

Modular Digital Power Series

MDP10 / 20



Installation and user guide



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MDP10



MDP20

General features

The MDP control unit series are modular. The MDP10 control-unit can power between 1 and 10 transducers, the MDP20 can power between 1 and 20 transducers

Modularity is based on the DIN-plug-based Power Circuit Boards (PCB), which can be inserted into the unit. Each PCB powers 2 transducers. The MDP10 has 5 slots for 1 to 5 PCBs, the MDP20 has 10 slots for 1 to 10 PCBs.

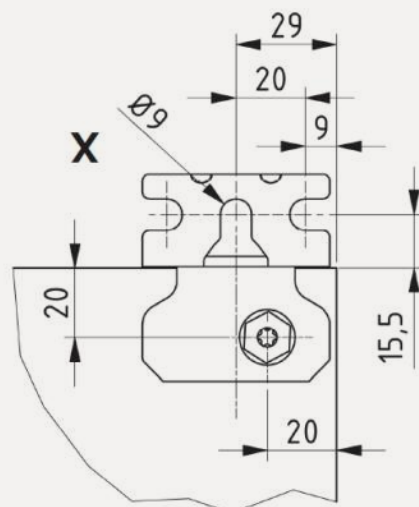
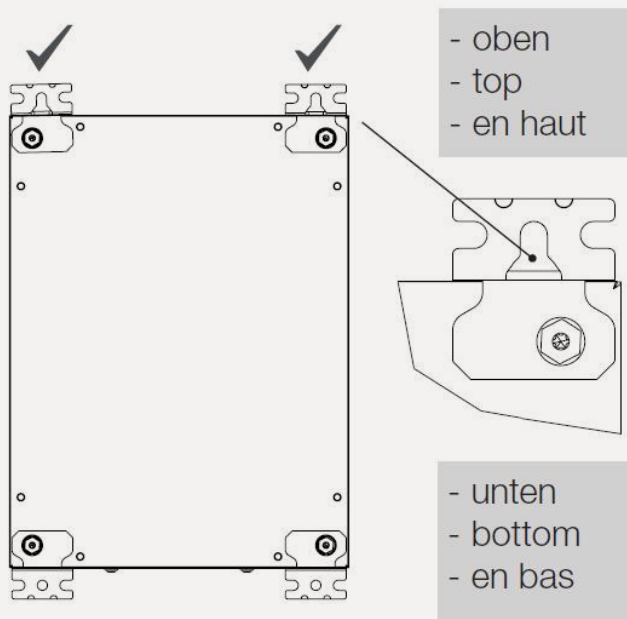
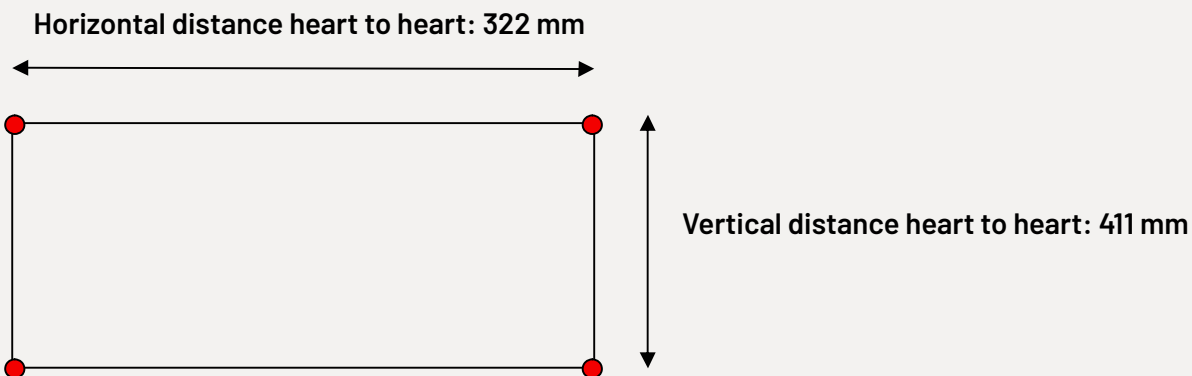
In this manual, we take the MDP10 as an example. The installation of the MDP20 is identical.

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The Netherlands

Mounting dimensions MDP10

Enclosure	Rittal AX1380.000
Brackets	Rittal 2508020
Enclosure dimensions	380x380x210mm

Dimensions of mounting frame holes (enclosure+brackets):

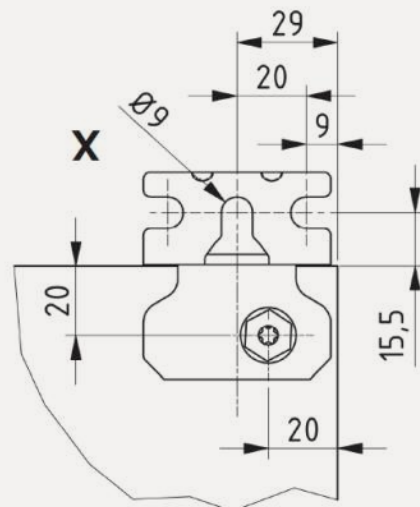
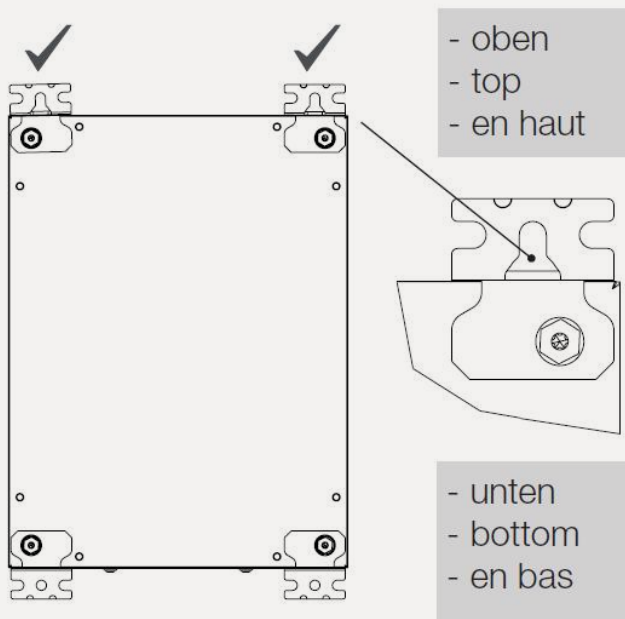
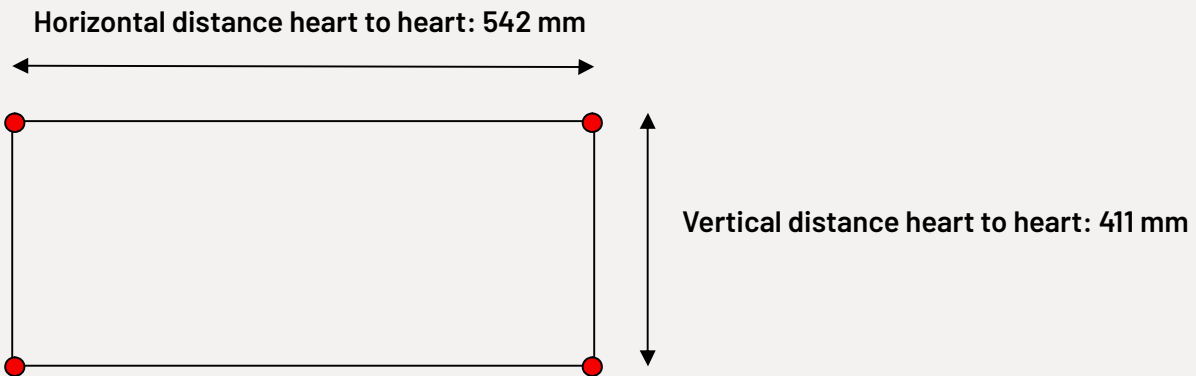


Drill holes of 9 mm. Use bolts M8.

Mounting dimensions MDP20

Enclosure	Rittal AX 1039.000
Brackets	Rittal 2508020
Enclosure dimensions	600x380x210mm

Dimensions of mounting frame holes (enclosure+brackets):



Drill holes of 9 mm. Use bolts M8.

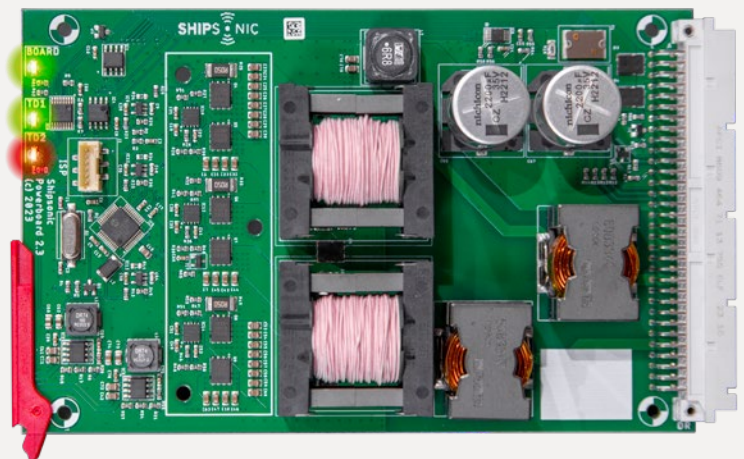


MDP Power Circuit Board

PCBs are numbered from 1 to 10, counting from left to right in your control unit.

Each PCB has 3 indicator LEDs. These LEDs are located on the upper left corner of the PCB. They are marked:

- BOARD (general PCB status)
- TD1 (transducer 1 status)
- TD2 (transducer 2 status)



When the BOARD LED is **green**, the power board is functional.

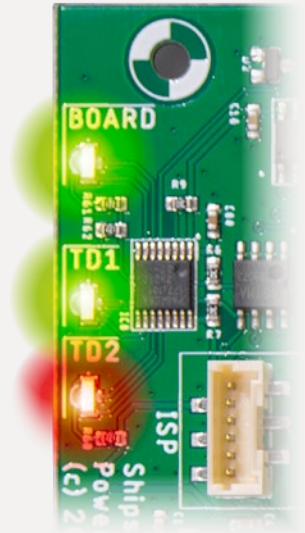
When the BOARD LED is **red**, there is a problem with the power board. Both TD LEDs will be off.

MDP Power Circuit Board

The TD LED 1 or 2 is **green** when the transducer is working properly.

A TD Led which is **red** indicates a transducer is missing or the transducer/cable assembly has a short circuit.

The TD LED will be off when that transducer channel is switched off in the configuration.

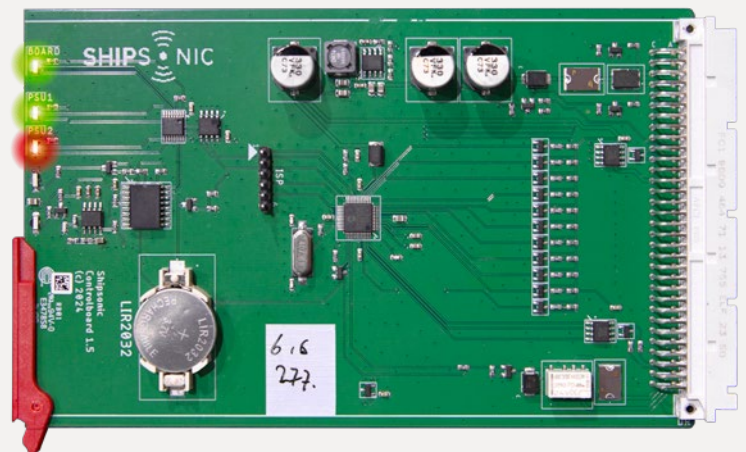


Indicator LEDs on the PCB

MDP Control Board

Each control unit has 1 control board. This board takes care of configuration, monitoring, logging, communications. It is the board all the way on the right on the control unit. So in the MDP10 the controlboard sits in slot 6, in the MDP20 the control board sits in slot 11.

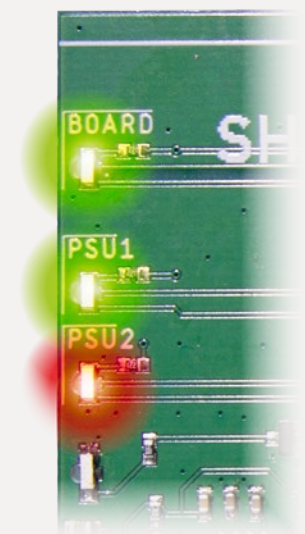
The control board also has 3 indicator LEDs. Again located on the upper left corner of the CB.



MDP Control Board

The (upper) LED marked BOARD has 2 functions:

1. With **the control unit door open** this LED indicates the system configuration. If it is **green**, it means that the system is properly configured. This means that all inserted PCBs are activated and that the required number of channels is activated. If an inserted PCB is not activated, this LED will be **red**, and the video screen will state: **unexpected board**. If a PCB is missing, the LED will also be **red**, and the video screen will state: **board missing**.
2. With **the control unit door closed** the same LED now indicates the **system status**. This is visible through the lens in the door. The system status is **green** when the configuration is correct and all channels have a working transducer attached. If anything is wrong, for example one transducer has become disconnected, this LED will turn **red**. The video screen will state what the problem is.



Indicator LEDs on the PCB



System status indicator in the door



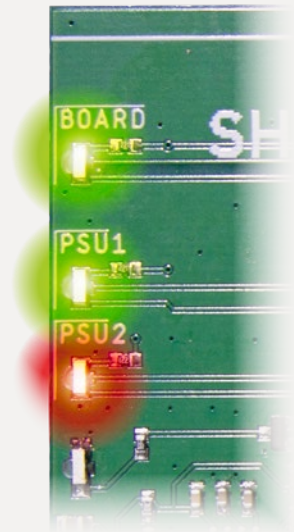
When the system status LED is red, open the panel door and see on the TFT display what the problem is.

The LEDs marked PSU report on the power supplies.

- PSU1 (power supply 1 status)
- PSU2 (power supply 2 status)

Green indicates OK, red indicates fault.

Please note that 1 power supply is sufficient to power your entire system. For operational continuity, 2 power supplies are installed, each with a separate circuit breaker.



Indicator LEDs on the PCB

Monitoring / TFT display

Each system has a TFT display inside. This screen gives you the status of:

- each power supply
- system temperature
- configuration status
- communications
- each individual transducer status

The displayed indicators are:

P1 power-supply 1
 P2 power-supply 2
 ..C system temperature
 CONF configuration
 S01 slot 1
 Etc...
 S0101 transducer channel 1
 S0102 transducer channel 2
 Etc...

Green indicates the value is OK, faults are indicated in **red**.

Transducer channel values are:

OK transducer connected and working
OFF transducer channel functional, but switched off in the configuration
OPEN no transducer connected (system waiting for transducer to be connected)
SHORT short circuit in transducer/cable assembly; channel is switched off. When this transducer/cable assembly is disconnected, value will switch to OPEN



Example 1

Power supply 1 OK, power supply 2 faulty

Temperature, configuration and real time clock (RTC) OK

5 PCBS inserted and activated

10 Transducer channels activated

TDs 1 and 2 functional

TDs 3-10 not connected



Example 2

Power supplies 1 and 2 OK

Temperature, configuration and real time clock (RTC) OK

5 PCBS inserted and activated

10 Transducer channels activated

TDs 1 and 2 functional

TDs 3-10 not connected



Example 3

Power supplies 1 and 2 OK

Temperature OK, configuration faulty, real time clock (RTC) OK

1 PCBS inserted and activated

2 Transducer channels activated,

TDs 1 and 2 functional

Slots 2-5 are activated in the configuration, but no PCB was inserted.

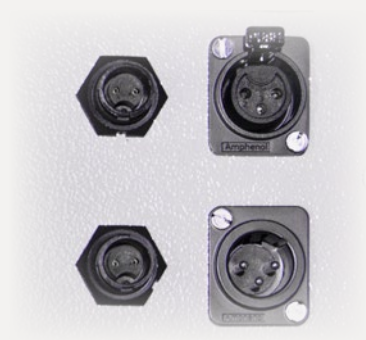
Connections



MDP10 Gland-Plate

Your system is standard fitted with Contact Closure Alarm and RS485 communication capability.

The 2 pole female sockets on the left are for contact closure, the 3 pole, 1 female and 1 male socket on the right are for RS485 communications. The 4 corresponding cable connectors are delivered inside the control unit.



The contact closure alarm repeats the system status LED. If you have installed 1 control unit, close 1 of the contact closure connections and lay a cable from the second connection to the engine control room. If you have more than 1 control unit installed, close 1 CC connection on the first unit, loop from the first unit to the last unit, and connect from the last unit to the engine control room.

The RS485 connection repeats the messaging of the TFT screen. If you have installed 1 control unit, close 1 of the RS485 connections and lay a cable from the second connection to the engine control room. If you have more than 1 control unit installed, close 1 RS485 connection on the first unit, loop from the first unit to the last unit, and connect from the last unit to the engine control room. The RS485 connection also allows you to configure the system. See the specs sheet for polarity.

The transducer connections are clearly marked 1 to 20. The gland on the left gives access to 2 automatic circuit-breakers DX3 1P+N C6A 4500A. See techspecs sheet for connecting.

Installation

Your control unit(s) arrive(s) configured (number of PCBs and TD channel configuration) as outlined in your purchase order and/or invoice.

Each control unit has Rittal 2508020-mounting-brackets already fitted.

Prepare the mounting frame and mount the unit as indicated on pages 3 and 4.

Install in a proper area, make sure the ventilation flow is free, inwards through the filters in the gland plate, outwards through the 2 ventilators on the upper sides.

Connect 240 VAC with 3 x 2,5mm² minimal cable to the automatic circuit breakers through the gland on the left on the gland plate. Ground the cabinet through the grounding bolt on the lower outside of the cabinet with a 2,5mm² cable.

Connect the transducers.

Switch on the cabinet with the 2 circuit breakers inside. Note that each power supply has its own circuit breaker, 1 power supply is enough to power your entire system, but 2 power supplies -with independent circuit breakers- are provided (redundancy) for secure continuous operation.

Wait for the system to load its settings. Wait for the TFT screen to come to life. Close the door and check if the system LED turns green.

If not, switch off, wait 1 minute, and switch back on again. If the system LED does not turn green, make a picture of the TFT screen inside and notify your supplier.

Parts list

3041MDP0CB	MDP Controlboard
3041MDP0PB	MDP Power Circuit Board (PCB) 2.3
3041MDP1000	Enclosure MDP10 - empty
3041MDP1002	MDP10-2, control unit 2 channels
3041MDP1004	MDP10-4, control unit 4 channels
3041MDP1006	MDP10-6, control unit 6 channels
3041MDP1008	MDP10-8, control unit 8 channels
3041MDP1010	MDP10-10, control unit 10 channels
3041MDP2000	Enclosure MDP20 - empty
3041MDP2012	MDP20-12, control unit 12 channels
3041MDP2014	MDP20-14, control unit 14 channels
3041MDP2016	MDP20-16, control unit 16 channels
3041MDP2018	MDP20-18, control unit 18 channels
3041MDP2020	MDP20-20, control unit 20 channels
HRP-300-24	Power supply MDP10
HRP-600-24	Power supply MDP20
1P+N C-6A	Automatic circuit breaker

Technical support and after sales service

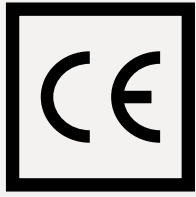
Technical support is available through email or directly by telephone from your local dealer or from Shipsonic. When calling, please be prepared to provide the information on the identification sticker on the inside of the cabinet door of the control-unit. Requests for parts can also be placed by phone or sent by email to your local agent or Shipsonic.

If a system needs to be returned for repair, contact your local agent or Shipsonic directly. We will arrange the repair and/or eventually the exchange of the system. Shipsonic pays for all repairs/replacements within the warranty period (1 year). Outside that period, your agent and/or Shipsonic will decide on a case by case basis what to do and whom will bear the costs.

Contact

For any additional information contact your local agent.
Otherwise, contact the producer of Shipsonic systems directly:
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The Netherlands

CE certification



All our products are in conformity with the essential requirements of directives 2004/108/EC (Electromagnetic Compatibility) 2011/65/EC (RoHS Directive) and 2006/95/EC (Low Voltage Directive) and their subsequent amendments of the European Parliament and Council.

CE - test done in accordance with the company: "Globus Benelux Hattem" The Netherlands:
CE - test ultrasonic anti fouling systems, under the following test norm:

NEN-EN IEC 61000-6
ELECTROMAGNETIC COMPATIBILITY (EMC)-PART 6-4
GENERIC STANDARDS - EMISSION STANDARDS FOR INDUSTRIAL ENVIRONMENTS:
(IEC610000-6-4:2006/A1;2010,IDT)

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