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Multifunctional Enclosure System

Full Functionality at the Enclosure Front

Manufactured by **DOLD**



KV 4600

Modular and innovative enclosure system

Ready for the future - the electronic DIN Rail mount enclosure series KV 4600 sets new standards in terms of modularity and functionality. All functions are integrated into the enclosure front, thus offering a high degree of flexibility for your electronics.

The multifunctional, modular enclosure system with overall widths of 12.5 / 17.5 / 22.5 mm are particularly suitable for modern control and industrial IoT applications as well as a number of other applications - including as a single stand-alone enclosure solution. Reduce your installation effort - with just a few enclosure components to the finished device. Increase your degree of automation - the push-in terminals meet the high requirements of the reflow soldering process. Individuality - customer-specific adaptations can be realized in a simple and cost-effective way.

Highlights:

- Module widths from 12.5 mm and different installation depths available
- Usage of up to two circuit boards per enclosure width
- High contact density due to the use of compact push-in terminals
- Light conductor concept - high display density with minimum space requirements
- Common bus concepts can be integrated into the bottom assembly
- Optionally sealable, tiltable front cover (manipulation protection)
- Optional mounting rail bus system (In-Rail-Bus)
- Easy and cost-effective realization of customer-specific adaptations



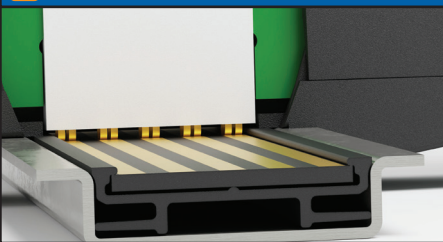
A Maximum Design Freedom

The available PCB surface can be fully used for component layout. Due to labyrinthine enclosure geometries between the circuit board and the outside edge, high creepage and clearance distances of up to 8 mm are reached (without ventilation slots).

B Circuit Board Arrangement

The mounting position of the circuit board is perpendicular to the DIN rail. It is possible to integrate up to two circuit boards.

C Optional Bus System Installation



Simply snap the mounting rail bus system (In-Rail-Bus) - and the device communication for power, signal and data transfer is ready. The contact spring block with gilded double-spring contacts can be soldered by machine and offers high contact reliability.

D Full Functionality at the Front



The large front area allows the individual arrangement of terminals and the integration of common communication interfaces (RJ45, D-SUB and USB connections, light conductors, radio, NFC and more).

E Three-part enclosure design



The optionally available division of the enclosure bottom into two functional units allows the installation of an additional PCB within the bottom assembly. This individually designable additional board ensures the manufacturer-independent, flexible, and easy integration of interfaces and communication components for module networking.

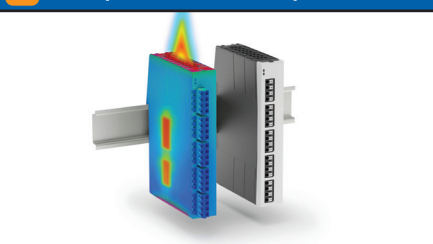
F Printing Options



Color printing available.

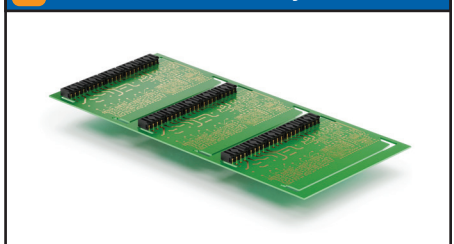
The enclosure offers a large surface area for individual and abrasion-resistant laser markings, pad or digital printing processes. Both the cover and housing can be printed to your specifications.

G Optimum Heat Dissipation



Lateral ventilation slots ensure optimum heat dissipation by free convection, thus allowing for applications with high thermal stress.

H Cost Efficiency



The PCB design allows for cost-efficient design, thus reducing material costs. Board space is also maximized with up to 9500mm² of surface area available.

KV 4600

Integrated fixed and pluggable connection technology

Highlights

- More connections on less width - up to 40 pins per 22.5 mm module
- The push-in terminal technology meets the high requirements of the reflow soldering process
- Quick, tool-free, direct and vibration-resistant connection of the conductors
- High mechanical stability and vibration resistance
- Pluggable push-in terminals 4-pin in 5.0 mm pin spacing
- Fixed push-in terminals 4, 6, 8, 10-pin in 3.5 or 5.08 mm pin spacing
- Optionally, each terminal connection can be assigned to a light conductor

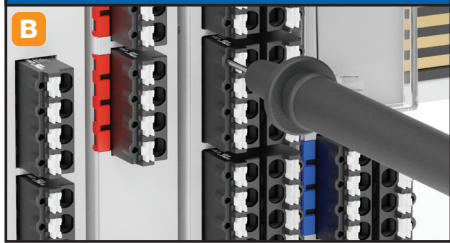
Customer Benefits:

- Full functionality at the enclosure front
- PCB surface up to 9500 mm² allows multiple applications and a cost-effective design
- Quick installation by simplified enclosure design
- High mechanical stability and vibration resistance

A Integrated Ventilation Slots

The different overall widths are available with or without ventilation slots.

B Quick Diagnosis with Pluggable Terminals



The integrated test point allows for a quick and easy diagnosis.

C Easy Installation



The enclosure design allows for a quick and easy installation by means of snapping.



D Quick Diagnosis with Fixed Terminals



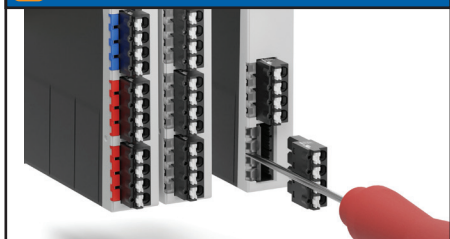
The integrated test point makes a quick on site diagnosis possible.

E Fixed Push-in Terminals



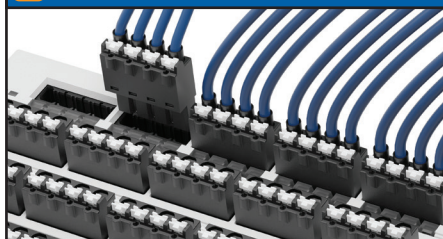
The push-in terminals, suitably packed for machine processing, meet the high requirements of the reflow soldering process and are available in 4, 6, 8, 10-pin versions in 3.5 or 5.08 mm pin spacing.

F Convenient Unplugging



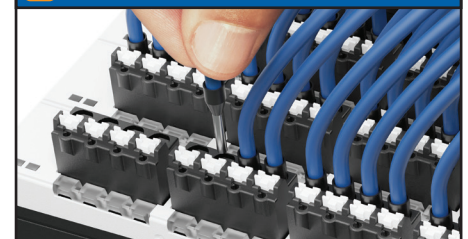
The optional integrated plug removal aid allows for the convenient unplugging of individual terminal blocks. An ideal solution for assemblies with high connection density and limited spatial conditions.

G Just Plug and Go



The pluggable terminal blocks arranged in line allow for the use of prewired leads. This saves time and improves handling. Coding of the individual terminal blocks is optionally available to effectively avoid wiring errors.

H Pluggable Terminals (Push-In)



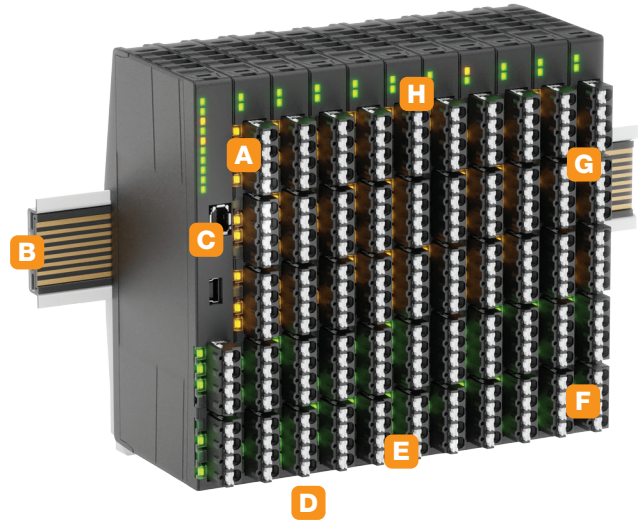
Tool-free installation of the conductor by pluggable push-in terminal technology in 5.0 mm pin spacing (4-pin). Our modular terminal technology makes the wiring quicker, easier and more reliable.

KV 4600

Smart and super compact electronic enclosures

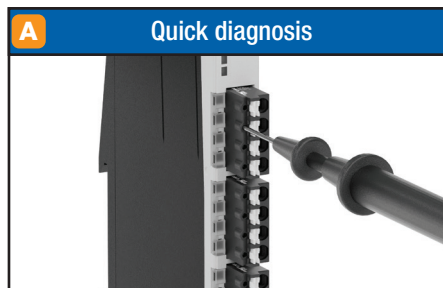
The I/O electronic enclosure is a variant of the enclosure series KV 4600 and excels with its super compact module width of only 12.5 mm and depth of 66 mm. The I/O enclosure is particularly suitable for modern control and industrial IoT applications, e.g. in the area of process engineering, and a number of other applications with confined space conditions.

The pluggable push-in connection technology is integrated from the front side. The wiring, reading of signals or the connection of plugs is therefore practice-oriented and convenient in the application. Device systems are often contacted and managed decentrally via bus systems. For this purpose, the I/O electronic enclosure offers connecting elements that are separately available and make it possible to link the individual modules.



Highlights:

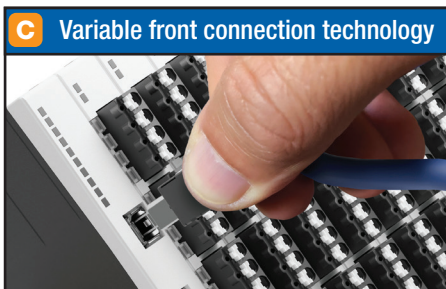
- Convenient front connection technology for the transfer of signals, data, and power
- Up to 20 inputs/outputs per module - 5 slots per circuit board
- Space-saving module width of only 12.5 mm with an installation depth of 66 mm
- PCB surface of 6429 mm²
- High mechanical stability
- Common bus concepts can be integrated into the bottom assembly
- Optionally, each terminal connection can be assigned to a light conductor



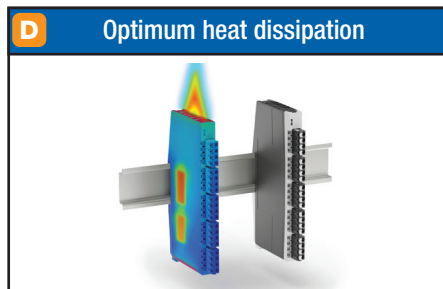
The integrated test point allows for a quick and easy diagnosis.



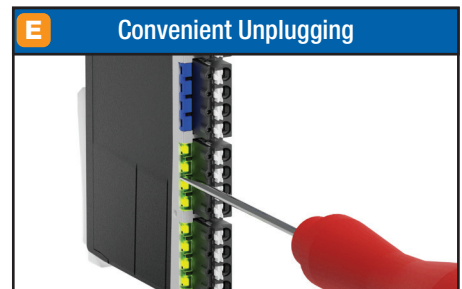
The optionally available mounting rail bus system, In-Rail-Bus, allows for the easy networking of system units by means of a bus PCB integrated into the mounting rail; it is available with 5 or 8 conductor paths.



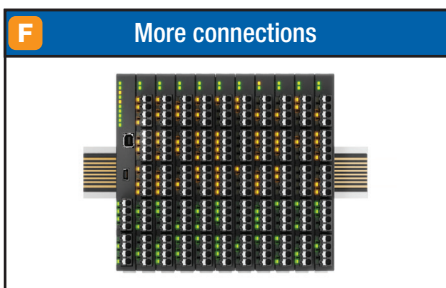
The variable front connection technology offers the opportunity to easily integrate common communication interfaces and connection sockets.



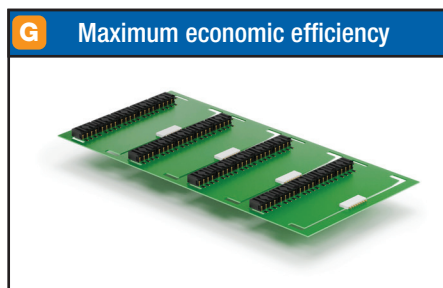
Lateral ventilation slots ensure optimum heat dissipation by free convection, thus allowing for applications with high thermal stress.



The optional integrated plug removal aid allows for the convenient unplugging of individual terminal blocks. An ideal solution for decentral assemblies with high connection density and limited spatial conditions.



Up to 20 connections in 5.0 mm pin spacing with only 12.5 mm overall width. The I/O modules can be extended as needed.








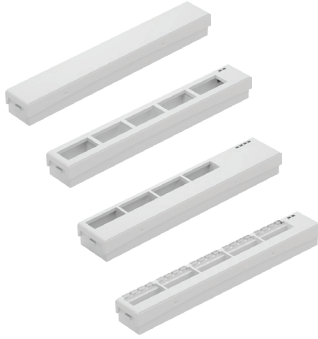


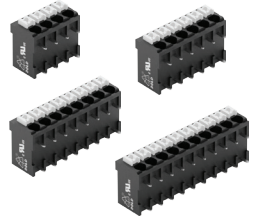

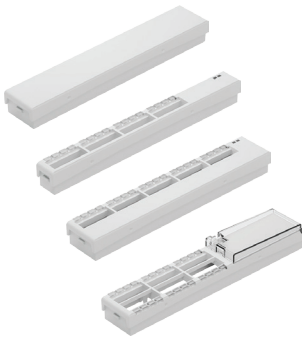


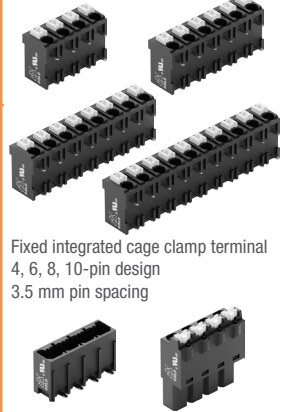
The enclosure, with its reduced installation depth of 66 mm, is customized for common I/O applications. The PCB design of more than 6429 mm², developed for these applications, increases the economic efficiency through cost efficient design.



Each terminal connection can be assigned to a light conductor. With an LED directly at the channel and status displays at every module, device faults can be localized immediately. Furthermore, the space-saving solution offers sufficient space for the individual labeling of the terminal points.

KV 4600

Overview of module parts

	Module	Front plate with variable breakouts	Enclosure frame + enclosure bottom	Enclosure base	Terminal technology
KV4612	 Width 12.5 mm		 Depth 66 mm		 Terminal block + pluggable cage clamp terminal 4-pin design 5.00 mm pin spacing
KV4603	 Width 17.5 mm		 Depth 92 mm	 Depth 92 mm	 Fixed integrated cage clamp terminal 4, 6, 8, 10-pin design 5.08 mm pin spacing
KV4604	 Width 22.5 mm		 Depth 92 mm	 Depth 92 mm	 Fixed integrated cage clamp terminal 4, 6, 8, 10-pin design 3.5 mm pin spacing Terminal block + pluggable cage clamp terminal 4-pin design 5.00 mm pin spacing

Please contact us for further configurable variants, coding options and accessories such as a sealable transparent cover (manipulation protection).

Are you in search of an individual electronic enclosure for your next device development? In this case, we have the right solution for you! Our enclosures are far more than mere packaging. They give your product a face, adapt to your requirements, offer functionality, and convince by design. Profit from existing tool inserts in combination with a clever tool concept.

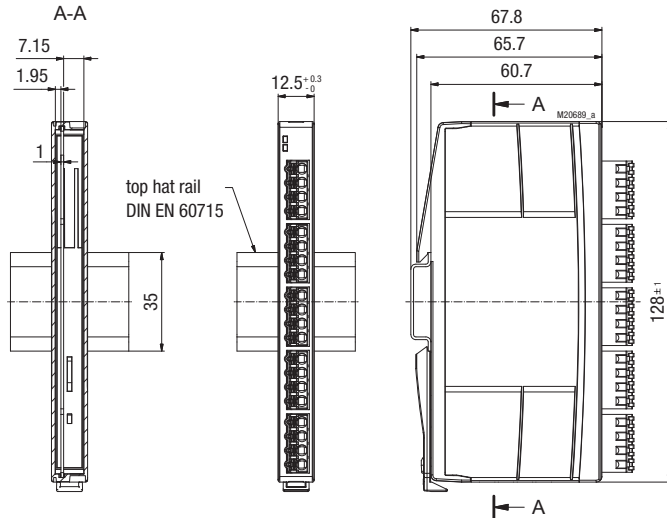


- 1 Definition of the enclosure width and depth based on your space requirements.
- 2 Design the front plate according to your needs. The large front plate offers space for the individual arrangement of breakouts. No matter if for terminals, light conductors, or integrated communication interfaces.
- 3 Define the number of terminal points. The push-in terminals are available with different numbers of pins and pin spacings of 3.5 and 5.08 mm. Alternatively, we also offer a pluggable model in 5.00 mm pin spacing. In order to avoid mismatching, they can optionally be supplied in pre-coded design.
- 4 Do you plan the networking of several module units? Our optionally available In-Rail-Bus system can be ordered with 5 or 8 conductor paths. Alternatively, common bus concepts can be integrated as well.
- 5 There are different accessories available. A variety of light conductor variants, grounding springs or sealable transparent covers. Further accessories on request.
- 6 Add custom marking. The front cover can be printed with your logo, terminal identification and more. It can even be printed in custom colors. The base of the enclosure has plenty of room to print instructions, diagrams or logos as well.
- 7 Send us your ideas as a sketch or a 3D-model. We will be happy to provide goal-oriented support for the design-in process.

KV 4600 Drawings

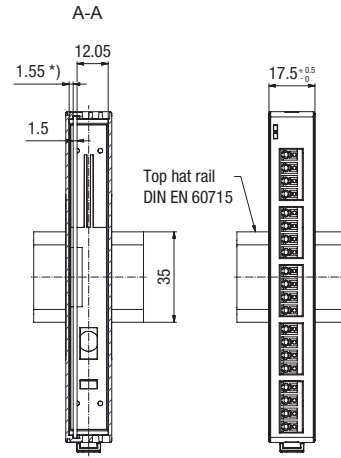
KV4612 Dimensions

Installation Spaces, PCB Position, Dimensions, Basic Structure, Sectional View



KV4603 Dimensions

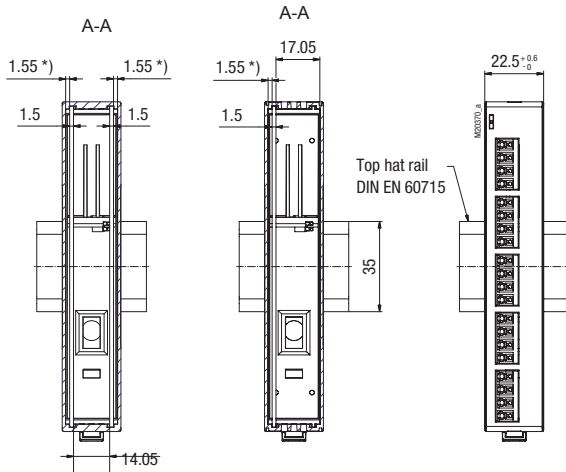
Installation Spaces, PCB Position, Dimensions, Basic Structure, Sectional View



*) 2.05 with printed circuit board thickness t = 1 mm

KV4604 Dimensions

Installation Spaces, PCB Position, Dimensions, Basic Structure, Sectional View

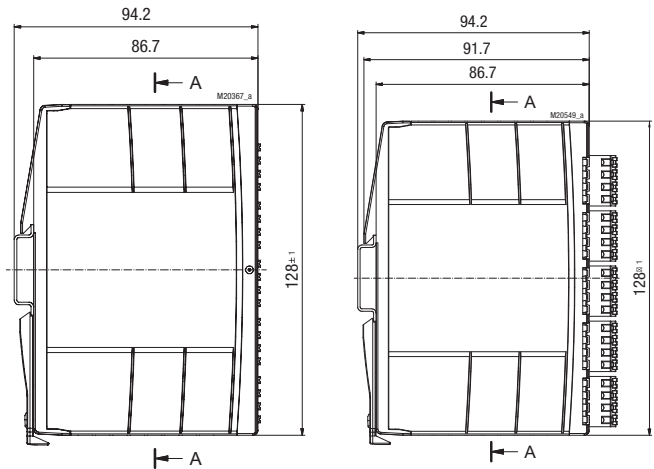


*) 2.05 with printed circuit board thickness t = 1 mm

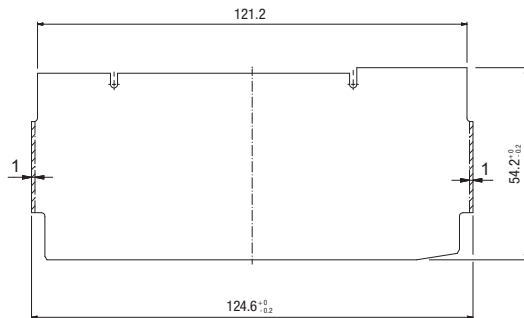
Side Dimensions of both KV4603 & KV4604

Fixed PCB Terminals

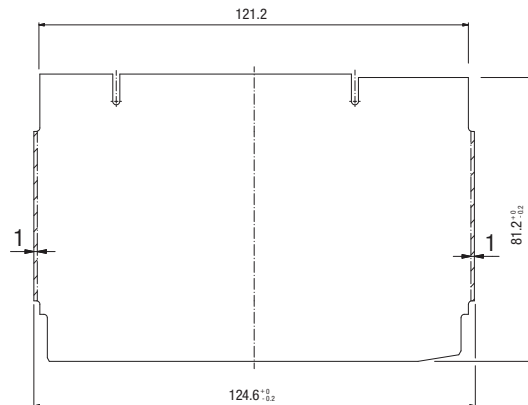
Puggable PCB Terminals



Blank PCB layout – KV4612



Blank PCB layout – KV4603 and KV4604



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DIN RAIL TERMINAL BLOCKS

Body in Housing
 Body in Housing
 Body in Housing