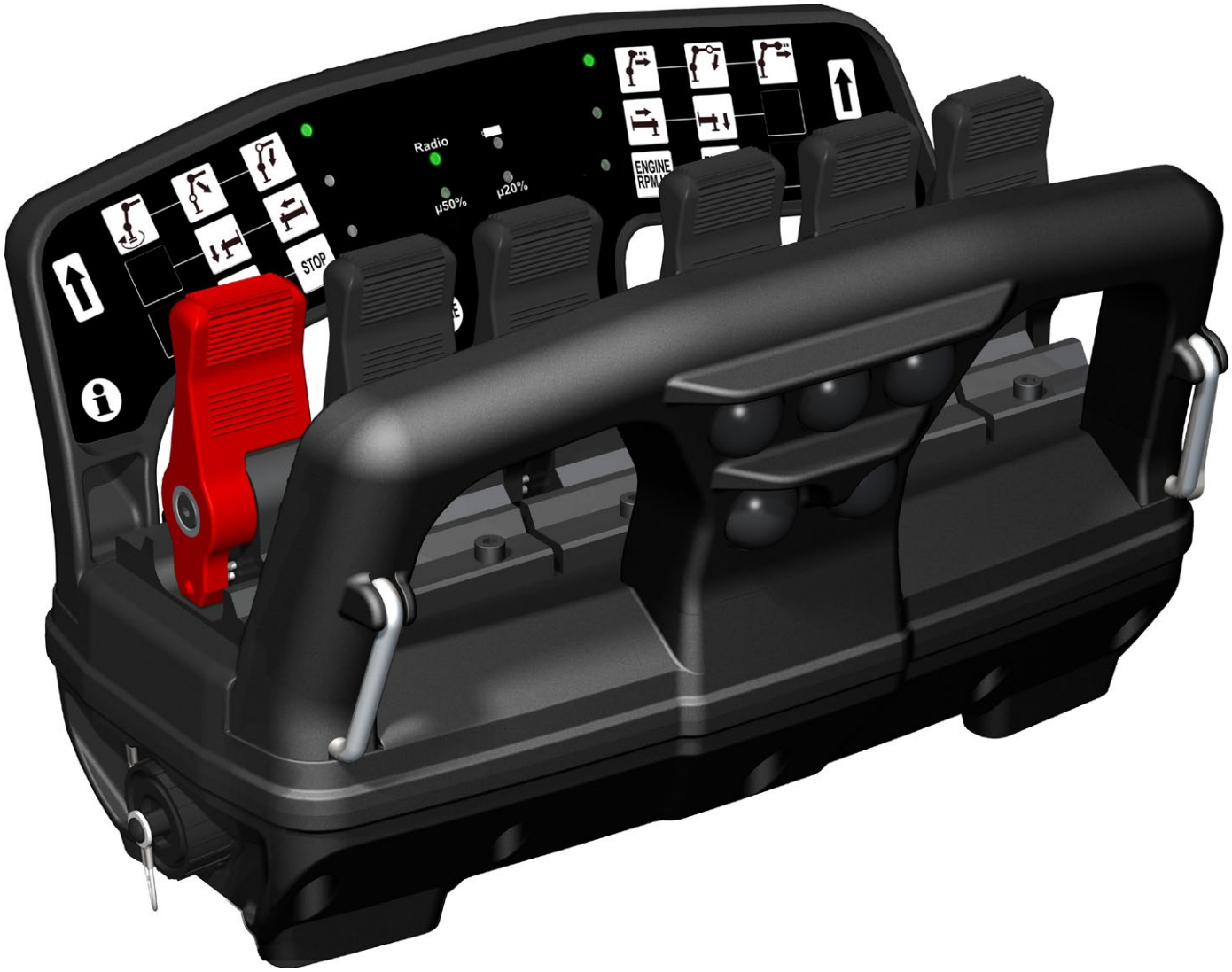
Olsbergs

MultiDrive 2

Controller Basic 6F

2012



Technical description

English

Introduction

MD2-Basic is the basic version of Olsbergs' line of radio controllers. The hand controller is equipped with a menu selection system as standard.

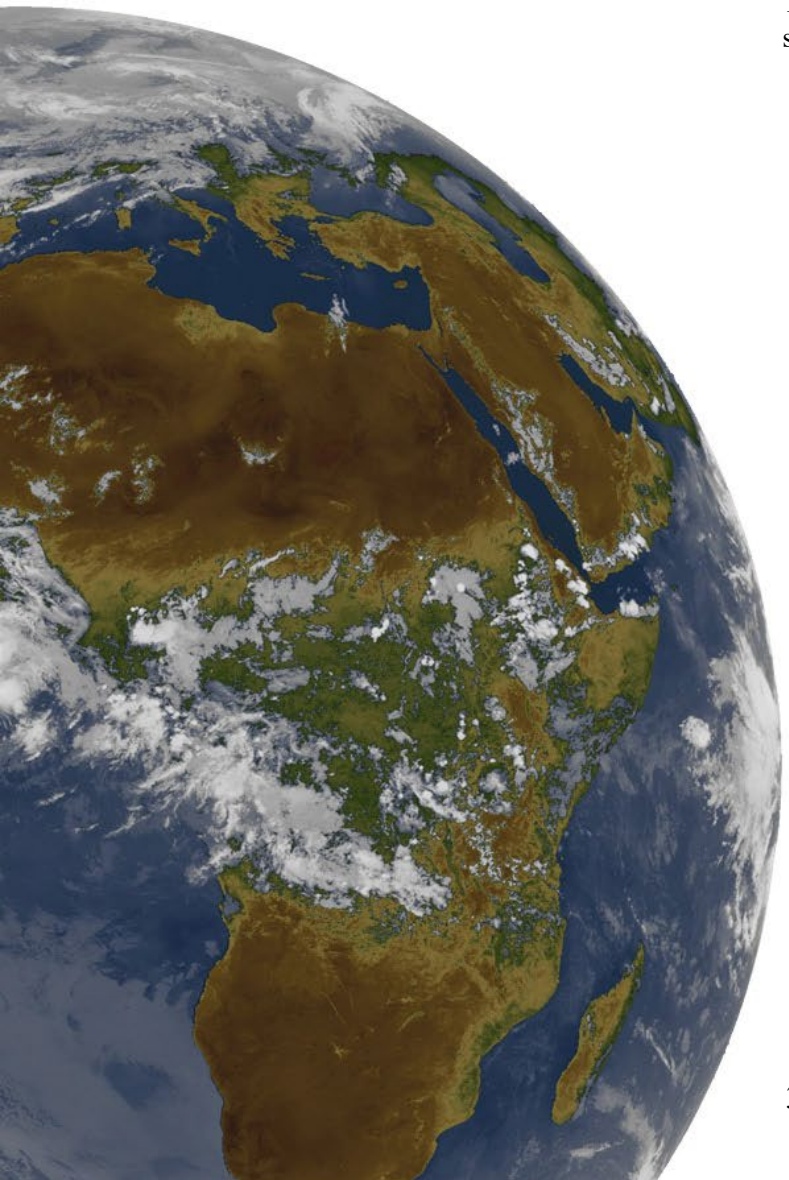
The hand controller contains a two-way communication radio enabling information to be sent both to it and from it. In the radio decoder contains a corresponding unit to handle traffic at the other end.

The hand controller utilises bluetooth radio and therefore operates in the 2.4 GHz band, which is a free band that has been approved practically worldwide. This means that no license is needed and the radio can in principle be used everywhere including over national boundaries.

The MD2-Basic meets a basic demand where the operator doesn't need feedback on the status of the machine.

The operator may select between three menus, of which two control six hydraulic functions each, and one controls up to six on-off-functions. Choosing menu is readily done by pressing one of three ergonomically positioned buttons. Sharply lit LEDs indicate the selected menu.

The information screen displays radio signal status, battery status and selected micro mode.



SAFETY PHILOSOPHY

The control system fulfils stringent safety requirements in terms of reliability and operational safety.

The products are CE-marked and approved in accordance with machinery directive 2006/42/EG.

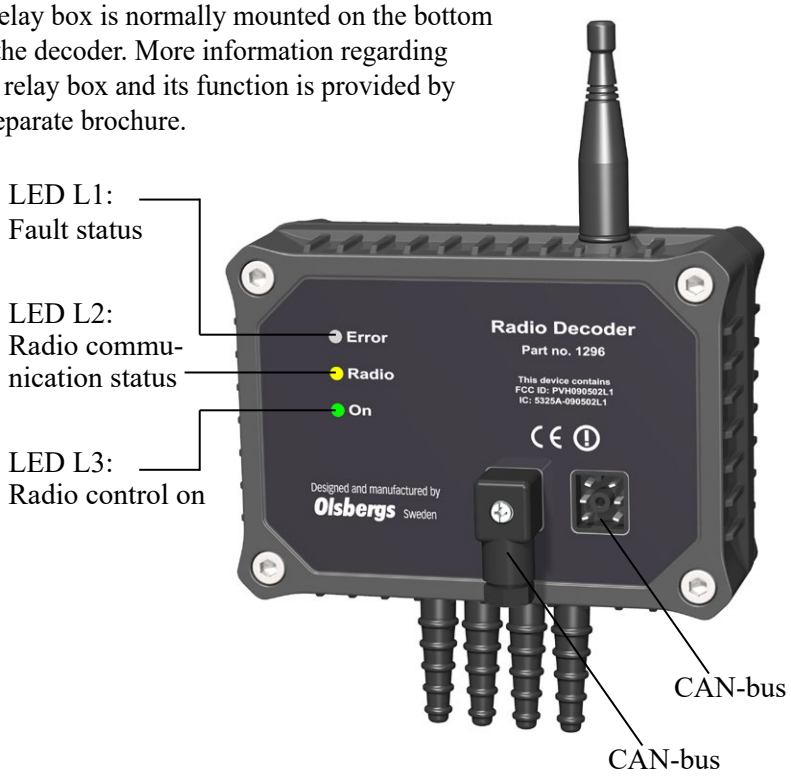
The system conforms to ISO 13849-1:2006 category 3 PLd.

Radio Decoder

The radio decoder contains one of the radio units. The decoder translates the radio traffic, consisting of lever and button data from the hand controller, to the CAN bus.

For safety reasons, it is extremely important that data is not corrupted, therefor the decoder has dual microprocessors which monitor each other to ensure accuracy in the translation. The controller and the decoder must be “paired” with each other to establish a connection. A unique code is loaded and stored in each unit. The pairing procedure is described elsewhere in this documentation.

A relay box is normally mounted on the bottom of the decoder. More information regarding the relay box and its function is provided by a separate brochure.

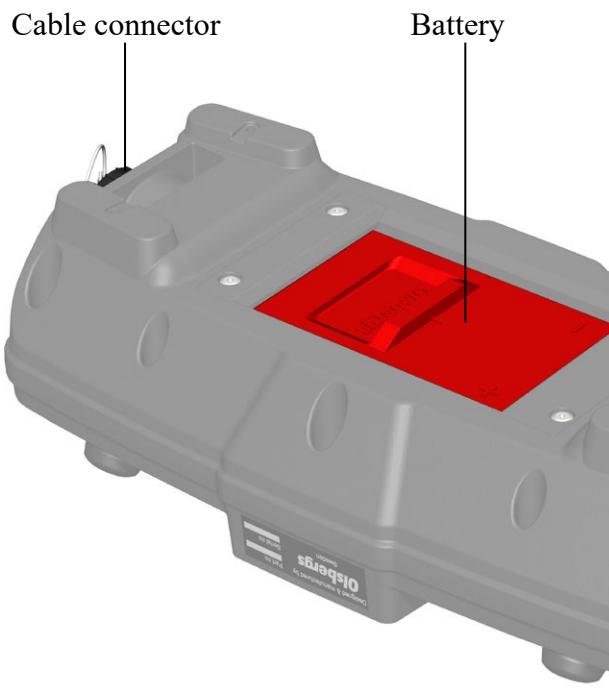


Controller

The hand controller is the device that the operator uses to control his crane and his vehicle.

The hand controller has six levers. The functions of each lever may be the same or different in different menus, however only one function can exist per lever at any one time.
If a lever is faulty, or if it is deflected on starting, it is disabled. The other levers operate as usual.

Activating the micro-button enables the operator to set the levers to 50% or 20% of normal speed thus enabling the crane to be operated with increased precision.



Blink mode for each LED in different operating cases:

Decoder on, under initialisation.
Error / Radio / On — Blink: 0,6s 1s 0,6s 1s osv

Cable operation.
Error / Radio / On — Flicker: 20Hz

Decoder powered, no radio connection.
Error / Radio / On — Blink: 0,6s 1s 0,6s 1s etc

Radio connection present, safety requirements not met.
Error / Radio / On — Steady: / Blink: 0,6s 1s 0,6s 1s etc

Normal operation.
Error / Radio / On — Steady: 20Hz / Flicker:

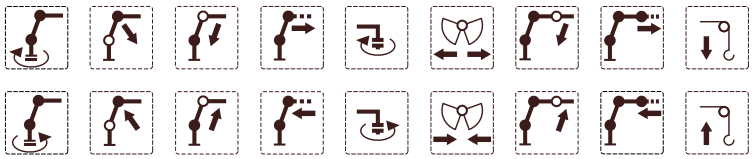
Teach-in procedure in progress.
Error / Radio / On — Flicker: 20Hz

Teach-in procedure complete.
Error / Radio / On — Steady:

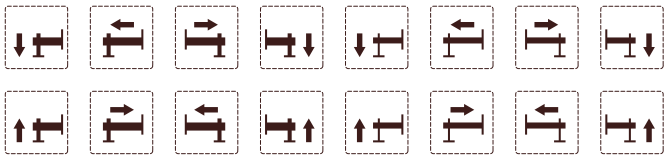
Internal error or failed teach-in procedure.
Error / Radio / On — Steady:

CRANE - Symbols

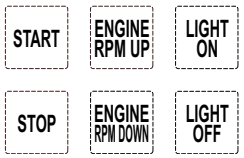
Symbol sign, Olsbergs Part Nº E1284



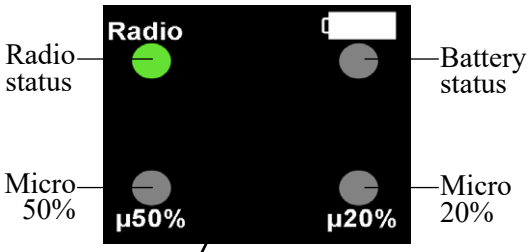
EXTRA - Symbols

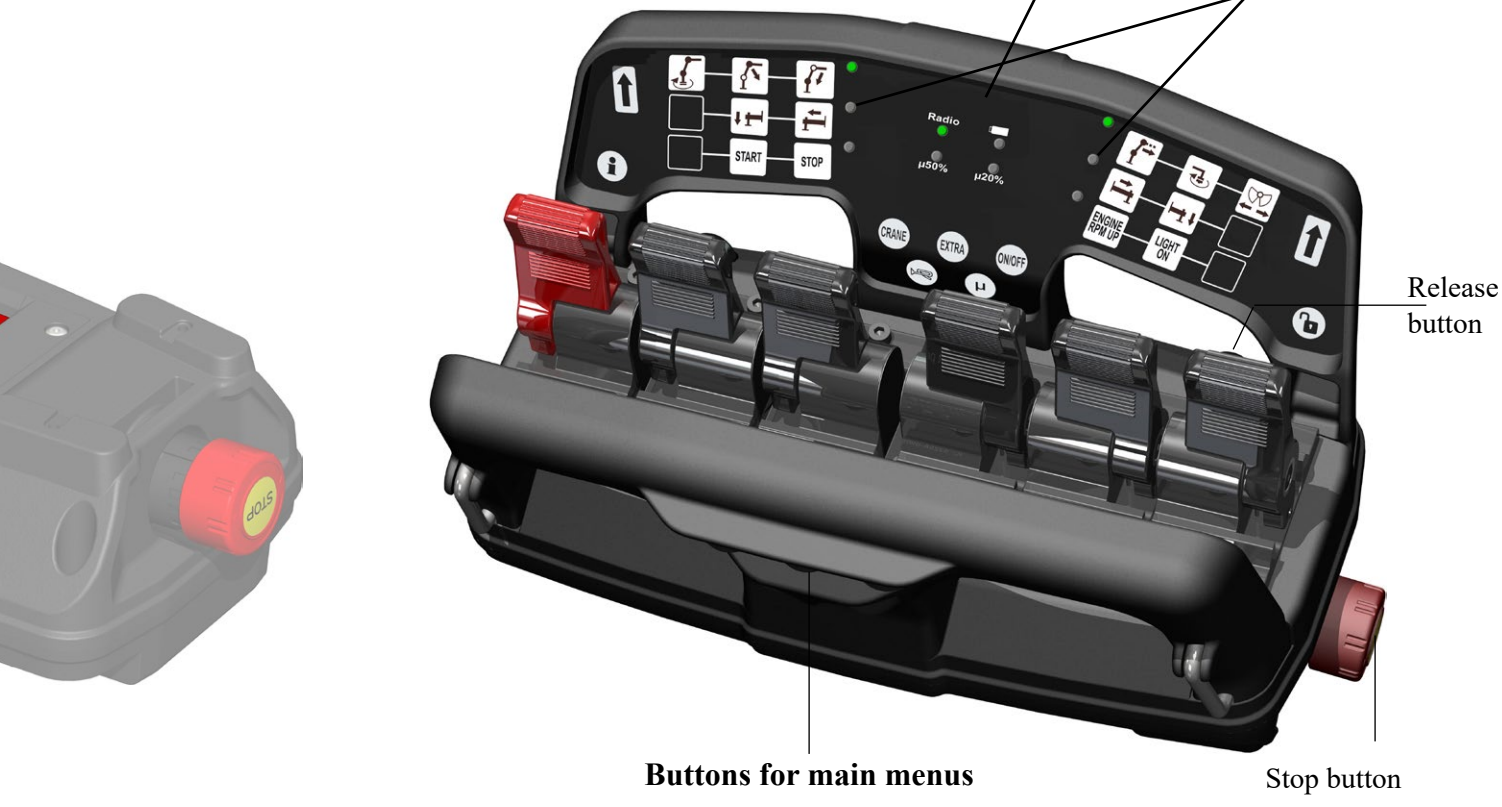


ON/OFF - Symbols



Graphic symbols on the information screen indicate which function that is controlled by which lever. All controllers come with a symbol label chart (E1284). When configuring the crane, the corresponding self-adhesive label can be put on the information screen.





Getting started!

The procedure for starting the system is described below.

INSTALLING THE BATTERY

Install a fully-charged battery in the hand controller as shown on the right. (Figure 1)

The battery must be installed correctly or the hand controller will not start.

A fully-charged 1700mAh battery provides approximately 8 hours of operation.

Figure 1

ACTIVATING THE SYSTEM ON THE CRANE

To turn on the crane's control unit press the on button on the Power Display Box, PDB. The LED above the button will then start to flash. (Figure 2)

Then press the remote control button on the PDB, the LED above this button will light and stay on. (Figure 3)

The decoder starts when remote control operation is selected and the decoder's yellow LED starts to blink.

The crane's control unit is now ready to be connected with the hand controller.

Figure 2

Figure 3

Figure 4

ACTIVATING THE CONTROLLER

To activate the hand controller pull the stop button out by turning it clockwise. The hand controller is powered up and starts to establish a radio link with the decoder on the crane.
While radio contact is being established, the green radio LED blinks. (Figure 4)

When the radio connection is established, the green radio LED flickers.
If the connection fails, the green LED gives a steady light. Push the stop button and start the activating process again.

Connection time for a cold-start can be up to 5 seconds. A cold-start occurs when the hand controller or decoder on the crane have been off for the last 10 minutes. When restarting within 10 minutes of turning off the hand controller, the radio link is still established and the hand controller is ready for use immediately.

The factory setting for the period of time the hand controller maintains contact with the decoder after pressing the stop button is 10 minutes.

Figure 5

RADIO LINK ESTABLISHED

When the radio connection is established the yellow LED on the decoder shines steadily and the green LED blinks rapidly. (Figure 5)

Other instructions

LOCKING/UNLOCKING THE HAND CONTROLLER

The hand controller can be locked to prevent unauthorised persons, such as children, from starting the hand controller and operating the crane. (Figure 1)

Locking the hand controller

- Press the EXTRA button and the ON-OFF button when the stop button is pressed in.
- Continue to hold the buttons pressed at the same time as the stop button is pulled out.

All six menu LEDs blink when the hand controller is locked.

Note!
If battery power drops too low the hand controller will lock automatically.

Figure 1

Unlocking the hand controller

- Press the EXTRA button and the ON-OFF button when the stop button is pressed in.
- Continue to hold the buttons pressed at the same time as the stop button is pulled out.

The hand controller is ready for use.

REPLACING A HAND CONTROLLER OR DECODER

Every system has a unique controller/decoder pair which only communicates with each other.
If one unit has to be replaced, a special procedure must be followed to make the new pair communicate.
The procedure is as follows:

1. Switch off the PDB's system.
2. Unscrew the left-hand connector on the decoder and remove it.
3. Connect the hand controller with the accompanying cable (E0781) to the decoder.
4. Switch on the PDB and select "remote".
5. Hold down the release button on the hand controller while pulling out the stop button.

When the yellow LED on the decoder starts to blink, let go of the release button. When the procedure is complete, the yellow LED goes out. If the procedure was successful, only the green LED remains lit, if not, the red LED is lit. The procedure can take up to half a minute.

CABLE CONTROL

The hand controller is normally used in radio mode but it is also possible to operate it via a cable.

A four-metre cable (E0781) is supplied as standard with the hand controller. The cable is intended to be used for short-term operation and when pairing in conjunction with the replacement of hand controllers or decoders. The cable connects to the vehicle via the decoder's left-hand CAN bus connector. (See Figure 3)

If the hand controller is to be wired permanently or for a long period, an adapter cable (E0837) is run from the PDB and installed at a suitable location on the vehicle. To give the operator greater freedom of movement, a 15-metre cable (E0782) is used between the adapter and the controller. (See Figure 2)

When the cable is connected to the hand controller the radio and battery LEDs are not lit.

BATTERY STATUS

Battery voltage		
Above 6,7 V		No LED
6,5 V - 6,7 V		LED Blink
Below 6,5 V		LED steady

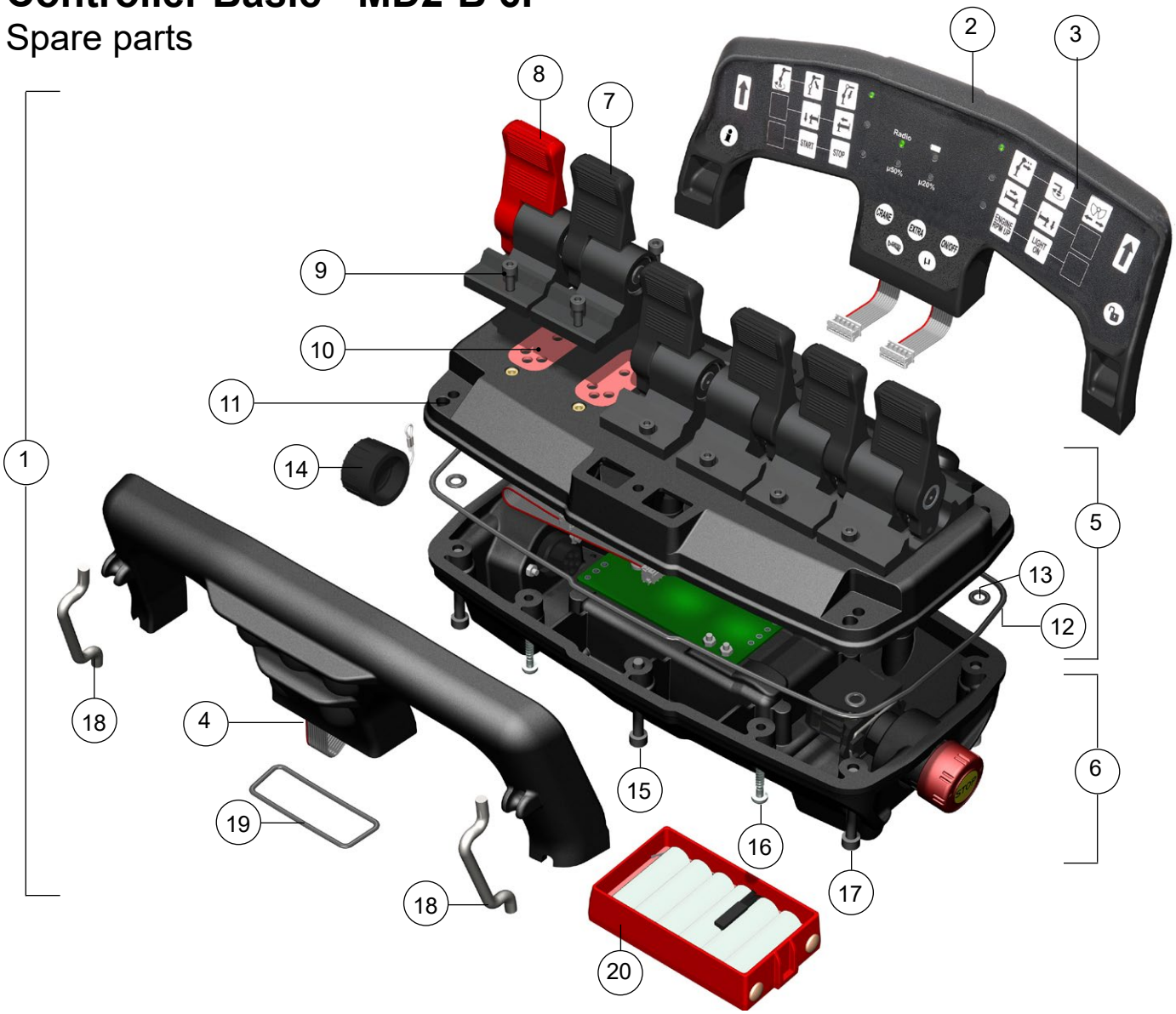
When the battery's voltage drops below 6.5 V, communication with the system stops. Exchange and charge the battery.

Figure 2

Figure 3

Controller Basic - MD2-B 6F

Spare parts



Pos	Part.N°	Description	Note
1	1218B	Controller Basic MD2-B 6f	
2	E1235	Handle, Diode	complete, incl. Symbol sign
3	E1284	Symbol sign, MD2-Basic	
4	E1390	Handle, Push button	complete
5	E1198	Controller MD2 6f, Top	incl. levers
6	E1200	Controller MD2 6f, Bottom	incl. stop button, contact chassis and cap
7	0498	Lever, Black	incl. screw and packing
8	0499	Lever, Red	incl. screw and packing
9	S2831	Screw M4x12 MC6S	A4 black nickel
10	E0447	Packing lever	
11	E1197	Top box, controller	excl. levers
12	S2920	O-ring Ø224,0x2,62	NBR 70
13	S2939	O-ring Ø6,0x2,0	NBR 70 (4 pcs)
14	S2532	Cap, controller	
15	S0238	Screw M5x45 MC6S	A4 black nickel
16	S2938	Screw T40x25 TX	
17	S2912	Screw M5x40 MC6S	A4 black nickel
18	E1377	Fittings, carrier strap	
19	S2940	O-ring Ø45,0x2,0	NBR 70
20	1201	Battery NiMH, 7.2 V	

Decoder / Radio - MD2, MDMMX

Spare parts

Pos	Part Nº	Description	Note
1	1296	Decoder / Radio MD2, MDMMX	incl. aerial
2	S3152	Screw M6x40 MC6S	A4
3	S2556	O-ring Ø5,28x1,78	NBR 70
4	S3183	Aerial, ½ wave lentgh	RSMA
5	S2948	O-ring Ø8.0*3.0	EPDM
6	E0854	Strapped plug, decoder	

Possible bottom modules

Pos	Part Nº	Description	Note
	1293	Relay Box PLUS, MDMMX	incl. o-ring
	E1431	Bottom box, high	incl. o-ring

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