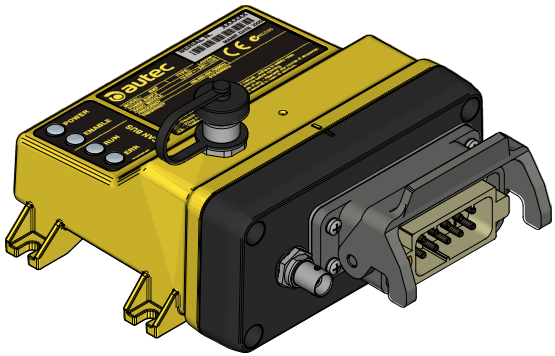
Original instructions

AIR SERIES

Part D: receiving unit
MVRCAN



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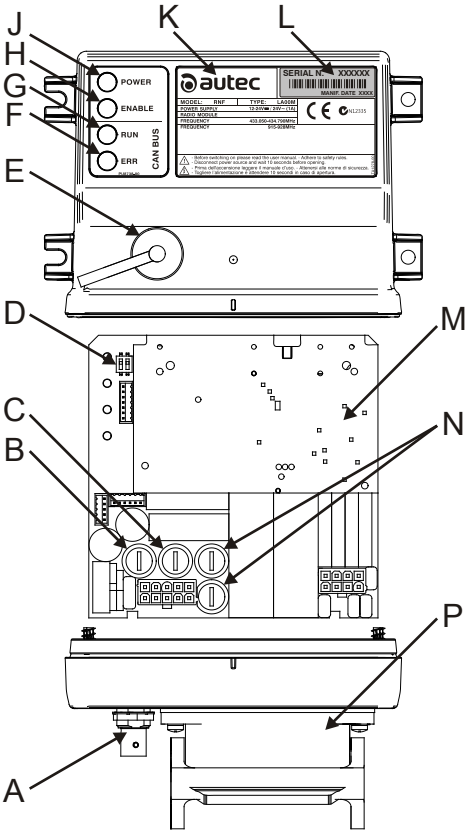
1 Description

The receiving unit uses the CANopen® communication protocol to communicate in a CAN bus network. The receiving unit acts as a slave node within this network.
This way, the STOP and SAFETY commands sent by the transmitting unit activate their corresponding outputs and are also sent via CAN network.

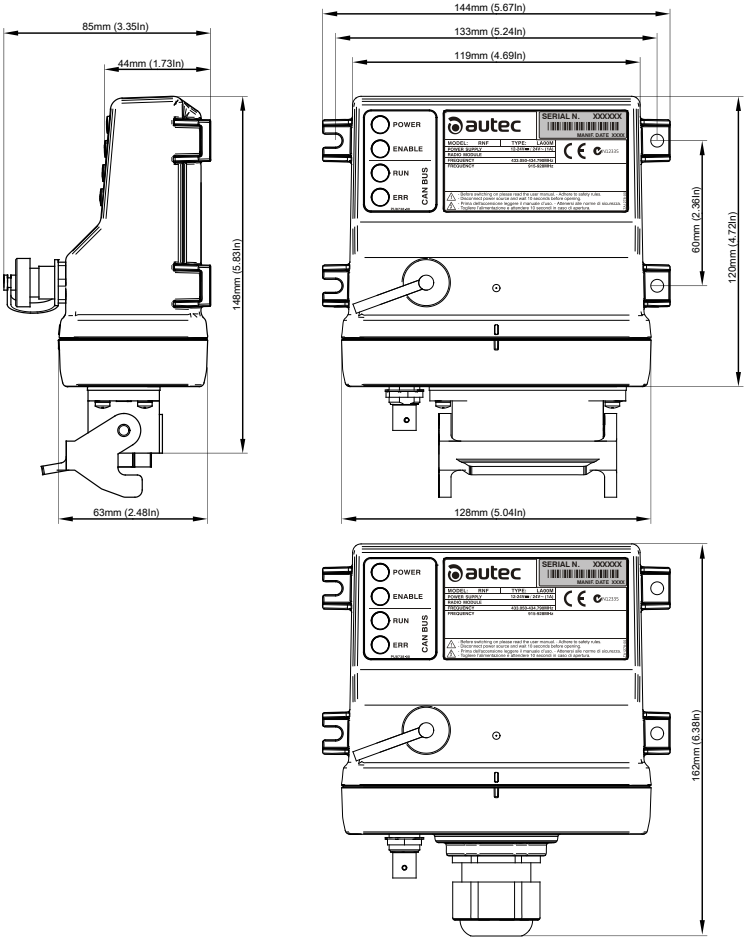
DANGER	**It is not possible to only rely on the CAN communication status to maintain or bring the remote controlled machine to a safe condition. Messages sent by the radio remote control via CAN network do not in fact ensure the same safety features as the corresponding commands that are directly carried out by the receiving unit's safety outputs.**



A	BNC connector for antenna
B	Power supply protection fuse
C	SAFETY contact protection fuse
D	DIP switches
E	Connector for cable control
F	ERR LED
G	RUN LED
H	ENABLE LED
J	POWER LED
K	Technical data plate
L	Identification plate
M	Electronic module and address key
N	STOP contacts protection fuses
P	Plug or cable gland

2 Technical data

Power supply ..... 12-24V⎓/24V~ (1A)
Power supply protection fuse ..... 1.6A T 250V (5x20mm)
Antenna ..... internal or dedicated
SAFETY contact rated current ..... 6A (30V≂)
SAFETY contact protection fuse ..... 6A T 250V (5x20mm)
STOP contacts rated current ..... 4A or 6A (30V≂)
STOP contacts protection fuses ..... 4A or 6A T 250V (5x20mm)
Commands rated current ..... 4A (30V≂)
Housing material ..... PA 6 (20%fg)
Protection degree ..... IP65 (NEMA 4)
Dimensions 128x148x85mm (5.04x5.83x3.35In)
Weight 0.65kg (1.43Lb)



3 Technical data sheet

The technical data sheet contains the wiring diagram showing the connection between the receiving unit and the machine. It also contains the transmitting unit configuration and shows the matching between commands sent and machine functions/movements.
Each technical data sheet must be filled in, checked and signed by the installer, who is responsible for a correct wiring.
A copy of the technical data sheet must always be kept together with this manual (always keep a copy of this data sheet for administrative purposes).

WARNING	**The wiring of the receiving unit outputs must always reflect the wiring indicated in the technical data sheet.**

4 Plates

4.1 Plates on MVRCAN unit in a radio remote control

Plate	Position	Content
radio remote control identification plate	On the cover of the receiving unit.	Radio remote control serial number (SERIAL N.), bar code and manufacturing year.
technical data plate	On the cover of the receiving unit.	MODEL, TYPE and main transmitting unit technical data, marking and possible radio remote control marks.

4.2 Plates on MVRCAN unit in a Take & Release system

Plate	Position	Content
system identification plate	On the cover of the receiving unit.	System serial number (SERIAL N.), bar code and manufacturing year.
technical data plate	On the cover of the receiving unit.	MODEL, TYPE and main transmitting unit technical data, marking and possible radio remote control marks.

4.3 Plates on MVRCAN unit in a Multi Units or Multi Receiver system

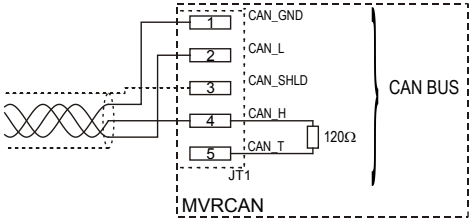
Plate	Position	Content
system identification plate	On the cover of each receiving unit.	System serial number (MULTI S/N), bar code and manufacturing year.
receiving unit identification plate	On the cover of each receiving unit.	The serial number of the receiving unit (SERIAL N.) and a bar code.
technical data plate	On the cover of each receiving unit.	MODEL, TYPE and main transmitting unit technical data, marking and possible radio remote control marks.

5 CAN BUS

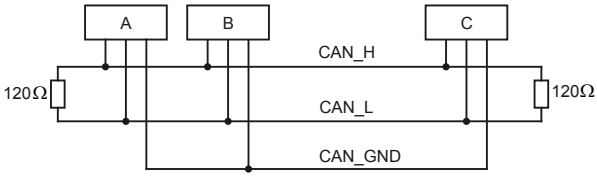
The CAN BUS port is used to connect the receiving unit in a network that communicates through CANopen® protocol.

5.1 Wiring the CAN network

Use CAN_H and CAN_L to wire the CAN network.
Use CAN_GND to wire GND of CAN network.
A coiled and shielded cable should be used. In this case, use CAN_SHLD to wire the shield.

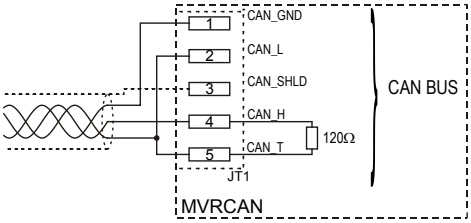


Both ends of CAN networks must be terminated with a 120 Ω resistor between CAN_H and CAN_L.



A	Node 1
B	Node 2
C	Node n

If the MVRCAN receiving unit is at the beginning or at the end of the network, connect outputs CAN_T and CAN_L so that the line termination is connected.



All CAN network nodes must have the same bit rate. The bit rate defines the maximum length for the network:

Bitrate (kbit/s)	1000	800	500	250	125	100	50	20	10
Approximate network length (m)	30	50	100	250	500	600	1000	2500	5000

6 Light signals

6.1 POWER LED (green)

The POWER LED indicates the status of the receiving unit.

The POWER LED...	Meaning
…is off	The receiving unit is switched off.
...is on	Receiving unit is powered.

6.2 ENABLE LED (green)

The ENABLE LED indicates the status of the radio link.

The ENABLE LED …	Meaning
… blinks once every 5 seconds	The receiving and transmitting unit do not communicate.
… blinks fast	The unit is ready to receive commands sent by the transmitting unit.

6.3 RUN LED (green)

The RUN LED indicates the status of the communication between the receiving unit and the CAN network Master node.

The RUN LED...	Meaning
…is off	The receiving unit does not work as a CAN network node.
… blinks	The receiving unit does not send commands in the CAN network.
...is on	The receiving unit is working correctly as a node in the CAN network.

RUN LED signals reflect the guidelines of the CANopen® standard, CiA recommendation 303-3.

6.4 ERR LED (red)

The ERR LED indicates the status of the CAN communication.

The ERR LED...	Meaning
…is off	The CAN communication is working correctly.
… blinks	The CAN communication does not work correctly.
...is on	No CAN communication.

ERR LED signals reflect the guidelines of the CANopen® standard, CiA recommendation 303-3.

7 Operation

7.1 Electronic module

The electronic module contains the address key, where the radio remote control configuration data are also stored. The receiving unit cannot work without this address key.

7.2 DIP switches

DIP switch 1 is used to set the frequency band.
DIP switch 2 shall always be set in the OFF position: do not modify it.

8 Malfunction signalled by the receiving unit

Use the light signals on the receiving unit to identify the radio remote control malfunction. If the problem persists after the suggested solution has been carried out, contact the support service of the machine manufacturer.

Signals	Possible reason	Solutions
The POWER LED is off.	Wrong or no power supply.	Correctly plug in the connecting plug between the radio remote control and the machine.
		Make sure that power supply wires are correctly connected and that the power supply value is within the limits specified in the technical data.
		Check the power supply protection fuse and, if needed, replace it.
The POWER LED is steady and the ENABLE LED blinks once every 5 seconds.	The transmitting and receiving unit do not communicate.	Start up the radio remote control.
The POWER LED is steady and the ENABLE LED blinks fast.	The receiving unit does not activate the outputs of the commands sent.	Check that the outputs are correctly wired and that the commands sent activate the corresponding relays.
		Check the protection fuse of the STOP contacts or of the SAFETY contact and, if needed, replace them.
The POWER LED is steady and the RUN LED blinks.	The receiving unit does not send commands in the CAN network.	Contact the support service of the machine manufacturer.
The POWER LED is steady and the ERR LED blinks.	CAN communication error.	Contact the support service of the machine manufacturer.