

The application of EN600 on industrial washing machines

Industrial washing machines are widely used in large hotels, factories and mines, dry cleaners and other places for towels, clothing, silk, wool and other washing, oil washing, drying. Washing machinery mainly automatic washing machine, ironing machine, dryer, dry cleaning machine, folding machine. Which the latter four of the lower requirements of the frequency inverter, only need to adjust the running speed.

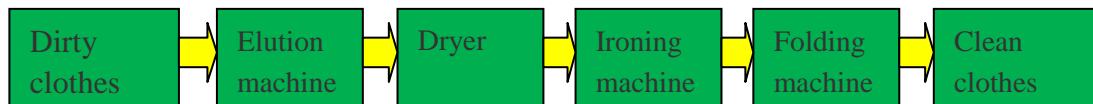
Washing industry introduction

When the world's first washing machine come out, industrial washing machine also appeared. Like the great changes brought about by the entire industrial revolution, today's automated washing machines replaced the previous hand wash. Industrial washing machines are widely used in large hotels, factories and mines, dry cleaners and other places for towels, clothing, silk, wool and other washing, oil washing, drying. Washing machinery mainly automatic washing machine, ironing machine, dryer, dry cleaning machine, folding machine. Which the latter four of the lower requirements of the frequency inverter, only need to adjust the running speed.

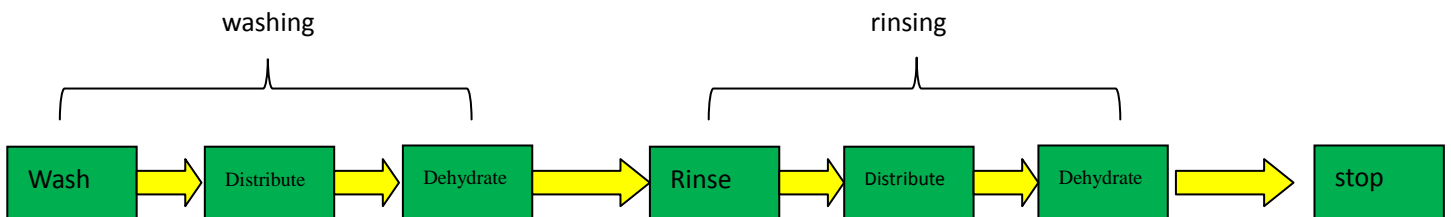


Washing process requirements

1. The basic workflow of the laundry plant:



2. Automatic elution workflow:



(1). Washing process: FWD and REV run frequently, and usually running frequency is about 10Hz, the operation time is about 30 mins (depends on the washing process).

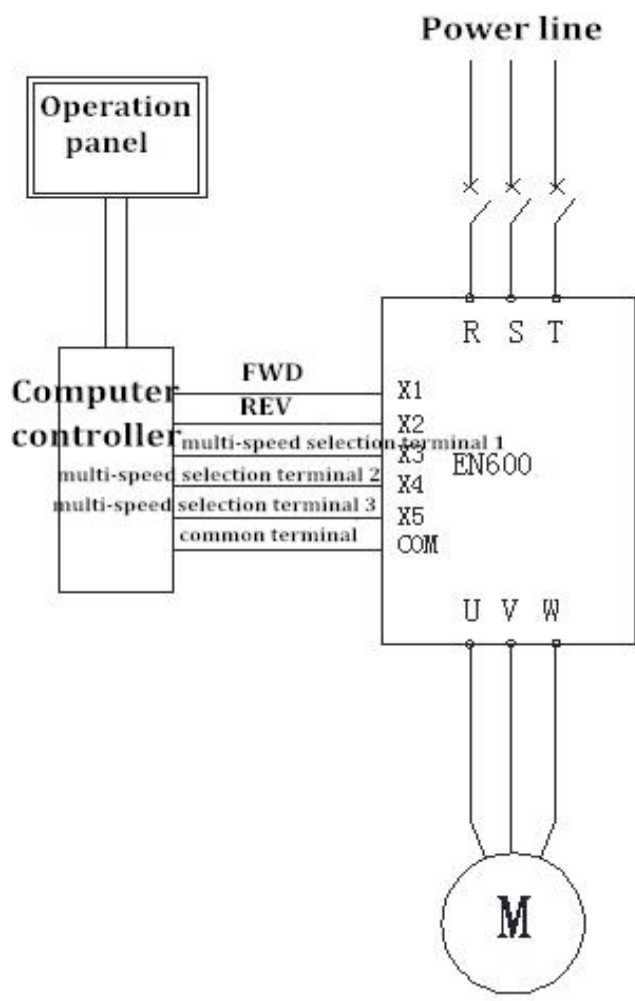
(2). Distribution process: running frequency is about 15~18Hz, and run for about 2mins.

(3). Poaching process: including Mid speed and high speed, usually at 110-140hz.

(4). Stop: The time of the shut down procedure within 1-2min.

EN600 Elution application

1. Washing machine control composition and wiring diagram



2. Main parameter setting

| Function code | Set range | Name |
|---------------|-----------|--|
| F00.00 | 2 | Senior list mode |
| F01.01 | 10 | Washing frequency |
| F01.11 | 140 | Upper limit frequency |
| F01.15 | 1 | Run command channel selection |
| F01.17 | 600 | Acceleration time |
| F01.18 | 400 | Deceleration time |
| F02.02 | 2 | Starting frequency |
| F02.11 | 1 | Stop mode |
| F03.02 | 4 | Torque boost |
| F04.09 | 5 | Carrier frequency |
| F04.11 | 1 | AVR function |
| F04.16 | 70 | Distribute frequency acceleration time |
| F04.17 | 70 | Distribute frequency deceleration time |

| | | |
|--------|-----|--|
| F04.18 | 120 | Mid dehydration frequency acceleration time |
| F04.19 | 120 | Mid dehydration frequency deceleration time |
| F04.20 | 170 | High dehydration 1 frequency acceleration time |
| F04.21 | 170 | High dehydration 1 frequency deceleration time |
| F04.22 | 170 | High dehydration 2 frequency acceleration time |
| F04.23 | 170 | High dehydration 2 frequency deceleration time |
| F04.24 | 170 | High dehydration 3 frequency acceleration time |
| F04.25 | 170 | High dehydration 3 frequency deceleration time |
| F04.26 | 170 | High dehydration 4 frequency acceleration time |
| F04.27 | 170 | High dehydration 4 frequency deceleration time |
| F08.18 | 1 | X1 forward running FWD terminal |
| F08.19 | 2 | X2 reverse running FWD terminal |
| F08.20 | 19 | X3 multi-step speed control terminal 1 |
| F08.21 | 20 | X4 multi-step speed control terminal 2 |
| F08.22 | 21 | X5 multi-step speed control terminal 3 |
| F10.31 | 18 | Distribute frequency |
| F10.32 | 90 | Mid dehydration frequency |
| F10.33 | 130 | High dehydration frequency 1 |
| F10.34 | 140 | High dehydration frequency 2 |
| F19.04 | 120 | Motor overload protection coefficient |
| F19.14 | 180 | Automatic current limit level |

The application advantages of the EN600 series on washing machine.

1. Low frequency torque, can start with load when washing;
2. Automatically optimize the V / F curve, can meet all washing machine applications;
3. With good slip compensation and rotor control;
4. High-speed stability, the motor will not stall when washing machine dehydrates at high speed;
5. With multi-speed and multi-stage acceleration and deceleration binding and binding release function;
6. According to different types of washing machines, call different macros.

Concluding remarks

EN600 series product has a mature application in the washing industry and it is widely used in the washing industry. The low-frequency large torque, fast response performance is put into fully play, can totally meet user's requirements. With 32 bit DSP hardware platform and advanced control algorithm, EN600 can achieve PG closed loop vector control and open loop vector control without PG, along speed vector and torque vector mode. It can quickly limit the impact current and is widely applied to heavy and light industries. And it also can realize high precision control, fast response speed, with good performance at low frequency, intelligent detection and good protections, and cost-effective, compact structure, high power density, easy to install and other features. EN600 series has wide range of networking capabilities, rich peripheral bus expansion, terminal expansion, relay expansion, analog expansion, etc.