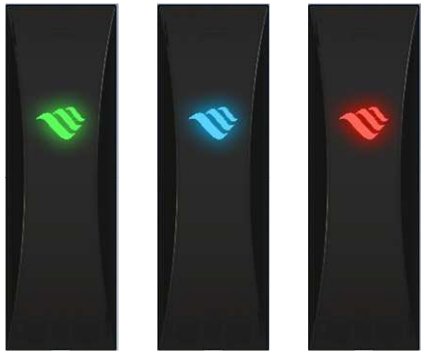
UR110-20 125kHz RFID Reader

RS485 OUTPUT with Remote I/O

INTRODUCTION

The UR110 brings the concept of " Your Reader" which is a stylish, reliable proximity RFID reader with piano finish housing which really shows seamless integration to an intelligent building. For those high end projects, UR110 fulfils its requirement in both excellent performance and flexible appearance, such as changeable housing with customized logo, LED colors or even the buzzer sound which are all configurable to meet wide range of applications in Access control area or Home automation area. With waterproof design, it also serves as a great outdoor reader in all environment.



UR110-20

FEATURES

- EM Card 125KHz Read only
- Outputs according to RS485 characteristics.
- Weather resistant
- Available installed on metal surface
- Reading distance: up to 9 cm
- New stylish housing to match modern construction for customer design
- 2ch Digital output can direct to drive Door Lock and Alarm .
- 2ch Digital input for Door Sensor and Door Open Switch with optical coupler to improve noise immunity

SPECIFICATIONS

OPERATING

Transmit Frequency	125KHz standard
Transponder	H4001 / H4002 / EM4100/4102 EM Card Read only
Reading distance	Up to 9 cm with EM card.
Interface	RS485

ELECTRICAL

Power Input	7.5 to 12 VDC. Linear supply recommended.
Current Requirements	75 mA @12VDC
Digital Output	Strike Max. Voltage : DC 50 VDC Strike Max. Current : 4.0A (Drain 2.0A Current-Continuous) Strike Time : 3 - 254 seconds (Toggle Mode) Strike Mode : Toggle/Latch (Open Drain)
Digital Input	Optical Coupler isolation Input Voltage : DC 7.5~12 VDC

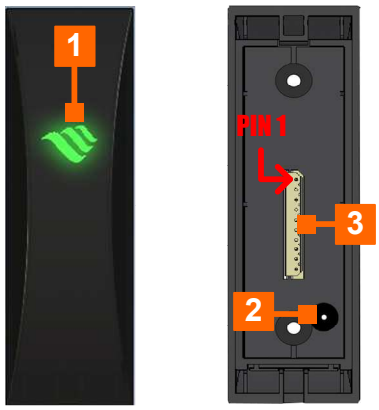
MECHANICAL

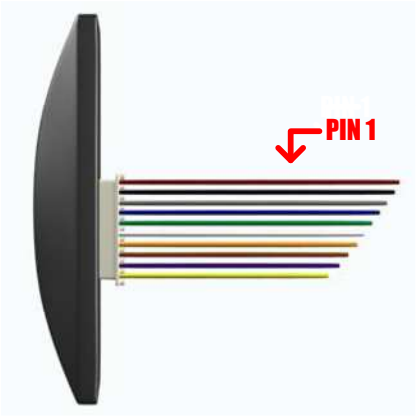
Dimensions	Length : 100 mm / Width : 32 mm / Height : 16.5 mm for UR110 Series Length : 87 mm / Width : 32 mm / Height : 16.5 mm for UR115 Series
Weight	50 gm (Without Cable)
Cable Length	15cm +/- 1cm

ENVIRONMENTAL

Temperature	Operating : 0 ℃ to 55 ℃ Storage : -10 ℃ to 65 ℃
Humidity	Operating : 10 % to 90 % noncondensing Storage : Up to 100% noncondensing

TERMINAL / INDICATOR DESCRIPTIONS





1 LED Indicator

Green	Red	Description
On	Off	Standby
Blink	Off	Read OK
Off	On	ISP Mode
Other		Software Control

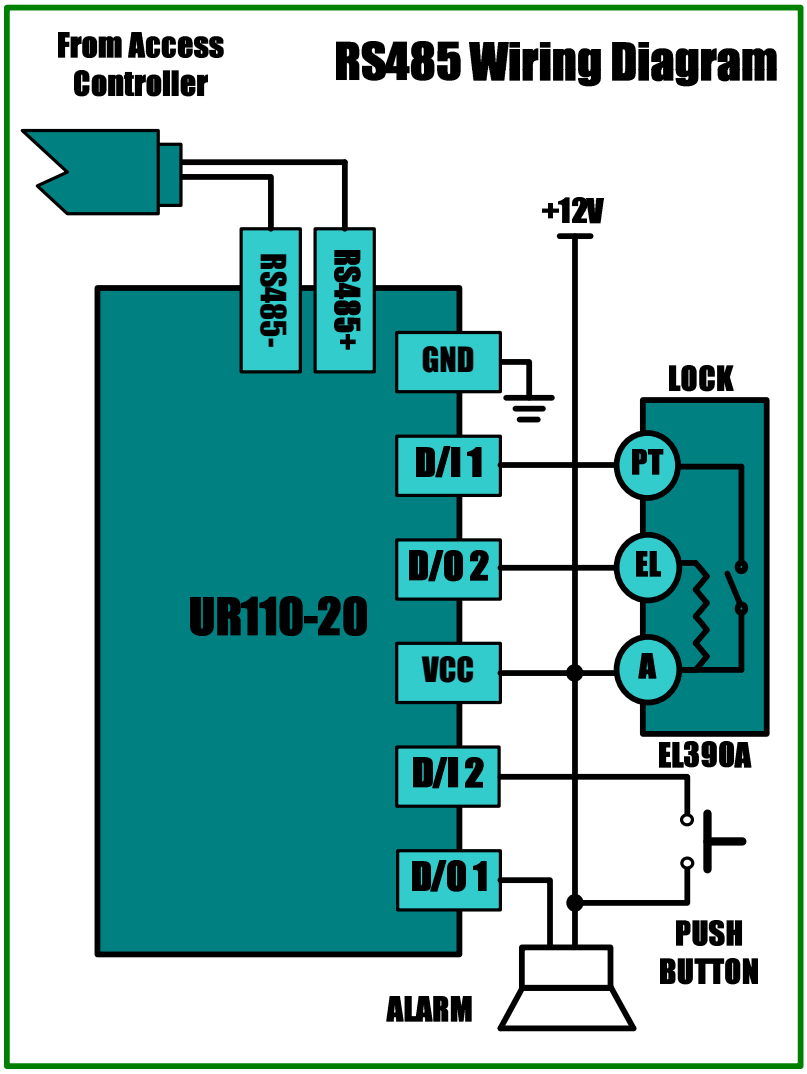
2 Sound Indicator

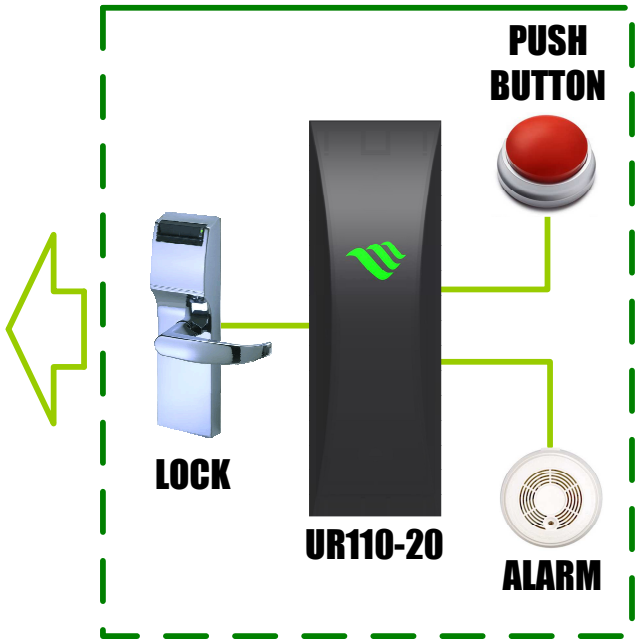
Buzzer	Description
Bi-	Read OK
Other	Software Control

3 9 Pin Terminal

Pin	Color	Signal	In/Out	Description
1	Red	VCC	P	Power 7.5-12 Volts
2	Black	GND	P	Power Ground
3	Gray	D/O 1	O	Digital output 1 (open drain)
4	Blue	D/O 2	O	Digital output 2 (open drain)
5	Green	485+	I/O	RS485+
6	White	485-	I/O	RS485-
7	Orange	GND	P	Power Ground
8	Brown	D/I 1	I	Digital input 1 (active high)
9	Purple	D/I 2	I	Digital input 2 (active high)
10	Yellow	SEL	I/O	Connector to Grand Enter ISP Mode

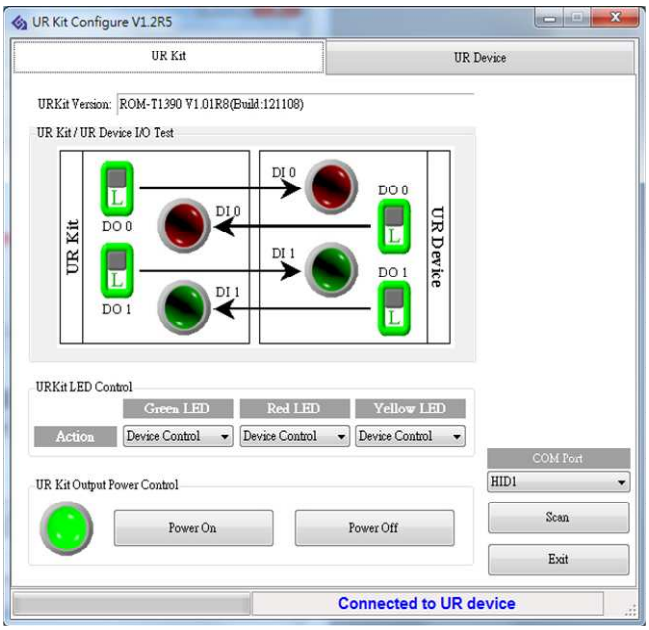
CONNECTION





Utility Tool

URkit is the Utility tool for UR series reader. With its software(URkit Configure), URkit may perform complete functionalities of UR series reader.



URKIT is an optional device for UR110's configuration,please contact sales for inquiry.

OUTPUT FORMAT

Data Structure (Serial ASCII)

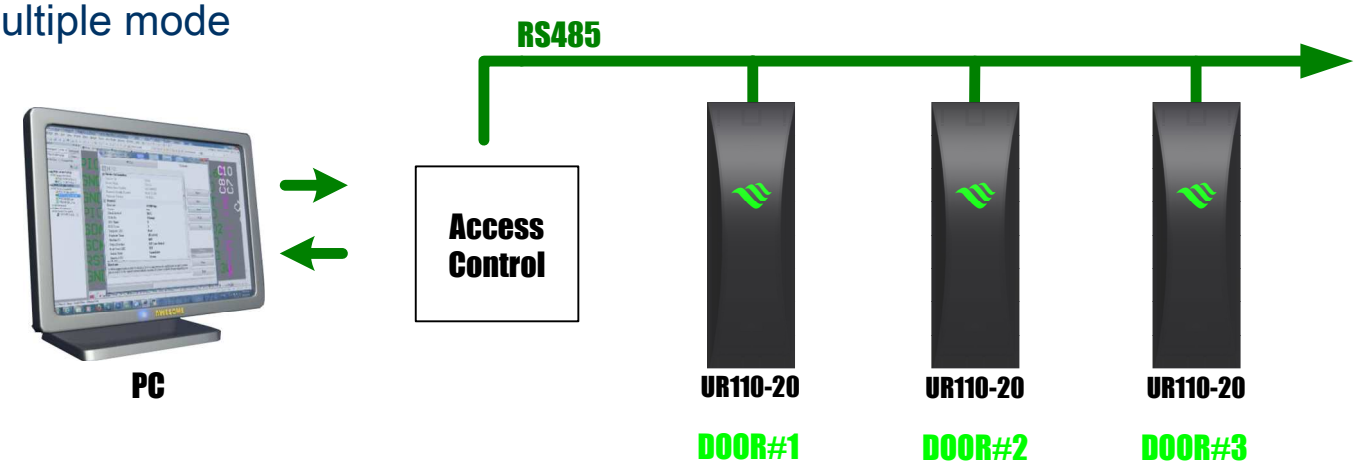
Baud Rate : 19200,N,8,1

STX(02 HEX)	DATA(10 HEX CHARACTERS)	CR	LF	CRLFETX(03 HEX)

The start character is factory defined as an ‘STX’ (02 HEX). This is followed by 10 Hex characters of data . The CR\LF characters serve to bring the received screen text back to the left hand side and on the line below after the data bytes have been sent. The ‘ETX’ (03 HEX) character denotes the end of the current transmission.

Peer to Peer mode

Multiple mode



Protocol

Command symbol definition

STX	**0x02**
ST	**State**
ADDR	**Address**
CR	**0x0D**

Set reader address

Host to Device

STX	"I"	ADDR	CR

Device to Host

STX	"A"	CR

Select the designated reader

Host to Device

STX	"D"	ADDR	CR

Device to Host

STX	"A"	ADDR	","	"UR110"	","	ST	","	Checksum	CR

1. ADDR is the hexadecimal string (2 bytes). For example, if the reader's address is 16 (0x10), ADDR is 10.
2. ADDR 00 indicates address of any reader. You can select any reader using ADDR 00.

ST bit		Description
b7-b4	b3-b0	
3	b0	D/I 1 (1: High, 0: Open or Low)
	b1	D/I 2 (1: High, 0: Open or Low)
	b2	D/O 1 (1: On, 0: Off)
	b3	D/O 2 (1: On, 0: Off)

This byte indicates the D/I is actived right now.

ST bit		Description
b7-b4	b3-b0	
3	b0	D/I 1 (1: High, 0: Open or Low)
	b1	D/I 2 (1: High, 0: Open or Low)
	b2	none
	b3	none

This byte indicates the D/I was actived previously.

[Ex.]

Host to Device

STX	"D"	00	CR

Device to Host

STX	"A"	ADDR	","	"UR110"	","	40	","	Checksum	CR

ST byte is "0100 0000". It indicates D/O 1 is on now; D/I 1 and D/I 2 were low (without the data in) previously.

Host to Device

STX	"D"	00	CR

Device to Host

STX	"A"	ADDR	","	"UR110"	","	21	","	Checksum	CR

ST byte is "0010 0001". It indicates D/I 2 is high (with the data in) now; D/I 1 was high (with the data in) previously.

Get firmware version

Host to Device

STX	“D”	00	CR

Device to Host

STX	“A”	ADDR	“,”	“UR110”	“,”	ST	“,”	Checksum	CR

Host to Device

STX	“V”	CR

Device to Host

STX	“A”	“,”	“ROM-T1309”	“,”	Version	CR

Control D/O

Host to Device

STX	“D”	00	CR

Device to Host

STX	“A”	ADDR	“,”	“UR110”	“,”	ST	“,”	Checksum	CR

Host to Device

STX	“J”	“n”	CR

Device to Host

STX	“A”	CR

[Ex.]

D/O 1 ON

Host to Device

STX	“J”	“B”	CR

Device to Host

STX	“A”	CR

[Ex.]

D/O 2 ON

Host to Device

STX	“J”	“D”	CR

Device to Host

STX	“A”	CR

“n”	Description
5	Treble Single Beep
6	Treble Triple Beep
7	Mediant Single Beep
8	Mediant Triple Beep
9	Bass Single Beep
A	Bass Triple Beep
B	D/O 1 On
C	D/O 1 Off
D	D/O 2 On
E	D/O 2 Off
F	* D/O 1 Momentarily On
G	* D/O 2 Momentarily On

* Default momentarily time is 5 seconds.

Control LED for standby status

Host to Device

STX	“D”	00	CR

Device to Host

STX	“A”	ADDR	“,”	“UR110”	“,”	ST	“,”	Checksum	CR

Host to Device

STX	“C”	“8”	“C”	“,”	LED State	Checksum	CR

Device to Host

STX	“A”	CR

LED Color	8				C				LED State
OFF	0	1	1	1	1	1	1	1	7F
Green	0	1	1	0	1	1	1	1	6F
Red	0	1	0	1	1	1	1	1	5F
Yellow (Green+Red)	0	1	0	0	1	1	1	1	4F
Blue	0	0	1	1	1	1	1	1	3F
Cyan (Green+Blue)	0	0	1	0	1	1	1	1	2F
Purple (Red+Blue)	0	0	0	1	1	1	1	1	1F
White (Blue+Red+Green)	0	0	0	0	1	1	1	1	0F

The Checksum is an 8-bit sum of all characters between STX and CR, represented as a 2-character HEX string. For an example packet below, the checksum is calculated as follows. The data part of the packet is “C8C,FF”. The sum of these character codes is: 43H+38H+43H+2CH+46H+46H=176H. Eight least significant bits contain 76H. The string representation of this value is “76” (i.e. 2 ASCII characters- ‘7’ and ‘6’).

[Ex.]

Set blue LED for standby status

Host to Device

STX	“C”	“8”	“C”	“,”	3F	Checksum	CR

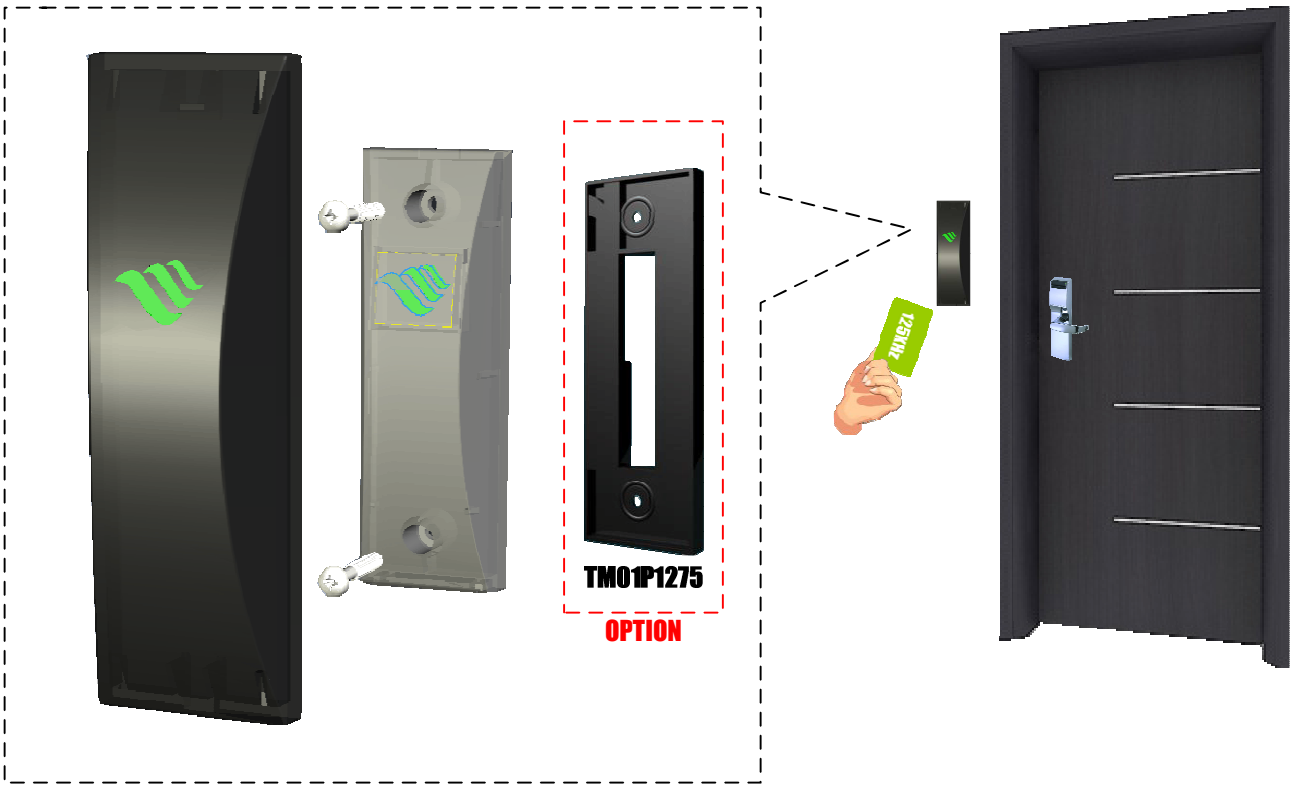
Device to Host

STX	“A”	CR

You can refer to the document “Programming Guide” for more protocols.

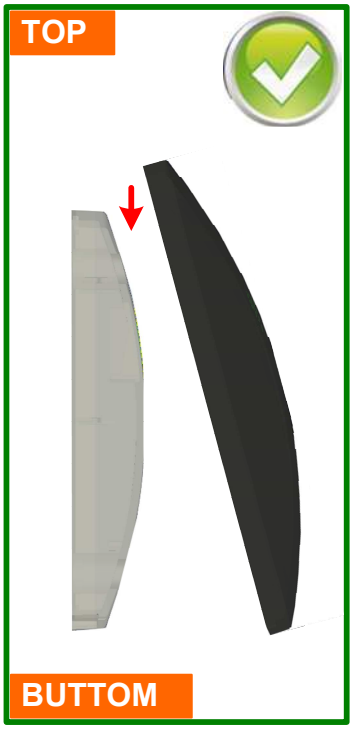
Installation

For the installation, the inner reader requires two screws to be fixed on the proper location next to the entrance. The outer black housing will apply on top of the reader.



Please pay special attention to the below instruction which demonstrates the proper direction that outer housing needs to be applied to inner reader.

Above picture shows the inside of the outer housing.



Above picture shows the correct direction (TOP) that outer housing needs to be applied.

CAUTION:

The crossed out wheeled bin label that can be found on your product indicates that this product should not be disposed of via the normal household waste stream.

To prevent possible harm to the environment or human health please separate this product from other waste streams to en-sure that it can be recycled in an environmentally sound manner.

For more details on available collection facilities please contact your local government office or the retailer where you purchased this product.

This information only applies to customers in the European Union.

For other countries, please contact your local government to investigate the possibility of recycling your product.