

# Specification

Customer's Name: \_\_\_\_\_

Product Material No. : \_\_\_\_\_

Model No. : LF-GSD020YCVersion: V1.2

## Customer Approval

Examined by	Reviewed by	Approved by

## LIFUD Approval

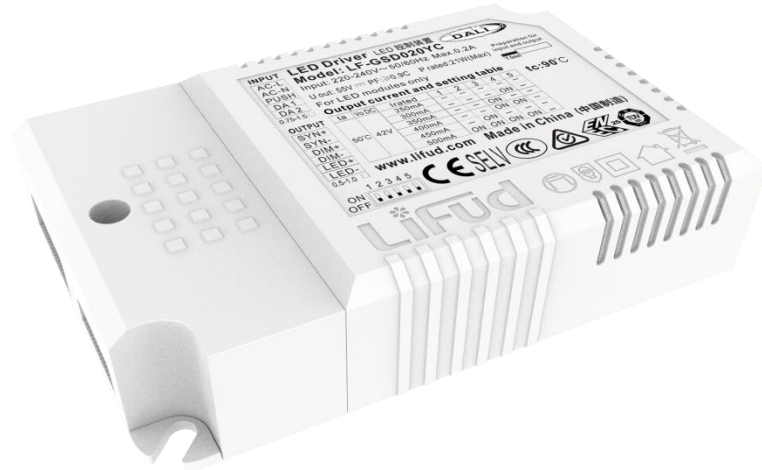
Drafted by	Reviewed by	Approved by

## Full Model Numbers Required by the Customer

Full model No.		Full model No.	
Full model No.		Full model No.	

## E.C. List

Version	Description of Change	R&D	Date
1.0	Formal version	Zhu Nengwu	2019-03-19
1.1	Revised and added R&D design parameters.	Zhu Nengwu	2019-04-15
1.2	Revised input current and label.	Zhu Nengwu	2019-04-18



## Product Description

LF-GSD020YC series is a 20W constant current LED power supply. It conforms to DALI 2.0 compatibility certification including IEC 62386-101,102,207. Input voltage limit is 180-264VAC. Output current can be selected from 250mA to 500mA via a DIP switch, 50mA every step. Owing to the unique circuit structure, the efficiency of this series reaches up to 86%. Equipped with 5 types of dimming functions (including DALI, PUSH, 0-10V, PWM & Rx), this product can be a solution for various LED lighting system designs.

## Product Feature

- Constant current output. The current value can be selected via a DIP switch, 50mA every step.
- Plastic housing. Compliance with the Class I and Class II light fixture
- Built-in active power factor correction function
- Stand-by power consumption <0.5W
- DALI dimming (Logarithmic or linear dimming curve can be switched to each other via DALI interface.)
- PUSH dim
- Synchronous dimming: 10 pcs of power supplies
- Warranty: 7 years (Please refer to the warranty condition.)

## Application

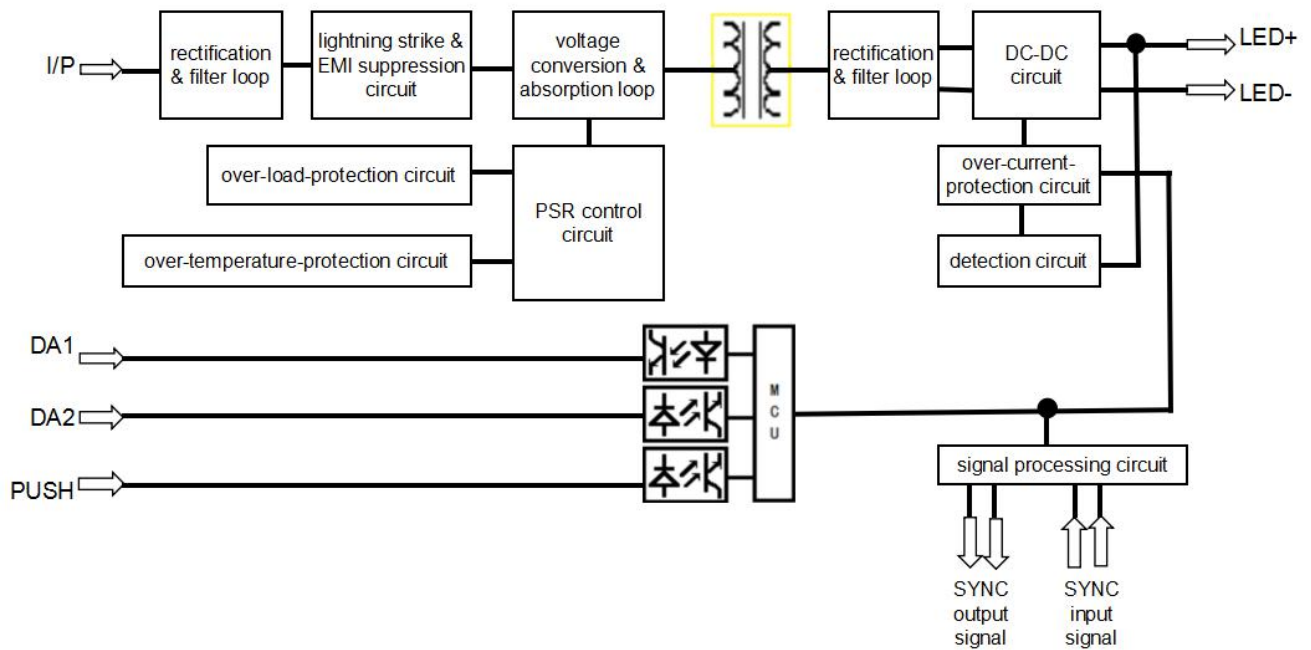
- warm house lighting
- flood-light lighting
- indoor office lighting
- decorative lighting
- commercial lighting
- residential lighting

**Technical Data**

Full Model Number		LF-GSD020YC					
<b>Output</b>	Output Voltage	25-42V					
	Output Current	The output current is selectable via a DIP switch. Refer to the DIP switch table.					
		250mA	300mA	350mA	400mA	450mA	500mA
	Ripple Voltage	<1V (20MHz)					
	Percent Flicker	<0.5%					
	Current Tolerance	±5%					
	Temperature Drift	±10%					
	Line Regulation	±5%					
Start-up Time	230V <1s						
<b>Input</b>	Line Regulation	±5%					
	Input Voltage	220-240VAC (voltage limit : 180-264VAC)					
	DC Input Voltage	310-340VAC (voltage limit : 254-374VAC)					
	Input Frequency	47-63Hz					
	Input Current	0.2A Max.					
	Power Factor	≥0.95/230VAC (LED load)					
	THD	≤10%					
	Efficiency	≥86%/230VAC					
	Inrush Current	≤30A/350uS@230VAC (Max.)					
	Qty of the same model of power supplies that can be configured by a circuit breaker	@230VAC, 20 pcs of power supplies (16A type-B circuit breaker); 35 pcs of power supplies (16A type-C circuit breaker)					
	Leakage Current	≤0.7mA					
	Standby Power Consumption	≤0.5W (when the OFF signal of DALI takes effect)					
<b>Protective Feature</b>	Open-Circuit Protection	Open circuit voltage≤55V					
	Short-Circuit Protection	Hiccup mode (auto-recovery)					
<b>Environment Condition</b>	Working Temperature	-30℃ ~ +50℃					
	Working Humidity	20-90%RH (no condensation)					
	Storage Temperature/Humidity	-40℃ ~ 80℃(six months under class I environment); 10-90%RH (no condensation)					
	Atmospheric Pressure	86-106KPa					
<b>Safety &amp; Norm</b>	Certificate	CB.CE.ENEC.RCM.CCC.DALI 2.0					
	Withstand Voltage	I/P-O/P: 3.75KV, 5mA, 60s					
	Insulation Resistance	I/P-O/P: 500VDC, >100MΩ					
	Surge Rating	IEC61000-4-5 (L-N: 1KV )					
	Safety Standard	EN61347, GB19510					
	Electromagnetic Interference	EN55015, EN61000-3-2					
	Electromagnetic Susceptibility	EN61000-4-2, 3, 4, 5, 6, 8, 11; EN61547					
Electromagnetic Compatibility	typical light fixture type: panel light						
<b>Others</b>	IP Rating	IP20					
	Warranty Condition	7 years (Tc: 75 ℃)					
	DALI Executive Standard	IEC 62386-101, 102, 207: DALI 2.0					
	Noise Rating	≤ 29db (Tested in a silent room and the noise collector was 10cm away from the power supply.)					
	TRIAC Universal Dimmer	/					

<b>Testing Equipment</b>	AC power source: CHROMA6530, digital power meter: CHROMA66202, Oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber, lightning surge generator: Everfine EMS61000-5B, rapid group pulse generator: Everfine EMS61000-4A, spectrum analyzer: KH3935, hi-pot tester: TH9201B, stroboscope (percent flicker tester) 60N-01, etc.
<b>Testing Condition</b>	Unless otherwise stated, the parameters of the power factor and efficiency are the test results under the ambient temperature of 25°C and humidity of 50%, AC input of 230V and 90% load.
<b>Additional Remark</b>	<p>1. It is recommended that customer should install an over &amp; under voltage protection and surge protection device to ensure safety before connecting to electricity.</p> <p>2. The PC cover, housing, end caps and other parts of the LED driver inside the LED light fixture must conform to UL94 V-0 flammability standard or above.</p> <p>3. As an accessory, the LED driver is not the only factor determining the EMC performance of the LED light fixture. The structure and the wiring of the light fixture are also relevant. Thus it's strongly recommended the LED light fixture manufacturer re-confirms the EMC of the whole LED light fixture.</p>

### Function Diagram

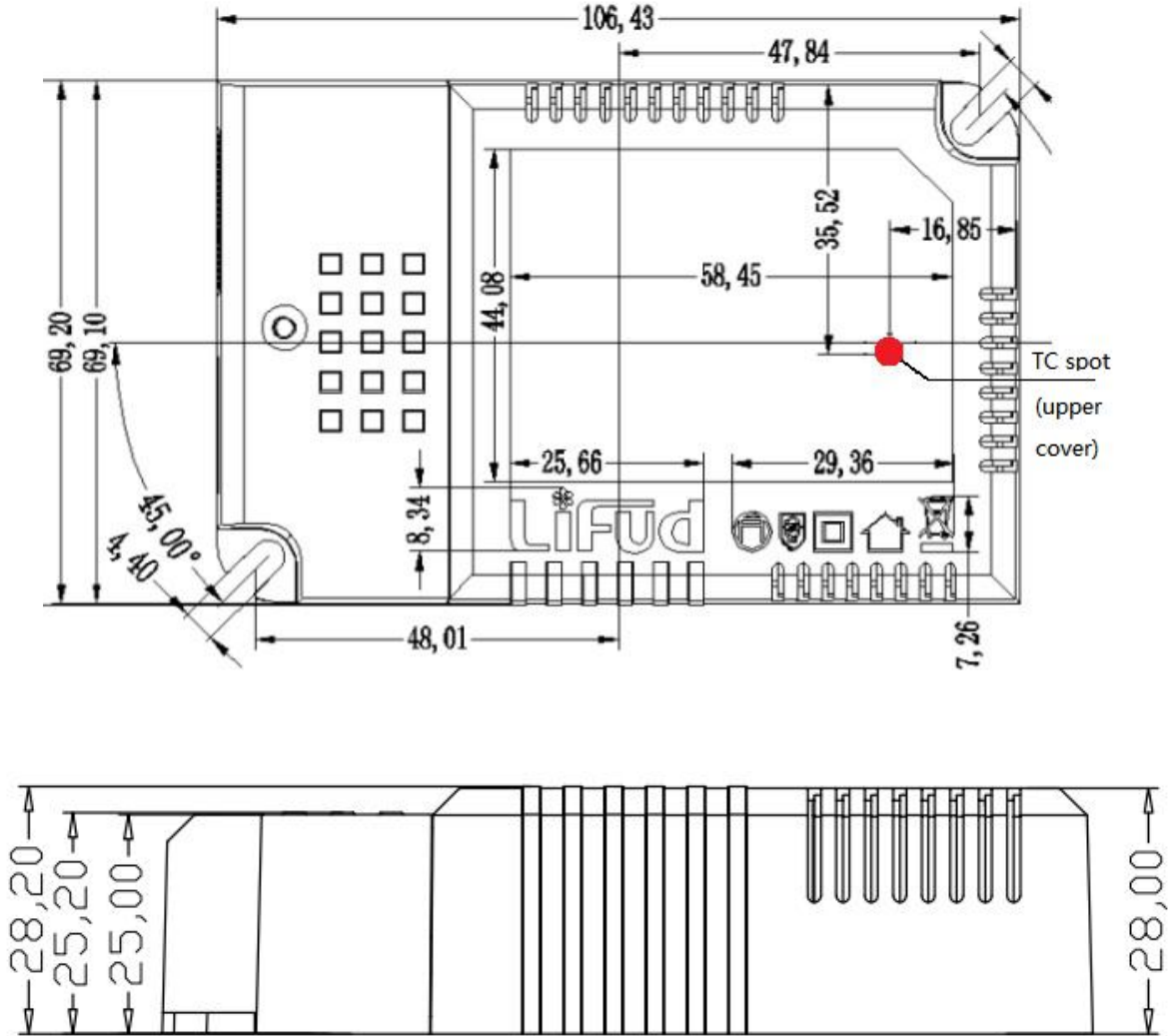


### DIP Switch Table

		DIP switch setting				
Ta	Vo DC	Current	1	2	3	4
50°C	25V — 42V	500mA	—	—	—	—
		450mA	—	—	ON	—
		400mA	—	ON	—	—
		350mA	—	ON	ON	—
		300mA	ON	—	—	—
		250mA	ON	—	ON	—

Remark: The default current for all DIP switch settings is 500mA, except for the settings mentioned above.

**Dimension (unit: mm, tolerance: +0.5mm )**



**Label**

**INPUT LED Driver LED 控制装置**

**Model: LF-GSD020YC**

AC-L  
AC-N  
PUSH  
DA 1  
DA 2  
0.75-1.5 □

Input: 220-240V~ 50/60Hz Max.0.2A  
U out: 55V = PF: ≥0.9C P rated:21W(Max)  
For LED modules only

Preparation for input and output  
17.5mm

**Output current and setting table**

ta	VoDC	current	1	2	3	4
50°C	25V-42V	500mA	-	-	-	-
		450mA	-	-	ON	-
		400mA	-	ON	-	-
		350mA	-	ON	ON	-
		300mA	ON	-	-	-
		250mA	ON	-	ON	-

tc:90°C

[www.lifud.com](http://www.lifud.com) Made in China (中国制造)

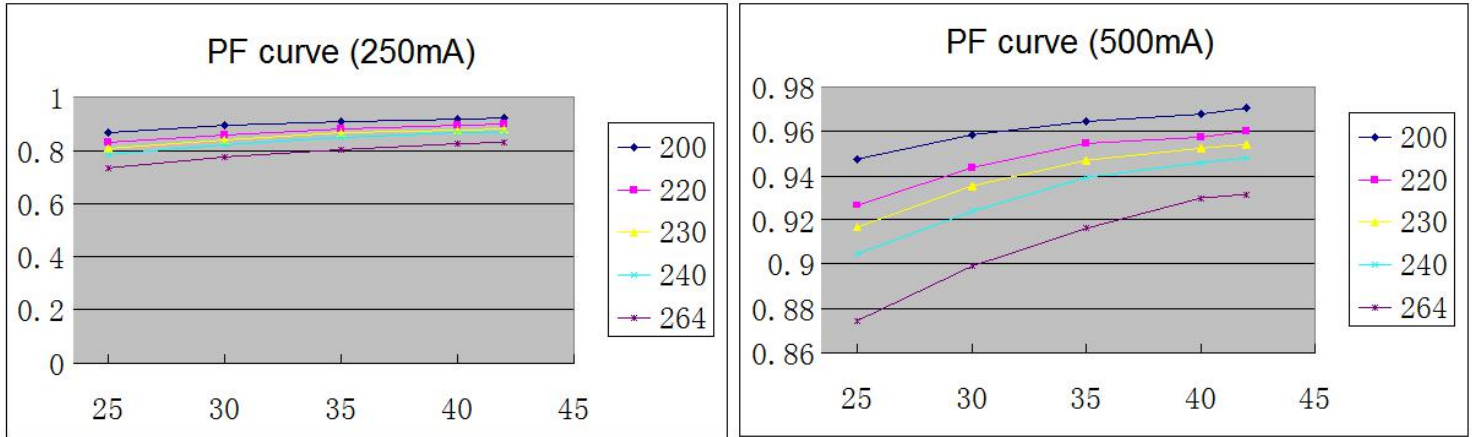
ON OFF

### Packaging Specification

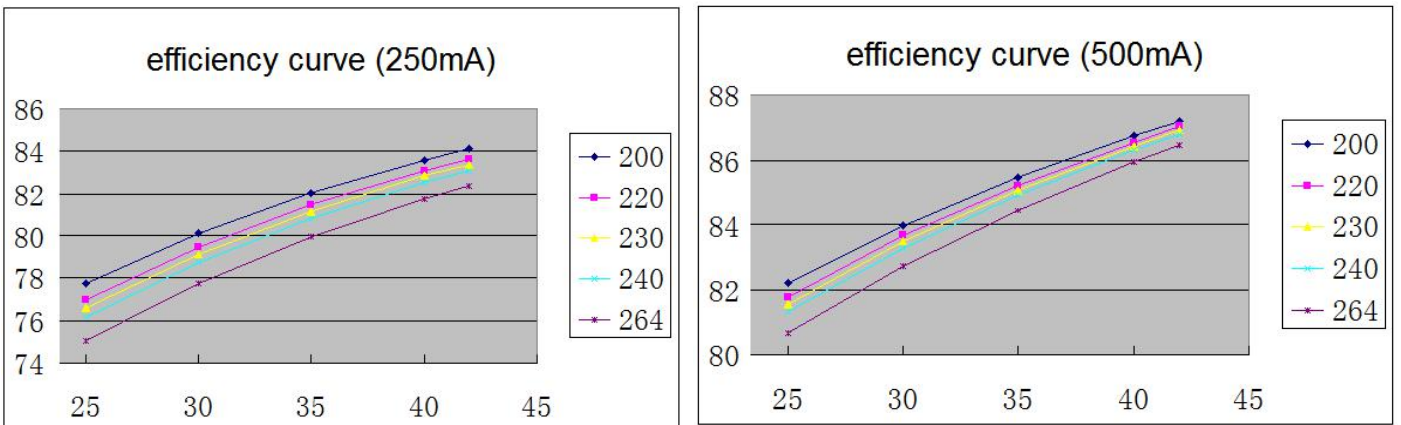
model	carton dimension	quantity and weight
LF-GSD020YC	385*285*210mm	9 pcs/layer, 6 layers/ctn, 54 pcs/ctn, weight: 7.74kg/ctn, 125g/pc

### Product Feature Curve

#### 1. PF curve

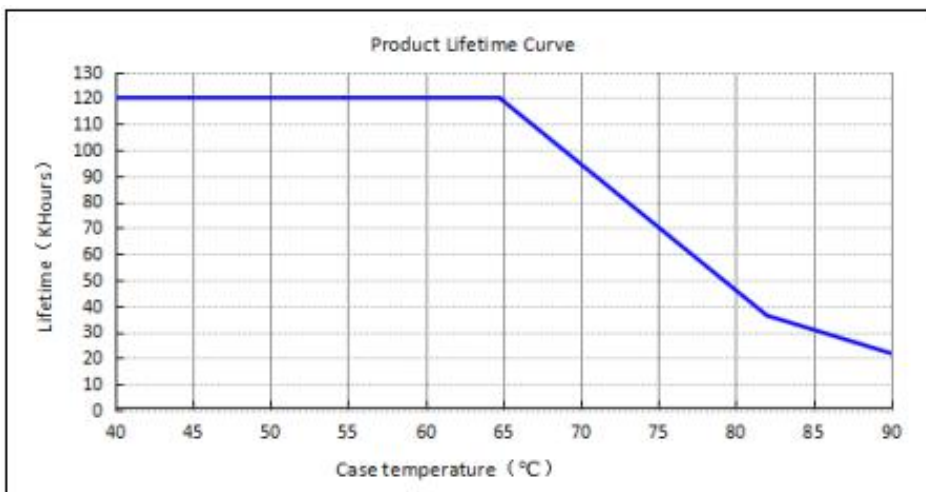


#### 2. Efficiency curve

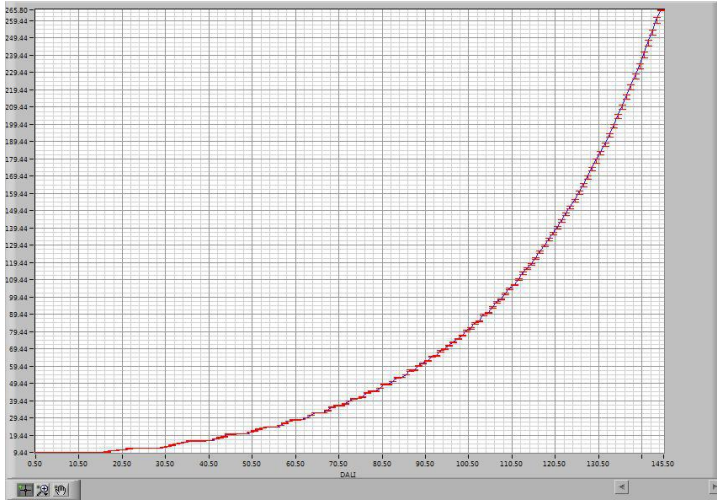


#### 3. Lifetime curve

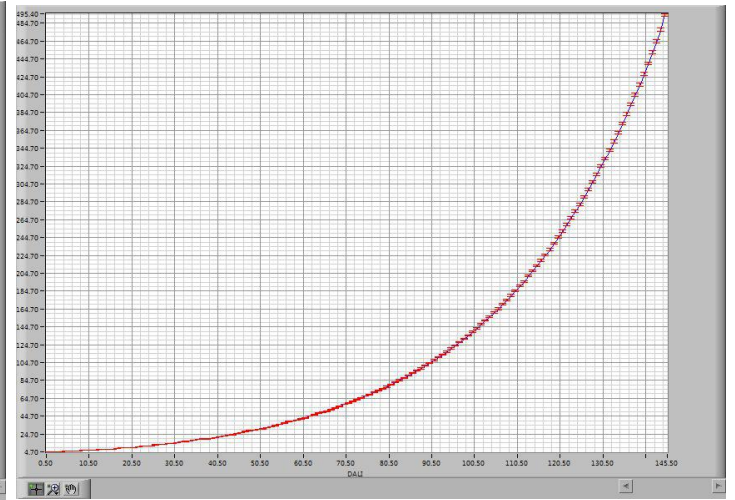
The curve below illustrates the driver's lifetime data when the its max. casing temperature in an airtight space reaches 40°C, 50°C, 60°C, 70°C, 80°C and 90°C.



#### 4. Dimming curve



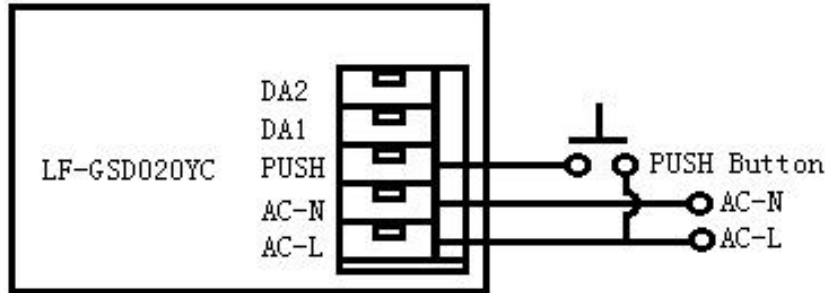
25V 250mA DALI logarithmic dimming curve



42V 500mA DALI logarithmic dimming curve

### Statement of Dimming Operation

#### 1. PUSH dim wiring diagram



(1)

Operation	Operation Time	Function
Instant Push	0.1 sec ~ 1 sec	Light On / Off
Long Push	1.5 sec ~ 10 sec	Brighter / Dimmer
Reset Push	> 11 sec	Back to Brightest

(2) Factory default setting is of 100% brightness.

(3) The push operation won't cause any variation if it's less than 0.1 sec.

(4) When controlling via the same button, in 0-10V mode, up to 10 pcs of power supplies can be connected in parallel, and in DALI & PUSH mode, up to 64 pcs of power supplies can be connected in parallel.

(5) The max. length of the wire from the button to the furthest LED power supply is 135m. Wire diameter: 16-22AWG.

(6) The button can only be connected to the AC-L and PUSH terminals of LF-GSD020YC. Connecting to AC-N will cause short circuit. ⚠

(7) The min. dimming depth of PUSH is 2%\*Iout.

#### 2. DALI dimming operation

(1) Connect DALI signal to DA1 and DA2 terminals.

(2) DALI protocol includes 16 group 64 IPs.

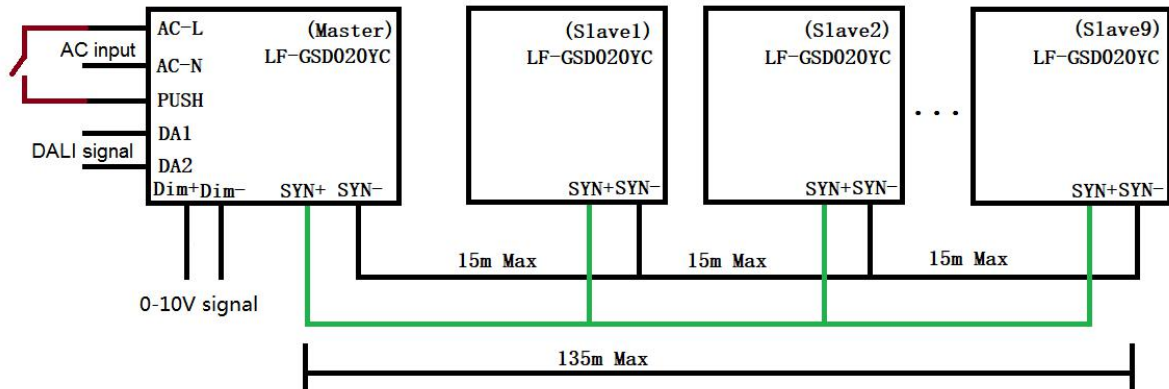
(3) The min. dimming depth of DALI is 2%\*Iout.

### 3. 0-10V, PWM, Rx dimming operation

- (1) 0-10V, PWM and Rx signals should be connected to DIM terminal
- (2) In 0-10V mode, the light turns off when the input voltage is below 0.3V and turns on when it's above 0.5V.
- (3) The min. dimming depth of 0-10V is 5%\*Iout.

### 4. Synchronous dimming operation

- (1) Max. 10 pcs of LF-GSD020YC can be dimmed synchronously. (one master and 9 slaves)
- (2) The longest wire between two products can be of 15m. Wire diameter: 16-22AWG
- (3) The longest wire from the master to the furthest slaves is of 135m. Wire diameter: 16-22AWG
- (4) The master can directly control slaves via DALI, 0-10V and PUSH dimming signals to realize synchronous dimming function.
- (5) Wiring diagram of synchronous dimming:



- (6) Before using synchronous dimming function, make sure all LF-GSD020YC are at 100% output.
- (7) When the synchronous dimming signal is withdrawn from the slaves, the slaves enter DALI mode by default.

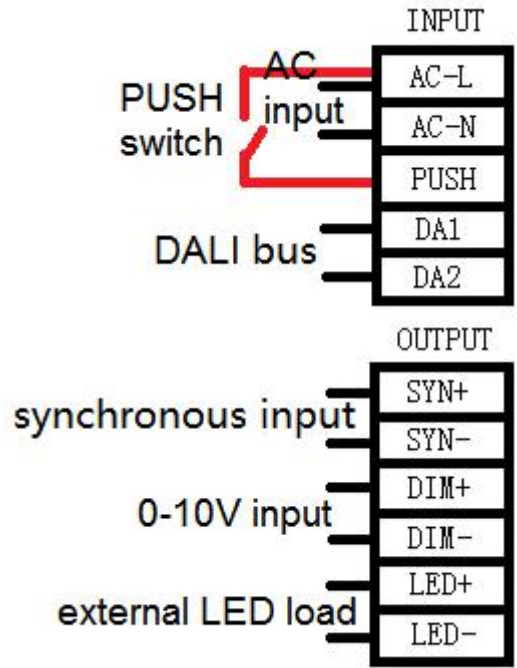
### 5. Switch between dimming modes

- (1) Switch between DALI and 0-10V
  - 1) DALI→0-10V: Supply AC power, in DALI mode, (make sure the current states lasts for at least 2 sec, ) make sure the DC voltage change value of the 0-10V terminal is higher than 5V and keep this states for over 1 sec. The dimming mode will be switched to 0-10V mode.
  - 2) 0-10V→DALI: Supply AC power, in 0-10V mode, (make sure the current states lasts for at least 2 sec, ) the DALI mode can be switched via DALI on/off or the knob.
- (2) Switch between DALI and PUSH
  - 1) DALI→PUSH: Supply AC power, in DALI mode, (make sure the current states lasts for at least 2 sec, ) long press the PUSH button for over 3 sec and it'll be switch to PUSH mode.
  - 2) PUSH→DALI: Supply AC power, in PUSH mode, (make sure the current states lasts for at least 2 sec, ) the DALI mode can be switched via DALI on/off or the knob.
- (3) Switch between PUSH and 0-10V
  - 1) PUSH→0-10V: Supply AC power, in PUSH mode, (make sure the current states lasts for at least 2 sec, ) make sure the DC voltage change value of the 0-10V terminal is higher than 5V and keep this states for over 1 sec. The dimming mode will be switched to 0-10V mode.
  - 2) 0-10V→PUSH: Supply AC power, in 0-10V mode, (make sure the current states lasts for at least 2 sec, ) long press the PUSH button for over 3 sec and it'll be switch to PUSH mode.

Remark: Before switching DALI mode to other modes, make sure the light is on. It's a default setting that in DALI mode, when the light is off, the power supply cannot be switched to other modes.



6. Wiring diagram



Remark: The final right of interpretation of contents of this data sheet belongs to Lifud Technology Co., Ltd.