

OMNIMATE Housing

Housings for Electronics

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OMNIMATE Housing Housings for Electronics

The perfect platform for form and function – including terminal layouts, bulk products and “tailor-made suits straight off the rack”.

Weidmüller’s electronics provide a state-of-the-art platform for electronics applications: for all design types and usage areas. The application and its requirements are the foundation for the housing design:

Component housings using the standard pitch sizes are particularly well suited for standardised electrical cabinet applications.

Because of their excellent flexibility and variability, profile housings are the perfect solution for custom constructions and small-batch series.

The perfect blend of design, connection technology and functionality result in a design that is well tailored to market and application requirements.



Flexibility

Profile housing – the perfect solution for custom constructions and small-batch series.



Innovation

Attention to detail: with the integrated, captive “AutoSet” coding function.



Reliability

Weidmüller's legendary quality and well-established, proven connection technology guarantee maximum availability for your systems.



Efficiency

Reduce costs and increase productivity: SMT/SMD connectors packed suitably for fully automated production.

Component housing for mounting on rail



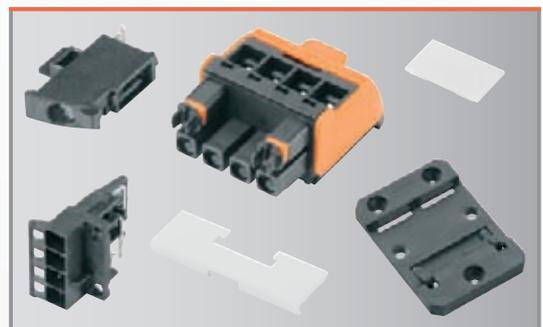
Component housing: function, form and processing all contribute to a single cohesive unit that offers safety, manufacturing efficiency and usability.

Assembly housing in profile shape



Assembly housing in profile shape - the flexible modular system of coloured and transparent plastic profiles and support modules provides the optimum balance between flexibility and efficiency.

Accessories



Comprehensive range of system accessories for integrating your assembled electronics "package" into the system environment - from attachment and connection to marking systems.

OMNIMATE Housing Orientation guide

Electronics housings

With 6 housing systems, Weidmüller's electronics housing portfolio offers a platform for electronic applications in any design and for all application areas.

Detailed design information and the most important product-related data is available on the respective product pages. Data sheets and CAD models are available online for download.

CH20M - Modular component housing Page I.6



WAVEBOX - Standard component housing Page I.34



System description (key points)

Scalability
Widths
Design
Production
Application

Connection system

Number of conductors that can be connected
Number of connection levels on each side

Design options

Housing design

PCB layout

Labelling & marking

Standard housing colours
(Other colours on request)

Additional features

optional (excerpt)

standard (excerpt)

Component housing system IP 20

- 7 housing widths from 6 to 67.5 mm:
- 6,1 / 12,5 / 17,5 / 22,5 / 35¹⁾ / 45 / 67,5
- individually configurable
- 100% reflow soldering compatible (automated)
- networked with mounting rail bus

Connectors (touch-safe both sides)

- 4 - 72
- 1 - 3



Individually configurable

- asymmetrical port configuration
- individual processing / modification
- large net layout space of up to 9000 mm²
- up to 3 flexibly positioned PCBs
- both sides can be fitted with components (underside: + 5mm)
- Pad & laser printing
- Device markers for female connector
- Device markers for hinged cover



Optional or standard

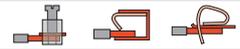
- Integrated mounting rail bus
- FE mounting rail contact
- Connection areas: lockable slots
- integrated, captive 16-fold "AutoSet" coding
- integrated ejector and plus / minus screws
- "Wire ready" and "wire guard" (protection against mis-inserting)
- transparent hinged cover, sealable

Component housing system IP 20

- 4 housing widths from 12,5 to 45 mm:
- 12,5 / 17,5 / 22,5 / 45
- Optional large-capacity front-module
- Wave solderable, partly reflow compatible
- in field removable electronics modules

Connector

- 4 - 24
- 1 - 2



4 standard versions:

- Option large capacity head element
- Option low height / depth
- net layout space of up to 8000 mm²
- up to 2 PCBs
- Double-sided installation
- Pad & laser printing
- Printable female plug
- Device markers for FRONT element



Optional:

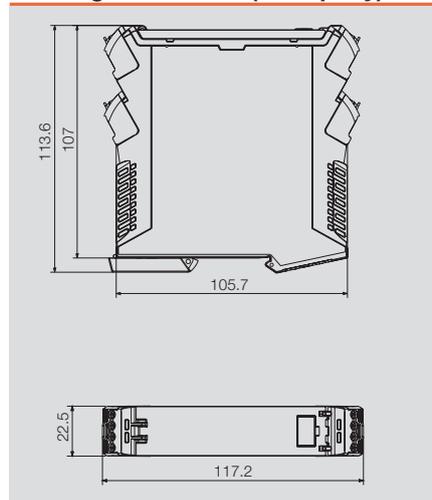
- Cross-connector 24 A / 2 pole top / bottom
- removable electronics modules

Legend of symbols

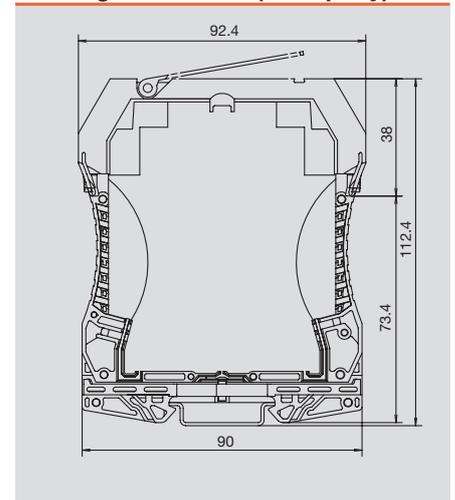


Note:: 1) on request

Housing dimensions (exemplary)



Housing dimensions (exemplary)



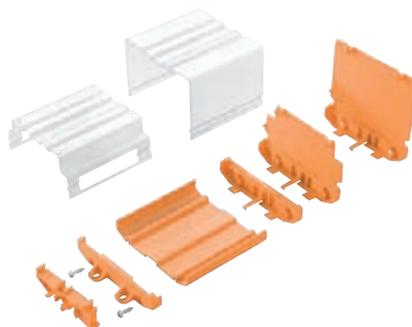
MICROBOX - Small housing
TERMINALBOX - Terminal housing

Page I.44



RS 45-122 Profile housing variable

Page I.48



RS 70 - Profile housing modular

Page I.48



Small housing IP 20

- MICROBOX: 6.1 mm
- TERMINALBOX: 6.0 mm
- Miniature plate housing
- Compact enclosure in terminal format
- e.g. for I/O-plate applications

Connection terminals

- 4 - 6
- 2 - 3



2 versions:

- MICROBOX: closed
- TERMINALBOX optionally with cover plate

- Pad-print printing



Optional:

- Cross-connector 32A

Variable extruded profile case IP 20

- Extruded profile cut to precise length
- Standard length 2m, optionally cut to size
- circuit boards 45 to 122 mm
- precisely cut lengths
- Modules protected with a clear cover

Female connectors or terminals

- as needed
- 1 - 3



Combinable and a perfect fit

- See-through covers in 2 sizes
- End plates in 3 sizes
- Standard circuit cards (EURO format)
- Up to 2 PCBs stackable
- Double-sided installation
- Pad-print printing
- Standard connector markings
- Marking strips for the cover hood



Optional:

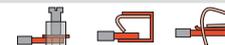
- direct mounting

Modular extruded profile case IP 00

- Extruded profile, stackable modular
- Elements of 5 / 10 / 15 / 25 / 30 / 45 mm
- for 68 mm circuit boards
- tool-free installation
- sub-assembly accessible when opened

Female connectors or terminals

- as needed
- 1 - 3



tool-free installation:

- 1 snap-on foot
- 5 different intermediate elements
- Standard circuit boards
- Double-sided installation

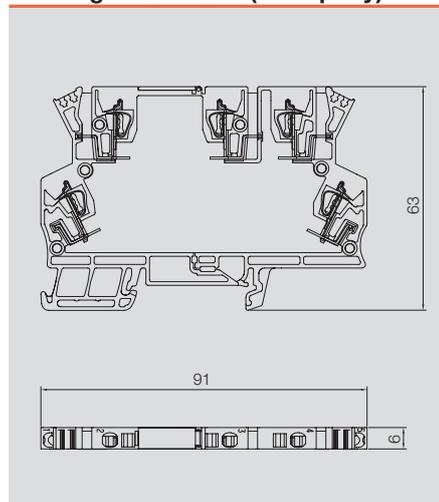
- Pad-print printing

- Standard connector markings

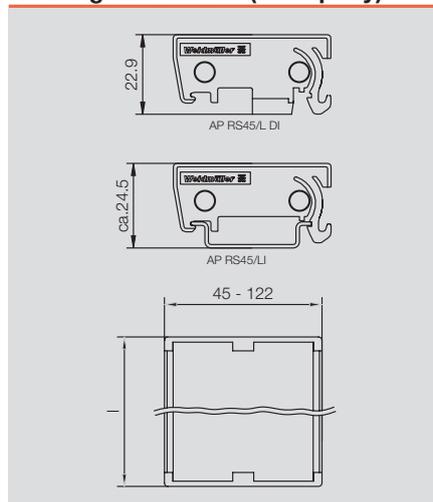


Optional:

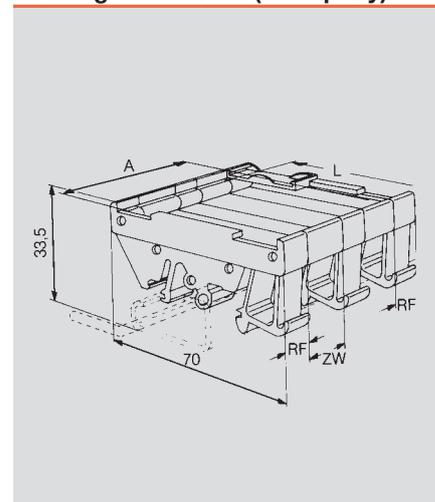
Housing dimensions (exemplary)



Housing dimensions (exemplary)



Housing dimensions (exemplary)



CH20M
Explanation

Individual design by combining form, function and appearance

CH20M (Component Housing IP20 Modular) – Weidmüller’s new housing standard – represents the ideal platform for basing customised electronic applications.

Like a “tailor-made suit straight off the rack”, the ground breaking module concept combines freedom in design with the low cost and planning security of a standard system.

In addition to scalability, a high level of safety and innovative functionality in the application, the system also convinces with superior attention to detail.

The results are quicker installation, user-friendly operation, high operational reliability and resistance to interference. From development to production, the CH20M represents efficiency. It covers all of the requirements for a modern electronics platform built with the future in mind.



Designed configuration

As many connections as you require and as affordable as you need: scalable connection levels, custom-configured for each side and available with six different housing widths and with up to 72 single wire connections.



Designed basic colours

With a focus on the important elements: the unobtrusive housing colours (black graphite, grey graphite and light grey) make a competent impression without distracting from the key operational and display elements.

Designed printing

Detailed symbols, data, graphics or text can be printed (with either laser or pad printing) on the large surface available on the housing element.



Designed functional colours

More operational confidence with functionally appropriate colour coding: three functional colours (red, yellow and blue coding) can be assigned to key industrial applications.



Designed optical appearance



The standard variants, with their modularity and variety, enable you to customise a wide range of designs to fit your application.

Designed functionality



Our comprehensive, standardised configuration variants can be further supplemented with modification and design changes to fit your custom needs.

Designed modifications

Modifying after the configuration: for example by integrating the pluggable 30-pole BL-I/O LED digital I/O connection level in the front or with the RJ45 socket on the side.



Power, signals and data are provided, connected and distributed securely and consistently

This customer-friendly bus solution brings power, signals and data to the rail in a quick and reliable manner. When supplying, connecting or distributing within modular applications, the rail bus can replace the tedious individual wiring process with a flexible and uninterrupted system solution. As a result, the wiring overhead and the error rate are both reduced. Redundant functions within complex applications can be efficiently centralised or intelligently distributed.



The system bus is securely integrated within the 35 mm standard mounting rail. The SMD-bus contact block can be reflow-soldered so that it can be completely automatically processed during the component assembly. The resistant, gold-plated contact surfaces ensure a permanent and reliable contact for all housing widths.



Scalability with no limits

Unique: The integrated connection solution covers all system widths: from the 6 mm slice to the 67 mm large-area housing.



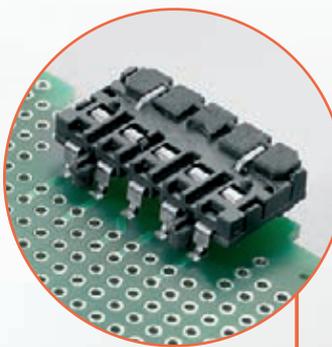
Easy to service during installation:

Quick: It's easy to replace a module, even in existing modules groups – without any influence on the neighbouring modules.



Unlimited configuration

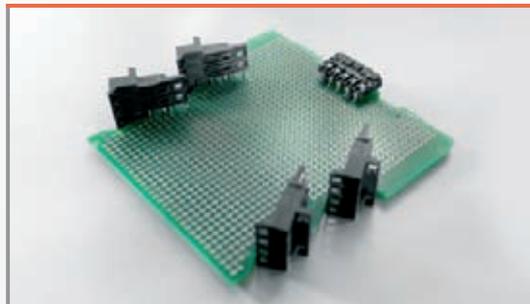
Compatible: The individual modules can be positioned anywhere on any TS-35 standard top-hat rail. Unused areas are safely covered.



State-of-the-art processing

Efficient: The SMD-compatible bus contact block is made from high-temperature-resistant LCP. It is designed for the SMT reflow process and is delivered in machine-ready packaging.

Affordable assembly



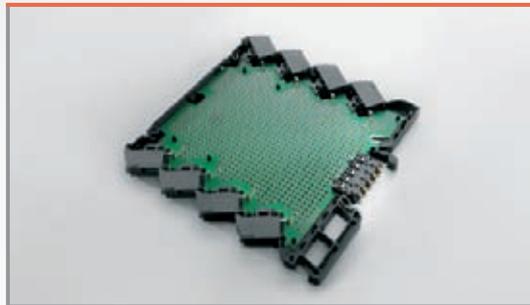
Fully automatic: No manual post-processing is required for the bus contact block – it is processed with the assembly group in a single SMT assembly process.

Safe installation

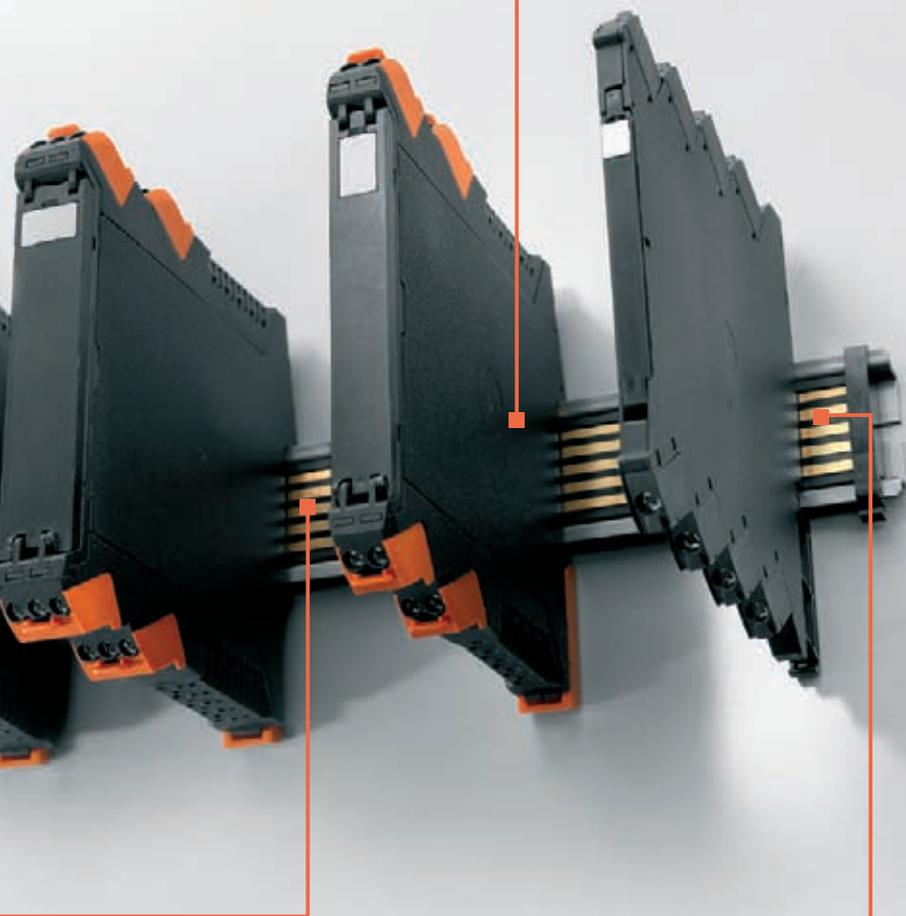


Low loss: You can safely avoid undesired bus interruptions and high contact resistances. Maximum facility availability ensured by the gold-plated contact surfaces on the system bus and contact block, as well as the consistent system design.

More flexibility in design

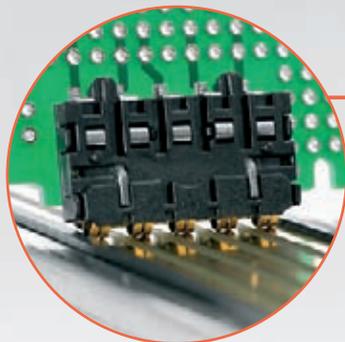


From design through production to application - CH20M6 sets the market standard with maximal board space with minimal exterior dimensions as well as allowing fully automatic reflow processing or bus connections.



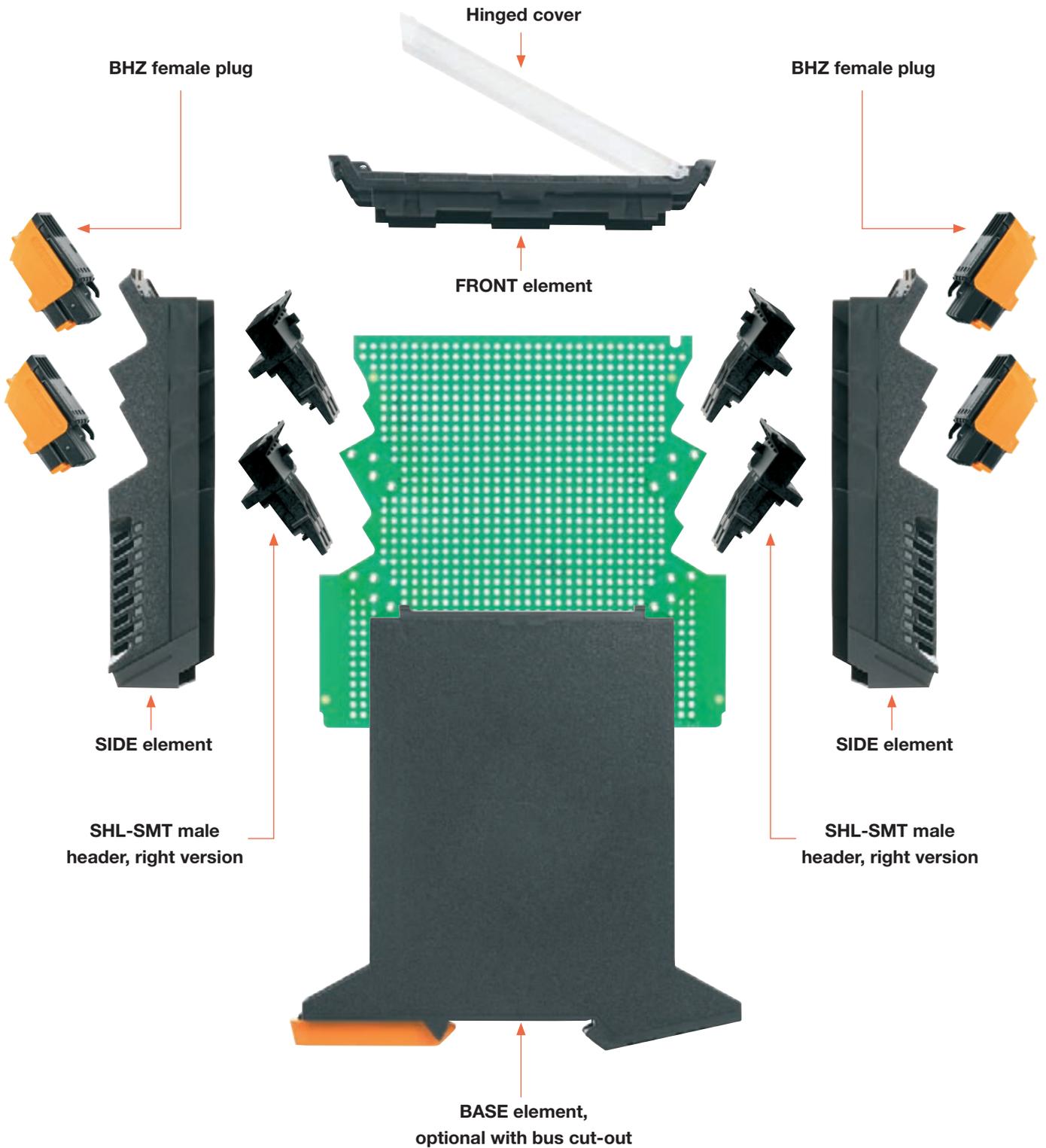
Maximum availability:

Reliable: Five fully-galvanised and partially gold-plated twin-arched contacts are used to establish a permanent contact to the rail bus. THR solder flanges ensure that the connection to the circuit board is stable.



OMNIMATE Housing – System CH20M

System overview





Hinged cover, transparent **CH20M22 C TP**
on FRONT element, black **CH20M22 F BK**



Hinged cover, black **CH20M22 C BK**



FRONT element, black **CH20M22 F BK**



FRONT element, black:
for use without hinged cover
CH20M22 FC BK

Connection area (SIDE) with 1-3 levels



Black SIDE element
3-row 12 connections
CH20M22 S PPP BK



Black SIDE element
2-row 8 connections-
CH20M22 S PPSC BK



Black SIDE element
1-row 4 connections
CH20M22 S PSCSC BK

Connection area (SIDE) with 1-3 levels and
varying connection configurations



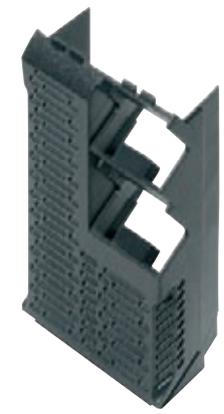
Black SIDE element
1-row 8 connections-
CH20M45 S P2SC/P2SC BK



Black SIDE element
2-row 16 connections
incl. Male header
CH20M AD-SHL



Black SIDE element
2-row 8 connections
CH20M45 S 2PSC/3SC BK



Black SIDE element
2-row 8 connections
CH20M45 S 3SC/2PSC BK

OMNIMATE Housing

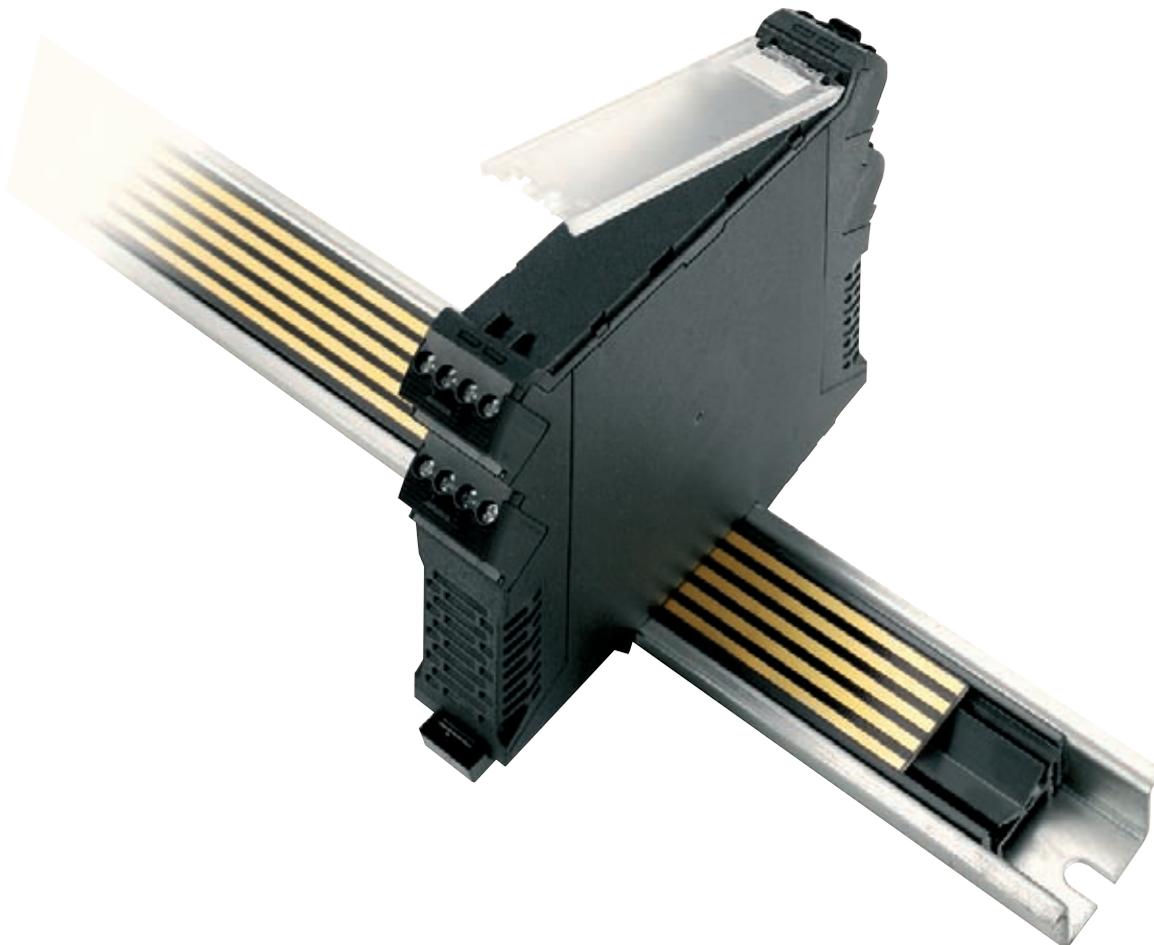
Component housing system CH20M

The module electronics housing system – CH20M (**C**omponent **H**ousings **IP20 M**odular) – is designed for seven widths.

Width	Type	Sample kit including wire connection mechanism	Catalogue pages	Colour scale ¹⁾
6.1 mm	CH20M6	1203290000 CH20M6 S-Kit	I.14	 Similar to RAL 9011
12.5 mm	CH20M12	1167190000 CH20M12 S-Kit	I.16	 Similar to RAL 7024
17.5 mm	CH20M17	1255820000 CH20M17 S-Kit	I.18	 Similar to RAL 7035
22.5 mm	CH20M22	1158390000 CH20M22 S-Kit	I.20	 Similar to RAL 5012
35 mm	CH20M35	On request		 Similar to RAL 1003
45 mm	CH20M45	1203350000 CH20M45 S-Kit	I.22	 Similar to RAL 3000
67 mm	CH20M67	On request	I.24	

Note: The sample kit contains all individual parts for setting up a housing, including the circuit board and wire connection mechanism.

Note: 1) Other colours on request



Housing elements

Hinged cover



Description / Type

COVER (CH20Mxx C xx)

- Transparent (light or dark)
- Holds itself in place when opened
- Sealable

Design options

Transparent

- pad printing
- markable
- machinable

Housing front



FRONT (CH20Mxx F xx)

- Large usable surface for the operational and display elements
- Can be customised

¹⁾

- laser marking
- With hinges for cover
- Optionally closed (without hinged cover)

Connection area



SIDE (CH20Mxx S xx)

SIDE element:

- 1 - 3 connection levels
- Can be configured asymmetrically
- For up to 3 circuit boards
- Up to 72 wires can be connected

¹⁾

- laser marking
- 1 - 3 plugging levels
- Up to 3 circuit boards, can be populated on both sides up to 5 mm on bottom of board
- with or without bus cut-out

Housing base



BASE (CH20Mxx B xx)

BASE element:

- For TS35 DIN rails
- Pre-attached snap-on foot
- ESD-protected (8kV acc. to EN 61000-4-2)
- All elements are permanently snapped in

¹⁾

- laser marking
- with or without bus cut-out
- Optional FE contact
- Snap-on foot in 2 standard colours (orange + black)

Connection system



BHZ female plug / SHL male header

Female plug / male header:

- Reflow compatible
- Can be automatically processed
- Integrated "AutoSet" coding
- Release clip is standard

¹⁾

- Headers packaged in box or on tape
- Clamping yoke screw connection
- PUSH IN spring connection (on request)

Rail bus



Bus

Non-interrupted system bus:

- Integrated in TS35 DIN rail
- For power, signals and data
- 5 conductor paths (max. 5 A / 63 V)
- SMD-compatible bus contacts (2 A / 63 V)

- Can be shortened to length
- For 7.5 and 15 mm with finger-safe hood
- Pre-assembled on request

CH20M

Technical data

CH20M6



Modular component housing for electronic components

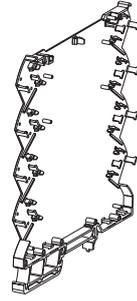
- 6.1mm wide
- Connection method: PCB terminals, clamping yoke screw connection
- Max. 8 wires

Technical data

Insulating material	PBT
Flammability rating (UL94)	V0
Rated voltage	250 V AC
Rated current	13 A

CH20M6 BP

Base housing

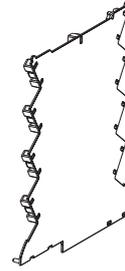


Base housing

- For mounting on rail
- Optionally with BUS cut-out

CH20M6 BP

Housing cover



Housing cover

Ordering data

Type / Version	Qty.	Order No.
 Base housing, black CH20M6 BP 4P-4P BK	50	2418600000

Ordering data

Type / Version	Qty.	Order No.
 black CH20M6 BC 4P-4P BK	50	2418610000

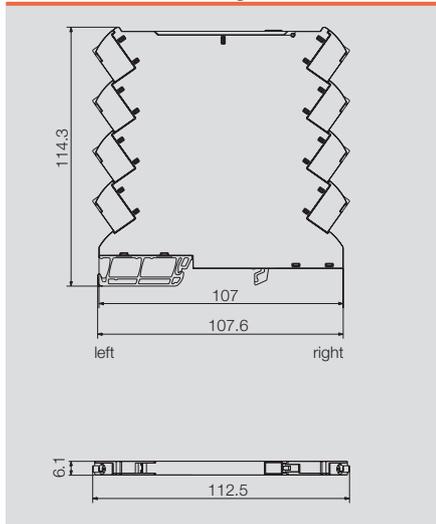
Demo Kit

Type / Version	Qty.	Order No.
SK DEMO CH20M6	1	1203310000

 Base housing BUS black CH20M6 BP 4P-4P BUS BK	50	1164630000
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 black CH20M6 BC 4P-4P BUS BK	50	1164640000
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Dimensional drawing



CH20M6 C

Hinged cover



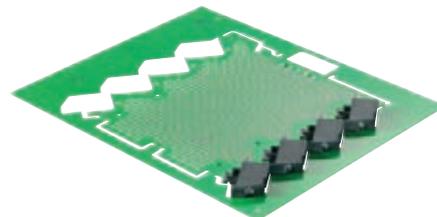
Hinged cover

Ordering data

Type / Version	Qty.	Order No.
 dark transparent CH20M6 C BK	50	2418620000
 light transparent CH20M6 C TP	50	1073410000

Connection system

and accessories



PCB terminal

Type / Version	Qty.	Order No.
Left, box packaging LHZ-SMT L 1.5SN BK BX	50	1137870000
Right, box packaging LHZ-SMT R 1.5SN BK BX	50	1137880000
Left, tape-on-reel LHZ-SMT L 1.5SN BK RL	432	2418580000
Right, tape-on-reel LHZ-SMT R 1.5SN BK RL	432	2418590000

Markers

Type / Version	Qty.	Order No.
Device marker hinged cover MF 5/7,5 MC BLANK	50	1877680000