

BIG Info

Stalltechnik für die Schweinehaltung | Equipment for pig production
Équipement pour l'exploitation porcine | Equipamiento para producción porcina
Оборудование для свиноводства

Operating manual

Hand terminal MIT-99

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Big Dutchman
PIG EQUIPMENT

Big Dutchman Pig Equipment GmbH
Postfach 1163 · 49360 Vechta · Deutschland
Tel. +49 (0) 4447-801-0 · Fax +49 (0) 4447-801-237
big@bigdutchman.de · www.bigdutchman.de

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Big Dutchman Pig Equipment GmbH

P. O. Box 1163

49360 Vechta

Germany

Tel: +49(0)4447-801-0 Fax: +49(0)4447-801-237 e-mail: big@bigdutchman.de

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1 General information

This operating manual provides information on how to install and apply the Big Dutchman MIT-99 hand terminal.



Figure 1-1: Hand terminal MIT-99

Two different versions of the hand terminal are available:

91-02-4055 Hand terminal MIT-99 for HYDROMIX / DRYEXACT

91-02-3955 Hand terminal MIT-99 for Callmatic

One charging station is available for both terminals. The charging station is supplied together with a resistance to be installed on the mounting plate of the MC99 / MC99NT (see plan of connections).

91-02-3798 Battery charger with fixing device for MIT-99/MC99NT

An antenna is additionally available in connection with the electronic sow feeding system Type Callmatic that can be connected to the MIT-99 hand terminal.

91-02-3956 Antenna for hand terminal MIT-99

2 Technical data of the MIT-99 hand terminal

- housing made of shock-resistant material (ABS)
- operated with 4 accumulators which can be exchanged by the customer
- long service (more than 10 hours)
- integrated accumulator charger
- large LCD-display (8 lines with 21 characters)
- contrast can be adjusted by means of the keyboard
- keyboard with 45 keys (alphanumeric with function keys)
- V40 high-speed processor with 11 MHz
- real time clock
- serial interfaces (RS485 / RS232)

Options:

- integrated RF communication module for limited local communication
- integrated TIRIS transponder reading module
- integrated NEDAP transponder reading modules

3 Operation

When installing accumulator batteries or connecting external tension, the hand terminal automatically starts the loaded application software.

The hand terminal is now ready for input from the user via keyboard, shows data on the LCD display and can communicate with the feeding computer via serial interfaces.

Which functions are possible depends on the loaded application software. For further information see the respective part of the operating instructions.

The application software comprises a number of features allowing the user to achieve the following:

- adjusting the contrast at the LCD display
- entering communication parameters
- leaving the application software and changing over to the system level
- entering battery parameters
- switching off hand terminal

Press the following keys to activate these functions from the user level:

☞ **2nd + SETUP** *activates the SETUP menu*

☞ **2nd + BATT** *activates the battery menu (charge monitor)*

4 SETUP menu

When calling in the SETUP menu, the following is displayed:

System Setup

Display ontime	60<	<- number of seconds until the display switches off
Contrast +-	23	<- adjusting LCD contrast (use keys +/-)
Local Device	50	<- MIT-99 address when connecting to RS485 network
Remote Device 1	2	<- MC99 address when connecting to RS 485 network *)
Remote Appl. 1	1	<- MC99 application no.
Remote Device 2	3	<- MC99 address when connecting to RS 485 network *)
Remote Appl. 2	3	<- C99 application no
Radio Device	0	<- UHF „radio“ network address
Power-Off	F10 0	<- switch off MIT-99 (2nd +F10) (used for storage of hand terminal)

Notes:

- * Remote device 1 is used for HYDROMIX and DRY EXACT
- * Remote device 2 is used for Callmatic

Animal no. in select.area	real	0	Emptying time dosing unit	1/100	0
Selection	Yes/No	Ja			
			Computer No.		3
Security time f.door lock.	sec.	15	Application No.	3 5	4
			External computer No.		1
Printer output / device No.	X5	199	External application No.		3
PC-output / device No.	X5	32	Pump time	sec.	60

Figure 4-1: Callmatic, programm 560, appl. 3

Animal no. in select.area	real	0	Emptying time dosing unit	1/100	0
Selection	Yes/No	Ja			
			Computer No.		3
Security time f.door lock.	sec.	15	Application No.	3 5	4
			External computer No.		1
Printer output / device No.	X5	199	External application No.		3
PC-output / device No.	X5	32	Pump time	sec.	60

Figure 4-2: Callmatic, programm 1100, appl. 2

Selection	Yes/No	Ja		
			Computer No.	3
Security time f.door lock.	sec.	15	Application No.	3 6 5
			External computer No.	1
Printer output / device No.	X5	199	External application No.	3
PC-output / device No.	X5	32	Pump time	sec. 60

Figure 4-3: Callmatic, programm 664, appl. 3

Residue-free feeding	No	Number comp./mix intern	14
		Feed curve base	MJ
Mix change 2 tanks	0	No	Accu test #1
2-protein-mix	NO		Accu test #2
Tandem	No		0
After-flow test	Yes	Valve after flow control	No
2-scale system	No	Valve after fl. cont. time 1/10 sec	0
Column feeding	No	Agitator during feeding on	sec 0
Printer connection	PARALLEL	Agitator during feeding off	sec 0
Computer text	FUTTER		
Valve Configuration	Big Dutchman		
Mixing / feeding	Feeding Compact		
Device no.	2	Tolerance evacuation batch mixer g	0
Application no.	3	4	Batch mixer for one valve
External computer no.	1		No
External application no.	3	Internal premix	No
Number comp./mix extern	14	Standard terminal output	30
Total no. of components	40	Standard printer output	X4
Overfeeding timer	300	AUX input	No
Time dosing	No	Mixtures: enter in % drymatter	No
Mainmenu Text No.	0	TM for Windows	Yes

Figure 4-4: HYDROMIX, programm 6XX / 7XX, appl. 3

- Use the keys **[PgUp↑]** and **[PgDn↓]** to move the cursor up and down and to display the above-mentioned input fields. Inputs are only possible where the cursor is positioned.
- **Press [ESC]** to change over to the application program.

The Power-Off function is only active when „Power.Off“ is displayed. Switch off MIT-99 (2nd +F10)

5 Battery menu

For activating these functions from the user level, press the following keys:

☞ **2nd + BATT** activates the battery menu (charge monitor)

Charge Monitor		
Batt. capacity	1600 <	<- battery capacity (in mA/h)
Charge time	0	<- duration of last charging (in mA/min)
Discharge-time	7093	<- discharge since last charging (in mA/min)
Charge number	5	<- number of charging cycles (since last reset)
Error Code	0	<- error message (for last charging)
Start voltage	160	<- battery voltage (measured at start of charging)
End voltage	185	<- battery voltage (measured at end of charging)
Start Temp.	128	<- battery temp. (measured at start of charging)
End Temp.	136	<- Batterietemp. (gemessen am Ende der Ladung)
Max. chrg time	43200	<- max. admissible charging time in seconds
Batt. Voltage	158	<- current battery voltage
Batt. Temp.	133	<- current battery temperature
Charg log F1		<- changing to charging log

Note:

- Use the keys **[PgUp↑]** and **[PgDn↓]** to move the cursor [<] up and down and to display the above-mentioned input fields. Inputs are only possible where the cursor [<] is positioned.
- Press **[ESC]** to change over to the application program.
- Enter battery capacity in mA/h in the field „Batt. capacity“. The value entered should be between 500 and 1100 mA/h.
- „Charge number“ and „Error Code“ can be deleted by „-“ signs, if this field has been selected. (Press **2nd + [-]** at the same time).
- If „Discharge time“ exceeds the value of 3000 mA/minute, a new charging cycle is started.

When entering a value e.g. of 3000 or more, a new charging cycle is started.

This function can be used for manual start of charging.

- See table of errors for the meaning of the „Error Codes“.
- „Max Charge time“ is calculated upon start of charging depending on the battery type.

- „Charge log“ is activated by **[2nd] + [F1]**. It shows records of the last charging cycle. Battery voltage and battery temperature are recorded every 20 minutes. The records are deleted upon start of a new charging cycle.
- Battery voltage is indicated in units from 0 to 255. Units can be converted in voltage, when using the following conversion factor:
during charging: 31.72 mV / indicated unit
during discharge: 32.53 mV / indicated unit

Generally the following formula can be applied:

$$\text{Voltage} = \text{indicated unit} * 0.032$$

- Battery temperature is indicated in units from 0 to 255. The table below can be used to convert the units into absolute temperature.

indicated units	approx. temperature (in °C)
94	10 °C
109	15 °C
123	20 °C
137	25 °C
150	30 °C
163	35 °C
175	40 °C
185	45 °C
194	50 °C
201	55 °C
208	60 °C
215	65 °C
221	70 °C
225	75 °C
226	80 °C

- If no key is pressed, MIT-99 changes to the so-called „stop“ position. The LCD display is activated again as soon as a key is pressed. In order to activate the LCD display, do not use function keys but e.g. the arrow key, if possible.

6 Operating MIT-99 in connection with Callmatic

6.1 General information about CALLMATIC

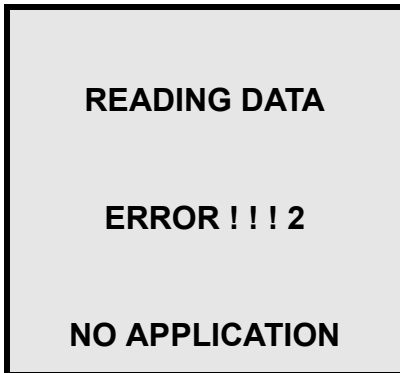
After switching on the hand terminal, the following can be displayed combined with the Callmatic feeding-on-demand-system:

Sow No 115		Note:
Alarm Sow	*<	• Inputs are only possible in bold fields. The values of the other fields will be displayed automatically.
Rest feed 0	2.75	• Use the keys [PgUp ↑] and [PgDn ↓] to move the cursor [<] up and down and to display the above-mentioned input fields. Inputs are only possible where the cursor [<] is positioned.
Rest feed 1	0.76	• The previous and the next sow no. can be displayed using the keys [HOME ←] and [END →].
Rest feed 2	0.00	• Entering a Sow No. and the [END →] key selects a specific sow number.
Rest feed 3	0.00	
MJ / Day	15.30	
Feed / Day	3.50	
Mix No.	A	
Curve No.	1	
% +/-	0	
Mineral	No	
Numb. Visits	0	
Last Station	0	
Station No.	3	
Group. No.	3	
Feed consumpt.	81.6	
Time correction	100	
Transponder No.	115	
Feed station	Yes	
Pregnancy day	114	
Selection day	70	
Selection reason	2	
Selection day	MO	
Selection	+	
Selection way	1	
Hogging select.	B	
Remark	CONTROLL	

Before modifying data in the hand terminal, they have to be updated, i.e. data have to be read in from the feeding computer to the hand terminal. After pressing keys [**2nd**] and [**F4**] and if everything has been connected and adjusted correctly, the following text is displayed:

READING DATA

Data transmission in progress is indicated in the display by figures behind the text. When transmission is finished, the application program, i.e. sow data is displayed again. If transmission is not successful, since e.g. a wrong application No. has been entered, the following error message is prompted:



6.2 Survey on function keys

Function keys are activated by pressing keys **[2nd]** and **[FX]***, i.e. two keys always have to be pressed at the same time.

* X = any function key

Their meaning is as follows:

F1 = change between HYDROMIX and CALLMATIC (back with ESC)

F2 = send **all** data to MC99 Feeding Computer

F4 = read data from Feeding Computer

F5 = send **new** data to the Feeding Computer

F6 = start reading the transponder

F7 = move in sow

F8 = move out sow

6.3 Move in sow

In order to move in a sow via the hand terminal, proceed as follows:

☞ Press key **[2nd]** and **[F7]**

The following is displayed:

```
HOUSING
Sow Number ?
```

Now enter the sow no. e.g. no. 111 and press the [ENTER] key. If this sow is already existing, the following message is prompted:

```
SOW EXISTS !
```

In order to delete this message, press the [ENTER] key again. After that, delete this sow no. or enter another no. If the sow no. is accepted, the following message is prompted:

```
MOVE IN
Transponder no.?
```

When entering a transponder no. that is already existing, this message is prompted:

```
NO. EXISTING !!!
```

In order to delete this message, press the [ENTER] key. The transponder no. can be entered once more.

Now enter the transponder no. via the keyboard or read it in via the antenna after pressing key **F6** (keys **[2nd]** and **[F6]**), i.e. when the transponder no. is indicated, press **[ENTER]** key for take over. After that, the display changes back to the input menu. In addition, the following data will automatically be retrieved:

Sow no.	111
MJ / day	15.30
feed / day	3.50
Mix No.	A
Curve no.	1
Mineral	No
Stations no.	1
Group no.	1
Time correction	100
Transponder no.	581
Feeding station	Yes

The advantage of this is that the sow gets feed in any case after transmission of these data to the feeding computer, even if no additional data have been entered.

6.4 Move out sow

In order to move out a sow via the hand terminal, proceed as follows:

Select the sow no. that you want to delete by means of keys **[HOME←]** and **[END→]** or by entering a sow no. and the **[END→]** key.

Press keys **[2nd]** and **[F8]**

The following is displayed:



Delete Sow ? Y/N ?

If you enter „Y „ and press the [ENTER] key, the sow will be deleted.

7 Operating MIT99 in connection with HYDROMIX or DRY EXACT

7.1 General information HYDROMIX

After switching on the hand terminal, the following can be displayed combined with the HYDROMIX system:

VALVE 115		
ANIMALS	11<	< number of sows – piglets with curve 10-11, e.g. 1-12
ENERGY	23.43	< is modified automatically, when the days on the curve are changed
% +/-	0	
% REDUCTION	0	
WEIGHT / DAYS	85.9	< current animal weight curve 1-9 / mating days curve 10 –11
KG FEED	100.5	< is modified automatically, when the days on the curve are changed. If feed curve is 0, enter daily feed ration here.
MIX	2	
FEEDCURVE	2	
AD LIBITUM	0	< max. kg feed / cycle in case of ad libitum feeding
CODE	ABCD	
INDEX	-	< No feed upon next feeding time, if this sign has also been entered in the times menu.
F-DAYS ANIMAL	58	
F-DAYS VALVE	278	
2. MIX	0	
2. MIX KG	.0	
BEGIN ANIMALS	4	
BEGIN WEIGHT	180	
DEAD ANIMALS	1	
DEAD WEIGHT	35	
FINAL ANIMALS	0	
FINAL WEIGHT	0	

- Inputs are only possible in the bold fields. The values of the other fields will be displayed automatically.
- Use the keys **[PgUp↑]** and **[PgDn↓]** to move the cursor [**<**] up and down and to display the above-mentioned input fields. Inputs are only possible where the cursor [**<**] is positioned.
- The previous and the next valve no. can be displayed using the keys **[HOME←]** and **[END→]**.
- A specific sow is selected by entering a valve no. and the **[END→]** key.

Before modifying data in the hand terminal, they have to be updated, i.e. data have to be read in from the feeding computer to the hand terminal. After pressing keys **[2nd]** and **[F4]** and if everything has been connected and adjusted correctly, the following text is displayed:



READING DATA

Data transmission in progress is indicated in the display by figures behind the text. When transmission is finished, the application program, i.e. sow data is displayed again. If transmission is not successful, since e.g. a wrong application No. has been entered, the following error message is prompted:



READING DATA

ERROR !!! 2

NO APPLICATION

7.2 Survey on function keys

Function keys are activated by pressing keys **[2nd]** and **[FX]***, i.e. two keys always have to be pressed at the same time.

* X = any function key

Their meaning is as follows:

F1 = change between HYDROMIX and CALLMATIC (back with ESC)

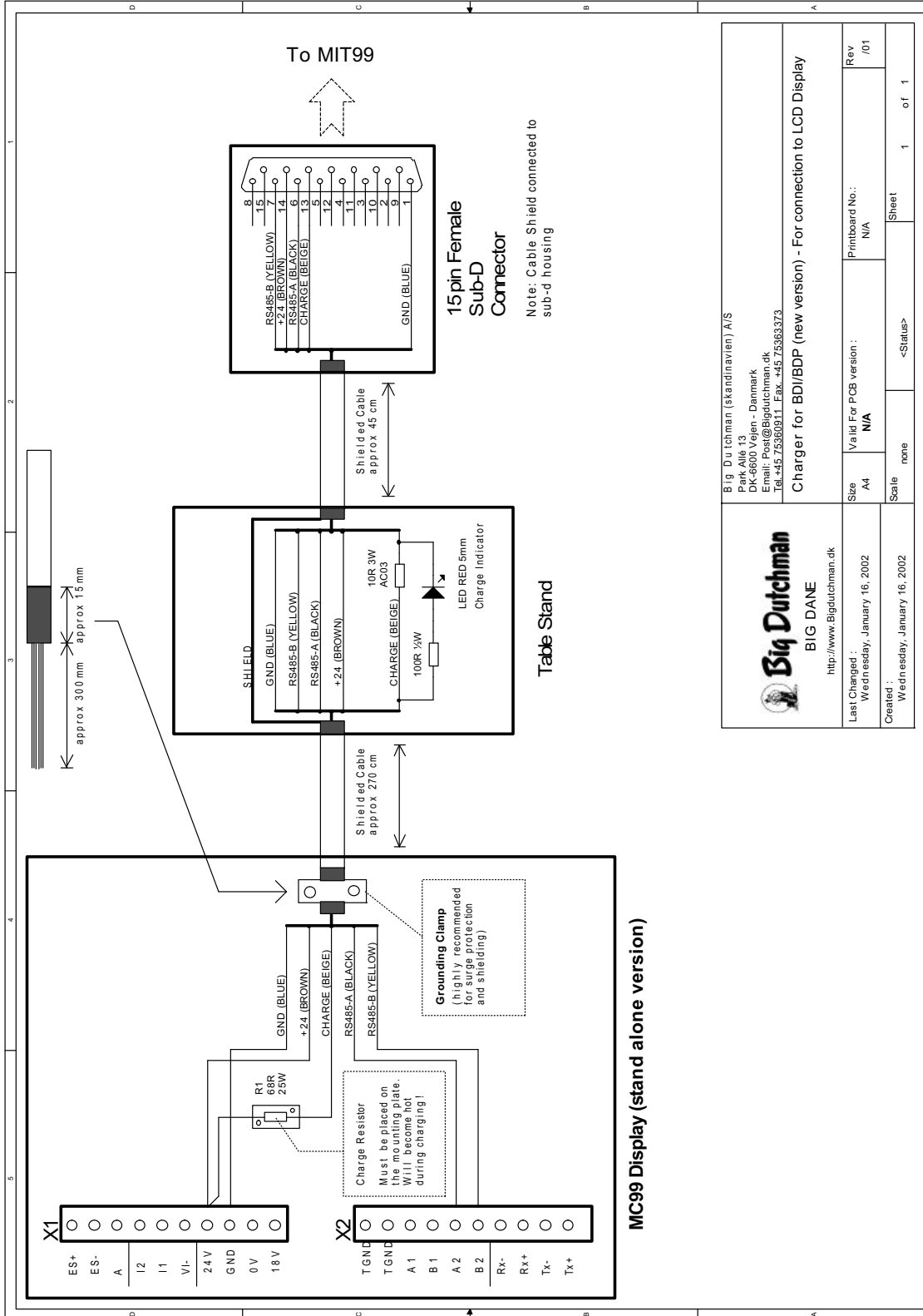
F2 = send **all** data to MC99 Feeding Computer

F4 = read data from Feeding Computer

F5 = send **new** data to the Feeding Computer

8 Electrical connection MIT-99

8.1 Connection MIT-99 to complete MC99 display



<p>Big Dutchman BIG DANE http://www.Bigdutchman.dk</p>		Big Dutchman (skandinavien) A/S Park Alle 13 DK-6600 Vejle - Danmark Email: Post@Bigdutchman.dk Tel: +45 75360311 Fax: +45 75363373	
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8.2 Connection MIT-99 to MC99NT CPU

