



## ■ Features

- EIB / KNX power supply with integrated choke
- Compact size with 3SU(52.5mm) width
- Safety extra low voltage(SELV)
- 180~264VAC input
- No load power consumption <0.5W
- Protections: Short circuit / Overload(short-circuit-proof) / Over voltage
- Cooling by free air convection
- Isolation class I
- LED indicator for normal operation, bus reset and bus overload
- Installed on DIN rail TS-35/7.5 or 15
- Over voltage category III
- 100% full load burn-in test
- 3 years warranty

## ■ Applications

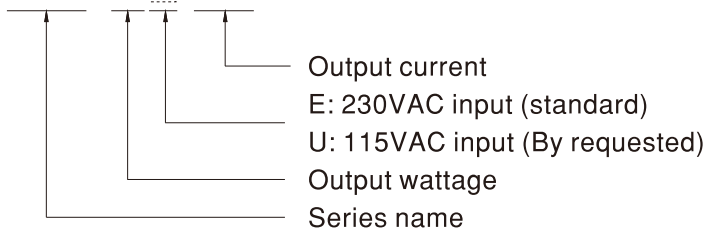
- Intelligent home control
- Modern building automation
- Lighting control
- HVAC system
- Security system
- Blinds and shutters
- Monitoring systems
- Energy management
- Alarm monitoring

## ■ Description

The KNX Power Supply KNX-20E-640 is a 640mA power supply with high efficiency and a small footprint of only 3SU (52.5 mm). The device has a KNX bus choke output and an additional output for ancillary power. The -30~+70°C wide temperature operating range can meet all kinds of applications. 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 trademark. With over 30 years of industrial power supply experience, KNX-20E-640 is engineered to be a reliable and safe solution for KNX bus environment.

## ■ Model Encoding

**KNX - 20E - 640**

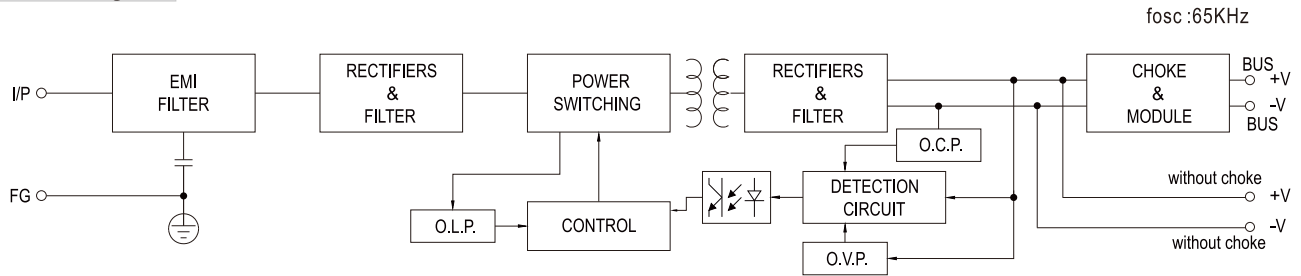




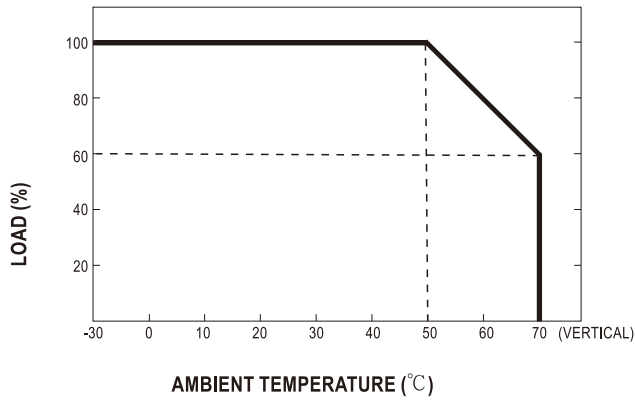
## SPECIFICATION

| MODEL                 | KNX-20E-640   |   |
|-----------------------|---|---|
| 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<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed |
|                       | OVER VOLTAGE  | 33 ~ 35V<br>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<br>Red LED1 (Reset):Reset the bus; Red LED2 ( $I > I_{max}$ ):Overload/Short                         |
|                       | CHOKE   | One integrated choke  |
| ENVIRONMENT           | WORKING TEMP.   | -30 ~ +70°C (Refer to "Derating Curve")   |
|                       | WORKING HUMIDITY  | 20 ~ 95% RH non-condensing  |
|                       | STORAGE TEMP., HUMIDITY   | -40 ~ +85°C, 10 ~ 95% RH non-condensing   |
|                       | VIBRATION TYPE OF PROTECTION  | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes  |
|                       | TYPE OF PROTECTION  | IP20 design   |
|                       | OVER VOLTAGE CATEGORY   | III ; According to EN61558, EN50178, EN60664-1, EN62477-1 ; altitude up to 2000 meters  |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS  | EN61558-1, EN61558-2-16 ; EN50491-3, EAC TP TC 004 approved   |
|                       | WITHSTAND VOLTAGE   | I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:1.25KVAC  |
|                       | ISOLATION RESISTANCE  | I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25°C / 70% RH  |
|                       | EMC EMISSION  | Compliance to EN50491-5-2,-5-3 ; EN61000-3-2,-3-3, EAC TP TC 020  |
|                       | EMC IMMUNITY  | Compliance to EN50491-5-2,-5-3 ; EN61000-4-2,3,4,5,6,8,11, heavy industry level, criteria A, EAC TP TC 020                            |
| OTHERS                | MTBF  | 109K hrs min.    MIL-HDBK-217F (25°C)   |
|                       | DIMENSION   | 52.5*90*54.5mm (W*H*D)  |
|                       | MOUNTING  | 35mm mounting rail according to DIN EN60715   |
|                       | PACKING   | 0.215Kg ; 60pcs/13.9Kg/0.97CUFT   |
| NOTE                  | <ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor. Measure before Choke.</li> <li>Efficiency before choke.</li> <li>The power supply is considered a component which will be installed into 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." (as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</li> <li>The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</li> </ol> |   |

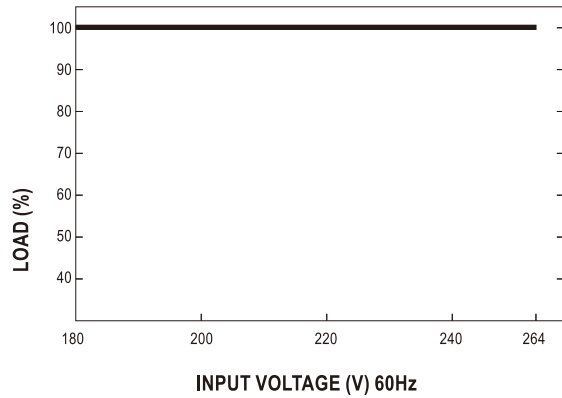
### Block Diagram



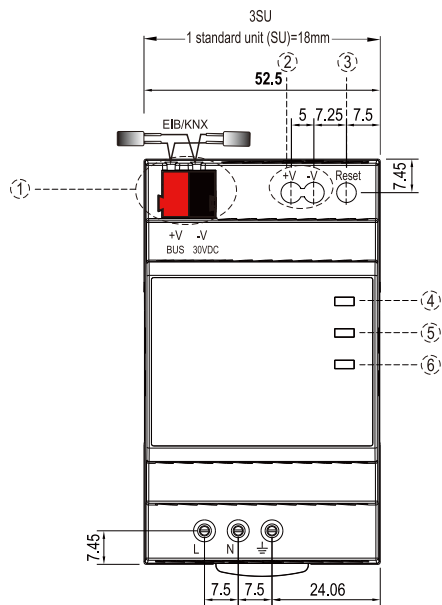
### Derating Curve



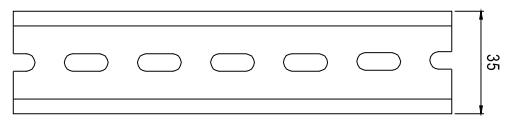
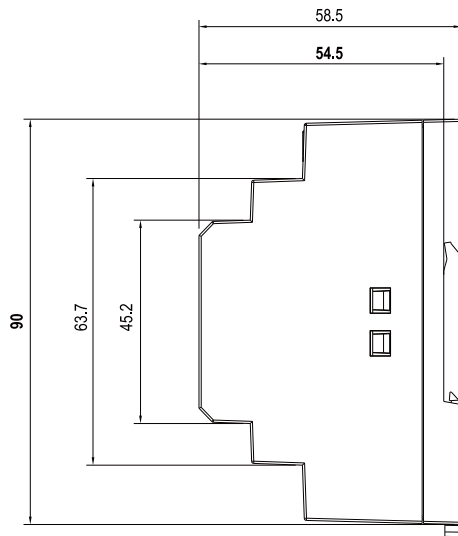
### Static Characteristics



### Mechanical Specification



Case No. KNX-20 Unit:mm



ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15

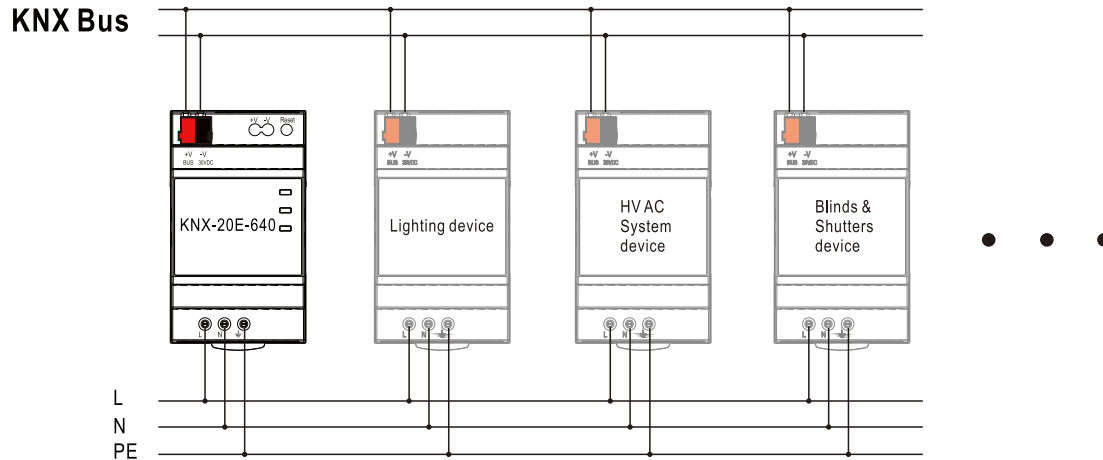
|   |                                     |
|---|-------------------------------------|
| 1 | KNX bus terminals (Red :+, Black:-) |
| 2 | Ancillary power terminals           |
| 3 | Reset button                        |
| 4 | Power ON (Green)                    |
| 5 | Reset (Red)                         |
| 6 | I > I max (Red)                     |

## ■ Configuration and Commissioning

The application program (data base) for ETS can be downloaded via <http://www.meanwell.com/productCatalog.aspx>

## ■ Typical application

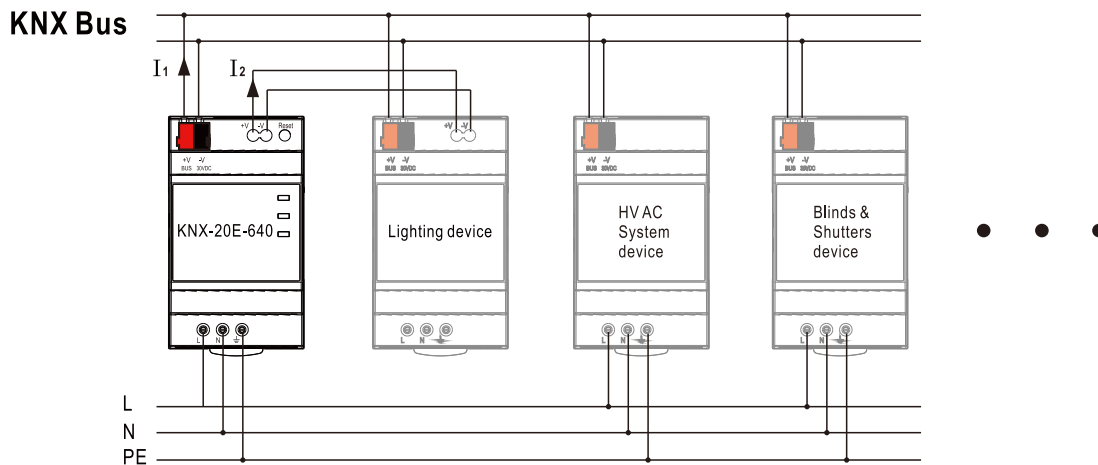
### ◎ Application 1: Powering KNX Bus Only



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.
5. It is possible to connect two KNX-20E-640 in parallel with following conditions: Two chokes installed in one line with at least 200m apart.

### ◎ Application 2: Powering KNX Bus and KNX device



Note:

1. Use only ancillary output of KNX-20E-640 to power the KNX device
2. The total current  $I_1 + I_2$  should be equal or less than 640mA.  $I_1 + I_2 \leq 640\text{mA}$
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<sup>2</sup> solid core or 0.5~2.5mm<sup>2</sup> finely stranded
3. Torque: 0.8Nm

## ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>