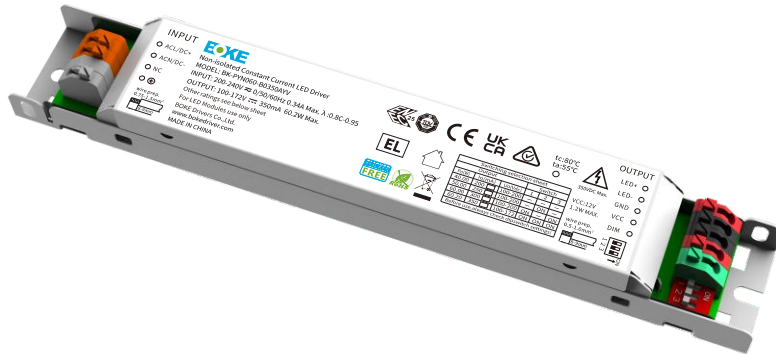


Non-isolated Constant current linear dimmable driver PYN Series suffix YV(3.3V/5V/10V PWM dimming+12V auxiliary power)



Features

- Input and output non-isolated
- Non-selv 12V power output
- Support 3.3 V/5 V/10V PWM dimming interface for control module or sensor dimming control
- Provide 12V 100mA auxiliary power supply to power control module or sensor
- Auxiliary 12V supports fast power-down feature
- 4-level current output can be realized by DIP-switch
- Soft dimming and flicker-free at any brightness
- High PF, high efficiency, low THD
- Suitable for built-in use of Class I lamps
- Passed CE, ENEC, UKCA, RCM, EL and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5-year guarantee

Typical applications

- LED indoor lighting
- LED office lighting
- LED commercial lighting

Interfaces

- PWM(3.3V/5V/10V PWM)
- VCC Auxiliary power(12V,100mA)

Functions

- Support central emergency application (dimming normal in DC input)
- Support self-contained emergency application
- Output short circuit protection

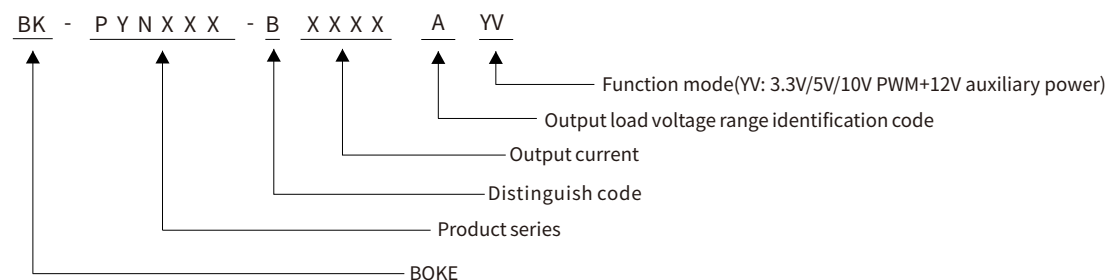
Suitable for lights

- Suitable for linear luminaires, tri-proof lights, working lights and other linear or ultra-thin lights etc.

Notice

- When using PWM to turn off the LED, the LED may be **slightly light**, It can be solved in the following two ways:
 1. Some resistors are connected in parallel to the LED string.
 2. Disconnect the input live wire (L wire) of the driver through the switch.
- Because the output no-load voltage is high, pay attention to the following applications
 1. It is prohibited to plug and unplug LED loads under powered conditions
 2. It is prohibited to switch color temperature through sliding switches under powered conditions
 3. The dimming port is non-isolated and applies only to the control module or sensor

Model coding rules of PYN series



Function list

Model	Suffix	Wired dimming		Aux power
		0-10V/10V PWM	3.3V/5V/10V PWM	12V/0.1A
BK-PYN022-B BK-PYN042-B BK-PYN060-B	MV	√		√
	YV		√	√

*The description in this specification is only applicable to the products with the suffix YV and the model are PYN022-B,PYN042-B and PYN060-B.

Model list

Model	Input voltage	Output power	Output voltage	Output current	Dimension	Certifications
BK-PYN022-B0350AMV	200-240VAC/DC	22.05W MAX.	39-63/88/73/110VDC	0.2-0.35A	L158*W30*H21mm	CE, ENEC, UKCA, RCM, EL
BK-PYN022-B0350AYV	200-240VAC/DC	22.05W MAX.	39-63/88/73/110VDC	0.2-0.35A	L158*W30*H21mm	CE, ENEC, UKCA, RCM, EL
BK-PYN042-B0350AMV	200-240VAC/DC	42W MAX.	54-120/140VDC	0.2-0.35A	L158*W30*H21mm	CE, ENEC, UKCA, RCM, EL
BK-PYN042-B0350AYV	200-240VAC/DC	42W MAX.	54-120/140VDC	0.2-0.35A	L158*W30*H21mm	CE, ENEC, UKCA, RCM, EL
BK-PYN060-B0350AMV	200-240VAC/DC	60.2W MAX.	100-172/200VDC	0.2-0.35A	L195*W30*H21mm	CE, ENEC, UKCA, RCM, EL
BK-PYN060-B0350AYV	200-240VAC/DC	60.2W MAX.	100-172/200VDC	0.2-0.35A	L195*W30*H21mm	CE, ENEC, UKCA, RCM, EL

*The description in this specification is only applicable to the products with the suffix YV and the model are PYN022-B,PYN042-B and PYN060-B.

Technical data

Product model	BK-PYN022-B0350AYV	
Output parameters		
Regulation method	Constant Current	
Rated output current range	0.2-0.35A	
Rated output voltage range	39-63/73/88/110VDC	
Rated output power	22.05W Max	
Output current adjustment	DIP S.W(4 levels)	
Output current ripple LF	±3%	
Output current accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	250VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.944%, Flicker index(IEEE 1789)=0.002, Pst LM = 0.031, SVM = 0.007, (The above parameters are obtained from testing the panel lights)	
Input parameters		
Rated input voltage range	200-240VAC 200-240VDC	
Input voltage range	180-264VAC 200-264VDC	
Input votage shock	<380 V AC	
Input current	<0.13A (Rated input voltage)	
Input frequency	0/50/60Hz	
Input PF/Input DF	PF: 0.96; DF: 0.97,see the electrical values below for details	
Input THD	11.5% ,see the electrical values below for details	
Efficiency(Max)	88% ,see the electrical values below for details	
In-rush current	10.32A peak ,286us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):25.1W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-FG:1750V AC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Isolation resistance	I/P-FG:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	N/A	
pushDIM dimming port	N/A	
0-10V 2in1 dimming port	3.3V/5V/10V PWM	
Auxiliary power supply	12V ±10% 100mA	
Dimming range	5%-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Supported(dimming normal in DC input)	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-60°C	
Case temperature	Tc=80°C	
Operating humidity	5-85% RH, non-condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Normal operation)	
Environmental protection	RoHS	
Certifications and standards		
Certification	CE, ENEC, UKCA, RCM, EL	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	N/A	
EL	Compatible IEC 61347-2- 13 Annex J, compatible with EN 60598-2-22 and EN 50172	
RF	N/A	

Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

Technical data

Product model	BK-PYN042-B0350AYV	
Output parameters		
Regulation method	Constant Current	
Rated output current range	0.2-0.35A	
Rated output voltage range	54-120/140VDC	
Rated output power	42W Max	
Output current adjustment	DIP S.W(4 levels)	
Output current ripple LF	±3%	
Output current accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	250VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.689%, Flicker index(IEEE 1789)=0.001, Pst LM = 0.027, SVM = 0.005, (The above parameters are obtained from testing the panel lights)	
Input parameters		
Rated input voltage range	200-240VAC 200-240VDC	
Input voltage range	180-264VAC 200-264VDC	
Input vottage shock	<380 V AC	
Input current	<0.24A (Rated input voltage)	
Input frequency	0/50/60Hz	
Input PF/Input DF	PF: 0.96; DF: 0.97,see the electrical values below for details	
Input THD	10% ,see the electrical values below for details	
Efficiency(Max)	91.5% ,see the electrical values below for details	
In-rush current	16.5A peak ,262us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):45.9W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-FG:1750V AC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Isolation resistance	I/P-FG:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	N/A	
pushDIM dimming port	N/A	
0-10V 3in1 dimming port	3.3V/5V/10V PWM	
Auxiliary power supply	12V ±10% 100mA	
Dimming range	5%-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Supported(dimming normal in DC input)	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-55°C	
Case temperature	Tc=80°C	
Operating humidity	5-85% RH, non-condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Normal operation)	
Environmental protection	RoHS	
Certifications and standards		
Certification	CE, ENEC, UKCA, RCM, EL	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	N/A	
EL	Compatible IEC 61347-2- 13 Annex J, compatible with EN 60598-2-22 and EN 50172	
RF	N/A	

Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

Technical data

Product model	BK-PYN060-B0350AYV	
Output parameters		
Regulation method	Constant Current	
Rated output current range	0.2-0.35A	
Rated output voltage range	100-172/200VDC	
Rated output power	60.2W Max	
Output current adjustment	DIP S.W(4 levels)	
Output current ripple LF	±3%	
Output current accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	300VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.470%, Flicker index(IEEE 1789)=0.001, Pst LM = 0.014, SVM = 0.004, (The above parameters are obtained from testing the panel lights)	
Input parameters		
Rated input voltage range	200-240VAC 200-240VDC	
Input voltage range	180-264VAC 200-264VDC	
Input votage shock	<380 V AC	
Input current	<0.34A (Rated input voltage)	
Input frequency	0/50/60Hz	
Input PF/Input DF	PF: 0.97; DF: 0.97,see the electrical values below for details	
Input THD	9%,see the electrical values below for details	
Efficiency(Max)	93%,see the electrical values below for details	
In-rush current	19 peak ,304us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):64.7W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-FG:1750V AC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Isolation resistance	I/P-FG:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	N/A	
pushDIM dimming port	N/A	
0-10V 3in1 dimming port	3.3V/5V/10V PWM	
Auxiliary power supply	12V ±10% 100mA	
Dimming range	5%-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Supported(dimming normal in DC input)	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-55°C	
Case temperature	Tc=80°C	
Operating humidity	5-85% RH, non-condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Normal operation)	
Environmental protection	RoHS	
Certifications and standards		
Certification	CE, ENEC, UKCA, RCM, EL	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	N/A	
EL	Compatible IEC 61347-2- 13 Annex J, compatible with EN 60598-2-22 and EN 50172	
RF	N/A	

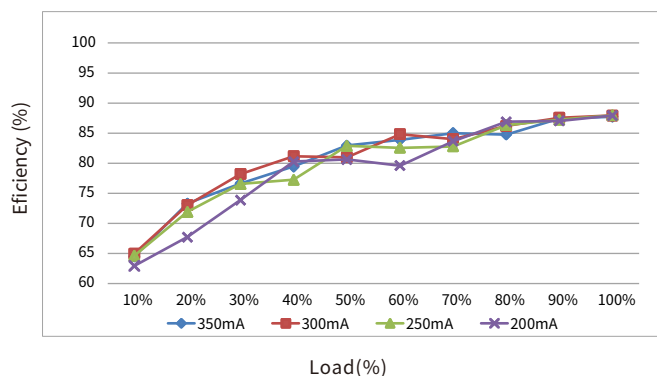
Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

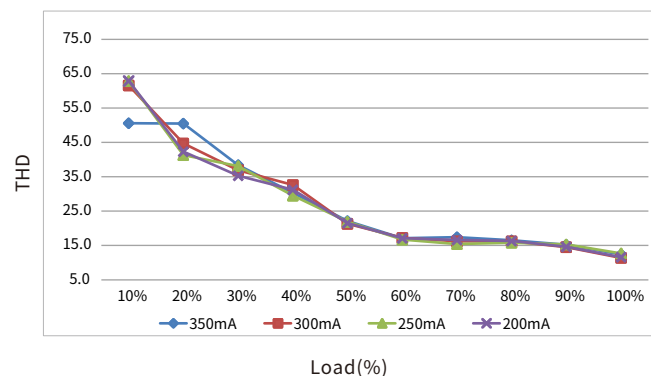
Electrical values

BK-PYN022-B0350AYV

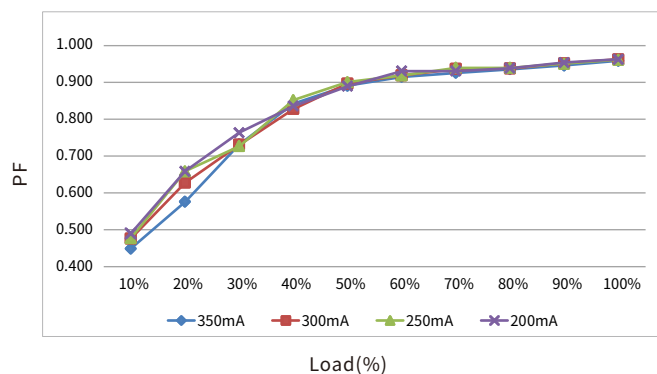
Efficiency vs Load



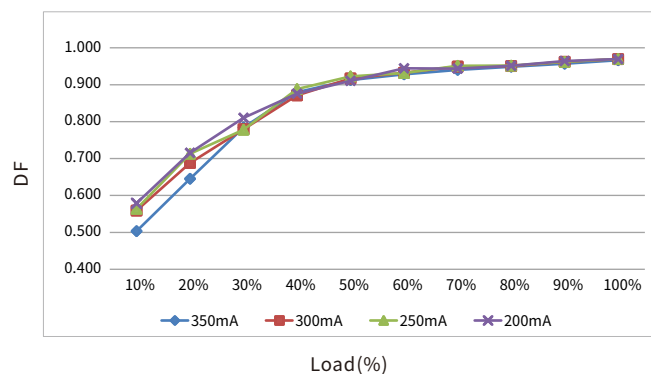
THD vs. Load



Power factor vs. Load

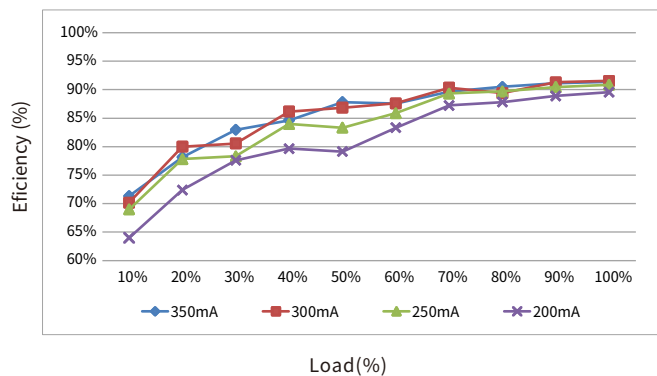


Displacement factor vs. Load

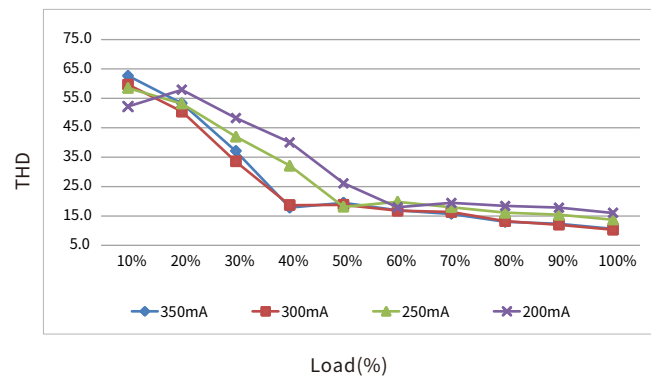


BK-PYN042-B0350AYV

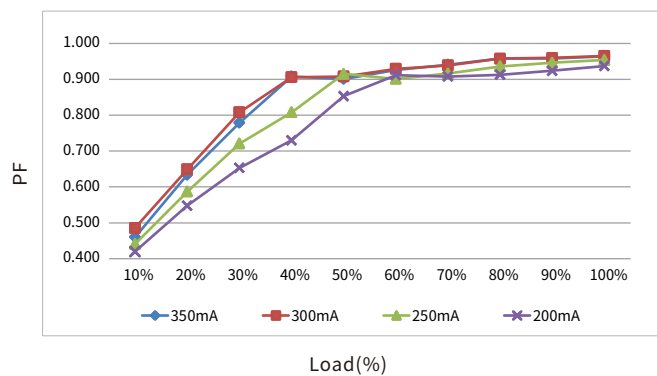
Efficiency vs Load



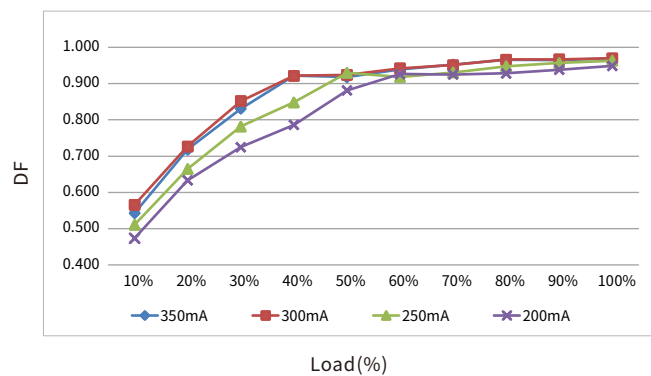
THD vs. Load



Power factor vs. Load



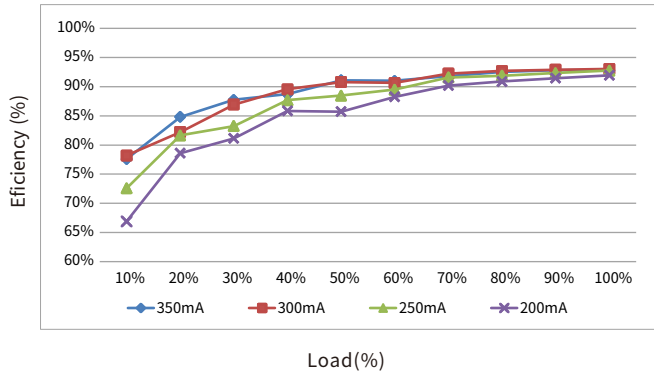
Displacement factor vs. Load



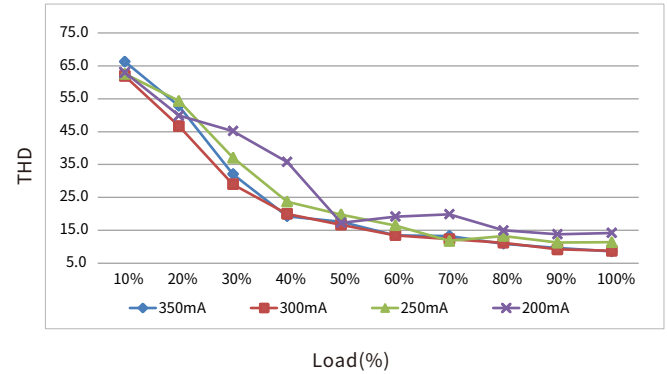
Electrical values

BK-PYN060-B0350AYV

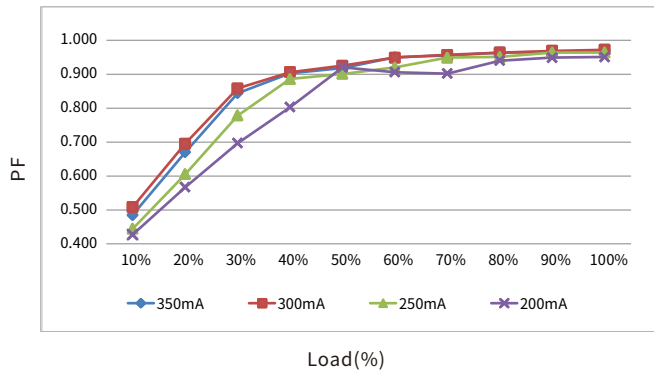
Efficiency vs Load



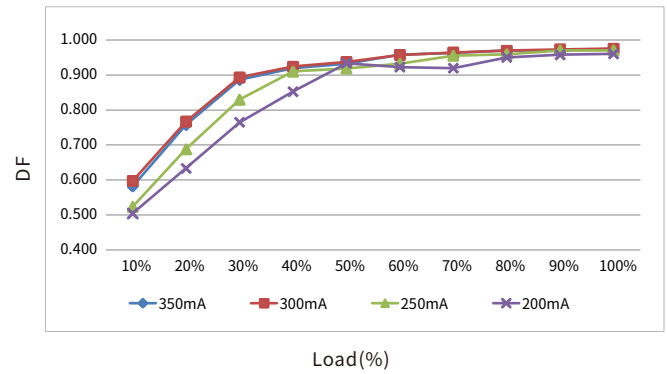
THD vs. Load



Power factor vs. Load



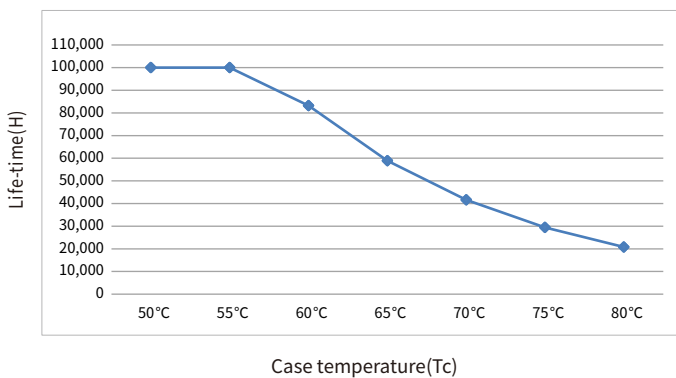
Displacement factor vs. Load



Expected life-time

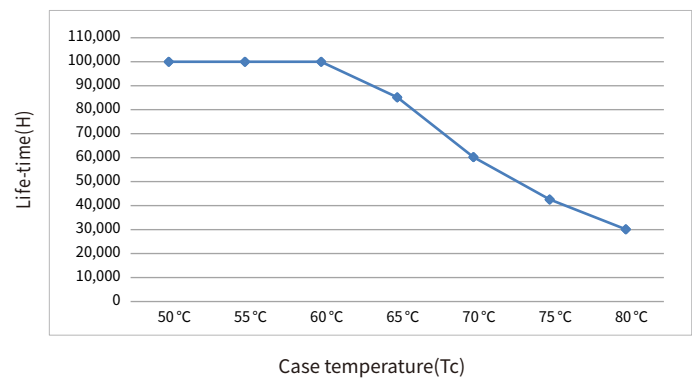
BK-PYN022-B0350AYV

Life-time vs. case temperature



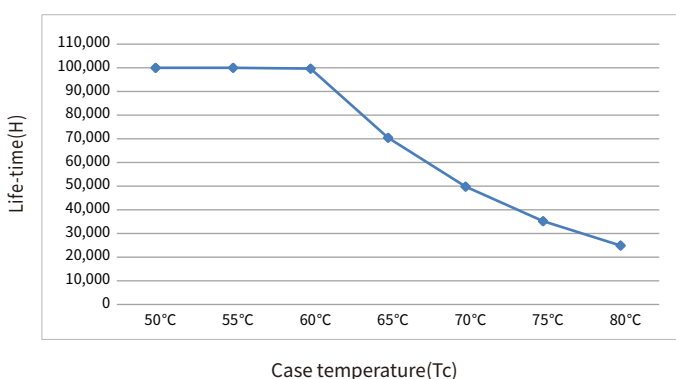
BK-PYN042-B0350AYV

Life-time vs. case temperature



BK-PYN060-B0350AYV

Life-time vs. case temperature



-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

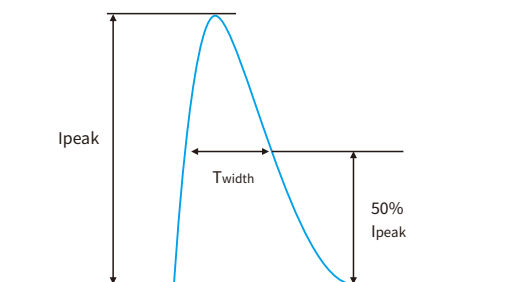
- The relation of tc to ta temperature depends also on the luminaire design.

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB															
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25	
BK-PYN022-B0350AMV	10.32A	286us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	22	29	36	45	56	37	48	60	74	93	71	92	114	142	178	
BK-PYN042-B0350AMV	16.5A	262us		16	20	25	31	39	26	34	42	52	65	39	51	62	78	97	
BK-PYN060-B0350AMV	19A	304us		11	14	18	22	28	19	24	30	37	46	28	36	44	55	69	

Remarks

- The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- Calculation uses typical values from ABB series S200 as a reference.
- Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.
- If the ambient temperature of the MCB installation exceeds 30°C or multiple MCBs are installed side by side, the number of drives mounted will be reduced and the calculation needs to be recalculated.
- Electrician's usually consider Type B for household lighting and Type C for commercial lighting application.



Functions

Output short-circuit behaviour

- Output short-circuit will not damage the driver.

After removing the short circuit fault, the driver will automatically resume output.

Output no-load operation

- Output no-load will not damage the driver.

Please turn off the driver first if you need to connect the LED load.

Insulation between circuits

Isolation	Input	Output	Case	VCC	PWM
Input	-	-	Basic	-	-
Output	-	-	Basic	-	-
Case	Basic	Basic	-	Basic	Basic

Label

BK-PYN022-B0350AYV

INPUT
 ○ ACL/DC+ Non-isolated Constant Current LED Driver
 MODEL: BK-PYN022-B0350AYV
 INPUT: 200-240V $\approx$ 0/50/60Hz 0.13A Max. λ : 0.8C-0.95
 OUTPUT: 39-63V $\approx$ 350mA 22.05W Max.
 Other ratings see below sheet
 For LED Modules use only
 BOKE Drivers Co., Ltd.
 www.bokedriver.com
 MADE IN CHINA

OUTPUT
 LED+ ○
 LED- ○
 GND ○
 VCC ○
 DIM ○

Output	Switch	1	2	3	
Po(W)	Io(mA)	Uo(Vdc)	1	2	3
22.00	200	39-110	—	—	—
22.00	250	39-88	—	ON	—
21.90	300	39-73	ON	—	ON
22.05	350	39-63	ON	ON	ON

Before use, always check dipswitch settings!

VCC: 12V 1.2W MAX.
 wire prep. 0.5-1.0mm
 8-9mm

BK-PYN042-B0350AYV

INPUT
 ○ ACL/DC+ Non-isolated Constant Current LED Driver
 MODEL: BK-PYN042-B0350AYV
 INPUT: 200-240V $\approx$ 0/50/60Hz 0.24A Max. λ : 0.7C-0.95
 OUTPUT: 54-120V $\approx$ 350mA 42W Max.
 Other ratings see below sheet
 For LED Modules use only
 BOKE Drivers Co., Ltd.
 www.bokedriver.com
 MADE IN CHINA

OUTPUT
 LED+ ○
 LED- ○
 GND ○
 VCC ○
 DIM ○

Output	Switch	1	2	3	
Po(W)	Io(mA)	Uo(Vdc)	1	2	3
28.00	200	54-140	—	—	—
35.00	250	54-140	—	ON	—
42.00	300	54-140	ON	—	ON
42.00	350	54-120	ON	ON	ON

Before use, always check dipswitch settings!

VCC: 12V 1.2W MAX.
 wire prep. 0.5-1.0mm
 8-9mm

BK-PYN060-B0350AYV

INPUT
 ○ ACL/DC+ Non-isolated Constant Current LED Driver
 MODEL: BK-PYN060-B0350AYV
 INPUT: 200-240V $\approx$ 0/50/60Hz 0.34A Max. λ : 0.8C-0.95
 OUTPUT: 100-172V $\approx$ 350mA 60.2W Max.
 Other ratings see below sheet
 For LED Modules use only
 BOKE Drivers Co., Ltd.
 www.bokedriver.com
 MADE IN CHINA

OUTPUT
 LED+ ○
 LED- ○
 GND ○
 VCC ○
 DIM ○

Output	Switch	1	2	3	
Po(W)	Io(mA)	Uo(Vdc)	1	2	3
40.00	200	100-200	—	—	—
50.00	250	100-200	—	ON	—
60.00	300	100-200	ON	—	ON
60.20	350	100-172	ON	ON	ON

Before use, always check dipswitch settings!

VCC: 12V 1.2W MAX.
 wire prep. 0.5-1.0mm
 8-9mm

DIP-switch & output current

BK-PYN022-B0350AYV

Output			1	2	3	Dimming depth
Prated(W)	Irated(mA)	Voltage(Vdc)				
22.00	200	39-110	--	--	--	5%
22.00	250	39-88	--	ON	--	5%
21.90	300	39-73	ON	--	ON	5%
22.05	350 ★	39-63	ON	ON	ON	5%

BK-PYN042-B0350AYV

Output			1	2	3	Dimming depth
Prated(W)	Irated(mA)	Voltage(Vdc)				
28.00	200	54-140	--	--	--	5%
35.00	250	54-140	--	ON	--	5%
42.00	300	54-140	ON	--	ON	5%
42.00	350 ★	54-120	ON	ON	ON	5%

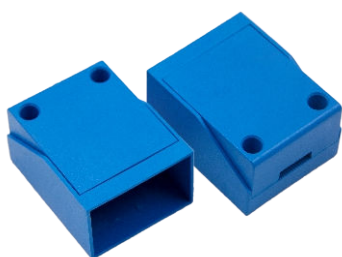
BK-PYN060-B0350AYV

Output			1	2	3	Dimming depth
Prated(W)	Irated(mA)	Voltage(Vdc)				
40.00	200	100-200	--	--	--	5%
50.00	250	100-200	--	ON	--	5%
60.00	300	100-200	ON	--	ON	5%
60.20	350 ★	100-172	ON	ON	ON	5%

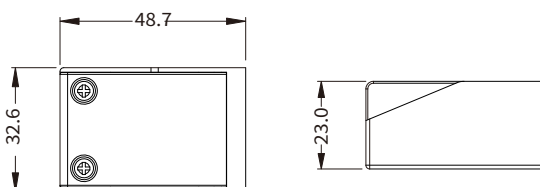
Remarks:

- ★ It means that this item is the factory default current.
- It means that this channel is OFF.

Optional accessories



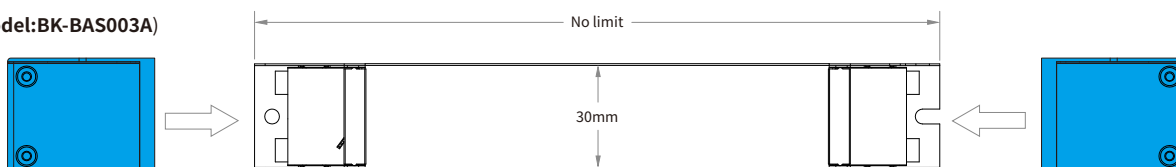
(Model:BK-BAS003A)



Unit:mm

Installation diagram of accessories

(Model:BK-BAS003A)



3.3V/5V/10V PWM+12V application

Wiring diagram



Electrical description

VCC: +12VDC $\pm$ 10%,100mA MAX

DIM: Signal:PWM

Voltage:3.3-10V

Frequency range:500hz-3khz

Phase position:positive logic

Duty cycle:0%(OFF),0.1%-4.9% is forbidden to use (unstable state), and the light may be on or off,5%(I_{max} *5%)~100%(I_{max})

Output status :after power-on, the indicator is on by default. If you need to power on, contact BOKE.

Typical applications

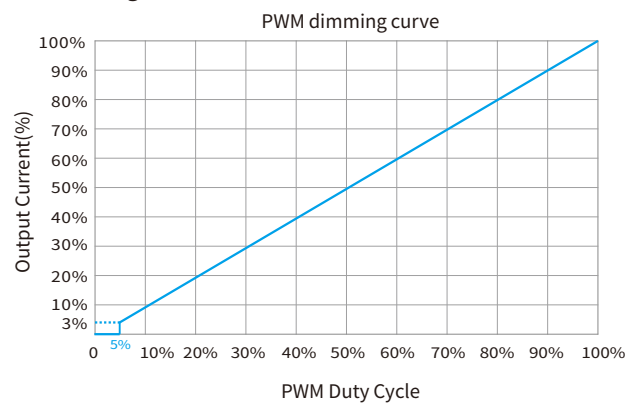
Aux supply 12V

Diming PWM

GND

Bluetooth module
Zigbee module
WiFi module
LoRa module
4G/5G module
NB-IoT module
Daylight Sensor
PIR Sensor
Microwave Sensor
IR Sensor
RF module
.....

Dimming curve

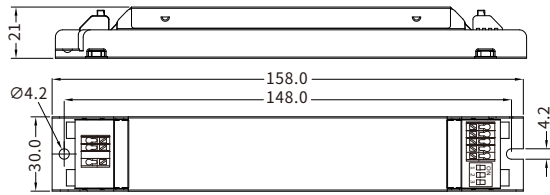


Mechanical Specification

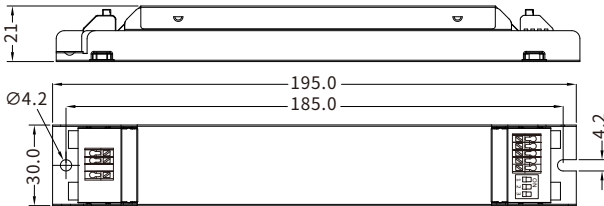
Size(Excluding accessories)

Unit:mm

PYN022-B/PYN042-B



PYN060-B

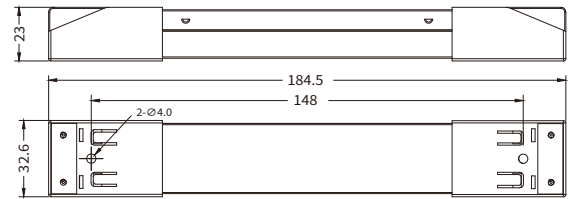


Mechanical Specification

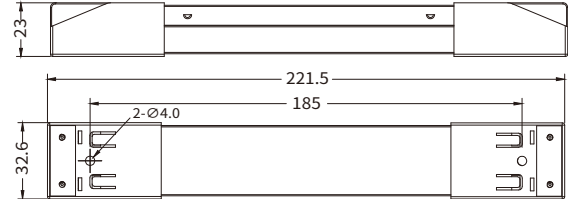
Size(Include accessories)

Unit:mm

PYN022-B/PYN042-B



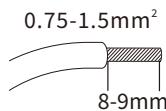
PYN060-B



INPUT

Numbering	function	colour
1	ACL/DC+	orange
2	ACN/DC-	orange
3	NC	gray
4	FG	gray

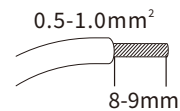
Input wire



OUTPUT

Numbering	function	colour
1	LED+	red
2	LED-	black
3	GND	black
4	VCC	red
5	DIM	green

Output wire



Installation note

Hot plug-in

- Hot plug-in is not supported due to residual output voltage of > 0 V.

Wiring guidelines

- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Max. length of output wires is 2 m.
- Incorrect wiring can damage LED modules.

Installation requirements

- The driver should be installed in a dry, acid-free, oil-free, fat-free environment.
- The installation ambient temperature of the drive shall not exceed the value of Ta at any time.
- The temperature of the mounting surface of the driver should be lower than 40°C
- The driver should keep a certain distance from the heating stuff (such as the lamp radiator).
- If the driver is used externally (it needs to be used with the plug fitting), the installation of the driver should also meet the following conditions:
 - 1.The driver should be a certain distance between the drives, as shown in Figure 1.
 - 2.The driver keeps a certain distance from surrounding objects, as shown in Figure 2.

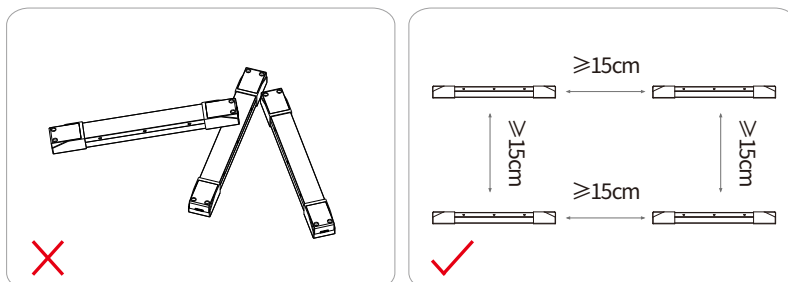


Figure 1

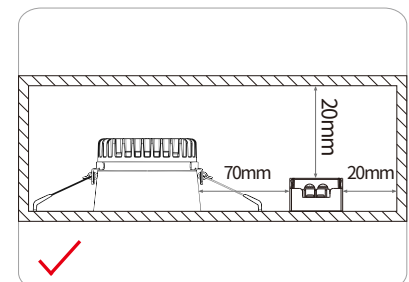


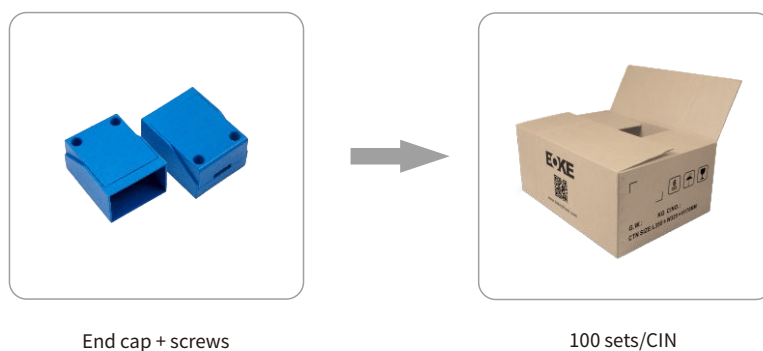
Figure 2

Packaging



Model	Product size	Weight	Paper tray	Carton size	Qty/carton	N.W	G.W
PYN022-B	L158*W30*H21mm	97g	L345*W75*H29mm	L355*W200*H270mm	56pcs	5.43KG	6.43KG
PYN042-B	L158*W30*H21mm	104g	L345*W75*H29mm	L355*W200*H270mm	56pcs	5.62KG	7.06KG
PYN060-B	L195*W30*H21mm	130g	L345*W75*H29mm	L355*W235*H205mm	42pcs	5.46KG	5.96KG

Accessories



Model	Product size	Weight	Carton size	Qty/carton	N.W	G.W
BAS003A	L48.7*W32.6*H23mm	22g	L450*W350*H180mm	100 sets	2.2kg	2.7kg

Additional information

1. The life and MTBF of the product are for reference only, and do not represent a warranty statement.
2. For more information, please send an email to info@bokedriver.com.