

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℃ to +70℃
- 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 KNX20-22A640, 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)
EN	KNX20-22A640	19.2	30V/640mA	86	2000

Note: *The efficiency tested at Vo2.

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-recovery
Over-current Protection	Room temperature	205% - 235% Io, self-recovery after the abnormality is removed
Over-voltage Protection	230VAC	33V - 35V (self-locking, restart to recovery)
Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information. When the working temperature is -30℃ to -5℃, 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℃	100	--	--	MΩ
	Input - output	Relative humidity: less than 70%	100	--	--	
	Output - 	At 500VDC	--	--	--	
Operating Temperature			-30	--	+70	℃
Storage Temperature			-40	--	+85	
Storage Humidity		Non-condensing	--	--	95	%RH
Switching Frequency			45	50	55	kHz
Power Derating	Operating temperature derating	+50℃ to +70℃	2	--	--	%/℃
	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℃	> 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.

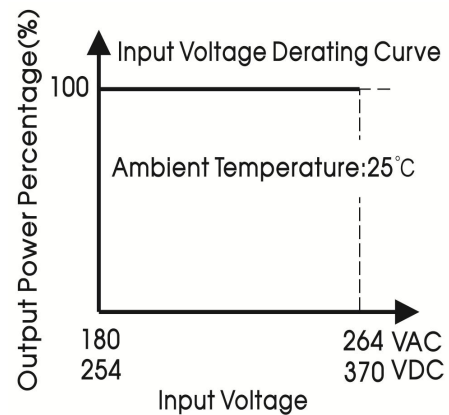
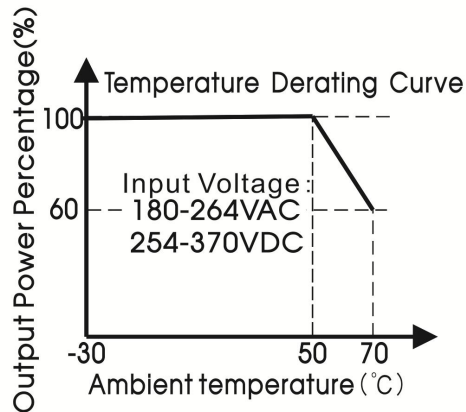
Mechanical Specifications

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

Electromagnetic Compatibility (EMC)

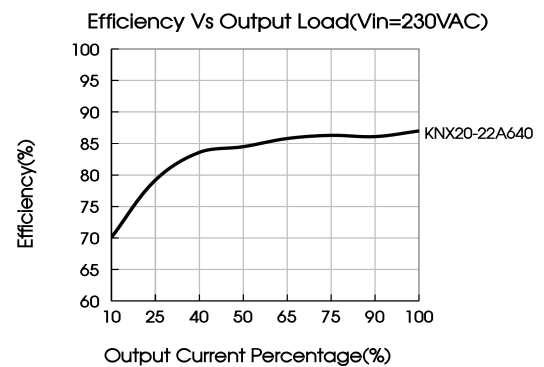
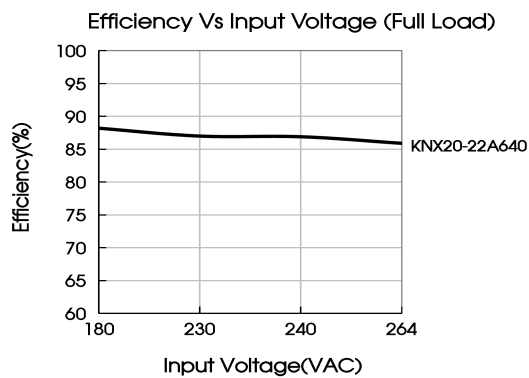
Emissions	CE	CISPR32/EN55032	CLASS B, EN 50491-5-2:2010	
	RE	CISPR32/EN55032	CLASS B, EN 50491-5-2:2010	
Immunity	ESD	IEC/EN 61000-4-2	Contact ±4KV/Air ±8KV	Perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN 61000-4-4	±2KV	Perf. Criteria A
	Surge	IEC/EN 61000-4-5	±1KV/±2KV	Perf. Criteria A
	CS	IEC/EN61000-4-6	3 Vr.m.s	Perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%, 95%	Perf. Criteria A

Product Characteristic Curve

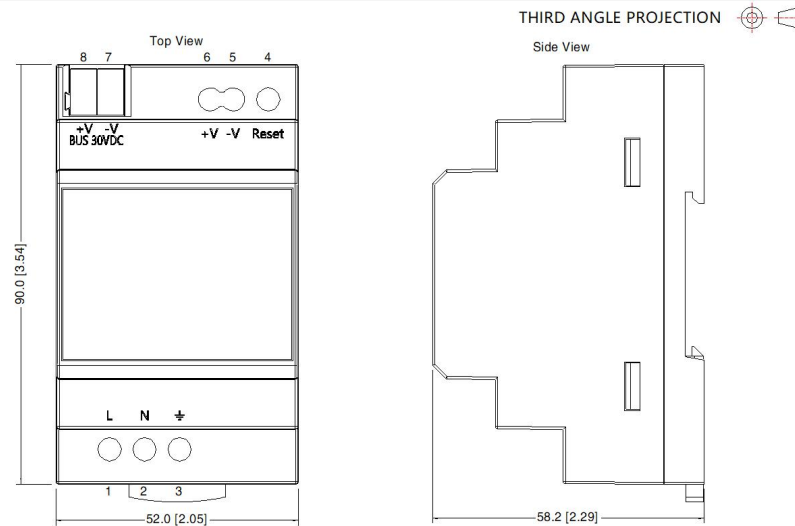


Note: 1. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

2. The efficiency curve is the efficiency of the secondary output.



Dimensions and Recommended Layout



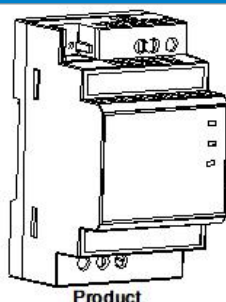
Port function			
Port	Mark	Port	Mark
1	L	4	Reset
2	N	5	-Vo2
3	⏏	6	+Vo2
Led1	ON(G)	7	KNX Bus -Vo1
Led2	Reset(R)	8	KNX Bus +Vo1
Led3	I>Imax(R)		

Note:
Unit: mm[inch]
General tolerances: $\pm 0.5[\pm 0.02]$

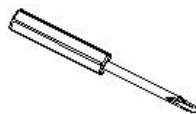
Installation Diagram

Materials required in the installation

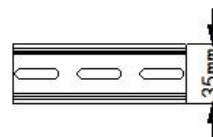
1	Product	1 PC
2	Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
4	22-12AWG Wire	/ PCS
The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.		



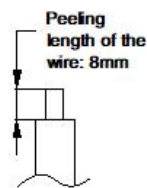
Product



Slotted screwdriver
Diameter of the cutting
Diameter: 3mm



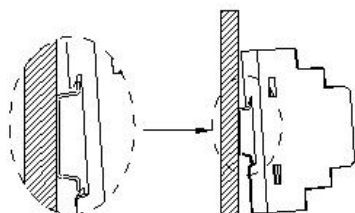
TS35/7.5 or TS35/15



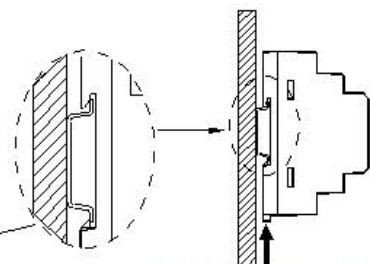
22-12AWG Wire

Installation Steps ①-②

① Clamp the buckle of the product into the TS35 DIN rail;

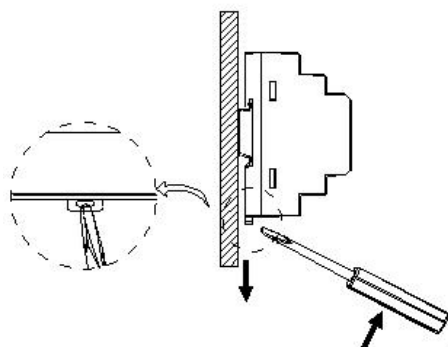


② Push the product vertically towards the TS35 DIN rail until hearing the sound of the buckle snapping into it.

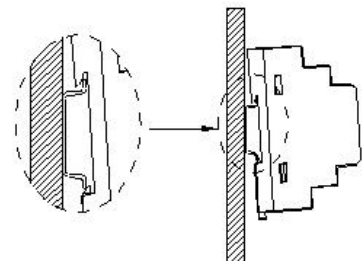


Push the tail of the buckle so that the buckle fully snaps into the rail

Disassembly Steps ③-④

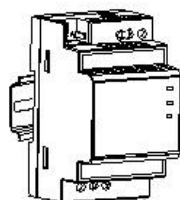


③ After inserting the Slotted screwdriver into the square groove at the bottom of the buckle, push the slider of the buckle downward in the direction shown in the figure.

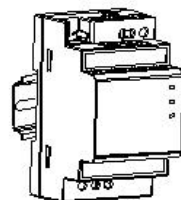


④ Hold the bottom of the product and push it outwards, then lift the product up to take the product out of the DIN rail.

Wiring / Unwiring Steps ⑤-⑥



Tightening torque:
Max0.3 N · m (For reference);



⑤ Use the Slotted screwdriver to loosen the terminal screws, insert the head of the wire into the bottom of the terminal, and then turn the screwdriver to tighten the terminal screws.

⑥ The Slotted screwdriver to loosen the terminal screws and pull the wires out of the terminal holes

Note: Keep the following installation clearances: 20mm on the top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).

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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