

MAGNUM[®]

More Power, Better Controls

USER MANUAL

THREE PHASE

SUBMERSIBLE PUMP PANEL - EXECUTIVE

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KALP CONTROLS

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INDEX

Sl. No.	Topic	Page No.
1	Introduction	3
2	Magnum TP Executive Panel	3
3	Installation Instructions	6
4	Mounting Template	7
5	Switching and Operating	8
6	Technical Specifications and Configuration	10
7	Panel Dimensions	12
8	Circuit Diagram	13
9	Precautions and Maintenance	14
10	Trouble Shooting	14
11	Spares and Assemblies Available	15
12	Warranty Card and Policy	16

INTRODUCTION

Dear Customer,

Congratulations on purchase of MAGNUM D.O.L Submersible Pump Panel - Three Phase EXECUTIVE. This is made with heavy duty components, a powerful product helping you exercise more control over your motor or pump.

Located in Bangalore, Magnum Switchgear commenced its operations in the year 2009. At Magnum, we are focused on offering you heavy duty

1. Submersible Pump Panel - DOL & Star Delta
2. Open Well Pump Panel
3. Starters - DOL & Start Delta
4. Single Phasing Preventer & Auto Start Unit.
5. Spares like Contactor, Relay, Capacitor, Meters etc.

ABOUT MAGNUM TP EXECUTIVE PANEL

Magnum submersible control panels are controlling devices for your submersible pumps. These are made from quality raw materials, enabling it to protect and control your motor consistently.

Functions

1. Switches your pump/ motor on and off.
2. Protects the pump from:
 - Over – Current
 - Single phasing condition
 - Phase Reversal
 - Short Circuit.
3. Enables Motor to automatically Switch-On if power resumes when kept in Auto-mode.
4. Indication of power supply to the panel.
5. Indicates current drawn by the motor.
6. Indicates voltage supplied to the panel.

Salient Features:

1. Powder coated MS enclosure for complete corrosion resistance & sturdiness.
2. Rugged MaK-1/MaU Contactor with wide voltage band (250V to 440V).

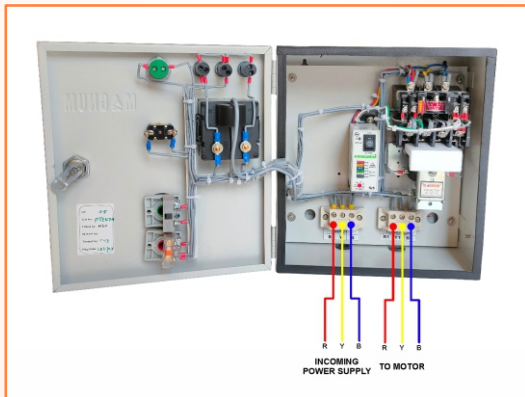
3. Fitted with MaK-1/MaU type relay for reliable overload protection.
4. Fitted with DOL type preventer used for sensing voltage and protecting from single phasing condition to the motor.
5. DOL Preventer can be chosen to run in three modes.
 - ▶ Auto – To automatically start the motor after the power resumes.
 - ▶ Manual – To avoid automatically starting the motor after the power-resumes.
 - ▶ Bypass – This can be used if you want to turn-off single phasing protection and Auto Feature. (This is not Recommended)

(Note: There would be certain time delay up to 30 seconds before the motor starts)

6. Ergonomic design with aesthetic looks.
7. Fitted with Digital Meter to inspect the motor current and incoming power supply.
8. Indication lamps for voltage between the phases.

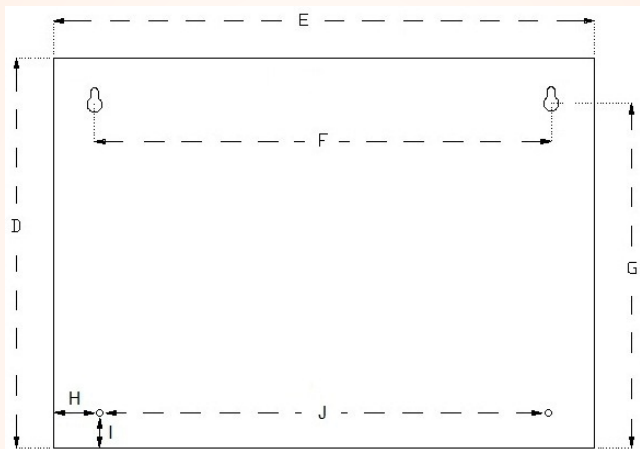
INSTALLATION INSTRUCTIONS

1. This Control Panel is designed to run only a Three-Phase Submersible Pump.
2. It is very important to ensure the current rating (power in H.P) of your motor and Control Panel are same.
3. Drill holes with the help of the given Mounting Template.
4. Control Panel to Submersible Pump connection,



- i. Connect the incoming power supply to R, Y and B terminals of the connector as shown in the above picture.
- ii. Connect the motor cable Red to R of the connector, Yellow to Y of the connector and Blue to B of the connector.

MOUNTING TEMPLATE (Not to scale)



D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
275	250	193	250	40	40	170

SWITCHING AND OPERATING

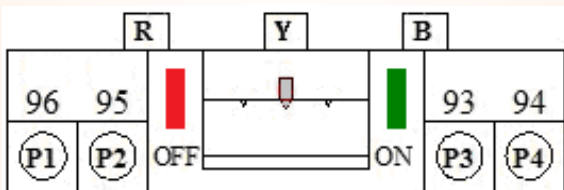
- Ensure the over load relay range matches to the ampere rating in your motor.

Switching On and Off

- Switch on the supply.
- Indicators will glow.
- To start the motor press the START (green) button for 3 - 4 seconds and immediately release the button after motor starts. **(Not more than 4 seconds) (Never attempt to press the green button when the motor is running)**
- You can now read the ammeter for motor current and voltmeter for incoming power supply.
- The motor can be switched off by pressing STOP (Red) button.
- Rubber Bushes are provided near the connecting terminals. Just make holes in the rubber bushes for connection and don't remove it. They offer a degree of ingress protection.

- If the motor/pump switches off automatically, (may be due to over-current) please press the reset button on the overload relay inside the panel.

A) For MaK-1/ MaU Controller:



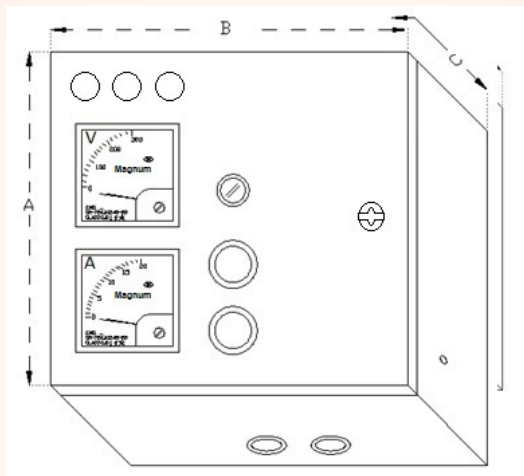
TECHNICAL SPECIFICATIONS

1. Power range : 1.5/2/3/5/7.5/10 HP
2. Coil Voltage : 440 V
3. Operating Voltage : 70% to 110% of coil voltage
4. Pick up voltage : Minimum 70% of coil voltage
5. Drop off voltage : Below 50% of coil voltage
6. Contactor 4P : MaU (4P: 16/25A)
MaK-1/ MaK-1 Heavy Duty(4P)
7. Relay 4P : MaK-1 4P/ MaU 4P
8. Area (for all models) : (275 * 252 * 150)mm
9. Net Weight : 4.7 – 5 Kg (for MaK-1)
4.9 – 5.9 Kg (for MaU)
10. Frequency : 50Hz
11. Insulation Voltage Ac (Vi) : 660V
12. Ambient Temperature : -25°C to +55°C
13. Terminal Capacity : 1*16 (mm)² or 2*10 (mm)²

Normal Configuration of the Panel

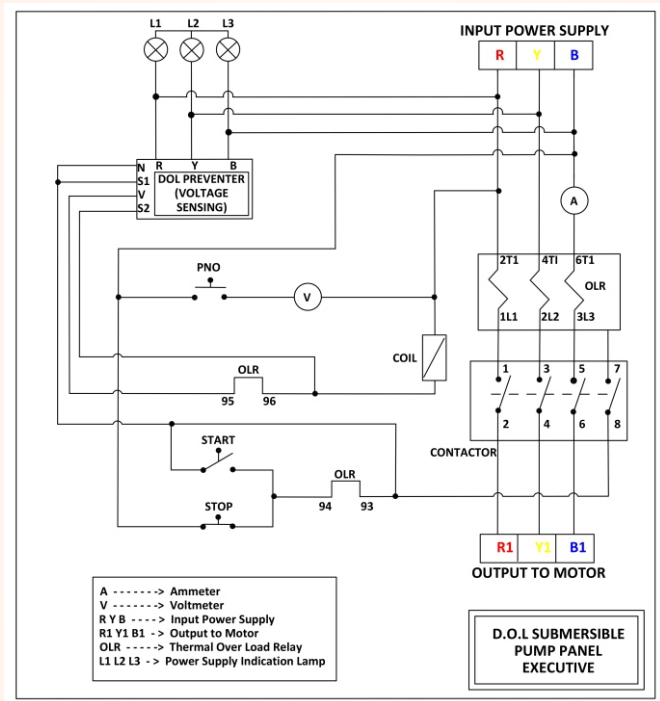
Power (H.P)	Cat. Number		Relay Range (A)		Recommended Fuse/ MCB 3P/4P (HRC) (A)
	For MaK-1	For MaU	For MaK- 1	For MaU	
1.5	PTEK1H	-	2.5-4	-	6
2	PTEK2	-	4-6.5	-	6
3	PTEK3	PTEU3	6-10	6-10	16
5	PTEK5	PTEU5	9-14	9-14	20
7.5	PTEK7H	PTEU7H	13-21	13-21	25
10	PTEK10	PTEU10	20-32	20-32	32

PANEL DIMENSIONS



A (mm)	273
B (mm)	250
C (mm)	137

CIRCUIT DIAGRAM



FOR MaK-1 / MaU type Controller

PRECAUTIONS & MAINTENANCE

- It's best that a qualified electrician installs the panel and repairs it in case of any problem.
- A dust free environment is vital for long run of the Control Panel. It is very important to keep the Control Panel away from water or moisture. In very humid places it is strongly recommended to keep it in a closed setting.
- The best way for prolonged life of the control Panel is to periodic inspection of the contactor contacts and keeping them free of dust and water.

TROUBLE SHOOTING

1. If motor/pump does not start:

- Reset the relay and then try starting again
- Ensure adequate supply voltage.
- Check the contacts of the contactor.

2. If motor draws excess current:

- Absence of water or load in the pump.

3. If motor trips after sometime:

- Ensure that the relay range and setting is correct.

SPARES AND ASSEMBLIES AVAILABLE

PART DESCRIPTION	SPECIFICATION	PART NO
Magnum MaK-1 Contactor 4P 415V	7mm 8mm	CTK7 CTK8
Magnum MaU Contactor 4P 415V	16A 25A 32A 40A	CTU16 CTU25 CTU32 CTU40
Digital Meter SR-72	500V, 50A	DM55
MaK-1 Contactor Housing MaK-1 Contactor Housing	Standard Heavy Duty	HK7 HK8
Magnum Coil 440V	MaK-1 MaU	CTK CTU
MaK-1 Relay	2.5-4 A 4-6.5 A 6-10A 9-14 A 11-18 A 13-21 A 20-32 A	RTK4 RTK6 RTK10 RTK14 RTK18 RTK21 RTK32
MaU Relay	6-10 A 9-14 A 13-21 A 20-32A	RTU10 RTU14 RTU21 RTU32
Terminal Block 3Way	30A	CPC33

Warranty Policy

1. This product carries a warranty, against manufacturing defects only for a period of **12 months** from the **date of manufacturing**.
2. The warranty is however subject to provision of proper usage, efficient maintenance and **does not cover** defects arising out of **fire accident, Voltage Surge, Inefficient maintenance, faulty operation and willful or accidental damage**. Warrant is not covered for charred or burnt components at all.
3. The company will not be liable for any consequential loss, injury or damages attributable to defect or failure of its products.
4. We believe in our products and hence provide you with product guarantee, should it prove to be defective due to faulty workmanship or otherwise, we will remedy the defect or replace the faulty parts or the whole product at our discretion, as soon as possible, free of cost.
5. This product is made from quality raw materials and skilled assemblers. We believe in our product and hence provide you with this warranty of 12 months.
6. Proof of purchase (Invoice) is to be produced to avail the warranty.