

QMI-1 Bus Interface

Description and instructions for usage

QMI-1 serves to connect a master PC to the QM-4000 system. The PC is connected to QMI-1 via a D-sub 9 connector (RS-232) and a 3.5mm audio jack. The QM-4000 bus is connected to another D-sub 9 labeled DEVICE BUS on QMI-1. The bus carries the following signals:

- 1) Supply voltage for MRA-3Q devices, 12–17V
- 2) RS485 signal pair with proprietary data protocol
- 3) Audio line (switched on selectively by MRA-3Q)

Layout of the device bus (QMI/MRA cable):

CAN-9 pin	Wire Color	Signal	MRA-3Q
1	yellow	AUDIO	OPTIONS middle
2	gray	GND	CHARGER -
3	white	GND	CHARGER -
4	red	+14 V	CHARGER +
5		NC	
6	shield	GND	CHARGER -
7	green	RS485 -	OPTIONS right channel
8	orange	RS485 +	OPTIONS left channel
9		NC	

When extending the bus the following wires should be paired: audio (1 and 2), power (3 and 4), and RS485 (7 and 8).

A non-stabilized DC adaptor 12V / 0.3-1A shall be connected to the POWER connector (the maximum current depends on the number of devices on the bus). The bus can be as much as 1200m long, wired from one device to another. If the bus is longer than 20m it is necessary to use a termination resistor at the most distant device (120 ohm connected between the green and the orange line, i.e. RS485+ and RS485-). The RS232 cable used for connection of QMI-1 to the PC should not be longer than 8m. The length of the audio cable to the PC (3.5mm jack) is not critical. QMI-1 contains the following indicators: the power is indicated by the red POWER LED, the data flow from the devices to the PC is indicated by the yellow LED, and the data flow from the PC to the device by the green LED. The SPEAKER output can be used to connect arbitrary active PC speakers. Another external audio recorder can be connected to the RECORDER connector. If the preset output levels are not satisfactory it is possible to modify them inside the QMI-1 using presets labeled LS, REC, and PC.

Default audio settings: SPEAKER 170mV eff, RECORDER 40mV eff, PC 40mV eff.