SUMAKE®

Professional & Industrial

SMT-C2
MODBUS address & function

V1.09
2025/12/22

SUMAKE

Catalogue

1. Setting of Connection

SMT-C2 communication is based on the MODBUS TCP / MODBUS RTU standard formats:

1.1 TCP Connection Method and Settings

a. Choose LAN-DHCP or LAN-STATIC for the controller's communication mode.
b. 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.)
c. Set the controller's SERVER PORT (default 502) and press SAVE.

1.2 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..

2. MODBUS data information

MODBUS PDU:

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

3. Document Information

- Author: Ben   Ben@sumake.com.tw
- Support controller V1.29 (Standard)
- Modbus document V1.09
- Release date: 2025/12/22
- Page:50

4. Data Information

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

Note: ※Torque of Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

4.1   Data Information

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
1000	4096	1	Tightening data year	2000~2099	0x03
1001	4097	1	Tightening data month	1~12	0x03
1002	4098	1	Tightening data day	1~31	0x03
1003	4099	1	Tightening data hour	0~23	0x03
1004	4100	1	Tightening data minute	0~59	0x03
1005	4101	1	Tightening data second	0~59	0x03
1006	**4102**	**10**	**Controller S/N**	**ASCII**	**0x03**
1010	**4112**	**10**	**Screwdriver Module**	**ASCII**	**0x03**
101A	**4122**	**10**	**Screwdriver S/N**	**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 1: CCW	0x03
1039	4153	1	Target (Angle/Toque)	1: ANGLE 2: TORQUE	0x03
103A	4154	1	Screwdriver Number	1	0x03
103B	4155	2	Torque unit multiplied by different value. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	0~TOOL MAX	0x03
103D	4157	1	Torque Units	0: Kgf-m 1: N-m 2: Kgf-cm 3: Lbf-in 4:cN-m	0x03

103E	4158	1	Total time (Second) * 1000	0~65535	0x03
103F	4159	2	Angle	0~4294967295	0x03
1041	4161	1	Batch mode	0: DEC 1: INC	0x03
1042	4162	1	Total Screw count	1~99	0x03
1043	4163	1	Total screw count	1~99	0x03
1044	4164	1	Results	3 : REVERSE 4 : OK 5 : OK-SEQ 6 : OK-JOB 7 : NG 8 : NS (NG Stop)	0x03
1045	4165	2	Rundown number	0~4294967295	0x03
1047	4167	1	(ENABLE / DISABLE)	0: enable 1: disable	0x03
1048	4168	1	Error message	0 : NO_ERROR 1 : ERR-CONT-TEMP 2 : ERR-MOT-TEMP 3 : ERR-MOT-CURR 4 : ERR-MOT-PEAK-CURR 5 : ERR-HIGH-TORQUE 6 : ERR-DEADLOCK 7 : ERR-PROC-MINTIME 8 : ERR-PROC-MAXTIME 9 : ERR-ENCODER 10: ERR-HALL 11: ERR-BUSVOLT-HIGH" 12: ERR-BUSVOLT-LOW 13: ERR-PROC-NA 14: ERR-STEP-NA 15: ERR-DMS-COMM 16: ERR-FLASH 17: ERR-FRAM 18: ERR-HIGH-ANGLE 19: ERR-PROTECT-CIRCUIT" 20: ERR-SWITCH-CONFIG 21: ERR-STEP-NOT-REC 22: ERR-TMD-FRAM 23: ERR-LOW-TORQUE 24: ERR-LOW-ANGLE 25: ERR-MALOPERATION 32: SEQ-COMPLETED 33: JOB-COMPLETED 34: WORKPIECE-RECOVERY	0x03
1049	4169	1	RPM	0~65535	0x03
104A	4170	2	Target torque multiplied by different values. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	0~TOOL MAX	0x03

104C	4172	2	HIGH torque multiplied by different values. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	0~TOOL MAX	0x03
104E	4174	2	LOW torque multiplied by different values. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	0~TOOL MAX	0x03
1050	4176	2	Target angle	0~30600	0x03
1052	4178	2	High Angle	0~30600	0x03
1054	4180	2	Low Angle	0~30600	0x03
1056	4182	2	Threshold torque multiplied by different values. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	0~TOOL MAX	0x03
1058	4184	2	Downshift torque multiplied by different values. **Kgf-m** : Torque value X 10000 **N-m** : Torque value X 1000 **Kgf-cm/Lbf-in** : Torque value X 100 **cN-m** : Torque value X 10	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**	**50**	**Barcode**	**ASCII**	**0x03**

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4.2 Advance Tightening Step Information Address.

※Torque value shows on Modbus value exchange lis:
Kgf-m : Torque value X 10000
N-m : Torque value X 1000
Kgf-cm/Lbf-in : Torque value X 100
cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
1092	4242	2	ADVANCE step1 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
1094	4244	2	ADVANCE step1 angle value	0~65535	0x03
1096	4246	2	ADVANCE step2 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
1098	4248	2	ADVANCE step2 angle value	0~65535	0x03
109A	4250	2	ADVANCE step3 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
109C	4252	2	ADVANCE step3 angle value	0~65535	0x03
109E	4254	2	ADVANCE step4 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
10A0	4256	2	ADVANCE step4 angle value	0~65535	0x03
10A2	4258	2	ADVANCE step5 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
10A4	4260	2	ADVANCE step5 angle value	0~65535	0x03
10A6	4262	2	ADVANCE step6 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
10A8	4264	2	ADVANCE step6 angle value	0~65535	0x03
10AA	4266	2	ADVANCE step7 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
10AC	4268	2	ADVANCE step7 angle value	0~65535	0x03
10AE	4270	2	ADVANCE step8 torque value multiply by specific value. (reference above formula)	0~TOOL MAX	0x03
10B0	4272	2	ADVANCE step8 angle value	0~65535	0x03

4.3 **Tightening Graph Data**

Tightening Graph – Torque

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
2000	8192	2	tightening Graph 1st data point – torque value multiply by specific value. (reference above formula)	0~65535	0x03
…	…	…	…	…	…
2F9E	12190	2	tightening Graph 2000th data point torque value multiply by specific value. (reference above formula)	0~65535	0x03

4.3.1 Tightening Graph – Angle

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
2FA0	12192	2	tightening Graph 1st data point – angle (°)	0~65535	0x03
…	…	…	…	…	…
3F3E	16190	2	tightening Graph 2000th data point – angle (°)	0~65535	0x03

4.3.2 Tightening Graph – RPM

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
3F40	16192	1	tightening Graph 1st data point – RPM	0~65535	0x03
…	…	…	…	…	…
470F	18191	1	tightening Graph 2000th data point – RPM	0~65535	0x03

4.3.3 Tightening Graph – Power

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
4710	18192	1	tightening Graph 1st data point – power (0.1 W)*10	0~65535	0x03
…	…	…	…	…	…
4EDF	20191	1	tightening Graph 2000th data point – RPM (0.1 W)*10	0~65535	0x03

4.3.4 Tightening Graph – Time

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
4EE0	20192	1	tightening Graph 1st data point – time(0.1ms) * 10 (0.0~6553.5ms)	0~65535 (0.0~6553.5 ms)	0x03
…	…	…	…	…	…
56AF	22191	1	tightening Graph 2000th data point – time(0.1ms) * 10 (0.0~6553.5ms)	0~65535 (0.0~6553.5 ms)	0x03

Please note:
tightening graph is stared on 0ms and till 6553.5ms (first data is record on 0ms)

4.3.5 Tightening Graph – Time

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
4EE0	20192	1	tightening Graph 1st data point – time(0.1ms) * 10 (0.0~6553.5ms)	0~65535 (0.0~6553.5 ms)	0x03
…	…	…	…	…	…
56AF	22191	1	tightening Graph 2000th data point – time(0.1ms) * 10 (0.0~6553.5ms)	0~65535 (0.0~6553.5 ms)	0x03

Please note:
tightening graph is stared on 0ms and till 6553.5ms (first data is record on 0ms)

4.4 Controller Status

4.4.1   Current Process Status

Address (HEX)	(DEC)	size	Description	Range	Function Code
10BD	4285	2	current system SN	0~4294967295	0x03
10BF	**4287**	**6**	**current JOB name**	**ASCII**	**0x03**
10C5	**4293**	**6**	**current Sequence name**	**ASCII**	**0x03**
10CB	**4299**	**6**	**current step name**	**ASCII**	**0x03**
10D1	4305	1	current job ID	0~221	0x03
10D2	4306	1	current sequence ID	1~99	0x03
10D3	4307	1	current step ID	1~8	0x03
10D4	4308	1	current Last Screw Count	1~99	0x03
10D5	4309	1	current Max Screw Count	1~99	0x03
10EA	4330	1	current input stats (I/O)	0~1023	0x03
10EB	4331	1	current output stats (I/O)	0~511	0x03

4.4.2   Barcode

Address (HEX)	(DEC)	size	Description	Range	Function Code
018C	**396**	**50**	**Barcode data**	**ASCII**	**0x03**

4.4.3   Tool Status

Address (HEX)	(DEC)	size	Description	Range	Function Code
10F8	4344	1	Tool Mode	0: Tightening 1: Reverse	0x03
10F9	4345	1	Tool Status	0: disable 1: enable	0x03
10FA	4346	1	Motor Status	0: stop 1: running	0x03
10FB	4347	1	Tool push Status	0: release 1: push	0x03

4.4.4   Controller Settings

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
0100	256	1	Device ID	1~255	0x03
0101	**257**	**7**	**Device name**	**ASCII**	**0x03**
0108	264	1	torque unit	0: kgf-m 1: N-M 2: kfg-cm 3: In-lbs 4.N-cM	0x03
0109	265	1	Language	0: English 1: Traditional Chinese 2: Simple Chinese	0x03
010A	266	1	Counting method	0: decrease 1: increase	0x03
010B	267	1	Buzzer	0: off 1: on	0x03
010C	268	1	Storage status	0: off 1: on	0x03
010D	269	1	Storage warning (%)	50~95	0x03
010E	270	1	Screen Backlight	0~7	0x03
0110	272	1	System time – year	2000~2099	0x03
0111	273	1	System time – month	1~12	0x03
0112	274	1	System time – day	1~31	0x03
0113	275	1	System time – hour	0~24	0x03
0114	276	1	System time – minute	0~59	0x03
0115	277	1	System time – second	0~59	0x03

4.4.5   Tool Settings

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
0122	290	1	Start Mode	0: remote. 1: Push 2: Lever 3: Lever and Push 6: Lever or Push 7: Lever or Remote 9: Lever or Push or remote	0x03
0123	291	1	Tool LED setting	0: Always ON 1: Always OFF 2: Start Only	0x03
0124	292	1	Tool Lever sensitivity (%)	10~90	0x03
0125	293	1	Tool Push sensitivity (%)	10~90	0x03

5. Function Setting

The table below represents the fields for setting of controller address and Information.

(Note: **Text (ASCII) data is in bold (two characters are stored in each address)**, others are numerical values).

5.1 Screwdriver Operation

Address (HEX)	(DEC)	size	Description	Range	Function Code
01C8	456	1	Screwdriver Start	0: off 1: on	0x03, 0x06, 0x10
01C9	457	1	Screwdriver reverse	0: off 1: on	0x03, 0x06, 0x10
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	0x03, 0x06, 0x10
01CF	463	1	Switch Job number	1~99, 101~170, 201, 221	0x03, 0x06, 0x10
01D0	464	1	Switch Sequency number	1~99	0x03, 0x06, 0x10

Please note:
1. If need to Modbus to operate screwdriver, you need to set setting of tools to remote. Setup > Tool > Tool Settings > Start Mode = Remote.
2. When you operate screwdriver start = ON by Modbus, after received OK signal, please set screwdriver start = OFF.

5.2 Graph Chart Setting (Modbus)

Address (HEX)	(DEC)	size	Description	Range	Function Code
0140	320	1	percentage of first parts graph setting (%)	0~100	0x03, 0x06, 0x10
0141	321	1	percentage of second parts graph setting (%)	1~1000	0x03, 0x06, 0x10

Please note:
The setting of percentage for first parts & second parts graph is requested to set before tightening. The new setting will apply on next tightening data & graph.

5.3 Export Data

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
01EB	491	1	destination of Export tightening record	1: FTP 2: USB1 3: USB2	0x06, 0x10
01EC	492	1	file type of Export tightening record	0: csv 1: zip	0x06, 0x10
01ED	493	1	Start year of Export tightening record	1911~2099	0x06, 0x10
01EE	494	1	Start month of Export tightening record	1~12	0x06, 0x10
01EF	495	1	Start day of Export tightening record	1~31	0x06, 0x10
01F0	496	1	Start hour of Export tightening record	0~23	0x06, 0x10
01F1	497	1	Start min of Export tightening record	0~59	0x06, 0x10
01F2	498	1	Start sec 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 min of Export tightening record	0~59	0x06, 0x10
01F8	504	1	End sec of Export tightening record	0~59	0x06, 0x10

5.4 Import Data Setting

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
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**

Important: The system must be restarted after importing the configuration file.

5.5 Export Data Setting

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
01F9	505	1	destination of Export tightening record	1: FTP 2: USB1 3: USB2	0x06, 0x10

5.6   Reset User Login Password

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
021C	540	1	Reset user login password	1: Reset	0x06, 0x10

Please note that after reset, the default password is "0000"

5.7   Software Update

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
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**

Please note: After update the software, please re-start controller.

5.8   Delete Tightening Data

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0205	517	1	Delete which year of tightening data	1911~2099	0x06, 0x10

5.9   Restart Controller

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
01CE	462	1	Restart controller	1: on	0x06, 0x10

Please note that the controller will restart controller directly.

5.10   Enter Barcode

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
018C	**396**	**27**	**enter barcode data**	**ASCII**	**0x10**

Please note that the error ASCII data will be ignored.

5.11   Setting of Screen Backlight

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
010E	270	1	setting of Screen backlight	0~7	0x06, 0x10

5.12 Setting of Screen Rotation

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
010F	271	1	setting of screen rotation	0: same direction as Logo 1: opposite to Logo 4: Rotate	0x06, 0x10

Please note that the controller will restart controller directly.

5.13 Setting Controller Time

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0110	272	1	setting controller time – year	2000~2099	0x06, 0x10
0111	273	1	setting controller time – month	1~12	0x06, 0x10
0112	274	1	setting controller time – day	1~31	0x06, 0x10
0113	275	1	setting controller time – hour	0~24	0x06, 0x10
0114	276	1	setting controller time – minute	0~59	0x06, 0x10
0115	277	1	setting controller time – second	0~59	0x06, 0x10

Please note:

After setting controller time by Modbus, please restart controller.

5.14 Setting Controller Time Zone

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0116	278	1	setting controller time zone	1~607	0x06, 0x10

Please note:

Setting parameters please reference **Index A. ASCII string increase**

A.1 Data Information

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
57AA	22442	125	Job Name	ASCII	0x03
5827	22567	125	Sequence name	ASCII	0x03

A.2 Current Process Status

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
58A4	22692	125	current JOB name	ASCII	0x03
5921	22817	125	current Sequence name	ASCII	0x03
599E	22942	125	current step name	ASCII	0x03

A.3 Controller settings

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5A1B	23067	80	Device name	ASCII	0x03

A.4 MODBUS Normal Job/Sequence setting

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5A98	23192	125	Modbus normal job Ok job name	ASCII	0x03, 0x06 0x10
5B15	23317	125	Modbus normal job sequence name	ASCII	0x03, 0x06 0x10

A.5 MODBUS Advanced Job/Sequence setting

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5B92	23442	125	Modbus advanced job name	ASCII	0x03, 0x06 0x10
5C0F	23567	125	Modbus advanced sequence name	ASCII	0x03, 0x06 0x10
5C8C	23692	125	Modbus advanced 1st step name	ASCII	0x03, 0x06 0x10
5D09	23817	125	Modbus advanced 2nd step name	ASCII	0x03, 0x06 0x10
5D86	23942	125	Modbus advanced 3rd step name	ASCII	0x03, 0x06 0x10
5E03	24067	125	Modbus advanced 4th step name	ASCII	0x03, 0x06 0x10
5E80	24192	125	Modbus advanced 5th step name	ASCII	0x03, 0x06 0x10
5EFD	24317	125	Modbus advanced 6th step name	ASCII	0x03, 0x06 0x10
5F7A	24442	125	Modbus advanced 7th step name	ASCII	0x03, 0x06 0x10
5FF7	24567	125	Modbus advanced 8th step name	ASCII	0x03, 0x06 0x10

Index B time zone

5.15   Automatic Computer Time Service

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0117	279	1	Automatic Computer Time Service	1: On	0x06, 0x10

Please note:
1. Controller LAN set to LAN-DHCP.
2. Set time zone to current time zone.
3. Turn on the Automatic Computer Time Service.

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5.16   Modbus Normal Job.

Please note:

1. Modbus setting for unit of torque is currently setting on the controller. Please check the currently unit of torque on controller.
2. After re-start controller, the setting of Modbus normal job will be default. MODBUS
3. Modbus normal job is not supported "save".
4. ※Torque value shows on Modbus value exchange list:
   Kgf-m : Torque value X 10000
   N-m : Torque value X 1000
   Kgf-cm/Lbf-in : Torque value X 100
   cN-m : Torque value X 10

5.16.1   Setting of Modbus Normal Job

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0300	768	1	reset of Modbus normal job	1: reset	0x06, 0x10
0301	769	1	Modbus normal job number	201	0x03, 0x06, 0x10
0302	**770**	**6**	**Modbus normal job Ok job name**	**ASCII**	**0x03, 0x06, 0x10**
0308	776	1	Modbus normal job Ok	0: off 1: on	0x03, 0x06, 0x10
0309	777	1	Modbus normal job Ok job stop	0: off 1: on	0x03, 0x06, 0x10
030A	778	1	Modbus normal job reverse Force(%)	0~110	0x03, 0x06, 0x10
030B	779	1	Modbus normal job reverse RPM	reference as screwdriver specification	0x03, 0x06, 0x10
030C	780	1	Modbus normal job reverse bottom	1: CCW 2: Disable	0x03, 0x06, 0x10
030D	781	1	Modbus normal job reverse count	0: off 1: on	0x03, 0x06, 0x10
030E	782	2	Modbus normal job reverse threshold Torque. Torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10

Please note:
After setting the parameters of Modbus normal job, please call Job ID:201.

5.16.2 Modbus Normal Job Sequence

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
033D	829	1	Modbus normal job sequence number	1	0x03, 0x06, 0x10
033E	**830**	**6**	**Modbus normal job sequence name**	**ASCII**	**0x03, 0x06, 0x10**
0344	836	1	Modbus normal job sequence Tightening Repeat	1~99	0x03, 0x06, 0x10
0345	837	1	Modbus normal job sequence stop on NG	0: off	0x03, 0x06, 0x10
0346	838	1	Modbus normal job sequence ok	1~9: NG times	0x03, 0x06, 0x10
0347	839	1	Modbus normal job sequence stop sequence on ok	0: off 1: on	0x03, 0x06, 0x10
0348	840	1	Modbus normal job sequence timeout*10	0~200 (0.0~20.0 sec)	0x03, 0x06, 0x10

Please note:
After setting the parameters of Modbus normal job, please call Job ID:201.

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5.16.3   MODBUS Normal Job Step Setting

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0379	889	1	Modbus normal step target type	1: angle 2: torque	0x03, 0x06, 0x10
037A	890	2	Modbus normal step target torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10
037C	892	2	Modbus normal step target angle	0~30600	0x03, 0x06, 0x10
037E	894	1	Modbus normal step joint offset Positive/Negative	0: Positive 1: Negative	0x03, 0x06, 0x10
037F	895	2	Modbus normal step joint offset value multiply by specific value. (reference above formula)	after offset, it could not over its max torque.	0x03, 0x06, 0x10
0381	897	2	Modbus normal step high torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10
0383	899	2	Modbus normal step low torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10
0385	901	1	Modbus normal step Run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
0386	902	1	Modbus normal step threshold type	1: angle 2: torque	0x03, 0x06, 0x10
0387	903	2	Modbus normal step threshold torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10
0389	905	2	Modbus normal step threshold angle	0~30600	0x03, 0x06, 0x10
038B	907	1	Modbus normal step monitor angle	0: off 1: over angle stop 2: monitor angle	0x03, 0x06, 0x10
038C	908	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
038E	910	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
0390	912	1	Modbus normal step downshift	0: off 1: angle 2: torque	0x03, 0x06, 0x10
0391	913	2	Modbus normal step downshift torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10
0393	915	2	Modbus normal step angle	0~30600	0x03, 0x06, 0x10
0395	917	1	Modbus normal step downshift RPM	reference as screwdriver	0x03, 0x06, 0x10

				specification	
0396	918	1	Modbus normal step pre-run	0: off 1: on	0x03, 0x06, 0x10
0397	919	1	Modbus normal step pre-run RPM	reference as screwdriver specification	0x03, 0x06, 0x10
0398	920	2	Modbus normal step pre-run angle	0~30600	0x03, 0x06, 0x10

Please note:

After setting the parameters of Modbus normal job, please call Job ID:201.

5.17 Modbus Advanced Job

Please note:

1. Modbus setting for unit of torque is currently setting on the controller. Please check the currently unit of torque on controller.
2. After re-start controller, the setting of Modbus normal job will be default.
3. Modbus normal job is not supported "save".
4. ※Torque value shows on Modbus value exchange list:
   Kgf-m : Torque value X 10000
   N-m : Torque value X 1000
   Kgf-cm/Lbf-in : Torque value X 100
   cN-m : Torque value X 10

5.17.1 Modbus Advanced Job Setting

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
03F6	1014	1	reset Modbus advanced job setting	1: reset	0x06, 0x10
03F7	1015	1	Modbus advanced job number	221	0x03, 0x06, 0x10
03F8	**1016**	**6**	**Modbus advanced job name**	**ASCII**	**0x03, 0x06, 0x10**
03FE	1022	1	Modbus advanced job Ok signal	0: off 1: on	0x03, 0x06, 0x10
03FF	1023	1	Modbus advanced job stop job on ok	0: off 1: on	0x03, 0x06, 0x10
0400	1024	1	Modbus advanced job reverse force(%)	0 ~ 110	0x03, 0x06, 0x10
0401	1025	1	Modbus advanced job reverse RPM	reference as screwdriver specification	0x03, 0x06, 0x10
0402	1026	1	Modbus advanced job reverse button	0: CW 1: CCW 2: Disable	0x03, 0x06, 0x10
0403	1027	1	Modbus advanced job reverse count	0: off 1: on	0x03, 0x06, 0x10
0404	1028	2	Modbus advanced job reverse threshold torque. Torque value multiply by specific value. (reference above formula)	reference as screwdriver specification	0x03, 0x06, 0x10

Please note:
After setting the parameters of Modbus normal job, please call Job ID:221.

5.17.2   Modbus Advanced Sequence

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
0433	1075	1	Modbus advanced sequence number	1	0x03, 0x06, 0x10
0434	**1076**	**6**	**Modbus advanced sequence name**	**ASCII**	**0x03, 0x06, 0x10**
043A	1082	1	Modbus advanced sequence tightening repeat	1 ~ 99	0x03, 0x06, 0x10
043B	1083	1	Modbus advanced sequence Stop on NG	0: off 1~9: NG times	0x03, 0x06, 0x10
043C	1084	1	Modbus advanced sequence OK signal	0: off 1: on	0x03, 0x06, 0x10
043D	1085	1	Modbus advanced sequence top sequence on OK	0: off 1: on	0x03, 0x06, 0x10
043E	1086	1		0	0x03, 0x06, 0x10
043F	1087	1	Modbus advanced sequence timeout (0.1 second) *10	1 ~ 600 (0.0~60.0 second)	0x03, 0x06, 0x10

Please note:

After setting the parameters of Modbus normal job, please call Job ID:221.

5.17.3 Modbus Advanced Step 1

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
046F	1135	1	Modbus advanced step 1 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
0470	**1136**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
0478	1144	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
0479	1145	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
047B	1147	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
047D	1149	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
047E	1150	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
047F	1151	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
0480	1152	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
0481	1153	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0483	1155	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0485	1157	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0487	1159	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
0488	1160	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
048A	1162	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
048C	1164	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
048D	1165	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
048E	1166	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:

1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.4 Modbus Advanced Step 2

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
04EC	1260	1	Modbus advanced step 2 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
04ED	**1261**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
04F5	1269	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
04F6	1270	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
04F8	1272	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
04FA	1274	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
04FB	1275	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
04FC	1276	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
04FD	1277	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
04FE	1278	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0500	1280	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0502	1282	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0504	1284	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
0505	1285	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
0507	1287	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
0509	1289	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
050A	1290	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
050B	1291	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:
1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.5   Modbus Advanced Step 3

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
0569	1385	1	Modbus advanced step 3 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
056A	**1386**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
0572	1394	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
0573	1395	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
0575	1397	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0577	1399	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
0578	1400	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
0579	1401	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
057A	1402	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
057B	1403	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
057D	1405	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
057F	1407	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0581	1409	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
0582	1410	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
0584	1412	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
0586	1414	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
0587	1415	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
0588	1416	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:

1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.6   Modbus Advanced Step 4

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
05E6	1510	1	Modbus advanced step 4 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
05E7	**1511**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
05EF	1519	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
05F0	1520	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
05F2	1522	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
05F4	1524	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
05F5	1525	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
05F6	1526	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
05F7	1527	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
05F8	1528	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
05FA	1530	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
05FC	1532	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
05FE	1534	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
05FF	1535	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
0601	1537	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
0603	1539	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
0604	1540	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
0605	1541	1	Modbus normal step interrupt alarm	0: off	0x03,

| | | | | 1: on | 0x06, 0x10 |

Please note:
1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.7 Modbus Advanced Step 5

※Torque value shows on Modbus value exchange list:
Kgf-m : Torque value X 10000
N-m : Torque value X 1000
Kgf-cm/Lbf-in : Torque value X 100
cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0663	1635	1	Modbus advanced step 5 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
0664	**1636**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
066C	1644	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
066D	1645	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
066F	1647	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0671	1649	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
0672	1650	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
0673	1651	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
0674	1652	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
0675	1653	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0677	1655	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0679	1657	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
067B	1659	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
067C	1660	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
067E	1662	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
0680	1664	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
0681	1665	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10

0682	1666	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:
1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.8 Modbus Advanced Step 6

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
06E0	1760	1	Modbus advanced step 6 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
06E1	**1761**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
06E9	1769	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
06EA	1770	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
06EC	1772	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
06EE	1774	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
06EF	1775	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
06F0	1776	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
06F1	1777	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
06F2	1778	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
06F4	1780	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
06F6	1782	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
06F8	1784	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
06F9	1785	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
06FB	1787	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
06FD	1789	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
06FE	1790	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
06FF	1791	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:

1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. **Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.**

5.17.9 Modbus Advanced Step 7

※Torque value shows on Modbus value exchange list:
Kgf-m : Torque value X 10000
N-m : Torque value X 1000
Kgf-cm/Lbf-in : Torque value X 100
cN-m : Torque value X 10

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
075D	1885	1	Modbus advanced step 7 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
075E	**1886**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
0766	1894	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
0767	1895	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
0769	1897	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
076B	1899	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
076C	1900	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
076D	1901	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
076E	1902	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
076F	1903	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0771	1905	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0773	1907	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
0775	1909	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
0776	1910	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
0778	1912	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
077A	1914	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
077B	1915	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
077C	1916	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:
1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.17.10 Modbus Advanced Step 8

※Torque value shows on Modbus value exchange list:

Kgf-m : Torque value X 10000

N-m : Torque value X 1000

Kgf-cm/Lbf-in : Torque value X 100

cN-m : Torque value X 10

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
07DA	2010	1	Modbus advanced step 8 ON/OFF	0: off 1: on	0x03, 0x06, 0x10
07DB	**2011**	**8**	**Modbus advanced step name**	**ASCII**	**0x03, 0x06, 0x10**
07E3	2019	1	Modbus advanced step target	1: angle 2: torque	0x03, 0x06, 0x10
07E4	2020	2	Modbus advanced step target angle	0 ~30600	0x03, 0x06, 0x10
07E6	2022	2	Modbus advanced step target torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
07E8	2024	1	Modbus advanced step delay time (0.1 second) *10	0 ~ 100 (0.0~10.0 second)	0x03, 0x06, 0x10
07E9	2025	1	Modbus advanced step direction	0: CW 1: CCW	0x03, 0x06, 0x10
07EA	2026	1	Modbus advanced step run down speed	reference as screwdriver specification	0x03, 0x06, 0x10
07EB	2027	1	Modbus advanced step joint offset	0: Positive 1: Negative	0x03, 0x06, 0x10
07EC	2028	2	Modbus advanced step joint offset torque value. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
07EE	2030	2	Modbus normal step high torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
07F0	2032	2	Modbus normal step low torque. Torque value multiply by specific value. (reference above formula)	reference as controller limit	0x03, 0x06, 0x10
07F2	2034	1	Modbus normal step monitor angle mode	0: off 1: Over angle stop 2: Monitor angle	0x03, 0x06, 0x10
07F3	2035	2	Modbus normal step high angle	0~30600	0x03, 0x06, 0x10
07F5	2037	2	Modbus normal step low angle	0~30600	0x03, 0x06, 0x10
07F7	2039	1	Modbus normal step record angle value	0: Skip 1: Positive 2: Negative	0x03, 0x06, 0x10
07DA	2010	1	Modbus normal step acceleration slope	20~5000	0x03, 0x06, 0x10
07DB	2011	1	Modbus normal step interrupt alarm	0: off 1: on	0x03, 0x06, 0x10

Please note:

1. After setting the parameters of Modbus advance job, please call Job ID:221.
2. Modbus advance step will keep running from step 1 to step 8 or until the step is OFF.

5.18   MODBUS Job I/O Input Settings

Modbus (Normal/Advanced) job I/O setting

5.18.1   MODBUS Job I/O Input Event Setting

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0153	339	1	I/O input event reset	1: reset	0x06, 0x10
0154	340	1	/O input event number	enter event list number	0x03, 0x06, 0x10
0155	341	1	I/O input event 2 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
0156	342	1	I/O input event 3 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
0157	343	1	I/O input event 4 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
0158	344	1	I/O input event 5 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
0159	345	1	I/O input event 6 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
015A	346	1	I/O input event 7 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
015B	347	1	I/O input event 8 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
015C	348	1	I/O input event 9 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10
015D	349	1	I/O input event 10 setting	0: off 1: High level voltage 2: Low level voltage	0x03, 0x06, 0x10

Please note:

1. Please enter event number and then enter High/Low level voltage.
2. Please do not enter the same event list number in the event.
   ex: enter 200 (start in) in event 1 & 2. It is not allowed.
3. After setting the I/O events, please call Job ID:201/221

The input event table is as follows:

Enter event	Event input
200	Start In
201	Reverse
202	Disable
203	Enable
204	Confirm
205	Clear
206	Seq Clear
207	Reboot
208	UserDefine1
209	UserDefine2
210	Gate Once

5.18.2   MODBUS Job I/O Output Trigger Event Setting

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
015E	350	1	I/O output event 1-event	Reference as output event table	0x03, 0x06, 0x10
015F	351	1	I/O output event 1-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0160	352	1	I/O output event 1-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
0161	353	1	Reserve	0	0x03, 0x06, 0x10
0162	354	1	I/O output event 2-event	Reference as output event table	0x03, 0x06, 0x10
0163	355	1	I/O output event 2-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0164	356	1	I/O output event 2-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
0165	357	1	Reserve	0	0x03, 0x06, 0x10
0166	358	1	I/O output event 3-event	Reference as output event table	0x03, 0x06, 0x10
0167	359	1	I/O output event 3-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0168	360	1	1	100~10000	0x03, 0x06, 0x10
0169	361	1	Reserve	0	0x03, 0x06, 0x10
016A	362	1	I/O output event 4-event	Reference as output event table	0x03, 0x06, 0x10
016B	363	1	I/O output event 4-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
016C	364	1	I/O output event 4-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
016D	365	1	Reserve	0	0x03, 0x06, 0x10
016E	366	1	I/O output event 5-event	Reference as output event table	0x03, 0x06, 0x10
016F	367	1	I/O output event 5-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0170	368	1	I/O output event 5-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
0171	369	1	Reserve	0	0x03, 0x06, 0x10
0172	370	1	I/O output event 6-event	Reference as output event table	0x03, 0x06, 0x10
0173	371	1	I/O output event 6-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0174	372	1	I/O output event 6-signal duration	100~10000	0x03,

			(milliseconds)		0x06, 0x10
0175	373	1	Reserve	0	0x03, 0x06, 0x10
0176	374	1	I/O output event 7-event	Reference as output event table	0x03, 0x06, 0x10
0177	375	1	I/O output event 7-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0178	376	1	I/O output event 7-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
0179	377	1	Reserve	0	0x03, 0x06, 0x10
017A	378	1	I/O output event 8-event	Reference as output event table	0x03, 0x06, 0x10
017B	379	1	I/O output event 8-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
017C	380	1	I/O output event 8-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
017D	381	1	Reserve	0	0x03, 0x06, 0x10
017E	382	1	I/O output event 9-event	Reference as output event table	0x03, 0x06, 0x10
017F	383	1	I/O output event 9-signal type	0: off 1: High level voltage 2: Pulse 3: Tool start	0x03, 0x06, 0x10
0180	384	1	I/O output event 9-signal duration (milliseconds)	100~10000	0x03, 0x06, 0x10
0181	385	1	Reserve	0	0x03, 0x06, 0x10

Please Note:
1. A single event corresponds to a single output number (signal)
2. For event and output signal type restrictions, please refer to the controller settings.
3. Event signal selection pulse signal output setting range (0.1 seconds to 10 seconds) 100~10000
4. After setting the I/O events, please call Job ID:201/221.

The output event table is as follows:

Output event No.	Event output
0	None
1	OK
2	NG
3	NG-High
4	NG-Low
5	OK-Sequence
6	OK-JOB
7	Tool Running
8	Tool Trigger
9	Reverse
10	UserDefine1
11	UserDefine2
12	Barcode stop
13	Barcode

5.18.3   MODBUS I/O Output Test

To use the output test function, you must first set the I/O output test function to on. Please set it to off when not in use.

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0182	386	1	I/O output function test	0: off 1: Start / Clear 2: Setting	0x03, 0x06, 0x10
0183	387	1	I/O output No.1 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0184	388	1	I/O output No.2 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0185	389	1	I/O output No.3 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0186	390	1	I/O output No.4 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0187	391	1	I/O output No.5 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0188	392	1	I/O output No.6 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
0189	393	1	I/O output No.7 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
018A	394	1	I/O output No.8 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10
018B	395	1	I/O output No.9 test	0: Low level voltage 1: High level 100 ~ : Pulse	0x03, 0x06, 0x10

Please Note:

The unit of the output pulse value is milliseconds. If it is written as 100, then it will be 100 milliseconds.

5.19 MODBUS JOB Barcode Stop Function Setting

This function setting is applicable in MODBUS Normal Job/ MODBUS Advanced Job.

Configuration order: Job Number > Sequence Number > Barcode Mode > Barcode data > Barcode Match Start Position > Barcode Match Quantity.

Address		size	Description	Range	Function Code
(HEX)	(DEC)				
0857	2135	1	Barcode function application job number	201 / 221	0x03, 0x06, 0x10
0858	2136	1	Barcode function application sequence number	1	0x03, 0x06, 0x10
0859	2137	1	Barcode mode	0: off 1: BS (STD) 2: BS (FREE) 3: SEQ switch	0x03, 0x06, 0x10
085A	**2138**	**50**	**Enter barcode data**	**ASCII**	**0x03, 0x10**
0896	2198	1	Barcode match from	1~ barcode length	0x03, 0x06, 0x10
0897	2199	1	Barcode match to	1~ barcode length	0x03, 0x06, 0x10

Note: Entering incorrect ASCII values will be ignored

Index A. ASCII string increase

A.1 Data Information

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
57AA	22442	125	Job Name	ASCII	0x03
5827	22567	125	Sequence name	ASCII	0x03

A.2 Current Process Status

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
58A4	22692	125	current JOB name	ASCII	0x03
5921	22817	125	current Sequence name	ASCII	0x03
599E	22942	125	current step name	ASCII	0x03

A.3 Controller settings

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5A1B	23067	80	Device name	ASCII	0x03

A.4 MODBUS Normal Job/Sequence setting

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5A98	23192	125	Modbus normal job Ok job name	ASCII	0x03, 0x06 0x10
5B15	23317	125	Modbus normal job sequence name	ASCII	0x03, 0x06 0x10

A.5 MODBUS Advanced Job/Sequence setting

Address (HEX)	Address (DEC)	size	Description	Range	Function Code
5B92	23442	125	Modbus advanced job name	ASCII	0x03, 0x06 0x10
5C0F	23567	125	Modbus advanced sequence name	ASCII	0x03, 0x06 0x10
5C8C	23692	125	Modbus advanced 1st step name	ASCII	0x03, 0x06 0x10
5D09	23817	125	Modbus advanced 2nd step name	ASCII	0x03, 0x06 0x10
5D86	23942	125	Modbus advanced 3rd step name	ASCII	0x03, 0x06 0x10
5E03	24067	125	Modbus advanced 4th step name	ASCII	0x03, 0x06 0x10
5E80	24192	125	Modbus advanced 5th step name	ASCII	0x03, 0x06 0x10
5EFD	24317	125	Modbus advanced 6th step name	ASCII	0x03, 0x06 0x10
5F7A	24442	125	Modbus advanced 7th step name	ASCII	0x03, 0x06 0x10
5FF7	24567	125	Modbus advanced 8th step name	ASCII	0x03, 0x06 0x10

Index B time zone

Index no.	Time zone	Index no.	Time zone
1	Africa/Abidjan	39	Africa/Maputo
2	Africa/Accra	40	Africa/Maseru
3	Africa/Addis_Ababa	41	Africa/Mbabane
4	Africa/Algiers	42	Africa/Mogadishu
5	Africa/Asmara	43	Africa/Monrovia
6	Africa/Asmera	44	Africa/Nairobi
7	Africa/Bamako	45	Africa/Ndjamena
8	Africa/Bangui	46	Africa/Niamey
9	Africa/Banjul	47	Africa/Nouakchott
10	Africa/Bissau	48	Africa/Ouagadougou
11	Africa/Blantyre	49	Africa/Porto-Novo
12	Africa/Brazzaville	50	Africa/Sao_Tome
13	Africa/Bujumbura	51	Africa/Timbuktu
14	Africa/Cairo	52	Africa/Tripoli
15	Africa/Casablanca	53	Africa/Tunis
16	Africa/Ceuta	54	Africa/Windhoek
17	Africa/Conakry	55	America/Adak
18	Africa/Dakar	56	America/Anchorage
19	Africa/Dar_es_Salaam	57	America/Anguilla
20	Africa/Djibouti	58	America/Antigua
21	Africa/Douala	59	America/Araguaina
22	Africa/El_Aaiun	60	America/Argentina/Buenos_Aires
23	Africa/Freetown	61	America/Argentina/Catamarca
24	Africa/Gaborone	62	America/Argentina/ComodRivadavia
25	Africa/Harare	63	America/Argentina/Cordoba
26	Africa/Johannesburg	64	America/Argentina/Jujuy
27	Africa/Juba	65	America/Argentina/La_Rioja
28	Africa/Kampala	66	America/Argentina/Mendoza
29	Africa/Khartoum	67	America/Argentina/Rio_Gallegos
30	Africa/Kigali	68	America/Argentina/Salta
31	Africa/Kinshasa	69	America/Argentina/San_Juan
32	Africa/Lagos	70	America/Argentina/San_Luis
33	Africa/Libreville	71	America/Argentina/Tucuman
34	Africa/Lome	72	America/Argentina/Ushuaia
35	Africa/Luanda	73	America/Aruba
36	Africa/Lubumbashi	74	America/Asuncion
37	Africa/Lusaka	75	America/Atikokan
38	Africa/Malabo	76	America/Atka
Index no.	Time zone	Index no.	Time zone

77	America/Bahia	117	America/Goose_Bay
78	America/Bahia_Banderas	118	America/Grand_Turk
79	America/Barbados	119	America/Grenada
80	America/Belem	120	America/Guadeloupe
81	America/Belize	121	America/Guatemala
82	America/Blanc-Sablon	122	America/Guayaquil
83	America/Boa_Vista	123	America/Guyana
84	America/Bogota	124	America/Halifax
85	America/Boise	125	America/Havana
86	America/Buenos_Aires	126	America/Hermosillo
87	America/Cambridge_Bay	127	America/Indiana/Indianapolis
88	America/Campo_Grande	128	America/Indiana/Knox
89	America/Cancun	129	America/Indiana/Marengo
90	America/Caracas	130	America/Indiana/Petersburg
91	America/Catamarca	131	America/Indiana/Tell_City
92	America/Cayenne	132	America/Indiana/Vevay
93	America/Cayman	133	America/Indiana/Vincennes
94	America/Chicago	134	America/Indiana/Winamac
95	America/Chihuahua	135	America/Indianapolis
96	America/Coral_Harbour	136	America/Inuvik
97	America/Cordoba	137	America/Iqaluit
98	America/Costa_Rica	138	America/Jamaica
99	America/Creston	139	America/Jujuy
100	America/Cuiaba	140	America/Juneau
101	America/Curacao	141	America/Kentucky/Louisville
102	America/Danmarkshavn	142	America/Kentucky/Monticello
103	America/Dawson	143	America/Knox_IN
104	America/Dawson_Creek	144	America/Kralendijk
105	America/Denver	145	America/La_Paz
106	America/Detroit	146	America/Lima
107	America/Dominica	147	America/Los_Angeles
108	America/Edmonton	148	America/Louisville
109	America/Eirunepe	149	America/Lower_Princes
110	America/El_Salvador	150	America/Maceio
111	America/Ensenada	151	America/Managua
112	America/Fort_Nelson	152	America/Manaus
113	America/Fort_Wayne	153	America/Marigot
114	America/Fortaleza	154	America/Martinique
115	America/Glace_Bay	155	America/Matamoros
116	America/Godthab	156	America/Mazatlan

Index no.	Time zone	Index no.	Time zone
157	America/Mendoza	197	America/Santiago
158	America/Menominee	198	America/Santo_Domingo
159	America/Merida	199	America/Sao_Paulo
160	America/Metlakatla	200	America/Scoresbysund
161	America/Mexico_City	201	America/Shiprock
162	America/Miquelon	202	America/Sitka
163	America/Moncton	203	America/St_Barthelemy
164	America/Monterrey	204	America/St_Johns
165	America/Montevideo	205	America/St_Kitts
166	America/Montreal	206	America/St_Lucia
167	America/Montserrat	207	America/St_Thomas
168	America/Nassau	208	America/St_Vincent
169	America/New_York	209	America/Swift_Current
170	America/Nipigon	210	America/Tegucigalpa
171	America/Nome	211	America/Thule
172	America/Noronha	212	America/Thunder_Bay
173	America/North_Dakota/Beulah	213	America/Tijuana
174	America/North_Dakota/Center	214	America/Toronto
175	America/North_Dakota/New_Salem	215	America/Tortola
176	America/Nuuk	216	America/Vancouver
177	America/Ojinaga	217	America/Virgin
178	America/Panama	218	America/Whitehorse
179	America/Pangnirtung	219	America/Winnipeg
180	America/Paramaribo	220	America/Yakutat
181	America/Phoenix	221	America/Yellowknife
182	America/Port-au-Prince	222	Antarctica/Casey
183	America/Port_of_Spain	223	Antarctica/Davis
184	America/Porto_Acre	224	Antarctica/DumontDUrville
185	America/Porto_Velho	225	Antarctica/Macquarie
186	America/Puerto_Rico	226	Antarctica/Mawson
187	America/Punta_Arenas	227	Antarctica/McMurdo
188	America/Rainy_River	228	Antarctica/Palmer
189	America/Rankin_Inlet	229	Antarctica/Rothera
190	America/Recife	230	Antarctica/South_Pole
191	America/Regina	231	Antarctica/Syowa
192	America/Resolute	232	Antarctica/Troll
193	America/Rio_Branco	233	Antarctica/Vostok
194	America/Rosario	234	Arctic/Longyearbyen
195	America/Santa_Isabel	235	Asia/Aden
196	America/Santarem	236	Asia/Almaty

Index no.	Time zone	Index no.	Time zone
237	Asia/Amman	277	Asia/Kamchatka
238	Asia/Anadyr	278	Asia/Karachi
239	Asia/Aqtau	279	Asia/Kashgar
240	Asia/Aqtobe	280	Asia/Kathmandu
241	Asia/Ashgabat	281	Asia/Katmandu
242	Asia/Ashkhabad	282	Asia/Khandyga
243	Asia/Atyrau	283	Asia/Kolkata
244	Asia/Baghdad	284	Asia/Krasnoyarsk
245	Asia/Bahrain	285	Asia/Kuala_Lumpur
246	Asia/Baku	286	Asia/Kuching
247	Asia/Bangkok	287	Asia/Kuwait
248	Asia/Barnaul	288	Asia/Macao
249	Asia/Beirut	289	Asia/Macau
250	Asia/Bishkek	290	Asia/Magadan
251	Asia/Brunei	291	Asia/Makassar
252	Asia/Calcutta	292	Asia/Manila
253	Asia/Chita	293	Asia/Muscat
254	Asia/Choibalsan	294	Asia/Nicosia
255	Asia/Chongqing	295	Asia/Novokuznetsk
256	Asia/Chungking	296	Asia/Novosibirsk
257	Asia/Colombo	297	Asia/Omsk
258	Asia/Dacca	298	Asia/Oral
259	Asia/Damascus	299	Asia/Phnom_Penh
260	Asia/Dhaka	300	Asia/Pontianak
261	Asia/Dili	301	Asia/Pyongyang
262	Asia/Dubai	302	Asia/Qatar
263	Asia/Dushanbe	303	Asia/Qostanay
264	Asia/Famagusta	304	Asia/Qyzylorda
265	Asia/Gaza	305	Asia/Rangoon
266	Asia/Harbin	306	Asia/Riyadh
267	Asia/Hebron	307	Asia/Saigon
268	Asia/Ho_Chi_Minh	308	Asia/Sakhalin
269	Asia/Hong_Kong	309	Asia/Samarkand
270	Asia/Hovd	310	Asia/Seoul
271	Asia/Irkutsk	311	Asia/Shanghai
272	Asia/Istanbul	312	Asia/Singapore
273	Asia/Jakarta	313	Asia/Srednekolymsk
274	Asia/Jayapura	314	Asia/Taipei
275	Asia/Jerusalem	315	Asia/Tashkent
276	Asia/Kabul	316	Asia/Tbilisi

Index no.	Time zone	Index no.	Time zone
317	Asia/Tehran	357	Australia/Lord_Howe
318	Asia/Tel_Aviv	358	Australia/Melbourne
319	Asia/Thimbu	359	Australia/NSW
320	Asia/Thimphu	360	Australia/North
321	Asia/Tokyo	361	Australia/Perth
322	Asia/Tomsk	362	Australia/Queensland
323	Asia/Ujung_Pandang	363	Australia/South
324	Asia/Ulaanbaatar	364	Australia/Sydney
325	Asia/Ulan_Bator	365	Australia/Tasmania
326	Asia/Urumqi	366	Australia/Victoria
327	Asia/Ust-Nera	367	Australia/West
328	Asia/Vientiane	368	Australia/Yancowinna
329	Asia/Vladivostok	369	Brazil/Acre
330	Asia/Yakutsk	370	Brazil/DeNoronha
331	Asia/Yangon	371	Brazil/East
332	Asia/Yekaterinburg	372	Brazil/West
333	Asia/Yerevan	373	CET
334	Atlantic/Azores	374	CST6CDT
335	Atlantic/Bermuda	375	Canada/Atlantic
336	Atlantic/Canary	376	Canada/Central
337	Atlantic/Cape_Verde	377	Canada/Eastern
338	Atlantic/Faeroe	378	Canada/Mountain
339	Atlantic/Faroe	379	Canada/Newfoundland
340	Atlantic/Jan_Mayen	380	Canada/Pacific
341	Atlantic/Madeira	381	Canada/Saskatchewan
342	Atlantic/Reykjavik	382	Canada/Yukon
343	Atlantic/South_Georgia	383	Chile/Continental
344	Atlantic/St_Helena	384	Chile/EasterIsland
345	Atlantic/Stanley	385	Cuba
346	Australia/ACT	386	EET
347	Australia/Adelaide	387	EST
348	Australia/Brisbane	388	EST5EDT
349	Australia/Broken_Hill	389	Egypt
350	Australia/Canberra	390	Eire
351	Australia/Currie	391	Etc/GMT
352	Australia/Darwin	392	Etc/GMT+0
353	Australia/Eucla	393	Etc/GMT+1
354	Australia/Hobart	394	Etc/GMT+10
355	Australia/LHI	395	Etc/GMT+11
356	Australia/Lindeman	396	Etc/GMT+12

Index no.	Time zone	Index no.	Time zone
397	Etc/GMT+2	437	Europe/Busingen
398	Etc/GMT+3	438	Europe/Chisinau
399	Etc/GMT+4	439	Europe/Copenhagen
400	Etc/GMT+5	440	Europe/Dublin
401	Etc/GMT+6	441	Europe/Gibraltar
402	Etc/GMT+7	442	Europe/Guernsey
403	Etc/GMT+8	443	Europe/Helsinki
404	Etc/GMT+9	444	Europe/Isle_of_Man
405	Etc/GMT-0	445	Europe/Istanbul
406	Etc/GMT-1	446	Europe/Jersey
407	Etc/GMT-10	447	Europe/Kaliningrad
408	Etc/GMT-11	448	Europe/Kiev
409	Etc/GMT-12	449	Europe/Kirov
410	Etc/GMT-13	450	Europe/Lisbon
411	Etc/GMT-14	451	Europe/Ljubljana
412	Etc/GMT-2	452	Europe/London
413	Etc/GMT-3	453	Europe/Luxembourg
414	Etc/GMT-4	454	Europe/Madrid
415	Etc/GMT-5	455	Europe/Malta
416	Etc/GMT-6	456	Europe/Mariehamn
417	Etc/GMT-7	457	Europe/Minsk
418	Etc/GMT-8	458	Europe/Monaco
419	Etc/GMT-9	459	Europe/Moscow
420	Etc/GMT0	460	Europe/Nicosia
421	Etc/Greenwich	461	Europe/Oslo
422	Etc/UCT	462	Europe/Paris
423	Etc/UTC	463	Europe/Podgorica
424	Etc/Universal	464	Europe/Prague
425	Etc/Zulu	465	Europe/Riga
426	Europe/Amsterdam	466	Europe/Rome
427	Europe/Andorra	467	Europe/Samara
428	Europe/Astrakhan	468	Europe/San_Marino
429	Europe/Athens	469	Europe/Sarajevo
430	Europe/Belfast	470	Europe/Saratov
431	Europe/Belgrade	471	Europe/Simferopol
432	Europe/Berlin	472	Europe/Skopje
433	Europe/Bratislava	473	Europe/Sofia
434	Europe/Brussels	474	Europe/Stockholm
435	Europe/Bucharest	475	Europe/Tallinn
436	Europe/Budapest	476	Europe/Tirane

Index no.	Time zone	Index no.	Time zone
476	Europe/Tirane	516	Libya
477	Europe/Tiraspol	517	MET
478	Europe/Ulyanovsk	518	MST
479	Europe/Uzhgorod	519	MST7MDT
480	Europe/Vaduz	520	Mexico/BajaNorte
481	Europe/Vatican	521	Mexico/BajaSur
482	Europe/Vienna	522	Mexico/General
483	Europe/Vilnius	523	NZ
484	Europe/Volgograd	524	NZ-CHAT
485	Europe/Warsaw	525	Navajo
486	Europe/Zagreb	526	PRC
487	Europe/Zaporozhye	527	PST8PDT
488	Europe/Zurich	528	Pacific/Apia
489	Factory	529	Pacific/Auckland
490	GB	530	Pacific/Bougainville
491	GB-Eire	531	Pacific/Chatham
492	GMT	532	Pacific/Chuuk
493	GMT+0	533	Pacific/Easter
494	GMT-0	534	Pacific/Efate
495	GMT0	535	Pacific/Enderbury
496	Greenwich	536	Pacific/Fakaofo
497	HST	537	Pacific/Fiji
498	Hongkong	538	Pacific/Funafuti
499	Iceland	539	Pacific/Galapagos
500	Indian/Antananarivo	540	Pacific/Gambier
501	Indian/Chagos	541	Pacific/Guadalcanal
502	Indian/Christmas	542	Pacific/Guam
503	Indian/Cocos	543	Pacific/Honolulu
504	Indian/Comoro	544	Pacific/Johnston
505	Indian/Kerguelen	545	Pacific/Kiritimati
506	Indian/Mahe	546	Pacific/Kosrae
507	Indian/Maldives	547	Pacific/Kwajalein
508	Indian/Mauritius	548	Pacific/Majuro
509	Indian/Mayotte	549	Pacific/Marquesas
510	Indian/Reunion	550	Pacific/Midway
511	Iran	551	Pacific/Nauru
512	Israel	552	Pacific/Niue
513	Jamaica	553	Pacific/Norfolk
514	Japan	554	Pacific/Noumea
515	Kwajalein	555	Pacific/Pago_Pago

Index no.	Time zone	Index no.	Time zone
556	Pacific/Palau	596	US/Eastern
557	Pacific/Pitcairn	597	US/Hawaii
558	Pacific/Pohnpei	598	US/Indiana-Starke
559	Pacific/Ponape	599	US/Michigan
560	Pacific/Port_Moresby	600	US/Mountain
561	Pacific/Rarotonga	601	US/Pacific
562	Pacific/Saipan	602	US/Samoa
563	Pacific/Samoa	603	UTC
564	Pacific/Tahiti	604	Universal
565	Pacific/Tarawa	605	W-SU
566	Pacific/Tongatapu	606	WET
567	Pacific/Truk	607	Zulu
568	Pacific/Wake		
569	Pacific/Wallis		
570	Pacific/Yap		
571	Poland		
572	Portugal		
573	ROC		
574	ROK		
575	Singapore		
576	SystemV/AST4		
577	SystemV/AST4ADT		
578	SystemV/CST6		
579	SystemV/CST6CDT		
580	SystemV/EST5		
581	SystemV/EST5EDT		
582	SystemV/HST10		
583	SystemV/MST7		
584	SystemV/MST7MDT		
585	SystemV/PST8		
586	SystemV/PST8PDT		
587	SystemV/YST9		
588	SystemV/YST9YDT		
589	Turkey		
590	UCT		
591	US/Alaska		
592	US/Aleutian		
593	US/Arizona		
594	US/Central		
595	US/East-Indiana		