

KL-GTCS

MODBUS address and function code description

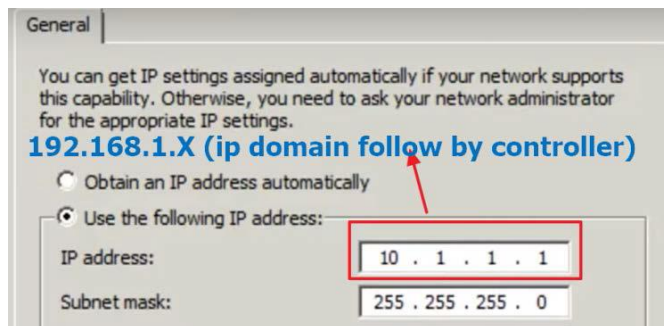
V1.04

GTCS communication is based on the MODBUS TCP / MODBUS RTU standard formats.

Connection methods are as follows:

- TCP Connection Method and Settings:

1. Choose LAN-DHCP or LAN-STATIC for the controller's communication mode.
2. Configure the controller with an IP address within the same domain as the computer.
(Select LAN-DHCP to view the IP or choose LAN-STATIC to set the STATIC-IP and GATEWAY IP.)



3. Set the controller's SERVER PORT (default 502) and press SAVE.

- RS-232 Connection Method and Settings:

On the computer side, configure communication settings as follows: BAUDRATE: 115200 / DATA bits: 8 / Stop bits: 1 / Parity: None / Flow control: Xon/Xoff.

MODBUS PDU:

- Data is organized in Big-Endian format.
- Supported Read Funcode code: Read Holding Registers.
- Supported Write Funcode codes: Write Single Register / Write Multiple Registers
(For writing multiple addresses, ASCII format only supports Write Multiple Registers).

Note 1: To control a screw using commands, the screw needs to be set to remote start (Navigate to Settings >> Tools >> Tool Settings >> Start Settings >> Remote Start).

Note 2: When using commands to start the screw (ON), if you need to perform other actions, you need to turn off the start (OFF).

Supported versions: Controller version V1.22 and above.

Below is the information corresponding to each address:

The table below represents the fields for reading controller information. (Note: Text (ASCII) data is in bold (two characters are stored in each address), others are numerical values)

Controller Information Address

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
1000	4096	1	Year	2000~2099	0x03
1001	4097	1	Month	1~12	0x03
1002	4098	1	Day	1~31	0x03
1003	4099	1	Hour	0~23	0x03
1004	4100	1	Minute	0~59	0x03
1005	4101	1	Second	0~59	0x03
1006	4102	10	Serial number of controller	ASCII	0x03
1010	4112	10	Screwdriver Module	ASCII	0x03
101A	4122	10	Serial number of Screwdriver	ASCII	0x03
1024	4132	6	Job Name	ASCII	0x03
102A	4138	6	Sequence name	ASCII	0x03
1030	4144	1	Controller Module	7	0x03
1031	4145	1	Controller Number	1~255	0x03
1032	4146	2	Total time of screwdriver tightening	0~ 4294967295	0x03
1034	4148	1	Job number	0~170	0x03
1035	4149	1	Sequence number	1~99	0x03
1036	4150	1	Program number	0	0x03
1037	4151	1	Step number	1~8	0x03
1038	4152	1	Direction	0: CW: clockwise 1: CCW: counter clockwise	0x03
1039	4153	1	Target (Angle/Toque/Delay time)	0: ANGLE 1: TORQUE 2: DELAY TIME	0x03
103A	4154	1	Screwdriver Number	1	0x03
103B	4155	2	Torque * 100	0~TOOL MAX	0x03
103D	4157	1	Torque Units	0: Kgf-m 1: N-m 2: Kgf-cm 3: Lbf-in	0x03
103E	4158	1	Total time (Second) * 100	0~65535	0x03
103F	4159	2	Angle	0~4294967295	0x03
1041	4161	1	Batch mode	0: DEC: decrease 1: INC: increase	0x03
1042	4162	1	Current screw count	1~99	0x03
1043	4163	1	Total screw count	1~99	0x03

1044	4164	1	Results	3 : Remove screws 4 : OK 5 : OK-Sequence 6 : OK-JOB 7 : NG 8 : NS: NG stop	0x03
1045	4165	2	System serial number	0~4294967295	0x03
1047	4167	1	(ENABLE / DISABLE)	0: enable 1: disable	0x03
1048	4168	1	Error message	0 : (none) 1 : temperature error 2 : Motor temperature error 3 : Motor current too high 4 : Motor peak current too high 5 : Torque over high limit 6 : Motor error 7 : Time lower the low limit 8 : tightening time is over 9 : Rotary sensor No pulse 10: Hall sensor no pulse 11: Voltage too high 12: Voltage too low 13: Setting sequences error 14: Setting steps error 15: communication	0x03

				between screwdriver and controller error 16: controller flash CAPTCHA error 17: controller Fram CAPTCHA error 18: Angle over high limit 19: hardware protection error 20: setting of start tool error 21: step error 22: FRAM of screwdriver PCB error 23: Torque lower the low limit 24: Angle lower the low limit 25: Operation not complete 32: Sequence complete confirm 33: Job complete confirm 34: Job recovery confirm	
1049	4169	1	RPM	0~65535	0x03
104A	4170	2	Target torque * 100	0~TOOL MAX	0x03
104C	4172	2	High torque * 100	0~TOOL MAX	0x03
104E	4174	2	Low torque * 100	0~TOOL MAX	0x03
1050	4176	2	Target angle	0~30600	0x03

1052	4178	2	Angle high limit	0~30600	0x03
1054	4180	2	Angle low limit	0~30600	0x03
1056	4182	2	Threshold torque * 100	0~TOOL MAX	0x03
1058	4184	2	Downshift torque * 100	0~TOOL MAX	0x03
105A	4186	1	Downshift RPM	0~65535	0x03
105B	4187	1	Pre-run RPM	0~65535	0x03
105C	4188	2	Pre-run angle	0~30600	0x03
105E	4190	2	Total angle	0~4294967295	0x03
1060	4192	27	Fasten barcode	ASCII	0x03
1092	4242	2	Advanced fastening step 1 final torque * 100	0~TOOL MAX	0x03
1094	4244	2	Advanced fastening step 1 final angle	0~65535	0x03
1096	4246	2	Advanced fastening step 2 final torque * 100	0~TOOL MAX	0x03
1098	4248	2	Advanced fastening step 2 final angle	0~65535	0x03
109A	4250	2	Advanced fastening step 3 final torque * 100	0~TOOL MAX	0x03
109C	4252	2	Advanced fastening step 3 final angle	0~65535	0x03
109E	4254	2	Advanced fastening step 4 final torque * 100	0~TOOL MAX	0x03
10A0	4256	2	Advanced fastening step 4 final angle	0~65535	0x03
10A2	4258	2	Advanced fastening step 5 final torque * 100	0~TOOL MAX	0x03
10A4	4260	2	Advanced fastening step 5 final angle	0~65535	0x03
10A6	4262	2	Advanced fastening step 6 final torque * 100	0~TOOL MAX	0x03
10A8	4264	2	Advanced fastening step 6 final angle	0~65535	0x03
10AA	4266	2	Advanced fastening step 7 final torque * 100	0~TOOL MAX	0x03
10AC	4268	2	Advanced fastening step 7 final angle	0~65535	0x03
10AE	4270	2	Advanced fastening step 8 final torque * 100	0~TOOL MAX	0x03
10B0	4272	2	Advanced fastening step 8 final angle	0~65535	0x03

Controller Information Address

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
01C8	456	1	Screwdriver Start	0: off 1: on	0x06, 0x10
01C9	457	1	Screwdriver	0: off	0x06, 0x10

			reverse	1: on	
01CA	458	1	Confirm	1: on	0x06, 0x10
01CB	459	1	Clear	1: on	0x06, 0x10
01CC	460	1	reset Sequence	1: on	0x06, 0x10
01CD	461	1	Screwdriver enable/disable	0: disable 1: enable	0x06, 0x10
01CE	462	1	Restart controller	1: on	0x06, 0x10
01CF	463	1	Switch Job number	1~99, 101~170	0x06, 0x10
01D0	464	1	Switch Sequence number	1~99	0x06, 0x10
01E0	480	1	Source of software update	1: FTP, 2: USB1 3: USB2	0x06, 0x10
01E1	481	10	Name of Software update	ASCII (Without file extension)	0x10
01EB	491	1	destination of Export tightening record	1: FTP, 2: USB1 3: USB2	0x06, 0x10
01EC	492	1	Start year of Export tightening record	0 = csv 1 = zip	0x06, 0x10
01ED	493	1	Start month of Export tightening record	1911~2099	0x06, 0x10
01EE	494	1	Start day of Export tightening record	1~12	0x06, 0x10
01EF	495	1	Start hour of Export tightening record	1~31	0x06, 0x10
01F0	496	1	Start year of Export tightening record	0~23	0x06, 0x10
01F1	497	1	Start minute of Export tightening record	0~59	0x06, 0x10
01F2	498	1	Start second of Export tightening record	0~59	0x06, 0x10

01F3	499	1	End year of Export tightening record	1911~2099	0x06, 0x10
01F4	500	1	End month of Export tightening record	1~12	0x06, 0x10
01F5	501	1	End day of Export tightening record	1~31	0x06, 0x10
01F6	502	1	End hour of Export tightening record	0~23	0x06, 0x10
01F7	503	1	End minute of Export tightening record	0~59	0x06, 0x10
01F8	504	1	End second of Export tightening record	0~59	0x06, 0x10
01F9	505	1	destination of Export tightening record	1: FTP, 2: USB1 3: USB2	0x06, 0x10
01FA	506	1	destination of import tightening record	1: FTP, 2: USB1 3: USB2	0x06, 0x10
01FB	507	10	name of import tightening record	ASCII (Without file extension)	0x10
0205	517	1	Delete which year of tightening record	1911~2099	0x06, 0x10
021C	540	1	Reset user login password	0: OFF 1: ON	0x06, 0x10

Note:

1. After a successful software update, a reboot is required.
2. After importing the configuration file, the interface needs to be refreshed.
3. To activate the "Reset User Password" function, set the reset password to 0000. You can then log in to the settings interface.
4. Changing the server port requires a reboot.