# DHC-96 CPM 1500

DHC-96 CPM 1500, digital multimeter 96 x 48, 2 output relays

Code: M223C8.

> Protocol: Modbus/RTU
> IP: 54
> Communications: RS-485
> N° relays: 2
> Digital inputs: 2
> Analog output: 1 (20 mA)
> System: DC (Shunt)
> Measurement Range (V): ± 150 / 300 /600 / 1000 / 1500 Vdc
> Measurement Range (A): 50 / 60 / 75 / 100 / 150 / 200 / 250 / 300 / 400 / 600 mV
> Paramètre: V/A/kW/kWh dc
> Mounting: Pannel
> Modules: 96 x 48

## Description

Panel-mounted digital instruments that display the value of an electrical variable measured or proportional value of a process signal on its screen (depending on the model). Designed to supervise, regulate and control units with the use of relay outputs that are built in the unit.

The **DHC-96** series displays the value of an electrical variable measured or proportional value of a process signal on its screen (depending on the model). The unit displays the electrical parameters of a single-phase installation, depending on the model, such as the voltage, current, etc. In DC systems, the unit can measure the voltage, current, frequency and other variables associated with industrial processes. The AC models take the measurements in true RMS (TRMS).

All models in this range have the following features:

- Universal power supply at 80...270 $V_{ac/dc}$ (DHC-96-CPM: 100...270 Vac/dc) and optional power supply at 16 ... 36 $V_{dc}$ (DHC-96-CPM: 20...60 Vdc)
- IP 54 protection degree on the front panel
- High measurement accuracy
- Programmable measuring input
- Alarm delays and interlockings
- Galvanic insulation between external circuits
- Self-configurable decimal point
- Installed on 96 x 49 mm panels

## Application

These digital instruments have many different applications and can be used in:

- Industrial applications
- Air conditioning units
- Solar photovoltaic energy installations
- Industrial process control systems

# DHC-96 CPM 1500

Digital instruments: Programmabled DC measurement Central

Code: M223C8.

## Specifications

### AC power supply

| | |
|---|---|
| Installation category | CAT III 300V |
| Consumption | 6 ... 18 VA |
| Frequency | 50/60 Hz |
| Nominal voltage | 100...270 V ~ |

### DC power supply

| | |
|---|---|
| Installation category | CAT III 300 V |
| Consumption | 1.3 ... 2 W |
| Nominal voltage | 100...270 Vdc |

### Mechanical characteristics

| | |
|---|---|
| Size (mm) width x height x depth | 96 x 49 x 107.7 (mm) |
| Weight (kg) | 228 |

### Environmental characteristics

| | |
|---|---|
| Protection class | Front: IP54, Rear case: IP20 |
| Relative humidity (without condensation) | ≤ 93 % |
| Storage temperature | -25 ... +70 °C |
| Working temperature | -25 ... +55 °C |

### Current measurement circuit

| | |
|---|---|
| Installation category | CAT III 1500 V |
| Consumption | < 1 VA |
| Nominal current (In) | Shunt: 50 / 60 /75 / 100 / 150 / 200 / 250 / 300 / 400 / 600 mV |
| Allowable overload | 1.2 In continuous |

### Voltage measurement circuit

| | |
|---|---|
| Installation category | CAT III 1500 V |
| Consumption | < 1 VA |
| Input impedance | > 1 MΩ |
| Nominal voltage | ± 150 / 300 / 600 / 1000 / 1500 Vdc |
| Maximum permanent measurement voltage | 1.2 Un continuous |

### Standards

| | |
|---|---|
| Electrical safety, Maximum height (m) | 2000 |
| Electrical safety, Installation category | CAT III 300 V |
| Standards | IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, IEC 61010-1, IEC 61326-1 |

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## User interface

| | |
|---|---|
| Keyboard | 4 keys |
| Display type | LCD 5 digits |

## Digital inputs

| | |
|---|---|
| Input/output insulation | 2000 V ~ |
| Quantity | 2 |
| Type | Potential-free contact |
| Maximum short-circuit current | 3.3 mA dc |
| Maximum open circuit voltage | 17 V dc |

## Analogue outputs

| | |
|---|---|
| Quantity | 1 |
| Linearity | 0.5 % |
| Current mode, nominal range | 0 ... 20 mA, 4 ... 20 mA, 4-12-20 mA |
| Current mode: maximum load resistance | 350 Ω |
| Maximum internal voltage | 17 V dc |

## Digital relay outputs

| | |
|---|---|
| Quantity | 2 |
| Maximum current | 2.5 A |
| Electrical life | $1 \times 10^5$ |
| Maximum switching capacity | 625 VA |

## Measurement accuracy

| | |
|---|---|
| Phase current measurement | Class 0.5 |
| Active energy measurement (kWh) | Class 1 |
| Active power measurement (kW) | Class 1 |
| Phase voltage measurement | Class 0.5 |

## Serial communication

| | |
|---|---|
| Protocol | ModBus RTU |
| Technology / Type | RS-485 |

### DHC-96 CPM

Digital instruments: Programmabled DC measurement Central

| CODE | TYPE | Protocol | Communications | N° relays | Analog output | System | Measurement Range (V) | Measurement Range (A) | Paramètre | Modules |
|---|---|---|---|---|---|---|---|---|---|---|
| Multimeter | | | | | | | | | | |
| M223A8. | DHC-96 CPM | Modbus/RTU | RS-485 | 2 | 1 (20 mA) | DC (Shunt) | ± 150 / 300 /600 Vdc | 50 / 60 / 75 / 100 / 150 / 200 / 250 / 300 / 400 / 600 mV | V/A/kW/kWh dc | 96 x 48 |

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Digital instruments: Programmabled DC measurement Central

Code: M223C8.

| CODE | TYPE | Protocol | Communications | N° relays | Analog output | System | Measurement Range (V) | Measurement Range (A) | Paramètre | Modules |
|---|---|---|---|---|---|---|---|---|---|---|
| M223B8. | DHC-96 CPM-HS | Modbus/RTU | RS-485 | 2 | 1 (20 mA) | DC (Hall) | ± 150 / 300 /600 Vdc | 4 Vdc | V/A/kW/kWh dc | 96 x 48 |
| M223C8. | DHC-96 CPM 1500 | Modbus/RTU | RS-485 | 2 | 1 (20 mA) | DC (Shunt) | ± 150 / 300 /600 / 1000 / 1500 Vdc | 50 / 60 / 75 / 100 / 150 / 200 / 250 / 300 / 400 / 600 mV | V/A/kW/kWh dc | 96 x 48 |

Option of 0/2... 10 VDC outputs on demand

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## Dimensions

## Connections