Lime Knx Power Supply

PS640-L
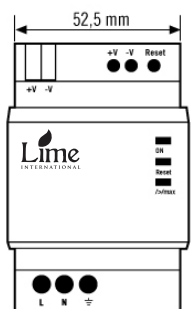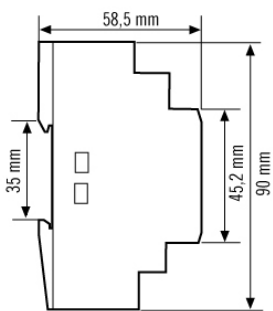KNX

FEATURES

- EIB / KNX power supply with integrated choke
- Compact size with 3SU(52.5mm) width
- Saftey extra low voltage (SELV)
- 180~264 VAC input
- No load power consumption <0.5W
- Protections: Short circuit / Overload (short-circuit-proof) / Over Voltage
- Cooling by free air convection
- Isolation class
- LED indicator for normal operation,bus reset and bus overload
- Installed on DIN rail TS-357.5/ or 15
- 100% full load on DIN rail TS-357.5/ or 15
- 3 years warranty

58,5 mm
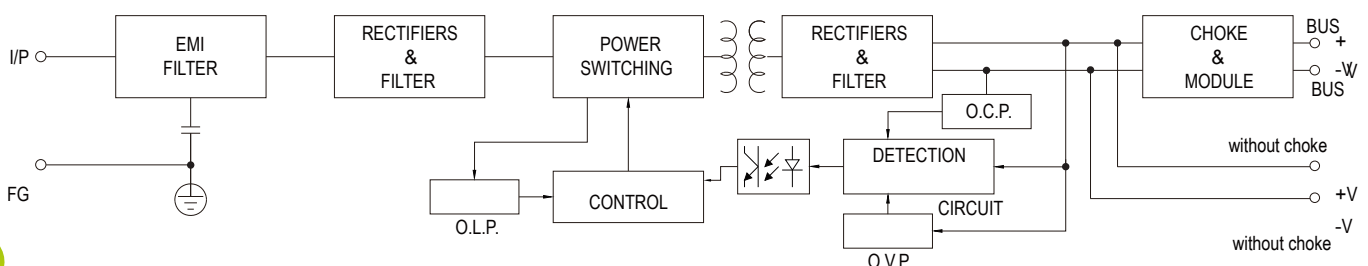**35 mm**
45,2 mm
90 mm

52,5 mm

+V -V Reset

Lime
INTERNATIONAL

ON
Reset
I>Imax

L N ⏚

APPLICATION

. Intelligent home control
. Modern building automation
. Lighting control
. HVAC system
. Security system
. Blinds and shutters
. Monitoring systems
. Energy management
. Alarm monitoring

DESCRIPTION.

The Lime KNX power supply KNX PS640-L is a 640 mA power supply with high efficiency and a small footprint of only 3US(52.5mm). The device has KNX bus choke output and an additional output for ancillary power.

The -30 ~ + 70 C wide temperature operation range can meet all kinds of application. LED indicators are used in case of normal operation, overload conditions and RESET operation. it is perfectly suitable to power up any products labeled with the KNX trademak. Lime KNX PS640-L is engineered to be a reliable and safe solution for KNX bus inviroment.

BLOCK DIAGRAM

I/P — EMI FILTER — RECTIFIERS & FILTER — POWER SWITCHING — RECTIFIERS & FILTER — CHOKE & MODULE — BUS + -W BUS

O.C.P.

FG

O.L.P. — CONTROL — DETECTION — CIRCUIT

O.V.P.

without choke

+V
-V
without choke

OUTPUT

BUS OUTPUT VOLTAGE WITH CHOKE	Bus,30V (KNX black/red terminal block)
DC OUTPUT VOLTAGE WITHOUT CHOKE	30V(Additional output for ancillary power)
RATED CURRENT	640mA
RATED POWER	19.2W
RIPPLE & NOISE (max.) Note.2	100mVp-p
SHORT CIRCUIT CURRENT	1.4A
SETUP, RISE TIME	1000ms, 50ms/230VAC at full load
AC MAINS FAILURE BACK-UP TIME(Typ.)	200ms/230VAC at full load

INPUT

VOLTAGE RANGE	180 ~ 264VAC 254 ~ 370VDC
FREQUENCY RANGE	47 ~ 63Hz
EFFICIENCY (Typ.) Note.3	86%
AC CURRENT (Typ.)	0.22A/230VAC
INRUSH CURRENT (Typ.)	COLD START 40A/230VAC
LEAKAGE CURRENT	<1mA / 240VAC

PROTECTION

OVERLOAD	205 ~ 235% rated output power
	Protection type : Constant current limiting, recovers automatically after fault condition is removed
OVER VOLTAGE	33 ~ 35V
	Protection type : Shut down o/p voltage, re-power on to recover

FUNCTION

RESET	Physical button for reset the bus (Press the RESET button for at least 20 seconds to reset the KNX Bus)
LED DISPLAY	Green LED (ON) :Normal operation
	Red LED1 (Reset):Reset the bus; Red LED2 ($I > I_{max}$):Overload/Short
CHOKE	One integrated choke

ENVIRONMENT

|	
WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")
WORKING HUMIDITY	20 ~ 95% RH non-condensing
STORAGE TEMP., HUMIDITY	40 ~ +85 ℃, 10 ~ 95% RH
VIBRATION TYPE OF PROTECTION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
TYPE OF PROTECTION	IP20 design
SHORT CIRCUIT CURRENT	1.4A
SETUP, RISE TIME	1000ms, 50ms/230VAC at full load
AC MAINS FAILURE BACK-UP TIME(Typ.)	200ms/230VAC at full load

SAFETY & EMC (Note 4)

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SAFETY STANDARDS	EN615581-,EN6155816-2- approved
WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC
ISOLATION RESISTANCE	I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25 ℃ / 70% RH
EMC EMISSION	Compliance to EN50491- 5 -2,- 5 - 3;EN50491-3;EN61000-3-2,-3 -3
EMC IMMUNITY	Compliance to EN504913--5,2-5-;EN610002,3,4,5,6,8,11-4-, heavy industry level, criteria A

OTHERS

MTBF	109K hrs min. MIL-HDBK-217F (25 ℃)
DIMENSION	52.5*90*54.5mm (W*H*D)
MOUNTING	I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25 ℃ / 70% RH
EMC EMISSION	35mm mounting rail according to DIN EN60715
PACKING	0.215Kg ; 60pcs/13.9Kg/0.97CUFT

NOTE

1. All parameters NOT mentioned are measured at 230VAC input, rated load and 25 C of ambient temperature.

2. Ripple & noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &47uf parallel capacitor Measure before choke.

3. Efficiency before choke

4. The power supply is considered a component which will be installed onto a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."
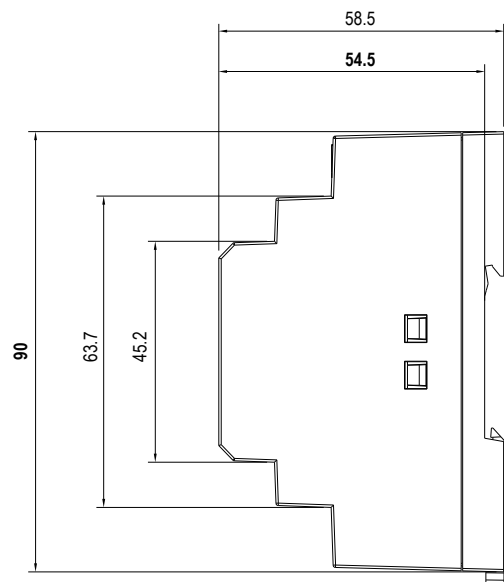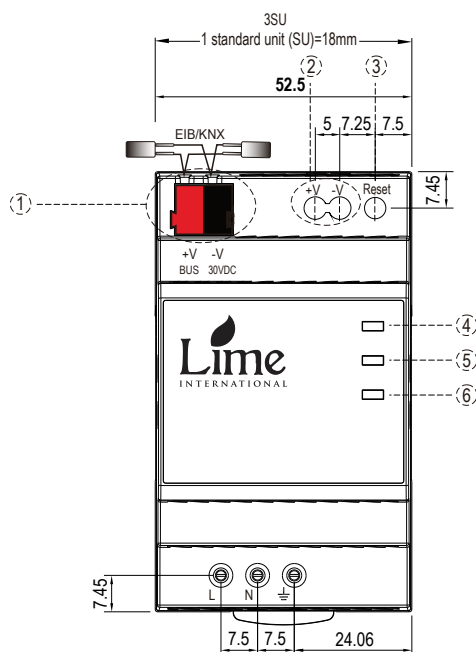
1	KNX bus termnials (Red :+, Black:-)
2	Ancillary power termnials
3	Reset button
4	Power ON (Green)
5	Reset (Red)
6	> max (Red)
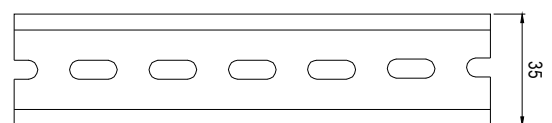
ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

TYPICAL APPLICATION

Application 1:Powering KNX Bus Only

KNX Bus

| Lime KNX PS-640L | Lighting device | HV AC System device | Blinds & Shutters device |

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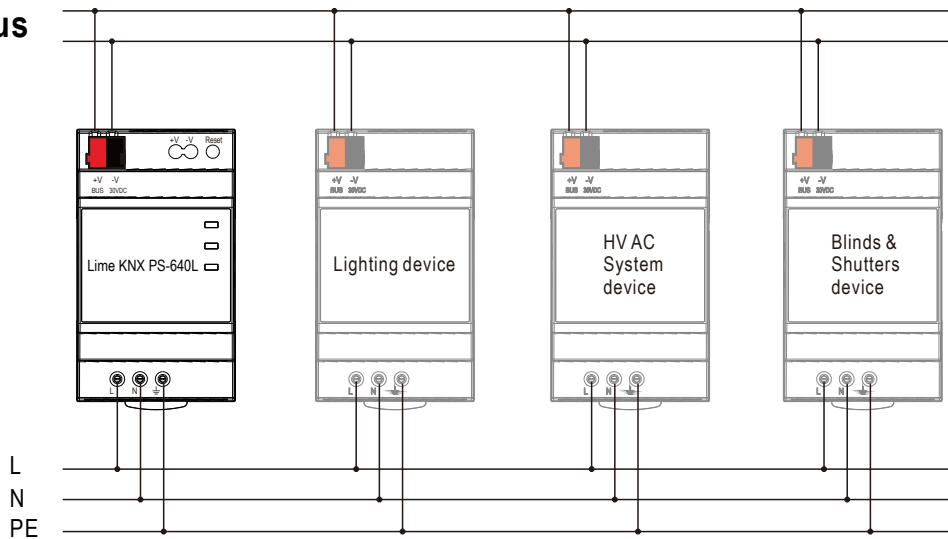
Bus wiring consideration:

1. the maximum number of bus devices connected is 64.
2. the maximum length of a line segment is 350 m, measured along the line between the power supply and the furthest device bus.
3. the maximum distance between two bus devices cannot exceed 700 m
4. the maximum length of a bus line is 1000 m, keeping into account all segments

Application 2:Powering KNX Bus and KNX device

KNX Bus

| Lime KNX PS-640L | Lighting device | HV AC System device | Blinds & Shutters device |

L
N
PE
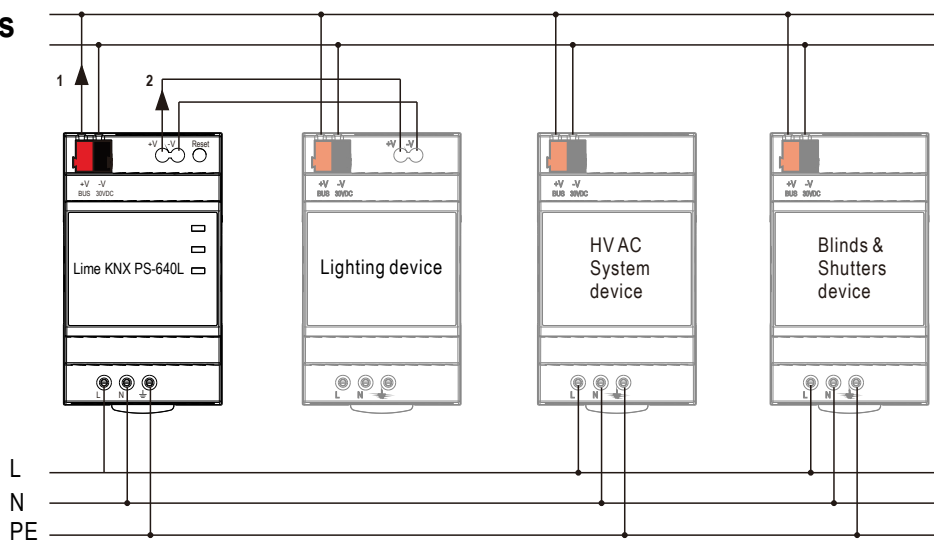
Note:

1. Use only ancillary output of Lime KNX-PS640-L to power the KNvX device
2. The total current + should be equal or less than 640mA. + ≤640mA
3. The above Bus wiring consideration is still applicable

Recommended Screwdriver, Wire and Torque Setting

1. Screwdriver(Width*Thick):Slotted screwdriver 2.5*0.4~3.5*0.6
2. Wire:0.5~4.0mm solid core or 0.5~2.5mm finely stranded
3. Torque:0.8Nm

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KNX

This device is complies with the KNX guidelines. Detailed knowledge of KNX and KNX training are a pre-condition for understanding and proper installation. Planning, installation and commissioning of the device are done withe KNX-certified software.

Support

The standard support is provided by the e-mail address: Support@lime-smart.com

LIME INTERNATIONAL

MEMBER KNX