



# KonboX<sup>®</sup> – The Wiring System for Elevator Shafts

An Innovation for Saving Time and Increasing Reliability

# Smart Solutions for State-of-the-art Elevator Applications

Whether your application involves passenger or freight elevators, low-rise buildings or multi-level structures, increasingly complex architectural designs set high requirements for suitable lift technologies. Until recently, the traditional installation of the necessary electrical control systems has remained a laborious and time-consuming task. One only has to consider the preparation of the wires and connectors, the installation of cable ducts, or the hanging of cabling in shafts – the costs involved add up quickly. This is without taking into account potential faults in the various installation steps; the resultant analyses and corrections cost additional time and money.

Such problems are now in the past. As a professional partner in this field, and one of the leading suppliers of electrical connection technologies, Weidmüller can offer you smart solutions that have been developed through intensive market research precisely for elevator applications.



# KonboX<sup>®</sup> Makes the Difference

Our latest innovation is called KonboX<sup>®</sup> – a trend-setting, shaft wiring system that reduces installation time and the number of components required, while increasing the overall safety level of the entire installation. In this manner, KonboX<sup>®</sup> sets standards – it optimizes your installation processes and cost situation, thereby giving you a jump on the competition!

The advantages of the KonboX<sup>®</sup> result from a smart combination of several ingenious components that have been specially designed to meet your needs:

- **PUSH IN connection technology – quick and reliable**

This unique Weidmüller design allows for secure connections in terminal blocks – fast and simple. You just stick the conductor with removed insulation in the connection point – you're done!

- **Twin-piercing contacts – double strength**

Through further development, the performance of piercing contacts has been improved. The innovation is based on the twin-pointed contacts between which the strands of the wire are clamped. Thus, the number of points of contact is doubled and the reliability is increased. In comparison, standard, single point piercing connections maintain the contact through the hold of the outer plastic insulating material; this is less than optimal since the copper strands tend to be pushed aside and not held in position. With two piercing contacts, a secure connection of the cable is guaranteed over time as result of the clamping of the conducting strands between these contacts.

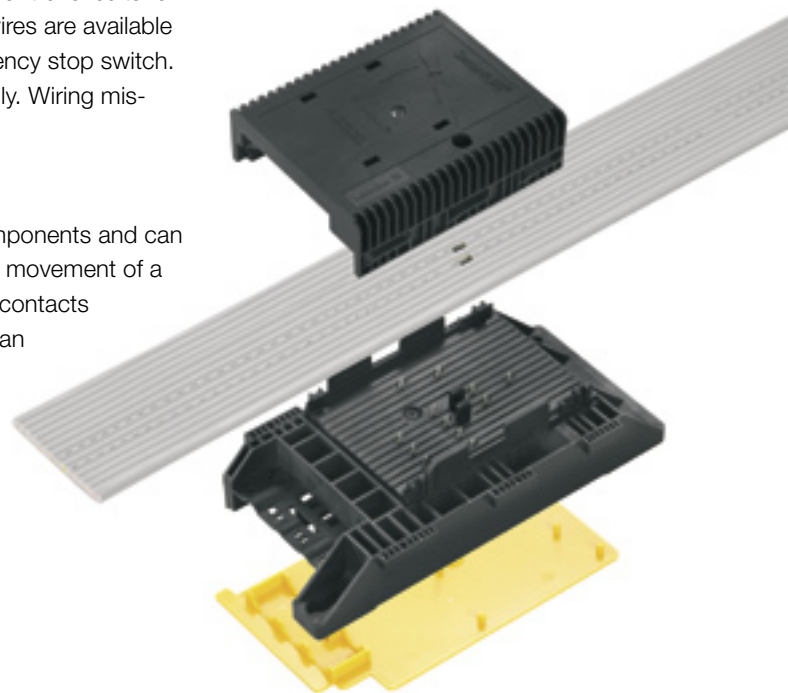
- **14-pole flat cable – all in one**

One cable instead of a bunch of single wires: You can wire the control circuits for the doors, bus system and lighting in one go. In addition, four wires are available for other functions, e.g., maintenance applications or an emergency stop switch. Thus, you can do the installation work quickly, securely and easily. Wiring mistakes can so be eliminated.

- **The enclosure – quality all around**

The robust and compact enclosure holds together all of the components and can be fastened together without the need for screws. The lever-like movement of a standard screw driver is all that is required in order to make the contacts and close the housing. It could not be simpler! If required, you can install the box already pre-wired in a doorway frame.

The combination of these components yield advantages in numerous ways.



# Convincing Advantages

When deciding to apply a new technology, you start off by focusing on certain considerations involving costs and handling:  
Can the amount of time and so the installation costs be reduced?  
Is it possible to save on the materials involved?  
Can the installation process be simplified?  
How can reliability be increased?  
Is it possible to reduce wiring mistakes?

With KonboX® all of these questions can be answered with a clear "YES"; this product offers substantial added value in comparison to standard wiring practices ...

- ... less time
- ... increased reliability
- ... and improved handling

In sum, the convincing product features, that are described on page 5, result in the following profitable results:

- Substantial reduction in shaft installation time
- Decrease in the number of components required, i.e., savings in material costs
- Simple and fault-free assembly in the shaft or through pre-configuration
- Reliability through fixed contact positions
- Simplified project planning

Take advantage of these points: Increase efficiency and reliability; decrease installation and material costs; add to your margins. Simply put: Expand your base of satisfied customers through advantages in comparison to the competition.



## Your biggest advantage: Saving time

Time is money, and the KonboX® is your box for savings. You reduce the amount of time necessary in installation through the simple placement of the flat cable with the attached boxes. But that's not all ...



### 1 Quick wiring

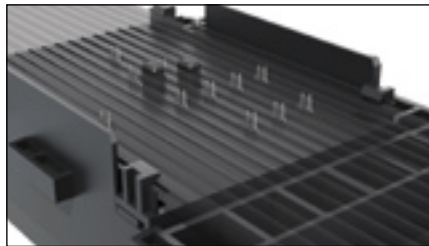
- The direct connection technology PUSH IN: Fast and reliable contacts at all levels
- Additional strain relief for the wires

### 2 Fast assembly

- Contacting of the flat cable wires takes place inside the KonboX® through a single lever-like hand movement
- An innovative solution – without the need for tightening of screws

## Better with a high degree of certainty

Be on the safe side – through the use of the double-piercing contacts. The lever-like closing of the protective plate that pushes down on the flat cable establishes the electrical contacts. There are even more arguments that will surely convince you ...



### 3 Reliable contacts

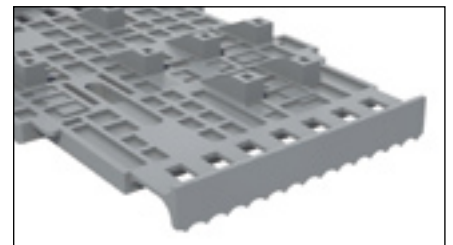
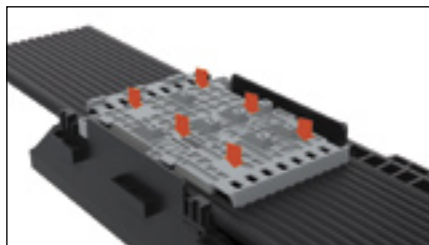
- Optimal contacting of the cable with the innovative twin-piercing technology
- No loosening of the contacts over time, i.e., maintenance-free

### 4 High-quality cable

- The robust and double-insulated flat cable protects the wires in the elevator shaft
- Precision cable manufacturing guaranteed

## Simple handling

With a single motion of the hand, the KonboX® is connected. Furthermore, all components are locked securely in place without the need for any tightening. We strive to make things easy for you and so have added yet more value ...



### 5 Practical installation

- The flat cable is simply positioned in the box and then fixed in position by the lowering of the pressing plate
- Simple assembly – without the need for screws

### 6 Strain-resistant connections

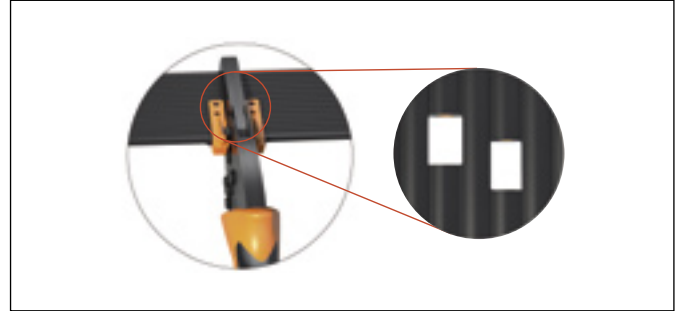
- The pressing plate holds the flat cable uniformly in position and guarantees strain relief
- Optimized handling during the installation process

# Handling and Use



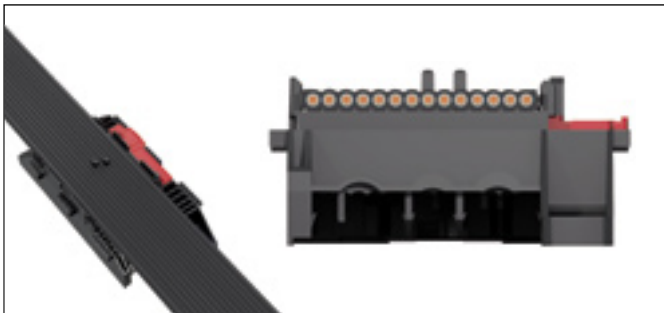
## 1 The KonboX® unit: Ready for connections

The basic unit of the KonboX® is shipped ready for use. The wiring can be done on site or during pre-configuration.



## 2 Breaking of the protective circuits

In order to break the necessary protective circuits, we offer a corresponding hand tool for the cable stamping function. This provides for a clean and reliable cutting through of the wires involved with a single pressing together of the tool.



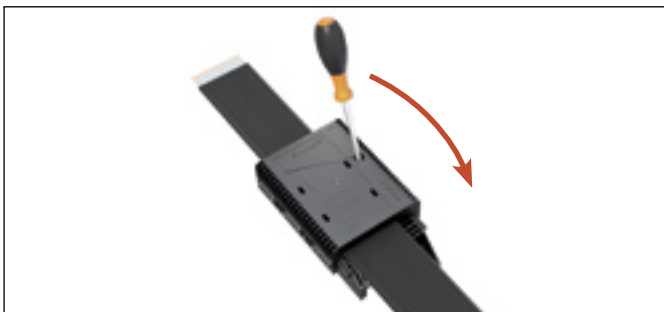
## 3 Placement of the flat cable

After the preparation of the flat cable, it is laid into position in the box. The insulating pegs guarantee the correct orientation of the flat cable.



## 4 Removal of the protective mechanism for transport

After the flat cable has been inserted, the device that protects the double-piercing contacts is simply removed.



## 5 Making the connections in the KonboX®

The patented contact mechanism of the KonboX® allows for the making of the connections to the cable through a single, lever-like motion with the use of a screw driver.

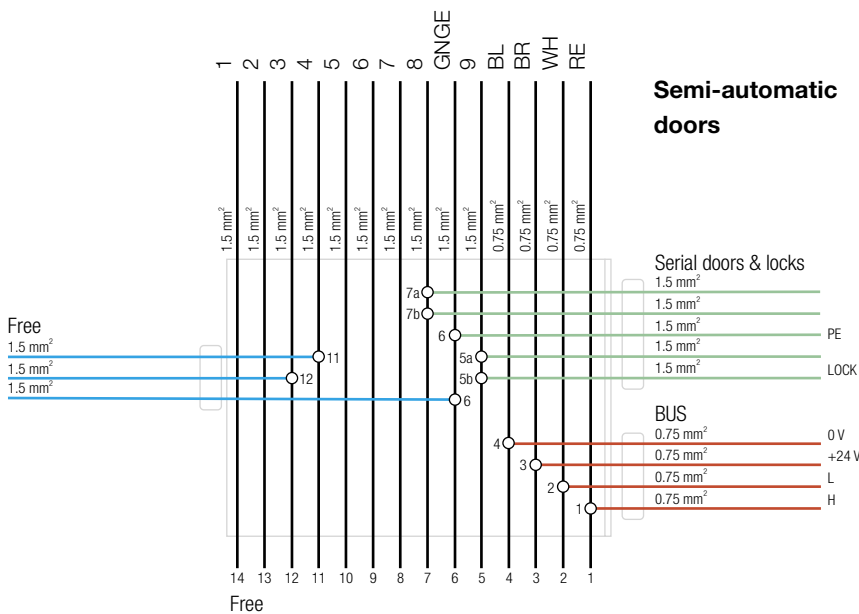
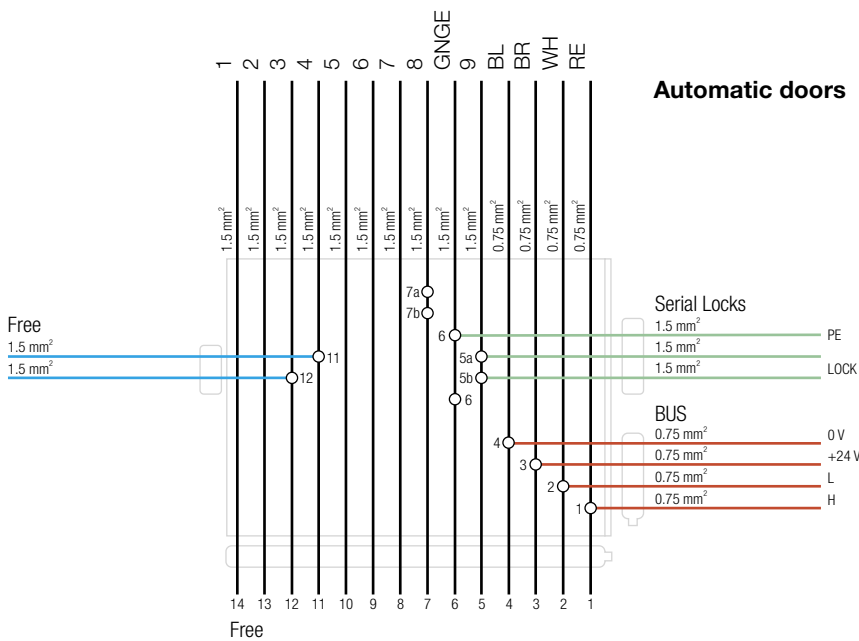
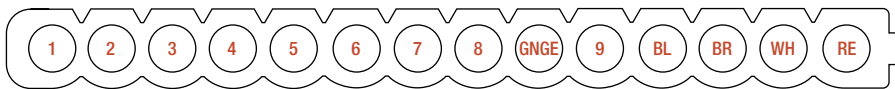


## 6 Installation in the shaft

After the connections are made, the box is simply mounted either in the shaft with the use of screws or within the appropriate space in the elevator door frame.

# Examples of Wiring

The key component of the KonboX® is the 14-pole flat cable that makes a bundle of single cables obsolete, and so guarantees additional flexibility and reliability. Our example of circuit wiring clearly shows that with this system you will have your installation under complete control – from floor to floor, level for level.



With elevator control applications without a bus system, the Easy Wiring function of the KonboX® allows for a simple and quick solution for realization at all levels.

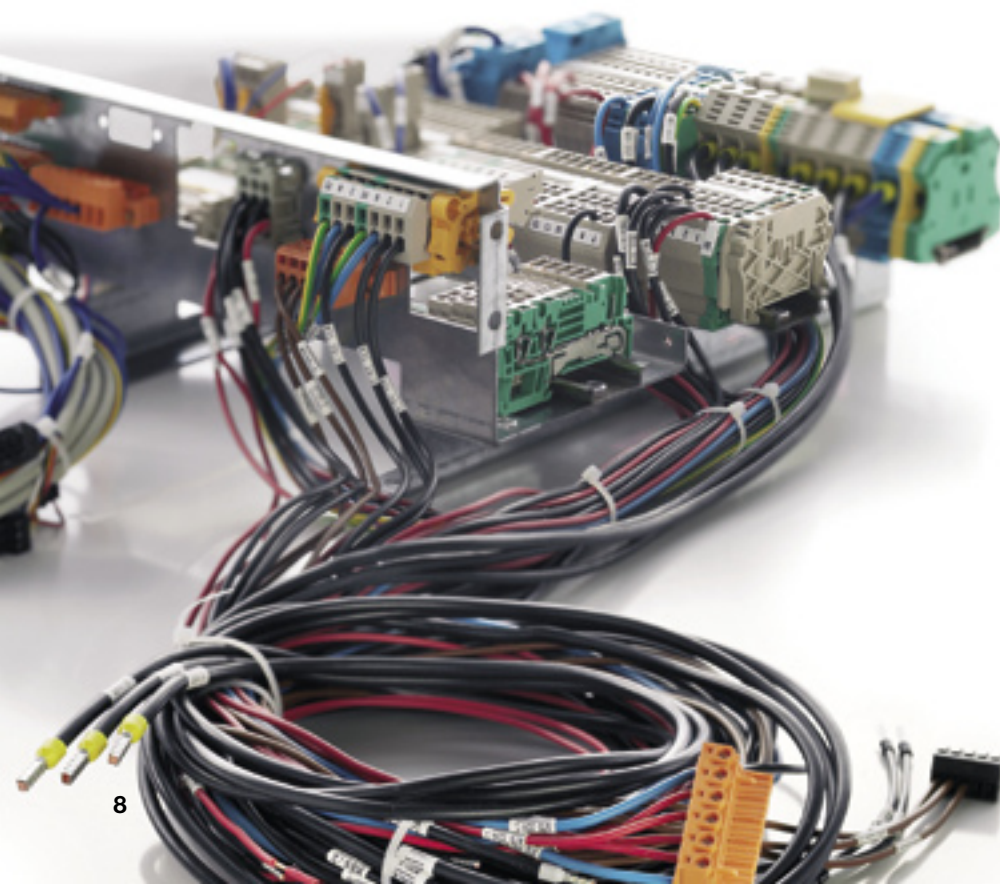
# Customer Specific Solutions

As a leading manufacturer of electrical connection technology components, Weidmüller has concentrated its efforts on implementing individual solutions based on specific needs. The focus of our philosophy is always on the customer. You specify your needs, and we develop the optimized concept for your success: From development consultation, to product configuration, to manufacturing and logistics solutions.

You profit from our broad range of services:

- Manufacturing of mounting rails and housings, as well as pre-configured terminals blocks and other devices
- Variety of housings with different cable entry points
- Diverse Markers for terminals, cables and housings – all according to customer needs
- Expertise in the use of diverse housing materials such as aluminum, plastics, sheet metal and stainless steel
- Flexibility in the choice of components: We integrate the products that you have chosen, such as cables and switching devices
- Pre-configured devices for building systems, for example, heavy-duty as well as printed circuit board connectors
- Customer-specific modifications of electronic devices such as switching power supplies, signal converters and transmission devices
- Pre-assembled cable harnesses – an option for KonboX® applications

Our certified manufacturing guarantees a constant high level of quality.



# Cable Types for Use in the Konbox®

The flat cable that is installed in the shaft replaces the manual configuring of cable harnesses as well as the need for ducts. An emphasis has been put on the design of a robust, double-insulated flat cable. For the manufacturing of this precision product, Weidmüller has selected cable suppliers that meet the highest level of quality.

You have a choice between the following:

**Cable with VDE approval**



**Cable without VDE approval**



For technical details of these cables, please see the product overview on pages 12 and 13.



# Easy Wiring: Installation Made Simple

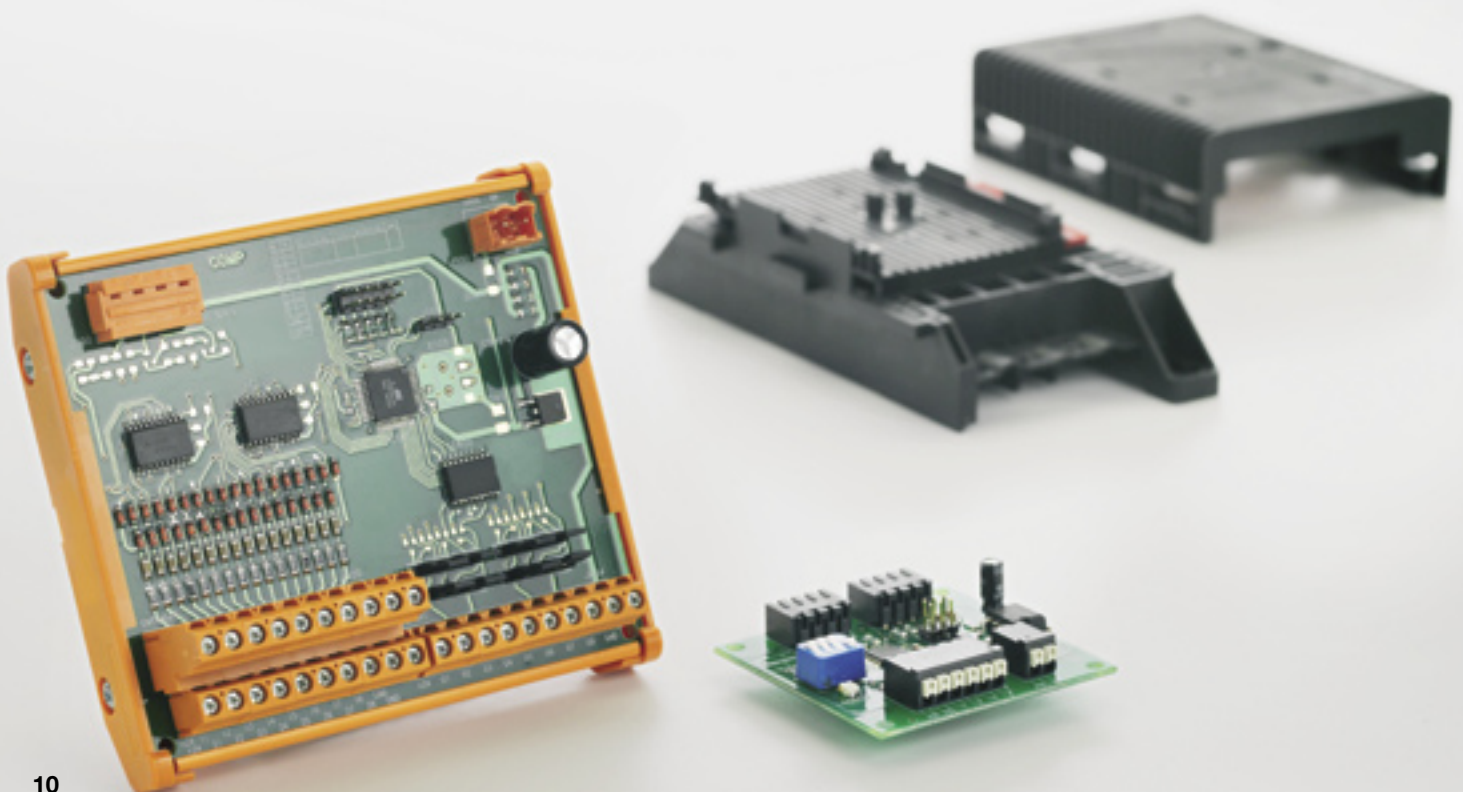
In elevator systems in which no bus system is used, the standard installation method involves labor-intensive wiring between the floors and the control cabinet. Especially in new installations of lift systems, the result is increased complexities and higher costs in individualized applications.

Easy Wiring with KonboX<sup>®</sup> solves these issues: The innovative system allows you to wire the floors with only four conductors and without the need for expensive field bus components. Through the use of the bus wires in the flat cable, there is the option to install as well as retrofit elevator systems. A modification of the circuitry is not needed. This new alternative offers you a solution to retrofitting existing elevators with KonboX<sup>®</sup> and Easy Wiring. This not only saves time, but also holds down costs.

## The advantages of Easy Wiring:

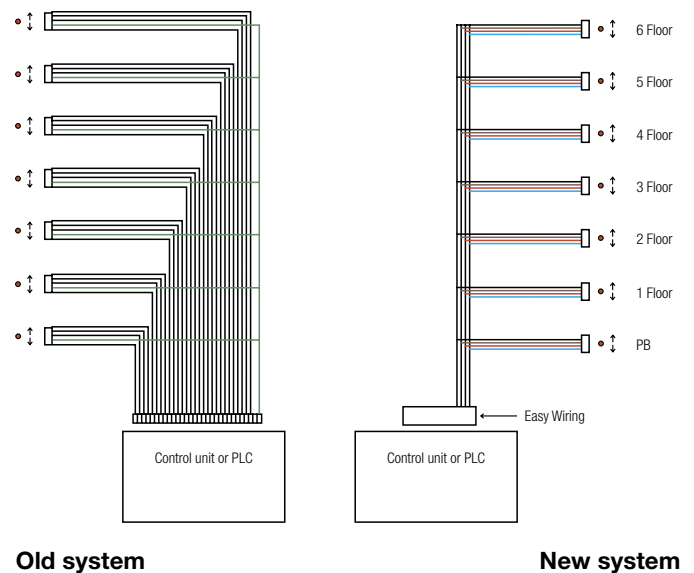
- More economical than bus-based systems on the market
- Simple installation without the need to change wiring in the electrical cabinet
- Use of the KonboX<sup>®</sup> also possible without a bus system

The era of complex wiring with field bus components has passed. With the use of four wires you can replace your current system and profit from Easy Wiring.



## Easy Wiring in the Application

The Easy Wiring master acts as the control unit and sets up a connection with its in- and outputs to the electrical cabinet of the elevator. Via a four-pole connection, ideally using the KonboX® flat cable, the separate floors are connected together through Easy Wiring slaves. Each of these floors can be equipped with a call button as well three further outputs such as up and down arrows, or an elevator location display. Finally, with the help of the included software, the system is configured according to the corresponding wiring plan.



## Housings for Use in Installations: Saving Time While Lowering Costs

In order to further simplify the task of wiring elevator shafts, Weidmüller has developed a line of housings for installations. These can be prewired and simply plugged in for total ease of operation.

The technical characteristics of such pre-configurations are matched exactly to the application using the KonboX®. The following significant advantages result:

- Elimination of additional wiring steps
- Reduction of the time necessary for installation
- Various housing sizes for flexible applications

Though, not always are such housings with standard dimensions the solution. In such cases, Weidmüller can custom develop housings with characteristics that match your needs.



**Weidmüller housing systems are the perfect solution for saving time and cost-efficient installation work.**

# Technical data KonboX®

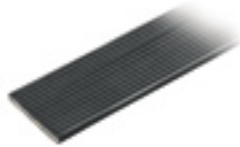


General data				
Manufacturer				
Part number	107306 0000	107314 0000	195195 0000	110129 0000
Article description	BASE UNIT 12C N	KONBOX SLIDER UNIT N	PROTECT COVER	KONBOX SET
Packing unit	20	20	20	1
Packing content				1 x base unit 1 x slider unit 1 x isolation plate
Protection class	IP20	IP20	IP20	IP20
Insulation material	Fibreglass reinforced polyamide	Fibreglass reinforced polyamide	Fibreglass reinforced polyamide	Fibreglass reinforced polyamide
Material color	Black	Black	Yellow	Yellow/Black
Silicon free	Yes	Yes	Yes	Yes
Halogen free	Yes	Yes	Yes	Yes
Temperature range	+10°C to +65°C	+10°C to +65°C	+10°C to +65°C	+10°C to +65°C
Flame resistant	V2	V2	V0	
Dimensions	KonboX® dimensions (when completely connected)			
	L: 157 mm			
	H: 46 mm			
	W: 88 mm			
Rated voltage	230 V	230 V		230 V
Rated current	2 A	2 A		2 A
Rated impulse withstand voltage	4 kV	4 kV		4 kV

Clamped conductors (PUSH IN connection elements)			
Solid/stranded	1 – 1.5 mm <sup>2</sup>		1 – 1.5 mm <sup>2</sup>
Flexible with wire end ferrule	1 – 1.5 mm <sup>2</sup>		1 – 1.5 mm <sup>2</sup>
Stripping length	12 mm		12 mm

A sample set can be ordered that includes the KonboX® (base unit, slider, insulating plate) as well as a 0.3 meter piece of flat cable manufactured by the company Dätwyler under the article number 110133 0000.

These products can only be used with the hand tools and flat cables described in this table.

**KonboX® flat cable****Stamping tool  
PTA 14****Screw driver****General data**

Manufacturer	Dätwyler Cables	Caesma		
Part number	-	-	196889 0000	900901 0000
Article description	Type 8869-F	M/W651415	PTA 14	SD 1.2x6.5x150
Packing unit	1,000 meter spools	1,000 meter spools	1	1
Temperature range for installation	+10°C to +65°C	+10°C to +65°C		
Operating temperature	-15°C to +70 °C	-20°C to +70°C		
Dimensions	53.0 x 4.9 mm	53.0 x 4.8 mm		
Outer sheath material	PVC	PVC		
Outer sheath color	Grey	Black		
Flame behaviour	Self-extinguishing according to IEC 60332-1-2	Self-extinguishing according to IEC 60332-1		
VDE number	VDE Reg. Nr. 8241	-		
Liftinstituut certification	NL 08-400-1002-112-01 (in conjunction with the KonboX®)	-		
Number of cores	14	14		
Protective earth conductor	Yes	Yes		
Conductor isolation	PVC	PVC		
Conductor material	Copper	Copper		
Cross section	4 x 1 mm <sup>2</sup> 10 x 1.5 mm <sup>2</sup>	4 x 1 mm <sup>2</sup> 10 x 1.5 mm <sup>2</sup>		
Rated voltage U <sub>0</sub>	300 V for 1.0 mm <sup>2</sup> and 1.5 mm <sup>2</sup>	300 V for 1.0 mm <sup>2</sup> and 1.5 mm <sup>2</sup>		
Rated voltage	500 V for 1.0 mm <sup>2</sup> and 1.5 mm <sup>2</sup>	500 V for 1.0 mm <sup>2</sup> and 1.5 mm <sup>2</sup>		

# Standard Products

The following represents merely an overview of some of the diverse and innovative products of the Weidmüller product range. Should you need further details, please contact us, and we will provide you with descriptive materials.

## Compactness newly defined: The standard printed circuit board component S2L/B2L 3.5



- Most compact in its class for connections of 1.0 mm<sup>2</sup> wires
- Pitch of 3.5 mm in two rows
- Tension clamp connections rated to 150 V/10 A
- Pin headers for use in wave reflow soldering processes with optional flanges
- Terminal block with optional lever for release

## The multifunctional quick-connect PCB terminal block LSF-SMT – simple, reliable and cost-effective



- Small in its dimensions but with surprising performance
- Compact size and fastest connection installation through spring contacts and push buttons
- Highly secure hold through a self-adjusting spring mechanism
- High current carrying capacity rated to: 17.5 A/800 V (IEC)
- Six-step pitch range from 3.5 to 7.62 mm (0.138 – 0.300 inch)
- Three directions of wire insertion with respect to the printed circuit board (90°/135°/180°)
- LCP material that is resistant to high temperatures (suitable for reflow soldering)
- Available in tape or tube packaging with either 1.5 oder 3.5 mm pins

## Universal connection system BLF 5.0x for both signals and power



- Connection technology PUSH IN: Simple, quick and reliable
- Compact dimensions with a large wire clamping capacity: Cross-sections from 0.2 mm<sup>2</sup> to 2.5 mm<sup>2</sup>
- User-friendly in its design and operation: Self-explanatory and without the need for tools
- Innovative locking and patented release mechanism
- Secure conductor clamping: Also in combination with wire ferrules and plastic collars

## Power on board – 100% performance, 100% reliability, 100% integration



- 100% scalable: Power capacity of up to 1 kV/76 A in four classes of performance
- 100% secure: Protection against incorrect insertion, plus “Wire Guard”, plus coding with six combinations
- 100% flexible: Four types of application, three directions of wire insertion, two types of connection technologies
- 100% reliable: Maintenance-free screw or spring clamp connections for operating conditions of up to 125°C
- 100% applicable: Integrated design, quick locking mechanism, broad assortment of system accessories

## WeiCoS



- Multifunctional and flexible for mounting on rails, in housing walls, or simply plugging together
- Secure connections through the separation of electrical and mechanical functions in the product design
- Simple and quick installation on site through pre-configured and coded connectors

## PUSH IN technology



- Time saving PUSH IN connection technology
- 3 = 5: Three product sizes for the wiring of five conductor cross-sections
- 100% secure: Conductors with removed insulation or wire ferrules can simply be inserted in the contact points – you're done!

## MultiCard



- Modern and innovative marking system
- More than 150 variations possible
- For equipment, cable as well as terminal marking
- Area reserved for project-specific labeling with printed details
- Customer-specific printing available at short notice

## stripax®



- Cutting and removal of insulation from finely-stranded and solid conductors with PVC insulation
- Insulation removal from wires ranging from 0.08 to 6 mm<sup>2</sup>; conductor cutting up to 6 mm<sup>2</sup>
- Clean removal of insulation through multiple cutting edges
- Adjustable for use with diverse insulating material strengths
- Single conductor strands are held together during processing
- Constant, high-precision results

## PRO-M switching power supplies



- Thin, space-saving, metal housing that can be placed in rows directly next to each other
- For use in diverse applications; internationally approved product
- Simple power increase through series connections of up to five modules without a diode module
- For every application, the matching power supply: A broad product portfolio, a diverse operating temperature range, high efficiency with additional reserve power

## RIDERSERIES



- The relay couplers of the RIDERSERIES with industrial strength pinning, and base, which includes PUSH IN connections, for one or two change-over contacts
- Pluggable, two-pole, cross-connections for simple potential distribution
- PUSH IN connections for two 1.5 mm<sup>2</sup> cross-sections
- Relay with an optional integrated test button, LED status display and diode
- Robust design for industrial environments

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Argentina	Indonesia	Saudi Arabia
Australia	Iran	Serbia
Austria	Ireland	Singapore
Azerbaijan	Israel	Slovakia
Bahrain	Italy	Slovenia
Belarus	Japan	South Africa
Belgium	Jordan	Spain
Bosnia and Herzegovina	Kazakhstan	Sweden
Brazil	Korea	Switzerland
Bulgaria	Kuwait	Taiwan
Canada	Latvia	Thailand
Chile	Lebanon	Tunisia
China	Lithuania	Turkey
Colombia	Luxembourg	Ukraine
Costa Rica	Macedonia	United Arab Emirates
Croatia	Malaysia	United States
Czech	Malta	Uruguay
Denmark	Mexico	Uzbekistan
Ecuador	Moldova	Venezuela
Egypt	Netherlands	Viet Nam
Estonia	New Zealand	
Finland	Norway	
France	Oman	
Germany	Pakistan	
Great Britain	Peru	
Greece	Philippines	
Hong Kong	Poland	
Hungary	Portugal	
Iceland	Qatar	
India	Romania	
	Russia	

**Weidmüller is the leading provider of solutions for electrical connectivity, transmission, conditioning and processing of power, signals and data in industrial environments. The company develops, produces and sells products in the field of electrical connectivity, functional electronics and communication electronics. Weidmüller's product and service portfolio is dedicated to add value to the products and thereby the business of our customers. The Weidmüller Group has a global focus with its own manufacturing plants, sales companies and representatives in over 70 countries.**

Order number:

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