

# Shaft copying systems

<b>Evaluation unit</b>	<b>PSU02</b>	<b>Safety functions according to EN 81-20/21/50</b>
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The PSU02 evaluation unit is used in combination with the Ants LES02 or Ants LES03 sensors to implement elevator and safety functions according to EN 81-20/-21/-50.

In combination with the LES02 sensor, numerous elevator and safety functions can be implemented as the **Kübler Safe system LES02/PSU02**.

With the combination of the evaluation unit PSU02 with the sensor Ants LES03 and the Safety Gear Trigger SGT02, the electromechanical safety gear of the elevator system can also be triggered and monitored as the **Kübler Safe-System LES03/SGT02/PSU02**.



## Features and benefits

- Digitalisierung von Aufzugsanlagen**  
 Safe determination, transmission and processing of position and speed information of the elevator car.
- Safety circuit**  
 The PSU02 evaluation unit is a central component in the safety concept of every elevator system. It communicates with the elevator control system and opens the safety circuit via safety relays depending on the application or in the event of a fault.
- Smart Teaching – simple and safe**  
 In order to be able to digitally simulate the traditional shaft installation, we offer a Smart Teaching Unit with which, for example, the position of the emergency limit switches or the door zone information can be taught into the PSU02 via smartphone.
- Elimination of existing components**  
 Numerous components such as magnetic switches, ramps, roller limit switches can be eliminated thanks to the digitally available shaft information.
- Minimization of installation and maintenance times**  
 Reduced installation and maintenance times due to fewer components with their integration into the overall system. Even the mounting kit for the installation of code band and sensor is designed according to the „plug-and-play“ principle.

<b>Order code</b>	<b>PSU02</b>	8.PSU02	. 1121	. 2211
		Type		
<ul style="list-style-type: none"> <li>- Top-hat rail mounting</li> <li>- Interface profile CANopen Lift, DS417 V2.2.8</li> </ul>				

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## Technical data

### Mechanical characteristics

<b>Max. number of floors</b>	200
<b>Connection</b>	picoMAX® eCOM 3.5
<b>Switch-off time / System reaction time</b>	< 25 ms (incl. relay switching time)
<b>Housing (material)</b>	plastic
<b>Mounting</b>	top-hat rail mounting
<b>Dimensions</b>	L x W x H 116 x 96 x 31 mm [4.55 x 3.78 x 1.21"]

### Electrical characteristics

<b>Supply voltage</b>	24 VDC ±10 %, low voltage PELV
<b>Power</b>	< 10 W
<b>Internal interface</b> (between Ants LES02 and PSU02)	CAN proprietary, V1.0.0
<b>External interface</b> (between PSU02 and control)	CANopen Lift, DS417 V2.2.8

### Environmental conditions

<b>Protection acc. to EN 60529</b>	IP00 (min. IP20 when mounted in cabinet)
<b>Humidity</b>	< 90 % (non condensing)
<b>Working temperature</b>	-5 °C ... +55 °C [+23 °F ... +131 °F]
<b>Storage temperature</b>	-10 °C ... +70 °C [+14 °F ... +158 °F]
<b>Air pressure (operating altitude)</b>	800 ... 1013 hPa (up to 2000 m above sea level)

### Safety characteristics

<b>Classification</b>	SIL3
<b>PFH<sub>d</sub> value</b>	< 10 <sup>-8</sup> h <sup>-1</sup>
<b>Mission time / Proof test interval</b>	20 years

### Standards / Directives / Certificates

<b>Standards</b>	standards for elevators	EN 81-20/21/50
	EMC emission	EN 12015
	EMC immunity	EN 12016
	vibration resistance	EN 60068-2-6
	shock resistance	EN 60068-2-27
	environmental conditions	EN 60068-2-14
<b>CE compliant</b> in accordance with		
	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU
	Elevator Directive	2014/33/EU
<b>UKCA compliant</b> in accordance with		
	EMC Regulations	S.I. 2016/1091
	RoHS Regulations	S.I. 2012/3032
	Lifts Regulations	S.I. 2016/1093

## Realizable elevator and safety functions

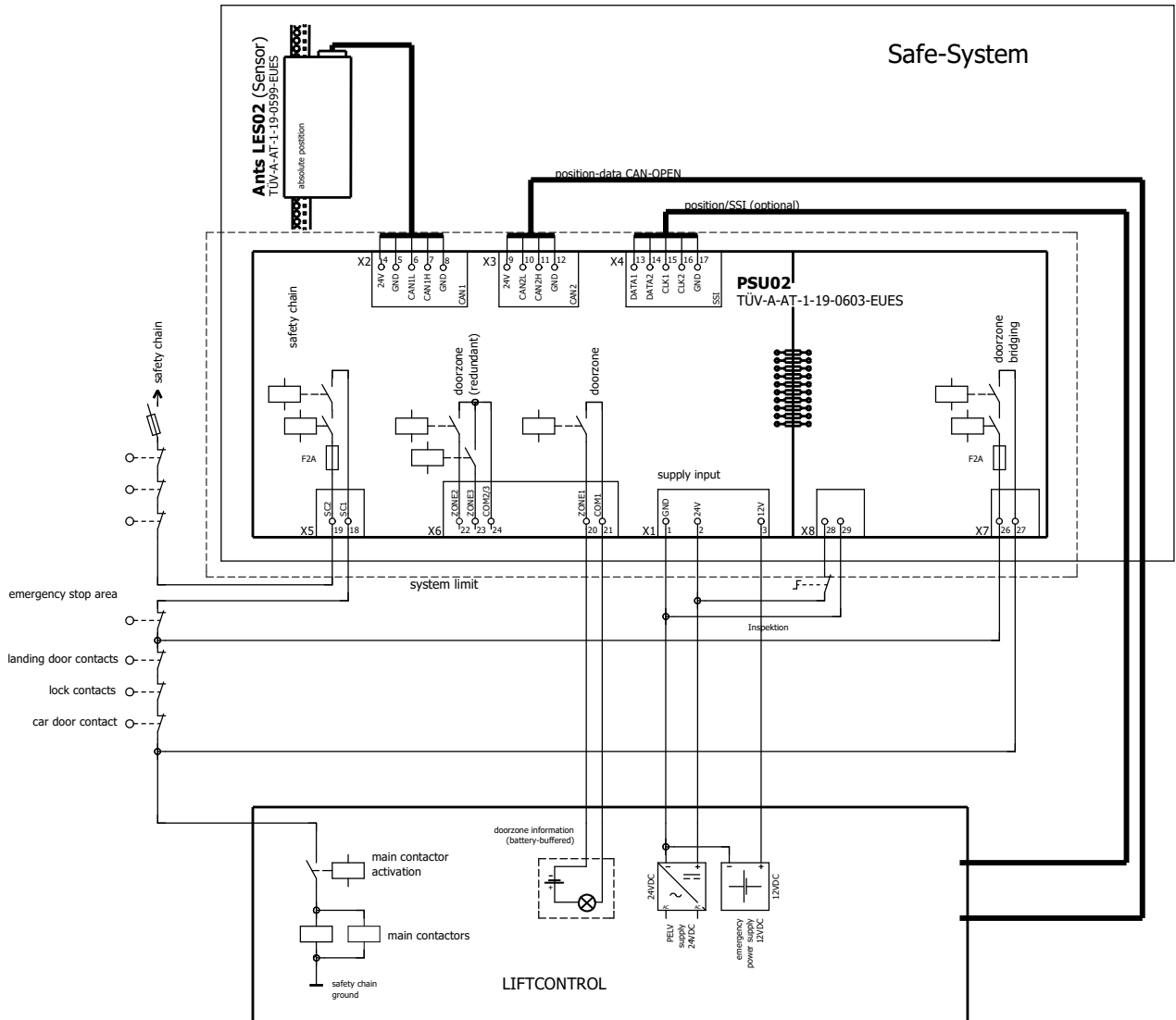
	Standard references	SIL	
<b>Absolute position feedback</b>	no standard reference	-	✓
<b>Final limit switch</b>	EN 81-20: 5.12.2.3.1 b)	1	✓
<b>Retardation control (in case of reduced stroke buffers)</b>	EN 81-20: 5.12.1.3	3	✓
<b>UCM (Unintended Car Movement)</b>	EN 81-20: 5.6.7.7	2	✓
<b>Door bridging</b>	EN 81-20: 5.12.1.4 a), b), c), 2), d)	2	✓
<b>Two redundant signals for the door zone (door zone magnet emulation)</b>	no standard reference	-	✓
<b>Overspeed pretripping 115 %</b>	EN 81-20: 5.6.2.2.1.6	2	(✓) functional
<b>Inspection limit switch within reduced shaft head / pit</b>	EN 81-21: 5.5.3.4, 5.7.3.4	2	✓
<b>Functional safety already from wiring (without presetting)</b>	no standard reference	3	✓
<b>Overspeed during inspection (0.63 m/s)</b>	EN 81-20: 5.12.1.5.1 e)	-	✓

1) Reference is the nominal speed of the elevator facility.  
2) The sensor switches to error mode for speeds > 12 m/s.

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## Wiring diagram Safe-System



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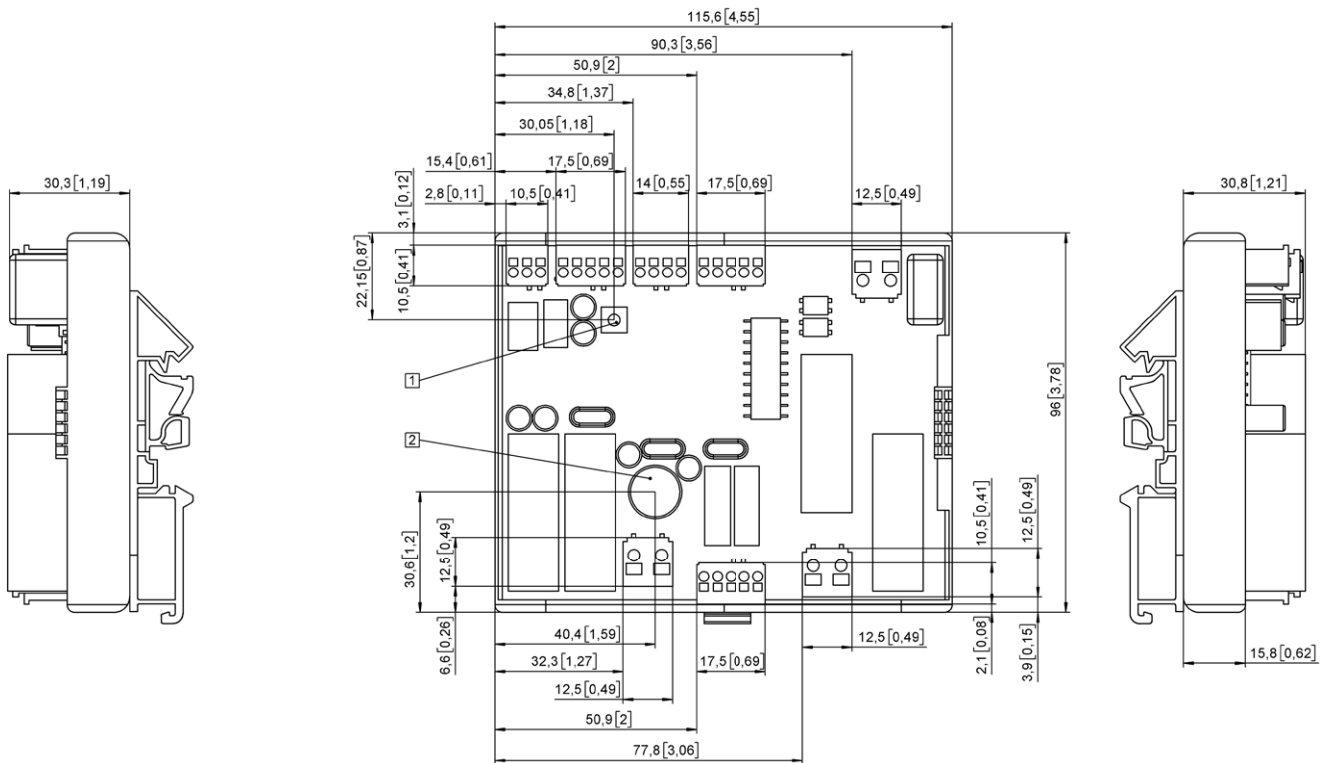
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## Dimensions

Dimensions in mm [inch]

### Evaluation unit PSU02

(Installation on all DIN EN top hat rails)



- 1 Pushbutton
- 2 Signal generator