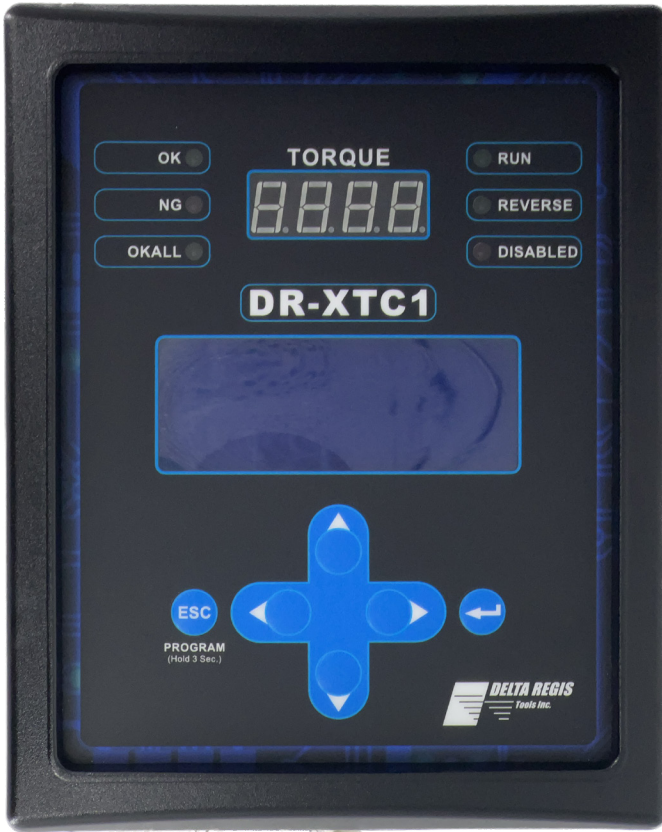




DR-XTC Series Transducer Controller Operation Manual



CAUTION — Please read, understand, and follow all operating and safety instructions in this manual before using a DR-XTC controller.

If you have any questions or concerns, please contact us at:

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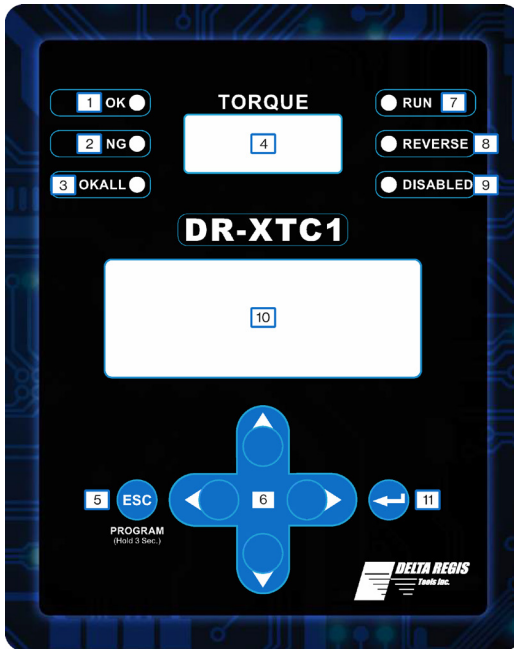
1. Product Specifications

Specifications		
Model	DR-XTC1	DR-XTC2
Input Voltage	AC 115/230V, 50/60 Hz, 6.3A	
I/O Output Voltage	DC 24V 50mA / 12V 100mA	
Count	1-99	
Count Method	Incremental/Decremental	
Torque Detection Value	Based on Screwdriver Specifications	
Screw Thread Number	0.0-999.9	
External Connection Input	Start/Forward/Reverse/Disable/Confirm	
External Connection Output	OK/NG/OK ALL/Start/Reverse	
Interface	RS-232, Micro SD, LAN, USB, I/O Terminals	
Compatible Software	deltaOnpoint	
External Dimensions	185 x 241.4 x 127 mm (7.3 x 9.5 x 5")	185 x 241.4 x 146.8 mm (7.3 x 9.5 x 5.8")
Weight	2.5 Kg (7.5 lbs)	3.7Kg (8.2 lbs)
DC Screwdriver model	ESL-XTE1/3/5/7 Series	ESL-XTE12/18/25 Series

2. Overview

2.1 Panel

1. OK Signal LED
2. NG Signal LED
3. OK ALL Signal LED
4. Torque Value Screen
5. ESC button (Return/Leave/Enter Programming Mode)
6. Up/Down/Left/Right Buttons
7. Tool Run Signal LED
8. Tool Reverse Signal LED
9. Tool Disabled Signal LED
10. LCM Display Screen
11. Enter Button (Select/Confirm)



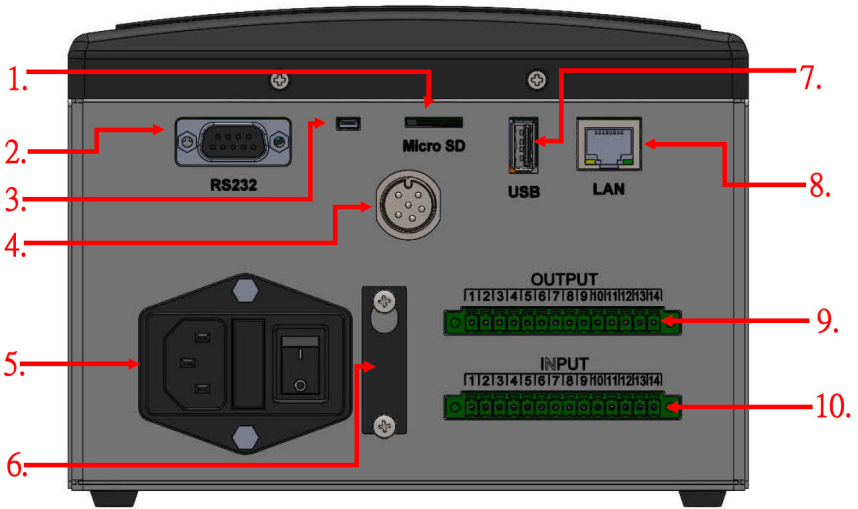
10. LCD Screen

```
Job: 1 JS: 1 Time: 0.000
TP : 1 TR: 0 Thread: 0.0
***** Torque:
Status:
```

Job: Job/Project
JS: Job Sequence
Time: Run Time
TP: Tightening Program
TR: Tightening Repeat
Thread: Rotations
Torque: Torque Value
Status: (OK/NGT/NGQ/NGC/OKALL)

2.2 Bottom Housing Connections

1. Micro SD card slot (Data Storage)
2. RS-232 Port (Data Cable)
3. Firmware update port
4. Tool connector
5. AC power socket, fuse, power switch
6. 110/220VAC Switch
7. Barcode Scanner Port
8. LAN comm port
9. Output Signal Terminal
10. Input Signal Terminal



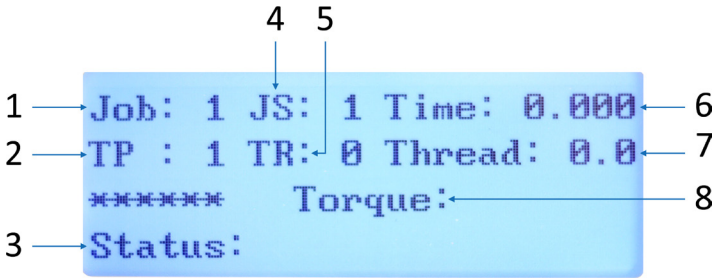
2.3 Top Housing

1. DC Fuse (10A/250V)
2. Grounding Screw



2.4 Settings Display (LCD)

1. Display Job Number
2. Display Sequence
3. Display Status (OK/NGT/NGO/OK ALL)
4. Display Job Sequence Number
5. Display Repeat Number
6. Display Run Time
7. Display Rotation Number
8. Display Torque Value



3. System Programming

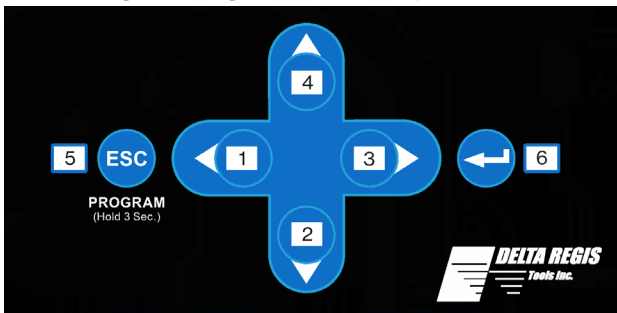
3.1 Hot Keys

1. Left button: Hold 3 seconds to jump to the first job sequence.
2. Down button: Hold 3 seconds to jump to the last job sequence.
3. Up button: Use up and down button to scroll through tool settings.
4. Right button: Hold for 3 seconds to jump to the next job sequence.

3.2 Programming Mode

5. Hold "ESCAPE" button for 3 seconds to enter programming mode.
6. Input password and press Enter button to enter programming mode.

***Default password is 0000. Once in programming mode use Up and Down arrows to select appropriate setting to change. Use Enter button to move forward through settings and use Escape button to move back.*



4. Control Setting

Name	Value	Function Description	Default
OPERATION MODE	STD/ADV	Connection mode. STD: Standalone mode. ADV: KL-AMS network system. (STD/ADV) connection mode.	STD
DEVICE ID	001~250	Equipment No.	01
TOOL START METHOD SETTING	Both Push Lever	Choose tool start mode.	Both
TOOL LED SETTING	Start on Always on Off	Set tool work-light LED on or off.	Off
EDIT JOB SEQUENCE SETTING	Job: 01~50 JS: 01~50 TP: 00~99 TR: 00~99 Reverse Button Setting: 1. Direction: CW/CCW 2. Force Level: 0~9 3. RPM: Please refer to the specification of screwdrivers	Setup screw sequence and repeats in job project, save up to 50 projects. JS: display job sequence. TP: display tightening program. TR: display repeat times. Reverse button settings: Forward (CW) and reverse (CCW) Force Level: Number of force segments Force 0(disabled) 1~9(10%~100%) RPM: Set reverse speed.	Job: 01 JS: 01 TP: 00 TR: 00
PROGRAM	00~50	Select Program	00
DEFAULT	N/Y	Return to factory default settings.	N
TORQUE UNIT	kgf.cm, N.m, kgf.m, lbf.in	Set up torque display unit.	kgf.cm
GATE MODE	Off, Once, Twice	OFF: Function off. Once: Workpiece in position (Short signal.) Twice: Workpiece in/out position (Open signal).	Off

4. Control Setting Continued

Name	Value	Function Description	Default
OKALL SIGNAL	Once/Each	OKALL signal output method <u>Once</u> : Output OKALL signal after all sequences completed. OKALL signal output time depends on At setting. <u>Each</u> : Output OKALL signal after each sequence completed. OKALL signal output time depends on At setting.	Once
STORE JOB BARCODE	1~50	“Scan job barcode” will show after pressing. After using scanner to scan barcode, it will save barcode into controller automatically. Setup sequence 1 to 50, will switch to barcode sequence. Barcode length should not exceed 20 bits.	01
BARCODE SETTING How to select/switch Job by barcode scanning	Define a valid barcode range From: 01~20 Bits: 01~20 To Binding Job (01~50)	Below steps will show you how to use certain section of a barcode to select/switch Job. Step 1. Determine the initial point of the section (01-20) Step 2. Determine section size (01-20) Step 3. Assign selected section to Job (01-50)	Job: 01 From: 01 Bits:01
BATCH MODE	INC/DEC	Select count up or count down	DEC
TIME SETTING	YYYY/MM/DD HH:MM:SS	Set up controller time Year/Month/Day/Hour/Minute /Second.	2018/01/01 01:01:01
SETUP PRODUCT serial number	Serial Number	Display device product serial number.	Product Barcode
PASSWORD	0000~9999	Set up password lock	0000
INTERNET SETTING	Offline/Online/ RS -232	Select data output from offline to online	Offline
ACOUSTIC MODE	On/Off	Setup beep.	On
LANGUAGE	Chinese/ English	Select language	English
FIRMWARE	V1.XXX	Display controller firmware version	V1.XXX

5. Program Setting

Name	Value	Function Description	Default
Screw Step	001~250	Step can set the speed, target value (torque / time / number of turns)	01
Program Name	*****	Setup program name	*****
RPM	Please refer to the specification of screwdrivers	Setup rotation speed (According to screwdriver type)	Please refer to the specification of screwdrivers
Option	Q/C	Setup tightening target	Q
Direction	CW/CCW	Setup rotation direction	CW
Delay Time	0.0~9.9	Setup interval time between screws	0.8
Target Thread	000.0~999.9	Setup target number of threads	005.0
Target Torque	Please refer to the specification of screwdrivers	Setup target torque	Please refer to the specification of screwdrivers
Hi Torque Kg.cm	000.01~99.99	Setup max. torque value	005.00
Lo Torque Kg.cm	000.00~99.98	Setup min. torque value	000.00
Hi Thread	000.1~499.9	Setup max. thread value	499.9
Lo Thread	000.0~499.8	Setup min. thread value	000.0

6. Screw Setting

Name	Value	Function Description	Default
Screw Sequence	01~99	Setup screw parameter.	01
Screw Name	*****	Setup screw parameter name.	*****
Screw Reverse	001~250	Setup screw reverse strategy	01
Sequence 1	001~250	Setup 1st sequence	01
Sequence 2	001~250	Setup 2nd sequence	00
Sequence 3	001~250	Setup 3rd sequence	00
Sequence 4	001~250	Setup 4th sequence	00
Sequence 5	001~250	Setup 5th sequence	00
OKALL Hold Time	0.0~9.9	AT: OKALL signal holding time	1.0

6. Screw Setting Continued

Name	Value	Function Description	Default
OK One Hold Time	0.0~9.9	OT: OK signal holding time	0.0
NOK Disable Screwdriver	ON/OFF	Disables screwdriver when error occurs. <u>ON</u> : When malfunction signal "NS" occurs, it will disable screwdriver immediately; User will need to press "ENTER" button to deactivate rotation (For I/O part. But screwdriver can reverse.) <u>OFF</u> : When malfunction "NG" occurs, screwdriver will not be disabled & it will not affect next activation. It will provide a warning	OFF
OKALL Disable Screwdriver	ON/OFF	Disable screwdriver when batch completed <u>ON</u> : Disables screwdriver after batch completed. Users need to press "ENTER" button (For I/O part, it is confirm signal) <u>OFF</u> : Screwdriver is not disabled after batch completed.	OFF

7. Extra Function

Name	Function Description
Export to SD Card	Export to controller internal setting value (Controller setting/Program setting/Screw setting)
Calibration Tool	Calibration mode

8. Confirm Mode

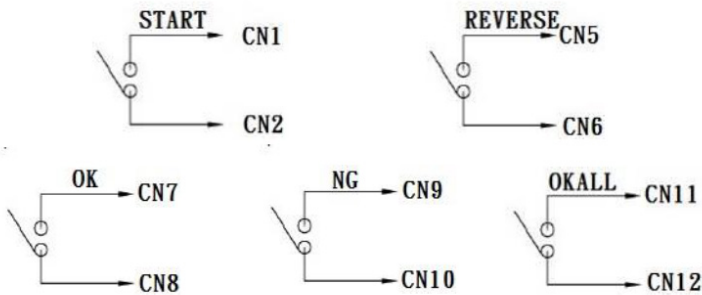
Code	Description	Disable Method
C1	Once external confirmation "GATE"	External GATE Signal; Trigger once
C2	Twice external confirmation "GATE"	External GATE Signal; Trigger twice
C3	When "OKALL disable screwdriver" function is on, LCM will display "C3" after a batch completed.	Panel Enter button/ External CONFIRM
C4	When "OKALL disable screwdriver" & "Gate mode-trigger once" functions are on; LCM will display "C4" after a batch completed.	External GATE Signal Trigger once + Panel Enter Button/ External CONFIRM
C5	When "OKALL disable screwdriver" & "Gate Mode-trigger twice" functions are on; LCM will display "C5" after a batch completed.	External GATE Signal Trigger twice + Panel Enter Button/ External CONFIRM
NS	When error occurs, LCM will display "NS"	Panel Enter Button/ External CONFIRM
BS	When Barcode Enabled, "BS" will be displayed before the job is executed.	Barcode scan function
OK	When screwdriver has completed proper tightening, LCM will display "OK"	NA
OKALL	When a batch is completed LCM will display "OK ALL"	NA
NG	<p><u>NG-F</u>: Sequence incomplete</p> <p><u>NS-F</u>: Press Confirm/Enter for next action.</p> <p><u>NGQ</u>: When output torque isn't inside set torque range. Output torque could be lower than "LQ" or higher than "HQ"</p> <p><u>NGC</u>: When number of output shaft rotations isn't inside set range. No. of rotation could be lower than "LC" or higher than "HC".</p>	NA

8. Confirm Mode Continued

Code	Description	Disable Method
E3	Voltage-drop protection: When the voltage of the electric screwdriver drops suddenly, the electric screwdriver will be disabled, and the LCM displays "E3" symbol, representing that the screwdriver is currently under low-voltage protection.	NA
E4	Over-temperature protection: When the internal temperature of the electric screwdriver is too high, the electric screwdriver will be disabled, and the LCM displays "E4" representing that the screwdriver is currently under over-temperature protection.	NA
E5	Stall protection: When the startup of the electric screwdriver motor is abnormal, the electric screwdriver will be stopped, and the LCM displays "E5" representing that the screwdriver is currently under motor stall protection.	NA
E7	Torque abnormal: When sensor has received the abnormal parameters from screwdriver, it will stop the actions of the screwdriver and display "E7" symbol on the LCM.	NA
E8	Temp cooling down state: When the screwdriver enters the temperature protection, it will disable the screwdriver and display "E8" symbol on the LCM.	NA
E9	Abnormal operation: When the screwdriver runs continuously for more than 20 seconds, it will disable the screwdriver and display "E9" symbol on the LCM.	NA
Er	GATE function abnormal: When the GATE function is on and function abnormal, the buzzer will alarm and LCM displays "ER".	NA
ES	Screwdriver communication error: If a communication error occurs, the electric screwdriver will be disabled and the LCM displays "ES".	NA
EOC	EOC Calibration is required	NA
ELS	When LCM displays the word ELS, it indicates that the SD card capacity is less than 100MB, and it will disable the screwdriver. Press the Enter key to release the screwdriver.	Press Enter Button

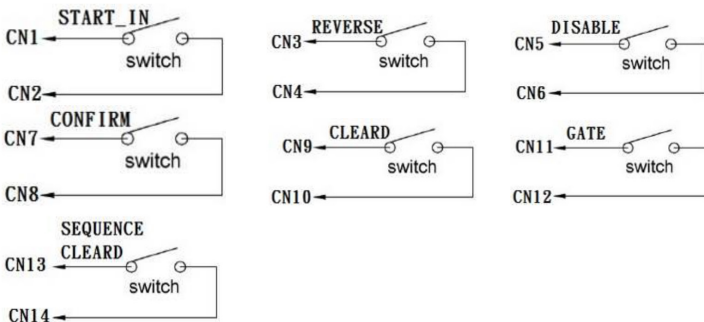
9. External Output Control Function Description

Connector No.	Definition	Description
CN 1	START	RUN FWD: When the screwdriver is on, CN1 & 2 short. When it short, CN1+CN2 short. When it open, CN1+CN2 open.
CN 2	COM	
CN 3	-	-
CN 4	-	
CN 5	REVERSE	RUN BWD: When the screwdriver reverse, CN5 & 6 short. When it short, CN5+CN6 short. When it open, CN5+CN6 open.
CN 6	COM	
CN 7	OK	OK: When a screw is fastened, CN7 & 8 short. When it short, CN7+CN8 short. When it open, CN7+CN8 open.
CN 8	COM	
CN 9	NG	NOK: When there is malfunction, CN9 & 10 short When it short, CN9+CN10 short. When it open, CN9+CN10 open.
CN 10	COM	
CN 11	OKALL	OK SEQUENCE: When it completed sequence setting screw, CN11 & 12 short. When it short, CN11+CN12 short. When it open, CN11+CN12 open.
CN 12	COM	
CN 13	VDC	Output voltage 24Vdc/50mA & 12Vdc/100mA
CN 14	GND	Output voltage GND



10. External Input Control Function Description

Connector No.	Definition	Description
CN 1	External start signal input START_IN	1. When CN1+CN2 short (CLOSE) screwdriver starts. 2. When CN1+CN2 open (OPEN) screwdriver stops.
CN 2	GND	
CN 3	External reverses signal input REVERSE	1. When external reverse signal CN3+CN4 short (CLOSE) first and activates signal CN1+CN2 short (CLOSE), screwdriver will start in reverse. 2. When external reverse signal CN3+CN4 open (OPEN) first and activates signal CN1+CN2 short (CLOSE), screwdriver will start regular.
CN 4	GND	
CN 5	External disable signal input DISABLE	1. When CN5+CN6 short (CLOSE), screwdriver cannot be activated. 2. When CN5+CN6 open (OPEN), screwdriver can be activated.
CN 6	GND	
CN 7	External confirm signal input CONFIRM	1. When system requests to press confirm button, we can short CN7+CN8 (CLOSE) instead. 2. After CONFIRM is executed, the NG signal is also cleared.
CN 8	GND	
CN 9	External clear signal input CLEARED	1. To clear sequence/program, it can be activated by shorting CN9+CN10 (CLOSE)
CN 10	GND	
CN 11	External sensor switch GATE	1. By inputting a confirm signal, it makes unit to judge its effective value. 2. Sensor switch: Switch in process can be CN 12 GND one or two.
CN 12	GND	
CN 13	External confirm SEQUENCE CLEARED	When we need to clean sequence, it can be activated by shorting CN13+CN14 (CLOSE).
CN 14	GND	



9. Data transmission description & flow control suggestion

1. Controller power on and time synchronization

After controller is powered on, it will send data {REQ100...} every second to external device such as computer PLC/AMS. The external device needs to reply {CMD100,...} to sync the external device time to the controller.

If the controller does not receive {CMD100,...},{REQ100,...} will be sent again after 10 seconds.

2. When controller receives barcode information, it will send scanned data and data format as {REQ101,...} to external device for control judgement or record saving. External device needs to reply {CMD100,...}.

3. After controller is powered on and screwdriver shuts off, brake signal format as {DATA100,...} will be sent. Every shut off will cause column 14 (no. of total tightenings on controller) to increase by 1. External device needs to reply {CMD100,...}, if not, the controller will keep sending DATA100(only update date time) and column 14 (no. of total tightenings on controller) value will remain unchanged.

4. Shut off data will be sent after each shut off. Use the column 14 (no. of tightenings on controller) to judge if there is new shut off data or not.

5. When controller receives feedback and format as {CMD100,...} from external device, controller will resume automatically sending {REQ100,...} and be able to configure controller time.

6. Recommended software control flow as below:

P.S: The content of [CMD100] in flow as the below:

{CMD100,YEAR,MONTH,DAY,HOUR,MINUTE,SECOND,0000,0000,0,1}

Str2 0001~9999 YEAR

Str3 01~12 MONTH

Str4 01~31 DAY

Str5 00~23 HOUR

Str6 00~59 MINUTE

Str7 00~59 SECOND

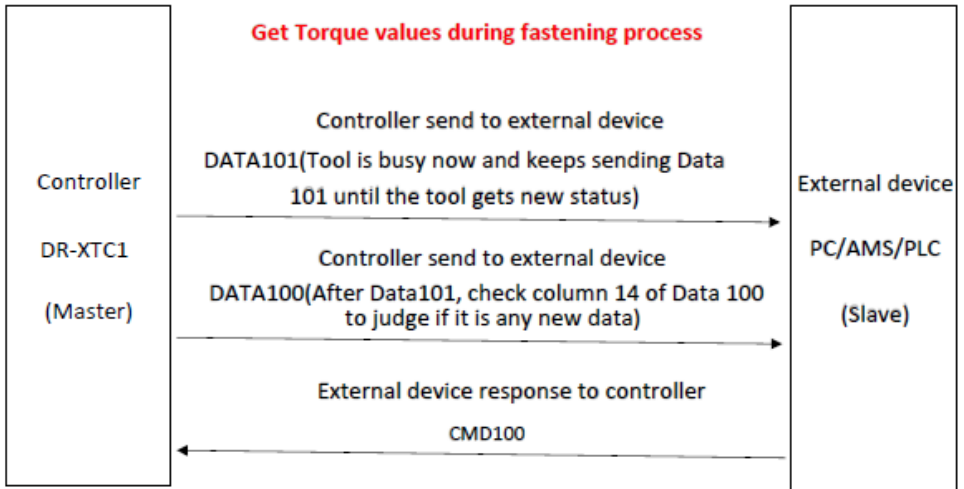
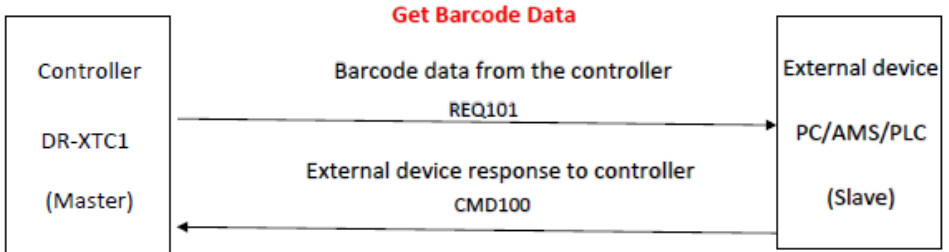
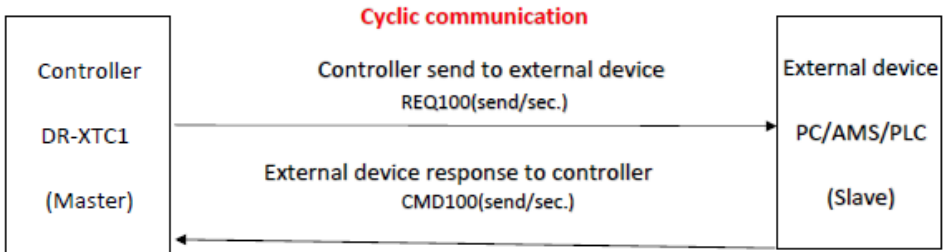
Str8 0000-9999 Check Sum (YEAR+MONTH+DAY+HOUR+MINUTE+SECOND = Check Sum)

Str9 0000-9999 Key Code (Check Sum + 5438 = Key Code)

Str10 (default: 0)

Str11 Instruction number (Same as the Instruction number of REQ100)

7. When the screwdriver is running, it will start transmitting {DATA101,...} until the screwdriver status (for example: NG,OK...) is generated.



Basic Data Output Protocol Description

COMPORT Setting: Baud rate : 115200/9600(CTS 1.7X), Data bit : 8 , Stop bit : 1, Parity bit :NON

Serial communication Mode -ASCII (American Standard Code for Information Interchange)

There are three basic data output formats send from device (TCG) to external system (DAS/AMS/Other System) via the

- 1.Command {REQ100} : Send from Device to Host (Send device status to host per second after device startup ready)
- 2.Command {REQ101} : Send from Device to Host (Send barcode data to host immediately after barcode scanned a data)
- 3.Command {DATA100} : Send from Device to Host (Send last shutoff data to host immediately and repeat per second)
- 4.Command {CMD100} : Send from Host to Device (Host respond system time to device)
- 3.Command {DATA101} : Send from Device to Host (Send the data to the host immediately when the screwdriver is ps : 1.Device will change output data from {DATA100} to {REQ100} after read {CMD100} from external system
- 2.The character position in the string does not contain a comma

1. {REQ100} Data format/example {REQ100,2019,11,26,13,39,57,2165,7603,0,0,003,TMP0005,TCG-TEST,1,1,10,10,1,10,4,1,1.008,1.09,1,0,99/99,100,}

Field	Parameter	Value	Data Type	String Length	Position	Description
1	Header+CMD	{REQ100	String	7 Byte	1-7	Header+Command code
2	Year	0001~9999	String	4 Byte	9-12	Year
3	Month	01~12	String	2 Byte	14-15	Month
4	Date	01~31	String	2 Byte	17-18	Date
5	Hour	00~23	String	2 Byte	20-21	Hour(24 hours)
6	Minute	00~59	String	2 Byte	23-24	Minute
7	Second	00~59	String	2 Byte	26-27	Second
8	Check Sum	0000~9999	String	4 Byte	29-32	
9	Key Code	0000~9999	String	4 Byte	34-37	Key Code
10	unused	0	String	1 Byte	39	unused
11	unused	0	String	1 Byte	41	unused
12	Device ID	001~250	String	3 Byte	43-45	Device index number arranged in the same assembly line (or workstation)
13	Tool SN	20 Bytes	String	20 Byte	47-66	Screwdriver serial no.
14	Device SN	20 Bytes	String	20 Byte	68-87	Device serial no.
15	Device Operation Mode	0~3	String	1 Byte	89	Mode : 0 : ADV (Connection mode), 1 : STD (Standalone Mode), 2 : ALI (Alignment mode) , 3 : SET(Setting mode)
16	Sequence Control Mode	0~1	String	1 Byte	91	0 : Sequence control mode 1 : Skip sequence mode
17	Job	01~50	String	2 Byte	93-94	Selected Job
18	Sequence	01~50	String	2 Byte	96-97	Selected Sequence
19	Select Tool	1	String	1 Byte	99	Selected Tool (Current activated screwdriver)
20	Program Unit	01~99	String	2 Byte	101-102	Selected Unit Program
21	Device Type	4	String	1 Byte	104	Device type (4:TCG)

22	Tool Connect	0~1	String	1 Byte	106	Screwdriver connection status (1: Connect, 0: Not connect)
23	Device Version	0.000~9.999	String	5 Byte	108-112	Device firmware version
24	Tool Version	0.00~9.99	String	4 Byte	114-117	Screwdriver firmware version
25	Tool Enable/Disable Status	0~1	String	1 Byte	119	Screwdriver status (0: Disable, 1: Enable)
26	Tool Stop Status	0~9,A~J	String	1 Byte	121	Tool Stop Status (0: None , 1:NS, 2:AS, 3:E3, 4:E4, 5:E5, 7:E7, 8:E8, 9:E9, A:EPC, B:ESC, C:ES, D:Er, E:C1, F:C2, G:C4, H:C5 I:EOC J:BS)
27	Screw count	00~99/00~99	String	5 Byte	123-127	The numbers of remaining screws / Total screws
28	Instruction number	1~255	String	3Byte	129-131	Instruction number
29	Tail	}	String	1 Byte	133	Tail
						ASCII code LF
						ASCII code CR
					{REQ100,...}Total:133	
Remark Item 1 to 29 are separated by "," (ASCII 0x2c)						
2. {REQ101} Barcode format/example	{REQ101.2019.11.26.15.56.48,2175,7613,OPID0000001,TMP0005,TCG-TEST,100,}					
Field	Parameter	Value	Data Type	String Length	Position	Description
1	Header+CMD	{REQ101	String	7 Byte	1-7	Header+Command code
2	Year	0001~9999	String	4 Byte	9-12	Year
3	Month	01~12	String	2 Byte	14-15	Month
4	Date	01~31	String	2 Byte	17-18	Date
5	Hour	00~23	String	2 Byte	20-21	Hour(24 hours)
6	Minute	00~59	String	2 Byte	23-24	Minute
7	Second	00~59	String	2 Byte	26-27	Second
8	Check Sum	0000-9999	String	4 Byte	29-32	
9	Key Code	0000-9999	String	4 Byte	34-37	Key Code
10	Barcode	1~30 Byte	String	30 Byte	39-68	Barcode data
11	Tool SN	20 Bytes	String	20 Byte	70-89	Screwdriver serial no.
12	Device SN	20 Bytes	String	20 Byte	91-110	Device serial no.
13	Instruction number	1~255	String	3 Byte	112-114	Instruction number
14	Tail	}	String	1 Byte	116	Tail
15						ASCII code LF
16						ASCII code CR
					{REQ101, }Total: 116	
Remark Item 1 to 14 are separated by "," (ASCII 0x2c)						

Field	Parameter	Value	Data Type	String Length	Position	Description
3. {DATA100} Data format/example	{DATA100,2019,11,26,16,24,48,2144,7582,4,003,TMP0005_____,TCG-TEST_____,0000000001,01,01,01,*****,01,0000.0000,0,0000.4720,0003.0000,99/99,1,1NG-F,0,}					
1	Header+CMD	{DATA100	String	8 Byte	1-8	Header+Command code
2	Year	0001~9999	String	4 Byte	10-13	Year
3	Month	01~12	String	2 Byte	15-16	Month
4	Date	01~31	String	2 Byte	18-19	Date
5	Hour	00~23	String	2 Byte	21-22	Hour(24 hours)
6	Minute	00~59	String	2 Byte	24-25	Minute
7	Second	00~59	String	2 Byte	27-28	Second
8	Check Sum	0000-9999	String	4 Byte	30-33	
9	Key Code	0000-9999	String	4 Byte	35-38	Key Code
10	Device Type	4	String	1 Byte	40	Device type (4:TCG)
11	Device ID	001~250	String	3 Byte	42-44	Device index number arranged in the same assembly line (or workstation)
12	Tool SN	20 Bytes	String	20 Byte	46-65	Screwdriver serial no. Less than 20 Bytes ,fill the underline" "
13	Device SN	20 Bytes	String	20 Byte	67-86	Device serial no. Less than 20 Bytes ,fill the underline" "
14	Device Count	0000000001~9999999999	String	10 Byte	88-97	Device accumulated shutoff count after poweron
15	Job	01~50	String	2 Byte	99-100	Selected Job
16	Sequence	01~50	String	2 Byte	102-103	Selected Sequence
17	Program unit	01~99	String	2 Byte	105-106	Selected Unit Program
18	Program Name	1~6 Bytes	String	6 Byte	108-113	Setup program name, it can choose number, capitals and lower case letters, number for program name.
19	Select Tool	01~09	String	2 Byte	115-116	Selected Tool (Current activated screwdriver)
20	Torque	Please refer to the specification of screwdrivers	String	9 Byte	118-126	Shutoff torque(example:0000.0000)
21	Torque unit	0~3	String	1 Byte	128	Torque unit(0: kgf.cm, 1: N.m, 2: lbf.in, 3: kgf.m)
22	Fastening time	0000.0000~0009.9990	String	9 Byte	130-138	Fastening time(ms)
23	Fastening thread	0000.0000~9999.99	String	9 Byte	140-148	Fastening thread
24	Screw count	00~99/00~99	String	5 Byte	150-154	The numbers of remaining screws / Total screws
25	INC/DEC	0~1	String	1 Byte	156	INC/DEC(0: INC, 1: DEC)

26	Status	OK,NGQ,NGC,OKAL,NG-F,NS-F	String	5 Byte	158-162	Fastening status OK:Each time when the fastening is complete. NGQ: stop torque is less than L/more than H. NGC: stop number of turns is less than L/more than H. OKALL:Each time when a batch is complete. NG-F : Sequence incomplete 1(Number represents step,5 step) NS-F : Press Confirm/Enter for next action. 1(Number represents step,5 step) Less than 5 Bytes ,fill the underline" _".
27	Tool Stop Status	0~9,A~H	String	1 Byte	164	Tool Stop Status(0: None , 1:NS, 2:AS, 3:E3, 4:E4, 5:E5, 7:E7, 8:E8, 9:E9, A:EPC, B:ESC, C:ES, D:Er, E:C1, F:C2, G:C4, H:C5)
28	Tail	}	String	1 Byte	166	Tail
29						ASCII code LF
30						ASCII code CR
			{DATA100, }	Total:166		
Remark Item 1 to 28 are separated by "," (ASCII 0x2c)						
4. {CMD100} Data format/example	{CMD100.2019.11.26.16.24.48.2144.7582.0.100.}					
Field	Parameter	Value	Data Type	String Length	Position	Description
1	Header+CMD	{CMD100	String	7 Byte	1-7	Header+Command code
2	Year	0001~9999	String	4 Byte	9-12	Year
3	Month	01~12	String	2 Byte	14-15	Month
4	Date	01~31	String	2 Byte	17-18	Date
5	Hour	00~23	String	2 Byte	20-21	Hour(24 hours)
6	Minute	00~59	String	2 Byte	23-24	Minute
7	Second	00~59	String	2 Byte	26-27	Second
8	Check Sum	0000-9999	String	4 Byte	29-32	YEAR+MONTH+DAY+HOUR+MINUTE+SECOND = Check Sum
9	Key Code	0000-9999	String	4 Byte	34-37	Check Sum+5438=Key Code
10	Device Name	0~1	String	1 Byte	39	Device Name(0: AMS, 1: DAS)
11	Instruction number	1~255	String	3 Byte	41-43	Instruction number
12	Tail	}	String	1 Byte	45	Tail

13						ASCII code LF
14						ASCII code CR
					(CMD100,)Total:	
Remark	1.Item 1 to 12 are separated by "," (ASCII 0x2c)					
4. {DATA101} Data format/example	{DATA101,00.612,000.25}					
Field	Parameter	Value	Data Type	String Length	Position	Description
1	Header+CMD	{DATA101	String	8 Byte	1-8	Header+Command code
2	Fastening time	00.000~99.999	String	6Byte	10-15	Fastening time
3	Torque	Please refer to the specification of screwdrivers}	String	7Byte	17-23	Torque(Torque value varies according to the torque unit)+Tail
4						ASCII code LF
5						ASCII code CR
					{DATA101,	
Remark	1.Item 1 to 3 are separated by "," (ASCII 0x2c)					
Communication interface :	RS-232C 9 Pin Female (DCE) to PC or PLC (DTE)					
Connection RS485 :	USB					
	1.Barcode scanner					
						
	2.Connection method					
						
Remark	※ The external device can judge the 14th field (Device Count) of response data to check if there is any					

DR-XTC1 Control Command Input Protocol Description

Delta Regis, Input Protocol, R0.0

1. Command (CMD104) : Host to Device(Host Appoint Tool and Job Sequence to Device)

No.	Parameter	Value/Format	Data Type	Description
	1. Header+CMD	(CMD104	String	Header+Command code
	2. Year	0001~9999	String	Year
	3. Month	01~12	String	Month
	4. Date	01~31	String	Date
	5. Hour	00~23	String	Hour
	6. Minute	00~59	String	Minute
	7. Second	00~59	String	Second
	8. Check Sum	0000~9999	String	Check Sum(YEAR+MONTH+DAY+HOUR+MINUTE+SECOND = Check Sum)
	9. Key Code	0000~9999	String	Key Code(Check Sum + 5438 = Key Code)
	10. unused	0	String	unused
	11. Select Job	1~50	String	Select Job
	12. Select Sequence	1~50	String	Select Sequence
	13. Instruction number	1~255	String	Instruction number
	14.)	String	Tail
	15.			ASCII code LF
	16.			ASCII code CR
	Remark	Item 1 to 13 are separated by "*" (ASCII 0x2c)		

DR-XTC Series

Transducer Controller