Three SA3 on slitting machine



2016-08-10 10:42

Requirements:

1. Three SA3 inverters, one for unwinding, two for winding.
2. A controller input 0~10V signal to control both speed and torque.
3. A start button and for winding a button for 0~10V signal reverse (to change rotate direction), for unwinding a button to stop and lock the position of motor.
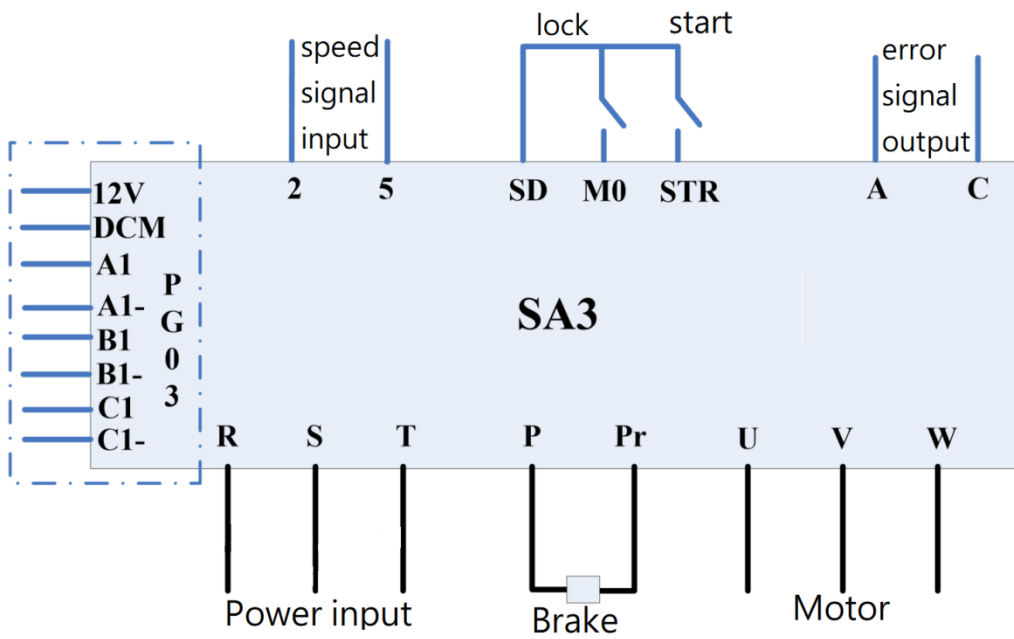4. Closed loop vector control.
5. An error signal output.

Wiring diagram:

SA3 for winding
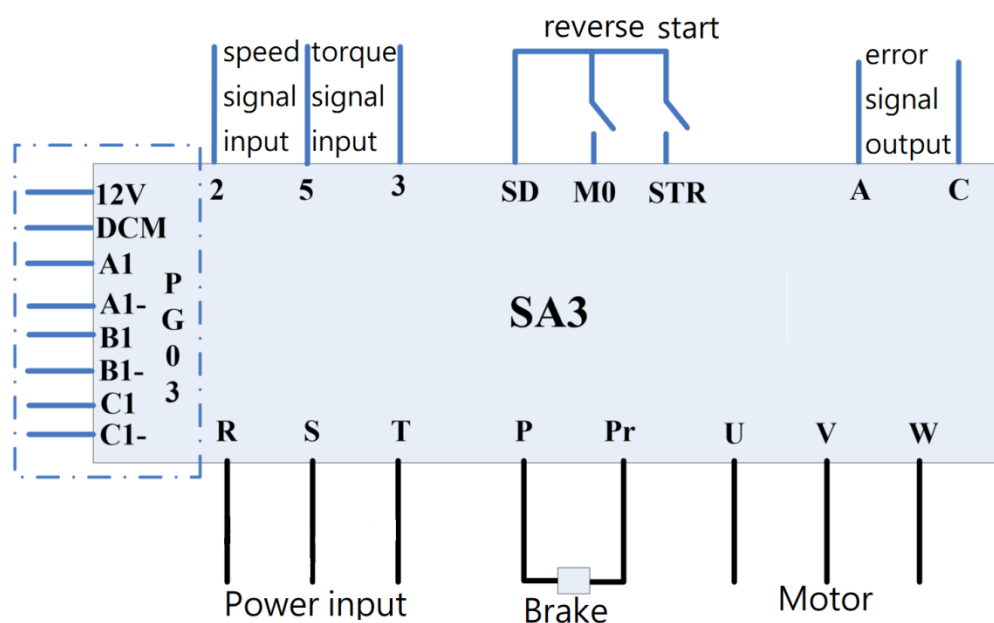
We used line driver encoder so wired as above, the reverse signal function is set in P.80 on terminal M0.

SA3 for unwinding

The stop and lock position is set in P.80 on terminal M0.

Photo:

Parameters changed:

SA3 for winding:

Number	Name	Setting range	Default value	Set value
P.7	Acceleration time	0~360s/0~3600s	20s	1s
P.80	M0 function	0~71	0	71
P.300	Motor control mode	0~6	0	4
P.301	Motor auto-tuning	0~4,8~10	0	1
P.302	Motor rated power	0~315.00KW	0.00KW	3.7KW
P.303	Motor poles	0~48	4	4
P.304	Motor rated voltage	0~440V	440V	380V
P.305	Motor rated frequency	0~650Hz	60Hz	50Hz
P.306	Motor rated current	0~500.00A	/	7.73
P.307	Motor rated speed	0~65000r/min	1710rpm	1435rpm
P.351	Encoder type	0~4	0	2
P.400	Control mode	0~2	0	1
P.405	Torque signal source	0~2	0	1
P.406	Speed limit source	0 1	0	1
P.504	3-5 terminal function	0~17	1	2

We set P.80 to 71 which reverse the 0~10V signal when M0 is in, and set the control mode P.400 to 1 which is torque control, the signal source is analog input so set P.405=1. The speed limit source P.405 is set to 1 meaning that the speed limit is decided by which operation mode the inverter is in. The 3-5 terminal is accepting analog torque signal so P.504 is set to 2.

SA3 for unwinding:

Number	Name	Setting range	Default value	Set value
P.7	Acceleration time	0~360s/0~3600s	20s	1s
P.80	M0 function	0~71	0	64
P.300	Motor control mode	0~6	0	4
P.301	Motor auto-tuning	0~4,8~10	0	1
P.302	Motor rated power	0~315.00KW	0.00KW	2.2KW
P.303	Motor poles	0~48	4	4
P.304	Motor rated voltage	0~440V	440V	380V
P.305	Motor rated frequency	0~650Hz	60Hz	50Hz
P.306	Motor rated current	0~500.00A	/	5.05
P.307	Motor rated speed	0~65000r/min	1710rpm	1455rpm
P.351	Encoder type	0~4	0	2

We need the motor to stop and lock the position when pressing M0 so set P.80=64.