

MultiDrive 2

Controller Basic 6F 868

2023



Technical description



English

EU Declaration of Conformity

Olsbergs Electronics AB

Fågelsångsvägen 10, SE-186 42 Vallentuna, Sweden

declare under our sole responsibility that the product(s):

Product Name: MultiDrive2

Model Number(s): Controller Basic 6F MD2 868, Radio Decoder CD2 868

Part Number(s): 1389 (462 8149), 1384 (462 4818)

to which this declaration relates is(are) in conformity with the essential requirements and other relevant requirements of EU Directive 2014/53/EU (RED) Radio Equipment Directive.

Type	Essential Requirements
Health & Safety (article 3.1a)	EN 62368-1:2014 EN 62311:2008
EMC (article 3.1b)	EN 301 489-1 V2.1.1 (2017-02) in accordance with the specific requirements of EN 301 489-3 V2.1.1 (2017-03)
Spectrum (article 3.2)	EN 300 220-2 V3.1.1 (2017-02)

Vallentuna, Sweden, February 2022

Jan-Erik Steen

Managing Director, Olsbergs Electronics AB

Introduction

Controller Basic 6F 868 is the LED version of Olsbergs' MD2 generation of hand controllers for radio remote control. 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 to it and from it. The radio decoder contains a corresponding radio unit to handle traffic at the other end.

The hand controller utilises ISM 868 MHz frequency band, which is a free band approved for usage in EU and conforms with EU radio directive (RED). This means that no radio license is needed and the radio can in principle be used everywhere in the EU including over national boundaries.

Controller Basic 6F 868 meets the need where the operator doesn't require feedback on the status of the machine.

The operator selects 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 radio remote 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 with the EU directive 2014/53/EU (RED) Radio Equipment Directive.

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.

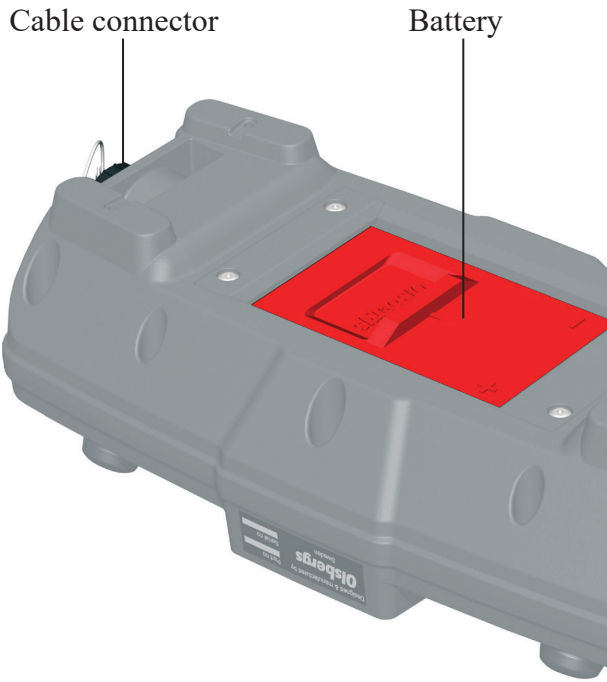
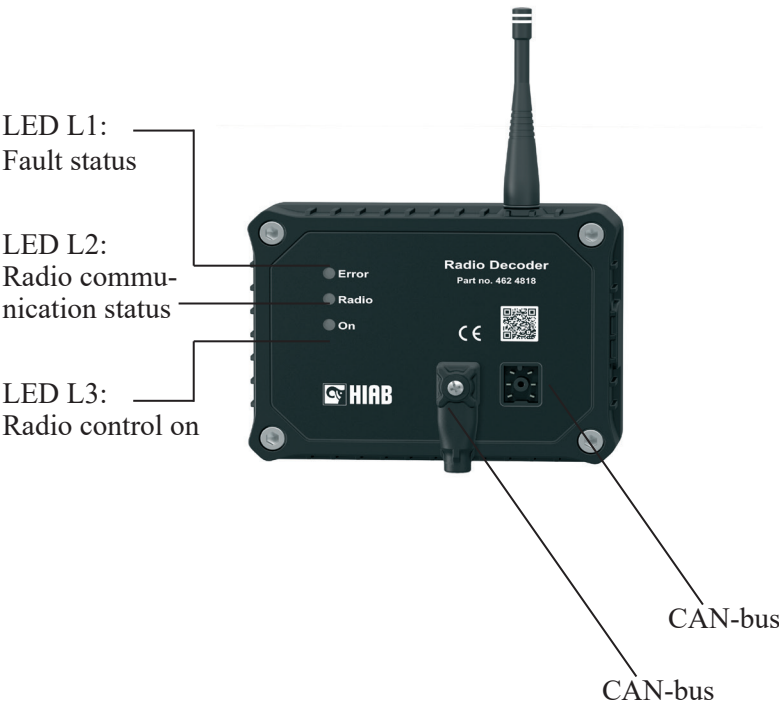
For safety reasons, it is extremely important that data is not corrupted, therefore the decoder has dual micro-processors which monitor each other to ensure accuracy in the translation. The controller and the decoder must be “paired” with each other to establish a connection. A unique code is loaded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

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.



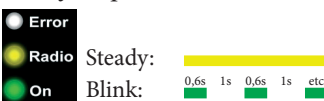
Cable operation.



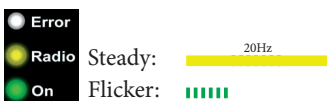
Decoder powered, no radio connection.



Radio connection present, safety requirements not met.



Normal operation.



Teach-in procedure in progress.



Teach-in procedure complete.



Internal error or failed teach-in procedure.



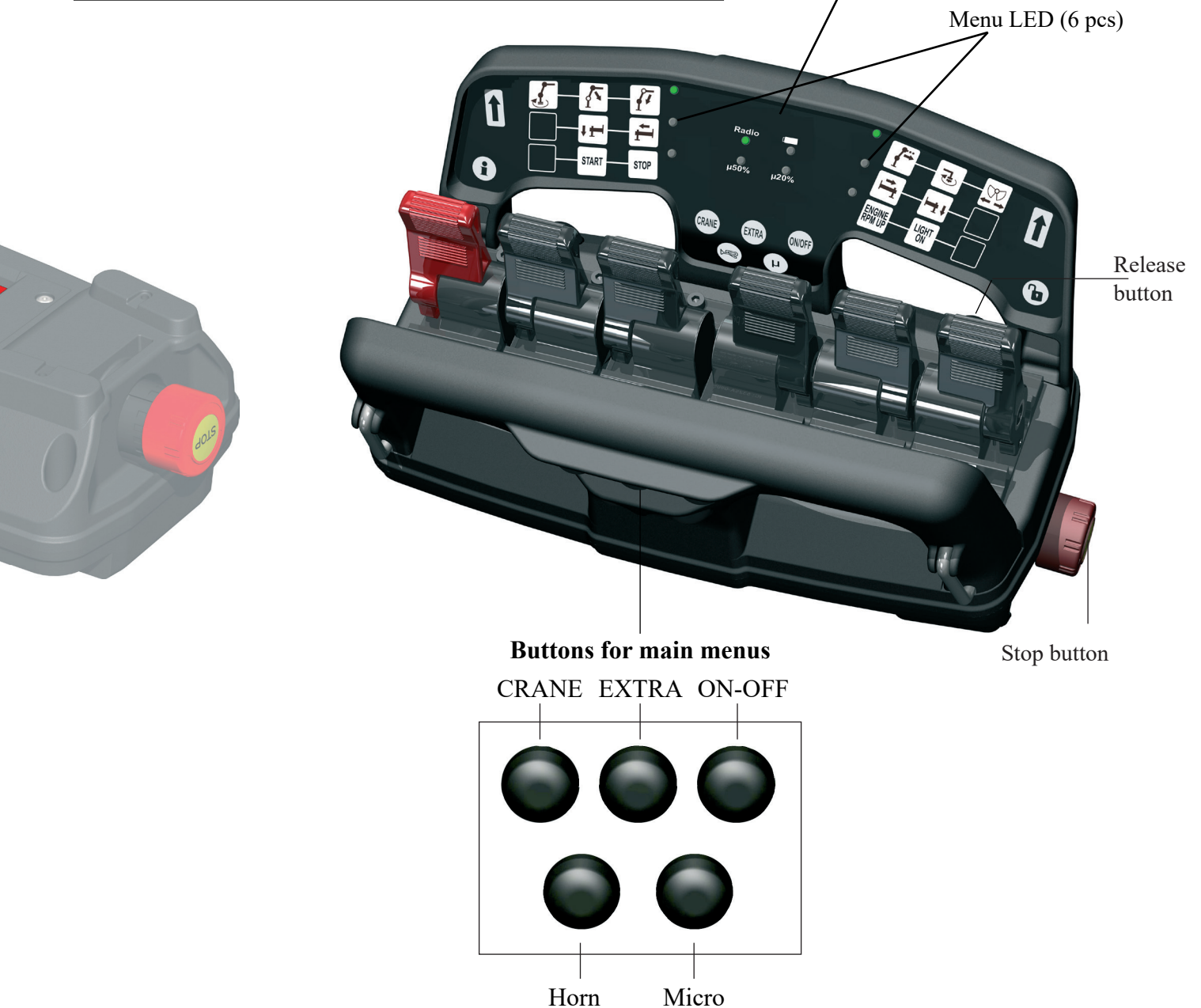
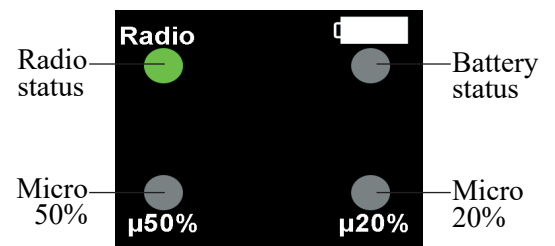
CRANE - Symbols

EXTRA - Symbols

ON/OFF - Symbols

Symbol sign, Olsbergs Part N° E1284

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 Box. The LED above the button will then start to flash. (Figure 2)

Then press the remote control button on the Power Box, 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.

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.



Figure 1

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 Power Box.
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 Power Box 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 Power Box 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.



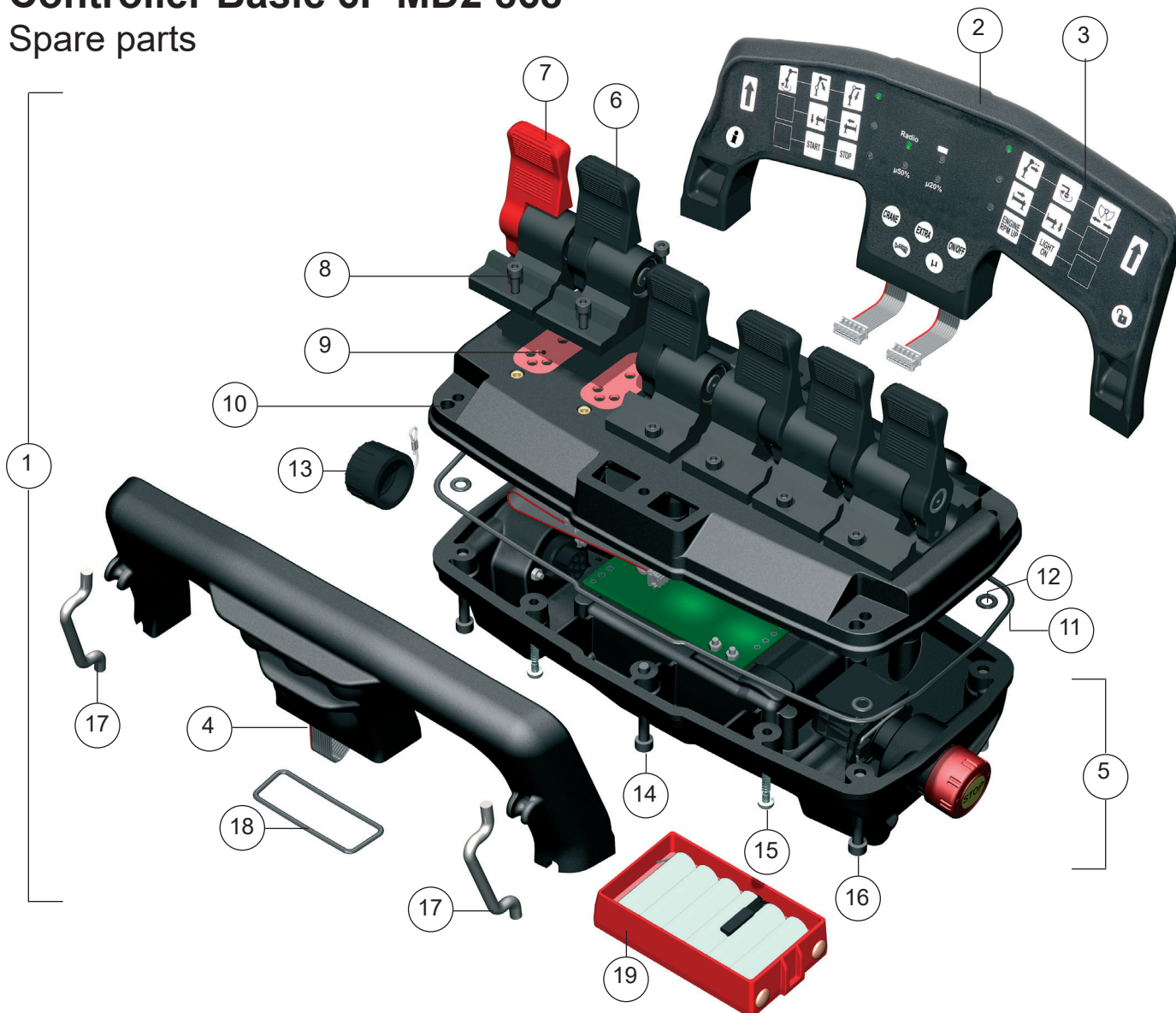
Figure 2



Figure 3

Controller Basic 6F MD2 868

Spare parts



Pos	Part.N°		Description	Note
1	1389	462 8149	Controller Basic 6F MD2 868	
2	E2246	468 6927	Handle, LED	complete, incl. Symbol signs
3	E1284	987 7100	Symbol signs Basic MD2	
4	E1390	988 0984	Handle, Push button	complete
5	E1200	987 3431	Controller MD2 6f, Bottom	incl. stop button, contact chassis and cap
6	0498	983 0022	Lever, Black	incl. screw and packing
7	0499	983 0031	Lever, Red	incl. screw and packing
8	S2831	981 1656	Screw M4x12 MC6S	A4 black nickel
9	E0447	983 0863	Packing lever	
10	E2200	462 4820	Top box 868, controller	excl. levers
11	S2920	987 3449	O-ring Ø224,0x2,62	NBR 70
12	S2939	988 0038	O-ring Ø6,0x2,0	NBR 70 (4 pcs)
13	S2532	985 7338	Cap, controller	
14	S0238	983 0898	Screw M5x45 MC6S	A4 black nickel
15	S2938	987 5816	Screw T40x25 TX	
16	S2912	983 9101	Screw M5x40 MC6S	A4 black nickel
17	E1377	988 0992	Fittings, carrier strap	
18	S2940	988 0046	O-ring Ø45,0x2,0	NBR 70
19	1201	983 6721	Battery NiMH, 7.2 V	

Radio Decoder MD2 868

Spare parts



Pos	Part N°		Description	Note
1	1384	462 4818	Radio Decoder MD2 868	incl. aerial
2	S3382	989 6066	Aerial, 868MHz 1/4-wave	RF
3	E0854	985 7290	Strapped plug, decoder	

Possible bottom modules

Pos	Part N°		Description	Note
	E1431	988 2588	Bottom box, high	incl. o-ring

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