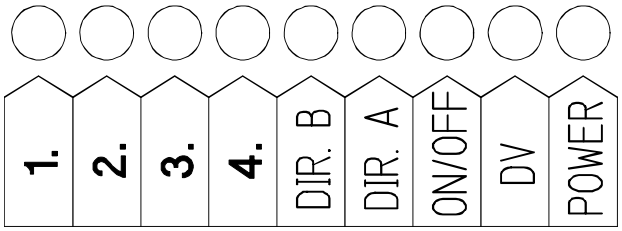
3.4 IRC-Electronic Box

The electronic box receives digitally coded control information from the remote control box via the radio receiver box.

The electronic box is connected to either 12 or 24 volts power supply from the accumulator of the vehicle. There are outputs for cable connection to the electric activations of the valve block as well as to the RCL-system.

On one of the sides of the electronic box there is a socket for connection of the radio receiver box and a socket for cable connection of the ON/OFF functions for the RCL system.

On the other side there is a plug for connection of the remote control cable. Furthermore there are 9 built-in diodes indicating the functional status.



Diode	Function
Power	Green diode – is lit when the system is powered.
DV	Red diode – is lit when there is voltage from the dump valve output in the electronic box to the RCL controller.
ON/OFF	Yellow diode – is lit when the ON/OFF functions are activated (push buttons and tumbler switches).
DIR.A	Green diode – is lit when a control lever activates the control valve for the A-port. The more the control lever is moved towards the extreme position, the more the diode is shining.
DIR.B	Red diode – is lit when a control lever activates the control valve for the B-port. The more the control lever is moved towards the extreme position, the more the diode is shining.
1.	Red diode – is flashing in combination with the diodes 2., 3., and 4. Indicating the type of error in case of system error. Please see chapter on troubleshooting.
2.	Green diode – is lit during normal loader operation. Is flashing in case of a system error. Please see chapter on troubleshooting.
3.	Red diode – is lit during normal loader operation. Is flashing in case of a system error. Please see chapter on troubleshooting.
4.	Yellow diode – is lit during normal loader operation. Is flashing in case of a system error. Please see chapter on troubleshooting.

15. Troubleshooting

In case of an error in the radio communication or the transmission of data between the electronic box and the RCL controller, the system comes up with the following error messages:

- The POWER diode (green) on the electronic box is lit and the diode 4. (yellow) is flashing
- The RUN and FUNC diodes on the RCL indicator panel are flashing

It will now be possible to troubleshoot by *pushing and holding down the red press button* on the RCL indicator panel.

Now a diode indicates where to find the error in the system.

Flashing diode	Type of error	Remedy
80% diode	No CAN communication	Try to re-start the IRC-system. Otherwise please contact an authorised HMF service point.
85% diode	The IRC-system has not been started up	Re-start the IRC-system
90% diode	Start up error in the Can-bus communication	Re-start the IRC-system
100% diode	The RCL controller has been set for emergency operation	Change back into remote control mode. Please see chapter on Emergency Operation.
80% / 85% diodes	The stop button on the remote control box is activated (pushed in)	Pull out the stop button (turn it to the right)
80%, 90% diodes	Error at the cable connection for the dump valve input in the RCL (The wire security connection)	Please contact an authorised HMF service point.
80%, 100% diodes	Unknown version of the remote control.	Please contact an authorised HMF service point.
85%, 90% diodes	Check sum error	Try to re-start the IRC-system. Otherwise please contact an authorised HMF service point.

If one of the following errors occurs:

- internally in the electronic box,
- in the wire connections between the electronic box and the electric activations of the control valve, or
- in the wire connection between the electronic box and the RCL-system

The diodes 1.-4. of the electronic box indicate in a certain combination where to find the error in the system.

Flashing diodes (repeated sequency)	Type of error	Remedy
1. - pause - 2.	Overload/short circuit in an ON/OFF output	Unscrew the cable on the ON/OFF socket of the electronic box. It is possible to work with the loader, but not to operate the ON/OFF functions.
1. - pause - 2. and 4.	Overload/short circuit in the wire connection from the dump valve output in the electronic box to the RCL controller	Please contact an authorised HMF service point.
1. - pause - 2. and 3.	Overload/short circuit in an electric activation on the control valve or in the wire connection/socket-outlet and plug for the electric activation	Remove the socket one by one on the electric activations, until the indication of error stops. Check the wire/socket for faults or moisture.
1. - pause - 3. and 4.	Overload/short circuit in the regulation signal from the electronic box to an electric activation on the control valve	Remove the socket one by one on the electric activations, until the indication of error stops. Check the wire/socket for faults or moisture
1. - pause - 2., 3. and 4.	Wrong voltage from the RCL to the dump valve output in the electronic box	Please contact an authorised HMF service point.
1. - pause - 4.	Check sum error	Please contact an authorised HMF service point.
4. - pause - 2	Incorrect or missing ID-code (the remote control box has been mixed up with another one)	Please contact an authorised HMF service point to get information on programming of a new ID-code

If problems continue, contact an authorised HMF service point immediately .