

A88N MANUAL

Version: 1.0

(Apply to N40, L40 and above versions)

2018/6/20

CATALOG

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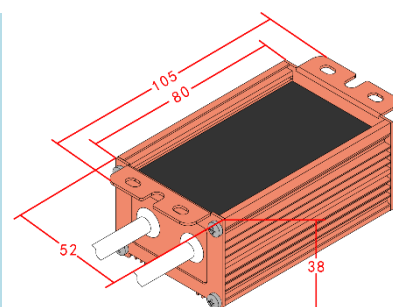
Function Overview

- Signal amplification: (original function of A88D is applicable for 250K -500K)
 - Output the 485 signal after the input signal of the channel RS-485 is amplified.
 - Output the 245 signal after the addressing input signal (ADI) is amplified.

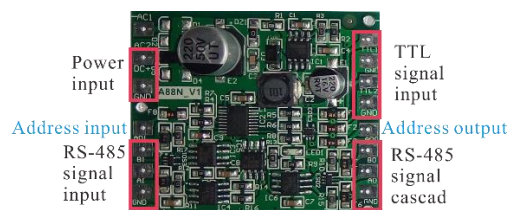
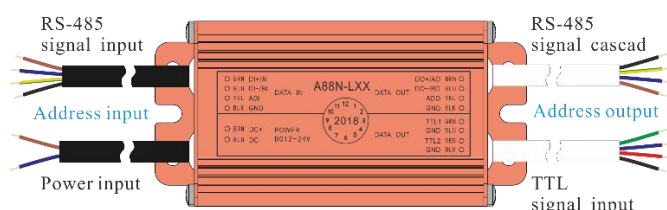
Apply to RS-485 parallel lighting fixtures, effectively extend transmission distance of RS-485 signal.
- Signal conversion: (original function of A68)
 - Convert one channel of RS-485 input signal into two channels of same TTL output signal.
 - After RS-485 input signal is amplified, it will transfer to next A88N and use as signal cascade.

Basic Parameters

PCB Size	52L×45W×13H (mm)
Product Size	105L×52W×38H (mm)
Product N.W.	210g
Input Voltage	DC12-24V (Please avoid using the power supply with poor performance.)
Output Power	<1W (Maximum power of TTL signal output is 0.35W.)
Input Signal	1CH RS-485 signal, 1CH TTL (ADI) signal
Output Signal	1CH RS-485 signal, 3CH TTL signal (include 1CH ADO signal)



Connection Instruction

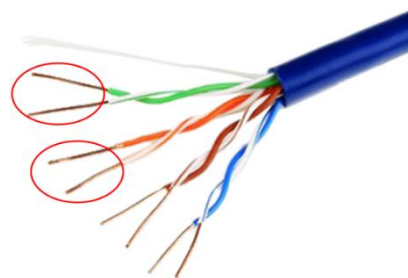


Port	Color	Label	Description
Power input	Brown	DC+	DC power supply V+
	Blue	DC-/GND	DC power supply V-
Signal input	Brown	DI+/AI	Input signal wire A
	Blue	DI-/BI	Input signal wire B
	Yellow	ADI	Addressing signal input port
	Black	GND	Signal earth
Signal cascade	Brown/red	DO+/AO	Output signal wire A
	Blue	DO-/BO	Output signal wire B
	Yellow/green	ADO	Addressing signal output port
	Black	GND	Signal earth
Signal output	Green	TTL1	Output 1
	Blue	GND	Signal earth
	Red	TTL2	Output 2
	Black	GND	Signal earth

Product (include PCB and waterproof parts) supports DC power supply only. If AC power supply is required, please contact us for special model.

★ Signal cables connection notes:

1. Use UTP—Unshielded Twisted Pair(resistance per 100M<10Ω), low quality Ethernet cables and telephone cable are unavailable.
2. Use one group twisted pair, suggest green + green white or orange + orange white. The quality and color of the cable are very important. Blue and brown wires greatly influence the signal transmission. Please don't use several groups of twisted pairs together.
3. Controller signal output GND must connect directly with input GND of lighting fixture. Cannot connect with lighting fixture through power switch.
4. Switch on the controller after all hardware signal cables and wires are connected. Please don't CONNECT / DISCONNECT the signal cables while the controller is power on; avoid bad output by reverse current and protect the circuit and components.



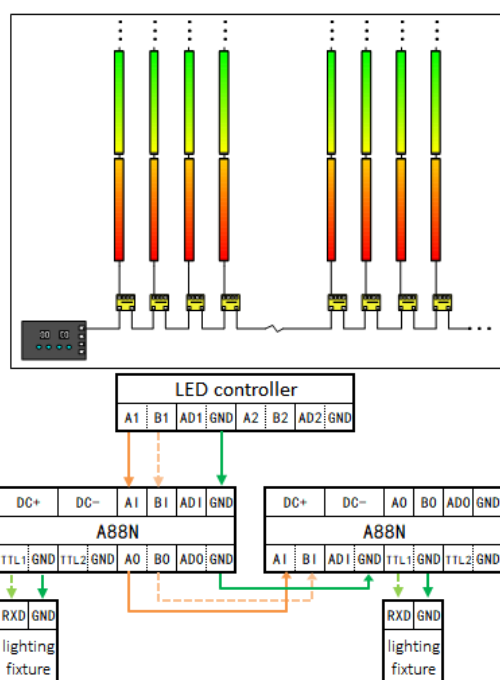
★ Transmission Distance:

Transmission Type	Normal 3-core / 4-core cable	CAT5E cable	Notes
LED controller → A88N	reach 10-30m	reach 30-100m	
A88N → A88N	reach 10-30m	reach 30-100m	When using CAT5E cable and connect the amplifier in each 30m, maximum 6pcs A88N can be cascaded and total distance should be no more than 180m.
Output RS485 → Lighting fixture	reach 10-30m	reach 30-100m	
Output TTL → Lighting fixture	reach 2-5m	reach 5-10m	

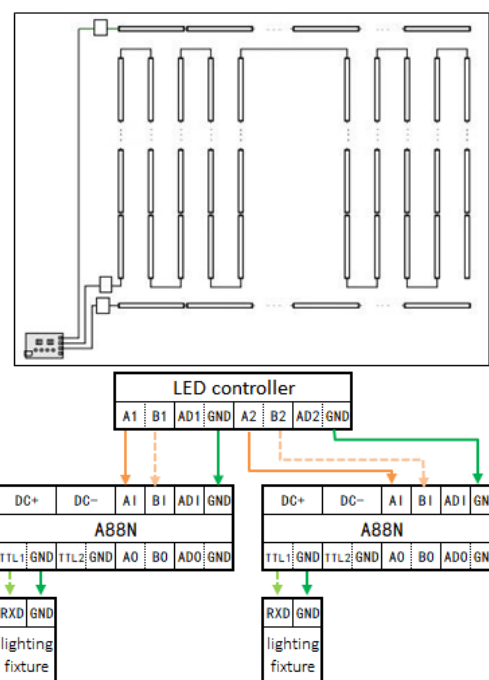
Application Diagram

1. Signal conversion (convert RS-485 into TTL): Main control + A88N + 2-wire lighting fixture.

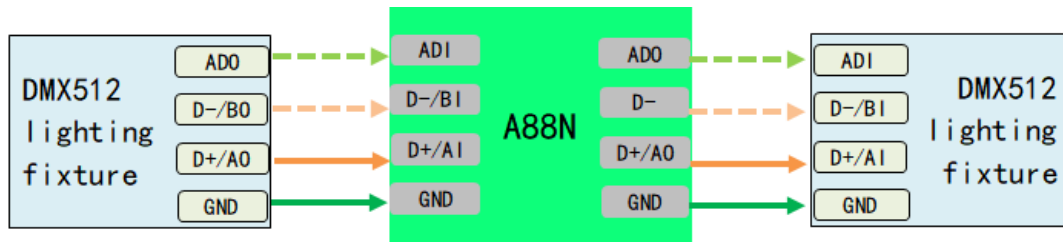
Example 1 Use several A88N in cascade



Example 2 Use individually

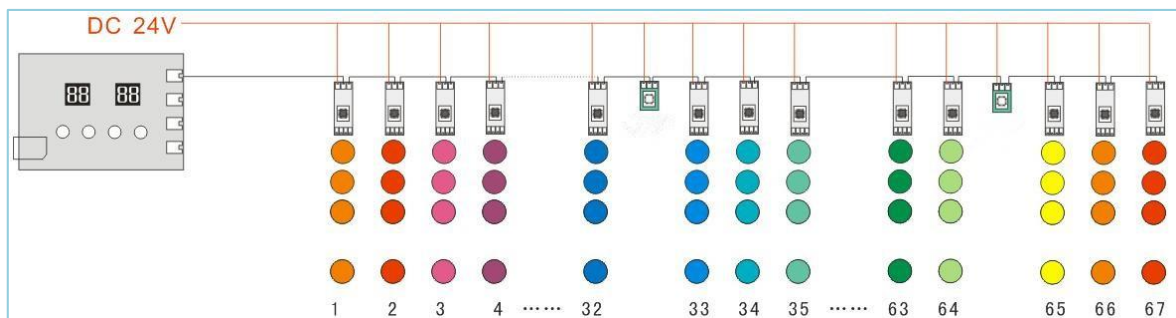


2. Signal amplification: DMX512 lighting fixture + A88N + DMX512 lighting fixture

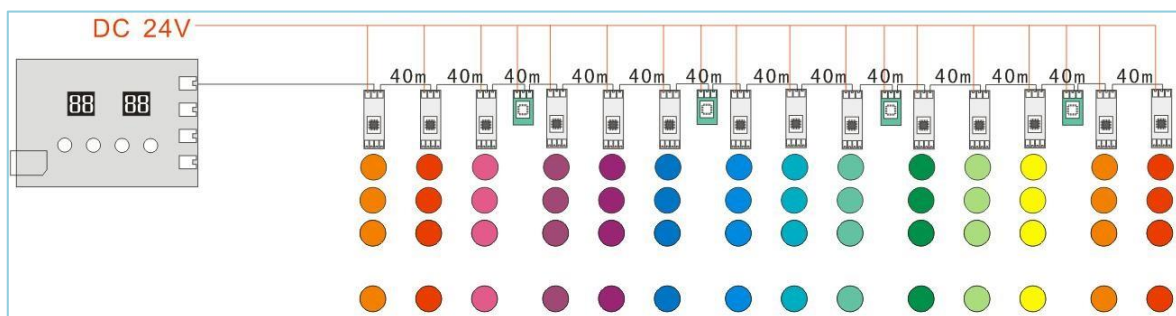


In general, we suggest adding one A88N after every 32pcs main chips in this application. If the distance between lighting fixtures is relatively long (less than 32pcs chips reach over 100m) then one A88N needs to be added in every 100m. User can also add A88N according to actual situation, but not limit to 32pcs main chips.

Example 1 Add One A88N after every 32pcs main chips when distance between lighting fixtures is short.



Example 2 Add One A88N in every 100m when distance between lighting fixtures is long.



★ Assemble Appropriate Resistor

When transmission wire in A88N signal input port is relatively long (normally longer than 50m), a matched resistor is required to connect between RS-485 signal input D+/A and D-/B wire of A88N.

The resistance of this matched resistor should be the same as characteristic impedance of transmission wire that it is normally 120Ω. (Most characteristic impedance in twisted-pair cables are around 100-120Ω).

