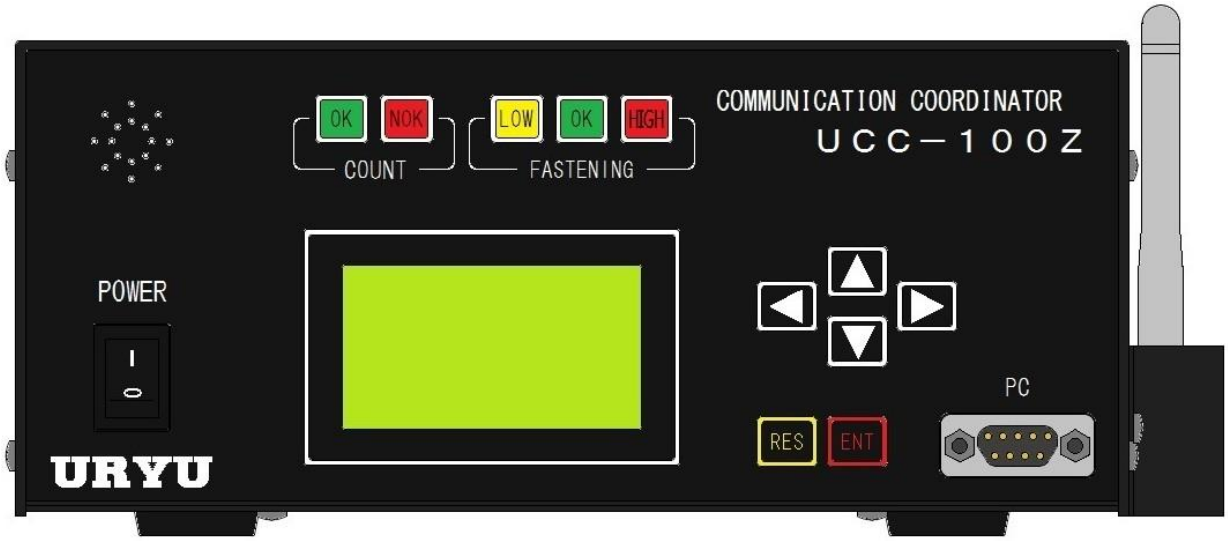
INSTRUCTION MANUAL

UCC-100Z

COMMUNICATION COORDINATOR FOR UBX-AFZ BATTERY-POWERED PULSE WRENCHES



EDITION 1.3

URYU SEISAKU, LTD.

1. Safety instructions

Do peruse this instruction manual before installation, operation, maintenance and inspection of this system. Use this system only after you master knowledge of UCC-100Z, safety information and warning descriptions. Keep this instruction manual so you can refer to at any time necessary. Take note that this instruction manual classifies the safety instructions into two signs DANGER and WARNING according to the degree of seriousness and urgency.


DANGER : A fatality and/or heavy personal injury is highly possible by improper operation. Urgent warning is essential in the event of accident.


WARNING : A dangerous situation accompanying mid-slight personal injury and/or property damage is possible by improper operation.


WARNING sign also warns the risk of serious consequences depending on the situation. So, follow all instructions given in this instruction manual always.

◆Installation and surroundings


WARNING

- Place on a metal or other incombustible component to prevent fire.
- Keep away from the combustibles to prevent fire.
- Avoid foreign material intrusion to prevent fire.
- Set UCC-100Z on a site that can bear its weight to avoid personal injury from accidental falling.
- Keep the workplace well lighted and clean to avoid personal injury.
- Do not wear loose-fitting clothes or dangling jewelry to operate this system. Operate this system in proper clothes on always. In addition, be careful not to get your hair caught in tools, tie long hair with a rubber ribbon or the similar, and wear a protective helmet to prevent personal injury.
- Securely install and fix this system to avoid personal injury in case of an emergency like an earthquake.

◆Wiring

DANGER

●Be sure to turn off UCC-100Z prior to wiring to avoid electric shock or fire.
●Make sure the ground wire is properly grounded to avoid electric shock or fire.
●Carry out wiring after you installed UCC-100Z to avoid electric shock or fire.
●Use expert electricians to make wiring to avoid electric shock or fire.
●Use always bar crimp contact when wiring UCC-100Z rear terminals to avoid electric shock or fire.

WARNING

●Make sure the rated voltage of this system is the same as power supply from the receptacle to avoid an electric shock or fire.
●Make correct wiring. There may be an electric shock if the wiring is wrong.

◆Handling and operation

DANGER

●Assurance of work-site safety by operators themselves before switching UCC-100Z is essential to prevent personal injury.
●Never touch switching devices with wet hands to avoid electric shock.
●Never touch the current-carrying UCC-100Z rear terminals even if the tool is not in operation to avoid electric shock.
●Neither damage, stress, load up, nor pinch power cord to avoid electric shock.
●Keep UCC-100Z switched off when you do not use this system.

WARNING

●Never overwork this system more than intended to avoid an injury or burn risk.

●Run this system under good footing and environment. Operation with awkward posture is very dangerous.

●Use this system with the greatest caution. Neither do careless and unreasonable action, use when you are tired, nor operate this system for a long time without break.

◆Maintenance & inspection

DANGER

●Inspect and/or replace this system only after it is switched off. Then disconnect power cord from receptacle to avoid electric shock.

●Only experts of this system shall conduct the maintenance and inspection. Take off a watch or jewels before the conduct. Inspect the power cord periodically. Only experts repair or replace the power cord if necessary. Use only isolated tool to avoid electric shock.

●Never dismantle this system on site to avoid electric shock, personal injury and fire. Send it to URYU or his designated distributor for repair and inspection.

◆Disposal

WARNING

●Dispose of this system as an industrial waste.

◆Miscellaneous concerns

DANGER

●Never modify this system to avoid electric shock, injury and fire.

●Stop the operation immediately and disconnect this system from receptacle in an emergency.

Special consideration

●Note that all graphic explanations in this manual can show some components unmasked form to explain the interior details which are covered by safety masking under regular operation. Be sure to put the masking back to this system as specified in this manual before operation and run it as intended.

●Keep any unauthorized persons away from this system.

●This is not a waterproof system. Never expose this system to water or moisture. Otherwise there may be an electric shock or fire.

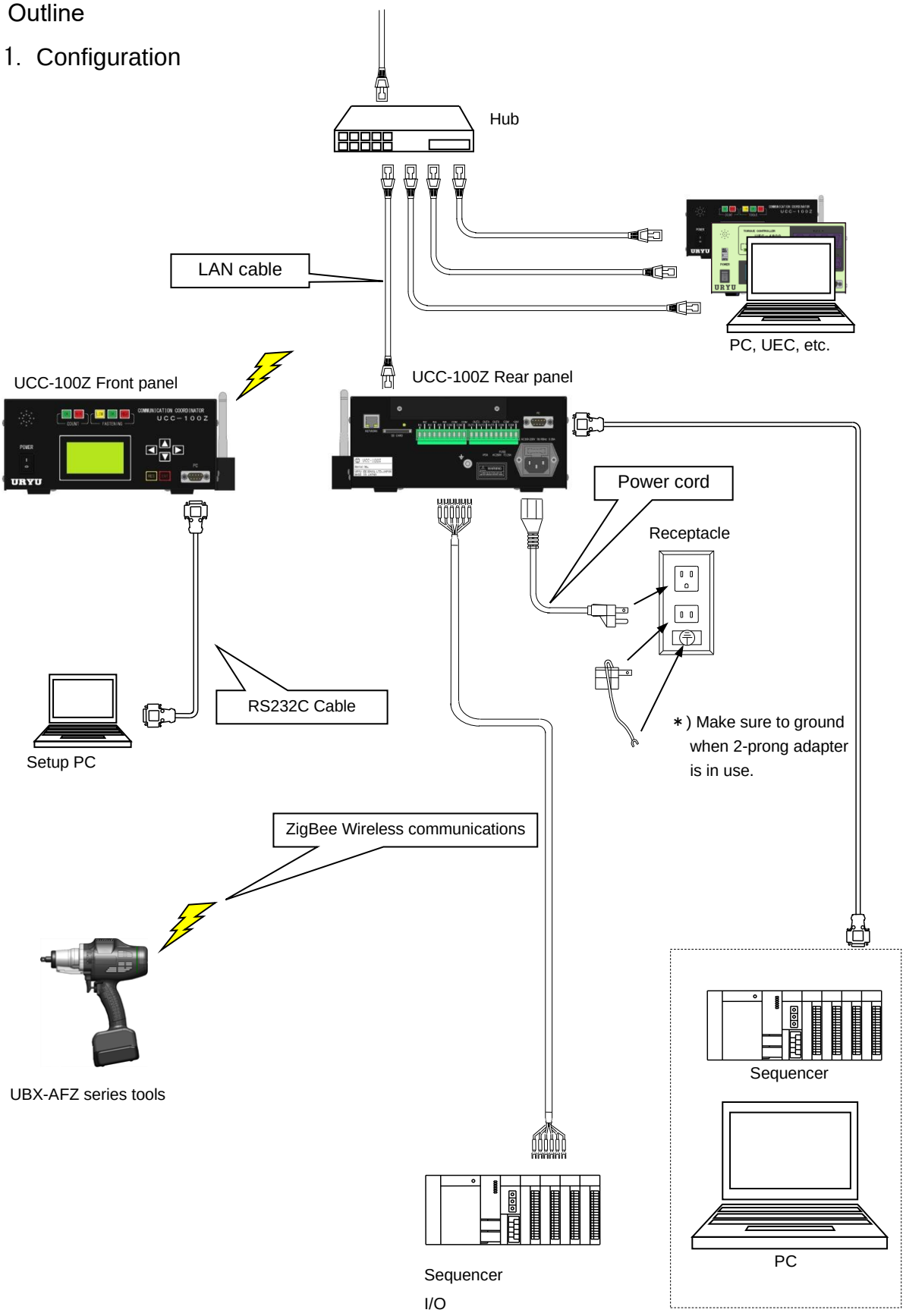
Disclaimer

●Contents of this manual is subject to change without notice.

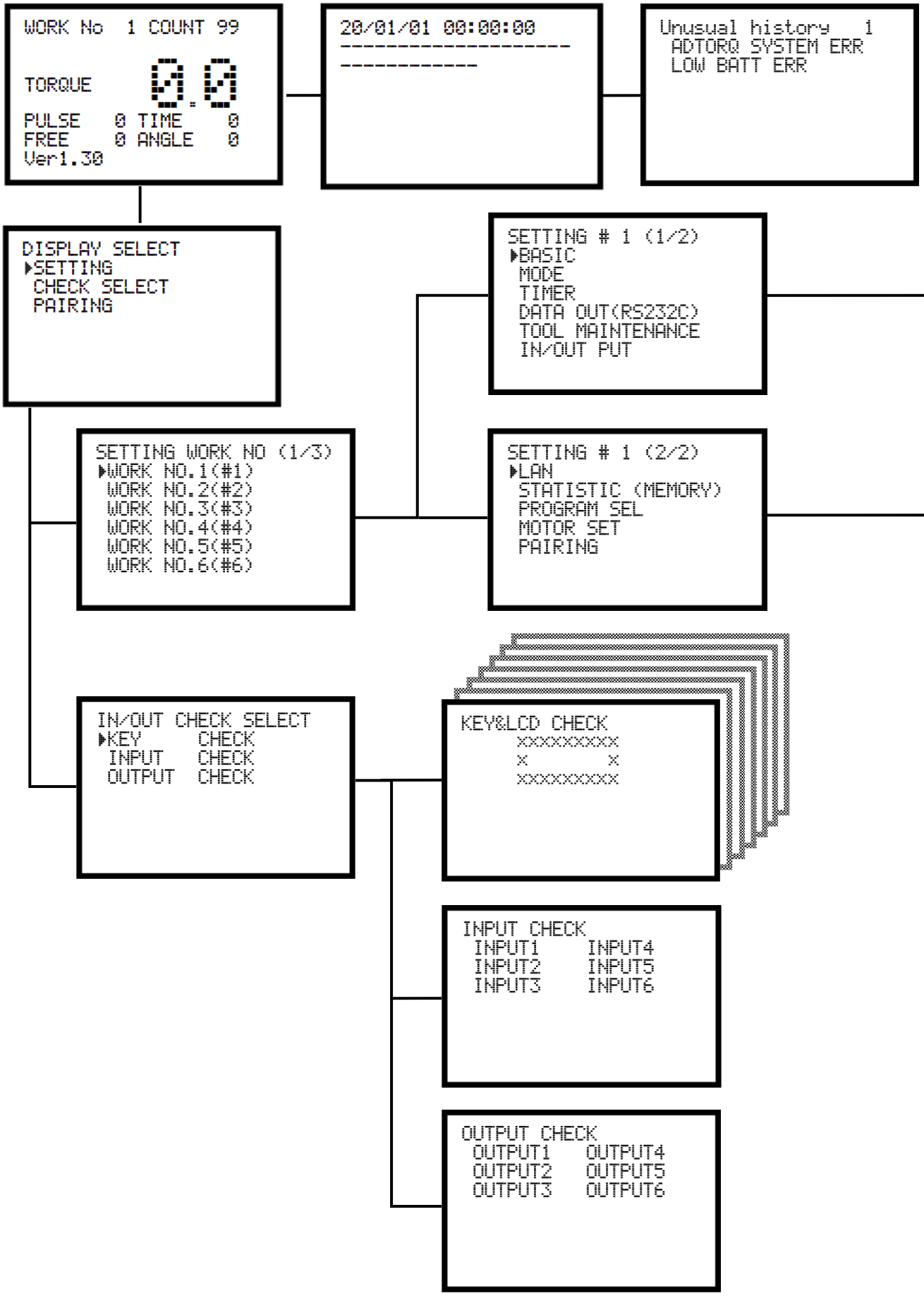
Copyright

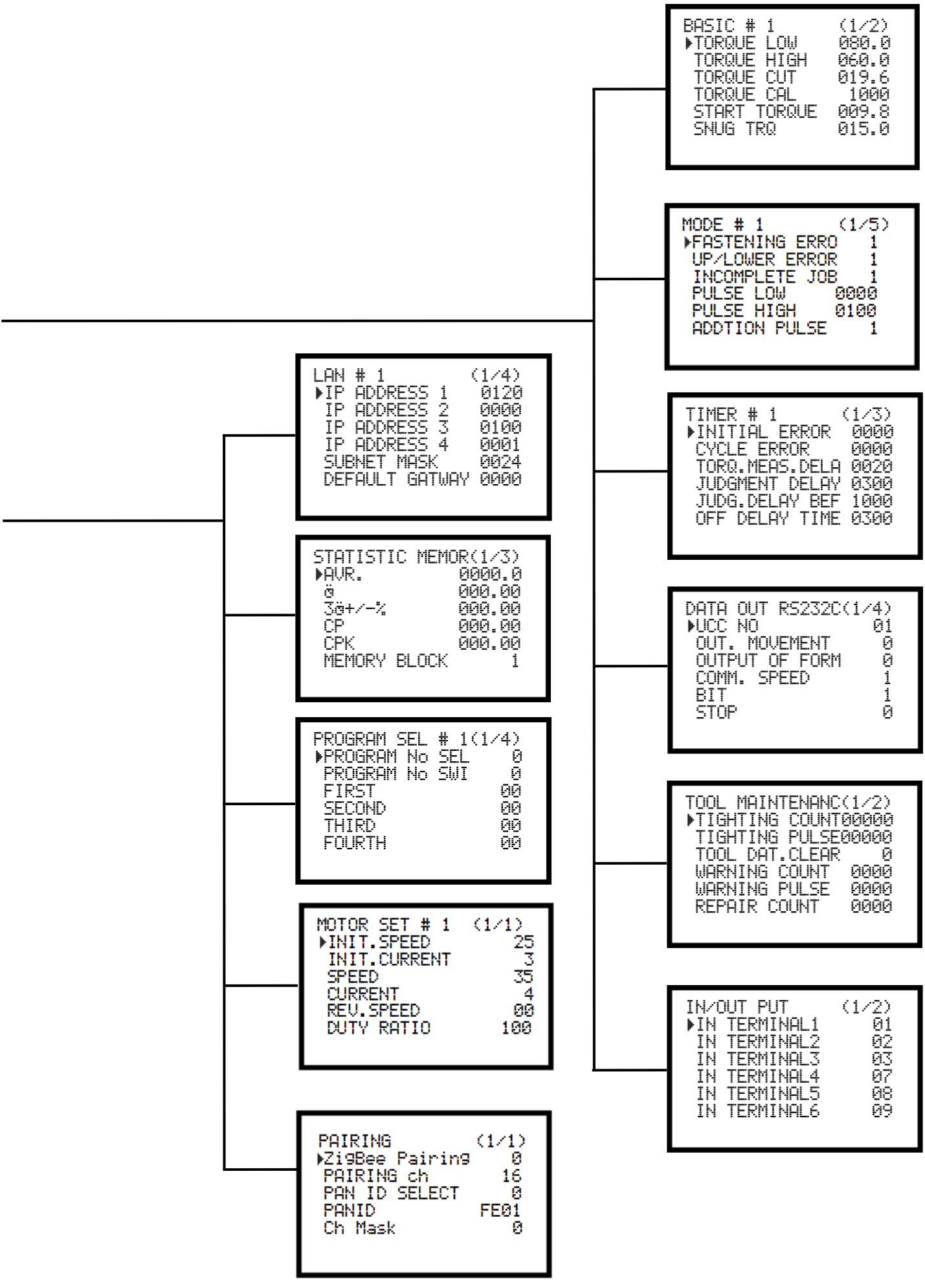
2. Outline

2. 1. Configuration

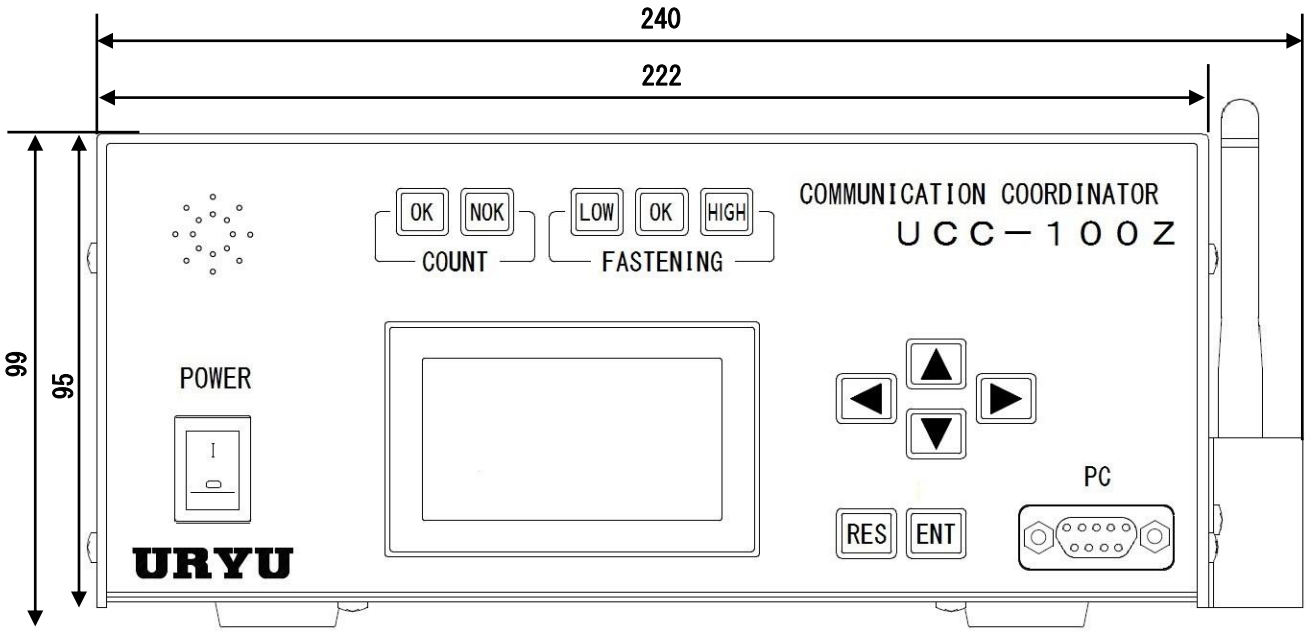


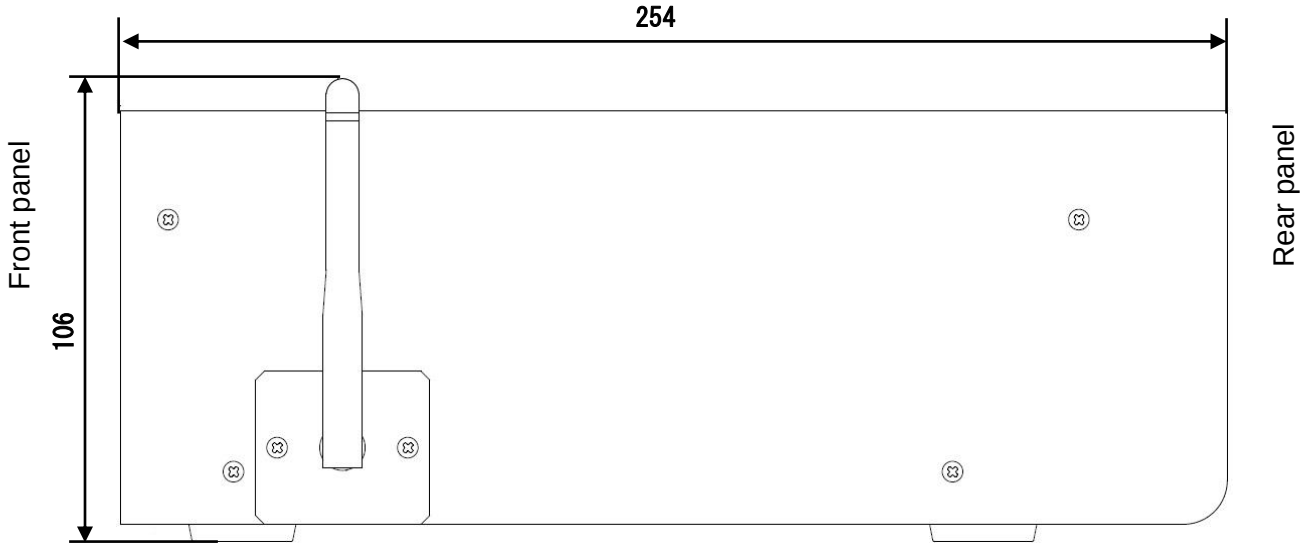
2. 2. LCD Screen diagram




BASIC # 1 (1/2)
▶TORQUE LOW 080.0
TORQUE HIGH 060.0
TORQUE CUT 019.6
TORQUE CAL 1000
START TORQUE 009.8
SNUG TRQ 015.0
MODE # 1 (1/5)
▶FASTENING ERRO 1
UP/LOWER ERROR 1
INCOMPLETE JOB 1
PULSE LOW 0000
PULSE HIGH 0100
ADDTION PULSE 1
TIMER # 1 (1/3)
▶INITIAL ERROR 0000
CYCLE ERROR 0000
TORQ.MEAS.DELA 0020
JUDGMENT DELAY 0300
JUDG.DELAY BEF 1000
OFF DELAY TIME 0300
DATA OUT RS232C(1/4)
▶UCC NO 01
OUT. MOVEMENT 0
OUTPUT OF FORM 0
COMM. SPEED 1
BIT 1
STOP 0
TOOL MAINTENANC(1/2)
▶TIGHTING COUNT00000
TIGHTING PULSE00000
TOOL DAT.CLEAR 0
WARNING COUNT 0000
WARNING PULSE 0000
REPAIR COUNT 0000
IN/OUT PUT (1/2)
▶IN TERMINAL1 01
IN TERMINAL2 02
IN TERMINAL3 03
IN TERMINAL4 07
IN TERMINAL5 08
IN TERMINAL6 09
LAN # 1 (1/4)
▶IP ADDRESS 1 0120
IP ADDRESS 2 0000
IP ADDRESS 3 0100
IP ADDRESS 4 0001
SUBNET MASK 0024
DEFAULT GATWAY 0000
STATISTIC MEMOR(1/3)
▶AVR. 0000.0
σ 000.00
3σ+/-% 000.00
CP 000.00
CPK 000.00
MEMORY BLOCK 1
PROGRAM SEL # 1(1/4)
▶PROGRAM No SEL 0
PROGRAM No SWI 0
FIRST 00
SECOND 00
THIRD 00
FOURTH 00
MOTOR SET # 1 (1/1)
▶INIT.SPEED 25
INIT.CURRENT 3
SPEED 35
CURRENT 4
REV.SPEED 00
DUTY RATIO 100
PAIRING (1/1)
▶ZigBee Pairing 0
PAIRING ch 16
PAN ID SELECT 0
PANID FE01
Ch Mask 0

2. 3. Dimensions





Side view

2. 4. Features

① UCC-100Z (hereafter described as UCC) performs fastening error detection and fastener number count.
② UCC performs setup and change of torque and fastener number count for 16 kinds (work 1~16). Use PROGRAM NO CHANGE, and multiple torque setups per WORK will be possible.
③ UCC performs tool control by counting total number of fasteners and total pulse numbers.
④ UCC establishes connection for 2 wireless tools in pairing mode.
⑤ UCC is compliant with ZigBee standard wireless communication.
⑥ 2.4GHz bandwidth usage by 16 channels enables UCC to enjoy communication around busy band frequency.
⑦ UCC sends setup value only after each fastening is completed, enabling line control by unique setup per fastener.
⑧ Confirm IN/OUT check and ERROR display by UCC panel and by buzzer sound.
⑨ Set and monitor various setups either by front panel or by PC.
⑩ UCC memorizes maximum 3,900 data (reduced to maximum 1,800 data if ID data is included).
⑪ Functions available by the exclusive PC software.
・Send and receive setups.
・Receive and store statistical data.
・Read SD card data.
・Read user's name(four-digit number) and setup change history when using PASSWORD function.
⑫UCC is compliant with Ethernet (TCP/IP).
・Connect with setting software, and UCC will perform setup exchange with the tool. The connection enables upload of fastening result, waveform data and statistical data also.
・Data upload to URYU data control system.
・Communication with users' network requires software modifications meeting the specifications.

●The software installed in UCC is subject to modifications for upgrade without notice.
●The software version is printed on a label attached just beside front panel switch. Switch on UCC, and the LCD will display the software version.

2. 5. Installation

Install and fix UCC firmly by paying attention to the following points.

2. 5. 1 Place

1）Within a building neither water nor direct rays of the Sun enters because UCC is not waterproof.

2）Where UCC suffers no corrosives, flammable gas, grinding fluid, oil mist, metal powders, etc.

3）Well-ventilated, less moisture, and less dust or waste.

4）Less vibration.

5）Where you can disconnect power cord from receptacle immediately when anything unusual happens with UCC.

6）Operate UCC after placing in a housing if used under contamination degree 3 environment.

2. 5. 2 Environmental conditions

Items	Conditions
Place	Indoors only
Ambient temperature	0 ° C~45 ° C (no freeze)
Ambient humidity	Below 90%RH (no dew)
Preservation temperature	0 ° C~45 ° C (no freeze)
Preservation humidity	Below 90%RH (no dew)
Vibration	Less than 5.6m/s² (10~60Hz)
Altitude	Lower than 1,000m
Installation category (over voltage capacity)	Installation category Ⅲ※
Contamination level	Contamination level 2※

※･･･The above categorization is of the over voltage category (1, 2 and 3), and contamination level (1,2 and 3) as per IEC60664. UCC has been categorized as over voltage capacity 3, and contamination level 2 as above mentioned.

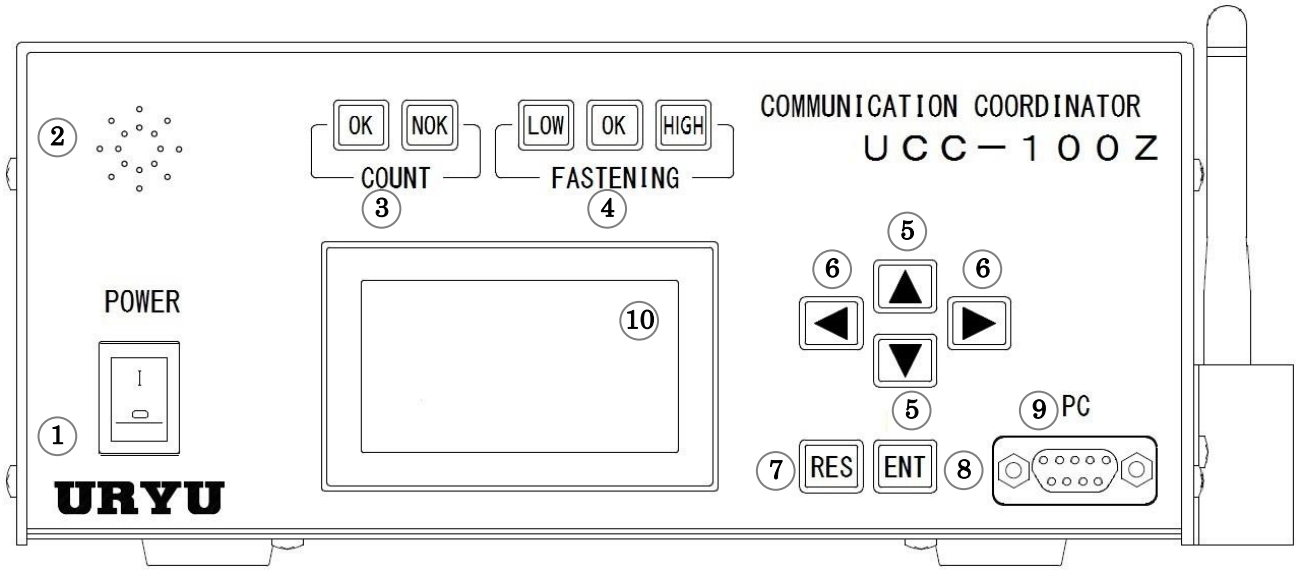
(IEC: International Electric Standard Committee)

3. Specifications

Item		Descriptions
Power source		AC100~240V+/-10%
Frequency		50/60Hz
Insulation resistance		DC500V greater than 10MΩ
Weight		2.9kg
Dimensions		254(D) x 222(W) x 106(H)
Main functions		Torque control or angle monitor, and fastener number count
Setting		Front panel
		by URYU exclusive setup software installed PC
Display		Torque resolution: +/-2048 (12bit by A/D use)
		LCD (20 letters x 8 lines)d Display: WORK NO, Unfinished fastener number, fastening time, pulse number, turning angles, and error message
Lamp (LED)		COUNT lamp (Count judge): OK (green)/NOK (red)
		FASTENING lamp (fastening judge): LOW (yellow)/OK (green)/HIGH (red)
Terminal	IN	Operation voltage DC24V and current about 10mA. 6 terminals (free format). Perform input by contact input.
	OUT	Contact capacity DC30V and 1A. 6 terminals (free format).
Key		LCD: ▲▼◀▶、RES (RESET), ENT (ENTER)
Option		Parts number 910-219-0 Straight PC cable for RS232C with both ends D-Sub 9-pin female 9-pin 3m long

4. Parts names and functions

4. 1. Front panel



① Power switch
Keep UCC switched off when you do not use.

② Buzzer
This sounds to announce fastening confirmation, errors, various NOK, key operation, etc. Press some key, and the buzzer will stop sounding.

③ Count lamp
OK lamp lights when unfinished fastener number becomes zero (all preset fasteners done).
NOK lamp lights if fasteners remain unfinished at the judgment.

④ Torque lamp
OK lamp lights if measured torque was between torque upper and low limit at the judgment.
HIGH or LOW lamp lights if measured torque was out of upper and low limit at the judgment. .

⑤ Use ▲▼ key to move cursor under menu picture, or to adjust setup value rise and fall.

⑥ Use ◀▶ key to select digit you are going to change input value under writing mode.

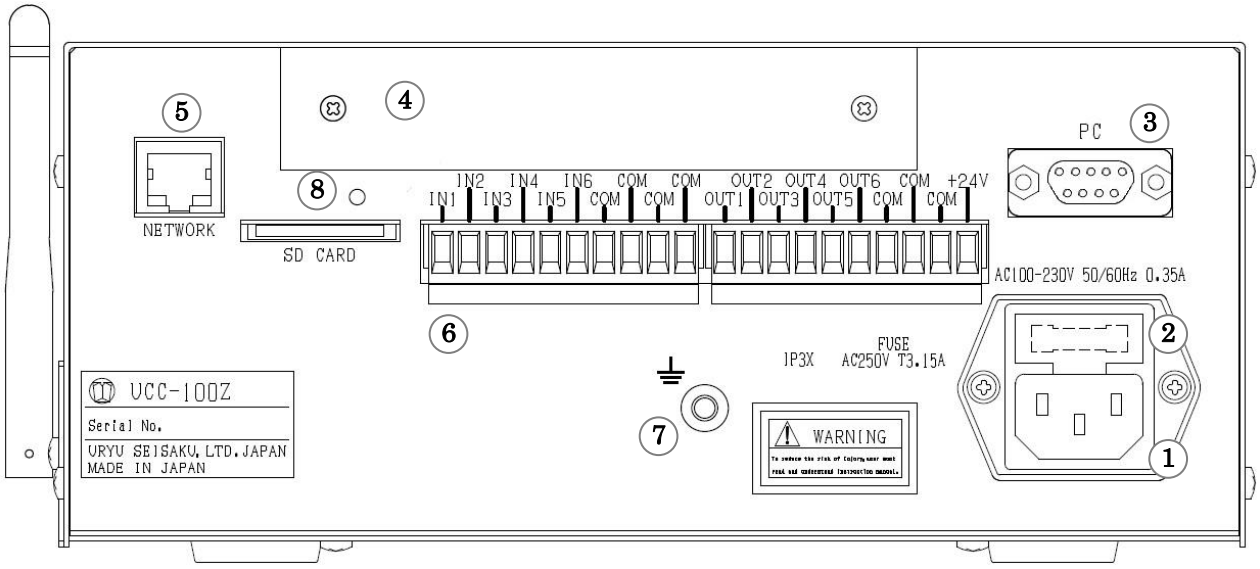
⑦ Press RES key to perform all reset. Press this key under NOK display, and UCC will cancel NOK display.

⑧ Press ENT key to stop buzzer sounding, or fix input value. Hold down this key longer than 3 seconds, and UCC will shift to writing mode.

⑨ PC connector socket (D-sub 9 pins)
Hook up UCC to PC. Use straight type PC cable for the communication.

⑩ LCD (20 letters x 8 lines)
The contents are fastening data such as torque, angles, time (start to cut), pulse numbers, judgment, unfinished fastener numbers, work number, ID, date, error information, and all setup values.

4. 2. Rear panel



① Power cord socket

Connect power cord.

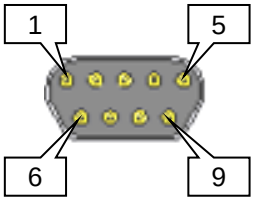
Make sure to ground the grounding wire of the power cord.

② Fuse holder

Circuit protecting fuse (T-type 3.15A)

③ PC connector socket (D-sub 9 male pins)

This is RS232C data IN/OUT communication port that hooks up UCC to serial printer, PLC, PC, barcode reader etc.



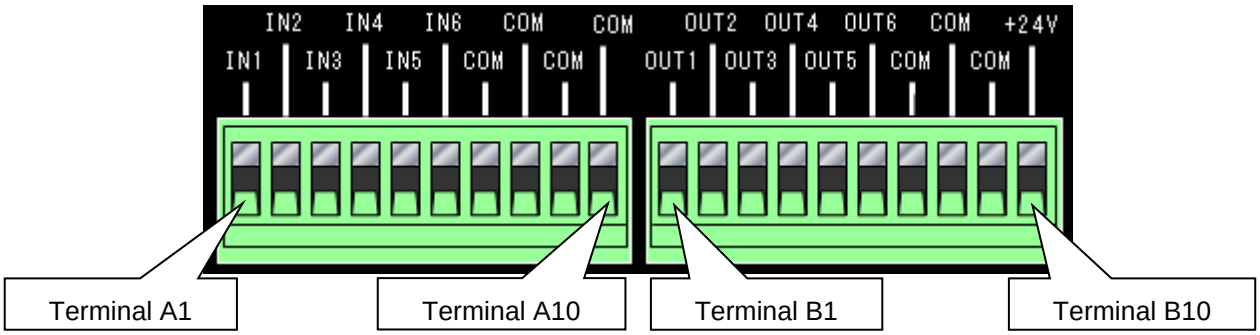
Wiring contents	
Pin Nos.	Signal contents
1	FG (Frame ground)
2	TXD (Data output)
3	RXD (Data download)
4	DSR (Power ON confirm)
5	SG (Signal ground)
6	DTR (Data terminal ready)
7	CTS (Clear to send)
8	RTS (Request to send)
9	

④ Space for option board

⑤ Network connector

Hook up UCC to Ethernet for further connection with PC or quality server.

⑥ Terminal block (free format)



Terminals	Signal contents	Terminals	Signal contents
A1	IN 1~6: Input terminals	B1	OUT 1~6: Output terminals
A2		B2	
A3		B3	
A4		B4	
A5		B5	
A6		B6	
A7	IN COM: Common terminals for input (-)	B7	OUT COM: Common terminals for output
A8		B8	
A9		B9	
A10		B10	+24V

※Terminals IN 1~6 and OUT 1~6 are free format accepting arbitrary signal allocation. Confirm the allocation of what signal to what terminal first, and then make wiring to the rear terminals.

※Make input to terminals IN 1~6 by contact input.

※Terminals OUT 1~6 are no-voltage output. Make wiring less than DC24V.

※Use bar crimp terminals for wiring with rear terminals.

※Recommended bar crimp terminal : 1.1-2.1mm in diameter, 10mm in length

※Recommended wire : AWG24-14 in diameter, 7mm±1mm in strip length

⑦ Ground terminal

Be sure to use this terminal for grounding if the power cord does not have ground wire.

⑧ SD card slot

Up to 32GB card-ready slot.

※Do not remove SD card while access lamp is lighting.

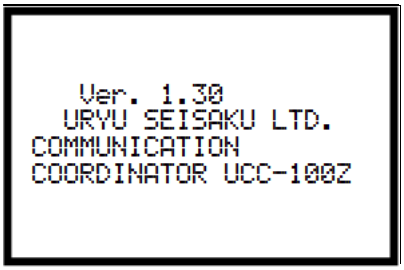
5. Operation

5. 1. Preparation

①Insert power cable plug in an outlet.
②Turn on UCC, and it will perform self-diagnosis with the buzzer sounding for about 10 seconds. Make visual check of front LCD at the same time.

5. 2. Self-diagnostic function

Turn on UCC, and it will check ROM→RAM →A/D for about 10 seconds to detect internal parts error.
[Self-diagnosis contents]
①LED lamp and buzzer check
Turn on UCC, and the LCD will display the following picture with all LED lamps lighting and buzzer sounding.
Confirm those audiovisual signs function when self-diagnosis is in process.



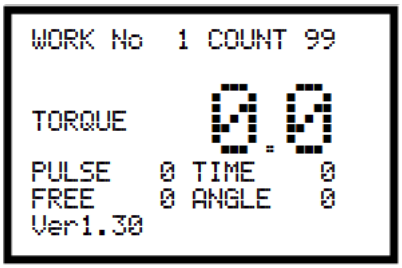
②ROM check
Check if ROM IC retaining UCC control program works normally.

③RAM check
Check if RAM IC retaining UCC setups and measurement data works normally.

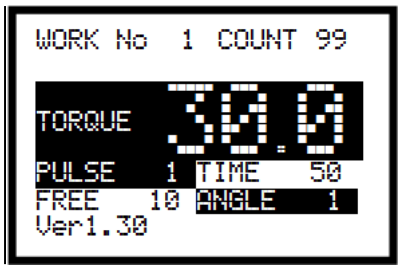
④SUM check
Check RAM IC for any abnormality within the stored setup data.

5. 3. LCD Display

①Following measurement picture will appear on LCD after self-diagnosis is completed.



[Measurement] picture

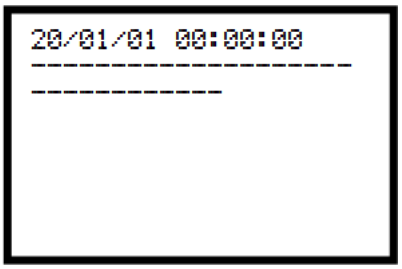


[Fastening NOK] picture

WORK NO:	Work number selected from 1~16.
COUNT:	Preset number of fasteners. The number decreases as the fastening advances (count down).
TORQUE:	Measured torque.
PULSE:	Pulse numbers generated from start to stop.
TIME:	Elapsed time from START torque to CUT torque.
FREE:	Turning angles from triggering to START torque.
ANGLE:	Turning angles from SNUG torque to CUT torque.

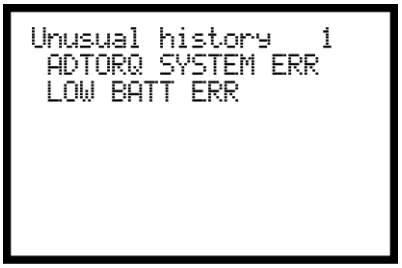
UCC provides FASTENING NOK judgment with buzzer sounding if there is out of LOW and HIGH limit items available in the measured data. LCD then displays out-of-range items such as torque, pulse numbers, free run angles, and angles (SNUG to CUT) by blank letters in the black back ground with ▼ for lower than LOW and ▲ for higher than HIGH limit.

②Press ▼ key under [Measurement], and LCD will display ID number coming from outside.



[ID] picture

②Press ▼ key once again, and LCD will display error history.



[Error history] picture

5.4. Key operation

①Press RES key under [Measurement], and UCC will clear measured data and fastening error.
②Press ENT key under [Measurement], and LCD will shift to MENU picture (DISPLAY SELECT).
③Press ▲▼ key, and the cursor▶ will go up and down.
④Fit cursor▶ at necessary point and press ENT key, and the picture will shift to the necessary picture (one step down).
⑤Picture displays current page/total pages on the screen top-right.
⑥Press ▼ key for next page and ▲ key for previous page under [Measurement].
⑦Hold down ENT key longer than 3 seconds, and UCC will shift to writing mode providing setup change.
⑧Press RES key in any picture, and LCD will return to [Measurement] picture.

5.5. Setup

Change setup value by PC or by LCD operation.

（1）By PC (refer to exclusive setup software instruction manual for the details)
①Hook up UCC to PC by straight PC cable connection with front PC connector for RS232C communication or by LAN cable with rear NETWORK socket for Ethernet communication.
②Change setup value by setup software.
③Transmit changed setup value to UCC by setup software.

（2）By sign key switch operation
①Get LCD to display a picture that you need to change setup value.
Hold down ENT key longer than 3 seconds, and UCC will shift to writing mode providing setup change.
②UCC communication is inoperative with all lamps flashing during writing mode.
③Press ▲▼ key so cursor▶ will go to the item for change, and press ENT key.
④Press ◀▶ key so cursor▶ will go to the digit for change.
⑤Press ▲ key for increase and ▼ key for decrease.
⑥Press ENT key after setup value change, and UCC will memorize the new setup value.
⑦Press RES key, and UCC will leave the writing mode and return to [Measurement] (setup value change comes to an end).

5.6. How to use

Following is preparation steps to operate UBX-AFZ making use of UCC.

(1) Make pairing of UBX-AF tool with UCC. （See 9.5 for Pairing procedure)
(2) Setup parameter settings for tightening. （See 8. for Set up)
(3) Review Proof ratio so as to match UCC display with break torque.
(See 8.1 for Basic setting)

Now ready to use UBX-AFZ.

6. IN/OUT check

6. 1. KEY CHECK (key entry diagnosis)

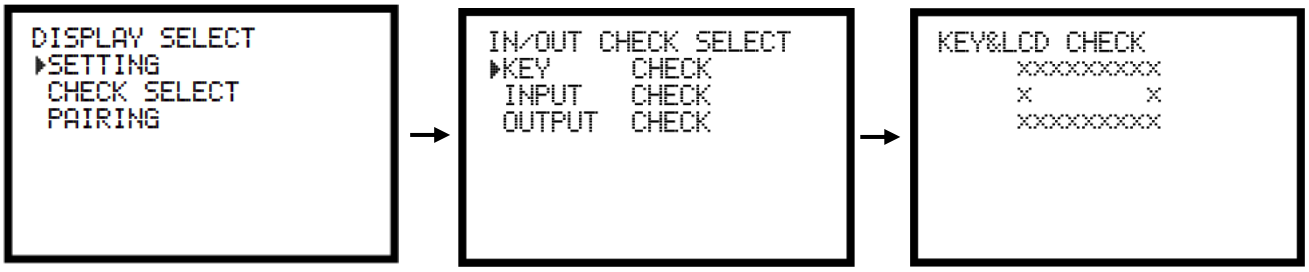
Check if sign key switches work normally.

①Press ENT key under [Measurement] to go to DISPLAY SELECT.

②Fit cursor ▶ to CHECK SELECT and press ENT, and UCC will shift to IN/OUT CHECK.

③Fit cursor ▶ to KEY CHECK, and press ENT.

④UCC will shift to KEY & LCD CHECK.



⑤Press sign keys, and LCD will display name of the sign.

Sing key	LCD display	Sign key	LCD display
▲	KEY&LCD CHECK xxxxxxxxx x UP x xxxxxxxxx	▼	KEY&LCD CHECK xxxxxxxxx x DOWN x xxxxxxxxx
▶	KEY&LCD CHECK xxxxxxxxx x RIGHT x xxxxxxxxx	◀	KEY&LCD CHECK xxxxxxxxx x LEFT x xxxxxxxxx
RES	KEY&LCD CHECK xxxxxxxxx x RESET x xxxxxxxxx	ENT	KEY&LCD CHECK xxxxxxxxx x ENTER x xxxxxxxxx

⑥Press ENT key 2 times in a row, and LCD will quit KEY CHECK and go back to IN/OUT SELECT.

6. 2. INPUT & OUTPUT CHECK (terminal and tool wiring diagnosis)

UCC conducts diagnosis to check external wires connected to rear terminals by monitoring input conditions and compulsory output to the connected tools.

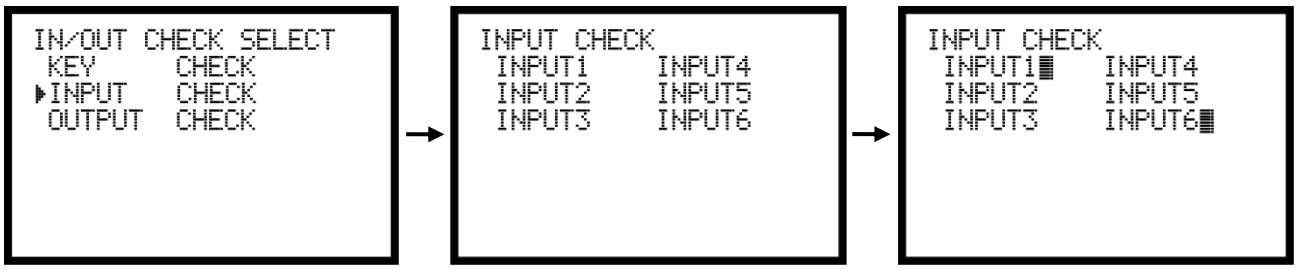
(1) Input wire check

①Press ENT key under [Measurement] to go to DISPLAY SELECT.

②Fit cursor ▶ to CHECK SELECT and press ENT, and LCD will shift to IN/OUT CHECK.

③Fit cursor ▶ to INPUT CHECK and press ENT, and LCD will shift to INPUT CHECK (UCC is inoperative with all lamps flashing).

④Enter signals in IN terminals, and LCD will display ■ sign in the right of terminals receiving signals. Following pictures show signal receipt of terminals IN1 and IN6.



⑤Press RES to terminate INPUT CHECK.

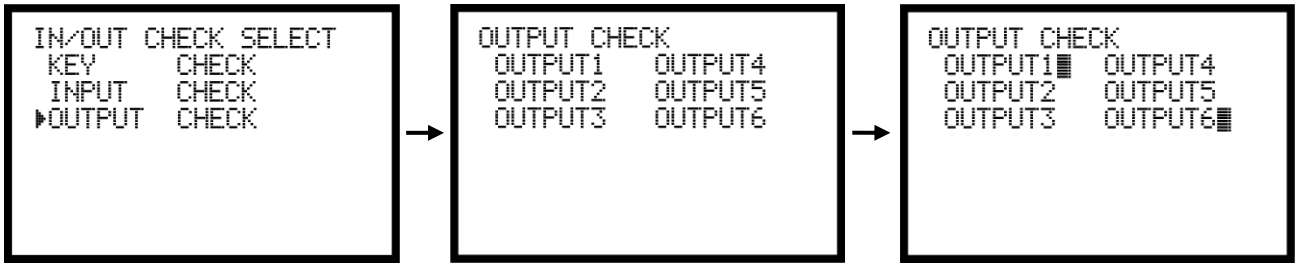
(2) Output wire check

①Press ENT under [Measurement] to go to DISPLAY SELECT.

②Fit cursor ▶ to CHECK SELECT and press ENT, and LCD will shift to IN/OUT CHECK.

③Fit cursor ▶ to OUTPUT CHECK and press ENT, and LCD will shift to OUTPUT CHECK (UCC is inoperative with all lamps flashing).

④Operate ▲▼ key to fit cursor ▶ to necessary OUT terminal and press ENT key, and UCC will switch on the OUT terminal. LCD will display ■ sign in the right of terminals receiving signals. Fit cursor ▶ to the terminal and press ENT, and it will be switched off.



⑤Press RES key to terminate OUTPUT CHECK.

7. WORK No. change

UCC provides maximum 16 different WORK setups by WORK signal entry to IN terminals. Enter 1 in WORK SIG.SEL,and UCC will provide 5 WORKS. Enter 0 in the same, and you will be able to enjoy 16 WORKS.

(Switching combination and the selected WORK number table)

Signal entry to IN terminals ● See IN/OUT (Rear terminal signal allocation) page 46.		Selected WORK NO.
Under 0 entry to WORK SIG.SEL	Under 1 entry to WORK SIG. SEL	
Nil	WORK 1	WORK 1
WORK A	WORK 2	WORK 2
WORK B	WORK 3	WORK 3
WORK A B	WORK 4	WORK 4
WORK C	WORK 5	WORK 5
WORK A C		WORK 6
WORK B C		WORK 7
WORK A B C		WORK 8
WORK D		WORK 9
WORK A D		WORK 10
WORK B D		WORK 11
WORK A B D		WORK 12
WORK C D		WORK 13
WORK A C D		WORK 14
WORK B C D		WORK 15
WORK A B C D		WORK 16

※Enter 0 in WORK SIG.SEL for over 6 WORKS. 1 entry in WORK SIG.SEL provides up to 5 WORKS.

（1） Decide on WORK SELECT method by necessary number of WORKS. Use WORK A, B, C, and D signal allocation to IN terminals under 0 entry in WORK SIG.SEL if you need to cover 6 or more WORKS. Use WORK 1 to WORK 5 signal allocation to IN terminals under 1 entry in WORK SIG.SEL if necessary WORKS are up to 5.

（2） Move to IN/OUT picture to allocate above WORK signals to IN terminals.

①By 0 entry in WORK SIG.SEL (applicable up to 16 WORK numbers)

Allocate WORK A to any one of IN1~IN6 when WORK number is up to 2.
Allocate WORK A and WORK B to any two of IN1~IN6 when WORK number is up to 4.
Allocate WORK A, WORK B, and WORK C to any three of IN1~IN6 when WORK number is up to 8.
Allocate WORK A, WORK B, WORK C, and WORK D to any four of IN1~IN6 when WORK number is nine or more.

②By 1 entry in WORK SIG.SEL (applicable up to 5 WORK numbers)

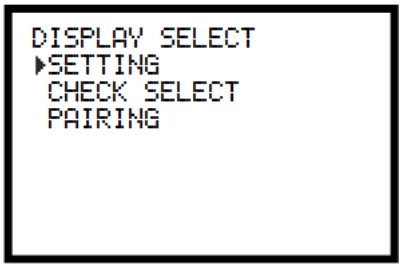
Allocate WORK 1~5 to arbitrary terminals IN1~IN6 in accordance with WORK numbers.
Example: Enter 10 in IN1, 11 in IN2, 12 in IN3, and signal allocation will be WORK 1 for IN1, WORK 2 for IN2 and WORK 3 for IN 3. Refer to page 47 for entry and allocation combination.
※Start fastening only after WORK number is allocated to UCC.

8. SETUP

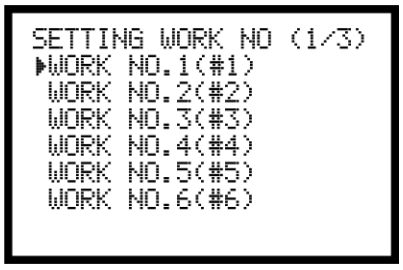
UCC has the following 11 SETUP pictures.

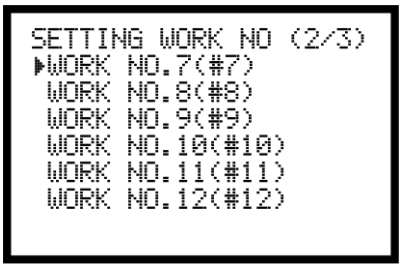
BASIC	CUT (target torque), LOW (low limit), HIGH (upper limit) etc. related to basic control.
MODE	Line control, function select etc.
TIMER	Various timer setting
DATA OUT	Set DATA that UCC outputs from PC connector in the rear panel.
TOOL MAINTENANCE	Set tools' maintenance cycle by cumulative fastener or pulse numbers.
IN/OUT PUT	Allocate input and output signals to terminal block of rear terminal.
LAN	Set Ethernet-related IP address or etc.
STATISTIC(MEMORY)	Set and display memorized data.
PROGRAM SEL	Set program number change.
MOTOR SET	Set motor speed and current.
PAIRING	Set tool pairing with UCC.

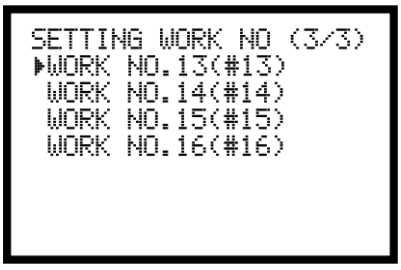
(1) Press ENT in [Measurement] to go to DISPLAY SELECT.
Fit ▶ to SETTING and press ENT.



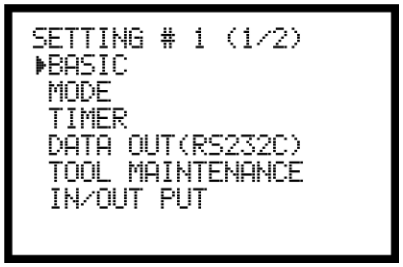
(2) SETTING WORK NO picture will appear. Select WORK NO with ▶, and press ENT.

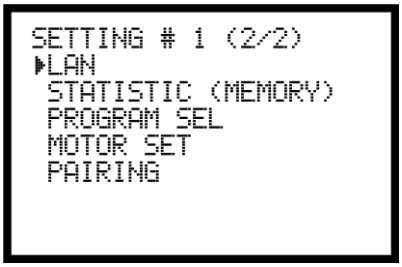




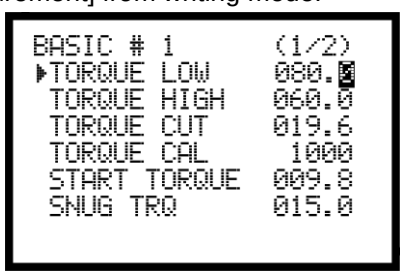


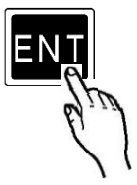
(3) SETTING picture will appear. Select SETUP with ▶, and press ENT.





(4) Hold down ENT longer than 3 seconds, and UCC will shift to writing mode. Press ENT at ▶ affixed SETUP, and cursor (_ under bar) will appear under the numbers. Press ◀▶ to set the cursor to digit you are going to change. ▲ increases and ▼ decreases the numbers. Change the numbers as needed. Press ENT, and UCC will memorize the new numbers. Press RES, and UCC will shift to [Measurement] from writing mode.





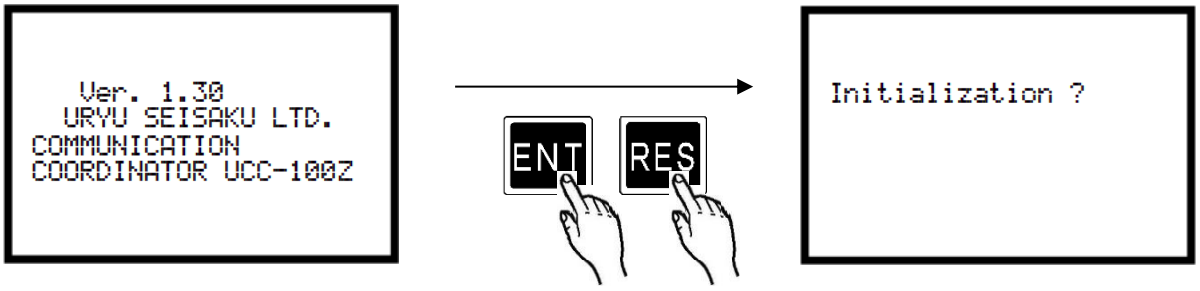
Keep pressing longer than 3 seconds.

※Reset to factory default setup

To reset UCC-100Z to factory default, do the following processes.
※Surrounding ZigBee device information obtained by PAN ID SCAN will be deleted at Initialization.
ZigBee device information can be saved in UCC-100Z PC software by verifying the settings in UCC-100Z with PC software.

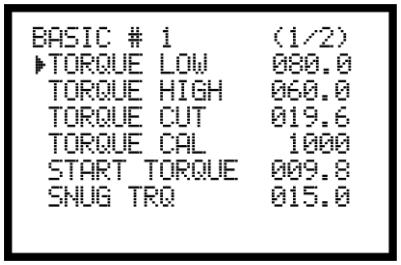
（1）UCC is alive as soon as the power switch is turned off. With complete turn off confirmation, keep pressing ENT and RES together, and then turn on UCC.

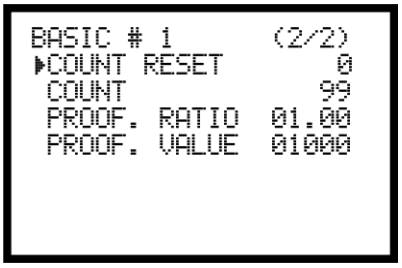
（2）Keep pressing ENT and RES together, and LCD screen will be changing from left to right in sequence. If LCD displays [Initialization?], release fingers from ENT and RES both. Then press ENT, and UCC is reset to factory default setup.



Keep pressing these keys together until the display changes.

8. 1. BASIC





TORQUE LOW (Torque low limit)

Default	80.0Nm
Range	0.0~999.7
Condition	LOW＜CUT
Function	UCC provides torque LOW NOK judgment unless torque reaches LOW.

TORQUE HIGH (Torque high limit)

Default	60.0Nm
Range	0.4~999.9
Condition	CUT＜HIGH
Function	UCC provides torque HIGH NOK judgment if torque exceeds HIGH.

TORQUE CUT (Cut torque value)

Default	19.6Nm
Range	0.3~999.8
Condition	LOW＜CUT＜HIGH and START＜SNUG＜CUT
Function	UCC sends stop signal to UBX-AFZ when the dynamic torque reached CUT torque. UCC automatically lessen SNUG torque so it will be 0.1Nm lower than CUT torque if your CUT torque entry was below SNUG.

TORQUE CAL (Calibration value)

Default	1000
Range	100~9999
Function	Enter numbers stamped on tool into UCC.

START TORQUE (Start torque)

Default 9.8Nm
Range 0.1~999.6
Condition START＜SNUG＜CUT
Function UCC begins torque measurement upon receipt of torque signal greater than START.

Use of the function
a. Judgment delay timer start point
b. Initial error timer start point
c. Cycle error timer start point
d. Torque measurement delay timer start point
e. Fastening time (**TSC** data: **T**ime from **S**tart to **C**ut) measurement start point
f. Free run angle measurement end point

※Set START torque over 1/100 of adjusted calibration value (CAL value x proof ratio). Too low START torque can prevent UCC from doing OK or NOK judgment leading to next fastening inoperative.

Example of UBX-AF700Z
CAL：800 x Proof ratio 1.00 = Calibration value 800
800 x 1/100 = START torque is 8.0Nm or greater

・UCC automatically increase SNUG torque so it will be 0.1Nm greater than START torque if your START torque entry was above SNUG.

SNUG TRQ (Snug angle)

Default 15.0
Range 0.2~999.7
Condition START torque＜SNUG＜CUT

Function

・Set torque when to start angle measurement.
・UCC automatically increases SNUG torque so it will be 0.1Nm greater than START torque if your START torque entry was above SNUG.
・UCC automatically decreases SNUG torque so it will be 0.1Nm less than CUT torque if your SNUG torque entry was above CUT.

COUNT RESET (Cycle number reset)

Function

・Set total cycle numbers and post-repair fastener numbers retained by UBX-AFZ.
・Enter [1], and UCC will reset post-repaired fastener numbers of UBX-AFZ tools.
・Enter [2], and UCC will reset post-repaired fastener numbers and total cycle numbers of UBX-AFZ.
・Use these functions after doing repair or maintenance.

COUNT (Fastener number count)

Default 99
Range 1~99

Function

・Set fastener numbers per work that UCC gets UBX-AFZ to fix.
・UCC provides judgment COUNT OK/NOK by this number.

PROOF RATIO (CAL adjustment ratio)

Default	1.00
Range	0.01~9.99
Function	Use to set UCC display by break torque in the tightening direction.

※Following formula shows how to match UCC display with break torque.

Break torque / UCC display = Proof ratio

※UCC display and break torque may not match depending on work. Make sure to use this function so as to match UCC display with break torque by fastening tests on actual work.

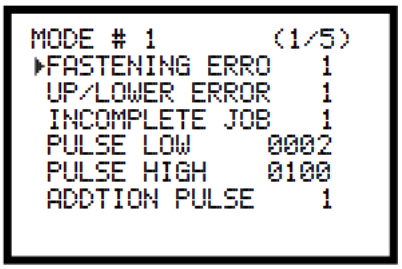
PROOF VALUE (Adjusted CAL value)

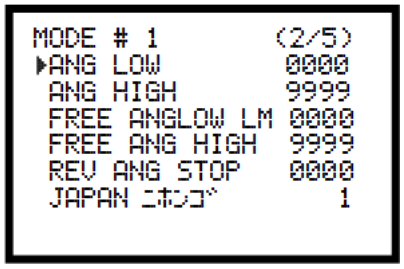
Default	1000
Function	

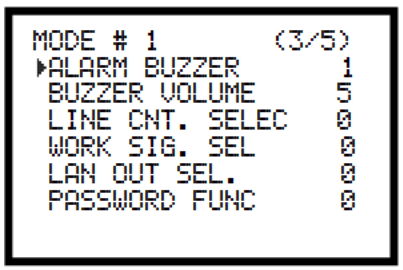
・PROOF VALUE=PROOF RATIO X CAL

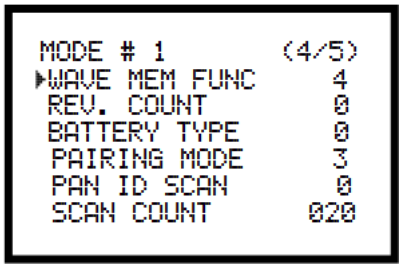
・UCC processes size of torque signal voltage against CAL with PROOF VALUE and display the result as fastening torque.

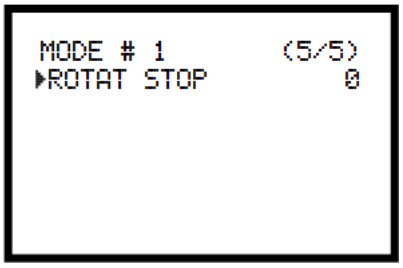
8. 2. MODE











FASTENING ERRO (Retry for various errors)

Default 1

Setup 0 UCC does not send next setup (fastening command) to UBX-AFZ until last error (LO.E./CYL.E./ F.E) is cancelled by pressing RES or switching on RESET terminal.

Setup 1 Trigger UBX-AFZ, and UCC will cancel error judgment to start fastening without RESET process (start reset).

UP/LOWER ERROR (Retry for HIGH or LOW torque NOK)

Default 1

Setup 0 UCC does not send next setup (fastening command) to UBX-AFZ until last HIGH/LOW error (torque/pulse number) is cancelled by pressing RES or switching on RESET terminal.

Setup 1 Trigger UBX-AFZ and UCC will cancel error judgment to start fastening without RESET process (start reset).

INCOMPLETE JOB

Default 1

Setup 0 UCC does not detect INCOMPLETE JOB ERROR.

Setup 1 UCC detects INCOMPLETE JOB ERROR.

Function

・UCC detects and provide INCOMLETE JOB ERROR if UBX-AFZ goes over START torque but stops fastening before CUT due to halfway finger off the trigger.

Error display

・LCD displays F. E. sign and torque alternately.

・UCC does not light front FASTENING lamp.

・UCC announces this error with buzzer sounding.

・UCC outputs FASTENING NOK signal from rear terminal block.

Cancel

・Enter 1 in FASTENING ERROR 1, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

※UCC provides INCOMPLETE JOB ERROR judgment even if final torque was within OK zone if it was due to halfway finger off the trigger before CUT torque.

PULSE LOW (Pulse number LOW limit)

Default 2
Range 0~9998
Condition PULSE LOW＜PUSLE HIGH
Function
・UCC provides PULSE LOW NOK judgment if pulse number during START to torque measurement end point was lower than PULSE LOW LIMIT. PULSE LOW NOK does not come unless torque reaches CUT.
Display under LOW NOK judgment
・LCD displays measured PULSE NUMBER by blank letters in the black back ground with suffix .
・UCC announces this error with buzzer sounding.
・UCC outputs FASTENING NOK signal from rear terminal block.
Cancel
・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).
・Press RES or switch on RESET terminal.

PULSE HIGH (Pulse number HIGH limit)

Default 100
Range 1~9999
Condition PULSE LOW＜PULSE HIGH
Function
・UCC provides PULSE HIGH NOK judgment with error display and stop UBX-AFZ if pulse number reached PULSE HIGH LIMIT before torque measurement end point.
Display
・LCD displays measured PULSE NUMBER by blank letters in the black back ground with suffix .
・UCC announces this error with buzzer sounding.
・UCC outputs FASTENING NOK signal from rear terminal block.
Cancel
・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).
・Press RES or switch on RESET terminal.

ADDITION PULSE

Default 1
Setup 1~99 (Additional pulse numbers to be satisfied beyond CUT)
Function
・UCC keeps fastening beyond CUT torque, and stop UBX-AFZ after preset number of ADDITION PULSE is detected.
・Giving ADDITION PULSE will get break-torque more stable.
※The setting upper limit of this function differs by UBX-AFZ version. The setting can be set within the range of 1-5 if the UBX-AFZ version is earlier than [ZB 3.20A].

ANG LOW LMT (Angle LOW limit)

Default 0

Range 0~9998 (deg.)

Function

・LOW limit for ANGLE judgment

・UCC provides ANGLE LOW NOK if turning angle was lower than this limit at judgment.

・Enter 0, and UCC will not carry out angle judgment.

[Output state of LOW NOK]

・LCD displays measured ANGLE value by blank letters in the black back ground with suffix .

・FASTENING LOW lamp blinks with buzzer sounding.

・UCC outputs FASTENING NOK signal from rear terminal block.

[Cancel]

・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

ANG UPP LMT (Angle HIGH limit)

Default 9999

Range 0~9999 (deg.)

Function

・HIGH limit for ANGLE judgment

・UCC provides ANGLE HIGH NOK if turning angle was higher than this limit at judgment.

・Enter 0, and UCC will not carry out angle judgment.

[Output state of HIGH NOK]

・LCD displays measured ANGLE value by blank letters in the black back ground with suffix .

・FASTENING HIGH lamp blinks with buzzer sounding.

・UCC outputs FASTENING NOK signal from rear terminal block.

[Cancel]

・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

FREE ANGLOW LM (Free Run Angle LOW limit)

Default 0

Range 0~9999

[Function]

・UCC counts angles 0.4 seconds to START.

・UCC provides FREE RUN ANGLE ERROR if it was lower than LOW limit.

・Enter 0, and UCC will not carry out FREE RUN ANGLE judgment.

[Output state of FREE RUN ANGLE LOW NOK]

・LCD displays measured FREE RUN ANGLE value by blank letters in the black back ground with suffix .

・Front lamps do not come but buzzer sounds.

・Terminal block outputs FASTENING NOK signal.

[Cancel]

・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

FREE ANG HIGH (Free Run Angle HIGH limit)

Default 0

Range 0~9999

[Function]

・UCC counts angles 0.4 seconds to START.

・UCC provides FREE RUN ANGLE ERROR if it was higher than HIGH limit.

・Enter 0, and UCC will not carry out FREE RUN ANGLE judgment.

[Output state of FREE RUN ANGLE LOW NOK]

・LCD displays measured FREE RUN ANGLE value by blank letters in the black back ground with suffix  .

・Front lamps do not come but buzzer sounds.

・Terminal block outputs FASTENING NOK signal.

[Cancel]

・Enter 1 in FASTENING ERROR 2, and the next operation will reset previous error (start reset).

・Press  or switch on RESET terminal.

REV ANG STOP （Reverse Stop Angle）

Default 0

Range 0~9999

[Function]

・UCC stops tool running in reverse rotation when reverse angle from triggering reaches Reverse stop angle.

・Enter 0 if you do not use this function.

JAPAN･ﾆﾎﾝｺﾞ (Language option)

Default 1

Setup 0 for Japanese

Setup 1 for English

Function

・Language option on LCD display. LCD shows JAPAN under ENGLISH 1 setup, and ENGLISH under Japanese 0 setup. This contrary display questions if conversion to the displayed language is necessary.

ALARM BUZZER (Fastening confirmation)

Default 1

Setup 0 UCC buzzer does not sound.

Setup 1 UCC buzzer sounds.

Function

・UCC buzzer sounds once for an OK fastener and twice for COUNT OK.

Sound volume

Default 5

Range 1~5

Function

・Adjust buzzer volume.

・Enter 1 for minimum and 5 for maximum. The volume gets louder as the number grows.

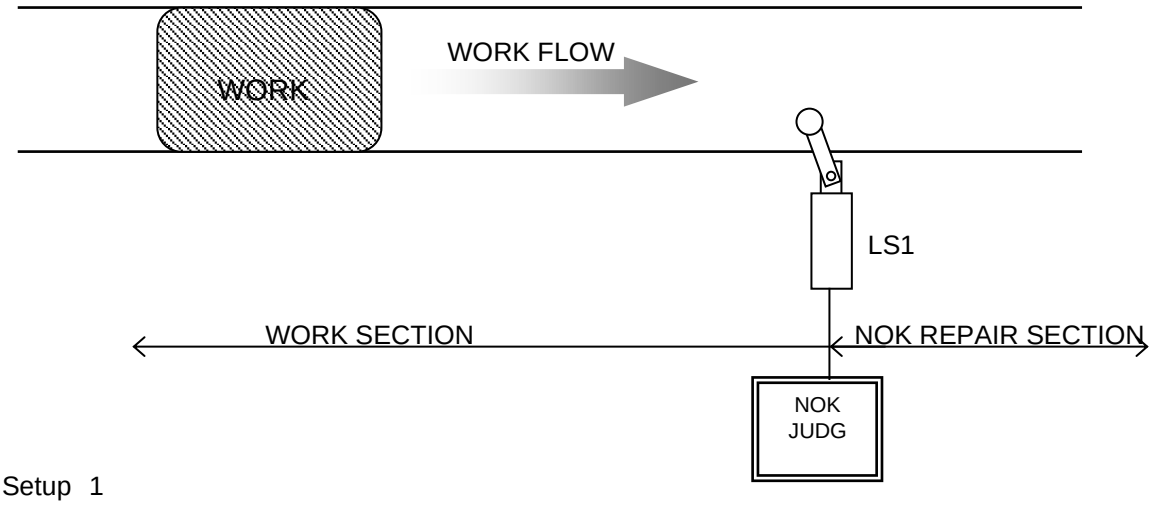
LINE CNT. SELEC (Line control)

Default 0

Setup 0

Count-down is always operative. Switch on LS1 (limit switch), and UCC will provide COUNT judgment. UCC provides COUNT OK if UBX-AFZ finished all preset number of fasteners with torque OK result before LS1. Switch on LS1, and UCC will reset previous judgment to prepare for next WORK. UCC provides COUNT NOK if any fasteners are undone at the point of LS1 switched on, but additional fastening of undone fasteners will convert the judgment to COUNT OK. This is NOK repair.

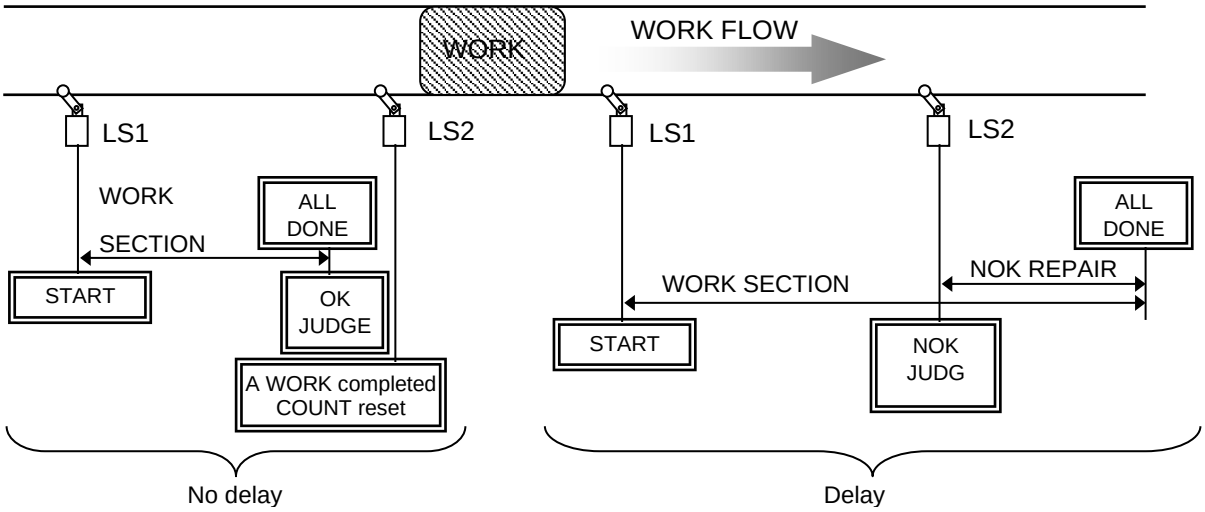
※The repaired COUNT OK signal duration is 1 pulse fixed 1000 millisecond.



Setup 1

Set 2 limit switches LS1 and LS2 to specify entrance and exit of a WORK section. Switch on LS1, and UCC will reset previous COUNT OK to prepare for next WORK. UCC provides COUNT OK if UBX-AFZ finished all preset number of fasteners with torque OK result before LS2. UCC provides COUNT NOK if any fasteners are undone at LS2 switched on point, but additional fastening of undone fasteners will convert the judgment to COUNT OK. Once UCC provides COUNT OK, COUNT DOWN does not work unless LS1 is switched on (out of WORK section). COUNT OK signal duration is adjustable 1~9999 milliseconds or unlimited.

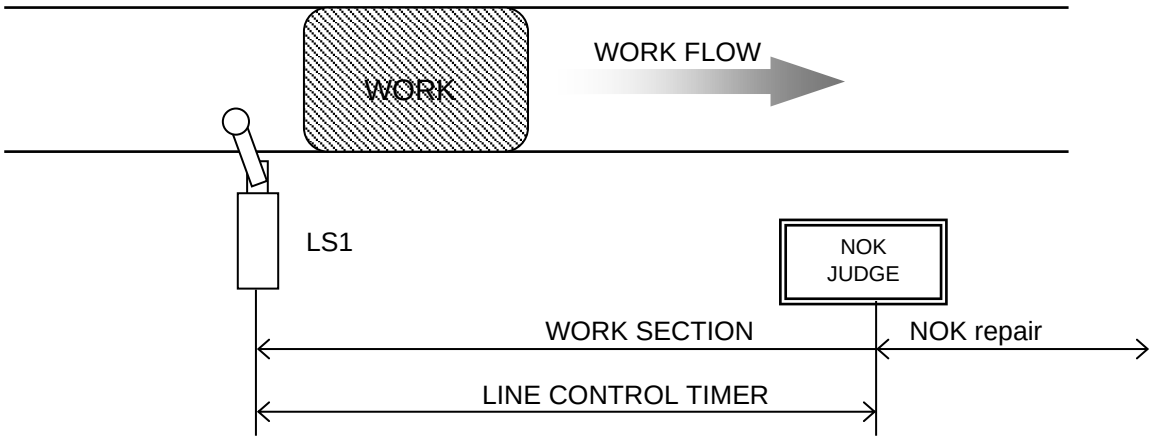
※The repaired COUNT OK signal duration is 1 pulse fixed 1000 millisecond.



Setup 2

Switch on LS1, and LINE CONTROL timer will start. COUNT DOWN begins with LS1 switching on, and UCC provides judgment when timer is up. Fasten preset number of fasteners before the timer is up, and UCC will provide COUNT OK. UCC provides COUNT NOK if any fasteners remain undone when the timer is up.

※COUNT OK signal duration is adjustable 1~9999 millisecond or unlimited. But he repaired COUNT OK signal duration is 1 pulse fixed 1000 milliseconds.

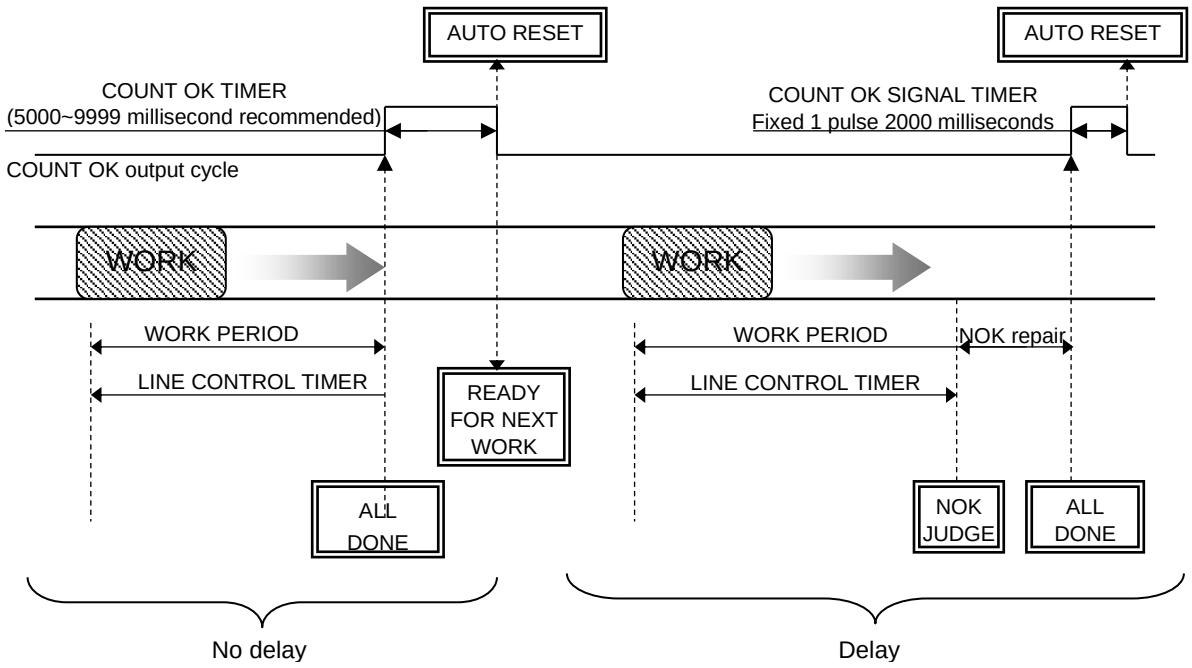


Setup 3

Setup 3 uses only LINE CONTROL timer instead of substantial limit switches. COUNT DOWN begins with first torque OK or QL wrench signal, and UCC provides judgment when the timer is up. Fasten a fastener by UBX-AFZ or by QL wrench to enter first torque OK signal into UCC, and LINE CONTROL timer will start. Finish preset number of fasteners before the timer is up, and UCC will provide COUNT OK. UCC resets COUNT OK to prepare for next cycle when COUNT OK signal goes off due to signal duration timer. UCC provides COUNT NOK if any fasteners remain undone when LINE CONTROL timer is up.

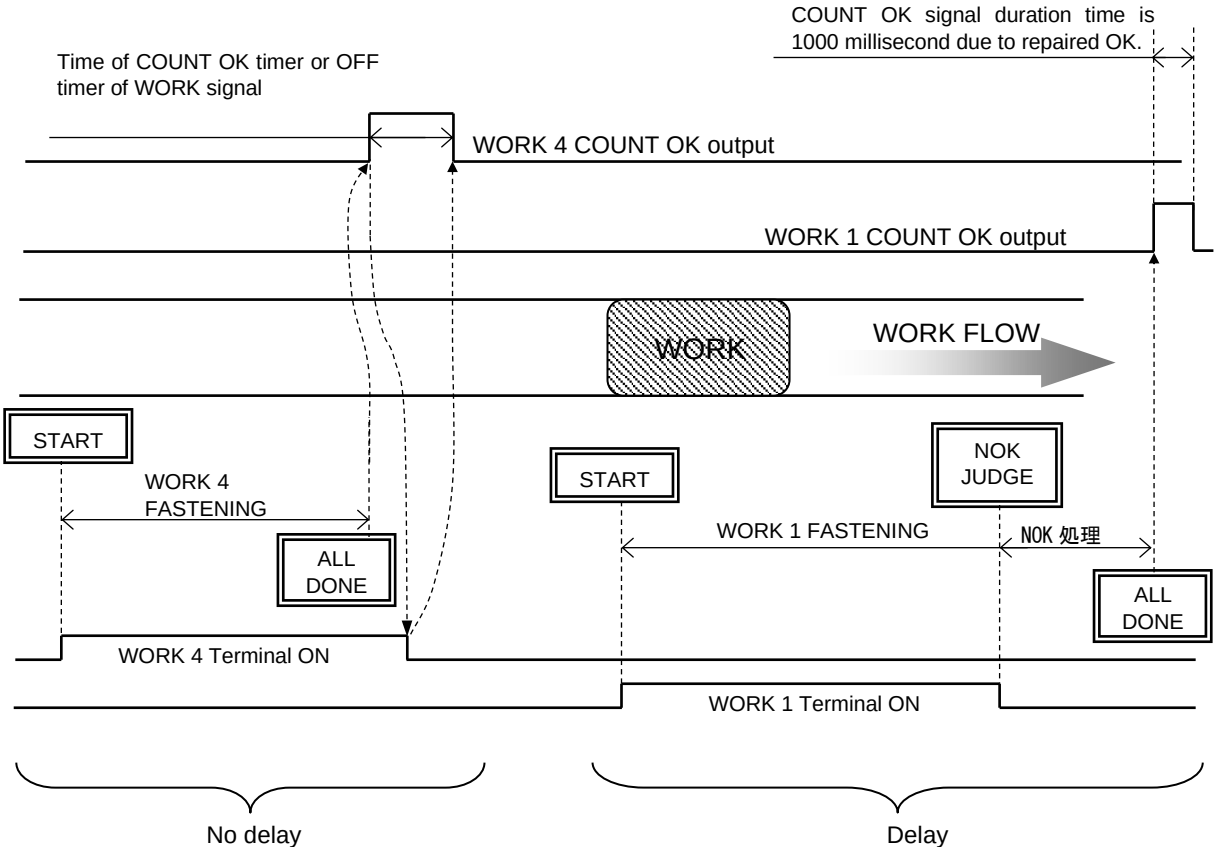
※COUNT OK signal duration is adjustable only 1~9999 millisecond. Unlimited setup is not possible.

※Repaired COUNT OK signal duration is 1 pulse fixed 2000 millisecond.



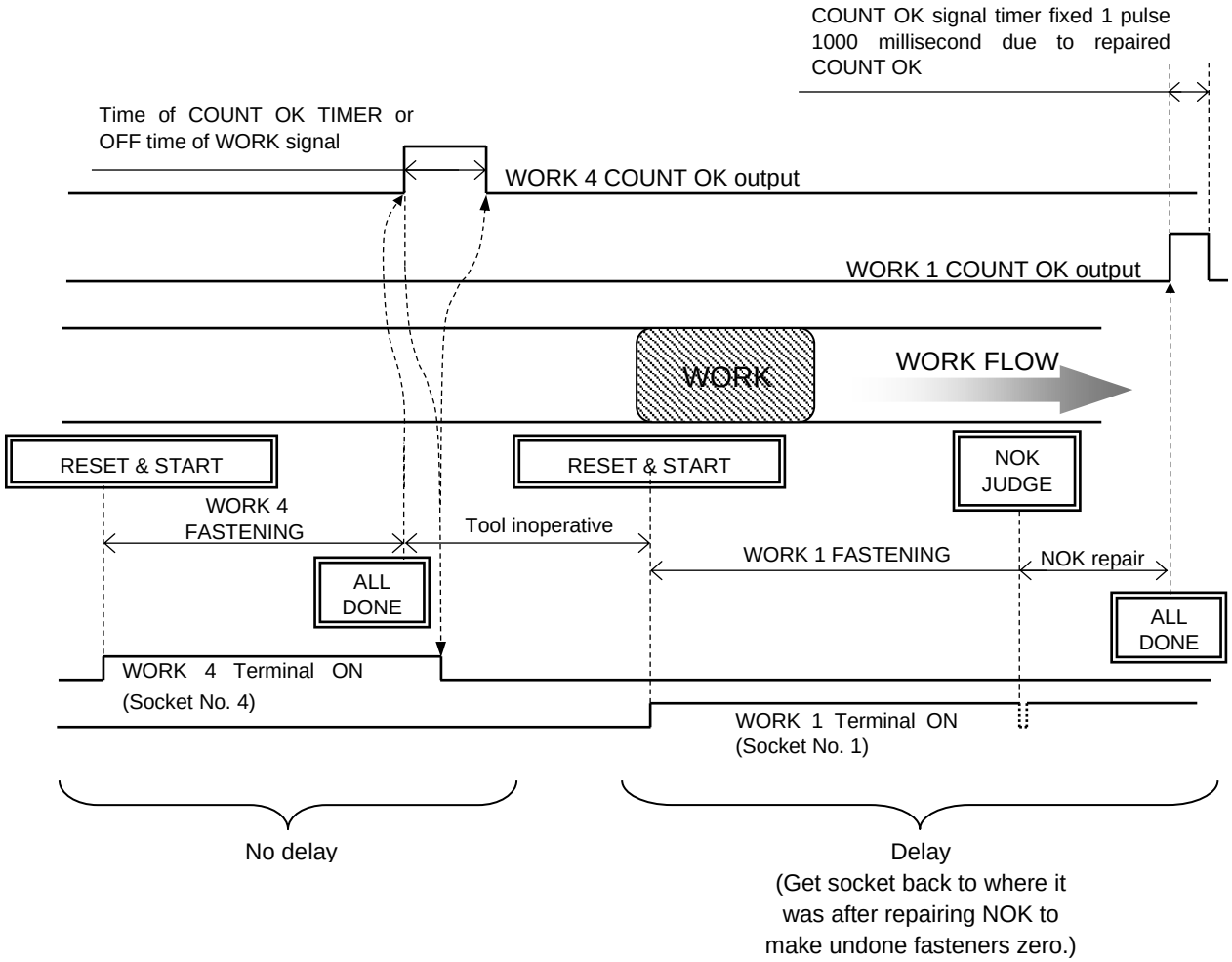
Setup 4

Change WORK number 1~5, and UCC will shift to COUNT DOWN. Use setup 4 with 1 entry in WORK SIG.SEL. Finish preset number of fasteners, and UCC will output COUNT OK signal to the terminal of corresponding WORK number like COUNT OK of WORK NO.2 to WORK 2 COUNT OK terminal. Set COUNT OK signal duration time by COUNT OK timer on a WORK to WORK basis. The OK signal duration due to repaired COUNT OK such as fastening the undone fasteners or PASS signal entry is 1 pulse fixed 1000 millisecond. UCC provides COUNT NOK if WORK change signal comes before UBX-AFZ finish preset number of fasteners. We provide an example having WORK 4 to WORK 1 change and judgment sequence as follows.



Setup 5

UCC makes WORK number switchover by socket changer signal. Change WORK 1~5, and UCC will perform ZERO/CAL check of torque sensor. Use setup 5 with 1 entry in WORK SIG.SEL. Finish preset number of fasteners, and UCC will output COUNT OK signal to the terminal of corresponding WORK number like the COUNTK OK of WORK 2 to WORK 2 COUNT OK terminal. Set COUNT OK signal duration time on a WORK to WORK basis. COUNT OK signal duration is adjustable 1~9999 millisecond or unlimited. UCC instead outputs 1 pulse fixed 1000 millisecond COUNT OK signal if it was converted from NOK by repair or PASS terminal switching. Switch off WORK change signal as foregoing COUNT OK comes, and COUNT OK will go off. UCC provides COUNT NOK judgment if WORK change signal is interrupted before the tool finish preset number of fasteners. Press front RES or switch on RESET of rear terminal block to cancel COUNT NOK. Once UCC provides COUNT OK, COUNT DOWN does not work unless WORK change signal is available (out of WORK SECTION).



WORK SIG.SEL

UCC provides maximum 16 different WORK setups by signal allocation to IN terminals. Enter 1 in WORK SIG.SEL (the fourth item from the top of MODE 3/4 page 27), and UCC will provide 5 WORKS. Enter 0 in the same, and you will be able to enjoy 16 WORKS.

Default 0

Setup 0: UCC provides maximum 16 different WORK setups by 4 signals allocation to IN terminals.

Setup 1: UCC provides maximum 5 different WORK setups by 5 signals allocation to IN terminals.

※Refer to MODE 3/4 page 27 and IN/OUT signal allocation for WORK SELECT details.

・Use setup 1 for LINE CNT.SELEC (setup 4 and 5 Line control) of page 33and 34 in this manual.

LAN OUT SEL (LAN output direction select)

Default 0

Setup 0 Hook up with setup software running device such as PC.

Setup 1 Hook up with quality server.

Function

・Select LAN's destination server.

・Enter 1, and serial number will appear on LCD display.

PASSWORD FUNC (Password history select)

Default 0

Setup 0 Do not use password function.

Setup 1 Use password function.

Setup 2 Delete all registered user name, password, and the history.

Function

・UCC asks the user for his password as he tries to change setting values.

・Refer to 9.4 PASSWORD in page 63 for the details.

WAVE MEM FUNC (Waveform memory function)

Default 4

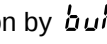
Setup 1 UCC does not memorize waveform data.

Setup 2 UCC memorize waveform data with alarm display and buzzer sounding.

Setup 3 UCC memorize waveform data with alarm display but without buzzer.

Setup 4 UCC memorize waveform data, but neither provides alarm display nor buzzer sounding.

Function

・UCC alarms buffer full information by  sign on LCD and buzzer sounding.

Rev. COUNT (Reverse count)
Default: 0 Do not use this function.
Setup: 1 Use Reverse count function.

【Function】
- UCC reverses a fastener count when detecting reverse torque after a fastener count is made.
- LCD displays [REV. Tq] when counting a fastener up.
- Consecutive reverse count is not possible.
- UCC reverses a WORK No in addition to a fastener count under the use of Program Number function.

Battery TYPE (Battery Type)
Default: 0
Setup: 0 Determine by the Dip Switch on UBX-AFZ Control Board.
Setup: 1 10.8(V)
Setup: 2 14.4(V)
Setup: 3 18(V)

【Function】
- Set Battery Voltage.
- Selecting setup 0 will determine the Battery voltage by setting of the Dip Switch on UBX-AFZ Control Board.
- Do not change this setting nor the Dip Switch position . To select a different Battery voltage can cause UBX-AF to malfunction.

Pairing Mode (Pairing Mode)
Default: 3
Setup: 0 Have UBX-AFZ paired with UCC by the Dip Switch mounted on UBX-AFZ.
Setup: 1 Have UBX-AFZ paired with UCC by wireless communication.
Setup: 2 Have two UBX-AFZ paired with UCC.
Setup: 3 Have UBX-AFZ paired with UCC by wireless communication under simple steps.

【Function】
- Set the pairing of UBX-AFZ and UCC.
- Refer to (9.5 Pairing procedure) for pairing under Setup 3.
- The 1st UBX-AFZ runs within the setup on WORK number 1-8, while the 2nd UBX-AFZ runs within the setup on WORK 9-16 when two UBX-AFZ are paired under Setup 2.
- Make sure the UBX-AF not the one in operation is powered-off when you use two paired UBX-AFZ. UBX-AFZ do not run when both two UBX-AFZ are powered-on at the same time.

※Pairing under setup 3 is available with UBX-AFZ version greater than [ZB 3.20A]. Use setup 1 for the UBX-AFZ version earlier than [ZB 3.20A].
※Refer to an extra manual “Pairing manual of UBX-AF by UCC-100Z” for pairing procedures under the Setup 0-2.

PAN ID SCAN (Surrounding PAN ID scan)
Default: 0
Setup: 0 Do not use this function.
Setup: 1 Use Manual PAN ID scan.
Setup: 2 Use Automatic PAN ID scan.

【Function】
- Detect other PAN IDs for pairing. Use this function when pairing is not correctly completed.
- Scan the surrounding ZigBee devices and exclude from the pairing target if there may exist third-party’s ZigBee devices around the UCC and UCC detects those PAN IDs other than PAN ID of UBX-AFZ tool.

※Refer to 9.6 PAN ID SCAN in page 69 for the details of Setup 1.

※Refer to an extra manual “Pairing manual of UBX-AF by UCC-100Z” for pairing procedures under the Setup 2.

SCAN COUNT (Scan Count)

Default: 20

Range: 0~120

【Function】

- Set the scan count when PAN ID scan is set at “1” or “2”.
- The higher the number of scans, the higher the accuracy and the longer the scan will take.
- It is recommended to set scan count for more than 20 when selecting setup 1 for PAN ID scan.

ROTAT STOP (Rotation Stop)

Default: 0

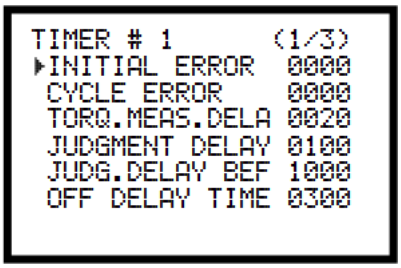
Setup: 0 Do not use this function.

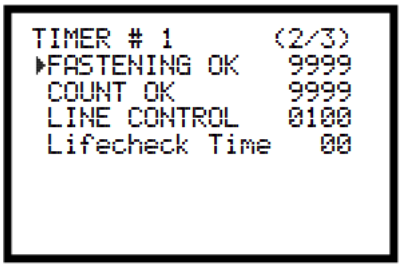
Setup: 1 Do not operate the tool except in the tightening process.

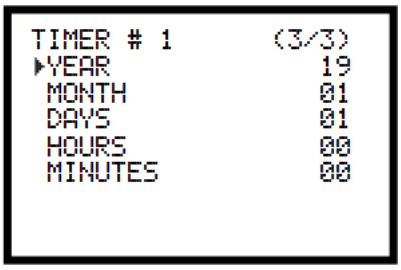
【Function】

- Determine tool’s operating condition.
- Selecting 0, and the tool is available for operation until COUNT OK.
- Selecting 1, and the tool will stop operating except in the tightening process(the state of being available for counting the fasteners).

8. 3. TIMER







INITIAL ERROR (Initial error timer)

Default 0 msec

Range 0~9999 msec

[Function]

・UCC provides INITIAL ERROR judgment if torque reaches CUT before this timer is up.

・Enter 0 if you do not use this function.

[Output state of INITIAL ERROR judgment]

・LCD displays LO.E. sign and torque value alternately.

・FASTENING lamp does not light.

・Buzzer sounds.

・Rear terminal block outputs FASTENING NOK signal.

[Cancel]

・Enter 1 in FASTENING ERROR 1, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

CYCLE ERROR (Cycle error timer)

Default 0

Range 0~9999 msec

[Function]

・UCC provides CYCLE ERROR judgment if torque is less than CUT when the timer is up from START.

・Use this timer to restrict fastening time.

・Enter 0 if you do not use this function.

[Output state of CYCLE ERROR judgment]

・LCD displays CYL. E. sign and torque value alternately.

・FASTENING lamp does not light.

・Buzzer sounds.

・Rear terminal block outputs FASTENING NOK signal.

[Cancel]

・Enter 1 in FASTENING ERROR 1, and the next operation will reset previous error (start reset).

・Press RES or switch on RESET terminal.

TORQ.MEAS.DELA (Torque measurement delay timer)

Default 20

Range 0~9999 msec.

[Function]

・This is time setup how long UCC passes up torque measurement from START to reject torque spike happening at bolt seating.

・This timer begins at START.

・Use this timer for applications that can cause initial torque spike at bolt/nut seating.

JUDGMENT DELAY (Judgment delay timer)

Default 300 (msec. = millisecond)

Range 100~9999 msec.

Function

・UCC provides judgment when this timer is up after UCC stopped UBX-AFZ by CUT signal.

・Use this timer as torque measurement end point.

・Study post-CUT torque spike magnitude to determine timer length.

※JUDG.DELAY BEF (pre-CUT torque) is operative when UCC first detect START torque.

JUDG.DELAY BEF (Pre-CUT torque Judgment delay timer)

Default 1000 msec.

Range 100~9999 msec.

[Function]

・With premature trigger off after START torque, this timer starts and UCC provides judgment when this timer is up.

・Use this timer for torque measurement end point.

※JUDGMENT DELAY timer is operative when torque reaches CUT torque.

OFF DELAY TIME(OFF delay timer)

Default 300

Range 1~9999 sec

[Function]

・UCC powers off UBX-AFZ when OFF DELAY timer is up from tool's Grip Switch off point.

・Even after OFF DELAY timer is up, UCC can continue drive cooling fan to protect UBX-AFZ.

FASTENING OK (Fastening/Torque OK timer)

Default 9999 msec.

Range 0~9999 msec.

[Function]

・This is time setup how long UCC maintain FASTENING OK signal from the rear terminal block.

・Trigger UBX-AFZ, and the foregoing FASTENING OK signal will go off before the timer is up.

・Adjust the timer if its duration can affect external sequencer.

・Enter 0, and UCC will maintain the signal output until next torque measurement starts

COUNT OK (Count OK timer)

Default 9999 msec.

Range 0~9999 msec.

[Function]

・This is time setup how long UCC maintain COUNT OK signal from the rear terminal block.

・Enter 0, and UCC will maintain the signal output until next cycle begins.

・WORK numbers 1~16 share the same setting (separate setting is not available).

※UCC does not accept 0 entry if setup 3 is selected for LINE CNT.SELEC (page 32).

LINE CONTROL (Line control timer)

Default 100

Range 1~9999 sec

[Function]

・This is for setup 2 and 3 of LINE CNT.SELEC (page 32) doing line control by timer.

LIFECHECK TIME (Existence-confirming interval)

Default: 0 msec

Range: 0~99 msec

【Function】

・This is interval setup for UCC to receive existence-confirming enquiry from the server.

・UCC provides existence-confirming error judgment if the server fails to send next enquiry before this timer is up.

・UCC stops sending settings to UBX-AFZ if existence-confirming error occurs in case of setup 1 under Rotation Stop(page 37) is selected.

YEAR (A.D. Christian era)

Default 0

Range 0~99

[Function]

・Set calendar year. Example: Enter 0, and UCC recognition will be 2000. Enter 16, and it will be 2016.

MONTH

Default 0

Range 1~12

[Function]

・Set calendar month.

DAYS

Default 0

Range 1~31

[Function]

・Set calendar date.

HOURS

Default 0

Range 0~23

[Function]

・Set calendar timer.

MINUTES

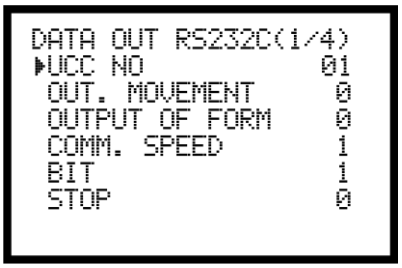
Default 0

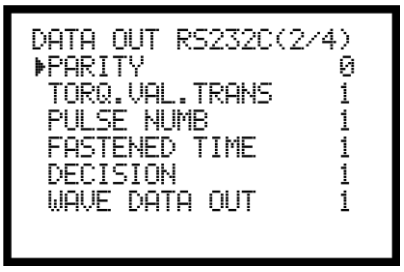
Range 0~59

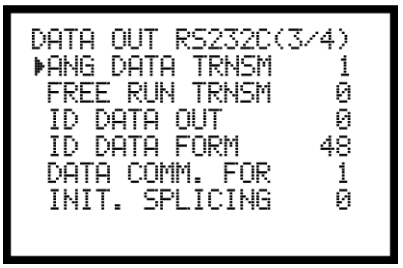
[Function] ・Set calendar minute.

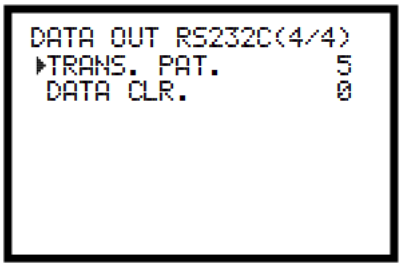
8. 4. DATA OUT (RS232C)

Set data contents that UCC output from rear panel PC port (RS232C).









UCC NO

Default 1

Range 1~25

[Function]

・When you hook up multiple UCC to a PC, give each UCC individually-arranged UCC numbers.

OUT MOVEMENT (Output data select)

Default 0 UCC outputs all data by RS232C.

Setup 1 UCC outputs data only when UCC detect following errors.
Torque and pulse numbers PLS.L (pulse number low), PLS.H (Pulse number high), ANG LOW LIMIT (Angle low limit error), ANG UPP LMT (Angle high limit error), LO.E (Initial error), CYL.E (Cycle error), and F.E. (Incomplete job error)

Setup 2 UCC does not output data.

[Function]

・UCC outputs data by rear panel RS232C port.

OUTPUT OF FORM (RS232C data system select)

Default 0

Setup 0 #~CR

Setup 1 #~LF

Setup 2 ENQ. NO. ACK/NAK~ET

Setup 3 Global

Setup 4 Same as UEC-4500

Setup 5 Same as UEC-4100

[Function]

・Select data system when UCC outputs data.

COMM. SPEED (Baud rate select)

Default	1	
Setup	0	4800 bps
Setup	1	9600 bps
Setup	2	19200 bps

[Function]

・Select baud rate of data transmission.

※This is not communication speed with a PC making parameter setup

BIT (Bit length select)

Default	1	
Setup	0	7 bit
Setup	1	8 bit

[Function]

・Bit length selection for data output by RS232C.

STOP (Stop bit select)

Default	0	
Setup	0	1 bit
Setup	1	2 bit

[Function]

・Stop bit selection for data output by RS232C.

PARITY (Parity bit select)

Default	0	
Setup	0	No parity
Setup	1	Even number
Setup	2	Odds number

[Function]

・Parity check selection for data output by RS232C

TORQ.VAL.TRANS (Torque value output select)

Default	1	
Setup	0	UCC does not output data.
Setup	1	UCC outputs torque value (5 byte with decimal point inclusive)

[Function]

・Select if output data includes torque value or not.

PULSE NUMB. (Pulse number output select)

Default	1	
Setup	0	UCC does not output data.
Setup	1	UCC outputs pulse number (4 byte).

[Function]

・Select if output data includes pulse number or not.

FASTENED TIME (TSC time output select)

Default 1

Setup 0 UCC does not output TSC data.

Setup 1 UCC outputs TSC data (4 byte)

[Function]

・Select if output data includes TSC data or not.

DECISION (Judgment output select by RS232C)

Default 1

Setup 0 UCC does not output judgment.

Setup 1 UCC outputs judgment.

[Function]

・Select if output data includes judgment data.

WAVE DATA OUT (Torque waveform data output select)

Default 1

Setup 0 UCC does not output data.

Setup 1 UCC outputs waveform data.

[Function]

・Select if UCC outputs data to URYU software Ethernet data communication protocol.

・LAN and RS232C do not interfere with each other.

ANG DATA TRNSM (Angle data output select)

Default 1

Setup 0 UCC does not output angle data (0000 is provided).

Setup 1 UCC outputs angle data (4 byte).

[Function]

・Select if output data includes angle data or not.

FREE RUN TRNSM (Free run angle data output select)

Default 0

Setup 0 UCC does not output free run angle data.

Setup 1 UCC outputs free run angle data.

[Function]

・Select if output data includes free run angle data or not.

ID DATA OUT (Select whether to associate ID data to output data)

Default 0

Setup 0 UCC carries out data transmission without ID data.

Setup 1 Output data is transmitted with ID data associated form.

[Function]

・Select whether to associate ID data with output data sent from rear panel RS232C port.

ID DATA FORM (ID data digit number select)

Default 48
Range 1~48

[Function]

・Set digit number of ID data. Unused digit is filled with 0.

DATA COMM. FOR (Data communication select)

Default 1
Setup 0 UCC does not receive job command from server. (WORK NO selection by IN terminals)
Setup 1 UCC receives job commend from server.

[Function]

・Select whether UCC receives job command from server by URYU standard protocol, or outputs fastening result without receiving job commend from server.
・In case of selecting setup 0, UCC will not receive command from server, but select WORK NO by WORK signal entry to IN terminals.
・In case of selecting setup 1, UCC receive WORK NO and Job from server.

INIT. SPLICING (Initial hook up select)

Default 0
Setup 0 When switched on, UCC transmit initial hook up command to server.
Setup 1 When switched on, server transmit initial hook up command to UCC.

[Function]

・Select which UCC or server first hook up by URYU standard communication protocol.

TRANS.PAT (Data sending pattern)

Choose data that UBX-AFZ transmits to UCC in association with judgment such as OK, NOK, errors or etc.

Default 0 UBX-AFZ does not transmit waveform data.
Setup 1 UBX-AFZ transmits torque waveform data per OK fastener.
Setup 2 UBX-AFZ carries out discrete data transmission torque and angle waveform per OK fastener.
Setup 3 Holding torque waveform data transmission until COUNT OK, UBX-AFZ carries out cumulative discrete data transmission per object at the time of COUNT OK.
Setup 4 Holding torque and angle waveform data transmission until COUNT OK, UBX-AFZ carries out cumulative discrete data transmission per object at the time of COUNT OK.
Setup 5 UBX-AFZ carries out indiscrete package data transmission torque and waveform per OK fastener.

[Function]

・Select data transmission contents and pattern that UBX-AFZ carries out to UCC.
・Readiness time after judgment is variable depending on the selection.
・Fastening is possible only after UCC completes cumulative data output under 3 or 4 setup option. UBX-AFZ remains inoperative until cumulative data output.
・Selecting setup 5 allows UCC to store waveform data of up to 50 pulses providing shorter readiness time than that of setup 2. Select setup 2 if pulses per waveform are more than 50.

DATA CLR. (Data clear)

Default: 0 UCC does not clear fastening data storage at TCP/IP connection time.

Setup: 1 UCC clears fastening data storage at TCP/IP connection time.

【Function】

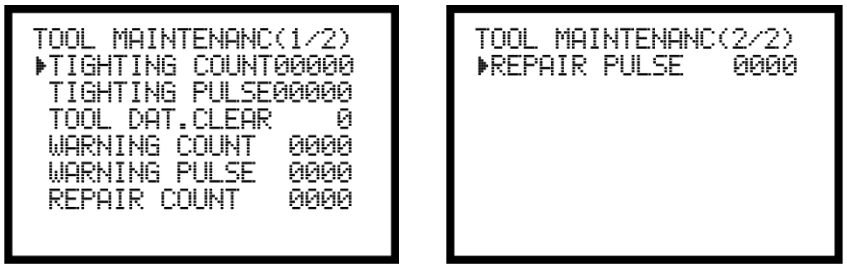
・Select whether or not UCC clears fastening data storage at TCP/IP connection time.

・Selecting setup 0 allows UCC to output fastening data stored by buffer when is hooked up to the server by URYU standard communication.

・Selecting setup 1 allows UCC to clear all fastening data stored by buffer when is hooked up to the server by URYU standard communication. In this case all fastening data is cleared without output.

8. 5. TOOL MAINTENANCE

UCC memorizes cumulative fastener numbers and pulse numbers from first fastener commenced by UBX-AFZ. Use these data to determine WORNING COUNT< WARNING PULSE, REPAIR COUNT, and REPAIR PULSE so you will notice maintenance such as oil change, parts replacement overhaul etc. for maintenance management.



TIGHTING COUNT (Total fastener number)

Range 0~99999 (unit: ten thousand fasteners)

[Function]

- ・Total number of fasteners that the connected UBX-AFZ so far fastened.
- ・The number includes NOK fasteners.

TIGHTING PULSE (Total pulse numbers)

Range 0~9999 (unit: ten thousand pulses)

[Function]

- ・Total number of pulses that the connected UBX-AFZ so far generated.
- ・The number includes NOK pules.

TOOL DAT. CLEAR (Tool data clear)

- ・Enter 1 in UCC, and cumulative COUNT and PULSE numbers will be zero.
- ・This data clear is for UCC only. Enter 1 in COUNT RESET of BASIC if you drop data memorized by UBX-AFZ.

WARNING COUNT (Warning count number)

Default 0

Range 0~9998 (unit: 10 thousand fasteners)

[Function]

- ・UCC gives WARNING display when cumulative fastener number reaches WARNING COUNT number.
- ・Set maintenance cycle you need to perform next parts or oil replacement for maintenance.

[Display contents]

- ・UCC buzzer sounds (press ENT to stop).
- ・UCC displays kcH.E. on LCD.
- ・UBX-AFZ is operative even if UCC gives WARNING.

※Enter 0 if WARNING is not necessary.

WARNING PULSE (Warning pulse number)

Default 0

Range 0~9998 (unit: 10 thousand pulses)

[Function]

・UCC gives WARNING display when cumulative pulse number reaches WARNING COUNT numbers.

・Set cumulative pulse numbers you need to perform next oil replacement for maintenance.

[Display contents]

・UCC buzzer sounds (press ENT to stop).

・UCC displays kcP.E. on LCD.

・UBX-AFZ is operative even if UCC gives WARNING.

※Enter 0 if WARNING is not necessary.

REPAIR COUNT (Repair caution fastener number)

Default 0

Range 0~9999 (unit: ten thousand)

[Function]

・UCC gives WARNING display when cumulative fastener number reaches REPAIR COUNT.

[Display contents]

・UCC buzzer sounds (press ENT to stop).

・UCC switches on CAUTION terminal.

・UCC displays rPH.E. on LCD.

・UBX-AFZ is operative even if UCC gives WARNING.

※Enter 0 if WARNING is not necessary.

REPAIR PULSE (Repair caution pulse number)

Default 0

Range 0~9999 (unit: ten thousand)

[Function]

・UCC gives WARNING display when cumulative pulse number reaches REPAIR COUNT.

[Display contents]

・UCC buzzer sound (press ENT to stop).

・UCC switches on CAUTION terminal.

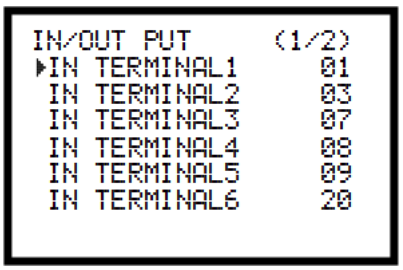
・UCC displays rPP.E. on LCD.

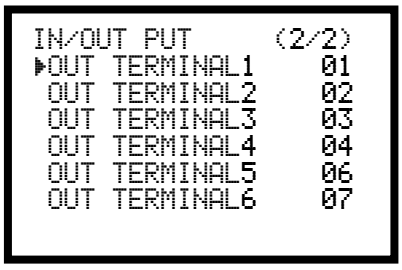
・UBX-AFZ is operative even if UCC gives WARNING.

※Enter 0 if WARNING is not necessary.

8. 6. IN/OUT (Rear terminal signal allocation)

Signal allocation to IN and OUT terminal is free format. As necessary, allocate signals to these terminals.





IN terminal signal allocation

Allocate signals to IN terminals 1 to 6.

Default signal allocation to IN terminals

LCD display	Default (Contents)	Terminal numbers
IN TERMINAL 1	1 (LS1)	IN1
IN TERMINAL 2	3 (RESET)	IN2
IN TERMINAL 3	7 (WORK A)	IN3
IN TERMINAL 4	8 (WORK B)	IN4
IN TERMINAL 5	9 (WORK C)	IN5
IN TERMINAL 6	20 (WORK D)	IN6

Signal details

Entry	Signal names	Contents
1	LS 1	COUNT judgment under line control setup 0. COUNT OK judgment to prepare for next WORK under line control setup 1 or 2.
2	START	External start ※Do not use this function for UBX-AFZ.
3	RESET	Reset line control setup, NOK judgment, and COUNT.
4	LS 2	Switch on judgment under line control setup 1.
5	PASS	Compulsory COUNT OK if any fastener remains undone.
6	QL	Count down fastening signal of click wrench (QL wrench).
7	WORK A	Allocate these 4 signals to IN terminals, and UCC will provide up to 16 WORK SELECT under 0 entry in WORK SIG. SEL.
8	WORK B	
9	WORK C	
20	WORK D	
10 ≀ 14	WORK 1 ≀ WORK 5	Allocate these 5 signals to IN terminals, and UCC will provide 5 WORK SELECT under 1 entry in WORK SIG.SEL.
15	CUT	Stop running UBX-AFZ by an external signal.
16	VALVE	Solenoid valve failure check signal. ※Do not use this function for UBX-AFZ.
17	TOOL SWITCH	This signal blocks UBX-AFZ from measuring torque. ※Do not use this function for UBX-AFZ.
21	RELOAD SETTINGS	Abort settings in UBX-AFZ, and then request for setting reloading. Transmission of settings to UBX-AFZ is suspended and UBX-AFZ gets disabled while this signal is input. UBX-AFZ will perform tightening even if this signal is input during tightening.

OUT terminal signal allocation

Allocate signals to OUT terminals 1~6.

Default signal allocation to OUT terminals

LCD display	Default (Contents)	Terminal numbers
OUT TERMINAL 1	1 (COUNT OK)	OUT1
OUT TERMINAL 2	2 (COUNT NOK)	OUT2
OUT TERMINAL 3	3 (FASTENING OK)	OUT3
OUT TERMINAL 4	4 (FASTENING NOK)	OUT4
OUT TERMINAL 5	6 (TORQUE LOW NOK)	OUT5
OUT TERMINAL 6	7 (TORQUE HIGH NOK)	OUT6

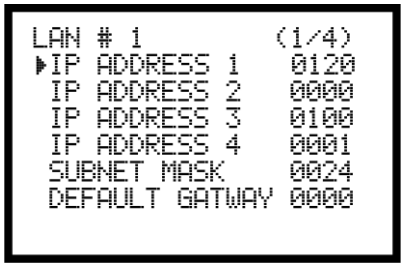
Signal details

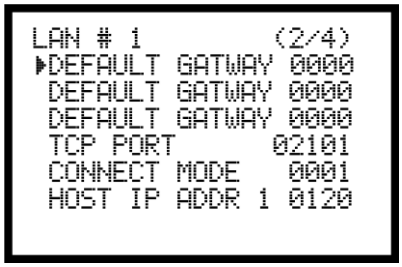
Entry	Signal names	Contents
1	COUNT OK	UCC outputs COUNT OK. Adjust signal duration time by COUNT OK timer.
2	COUNT NOK	UCC outputs COUNT NOK. UCC maintains COUNT NOK signal until this is reset or repaired.
3	FASTENING OK	UCC outputs FASTENING OK. Adjust signal duration time by FASTENING OK timer.
4	FASTENING NOK	UCC outputs FASTENING NOK. UCC maintains FASTENING NOK signal until this is reset or repaired.
5	SV	UCC outputs SV signal when torque reaches START torque. ※Do not use this function for UBX-AFZ.
6	TORQUE LOW NOK	UCC outputs when torque judgment was LOW NOK.
7	TORQUE HIGH NOK	UCC outputs when torque judgment was HIGH NOK.
8	OPERATION RANGE	UCC outputs while UBX-AFZ remains job section.
9	CPU RUN	UCC outputs while UCC is operative. But this goes off while UCC is in writing mode not controlling UBX-AFZ.
10	CAUTION	UCC outputs when cumulative fastener number/pulse number reaches REPAIR COUNT/REPAIR PULSE.
11	WORK A answer	UCC outputs answer signals of WORK A, B, C and D currently selected. Example: UCC outputs WORK A and C answer signals when WORK 6 is selected (page 21).
12	WORK B answer	
13	WORK C answer	
20	WORK D answer	
14	WORK 1 COUNT OK	COUNT OK per WORK number
15	WORK 2 COUNT OK	
16	WORK 3 COUNT OK	
17	WORK 4 COUNT OK	
18	WORK 5 COUNT OK	
19	SV2	UCC outputs when torque reaches SNUG torque. ※Do not use this function for UBX-AFZ.

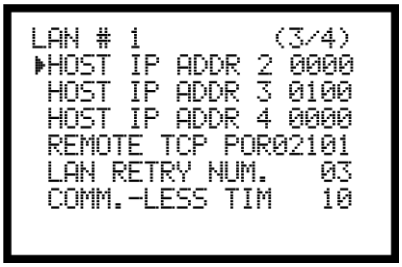
※It is not possible to allocate one signal to 2 or more terminals.

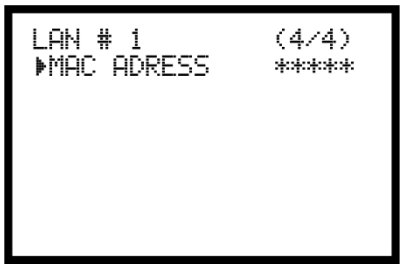
8. 7. LAN

This is Ethernet (TCP/IP) communication setup. Change setup value on LCD as described in 5.5 Setup page 18. Press RES after the change is over, and then switch off UCC. Switch on UCC again, and setup value rewriting is completed. Setup value rewriting is not possible unless you carry out this process.









IP ADDRESS 1~4

Default 120.0.100.1

Range 0~255

[Function]

・Set controller side IP address.

SUBNET MASK

Default 0024

Range 1~31

[Function]

・Setup subnet mask.

Subnet Mask Table					
1	255, 255, 255, 254	11	255, 255, 248. 0	21	255, 224, 0, 0
2	255, 255, 255, 252	12	255, 255, 240, 0	22	255, 192, 0, 0
3	255, 255, 255, 248	13	255, 255, 224, 0	23	255, 128, 0, 0
4	255, 255, 255, 240	14	255, 255, 192, 0	24	255, 0, 0, 0
5	255, 255, 255, 224	15	255, 255, 128, 0	25	254, 0, 0, 0
6	255, 255, 255, 192	16	255, 255, 0, 0	26	252, 0, 0, 0
7	255, 255, 255, 128	17	255, 254, 0, 0	27	248, 0, 0, 0
8	255, 255, 255, 0	18	255, 252, 0, 0	28	240, 0, 0, 0
9	255, 255, 254, 0	19	255, 248, 0, 0	29	224, 0, 0, 0
10	255, 255, 252, 0	20	255, 240, 0, 0	30	192, 0, 0, 0
				31	128, 0, 0, 0

DEFAULT GATWAY (Default Gateway)

Default (0. 0. 0. 0)

Range 0~255

[Function]

・Setup Default Gateway.

・Make the setup when you hook up your PC to UCC through router.

TCP PORT

Default 2101

Range 0~9999

[Function]

・Setup TCP port of UCC.

CONNECT MODE

Default 1

Setup 0 Hook up UCC to host.

Setup 1 Hook up UCC to client.

[Function]

・Enter 1 when you use setup software.

HOST IP ADDR (Hose IP Address 1~4)

Default 120.0.100.0

Range 0~255

[Function]

・Setup IP address of PC or Server communicating with UCC through Ethernet.

REMOTE TCP POR (Remote TCP Port)

Default 2101

[Function]

・Set up TCP port of destination PC or Server. Set the value just the same as UCC's TCP port.

LAN RETRY NUM. (LAN Retry numbers)

Default 3

Range 0~10

[Function]

・Set up retry numbers, and UCC will continue predetermined retrials maximum if first LAN connection failed.

・The default setup is recommend.

COMM.-LESS TIM (Maximum waiting time for an answer from the destination through LAN)

Default 10 sec

Rage 0~10 sec

[Function]

・Set up waiting time, and UCC will wait for an answer from destination server or PC for the predetermined time.

・The default setup is recommended.

MAC ADRESS (MAC Address)

Default Every UCC comes with a unique MAC address.

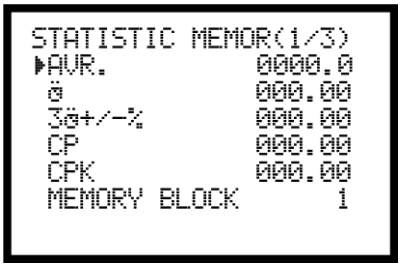
Range 0~9999

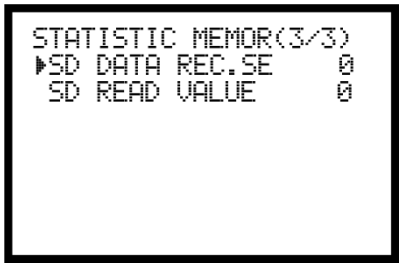
[Function]

・This is UCC's MAC address. The address change is not possible.

8. 8. STATISTIC (MEMORY)

Set up memory data download, display, clear, setting etc., and SD card operation and setup.





AVR (Mean of memorized data)

[Function]

・UCC displays memorized data mean value.

※This is not setup.

$$\bar{x} = \frac{x_1 + x_2 + \sim + x_n}{n}$$

$\bar{x}$: Mean value

n: Sample number

σ (σ Sigma value display)

[Function]

・UCC displays memorized data sigma value (standard deviation).

※This is not setup.

$$\sigma = \sqrt{\left[\frac{1}{n-1}\sum(x_n - \bar{x})^2\right]}$$

σ: Standard deviation

3σ+/- display (±% difference between 3σ of memorized data and mean value)

[Function]

・UCC displays 3 sigma/mean value.

※This is not setup.

3σ: Variation $3\sigma = 3\sigma / \bar{X} \times 100\%$

CP (CP value display)

[Function]

・UCC displays CP (Capability of process) value of memorized data.

・UCC calculates CP value by using torque LOW limit, torque HIGH limit of the selected WORK number and memorized data.

※This is not setup.

$$CP = \frac{HIGH - LOW}{6\sigma}$$

CP: Capability of process

CPK (CPK value display)

[Function]

・UCC displays CPK (One-sided Capability of process) value of memorized data.

・UCC calculates CPK value by using torque LOW limit, torque HIGH limit of the selected WORK number and memorized data.

※This is not setup.

$$CPK = \frac{B}{3\sigma}$$

B1 : HIGH limit – Mean value

B2 : Mean value – LOW limit

B : B1 or B2 whichever the smaller

CPK : Capability of Process Index with mean value deviation inclusive

MEMORY DATA BLOCK (Memory block classification select)

Default 1

Setup 1 Memory data does not include ID data (maximum 3,900 pieces)

Setup 2 Memory data includes ID data (maximum 1,800 pieces)

[Function]

・Select whether to include ID in data in memory data when UCC stores measurement data.

MEM. CONTENTS (Memory contents select)

Default	2	
Setup	0	UCC does not memorize fastening data.
Setup	1	UCC memorizes all fastening data. UCC provides alarm display COUP (Max memory) sign on LCD with buzzer sounding when free memory is 10 pieces away from maximum number. Press RES or switch on RESET terminal, and the alarm will go off. But next fastening data switches on alarm display again.
Setup	2	UCC memorizes all fastening data but provides no alarm display COUP and buzzer.
Setup	3	UCC memorizes only OK data and provide alarm display COUP.
Setup	4	UCC memorizes only OK data but does not provide alarm display COUP and buzzer sounding.

[Function]

- Select whether to use alarm display COUP (Max memory) sign on UCC.
- Change setup entry, and UCC will drop all memory.

MEMORY CLEAR

[Function]

- Enter 1, and UCC will display –CLE on LCD.
- Press ENT, and UCC will clear all memory.
- Or, connect PC and click MEM CLR key on statistic picture.

UNUS.HIST.CL (Unusual history clear)

[Function]

- Enter 1, and UCC will clear error data stored by UCC.

SD SETUP VALUE (Setup value storage by SD card)

[Function]

- Enter 1, and UCC will write all setup values in SD card.
- The setup data is stored with the writing date as the file name like [SD160405].
- If you do writing twice or more a day, UCC will advance tens place such as 40, 50, 60 avoiding and developing from 30.

Example: Do the data writing on 2016.04.05, and the SD card will prepare a folder [SD160405] in which the data will be stored with file name [SD160405.SDT]. This is first data storage of the day. Further storage on the same day will be file [SD160440.SDT] in a new folder [SD160440] and file [SD160450.SDT] in a new folder [SD160450]. LCD displays stored file as [160405] by SD DATA REC (Setup value reading). Maximum file number is four a day.

SD FORMAT (SD card format)

[Function]

- Insert SD card in SD card slot in the rear panel. Enter 1, and UCC will format the card (initialize).
- If you use a new SD card, format it before us.

※Attention is necessary, because the format clears all data and setup value in SD card.

SD WAVE REC.SE (Waveform saving in SD card)

Default 0

Setup 0 UCC does not write waveform data in SD card.

Setup 1 UCC writes waveform data in SD card.

[Function]

・Insert SD card in the rear slot and enter 1, and waveform data writing will be operative.

・UCC accepts SD card up to 32GB.

・Change the entry from 0 to 1, and UCC will start waveform data writing in SD card. Waveform data before the change is not written in SD card.

SD DATA REC.SE (Fastening data saving in SD card)

Default 0

Setup 0 UCC does not write fastening data in SD card.

Setup 1 UCC writes fastening data in SD card.

[Function]

・Insert SD card in the rear slot and enter 1, and fastening data writing will be operative.

・UCC accepts SD card up to 32GB.

・Change the entry from 0 to 1, and UCC will start fastening data writing in SD card. Fastening data before the change is not written in SD card.

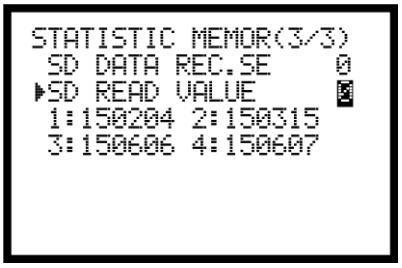
SD READ VALUE (Setup value reading stored in SD card)

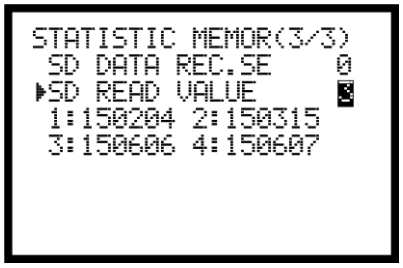
Default 0

Setup 1~4 UCC downloads setup value stored in SD card.

[Function]

・Select SD DATA REC.SE under writing MODE, and UCC will display file names stored in SD card.

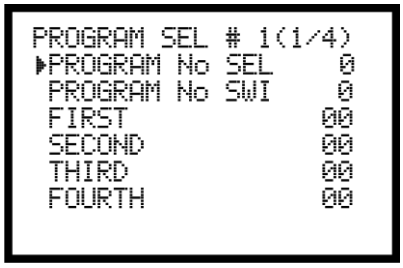


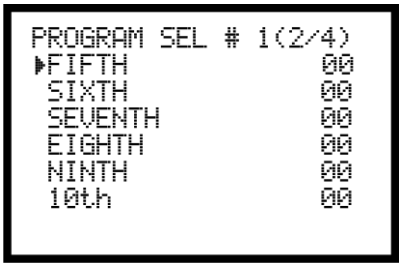


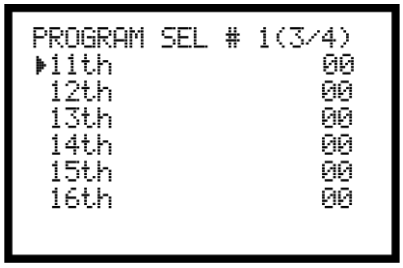
Enter left figure of file name, and UCC will download setup value stored in SD card. Above picture (right) shows entry of 3 downloading file 150606. Fix digit number like [SD(6 digit only)] when you name file by PC. UCC will not display setup value if digit number is less than 6.

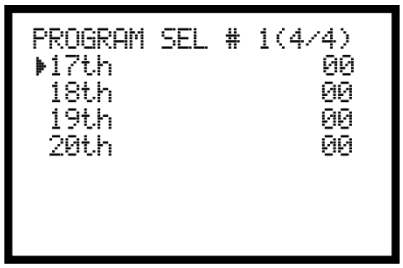
8. 9. PROGRAM NUMBER

Make a PROGRAM if you want to drive a UBX-AFZ by different power setups for each fastener like 1st one by high torque and 2nd one by lower torque etc. Use PROGRAM NUMBER, and you will be able to enjoy up to 16 different WORKS (setups) per OBJECT having up to 20 pieces fasteners. For n pieces fasteners of one OBJECT, enter 0 in n+1th fastener to terminate one PROGRAM.









PROGRAM No SEL (Program number function select)

Default 0

Setup 0 Spare PROGRAM function.

Setup 1 UCC selects PROGRAM number by PROGRAM signal entry to IN terminals (see page 21 WORK No. Change).

Setup 2 UCC selects PROGRAM number as per data (32 byte) coming to rear PC socket (RS232C) from GLOBAL pokayoke. Enter 1 in ID DATA OUT and set digit 32 for ID data.

Setup 3 UCC selects PROGRAM number as per data (48 byte) coming to rear PC socket (RS232C) from GLOBAL pokayoke. Enter 1 in ID DATA OUT and set digit 48 for ID data.

[Function]

・Set whether to use PROGRAM change, and how to select the number.

・Change the entry from 0 to 1, 2, or 3, or the retrograde, and UCC will clear fastening result memory (unable to change above setup while retaining the memory).

・UCC reverses WORK number when detecting reverse torque in reverse rotation. It functions when Reverse Count function is activated.

PROGRAM No SWI (Fastener shift process)

Default 0

Setup 0 UCC will shift to next WORK No. (fastener) if foregoing fastening was OK.

Setup 1 UCC will shift to next WORK No. (fastener) with no relation to foregoing result OK or NOK.

Setup 2 UCC will shift to next WORK No. (fastener) if foregoing fastening was OK or HIGH NOK.

[Function]

・Select condition when shifting to next WORK No. (fastener).

FIRST~20TH (Work number allocation from 1st fastener to 20th fastener)

Default 0

Setup 0~16

Contents 0 End of fastening cycle

1~16 UBX-AFZ carries out fastening as per WORK No. setups in the order arranged by the PROGRAM.

[Function]

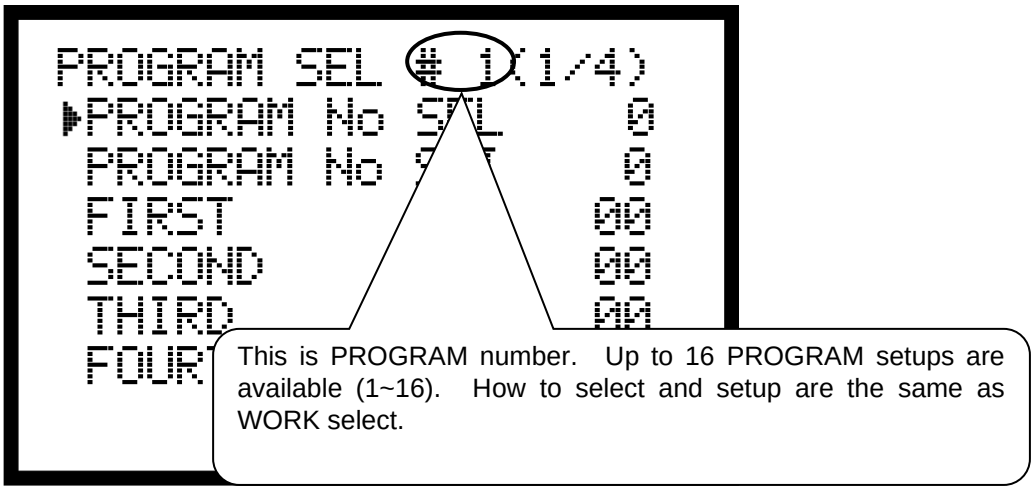
・Allocate which WORK No. to what number fastener.

[Example]

This is an example setup fixing an object by 4 fasteners by 2 work numbers WORK 1 and WORK 2. Enter 1, 2, or 3 in PROGRAM NO SEL of page 60. Then, create a PROGRAM with 1 entry in FIRST, SECOND, THIRD, and 2 entry in FOURTH, and 0 entry in FIFTH. UBX-AFZ performs fastening 1st, 2nd, and 3rd fasteners by WORK 1 setup, then 4th fastener by WORK 2 setup, and provides COUNT OK judgment upon completion of 4th fastener. Up to 20 fasteners under one PROGRAM have free options of 1~16 WORK setups.

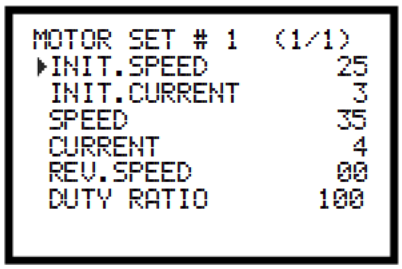
UCC receives PROGRAM signal from IN terminals of its rear panel under 1 entry in PROGRAM NO SEL.

UCC receives PROGRAM signal from PC socket of its rear panel under 2 or 3 entry in PROGRAM NO SEL.



8. 10. MOTOR SET

Set tools' revolution speed and current value. Pull the trigger, and UBX-AFZ will run at INITIAL speed by INITIAL current until torque reaches START. After START, the speed and the current will shift to SPEED (fixed) and CURRENT (fixed).



Init. Speed (Initial speed setup)

Default 25 (2500 rpm)
Range 10~48 (1000~4800 rpm)

[Function]

・Set revolution speed from triggering to START torque.

Init. curr (Initial current setup)

Default 3
Range 1~4 (low ~ high)
Setup 1 (35%)
Setup 2 (55%)
Setup 3 (75%)
Setup 4 (100%)

[Function]

・Set motor current from triggering to START torque.

Speed (Fixed speed setup)

Default 35 (3500 rpm)

[Function]

・Set motor speed after START.
・Speed range is directly dependent on current setup.

[Adjustable speed range along with progressive current increase]

Speed:	Current
13~48	Setup 1
17~48	Setup 2
21~48	Setup 3
25-48	Setup 4

Current (Fixed current setup)

Default 4
Setup 1 (35%)
Setup 2 (55%)
Setup 3 (75%)
Setup 4 (100%)

[Function]

・Set motor current after START.

REV. Speed (Reverse speed)

Default : 0 (4800 rpm)

Range: 0 (Same speed as Fixed speed setup)

10~48 (1000~4800 rpm)

[Function]

・Set revolution speed from triggering to START torque.

・UBX-AF runs in counter-clockwise with the same speed determined by Speed (speed setup after START torque) when set 0.

DUTY (Duty ratio)

Default: 100 (100%)

Range: 10~100 (10~100%)

【Function】

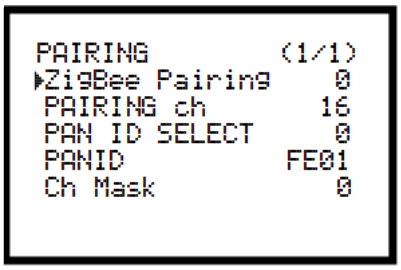
・Set motor output by setting.

・Adjustable at 10% intervals.

※It is recommended that the Duty ratio setting is set 40 or over for use.

8. 11. PAIRING SET

This setup is to pair UBX-AFZ and UCC. Following LCD is displayed when Paring Mode in Mode Setup is set to 0 or 2. The same LCD is not displayed when Paring Mode is set to 1.



ZigBee Pairing

Default 0

[Function]

- Enter 1, and the pairing will start.
- Proceed with pairing after confirmation of PAIRING Ch and PANID.
- Carry out pairing, and UCC will write PAIRING Ch and PANID in UCC itself and UBX-AFZ.
- Refer to an extra manual “Pairing manual of UBX-AF by UCC-100Z ” for the details.

Pairing Ch (Pairing channel)

Default 0
Rage 1~16
Setup 0 Scan unused channel.

[Function]

- Choose channel for ZigBee out of 1~16 channels.
- Carry out pairing after setup change, and UCC will write PAIRING Ch in UCC itself and UBX-AFZ.
- Enter 0 if you scan unused channel.
- Refer to an extra manual “Pairing manual of UBX-AF by UCC-100Z ” for the details.

PAN ID SEL (PAN ID Select)

Default 0
Setup 0 (PAN ID setting range : FE00~FE7F)
Setup 1 (PAN ID setting range : 0000~EEFF)

[Function]

- Set the PAN ID setting range for Zigbee wireless communication.
- Enter 0 when you carry out pairing by making use of the Dip Switch on UBX-AFZ.
- PC is required to write PAN ID in UBX-AFZ when carrying out pairing under setup 1.

PAN ID (PAN ID)

Default 000 (FE00)
Range 000~127 (under Paring Mode 0)
0000-EEFF (under Paring Mode 1)

[Function]

- This is the ID to carry out paring of UCC and UBX-AFZ.
- The setting range changes according to Paring Mode setting.
- Carry out pairing after setup change, and UCC will write PAN ID in UCC itself and UBX-AFZ.
- If you do not carry out pairing UCC does not write PAN ID but the PAN ID remains unchanged after UCC leaves writing mode.

Ch Mask (Ch mask)

Default 0

Setup 0 Do not use Ch mask pairing

Setup 1 Use Ch mask pairing.

[Function]

・Pairing by making use of Uryu genuine Cable to be connected between UBX-AFZ and UCC front PC Connector by closing pairing channels other than specified one.

・Use this function if you find it difficult to succeed in pairing due to radio interference from ZigBee devices around UCC.

・Refer to an extra manual “Pairing manual of UBX-AF by UCC-100Z” for detailed pairing procedures.

9. FUNCTIONS

9.1. UPPER & LOW LIMIT JUDGMENT

UCC provides judgment whether measured torque and counted pulse numbers at the end of fastening were within HIGH and LOW limit set by limits of TORQUE LOW, TORQUE HIGH, PULSE LOW and PULSE HIGH of 8.1 BASIC.

[Judgment]

（1）Measured value was within limits of HIGH and LOW (OK)

- ・UCC front panel OK lamp lights (green).
- ・UBX-AFZ LED lamp lights green.
- ・FASTENING OK terminal is switched on.
- ・UCC gives buzzer sounding 1 pulse for FASTENING OK and 2 pulses for COUNT OK.

（2）Measured torque was greater than HIGH limit (HIGH NOK)

- ・UCC front panel HIGH lamp lights (red).
- ・UBX-AFZ LED lamp lights red.
- ・UCC displays measured torque value by blank letters in the black back ground with suffix  .
- ・UCC gives buzzer sounding.
- ・FASTENING NOK terminal is switched on.
- ・TORQUE HIGH NOK terminal is switched on.

（3）Counted pulse number was more than HIGH limit.

- ・UCC front panel HIGH lamp lights (red).
- ・UCC LCD displays PLS.H. and torque value alternately.
- ・UBX-AFZ LED lamp lights red.
- ・UCC displays measured torque value by blank letters in the black back ground with suffix  .
- ・UCC gives buzzer sounding.
- ・FASTENING NOK terminal is switched on.

（4）Measured torque was lower than TORQUE LOW limit (LOW NOK)

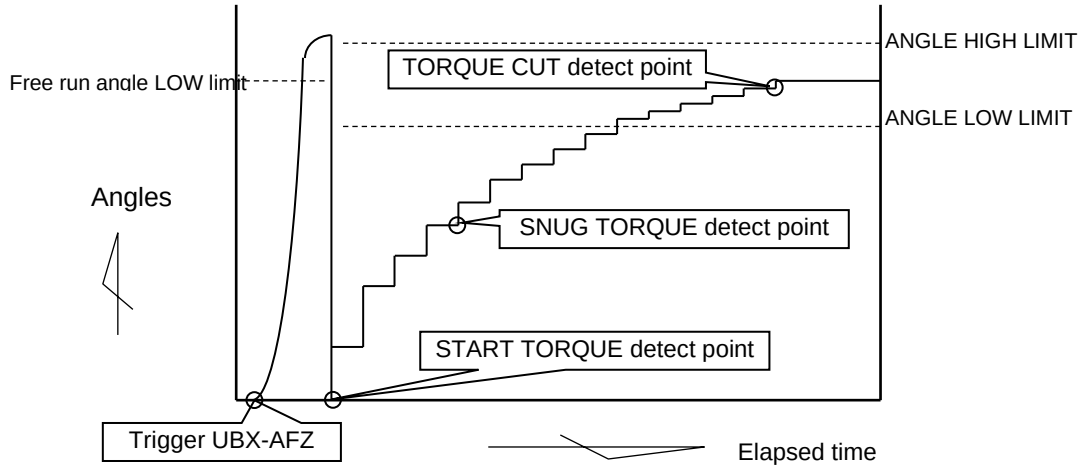
- ・UCC front panel LOW lamp lights (yellow).
- ・UCC displays counted pulse numbers by blank letters in the black back ground with suffix  .
- ・UBX-AFZ LED lamp lights red.
- ・UCC gives buzzer sounding.
- ・FASTENING NOK terminal is switched on.
- ・TORQUE LOW NOK terminal is switched on.

（5）Counted pulse number was less than LOW limit.

- ・UCC front panel LOW lamp lights (yellow)
- ・UCC LCD displays PLS.L. and torque value alternately.
- ・UCC displays counted pulse numbers by blank letters in the black back ground with suffix  .
- ・UBX-AFZ LED lamp lights red.
- ・UCC gives buzzer sounding.
- ・FASTENING NOK terminal is switched on.

9. 2. ANGLE UPPER & LOW LIMIT JUDGMENT

UCC makes judgment on whether measured angle was within HIGH and LOW limit. The angle HIGH and LOW limit judgment is made on angles of FREE RUN, START to SNUG, and SNUG to TORQUE CUT by angles determined by FREE RUN ANGLE, ANGLE LOW and ANGLE HIGH of 8.2 MODE setup.



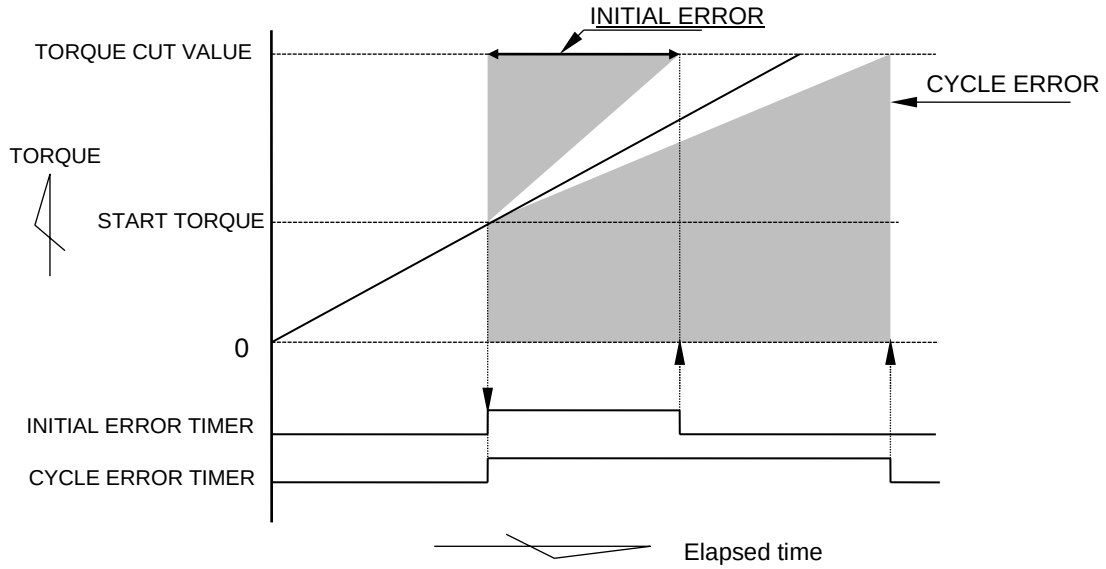
[Judgment]

(1) When FREE RUN angle was less than FREE RUN ANGLE LOW LIMIT.
- UCC provides FREE RUN angle error judgment (low limit: 1~9999).

(2) When SNUG to TORQUE CUT angle was more than ANGLE HIGH LIMIT.
- UCC provides ANGLE HIGH error judgment (high limit 1~9999)

(3) When SNUG to TORQUE CUT angle was less than ANGLE LOW LIMIT.
- UCC provides ANGLE LOW error judgment (low limit 1~9999)

9. 3. TORQUE CHANGE DEGREE MONITORING ZONE



Note) This line graph describes torque-time relations when torque grows rectilinearly.

1）INITIAL ERROR (LO.E.)

UCC provides INITIAL ERROR judgment when START to CUT elapsed time was shorter than INITIAL ERROR timer (torque reaches CUT before INITIAL ERROR timer is up).

[Setup]

・Enter 1 in INITIAL ERROR detect.

・INITIAL ERROR timer: 1~9999 msec.

[Hint]

・Calculate average time elapsed START to CUT for OK fasteners. Then study time to detect INITIAL ERROR.

2）CYCLE ERROR (CYL.E)

UCC provides CYCLE ERROR judgment when START to CUT elapsed time was longer than CYCLE ERROR timer (torque was still lower than CUT when the timer was up).

[Setup]

・Enter 1 in CYCLE ERROR detect.

・CYCLE ERROR timer: 1~9999 msec.

[Hint]

・Calculate average time elapsed START to CUT for OK fasteners. Then study time to detect CYCLE ERROR.

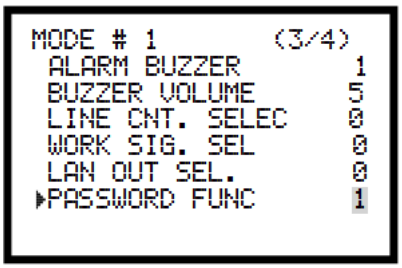
9. 4. PASSWORD

UCC requests password when you enter in writing mode to change setup. Register user's name and the password by the set. Change the setup values, and UCC will memorize user's name and the password that associated in the change. Choose any combination of figures from 0000 to 9999 for a four-digit number. UCC accepts up to 16 combinations of user's name and password.

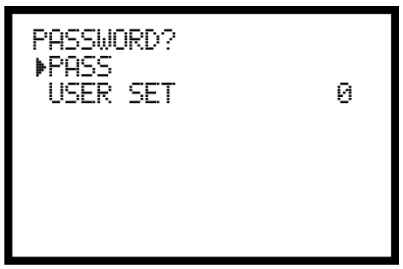
1）Registration

※Following shows how to register 1234 as user's name and password.

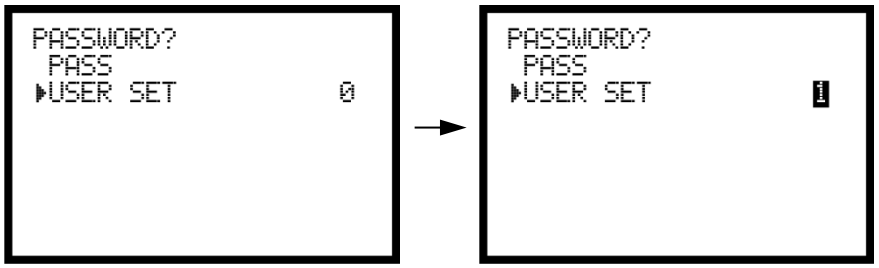
Enter 1 in 3rd picture of MODE, and press ENT to shift to PASSWORD. Then press RES to get out of setup MODE once.



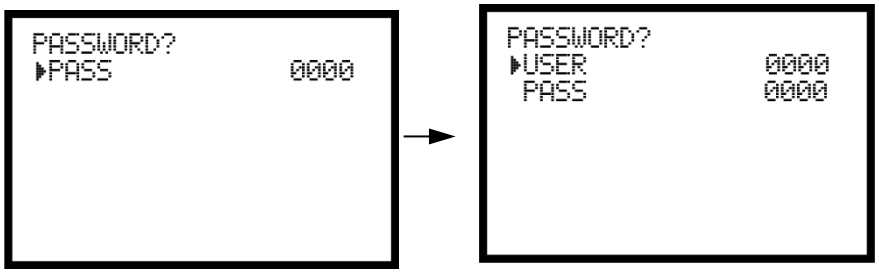
Keep pressing ENT, and PASSWORD requesting picture will appear on LCD.



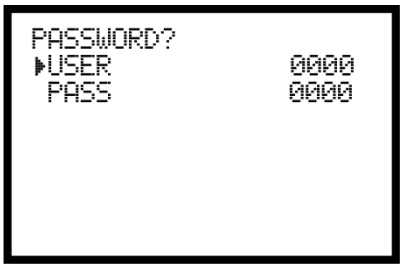
Enter 1 in USER SET, and press ENT.

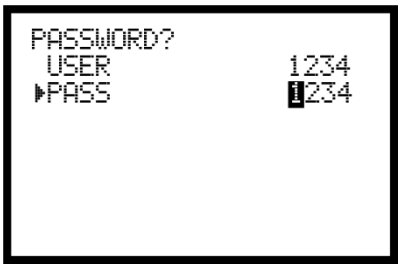


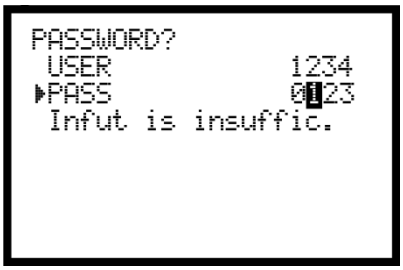
UCC requests password. Enter registered password if already registered. Press ENT without password entry if not registered, and LCD will display user registeration picture.



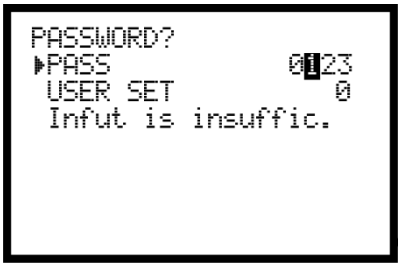
Register user's name (four-digit number) and password (four-digit number) corresponding to USER and PASS. LCD displays 0000 for USER and PASS both before the registration. Use ▲ and ▼ to change 0 to any of 1~9 number once, then enter 0 again so UCC will recognize 0 as a part of user's name or password. Do the same for all digits if you use 0, or UCC will reject the registration with error display on LCD.

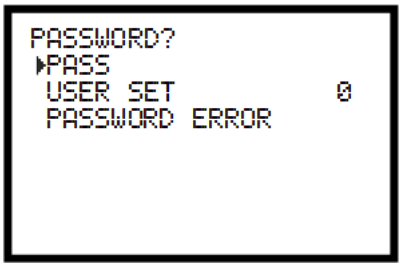






Press ENT after you arranged numbers for USER and PASS as necessary. Then press RES to get out of setup MODE, and the registration will be completed. These passwords of USER and PASS will be operative from next operation. UCC will detect insufficient number as an error if you enter different number.

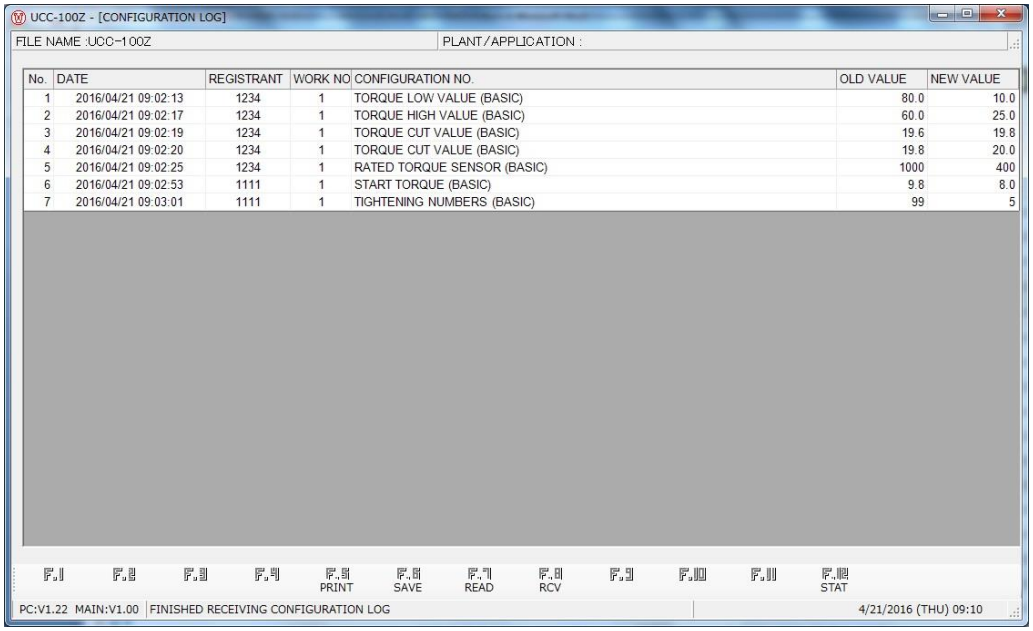




2）Process how to observe setup change history

Hook up UCC to your PC by the front panel RS232C port. Launch setup software on PC and have F10 SETUP HISTORY displayed.

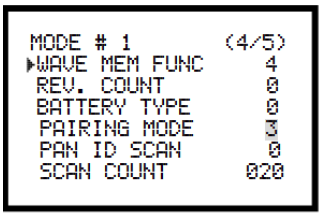
Click F8, and your PC will download setup change history.



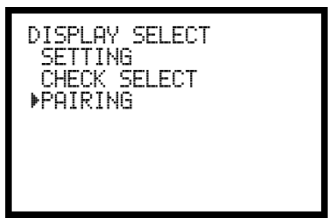
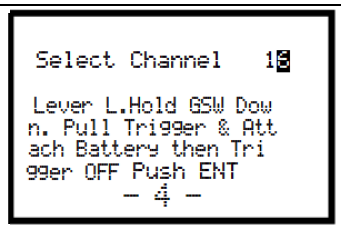
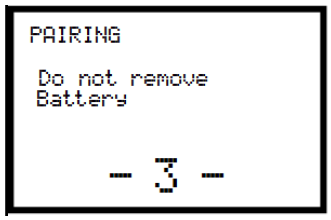
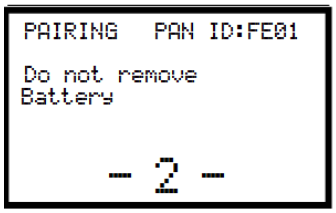
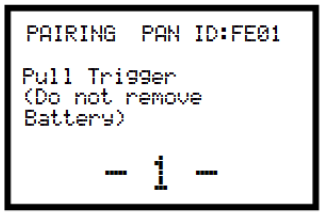
9. 5. PAIRING PROCEDURE

Following is the procedures to carry out pairing of UCC and UBX-AFZ.

【SET】
Enter 3 in PAIRNG MODE under MODE SETTING.



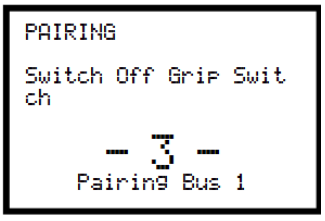
【STEP】

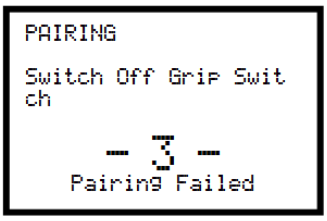
	【UCC-100Z】	【UBX-AFZ】
1	 Hold down ENT key longer than 3 seconds to activate writing mode, then select PAIRING in menu picture.	
2	 Select channel. Press ENT ONLY AFTER preparation on UBX-AFZ (refer to right section) is completed.	Set Reverse Lever on UBX-AFZ to L side. Attach the Battery to the tool with pulling the Trigger and holding down the Grip Switch. Release your fingers, and Judgement LED turns on yellow. Set Reverse Lever up to R, and Judgement LED flashes in yellow.
3	 LCD screen will change as shown on the left, and UCC search UBX-AFZ being ready for pairing.	Wait until the screen changes. (The Judgement LED is flashing in yellow.)
4	 LCD screen will change as shown on the left when detecting UBX-AFZ under pairing status.	Make sure that the PAN ID displayed on LCD screen is matched with the setup in UBX-AFZ. (The Judgement LED is flashing in yellow.)
5	 LCD screen will change as shown on the left and give buzzer sounding 1 pulse.	Make sure to see the screen says -1-, and then pull the trigger and release your fingers from trigger. The judgement LED flashes in green and red alternately and then start pairing.
6	 LCD screen will change as shown on the left and give buzzer sounding 2 pulse.	Wait till the count displayed on LCD screen become -0-. The judgement LED flashes in green and ZigBee LED turns off when pairing is completed.

LCD screen returns to the main screen after pairing process is completed. UBX-AFZ is ready to run by pulling the Grip Switch.

【Pairing failed】

UCC will stop pairing in case there are more than two UBX-AFZ tools being paired (while JUDGEMENT LED flashes on and off yellow) when the displayed count is -3-. Make sure that there is no other UBX-AFZ tool under pairing around you, then try to proceed with pairing one by one if UCC displays below screens. If there is no UBX-AFZ already paired, carry out surrounding PANID SCAN under Mode Setting as UCC may be detecting third-party's ZigBee devices. Refer to 9.6 PANID SCAN in page 69 or an extra manual "Pairing manual of UBX-AF by UCC-100Z" for scan procedures.





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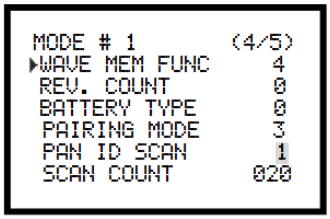
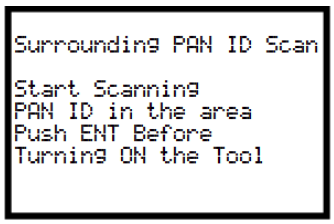
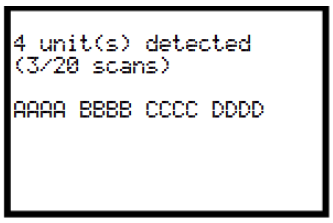
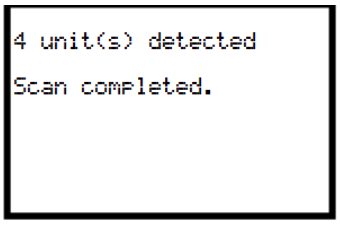
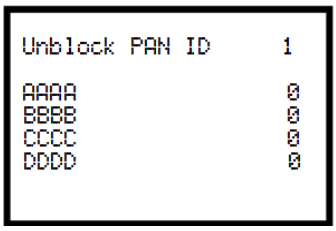
9. 6. PANID SCAN

Following is the procedures to carry out PANID SCAN so as to remove Zigbee devices around UBX-AFZ from pairing target if UCC detects other Zigbee devices and fails to do pairing.

Be sure to switch off the UBX-AF when carrying out PANID scan.

	【LCD】	【OPERATION】
1		Enter any number (recommended to be set as 20 or more) in Scan Count under Mode setting, and then enter 1 in PANID SCAN.
2		Press ENT to start PANID SCAN after you confirmed the screen on the left.
3		Detected PANIDs are displayed. Wait until the preset SCAN COUNT is completed.
4		Scan completed. Carry out pairing as per 9.5 PAIRING PROCEDURES.

Press ◀▲keys simultaneously on [Measurement] screen to display memorized PANIDs(maximum 10 IDs) Enter 1 on the right of displayed PANID will delete from the list, and UCC will detect the PANID again during pairing.



10. ERRORS

10. 1. Error display and the contents

◎ZERO Error [ZER.E] and detected value are displayed alternately.
・Torque sensor deviation under 0-voltage is ±6% or greater at ZERO check.

◎CAL Error [CAL.E.] and detected value are displayed alternately.
・Torque sensor deviation under rated strain voltage is 100±6% or greater than CAL value.

◎Buffer Full Error [BUF.E.] and measured torque are displayed alternately.
・Waveform buffer is full. Buffer capacity depends on waveform data contents arranged by MODE setup. UCC does not display this error if setup entry is 1 or 4 in WAVE MEM FUN (Waveform memory function page 35 of MODE setup.

◎Setup Error [S.E.] is displayed.
・Entry in UCC or transfer to UBX-AFZ such as contradictory setup selection, out-of-range value or impeditive number to interlock.

◎TORQUE LOW NOK (Yellow lamp lighting and UCC displays measured torque value by blank letters in the black back ground with suffix .
・Measured torque was less than TORQUE LOW LIMIT.

◎TORQUE HIGH NOK (Red lamp lighting and UCC displays measured torque value by blank letters in the black back ground with suffix .
・Measured torque was greater than TORQUE HIGH LIMIT.

◎PULSE LOW NOK (Yellow lamp lighting and UCC displays measured pulse number by blank letters in the black back ground with suffix .
・Counted pulse number was less than PULSE LOW LIMIT.

◎PULSE HIGH NOK (Red lamp lighting and UCC displays measured pulse number by blank letters in the black back ground with suffix .
・Counted pulse number was more than PULSE HIGH LIMIT.

◎ANGLE LOW NOK (Yellow lamp lighting and UCC displays measured angle by blank letters in the black back ground with suffix .
・Measured angle was less than ANGLE LOW LIMIT.

◎ANGLE HIGH NOK (Red lamp lighting and UCC displays measured angle by blank letters in the black back ground with suffix .
・Measured angle was greater than ANGLE HIGH LIMIT.

◎FREE RUN ANGLE ERROR [FRE.E] is displayed.
・Measured angles from triggering to START torque was less than FREE RUN ANGLES.

◎INITIAL ERROR [LO.E] and measured torque are displayed alternately.
・Torque reached CUT torque before INITIAL ERROR TIMER was up.

◎CYCLE ERROR [CYL.E] and measured torque are displayed alternately.
・Torque failed to reach CUT torque when CYCLE ERROR TIMER was up.

◎INCOMPLETE JOB ERROR [F.E.] is displayed.
・UBX-AFZ went over START torque but stopped fastening before CUT due to halfway finger off the trigger.

◎GP ERROR [GPT.E] is displayed.
・UCC fails to communicate with Global Pokayoke.

◎SERVER ERROR [SRU.E.] is displayed.
・UCC fails to communicate with Server.

◎WARNING COUNT [TCH.E] is displayed.
・Cumulative fastener number reached WARNING COUNT.

◎WRNING PULSE [TCP.E.] is displayed.
・Cumulative pulse number reached WARNING PULSE.

◎REPAIR COUNT (fastener number) [RPH.E] is displayed.
・Cumulative fastener number reached REPAIR COUNT.

◎REPAIR COUNT (pulse number) [RPP.E.] is displayed.
・Cumulative pulse number reached REPAIR COUNT.

◎LOW MEMORY WARNING [COUP] is displayed.
・Free memory is 10 pieces away from maximum numbers.

◎ROM ERROR [ER.01] is displayed.
・ROM is out of order or malfunctions due to some reasons.

◎RAM ERROR [ER.02] is displayed.

・RAM is out of order or malfunctions due to some reasons.

◎A/D ERROR [ER.03] is displayed.

・A/D is out of order or malfunctions due to some reasons.

◎SAM ERROR [ER.05] is displayed.

・Something is wrong with setup data memorized by RAM.

◎SD CARD ERROR [ER.08] is displayed.

・SD card or the slot is out of order. Card is not inserted correctly. Low memory (free memory is too low). UCC failed to download or upload data from SD card. SD card is larger than 32GB.

◎SD CARD FULL [SDDF] is displayed.

・ SD Card runs short of memory space for data storage.

◎FILTER ERROR

・Filter's IC on PCB board is out of order.

◎DC24V FAILURE [D24E.] is displayed.

DC24V circuit failed in UCC.

Following defects take the place when DC24V fuse (UCC internal PCB) has blown out.

・IN terminals do not receive signals.

・+24V does not output power though OUT terminals output signals.

※UCC is not switched on if rear panel ② AC fuse blows out.

◎URYU-standard COMMUNICATION ERROR [CON.E.] is displayed.

・ UCC fails to communicate to Server under URYU-standard communication.

◎Net MASK ERROR [NET.E.] is displayed.

・Switch on UCC, but communication does not start with the built-in ZigBee module.

◎CPU SYSTEM ERROR [CPU.E.] is displayed.

・CPU in UBX-AFZ control board produces heat.

◎MOTOR SYSTEM ERROR [UDT.E.] is displayed.

・UBX-AFZ internal communication error between control board and motor.

◎ZigBee SYSTEM ERROR [BEE.E.] is displayed.

・UBX-AFZ internal control board failed.

◎BATTERY SYSTEM ERROR [BAT.E.] is displayed.

・Battery failure.

◎AD TORQUE SYSTEM ERROR [ADT.E.] is displayed.

・AD torque sensor failed.

・UBX-AFZ internal wire short circuit.

◎LOW BATTERY ERROR [LBAT] is displayed.

・Battery level dropped to the limit.

◎ROTARY ENCODER ERROR [ROE.E.] is displayed.

・Encoder (angle sensor) failed.

◎CONTROL TASK SYSTEM ERROR [STU.E.] is displayed.

・Unexpected error on fastener control task.

◎SUM CHECK ERROR [SUM.E] is displayed.

・Sum check error between communication of UCC and UBX-AFZ.

●Other errors

◎UBX-AFZ does not start.

・Setup value interlock error if UCC front panel displays S.E.

・Motor protection function worked to stop the tool (internal temperature 80℃ and over).

◎Torque value appears on LCD despite no fastening, or LCD displays nothing for fastening.

・There exists other pair of UCC and UBX-AFZ using the same PAN ID setup.

◎LCD does not display error contents although Judgement LED is flashing in red and ZigBee communication LED is flashing in green.

・ZigBee communication error between UCC and UBX-AFZ caused by bad radio wave environment.

10. 2. Error solutions

Error sign	Trouble shooting
ZERO ERROR	・Replace UBX-AFZ.
CAL ERROR	
BUFFER FULL ERROR	・Enter 4 in WAVE MEM FUN (Wave memory function).
SETUP ERROR	・Do setup again so there is no contradictory value entry such as CUT＜START or the range.
INITIAL/CYCLE ERROR	・Check re-hit a fastener or cross thread. ・Check work or bolt. ・Check START/CUT torque setup. ・Check INITIAL/CYCLE error timer setup. ※1 ・Check HIGH/LOW LIMIT of pulse number and angles.※1 ※Study normal elapsed time, counted pulse numbers, and turned angles from START to CUT torque.
PULSE LOW／HIGH ERROR	
ANGLE LOW／HIGH	
FASTENING ERROR	・Check premature trigger off before UCC provides judgment. ・Check tool capacity. ・Check if judgment delay timer is too short. ・Prolong JUDG.DELAY BEF (Judgment delay timer pre-CUT torque). ・Review START torque setup.
FREE RUN ANGLE ERROR	・Check re-hit a fastener, cross thread, temporary fastener for initial engagement. ・Review START torque setup.
GP ERROR	・Check if DATA OUT setup is correct.
SERVER ERROR	・Check if LAN OUT setup is correct.
WARNING COUNT (PULSE) ERROR	・Replace or refill oil of pulse unit, carry out maintenance replacing O-ring and parts, and enter new WARNING COUNT (PULSE) number for next maintenance.
REPAIR COUNT(PULSE) ERROR	・Carry out tool repair or replacement, and clear REPAIR COUNT (PULSE) number.
LOW MEMORY WARNING	・Download memory of UCC to server or to PC so UCC memory is nil. ・Review memory data contents if LOW MEMORY WARNING is not necessary.
ROM･RAM ERRO	・Replace UCC with a new one.
A／D ERROR	・Replace UBX-AFZ with a new one. ・Replace UCC with a new one.
SAM ERROR	・Suspect memory rewriting due to noise if restart by power switch or RES has fixed this error. Carry out all setups from the scratch as RES initializes UCC to blank slate.
SD CARD ERROR	・Format SD card before use. ・Check if SD card is inserted in slot correctly. ・SD card or slot failed. Replace SD card or UCC. ・UCC is arranged to save data in SD card despite no card loading. Check memory saving setup. ・Replace SD card, or format SD card to increase memory capacity. ・UCC is compliant with SD card up to 32GB. Check the capacity.
DC24V ERROR	・DC24V circuit failed in UCC. DC24V wiring could be short-circuited. Switch off UCC, disconnect power cord, and rewire DC24V. Use #909-814-0 Fuse HM10(1A) made by Daito Communication Apparatus Co.
URYU-STANDARD COMMUNICATION ERROR	・Check connection of UCC and Server. ・Check Life-check timer setting.
Net MASK ERROR	・Replace UCC with a new one.
CPU SYSTEM ERROR	・Replace UBX-AFZ with a new one.
Motor SYSTEM ERROR	・Replace UBX-AFZ with a new one.
ZigBee SYSTEM ERROR	・Replace UBX-AFZ with a new one.
BATTERY SYSTEM ERROR	・Check if battery is set to UBX-AFZ correctly. ・Replace the battery with a new one.
AD TORQUE SYSTEM ERROR	・Replace UBX-AFZ with a new one.
LOW BATTERY ERROR	・Recharge the battery and reload. ・Detach battery from tool when not in use.

ROTARY ENCODER ERROR	・Replace UBX-AFZ with a new one.
CONTROL TASK SYSTEM ERROR	・Replace UBX-AFZ with a new one.
UBX-AFZ does not start.	・Check if WORK command comes to UBX-AFZ. ・Check if COUNT number in UCC is the same number required by the job.
ZigBee communication error	・Carry out Ch search and review the surrounding radio wave environment. ・Retry Pairing with a less crowded channel if radio wave environment of the channel being used is not good.

※1　Study normal elapsed time, counted pulse numbers, and turned angles from START to CUT torque for setup reference.

11. Others

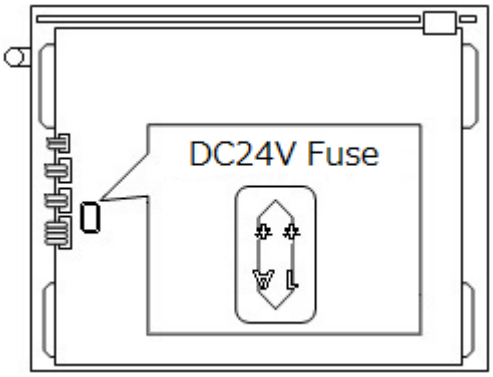
11. 1. Cleaning

Remove stain on UCC with cloth wet with water or a little neutral detergent.

11. 2. Fuse replacement

●DC24V fuse replacing process

①Remove black color covering plate from UCC to find DC24V on main circuit board.
②Turn off UCC and disconnect power plug from receptacle.
③Open 8 screws fixing black color plate and remove the covering plate.
④Pull out DC24V fuse vertically up from main circuit board.
⑤Insert a new fuse to the bottom.　Either direction is okay because 2-pin fuse is non-polar.



Use URYU genuine fuse whose code number is
909-814-0 Fuse HM10(1A).　When replacing fuse
Damaged by short-circuit, fix the short-circuit problem first.
Fuse replacement without fixing the problem repeat the same trouble.