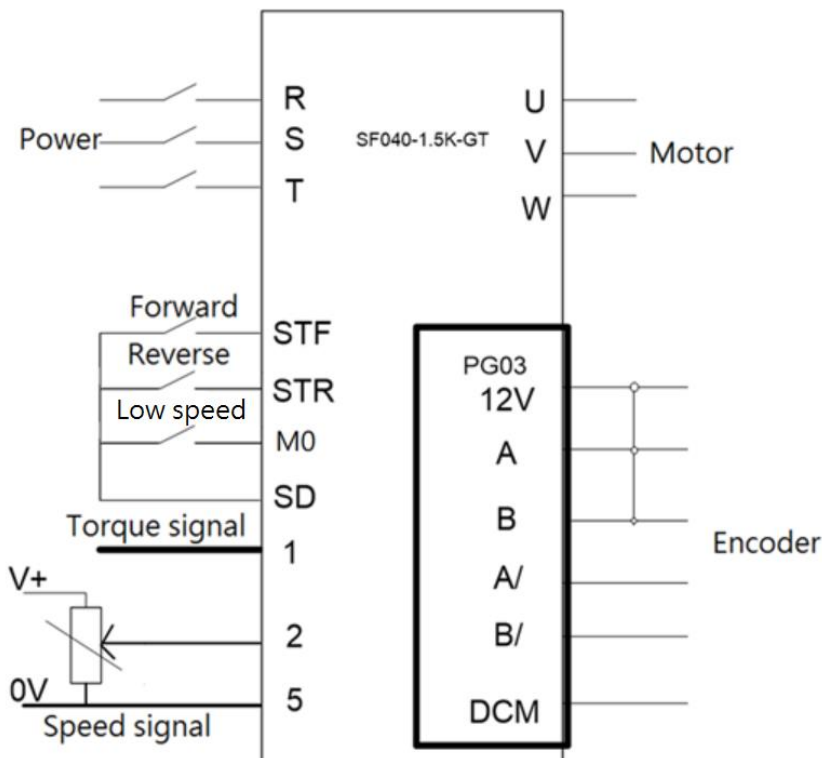Requirements:

1. Tension controller signal output 0~10V signal then transform into -10~10V to change the direction of the roller,-10V~0V rotate reverse, 0V~10V rotate forward.
2. A potentiometer to adjust the speed, a low speed button and both forward/reverse buttons.
3. Close loop vector control with encoder.

Wiring diagram:

We use an open collector encoder and is wired above, the potentiometer is wired to terminal 2 5 and the torque signal from the controller is wired to terminal 1 5.

Photo:
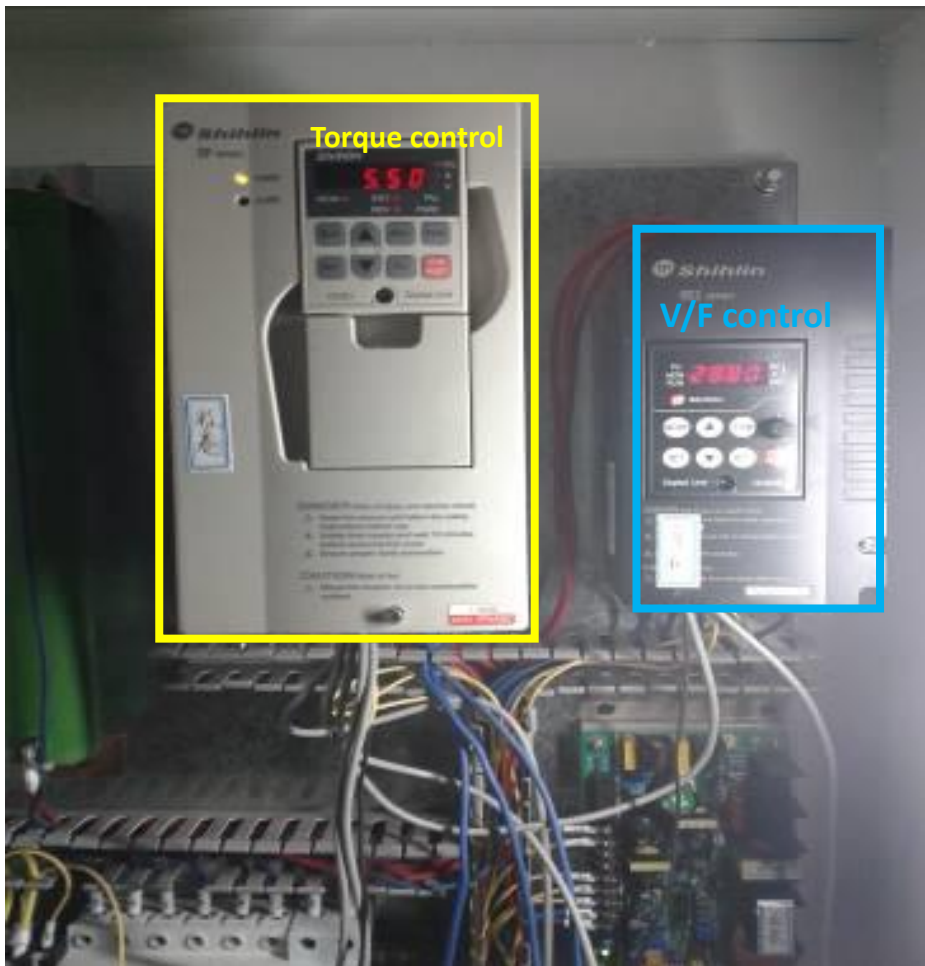
Parameters changed:

Number	Name	Setting range	Default value	Set value
P.6	Low speed	0~650Hz	10Hz	5Hz
P.7	Acceleration time	0~360s/0~3600s	5s	5s
P.8	Deceleration time	0~360s/0~3600s	5s	1s
P.73	Input voltage range	0(0~5V) 1(0~10V)	0	1
P.79	Operation mode	0~8	0	2
P.300	Motor control mode	0~6	0	4
P.301	Motor auto-tuning	0~4,8~10	0	2
P.302	Motor rated power	0~315.00KW	0.00KW	1.5KW
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	/	3.4A
P.307	Motor rated speed	0~65000r/min	1710rpm	1410rpm
P.350	Encoder pulse per round	0~20000 pulses	1024 pulses	1000pulses
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.500	2 5 terminal function	0~17	1	1
P.501	4 5 terminal function	0~17	1	0
P.502	1 5 terminal function	0~17	1	2
P.514	1 5 terminal minimum voltage(+) reference	-100%~100%	0%	0%
P.515	1 5 terminal maximum voltage(+) reference	-100%~100%	100%	100%
P.516	1 5 terminal minimum input voltage(+)	0~10V	0V	0V
P.517	1 5 terminal maximum input voltage(+)	0~10V	5V	10V
P.518	1 5 terminal minimum voltage(-) reference	-100%~100%	0%	0%
P.519	1 5 terminal maximum voltage(-) reference	-100%~100%	0%	-100%
P.520	1 5 terminal minimum input voltage(-)	0~10V	0V	0V
P.521	1 5 terminal maximum input voltage(-)	0~10V	0V	10V
P.530	1 5 input voltage range	0~5	0	5
P.352	PG detect error time	0~100.0s	1.0s	0s
P.406	Speed limit source	0 1	0	1

P.6 is set to 5Hz for M0 as low speed button, and we need to set P.514~P.521/P.530 for the -10V~10V signal input, P.351 is decided by the encoder type and the rotating direction. P.400 is set to 1 to enable torque control under closed loop vector control, we use voltage signal input to control torque so P.405 is set to 1. P.352 is set to zero so it shows error instantly. The value of P.350 is set according to the encoder.

Note: The encoder should be connected firmly on the motor to avoid slipping and miscount.