Base Load Power Hub (BLPH)

GENERAL ARRANGEMENT AND DATASHEET - DESALINATION PACKAGE

Document Number: 1724000448-MAC-DA-00008

Document Class: 3

04	25/07/2025	Issue For Information (IFI)	SF	RM	RM
03	06/12/2024	Issue For Information (IFI)	SF	RM	RM
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Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR INFORMATION (IFI)
01	ISSUE FOR INFORMATION (IFI)
02	ISSUE FOR INFORMATION (IFI)
03	ISSUE FOR INFORMATION (IFI)
04	ISSUE FOR INFORMATION (IFI)

HOLDS LIST

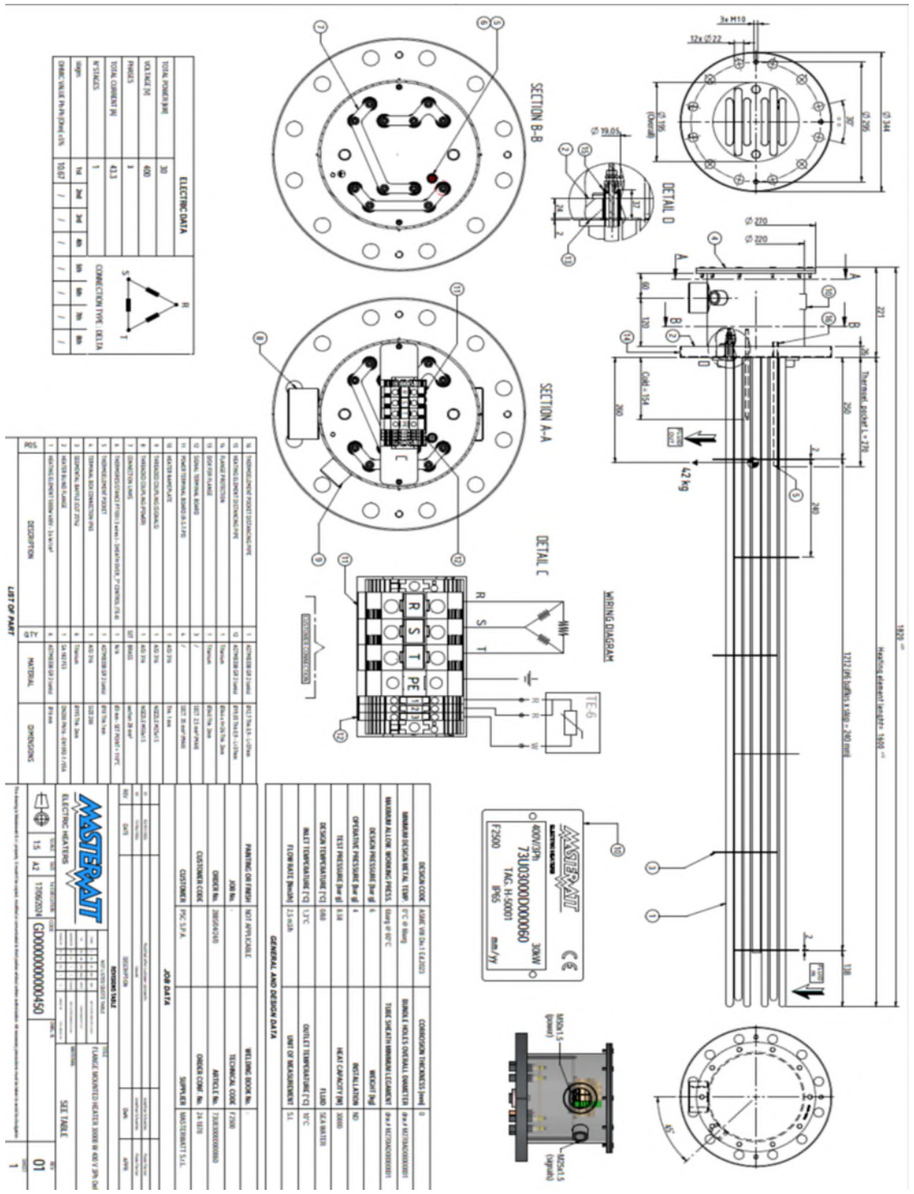
No.	Description
1.	
2.	
3.	
4.	

Drawing Heat Exchanger (Element)

Supplier: MASTERWATT

Models: 30 Kw - 400 V./3ph - sea water

WEIGHT= Heating elements 42 kg <2> **TAG= H-50001**
Vessel 160 kg <2>



REFERENCE DOCUMENTS

1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LOADING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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ELECTRIC HEATER DATASHEET

PSC	PROJECT: HOLLANDSE KUST NOORD WIND PARK Project	CLIENT: Rosetti Marino S.p.A.	Doc. Nr. PK2885-M-001
	ITEM: H-50001		
REFERENCE DRAWING:	P&I: 1724000448-PR-PID-00013	MFR: Masterwatt	

TYPE: Electric Heater Bundle

INSTALLATION: ■ INDOOR ☐ OUTDOOR

ELECTRICAL CHARACTERISTICS

INSTALLED POWER		30				kW
SUPPLY	400	Volts	3	Phases	50	Hz
CONNECTION TYPE	■ DELTA		☐ STAR			
	☐ SINGLE PHASE		☐			
STANDARDS	☐ IEC	☐ ATEX	☐ KOSHA			
PROTECTION		IP65				
EXECUTION		SAFE AREA				
TEMPERATURE CLASS		N.A.				
NUMBER OF STAGES		1				
ELECTRIC POWER STEP N° 1		30				kW
ELECTRIC POWER STEP N° 2		-				kW
ELECTRIC POWER STEP N° 3		-				kW
ELECTRIC POWER STEP N° 4		-				kW
SPECIFIC POWER		3.4				W/cm^2
EXCHANGE SURFACE		0.882 <2>				m^2

SERVICE CONDITION

FLUID TO BE HEATED		SEA WATER		
DESIGN FLOW		2,5		m^3/h
INLET PRESSURE		4		bar g
MAX PRESSURE DROP		1		bar g
INLET LIQUID TEMP.		1,3		°C
OUTLET LIQUID TEMP.		10		°C
HEAT DUTY CAPACITY		30		kW
MOLECULAR WEIGHT	18	DENSITY	1020-1030	kg/m^3
INLET FLUID CONDITION	■ LIQUID	☐ GAS		
OUTLET FLUID CONDITION	■ LIQUID	☐ GAS		
FLUID SPEED	2.5			m^3/h
MECHANICAL DESIGN TEMPERATURE		0 / +60		°C
MECHANICAL DESIGN PRESSURE		6		barg
DESIGN VESSEL CODE		PED		
INSTALLATION		Indoor & Vertical		

MECHANICAL CHARACTERISTICS

ELEMENT NUMBER	6 armoured electric resistances		
ELEMENT DIAMETER	16		mm
TOTAL LENGHT	2021 [4]		mm
HEATED LENGHT	2500 [4]		mm
BAFFLES	YES ■	NO ☐	n° 6
VESSEL DIAMETER	DN200		mm
HEAT EXCHANGER EMPTY WEIGHT	197 (bundle + vessel) [4]		kg
HEAT EXCHANGER TET WEIGHT	270 [4]		kg

PROCESS CONNECTIONS

FLANGE	Inlet (PVC)	DIAMETER	DN40
		RATING	PN16
FLANGE	Outlet (PVC)	DIAMETER	DN40
		RATING	PN16
FLANGE	Heater	DIAMETER	DN 200
		RATING	EN1092 PN16

MATERIALS

BODY CONNECTIONS FLANGE	A185 F53 / Titanium Cladded
HEATING ELEMENTS SHEATH	ASTM B338
TERMINAL BOX	AISI 316
VESSEL	Vinylester
BAFFLES	Titanium
TUBE SHEET	A185 F53 / Titanium Cladded
CORROSION ALLOWANCE	N.A. mm
FINISHING	N.A.

ACCESSORIES

THERMOELEMENT FOR FLUID	YES ☐	NO ■
THERMOELEMENT FOR HEATING ELEM.	YES ■	NO ☐
ANTICONDENSING	YES ☐	NO ■
ELECTRIC INSULATION BETWEEN RESISTIVE WIRE, SHEATH	YES ■	NO ☐

REMARKS

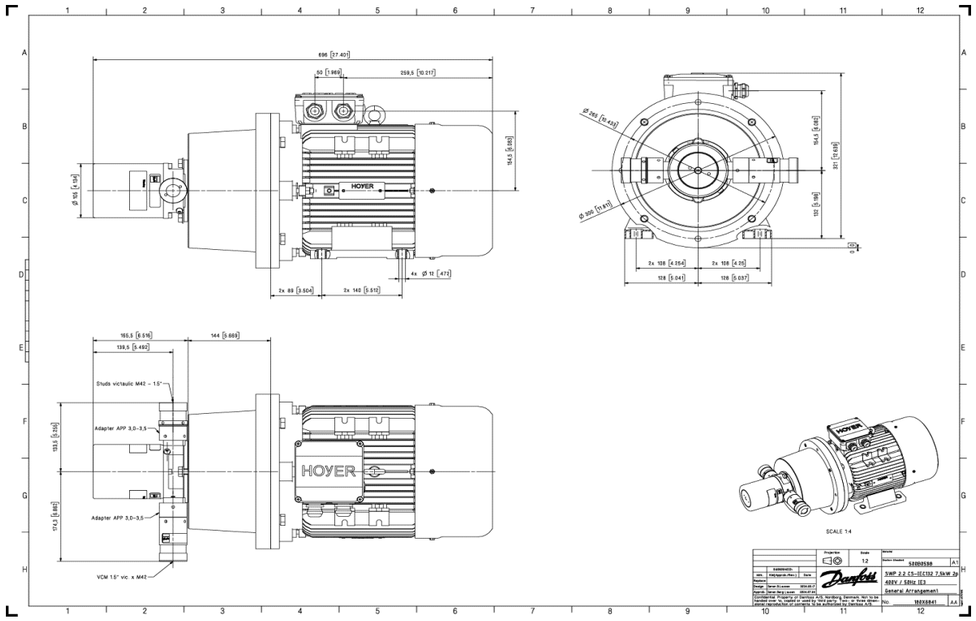
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Supplier: DANFOSS

Models: APP 2.2

Drawing high pressure pumps

WEIGHT (PUMP+MOTOR) = 67 kg <2>
TAG= P-50004A/B



REFERENCE DOCUMENTS	
1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LOADING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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VOLUMETRIC PUMP DATA SHEET
SPECIFICA PER POMPA VOLUMETRICA

Sh. 7/ 29

PROJECT: Progetto	HOLLANDSE KUST NOORD WIND PARK	LOCATION: Località	Off Shore Hollandse Kust Noord (Netherlands)	DOC N° : Doc N°	PK2885-M-001
MOD: Mod	APP 2.2	PLANT: Impianto	Water treatment package	CUSTOMER: Cliente	Rosetti Marino S.p.A.
MFR: Fornitori	DANFOSS			JOB: Commessa	PK2885

1	SERVICE Descrizione	SWRO HIGH PRESSURE PUMP		PUMP TYPE Tipo di pompa	Volumetric, Rotating Axial Pistons	PUMP SERIAL No. Matricola pompa	
2	MANUFACTURER Costruttore	DANFOSS		No. of UNITS No. Unità	2		
3	EL. MOTOR No. Motore el. No.		ITEM Sigla	P-50004 A/B	SUPPLIED BY Fornito da	HOYER <2>	ASSEMBLED BY Sub-Supplier Montato da	N/A<2>
4	WEIGHT: Peso	67 <2> Kg						

DESIGN CONDITION FOR ONE PUMP
CONDIZIONI DI PROGETTO

6	LIQUID Liquido	Sea water		CAPACITY NORM. Portata normale	2	m^3/h	
7	SOLID IN SUSPENSION Solidi in sospensione	None		DISCHARGE PRESSURE Pressione di mandata	55-63.5	barg	
8	CORROSIVE COMPOUND Composti corrosivi	(pH = 8.2), Chlorides = 20310 ppm		SUCTION PRESS. MAX Pressione di aspirazione max	4	barg	
9	TEMP. NORM. Temp. Norm.	10	MAX 25 °C Max	DIFFERENTIAL PRESSURE Pressione differenziale	51-59.5	bar	
10	VISCOSITY Viscosità	1.31-0.89	mPa sec	DIFFERENTIAL HEAD Prevalenza	507-592 <2>	m	
11	DENSITY Densità	1020-1030	kg/m^3	NPSH AVAILABLE NPSH disponibile	30 (booster pump)	m	
12	VAPOUR PRESSURE Tensione di vapore	0.012-0.02	Bar abs	OPERATION Servizio	Continuos		
13	FREEZING TEMP. Temperatura di congelamento	-1	°C	INSTALLATION Installazione	INDOOR ■ Al chiuso	OUTDOOR □ All'aperto	

CHARACTERISTICS
CARATTERISTICHE

SAFETY V. RATING Taratura valvola sicurezza	65	bar
MAX PRESSURE Pressione max ammissibile	83	bar
MAX TEMP. Temperatura max	50	°C

CONSTRUCTION DATA
DATI COSTRUTTIVI

15	PUMP ASSEMBLING Montaggio pompa	(HORIZONTAL ■) (Orizzontale)	(FOOT □) (Foot)	(BRAKET □) (Braket)	(VERTICAL □) (Verticale)		
16	JACKET Camicie	N/A <2>					
17	DIAPHRAGM ø Membrana	N/A <2>	mm	THICKNESS Spessore	N/A <2>	mm	
18	PISTON CASING NORM. Corsa pistone	0/125.2 <2>	mm	MIN./MAX			
19	VALVE TYPE Tipo valvole di ritegno	Check valve VCM 10 (Supplier Standard) <2>					
20	SUCTION NOZZLE ø Flangia di aspirazione	3/4 GAS	mm				
21	DISCHARGE NOZZLE ø Flangia di mandata	3/4 GAS	mm				
22	LUBRICATION TYPE Lubrificazione tipo	None		LUBRICANT TYPE Lubrificante tipo	None <2>		
23	JOINT TYPE Giunto tipo	Flexible Coupling					
24	BASE PLATE Basamento	None					
25	PACKING TYPE Premistoppa tipo	Hastelloy / NBR					
26	SEALING TYPE Tenuta tipo	Packing					
27	SAFETY VALVE Valvola di sicurezza	External	(YES □) (Si)	(NO ■) (No)	PULSATION DAMPER Smorzatore di pulsazioni	(YES □) (Si)	(NO ■) (No)
28	STEAM TRACING (to execute at erection) Tracciatura (da eseguire al montaggio)		(YES □) (Si)	(NO ■) (No)	FLUID Fluido		
29	INSULATION Coibentazione	None <2>					

TESTS
COLLAUDI

<2> According to project ITP Doc. 1724000448-QC-ITP-00002

MATERIALS
MATERIALI

31	CASING Cassa	Duplex Stainless Steel
32	PISTON Pistone	Duplex Stainles Steel
33	INNER PART Parti interne	Super Duplex Stainles Steel
34	VALVE Valvole di ritegno	Duplex <2>
35	STUFFING BOX Premistoppa tipo	Hastelloy / NBR <2>
36	PULSATION DAMPER Smorzatore di pulsazioni	N.A.
37	GASKETS Guarnizioni	NBR
38	BASE PLATE Basamento	N.A.

DRIVING MOTOR
MOTORE DI COMANDO

31	TYPE: Tipo	ELECTRIC ■ Elettrico	PNEUMATIC □ Pneumatico	
32	NOMINAL POWER kW Potenza Nominale	7.5		
33	RPM Giri al minuto	2930 (1)	POLES No. No. Poli	2
34	CONSTR. SHAPE Forma	B3		
35	PROTECTION & EXECUTION Protezione ed esecuzione	IP 55	Safe Area	
36	VOLT/PHASES/CYCLES Volt/fasi/cicli	400/3/50		
37	MFR Costruttore	HOYER		
38	TYPE Tipo	IEC		

AUXILIARY PIPES
TUBAZIONI AUSILIARIE



REMARKS *Note*: (1) Suitable for operation with VSDS

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00	23/06/2024	Issue for Review (IFR)	IT	WR	RM

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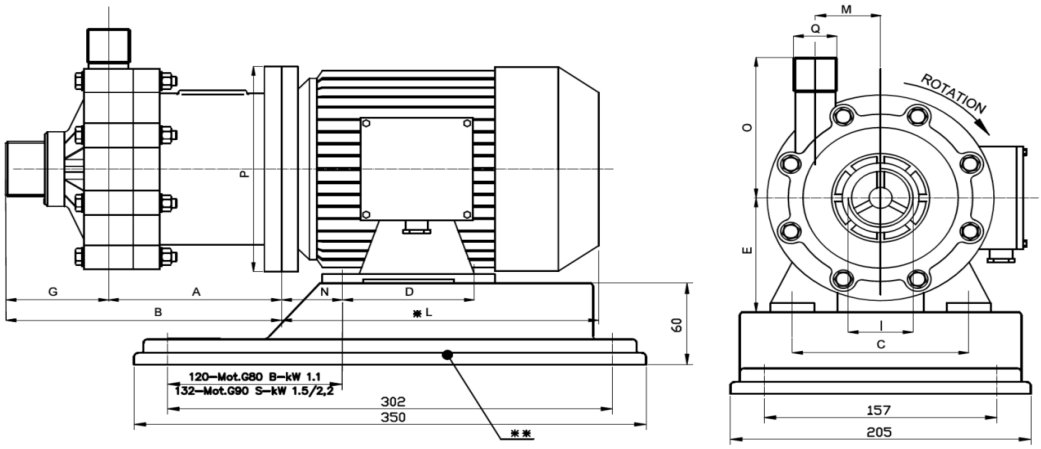
Supplier: GEMMECOTTI

Models: HTM 15 PP 1.1. kW

Drawing Back wash pumps

WEIGHT (PUMP+MOTOR) = 18.8 kg TAG= P-50002A/B

DATA												
A	B	C	D	E	G	I	L	M	N	O	P	Q
151	231	125	100	80	80	2'' Threaded Gas MALE	232	66	50	135	200	1.1/2" Threaded Gas MALE



<2>

PUMP TYPE	MOTOR FLANGE B3–B5	POT. Kw	DIMENSIONS – mm –												
			A	B	C	D	E	G	I	*L	M	N	O	P	Q
HTM 15	G 80 B	1.1	151	231	125	100	80	80	2" MALE	232	66	50	135	200	1" 1/2 MALE

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CENTRIFUGAL PUMP DATA SHEET

SPECIFICA POMPA CENTRIFUGA

PROJECT: Progetto	HOLLANDSE KUST NOORD / WIND PARK Project	LOCATION: Località	Off Shore Hollandse Kust / Noord	DOC N° : Doc N°	PK2885-M-001
MOD Mod	HTM 15 PP	PLANT: Impianto	Water treatment package	CUSTOMER: Cliente	Rosetti Marino S.p.A.
MFR: Fornitori	GEMME COTTI			JOB: Commessa	PK2885

SERVICE Descrizione	Backwash pumps	ITEM Descrizione	P-50002 A/B	N° OF UNITS N° di unità	2		
APPLICABLE CODE Norme	NONE			TYPE Tipo	Centrifugal		
WEIGHTS: Pesi	PUMP: Pompa	6	Kg MOTOR: Kg motore	13			

DESIGN CONDITION
CONDIZIONI DI PROGETTO

LIQUID Liquido	SEA WATER (2)			NORMAL CAPACITY Portata normale	5	$m^3/$	DESIGN Richiesta: 23 m^3/h
SOLID IN SUSPENSION Solidi in sospensione	None	% wt		DISCHARGE PRESSURE Pressione di mandata	2.6	bar abs	
SIZE DISTRIBUTION Granulometria	N/A <2>			SUCTION PRESSURE Pressione di aspirazione massima	1.1	bar abs	
PUMPING TEMPERATURE (P.T.) Temperatura di pompaggio	10/25	°C		DIFFERENTIAL PRESSURE Pressione differenziale	1.5	bar	
VISCOSITY AT P.T. Viscosità	1.31-0.89	m Pa sec		DIFFERENTIAL HEAD Prevalenza	14.5	m	
SPECIFIC GRAVITY AT P.T. Densità	1020-1030	kg/m^3		OPERATING TIME Tempo operativo	1	hours/day	
VAPOUR PRESSURE AT P.T. Tensione di vapore	0.012-0.02	bar abs		SHUT-OFF PRESSURE Pressione di arresto	2	bar	
NPSH AVAILABLE / REQUIRED NPSH richiesto / disponibile	10.4 - 11.3 / 2.5	m		MAX. SUCTION PRESS. Pressione di aspirazione massima	1.2	bar abs	
EFFICIENCY Rendimento	34.28 <2>	%		MECH. DESIGN PRESS. Pressione di progetto	6	bar (g)	
POWER Potenza	ABSORBED AT DUTY POINT Assorbita al punto di lavoro normale	0.55	kW	MECH. DESIGN TEMP. Temperatura di progetto	60	°C	
	ABSORBED AT END OF CURVE Assorbita al massimo carico	0.9	kW	SPEED Velocità	2900	rpm	
	SELECTED MOTOR Nominale	1.1	kW	ROTATION (VIEW FROM MOTOR) <2> Rotazione (vista dal MOTORE)	☐ C.W. Orario	■ C.C.W. Antiorario	

CONSTRUCTION DATA
DATI COSTRUTTIVI

INSTALLATION Installazione	■ HORIZONTAL Orizzontale	☐ VERTICAL Verticale	■ IN LINE In linea	LOCATION Posizione	☐ OUTDOOR All'aperto	■ INDOOR Al chiuso		
SUPPORT TYPE Supporti tipo	☐ CENTERLINE In linea	<2>	■ MOTOR FOOT Piedini	☐ BRACKET Mensole				
SPLIT Apertura corpo	☐ AXIAL Assiale	<2>	■ RADIAL Radiale					
CASING Voluta tipo	<2>	■ SINGLE VOLUTE Singola	☐ DOUBLE VOLUTE Doppia	☐ DIFFUSER Diffusore				
THREADED CONNECTIONS Connessioni filettate	☐ VENT Sfiato	☐ DRAIN Scarico	☐ MANOMETER Manometro					
NOZZLE Bocchelli	SUCTION Aspirazione	SIZE Ø	Threaded 2" Gas Male					
	DISCHARGE Mandata	SIZE Ø	Threaded 1.1/2" Gas Male					
IMPELLER N° Girante N°	TYPE Tipo ☐	OPEN Aperta ☐	SEMIOPEN Semiaperta ■	CLOSED Chiusa	RATED ø Diametro ø	108 <2>	mm	
RADIAL THRUST BEARINGS MFT & TYPE Cuscinetti tipo	Supplier standard <2>				LUBRICATION Lubrificazione	N/A <2>		
COUPLING Giunto	MAGNETIC DRIVEN			ASSEMBLED BY Montato da	☐ BUYER Cliente	<2>	■ PUMP MRF Costruttore	
COUPLING GUARD NON-SPARKING Protezione giunto da scintille	☐ YES Si	■ NO No		BASE PLATE Basamento	☐ YES Si	<2>	■ NO No	
SEALING Tenuta	N/A<2>	☐ MECHANICAL Meccanica	☐ PACKING Premistoppa	TYPE Tipo	N.A.			
☐ REDUCTION GEAR Riduttore a ingranaggi	N/A <2>							

MATERIALS
MATERIALI

CASING Corpo	PP	BEARINGS Cuscinetti	PTFEC
IMPELLER Girante N°	PVDF	BASE PLATE Basamento	PP <2>
SHAFT Albero	Al2O3		

HEATING / COOLING <2>
TUBAZIONI AUSILIARIE



SHOP TEST APPL. CODE
COLLAUDI

<2> According to project ITP Doc. 1724000448-QC-ITP-00002

OTHERS
ALTRO

PUMP + BASE PLATE + COUPLING WEIGHT+DRIVE Peso pompa + Basamento + Giunto + Motore	22 <2>	kg
PUMP WEIGHT ONLY Peso corpo pompa	6 <2>	kg

MOTOR DRIVER
MOTORE DI COMANDO

DRIVER Motore	■ ELECTRICAL MOTOR Elettrico				TYPE Tipo	IE3	
REQUIRED POWER Potenza richiesta	kW	1.1	rpm	2900	Volts/Phases/Cycles Volt/fasi/Cicli	400/3/50	
	Shape Forma		Enclosure Protazione	IP55	Execution Esecuzione	Safe area	

REMARKS
Note

(1) INCLUDED:
- Electric motor
- Nameplate

(2) pH = 8,2 Chlorides = 20310 ppm

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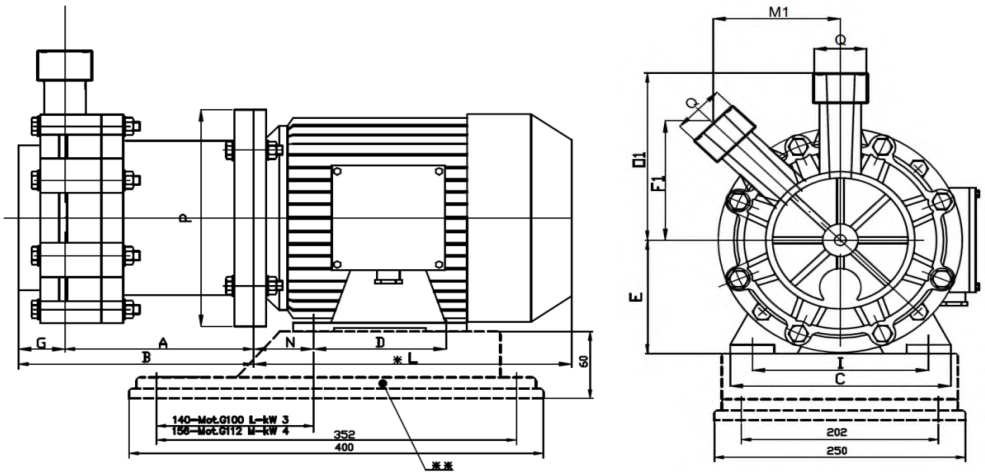
Supplier: GEMMECOTTI

Models: HTT 12000 PP 4 Kw

Drawing Sea Water Booster pumps

WEIGHT (PUMP+MOTOR)= 43 <2>kg **TAG= P-50003A/B**

DATA													
A	B	C	D	E	F	G	I	L	M	N	O1	P	Q
207	241	230	140	112	95	34	190	324	95	70	135	250	1.1/2'' Threaded GAS MALE



PUMP TYPE	MOTOR FLANGE B3–B5	POT. Kw	DIMENSIONS – mm –													
			A	B	C	D	E	F1	G	I	*L	M1	N	O1	P	Q
HTT 12000	G 100 L	3	207	241	200	140	100	95	34	160	316	95	63	135	250	1" 1/2"G MALE
	G 112 M	4			230		112			190	324		70			

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CENTRIFUGAL PUMP DATA SHEET
SPECIFICA POMPA CENTRIFUGA

PROJECT: Progetto	HOLLANDSE KUST NOORD / WIND PARK Project	LOCATION: Località	Off Shore Hollandse Kust Noord / The Netherlands
DOC N° : Doc N°	PK2885-M-001		
MOD. Mod	HTT 12000 PP	PLANT: Impianto	Water treatment package
CUSTOMER: Cliente	Rosetti Marino S.p.A.		
MFR: Fornitori	GEMME COTTI		
JOB: Commessa	PK2885		

SERVICE (Descrizione)	Booster pumps	ITEM	P-50003 A/B	N° OF UNITS (N° di unità)	2	
APPLICABLE CODE (Norme)	NONE			TYPE (Tipo)	Centrifugal	
WEIGHTS: (Pesi)	PUMP: (Pompa) 8 <2>	Kg BASE: (Kg base)		Kg MOTOR: (Kg motore) 30.2 <2>	Kg TOTAL WEIGHT: (Kg peso totale)	43 Kg

DESIGN CONDITION
CONDIZIONI DI PROGETTO

LIQUID (Liquido)	SEA WATER (2)		NORMAL CAPACITY (Portata normale)	2.5 m^3/h	DESIGN (Richiesta) 9 m^3/h
SOLID IN SUSPENSION (Solidi in sospensione)	None % wt		DISCHARGE PRESSURE (Pressione di mandata)		5.1 bar abs
SIZE DISTRIBUTION (Granulometria)	N/A <2>		SUCTION PRESSURE (Pressione di aspirazione massima)		1.1 bar abs
PUMPING TEMPERATURE (P.T.) (Temperatura di pompaggio)	10/25 °C		DIFFERENTIAL PRESSURE (Pressione differenziale)		4 bar
VISCOSITY AT P.T. (Viscosità)	1.31-0.89 m Pa sec		DIFFERENTIAL HEAD (Prevalenza)		41.2 m
SPECIFIC GRAVITY AT P.T. (Densità)	1020-1030 kg/m^3		OPERATING TIME (Tempo operativo)		24 hours/day
VAPOUR PRESSURE AT P.T. (Tensione di vapore)	0.012-0.02 bar abs		SHUT-OFF PRESSURE (Pressione di arresto)		4.8 bar
NPSH AVAILABLE / REQUIRED (NPSH richiesto / disponibile)	10.4 - 11.3 / 3 m		MAX. SUCTION PRESS. (Pressione di aspirazione massima)		1.2 bar abs
EFFICIENCY (Rendimento)	7.51 <2> %		MECH. DESIGN PRESS. (Pressione di progetto)		6 bar (g)
POWER (Potenza) ABSORBED AT DUTY POINT (Assorbita al punto di lavoro normale)	3.5 kW		MECH. DESIGN TEMP. (Temperatura di progetto)		60 °C
ABSORBED AT END OF CURVE (Assorbita al massimo carico)	2.25 kW		SPEED (Velocità)		2900 rpm
SELECTED MOTOR (Nominale)	4 kW		ROTATION (VIEW FROM MOTOR) (Rotazione (vista dal MOTORE)) <2>		■ C.W. (Orario) ☐ C.C.W. (Antiorario)

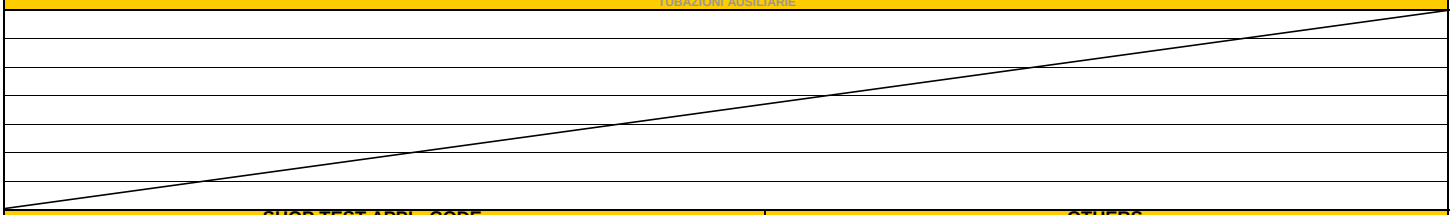
CONSTRUCTION DATA
DATI COSTRUTTIVI

INSTALLATION (Installazione)	■ HORIZONTAL (Orizzontale)	☐ VERTICAL (Verticale)	☐ IN LINE (In linea)	LOCATION (Posizione)	☐ OUTDOOR (All'aperto) ■ INDOOR (Al chiuso)
SUPPORT TYPE (Supporti tipo)	☐ CENTERLINE (In linea) <2>	■ MOTOR FOOT (Piedini)	☐ BRACKET (Mensole)		
SPLIT (Apertura corpo)	☐ AXIAL (Assiale) <2>	■ RADIAL (Radiale)			
CASING (Voluta tipo)	■ SINGLE VOLUTE (Singola)	☐ DOUBLE VOLUTE (Doppia)	☐ DIFFUSER (Diffusore)		
THREADED CONNECTIONS (Connessioni filettate)	☐ VENT (Sfiato)	☐ DRAIN (Scarico)	☐ MANOMETER (Manometro)		
NOZZLE (Bocchelli) SUCTION (Aspirazione)	SIZE Ø Threaded 1.1/2" GAS Male				
DISCHARGE (Mandata)	SIZE Ø Threaded 1.1/2" GAS Male				
IMPELLER N° (Girante N°) TYPE (Tipo)	☐ OPEN (Aperta) ☐ SEMIOPEN (Semiaperta) ■	CLOSED (Chiusa)	RATED ø (Diametro ø) 92 <2> mm		
RADIAL THRUST BEARINGS MFT & TYPE (Cuscinetti tipo)	Supplier standard <2>		LUBRICATION (Lubrificazione)	N/A <2>	
COUPLING (Giunto)	MAGNETIC DRIVEN		ASSEMBLED BY (Montato da)	☐ BUYER (Cliente) ■ PUMP MRF (Costruttore)	
COUPLING GUARD NON-SPARKING (Protezione giunto da scintille)	☐ YES (Si) ■ NO (No)		BASE PLATE (Basamento)	☐ YES (Si) ■ NO (No)	
SEALING (Tenuta) N/A<2>	☐ MECHANICAL (Meccanica) ☐ PACKING (Premistoppa)		TYPE (Tipo)	N.A.	
☐ REDUCTION GEAR (Riduttore a ingranaggi)	N/A <2>				

MATERIALS
MATERIALI

CASING (Corpo)	PP	BEARINGS (Cuscinetti)	PTFEC
IMPELLER (Girante N°)	PVDF	BASE PLATE (Basamento)	PP <2>
SHAFT (Albero)	Al2O3		

HEATING / COOLING <2>
TUBAZIONI AUSILIARIE



SHOP TEST APPL. CODE
COLLAUDI

<2> According to project ITP Doc. 1724000448-QC-ITP-00002

OTHERS
ALTRO

PUMP + BASE PLATE + COUPLING WEIGHT+DRIVE (Peso pompa + Basamento + Giunto + Motore)	43 <2>	kg
PUMP WEIGHT ONLY (Peso corpo pompa)	8 <2>	kg

MOTOR DRIVER
MOTORE DI COMANDO

DRIVER (Motore)	■ ELECTRICAL MOTOR (Elettrico)			TYPE (Tipo)	IE3		
REQUIRED POWER (Potenza richiesta)	kW 4	rpm 2900		Volts/Phases/Cycles (Volt/fasi/Cicli)	400/3/50		
Shape (Forma)	Enclosure (Protazione) IP55			Execution (Esecuzione)	Safe area		

REMARKS
Note

(1) INCLUDED:
- Electric motor
- Nameplate

(2) pH = 8,2 Chlorides = 20310 ppm

DATE (Data)	REV (Rev)	DESCRIPTION (Descrizione)	FILLED OUT (Compilato)	CHECKED (Controllato)	APPR. BY (Approvato)
04/11/2024	02	Issue for Review (IFR)	SF	WR	RM
31/07/2024	01	Issue for Review (IFR)	IT	WR	RM
20/06/2024	00	Issue for Review (IFR)	IT	WR	RM

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Supplier: GRUNDFOS

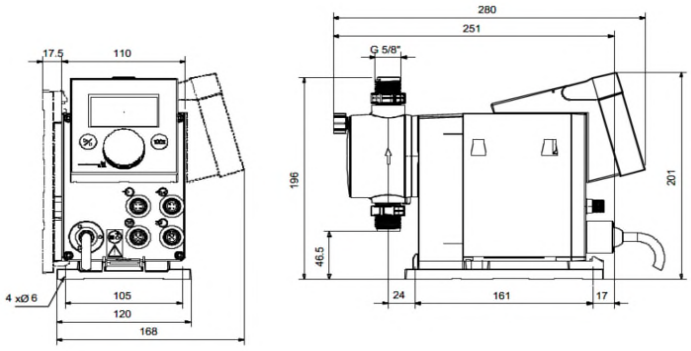
Models: DDC 6-10 AR-PV/T/C-F-31U2U2FGC3

Drawing dosing pump (Caustic Soda)

WEIGHT= 2 kg

TAG= P-50005A/B

Dimension



REFERENCE DOCUMENTS	
1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LAODING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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VOLUMETRIC PUMP DATA SHEET

SPECIFICA PER POMPA VOLUMETRICA

PROJECT: Progetto	HOLLANDSE KUST NOORD WIND PARK	**LOCATION:** Località	Off Shore Hollandse Kust Noord (Netherlands)	**DOC N° :** Doc N°	PK2885-M-001
MOD: Mod	DDC 6-10 AR-PVC/E/C F-31U2U2FGC3	**PLANT:** Impianto	Water treatment package	**CUSTOMER:** Cliente	Rosetti Marino S.p.A.
MFR: Fornitori	Grundfos			**JOB:** Commessa	PK2885

1	SERVICE Descrizione	Caustic soda dosing pumps		PUMP TYPE Tipo di pompa	Volumetric, Metering diaphragm	PUMP SERIAL No. Matricola pompa	
2	MANUFACTURER Costruttore	Grundfos		No. of UNITS No. Unità	2		
3	EL. MOTOR No. Motore el. No.	ITEM Sigla	P-50005 A/B	SUPPLIED BY Fornito da	Grundfos	ASSEMBLED BY Montato da	Grundfos
4	WEIGHT: PUMP Kg Pesi Pompa	2					

DESIGN CONDITION FOR ONE PUMP
CONDIZIONI DI PROGETTO

6	LIQUID Liquido	Caustic soda (2% w/w)		CAPACITY NORM. Portata normale	0,05	DES. Rich.	0,10	l/h
7	SOLID IN SUSPENSION Solidi in sospensione	None		DISCHARGE PRESSURE Pressione di mandata	5,3			barg
8	CORROSIVE COMPOUNDS Composti corrosivi	pH = 13.7		SUCTION PRESS. MAX Pressione di aspirazione max	atm			barg
9	TEMP. NORM. Temp. Norm.	10.5	MAX Max 25 °C	DIFFERENTIAL PRESSURE Pressione differenziale	5,3			bar
10	VISCOSITY Viscosità	1 <2>	mPa sec	DIFFERENTIAL HEAD Prevalenza	53 <2>			m
11	DENSITY Densità	1020	kg/m^3	NPSH AVAILABLE NPSH disponibile	10 <2>			m
12	VAPOUR PRESSURE Tensione di vapore	0,012 <2>	Bar abs	OPERATION Servizio	Continuos			
13	FREEZING TEMP. Temperatura di congelamento	<0 <2>	°C	INSTALLATION Installazione	INDOOR ■ Al chiuso	OUTDOOR □ All'aperto		

CHARACTERISTICS
CARATTERISTICHE

SAFETY V. RATING Taratura valvola sicurezza	6 (1)	bar
CAPACITY Portata	min 6 ml/h max 6 l/h	
MAX PRESSURE Pressione max ammissibile	10	bar
MAX TEMP. Temperatura max	45	°C

CONSTRUCTION DATA
DATI COSTRUTTIVI

15	PUMP ASSEMBLING Montaggio pompa	(HORIZONTAL ■ Orizzontale)	(FOOT ■ Foot)	(BRAKET □ Braket)	(VERTICAL □ Verticale)
16	JACKET Camicia	N/A <2>			
17	CORROSION ALLOWANCE Sovraspessore di corrosione	N/A <2> mm			
18	SUCTION NOZZLE ø Flangia di aspirazione	Threaded 5/8" Gas Male			
19	DISCHARGE NOZZLE ø Flangia di mandata	Threaded 5/8" Gas Male			
20	LUBRICATION TYPE Lubrificazione tipo	None			
21	JOINT TYPE Guarnizione tipo	None			
22	BASE PLATE Basamento	None			
23	PACKING TYPE Premistoppa tipo	N/A <2>			
24	SEALING TYPE Tenuta tipo	N/A <2>			
25	MULTI FUNCTIONAL VALVE Valvola multifunzione	(YES ■ Si)	(NO □ No)	PULSATION DAMPER Smorzatore di pulsazioni	(YES □ Si) □ (NO ■ No)
26	STEAM TRACING (to execute at erection) Tracciatura (da eseguire al montaggio)	(YES □ Si)	(NO ■ No)		
27	INSULATION Coibentazione	N/A <2>			

TESTS
COLLAUDI

<2> According to project ITP Doc. 1724000448-QC-ITP-00002

MATERIALS
MATERIALI

29	CASING Cassa	PVC
30	PISTON Pistone	N/A <2>
31	DIAPHRAGM Membrana	PVDF
32	INNER PART Parti interne	PVC
33	VALVE Valvole di ritegno	PVC
34	STUFFING BOX Premistoppa tipo	N/A <2>
35	PULSATION DAMPER Smorzatore di pulsazioni	N/A <2>
36	GASKETS Guarnizioni	EPDM
37	BASE PLATE Basamento	N/A <2>
38		

DRIVING MOTOR
MOTORE DI COMANDO

29	TYPE: Tipo	ELECTRIC ■ Elettrico PNEUMATIC □ Pneumatico
30	NOMINAL POWER kW Potenza Nominale	0.022 <2>
31	PROTECTION & EXECUTION Protezione ed esecuzione	IP 65
32	VOLT/PHASES/CYCLES Volt/fasi/cicli	240 or 100/1/50
33	MFR Costruttore	Grundfos
34	TYPE Tipo	Stepper suitable for safe area
35	FULL LOAD AMPERAGE A Amperaggio pieno carico	25 <2>
36		
37		
38		

AUXILIARY PIPES <2>
TUBAZIONI AUSILIARIE

39–45

REMARKS

Note

47 **(1) Multi functional valve (PSV+check) set at 6 barg**

48 **(2) Injection valve shall be included**

49 **(3) Automatic stroke adjustment 4-20 mA**

50–52

Rev. Rev.	DATE Data	DESCRIPTION Descrizione	FILLED OUT Compilato	CHECKED Controllato	APPR. BY Approvato
02	04/11/2024	Issue for Review (IFR)	SF	WR	RM
01	31/07/2024	Issue for Review (IFR)	IT	WR	RM
00	23/06/2024	Issue for Review (IFR)	IT	WR	RM

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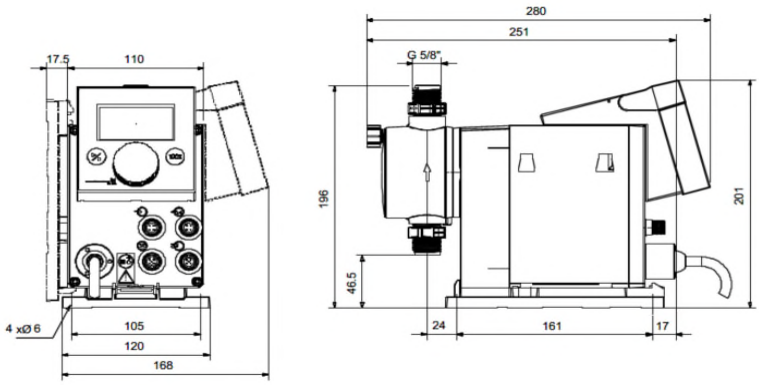
Models: DDC 6-10 AR-PVC/V/C-F-31U2U2FGC3

Drawing dosing pump (Antiscalant)

WEIGHT= 2 kg

TAG= P-50006A/B

Dimension



REFERENCE DOCUMENTS	
1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LOADING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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VOLUMETRIC PUMP DATA SHEET
SPECIFICA PER POMPA VOLUMETRICA

PROJECT: Progetto: HOLLANDSE KUST NOORD WIND PARK	LOCATION: Località: Off Shore Hollandse Kust Noord (Netherlands)	DOC N° : Doc N°: PK2885-M-001	
MOD: Mod: DDC 6-10 AR-PVC/V/C F-31U2U2FG	PLANT: Impianto: Water treatment package	DEPARTMENT: Reparto:	CUSTOMER: Cliente: Rosetti Marino S.p.A.
MFR: Fornitori: Grundfos	RFQ N° RdO N°:	PO N° Ordine N°:	JOB: Commessa: PK2885

SERVICE Descrizione	Antiscalant dosing pumps		PUMP TYPE Tipo di pompa	Volumetric, Metering diaphragm	PUMP SERIAL No. Matricola pompa
MANUFACTURER Costruttore	Grundfos		No. of UNITS No. Unità	2	
EL. MOTOR No. Motore el. No.		ITEM Sigla	P-50006 A/B	SUPPLIED BY Fornito da	Grundfos	ASSEMBLED BY Montato da	Grundfos
WEIGHT: PUMP Kg Peso Pompa	2				

DESIGN CONDITION FOR ONE PUMP
CONDIZIONI DI PROGETTO

LIQUID Liquido	Antiscalant		CAPACITY NORM. Portata normale	0.01	DES. Rich.	0.05	l/h
SOLID IN SUSPENSION Solidi in sospensione	None		DISCHARGE PRESSURE Pressione di mandata	3.0			barg
CORROSIVE COMPOUNDS Composti corrosivi	pH = 7.5		SUCTION PRESS. MAX Pressione di aspirazione max	atm			barg
TEMP. NORM. Temp. Norm.	10.5	MAX Max 25 °C	DIFFERENTIAL PRESSURE Pressione differenziale	3			bar
VISCOSITY Viscosità	<10 <2>	mPa sec	DIFFERENTIAL HEAD Prevalenza	27 <2>			m
DENSITY Densità	1130 <2>	kg/m^3	NPSH AVAILABLE NPSH disponibile	10 <2>			m
VAPOUR PRESSURE Tensione di vapore	Not available	bar abs	OPERATION Servizio	Continuos			
FREEZING TEMP. Temperatura di congelamento	<0	°C	INSTALLATION Installazione	INDOOR ■ Al chiuso	OUTDOOR □ All'aperto		

CHARACTERISTICS
CARATTERISTICHE

SAFETY V. RATING Taratura valvole sicurezza	6 (1)	bar
CAPACITY Portata	min 6 ml/h	max 6 l/h
MAX PRESSURE Pressione max ammissibile	10	bar
MAX TEMP. Temperatura max	45	°C

CONSTRUCTION DATA
DATI COSTRUTTIVI

PUMP ASSEMBLING Montaggio pompa	(HORIZONTAL ■ Orizzontale)	(FOOT ■ Foot)	(BRAKET □ Braket)	(VERTICAL □ Verticale)	
JACKET Camicie	N/A <2>				
CORROSION ALLOWANCE Sovraspessore di corrosione	N/A <2> mm				
SUCTION NOZZLE ø Flangia di aspirazione	Threaded 5/8" Gas Male				
DISCHARGE NOZZLE ø Flangia di mandata	Threaded 5/8" Gas Male				
LUBRICATION TYPE Lubrificazione tipo	None				
JOINT TYPE Giunto tipo	None				
BASE PLATE Basamento	None				
PACKING TYPE Premistoppa tipo	N/A <2>				
SEALING TYPE Tenuta tipo	N/A <2>				
MULTI FUNCTIONAL VALVE Valvola multifunzione	(YES ■ Si) (NO □ No)	PULSATION DAMPER Smorzatore di pulsazioni	(YES □ Si)	□ (NO ■ No)	
STEAM TRACING (to execute at erection) Tracciatura (da eseguire al montaggio)	(YES □ Si) (NO ■ No)				
INSULATION Coibentazione	N/A <2>				

TESTS
COLLAUDI

<2> According to project ITP Doc. 1724000448-QC-ITP-00002

MATERIALS
MATERIALI

CASING Cassa	PVC
PISTON Pistone	N/A <2>
DIAPHRAGM Membrana	PVDF
INNER PART Parti interne	PVC
VALVE Valvole di ritegno	PVC
STUFFING BOX Premistoppa tipo	N/A <2>
PULSATION DAMPER Smorzatore di pulsazioni	N/A <2>
GASKETS Guarnizioni	EPDM
BASE PLATE Basamento	N/A <2>

DRIVING MOTOR
MOTORE DI COMANDO

TYPE: ELECTRIC ■ Tipo Elettrico / PNEUMATIC □ Pneumatico	
NOMINAL POWER kW Potenza Nominale	0.022 <2>
PROTECTION & EXECUTION Protezione ed esecuzione	IP 65
VOLT/PHASES/CYCLES Volt/fasi/cicli	240 or 100/1/50
MFR Costruttore	Grundfos
TYPE Tipo	Stepper suitable for safe area
FULL LOAD AMPERAGE A Amperaggio pieno carico	25 <2>

AUXILIARY PIPES <2>
TUBAZIONI AUSILIARIE

REMARKS
Note

(1) Multi functional valve (PSV+check) set at 6 barg

(2) Injection valve shall be included

(3) Manual stroke adjustment

Rev. Rev.	DATE Data	DESCRIPTION Descrizione	FILLED OUT Compilato	CHECKED Controllato	APPR. BY Approvato
02	04/11/2024	Issue for Review (IFR)	SF	WR	RM
01	31/07/2024	Issue for Review (IFR)	IT	WR	RM
00	23/06/2024	Issue for Review (IFR)	IT	WR	RM

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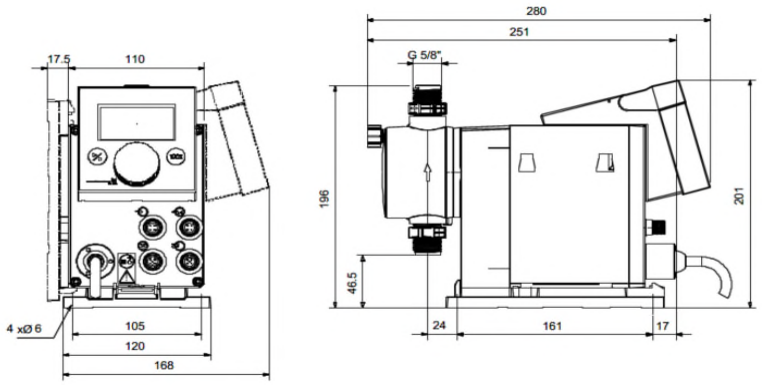
Models: DDC 6-10 AR-PVC/V/C-F-31U2U2FGC3

Drawing dosing pump (Biocide)

WEIGHT= 2 kg

TAG= P-50007A/B
P-50008A/B
P-50010A/B

Dimension



REFERENCE DOCUMENTS	
1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LOADING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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VOLUMETRIC PUMP DATA SHEET
SPECIFICA PER POMPA VOLUMETRICA

Sh. 17 / 29

		PROJECT: Progetto	HOLLANDSE KUST NOORD WIND PARK	LOCATION: Località	Off Shore Hollandse Kust Noord (Netherlands)	DOC N° : Doc N°	PK2885-M-001
	MOD: Mod	DDC 6-10 AR-PVC/V/C F-31U2U2FG	PLANT: Impianto	Water treatment package	DEPARTMENT: Reparto	CUSTOMER: Cliente	Rosetti Marino S.p.A.
	MFR: Fornitori	Grundfos	RFQ N° RdO N°		PO N° Ordine N°	JOB: Commessa	PK2885

1	SERVICE Descrizione	Biocide dosing pumps (inlet water plant)		PUMP TYPE Tipo di pompa	Volumetric, Metering diaphragm	PUMP SERIAL No. Matricola pompa
2	MANUFACTURER Costruttore	Grundfos		No. of UNITS No. Unità	2	
3	EL. MOTOR No. Motore el. No.	ITEM Sigla	P-50007 A/B P-50008 A/B <2> P-50010 A/B <2>	SUPPLIED BY Fornito da	Grundfos	ASSEMBLED BY Montato da Grundfos
4	WEIGHT: PUMP Kg Peso Pompa	2				

	DESIGN CONDITION FOR ONE PUMP CONDIZIONI DI PROGETTO					CHARACTERISTICS CARATTERISTICHE	
5							
6	LIQUID Liquido	Biocide (DBNPA or equivalent)	CAPACITY NORM. Portata normale	Note 4 <2>	DES. 6 <2> Rich. l/h	SAFETY V. RATING Taratura valvola sicurezza	6 (1) bar
7	SOLID IN SUSPENSION Solidi in sospensione	None	DISCHARGE PRESSURE Pressione di mandata	4.5	barg	CAPACITY Portata	min 6 ml/h max 6 l/h
8	CORROSIVE COMPOUNDS Composti corrosivi	pH = 2.5-4 (sol. 1%)	SUCTION PRESS. MAX Pressione di aspirazione max	atm	barg	MAX PRESSURE Pressione max ammissibile	10 bar
9	TEMP. NORM. Temp. Norm.	10.5 MAX Max 25 °C	DIFFERENTIAL PRESSURE Pressione differenziale	4.5	bar	MAX TEMP. Temperatura max	45 °C
10	VISCOSITY Viscosità	1 mPa sec	DIFFERENTIAL HEAD Prevalenza	38	m		
11	DENSITY Densità	1140-1180 kg/m^3	NPSH AVAILABLE NPSH disponibile	8	m		
12	VAPOUR PRESSURE Tensione di vapore	0.23 bar abs	OPERATION Servizio	Continuos			
13	FREEZING TEMP. Temperatura di congelamento	<0 °C	INSTALLATION Installazione	INDOOR ■ Al chiuso	OUTDOOR □ All'aperto		

	CONSTRUCTION DATA DATI COSTRUTTIVI				TESTS COLLAUDI
14					
15	PUMP ASSEMBLING Montaggio pompa	(HORIZONTAL ■ Orizzontale)	(FOOT ■ Foot)	(BRAKET □ Braket) (VERTICAL □ Verticale)	<2> According to project ITP Doc. 1724000448-QC-ITP-00002
16	JACKET Camicia	N/A <2>			
17	CORROSION ALLOWANCE Sovraspessore di corrosione	N/A <2> mm			
18	SUCTION NOZZLE ø Flangia di aspirazione	Threaded 5/8" Gas Male			
19	DISCHARGE NOZZLE ø Flangia di mandata	Threaded 5/8" Gas Male			
20	LUBRICATION TYPE Lubrificazione tipo	None			
21	JOINT TYPE Giunto tipo	None			
22	BASE PLATE Basamento	None			
23	PACKING TYPE Premistoppa tipo	N/A <2>			
24	SEALING TYPE Tenuta tipo	N/A <2>			
25	MULTI FUNCTIONAL VALVE Valvola multifunzione	(YES ■ Si) (NO □ No)	PULSATION DAMPER Smorzatore di pulsazioni	(YES □ Si) □ (NO ■ No)	
26	STEAM TRACING (to execute at erection) Tracciatura (da eseguire al montaggio)	(YES □ Si) (NO ■ No)			
27	INSULATION Coibentazione	N/A <2>			

	MATERIALS MATERIALI		DRIVING MOTOR MOTORE DI COMANDO		
28					
29	CASING Cassa	PVC	TYPE: Tipo ELECTRIC Elettrico ■	PNEUMATIC Pneumatico □	
30	PISTON Pistone	N/A <2>	NOMINAL POWER kW Potenza Nominale	0.022 <2>	
31	DIAPHRAGM Membrana	PVDF	PROTECTION & EXECUTION Protezione ed esecuzione	IP 65	
32	INNER PART Parti interne	PVC	VOLT/PHASES/CYCLES Volt/fasi/cicli	240 or 100/1/50	
33	VALVE Valvole di ritegno	PVC	MFR Costruttore	Grundfos	
34	STUFFING BOX Premistoppa tipo	N/A <2>	TYPE Tipo	Stepper suitable for safe area	
35	PULSATION DAMPER Smorzatore di pulsazioni	N/A <2>	FULL LOAD AMPERAGE A Amperaggio pieno carico	25 <2>	
36	GASKETS Guarnizioni	EPDM			
37	BASE PLATE Basamento	N/A <2>			
38					

	AUXILIARY PIPES <2> TUBAZIONI AUSILIARIE
39	
40	
41	
42	
43	
44	
45	

46 ***REMARKS***
Note

47 **(1) Multi functional valve (PSV+check) set at 6 barg**

48 **(2) Injection valve shall be included**

49 **(3) Manual stroke adjustment**

50 **(4) P50007A/B: 0.03 l/h; P50008A/B: 0.85 l/h; P50010A/B: 0.85 l/h <2>**

51

Rev. Rev	DATE Data	DESCRIPTION Descrizione	FILLED OUT Compilato	CHECKED Controllato	APPR. BY Approvato
02	04/11/2024	Issue for Review (IFR)	SF	WR	RM
01	31/07/2024	Issue for Review (IFR)	IT	WR	RM
00	23/06/2020	Issue for Review (IFR)	IT	WR	RM

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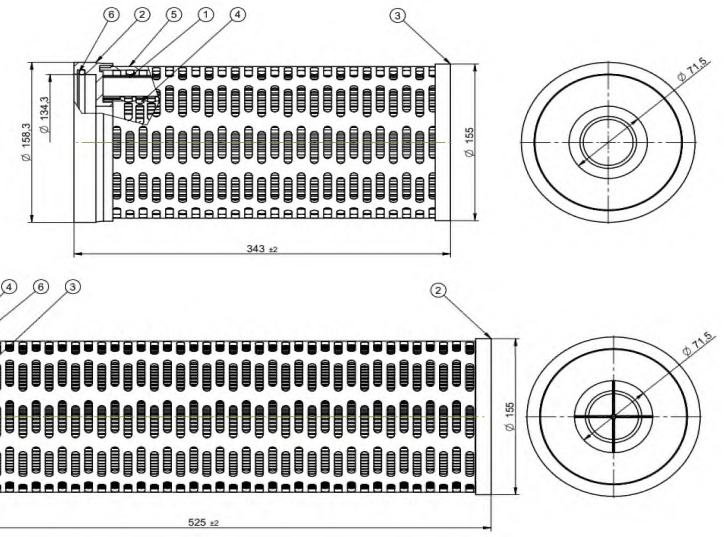
Models: FMX-01
Model cartridge filter: PP95MX5L 13" 20 MICRON / PP95MX5L 13" 5 MICRON

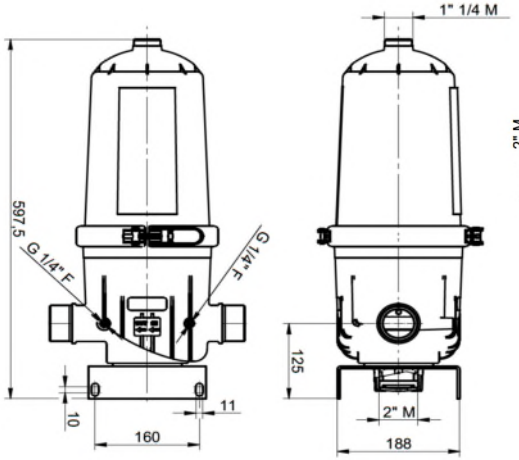
Drawing cartridge filters

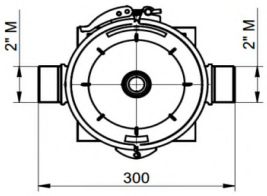
WEIGHT VESSEL = 19 kg

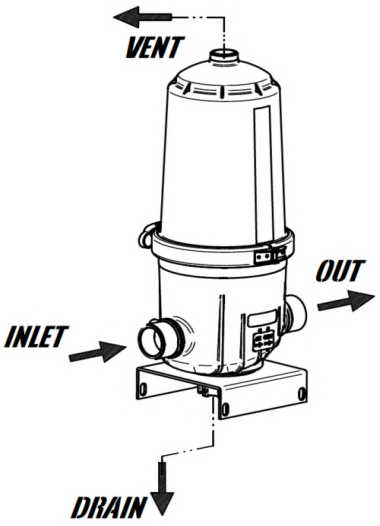
TAG= S-50002A/B, S-50003A/B

Po.	Description	Dimens.	Material
1	Pleated	L=311mm,5 mm	PP
2	Lower shell attachment MX	D=155	PP
3	Lower shell attachment		PP
4	Cartridge Inner Duct FM	13''	PP
5	Cartridge Outer Duct MX	13''	PP
6	Ring 210	133,4*5,34*144,08 mm	Silica









REFERENCE DOCUMENTS	
1724000448-MAC-DA-00005	GENERAL ARRANGEMENT DRAWINGS AND FOUNDATIONS LOADING CALCULATIONS
1724000448-PR-PID-00013	WATER TREATMENT PACKAGE-PID DIAGRAM

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FILTER DATA SHEET
SPECIFICA PER FILTRO

PLANT: Impianto: Water treatment package	**CUSTOMER:** Cliente: Rosetti Marino S.p.A		
LOCATION: Località: HOLLANDSE KUST NOORD WIND PARK Project	**JOB:** Commessa: PK2885	**ITEM:** Sigla: S-50002A/B	
DEPARTMENT : Reparto	**P&I :** 1724000448-PR-PID-00013	**MFR:** Costruttore: EVERBLUE	**DOC.Nr.** Doc. Nr.: PK2885-M-001

1	SERVICE OF UNIT / Servizio: Cartridge filter (20 µm)			No. OF UNITS / No. di unità: 2
2	FLUID HANDLED / Fluido trattato:			Sea water
3	CORROSIVE COMPOUNDS / Composti corrosivi		ppm	TDS = 37000 and Chloride = 20300, (@pH = 8,2)
4	FLOW RATE / Portata:	OPERATING INLET / NET	m^3/h	2 / 2
5	OPERATING PRESSURE / Pressione di esercizio		barg	4
6	OPERATING TEMPERATURE / Temperatura di esercizio:		°C	10-23
7	FLUID DENSITY/ Densità:		kg /m^3	1020 / 1029
8	FLUID VISCOSITY / Viscosità:		mPa sec	1.67/ 0.89
9	TOTAL SUSPENDED SOLIDS / Solidi Sospesi Totali:		mg/l	<5
10	MINIMUM SIZE OF PARTICLES TO BE REMOVED / Dim. minima delle particelle da filtrare:		µm	> 40
11	PRESSURE DROP / Perdite di carico:	CLEAN / DIRTY / MAX	bar	0.2 / 0.7 / 1.0
12	MAX WASHING PHASE FLOW RATE		m^3/h	N.A.
13	MAX WASHING PHASE DURATION TIME		sec	N.A.
14	DESIGN PRESSURE / Pressione di progetto:		barg	6
15	TEST PRESSURE / Pressione di prova :		barg	9
16	DESIGN TEMPERATURE / Temperatura di progetto:		°C	50
17	FILTER TYPE (Tipo di filtro)			Cartridge element spiral wound
18	FILTRATION AREA		m^2	0,3
19	FILTER DIAMETER/HEIGHT DIMENSIONS		mm	300 / 600
20	FILTER EMPTY AND OPERATING WEIGHT		kg	19 / 40
21	FILTER MATERIAL / Materiale filtrante:			PP
22	SUPPORT BASKET MATERIAL / Materiale supporto cestello:			PP
23	FILTER HOLES DIAMETER / Diametro fori del filtro:		µm	20 (NON ABSOLUTE)
24	FILTER REMOVAL EFFICIENCY / Efficienza di filtrazione		%	95
25	BODY MATERIAL / Materiale corpo:			PP
26	CORROSION ALLOWANCE / Sovraspessore di corrosione:		mm	N.A.
27	CODE REQUIREMENTS / Norme richieste:			PED 2014/68/UE
28	CONNECTIONS / Connessioni	FLUID / Fluido: IN /OUT		3" BSP
29		DRAIN / Scarico:		3" BPS
30		VENT / Sfiato:		3/4 "
31	BY-PASS FOR MAINTENANCE / By-pass per manutenzione:			NO
32	FILTER TWIN OR SINGLE / Filtro doppio o singolo:			Single
33	TYPE OF SUPPORT (IF APPLICABLE) / Tipo di supporto:			N.A.
34	GASKETS / Guarnizioni:			NBR
35	ELASTOMERS / Elastomeri:			N.A.
36	POWER SUPPLY		V, Hz	N.A.
37	INSTALLED POWER		W	N.A.
38	THERMAL INSULATION TYPE / Tipo isolamento: N.A.	THICKNESS / Spessore:	mm	N.A.

39 **REMARKS**

40 **(1) Required items included:**
- Nameplate
- Filter element
-Tools key

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REV. Rev.	DATE Data	DESCRIPTION Descrizione	PREPARED Compilato da	CHECKED Controllato da	APPR. BY Approvato da
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01	31/07/2024	Issue for Review (IFR)	IT	WR	RM
00	24/06/2024	Issue for Review (IFR)	IT	WR	RM

FILTER DATA SHEET
SPECIFICA PER FILTRO

PSC	PLANT: Impianto: Water treatment package	CUSTOMER: Cliente: Rosetti Marino S.p.A		Sh. 20 / 29
	LOCATION: Località: HOLLANDSE KUST NOORD WIND PARK Project	JOB: Commessa: PK2885	ITEM: Sigla: S-50003A/B	
DEPARTMENT : Reparto	P&I : 1724000448-PR-PID-00013	MFR: Costruttore: EVERBLUE	DOC.Nr. Doc. Nr.: PK2885-M-001	

1	SERVICE OF UNIT / Servizio: Cartridge filter (5 µm)			No. OF UNITS / No. di unità: 2
2	FLUID HANDLED / Fluido trattato:			Sea water
3	CORROSIVE COMPOUNDS / Composti corrosivi		ppm	TDS = 37000 and Chloride = 20300, (@ pH = 8.2)
4	FLOW RATE / Portata:	OPERATING INLET / NET	m^3/h	2 / 2
5	OPERATING PRESSURE / Pressione di esercizio		bar	4
6	OPERATING TEMPERATURE / Temperatura di esercizio:		°C	10
7	FLUID DENSITY/ Densità:		kg /m^3	1020 / 1029
8	FLUID VISCOSITY / Viscosità:		mPa sec	1.67/ 0.89
9	TOTAL SUSPENDED SOLIDS / Solidi Sospesi Totali:		mg/l	<3
10	MINIMUM SIZE OF PARTICLES TO BE REMOVED / Dim. minima delle particelle da filtrare:		µm	> 20
11	PRESSURE DROP / Perdite di carico:	CLEAN / DIRTY / MAX	bar	0.2 / 0.7 / 1.0
12	MAX WASHING PHASE FLOW RATE		m^3/h	N.A.
13	MAX WASHING PHASE DURATION TIME		sec	N.A.
14	DESIGN PRESSURE / Pressione di progetto:		barg	6
15	TEST PRESSURE / Pressione di prova :		barg	9
16	DESIGN TEMPERATURE / Temperatura di progetto:		°C	50
17	FILTER TYPE (Tipo di filtro)			Cartridge element spiral wound
18	FILTRATION AREA		m^2	0,3
19	FILTER DIAMETER/HEIGHT DIMENSIONS		mm	300 / 600
20	FILTER EMPTY AND OPERATING WEIGHT		kg	19 / 40
21	FILTER MATERIAL / Materiale filtrante:			PP
22	SUPPORT BASKET MATERIAL / Materiale supporto cestello:			PP
23	FILTER HOLES DIAMETER / Diametro fori del filtro:		µm	5 (NON ABSOLUTE)
24	FILTER REMOVAL EFFICIENCY / Efficienza di filtrazione		%	95
25	BODY MATERIAL / Materiale corpo:			PP
26	CORROSION ALLOWANCE / Sovraspessore di corrosione:		mm	N.A.
27	CODE REQUIREMENTS / Norme richieste:			PED 2014/68/UE
28	CONNECTIONS / Connessioni	FLUID / Fluido: IN /OUT		3" BSP
29		DRAIN / Scarico:		3" BPS
30		VENT / Sfiato:		3/4 "
31	BY-PASS FOR MAINTENANCE / By-pass per manutenzione:			NO
32	FILTER TWIN OR SINGLE / Filtro doppio o singolo:			Single
33	TYPE OF SUPPORT (IF APPLICABLE) / Tipo di supporto:			NONE
34	GASKETS / Guarnizioni:			NBR
35	ELASTOMERS / Elastomeri:			N.A.
36	POWER SUPPLY		V, Hz	N.A.
37	INSTALLED POWER		W	N.A.
38	THERMAL INSULATION TYPE / Tipo isolamento: N.A.	THICKNESS / Spessore:	mm	N.A.
39	**REMARKS**			
40	**(1) Required items included:** **- Nameplate** **- Filter element** **- Tools key**			
41				
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REV. Rev.	DATE Data	DESCRIPTION Descrizione	PREPARED Compilato da	CHECKED Controllato da	APPR. BY Approvato da
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Supplier: SG

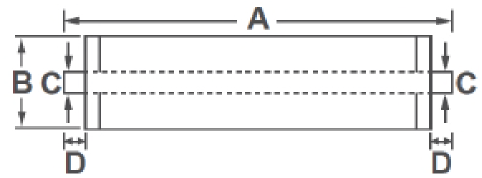
Models: LG SW4040R membrane
1MNC1384 Vessel

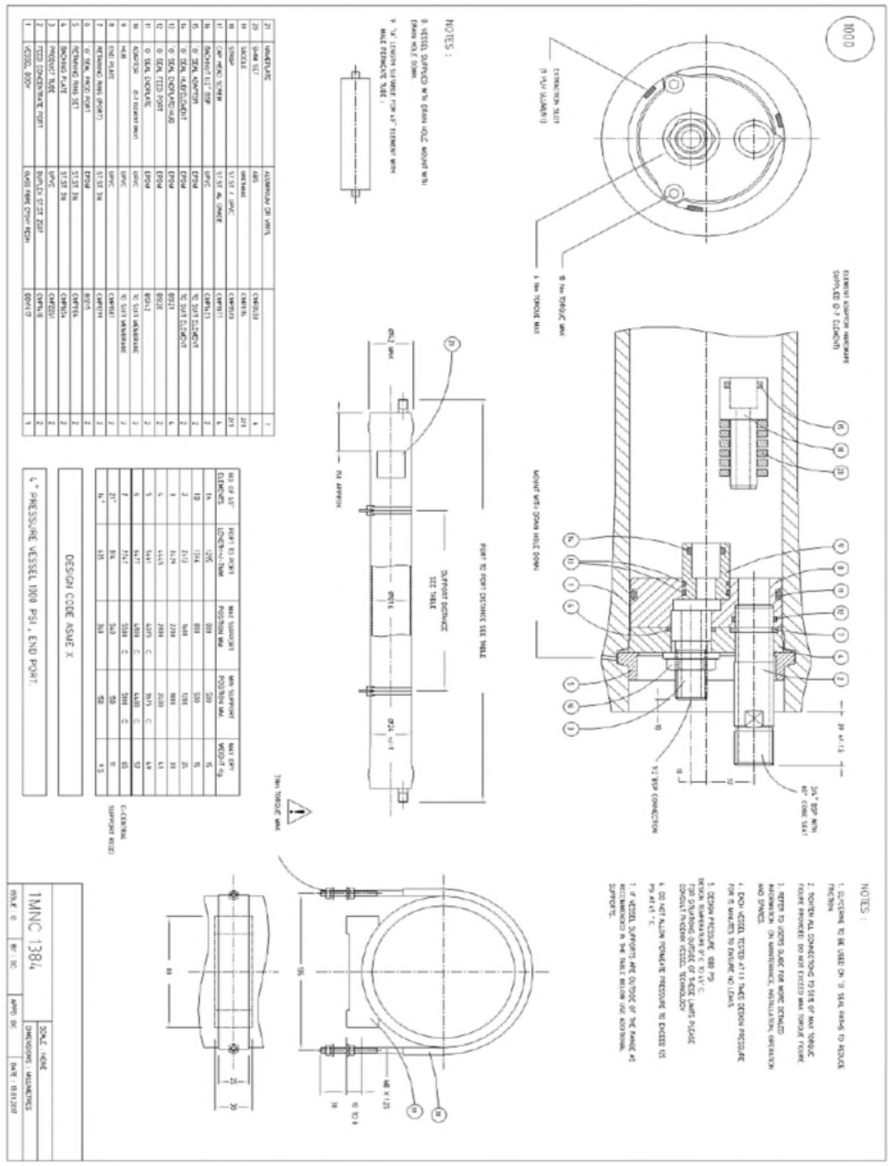
Drawing Vessel membranes

WEIGHT= 57 kg TAG=A-50007A/B

Membrane: nr.6 elements

Dimension	
A	1,016 mm
B	100 mm
C	19 mm
D	29 mm





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Pressure Vessel for Membranes

PROJECT: Progetto	HOLLANDSE KUST NOORD WIND PARK	**LOCATION:** Località	Off Shore Hollandse Kust Noord (Netherlands)
DOC N° : Doc N°	PK2885-M-001		
MOD: Mod	1MNC1384	**PLANT:** Impianto	Water treatment package
CUSTOMER: Cliente	Rosetti Marino S.p.A		
MFR: Fornitori	ASTRO		
JOB: Commessa	PK2885		

SERVICE Servizio	Pressure Vessel for Membranes	ITEM Item	A-50007A/B	No. of UNITS No. Di UNITA'	2
WEIGHT Pesi	EMPTY Vuoto	57	kg		

OPERATING CONDITION
CONDIZIONI OPERATIVE

		SHELL Mantello	JACKET Camicia
OPERATING TEMPERATURE Temperatura operativa	°C	10 / 25	
OPERATING PRESSURE Pressione operativa	barg	55 - 63	
Fluid		Filtered sea water	

DESIGN DATA
DATI DI PROGETTO

DESIGN PRESSURE Pressione di progetto	69 barg	
TEST PRESSURE Pressione di prova	75,9 (1,1 times Pdes) barg	
DESIGN TEMPERATURE Tempratura di progetto	0 - 45°C °C	
Body Material Materiale	Glass Fibre Epoxy Resin	
GASKET Guarnizioni	EPDM	
Number of installed elements	6 membranes	
DIMENSION Dimensione	4"/ 6477 mm (Lenght)	

INSTALLATION Installazione: Horizontal — INDOOR All'aperto ☒ — OUTDOOR Al chiuso ☐

INSULATION TYPE Tipo isolamento: NONE — THICKNESS Spessore: N.A. mm — SURFACE Superficie: m^2

CODE REQUIREMENTS Guranizioni

NOZZLES
BOCCHELLI

ITEM Sigla	DN" DN"	RATING Rating	TYPE Tipo	SERVICE Servizio
N1	3/4"	-	Threaded BSP - F	Sea Water Inlet
N2	3/4"	-	Threaded BSP - F	Product Water Outlet
N3	1/2"	-	Threaded BSP - F	Concentrate (Brine)



REMARKS
Note

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Specifiche di nostra propriteà, diritti tutelati a termini di legge

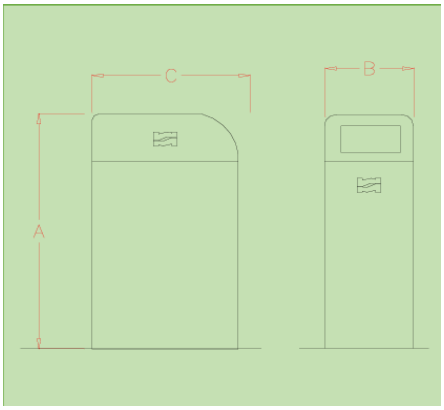
Supplier:NOBEL

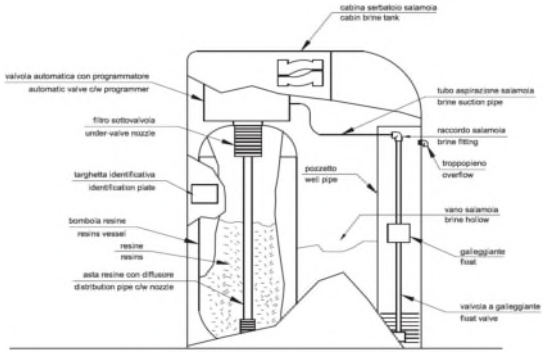
Models:AC 90

Drawing Water Softener

WEIGHT= 35 kg **TAG= S-50004**

Data			Connections inlet/outlet 1''
A	B	C	
1000 mm	300 mm	450 mm	





REFERENCE DOCUMENTS	
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Water Softener Data sheet

PROJECT: Progetto	HOLLANDSE KUST NOORD WIND PARK	**LOCATION:** Località	Off Shore Hollandse Kust Noord (Netherlands)
DOC N° : Doc N°	PK2885-M-001		
MOD: Mod	AC 90	**PLANT:** Impianto	Water treatment package
CUSTOMER: Cliente	Rosetti Marino S.p.A		
MFR: Fornitori	Nobel		
JOB: Commessa	PK2885		

SERVICE Servizio	Water Softener	ITEM Item	S-50004	No. of UNITS No. Di UNITA'	1	
WEIGHT Pesi	EMPTY Vuoto	35	Kg	IN OPERATION	110	kg

OPERATING CONDITION
CONDIZIONI OPERATIVE

	SHELL Mantello	JACKET Camicia
OPERATING TEMPERATURE Temperatura operativa °C	10 / 25	
OPERATING PRESSURE Pressione operativa barg	5	
Max Flow m^3/h	1.8	
Fluid	Fresh Water	

DESIGN DATA
DATI DI PROGETTO

DESIGN PRESSURE Pressione di progetto	6	barg
DESIGN TEMPERATURE Tempratura di progetto	5 - 40°C	°C
Body Material Materiale	GRP	
GASKET Guarnizioni	EPDM	
Power Supply	110 - 240 V; 50-60 Hz; 10 W 12 V (Working tension)	
DIMENSION Dimensione	1000 x 300 x 450	mm

INSTALLATION Installazione: Vertical — INDOOR All'aperto ■ — OUTDOOR Al chiuso □

INSULATION TYPE Tipo isolamento: NONE — THICKNESS Spessore: N.A. mm — SURFACE Superficie: m^2

CODE REQUIREMENTS Guranizioni

NOZZLES
BOCCHELLI

ITEM Sigla	DN" DN"	RATING Rating	TYPE Tipo	SERVICE Servizio
N1	1"	-	Threaded BSP - F	Water Inlet
N2	1"	-	Threaded BSP - F	Water Outlet
N3	22 mm	-	Nipple	Drain

REMARKS
Note

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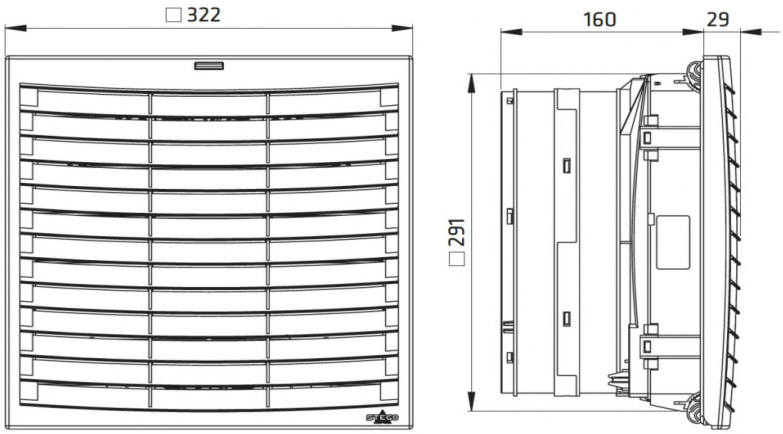
Supplier: STEGO

Models: FPO 018

Container air fan drawing

WEIGHT= 3.4 kg **TAG= HFA-50001A/B/C**

Data		
Lenght	heigth	width
322 mm	322 mm	189 mm



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CONTAINER AIR FAN

SPECIFICA PER VENTILATORE CONTAINER

	PLANT: Impianto: **Water treatment package**	**CUSTOMER:** Cliente: **Rosetti Marino S.p.A**	**Sh.: 26/29**
	LOCATION: Località: **HOLLANDSE KUST NOORD**	**JOB:** Commessa: **PK2885**	**ITEM:** Sigla: **HFA-50001A/B/C**
DEPARTMENT : Reparto	**P&I :** **172400448-PR-PID-00013**	**MFR:** Costruttore: **STEGO**	**DOC.Nr.** Doc. Nr.: **PK2885-M-001**

1	SERVICE OF UNIT / Servizio: **CONTAINER AIR FAN**		No. OF UNITS / No. di unità:	**3**
2	FLUID HANDLED / Fluido trattato:			**ambient air**
3	FLOW RATE / Portata:	m^3/h		**1010**
4	OPERATING / DESIGN PRESSURE / Pressione di esercizio /progetto	barg		**atm**
5	OPERATING TEMPERATURE / Temperatura di esercizio:	°C		**min -25°C; Max +50**
6	DESIGN TEMPERATURE / Temperatura di progetto:	°C		**min -40°C; Max +70**
7	AIR FAN DIMENSIONS	mm		**Please refer to sheet 25**
8	AIR FAN WEIGHT	kg		**3.4**
9	CASING MATERIAL			**Plastic UL94 V-0**
10	POWER SUPPLY	W		**140**
11	NOMINAL VOLTAGE			**AC 230 V, 50/60 Hz**
12	CURRENT ABSORBED	mA		**500-700**
13				
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38	**REMARKS**			
39				

REV. Rev.	DATE Data	DESCRIPTION Descrizione	PREPARED Compilato da	CHECKED Controllato da	APPR. BY Approvato da
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01	22/07/2024	Issued for Information	IT	WR	RM
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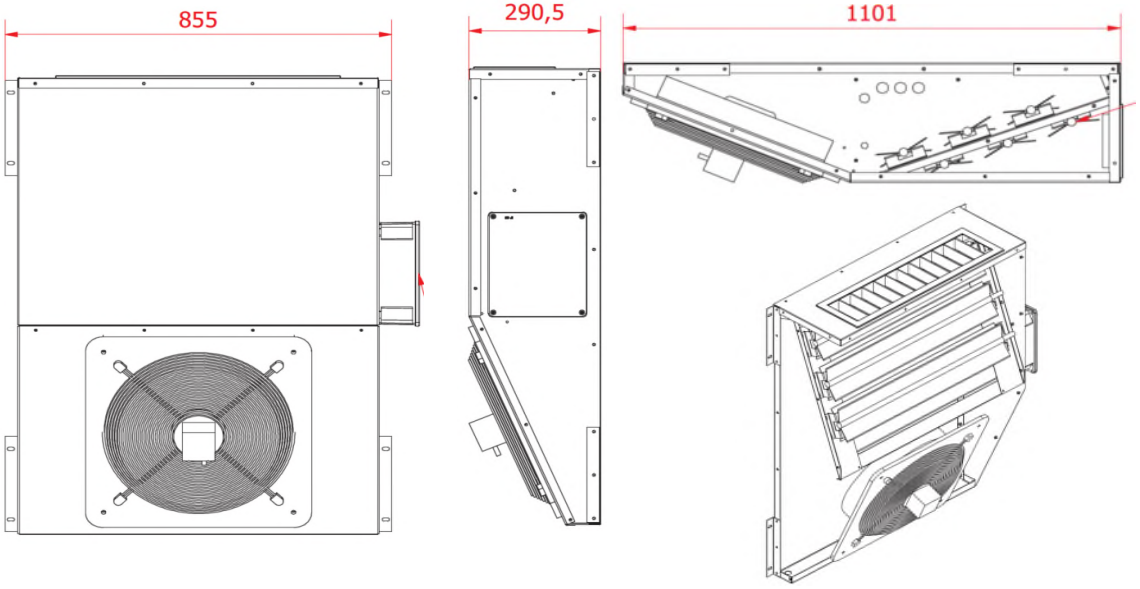
Supplier: AC GRAF

Models: Not Applicable

Container electrical heater drawing

WEIGHT= 26.4 kg **TAG= HHS-50003A/B**

Data		
Lenght	heigth	width
1101 mm	290.5 mm	855 mm



REFERENCE DOCUMENTS	
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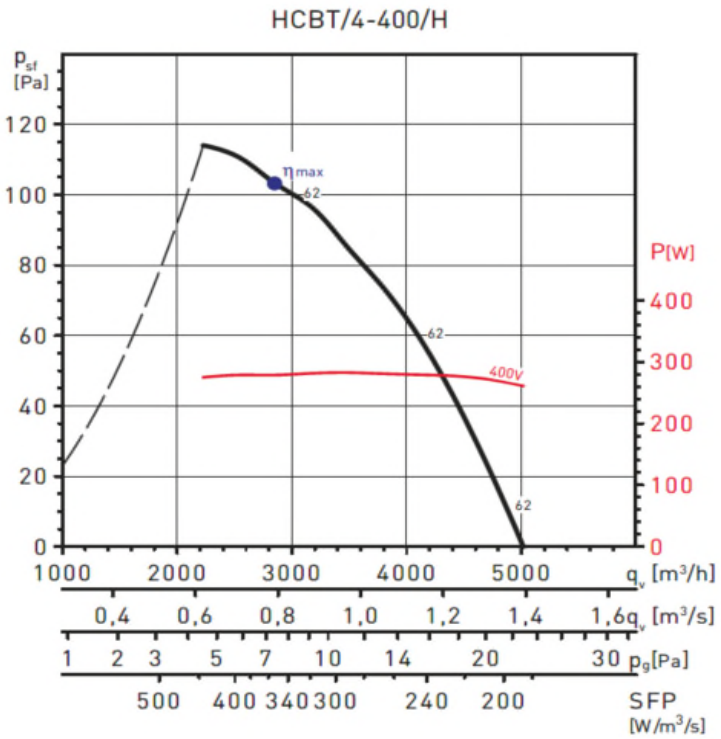
CONTAINER ELECTRICAL HEATER

SPECIFICA PER RISCALDATORE CONTAINER

PLANT: Impianto: Water treatment package	CUSTOMER: Cliente: Rosetti Marino S.p.A		Sh.: 28/29
LOCATION: Località: HOLLANDSE KUST NOORD	JOB: Commessa: PK2885	ITEM: Sigla: HHS-50003A/B	
DEPARTMENT : Reparto	P&I : 172400448-PR-PID-00013	MFR: Costruttore: AC GRAF	DOC.Nr. Doc. Nr.: PK2885-M-001

1	SERVICE OF UNIT / Servizio: CONTAINER ELECTRICAL HEATER		No. OF UNITS / No. di unità: 2
2	FLUID HANDLED / Fluido trattato:		ambient air
3	FLOW RATE / Portata:	m^3/h	2000
4	OPERATING / DESIGN PRESSURE / Pressione di esercizio /progetto	barg	atm
5	OPERATING TEMPERATURE / Temperatura di esercizio:	°C	min -40°C; Max +70
6	DESIGN TEMPERATURE / Temperatura di progetto:	°C	min -40°C; Max +70
7	CONTAINER ELECTRICAL HEATER DIMENSIONS	mm	Please refer to sheet 27
8	CONTAINER ELECTRICAL HEATER WEIGHT	kg	26.4
9	CASING MATERIAL		AISI 316
10	POWER SUPPLY	kW	8.4
11	NOMINAL VOLTAGE		400 V; 3ph; 50Hz
12			

AXIAL FLOW FAN PERFORMANCE CURVE (Note1)

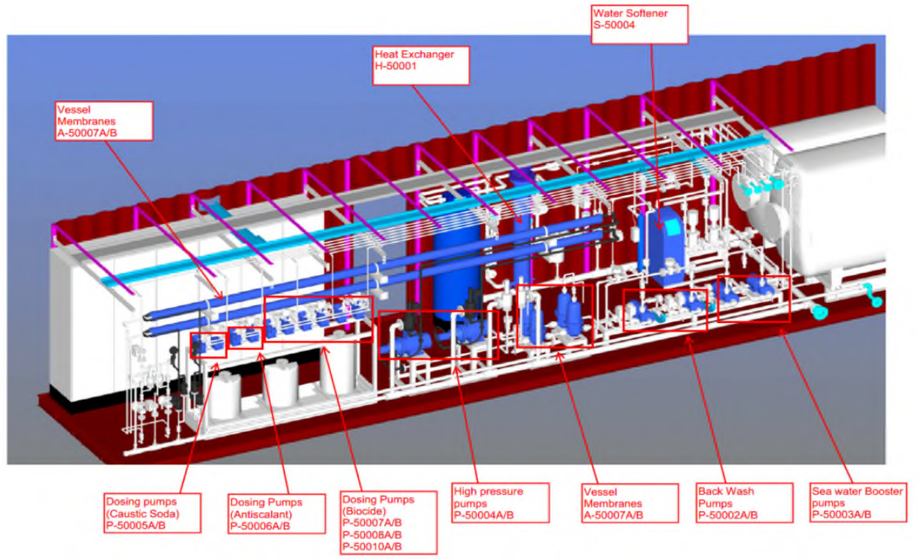


Note

1) Installed in the container electrical heater

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Desalination Package general view



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