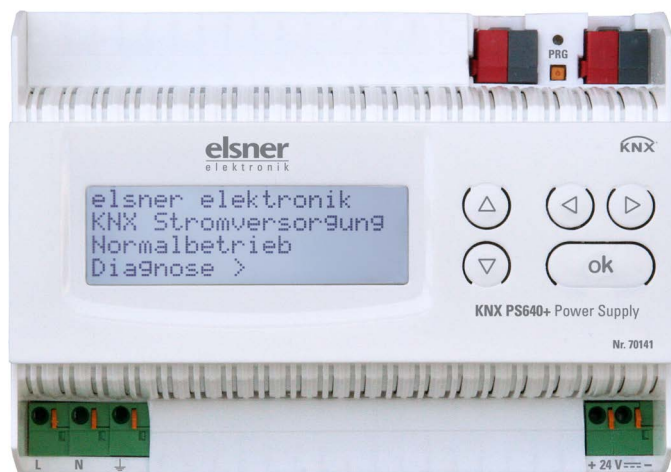




KNX PS640+

Power Supply System

Item number 70141



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This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

Clarification of signs used in this manual



Safety advice.



Safety advice for working on electrical connections, components, etc.

DANGER!

... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.

WARNING!

... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.

CAUTION!

... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.



ATTENTION! ... indicates a situation which may lead to damage to property if it is not avoided.

ETS

In the ETS tables, the parameter default settings are marked by underlining.

1. Safety and operating instructions



Installation, testing, operational start-up and troubleshooting should only be performed by a qualified electrician.



DANGER!

Risk to life from live voltage (mains voltage)!

- Inspect the device for damage before installation. Only put undamaged devices into operation.
- Comply with the locally applicable directives, regulations and provisions for electrical installation.
- Immediately take the device or system out of service and secure it against unintentional switch-on if risk-free operation is no longer guaranteed.

Use the device exclusively for building automation and observe the operating instructions. Improper use, modifications to the device or failure to observe the operating instructions will invalidate any warranty or guarantee claims.

Operate the device only as a fixed-site installation, i.e. only in assembled condition and after conclusion of all installation and operational start-up tasks, and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

For information on installation, disposal, scope of delivery and technical data, please refer to the installation instructions.

2. Description

The device supplies 29 V bus voltage for a KNX TP line to "U_{Line}" and 24 V DC to "U_{24V}". The power supply provides control and diagnostic functions such as line reset or reading out operating data and fault messages. These functions can be carried out

- via the display and buttons of the device
- via the integrated KNX participant „Device“ on a KNX TP line

Functions:

- Delivers a **29 V KNX bus voltage** (reduced), output current max. 640 mA, short-circuit proof
- Delivers **24 V DC** (not reduced), output current max. 150 mA
- **Reset** of a line directly on the device
- Record of operating hours, overload, external overvoltage, internal overvoltage, short circuit and excess temperature
- Display of operating data bus voltage, bus current and temperature of the device
- The display may be shown in German, English, Spanish or Dutch

- **Bus connection** for data transfer (e. g. malfunction messages, operating data)
- Possibility for reset and diagnostics via the bus

3. Commissioning

Configuration is made using the KNX software ETS. The **product file** can be downloaded from the Elsner Elektronik website on **www.elsner-elektronik.de** in the "Service" menu.

4. Settings of the device

4.1. Starting Position

```
elsner elektronik
KNX Power Supply
Normal Operation
Diagnostics >
```

The following may be read off and set on the display of the power supply system KNX PS640+:

- Reset of a line
- Recall of the data memory with operating hours, overcharge, external electrical surge, internal electrical surge, short circuit and excess temperature
- Recall of the operating data bus voltage, bus current and temperature
- Language of display

The display is dimmed after 60 seconds if during this period no key is pressed.

4.2. Key functions in display menu

▷	Confirms the selection, moves to the next step.
◁	One step back.
▽△	Changes a setting (selects a setting or changes a value). The cursor (the blinking rectangle) indicates the selected menu item.
ok	Confirms the settings and returns to the device main menu.

4.3. Line reset

```
elsner elektronik
KNX Power Supply
Normal Operation
Diagnostics >
```

In starting position, press key ▷ once.

```
Line Reset      > █
Data Memory     >
Operating Data  >
Language        >
```

Press key ▷ once more in order to get into the sector „Line reset“.

```
Reset: Yes      █
      No
      30 seconds
Reset not active!
```

Move the cursor (flashing rectangle at right edge) to the desired setting with the keys ▽ or △ and confirm with key **ok**.

Yes	Reset is activated. The line is switched to neutral and shorted. The basic setting displays: „Reset is active!“
No	Reset not activated. The power supply system works in normal operation.
30 seconds	A reset of 30 seconds is started. Afterwards, the line is supplied with voltage as usual. During the reset state, which lasts 30 seconds, the basic setting displays: „Reset active: XX sec“ (countdown).

With key ◀, you return to the previous menu level.

4.4. Data memory

```
elsner elektronik
KNX Power Supply
Normal Operation
Diagnostics >
```

In starting position, press key ▶ once.

```
Line Reset >
Data Memory > █
Operating Data >
Language >
```

Move the cursor (flashing rectangle at right edge) to the „Data memory“ menu with the keys ▼ and ▲ and confirm with key ▶.

```
Hours of Operation > █
Overload >
Ext. Overvoltage >
Int. Overvoltage >
```

```
Short circuit >
Excess Temperat. >
```

Move the cursor to the desired menu with the up and down keys and press key ▶.

4.4.1. Operating hours

```
Run time: 0 years
          0 day 0 hrs.
< = Back
```

The operating hours of the power supply system are displayed in years, days and hours.

With key ◀ you return to the previous menu level.

4.4.2. Overload

```
Run time: 0 years
          0 day 0 hrs.
< = Back
```

The number of overload incidents and the total time in days, hours and minutes are displayed.

With key ◀ you return to the previous menu level.

4.4.3. External Overvoltage

```
External Overvoltage
was detected
0 times.
< = Back
```

The number of external overvoltage incidents is displayed.

With key ◀ you return to the previous menu level.

4.4.4. Internal Overvoltage

```
Internal Overvoltage
was detected
0 times.
< = Back
```

The number of internal overvoltage incidents is displayed.

With key ◀ you return to the previous menu level.

4.4.5. Short Circuit

```
A short at the bus was
detected
0 times.
< = Back
```

The number of short circuit incidents at the bus is displayed.

With key ◀ you return to the previous menu level.

4.4.6. Excess Temperature

```
Excess Temperature on
the board
was detected
0 times!
```

The number of excess temperature incidents on the circuit board of the device is displayed.

With key ◀ you return to the previous menu level.

4.5. Operating data

```
elsner elektronik
KNX Power Supply
Normal Operation
Diagnostics >
```

In starting position, press key ▶ once.

```
Line Reset      >
Data Memory     >
Operating Data  > ■
Language        >
```

Move the cursor (flashing rectangle at right edge) to the „Operating Data“ menu with the keys ▼ and ▲ and confirm with key ▶.

```

Bus Voltage  29.4 V
Bus Current  320 mA
Temperature  42.1°C

```

The current values of

- Bus voltage
 - Bus current
 - Temperature on the circuit board of the device
- are displayed.

With key ◀ you return to the previous menu level.

4.6. Language

```

elsner elektronik
KNX Power Supply
Normal Operation
Diagnostics >

```

In starting position, press key ▶ once.

```

Line Reset      >
Data Memory     >
Operating Data  >
Language        > █

```

Move the cursor (flashing rectangle at right edge) to the „Language“ menu with the keys ▼ and ▲ and confirm with the key ▶.

```

Sprache  : Deutsch █
Language : English
Idioma   : Espanol
Taal     : Hollands

```

Move the cursor to the desired language with the up and down keys and press the key **ok**. The display automatically jumps to the previous menu in the desired language.

With key ◀ you get back by one menu level to the basic setting.

5. Transmission protocol

5.0.1. Abbreviations

Flags:

C Communication

R Read

W Write

T Transmit

U Update

5.0.2. Listing of all communication objects

No.	Name	Function	EIS type	Flags
0	Bus voltage [V]	Output	14.030	C R T
1	Bus current [mA]	Output	9.021	C R T
2	Permanent reset (1 = active 0 = inactive)	Input	1.003	C R W
3	Time reset (1 = 30 seconds active 0 = inactive)	Input	1.003	C R W
4	Reset status of the line (1 = active 0 = inactive)	Output	1.002	C R T
5	Overload (0 = normal 1 = overload)	Output	1.002	C R T
6	external overvoltage (0 = normal 1 = overvoltage)	Output	1.002	C R T
7	internal overvoltage (0 = normal 1 = overvoltage)	Output	1.002	C R T
8	Short circuit (0 = normal 1 = short circuit)	Output	1.002	C R T
9	Overtemperature (0 = normal 1 = overtemperature)	Output	1.002	C R T
10	System defect (0 = normal 1 = defect)	Output	1.002	C R T
11	1 bit malfunction collection (operation = 0 fault = 1)	Output	1.002	C R T
12	8 bit status collection	Output	5.010	C R T
13	Date	Input	11.001	C R W
14	Time	Input	10.001	C R W

No.	Name	Function	EIS type	Flags
15	Recall error information (1 = No.+1 0 = No.-1)	Input	1.008	C R W
16	Message part 1	Output	16.000	C R T
17	Message part 2	Output	16.000	C R T
18	Message part 3	Output	16.000	C R T
19	Message part 4	Output	16.000	C R T
20	Threshold value: 16 bit value [mA]	Input / Output	9.021	C R W T U
21	Threshold value: 1 = Increment 0 = Decrement	Input	1.008	C R W
22	Threshold value: Increment	Input	1.017	C R W
23	Threshold value: Decrement	Input	1.017	C R W
24	Threshold value: Switching output	Output	1.002	C R T
25	Threshold value: Switching output block	Input	1.003	C R W
26	Software version	readable	217.001	C R

5.1. Setting of parameters (Software ETS)

5.1.1. General settings

Measured values:

Transmission behaviour object „bus voltage“	<ul style="list-style-type: none"> • do not send • send cyclically • send in case of change • send in case of change and cyclically
Sending cycle (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h
Change in % (only if sending „in case of change“)	1 ... 50

Transmission behaviour object „bus current“	<ul style="list-style-type: none"> • do not send • send cyclically • send in case of change • send in case of change and cyclically
Sending cycle (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h
Change in % (only if sending „in case of change“)	1 ... 100

Reset of the line:

What shall be used for the reset?	
display and keyboard	Yes
object „permanent reset“ 1 = reset 0 = no reset	No • Yes
object „time reset“ 1 = 30 seconds reset 0 = no reset	No • Yes
Use object „reset status of the line“	No • Yes

Other:

Maximum telegram quota	1 • 2 • 3 • 5 • 10 • 20 Telegrams per second
General sending delay after power up and programming	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h

5.1.2. Messages**1 bit malfunction objects:**

Object „overload“	<ul style="list-style-type: none"> • do not send • send in case of change • send in case of change to 1 • send in case of change to 0 • send in case of change and cyclically • send in case of change to 1 and cyclically • send in case of change to 0 and cyclically
Sending cycle (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h
Object „external overvoltage“	<i>[The setting options are similar to object „overload“]</i>
Object „internal overvoltage“	<i>[The setting options are similar to object „overload“]</i>
Object „short circuit“	<i>[The setting options are similar to object „overload“]</i>
Object „overtemperature“	<i>[The setting options are similar to object „overload“]</i>
Object „system defect“	<i>[The setting options are similar to object „overload“]</i>

1 bit malfunction collection:

Object „1 bit malfunction collection“ This object results in a disjunction of the 1 bit malfunction objects	<ul style="list-style-type: none"> • do not send • send in case of change • send in case of change to 1 • send in case of change to 0 • send in case of change and cyclically • send in case of change to 1 and cyclically • send in case of change to 0 and cyclically
Sending cycle (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h

8 bit status collection:

Object „8 bit status collection“	<ul style="list-style-type: none"> • do not send • send in case of change • send in case of change and cyclically
Sending cycle (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h
Bit 0 = reset status of the line Bit 1 = overload	= value 1 = value 2
Bit 2 = external overvoltage Bit 3 = internal overvoltage	= value 4 = value 8
Bit 4 = short circuit Bit 5 = overtemperature	= value 16 = value 32
Bit 6 = current threshold value exceeded Bit 7 = system defect	= value 64 = value 128

A combination of error messages is possible. If e.g. value 34 is transferred, then Bit 1 = Overload and Bit 5 = Overtemperature are set.

The value set in the menu „current threshold value“ (see next chapter) is used as **current threshold value**. The additional settings for hysteresis etc. are *not* taken into account for the status collection. Bit 6 „current threshold status exceeded“ is set, if the threshold value has been exceeded for 1 minute. The bit is immediately deleted again, if the threshold value is underrun.

Error log:

Use error log	No • Yes
---------------	----------

If the error log is used:

Object „message part 1“ sends signal:
Error no. (1 = latest error)

Object „message part 2“ sends signal:
Error type

Object „message part 3“ sends signal:
Date of error start

Object „message part 4“ sends signal:
Time of error start

5.1.3. Current threshold value

Use threshold value

No • Yes

If the threshold value is used:

Threshold value:

If the threshold value is set by parameter:

Threshold value is set by	Parameter
Threshold value in mA	0 ... 640
Hysteresis of the threshold value in %	0 ... 50

If the threshold value is set by communication object:

Threshold value is set by	Communication object
The value communicated last shall be maintained	<ul style="list-style-type: none"> • not • after restoration of voltage • after restoration of voltage and programming (Do not use for first commissioning)
Start threshold value in mA valid until 1. communication (only if the value communicated last is „not“ maintained or „after restoration of voltage“)	0 ... 640
Type of threshold change	<ul style="list-style-type: none"> • Absolute value with a 16 bit com.object • Increment/decrement with one comm. object • Increment/decrement with two comm. objects
Step size in mA (only with „increment/decrement“)	1 • 2 • 5 • 10 • 20 • 50 • 100
Hysteresis of the threshold value in %	0 ... 50

Switching output:

Output is at (TV = Threshold value)	<ul style="list-style-type: none"> • TV above = 1 TV - hyst. below = 0 • TV above = 0 TV - hyst. below = 1 • TV below = 1 TV + hyst. above = 0 • TV below = 0 TV + hyst. above = 1
Switching delay from 0 to 1	none • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching delay from 1 to 0	none • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching output sends	<ul style="list-style-type: none"> • send in case of change • send in case of change to 1 • send in case of change to 0 • send in case of change and cyclically • send in case of change to 1 and cyclically • send in case of change to 0 and cyclically
Send switching output in a cycle of (only if sending „cyclically“)	5 sec • 10 sec • 30 sec • 1 min • ... • 2 h

Blocking:

Use block of the switching output	No • Yes
-----------------------------------	----------

If the block of the switching output is used:

Use block of the switching output	Yes
Evaluation of the blocking object	<ul style="list-style-type: none"> • if value 1: block if value 0: release • if value 0: block if value 1: release
Value of the blocking object before 1. communication	0 • 1

Behaviour of switching output	
with blocking	<ul style="list-style-type: none"> • do not send telegram • send 0 • send 1

The behaviour with release of the switching output depends on the value of the parameter „Switching output sends ...“ (see „Switching output“)

Value of parameter „Switching output sends“:	Setting options „Behaviour of the switching output with release“:
in case of change	<ul style="list-style-type: none"> • do not send telegram • send status of the switching output
in case of change to 1	<ul style="list-style-type: none"> • do not send telegram • if switching output = 1 → send 1
in case of change to 0	<ul style="list-style-type: none"> • do not send telegram • if switching output = 0 → send 0
in case of change and cyclically	send status of the switching output (no selection)

in case of change to 1 and cyclically	if switching output = 1 → send 1 (no selection)
in case of change to 0 and cyclically	if switching output = 0 → send 0 (no selection)

Questions about the product?

You can reach the technical service of Elsner Elektronik under
Tel. +49 (0) 70 33 / 30 945-250 or
service@elsner-elektronik.de

We need the following information to process your service request:

- Type of appliance (model name or item number)
- Description of the problem
- Serial number or software version
- Source of supply (dealer/installer who bought the device from Elsner Elektronik)

For questions about KNX functions:

- Version of the device application
- ETS version used for the project



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