G.P.T.CO

# GOL PUMPS TECHNOLOGY INC

## Installation & Operation Manual

# MOTOR STARTER

# SP-MP1

(( 0.37kw - 2.2kw )) (( Single Phase ))

110V Or 220V

50Hz / 60Hz


Read Manual Carefully Before Any Operation

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## In the manual the following symbols will be used:

Generic danger: Failure to comply with the safety regulations that follow can irreparably-damage the controller or equipment.

Electric shock risk: Failure to comply with the safety regulations that follow can cause death or serious personal injury.

# WARNINGS

Read this manual carefully before any operation.
Please keep this manual for future use.

## WARNINGS!!

■Before carrying out any installation or maintenance operation, protector must be disconnected form the power suppiy;

■Don't open the cover during running the protector;

■Don't put wire ,metal bar filaments etc into the protector;

■Don't splash water or other liquid over the protector;

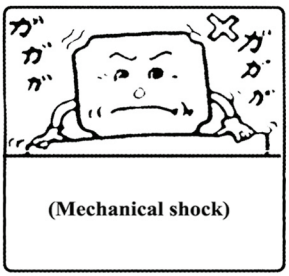
## ⚠ CAUTION

■The electrical and hydraulic connections must be carried out by competent, skilled.qualfied personnel;

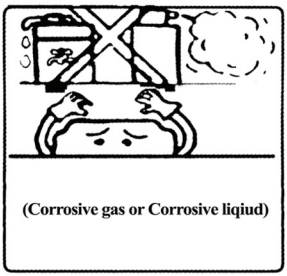
■Never connect AC power to output C/M/A terminals;

■Ensure the motor, protector and power specifications matching;

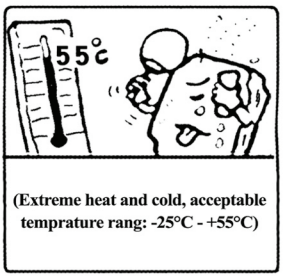
■Don't install the protector in the following condition;



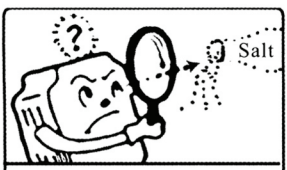
(Mechanical shock)



(Corrosive gas or Corrosive liqiud)

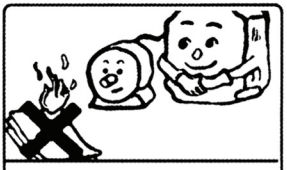



(Extreme heat and cold, acceptable temprature rang: -25°C - +55°C)




(Salt mist Corrosion)

(Rain and Moisture)



(Flammable material : Solvent)

# RESPONSIBILITY

The manufacturer is not liable for malfunctioning if the product has not correctly been installed, damaged, modified, and /or run outside the recommended work range or run outside the recommended work range or in contrast with other indications given in this manual.

The manufacturer declines all responsibility for possible errors in this operation manual, if due to misprints or errors in copying.

The manufacturer reserves the right to make any modifications to products that it may consider necessary or useful, without affecting the essential characteristics.

## 1 INTRODUCTION

Thank you for choosing our products, we will supply you with cordial and well-around service as well as ever.

Intelligent Pump Motor Protocter model SP-MP1 is an easy to use, programmable protection device for direct start, single phase deep well submersible pump, centrifugal pump, pipeline pump motor etc with output power from 0.37KW-2.2KW (0.5HP-3HP)

### 1.1 Applications

Model MP-S1 is useful in all cases we need to protect single pump managing its turn-on and turn off.

Typical usage scenarios include:

-Houses
-Flats
-Holidays houses
-Farms
-Water supply from wells
-Irrigations of greenhouses, gardens, agriculture
-Rain water reuse
-Industrial plants
-Waste water tank / Sewage sink

### 1.2 Technical parameter & features

**Main features:**

- Dynamic LCD displaying pump running state
- Protect the pump against many faults
- Memory Function when Power Off&Power Recovery
- Visual &Audio Alarm For Fault Prompt
- Push Button Calibration
- Reserved space for installing internal start capacitor of pump motor
- IP54 protection grade

The following chart shows main technical parameters of Model SP-MP1

| Main technical data | |
|---|---|
| Rated output power | 0.37KW-2.2KW (0.5HP-3HP) |
| Rated input voltage | refer to the nameplate : 110V or 208-230 V |
| Freyquency Voltage | 50Hz / 60Hz |
| 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 | 115% of rated input voltage |
| Trip voltage of under voltage | 80% of rated input voltage |
| Protection function | Dry run<br>Over load<br>Transient surge<br>Under voltage<br>Over voltage<br>Pump stalled<br>Short circuit |
| **Main installation data** | |
| Working temperature | -25℃ -- +55℃ |
| Working humidity | 20% - 90%RH, no drips concreted |
| Degree of protection | IP54 |
| Install position | Wall mounting |
| Unit dimensions ( L x W x H) | 152×125×70mm |
| Unit weight (net) | 380g |

## 1.3 Protector components

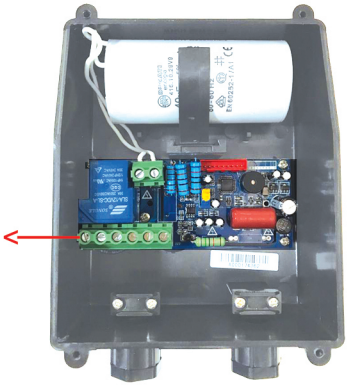

## Optional

**Without Capacitor** ☐

**With Capacitor** ☐

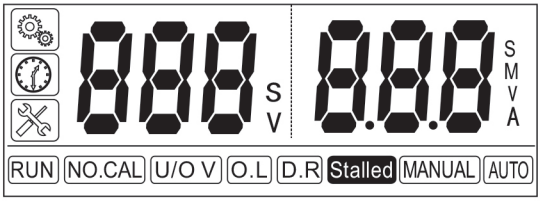
**Size Cap** **µf** ☐

Main terminals for electrical connection to the power supply and electrical pump motor



**NOTE:Start Capacitor not included - optional**

LCD Screen

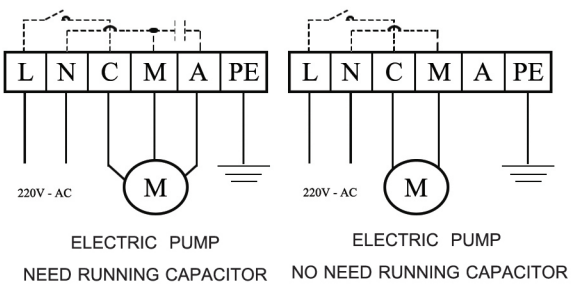


Meaning of the icons shown on the LCD

| Icon | Meaning/Description |
|---|---|
| V | voltage |
| M | minute |
| S | second |
| H | hour |
| A | ampere |
| O.L | over load |
| NO.CAL | pump no calibration |
| U/O V | under voltage or over voltage |
| D.R | dry run |
| Stalled | pump stalled |

## 2 INSTALLATION

### 2.1 Electrical connection to the power supply line and electrical pump




ELECTRIC PUMP
NEED RUNNING CAPACITOR

ELECTRIC PUMP
NO NEED RUNNING CAPACITOR

**Note: for actual motor wiring , please refer to the wiring diagram on the cover of control box**

**DANGER Electric shock risk**

- Before carrying out any installation or maintenance operation, the SP-MP1 should be disconnected from the power supply and one should wait at least 2 minutes before opening the appliance.
- Never connect AC power to output C/M/A terminals.
- Don't put wire, metal bar filaments etc into the controller.
- Ensure the motor, protector and power specifications matching.
- The electrical and hydraulic connections must be carried out by competent, skilled, qualified personnel.

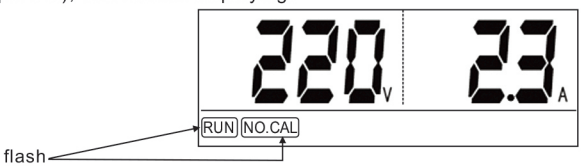
## 2.2 Parameter Calibration setting & erasing

To achieve best level of protection of the motor, it is essential that parameter calibration must be done immediately after successful pump installation or pump maintenance.

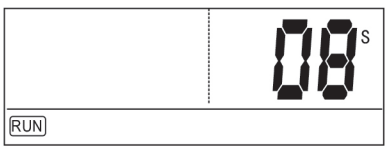
# Setting the parameter calibration

- Make sure the pump not running and LCD screen displaying:


- Press the START key to run pump, confirm the pump and all pipe network in normal working state (including voltage, running ampere et); LCD screen displaying:




- Press the STORE key and release, the SP-MP1 makes a "Di" sound and starts countdown, LCD screen displaying:




- Pump stops running and parameter calibration completed, LCD screen displaying:

product is ready for running.


**Erasing former parameter calibration**

When pump is reinstalled after maintenance or new pump is installed, user must erase the former parameter calibration and a new calibration must be done.

# Erasing the parameter calibration

- Make sure the pump not running and LCD screen displaying:


- Hold pressing the STOP key and release till SP-MP1 makes a "Di" sound, product recover the default factory setting and LCD screen displaying:


## 3 BASIC OPERATION

### 3.1 Basic Operation

Press START button,the pump starts running and LCD screen displaying:


Press STOP button,the pump stops running and LCD screen displaying:

## 3.2 Motor protection

During pump running, if dry run, over load, under voltage, over voltage etc failures happened, the SM-MP1 product will immediately shut down the pump running and automatically execute a check for restarting conditions after a built in time delay has elapsed. the product will not recover automatically until all the abnormal situation(s) have been cleared.

## 4 TROUBLE SHOOTING GUIDE

| Fault Message | Possible Cause | Solutions |
|---|---|---|
| flashing of UNDER V | the real running voltage is lower than the calibrated voltage, pump is in under voltage protection state | report low line voltage to the power supply company |
| | | product will attempt to restart the pump every 5minutes until line voltage is restored to normal |
| flashing of OVER V | the real running voltage is higher than the calibrated voltage, pump is in over voltage protection state | report high line voltage to the power supply company |
| | | product will attempt to restart the pump every 5minutes until line voltage is restored to normal |
| flashing of OVER LOAD | the real running ampere is higher than the calibrated running ampere, pump is in over load protection state | product will attempt to restart the pump every 30minutes until running ampere is restored to normal |
| | pump impeller is jammed / pump motor dragging / pump bearing broken | check pump impeller or bearing |
| flashing of NO CALIBR | parameter calibration not completed | refer to parameter calibration setting |
| flashing of DRY RUN | liquid level in the well / sump is below the pump intake, pump stops running | product will attempt to restart the pump every 30minutes until liquid level above the pump intake |
| flashing of STALLED | pump motor running ampere increasing was greater than the normal running ampere (calibrated ampere) by more than 200% | cut off power supply & repair or replace pump immediately |

# OTHER PRODUCTS
## The newest Control Panels

((Supplied with remote control))


Control panel model SPL 911-931

((Supplied with remote control))


Control panel model SPL 912-932


Control panel model SP-M1

# SP-MP1

(( 0.37kw - 2.2kw )) (( Single Phase ))
110V Or 220V
50Hz / 60Hz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