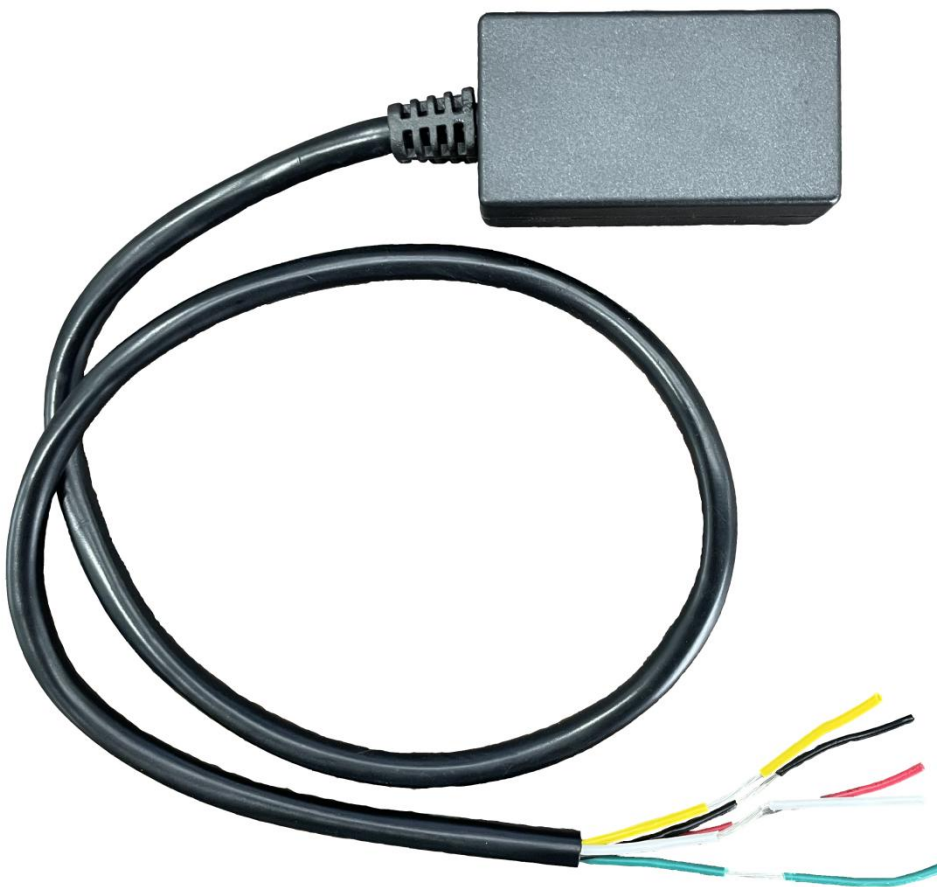


BRY100

V1.7



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1. Revision History

Revision	Date	Author	Description of Change
1.0	2022-03-25	Tom Liu	Initial
1.1	2022-09-06	Tom Liu	Add operation instruction
1.2	2022-09-14	Tom Liu	Modify pin color
1.3	2022-09-20	Tom Liu	7.4.3 Add “AT@GET=3” command to query relay state
1.4	2022-10-8	Tom Liu	Modify product characteristics
1.5	2024-4-24	Michael Liu	7.3.5 Add “AT@SET=7” command to Gradual Enable Relay
1.6	2024-5-17	Michael Liu	7.3.6 Add “AT@SET=8” command to Gradual Disable Relay
1.7	2024-8-1	Susan Liu	7.3.5 and 7.3.6 Modify data range to 1 - 100 (*100ms) of <Enable Time of first phase> and <One Cycle Time>

2. Product Introduction

WRL300 is professional wireless BLE 5.1 Relay applications. The Bluetooth broadcast frequency is 100 milliseconds.

WRL300	Pin No	Pin Names	Color	Description
5Pin Interface	1	VDD	RED	Power support 8V~32V
	2	GND	BLACK	Ground
	3	RELAY_COM	WHITE	Common
	4	RELAY_NO	YELLOW	Normal opened
	5	RELAY_NC	GREEN	Normal closed

3. Product Features

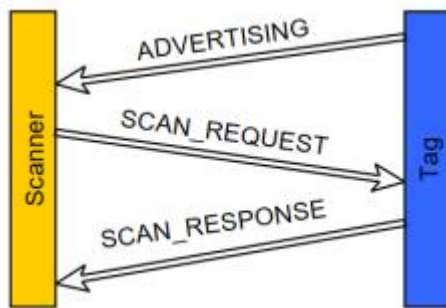
Compact Size
Easy installation
IP64
BLE 5.1
BLE/Remote Control
Firmware Over the Air

4. Product Characteristics

PN	BRY100
Industrial grade	IP64
Shell material	ABS plastic
Shell color	black
Dimensions	49mm*27mm*16mm
Product weight	22g ± 1g
Operating Voltage	DC 8 ~ 32V

StandbyCurrent	< 1.5mA @12V & < 1mA 24V
TriggerCurrent	19mA@12V / 10.6mA@24V
Maximum Load Current	6A@250VAC / 6A@30VDC
The Max Switch Voltage	400VAC/125VDC
The Max Switch Current	6A
The Max Switch Power	1500VA/180W
Operatingtemperature	-40°C~+85°C
Transmission Range	Up to 150m (Open Field)

5. Advertising Definition



5.1 “BLE Relay” Format

Bytes	Frame Type	Value
1	Length	0x02
2	Type	0x01
3	Data	0x06
4	Length	0x04
5	Type	0x16
6	Relay Serve LOW	0x02
7	Relay Serve MSB	0x2A
8	Relay Output State	0x01
9	Length	0x11
10	Type	0x09
11	NAME[0]	
12	NAME[1]	
13	NAME[2]	
14	NAME[3]	
15	NAME[4]	
16	NAME[5]	
17	NAME[6]	

18	NAME[7]	
19	NAME[8]	
20	NAME[9]	
21	NAME[10]	
22	NAME[11]	
23	NAME[12]	
24	NAME[13]	
25	NAME[14]	
26	NAME[15]	

6. Service Definition

Service Definition	
Control Service	
Service UUID	0000 2e00 -0000-1000-8000-00805f9b34fb
Characteristic1	
Read UUID	0000 2e21 -0000-1000-8000-00805f9b34fb
Max Length	180 Byte
Characteristic2	
Write UUID	0000 2e22 -0000-1000-8000-00805f9b34fb
Max Length	180 Byte

7. Command

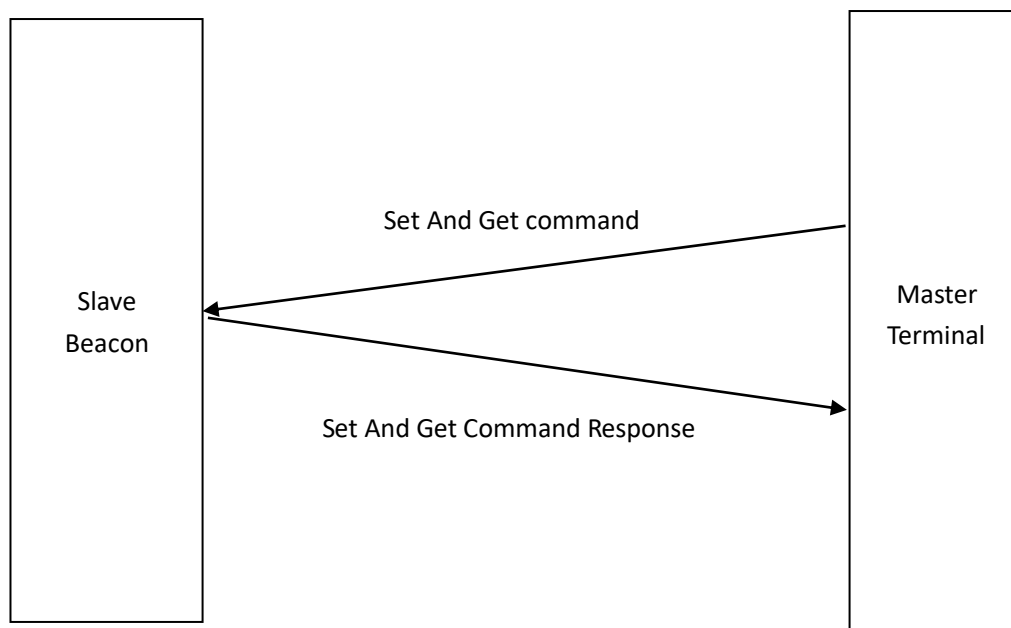
7.1 Command Format

All the commands use ASCII characters. Each command has the following format:

Command Format	Command Type
AT@SET=<param1>,<param 2>,...<param N>#	Set Parameters Command
@SET:<param 1>, <param 2>,...<param N>#	Set Parameters Command Response
AT@GET=<param 1>, <param 2>,...<param N>#	Get Parameters Command
@GET: <param 1>, <param 2>,...<param N>#	Get Parameters Command Response

The "<param 1>, <param 2>, ...<param N>" carries the command's parameters. The ASCII character ',' is used to separate the parameter characters. The parameter string consists of the ASCII characters: '0'-'9', 'A'-'Z', 'a'-'z'. The ending of command with character '#'.

Please refer to the following flow chart figure:



7.2 Error Code

The error code indicates the result of command execution.

Error Code	Description
0	Command Executed Successful
1	Operation Not Allowed
2	Invalid parameter

7.3 Set Command

7.3.1 Password Authorization

The **AT@SET=1** command is used to password authorization.

Example: AT@SET=1,123456#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'1'	'1'
2	Password	<=6	'0' – '9' 'A' – 'Z' 'a' – 'z'	
3	Tail Character	1	#	#

- ✧ <Command ID>: This is ID number of command and the ID number is unique.
- ✧ <Password>: The password for authorization, the default password is "123456". Password authorization is required for each Bluetooth connection. If the password authorization failed, the beacon will reject any commands and the response error code is 1 (Operation Not Allowed).

The response of **AT@SET=1** command:

Example: @SET:1,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'1'	'1'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

7.3.2 Change Password

The **AT@SET=2** command is used to change password.

Example: AT@SET=2,123456#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'2'	'2'
2	Password	<=6	'0' – '9' 'A' – 'Z' 'a' – 'z'	
3	Tail Character	1	#	#

The response of **AT@SET=2** command:

Example: @SET:2,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'2'	'2'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

7.3.3 Disable Relay

The **AT@SET=5** command is used to disable relay.

Example: AT@SET=5#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'5'	'5'
2	Tail Character	1	#	#

The response of **AT@SET=5** command:

Example: @SET:5,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'5'	'5'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

7.3.4 Enable Relay

The **AT@SET=6** command is used to enable relay.

Example: AT@SET=6#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'6'	'6'
2	Tail Character	1	#	#

The response of **AT@SET=6** command:

Example: @SET:6,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'6'	'6'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

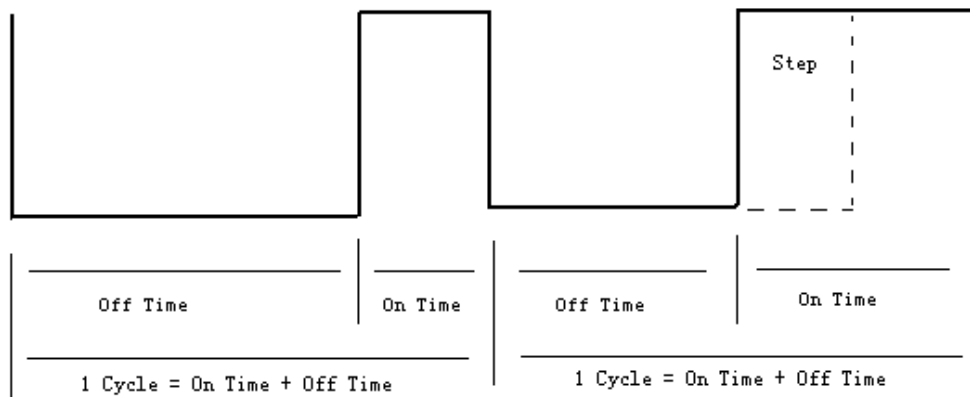
7.3.5 Gradual Enable Relay

The **AT@SET=7** command is used to gradual enable relay.

Example: AT@SET=7,1,10,1#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'7'	'7'
2	Enable Time of first phase	<=3	1 - 100 (*100ms)	

3	One Cycle Time	<=3	1 - 100 (*100ms)	
4	Incremental Step Time	<=3	0 - 100 (*100ms)	
5	Tail Character	1	#	#

Gradual Progressive Wave Shape



The response of **AT@SET=7** command:

Example:

@SET:7,0#

SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'7'	'7'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

7.3.6 Gradual Disable Relay

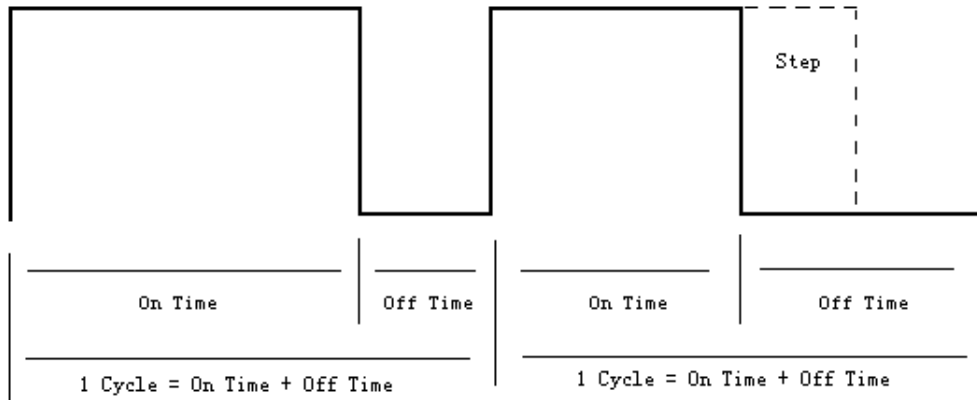
The **AT@SET=8** command is used to gradual disable relay.

Example:

AT@SET=8,1,10,1#

SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'8'	'8'
2	Enable Time of first phase	<=3	1 - 100 (*100ms)	
3	One Cycle Time	<=3	1 - 100 (*100ms)	
4	Incremental Step Time	<=3	0 - 100 (*100ms)	
5	Tail Character	1	#	#

Gradual Progressive Wave Shape



The response of **AT@SET=8** command:

Example: @SET:8,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'8'	'8'
2	Result	1	Please refer to the below "Error Code"	
3	Tail Character	1	#	#

7.4 Get Command

7.4.1 Get Password

The **AT@GET=1** command is used to get current password.

Example: AT@GET=1#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'1'	'1'
2	Tail Character	1	#	#

✧ <Command ID>: This is ID number of command and the ID number is unique.

The response of **AT@GET=1** command:

Example: @GET:1,0,123456#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'1'	'1'

2	Result	1	Please refer to the below "Error Code"	
3	Password	<=6	'0' – '9' 'A' – 'Z' 'a' – 'z'	
4	Tail Character	1	#	#

7.4.2 Get Version Information

The **AT@GET=2** command is used to get version information.

Example: AT@GET=2#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'2'	'2'
2	Tail Character	1	#	#

✧ <Command ID>: This is ID number of command and the ID number is unique.

The response of **AT@GET=2** command:

Example: @GET:2,0,000101#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'2'	'2'
2	Result	1	Please refer to the below "Error Code"	
3	Software Version	<=6		
4	Tail Character	1	#	#

7.4.3 Get Relay State

The **AT@GET=3** command is used to get current relay state.

Example: AT@GET=3#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'3'	'3'
2	Tail Character	1	#	#

✧ <Command ID>: This is ID number of command and the ID number is unique.

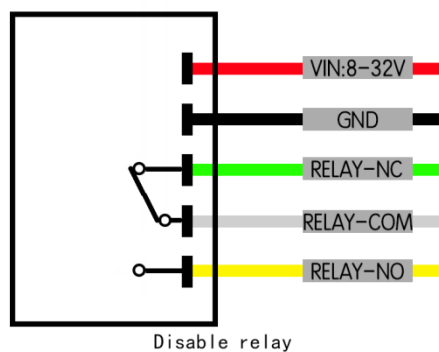
The response of **AT@GET=3** command:

Example: @GET:3,0,0#				
SN	Parameter	Length (Byte)	Range/Format	Default
1	Command ID	1	'3'	'3'
2	Result	1	Please refer to the below "Error Code"	
3	Relay state	1	"0" ,"1" "2" ,"3"	"0"
4	Tail Character	1	#	#

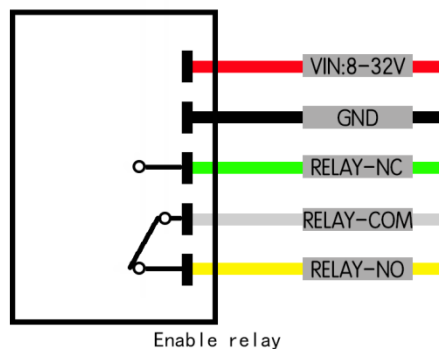
✧ <Relay state>: "0" is relay OFF, "1" is relay ON. "2" is gradual enable. "3" is gradual disable.

8. Operating instruction

- ✧ Step1: Connected to WRL300 by Bluetooth.
- ✧ Step2: After Connected, master device need identity authorize, input the corresponding authorize password. The authorization timeout period is 10 seconds, if the master device has not input authorize password in 10 seconds, the WRL300 will actively disconnect.
Example: send `AT@SET=1,123456#`, the default password is "123456".
- ✧ Step 3: After the authorization is successful, you can control relay output, refer to the following:
The `AT@SET=5#` command is used to disable relay, relay NC pin switch to relay COM pin.



The `AT@SET=6#` command is used to enable relay, relay NO pin switch to relay COM pin.



Notice: After the device is powered on, the initial state of the relay is disabling state.
After the device is powered off, the state of relay is always disabling state.