

# BOREHOLE RANGE

3SDM



# HYDRO PUMPS

WATER TECHNOLOGIES

# 3 SDM BOREHOLE RANGE



## Applications

For water supply from boreholes, wells or reservoirs  
Continuous duty rated products for use in domestic, farming and irrigation applications.

## Operating Conditions

Maximum fluid temperature up to + 35 °C  
Maximum sand content: 0.25%  
Minimum well diameter: 3"

## Motor and Pump

Replaceable Pump and Motor.  
Single-Phase: 220 - 240V/50Hz  
Equipped with start control box or digital auto-control box.  
Curve tolerance according to ISO 9906

## Warranty: 1 year

(according to our general sales conditions)

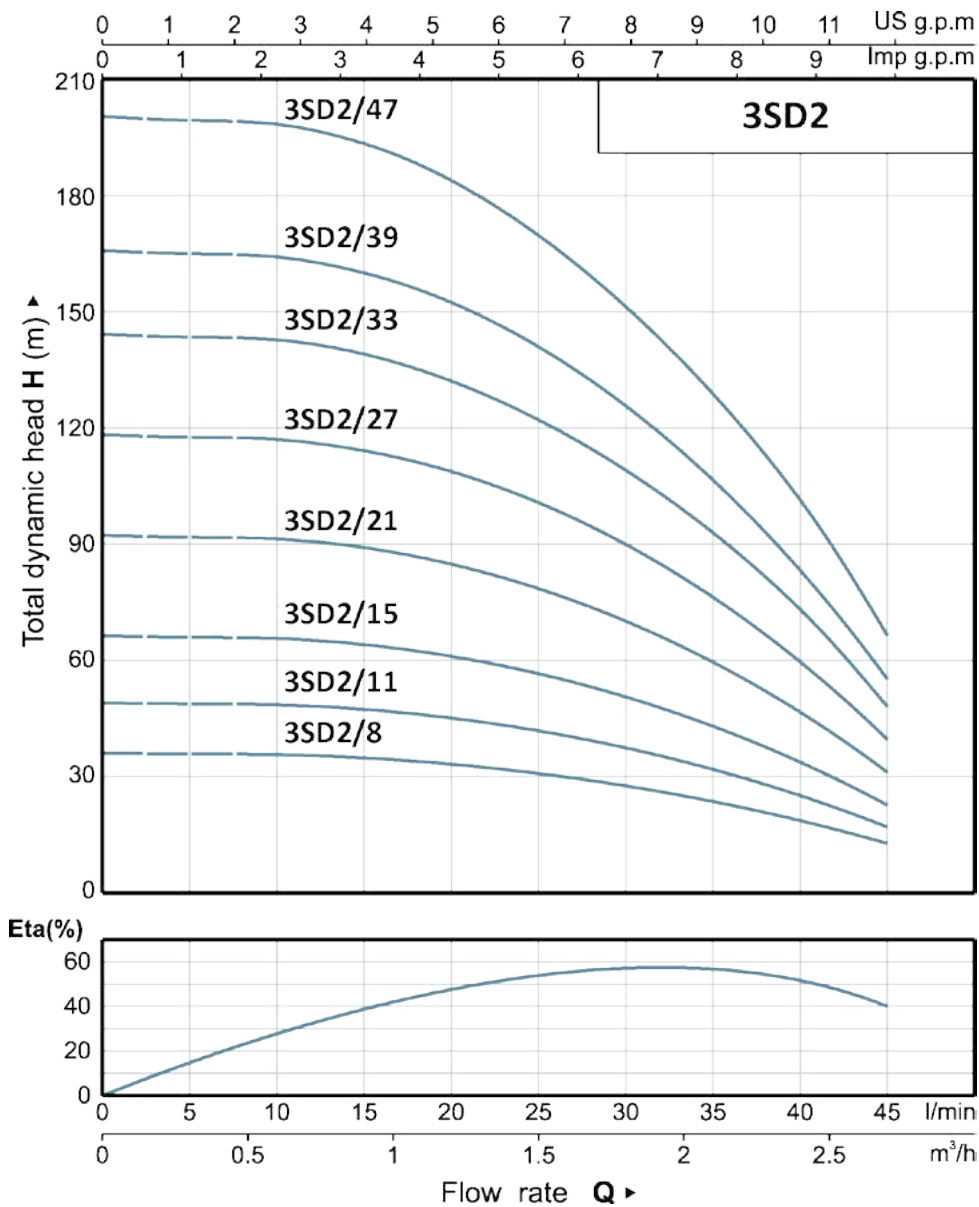


Components	Material
Pump external casing	AISI 304 SS
Delivery casing	Cast-Cu ASTM C85500
Suction lantern	Cast-Cu ASTM C85500
Diffuser	Plastic.PC
Impeller	Plastic.POM
Shaft	AISI 304 SS
Shaft coupling	AISI 304 SS
Wear ring	AISI 304 SS
Motor external casing	AISI 304 SS
Top chock	①Cast-Cu ASTM C85500 ②Cast-iron ASTM NO.30
Bottom support	AISI 304 SS
Mechanical seal	Special seal for deep well(Graphite-Ceramic/TC)
Shaft	AISI 304 SS-ASTM 5140
Bearing	NSK
Seal lubricant oil	Oil for food machinery and pharmaceutic use.

## 3SD(M) 2 / 8(N)

- built-in capacitor (outboard capacitor with no N marked)
- impeller's number
- capacity (m<sup>3</sup>/h)
- single phase (three phase with no M marked)
- pump name
- well Ø 3"

# 3 SDM 1.8



## Performance Data 50 Hz

VERSION		MODEL	P2		CAP µf	DELIVERY										
1*	2**	3 ~ 380-415V	kW	HP		m3/h	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7
						l/min	0	5	10	15	20	25	30	35	40	45
✓	✓	3SDM2/8	0.18	0.25	16	Head (m)	35	34	34	33	32	29	26	22	17	11
✓	✓	3SDM2/11	0.25	0.39	16		48	47	47	46	44	40	36	30	24	15
✓	✓	3SDM2/15	0.37	0.5	20		65	64	64	63	60	55	49	41	33	21
✓	✓	3SDM2/21	0.55	0.75	25		91	90	90	88	84	77	68	58	46	29
✓	✓	3SDM2/27	0.75	1	35		117	116	115	113	107	99	88	75	59	38
✓		3SDM2/33	1.1	1.5	45		143	142	141	138	131	121	107	91	72	46
✓		3SDM2/39	1.1	1.5	45		168	168	167	163	155	143	127	108	85	55
✓		3SDM2/47	1.5	2	55		203	202	201	196	187	172	153	130	102	66

\* Version 1 Pump, Motor & Control Box

\*\* Version 2 Pump, Motor, Control Box, Base plate, Cable (length - refer price list), Joint & Rope.

Note: Unit c/w maximum 1.5mm 4 core cable.

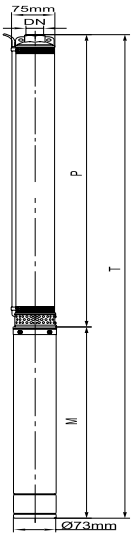
However, it is not recommended for use for lengths longer than 60m.

For applications where longer distances are required it is advised to purchase the Version 1 kit. Refer to the 3" & 4" Borehole Catalogue (p.7) for the cable length chart to ensure correct cable size is purchased.

# TECHNICAL DATA

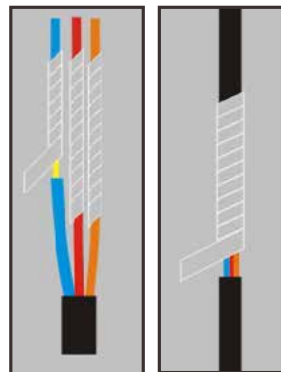
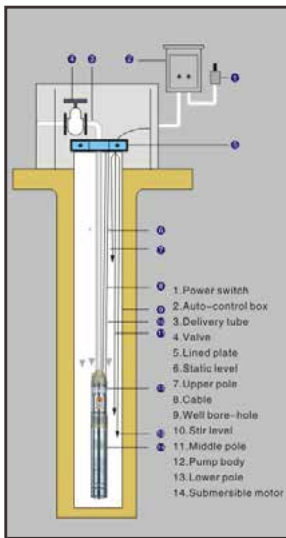


## Dimensions and weights



MODEL 1 ~220-240	DN	DIMENSIONS(mm)			WEIGHTS (kg)		
		P	M	T	P	M	T
3 SDM 2 / 8	1 ¼"	377	288	665	1.8	4.0	5.8
3 SDM 2 / 11	1 ¼"	444	308	752	2.1	4.8	6.9
3 SDM 2 / 15	1 ¼"	535	338	873	2.4	5.6	8.0
3 SDM 2 / 21	1 ¼"	694	368	1062	3.2	6.4	9.6
3 SDM 2 / 27	1 ¼"	830	408	1238	3.5	7.5	11.0
3 SDM 2 / 33	1 ¼"	966	448	1414	4.3	8.7	13.0
3 SDM 2 / 39	1 ¼"	1101	493	1594	4.9	10.0	14.9
3 SDM 2 / 47	1 ¼"	1306	543	1849	5.8	11.3	17.1

## Installing a borehole pump and motor



SINGLE PHASE 3" OIL FILLED BOREHOLE MOTOR CAPACITOR RATINGS		
kW	Capacitor (mF)	Running Amps
0.18	12	2.2
0.25	16	3.9
0.37	20	4.2
0.55	25	4.5
0.75	35	6
1.1	45	9
1.5	55	10.3
2.2	75	14.6

## MAXIMUM CABLE LENGTH FROM PUMP TO STARTER

TYPE	kW	$i_n$ (A)	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	6 mm <sup>2</sup>	10 mm <sup>2</sup>
220V~/50H	0.18	2.2	171	290			
	0.25	3.9	122	207			
	0.37	4.2	111	185	295		
	0.55	4.5	80	133	211	315	
	0.75	6	58	96	153	229	377
	1.1	9	48	79	153	190	316
	1.5	10.3	34	57	92	137	228

Note: Unit c/w maximum 1.5mm 4 core cable.

However, it is not recommended for use for lengths longer than 60m.

For applications where longer distances are required it is advised to purchase the Version 1 kit. Refer to the 3" & 4" Borehole Catalogue (p.7) for the cable length chart to ensure correct cable size is purchased.

# PUMP CONTROLLER



## MA CONTROL BOX SINGLE PHASE

### Technical data

This single phase control box is equipped with a capacitor and thermal over-load protector.

### Application range

Type of motor: Single phase motor  
 Motor power: 0.18-1.5kW  
 Voltage: 220V ~240V  
 Frequency: 50Hz



### Product functions

Provides basic protection against short circuiting and over current.

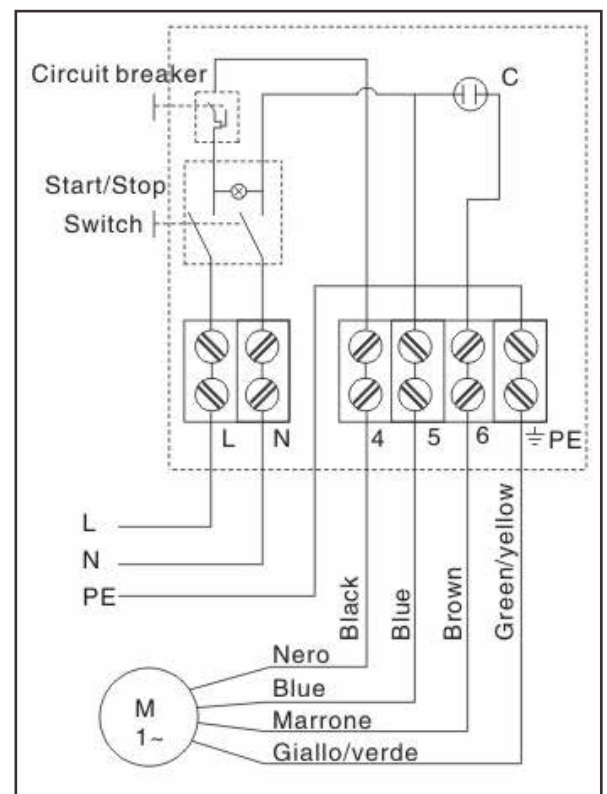
### Operating method

Manual control.

### Installation environment index

Grade protection: IP44  
 Environment temperature: -25°C to 55°C  
 Environment humidity: (20-90)%RH

POWER		RUNNING CAPACITOR	MCB
kW	HP	Microfarad (µF)	Amp
0.18	0.25	12	8
0.25	0.39	16	8
0.37	0.50	20	8
0.55	0.75	30	10
0.75	1.00	40	15
1.1	1.50	50	15
1.5	2.00	65	20



# DIGITAL CONTROL BOX

## 220V Digital Version 1



### Characteristic

- Rated Operating Voltage: AC 230V/50Hz
- Rated Output Power: 0.37-2.2KW (0.5-3.0Hp)
- Adopt the Digital chip control, integrate in upper/lower water level control and pressure control automatically.
- Both “One Key Automatic Setting” and “Manual Setting” for set the overload and under load.
- Have overload, under load (dry running), over/under voltage protection.
- Under load restart time 1 - 60 minute adjustable.
- Domestic original memory function, and easily check the last 10 failure data.
- Humanization design, small volume, and convenient installation.
- 6 stages of processing inspection, 120 hours of dynamic trouble simulation fully aging.

### Main Technical Specifications

- Locked-rotor Actuating Time:  $\leq 1.5$  seconds
- Actuating Time for Dry-running Protection:  $\leq 20$  seconds.
- Local Power Loss: Static Power: 3.5W, Dynamic Power: 4.5W.
- Over-current Actuating Time: 1 seconds - 1 minute (inverse time lag characteristic - the higher current for the shorter time).
- Liquid Level Control Mode: use the pulse electrode probe to detect and its transmission distance is less than or equal to 1000 meters.
- Pressure Control Mode: electro connecting pressure gauge, normal open and close type pressure switch, and floating ball liquid level switch.

### Application

Products are widely used in deep well pump, diving pump, dredge pump, pipeline pump, pressure pump, multi-level pump, etc. and used in life supply water, underground drainage, building supply water, etc.





## M521 DIGITAL CONTROL BOX SINGLE PHASE

### Product functions

- Liquid level control for supply (borehole) and delivery (storage). Enabled for operation, utilising floating level switch / liquid level probe / pressure switch.
- Over / under voltage protection with adjustable parameters.
- Auto / Manual operation.
- Dynamic and interactive LCD display.
- Push Button Calibration
- Pump Accumulative Running Time Display
- Pump Last Five Fault condition Recording
- Controller enabled for operation with single phase motor fitted with internal or external capacitor from 0.37 to 1.5kW. Capacitor to be retro fitted for borehole motor use. Refer to capacitor size requirement as per table below.



### Application range

Type of motor:	Single phase motor
Motor power:	0.37 - 1.5kW
Voltage:	220V
Frequency:	50Hz

SINGLE PHASE 3" / 4" OIL FILLED BOREHOLE MOTOR CAPACITOR RATINGS	
kW	Capacitor (mF)
0.37	20
0.55	25
0.75	35
1.1	45
1.5	55

### Installation environment index

Grade protection:	IP22
Environment temperature:	-25°C to 55°C
Environment humidity:	(20-90)%RH

TECHNICAL DATA	
RATED OUTPUT POWER	0.18kW - 1.5kW
RATED INPUT VOLTAGE	AC220V/50Hz Single Phase
TRIP RESPONSE TIME OF OVER LOAD	5sec - 5min
TRIP RESPONSE TIME OF SHORT CIRCUIT	0.1sec
TRIP RESPONSE TIME OF UNDER / OVER VOLTAGE	5sec
TRIP RESPONSE TIME OF DRY RUN	6sec
RECOVERY TIME OF OVER LOAD	30min
RECOVERY TIME OF UNDER / OVER VOLTAGE	5min
RECOVERY TIME OF DRY RUN	30min
TRIP VOLTAGE OF OVER VOLTAGE	110% of rated input voltage
TRIP VOLTAGE OF UNDER VOLTAGE	80 of rated input voltage



## PROTECTION FUNCTIONS

- \*Dry run
- \*Over load
- \*Transient surge
- \*Under voltage
- \*Over voltage
- \*Pump stalled
- \*Short circuit

## MEANING OF THE ICONS SHOWN ON THE LCD

Icon	Meaning/Description
	pump parameter configuration icon, when this icon appears, pump control box is in parameter adjusting manual;
	time displaying icon, when this icon appears, it means pump control box is displaying some parameter of time, eg: pump accumulative running time (unit: hour); counting down etc
	pump fault icon, when this icon appears, it means pump control box is displaying some fault information;
	network connection error icon, when this icon appears, it means there is no network connections or network connection error between pump control box and SC(slave controller) or computer;
	network normal connection icon, when this icon appears, it means the network connection between pump control box and SC (slave controller) or computer is normal;
<b>V</b>	voltage
<b>M</b>	minute
<b>S</b>	second
<b>H</b>	hour
<b>%</b>	percent
<b>A</b>	ampere
	pump running
	pump stops running
	low pressure or lack of pressure in the pipeline or pressure tank
	high pressure or full of pressure in the pipeline or pressure tank

## INSTALLATION

ELECTRICAL CONNECTION TO THE POWER SUPPLY:

