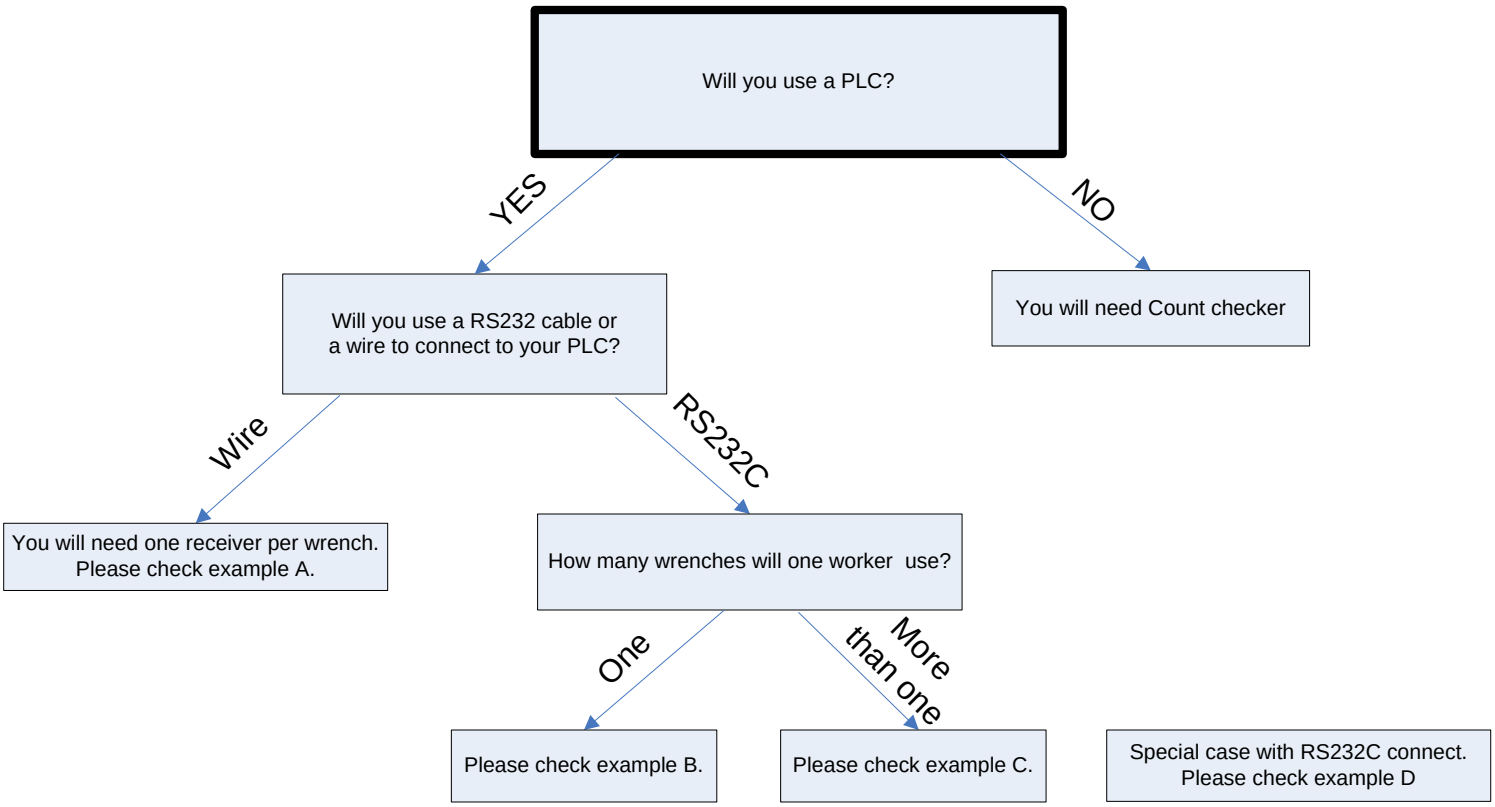


Example No.	Number of operators	Number of torque wrenches	Detail
ExampleA	1operator	1torque wrench	Our standard setting. Receiver will judge 3digits ID.
ExampleB	1operator	1torque wrench	3digits ID can send to PLC.
ExampleC	1operator	2torque wrenches	Multiple wrenches with one receiver.
ExampleD	2operators	4torque wrenches	Special case of multiple wrenches with one receiver.

3digits ID can use any numbers

Receiver to PLC is connected by wire.

Example A Standard Channel Setting. Receiver mode “1”

One operator, one torque wrench, one receiver.

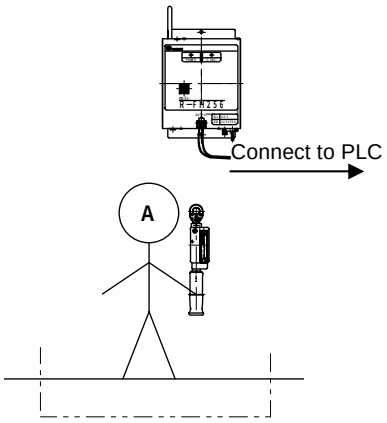
Receiver

000 1 000

Transmitter

000 1 000

Receiver will judge these 2 numbers.



More detail, please refer to “Example#1 How to Set up Using Channel Setting”.

Receiver to PLC is connected by RS232C Cable.

3 digits ID will be sent to the PLC, when receiver is connected to the PLC by RS232C cable.
PLC will judge by using 3 digits ID.

Example B Receiver mode “1”

One operator, one torque wrench, one receiver.

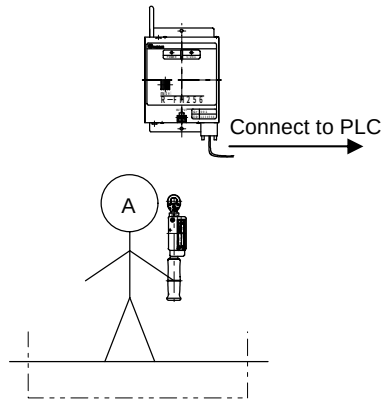
Receiver

000 1 000 This number will be sent to the PLC.

Transmitter

000 1 000

Receiver will judge these 2 numbers.



More detail, please refer to “ Example#2 How to Set up Using Channel Setting”.

Example C Receiver mode “0”

One operator, two torque wrenches, one receiver.

Receiver

000 0 000

Transmitter 1

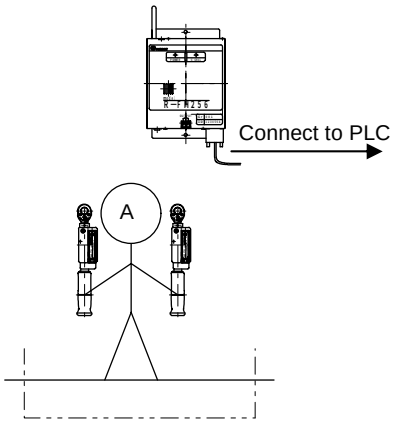
000 0 000

Transmitter 2

000 0 001

This number will be sent to the PLC.

Receiver will judge this number.



More detail, please refer to “Example#3 How to Set up Using Channel Setting”.

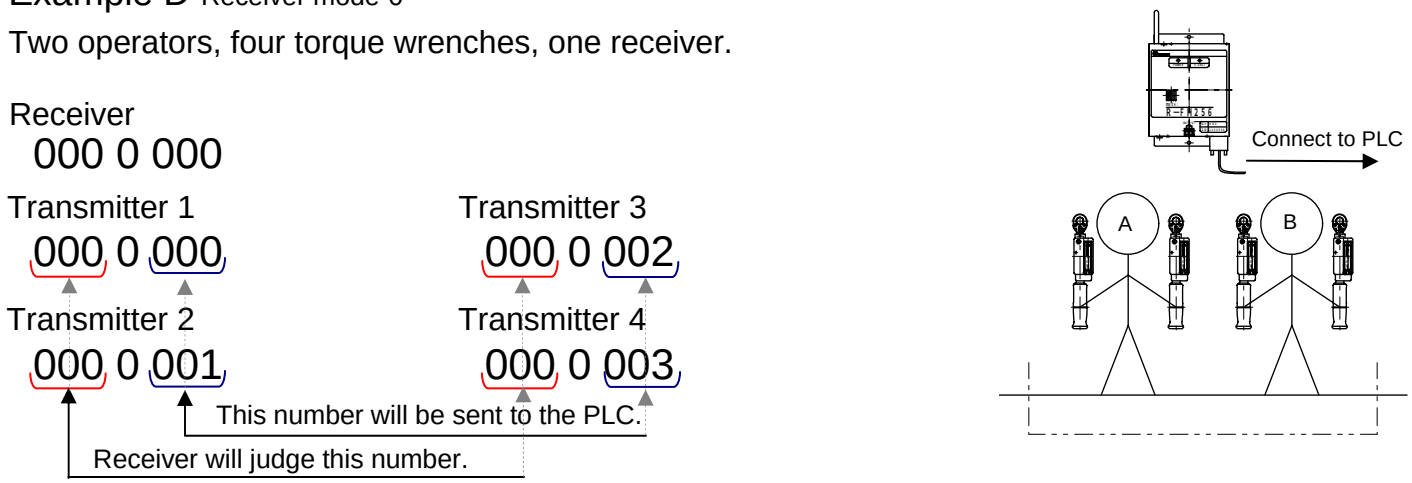
To confirm if 2 operators with 1 receiver is possible or not,
Please refer to “Example D”. But this is special case, there are some requirement.

Receiver to PLC is connected by RS232C Cable.

3 digits ID will be sent to the PLC, when receiver is connected to the PLC by RS232C cable.
PLC will judge by using 3 digits ID.

Example D Receiver mode"0"

Two operators, four torque wrenches, one receiver.



If you connect to the PLC by RS232C cable and use multiple wrenches with one receiver,
Please program your PLC software to judge exact signal or not by using 3digits ID data.

Receiver can not catch two signals at the exact same time.
If you have possibility to click at the same time with two operators,
Please set up one operator with one receiver.

Example#1 How to Set up Using Channel Setting.

Example for One Wrench with One Receiver.

Group				Receiver mode		3digits ID		
0	0	0		1		0	0	0

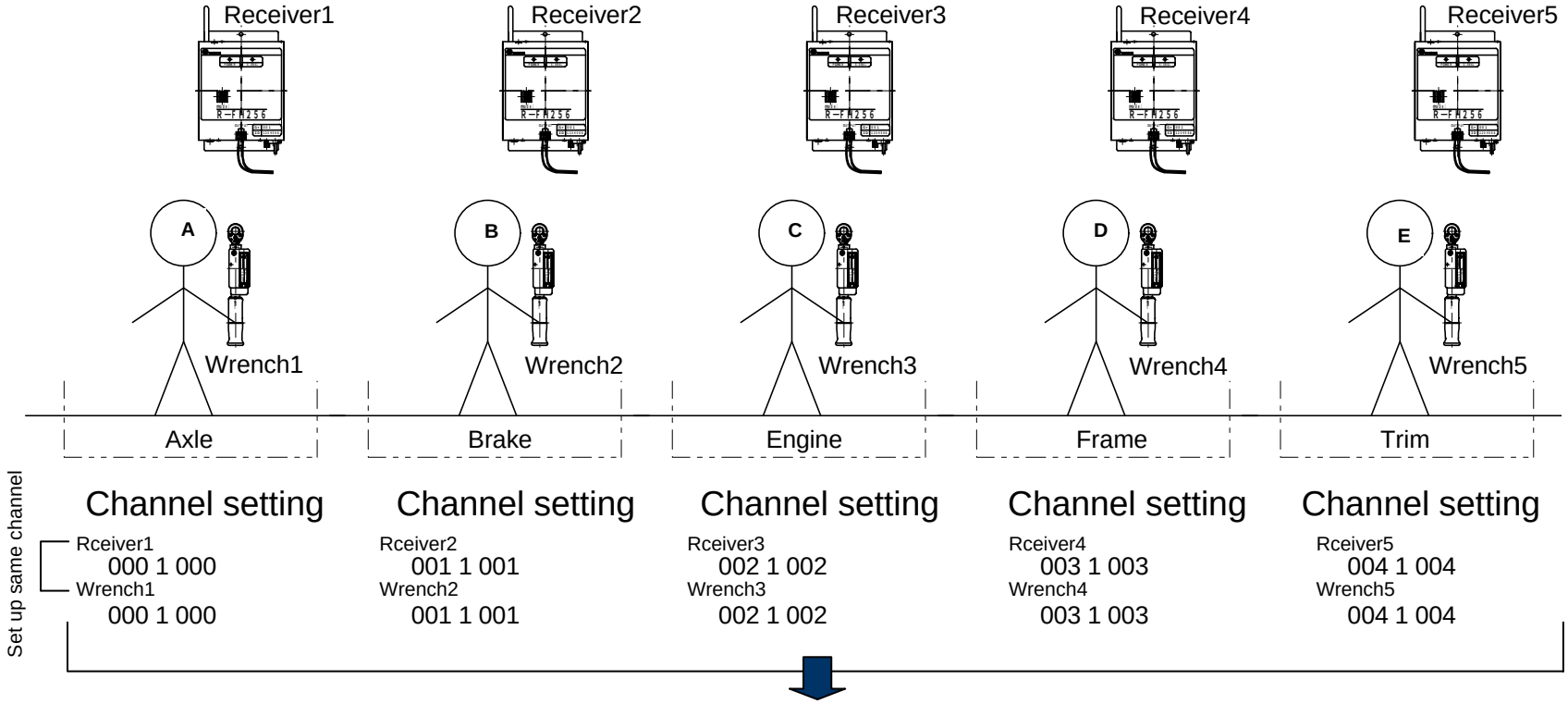
000~255 | 0~3 | 000~999

Receiver will judge group and 3digits ID.

Receiver Mode 1

Receiver Mode “1” will judge Group and 3digits ID.

Please set up same channel setting between Receiver and Torque wrench.



This setting is our standard setting.
When wrench click, PLC will get signal.

Example#2 How to Set up Using Channel Setting.

Example for One Wrenches with One Receiver.

Group				Receiver mode		3digits ID		
0	0	0		1		0	0	0
000~255				0~3		000~999		

Receiver will judge group and 3digits ID.

This 3 digits ID data will be sent to the PLC.

Table1. Organize set up to easily identify location and source wrench.

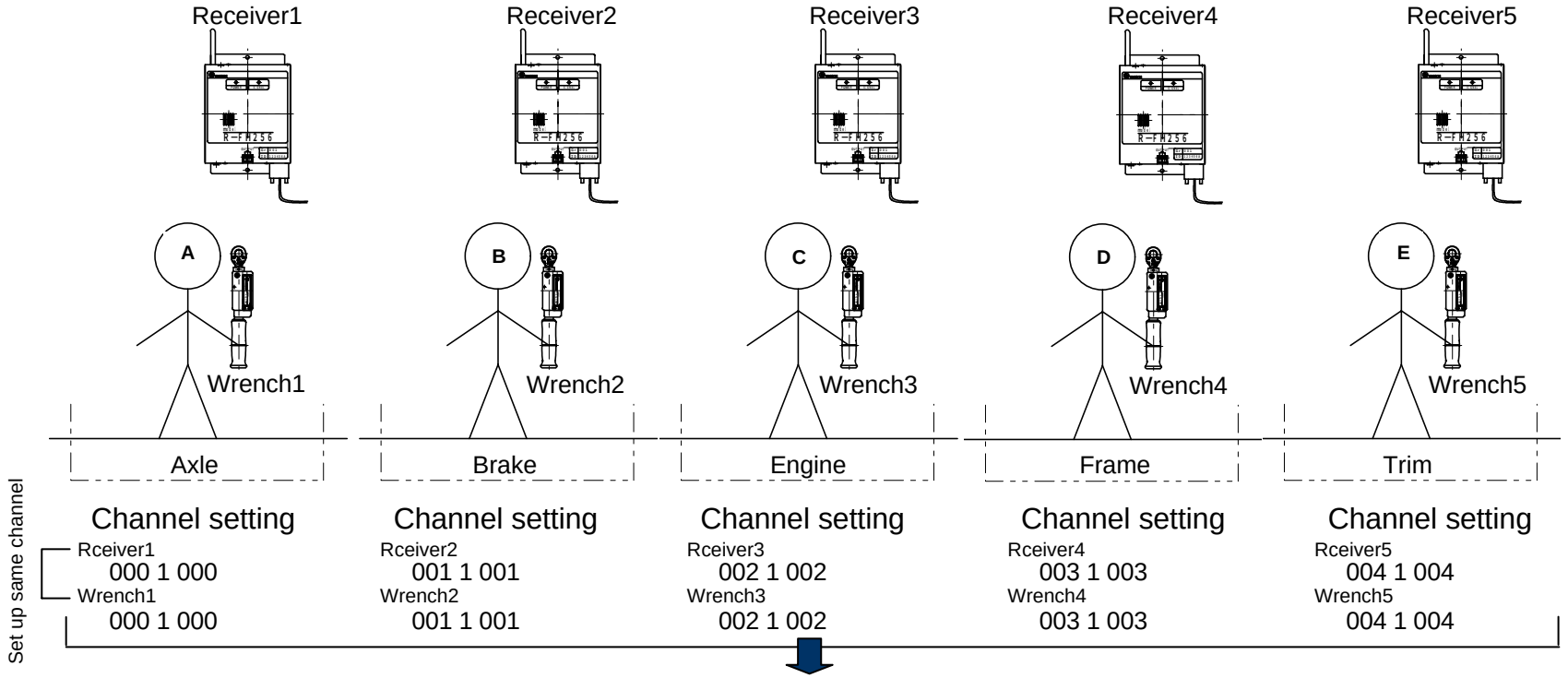
3digits ID	Portion	Torque wrench	Set Torque N.m
000	Axle	QSPFH50N3	35
001	Brake	SPFH19N-1X10N	15.9
002	Engine	QSPFH25N3	15
003	Frame	QSPFH100N4	65
004	Trim	CSPFH25N3X12D with SH12DX12	12.5

Receiver Mode 1

Please program your PLC software to judge exact signal or not by using 3 digits ID.

- If you want to connect from receiver to PLC by RS232C cable.
- If you want to use 3digits ID to control and record at PLC, for example using the list like table1.

➡ Please use this mode.



When wrench click, PLC will get 3digits ID data.

If you record 3 digits ID at PLC. You can confirm which wrench is used to tighten the bolt by comparing the recorded ID and the list like table1 later.

Example#3 How to Set up Using Channel Setting.

Example for Multiple Wrench with One Receiver.

Group				Receiver mode		3digits ID		
0	0	0		0		0	0	0
000~255				0~3		000~999		

Receiver will judge this group ID.

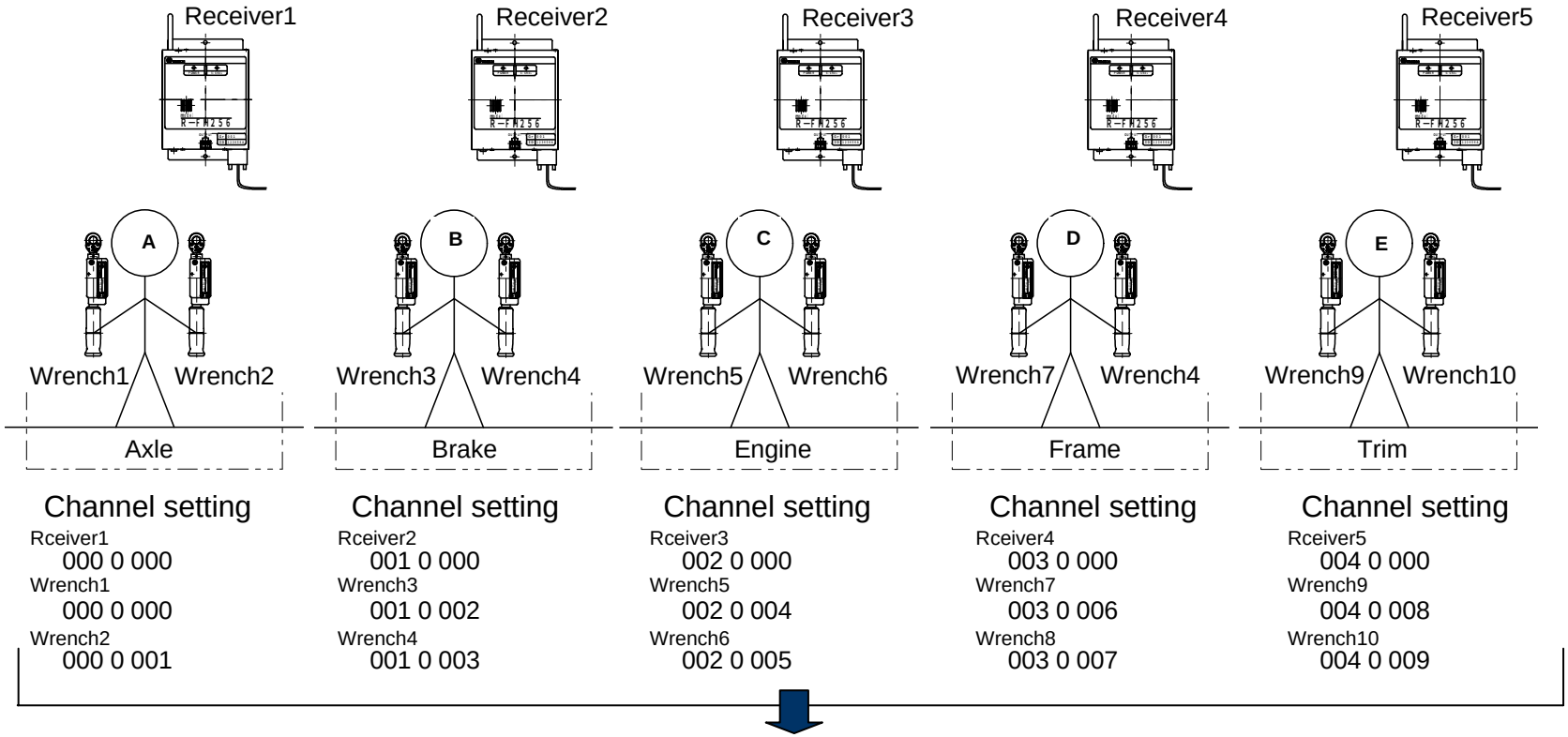
This 3 digits ID data will be sent to the PLC.

Receiver Mode 0

If you connect to the PLC by RS232C cable and use multiple wrenches with one receiver, Please program your PLC software to judge exact signal or not by using 3digits ID data. Receiver can not catch two signals at the exact same time.

Table2. Organize set up to easily identify location and source wrench.

3digits ID	Portion	Torque wrench	Set Torque N.m
000	Axle1	QSPFH50N3	35
001	Axle2	CSPFH50N3X15D with SH15DX17	24.5
002	Brake1	SPFH19N-1X10N	15.9
003	Brake2	SPFH19N-3X10N	15.9
004	Engine1	QSPFH25N3	15
005	Engine2	QSPFH25N3	10
006	Frame1	QSPFH100N4	65
007	Frame2	QSPFH140N3	110
008	Trim1	CSPFH25N3X12D with SH12DX12	12.5
009	Trim2	QSPFH50N3	40



PLC can judge exact signal or not by using 3 digits ID.
If you check the record of 3digits ID at PLC later, you can check which wrench is used to tighten the bolt by comparing the recorded ID and the list likeTable2.

Channels 000~255			Receiver Mode 0,1,2,3			3 digits ID 000~999		
0	0	0		0		0	0	0

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Receiver Modes	Qualifiers for Reciever to Accept Signal	
0	Channel	Example: 001 **0** 000
1	Channel & 3 digits ID	Example: 001 **1** 001
2	Channel & Serial Number	Example: 001 **2** 000 078760W
3	Channel, 3 digits ID & 7 digits ID	Example: 001 **3** 001 078760W

Receiver mode must be set same as the FM receiver and FM wrench.
If FM receiver and PLC is connected by RS232C cable,PLC can get 3digits ID and 7 digits ID.
7 digits ID can register as serial number ,management number and anything you want.
If you connect FM receiver to PLC by RS232C cable, please use D-sub9 pin female RS232C straight cable which is on the market.
When you connect from FM receiver to PLC by RS232C cable,you can use multiple wrenches with one receiver but if you connect by wire please use one FM wrench with one FM receiver.
If you connect to the PLC by RS232C cable and judge by 3 and 7 digits ID, you have to program PLC software by yourself.
Receiver can not catch the signal at the same time.

Receiver Mode 0

Set Receiver Mode to "0" to accept multiple wrenches to one receiver

Example:

Receiver 000 0 000 000000W

Transmitter		
	000 0 000 000000W	Receive
	001 0 000 000000W	Cannot Receive
	000 0 **001** 000000W	Receive
	000 0 000 **000001W**	Receive
	000 0 **001 000001W**	Receive
	001 0 000 **000001W**	Cannot Receive
	001 0 **001 000001W**	Cannot Receive

Receiver Mode 0 can catch every signal Which channel is same as FM receiver and FM wrench.
Please connect FM receiver to PLC by RS232C cable, and PLC can judge by using 3 and 7 digits ID.

Receiver Mode 1

Set receiver mode to "1" to accept specific channel and 3 digits ID

Example:

Receiver 000 1 000 000000W

Transmitter		
	000 1 000 000000W	Receive
	001 1 000 000000W	Cannot Receive
	000 1 **001** 000000W	Cannot Receive
	000 1 000 **000001W**	Receive
	000 1 **001 000001W**	Cannot Receive
	001 1 000 **000001W**	Cannot Receive
	001 1 **001 000001W**	Cannot Receive

Receiver Mode 1 is the standard setting.
Receiver judges channel and 3 digits ID.

Receiver Mode 2

Set reciever mode to "2" to accept specific channel and 7 digits ID

Example:

Receiver 000 2 000 000000W

Transmitter		
	000 2 000 000000W	Receive
	001 2 000 000000W	Cannot Receive
	000 2 **001** 000000W	Receive
	000 2 000 **000001W**	Cannot Receive
	000 2 **001 000001W**	Cannot Receive
	001 2 000 **000001W**	Cannot Receive
	001 2 **001 000001W**	Cannot Receive

Receiver mode 2 is the additional function.
If you want to control more detail by using 7 digits ID,Please use this mode.

Receiver Mode 3

Set receiver mode to "3" to accept specific channel, 3 digits ID, and 7 digits ID.

Example:

Receiver 000 3 000 000000W

Transmitter		
	000 3 000 000000W	Receive
	001 3 000 000000W	Cannot Receive
	000 3 **001** 000000W	Cannot Receive
	000 3 000 **000001W**	Cannot Receive
	000 3 **001 000001W**	Cannot Receive
	001 3 000 **000001W**	Cannot Receive
	001 3 **001 000001W**	Cannot Receive

Receiver mode 3 is the additional function.
If you want to control more detail by using 3digits and 7 digits ID,Please use this mode.

R-FH256 Data Output Format

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Data output	RS232C
Baud rate	9600bps
Parity	None
Data length	8bit
Stop bit	1bit
Flow control	CTS/RTS

Data Format

RE	,	0	0	1	,	1	2	3	4	5	6	A	CR	LF
Header		3 digits ID				7 digits ID							delimiter	
		000 - 999												

Note
If you don't set 7 digits ID,this section will be blank.
Setting box is required with 3 digits ID.
If you set 7 digits ID,They will need program software with the Setting Box with RS232C connection.

Sample Photos

Connect to PLC

R-FH256 with RS232C cable.
Receiver

SB-FH256
Setting Box

RS232C cable
Please use D-sub9 pin female RS232C straight cable which is on the market.