Poultry Door Opener

Description and operations manual



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General description

Poultry Door Opener (JT-PDO)

The Poultry Door Opener from JOSTechnik (**JT-PDO**) is a result of the consistent further development based on the gate control unit **JT-KS** which was successfully sold around the world since some years. The device was created to open and close flap gates at poultry houses or other small animal sheds. The **JT-PDO** is able to lift flaps of a weight from 400 g up to 2,5 kg. It is possible to use flaps from the web shop of <u>www.jost-technik.de</u> as well as existing or self-built sliders. It is very important that the slider runs smoothly trough its guide rails.

In addition to the function as a flap opener/closer the **JT-PDO** offers some extended capabilities for managing a poultry house. Those capabilities are described in chapter "Extras".

Functions of the JT-PDO:

- automatic opening/closing flap gates
- electronic controls per light sensor and/or integrated time switch
- automatic opening process can be delayed/suppressed when the outside temperature is to low, the temperature value is user adjustable.
- activation of opening/closing by hand using the membrane buttons (▲ and ▼) on the housing
- stop point of the flap during closing procedure is determined via driving time and does not need a limit switch
- emergency stop function in case an animal stays in the guide way of the flap (an interrupted closing procedure will be automatically repeated)
- clearly visible status indication of the flap by a multicolour LED
- option to determine the stop point of the flap by using a limit switch instead of acquisition the driving time
- remote control via radio remote control (optional)
- installation indoors or outdoors is possible
- self locking flaps can be used

The **JT-PDO** basically operates in automatic mode. It is possible to change over to manual mode (see chapter "Manual operation" at page 15).

The **JT-PDO** needs a 12 V DC power supply. A suitable plug transformer for connection to 230 V mains voltage is available. The **JT-PDO** has the protection class IP65 and can be used outdoors without any further protections. The plug transformer has no protection level and must always be connected indoors.

Under normal circumstances it is not necessary to open the device because all the operating elements are accessible from the outside. Indication LEDs and LCD-display are clearly visible from outside through the transparent lid.

The functions of the device can be extended by optional available modules (see chapter "Optional modules" at page 2). The device is configured in such a way that the setting effort for the use <u>as a pure flap gate opener</u> is kept at a minimum.

Extras

The **JT-PDO** is enhanced by new features which are very useful to increase the profit of small animal farming. The light sensor and the temperature sensor are always integrated in the device. An internal time switch supplies the system with date and time. All setup procedures take place on an illuminated display what is also used to display several system states.

The time switch automatically switches over between standard time and daylight saving time and shows the days of the week dependent on the date. For the regulation of an imprecise clock an automatic response correction procedure can be started by the user.

*The JT-PDO has following additional functions (*additional connection modules are required): - heating operation:

- + this option allows to control the temperature inside the shed using electrical heaters/heat lamps if the temperature is very low in the wintertime.
- + to warm up the water for the animals.
- fan operation:
 - + this option allows to control the temperature inside the shed using electrical
 - ventilators/blowers if the temperature is very high in the summertime.
- lighting operation:
 - + this option allows to control the light inside the shed to artificially prolong the daylight phase and to attract the animals into the shed when the dusk begins (<u>no</u> dimming function).

The functions heating / ventilation / lighting are pure automatic functions. The operation <u>can not</u> be done manually. The temperature values for switch on/off and the value for lighting duration are user adjustable. For safety reasons the functions heating and ventilation are monitored internally by the control. If one of these switch-off-values will not be reached a **safety switch-off** will be executed and an error message will be displayed. An automatic restart of the function is not possible.

Another possible function of the **JT-PDO** is to control the **Poultry Light Manager mini** (**JT-PLMmini**) which is able to simulate a sunrise and sunset via a dimming function. That is a comfortable option to substitute the functions of the stand-alone system **JT-PLM** by the combination of a **JT-PDO** with the **JT-PLMmini**, which is a cheaper device than a **JT-PLM**.

Optional modules

Depending on the configuration and extra functions the use of several additional modules is required.

Following modules are available:

- connection module JT-Rel-HL-2 for connecting: heaters/heating lamps,

ventilators,

illuminants

(one connection module per device is needed)

These modules connect the **JT-PDO**, which runs itself on 12 V DC power, with 230 V AC powered devices. But also the external devices, which can be operated with 12 V DC, have to be connected via such a module, because the **JT-PDO** can not deliver the electric output power to supply these external devices (see chapter *Technical data* at page 18).

Please note! The connection of devices with a 230 V AC power (like heaters, ventilators, lamps and luminescent tubes) has only to be done by qualified professionals.

- external sensors for: • brightness (light sensor JT-LS-SFH)

• temperature (temperature sensor JT-TS)

end position (limit switch JT-ES)

- radio remote control with two push buttons (JT-FB)

- light control "Poultry Light Manager mini" (JT-PLMmini)

- solar energy set to provide the **JT-PDO** with 12 V power independent of the mains (JT-S-Set)

It is easy to retrofit these optional modules by yourself. Special knowledge of electrical engineering or soldering are not necessary. The connections can be done by using the integrated screw connection terminals. You can find a description of the wiring in chapter *Assembly instructions/Optional modules* at page 4.

For assembly these optional modules you must drill additional holes (Ø 7 mm) trough the housing of the **JT-PDO**. Subsequently insert the provided cable glands into these holes. An additional hole (Ø 10 mm) is necessary for the connection of the solar set. You can find a drilling template in the appendix.

Attention: Do not destroy the components by drilling to deep through the housing, the best is to use a depth stop.

For retrofitting you have to open the device. Disconnect the device from the mains before. After connecting the modules, sensors and connecting cables close the device now and connect it to the mains again.

Assembly instructions

Poultry Door Opener (JT-PDO)

The device has to be mounted correctly and the flap gate has to be connected before you should start the commissioning procedure. The activation of the device without a connected flap gate may result in malfunctions.

To be able to use all the capabilities of the Poultry Door Opener it is necessary to read this manual attentively.

Open the housing and connect the power supply cable to the 12 V terminal (red wire to +, black wire to -). If you have bought an optional external light sensor and/or an external temperature sensor and/or a radio remote control then connect it also (see chapter *Optional modules* at page 4). If necessary connect the cables for the adapters of additional equipment. Please observe the correct polarity. Afterwards close the housing carefully and tighten the four screws slightly. Now you can mount the flap gate and hook it up to the Poultry Light Manager.

Please note:

The aluminium nut at the pull cord has to be close to the housing (pull cord is coiled). Tighten a separate cord (not part of the delivery) to that aluminium nut. Take the gate flap to "open" position and hook it up now.

Optional modules

Mount the connection modules JT-Rel-HL2 close to the extra devices like heaters/heating lamps, ventilators and/or light source. Connect the terminal inside the **JT-PDO** with the terminal KL3 at JT-Rel-HL2 by using the control cable 2x0,25 mm² in consideration of the polarity.



Figure 1: terminal block JT-Rel-HL2

G [(8	6	0			C	0		
	*	9	P	ę	P	P	P	7	P
2.1 G	nd	2.2	3.1	Gnd	3.2	-т	S+	-L	.S+

Figure 2: terminal block Poultry Door Opener

Optional modules	inside Poultry Door Opener	at JT-ReI-HL2 terminal KL3
Limit switch	to clamp 2.1 and Gnd	not used
Lighting	to clamp 2.2 and Gnd	negative pole to Gnd inside PDO
Ventilator	to clamp 3.1 and Gnd	negative pole to Gnd inside PDO
Heater	to clamp 3.2 and Gnd	negative pole to Gnd inside PDO

Optional additional device	inside Poultry Door Opener	inside Poultry Light Manager mini
Poultry Light Manager mini (PLMmini)	clamp 3.1 Gnd clamp 3.2	Rx Gnd Tx



Figure 3: Terminal block Poultry Light Manager mini (JT-PLMmini)

The radio remote control receiver is just to plug into the connector socket at the upper printed circuit board.

Mount the **JT-PLMmini** close to the **JT-PDO** to keep the length of the connecting cable (control cable $3x0,25 \text{ mm}^2$) between the devices as short as possible. Connect the wires as described in the upper chart.

Menu operation

General structure



The menu is displayed on two lines. The first line shows the symbols for the buttons < > and the menu title. If the text length exceeds the displays line length then the text appears as a ticker tape. The second line shows the corresponding parameter value and is used to modify this value.

To display or modify the parameter values is necessary to scroll trough the menu by using the **push buttons** > or <. It is not possible to jump directly to a special parameter. Press and hold a push button will browse forward or backward trough the main menu. To select one of the menus use the **push button** \downarrow . It is <u>necessary to leave</u> the menu again to get back to normal operation mode. As long as a menu item is selected the **JT-PDO** is <u>not</u> <u>able</u> to execute any other functions.

Changed values are stored immediately after a menu is left and they remain stored even in case of a power break.

Мо	10:32	CET
[15°C	[23°C

Мо	10:32	CET
V 3.X.X	xx	TA 📕

Push the **button** ↓ until the display backlight turns on. As soon as the button is released again the first menu item will be shown.

The main menu breaks down as follows:

- 1. Configuration
- 2. Clock / date
- 3. Extras
- 4. Reset settings

In the submenu items the push buttons have following functions:

A function takes always effect on the value which is underlaid by the blinking cursor.

- **Button > :** will increase a value:
- Button < : will reset a value to "0" or set it to a preset value
- Button ↓: will confirm the value and jump to the next value or exit from the submenu and go to next higher menu level

Some general rules:

If a parameter in a submenu item consists of more than one changeable temperature value or time value so it is possible to deactivate the related function by set **both** values to **"0**" or to the **same** value. Exceptions are stated in the relevant menu item.

To avoid some input mistakes the adjustment range of several values is limited. Most of the input values will be checked for plausibility.

If a value (like time or temperature) will be changed by press and hold the **push button >** the value will automatically count up or down.

Settings and changes

Factory settings

The chart below shows the factory settings and the range which can be used for parameter settings.

Operating parameters / settings		Factory settings	Adjustment range (specified)
Clock / Date			
	time	current time	
	date	current date	
automatic	time correction	off	automatic
Flap opener			
Timer 1	open	07:03	03:00 – 14:59 h *
	close	19:05	15:00 – 22:59 h *
Timer 2	open	00:00	03:00 – 14:59 h *
	close	00:00	15:00 – 22:59 h *
Mode	open	+/+	-/- , x/- , x/x , -/x , +/+
	close	x/x	-/- , x/- , x/x , -/x , +/+
Light sensor	open	18 %	15 % - 75 %
	close	5 %	2 % - 12 %
Temperature to cold		-99 °C	-99 °C5 °C
Detect end position		not detected	automatic by start / stop
Mounting		outside	outside / inside
Limit switch		no	yes / no
Extras			
Heating: heater -	automatic on	25 °C	0 °C - 25 °C
	automatic off	25 °C	0 °C - 25 °C
Airing: ventilator -	automatic on	25 °C	25 °C – 40 °C
	automatic off	25 °C	20 °C – 30 °C
Illumination:	duration	0 Min	0 Min – 60 Min
PLMmini: start sunris	se (imitation)	00:00	04:00 - 08:00
start night's rest		00:00	19:00 – 23:00
	-	no	LED, fluorescent tube
Timer switch: respo	onse correction	off	automatic
Language		Deutsch	Deutsch, English, Francais, Dutch, Espanol, Portuguese, Svenska

* Note: These time limitations are not valid if timer 1 and timer 2 are set for daily use.

Next chapter implied the description of all submenus and the meaning of the parameters.

Main menu item "Flap opener"

Submenu items "Timer 1" and "Timer 2"

This submenu provides the opportunity to set the times for the automatic opening (\blacktriangle) and closing (\triangledown) of the flap. The input time range is limited from 3:00 to 22:59. The automatic operation of flap gate control needs time ranges to ensure the **trouble-free** operation. These time ranges are:

- range for automatic opening operation: from 3:00 to 14:59

- range for automatic closing operation: from 15:00 to 22:59

You can optionally use:		
1. only Timer 1	daily	No limitation for time settings as
2. Timer 1 and Timer 2	T1 Mo – Fr T2 Sa – So	long as the upper mentioned time ranges are respected.
3. Timer 1 and Timer 2	daily	T1-▼ has to be before T2-▲
< Timer 1 >	Example for variant 1.	< Timer 2 >
▲ 07:03 ▼ 19:05		▲ 0:00 ▼ 0:00
	_	
< Timer 1 >	Example for variant 2.	< Timer 2 >
▲ 07:03 ▼ 19:05		▲ 9:00 ▼ 20:00
< Timer 1 >	Example for variant 3.	< Timer 2 >
▲ 07:03 ▼ 10:45		▲ 16:30 ▼ 18:00

The opening and closing operations are <u>only possible</u> according to the given time ranges. This does not apply in case of a manual operation and for *variant 3*. The utilisation of the Timers (daily, both daily or weekdays/weekend) is an automatic function and will be determined by the relation of the adjusted times. To deactivate the Timer 2 just enter 0:00 behind both symbols \blacktriangle + \blacktriangledown .

The logic of the set times (opening before closing, closing 1 before opening 2) will be checked during input. In case of inconsistencies the menu item can not be left and the cursor will be set to the position which has to be corrected.

In case of using variant 3 (2 times for opening and 2 times for closing) the performance is controlled by the timers only. The next menu item "Modus" will not appear, because all the other operating modes do not make any sense.



The selected mode determines the manner in which the control opens / closes the flap. The mode setup procedure has to be done separately for the opening and closing operations. The selected modes are effective for all selected timers. Following modes are available:

	mode	open/close if	explanation
0	+/+	timer value and light sensor value = true	both in combination
1	x/-	timer value = true	timer operation only
2	-/x	light sensor value = true	light sensor operation only
3	x/x	timer value or light sensor value = true	one of them first
4	-/-	operation by push button or remote control	manual operation only

Push button > scrolls trough the different modes, **push button <** has no function.

Example for mode 0 selected at \blacktriangle :

Flap gate will be opened if it is "bright" but not before the time is also reached.

Example for mode 3 selected at ▼:

Flap gate will be closed either it is "dark" or the time is reached.

If in submenu item "Timer" the variant 3 is chosen, the system will automatically set the mode 1 (x/-) and the submenu item "mode" will not appear for adjustments.

Submenu item "Light sensor"



The menu gives the opportunity to setup the threshold values for the light sensor for opening (\blacktriangle) and closing the flap (∇).

Information: The lower the percentage value is, the darker it is.

Push button > increases the value, Push button < resets the value to factory default.

Submenu item "Temp. to cold"



On very cold days it is possible to prevent/delay the opening procedure. Below the limit temperature the flap gate will stay closed until the outside temperature is higher again. This performance will maintained even if the timer value or light sensor value for opening was reached.

Push button > increases the temperature value, **Push button** < sets the temperature value to -99°C, that means the function is **Off.**

Submenu item "Detect end position" (position for flap gate state "CLOSED")

< Detect end position >	< Detect end position >	< Detect end position >
Start	Stop	Wait

Due to the structural differences of the buildings it is necessary to determine the flap gate stroke individually. The function "Detect end position" must be executed once after installation to give the controller the information about the flap position for "closed". The information will remain in the memory until "Reset settings" is carried out. When the first installation was done and the device is powered on or after "Reset settings", this menu item will automatically appear first of all (see also chapter "Commissioning" at page 13).

Submenu item "Mounting"

<	Mounting	>
0	utside	

The information about the place where the unit is mounted forms the basis for the assignment of specific parameters to the sensors. A wrong information causes faulty procedures in the connected devices.

Push button > toggles between "Inside" and "Outside", Push button < sets to "Outside"

Outside	The <i>integrated</i> sensors (light + temperature) are measuring the outside ambient values, they <u>do not</u> deliver any informations about the conditions inside the building. To use the functions "Heating" and/or "Airing" it is necessary to install an additional external temperature sensor inside the building.
Inside	The <i>integrated</i> sensors (light + temperature) are measuring the ambient values inside of the building, they do <i>not</i> deliver any informations about the conditions outdoors. To use the function "Extras → Illumination" it is necessary to install an additional external light sensor outdoors . To use all <i>additional functions</i> , the installation of booth external sensors is required.

Submenu item "Limit switch"



The position "flap closed" can also be indicated by a limit switch. In the normal operation mode (without limit switch) the state "flap is closed" will be evaluated by a time measurement of the flap motion. That is carried out together with a measurement of the motor current, which can recognize an unexpected disturbance of the flap motion. In case

of using a limit switch only the state "flap closed" will be detected. The monitoring function is deactivated. The limit switch is an option and should only be used for special circumstances.

Push button > toggles between "Yes" and "No", Push button < sets to "No" (off)

Note: If a self locking flap is used, the limit switch is not applicable.

Main menu item "Clock / Date"

Submenu items "Time of day" and "Date"

< Time	>
10:32	

< Date > 10.01.17

The device will be delivered with adjusted date and time. If the devices is used in a different time zone or the clock runs incorrectly, it is possible to manually adjust hours and minutes.

The adjustment procedure for the date requires first of all to set the month followed by set the day. The input of the days date is followed by a plausibility check (different lengths of the months). Afterwards the current day of the week will be calculated and displayed. The displayed weekday *can not* be straight changed.

The clock runs battery-supported so that date and time are still contemporary after a power break.

Submenu item "Response correction"



Caused by manufacturing tolerances or temperature variations it can happen that the clock does not run accurately. To make the time correction some easier it is possible to initialise an automatic time correction function. That function can be used if the time deviation is not acceptable any more.

Following steps are necessary to use that function:

- Set the clock to the correct time. Write down current date and time when the correction has been done.
- Leave the clock run for some days (5 10 days are recommended, 50 days max.)
- After that days and at the <u>same hour</u> as the correction has been done, chose the menu "Response correction" and carry out the following procedure:

The menu displays the system time. The cursor is set to the hour position and is blinking. Now it is possible to adjust the hour and subsequently the minutes to the correct current time. Thereafter the cursor jumps to the position for the input of number of days. At this position input the amount of days which have been elapsed from the previous time correction up to now. After the menu item is closed again the automatic time correction is active and will be performed each midnight. The correction value will be kept even when a "Reset settings" was carried out. For deactivation of the automatic procedure the menu "Response correction" has to be selected again and the amount of days has to be set to zero.

Main menu item "Extras"

Submenu items "Heating" and "Airing"



< Airing	>
28°C	28°C

If the temperature inside the building is **very low** it is possible to start heating or, in case of very high temperature values, to start a ventilation. That can be done automatically if the functions are selected and the necessary units are connected. The threshold values for those functions can be adjusted in the submenus "Heating" and "Airing". The heater will be switched on if the temperature falls below the "on" threshold value (left picture, left value) and the ventilator will be switched on if the temperature exceeds the "on" threshold value (right picture, left value). The devices will be switched off if the temperature has reached the threshold values for "off" (booth pictures, right value). If the environmental temperature is outside of the threshold ranges, the devices will not be started.

The adjusted values will be checked for plausibility. In case of an input mistake the menu can not be left and the cursor jumps back to the first input value.

Heaters and ventilators are monitored. In case a switch off value was not reached after a fixed given **safety time** of 4 hours, the heater/ventilator will be switched off. For safety reasons the system will prevent an automatic restart. An error indicator will signalize this incident and it must be acknowledged manually (see chapter *troubleshooting and service* at page 16).

Attention! The required heating power depends on the dimension and architectural quality of the building. That means an expert should be consulted to evaluate the necessary power. Otherwise it can happen that the heating power is not enough to reach the cut-off temperature and the heating unit runs permanently until a safety switch off. It is also recommended to keep the door closed during heating.

The heating and airing functions can only be started if the flap gate has the state "Closed".

Submenu item "Illumination"



The illumination function is a good instrument to lure the animals into the shed at the beginning of the dusk. The illumination will automatically turn on short before it gets dark (indicated by light sensor value for closing procedure) and will stay on for an adjustable

time (max. 60 min.). The device does <u>not</u> offer the opportunity to switch the lights manually. If the flap gate state is "Closed" **before** the illumination function was started this function will stay idle and the light will **not** turn on.

Push button > increases the duration, **Push button <** sets the duration to **0 Min** (function is off).

Submenu item "PLMmini"

< PLMmini	>	< PLMmini >
0:00	0:00	Off

The **JT-PDO** takes the adjustment functions for an optional light controller **JT-PLMmini**. Time settings are possible for a desired artificial sunrise (**1**) and for night sleep time in the shed (**2**). The dimming procedure starts automatically 30 minutes before the night sleep time. The illumination will automatically be turned on short before it is getting dark (indicated by light sensor value for closing procedure). After the adjustment of the switching time is done, the menu changes to next parameter. It is possible to select the light sources (LED or fluorescent tube). The device is able to operate dimmable 12 V LED-lamps and LED-strips as well as fluorescent tubes with an electronic control gear (ECG).

Push button > changes between **"Off**", **"LED"**, **"Fluorescent tube"**, **Push button <** switches function to **"Off**"

The simultaneous operation of LEDs and fluorescent tubes is not possible. Not suitable for 230 V LED-lamps.

Submenu item "Language"



After one of the different language is selected, the text is translated and displayed in the corresponding language.

Push button > scrolls through the integrated languages, **Push button <** selects the standard language **"Deutsch"**.

Main menu item "Reset settings"

There are no submenu items.



Pressing **push button** > the menu will be left <u>without</u> any further actions and goes to the main display. Pressing **Push button** \downarrow will reset all values to factory settings without further queries. Date and time remain unchanged.

After the reset was carried out the device will do a self-test and waits for a commissioning with the adjustment of the lower end position (see chapter "**Commissioning**" at page 14).

Remark: If it is desired to do just a readjustment of the lower end position of the flap, it is recommended to use the option "End position" in the main menu **"Flap opener"** (page 9) and start a new adjustment. It is not necessary to run "Reset settings" before.

Commissioning and operation

Commissioning

After professional installation of the **JT-PDO** the plug transformer can be connected to the mains or the device can be connected to a solar set. As soon as powered the **JT-PDO** will start the initialization with a self test. The four LEDs (left side inside the housing) will be switched on and off again one by one, the display will be turned on and will indicate that the initialisation procedure is running.



The motor starts up and lifts the flap up to the highest position, the motor stops and will turn down for some millimetres to relieve the pull cord again. The backlight of the display will turn off. The initialisation is completed.

Now the display shows following message:



Use the **push button** \dashv to start the commissioning phase.



Push button → will start the procedure, the motor starts running, the flap gate moves downwards and the display shows the next message:



When the flap gate has reached the lowest position press the **Push button** \downarrow again. If a self locking flap is used, press the push button not before the flap has locked. The motor will stop and will run upwards now until the flap gate is in the upper position.

It is not necessary to start that procedure if the flap gate control (JT-PDO) is operated with a limit switch (option). Use the push button > to get the submenu item "Limit switch" and set the parameter there to "Yes".

Now the commissioning procedure is completed and the device is ready for operation. The display will show the standard view of the **JT-PDO** which is alternating between following two views:

Мо	10:32	CET
[15°C		[' 21°C

Мо	10:32	CET
V 3.X.XXX		ТА

The first line shows the day of the week, the current time of the day and the time zone CET / CEST. The lower line shows the inside and the outside temperature. If the external temperature sensor is not connected, the corresponding temperature will **stay** at 15 °C.

Without any changes of the factory settings (see chapter *"Factory settings"* at page 7) the device will run in following operating modes:

Mounting "Outside" the device internal light sensor is used and measures the outside temperature.

Flap "Opening" daily from **07:03 and** it has to be bright (Mode 0 +/+)

Flap "Closing" daily at **19:05 or** it is already dark (Mode 3 x/x)

All other functions are switched off. If it is desired to use other times, modes or extra functions, thus those have to be adjusted in the corresponding menus (see chapter *"Settings and changes"* at page 7).

At any time it is possible to operate the flap gate manually by using the **push buttons** \blacktriangle and \triangledown or an (optional) radio remote control device.

Automatic operation

The **JT-PDO** is designed for automatic operation and will open and close the flap gate in accordance with the selected operating mode. Manual interventions are only required if it is necessary to depart from the standard use, for instance to close the flap because the shed has to be cleaned or to open the flap in the evening again to lure a stray animal into the shed.

The automatic mode will just be broken in case en error occurs. That will be indicated by LEDs. If an error has occurred, the automatic operation will not restart automatically. It is

always necessary that the user takes action now (see chapter "Status indication" at page 16).

Manual operation

Each single use of the **push buttons** \blacktriangle or \lor or of the (optional) radio remote control will interrupt the automatic mode. It means that the automatic opening and closing procedures are stopped until the manual mode will be left again. LED 1 (flap state indicator) indicates by flashing light that the automatic mode is stopped (see chapter *"Status indication"* at page 16). The flashing light changes over to permanent light again if the operation has returned to the automatic mode. That can be initialised by pressing the opposite push button.

Short explanation: If the flap gate has **closed automatically** and will be **opened manually** now, the flap will **stay open** (automatic operation is idle) until it has been **closed manually** again (automatic operation is restarted).

The submenu item "*Mode*" offers, among others, the opportunity to select **mode 4 (-/-)**. If that mode is selected for morning **and** evening the device is set to a **permanent manual operation**. The flap gate can only be moved by using the push buttons or the (optional) radio remote control. The LED 1 indicates the flap states "open" with a red and "closed with a green **flashing** light (see chapter "*Status indication*" at page 16).

If the previously mentioned mode is selected for morning only **or** for evening only, the device will switch to a **semi-automatic mode**. The manual operation is just activated for a time range in the morning **or** in the evening. If the manual procedure will not be executed in the defined time range, the flap gate will keep its current state. The current flap state state will be indicated by a permanent lighting LED independent if a manual or automatic procedure was executed to change the state.

Status indication

Most of the function of the **JT-PDO** are using LEDs for the status indication. Following LEDs are used:



- LED 1 indicates the state of the gate flap "Open" or "Closed"
- LED 2 indicates the state of the heater
- LED 3 indicates the state of the ventilator
- LED 4 indicates the state of lighting

Fig.4: status indication

Display	Appearance	Meaning		
LED 1	Permanent green	Flap is "Closed"		
	Permanent red	Flap is "Open"		
	Blinking green	Flap is "Closed" (by manual operation)		
	Blinking red	Flap is "Open" (by manual operation)		
	(1) Blinking alternate red/green	Flap could not close correctly		
LED 2	Permanent red	Heating is ON – switch off temperature not reached y		
	Off	Heating is OFF or is not activated		
LED 3	Permanent yellow	Ventilator is ON – switch off temperature not reached yet		
	Off	Ventilator is OFF or is not activated		
LED 2 + LED 3	(2) Blinking red + yellow	Heating / ventilator is off safety switch off was activated because switch off temperature was not reached inside a time window		
LED 4	Permanent green	Lighting is ON		
	Off	Lighting is OFF		
Key: = Inform	ation 📃 = Error	= Status		

Troubleshooting and service

- (1) Flap has not closed correctly
 - Check flap gate for ease of operation, it must not cant or rub against the guide rail
 - Check whether debris, ice or something else is in the guide rails, cleaning is recommended
- (2) The safety switch-off procedure is activated because the switch-off temperature was not reached inside a given time window.
 - In all probability the thermal isolation quality of the shed is not good enough to get the switch-off temperature with the used cooling- /heating power.

Menu $\textbf{Extras} \rightarrow \textbf{Heating}$ or Airing: change the switch-off temperatures or

use devices with higher heating/cooling power (**Caution!** Consider the maximum connected load)

- (3.1) Heating / airing does not work (LED 2 / 3 are off)
 - Menu Extras → Heating / Airing: threshold values for switch on and switch off are not different.
 - The flap gate is not closed (LED 1 shows red permanent or blinking)
- (3.2) Heating / airing does not work (LED 2 / 3 are on)
 - Check the connection between the modules for heating / airing and the control device.
 - Check the main power for the heater / ventilator.

- (4.1) Lighting does not work (LED 4 is off)
 - Menu Extras \rightarrow Lighting: lighting duration is set to zero.
 - The adjusted darkness value is not reached yet. The switch-on value for lighting is directly linked to the light sensor value for closing the flap.
 - The flap gate was already closed before the dusk came up.
- (4.2) Lighting does not work (LED 4 is on)
 - Check the connection between the module for lighting and the control device.
 - Check the main power for the lighting.
- (5) The clock is slow or fast
 - See chapter Submenu item "Response correction" and activate the response correction.

It does not work yet. What next?

First you should call our service department (you can find the phone number on the invoice / bill of delivery). Keep prepared your invoice and a list of all adjusted values to answer the questions of our service personal.

Keep yourself prepared for following questions:

- What does not work? Give a detailed description.
- What did you try yourself to solve the problem?

If you want to send the device to manufacturers service for check out / repair, please consider following procedure:

- send the item as small package
- put a copy of the invoice / bill of delivery into the package
- give a short description of the malfunction
- please send also your telephone number and your e-mail address

In case the check out / repair is subject to a charge, we will send you at first an e-mail with a written quotation. The repair will be done by us after you have agreed our proposal.

Technical data

Data

designation	Poultry Door Opener (JT-PDO)
connection voltage	12 V= (230 V~ for the wall power plug 12 V= $/$ 1,0 A)
current consumption	approx. 20 mA (just the JT-PDO), approx. 100 mA (the JT-PDO plus additional modules)
max. output current	20 mA per output, 500 mA in sum of all outputs
internal length of the pull cord	approx. 1,25 m
min. weight of the gate flap	approx. 400 g
max. weight of the gate flap	approx. 2500 g
housing size	120x120x60 mm (L x W x H)
weight (without flap)	approx. 300 g
WEEE-RegNr.	DE58973207

Disposal

Sales packaging includes packages that the end consumer accrues (Art. 3 para. 1 no. 2, regulation on packaging [VerpackV]). Product manufacturers or distributors must undertake to either take back the packaging waste at their place of business or within the immediate vicinity free of charge (Art. 6 para. 1) or take part in a complete-coverage system that picks up the packaging waste at the private end user or in his immediate vicinity (so-called dual systems).

Obligation to inform according to the Battery Ordinance [BattV].

In relation to the distribution of batteries or with the delivery of equipment that contain batteries, we are obligated to make you aware of the following:

According to law, you are obligate to returned used batteries as the end user. You can return old batteries to our dispatch warehouse (address for dispatch) that we carried or have carried in our assortment free of charge. The symbols depicted on the batteries have the following meaning:

The symbol of the crossed-out waste bin means that the battery must not be disposed of as household waste.

Pb = battery contains more than 0.004 percent of lead by weight

Cd = Battery contains more than 0.002 percent cadmium by weight

Hg = Battery contains more than 0.0005 percent mercury by weight

WEEE Directive 2002/96/EG

Electrical and electronic equipment must not be disposed of as household waste according to the European WEEE Directive. The equipment's components must be separated for recycling or disposal because poisonous or dangerous components could strongly damage the environment if they are not disposed of properly. As a consumer, according to the German Electrical Equipment Act [ElektroG], at the end of its service life, you are obligated to return electric and electronic equipment to the manufacturer, the point of sale or the public collection points designated for this purpose free of charge. Details regarding this are regulated by respective regional law. The symbol on the product, operation manual and/or the packaging makes reference to these regulations.

WEEE-Reg.-Nr.: DE58973207



Declaration of conformity

EC declaration of conformity according to the EC Machinery Directive 2006/42/EG from 17 May 2006, appendix II A We hereby declare that the machine named in the following in its concept and construction as well as the version brought to the market by us comply with the essential health and safety requirements of the EC Directive 2006/42/EC. In the event a change is made to this machine without our consent, this declaration shall no longer be valid. Manufacturer/authorized representative:			
Description of the machine:		2000.00.002	
Function: Gate control ur	it • Type / model :	JT-KS	
 Serial number: V1 	 Year of manufacture: 	2014	
A declaration shall hereby be made on the compliance of the product with other equally applicable directives/regulations:			
EC - EMC Directive (2004/108/EC) from 15 December 2004			
 EC - Low Voltage Directive (20) 	06/95/EC) from 27 December 2006		
Authorise representative for the compilation of the technical documentation:			
Gerd Jost Martha-Brautzsch-S	r. 26a D-04838 Doberschütz		

Doberschütz 01/09/2014 Ilka Jost JOSTechnik

Appendix

Form for user settings

Parameter	Current settings			
Mounting	Inside	Outsid	de	
Timer 1	Open (▲)	Close	(▼)	
Timer 2	Open (▲)	pen (▲) Close (▼)		
Mode (▲morning / ▼evening)	Open (\blacktriangle) Close (\triangledown)		(▼)	
Light sensor	Open (▲) Close (▼)		(▼)	
Temp. to cold (°C)				
Limit switch	No	Yes		
Heating	Off	On		
Airing	Off	On		
Illumination (minutes)				
PLMmini	Sunrise	Night rest		
Illuminant	Off	LED	flouresc. tube	

Drilling template

You can print out that template and use it for drilling the holes. Please keep under careful observation, that your printer does not change the pattern size!



