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# CH20M12 B FE BK/OR 2010

## Product image



## Superior efficiency, flexibility and design - the "standard tailor-made fit"

When selecting a housing design, flexibility is a key factor. Other important criteria are: scalability, customized design, innovative functionality and cost efficiency. You need a choice which offers the maximum performance with the minimum overhead.

The CH20M12 modular electronics housing is the "small" option amongst the "large" housing solutions for compact electronics applications.

The entire system is characterized by excellence: outstanding scalability and flexibility, a high security level, innovative application functionality and a variety of practical details.

- **Quicker installation** with features such as "Wire ready" the universal multi-tool screw head
- **User-friendly operations:** with clear and permanent labelling and extra marking possibilities, integrated release clip or transparent cover
- **Maximum interference immunity** with EMC-compliant construction featuring deeply overlapping module joint edges made from high-performance plastic
- **High operational reliability** with the unique Auto-Set coding system and featuring double-sided touch protection on the pin header and socket blocks

CH20M - a compact name for the most flexible system available on the market. It doesn't just stand for "Component Housing IP20 Modular".
CH20M also stands for efficiency and innovation throughout design, production and use.

## General ordering data

| | |
|---|---|
| Version | Modular housing, OMNIMATE Housing - series CH20M black, Width: 12.5 mm |
| Order No. | 1176990000 |
| Type | CH20M12 B FE BK/OR 2010 |
| GTIN (EAN) | 4032248970476 |
| Qty. | 14 pc(s). |

Creation date February 17, 2023 11:55:58 AM CET

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## CH20M12 B FE BK/OR 2010

## Technical data

### Dimensions and weights

| | | | |
|---|---|---|---|
| Depth | 107.4 mm | Depth (inches) | 4.228 inch |
| Height | 109.2 mm | Height (inches) | 4.299 inch |
| Width | 12.5 mm | Width (inches) | 0.492 inch |
| Net weight | 7.786 g | | |

### Temperatures

| | | | |
|---|---|---|---|
| Operating temperature range | -40 °C...120 °C | Operating temperature, min. | -40 °C |
| Operating temperature, max. | 120 °C | Humidity | 5 - 93% rel. humidity, Tu = 40°C, no condensation |

### Component Properties

| | | | |
|---|---|---|---|
| Color of clip-on foot | orange | Cut out in clip-on foot area as preperation for | FE contact, contact not included! |
| Number of connection levels, max. | 3 | | |

### Mechanical tests

| | | | |
|---|---|---|---|
| According to Standard | DIN EN 61373:1999 (shock and vibration) | | |
| Test conditions | five housings installed in a row, 100g additional weight on the PCB | | |
| Proved axles | X, Y, Z | | |
| Shock test | General test advices | All mechanical tests were tested on examplary setup, or in view of depending regulation. The specified results do not replace approval relevant tests. They are just orientation values. | |
| | Test category | 1 | |
| | Number of shocks per axle | 3 in positive and negative direction | |
| | Shock duration | 30 ms | |
| | Acceleration horizontal | 30 m/s² | |
| | Acceleration vertical | 30 m/s² | |
| | Acceleration longitudinal | 50 m/s² | |
| Vibration test | Test duration | 5 hours per axle | |
| | Effective acceleration | 7.9 m/s² | |
| | Test category | 1B | |

### Thermal tests

| | | | |
|---|---|---|---|
| Thermal tests | General test advices | All thermal tests were tested on examplary setup, or in view of depending regulation. The specified results do not replace approval relevant tests. They are just orientation values. | |
| | Test conditions | seven housings installed in a row - no spacing, two connection level, one coolinglevel | |
| | Test axles | horizontal, More on request | |
| | Ambient temperature | 80 °C | |
| | Power dissapation, max. | 0.8 W | |
| | Ambient temperature | 60 °C | |
| | Power dissapation, max. | 1.35 W | |
| | Ambient temperature | 40 °C | |
| | Power dissapation, max. | 1.9 W | |
| | Ambient temperature | 20 °C | |
| | Power dissapation, max. | 2.65 W | |

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## Technical data

### Assembly properties

| | | | |
|---|---|---|---|
| Number of slots for female connectors of the mounted assembly, max. | 6 | Number of PCBs, max. | 1 |
| Number of connection levels, max. | 3 | Number of poles, max. | 12 |
| Height of components on the PCB, max. | 6.1 mm | Type of assembly of the PCB | double-sided |

### Design - IN requirements

| | | | |
|---|---|---|---|
| PCB thickness | 1.6 mm | Tolerance for the PCB shape | ±0.1 mm |
| Tolerance of circuit board thickness | ±0.15 mm | | |

### Individualization options

| | | | |
|---|---|---|---|
| Customer specific labelling possible | Yes | Customer specific order process | See guideline under downloads |
| Processing possibilities | Laser processing | | |

### General data

| | | | |
|---|---|---|---|
| Colour | black | Colour chart (similar) | RAL 9011 |
| Encapsulation option | No | Protection degree | IP20 in installed state |
| Rail | TS 35 | | |

### Material data

| | | | |
|---|---|---|---|
| Comparative Tracking Index (CTI) | 600 ≤ CTI | Insulating material | PA 66 GF 30 |
| Insulating material group | I | UL 94 flammability rating | V-0 |

### Classifications

| | | | |
|---|---|---|---|
| ETIM 6.0 | EC001031 | ETIM 7.0 | EC001031 |
| ETIM 8.0 | EC001031 | ECLASS 9.0 | 27-18-27-90 |
| ECLASS 10.0 | 27-18-27-92 | ECLASS 11.0 | 27-18-27-92 |
| ECLASS 12.0 | 27-18-27-92 | | |

### Important note

| | |
|---|---|
| Product information | Circuit board contour, restricted zones, and other information for the design in of the circuit board can be found in the category connection technology under the corresponding male headers in the downloads. |

### Approvals

| | |
|---|---|
| ROHS | Conform |

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## CH20M12 B FE BK/OR 2010

## Technical data

### Downloads

| | |
|---|---|
| Engineering Data | CAD data – STEP |
| | CAD data – PCB_position_50880_LP-POSITION_12MM |
| | CAD data – Pin_header_pin_length_CH20M_A_OV_PCB-SHL_70315 |
| User Documentation | Guideline customerspecific housings |
| | Guideline kundenspezifische Gehäuse |
| Catalogues | Catalogues in PDF-format |
| Brochures | FL ANALO.SIGN.CONV. EN |
| | MB DEVICE MANUF. EN |
| | FL MACHINE SAFETY EN |
| | FL 72H SAMPLE SER EN |
| | PO OMNIMATE EN |
| | PO OMNIMATE EN |

## CH20M12 B FE BK/OR 2010

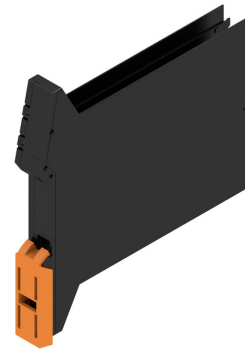## Drawings

### Product image

### Product benefits

Base element including FE cut-out

### Dimensioned drawing

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