Scout Interface Layout

- Fastening result by NG / OK
- Numeric LED for the number of fastening screw
- Power Input 24VDC, 1A for HDC controller
- RS232C Com port
- USB Com port
- Menu LCD
- Key
- RJ-11(GP) Screwdriver port
- 25P I/O port
- Hybrid screwdriver port

Dimensions:
- 126.5 mm
- 136.5 mm
- 55.5 mm
- 55.5 mm
- 33 mm
Connecting the Scout

1. The Scout can be powered by a STC30 Plus, STC40, ET-30D, FT-30D, YFC-35D or via external power, 24VDC, 1A.2 If no transformer, then Scout requires external power (24VDC, 1A).
2. To power up the Scout with a transformer, plug in the cable to the transformer where it says “Signal”. Then plug the “Connection” cable into the RJ-11 modular jack where it says “Screwdriver” port A on the side of the Scout. Make sure the transformer is plugged in too.
3. For external power option, plug in power supply on the side where is states “24v m”
4. Maximum 5 screwdrivers can share one program of Scout. The Scout has 4 screwdriver ports on the side, and one extra screwdriver can be connected through 25P I/O.

Note: Maximum 4 screwdrivers (with a Mountz transformer) can share one program
Only one (1) STC30 Plus transformer with the version lower than v4.3 can be connected to Scout II.
5. The numeric LED shows the number of screws which should be fastened for a cycle (Max. 99).
6. Fastening results are displayed by NG or OK for every fastening. In order to use NG/OK, the different parameter setting can be saved on the program number from A to G.
7. The parameter setting can also be set-up on Scout Manager (pc software). It uploads the settings to Scout II. The settings on programs can be saved in csv format file.

Caution

1. The screw counter SCOUT II should be used with STC30 Plus, STC40, ET-30D, FT-30D, YFC-35D transformer only. Never use the screw counter with any other tools not specified by the manufacturer.
2. Always use the right connecting cable between the transformer and Scout II.
3. Never use non specified cable by the manufacturer.
4. Don't connect both STC30 Plus, STC40, ET-30D, FT-30D, YFC-35D together to Scout II. Only use one transformer model type when using connecting multiple tools.
5. Do not use the screw counter near fire and magnetic environment.

Accessories for Scout II
(Refer to image on page 4 for reference)

ACCESSORIES INCLUDED

<table>
<thead>
<tr>
<th>Item #</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-7000007</td>
<td>Cable RJ-45(8 Pin) - RJ11(6Pin)*</td>
</tr>
</tbody>
</table>

Note* This cable is used for connecting the selected Mountz transformer to the Scout unit.

ACCESSORIES OPTIONAL

<table>
<thead>
<tr>
<th>Item #</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-PELZ911</td>
<td>Cable (Signal 8-Pin)</td>
</tr>
<tr>
<td>14-GCM6913</td>
<td>Charger (24VDC 1A)</td>
</tr>
<tr>
<td>770319</td>
<td>Cable USB (Type A to Type B: M-M 6 ft)</td>
</tr>
<tr>
<td>145780</td>
<td>Cable (RS232 to USB Type A 6 ft)</td>
</tr>
<tr>
<td>145760</td>
<td>Cable 25P I/O (M-M)</td>
</tr>
</tbody>
</table>

Pin No. | Color      | Function   |
--------|------------|------------|
1       | Solid Orange | Not Used   |
2       | White/Orange | Stop       |
3       | Blue        | Start      |
4       | White/Blue  | DC(-)      |
5       | Green       | Driver Lock|
6       | White/Green | Driver Lock|
7       | Brown       | N/A        |
8       | White/Brown | Not Used   |
Scout II (Screw Counter) Operating Instructions

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Charger (24VDC 1A)
Item # 14-GCM6913
Optional Accessory

Cable RJ-45(8 Pin) - RJ11(6Pin)
Item #14-7000007
Accessory Included

Mountz Transformers that are compatible
- STC30
- STC40
- HTC35
- ET-30D
- FT-30D

Cable (Signal 8-Pin)
Item # 14-PELZ911
Optional Accessory

Cable (RS232 to USB Type A 6 ft)
Item # 145780
Optional Accessory

Cable USB
(Type A to Type B: M-M 6 ft)
Item # 770319
Optional Accessory

Compatible with

PLC

YFC-35D Controller

Cable 25P I/O (M-M)
Item # 145760
Optional Accessory
Operation

1. Mode

By pressing the MODE button, it circulates through Work, Log-in, Parameter and Measuring modes. Work is operating the unit. Before accessing parameter mode, the password is required. Every settings is accessible in Parameter mode. Once logged in, it circulates through Work, Parameter & Measuring modes until the power is turned off. When turned back on, then you must login again.

Fastening time is monitored on Measuring mode. Minimum and Maximum time measurements can be saved on the selected program #.

Factory setting password: 0
Operation

2. Work Mode

Program # 1 to 8

Mode

Judgement (READY / OK / NG)

1 WORK [READY]

< 0000000 > 0000mS

Fastening time
Total fastened screw number

Move to next MODE when only cycle reset
Decrease count number (-1)

Program # UP (1 to 8)

Program # DOWN

Error and Cycle RESET

Operation

3. Log-in Mode

[ PASSWORD ]
[ 0000 ]

[ PASSWORD ]
[ LOGIN ]

Factory setting password "0000" can be changed in P33 parameter.

1. Move back to work MODE without password login
2. Move to next Parameter MODE after password login

Move the cursor left

Number UP (0 to 9)

Number DOWN

Log-in enter
Operation

4. Parameter Mode

Move to next Work MODE on Mode display

Move the cursor left

Select Parameter # & Save data

Move back without saving data

Parameter #

Description

setting data

[ PARAMETER ]

PLEASE ENTER

[01] CNT NUMBER 1

[ 05 ]

Number UP

(Parameter #, data)

Number DOWN

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4. Measuring Mode

Total measured data

Display select

Min time  Max time

Last data  Average value

Program # to be linked and saved with the current Min/Max data

Move to next Work MODE on Mode display

1. Move the cursor left
2. Cancel the last data in calculation

Link and save the current data to the selected Program #

Move back without saving data
### Program # and Parameters

The program numbers from 1 to 8 are effected together with parameter 1~8 for number of screws, P9~16 for minimum tightening time, P17~24 for maximum tightening time.

<table>
<thead>
<tr>
<th>Program #</th>
<th>1st data</th>
<th>2nd data</th>
<th>3rd data</th>
<th>4th data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P1</td>
<td>P9</td>
<td>P17</td>
<td>P38</td>
</tr>
<tr>
<td>2</td>
<td>P2</td>
<td>P10</td>
<td>P18</td>
<td>P39</td>
</tr>
<tr>
<td>3</td>
<td>P3</td>
<td>P11</td>
<td>P19</td>
<td>P40</td>
</tr>
<tr>
<td>4</td>
<td>P4</td>
<td>P12</td>
<td>P20</td>
<td>P41</td>
</tr>
<tr>
<td>5</td>
<td>P5</td>
<td>P13</td>
<td>P21</td>
<td>P42</td>
</tr>
<tr>
<td>6</td>
<td>P6</td>
<td>P14</td>
<td>P22</td>
<td>P43</td>
</tr>
<tr>
<td>7</td>
<td>P7</td>
<td>P15</td>
<td>P23</td>
<td>P44</td>
</tr>
<tr>
<td>8</td>
<td>P8</td>
<td>P16</td>
<td>P24</td>
<td>P45</td>
</tr>
</tbody>
</table>
## Scout II (Screw Counter) Operating Instructions

### Parameters

<table>
<thead>
<tr>
<th>P #</th>
<th>Name</th>
<th>Specification</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01-P08</td>
<td>Program #</td>
<td>Save total number of screws on P1-8.</td>
<td>1</td>
</tr>
<tr>
<td>P09-P16</td>
<td>Minimum tightening time</td>
<td>Minimum screw tightening time</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Input: 0.000 - 9.999 sec (&quot;0&quot;: No use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P17-P24</td>
<td>Maximum tightening time</td>
<td>Maximum screw tightening time</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Input: 0.000 - 9.999 sec (&quot;0&quot;: No use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P25</td>
<td>Type of cycle start and stop</td>
<td>Select one of 4 types of Cycle Start signal input</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0 : Auto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 : Start (continuous ON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 : Start (pulse ON) + Stop (timer on P27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 : Start (pulse ON) + Stop (pulse ON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P26</td>
<td>Input signal type</td>
<td>Select one of 2 signal type</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0 : Active High</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 : Active Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 --&gt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 --&gt; 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>※ When Active Low is selected, the only one(1) screwdriver (&quot;A&quot;) can be connected.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P27</td>
<td>Timer setting for Cycle start/stop type 2 of P25</td>
<td>Input screw tightening time limit after Cycle start signal</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Input: 0.0 - 9.99 sec (&quot;0&quot;: No use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P28</td>
<td>Minimum time to judgement</td>
<td>Set the minimum time to judgement of OK/NG</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Input: 0 - 99 (x 0.1s) (&quot;0&quot;: No use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P29</td>
<td>Com port select</td>
<td>Select one of two com ports.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0 : USB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 : RS-232C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P30</td>
<td>Hybrid HDC connect</td>
<td>Select one of two condition</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0 : Not Connected (not use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 : Connected (used)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P #</td>
<td>Name</td>
<td>Specification</td>
<td>Default</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| P31 | Fastening buzzer                    | Select one of followings
0 : Not use
1 : OK only
2 : NG only
3 : OK + NG                                                                     | 0       |
| P32 | Cycle buzzer                        | Select one of followings
0 : Not use
1 : OK only
2 : NG only
3 : OK + NG                                                                     | 0       |
| P33 | Reset key control                   | Select Reset key Enable / Disable
0 : Disable
1 : Enable                                                                      | 0       |
| P34 | Program key control                 | Select Program key Enable / Disable
0 : Disable
1 : Enable                                                                      | 0       |
| P35 | Program Select Input with Binary code | Program Select Input by Binary code with Pin no. 1 ~ 3
0 : Disable
1 : Enable                                                                      | 0       |
| P36 | Monitoring data output setting      | Select Enable / Disable of monitoring data output through RS-232C port
0 : Disable
1 : Enable                                                                      | 0       |
| P37 | Cycle start signal interval required | The interval time between Cycle complete and new cycle start can be set between 1 ~ 10mS ( unit : 10 mS ) | 100     |
| P38-45 | Mid.Count signal setting for P1~P8 | The signal of Pin #20 on I/O keeps ON after the Mid.CNT number until the cycle complete. | 0       |
| P46 | Password                            | Key in the password in 4 numbers.
Initial factory setting password is "0000"

If the password is forgot, click the " P Init " menu on Scout-Manager control bar with password "77", then all parameters are changed to the factory setting.
## Scout II (Screw Counter) Operating Instructions

(Rev 6.4 4/27/17)

### Parameters

<table>
<thead>
<tr>
<th>P #</th>
<th>Name</th>
<th>Specification</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>P47</td>
<td>Parameter initial</td>
<td>All parameter are initialized to the factory setting. Key in &quot;77&quot; on P34 and press Enter button.</td>
<td></td>
</tr>
<tr>
<td>P48</td>
<td>Auto system Lock</td>
<td>Driver is locked between Cycle complete and next new Cycle start signal. 0 : Disable  1 : Enable</td>
<td>0</td>
</tr>
<tr>
<td>P49</td>
<td>Count UP Enable</td>
<td>Count number display on the panel 0 : Disable ( Count DOWN ) 1 : Enable ( Count UP )</td>
<td>0</td>
</tr>
<tr>
<td>P50</td>
<td>Timer setting on Auto cycle start</td>
<td>Time limit on auto cycle start makes NG after set time 0 ~ 5.0sec ( 0 : not use ) unit : 0.1 sec</td>
<td>0</td>
</tr>
<tr>
<td>P51~56</td>
<td>Spare</td>
<td>Spare</td>
<td></td>
</tr>
<tr>
<td>P57</td>
<td>Version information</td>
<td>It is not allowed to change.</td>
<td>version</td>
</tr>
</tbody>
</table>
Interface
25P I/O interface details
The configuration of 25P I/O port for remote control is as below

<table>
<thead>
<tr>
<th>PIN no.</th>
<th>Configuration</th>
<th>IN / OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>External Motor Run signal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>External Torque Up signal</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cycle Start</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cycle Stop</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Cycle Reset</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Driver Lock</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Spare 1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PS1 (Program selecting)</td>
<td>PS1(P35 Enable)</td>
</tr>
<tr>
<td>9</td>
<td>PS2 (Program selecting)</td>
<td>PS2(P35 Enable)</td>
</tr>
<tr>
<td>10</td>
<td>PS3 (Program selecting)</td>
<td>PS3(P35 Enable)</td>
</tr>
<tr>
<td>11</td>
<td>PS4 (Program selecting)</td>
<td>spare</td>
</tr>
<tr>
<td>12</td>
<td>PS5 (Program selecting)</td>
<td>spare</td>
</tr>
<tr>
<td>13</td>
<td>PS6 (Program selecting)</td>
<td>spare</td>
</tr>
<tr>
<td>14</td>
<td>PS7 (Program selecting)</td>
<td>spare</td>
</tr>
<tr>
<td>15</td>
<td>PS8 (Program selecting)</td>
<td>spare</td>
</tr>
<tr>
<td>16</td>
<td>Cycle complete OK</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Cycle complete NG</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Tightening OK</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Tightening NG</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Mid-count complete signal</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Driver Lock</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Spare 2</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>No use</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Input COM</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Output COM</td>
<td></td>
</tr>
</tbody>
</table>
INPUT (Negative(-) Common wiring)

External power (24VDC+)

1. External motor RUN
2. External torque up
3. Cycle Start
4. Cycle Stop
5. Cycle reset
6. Driver Lock
7. Spare 1
8. PS1
9. PS2
10. PS3
11. PS4
12. PS5
13. PS6
14. PS7
15. PS8
24. Input COM
   Return 24V(-)
OUTPUT (Negative(-) Common wiring)

SCOUT II

24VDC, 100mA max

External power (24V+)

Cycle complete OK

Cycle complete NG

Tightening OK

Tightening NG

Mid-count complete

Driver Lock

Spare 2

No use

Output COM

Return(24V-)

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OUTPUT (Positive(+) Common wiring)

SCOUT II

24VDC, 100mA max

16. Cycle complete OK
17. Cycle complete NG
18. Tightening OK
19. Tightening NG
20. Mid-count complete
21. Driver Lock
22. Spare 2
23. No use
25. Output COM

External power (24VDC+)

Return (24V-)

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Binary coding for Program selecting by 3 pins (Pin no. 8, 9 and 10) -

<table>
<thead>
<tr>
<th>Program no.</th>
<th>pin 10 (PS3)</th>
<th>pin 9 (PS2)</th>
<th>pin 8 (PS1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

** Program selecting is not effective during the cycle ON.
Wiring example #1 - Tower lamp, solenoid valve, sensors, switch
Wiring example #2 - Inter-Lock of two screwdriver with Mid-Count signal setting
Customized cable details

Pin configuration

<table>
<thead>
<tr>
<th>STC30 Plus, STC40, ET-30D, FT-30D</th>
<th>Scout II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (x)</td>
<td>6 (Torque up)</td>
</tr>
<tr>
<td>2</td>
<td>5 (Start)</td>
</tr>
<tr>
<td>3</td>
<td>4 (com)</td>
</tr>
<tr>
<td>4</td>
<td>(x) 3 (Lock)</td>
</tr>
<tr>
<td>5</td>
<td>2 (Ground)</td>
</tr>
<tr>
<td>6</td>
<td>1 (30V+)</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8 (x)</td>
<td></td>
</tr>
</tbody>
</table>

STC30 Plus, STC40, ET-30D, FT-30D

GROUND      LOCK

SCOUT II
Connecting to Hybrid HDC controller

The screw count number on P74 of Hybrid HDC controller can be changed by program selecting on Scout II through the RS-232 interface port. Only the RS-232 (not USB) interface of HDC controller works with Scout II.

The min/max tightening time on Scout does not work for Hybrid HDC controller. Only the screw count number on Scout works for counter in the HDC controller.
Timing Chart
(examples) number of fastening screw is supposed to be three (3)
Timing chart details for NG / OK set up

Fastening OK

```
Start

Stop

Min. fastening time  set range  Max. fastening time
```

Fastening ERROR 1 - TIME LAPSE

```
Start

Stop

Min. fastening time  set range  Max. fastening time
```
Fastening ERROR 2 - TIME OVER

Start

Stop

Min. set range Max. fastening time

fastening time

Fastening ERROR 3 - NO TORQUE UP (Most common mistake in assembly)

Start

Torque Up

No Torque Up Error

P28 / Minimum time to judgement
Cycle Start / Stop in the various operating conditions

Auto Start
Where the fastening number count is not necessary. It starts to count the number of fastening automatically just after cycle end with "0" display on the screw counter, and repeats without any cycle start and stop signal for counting. "Auto Start" can be used for monitoring fastening OK / NG condition without counting of fastening numbers.

Start (Continuous ON)
Scout starts counting the fastening number from the ON signal edge and keeps counting until receiving a signal OFF. If the number reaches to the target before signal OFF, it makes the Cycle complete OK and provides Cycle end output signal.

Also it verifies the Cycle complete NG. If the ON status is turned OFF, it means the fastening work isn’t finished because the work piece left the working area.

The display is reset to the target number when the Cycle Start signal is turned ON again.

The above switch can be replace to the sensor as shown on right
Start (pulse) + Stop by time limit (Optional)
Automatic flow assembly line with pallet conveyor system which is controlled by PLC

In order to control the flow of the work-piece to next process automatically, the SCOUT works with the PLC for transmitting signals of the fastening "cycle start" and "cycle stop" process.

If PLC gives the cycle start signal (pulse) to the SCOUT when the work-piece arrives at the worktable, then the SCOUT is ready to monitor the screw fastening process. Once the required number of screws is fastened properly, the SCOUT sends a signal (pulse - 0.5S) to the PLC to alert it that the "cycle stop" process has occurred. Then PLC will make another process.

With a semi-auto assembly line, the operator can push the button for every "cycle start" as soon as picking up the work-piece from the conveyor belt and taking it to the worktable. Pushing the button sends the signal (pulse - 0.5S) to the SCOUT.

If the time is limited on P27 and the fastening is not complete at the set time, the Scout will verify the fastening NG at the set time. It can be cleared to the target by pressing RESET button.

Example #1 ) Cycle start pulse signal with time limit on P27
Example #2 ) Cycle start pulse signal without time limit on P27

Without the fastening time limit on P27, it can be a useful application with a pallet conveyor system with a stopper as shown below. The stopper does not go down keeping the work piece in work area, if there is no Cycle complete OK signal from the Scout.

Start (pulse) + Stop (pulse)

Using Optical or Magnetic Sensors for an Alert Buzzer for Semi-Auto Assembly Line with Belt Conveyor System

If the operator lifts the work-piece up for any reason, like inspecting it, the SCOUT will recognize the work-piece as being moved out and trigger an alert buzzer. In this case, it is a suitable solution for detecting work-piece. This process requires two signals for the work-piece coming IN and OUT using the optical or magnetic sensors.

With two signals for work-piece coming IN and OUT using the optical or magnetic sensors. Scout starts to count fastening numbers with Start signal, and verify Cycle complete OK / NG with Stop signal.
RS-232C & USB communication port

Scout II provides both RS-232C and USB communication port together with free PC software, SCOUT II Manager. The com port and cable specification is as below.

**RS-232C Port**

Cable (RS232 to USB Type A 6 ft.)
Item # 145780

Cable USB (Type A to Type B: M-M 6 ft.)
Item # 770319

**SCOUT II**

<table>
<thead>
<tr>
<th>Pin no</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>TXD</td>
</tr>
<tr>
<td>3</td>
<td>RXD</td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin no</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>RXD</td>
</tr>
<tr>
<td>3</td>
<td>TXD</td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
</tr>
</tbody>
</table>
Protocol

Protocol frame

<table>
<thead>
<tr>
<th>1 byte</th>
<th>1 byte</th>
<th>0 ~ n byte</th>
<th>1 byte</th>
<th>1 byte</th>
</tr>
</thead>
<tbody>
<tr>
<td>STX</td>
<td>CMD</td>
<td>Data</td>
<td>BCC</td>
<td>ETX</td>
</tr>
</tbody>
</table>

- Check sum range
- Parity check range

- Baud rate: 19200 BPS
- Data bit: 8bit
- Parity: None
- Stop Bits: 1

Communication control letter

<table>
<thead>
<tr>
<th>Name</th>
<th>Word</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packet start</td>
<td>STX</td>
<td>It means Packet start at the first of the message.</td>
</tr>
<tr>
<td>Packet finish</td>
<td>ETX</td>
<td>It means Packet end at the last of the message.</td>
</tr>
<tr>
<td>OK response</td>
<td>ACK</td>
<td>OK response on the message receipt</td>
</tr>
<tr>
<td>NOK response</td>
<td>NAK</td>
<td>NOK response on the message receipt</td>
</tr>
<tr>
<td>Packet end</td>
<td>ETB</td>
<td>It means the packet end of the first message of two blocks of long message</td>
</tr>
</tbody>
</table>

Command

The command for data request and response are same, but distinguished by the capital letter for request, the small letter for response.

<table>
<thead>
<tr>
<th>no</th>
<th>Description</th>
<th>Command</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Save the parameter</td>
<td>S (capital)</td>
<td>PC → SCOUT II</td>
</tr>
<tr>
<td>2</td>
<td>monitoring Data output</td>
<td>m (small)</td>
<td>SCOUT II → PC</td>
</tr>
</tbody>
</table>
Scout II (Screw Counter) Operating Instructions
(Rev 6.4 4/27/17)

It add all binary number within Check sum range and convert to 1 Byte of ASCII code. The "41H" is check sum result (BCC) in the example shown.

<table>
<thead>
<tr>
<th>STX</th>
<th>CMD</th>
<th>Data</th>
<th>BCC</th>
<th>ETX</th>
</tr>
</thead>
</table>

Example)

<table>
<thead>
<tr>
<th>STX</th>
<th>S</th>
<th>0</th>
<th>0</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>1</th>
<th>5</th>
<th>BCC</th>
<th>ETX</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>20</td>
<td>20</td>
<td>21</td>
<td>20</td>
<td>20</td>
<td>21</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

----- ASCII code

5 3 H
2 0 H
2 0 H
2 1 H
2 0 H
2 0 H
2 1 H
+ 3 5 H

1 4 A H ------ Hexa code
↓ ↓
34H 41H --------- Hexa value of "A" in ASCII code

Parameter change and save

1) Save parameter ( PC --> Scout II )

<table>
<thead>
<tr>
<th>STX</th>
<th>S</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>2</th>
<th>2</th>
<th>2</th>
<th>2</th>
<th>BCC</th>
<th>ETX</th>
</tr>
</thead>
</table>

1 : Parameter number ( 001 - 999 )
2 : Data ( 0000 - 9999 )

※ Example ( Program # 1 ) Number of screw (12), Min (500mS), Max (750mS)

<table>
<thead>
<tr>
<th>Parameter #1</th>
<th>Parameter #9</th>
<th>Parameter #17</th>
</tr>
</thead>
</table>

Screw #

| STX | S  | 0  | 0  | 1  | 0  | 0  | 1  | 2  | BCC | ETX |

Min time

| STX | S  | 0  | 0  | 9  | 0  | 5  | 0  | 0  | BCC | ETX |

Max time

| STX | S  | 0  | 1  | 7  | 0  | 7  | 5  | 0  | BCC | ETX |
Monitoring data output

By selecting "Enable(1)" on P36, the following output data come out automatically from RS-232C port whenever there is an event on Scout II.

```
| STX | m   | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 4 | 4 | 5 | BCC | ETX |
```

m : Command for monitoring data output

1 : Fastening time ( 4 digits )

2 : Program number 1 ~ 8 ( 1 digit )

3 : Error number 1 ~ 5 ( 2 digits )
   ※ Error number details
      1 : Fastening Time Lapse ( Less than Min time )
      2 : Fastening Time Over ( Over than Max time )
      3 : Fastening No Torque Up
      4 : Cycle Error
      5 : Cycle limit time over on P27

4 : Count Number displayed on Scout II FND ( Remained screw number )

5 : OK / NG judgement
   ※ OK / NG judgement details
      1 : Fastening OK
      2 : Fastening NG
      3 : Cycle OK
      4 : Cycle NG
PC communication software, SCOUT II-Manager (for MS Windows)
The PC communication software, SCOUT II-Manager, is for programming the screw counter. The Min, max fastening time &
total number of screws can be changed on PC software and downloaded to Scout II.

For changing parameters of SCOUT II by PC software, it requires a Log-in password. For the Log-in password of SCOUT II-
Manager software, please contact to the Mountz. The password can not be open to operators without agreement of manag-
ing group. SCOUT II-Manager without Log-in is available by request as well.

Software install
- PC Operating System : MS Windows ( 2000, XP, Vista )
- Display : 800 x 600 ( Optimized )

The SCOUT II-Manager software require MS Dot Net framework v 2.0 or higher on your OS before installing.
Window 2000 and XP can be updated with Dot Net framework on the download center of Microsoft web site. ( www.microsoft.com ).

Microsoft .NET Framework ver 2.0

For installation of SCOUT II-Manager, just copy the file ( SCOUT II-Manager.exe ) on your PC, and double click for open.

How to use
- Install the provided USB driver on your PC
- Connect the SCOUT II to PC, and Power on.
- Check COM port no.of SCOUT II USB port on your PC device manager. example ) CP210x USB to UART Bridge Controller
  (COM4)
- Open the SCOUT II-Manager software
- Select the Comport no and click OK on Scout II manager
- Click " READ ALL " menu for read all parameters from the connected SCOUT II.
- For changing parameter, it require Manager Log-in password.
### Scout II (Screw Counter) Operating Instructions

**Parameter setting**

- **Real time monitoring**:
  - Disable
  - Enable

- **Command**:
  - Clear
  - Save

- **Auto system lock**:
  - Disable
  - Enable

### Monitoring data

<table>
<thead>
<tr>
<th>Number</th>
<th>Time</th>
<th>Fasten_Time</th>
<th>PGM_No</th>
<th>Error</th>
<th>Count</th>
<th>Complete</th>
</tr>
</thead>
</table>

**COM4**: Close

Happy day!!!
### SCOUT II Firmware Upgrade History

<table>
<thead>
<tr>
<th>NO</th>
<th>Date</th>
<th>Version</th>
<th>Description</th>
<th>Firmware</th>
<th>Scout-Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2010.01.28</td>
<td>V1.1</td>
<td>1) Display word replacement to &quot; Mid Cnt Signal &quot; 2) Bug patch in program selection by I/O when HDC is connected. 3) Parameter # is added on Scout-Manager window</td>
<td>SCOUT2_V1.10_100128.hex</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2010.04.06</td>
<td>V1.12</td>
<td></td>
<td>SCOUT2_V1.12_100034.hex</td>
<td>scout2_V1.01</td>
</tr>
<tr>
<td>3</td>
<td>2010.04.06</td>
<td>V1.2</td>
<td>Monitoring feature is added (P36)</td>
<td>SCOUT2_V1.20_100405.hex</td>
<td>scout2_V1.10</td>
</tr>
<tr>
<td>4</td>
<td>2010.04.07</td>
<td>V1.21</td>
<td>A.B.C... For Program # is replaced to 1,2,3... Ex) PGN A --&gt; PGN1</td>
<td>SCOUT2_V1.21_100407.hex</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2010.04.13</td>
<td>V1.22</td>
<td>Fastening is allowed even after Cycle NG, in order to finish the cycle. (Request of Mountz)</td>
<td>SCOUT2_V1.22_100413.hex</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2010.05.18</td>
<td>V1.23</td>
<td>The interval time limit between the cycle is changed to 50ms from 100ms. (Request of Dogal / A customer has pallet moving with short distance providing very short time of sensor detection. Too short detecting time is not effective.)</td>
<td>SCOUT2_V1.23_100518_DogaTest.hex</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2010.05.26</td>
<td>V1.3</td>
<td>1) Added P37 - the interval time limit between the cycle is allowed to set from 10 to 100ms. 2) 8 Mid count number setting for 8 programs. 3) When &quot;Continuous ON&quot; is selected on P25 for Cycle start, time setting on P27 is effective from cycle start signal, but now effective from first torque up of new cycle start 4) Improving other bug</td>
<td>SCOUT2_V1.23_100518_DogaTest.hex</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2010.07.23</td>
<td>V1.31</td>
<td>Chattering protection for Dogal's Binary Decoder</td>
<td>SCOUT2_V1.31_1000723.hex</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2010.08.09</td>
<td>V1.32</td>
<td>1) Added P48 - System lock enable When P48 is Enabled, screwdriver is locked after Cycle complete, and released just after new Cycle Start.</td>
<td>SCOUT2_V1.32_1000809.hex</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2010.10.08</td>
<td>V1.33</td>
<td>2) Added P49 - Count UP Enable The display number on the panels selection between (Disable) 0: Count DOWN 1: Count UP (Enable)</td>
<td>SCOUT2_V1.33_1001008.hex</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2011.01.25</td>
<td>V1.34</td>
<td>1) PS5 added: Time limit on Auto cycle start _ NG after set time 2) PS1+55 (spare) added 3) PS5 version</td>
<td>SCOUT2_V1.34_110125.hex</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>2011.05.04</td>
<td>V1.35</td>
<td>Bug solved, when two drivers are used with inter-lock, the last fastening made double hit. --&gt; solved</td>
<td>SCOUT2_V1.35_110504.hex</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>2013.02.18</td>
<td>V1.36</td>
<td>PS5 added for Count delete key Enable / Disable</td>
<td>SCOUT2_V1.36_130218.hex</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>6/10/14</td>
<td>V1.37</td>
<td>Tightening error on the first screw in a cycle could not be reset, --&gt; solved --&gt; Requested by Torq on</td>
<td>SCOUT2_V1.37_140610.hex</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>7/15/14</td>
<td>V1.38</td>
<td>Reset on the first screw in a cycle become a error --&gt; Requested by Mountz</td>
<td>SCOUT2_V1.38_140701.hex</td>
<td></td>
</tr>
</tbody>
</table>
Mountz Torque Testers and Calibration Equipment

Torque tools go out of calibration with use. Calibrating a torque tool is a fine-tuning process of bringing the tool back within its tolerance. Torque testers can also be used for quick tools tests on the line or in the lab to determine whether torque tools are holding a given setting.

A regular torque tool calibration and re-calibration guarantees the operator repeatable accuracy and adherence to international standards. Torque testing also ensures torque equipment is operating to peak performance and can highlight potential tooling problems before they arise perhaps due to tool wear or broken components.

Controlling torque is essential for companies to ensure their product's quality, safety and reliability isn't compromised. The failure of a three-cent fastener that isn't properly tightened can lead to catastrophic or latent failures. Fasteners that are insufficiently torqued can vibrate loose and excessive torque can strip threaded fasteners. Using a quality torque tool has become increasingly important for many companies to ensure that proper torque is being applied and maintains gauge requirements associated with the ISO 9001 Quality Standard. Look for the Mountz hexagon logo - it's a stamp for quality tools, service and knowledge in the field of torque control.

Mountz Calibration & Repair Services
Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer two state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

Mountz, The Torque Tool Specialists®, has been a leader in the torque tool industry for more than 50 years. Engineered in the Silicon Valley and serving the globe, Mountz focuses on delivering high-quality torque products, services, and solutions to ensure customers can always proceed with confidence. We are committed to forging a safer world through precision and accuracy, and by innovating every day.

Tool Service & Repair Capability
Torque Wrenches: Click, Dial, Beam, Cam-Over & Break-Over

Torque Screwdrivers: Dial, Micrometer, Preset & Adjustable

Torque Analyzers/Sensors: All brands

Electric Screwdrivers: All brands

Air Tools: All brands
Impact Wrenches, Drills, Pulse Tools, Grinders, Percussive Tools, Air Screwdrivers, Nutrunners, DC Controlled Nutrunners

Torque Multipliers: All brands

Mountz Service Locations

Eastern Service Center
19051 Underwood Rd.
Foley, AL 36535
Phone: (251) 943-4125
Fax: (251) 943-4979

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Fax: (408) 292-2733

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