

FA successful application

Case name	Shihlin SF inverter on centrifuge				
Department	FA engineer group	Date	2014-07-10	Page	2
Product	SF series	Code	ANI00011	Ver.	A

1. Introduction

Industrial centrifuge is one of the main equipments in the chemical industry. It mainly separates solid and liquid by centrifugal force, generally consists of feeding, washing, dehydrating, unloading, etc., among which feeding, washing, unloading the material is controlled by a solenoid valve and a pneumatic valve. The centrifugal kettle is the main component for solid-liquid separation. It is driven by a three-phase AC motor through a belt (this motor is usually controlled by inverter). According to the process, the material is mainly solid-liquid mixture at the beginning stage. The load is relatively large when starting. When a certain speed is reached, the liquid flows out from the outside of the centrifuge due to centrifugal force, so that part of the liquid is separated first. As the motor speed is further increased, the load is also reduced accordingly.

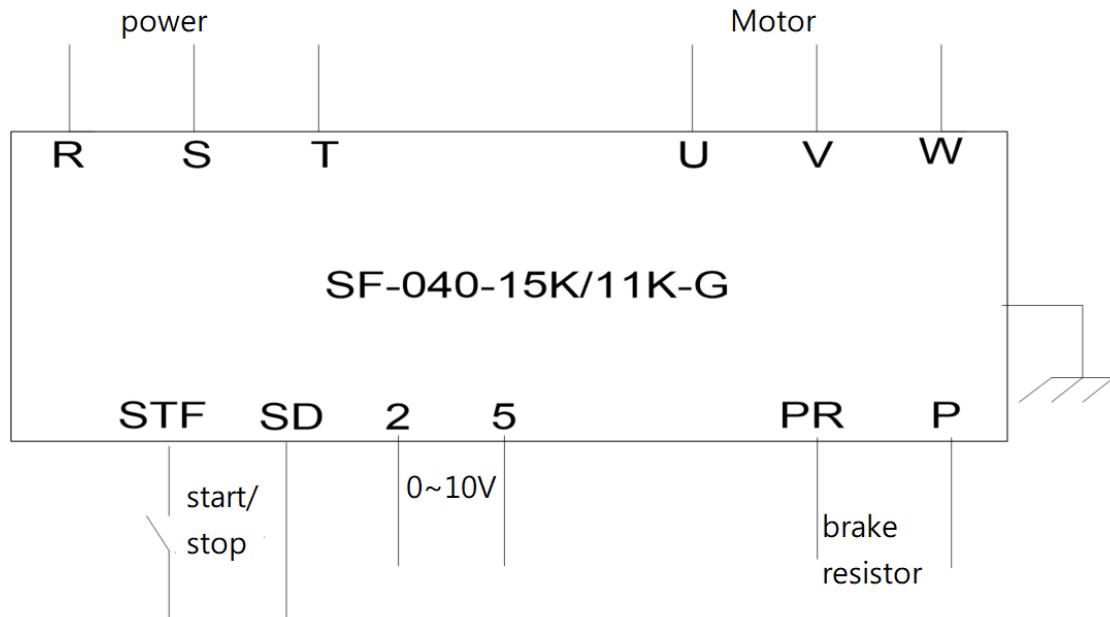


In recent years, inverter has been continuously updated as an industrial control equipment, and have been widely used in various industries. As the performance of the inverter is continuously improved and the functions are continuously enhanced: such as multi-speed, programmable automatic operation, communication function, etc., the inverter can be adapted to the production process of the centrifuge, and can be realized by multi-speed control. The inertia of the centrifuge is large. If the inverter needs to stop at when decelerating, the brake unit must be installed. The brake resistor will generate heat due to energy consumption during normal operation, and the power of the resistor and the decelerating time can be appropriately amplified. Shihlin Inverters under 22KW include built-in brake unit which can solve the problem of decelerating difficulty caused by the inertia of the centrifuge. (Shihlin inverters over 22KW models require an external brake unit).

2. Requirements

- 1、A controller sending 0~10V signal to control frequency, an external button for start/stop.
- 2、380V/11KW motor, Shihlin SF-040-15K/11KG。

3. Wiring diagram



4. Parameter setting

Parameter	Name	Default	Set
P.0	Torque boost	4	0
P.1	Max frequency	120	50
P.7	Acceleration time	20	300
P.8	Deceleration time	20	300
P.19	Base voltage	9999	380
P.30	Brake function	0	1
P.70	Regeneration rate	0	60
P.150	Start method	0	111
P.79	Operation mode	0	2

Note : When tuning

- a : Make sure the rotating direction of the motor is correct
- b : Check if the starting current, operating current and the temperature are acceptable (Set P.161=6 to monitor the value, in ideal case it should be ≤ 0.5 without rising)