

## 50W DALI + PUSH Dimming power supply



■ Approve



### Features

- For luminaires of protection Class I or II, SELV, Built-in/Independent (With side caps)
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor: >0.95
- Efficiency : 90%
- Adjustable Output Current with dip-switch
- Support DALI-2, Push Dimming
- Suitable for emergency lighting acc. to EN 50172
- EOfi=100%
- DALI maintainace (Part 251,252,253)
- 5 years warranty

### Applications

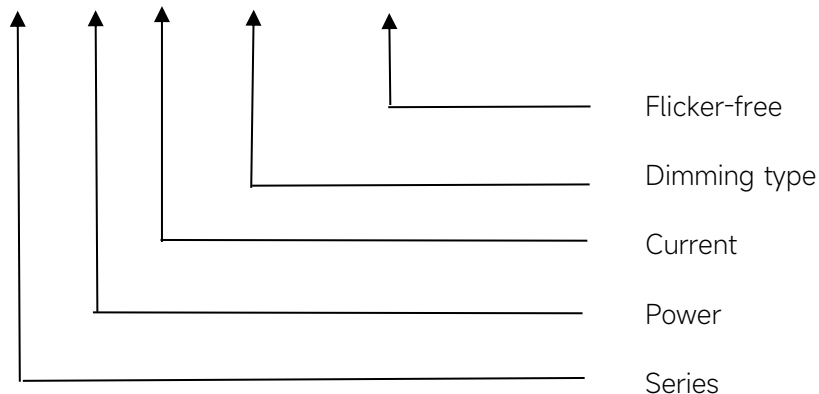
- Linear light

### ◆ Description

FMS-50-1050 DALI-2 LD is a 50W constant current LED driver that operates from 198-264Vac input with 350 to 1050mA output current and a forward voltage range from 15 to 51Vdc. The output current is adjustable. by dip-switch. With its compact dimensions from 280 x 30 x 21 mm. It is easy to integrate in linear light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

### ◆ Model code

#### FMS-50-1050 DALI-2 LD



## ◆ Specification

Output	Constant Current	350mA	400mA	...mA	1050mA	
	Voltage Range	15-51VDC			...VDC	15-47VDC
	Unload voltage Max.	59VDC				
	Current Accuracy	±5%				
	Output LF current ripple(≤120Hz)	±5%				
	SVM	≤0.4				
	Pst	≤1				
	Efficiency(Typ.)	90%				
	EOF1	100%				
Input	Rated input voltage	220-240V				
	Range of input voltage	198-264VAC				
	Maximum voltage	300VAC@1 h maximum,unit might not operate in this abnormal condition				
	Range input voltage(DC)	176-280VDC				
	Frequency(Hz)	0/50/60 Hz				
	Displacement factor	>0.95				
	Power Factor(Typ.)	>0.95				
	Input Current	0.32A max.				
	Start-up time	< 0.8S				
	Switch over time(AC/DC mode)	< 0.4S				
	No Load Power	≤0.3W				
	Standby Power	≤0.3W				
	Network standby power	≤0.3W				
	THD (Typ.)	<10%				
Dimming	Dimming	YES				
	Dimming mode	DALI-2 (IEC 62386-101,102,207,251,252,253) & Push Dimming (Corridor Function)				
	Dimming depth	5mA@350-500mA, 1%@550-1050mA				
	Dimming current range	1 ~100%				
	Dimming method	1%-13% @PWM dimming, 13%-100% @AM dimming				
Protection	Over Load Protection	103-120% YES/Latch off				
	Over Voltage Protection	59VDC YES/Latch off				
	Short circuit Protection	YES/Latch off				
	Over Temperature Protection	YES/Auto Resume				
Capability	Surge capability (L-N)	1KV				
	Surge capability (L/N-Ground)	2KV				
Environment	Operating Temperature	-25°C~+60°C				

	Humidity	10%-90%RH
	Tc	80°C
	Storage Temperature	-25°C~+85°C
	Lifetime	>50000h,@Tc=80°C
	Ripple&Noise	25dB(A)@20CM
Surface	Dimension	280 x 30 x 21(LXWXH)mm
	material	metal case
Standards	Safety	GB19510. 1, GB19510. 14;IEC61347- 1, IEC61347-2- 13;EN61347- 1, EN61347-2- 13;EN61347- 1, EN61347-2- 13, EN62384
	EMC	GB/T17743, GB17625. 1;EN55015, EN61000-3-2, EN61000-3-3, EN61547;EN61000-4-2,3,4,5,6,8,11, EN61547
	ErP	Erp2.0 EU 2019/2020
	RoHS	RoHS (2011/65/EU) (EU)2015/863
DALI performance	EN 62386-101 (DALI-2) EN 62386-102 (DALI-2) EN 62386-207 (DALI-2,including part251,252,253)	
Note	<p>1.All parameters NOT specially mentioned are measured at 230VAC input , full load and 25°C of ambient temperature.</p> <p>2.Ripple &amp; Noise are measured at 20MHz of bandwidth.</p> <p>3.The DC input for this product is only used for emergency lighting and applies to functional and safety requirements, EMC is not considered.</p> <p>4.DALI protocol comprises 16 groups and 64 addresses.Up to 32 drivers can perform the PUSH dimming at the same time when utilizing one push button.</p> <p>5.Unload voltage Max. is measured 5 seconds after power-on.</p> <p>6.EL compatible with IEC 61347-2-13 Annex J, compatible with EN 60598-2-22 emergency lighting fixtures, compatible with EN 50172 central battery system applications.</p> <p>7.All Eaglerise power supply are complied with EMI regulations. Since they are belong to component and will be installed inside system enclosure. When they are integrated into a system, the EMI characteristics of the system must be re-verified again.</p>	

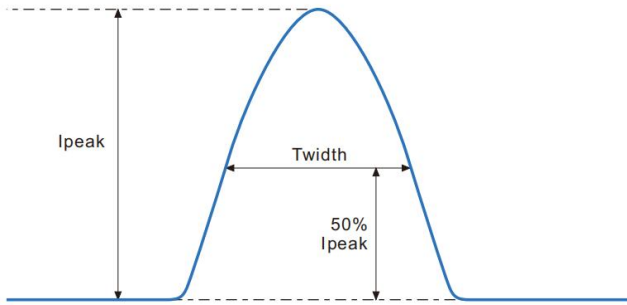
## ◆ Parameter

Number	Output				Switch position			
	Current (mA)	Voltage (VDC)	Voltage No load (VDC)	Power (W)	1	2	3	4
1	350mA	15-51VDC	59VDC	17.9W	ON	--	--	--
2	400mA	15-51VDC		20.4W	--	ON	--	--
3	450mA	15-51VDC		22.9W	ON	ON	--	--
4	500mA	15-51VDC		25.5W	--	--	ON	--
5	550mA	15-51VDC		28.1W	ON	--	ON	--
6	600mA	15-51VDC		30.6W	--	ON	ON	--
7	650mA	15-51VDC		33.2W	ON	ON	ON	--
8	700mA	15-51VDC		35.7W	--	--	--	ON
9	750mA	15-51VDC		38.3W	ON	--	--	ON
10	800mA	15-51VDC		40.8W	--	ON	--	ON
11	850mA	15-51VDC		43.4W	ON	ON	--	ON
12	900mA	15-51VDC		45.9W	--	--	ON	ON
13	950mA	15-51VDC		48.5W	ON	--	ON	ON
14	1000mA	15-50VDC		50W	--	ON	ON	ON
*15	1050mA	15-47VDC		49.4W	ON	ON	ON	ON

\* Factory default

◆ **Inrush Current**

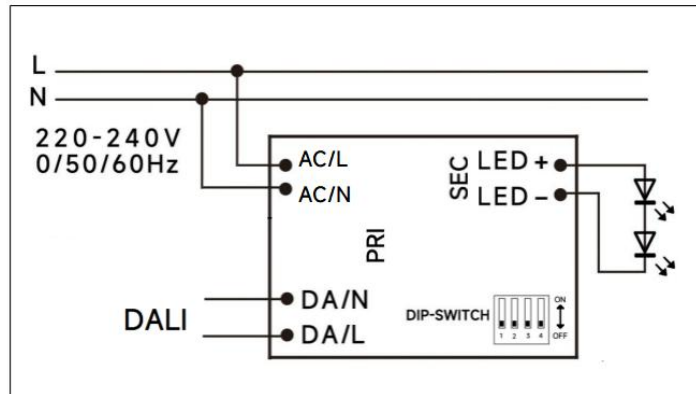
$I_{peak}$	Twidth	B10	B16	B20	C10	C16	C20
12A	40μs	25pcs	40pcs	50pcs	25pcs	40pcs	50pcs



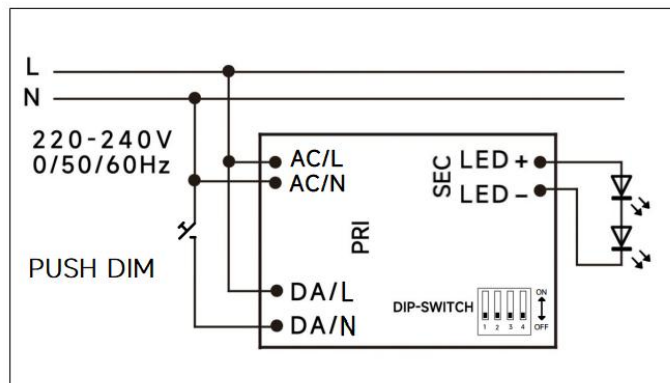
Remarks:

- 1.The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- 2.Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.

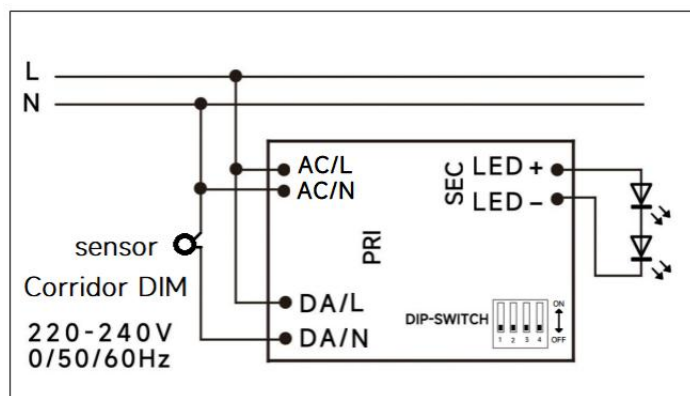
◆ **Wiring diagram**



DALI dimming application

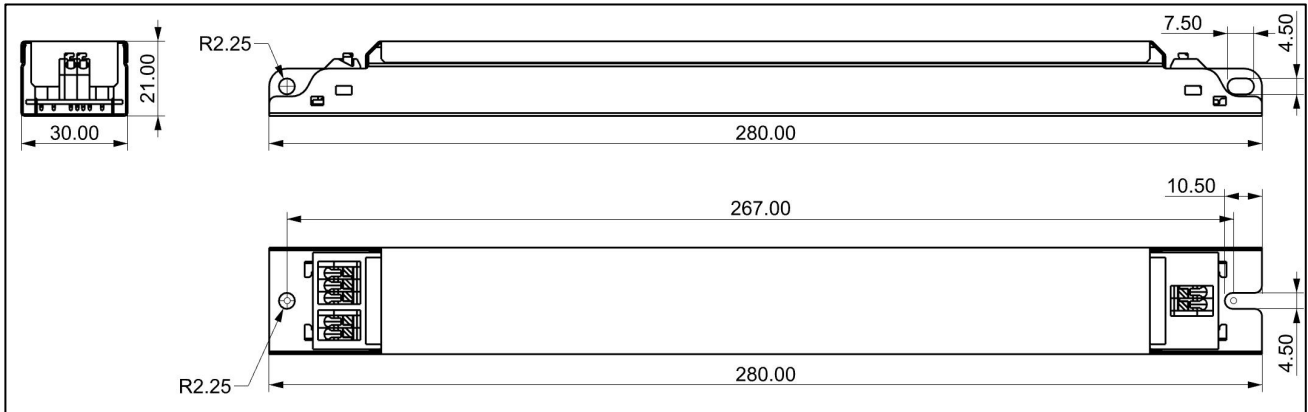


PushDIM dimming application



Corridor DIM dimming application

## ◆ 2D diagram



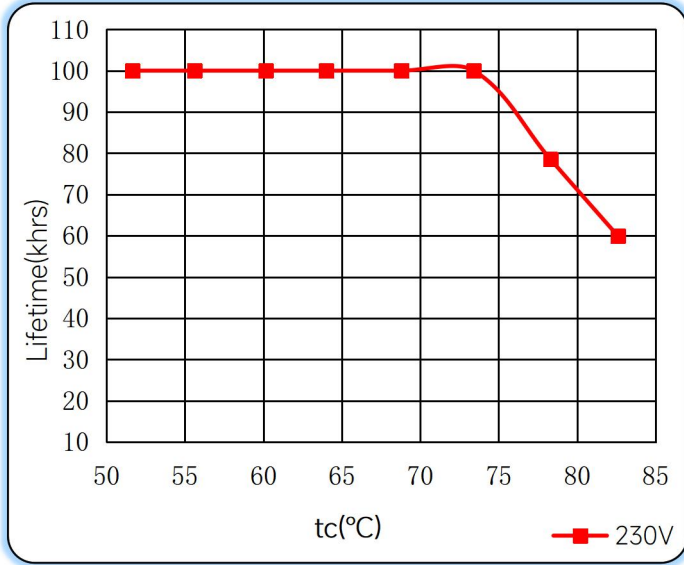
## ◆ Wiring & Connections

Specification item		Value (Unit )
Input	Input wire cross-section	0.5...1.5 mm <sup>2</sup> (With A side caps: 0.75...1.5 mm <sup>2</sup> )
	Input wire gauge.	16...20 AWG (With A side caps: 16...22 AWG )
	Input wire strip length	7...9mm
Output	Output wire cross-section	0.5...1.5 mm <sup>2</sup>
	Output wire gauge.	16...20 AWG
	Output wire strip length	7...9mm

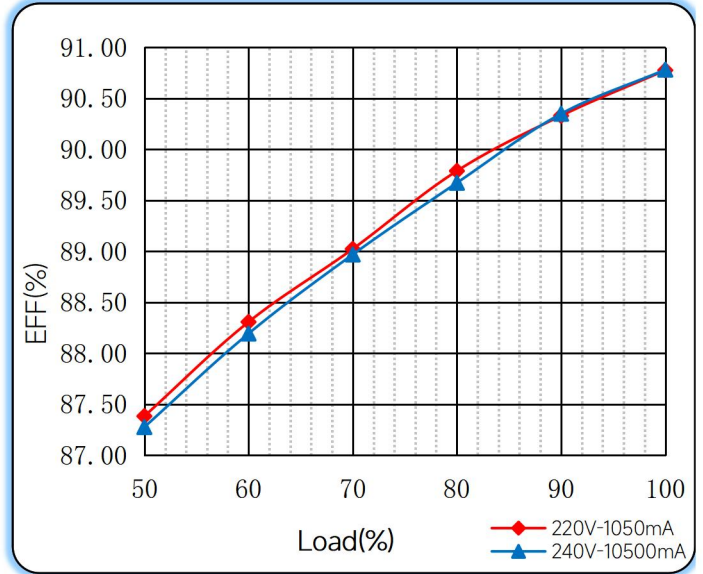
Note: Solid wire is risky to use on an angled terminal. Stranded wire is recommended for this kind of use.

## ◆ Curve for FMS-50-1050 DALI-2 LD, $I_o=1050\text{mA}$

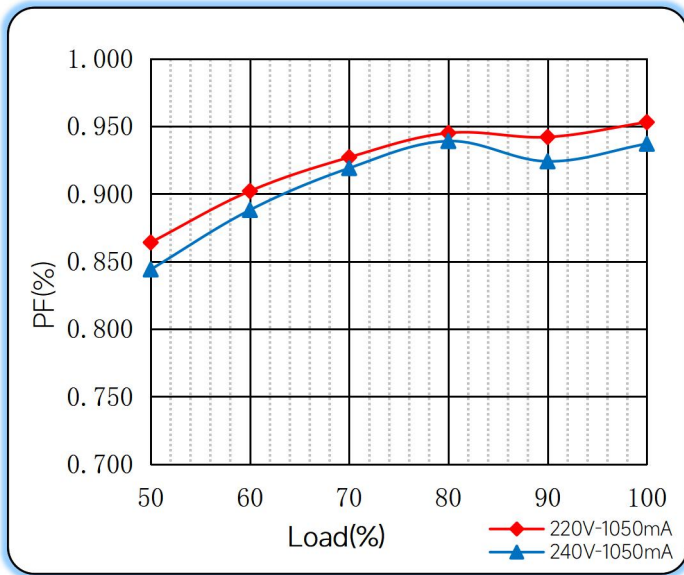
### Lifetime vs. Temperature Curve



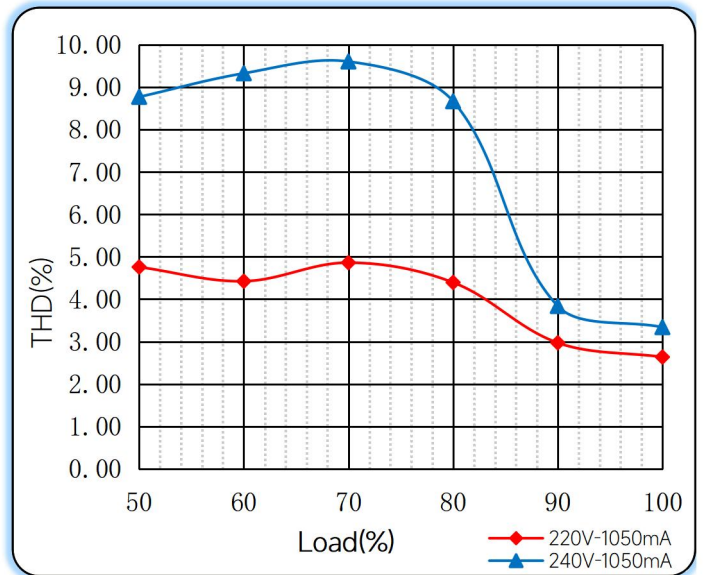
### Efficiency vs. Load



### Power Factor Characteristics



### THD vs. Load





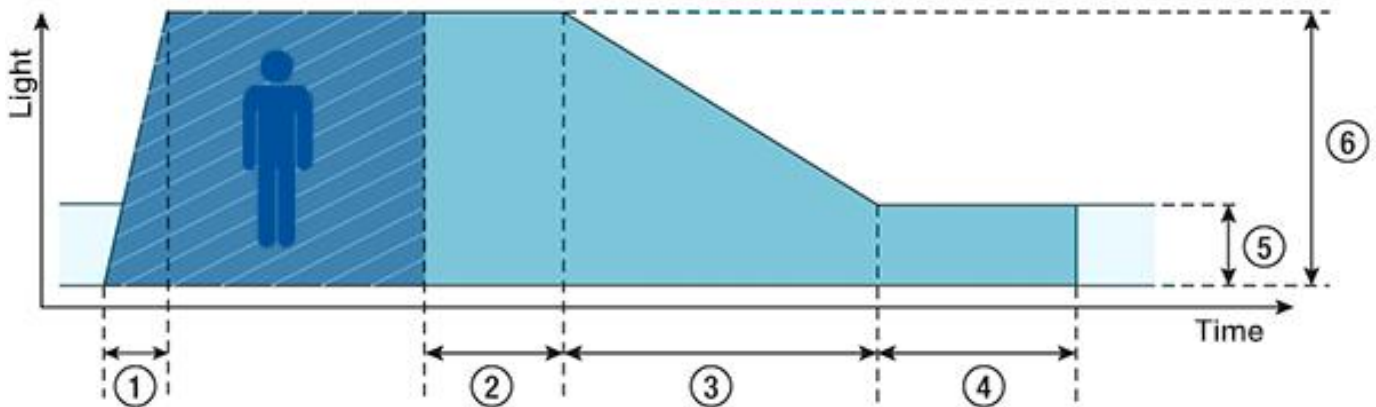
## ◆ Push dimming operation

Action	Action duration	Function
Short push	<0.5s	Turn on/off
Short push twice	<0.5s	LED on: Save current brightness level LED off: Delete saved level and turn on at 100% brightness
Short push five times	<3s	Quit Corridor mode
Long push	0.5-14s	Dimming up or down
Long push	15s-2mins	Sync all LEDs to be 100% brightness
Long push	>2mins	Enter Corridor mode - LED keep 100% brightness for 2mins. Then brightness will turn to be 10% within 32s if no action during 2mins 100% brightness.

**Note:**

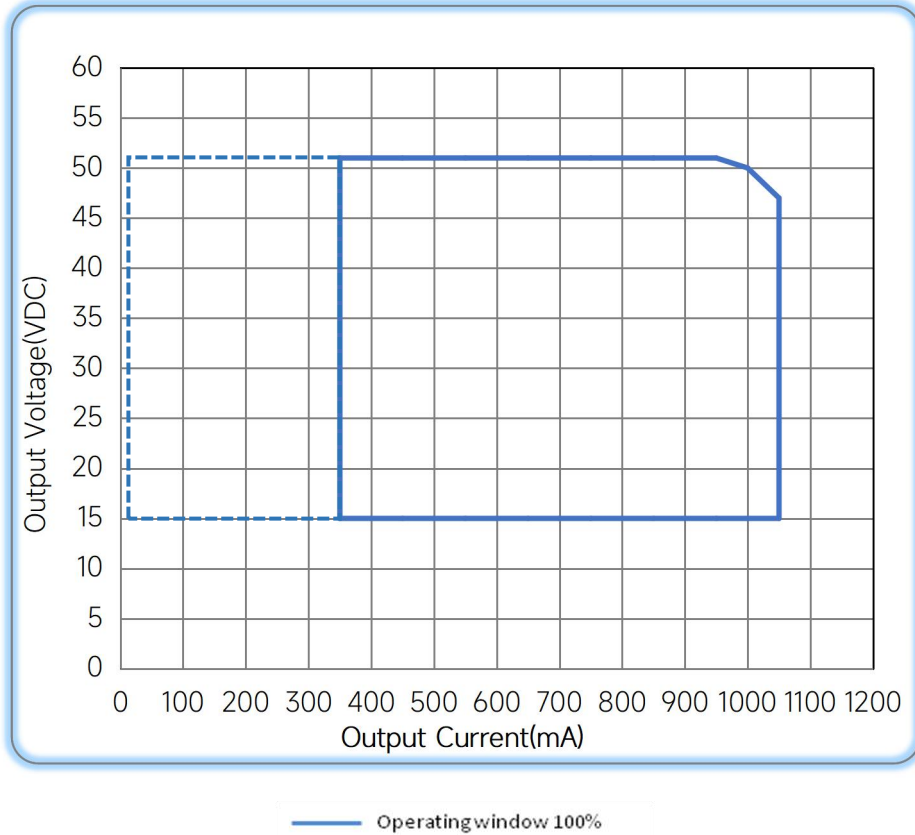
- 1.The factory default brightness is at 100%.
- 2.Up to 30 drivers can perform the PUSH dimming at the same time when utilizing one common push button
- 3.The maximum length of the cable from the push button to the last driver is 200 meters.

## ◆ Corridor mode



- ◆ ① **Fade-in time(0.5s)**: the time that starts as soon as the presence of a person is detected. During the fade-in time the luminous intensity is faded up to the presence value.
- ◆ ② **Run-on time(120s)**: the time that starts as soon as the presence of a person is no longer detected. If the presence of a person is detected again during the run-on time the run-on time is restarted from zero. If no presence is detected during the run-on time the fade time is started as soon as the run-on time expires.
- ◆ ③ **Fade time(32s)**: the time during which the luminous intensity is faded from the presence value to the absence value.
- ◆ ④ **Switch-off delay (Never Off)**: the time during which the absence value is held before the lighting is switched off. Depending on the profile selected the switch-off delay may have different values or may not be defined.
- ◆ ⑤ **Absence value(default: 10 %)**: the luminous intensity when there is no person present.
- ◆ ⑥ **Presence value (default: 100 %)**: the luminous intensity when persons are present.

◆ **Operating window**



◆ **Revision Updates**

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2023/05/05
Dimming depth	1%	5mA@350-500mA, 1%@550-1050mA	B	2024/03/02

Remark: The final interpretation of the contents of the specification belongs to Eaglerise Electric & Electronic (China) Co., Ltd.

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Manual