

Digital repeater (LED)

# DR-109



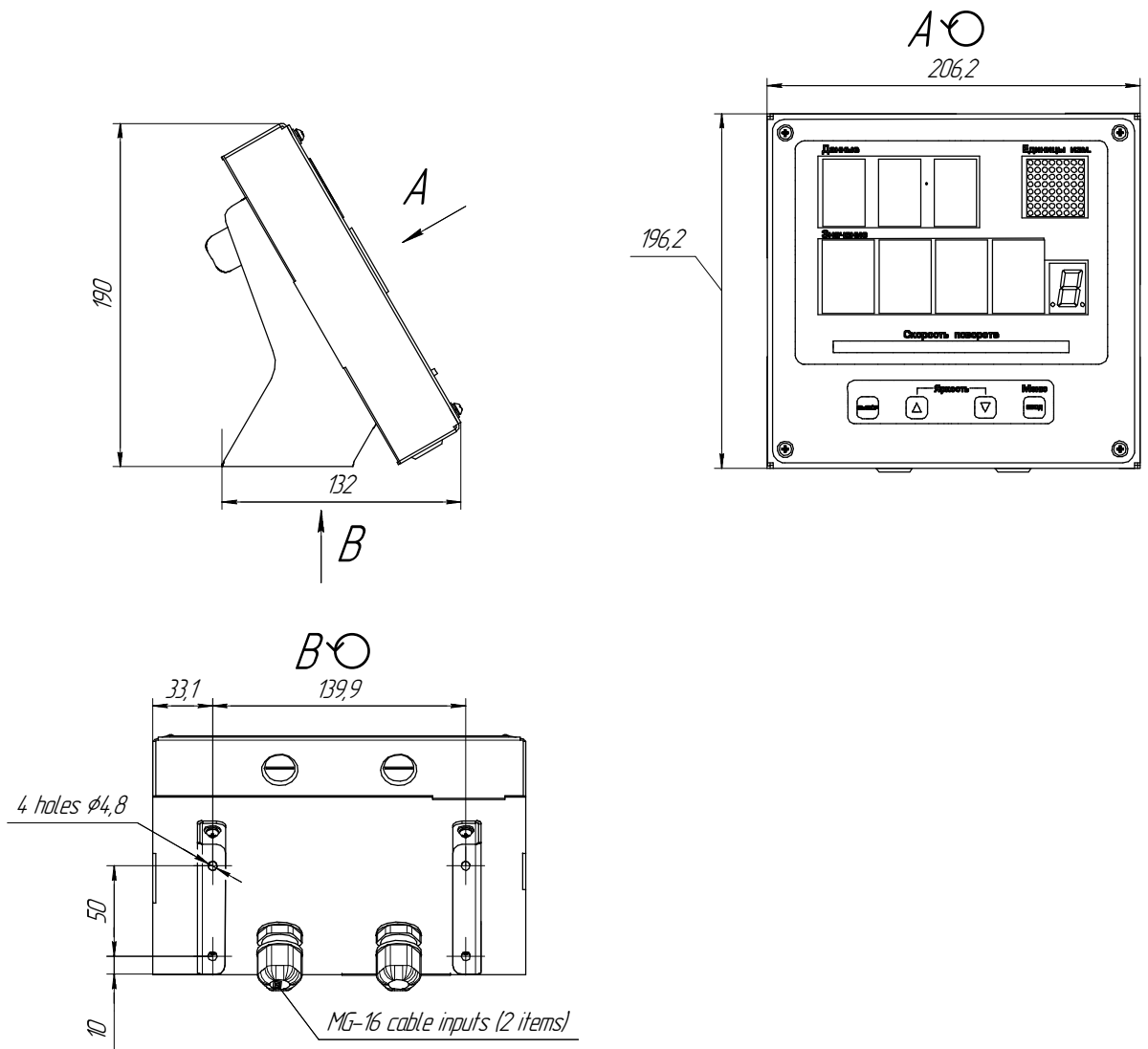
The DR-109 multipurpose digital repeater allows the visual indication of digital data received in NMEA 0183 sentences through RS-232 and RS-422/485 serial interfaces. The DR-109 provides sequential displaying of up to 3 data types on the built-in LED indicator (ship speed and heading, depth below keel, current time and weather conditions). The data of ship turn rate may be displayed regardless of main data on the built-in LED linear.

## TECHNICAL CHARACTERISTICS

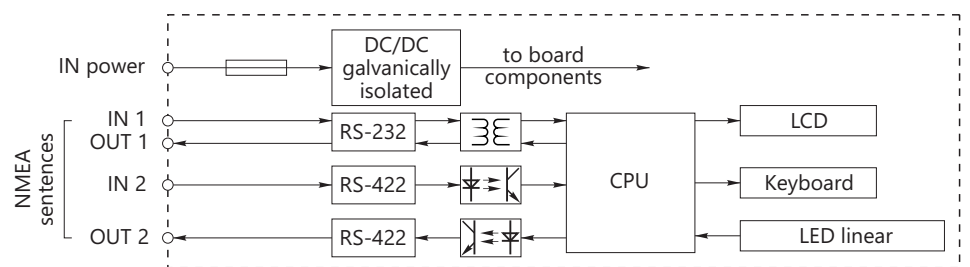
General characteristics	
IP rating	IP 22 (optionally IP 65)
Storage temperature	-60...+70°C
Operating temperature	-15...+55°C
Weight	2 kg

Characteristics of inputs	
Number of input ports	2
Supported interfaces	RS-232 and RS-422
Max receive rate	115200 bit/s

Electrical characteristics	
Power supply voltage	18...36 VDC
Max power consumption	10 W
Galvanic isolation from power mains	+
Reverse polarity protection	+



DR-109 dimensional drawing



DR-109 functional diagram

Multipurpose digital repeater (LCD)

## DR-209



The DR-209 multipurpose digital repeater displays NMEA-sentences data from various ship equipment on a monochrome LCD monitor in user-friendly format and rebroadcasts the received data by communication channels.

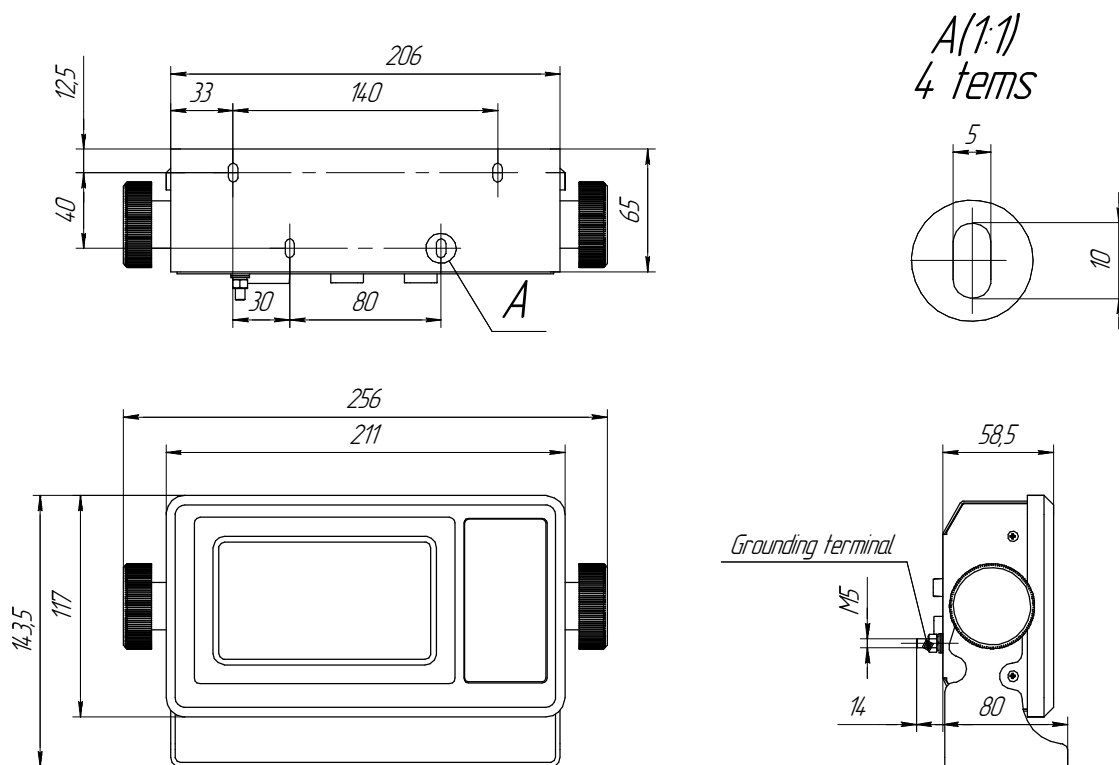
### TECHNICAL CHARACTERISTICS

General characteristics	
IP rating	IP 22 (optionally IP 65)
Storage temperature	-60...+70°C
Operating temperature	-15...+55°C
Weight	2 kg

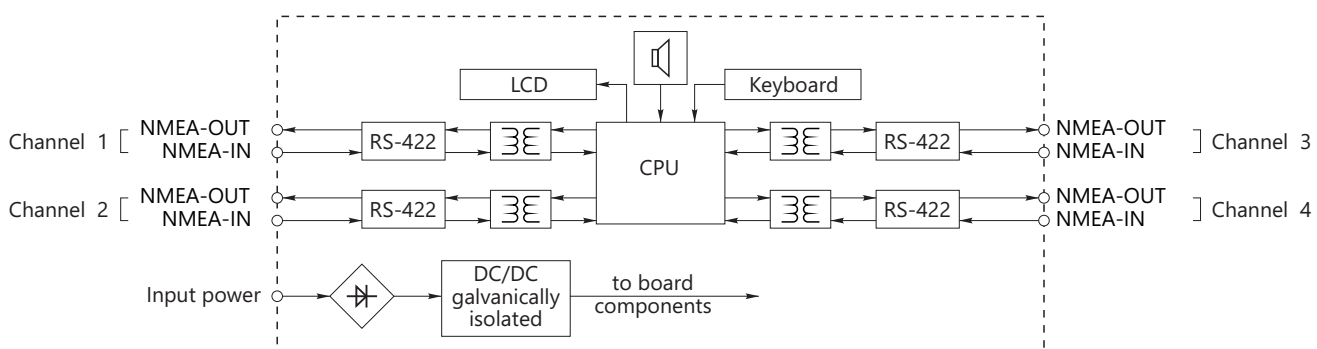
Electrical characteristics	
Power supply voltage	10...36 VDC
Power consumption	max 12 W
Galvanic isolation from power mains	+
Reverse polarity protection	+
Overvoltage protection	+

Characteristics of inputs	
Number of input ports	2
Supported interfaces	RS-422
Max receive rate	57600 bit/s
Galvanic isolation	+

Characteristics of outputs	
Number of output ports	4
Supported interfaces	RS-232, RS-422/485
Max baudrate	57600 bit/s
Galvanic isolation	+



**DR-209 dimensional drawing**



**DR-209 functional diagram**

## Multipurpose digital repeater DR-209M



The DR-209M multipurpose digital repeater displays NMEA-sentence data from various ship equipment on an 8 inch colour LCD monitor in user-friendly and convenient format. It rebroadcasts the obtained data by communication channels. The device is equipped with a touch screen and 12/24V output to supply connected equipment.

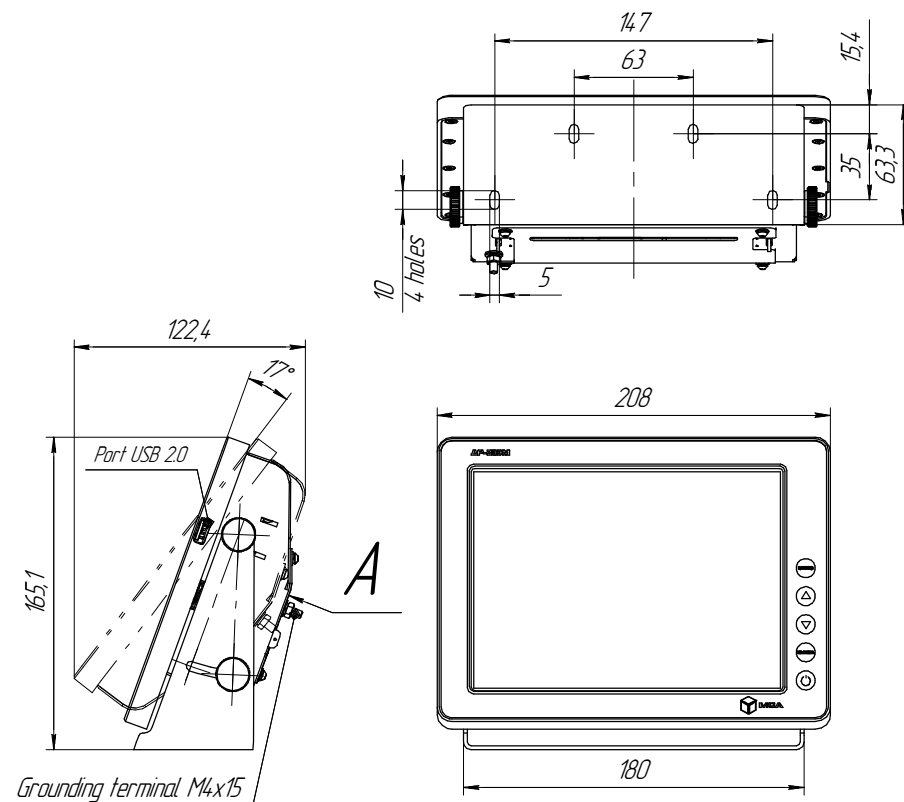
### TECHNICAL CHARACTERISTICS

General characteristics	
IP rating	IP 22
Storage temperature	-60...+70°C
Operating temperature	-15...+55°C
Weight	1.76 kg

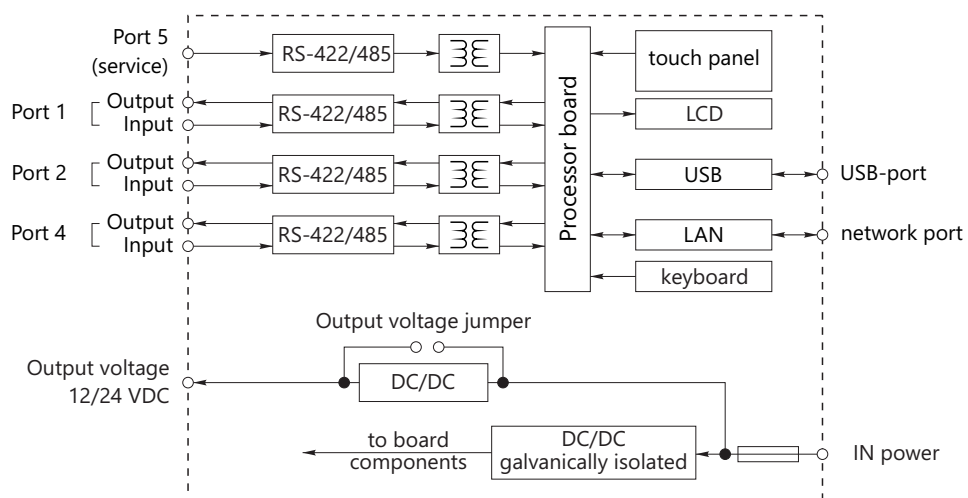
Electrical characteristics	
Power supply voltage	10...36 VDC
Power consumption	max 20 W
Galvanic isolation from power mains	+
Reverse polarity protection	+
Overvoltage protection	+

Characteristics of inputs	
Number of input ports	3
Supported interfaces	RS-422
Max receive rate	115200 bit/s
Galvanic isolation	+

Characteristics of outputs	
Number of output ports	3
Supported interfaces	RS-422
Maximum baud rate	115200 bit/s
Galvanic isolation	+



**DR-209M dimensional drawing**



**DR-209M functional diagram**

## Steering repeater DR-309



The DR-309 steering repeater displays the vessel's course data received in NMEA-sentences from various digital sources using a card and LED indicator. The device rebroadcasts the received NMEA data through an RS-422 (or CAN optionally) interface.

### TECHNICAL CHARACTERISTICS

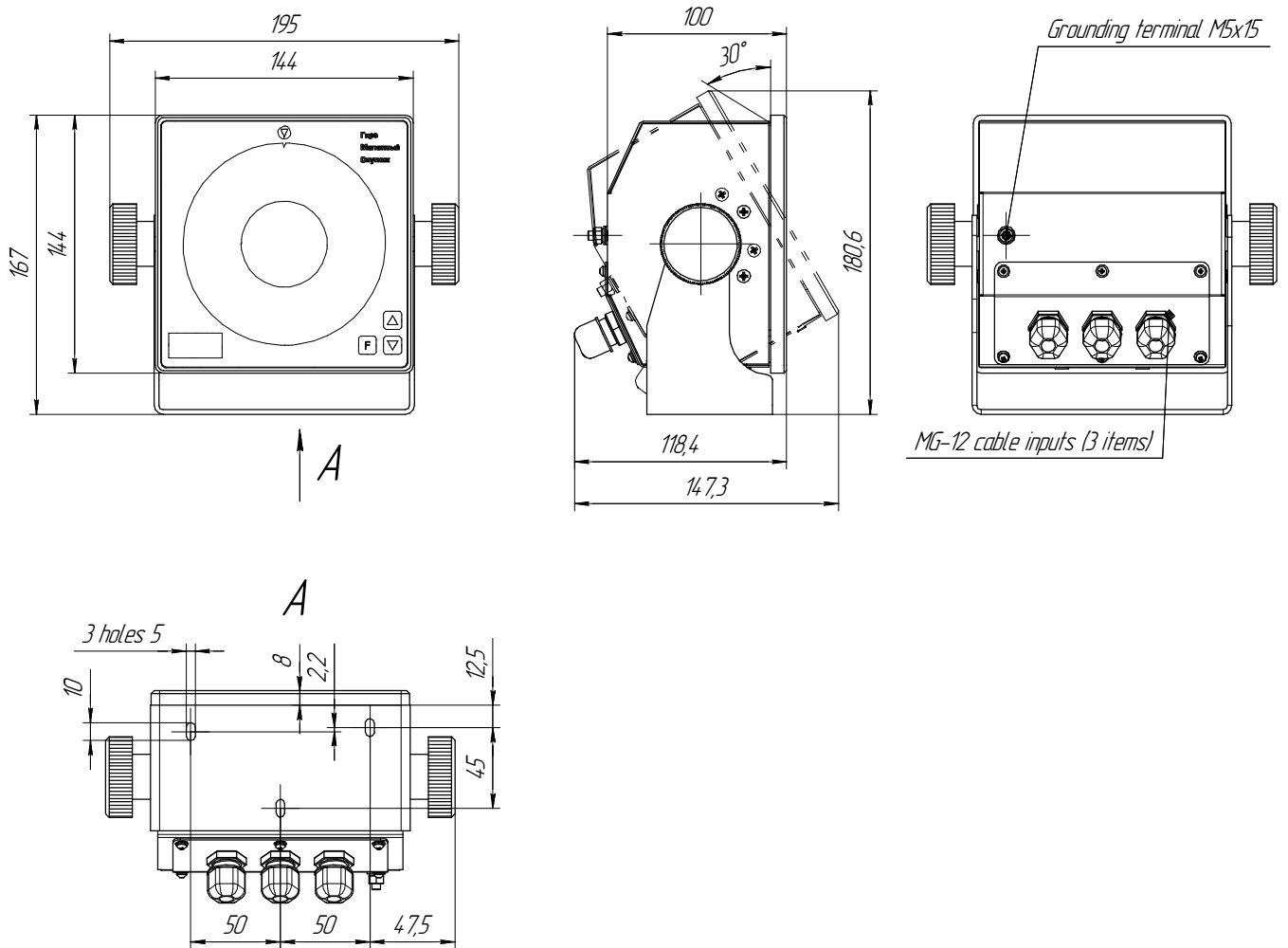
General characteristics	
IP rating	IP 22
Storage temperature	-60...+70°C
Operating temperature	-15...+55°C
Weight	2 kg

Electrical characteristics	
Power supply voltage	10...36 VDC
Power consumption	max 12.5 W
Galvanic isolation from power mains	+
Reverse polarity protection	+
Overvoltage protection	+

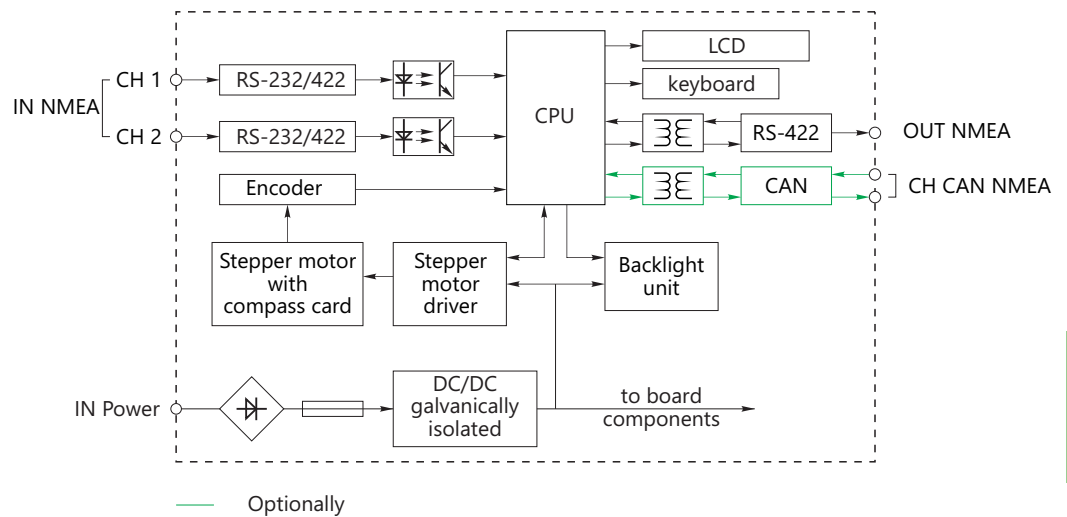
Characteristics of inputs	
Number of input ports	2
Supported interfaces	RS-232/RS-422
Max receive rate	115200 bit/s
Optoisolation	+
Supported sentences	\$xxHDT, \$xxHDG, \$xxHDM

Characteristics of outputs	
Number of output ports	1
Supported interfaces	RS-232/RS-422 (CAN optionally)
Max baud rate	115200 bit/s
Galvanic isolation	+

Operating characteristics	
Follow up speed	>12 °/s
<i>Resolution capacity:</i>	
Character display	0.1°
Compass card indicator	0.5°



DR-309 dimensional drawing



DR-309 functional diagram