



SUBMERSIBLE PUMPS



GRINDER FX

SUBMERSIBLE PUMPS



TECHNICAL DATA

Flow rate minimum and maximum: 23,8 m³/h
Head up to: 33 m
Immersion dept (maximum): 20 m
Type of pumped liquid: loaded waters with filamentary bodies, paper or textile material in the presence of domestic or civil waste
Supported liquid temperature (maximum and minimum): + 50°C (+ 60°C for short period of time)
Flanged and threaded: from 1"½, DN32, DN40
Impeller type: Grinder
Start time (maximum) per hour: 20/h
Class of protection: IP 68
Motor insulation class: F
Single phase power input: 1x 220-240V 50Hz
Three phase power input: 3x 400V 50Hz / 3x 230V 50Hz on request
Maximum dry run time: 10 min
Power cable (m) and plug: 10 m
Possible type of installation: mobile on the ground or fixed on a coupling device
Certification: EN 12050 \ ATEX
Special versions on request: different cable lengths, different voltages and frequencies

Grinder FX is a submersible pump with shredder designed for the drainage of waste water coming from drains in civil and commercial environments. The pump is certified according to the wastewater standard EN 12050-1. Pump suitable for fixed installations with a coupling device or mobile if placed on a base directly on the bottom of the tank. Thanks to the high-strength grinder, the pump is suitable for installations with small-diameter pipes or those requiring high pressures. The pump is designed for quick maintenance thanks to a constructive solution that provides easy access to the main components of the pump. Automatic versions with power up to 1,5 kW. ATEX version available for use in potentially explosive environments. (ATEX certifications: II2G Ex db k IIB T4 or IEC EX: Ex db IIB T4 Gb).

CONSTRUCTION FEATURES OF THE PUMP

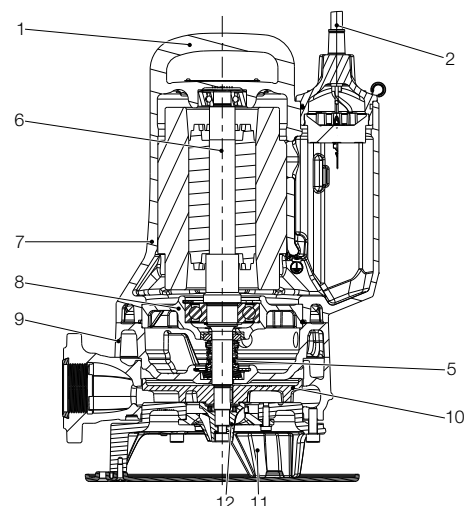
Pump body and impeller in cast iron, shredder in AISI 630. Motor shaft in AISI 304 stainless steel. Double mechanical seal in SiC-SiC/SiC-C in oil chamber not in contact with the pumped liquid, independent of the direction of rotation. Delivery port both flanged and threaded.

CONSTRUCTION FEATURES OF THE MOTOR

Single-phase asynchronous motor (MA / MNA versions) and three-phase version motor (TNA versions). The rotor is mounted on lubricated bearings. Continuous operation in S1 with the motor completely immersed. Dry running for a maximum time of 10 minutes. Over-temperature sensors in the motor windings with intervention threshold at +130°C. Quick-bonded resin-bonded cable gland, 07RN8-F power cable. Single-phase versions with starter and capacitor in a separate panel, MA versions with float for automatic operation. In the three-phase motors the over-temperature sensor connection is responsibility of the user.

MATERIALS

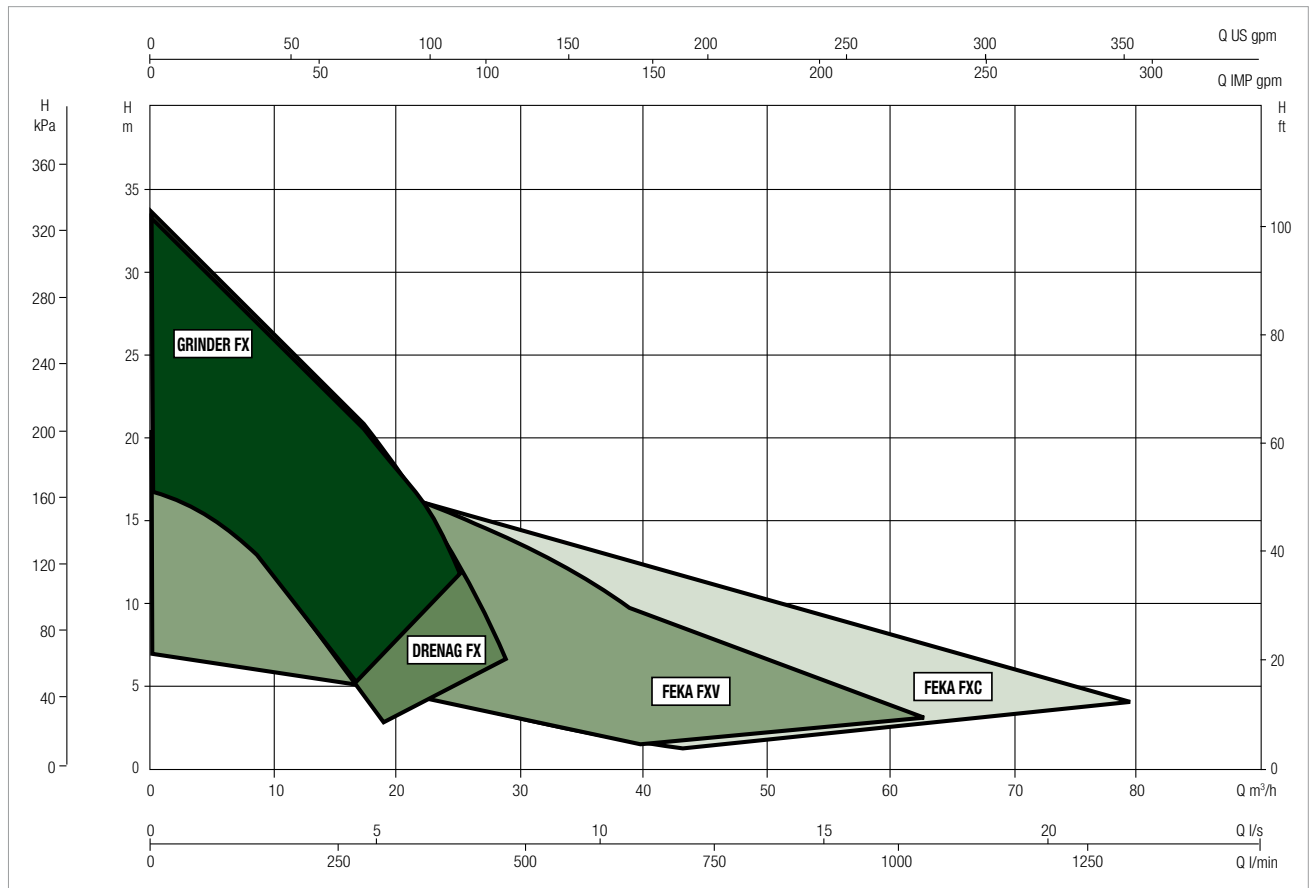
N°	PARTS	MATERIALS
1	HANDLE	CAST IRON EN G.JL 200
2	ELECTRIC CABLE	07RN8-F
3	SCREWS	STAINLESS STEEL AISI 304
4	OR	NBR
5	MECHANICAL SEAL PUMP SIDE	SiC-SiC/SiC-C
	MECHANICAL SEAL MOTOR SIDE	SiC/CARBON
6	MOTOR SHAFT	STAINLESS STEEL AISI 304 (P2>1.5kW) AISI 431 (P2<1.2kW)
7	PUMP BODY / MOTOR	CAST IRON EN G.JL 200
8	BEARING INNER FLANGE	ALLUMINIUM ALLOY EN AC 46100
9	FLANGE	CAST IRON EN G.JL 200
10	IMPELLER	CAST IRON EN G.JL 250
11	BASE	CAST IRON EN G.JL 200
12	CUTTER / CUTTER BASE	STAINLESS STEE EN1.4542 / AISI 630
13	COATING	CATAPHORESIS and ACRILIC TWO-COMPONENT 50µm



PERFORMANCE RANGE

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO9906.

GRAPHIC SELECTION TABLE

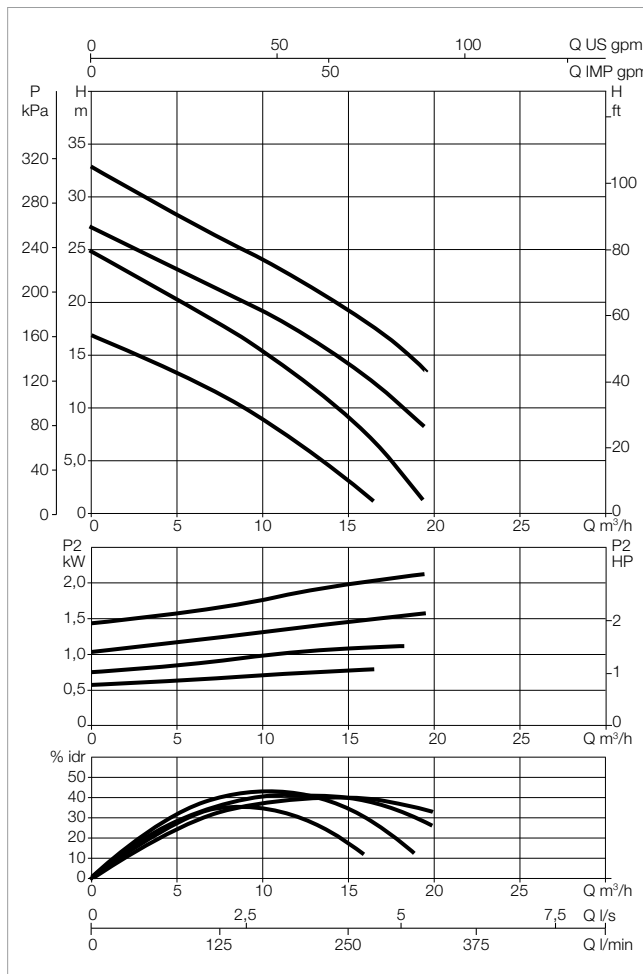
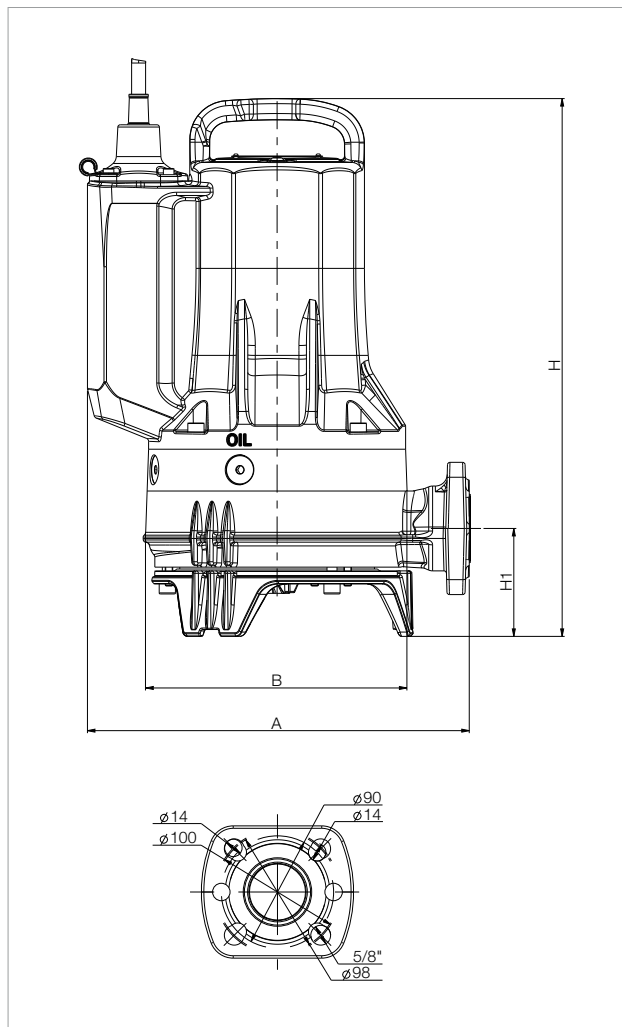


SELECTION TABLE GRINDER FX 15

MODEL	Q=m³/h	0	2,4	4,8	7,2	9,6	12	14,4	16,8	19,2
	Q=l/min	0	40	80	120	160	200	240	280	320
GRINDER FX 15.07	H (m)	16,9	15,2	13,4	11,4	9,2	6,7	3,9		
GRINDER FX 15.11		24,9	22,6	20,5	18,3	15,9	13,2	10,1	6,3	1,8
GRINDER FX 15.15		27,3	25,2	23,3	21,4	19,5	17,3	14,8	11,9	8,5
GRINDER FX 15.22		32,8	30,5	28,5	26,5	24,4	22,3	19,9	17,2	14,0

GRINDER FX 15 - SUBMERSIBLE PUMPS

Pumped liquid temperature range: da 0° a +50°C. For higher temperatures contact our sales network.



The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO9906.

MODEL	ELECTRICAL DATA							
	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	Is A	CAPACITOR	RATED SPEED rpm/min
			Kw	HP				
GRINDER FX 15.07 MA	1x230V	1,1	0,8	1,1	5,3	29	25+200	2870
GRINDER FX 15.07 MNA*	1x230V	1,1	0,8	1,1	5,3	29	25+200	2870
GRINDER FX 15.07 TNA*	3x400V	1	0,8	1,1	2	22	-	2870
GRINDER FX 15.11 MA	1x230V	1,5	1,1	1,5	6,8	29	25+200	2870
GRINDER FX 15.11 MNA*	1x230V	1,5	1,1	1,5	6,8	29	25+200	2870
GRINDER FX 15.11 TNA*	3x400V	1,5	1,1	1,5	2,8	19	-	2870
GRINDER FX 15.15 MA	1x230V	2,2	1,6	2,1	9,8	36	40+200	2870
GRINDER FX 15.15 MNA*	1x230V	2,2	1,6	2,1	9,8	36	40+200	2870
GRINDER FX 15.15 TNA*	3x400V	2,1	1,6	2,1	3,8	25	-	2870
GRINDER FX 15.22 TNA*	3x400V	2,6	2,1	2,8	4,7	35	-	2870

*Available in Ex version

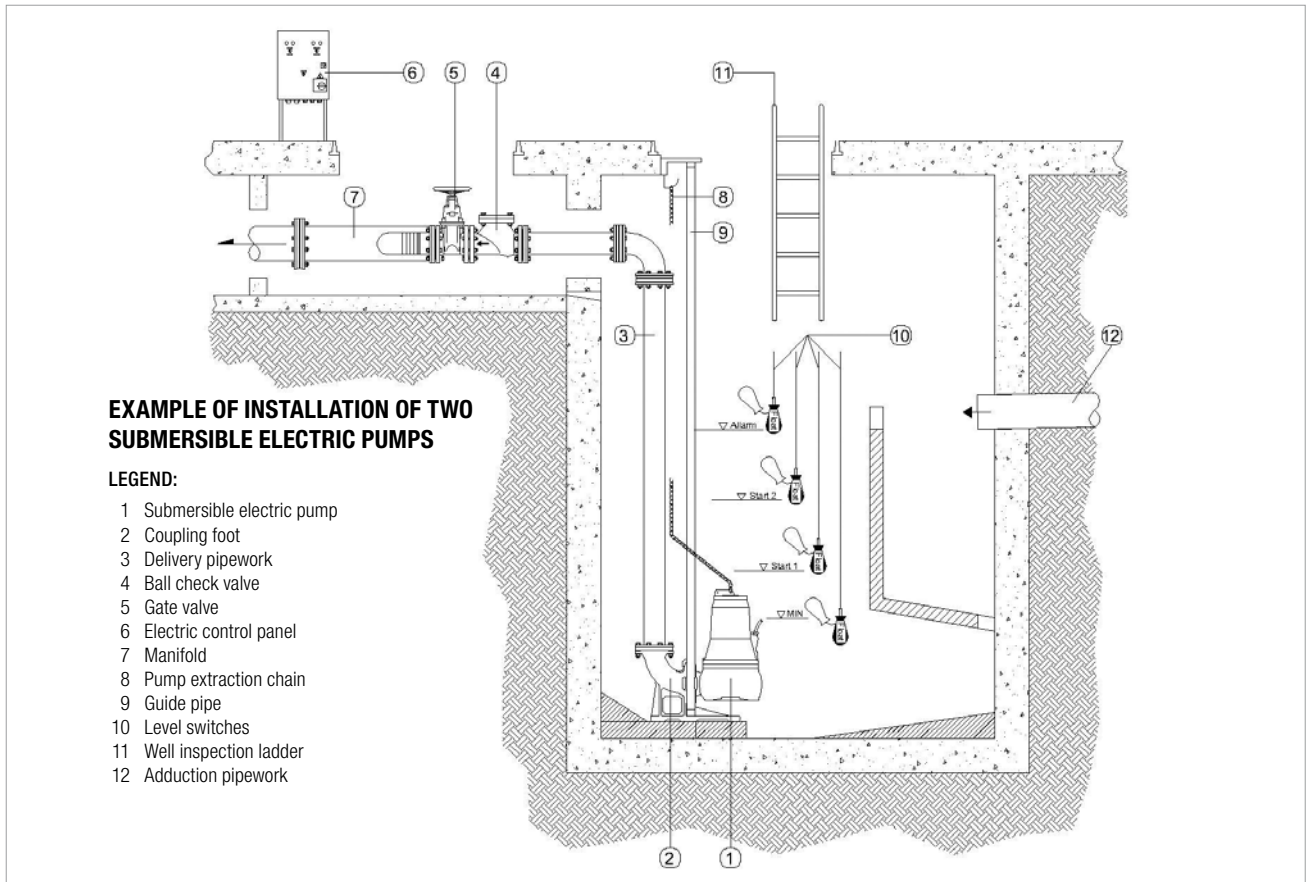
MODEL	FREE PASSAGE	A		B		H		H1	DELIVERY				PACKING DIMENSIONS			WEIGHT Kg
		A	B	Ex	H	GAS	DN1		HOLES	D	L/A	L/B	H			
GRINDER FX 15.07*	-	306	215	404	404	87	Rp 1"1/2	DN32 PN10 / 6 DN40 PN6	4 2	100-90 90	660	370	400	35		
GRINDER FX 15.11*	-	306	215	404	421	87	Rp 1"1/2	DN32 PN10 / 6 DN40 PN6	4 2	100-90 90	660	370	400	35		
GRINDER FX 15.15*	-	306	215	413	430	87	Rp 1"1/2	DN32 PN10 / 6 DN40 PN6	4 2	100-90 90	660	370	400	38		
GRINDER FX 15.22*	-	306	215	430	448	87	Rp 1"1/2	DN32 PN10 / 6 DN40 PN6	4 2	100-90 90	660	370	400	39		




*Available in Ex version

ACCESSORIES

CONTROL PANELS

PUMPING STATION ACCESSORIES



FLOATS	DESCRIPTION	
	FLOAT	5 meters
		10 meters
		15 meters
		20 meters
	BULB FLOAT	10 meters
		20 meters
	300 g COUNTERWEIGHT FOR FLOAT	
ATEX 10MT FLOAT		



TECHNICAL DATA

Nominal power input voltage:

e.box plus 1x 230 V / 3 x 230 V - 3 x 400 V (automatic selection)

e.box basic 1x 230 V

Frequency: 50 - 60 Hz**Maximum power of use:**

e.box plus 5,5 kW + 5,5 kW

e.box basic 2,2 kW + 2,2 kW

Maximum current of use: 12 A + 12 A**Starting capacitor:** supplied as accessory KIT**Ambient temperature operation limits:** -10° C + 40° C**Air relative humidity:** 90% a 20° C**Max. altitude:** 1000 s.l.m.**Protection class:** IP 55**Display:** 1.6" for e.box PLUS D and e.box BASIC D models

Standard of reference for the construction of the control panels EN 60335-1

APPLICATIONS

E.box is an electronic control panel that provides all the functions and protections required for the installation of a pumping set for draining, filling, and pressurisation purposes.

E.BOX PLUS is an electric control panel for automatic protection and operation of one or more submersible electric pumps or pressure booster pumps, both single and three phase, for domestic, civil, and industrial applications. Thanks to the current regulation possibility, the e.box control panel is compatible with all pump models with current between 1 and 12 A, with power up to 5,5 kW.

E.BOX BASIC is an electric control panel for automatic protection and operation of one or more single phase submersible electric pumps or pressure booster pumps for domestic applications. The e.box control panel is compatible with all single phase pump models with current between 1 and 12 A, with power up to 2,2 kW, as indicated in the product compatibility table.

CONTROL PANEL CONSTRUCTION

Supplied in an IP 55 protection class self-extinguishing thermoplastic material box, the control panel protects the electric pumps from abnormal conditions such as: overload and overtemperature (with automatic reset), short circuit (with fuses - Plus model only), pump current surges (amperometric protection), abnormal voltage, dry run, quick starts, pressure sensor fault, or inconsistency of the external protection commands.

FRONT PANEL COMPONENTS

- General disconnecter with padlockable door lock.
- AUT-O-MAN operation selection pushbuttons.
- Alarm RESET pushbutton.
- Operation, stop, alarm notification lamps.
- Display, for PLUS D or BASIC D models.

PANEL INTERNAL COMPONENTS

- Electronic control card with protection fuses and contactors.
- Power input connection terminals, single phase (L-N in the Basic version), or three phase (L1-L2-L3 in the Plus version).
- Electric pump connection terminals, single phase (L-N in the BASIC version), or three phase (L1-L2-L3 in the PLUS version).
- Terminals for the connection of pressure switches, sensors, KK thermal protection, alarm notification N.O. contacts. Operation selection dip switch: level floats or sensor, tank filling and emptying, operation with one or two pumps also for the version with display.

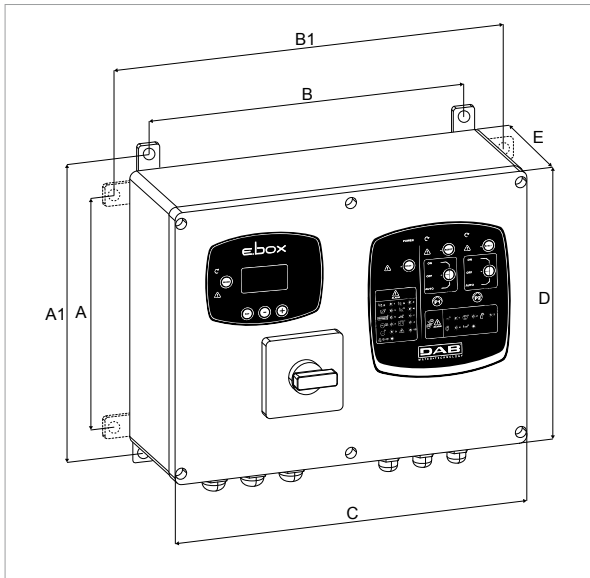
SOFTWARE

For the models with display, the software

- During the first installation, provides step by step guidance in the selection of the correct settings based on the actual application.
- Makes the status of the control panel and the pumps clearly and immediately visible.
- When compared to the previous model, makes it easier to change the level settings, as operation of the control panel dip switch is no longer required.

ELECTRIC PROTECTION AND CONTROL PANELS

E.BOX



MODEL	A	A1	B	B1	C	D	E	PACKING DIMENSIONS			WEIGHT Kg
								L/A	L/B	H	
E.BOX BASIC 230/50-60	212	265	282	337	320	260	120	250	430	310	4
E.BOX PLUS 230-400V/50-60	212	265	282	337	320	260	120	250	430	310	5
E.BOX BASIC D 230/50-60	212	265	282	337	320	260	120	250	430	310	4
E.BOX PLUS D 230-400V/50-60	212	265	282	337	320	260	120	250	430	310	5

MODEL	ELECTRICAL DATA					
	POWER INPUT 50 HZ	STARTING	P2 NOMINAL		MAX CURRENT A	DISPLAY
			kW x2	HP x2		
E.BOX BASIC 230/50-60	1X230 V~	direct	2,2	3	12+12	
E.BOX PLUS 230-400V/50-60	1X230 V~	direct	2,2	3	12+12	
	3X230 V~		3	4		
	3X400 V~		5,5	7,5		
E.BOX BASIC D 230/50-60	1X230 V~	direct	2,2	3	12+12	•
E.BOX PLUS D 230-400V/50-60	1X230 V~	direct	2,2	3	12+12	•
	3X230 V~		3	4		
	3X400 V~		5,5	7,5		

ACCESSORIES

	FLOAT	5 meters cable
		10 meters cable
		15 meters cable
		20 meters cable
	BULB FLOAT	10 meters cable
		20 meters cable
	0-5 m - 20 m LEVEL TRANSDUCER E.BOX PANEL CABLE	

	FLASHING ORANGE 230 V
	KIT CAPACITOR 40UF
	KIT CAPACITOR 30UF
	KIT CAPACITOR 20UF