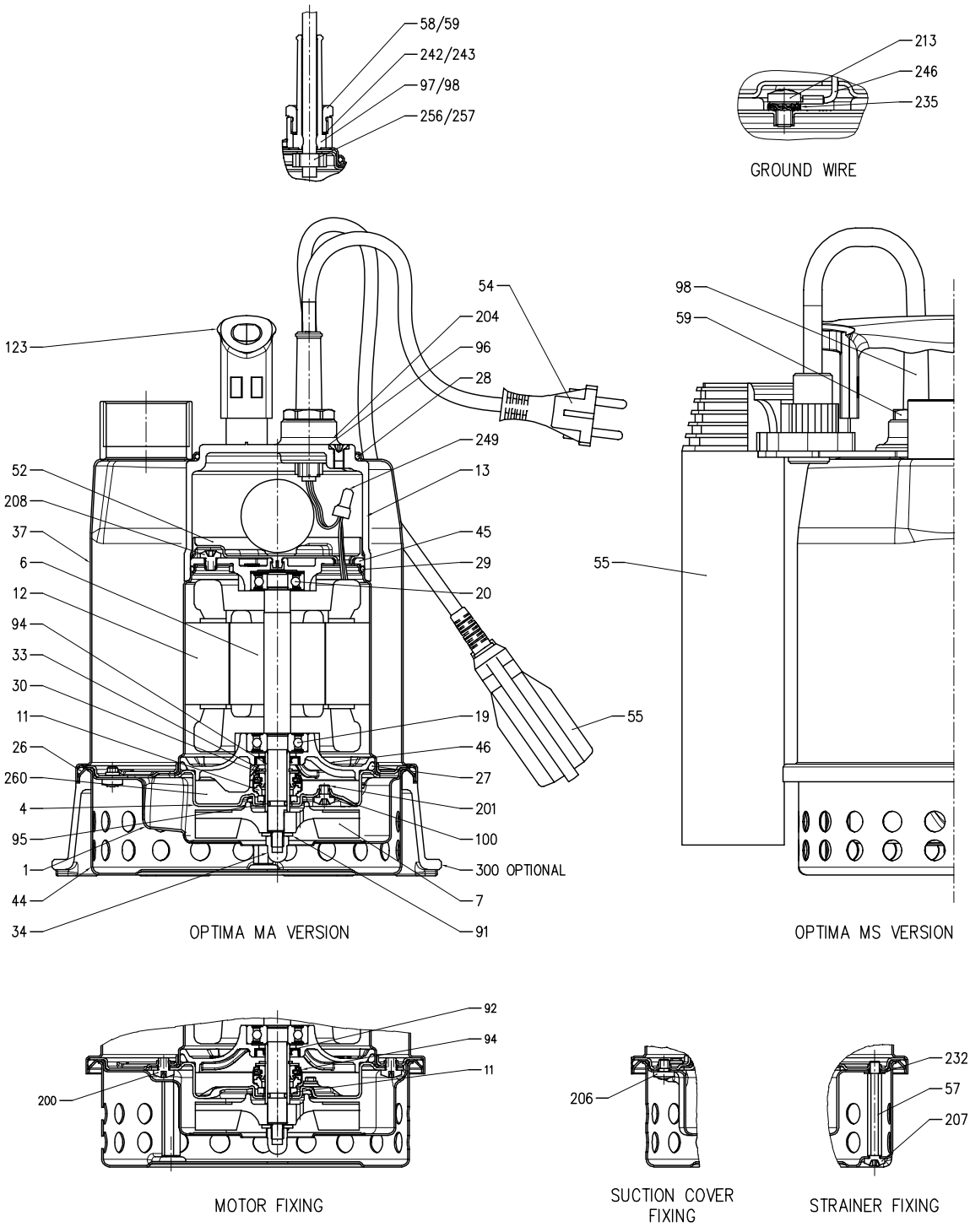
SECTIONAL VIEW



CONSTRUCTION

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SECTIONAL VIEW TABLE

N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.ty
1	Suction cover	EN 1.4301 (AISI 304)	-	-	1
4	Casing cover	EN 1.4301 (AISI 304)	-	-	1
6	Shaft with rotor	EN 1.4305 (AISI 303)	-	-	1
7	Impeller	PPE+PS-HI-GF20	-	-	1
11	Mechanical seal [1]	[1]	[1]	-	1
12	Motor frame with stator	EN 1.4301 (AISI 304)	-	-	1
13	Motor cover	PP-GF30	-	-	1
19	Lower ball bearing	-	-	-	1
20	Upper ball bearing	-	-	-	1
21	Adjusting ring	-	-	-	1
23	Capacitor	-	-	-	1
26	O-ring	NBR	159,5x3	-	1
27	O-ring	NBR	88,5x3,53	-	1
28	O-ring	NBR	75,87x2,62	-	1
29	O-ring	NBR	75,87x2,62	-	1
30	Washer	EN 1.4301 (AISI 304)	12x21x1	-	1
33	Seeger ring	Carbon steel TC80	12	UNI 7435	1
34	Impeller nut	A2 - 70 UNI 7323	M6	UNI 5721	1
37	Outer casing	EN 1.4301 (AISI 304)	-	-	1
44	Strainer	EN 1.4301 (AISI 304)	-	-	1
45	Upper bearing housing	EN 1706 AC-46000 D	-	-	1
46	Lower bearing housing	EN 1706 AC-46000 D	-	-	1
52	Terminal insulating base	PA6	-	-	1
54	Power cable	-	-	-	1
55	Switch [2] [3]	-	-	-	1
57	Spacer	EN 1.4301 (AISI 304)	-	-	2
58	Power cable connector	PA66-GF30	-	-	1
59	Switch cable connector [2]	PA66-GF30		-	1
91	Washer	EN 1.4301 (AISI 304)	-	-	1
92	Lip seal	NBR	22x12x4	-	1
94	Shaft sleeve	EN 1.4305 (AISI 303) ceramic coated	-	-	1
95	O-ring	NBR	6,07x1,78	-	1
96	O-ring	NBR	4,48x1,78	-	1
97	Power cable boot	NBR	-	-	1
98	Switch cable boot [2]	NBR	-	-	1
100	O-ring	NBR	4,48x1,78	-	1
123	Handle	PP	-	-	1
200	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	4
201	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	1
204	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	1
206	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	3
207	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	2
208	Screw	A2 - 70 UNI 7323	M5x6	UNI 7687	3
213	Screw	A2 - 70 UNI 7323	M4x6	UNI 7687	1
232	Washer	PA6	5,5x10x1	-	2
235	Washer	Zinced Steel	4	UNI 8842	1
242	Washer	EN 1.4301 (AISI 304)	13,4x15,9x1	-	1
243	Washer [2]	EN 1.4301 (AISI 304)	13,4x15,9x1	-	1
246	Ground wire	-	-	-	1
256	Cable holder	-	-	-	1
257	Cable holder [2]	-	-	-	1
260	Oil	Esso Marcol 152	-	-	40 cc
300	Minimum suction system [4]	Thermoplastic	-	-	-

[1] See pag. 302 [2] Only for automatic version [3] It could be floating or magnetic type
[4] OPTIONAL See pag.500

CONSTRUCTION

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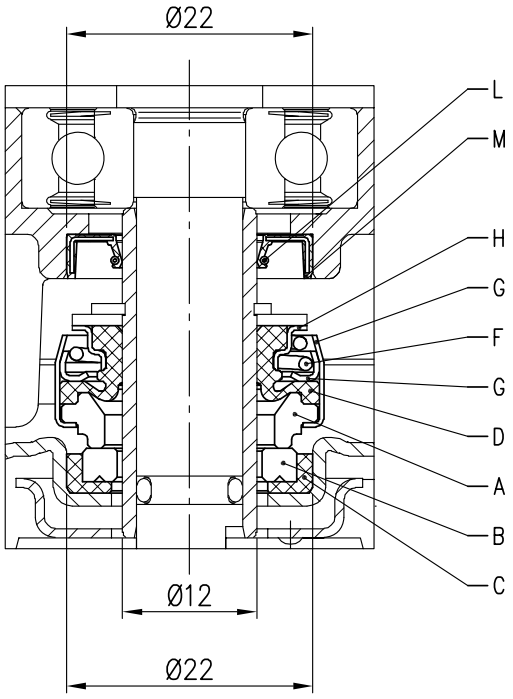
MECHANICAL SEAL



REF	PART NAME	MATERIAL product standard
A	Rotary seal ring	Carbon graphite
B	Stationary seal ring	Ceramic
C	Gasket	NBR
D	Bellows	NBR
F	Self driving spring	EN 1.4301 (AISI 304)
G	Frame	EN 1.4301 (AISI 304)
H	Retainer ring	EN 1.4301 (AISI 304)
L	Spring	EN 1.4318 (AISI 302)
M	Lip	NBR

BEARINGS

Type pumps	Ball Bearing	
	Lower side	Upper side
Optima M	6200 ZZ C3	6000 ZZ C3

ELECTRICAL CONNECTIONS AND INSTALLATION

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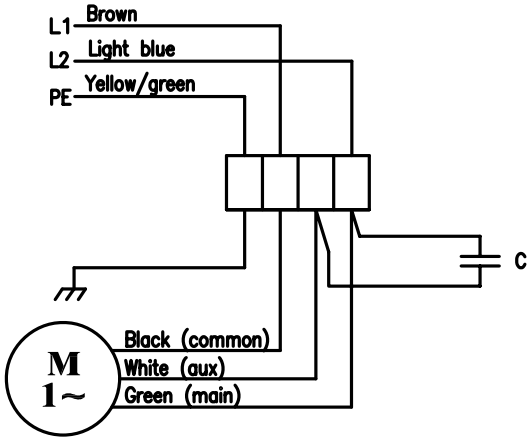
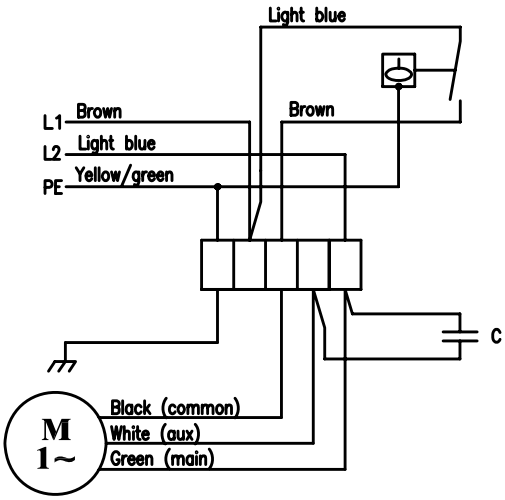
SINGLE PHASE MOTOR DIAGRAM AND ELECTRIC CONNECTIONS

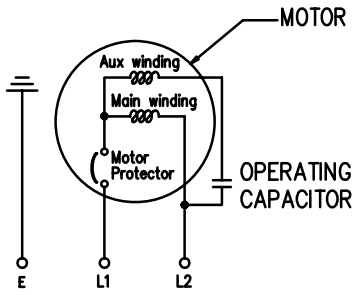
WITHOUT FLOAT SWICH



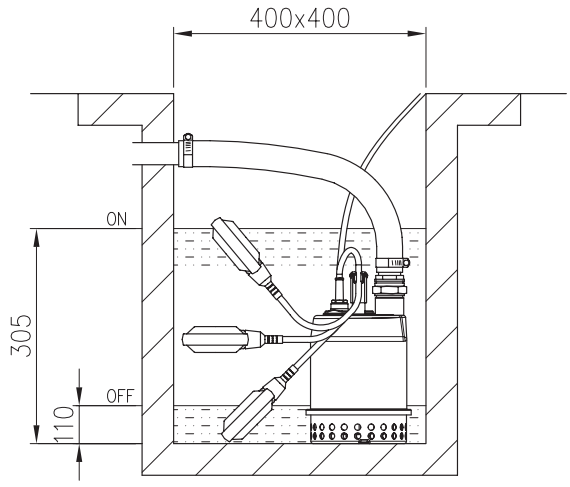
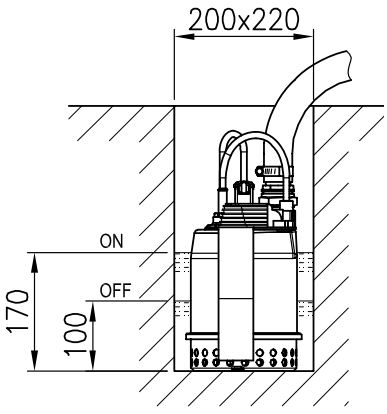
WITH FLOAT SWICH



230 V
INTERNAL MOTORPROTECTOR



INSTALLATION

OPTIMA MA	OPTIMA MS
	

DIMENSIONS AND WEIGHT

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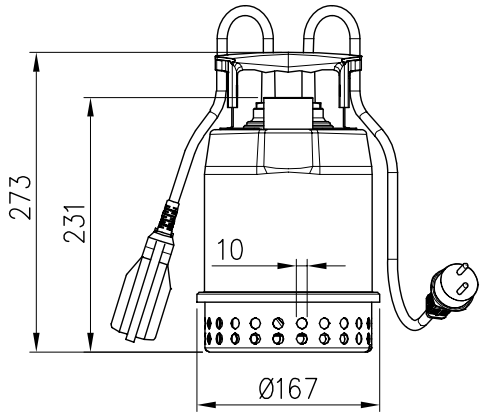
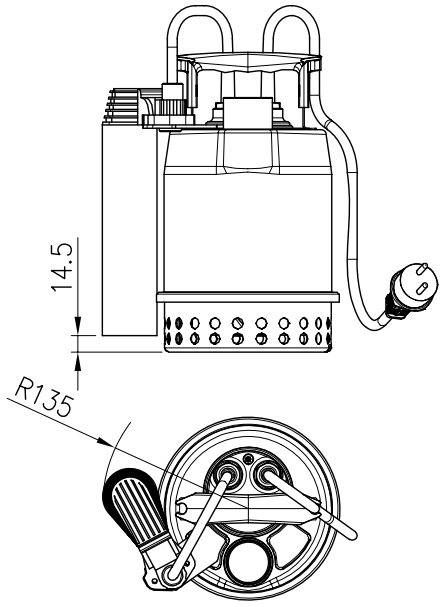
PUMP

OPTIMA MA	OPTIMA MS
	

Type Pumps	Weight [kgf]
OPTIMA M	4.2
OPTIMA MA	4.4
OPTIMA MS	4.6

PACKING AND WEIGHT

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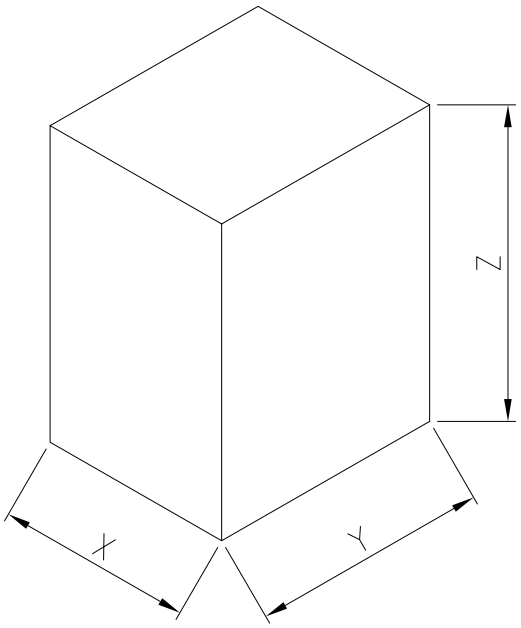
PACKING



Type Pumps	Dimensions [mm]			Weight [kgf]
	X	Y	Z	
OPTIMA M	180	220	330	4.7
OPTIMA MA				4.9
OPTIMA MS				5.1

TECHNICAL DATA

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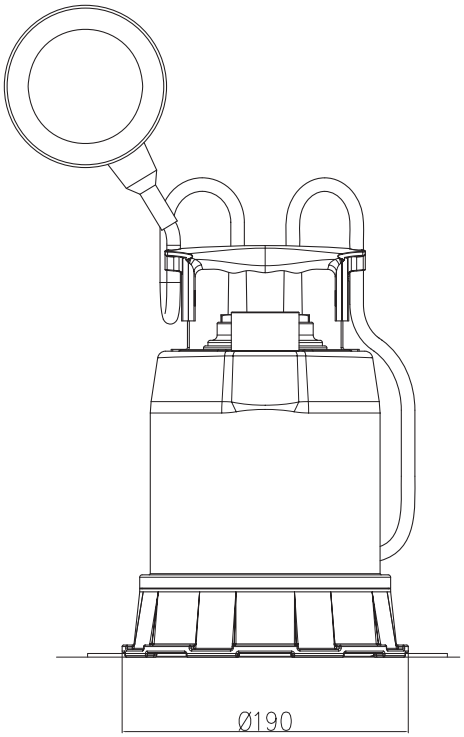
ELECTRIC DATA							
Type pumps	kW	HP	Capacitor Single Phase		Input POWER	Full load current	Locked rotor current
			μF	Vc [V]	[kW]	[A]	[A]
OPTIMA M	0.25	0.33	8	450	0.43	1.90	4.8

MINIMUM SUCTION SYSTEM



LEVEL	
Minimum starting suction level	10 mm
Minimum suction level capability	3 mm