

AC-DC KNX bus power supply. Dedicated for smart home, building automation, lighting control, curtain and blinds control, heating and air conditioning systems, security monitoring systems, etc.



FEATURES

- 180 - 264VAC or 254 - 370VDC Input voltage
- Operating ambient temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current, over-voltage protection
- EN/BS EN62368 safety approved, safety according to EN61558, EN50491
- Bus reset function
- LED indicator for working status, over-load and reset
- The internal integrated choke
- Compact dimensions, Din-rail design, din rail TS-35/7.5 or TS-35/15 mountable
- OVC III
- SELV
- 10-year life design

The KNX20-22A640G, an AC-DC switching power supply, which integrates a choke inside, the output current is connected to the bus through the choke coil, and a set of auxiliary power output is provided. The product is equipped with an LED indicator that indicates multiple operating conditions and a wide operating temperature range that allows the product to be used in a variety of applications. Particularly suitable for use in home and building intelligent control in compliance with the KNX specification.

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 230VAC (%) Typ.*	Max. Capacitive Load (µF)
--	KNX20-22A640G	19.2	30V/640mA	86	2000

Note: *Efficiency is the efficiency of the auxiliary circuit before the choke.

Input Specifications




Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	180	--	264	VAC
	DC input	254	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	230VAC	--	--	0.25	A
Inrush Current	230VAC Cold start	--	--	45	
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Current Range		0	--	640	mA
Output Voltage Accuracy	Full load range	--	±5	--	%
Line Regulation	Rated load	--	±1	--	
Load Regulation	Primary output	--	±6	--	
	Secondary output	--	±4	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	90	100	mV
Hold-up Time	230VAC	150	200	--	ms
Short Circuit Protection	Recovery time <5s after the short circuit disappear.	Constant current, long-term short circuit protection, self-recover			

Over-current Protection	Room temperature	205% - 235% Io, self-recover after the abnormality is removed
Over-voltage Protection	230VAC	33V - 35V (Hiccup, self-recover)
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information. When the working temperature is -30°C to -5°C, the ripple and noise will be ±5%Vo.		

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input - 	Electric strength test for 1min., leakage current <10mA	2000	--	--	VAC
	Input - output		4000	--	--	
	Output - 		1250	--	--	
Insulation Resistance	Input - 	Ambient temperature: 25±5°C Relative humidity: less than 70% At 500VDC	100	--	--	MΩ
	Input - output		100	--	--	
Operating Temperature			-30	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity	Non-condensing		--	--	95	%RH
Switching Frequency			45	50	55	kHz
Power Derating	Operating temperature derating	+50°C to +70°C	2	--	--	%/°C
	Input voltage derating	180VAC - 264VAC	--	--	--	%/VAC
Safety Standard			EN/BS EN62368-1 (Report) Design refer to EN61558-2-16, IEC63044-3:2018			
Safety Class			CLASS II			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

Function

Reset	There is a button to reset the KNX, at least press the button for 20s for reset.
LED Indicator	LED1, Green indicates normal operation; LED2, Red indicates resets; LED3, Red indicates output over-current or short circuit.
Choke	Product integrated choke.

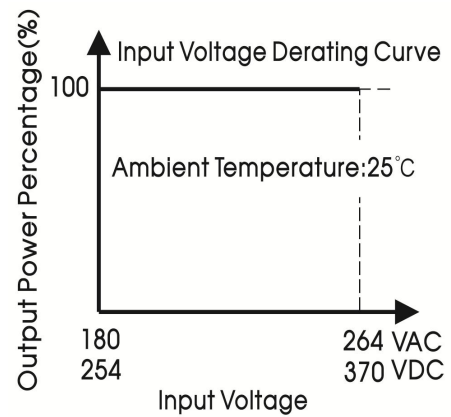
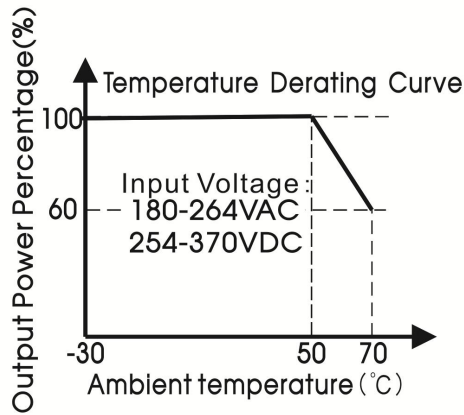
Mechanical Specifications

Dimensions	52.00mm x 90.00mm x 58.20mm
Weight	195g (Typ.)
Cooling Method	Free air convection

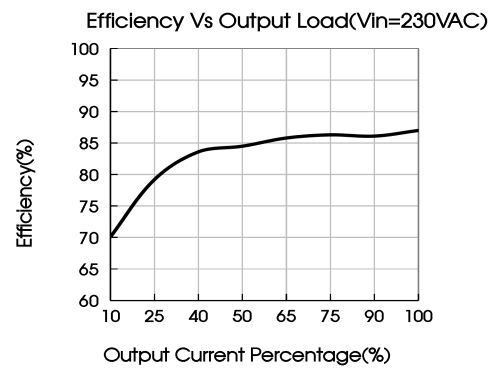
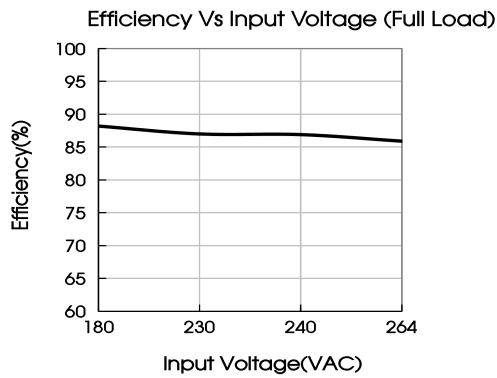
Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR22/EN55022	CLASS B, EN 50491-5-2:2010
	RE	CISPR22/EN55022	CLASS B, EN 50491-5-2:2010
Immunity	ESD	IEC/EN 61000-4-2	Contact ±4KV/Air ±8KV Perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m Perf. Criteria A
	EFT	IEC/EN 61000-4-4	±2KV Perf. Criteria A
	Surge	IEC/EN 61000-4-5	±1KV/±2KV Perf. Criteria A
	CS	IEC/EN61000-4-6	3 Vr.m.s Perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC61000-6-2/IEC61000-4-11	70% 240 , 25/30 Period (50/60Hz) 40% 240 , 10/12 Period (50/60Hz) 0% 240 , 1 Period

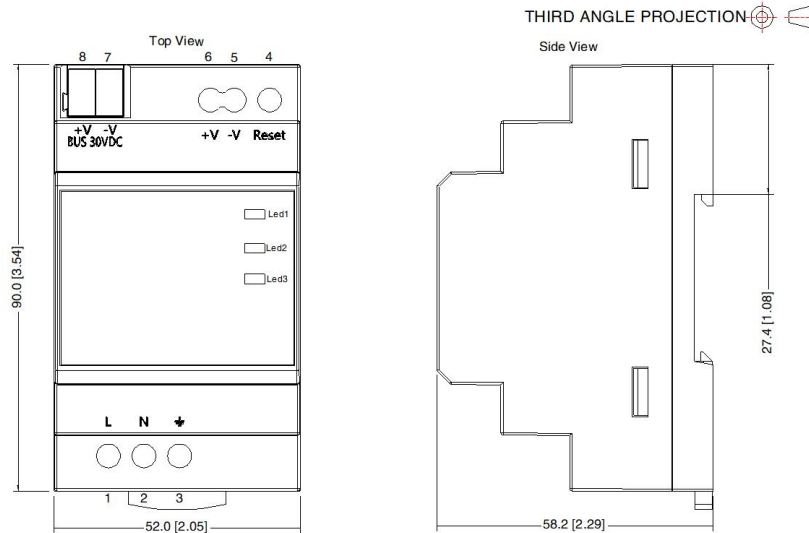
Product Characteristic Curve



Note: 1. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.
2.The efficiency curve is the efficiency of the secondary output.



Dimensions and Recommended Layout



Port function			
Port	Mark	Port	Mark
1	L	4	Reset
2	N	5	-Vo ₂
3	⏏	6	+Vo ₂
Led1	ON(G)	7	KNX Bus -Vo ₁
Led2	Reset(R)	8	KNX Bus +Vo ₁
Led3	I>Imax(R)		

Note:
Unit: mm[inch]
Wiring range: Pin1, 2, 3 wire range: 22-12AWG
Pin5, 6 wire range: 30-12AWG
Pin1, 2, 3 connector tightening torque: M2.5, 0.3N · m ± 10%
Pin5, 6 connector tightening torque: M3, 0.4N · m ± 10%
Mounting rail: TS35
General tolerances: ± 0.50[± 0.020]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220196;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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