IS300 Servo Drive Commissioning (Multi Pumps)

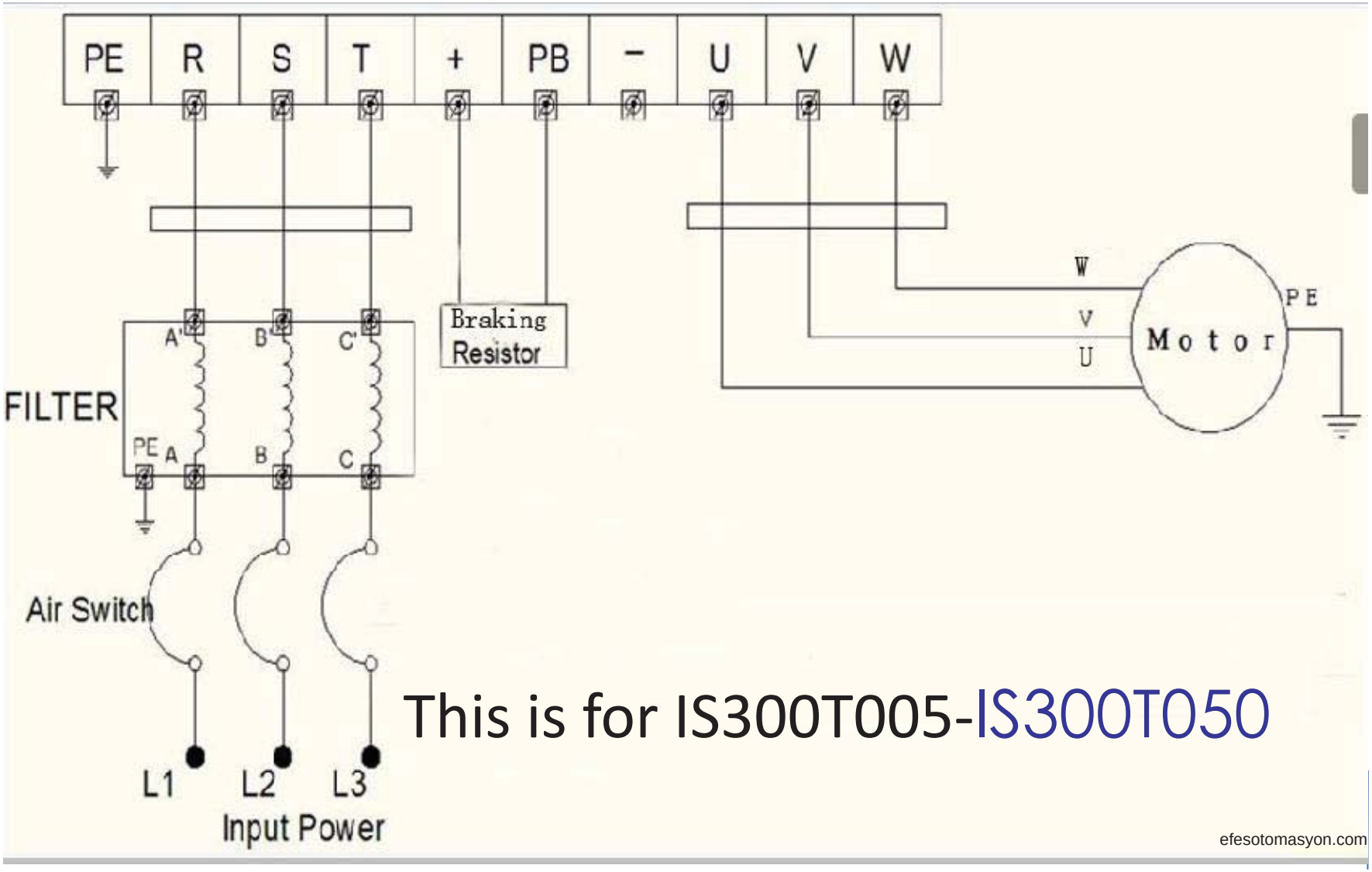
NEVER STOP IMPROVING

10th 十年感动 百年梦想 2003-2013

Content

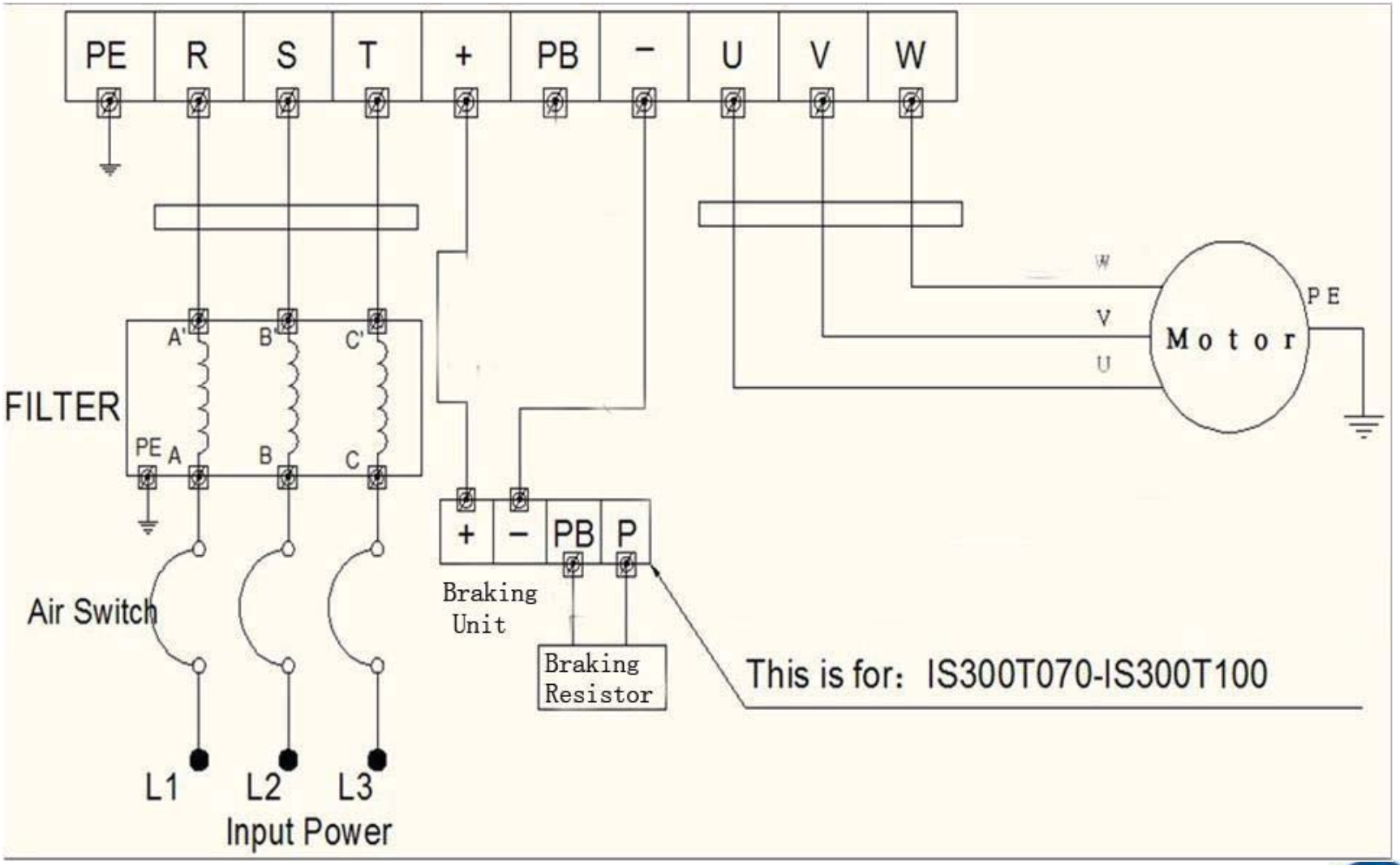
- Wiring
- Commissioning

Main Circuit Wiring

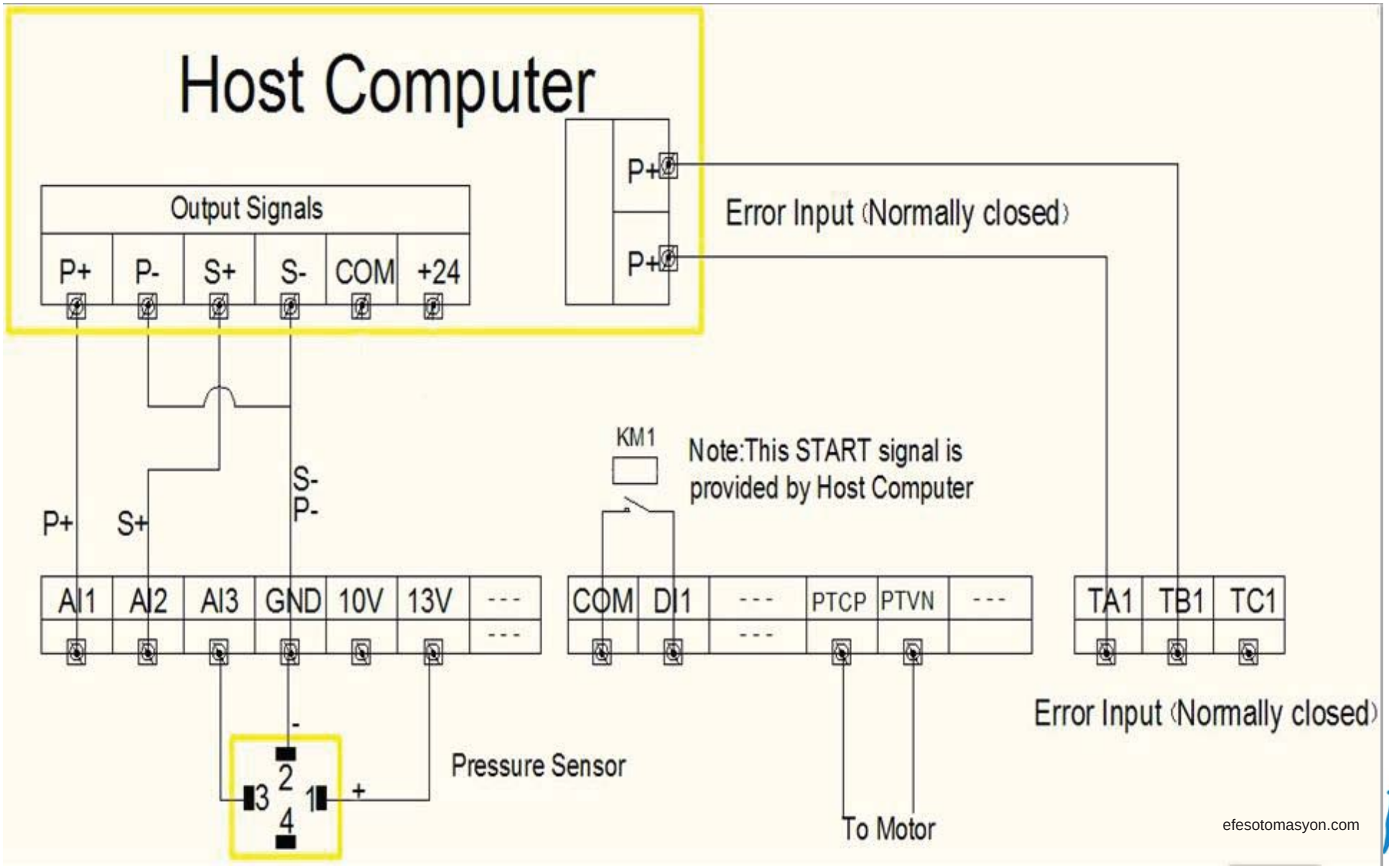


This is for IS300T005-IS300T050

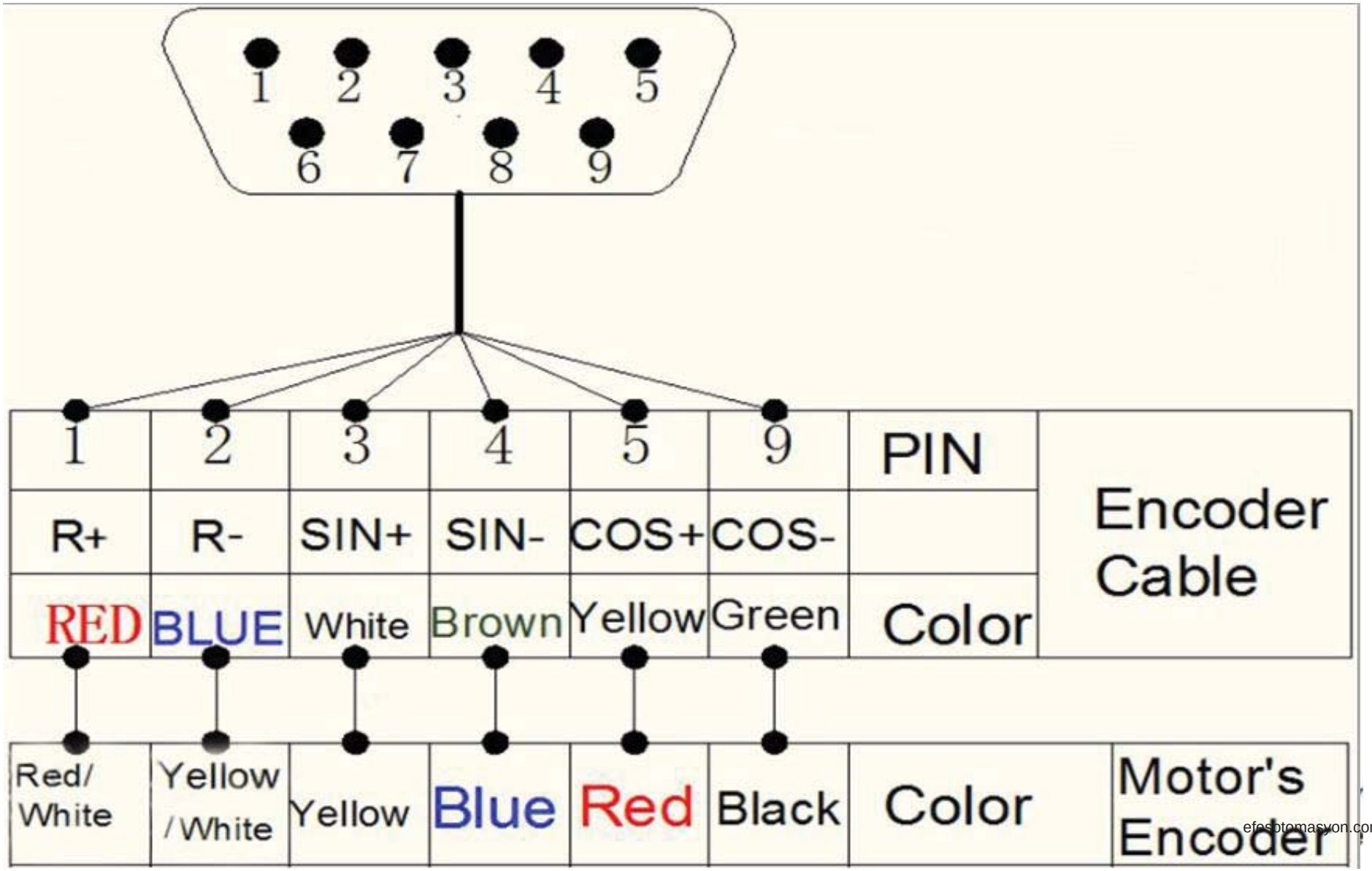
Main Circuit Wiring



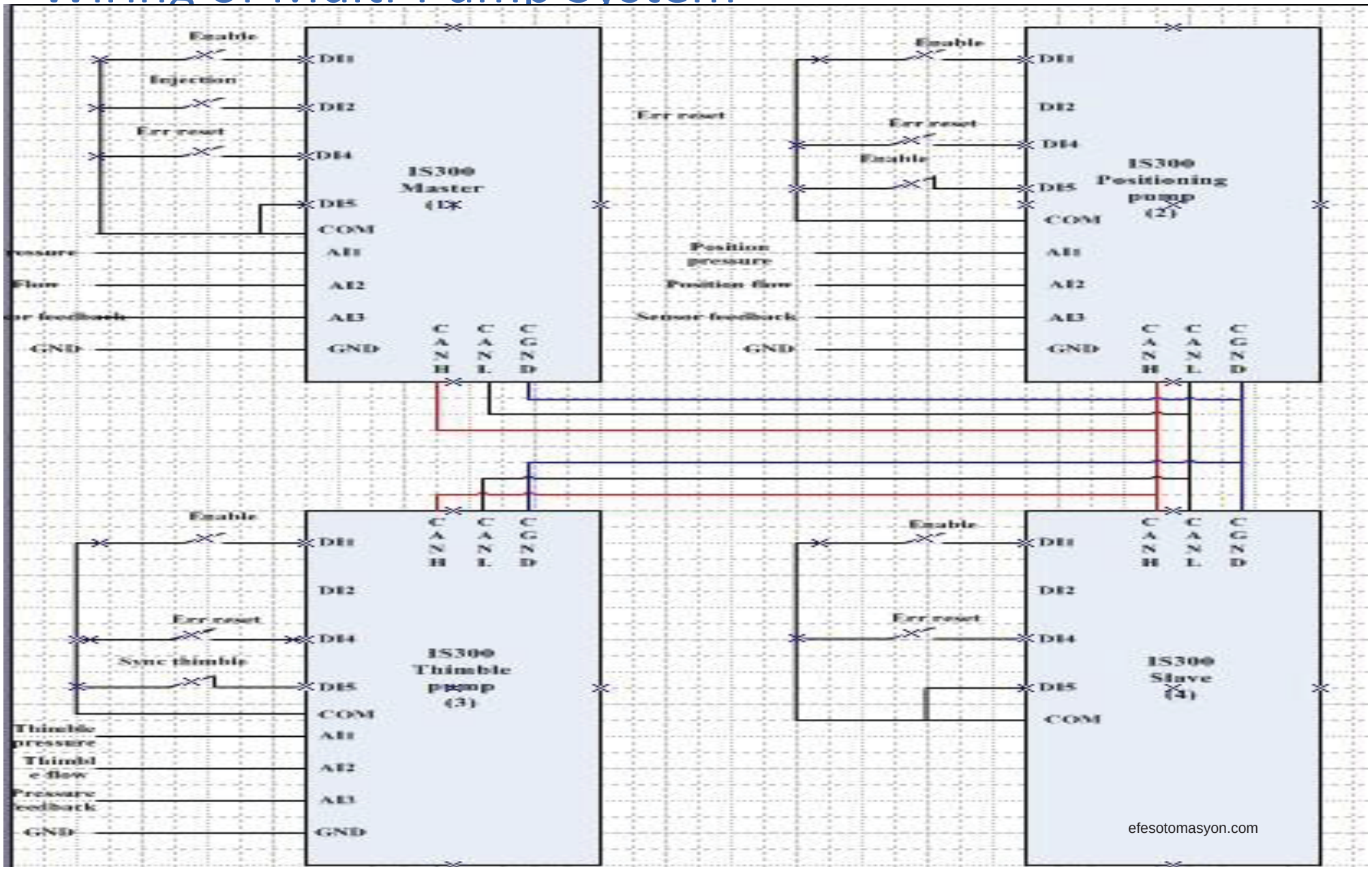
Control Circuit Wiring



Encoder Wiring



Wiring of Multi-Pump System



Commissioning

Key points for multi-pump commissioning

- ✓ **Restore default setting**
- ✓ **Set control mode & command source**
- ✓ **Set motor parameter**
- ✓ **Perform motor auto-tuning**
- ✓ **Perform trial run to check motor direction**
- ✓ **Perform AI zero drift correction**
- ✓ **Set hydraulic control mode & perform fine tuning**
- ✓ **Other settings**

Key points for multi-pump commissioning

- Determine the master drive and slave drive(s) before commissioning:

1. Check the value of A2-01 on each drive. If A2-01=1, it indicates that this drive is the master drive. Otherwise, slave .

- Disconnect the cable that connects DI5 terminal (to cut off communication between the master and slave drives), and then you can start commissioning.

Restore default setting

- To restore default setting, simply set FP-01=1

Set control mode & command source

- Set command source: F0-02=0
- Set control mode: A3-00=0

Set motor parameters

- Input motor parameters in group F1:

F1-01=Rated motor power

F1-02=Rated motor voltage

F1-03=Rated motor current

F1-04=Rated motor frequency

F1-05=Rated motor rotational speed

Note:

Generally, rated frequency of motor cannot be found on its nameplate. You can get the frequency by the following relation between motor's speed and frequency.

Perform motor auto-tuning

Static or dynamic auto-tuning?

After changing a new motor: static auto-tuning;

After rectifying a fault: dynamic auto-tuning

✓ Static auto-tuning:

Set F1-16=1, and then press “RUN”. The operating panel then displays “TUNE”. When “TUNE” disappears, static auto-tuning is completed.

✓ Dynamic auto-tuning:

Set F1-16=2, and then press “RUN”. The operating panel then displays “TUNE”. After “TUNE” disappears, check and record the value of A1-02 (Encoder installation angle).

Set F1-16=2 and then perform auto-tuning again. Then check the value of A1-02.

Compare the two recorded values of A1-02. Make sure the difference between them is within 5.

Perform trial run to check motor direction

- This procedure is required only after replacing a new motor.

  Set F0-08=5 (Preset frequency: 5 to 15 Hz suggested), and then press “RUN”.

I. Observe the oil pressure gauge. If pressure is rising up, it indicates that the motor rotates at the right direction.

II. If pressure is not rising up, change any two of the U/V/W cables and perform auto-tuning again.

Perform AI zero drift correction

- Set F0-08=0 on each servo drive, and then press “RUN”. The servo drive will run at zero speed.
- Set A3-20=1. When “AIcod” is displayed, press “RUN”. The servo drive then performs AI zero drift correction automatically (this takes about 1 second).
- Press “STOP”. Then you can query AI1, AI2 and AI3 zero drift status through function codes U1-07, U1-08 and U1-09 on the master drive.

Notes:

✓ AI zero drift correction must be performed after replacing the servo drive, control board or pressure sensor.

✓ If the servo motor automatically rotates in the forward or reverse directly, perform AI zero drift correction first.

✓ If a 1-5V or 0-5V pressure sensor is used, set F4-30=5 (AI3 maximum input).

Set convergent flow parameters

- Set A2-01=1 on the master drive, and A2-01=2/3/4/… on the slave drives. (A2-01: Local address)

Set hydraulic control mode

Parameters related to system control mode setting:

- Maximum rotational speed: A3-01 (speed that corresponds to 100% flow reference)
- System hydraulic pressure: A3-02
- Maximum hydraulic pressure: A3-03 (measuring range of the pressure sensor)

Set hydraulic control mode & perform fine tuning

- Set A3-00=2, and the system enters hydraulic control mode. Plug in DI1 of terminal block CN2, and then tighten up the relief valve. Plug in cable of the DI5 terminal to recover communication between the master and slave drives. Now you can power on the servo drives.

General setting for fine tuning:

Single pump: set A3-07=0.035 (Hydraulic pressure control Td1)

Dual pumps: set A3-13= 0.05 to 0.07 (Hydraulic pressure control Td2)

NEVER STOP IMPROVING

Inovance