

Tests with New driver EL7041

First test : 0.2 A → 0.4 A

No vibration, but the current cannot be risen to more than 0.4 A

Index 8010 STM Motor Settings Ch.1

Index (hex)	Name	Meaning	Data type	Flags	Default
8010:0	STM Motor Settings Ch.1	Maximum subindex	UINT8	RO	0x11 (17 _{dec})
8010:01	Maximal current	Maximum permanent motor coil current (unit: 1 mA)	UINT16	RW	0x1388 (5000 _{dec})
8010:02	Reduced current	Reduced coil current (reduced torque, unit: 1 mA)	UINT16	RW	0x09C4 (2500 _{dec})
8010:03	Nominal voltage	Nominal voltage (supply voltage) of the motor (unit: 1 mV)	UINT16	RW	0xC350 (50000 _{dec})
8010:04	Motor coil resistance	Internal resistance of a coil (unit: 0.01 ohm)	UINT16	RW	0x0064 (100 _{dec})
8010:05	Motor EMF	Motor countervoltage (unit: 1 mV/(rad/s))	UINT16	RW	0x0000 (0 _{dec})
8010:06	Motor fullsteps	Motor full steps per revolution	UINT16	RW	0x00C8 (200 _{dec})
8010:07	Encoder increments (4-fold)	Encoder increments per revolution (quadruple evaluation)	UINT16	RW	0x0000 (0 _{dec})
8010:09	Start frequency	Maximum possible start velocity of the motor	UINT16	RW	0x0064 (100 _{dec})
8010:10	Drive on delay time	Switch-on delay of the driver stage (unit: ms)	UINT16	RW	0x0064 (100 _{dec})
8010:11	Drive off delay time	Switch-off delay of the driver stage (unit: ms)	UINT16	RW	0x0096 (150 _{dec})

Index 8011 STM Controller Settings Ch.1

Index (hex)	Name	Meaning	Data type	Flags	Default
8011:0	STM Controller Settings Ch.1	Maximum subindex	UINT8	RO	0x08 (8 _{dec})
8011:01	Kp factor (curr.)	Kp control factor (proportional component) for the current controller (unit: 0.001)	UINT16	RW	0x0190 (400 _{dec})
8011:02	Ki factor (curr.)	Ki control factor (integral component) for the current controller (unit: 0.001)	UINT16	RW	0x0004 (4 _{dec})
8011:03	Inner window (curr.)	Inner window for the I component of the current controller (unit: 1%)	UINT8	RW	0x00 (0 _{dec})
8011:05	Outer window (curr.)	Outer window for the I component of the current controller (unit: 1%)	UINT8	RW	0x00 (0 _{dec})
8011:06	Filter cut off frequency (curr.)	Filter limit frequency of the current controller (low-pass, unit: 1 Hz)	UINT16	RW	0x0000 (0 _{dec})
8011:07	Ka factor (curr.)	Ka control factor (acceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})
8011:08	Kd factor (curr.)	Kd control factor (deceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})



From 400 to 4000

From 4 to 40

Second test : 0.4 A → 0.6 A

Index 8010 STM Motor Settings Ch.1

Index (hex)	Name	Meaning	Data type	Flags	Default
8010:0	STM Motor Settings Ch.1	Maximum subindex	UINT8	RO	0x11 (17 _{dec})
8010:01	Maximal current	Maximum permanent motor coil current (unit: 1 mA)	UINT16	RW	0x1388 (5000 _{dec})
8010:02	Reduced current	Reduced coil current (reduced torque, unit: 1 mA)	UINT16	RW	0x09C4 (2500 _{dec})
8010:03	Nominal voltage	Nominal voltage (supply voltage) of the motor (unit: 1 mV)	UINT16	RW	0xC350 (50000 _{dec})
8010:04	Motor coil resistance	Internal resistance of a coil (unit: 0.01 ohm)	UINT16	RW	0x0064 (100 _{dec})
8010:05	Motor EMF	Motor countervoltage (unit: 1 mV/(rad/s))	UINT16	RW	0x0000 (0 _{dec})
8010:06	Motor fullsteps	Motor full steps per revolution	UINT16	RW	0x00C8 (200 _{dec})
8010:07	Encoder increments (4-fold)	Encoder increments per revolution (quadruple evaluation)	UINT16	RW	0x0000 (0 _{dec})
8010:09	Start frequency	Maximum possible start velocity of the motor	UINT16	RW	0x0064 (100 _{dec})
8010:10	Drive on delay time	Switch-on delay of the driver stage (unit: ms)	UINT16	RW	0x0064 (100 _{dec})
8010:11	Drive off delay time	Switch-off delay of the driver stage (unit: ms)	UINT16	RW	0x0096 (150 _{dec})



From 0.6 A to 0.9 A

Index 8011 STM Controller Settings Ch.1

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8011:0	STM Controller Settings Ch.1	Maximum subindex	UINT8	RO	0x08 (8 _{dec})
8011:01	Kp factor (curr.)	Kp control factor (proportional component) for the current controller (unit: 0.001)	UINT16	RW	0x0190 (400 _{dec})
8011:02	Ki factor (curr.)	Ki control factor (integral component) for the current controller (unit: 0.001)	UINT16	RW	0x0004 (4 _{dec})
8011:03	Inner window (curr.)	Inner window for the I component of the current controller (unit: 1%)	UINT8	RW	0x00 (0 _{dec})
8011:05	Outer window (curr.)	Outer window for the I component of the current controller (unit: 1%)	UINT8	RW	0x00 (0 _{dec})
8011:06	Filter cut off frequency (curr.)	Filter limit frequency of the current controller (low-pass, unit: 1 Hz)	UINT16	RW	0x0000 (0 _{dec})
8011:07	Ka factor (curr.)	Ka control factor (acceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})
8011:08	Kd factor (curr.)	Kd control factor (deceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})



4000



40

Second test : 0.4 A → 0.6 A

Index 8010 STM Motor Settings Ch.1

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8010:11	Drive off delay time	Switch-off delay of the driver stage (unit: ms)	UINT16	RW	0x0096 (150 _{dec})



0.9 A

Torque value is in the range of 4 to 5 N.m 😊

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8011:06	Filter cut off frequency (curr.)	Filter limit frequency of the current controller (low-pass, unit: 1 Hz)	UINT16	RW	0x0000 (0 _{dec})
8011:07	Ka factor (curr.)	Ka control factor (acceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})
8011:08	Kd factor (curr.)	Kd control factor (deceleration component) for the current controller (unit: 0.001)	UINT16	RW	0x0064 (100 _{dec})



4000



40