



## User Manual

Gate with drive  
HMDLP230  
HGD230



**Please read this original user manual before using this gate for the first time! Act in accordance with the manual and keep it in a safe place for later use or for the following owner.**



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## FOREWORD

This manual enables you to operate and maintain the gate correctly. It also describes which drive variants are possible and for which gates. Possible options are briefly described. The Operation chapter explains the control unit. Chapter Programming and settings describes how you can change various settings. The Maintenance chapter is extremely important to ensure that you can continue to operate your gate problem free in the long term.

The document is the description for the use of the electric gate control **HMD230S or HMD230A** in the software version 2.40.40e.50 or newer. In the further description, the two variants are generally referred to as "HMD230x."

**Please read this user manual carefully before using the sliding gate.**

Store the manual in a safe place to be able to refer to it later if required. This description is intended for the operator of the gate. The installer uses a separate manual to assemble and install the gate.

The installer uses an installation scheme for the drive concerned and works according to the applicable standards. In the event of a fault, you should contact a Heras certified technician. A connection diagram can be found at the end of this document.



# 1 PREFACE

## 1.1 MANUFACTURER / SUPPLIER

Manufacturer: Heras B.V.  
Hekdam 1, 5688 JE Oirschot  
Netherlands  
Tel.: +31(0)499-551255  
www.heras.com

Technical Construction File: Heras B.V. manager, PD Department

## 1.2 SERVICE / MAINTENANCE

In the event of problems, failures or questions you can contact:

<b>Heras Netherlands</b>	Telephone	+31(0) 499 551 255
<b>Heras Germany</b>	Telephone	+49(0) 1805 437277
<b>Heras UK</b>	Telephone	+44(0) 1302 364 551
<b>Heras France</b>	Telephone	+33(0) 3 88 067 000
<b>Heras Norway</b>	Telephone	+47(-) 22 900 555
<b>Heras Sweden</b>	Telephone	+46(0) 77 1506050

## 1.3 DEFINITIONS: USER / OPERATOR / ENGINEER

User: Anyone using the gate.

Operator: A user who is familiar with all safety aspects dealt with in this manual. Operators are not allowed to carry out any installation work on the gate unless explicitly specified.

Engineer: The engineer is a Heras fitter (or an engineer employed by the customer who has been given explicit permission in writing from Heras) who is qualified to perform technical interventions on the gate.



## 1.4 PRESCRIBED USE / APPLICATION

Only the correct installation and maintenance by an authorised/qualified company or person in agreement with the user manual, logbook, checklists and maintenance lists can ensure the safe operation of the system.

A qualified person is, according to EN 12635, a person who has the required training, qualified knowledge and practical experience required to install, test and maintain a sliding gate system correctly and safely.

## 1.5 CONFORMITY WITH EUROPEAN DIRECTIVES

The installation complies with the following EU Directives/ regulations:

EU	2006/42/	EC	Machine Directive
EU	2014/30	EU	EMC Directive (electromagnetic compatibility)
EU	305/2011	EC	Construction Product Regulation

UK	Supply of Machinery (Safety) Regulations 2008
UK	Electromagnetic Compatibility Regulations 2016
UK	Construction Products Regulations 2013

The design and production has been executed compliant with the applicable product standard EN 13241 and EN 12453.

A Declaration of Performance (DoP) and Declaration of Conformity (DoC) are obligatory for this product. The DoP and DoC are included in Appendix A.

The CE or UKCA mark is located on the rear of the bottom rail of the gate.

## 1.6 DELIVERY

The gate and the gate drive and control unit must be installed, connected, set up and tuned by a fitter or an engineer who also connects and programs any accessories. The gate control unit is adjusted to the options/accessories agreed with the user. The relevant options are laid down during hand-over.

Of course, you can add optional/accessories afterwards. Contact your supplier for this. Gates are always delivered fully tested.

## 1.7 GENERAL INFORMATION REGARDING THE ELECTRICAL CONNECTIONS

Electrical connections must be made compliant with the supplied wiring diagram.

It is important that the system is correctly earthed (Protective grounding in accordance with DIN VDE).

Because EMC-related suppression components can leak current to the earth cable, it is advisable that you do not protect the control unit with a Residual Current Device. When switching on the system, a high starting current can be generated due to the charging of the intermediate circuit.

If after measurement during commissioning it appears that the leakage current exceeds the permitted 3.5 mA, an additional grounding, in accordance with EN 60335-1 and IEC 30364-5-54, must be provided. Measurement is made according to EN 60335-2-103. Consult your installer for this.

Take into account good shielding, for example an automatic circuit breaker 16A B characteristic.



Ensure that the feeder cables are not carrying power during commissioning.

## 1.8 DELIVERY OF DRIVE UNIT



Due to the weight of the drive unit (approximately 26 kg), a forklift or pallet truck must be used for its installation and replacement.

After installation and commissioning, by a Heras technician or a technician trained by Heras, the cover of the drive unit must be locked with a key. This key is then handed over to the customer. This is done to prevent unauthorised access.

## 1.9 HMDLP230 / HGD230

The HMDLP230 / HGD230 are delivered as a complete drive and control unit, including gear wheel module 6.

By default, the half profile cylinder (according to DIN 18252) is not included.

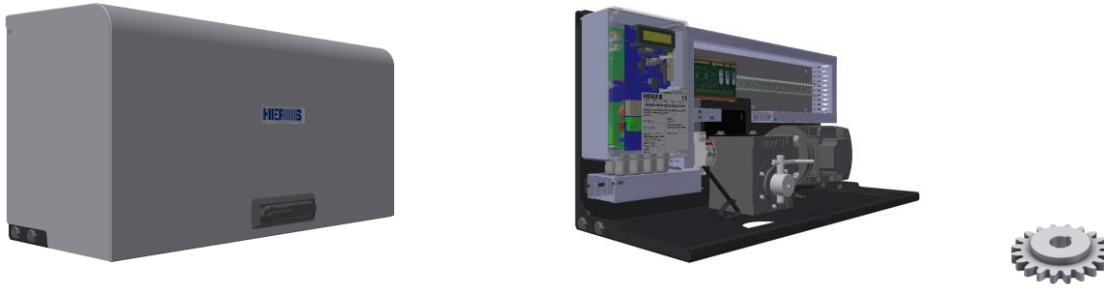


Illustration 1: HMDLP230 cover, cabinet and gear wheel

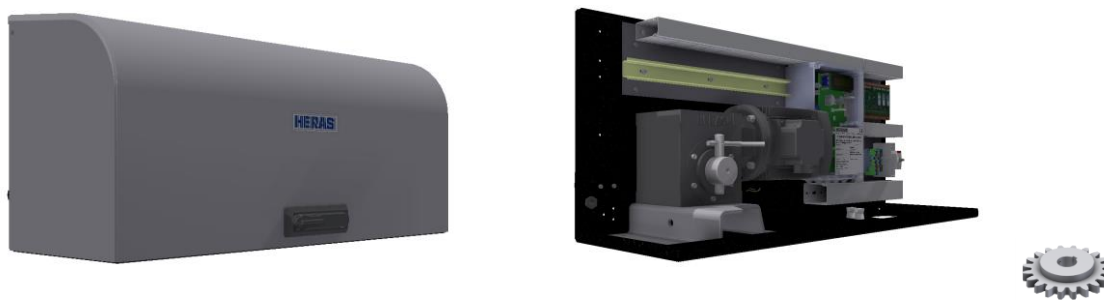


Illustration 2: HGD230 cover, cabinet and gear wheel

## 2 SAFETY

### 2.1 EXPLANATION OF THE SYMBOLS



**Caution:** To prevent personal injury, you must observe the safety instructions below.



**Note:** To prevent material damage, you must observe the safety instructions below.



**Information:** This is followed by further information or by a reference to other documents.



**Warning:** Risk of limbs getting crushed



**Warning:** Risk of injury to hands by gear wheels

## 2.2 SAFETY DISTANCES

Safety distances apply for the area into which the gate slides in accordance with EN 12453 for electrically driven gates.

## 2.3 GENERAL SAFETY INSTRUCTIONS



- The operator must read the entire user manual before the gate is used for the first time. The instructions stated in the user manual must be observed and complied with. All other forms of use can cause unexpected hazards and are forbidden.
- It is forbidden to apply the drive unit to gates other than those stated in this manual, without Heras' permission.
- Applying a third-party drive unit and/or safety edge will affect safety and will invalidate the CE mark and UKCA mark.
- The gate must only be put into use if all safety facilities are in place and connected, and work properly.
- All faults which might present a source of danger to the user or to third persons must be eliminated immediately.
- All warnings and safety notices on the equipment must be in place and clearly legible at all times.
- Closing the gate infill openings in any way, such as by means of banners, advertising signs etc, is not allowed as this may negatively affect the safe operation of the gate.
- All alterations or extensions to the gate must be carried out by qualified personnel using parts which the manufacturer has defined as suitable for such alterations or extensions. Any failure to comply with these instructions will be considered as non-compliant behavior and will invalidate the manufacturer's guarantee, as a result of which the risk entirely transfers to the user.
- For a double sliding gate, it is strictly forbidden to remove the central slam support (mounted on the floor in the opening). This is important for the stability of the gate when closed.
- Improper usage or servicing or ignoring the operating instructions can be a source of danger for persons, and/or result in material damage.
- If the meaning of any part of these installation and operating instructions is not clear, then please contact your supplier before you use the equipment.
- This manual must always be available at the operating location of the control /gate. This manual must be read thoroughly and applied by all

persons who are in charge of the operation, maintenance and restoration of the controls.



**The HMD230 is a frequency converter. Since dangerous live voltage may still be present after switching off the HMD230, you must observe a 3 to 5 minute waiting time to make sure that all power has discharged. Working on a live frequency converter PCB involves a risk of fatal injury!**

## 2.4 SAFETY PROVISIONS EMPLOYED

- To protect people and goods from injury or damage, the gate is fitted with safety provisions including safety edges and/or photocells. These serve as emergency provisions that immediately stop and reverse the movement of the gate. It is forbidden to use these provisions to stop the gate normally.
- For a gate with hold-to-run control, the above-mentioned safety provisions are not necessary and will therefore not be standard provisions.  
With this type of operation, the gate stops immediately as soon as the switch is released.

## 2.5 INTENDED USE

Giving safe access for goods and vehicles accompanied or driven by persons in industrial, commercial or residential premises.

## 2.6 SAFETY DURING USE



Children or people with a disability must not operate the gate. Parents must supervise their children to prevent them playing with the gate.

**→ PARENTS ARE RESPONSIBLE FOR THEIR CHILDREN ←**



- Keep a safe distance from the moving gate. Warning icons to this effect have been installed in various locations.



- Only pass through the gate when it is completely open.
- The gate must not be operated in windy conditions, wind force  $\geq 9$  Beaufort. The gate leaf can swing in a way that can result in damage to the construction.

- The safety edges serve as emergency facilities to immediately stop and reverse the gate movement. Using them as a regular gate stop feature is not allowed. Since the head stiles of the gate have safety edges that cannot cover their full height, there is still some risk of people getting trapped by the gate here.
- When hold-to-run-control is employed, the gate must only be operated if it can be seen completely, directly and in real-time. Operation must be via a permanently installed operating device, for instance a key switch or push button. This operating device must be located in such a way that the operator's position is safe. The gate must stop immediately when the button or key is released. Other operating devices are not allowed.
- The gate must be able to move freely without there being obstacles in the gate opening passage or anywhere else on the moving trajectory of the gate. Do not stick any objects through, over or under the gate which might block the gate.
- The gate running surface must always be free from snow, ice or dirt that might affect its sliding behaviour. In the event of frost, check this before commissioning the gate. If the running surface is blocked, the gate will not move at all or will not complete its movement. An irregular running surface may cause damage to the drive and/or road wheels.
- In certain circumstances, the sun can temporarily distort the gate. When closing the gate, the leaf is guided to its neutral position. When opening the gate, the leaf will move around somewhat. This has no adverse consequences for the construction.
- Climbing the gate is strictly forbidden as people climbing the gate could be hurt if the gate is started unexpectedly.
- Do not stick any objects through, over or under the gate which might block the gate.
- Do not place any obstacles in the opening.
- Always lock the drive unit cabinet during use.

## 2.7 SAFETY DURING INSTALLATION, MAINTENANCE AND DISASSEMBLY



- When work is carried out or while cleaning the gate, the power supply to the system must be switched off and it must be ensured that it cannot be switched on unexpectedly.



- Use the necessary personal safety equipment.
- The gate is driven by means of a gear wheel. This is located under the beam and it is partly screened off by the drive unit cabinet. Beware of moving parts when carrying out maintenance under the gate at the drive unit cabinet.

- To move the gate manually, first switch the automatic fuse in the drive unit cabinet to "off" and make sure it cannot be switched on again (e.g. by locking the cabinet).
- The EN 13241 and EN 12453 standards must be taken into consideration during installation. To achieve a good safety level, both the above standards and the national regulations must be taken into account in non-EC countries.



**The Delta and uGate have highly tensioned cables fitted in the bottom rail. If these cables are damaged, they can snap with great force. This can lead to serious injury. Therefore, it is prohibited to drill into or grind these rails.**

**!! Only people trained by Heras are allowed to disassemble the bottom rail.**

If the gate is damaged, always contact the supplier for an inspection.



Illustration 3: Warning sticker bottom rail

### 3 OPERATION

#### 3.1 OPENING/CLOSING SLIDING GATE - NORMAL USE

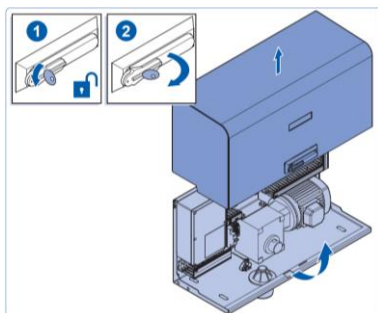
The gate can be operated using pulse operation, for instance via a button or key switch. The location of the operating device depends on the customer's choice or the operating mode.

- **OPEN:**  
Press the "Open" button. The gate slides open to the next end position. This can be completely or partially open (if the "Partially open" function has been programmed).
- **CLOSE:**  
Press the "Close" button. The gate closes completely.
- **STOP:**  
Press the "Stop" button. The gate will stop immediately, irrespective of its direction of travel. To restart the gate press "Open" or "Close".

#### 3.2 OPEN /CLOSE SLIDING GATE - EMERGENCY USE

In an emergency, the gate can also be operated from the drive unit. To do this the cover of the motor unit must be opened.

##### 3.2.1 Opening the cover



- Open the lock.
- Turn the lever through a quarter rotation in a clockwise direction.
- Now rotate the cover through approx. 90° so that it can serve as a rain cover.
- Lift the cover away in a vertical movement.

Illustration 4: opening the cover



## 3.2.2 Closing the cover

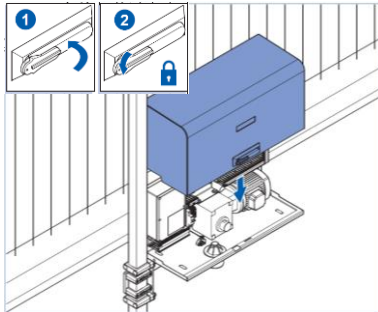


Illustration 5: closing the cover\*

- Lower the tabs of the cover into the slot in the drive unit cabinet.
- Screw the cover into place to close it. Make sure that the sides of the cover properly fit over the drive unit cabinet.
- Close the lever and the lock.

\* The illustration shows the HMDLP230. The same principle applies to the HGD230.

## 3.2.3 Open / close in case of emergency

Two push buttons are located on the backplane of the control unit. These can be used to open, close and stop the gate.

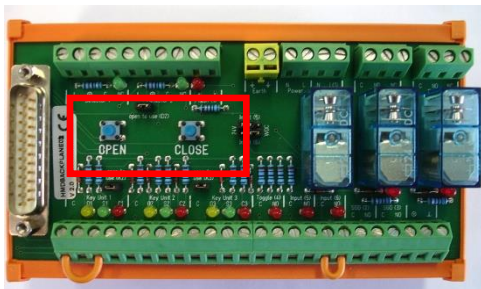


Illustration 6: Backplane

- **OPEN:**  
Press the "Open" button.  
The gate slides open to the next end position. This can be completely or partially open (if the "Partially open" function has been programmed).
- **CLOSE:**  
Press the "Close" button.  
The gate closes completely.
- **STOP:**  
Press the "Open" and "Close" buttons\* simultaneously.  
The gate will stop immediately, irrespective of its direction of travel.

Press "Open" or "Close" to restart the gate.

### 3.2.4 Disengaging the motor

The gate can be opened by hand in emergency situations. The gear wheel of the drive unit will have to be disengaged from the toothed bar for this.

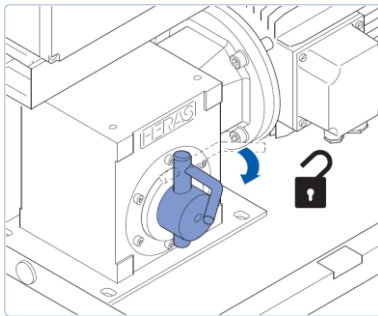


Illustration 7: release the motor

- Open the drive unit cabinet (key)
- Set the automatic fuse to "OFF".
- Pull the disengagement lever forwards after which the gate can be opened and closed manually.

### 3.2.5 Engaging the motor



**NOTE: ONLY engage the gate when it is in the CORRECT POSITION. Only then will the software recognise the correct end positions. Engaging the gate in the wrong position will lead to damage and the gate will operate incorrectly. See Menu 7.3 end positions and section 7.3.1 Marking plate for more information.**

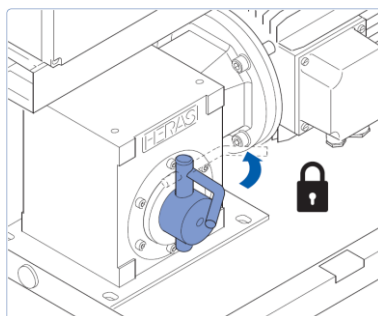


Illustration 8: lock the motor

- When locking the system again, close the gate as far as the mark on the bottom rail.
- Now move the gate back and forward a bit to engage the gear wheel with the rack and push the lever back.
- Set the automatic fuse to "ON".
- Lock the drive unit cabinet after use.

## 3.3 AUTOMATIC DISENGAGEMENT

Versions with automatic disengagement if there is a power failure can be recognized by a coil; this will automatically disengage the drive if a power failure occurs.

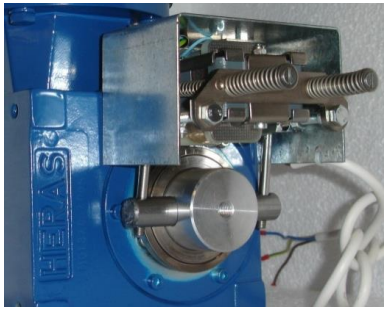


Illustration 9: Automatic disengagement



Attention! To be able to use the electrical system again to operate the gate after operating it manually, follow the procedure as described in chapter 7.3

## 4 DESCRIPTION

### 4.1 DELTA

The Delta is a cantilever sliding gate with a modular construction for openings up to 9.5 meters in a single version and up to 19 meters in a double version.

Applications include port areas, company buildings, office buildings, storage sites, garden and landscape areas, high-risk sites, airports, transport and distribution sites, and parking garages.

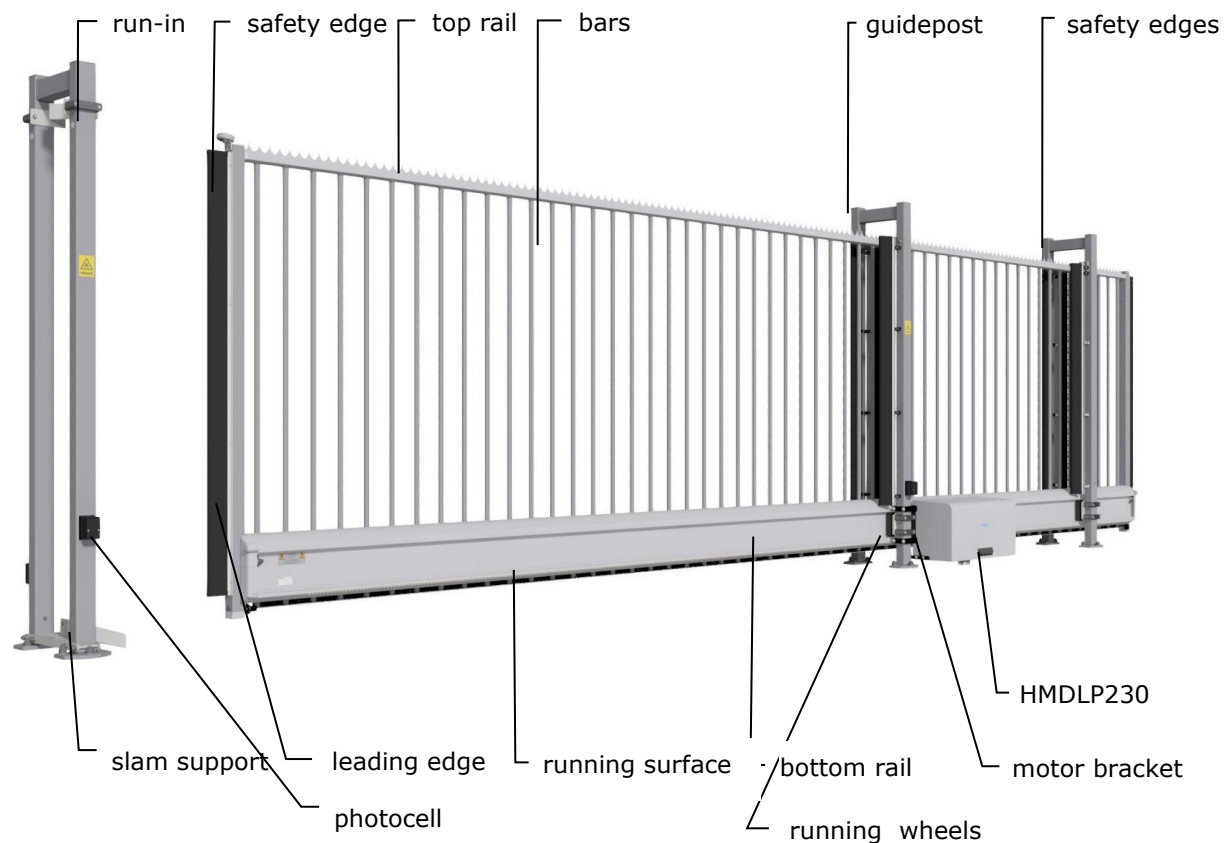


Illustration 10: Delta sliding gate terms

## 4.2 UGATE

The uGate is a cantilever sliding gate with a modular structure for openings up to 12 meters in a single version and up to 24 meters in a double version.

Applications include port areas, company buildings, office buildings, storage sites, garden and landscape areas, high-risk sites, airports, transport and distribution sites, and parking garages.

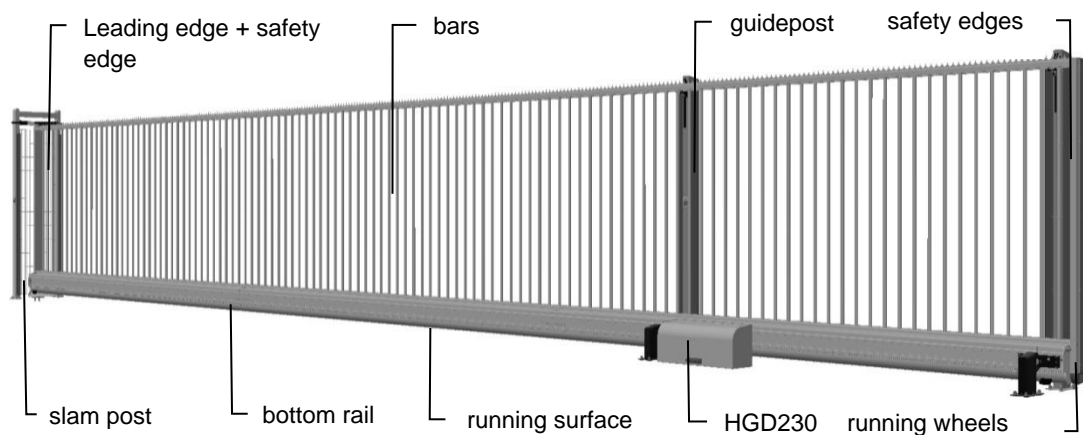


Illustration 11: uGate sliding gate terms

## 4.3 DRIVE UNIT

### 4.3.1 Drive unit variants

The following sliding gate/drive unit combinations are possible:

Drive unit type Sliding gate type	HMDLP230S	HMDLP230A	HGD230S	HGD230A
DELTA	■	■		
uGATE			■	■

Drive unit type Gate speed	HMDLP230 <b>S</b>	HMDLP230 <b>A</b>	HGD230 <b>S</b>	HGD230 <b>A</b>
0,25 m/s	■		■	
0,5 m/s		■		■

S = Standard,      A = Advanced,



See the chapter "TECHNICAL DATA" for further information.

The motor has a pulse generator enabling the motor control to determine the gate position. It is already connected to the control unit on delivery. Limit switches are not necessary anymore.

## 4.4 SAFETY EDGES

Electrically driven Heras gates are protected by safety edges. The type of device and the speed of movement depend on the motor control unit used. If the safety device touches an obstacle, the gate will immediately stop and reverse.

Dependent on the device, the gate will restart. The safety edges have been fitted to the stationary and/or moving part or parts of the gate. They are not required for hold-to-run-control. These strips serve as safety components. The number of safety edges depends on the situation.

Before the gate is moved, the control system checks the status of the safety edges. If one of the safety edges is faulty, the gate can only be opened and closed in hold-to-run-mode. In that case, consult a qualified engineer.



See the chapter "SERVICE /MAINTENANCE"

## 4.5 PHOTOCELLS

Photocells detect whether there are obstacles in the path taken by the gate. If an obstacle is detected, the gate will stop immediately and slide open to its original starting point (OPEN or PARTIALLY OPEN). Dependent on the device, the gate will restart. The photocell is only active when the gate is being closed. Gates can be fitted with multiple photocells.

## 4.6 ACCESSOIRES

### 4.6.1 Loop detection (optional)

A detection loop is an induction loop embedded in the road surface that, with the assistance of electronics, can detect a vehicle. When the loop detects a vehicle, the gate will open and/or stay open. Detection loops do not detect people.

### 4.6.2 Traffic light (optional)

Red/green signal lights that indicate the open/closed position statuses. People are only allowed to pass through the gate opening when the green light is on.

### 4.6.3 Flash light (optional\*)

A flashing beacon to ensure extra attention before and while the gate is opening/closing.



A technician can program the switching time.

\* In some countries, a flashing light is obligatory.

### 4.6.4 Remote control (optional)

Remote control to open, stop and close the gate.



See the chapter "REMOTE CONTROL"



Ensure that the remote control cannot come within reach of children and that it can only be accessed by authorised people. Only use the remote control in the vicinity of the gate, so that you can see the entire gate.

Note that the button of the remote control can be pressed accidentally, for instance, when it is in a pocket and this can lead to undesired gate movements.

### 4.6.5 Lighting (optional\*)

Two kinds of lighting can be connected to the HMD230.

- Passage lighting to enhance the visibility of the passage opening. It can be lit before and/or while the gate is opening/closing.

- Outdoor lighting to illuminate the grounds. This is activated as soon as the gate is operated and it is switched off automatically after a certain pre-set time.



\* In some countries, lighting is obligatory.

## 4.7 OPERATING MODES

The control software is divided into separate function modules and is available to users in three possible operating modes:

- hold-to-run-mode
- automatic mode
- emergency operation

### 4.7.1 Hold-to-run-control

The gate motor drive can be operated in hold-to-run operating mode with limited comfort. In hold-to-run operating mode, the gate does not require safety edges. The gate will move as long as an OPEN or CLOSE key is pressed.



it shall only be possible to operate the manual actuators in such a position that allows full, direct and permanent real-time view of the door during the leaf movement and ensures that the person controlling the door is not in a hazardous position. No controls other than manual actuators are to be installed. The door leaf shall stop when the manual actuators is released.

### 4.7.2 Automatic mode

If the safety facilities have been installed completely, the motor drive will usually work in this automatic mode. The user can only use all motor drive functions in automatic mode. Total safety of the gate is guaranteed here by the activated safety facilities.

Opening or closing the gate can be initiated in automatic mode by means of the backplane and (see chapter 5.8):

- two command keys OPEN, CLOSE (work as dead man's keys while learning the limits)
- one impulse input with toggle function OPEN, STOP, CLOSE, STOP
- 3x3 impulse inputs for OPEN, STOP and CLOSE commands
- 1 impulse input with PART OPEN function



Every movement command causes the full action that has been selected to be performed (open gate, close gate etc.). Every action is stopped immediately by a stop command or a signal from the safety facilities.

Activating the safety edge causes the gate to immediately move in the opposite direction. If a photocell is interrupted while the gate is closing, this will cause the gate to be opened as far as the point where the closing movement started (OPEN or PARTLY OPEN).

A movement command for the opposite direction will gradually decelerate the gate and then cause it to move in opposite direction.

### **Automatic mode if the gate has not been installed fully yet:**



If the gate has not been fully installed yet, or if motor drive programming has not been completed yet, the motor drive will work in a special safety mode (e.g.: the end positions of the gate have not been defined yet). The gate will then only run at dead man's mode speed. Only after the OPEN and CLOSED end positions have been set and after a measuring run at dead man's mode speed has been performed, will the system switch over to the automatic mode speed (depending on the type, HMDLP230/HGD230), this will be 0.25 m/s or 0.5 m/s). If the power supply to the drive has been interrupted, the gate will also only run at dead man's mode speed until the first time when an end position has been reached.

### **4.7.3 Emergency operation**

The gate motor drive can switch over automatically from automatic mode to emergency operation. This automatic switch-over can only take place after a "Function emergency situation" input signal which is generated by a fire emergency room. Only the one movement (OPEN or CLOSED, depending on programming) that is requested will be performed at dead man's mode speed in this operating mode. The safety facilities are also activated during this movement. The movement can be interrupted by pressing and holding the STOP key or by a safety device being triggered. When this interruption no longer applies, the gate will immediately continue to move. At the end of the emergency movement and after the signal ("Function emergency situation") has been reset, the software of the motor drive will initiate a restart to enable safe switch-over to automatic mode.

Any static active OPEN or PARTLY OPEN signals are ignored by the motor drive in this operating mode.

Just as the command triggered by an OPEN or CLOSE command key being pressed cannot be performed when a program is started, a static active "Emergency situation" input signal will also not be carried out when switching on the motor drive.

## **4.8 AUTOMATICALLY CHANGING OPERATING MODES**

The gate motor drive can switch over from automatic mode to emergency operation if it has been programmed to allow this and the HMD230/IGD recognizes a corresponding "emergency situation" signal from a fire emergency room. This operating mode will then be performed until the motor drive is restarted.

If electronic safety facilities on the gate are out of operation (e.g. faulty photocell), the motor drive can automatically switch over from automatic mode to hold-to-run-control. This automatic switch-over will take place only for the individual motor movement that has been started and only if the key provided for hold-to-run-control is pressed. After this, the motor drive will switch over to automatic mode again, but if a new fault occurs or if the fault is not remedied, the system can switch over to hold-to-run-control again for the next movement.

Changing between operating modes is possible in the following directions:

- |                            |    |   |
|----------------------------|----|---|
| • Automatic mode           | -> | Hold-to-run-control mode  |
| • Hold-to-run-control mode | -> | Automatic mode (if safety has been restored)  |
| • Automatic mode           | -> | Emergency operation   |
| • Emergency operation      | -> | Automatic mode (if no emergency situation signal is active anymore and after restarting the control software) |

## 5 CONTROL UNIT AND DISPLAY READINGS

### 5.1 TOTAL VIEW OF HMDLP230 DRIVE UNIT

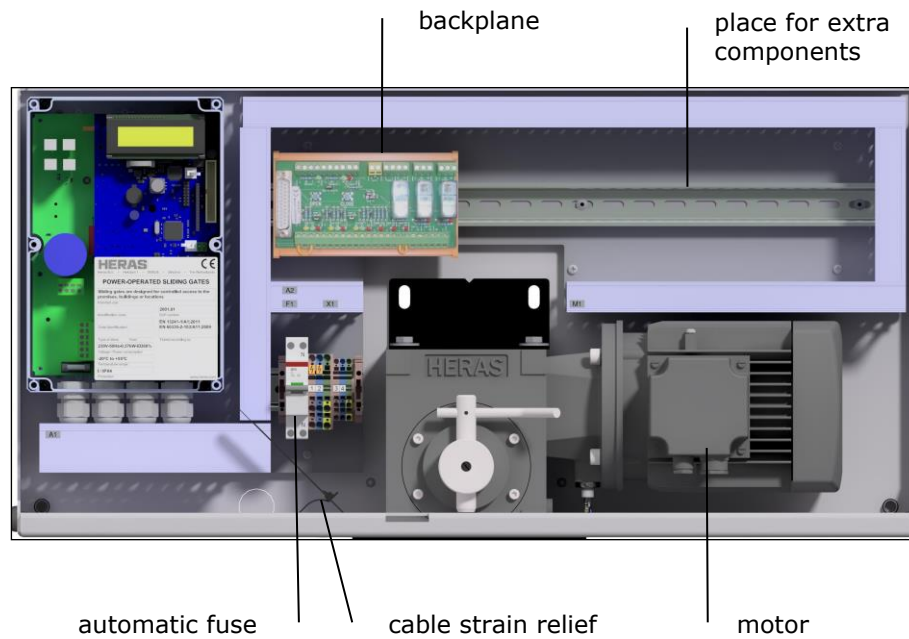


Illustration 12: view of HMDLP230 drive unit

## 5.2 TOTAL VIEW OF HGD230 DRIVE UNIT

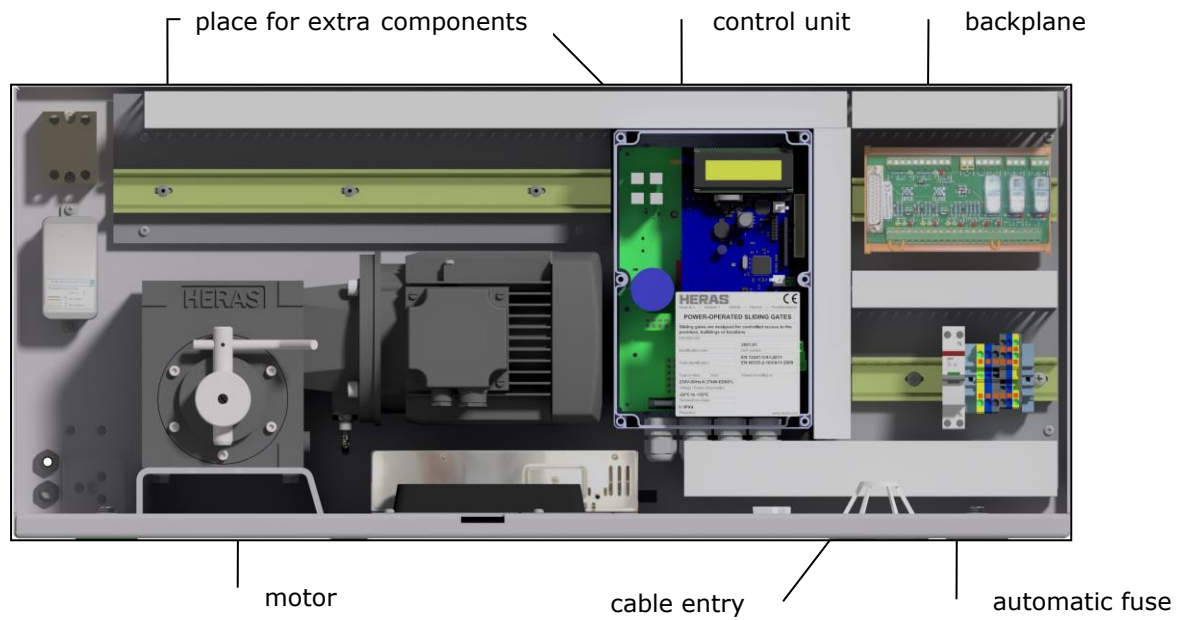


Illustration 13: view of HGD230 drive unit

## 5.3 VIEW OF CONTROL UNIT

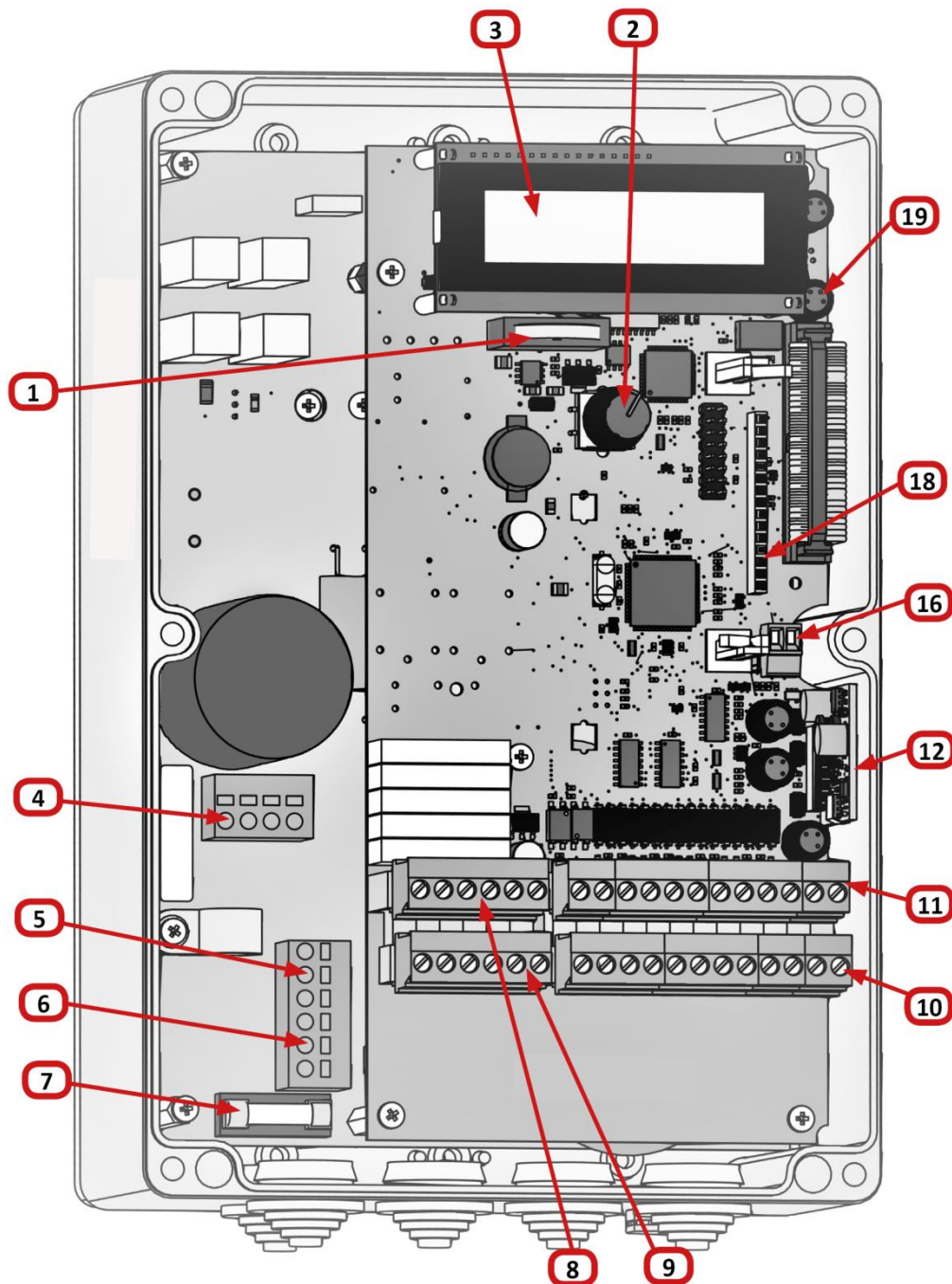


Illustration 14: view of control unit

## Names of the numbered parts:

- 1 Battery for real-time clock
- 2 Turn and select switch for setting
- 3 LCD text screen
- 4 Motor connection
- 5 Power supply 230 V<sub>AC</sub> / 50 Hz
- 6 Connection for further 230 VAC / 50 Hz consumers
- 7 Fuse for external 230 V consumers (6.3 A)
- 8 Connection for the relay outputs Rel4 and Rel5
- 9 Connection for the relay outputs Rel1 to Rel3
- 10 Connection for the supply of external 24 VDC devices and operating elements as well as the static safety lists
- 11 Connection for the inputs of the control elements infrared and ISK coil
- 12 Electric readout unit for the moving safety lists: INDUS onboard 70-757 print
- 16 Antenna connection of the receiver for the hand transmitters (optional)
- 18 Socket for the receiver print (optional)
- 19 Encoder connection

## 5.4 TWIST AND SELECTOR SWITCH

The twist and selector switch, located under the battery for the clock, enables the information displayed by the HMD230 to be influenced. This rotary and push button can also be used to control the manual programming of the motor drive using the integrated menu system.

This control button has two functions. Rotate can change the size of a displayed value: increase to the right [clockwise]; decrease to the left [counter clockwise]. Likewise, one can scroll back and forth in a displayed table or used in a stored memory. If you press the button, a displayed value is accepted, another mode is selected or a display or selection (menu) is closed.



Illustration 15: Rotary and push button

## 5.5 LCD SCREEN

An LCD screen with two lines of 16 characters each has been provided to display more motor drive control information. This shows the active operating mode of the motor drive or the movement status of the motor in legible text.

The background of the display is lit for as long as the twist and selector switch is operated. 20 seconds after the last entry is made, the light is switched off. It can be switched on again at any moment by turning the selector switch. The display is also properly legible in direct sunlight.

Heras HMD230S  
Automatic Mode

Heras HMD230A  
Automatic Mode

Illustration 16: Information on the LCD screen



After resetting the software or after switching on the power, the display light will blink for a few seconds. This indicates that the processor is booting; it is not a fault condition.

### 5.5.1 Display of operating modes

The following options are available as regards displaying operating modes on the LCD screen:

Display reading	Meaning
ATC Pe:x.xx	Start indication of the periphery controller (wait for information from the motor controller)
Heras HMD230 Automatic mode	Automatic operating mode, the gate is now in the idle position
Automatic mode Open	Automatic mode; gate opening active
Automatic mode Close	Automatic mode; gate closing active
Automatic mode Stop immediately	Automatic mode; STOP active
Automatic mode Close: xx	Automatic mode; the gate closes automatically after XX seconds
Heras HMD230 Hold-to-run-	Idle position for hold-to-run-control
Hold-to-run- control	Open gate in hold-to-run-control mode active

Display reading	Meaning
Hold-to-run-control	Close gate in hold-to-run-control mode active
Hold-to-run-control	Hold-to-run-control STOP active
Heras HMD230 Emergency	Idle position for emergency operation
Emergency operation Open	Emergency operation; gate opening active
Emergency operation Close	Emergency operation; gate closing active
Emergency operation Stop	Emergency operation; STOP active

### 5.5.2 Date and time display

You can permanently display the current time on the screen from the operating mode display by briefly pressing the twist and selector switch once. The clock date is shown in the top line, using the "*year. month. day*" format. The lower line shows the time in the 24-hour "*hours: minutes: seconds*" format.

The selected operating mode is displayed again if you briefly press the twist and selector switch or 20 seconds after operating this switch.



Illustration 17: Date and time display

### 5.5.3 LCD sensor display

The display also provides detailed information on the sensors that have been configured. Pressing the twist and selector switch again displays the current state of the sensors that have been set. Turning the switch displays the individual sensors one by one. The sensor from the parameter list is always listed in the first line. The second line shows the current sensor state. Here a "1" stands for an active sensor and a "0" for an inactive sensor. This information is constantly updated to facilitate trouble-shooting. Again, the operating mode is shown again 20 seconds after operating the twist switch.



Sensors that are not installed (specified by parameters in the program) are also not displayed.

Display reading	Meaning
No sensors set	Is shown if no sensors have been programmed
Sensors Begin	Turn the selector switch in a counter-clockwise direction to access the first entry in the sensor
Pulse generator value:	Current value of the incremental encoder
Stat.prot. OPEN Value: 1 => x	Stationary anti-crushing safety protection device for the OPEN direction of the gate
Stat.prot. CLOSE Value: 1 => x	Stationary anti-crushing safety protection device for the CLOSING direction of the gate
Mov.prot. OPEN Value: 1 => x	Moving anti-crushing safety protection device for the OPEN direction (ISK)
Mov.prot. CLOSED	Moving anti-crushing safety protection device for the CLOSING direction (ISK)
Vehicle prot. Value: 1 => x	Photocell status
Sensors End	Turn the selector switch in a clockwise direction to access the last entry in the sensor table

## 5.5.4 Display errors/events

The display proactively displays information about some of the error messages and special events of the controller or gate, without the operator having to scroll through the diagnostics menu or the sensor display.

### How does the proactive view work?

This proactive display of the events in the display only takes place during the display of the operating mode. During the sensor display or in the menu display, the event and error display is not active.

If several events are active at the same time, they are displayed in sequence for 2 seconds each.

The displayed messages refer to the section "Parameter reference or fault numbers" (chapter 8.2) of this document.

## Examples for the proactive view

- Immediately after switching on the controller, the display briefly appears message "250 ProgramInit" to let you know that the controller has been started correctly.
- When the control unit is switched off, the message "224 FU Span.Fhl" appears briefly when the power supply fails, before the display goes out.
- If some special inputs are activated for a longer time (than usual), the reference is also displayed: For example, if the Stop button is active for more than 2 seconds, "161 Immediate stop" is displayed.

### **5.5.5 Selecting the menu system**

The HMD230 menu system is accessed by pressing the twist and selector switch for approx. 2 seconds while the operating mode is displayed. The display then shows the text "Main menu".



Illustration 18: Display of main menu on the LCD screen

Turn the selector switch to select the individual menu options and then press the switch to activate the selected option. The first menu option in a menu level always brings you back one level, "Back in menu". The "Exit main menu" option in the main menu closes the menu display and restarts the control software.

### **5.5.6 Menu system**

Many control functions of the HMD230 are achieved through parameters that are stored in the device and that can be changed. These parameters are loaded into the motor drive during the manufacturing process and they provide the specific behavior of a defined gate. The user or installer of the gate motor drive can access many of these parameters via the menu system.

### **5.5.7 Entering the password**

How to select menu options and how to navigate for entering the password are demonstrated here, starting from the operating modes display. The display initially shows "Automatic mode" and after the twist and selector switch is pressed



for two seconds and released again the menu display changes. The following will then be displayed:

Main menu  
1 Identification

Turning the selector one position further in a clockwise direction displays the following information:

Main menu  
2 Service Menu

Press the selector switch to activate this menu option and go down one level in the service menu:

Service Menu  
1 Enter passw.

Press the switch to activate this menu option and to access the field where you can enter the password:

Enter passw.  
Value: 3XXXX

Turn the switch to change the preset value shown. The faster you turn, the faster the values will change. Press the switch to store the value that you have set and to display the previous menu option again:

Service Menu  
1 Enter passw.

If the password has been entered correctly, you can immediately select the password-protected menu options and entry possibilities. The password will be valid for 10 minutes and will then be reset automatically to the value 33333 if no further entry is made.

By pressing and holding the selector switches for two seconds, you can immediately select the main menu option "Exit main menu":

Main menu  
Exit Menu

When this menu option is selected, the motor drive will restart the program (reset) and the active operating mode will be switched on again (here: "Automatic mode").

## 5.6 MENU DISPLAY INSTRUCTIONS

The menu system of the HMD230 offers the following possibilities:

### 1. Identification

<input type="checkbox"/> Master version	Motor drive software version
<input type="checkbox"/> Gate profile	Motor drive version
<input type="checkbox"/> Serial number	Serial number of control unit and PAN
<input type="checkbox"/> Motor Controller	Motor controller software version
<input type="checkbox"/> Peri.Controller	Periphery controller software version
<input type="checkbox"/> Parameterset	Software version parameter set
<input type="checkbox"/> Bootloader Mot	Software version Bootloader Motorcontroller
<input type="checkbox"/> Bootloader Peri.	Software version Bootloader Peripheriecontroller

### 2. Service

<input type="checkbox"/> Password entry	Access (password) for authorised persons and activation extra functions
<input type="checkbox"/> Language	Language settings
<input type="checkbox"/> Motor direction	Adjustment of motor rotation direction left / right
<input type="checkbox"/> Calender selection	Activate week/year calender
<input type="checkbox"/> Emergency oper.	Settings for emergency operation

### 3. Diagnostics

<input type="checkbox"/> Gate status	Condition of the control / gate, the inputs and outputs as well as maintenance information
<input type="checkbox"/> Sensor status	Status of connected sensors
<input type="checkbox"/> System Log	List of the most recent events and errors including time marking (date and time)
<input type="checkbox"/> Temperatures	Temperature of CPU & Frequency controller

### 4. Settings

<input type="checkbox"/> Timer settings	Menu for setting different timers (automatic closing, lighting, etc.)
<input type="checkbox"/> End positions	Setting the end positions (incremental encoder)

- ☐ In-/Outputs      Choice of functions for Inputs IN5 and IN6 as well as the outputs Rel4 and Rel5
- ☐ Safeties      Settings for the installed safeties
- ☐ Special parameters      Settings for maintenance notifications
- ☐ Operating mode      Choice between hold to run and automatic control
- ☐ Parameter backup      Saving and restoring settings (e.g. factory settings)

## 5. Clock/Calender

- ☐ Show clock      Shows the actual date and time of the control unit
- ☐ Set clock      Menu for manually setting the clock
- ☐ Cal.activation      Activation / deactivation of the built-in calendar function
- ☐ Disp.Week Cal.      Menu for displaying the registered gate functions in the weekly calendar
- ☐ Edit Week Cal.      Menu for editing the registered gate functions in the weekly calendar
- ☐ Disp.Year Cal.      Display of the registered gate functions in the annual calendar
- ☐ Edit Year Cal.      Editing possibility of the integrated annual calendar

## 6. RF Remote CTRL.

- ☐ Active transmi      Number of programmed remote controls
- ☐ Prog. transmi      Teach in a new transmitter with the functions predefined in the program
- ☐ Prog. Key OPEN      Teach in a new remote control (key) for the function OPEN
- ☐ Prog. Key CLOSE      Teach in a new remote control (key) for the function CLOSE
- ☐ Prog.Part OPEN      Teach in a new remote control (key) for the function PARTLY OPEN (pedestrian passage)
- ☐ Prog. Key TOGG      Teach in a new remote control (key) for the function Toggle
- ☐ Delete transmi      Delete a previously learned and stored remote control (key) by receiving it again
- ☐ Delete PlaceNO      Delete a remote control (key) from the listed table
- ☐ Delete all      Delete all stored remote controls (buttons)

## 5.7 MENU STRUCTURE , TEXTS AND REFERENCES

Selecting the menu brings you to the main menu level where you can choose from a number of submenus. The first menu option "Exit" lets you exit the menu system after which a restart or reset brings you back in the active operating mode of the motor drive. How many submenu levels are available depends on the password that is entered. First-level submenus can lead to second-level submenus.

The colored entries in the submenus of the following menu listings can only be accessed with the correct password.

Main menu	Menu level 1	Menu level 2
Quit Menu		
1 Identification	Menu back 1 Master version 2 Gate type 3 Serial number 4 Motor Controller 5 Peri.Controller 6 Parameter Set 7 Bootloader Motor 8 Bootloader Peri.	(Chap: 7.19.1)
2 Service Menu	Menu back 1 Passwort input	(Chap: 5.5.7)

Main menu	Menu level 1	Menu level 2
	2 Language	(Chap: 5.7.1)
		Menu back
		1 Dutch
		2 Englisch
		3 German
		4 French
		5 Norwegian
		6 Swedish
		7 Danish
	3 Mot.Rotation	(Chap: 7.1)
	4 Calender choice	(Chap: 7.22.1)
	5 Emergency Oper	(Chap: 7.9)

3 Diagnostics		
	Menu back	
	1 Gate State	(Chap: 7.19.3)
		Menu back
		1 Gate state
		2 Input: 876543
		3 Output: 54321
		4 Completed cycles
		5 Motor runtime
		6 Last service
		7 RESET Service (Chap: 7.8.6)
	2 Sensor Status	(Chap: 7.19.4)

Main menu	Menu level 1	Menu level 2
	3 System Logbook	(Chap: 7.19.6)
	4 Temperatures	
		Menu back
		1 CPU Temperature (Chap: 7.19.5)
		2 FU Temperature (Chap: 7.19.5)
		3 RESET.Min/Max

4 Settings		
	Menu back	
	1 Set timer	
		Menu back
		1 Lighting (s) (Chap: 7.7)
		2 TMR Keep open (Chap: 7.11.1)
		3 TMR keep part op (Chap: 7.11.2)
		4 TMR Autom. Close(Chap: 7.11.3)
		5 Secondary time (s) (Kap: 7.11.4)
		6 Flashlight Prewarn (Chap: 7.6)
	2 Gate limits	
		Menu back
		1 Set close limit (Chap: 7.3)
		2 Set part open
		3 Set open limit
		4 RESET position
	3 In-/Outputs	
		Menu back



Main menu	Menu level 1	Menu level 2
		1 In5 (Chap:7.14) 2 In6 3 Out Rel4 (Chap: 7.16) 4 Out Rel5
	4 Safeties	Menu back
		1 Lightbarrier (Chap: 7.5) 2 ISK activation (Chap: 7.2) 3 JCM activation (Chap: 7.2.1) 4 JCM NTouchONLY (Chap: 7.2.2)
	5 Spec.Parameter	Menu back
		1 Cycles to service (Chap: 7.8.1) 2 RuntimeToService (Chap: 7.8.2) 3 Serv.Interv. M (Chap: 7.8.3) 4 Service Action (Chap: 7.8.4)
	6 Operation mode	Menu back
		1 Hold to run (Chap: 7.4) 2 Automatic mode (Chap: 7.4)
	7 Param backup	Menu back
		1 Restore (Chap: 7.17.2) 2 Save (Chap: 7.17.1) 3 Write card (Chap: 7.18.1)

Main menu	Menu level 1	Menu level 2
5 Clock/Calender	Menu back 1 Display clock 2 Set date/time	(Chap: 7.21.1) (Chap: 7.21.2) Menu back Year Month Day Hour Minute Second Daylight saving Now daylight? 3 Cal.Activation (Chap: 7.22.1) 4 Disp.Week.Cal. (Chap: 7.22.2) 5 Edit Week Cal. Menu back 1 Set weekdays (Chap: 7.22.3) 2 Delete week (Chap: 7.22.7) (from here only when calendar choice = 2) 6 Disp.Year Cal. 7 Edit year Cal Menu back 1 Set day (Chap: 7.22.9) 2 Del.Year Cal. (Chap: 7.22.13)

Main menu	Menu level 1	Menu level 2
6 RF Remote control	Menu back	
	1 Active Transmi	(Chap: 7.20.1)
	2 Prog transmi	(Chap: 7.20.2)
	3 Prog.Key OPEN	(Chap: 7.20.3)
	4 Prog.Key CLOSE	(Chap: 7.20.3)
	5 Prog.Part OPEN	(Chap: 7.20.3)
	6 Prog.Key TOOG	(Chap:7.20.3)
	7 Delete transmi	(Chap: 7.20.4)
	8 Delete PlaceNO	(Chap: 7.20.5)
	9 Delete all	(Chap:7.20.6)

## 5.7.1 Setting the language

After entering the password, the engineer can change the menu interface language. In addition to the default language "English", another 6 languages can be selected.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Service Menu", "Language": select the language and confirm.
- The display uses the new selected language as soon as a new language has been selected.

## 5.8 BACKPLANE

Several accessories such as photocells, lighting etc. can be connected to the backplane.

The backplane has several control LEDs. The system is OK if all the green LEDs (detector 1, detector 2, Key units 1 to 3) light up while the gate is not active. If the gate gets an OPEN command, one of the orange LEDs (for the active input) will light up. If the gate gets a CLOSE command, one of the red LEDs (for the active input) will light up.

The "OPEN" and "CLOSE" keys are used to open or close the gate.

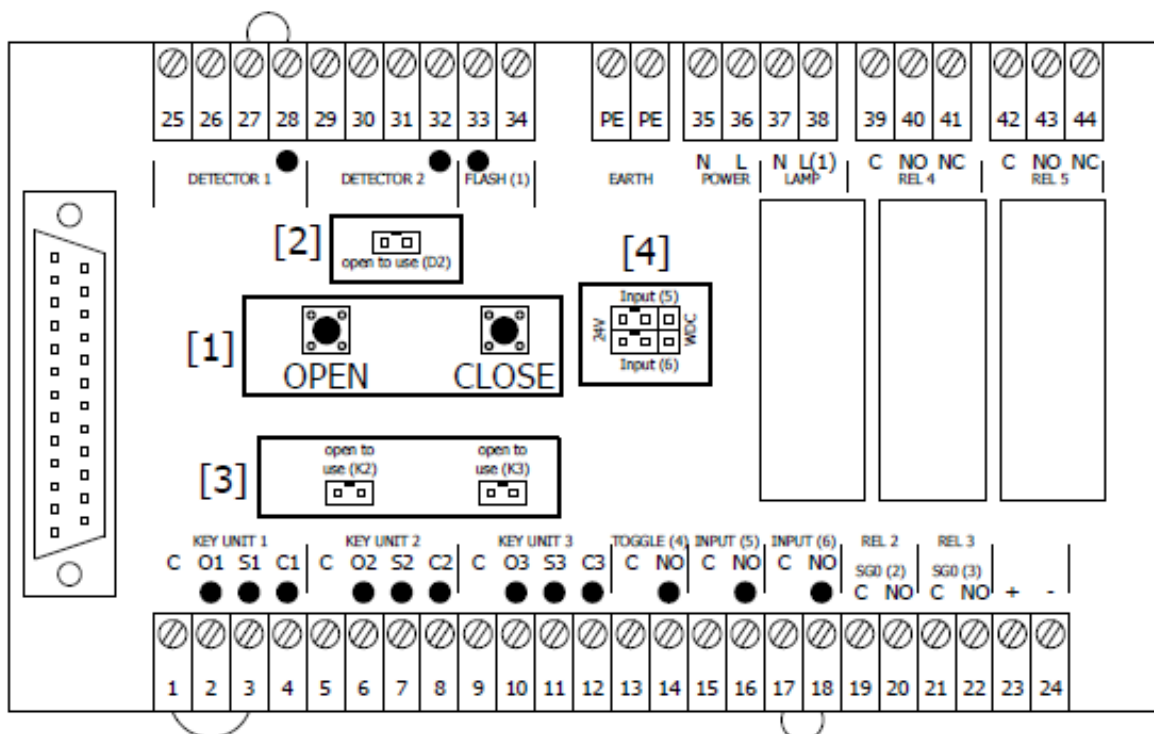


Illustration 19: Backplane

The following statements belong to the numbers which can be found in Figure 19:

1. With the buttons "OPEN" and "CLOSE" the gate can be operated both deadman and in automatic mode. During learning the limits they always work in dead men.
2. Jumper to bridge the second detector connection. If a second detector is connected, then remove the jumper.
3. Jumpers to bridge the second and third stop. If a second or third stop is connected, then remove the corresponding jumper.
4. Jumpers for selecting the 24V or the tested  $\bar{\phantom{x}} \mid \_ \mid \bar{\phantom{x}}$  24V for inputs IN5 and IN6. Jumper on center and left selects 24V on the relevant input; jumper on center and right select the tested  $\bar{\phantom{x}} \mid \_ \mid \bar{\phantom{x}}$  24V.

## 6 INSTALLATION

This chapter is about commissioning the HMD230.

### 6.1 ELECTRICAL CONNECTION



In principle, and for safety reasons, the electrical system must be connected by a qualified electrical engineer. Work on the motor drive is only permitted if the power supply is fully interrupted. To fully interrupt the power supply, an isolator switch or mains plug must be installed and used. The isolator switch or mains plug must be within easy reach.

Observe the instructions in the chapter Safety. Avoid parallel signal and energy leads and cables where possible. The dimensions of all leads and cables must be adjusted to the power consumption.

The cable glands must be treated this way that the protection against water and foreign objects penetrating is still compliant with the IP classification after introducing the leads and cables.

#### 6.1.1 Connecting the supply voltage and the drive motor

When connecting the motors, follow the wiring diagrams as supplied by the motor manufacturer.

The HMD230 has been designed for 230V<sub>AC</sub> single-phase input voltage: it generates a rotary field of 3 x 230V<sub>AC</sub>.

Connect the motor drive as shown in the illustrations below:



Illustration 20: Electrical connection

Make sure that the earth lead and the motor connection cable shield are connected correctly.

While commissioning, check the direction of rotation of the motor, so that the gate will move in the required direction when the OPEN key is pressed. If necessary, switch connections V and W or change the direction of rotation by means of the configuration in the menu.

### 6.1.2 Supply of external consumers with 230 V<sub>AC</sub>

External consumers of the controller, which work with a 230 VAC power supply, can be connected via the fused voltage output with the terminal designation "L" on the power board of the controller (Illustration 20:). The maximum load specified by the integrated fuse (Illustration 20:) must be observed.

### 6.1.3 Instructions for EMC installation



**Attention:** If the installation does not comply with EMC requirements, other equipment in the direct vicinity of the motor drive may be disturbed.

The HMD230 is a motor drive which includes a frequency converter. The switching technology inherent in frequency converters may lead to disturbances in their direct vicinity.

A shielded cable must always be used for the motor cable. Connect the shield to the motor using an EMC screw connection and connect it in the motor drive using the PE terminal provided for this purpose.

If the system has to comply with the requirements of EN 61000-6-3, the power supply lead and all control leads must have ferrite cores.

### 6.1.4 Connecting the inputs

The HMD230 has two terminal blocks next to each other for connecting external devices. The left-hand block is intended for outputs, whereas controls or sensors can be connected to the right-hand block. Many of these connections are also available on the backplane.

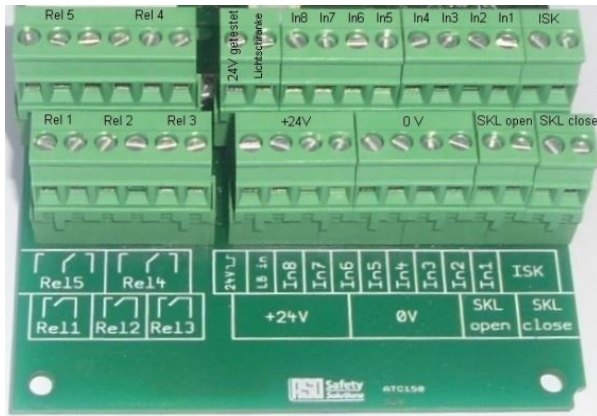


Illustration 21: Connecting external devices

## 6.1.5 Power supply for external devices with 24Vdc

To supply power to the external sensors and controls, the HMD230 features a 24 V<sub>DC</sub> power supply with potential separation and voltage stabilisation which can supply a maximum current of 500 mA. The supply voltage is fused with an automatically resetting fuse on the PCB. Devices can also be connected to the backplane; see the connection diagram at the back of this document.

## 6.2 CONNECTING THE CONTROLS

The controls (keys) for the open, close, toggle and part open functions are connected through a make contact. Switches with a static make contact (e.g. timer) are also allowed for the open and part open functions. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

Only controls with a break contact are used for the stop, emergency stop and emergency situation functions.



**ATTENTION:** The power supply to the controls must go through the synchronised 24V  $\overline{|\_|\_}$  output for the **emergency stop** and **emergency situation** functions.

Several break contacts can be switched in series in the form of a stop chain for the stop and emergency stop inputs.

To comply with the special requirements set on dead man's operation, the inputs "In7" and "In8" may only be assigned to pushbuttons, the operation of which

guarantees a complete view of the door system and safe use. These settings cannot be changed while programming.

Ill.Nr.	Terminal number	Marking	Input function
21	3	In8	Hold to run button OPEN (e.g. Key switch on the gate)
21	4	In7	Hold to run button CLOSE (e.g. Key switch on the gate)
21	5	In6	Emergency stop
21	6	In5	Partly OPEN pulse (pedestrian passage)
21	7	In4	TOGGLE pulse (OPEN / STOP/ CLOSE / STOP)
21	8	In3	CLOSE pulse
21	9	In2	STOP button (normally closed contact)
21	10	In1	OPEN pulse

Section 7.14 describes how to assign other functions to the two inputs In5 and In6. Pre-installed at input In5 is a partial OPEN function and at In6 an emergency-stop switch.

### 6.2.1 Installing the dead man's keys

You cannot put a gate into operation until at least one OPEN and one CLOSED key have been connected for dead man's operation. Since you cannot set the end positions without these keys, you have to perform the following actions in the sequence described below. If a backplane is present, those keys are already prepared and connected as such.

- Switch off the power supply to the motor drive.
- Connect the keys to the 24V power supply.
- Connect the key for OPEN [dead man's key] to input terminal In8 (make contact ).



- Connect the key for CLOSED [dead man's key] to input terminal In7 (make contact ).
- Switch on the power supply of the motor drive.
- Check that the keys work.

## 6.2.2 Stop function

To stop a running motor or to prevent the motor from starting, a STOP button or switch can be connected to the "In2" input. This element must be designed as a normally closed contact. It is also possible to connect several NC circuits in series in the form of a STOP chain (eg. motor temperature switch, access switch, STOP button). Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect the STOP button to the input IN2 and the +24 Volt (normally closed contact).
- Switch on the power supply of the motor drive.

## 6.2.3 Emergency stop function

An emergency stop function is pre-installed at input In6. When the input (normally closed contact) is activated, a stop is immediately activated. It is no longer possible to move the motor. When the input is deactivated, the program of the controller performs a reset. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect the EMERGENCY button /switch to the input IN6 and to +24 Volt.
- Switch on the power supply of the motor drive.

## 6.2.4 Open, close controls

OPEN and CLOSE keys can be connected to drive the gate by hand. The inputs referred to below have already been factory-configured for the relevant functions and do not require any further settings to be made. The function at this input is only supported in automatic mode. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

Proceed as follows to connect the keys:

- Switch off the power supply to the motor drive.
- Connect the keys to the 24V power supply.

- Connect the OPEN key to input terminal In1 (make contact).
- Connect the CLOSE key to input terminal In3 (make contact).
- Switch on the power supply of the motor drive.
- Check that the keys work.

## 6.2.5 Toggle impulse key

How to connect a key to input "In4" and configure it is described below. Whenever this key is pressed, an impulse is generated for the toggle functions OPEN, STOP, CLOSE, STOP.

Here, the input "In4" has already been factory-configured for the relevant function. The function at this input is only supported in automatic mode. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
  - Connect the key to the 24V power supply.
  - Connect the key for the toggle impulse to input terminal In4 (make contact ).
  - Switch on the power supply of the motor drive.
- Check that the key works.

## 6.2.6 Installing/Setting a part open function

To set a part open function, a pushbutton or switch contact (make contact) is connected to input In5. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect the key/switch to the 24V power supply.
- Connect the key/switch to input In5.
- Switch on the power supply of the motor drive.
- Check that the part open function of the gate works.

The opening width of the gate from the CLOSED position to the partial OPEN OPEN position is determined by the value of the incremental encoder. How this is set is described in chapter 7.3.

### 6.2.7 Connecting the status indicator of the gate

The HMD230 can indicate two different gate statuses by means of relays. The output relay "Rel2" is factory-set such that it is closed when the gate has reached its OPEN position. The output relay "Rel3" has been set such that it is closed when the "gate CLOSED" position has been reached. No further settings are required. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

## 6.3 STATIONARY ANTI-CRUSHING SAFETY PROTECTION DEVICES

The stationary anti-crushing safety protection devices can be connected directly to the buses marked "open" and "close" on the PCB, using M8 connectors. If relevant, the anti-crushing safety protection devices can also be connected to the plug-in terminals in the lower right-hand corner of the input terminal block. These safeties are never connected to the backplane, always directly on the control itself.



Illustration 22: Electrical connection of anti-crushing safety protection devices and ISK



**Attention:** A single input (SKL open; SKL close) may only be used to connect the M8 connector or the input terminal, but they cannot both be connected to the same input terminal. This would result in a parallel connection of the anti-crushing safety protection device, leading to failures.

### 6.3.1 Connecting stationary anti-crushing safety protection devices (SKL)

The stationary anti-crushing safety protection devices (SKL) are always delivered pre-activated.

- Switch off the power supply to the motor drive.
- Connect the anti-crushing safety protection device(s) for the OPEN direction to the SKL open connection.

- Connect the anti-crushing safety protection device(s) for the CLOSING direction to the SKL close connection.
- Switch on the power supply of the motor drive.
- Check that the safety protection devices have been connected correctly and check the reaction of the gate in the relevant movement direction in automatic mode!

## 6.3.2 Connecting the ISK system

The ASO ISK system has already been integrated with the HMD230. A stationary SPK55 core can be connected to the lower of three 3-pole M8 buses. If relevant, the core can also be connected to the plug-in terminal in the upper right-hand corner of the input terminal block. These safeties are never connected to the backplane, always directly on the control itself.



**Attention:** Connecting the M8 connector and the input terminal to one and the same input at the same time is not allowed here either. This would result in a parallel connection of the anti-crushing safety protection device, leading to failures.

By default, the evaluation of a connected ISK system is activated. To subsequently activate the ISK system (deactivate JCM), you can open the "Settings" menu; "Securities" the menu item "Activate ISK" should be selected.

## 6.3.3 Connecting a photocell

Both one-way and reflective photocells of a 24V operating voltage can be connected to the HMD230. Photocells can also be connected to the backplane; see the connection diagram at the back of this document.

### One-way photocell:

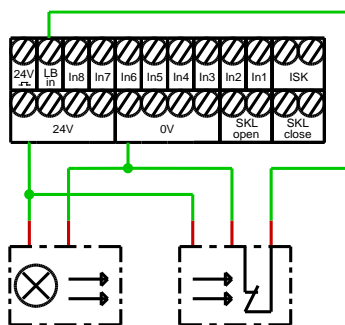


Illustration 23: Electrical connection of a one-way photocell

## Reflective photocell:

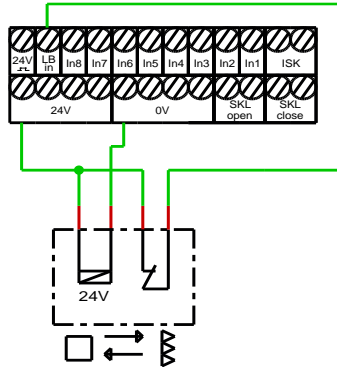


Illustration 24: Electrical connection of a reflective photocell

### 6.3.4 Wiring diagram for the inputs on the terminal block

By default, the following sensors and controls have been installed on the gate:

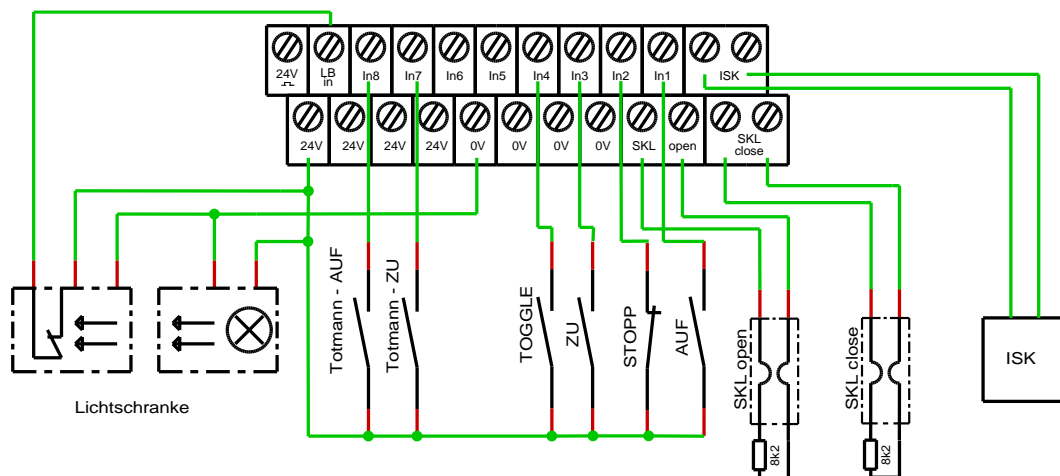


Illustration 25: Installation of inputs incl. photocell

### 6.3.5 Incremental encoder

An incremental encoder is connected to the HMD230 to determine the gate's movement direction, speed and end positions. This incremental encoder has been installed in the motor and supplies two square-wave signals in opposite directions which the program uses to derive the necessary information. The type of incremental encoder applied is determined by the manufacturer. Incremental encoders that have not been approved for use must not be connected. The incremental encoder is connected to the lower 4-pole M8 bus to the right of the

display (Illustration 14:). The encoder is already connected to the control unit at the factory.

The 4-pole M8 bus is configured as follows:

Connection	SIGNAL	Wire colour
Pin 1	TSIG2	white
Pin 2	+5V	black
Pin 3	TSIG1	blue
Pin 4	GND	brown

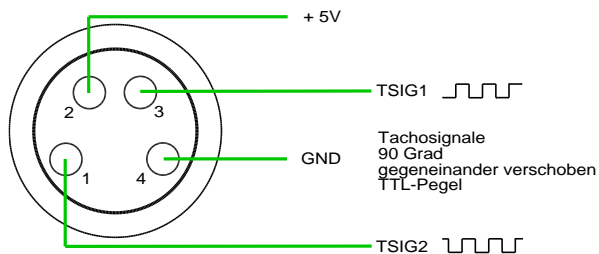


Illustration 26: Electrical connection of incremental encoder



**Attention:** If the gate is disengaged from the motor drive and moved to another position by hand, the closed position of the gate **must** be redefined in the program before using the motor drive again.

## 6.4 RELAY OUTPUT CONNECTIONS

The HMD230 has five relays available for signalling and lighting purposes (Illustration 21:). Relays Rel1 to Rel3 are make contacts, the other two relays (Rel4, Rel5) are make-and-break contacts. The switch contacts are potential free and are capable of ohmic loads of up to 250 W. Connecting these relays, also as described in chapter 6.4.1 and 6.4.2, can also be done on the backplane; see the connection diagram at the back of this document.

A fused 230V output is available to connect AC loads to the power supply of the HMD230 (Illustration 20:). The wiring from this output to the relevant relay must be installed by a professional.

The following functions have already been set on the relays:

Ill.Nr.	Terminal number	Marking	Output function
21	1, 2	Rel1	Flashlight or lamp
21	3, 4	Rel2	Gate state OPEN
21	5, 6	Rel3	Gate state CLOSE
21	4, 5, 6	Rel4	Not used
21	1, 2, 3	Rel5	Not used

The output of Rel1 is switched on at the start of the warning time and permanently during the movement. The flashing function must be performed by the connected lamp.

The service engineer can assign one of the following functions to the relays Rel4 and Rel5:

- Lighting (yard lighting) with deactivation relay after a gate movement has ended
- Traffic light function red/green
- Maintenance signal (maintenance necessary)
- Error message
- JCM No-Touch activation
- Electro-mechanical brake
- Safety edge activated

## 6.4.1 Relay output with 24 V<sub>DC</sub>

Control lamps with a 24 volt supply voltage can be connected as follows:

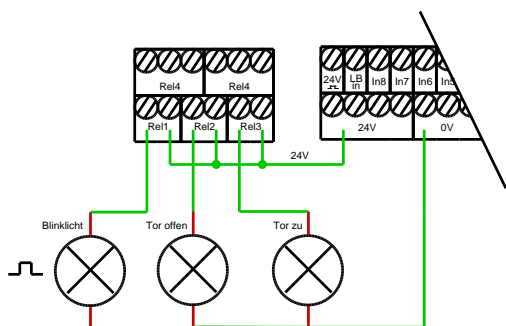


Illustration 27: Electrical connection of 24 VDC relay



**Attention:** Take the motor drive's maximum current load capacity of 500 mA into account when connecting the external 24V power supply.

## 6.4.2 Relay output with 230 V<sub>dc</sub>

The HMD230 PCB features a 230V output which is fused by a glass fuse (6.3A slow-acting). 230V loads can also be switched with this power supply output and the relays. A relevant indicator lamp or flashing light can be connected as follows:

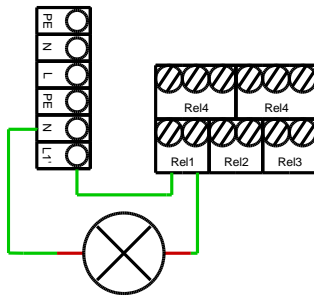


Illustration 28: Electrical connection of 230V relay



**Attention:** When connecting, take the maximum current load capacity of the power supply output into account. Furthermore, every individual relay is restricted to a maximum load of 250 W. Only replace the fuse (6.3A, slow-acting) by a fuse of the same rating.



**Caution:** In accordance with the standards, the relay outputs have been separated from the low safety voltage on the motor drive. However, since the individual relay connections do not comply with this condition, **connecting the relays inside the HMD230 with 230 V<sub>AC</sub> and 24V<sub>dc</sub> is not allowed. This is allowed if it is connected to the backplane.**

## 6.5 CONNECTING THE RADIO-FREQUENCY RECEIVER

The HMD230 can optionally be fitted with a radio-frequency receiver for hand transmitters. The radio-frequency receiver works with 868 MHz and FM modulation. The radio-frequency receiver is factory-fitted to the right of the slot for the communication interface on the bus terminal strip.

The receiver can also be retrofitted or replaced. This receiver can also be



combined with an external antenna to be connected to the plug-in terminal directly under the module.

**The internal core of the coax cable of the antenna is connected to the right-hand terminal, near the housing side. The antenna shield is connected to the left-hand terminal.**

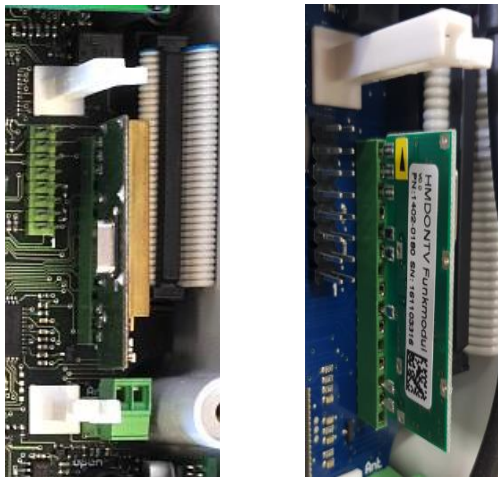


Illustration 29: Electrical connection of radio-frequency receiver module



**Information:** Only hand transmitters whose use has been approved by the manufacture can be 'taught' (programmed automatically) to the motor drive.

## 7 PROGRAMMING AND SETTINGS

Before the HMD230 is commissioned and the gate is installed, the following installations and parameter adjustments are useful or necessary. All configurations and displays that are only accessible to a trained technician are protected by a password.

### 7.1 CHANGING THE DIRECTION OF ROTATION OF THE DRIVE

If, when using the motor for the first time, you find that the gate is moving in the wrong direction, you can reverse the direction of rotation of the motor by switching the two phases of the motor connection. However, you can also change the direction of rotation by changing a software setting. Proceed as follows to make the relevant change:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Service Menu", "Motor dir.of rot.": change the value to "1".
- Double-check that the gate moves in the right direction!

### 7.2 PROGRAMMING THE MOVING ANTI-CRUSHING SAFETY PROTECTION DEVICES (ISK)

The moving anti-crushing safety protection devices, connected via the ISK, are always delivered pre-activated.

- Switch off the power supply to the motor drive.
- Connect the ISK system to the ISK connection.
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Safeties“, „activate ISK “.
- Exit menu
- Check that the safety protection devices have been connected correctly and check the reaction of the gate in the relevant movement direction in automatic mode.

#### 7.2.1 Connecting a JCM Radio band system

By adding other sensors in the safety circuit of the stationary safety buffers devices, for example, the anti-crush protection devices on the gate leaf which transmit their status by means of a radio signal can also be evaluated by the control in a safety-oriented manner. In this case, the corresponding relay of the

radio receiver, which indicates the status of this trailing protection (s), becomes a break contact (normally closed) in series with the 8.2 kOhm of the corresponding SKL input ( open or closed). The activation of the safety buffer on the radio system then opens the safety circuit with the 8.2 kOhm resistor and activates the corresponding safety function in the controller.

To use a JCM radio transmission system for anti-crushing devices on the HMD230 controller, the hardware must be installed in accordance with the specifications supplied, both for the OPEN and the CLOSE direction. The wiring of a JCM radio receiver "RB3R868" to the controller is shown as an example in the following circuit diagram and illustration:

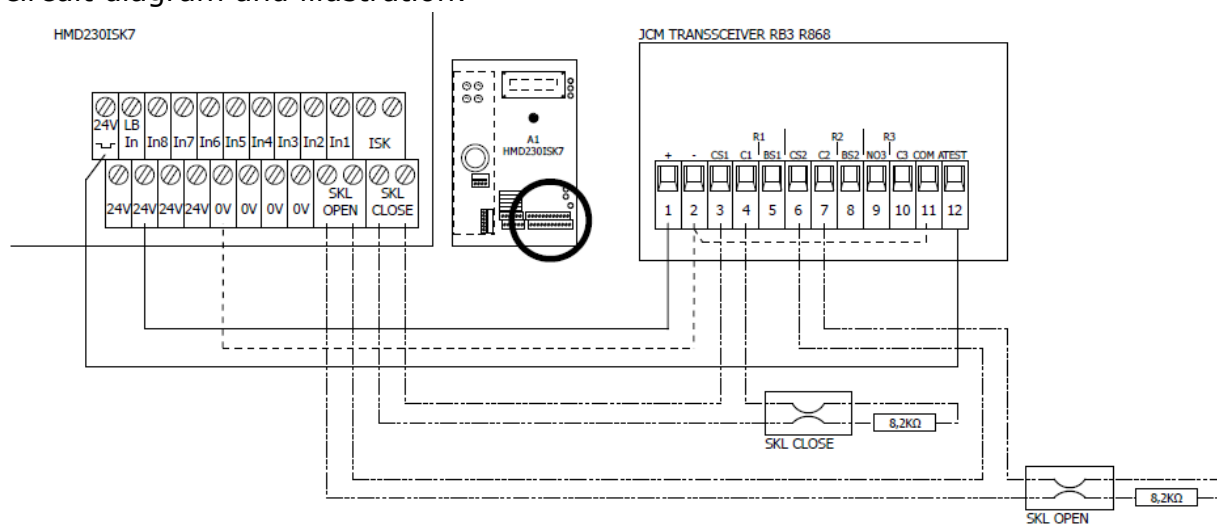


Illustration 30: Connecting a JCM Transceiver RB3R868 to the control unit

The setting of the 4 DIP switches "SW1" of the JCM receiver is: "Off, Off, Off, On". The two traveling anti-crushing devices must be connected to the corresponding transmitter of the JCM Radio Band System "RB3T868" as shown in the illustration below at terminals S1 and S2:



Illustration 31: Connecting the anti-crushing devices to the JCM transmitter RB3R868

Here, the three DIP switches of "SW1" on the transmitter are set to OFF, ON, OFF. After a correct hardware installation, the control is switched on and configured for the JCM system in the following way:

- Switch on the power supply to the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Safeties“, „activate JCM “.
- Exit menu
- Programming and learning the JCM system according to the JCM manual for the RB3 system
- Check that the safety protection devices have been connected correctly and check the reaction of the gate in the relevant movement direction in automatic mode.

## 7.2.2 Setting JCM No-Touch System

The "No-Touch" system from JCM can also be optionally connected to the HMD230. This includes the contactless detection of obstacles, made of certain materials, by the anti-crushing device. By radio transmission of this signal and sending the information to the connection of stationary safety protection devices, the control of the gate can then react.

For efficient power management of the power supply of the moving radio unit, the controller switches the "No-Touch" system on and off if necessary.

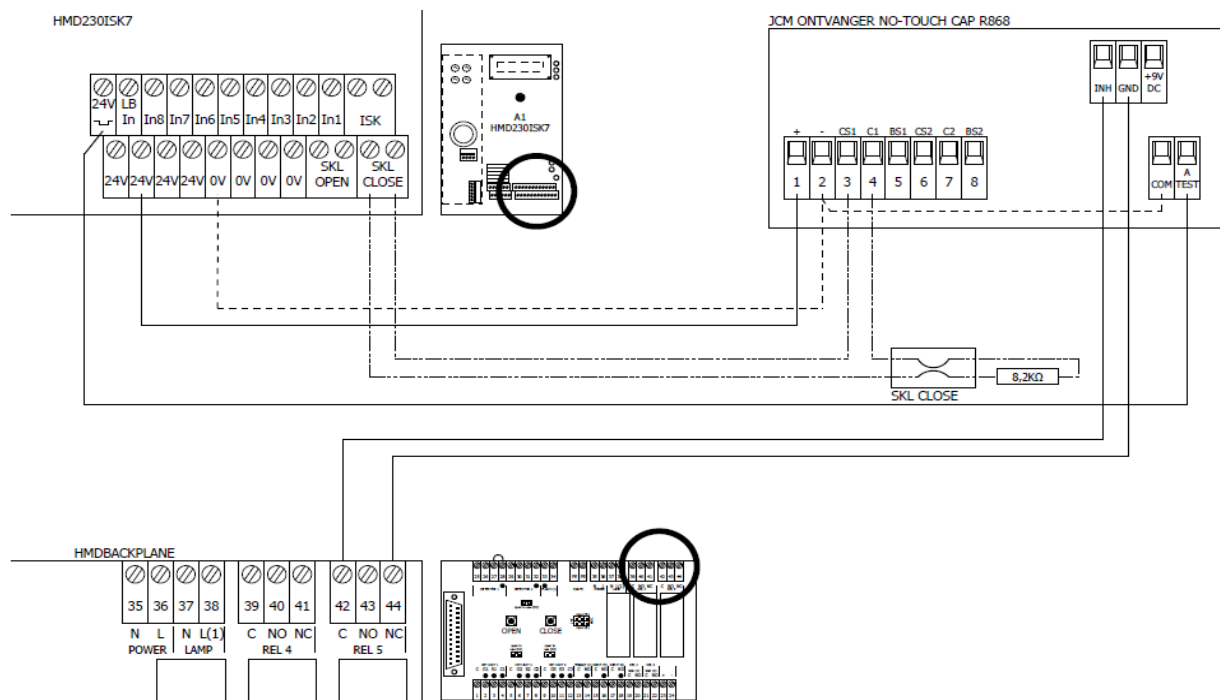


Illustration 32: Connecting the JCM receiver No-Touch CAP R868

The setting of the 4 DIP switches of the JCM receiver is: "On, Off, Off, On". The No-Touch function for the closing movement can be set via the output relay Rel5 on the backplane as follows:

- Switch off the power supply to the motor drive.
- Connect the two contacts "INH" and "GND" of the JCM receiver CAP R868 / 916 to the right and left contacts of the relay contact Rel5 as shown in the drawing.
- Switch on the power supply to the motor drive
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Safeties“, „JCM NTouchONLY “.
- Menu: „Settings“, „In-/Outputs“, „OUT Rel5“: set to „28“.
- Exit menu.
- Check that the safety protection devices have been connected correctly and check the reaction of the gate in the relevant movement direction in automatic mode.

The radio transmitter for the information of the moving anti-crushing device on the gate must be carefully installed, adjusted and tested according to the description provided.

### **7.3 LEARNING THE END POSITIONS OF THE GATE**

The motors of the Heras drive have an incremental encoder module. No further limit switches are required on the gate. When installing and setting the gate and the drive, the end positions of the gate are laid down, if present through the buttons on the backplane, as follows:

- Switch on the power supply of the motor drive.
- Lock the motor and send it to the CLOSED position by use of the dead man's key button.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Press "Settings", "End positions", "Set CLOSED pos.". The motor drive performs a reset.
- Use the dead man's keys to move the gate to its part open position.
- Press "Settings", "End positions", "Set part OPEN". The motor drive performs a reset.
- Use the dead man's keys to move the gate to its open position.
- Press "Settings", "End positions", "Set OPEN pos.". The motor drive performs a reset.

- Press the CLOSED button. The motor drive determines the maximum motor running time and saves it.

A reference run is now performed to lay down the maximum motor running times for moving from one end position to the other end position. The reference run consists of the gate moving automatically all the way from the OPEN position to the CLOSED position at low speed once. The motor drive measures the time that elapses during this reference run and save this time to its memory. The motor drive is ready for use now.

Check that both end positions are reached and that the motor stops when these end positions have been reached.

If values have been 'taught' incorrectly, all values can be cleared at once by selecting "Settings", "End positions", "RESET pos.". The total teaching procedure has to be repeated then.



**Attention:** Teaching the end positions must **always** start by teaching the CLOSED position. Other entry sequences will not be accepted.



**Attention:** If the gate has been disconnected from the motor drive control system and has been moved by hand, the gate position will no longer be defined in the software. You must then manually move the gate to its CLOSED position and set the position again.



**Attention:** If there is a power failure while the gate is being moved, it may no longer be possible to save the gate position. This is indicated by the fact that the gate can no longer be moved in automatic mode. You must then also manually move the gate to its CLOSED position and set the position again.

### **Procedure:**

- Move the gate into the CLOSED position.
- Press "Settings", "End positions", "Set CLOSED pos.". The motor drive performs a reset.
- Check that both end positions are reached and that the motor stops when these end positions have been reached.

Alternatively:

Press the "OPEN" and "CLOSE" buttons on the backplane simultaneously for about 10 seconds. The current position of the gate is now the (new) CLOSED position.

## 7.3.1 Marker plate

In CLOSED position (gate closed) the slot of the marker plate must be aligned to the side of the drive unit. If this is not the case, then manually move the gate to its CLOSED position. On a SafeGlide 2, no marker plate is mounted.



Marker plate Delta



Marker plate uGate

Illustration 33: Marker plate on Delta and uGate



**Attention:** If there is a power failure while the gate is being moved, it may no longer be possible to save the gate position. This is indicated by the fact that the gate can no longer be moved in automatic mode. You must then also manually move the gate to its CLOSED position and set the position again.

## 7.4 CHANGING THE OPERATING MODE: DEAD MAN'S OPERATION / AUTOMATIC MODE

The technician can deliberately switch the motor drive, which as a rule works in automatic mode, to dead man's operation so that the gate can only be driven at a low speed, using the connected dead man's keys. All safety facilities are deactivated then.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Operating mode": select the operating mode.
- Check the operation.

## 7.5 SETTING A PHOTOCELL

The photocell input is only active when the gate is moving in its CLOSING direction. If the photocell is interrupted, the gate will move to its OPEN end position. Photocells can also be connected to the backplane; see the connection diagram at the back of this document.

### Photocell with normally closed contact

The photocell is always factory-set with a normally closed contact. This is connected as follows:

- Switch off the power supply to the motor drive.
- Connect the power supply of the photocell to +24 V and 0 V.
- Connect the photocell signal to the input terminal LB<sub>in</sub> (normally closed contact ).
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Safeties“, „Light barrier“: Set to „1“ .
- Exit menu.
- Check the photocell functioning while moving the gate in its CLOSING direction.

If no photocell has been installed, this function can be deactivated:

- Menu: "Service Menu", "Enter passw.": enter the password.



- Menu: "Settings", "Safety devices", "Light barrier": set to "0".

## **Photocell with normally open contact**

If only one photocell with a normally open contact is available, it can be used with the following parameters.

- Switch off the power supply to the motor drive.
- Connect the power supply of the photocell to +24 V and 0 V.
- Connect the photocell signal to the input terminal LB<sub>in</sub> (normally open contact ).
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Safety devices", "Light barrier": set to "3".
- Exit the menu.
- Check the photocell functioning while moving the gate in its CLOSING direction.

## **7.6 CONNECTING A FLASHING LIGHT**

The output of relay 'Rel1' is factory-set for flashing light operation. An automatic 24V flashing light is connected to relay 'Rel1' as follows. Lights can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect the 24V power supply to output relay 'Rel1'.
- Connect the flashing light to the output relay 'Rel1' and to GND.
- Switch on the power supply of the motor drive.

The flashing light is switched on by the HMD230 as soon as a movement command is detected. Three seconds before the gate is automatically closed, the indicator relay Rel1 is also switched on and remains active as long as the gate is closed.

This warning time can be activated or deactivated as follows.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Set timer", "Flash l. warn.":
- Value 0: warning time off
- Value 1: warning time on

## 7.7 SETTING A LAMP (YARD LIGHTING)

The HMD230 can drive a lamp, e.g. to automatically light the zone around the gate when the gate is moving. The function can be installed on Rel4 or Rel5. In this example we describe the installation and setting procedures for Rel4. Lights can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect the lamp to the output relay Rel4.
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", In/Outputs", „OUT Rel5": set to „21"
- Menu: "Settings", "Set timer", "Lighting (s)": set at the required time (in seconds). The value must be greater than 0, otherwise the relay will not be activated.

The lamp connected to "Rel4" is now switched on by the motor drive as soon as a movement command is detected. After the motor is switched off, the lamp will continue to be lit for the time as set (1 to 1800 seconds).

This parameter "Lighting (s)" can be changed by the customer without the need to enter a password.

## 7.8 PROGRAMMING SERVICE INTERVALS

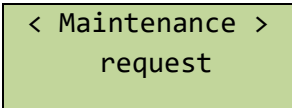
The HMD230 can indicate two different gate states via relays.

At the factory, the output relay "Rel2" is set so that it is closed when the OPEN position of the gate is reached. The output relay "Rel3" is set so that it is closed at "Gate CLOSED".

Settings on the control are not necessary.

### 7.8.1 Cycle counter

A maintenance message can be displayed after a certain number of gate movements. When the defined number of door movements is reached or exceeded, the "Maintenance request" event is activated in the control system. The message appears on the display during an active maintenance message.



< Maintenance >  
request

Upon delivery, the value for the number of gate movements is set to 30,000. The maintenance message can be set as follows:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Spec.parameter“, „Cycles to Service“: set to „zz“

The input "zz" defines a number of cycles (in 1000 cycles) that the gate is "open" and again "closed". Each time the end position "CLOSED" is reached, the counter is incremented. When the counter reaches the preset value of "zz", the control activates the maintenance message. The value "zz" is the maximum number of gate cycles (in 1000 cycles) (CLOSED, OPEN, CLOSED) to the service request. The adjustable values mean:

- 0 = no maintenance notification after number of cycles
- 25 = 25.000 complete movements OPEN and CLOSE

### 7.8.2 Motor runtime

Maintenance after the completed engine running time (in hours) is possible with the help of this adjustable parameter. On delivery, this option is not used and the value is preset with 0 hours. The maintenance message can be set as follows:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Spec.parameter“, „RuntimeToService“: set to a value in number of hours

### 7.8.3 Maintenance interval

For regular maintenance of the gate, it is the intention to define a maintenance message after a certain period of time (number of months). When the defined time is reached or exceeded, the "Maintenance Necessary" event is activated in the control system. On delivery, this option is not used and the value is preset with 0 hours. The maintenance message can be set as follows:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Spec.parameter“, „Serv.Interv. M“: set to „mm“

The input "mm" defines the number of months until the maintenance message. The value 0 means: no maintenance message after time. The maximum value that can be set is 60, which corresponds to 5 years.

#### 7.8.4 Setting the maintenance message on a flash light

A maintenance message from the control can activate an additional action of the flashing light via a menu entry. As soon as a condition for the maintenance message in the control system is met, the flash light remains active for a few seconds after each movement to the end position of the door (the flash light does not go off until 4, 8 or 12 seconds after the engine has stopped).

The additional activation of the maintenance message is done in the following way:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „Spec.parameter“, „Service action“: set 0 up to 3

The following actions are linked to the set value:

Parameter value	Flash light function
0	No further flash light function
1	Flash light remains on for 4 seconds longer after the OPEN or CLOSE position has been reached
2	Flash light remains switched on for 8 seconds longer
3	Flash light remains switched on for 12 seconds longer

#### 7.8.5 Maintenance message on a relay output

The HMD230 can be set so that an active maintenance message also activates a relay for signaling. This function can be set to Rel4 or Rel5. By way of example, the setting for Rel5 is described here. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect signal light to relay output Rel5
- Switch on the power supply to the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „OUT Rel5“: set to „6“.

The lamp connected to "Rel5" is now switched on by the controller as soon as one of the set maintenance messages becomes active.

## 7.8.6 Reset service

As long as maintenance has not been completed and is confirmed by the service technician in the menu, the text "<MAINTENANCE> required" is displayed periodically in the LC display. Moreover, after each movement to the end position of the gate, the flash light remains active for a few seconds longer (if this is set). In addition, a relay output can be set, which is then switched to active. After the technical maintenance of the gate and checking the safety functions by qualified personnel, this can be confirmed in the operating system in the following way and the maintenance request can be reset:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Diagnostics“, „Gate state“, activate „Reset Service“.

The time counter for the number of months past and also the cycle counter for the number of gate movements are reset to 0.

## 7.9 SETTING THE EMERGENCY SITUATION FUNCTION

The emergency situation function enables the gate to be opened or closed (depending on the parameters) remotely by a fire emergency room without jeopardising safety. For this, it is necessary that the loop from the fire emergency room works like a break contact. This loop is always closed when idle; it is controlled by the HMD230. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

Set the test loop on one of the inputs In5 or In6 as follows:

- Switch off the power supply to the motor drive.
- Connect the power supply of the fire emergency loop to the 24V  $\overline{|\_|\_}$  test output. Make sure the jumper on the backplane is in the correct position.
- Connect the fire emergency test loop to input In6.
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- „Service Menu“, „Emergency Oper.“:
  - Value „0“: Input will be ignored
  - Value „1“: wenn the input is activated, the gate will OPENED

- Value „2“: wenn the input is activated, the gate will CLOSED
- Menu: „Settings“, „In/Outputs“, „OUT Rel5“: set to „30“
- Check the functioning of the emergency operation function.

## **Emergency opening:**

If the loop is opened by the fire emergency and provided that permission for opening in emergency situations has been set, the gate will open at low speed. This opening movement can be interrupted by the stop key or the safety facilities; however after the interruption action has ended the gate will continue to open. The gate then stops in its open position and no longer responds to any commands. If the loop to the fire emergency is closed again, the motor drive will perform a reset and the gate is closed again when the next command is given.

## **Emergency closing:**

If the loop is opened by the fire emergency and emergency closing has been set, the gate will close at low speed. This closing movement can be interrupted by the stop key or the safety facilities; however after the interruption action has ended the gate will continue to close. The gate then stops in CLOSED position and no longer responds to any commands. If the loop to the fire emergency room is closed again, the motor drive will perform a reset and the gate is opened again when the next command is given.

## **7.10 Setting the traffic light**

A simple traffic light circuit can be created using make-and-break relays Rel4 or Rel5. The red and green lights are connected to one of the two operating contacts of the make-and-break relay. Always pay attention to the maximum load capacity of the relay. Lights can also be connected to the backplane; see the connection diagram at the back of this document.

The traffic light switches to "GREEN" when the gate has reached its OPEN position, the motor has been switched off and the flashing light is not active. The traffic light switches to "RED" when the flashing light is activated (e.g. warning for automatic closing), the motor is switched on, or the gate is not in OPEN position.

The function can be set on one of the output relays Rel4 or Rel5 as follows.

- Switch off the power supply to the motor drive.
- Connect the power supply for the traffic lights to the make-and-break contact of Rel4.

- Connect the red/green traffic lights to the other two contacts of the make-and-break relay Rel4.
- Switch on the power supply of the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „OUT Rel5“: set to „20“.
- Exit the menu.
- Check the traffic light operation.

## 7.11 TIMER-CONTROLLED GATE MOVEMENTS

Certain gate movements can be started automatically by pre-defined timer settings. These timer settings per menu must be displayed here.

### 7.11.1 Setting automatic closing

The motor drive can close the gate automatically after a time as set (1 to 3600 seconds) has elapsed after the OPEN end position was reached. This function is active only in automatic mode and after the OPEN end position has been reached.

- Menu: "Settings", "Set timer", "Keep-open TMR": set to "xxx".

**Example:** If the "Keep-open TMR" parameter is set at value 5, a 5-second timer is started when the gate reaches its OPEN end position in automatic mode. This timer causes the gate to be closed automatically again after 5 seconds. If another OPEN command is given or an installed photocell is activated during this time, the timer will start to count down again.

This value can be changed by the customer without the need to enter a password.



The TMR automatic closing is not activated when the maximum number of reversions for the CLOSE movement has been reached:

If the gate moves in the CLOSE direction but does not reach the CLOSED position because a safety edge is approached in the same direction (no infrared), the gate will return to the OPEN position. The TMR automatic closing will be activated again. A similar action can happen at most 5 times in succession. The gate then remains open and the timer does not start again. Only after a new CLOSE command is given and after reaching the CLOSED position will the reversing counter be set to 0 and automatically close again after the next opening.



**Attention!** If a **TMR AUTOMATIC CLOSING IS SET** and the gate is in the **OPEN position** and the control is restarted (for example, by interrupting

the voltage), **THE TMR AUTOMATIC CLOSING IS ALSO RESTARTED.** After the countdown of the timer, the gate will be closed automatically.

### 7.11.2 Time to close from Part OPEN position

The motor drive can close the gate automatically after a set time (1 to 255 seconds) has elapsed after the Part OPEN position was reached. This function is active only in automatic mode and after the Part OPEN position has been reached.

- Menu: "Settings", "Set timer", "Keep-Part OPEN TMR": set to "xxx".

**Example:** If the "Keep Part OPEN TMR" parameter is set at value 5, a 5-second timer is started when the gate reaches its Part OPEN position in automatic mode. This timer causes the gate to be closed automatically again after 5 seconds. If another Part OPEN command is given or there is a static Part OPEN command during this time, the timer will start to count down again.

This value can be changed by the customer without the need to enter a password.



**Attention!** If a **TMR AUTOMATIC CLOSING IS SET** and the gate is in the **OPEN position** and the control is restarted (for example, by interrupting the voltage), **THE TMR AUTOMATIC CLOSING IS ALSO RESTARTED.** After the countdown of the timer, the gate will be closed automatically.

### 7.11.3 Time to close the gate from interim positions

If the gate always has to close again automatically by itself (automatic closing movement) after a set time (1 - 255 seconds), this must be set via the "TMR Auto Close" parameter. This function is only active in automatic mode and concerns all gate positions except the OPEN end position and the Part OPEN position.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Set timer", "Auto Close TMR": set to "xxx".

**Example:** If the time is pre-set at 20, a 20-second timer is started as soon as the motor stops in automatic mode (other than by the STOP key being pressed) and the gate is not in the CLOSED end position. This timer causes the gate to be closed automatically again after 20 seconds.



## 7.11.4 Setting a short closing time

If a photocell is used you can set a shorter open dwell time after the photocell has been interrupted.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Set timer", "Secondary time": set to "xxx".

**Example:** If the time is pre-set at 5, a 5-second timer is started as soon as the photocell is interrupted (signal active and inactive again) in automatic mode. This timer causes the gate to be closed automatically again after 5 seconds.



This shortened auto closing timer of the gate is also activated even if the light barrier is activated during OPEN travel of the gate. The original hold-open time of the gate is only set again when the gate closes again and the entrance of the light barrier remains inactive.

## 7.12 DISABLE CALENDAR FUNCTION

The programmed and active port functions in the controller's calendar can be temporarily deactivated by hardware (switch). For this purpose, one of the inputs In5 or In6 can be configured to deactivate the calendar functions or to ignore new events when there is 24 volts. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

One way to disable "calendar functions" on input In6 is as follows:

- Connect a switch to input In6 and +24 Volt.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „In6“: set to „28“.
- Exit menu and test function.

## 7.13 DISABLE AUTOMATIC CLOSING TIMER

To temporarily stop automatic closing from the OPEN or OPEN position gate, one of the In5 or In6 inputs can be configured to deactivate the closing timers when the 24 volts is present. Contacts can also be connected to the backplane; see the connection diagram at the back of this document. For the In6 entrance, this is done in the following way:

- Connect a switch to input In6 and +24 Volt.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „In6“: set to „29“.

- Exit menu and test function.

## 7.14 OPTIONAL FUNCTIONS ON IN5 AND IN6

The two 24 Volt inputs In5 and In6 can optionally be assigned functions from the following table.

Value	24V input functions
0	No function
2	Partly OPEN (pedestrian passage) in automatic mode
11	Emergency stop [normally closed contact] in all operating modes; with reset after deactivation
28	Disable calender function
29	Disable automatic closing timer
30	Emergency operation activation in automatic mode; with reset after deactivation

The selection in the menu is as follows:

- Connect a button or switch tot he required input In5 or In6.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „In5“ or „In6“: set to a value from the above table.
- Exit menu and test function.

## 7.15 ADDITIONAL ELECTRIC BRAKE

An extra electric brake can be parameterized to output relay "Rel4" or "Rel5". The relay switches on as soon as the motor is supplied by the control unit (brake is released). When the engine is switched off, the relay drops out again (brake fixed). Contacts can also be connected to the backplane; see the connection diagram at the back of this document. The extra electric brake can be parametrised on Rel4 as follows.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „OUT Rel4“: set to „11“.

## 7.16 ADDITIONAL OPTIONS FOR REL4 AND REL5

The two changeover relays Rel4 and Rel5 can optionally be assigned functions from the following table. Contacts can also be connected to the backplane; see the connection diagram at the back of this document

Value	Relay output functions
0	No function
6	Status indication: Maintenance required (cycle counter, maintenance interval reached)
7	Status Indication: Fault / error has occurred (after the recovery of all error messages, this relay remains active for about 2 seconds)
11	Activation of an additional electric motor brake (relay is active when the motor is running)
20	Simple traffic light control [RED / GREEN] (relay is active when the gate is in the OPEN position and the flash light is not active)
21	Output for lighting [when the timer for lighting is also greater than 0]  (Relay is active when the flash light is active and also during the time set in the lighting timer)
25	Output for safety edges. Will be active if one or more safety edges are activated
27	Output for JCM NO-TOUCH: Active during the gate movement OPEN between gate position CLOSED and VorEnd-OPEN
28	Output for JCM NO-TOUCH: Active during the gate movement CLOSED between gate position OPEN and VorEnd-CLOSED

Value	Relay output functions
29	Output for JCM NO-TOUCH: Contains the two functions described above (depending on the direction in which the gate moves)

The selection in the menu is as follows:

- Connect the device to the desired Rel4 or Rel5 output.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In/Outputs“, „OUT Rel4“ or „OUT Rel5“: set to a value from the above table.
- Exit menu and test function.

## 7.17 SAVING PARAMETERS TO THE MEMORY

The operating parameters can also be saved in a special section of the memory. A copy of the current parameter settings is then made and these settings as saved can be restored later, overwriting the, then, current parameters.

### 7.17.1 Saving the parameter settings

You can make a backup copy of the current operating parameter settings of the motor drive and save this to a separate part of the memory. If the parameter settings are changed later and found not to be OK, you can restore the previously saved parameter settings so that the parameters are correct again.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Param Backup", activate "Save new".

### 7.17.2 Restoring parameter settings

You can reactivate the backup copy of the motor drive operating parameter settings that has been saved in a separate part of the memory to use these settings again as the current operating parameters. This enables the saved (operational) parameters to be restored after a faulty configuration of the HMD230.

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Param Backup", activate "Restore".

- When copying has ended, the software will automatically restart the master drive with the restored parameters.

## 7.18 SAVING PARAMETERS TO CHIPCARD

A chipcard reader interface can be connected to the communication slot of the motor drive. This card reader enables standard I2C chipcards to be read and to be written to 64-kByte memory cards are supported.



Illustration 34: Chipcard reader

### 7.18.1 Saving the parameter settings to card

The communication with the chipcard reader interface to write the parameter settings from the HMD230 to a card only works in combination with the installed LCD screen.

The parameters are written to the card as follows:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Settings", "Param Backup", activate "Write card".
- The text "copy CTRL->Card." is displayed; when the procedure has ended, the message "Card writing ready" is displayed.
- You can now remove the card to which data has been written and which has been checked from the card reader.



**Attention! :** If a chipcard reader is not connected or if errors occur during copying the following message is displayed: "Card Comm. ERROR". If such an error occurs while writing to the memory on the chipcard, the data on

the card in question must not be used anymore. You can either write the data to the card again, or format the card on another writing/reading device or destroy the card.

## 7.18.2 Reading the parameter settings from the card

The contents of chipcards can only be copied to the motor drive if a correctly written chipcard is recognised in the chipcard reader interface when switching on the motor drive (restart and/or reset).

- Switch on the power supply to the motor drive while a chipcard is inserted.
- Indication: "I2C SmartCard".
- Turn the selector switch in a clockwise direction; you will now see the message: "copy Card->CTRL"
- Press the selector switch to start copying: "copy ...."
- When copying is finished the following message is displayed: "copy DONE".
- Removing the card from the reader restarts the motor drive with the newly loaded parameters.



**Note!:** Errors that occur during copying are reported by means of "Card Comm. ERROR".

You can try to read the chipcard again by turning the selector switch and pressing it. If this does not work, all parameters will be erased by the software when the chipcard is removed. The HMD230 shows "Init/Clear EEPROM" and then "Load Parameter". The contents of a card have to be read then again. **The motor drive does not work without correct parameters.**

## 7.19 SUPPORT DURING DIAGNOSIS

The HMD230 has a diagnostics menu that makes putting the motor drive into use and troubleshooting easier.

### 7.19.1 Version display

The motor drive version can be displayed as follows:

- Menu: "Identification", "Master Version": the figures and the combination of numbers shown clearly identifies the software version used.

- Menu: "Identification", "Gate profile": the text shown is the designation of the gate for which the master drive, the software and the parameters stored have been defined.
- Menu: „Identification“, „Serial number“: The serial number of the control is shown here.

The following version parameters are visible after entering the right password:

- Version of the motor controller program.
- Version van het periphery controller program.
- Version of the parameter table loaded.
- Version of the boot loader of the motor controller.
- Version of the boot loader of the periphery controller.

## 7.19.2 Movement commands at start-up

The HMD230 tests the configured inputs when it is started after a program reset or after switching on the power supply. Make contacts that have statically energized to GND, make contacts that have statically energized to 24V, and emergency stop and emergency situation inputs that are not tested cause the master drive to not start up. The display shows the input pattern as identified.

OPEN/CLOSE-StartActive  
Value: 01000010

E.g. the In the displayed message, for example, the. input "In7" (dead man button CLOSE) has been active at start-up. After a change of the relevant signal for the control a reset.



**Information:** This function is suppressed on inputs with the functions "Part Open" and "Open" since these inputs may also receive static signals (e.g. external timer) when the unit is started. Nevertheless, the static signals do not lead to an uncontrolled gate movement during starting.

## 7.19.3 Gate status

The Gate status menu summarises all information that represents the current condition of the motor drive in combination with the gate. The menu can be reached via "Diagnosis", "Gate status" and has the following options:

Menu	Display reading	Meaning
Gate Status	OPEN/CLOSED / PART OPEN / KEEP	The current status of the gate which has been recognised by the software is shown.
Input: 87654321	Value: 00000010	The logical values on the input terminals of the motor drive are displayed. The sequence matches inputs In8 to In1. An active input is indicated as "1". In the example only input In2 (stop function; break contact) is connected to 24V.
Output: 54321	Value: 00010	The status of the output relay is displayed together with the corresponding logical values. An energized relay is indicated as "1". The sequence matches outputs Rel5 to Rel1. The relay Rel2 is energized in the example (status display Gate open).
Cycles Run	217 / 19	The total number of movements and the number of movements since the last maintenance are displayed. One movement is one OPEN-CLOSED cycle.
Last Service	2011.02.24/1 mo	The date of the last maintenance is displayed, as well as the time that has elapsed which is indicated as months.

To make sure that the gate is maintained at regular intervals, a maintenance interval can be defined depending on the number of gate movements.

If the maintenance reminder is active (number of movement cycles or maintenance interval reached), the display shows the "< Maintenance > required" message.

< Maintenance >  
required

The maintenance reminder can be reset via the menu option "Diagnosis", "Gate status", "RESET Service" after entering the right password. This resets the



number of movement cycles, the motor operation hours and the number of months since the last maintenance to 0. The current clock date is saved for the last maintenance.

#### **7.19.4 Sensor statuses**

The statuses of the sensors can be displayed via "Diagnosis", "Sensor Status". The menu is built up identically to the display in the operating mode, as shown under 5.5.3 LCD sensor display.

#### **7.19.5 Temperatures**

The current temperatures and the maximum and minimum temperatures that have occurred can be displayed. This display option can be reached as follows:

- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: "Diagnosis", "Temp. measured", "CPU temperature" shows the temperatures measured on the master drive PCB. The current temperature as degrees Celsius is shown first. The lowest and finally the highest temperature, separated by a slash, are shown then.
- Menu: "Diagnosis", "Temp. measured", "FC temperature" shows the temperatures measured on the power supply module of the frequency converter. Again, the current, minimum and maximum temperatures are shown.
- Menu: "Diagnosis", "Temp. measured", activate "RESET Min/Max". This sets the minimum and maximum values of the items displayed in question to the current temperature.

#### **7.19.6 Log system**

The log system is a ring buffer with up to 254 items. Here, relevant events of the control software with their reference number and the time stamp are permanently stored in the memory and are still available after the restart or power failure. This log can be used to track the last actions of the gate and any errors that have occurred.

The first line shows the date and time of the entry. In the second line there is initially a number of up to three digits, which corresponds to a reference number from the parameter table. This is followed by a corresponding text, which can be found in the parameter table. By turning, the memory of the selector switch can

be scrolled through the time-sorted messages in this logbook. The very first entry in this logbook is always the reference to program initialization ([250] ProgramInit.). Targeted deletion of these data is not possible. If you only reload the full parameter memory, this system log is reset.

The system log is displayed as follows:

- Menu: "Service Menu", "Enter password": Enter password
- Menu: Activate "Diagnosis", "System Log"

Display	Meaning
Log system begin	Start of memory reached
y.mm.dd HH:MM:SS 250 ProgrammInit	Program initialization (first entry in the memory)
...	...
y.mm.dd HH:MM:SS 253 RESET	Log entry due to a reset of the control
...	...
Log system End	End of memory reached

## 7.20 REMOTE CONTROL

The motor drive features a slot for a radio-frequency receiver module. An 868 MHz receiver module with FM modulation is used and the constant share of the "Rolling Code" of the HERAS transmitter used is analysed. A corresponding hand transmitter enables the following functions of the motor drive to be remotely controlled:

- "OPEN function" left-hand top key
- "CLOSE function" right-hand top key
- "STOP function" large bottom key

The keys can also be programmed individually, see "Teaching hand transmitters". Editing options (like teaching the hand transmitter and deleting) are available via the menu structure of the motor drive. A maximum of 150 hand transmitters (or single button function) can be taught.



**Information:** Gate movements can only be activated by means of the remote control if the motor drive is working in automatic mode.

An external antenna must be connected to the corresponding connector of the motor drive PCB (Illustration 14: pos. 16 in the illustration).

**The internal core of the coax cable of the antenna is connected to the right-hand terminal (near the housing side). The antenna shield is connected to the most inward left-hand terminal.**

## 7.20.1 Displaying the number of hand transmitters

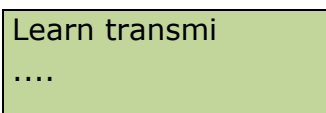
A separate storage location is reserved in the memory of the motor drive for each hand transmitter. The total number of transmitters stored can be displayed by means of the menu option "Active transmitters".

- Menu: "Remote control", activate "Active transmitters".

## 7.20.2 Teaching hand transmitters

Every hand transmitter which is used must be taught the commands to operate the master drive once. This is done as follows:

- Menu: "RF remote control", activate "Teach transmitter".



- Now press a key on the hand transmitter. Twenty seconds are available for this function. When the transmitter is detected, a memory location is occupied in the control on which the three key functions are automatically stored
- After recognizing and saving the transmission code, a numeric value is displayed for 2 seconds. This is the value of the received signal together with the storage position.

RF#: xxxxxxxxxxxx  
Pos.: p ..

- The display returns to the menu. By activating the menu again, multiple hand transmitters can be programmed.
- After activating the menu, if the program does not recognize a valid code within twenty seconds the display returns to the menu.
- Check the number of transmitters stored by means of the menu option "Active transmitters".
- Exit the menu and check the key functions that have been taught in "Automatic mode".

### 7.20.3 Teaching hand transmitter buttons

If the functions that are programmed as standard for the hand transmitter OPEN, CLOSE, STOP are inadequate, another four functions can be programmed. The individual buttons can be programmed using the menu below.

<i>3 Prog.But OPEN</i>	Program OPEN function
<i>4 Prog.But CLOSE</i>	Program CLOSE function
<i>5 Prog.Part.OPEN</i>	Program PART OPEN function
<i>6 Prog.But Toggle</i>	Program Toggle function OPEN – STOP – CLOSE - STOP

The display shows the function that must be learned in the upper line after selection. Now the operator has 20 seconds to press the desired button on the remote control.

A separate storage location is occupied for each individual key function.

The received coding of the transmitter with the special pressed key is stored as a comparison value in the memory of the controller. The display shows the numerical value of the received radio signal and the memory space on which this transmitter was stored for 2 seconds.

RF#: xxxxxxxxxxxx  
Pos.: p ...

The display then returns to the menu. By activating this menu item again, several channels can be learned in succession.

If the program does not recognize a valid code within 20 seconds after activating the teach-in process, the display returns to the menu.

#### **7.20.4 Deleting transmitters from the memory**

You can delete specific individual hand transmitters from the HMD230 memory. The menu option "Delete transmitter" puts the motor drive in a mode where the next correctly received hand transmitter is deleted from the memory again.

- Menu: "RF remote control", activate "Delete transmitter".
- The first line of the display now reads: "Delete transmitter".
- Now press a key on the hand transmitter to be deleted.
- When the transmission code has been recognized, the menu is displayed again.
- Check the number of transmitters stored by means of the menu option "Active transmitters".

#### **7.20.5 Deleting memory location**

If a specific radio remote control or a special button of a transmitter from the memory of the controller is to be deleted without the corresponding remote control being available, this can be done via the menu item "Delete Pos.". Then a list of the programmed hand-held transmitter positions or the special key functions is displayed.

The position of the memory location to be deleted is selected by turning. If you press the dial again, you are looking for "Delete?". After having pressed the rotary switch again, this input is removed from the memory and this is confirmed with the "Ready" display.

#### **7.20.6 Deleting all transmitters from the memory**

All transmitters stored in the memory of the HMD230 can be deleted using the menu option "Delete all".

- Menu: "RF remote control", activate "Delete all".
- Check the number of transmitters stored by means of the menu option "Active transmitters".

## **7.21 INTEGRATED REAL-TIME CLOCK**

The clock module integrated in the HMD230 can be used to move the gate automatically, on the basis of an exact time schedule.

If the power supply to the motor drive is switched off, the date and time are kept up to date for a couple of weeks. Automatic switch-over to summer or winter time take place, according to EU rules. As a result, the clock is put forward one hour at 2 a.m. CET on the last Sunday of March and it is put back one hour at 3 a.m. CET on the last Sunday of October.

### **7.21.1 Display date/time**

Press the selector switch once to display the current date and time for 20 seconds. You can access this menu option as follows:

- Menu: "Clock/Calendar", activate "Display clock"

### **7.21.2 Setting the clock**

The internal clock of the HMD230 has been factory-set. If this time ever differs from the actual current time, the clock can be set as follows:

- Menu: "Clock/Calendar", "Set date/time", "Year" and then set the last two figures of the current year
- Menu: "Clock/Calendar", "Set date/time", "Month": set the current month
- Menu: "Clock/Calendar", "Set date/time", "Day": set the current day
- Menu: "Clock/Calendar", "Set date/time", "Hour": set the current hour
- Menu: "Clock/Calendar", "Set date/time", "Minutes": set the current minutes
- Menu: "Clock/Calendar", "Set date/time", "Seconds": set the current seconds
- Menu: "Clock/Calendar", "Set date/time", set "Autom.summer time" to "1" in for automatic summer time switch-over according to the EU rules
- Menu: "Clock/Calendar", "Set date/time", set "Summer time now?" to "0" in winter; and set it to "1" if the summer time has started
- Check the date and time with "Display clock"

## 7.22 CALENDAR FUNCTIONS OF THE MOTOR DRIVE

In automatic mode, the calendar functions of the master drive can be used to influence the gate behaviour in different ways at specific times.

Some commands are available for gate actions. They can be called up at carefully defined times. The times and commands can be repeated for the seven week days, with a weekly cycle.

However, other combinations of times and commands of a higher priority (e.g. for holidays) can be planned in a yearly calendar to suppress this weekly recurring time process. This enables the automatic gate behaviour to be defined individually in advance by making the relevant calendar entries.



**Information:** The calendar function in the motor drive must be enabled by the engineer once and is then available to the customer. Otherwise, the calendars will not be visible.

**Possible calendar functions** (actions that the motor drive can perform via a calendar)

Functions	Action
No action	No gate action (hold position)
Keep open position	Keep the gate statically in OPEN position (The gate cannot be closed)
Leave open pos.	Leave the static OPEN position of the gate (The gate can close again)
Auto.close OFF	Deactivate the automatic closing function (The keep-open time is ignored)
Auto.close ON	Activate the automatic closing function (Activate the keep-open time again)
Keep Part Open ON	Activate the keep-open function for the Part OPEN position
Keep Part Open OFF	Deactivate the Keep Part OPEN function (The gate can close again)
OPEN gate	The gate moves to the OPEN position.
CLOSE gate	The gate moves to the CLOSE position (if possible)
Gate Part OPEN	The gate moves to the Part OPEN position (if possible)

### 7.22.1 Activating the calendar

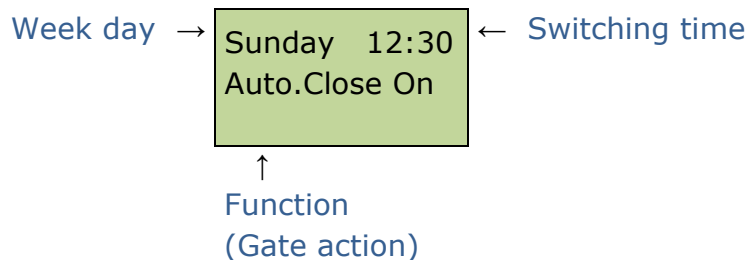
The following setting can be used to activate or deactivate the total calendar functions without you having to change the specific individual entries.

- Menu: "Clock/Calendar", "Activate cal.",
- 0 = all calendar functions off
- 1 = calendar activated

### 7.22.2 Displaying the weekly calendar

A maximum of 20 different switching times and the corresponding functions (gate actions) can be entered in the weekly calendar for every individual week day (Sunday through Saturday). Only the times entered are shown in the display mode for the weekly calendar. The empty memory positions are skipped. The weekly calendar can be displayed as follows:

- Menu: "Clock/Calendar", select "Display week clock"



- Turn the selector switch to browse through all entries in the calendar
- The end of all actions entered is displayed by means of "END of week clock display"
- Briefly press the switch to exit the weekly calendar



### 7.22.3 Adding and changing entries in the weekly calendar

Proceed as follows to add new entries to the weekly calendar or change existing entries:

- ▶ Menu: "Clock/Calendar, "Change week clock.", activate "Set week days" / A free memory position for a week day is displayed as follows:
 

Sunday
- ▶ Turn the selector switch in a clockwise direction to select the week day for the entry:
 

**Monday**
- ▶ Press the selector switch to call up the entry mode for the hours:
 

Monday  
**00:**
- ▶ Turn the selector switch in a clockwise direction to select the hour for the switching time:
 

Monday  
**12:**
- ▶ Press the selector switch to call up the entry mode for the minutes:
 

Monday  
**12:00**
- ▶ Turn the selector switch in a clockwise direction to select the minutes for the switching time:
 

Monday  
**12:30**
- ▶ Press the selector switch to call up the entry mode for the motor drive function for this switching time:
 

Monday  
12:30  
**No action**
- ▶ Turn the selector switch in a clockwise direction to select the function:
 

Monday  
12:30  
**partOp Hold**
- ▶ Press the selector switch to insert the full entry into the week day on the calendar, sorted by time.  
The next free memory location of the calendar is shown:
 

**Monday**
- ▶ Turn the selector switch in a clockwise direction to switch over to the end of the weekly calendar:
 

Set weekday  
END

- Now press the selector switch to exit the entry and change function of the week calendar.

## 7.22.4 Copying a day in the weekly calendar

All entries for a week day can be copied to another week day on the weekly calendar, provided that no entries have been made so far in the week day which the data is to be copied to.

- Menu: "Clock/Calendar, "Change week clock", activate "Set week days"

- ▶ Select the destination day to which the entry is to be copied:

**Tuesday**

- ▶ Press the selector switch to call up the entry mode for the hours:

Tuesday  
**00:**

- ▶ Turn the selector switch a couple of positions in a counter-clockwise direction to select the day from which to copy the entry:

Tuesday  
copy from:  
**Monday**

- ▶ Press the selector switch to copy the entry (here: from Monday to Tuesday):

Tuesday  
Ready

## 7.22.5 Deleting individual entries

You can delete individual entries for a week day on the weekly calendar as follows:

- Menu: "Clock/Calendar, "Change week clock", activate "Set week days"

- ▶ Select the entry to be deleted:

Monday  
**12:30**

No action

- ▶ If you turn the selector switch a few positions in a counter-clockwise direction, the following question will be displayed:

Monday  
**Delete input?**

- ▶ Press the selector switch to delete this entry from the week day on the calendar:

Monday  
Ready

### 7.22.6 Deleting a week day

You can also delete all entries for a week day from the weekly calendar after selecting the first entry for the week day in question:

- Menu: "Clock/Calendar, "Change week clock", activate "Set week days"

- ▶ Select the first entry of the week day to be deleted:

Monday  
**08:00**  
Hold open

- ▶ If you turn the selector switch a few positions in a counter-clockwise direction, the following question will be displayed:

Monday  
**Delete input?**

- ▶ Press the selector switch to delete all entries for this week day from the calendar:

Monday  
Ready

### 7.22.7 Deleting the entire weekly calendar

You can also delete all entries for the entire weekly calendar as follows:

- ▶ Menu: "Clock/Calendar, "Change week clock", activate "Delete week"

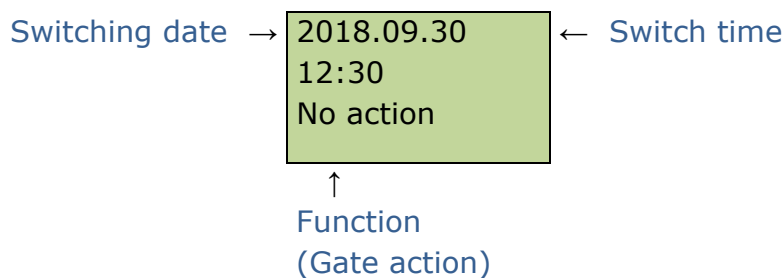
Delete week

### 7.22.8 Displaying the yearly calendar

The yearly calendar is located over the weekly calendar on the control system. The yearly calendar can store 20 different switching time and corresponding gate actions per day for a total of 40 days. If switching times have been entered in the yearly calendar for a certain date, only the relevant entry will be applied with priority on the day in question and the weekly calendar will be ignored for this day.

Only the times entered are shown in the display mode for the yearly calendar. The empty memory positions are skipped. The yearly calendar can be displayed as follows:

- Menu: "Clock/Calendar", select "Display year clock"



- Turn the selector switch to browse through all entries in the calendar
- The end of all actions entered is displayed by means of "END of year clock display"
- Briefly press the switch to exit the yearly calendar display



**Information:** Other gate actions planned on the weekly calendar can be suppressed specifically for one day in the year (e.g. a national holiday) by using the "No action" function.

### 7.22.9 Adding and changing entries in the yearly calendar

Proceed as follows to add new entries to the yearly calendar or change existing entries:

- Menu: "Clock/Calendar, "Change year clock", activate "Set day"

- ▶ An empty memory position for a date is displayed as follows: 20
- ▶ Press the selector switch to call up the entry mode for the year: 2018.
- ▶ Turn the selector switch in a clockwise direction to select the year: 2019.
- ▶ Press the selector switch to call up the entry mode for the month: 2019.01.
- ▶ Turn the selector switch in a clockwise direction to select the month: 2019.06.
- ▶ Press the selector switch to call up the entry mode for the day: 2019.06.01
- ▶ Turn the selector switch in a clockwise direction to select the day: 2019.06.17
- ▶ Press the selector switch to call up the entry mode for the hours: 2019.06.17 00:
- ▶ Turn the selector switch in a clockwise direction to select the hour for the switching time: 2019.06.17 12:
- ▶ Press the selector switch to call up the entry mode for the minutes: 2019.06.17  
12:00
- ▶ Turn the selector switch in a clockwise direction to select the minutes for the switching time: 2019.06.17  
12:30
- ▶ Press the selector switch to call up the entry mode for the motor drive function for this switching time: 2019.06.17  
12:30  
**No function**
- ▶ Turn the selector switch in a clockwise direction to select the function: 2019.06.17  
12:30  
**Keep Part Open**

- ▶ Press the selector switch to insert the full entry into the yearly calendar, sorted by time / The next memory position of the calendar will be displayed:

2019.06.17

- ▶ Turn the selector switch in a clockwise direction to switch over to the end of the yearly calendar:

Cal. Week days  
Ready

- Now press the selector switch to exit the entry and change function of the yearly calendar.



**Information:** Changes to the date (and not only the switching time) can only be made in the first entry for this date and always apply to all entries for this day.

The yearly calendar is sorted, i.e. an older date is put before a more recent date.

## 7.22.10 Copying a day in the yearly calendar

All entries for a certain day can be copied to another day with a different date on the yearly calendar, However, a new date has to be entered for this.

- Menu: "Clock/Calendar, "Change year clock", activate "Set day"

- ▶ Enter a new date (as described above):

2018.12.24

- ▶ Press the selector switch to call up the entry mode for the hours:

2018.12.24  
00:

- ▶ Turn the selector switch a couple of positions in a counter-clockwise direction to select the day from which to copy the entry:

2018.12.24  
Copy from:  
**2018.06.17**

- ▶ Press the selector switch to copy the entry (here: from 17<sup>th</sup> of June 2018 to the 24<sup>th</sup> of December 2018):

Ready

### 7.22.11 Deleting individual entries

You can delete individual entries for a specific day on the yearly calendar as follows:

- Menu: "Clock/Calendar, "Change year clock", activate "Set day"

- ▶ Select the entry to be deleted:

2018.06.17  
14.30  
No action

- ▶ If you turn the selector switch a few positions in a counter-clockwise direction, the following question will be displayed:

2018.06.17  
**Delete input**

- ▶ Press the selector switch to delete this entry from the yearly calendar:

Ready

### 7.22.12 Deleting a day

You can also delete all entries for an individual day from the yearly calendar after selecting the first entry for the day in question:

- Menu: "Clock/Calendar, "Change year clock", activate "Set day"

- ▶ Select the entry to be deleted:

2018.06.17  
14.30

- ▶ If you turn the selector switch a few positions in a counter-clockwise direction, the following question will be displayed:

2018.06.17  
**Delete input**

- ▶ Press the selector switch to delete this entry from the yearly calendar:

Ready

### 7.22.13 Deleting the entire yearly calendar

You can also delete all entries for the entire yearly calendar as follows:

- ▶ Menu: "Clock/Calendar, "Change year clock", activate "Delete year clock"

Delete year clock  
Ready

### 7.23 FAULT SIGNALING ON A RELAY OUTPUT

The controller can activate a relay in the case of some detectable faults of the gate or also of the control itself, for example to send a signal lamp to indicate that the fault or the wrong operating status is easily recognizable. More detailed information can then be obtained via the display of the controller.

Setting such an error indication is possible on Rel4 or Rel5 and will be described here as an example for Rel5. Contacts can also be connected to the backplane; see the connection diagram at the back of this document.

- Switch off the power supply to the motor drive.
- Connect a signal lamp to realy output Rel5.
- Switch on the power supply to the motor drive.
- Menu: "Service Menu", "Enter passw.": enter the password.
- Menu: „Settings“, „In-/Outputs“, „OUT Rel5“: set to „7“ .

The lamp that is connected to "Rel5" is switched on by the controller as soon as an event / error or fault occurs in the following list:

(25, 26, 27, 28, 33, 40, 86, 161, 171, 172, 210, 213, 214, 215, 225, 226, 234, 235)

The numbers in the list refer to the "reference / fault number" in chapter 7.26.

- Short-term events are shown extended by about 2 seconds (eg safety list activated).
- A constantly activated STOP input is only displayed after 2 seconds.
- A long-term activated photocell is only displayed after 10 seconds.
- Events related to the motor run or gate end positions are displayed until a new correct motor run has been performed (eg run time error, limit switch error, incremental encoder fault).



## 8 FAULTS

### 8.1 DEFECTIVE PHOTOCELL OR SAFETY EDGE

If a photocell or safety device is defective, the gate can only be opened and closed using the dead man's switch. In this case, consult a qualified technician.



See chapter "SERVICE / MAINTENANCE"

### 8.2 PARAMETER REFERENCE AND/OR FAULT NUMBERS

A summary of the events or the errors or faults that are possible in the log systems described above is provided here:

Ref. / Fault nr	Text	Meaning
25	Stat.safety.OPEN	Stationary anti-crushing safety protection device OPEN has been activated (a '0' is stored directly behind the text if the motor was not active)
26	Stat.safety.CLOSE	Stationary anti-crushing safety protection device CLOSE has been activated (a '0' is stored directly behind the text if the motor was not active)
27	Mov.safety.OPEN	Moving anti-crushing safety protection device OPEN has been activated (a '0' is stored directly behind the text if the motor was not active)
28	Mov.safety.CLOSE	Moving anti-crushing safety protection device CLOSE has been activated (a '0' is stored directly behind the text if the motor was not active)
33	Emergency stop	The emergency stop function has been activated
38	EMERGENCY OPEATION (bmc)	The emergency operation function has been activated
40	Lightbarrier	The photocell was activated during the CLOSED movement

86	Number of reversals	The maximum number of reversals for a movement direction (without the end position being reached) has been reached
96	Pa96	Automatic software changeover when recognizing other power supply hardware
117	Now summertime?	The automatic changeover of the clock from winter to summer time was activated
130	SKL AUftstFhl	Incorrect test result of the static safety device OPEN was detected
131	SKL ZU TstFhl	Incorrect test result of the static safety device CLOSE was detected
143	Auto close ON? .....?	After a reset of the control, the gate is in the OPEN position and expects activation of the timer
155	Calendar:	A command has been carried out due to an entry in a calendar
161	Direct stop	The stop function has been active for 2 seconds (input STOP, or dead man OPEN and CLOSE are active at the same time) Only logged in the system log during a movement of the gate.
171	OPEN	The OPEN limit switch was active during the OPEN movement and was inactive again before the gate was stopped
172	CLOSE	The CLOSE limit switch was active during the CLOSE movement and was inactive again before the gate was stopped
197	BEGIN	Restart of the program
201	ROM error	The motor controller detected a program memory error (serious exception/error)

202	EEPROM error	A fault occurred while accessing the EEPROM.
203	StackReg.error	The motor controller detected a stack memory error (serious exception/error)
204	Stack_error:low	The motor controller detected a stack memory error (serious exception/error)
205	Stack_error:high	The motor controller detected a stack memory error (serious exception/error)
206	WdgError:low	The motor controller detected a watchdog error (serious exception/error)
207	WdgError:high	The motor controller detected a watchdog error (serious exception/error)
208	Watchdog error	The motor controller detected a watchdog error (serious exception/error)
209	WDG reset	The motor controller was restarted by the watchdog
210	MotRunTimeError	The motor movement was stopped because the maximum motor run time for this gate movement was reached
211	Main-cntError	Main loop counter overflow of the motor controller (serious exception/error)
212	Non-def.status	The variable of the automatic status feedback unit reached an Invalid value (serious exception/error)
213	Limitsw.error	The limit switch was not cleared within the maximum time allowed (4 sec.)
214	< MAINTENANCE > necessary	One of the specified maintenance events (gate cycle, motor run time, service interval) occurred
215	Limits Undef.	The end positions of the gate are not defined for the control software (eg both contacts of limit switches open)
217	EEPR.error.Txt	The display text searched was not found in the memory

218	EEPR.error.wr.	An error occurred while writing a text to the memory
219	EEPR.error.language	An error occurred with a reference address for a text in the memory
220	Motor error	The motor movement was stopped due to a motor monitoring signal
222	PWM Max.	Motor speed reduction due to excessive slip
224	FU Spann.Fhl	The supply voltage of the FU module is too low (eq power off)
225	FC Fault	Short circuit in the power supply module of the frequency converter or in the motor
226	FC temp.fault	Temperature error message from the frequency converter module
228	REL+error.High	The value measured by the voltage monitoring function of the enable signal
229	REL+error.Low	The value measured by the voltage monitoring function of the enable signal
230	REL+error.Idl	The stationary voltage value measured by the voltage monitoring function of the enable signal was too high
234	INC sensor OP	Incorrect value from the encoder during the OPEN movement
235	INC sensor CL	Incorrect value from the encoder during the CLOSE movement
236	AutoLearnActive	A learning movement has been activated for the gate
238	OPEN/CLOSE-StartActive	The program start of the motor controller was interrupted by an active movement command
239	PhotocellTstError	The test of the photocell identified a failure
240	EMERGENCY_SITUATIONtstError	The test of the input signal for the emergency situation function resulted in a fault
241	SPI BCC Error	A checksum error occurred while the controllers where communicating
242	SPI ID Error	A data error was detected while the controllers where communicating

243	ParameterError	An error occurred while writing data to the memory
244	EMERGENCY_STOPts tError	An error occurred while testing the EMERGENCY STOP input signal
247	VersionError	The parameters loaded and the program versions of the motor
248	Param.LoadError	When transferring the parameters from the periphery controller to the motor controller an error was detected
249	Menu pointer error	Menu program pointer error
250	ProgramInit.	In the system log: the program has been initialized (clear and initialize the parameter memory)  In the events log: the program was restarted (e.g. reset at Exit menu)
251	EMERGENCY SITUATIONactive	An EMERGENCY SITUATION movement was requested
253	Reset	The program has restarted the software

## 9 EMERGENCY STOP

The HMDLP230 and HGD230 do not have an emergency stop system. According to the Machine Directive 2006/42/EC, annex 1, article 1.2.4.3., this is not necessary if the emergency stop system would not lower the risk. However, an emergency stop system can be connected.

## 10 MAINTENANCE INSTRUCTIONS



- When working on the gate or cleaning it, the power supply to the system must be switched off and protected from unauthorized switching on.
- If the gate must be moved manually, first turn the system circuit breaker in the motor cabinet to the "off" position and protect it from being switched on (e.g. by locking the cabinet).

### 10.1 GATE MAINTENANCE

Under normal conditions and with regular maintenance, sliding gates have a life of at least 200,000 cycles. To ensure that your gate operates safely, reliably and in compliance with all relevant legislation and laws, we recommend a MINIMUM of one maintenance check every 12 months or after 30,000 operating cycles, whichever is the sooner. However, to ensure safety and proper operation of the gate, more frequent maintenance checks are recommended during the lifetime of the gate.

Any maintenance work, including repair, replacement, modification and upgrade MUST be conducted by a Heras trained, qualified, competent and certified technician using Heras approved tools and spare parts.

Failure to ensure that the gate is used in accordance with User manual provided, or any faults or damage caused by wilful misuse, will result in any warranty becoming void.

During maintenance, essential points of the sliding gate must be periodically checked using an inspection protocol.

- Correct operation and adjustment.
- Check all anchor and bolted connections.
- Check wear of running wheels, guide wheels and the surface on which they run
- Check welded joints, damage to coating and zinc
- Check for damage and the operation of safety edges and infrared.

### 10.2 DRIVE UNIT MAINTENANCE

Only the battery [type CR 2032] for the integrated clock module must be replaced after 5 years. The battery can be found in a vertical holder over the twist and selector switch.



Beware of causing a short circuit when using a metal implement to remove the battery.

The entire gate system must be checked regularly, in accordance with DIN EN 12453.

To remind the operating company/user of this necessary maintenance, the

<MAINTENANCE>  
required

message is generated by the software of the motor drive.

## 10.3 CLEANING

The gate and the outside of the drive unit cabinet can be cleaned using a non-aggressive detergent and a soft cloth, brush or sponge. Avoid using a pressure cleaner as this might damage the gate and the drive unit.

Lubricating the running surface of the gate is not allowed.

## 11 DECOMMISSIONING AND REMOVAL



**Ensure that the gate is dismantled by a qualified technician.  
Disconnect the electricity supply in a safe way from the drive unit.**

Use the installation manual.

At the end of their service lives the products must be disposed of in accordance with all local, regional and national rules and instructions. The sliding part is mainly made of aluminum and steel parts. The guideposts are made of steel. Heras is also happy to take the products back and then dispose of them in an appropriate manner.



The Delta and uGate gates have highly tensioned cables fitted in the bottom rail. If these cables are cut, they can snap with great force. This can lead to serious injury. Therefore, **it is prohibited to disassemble the bottom rail yourself.**

**!! Only people trained by Heras are allowed to disassemble the bottom rail.**

There is no hidden danger associated with dismantling the bars, top rail and stiles.



The points that are fitted to some sliding gates are sharp. There is a danger of being cut when disassembling such a gate. Wear suitable gloves.

The master drive is fitted with a battery of the type CR 2032.

Disposing of batteries as domestic waste is not allowed. Spent batteries can be handed in for free at the public municipal collection facilities and at all points of sale where batteries are sold. You can also return any batteries bought from us to us after use. In this way you will be making an important contribution to conserving the environment!

## 12 SPARE PARTS

Use a CR 2032 button battery to replace the battery (Illustration 14:) of the integrated clock.



## 13 TECHNICAL DATA

### 13.1 SLIDING GATE DESCRIPTION

Gate leaf	Delta	uGate
Length [m]	5.15 ... 12.5	9.74 ... 16.3
Height [m]	1.00 ... 2.5	1.5 ... 2.5
Max. weight [kg]	340	450
Construction	Cantilever	Cantilever

### 13.2 DRIVE DESCRIPTION

Type of drive	HMD230S	HMD230A, HGD230A, IGD230P(E)
Motor	MOTHR80P (standard motor) MOTHR80PAO (with automatic disengagement)	
Supply voltage [VAC]	1 phase 230V <sub>AC</sub> /N/PE ±10% 50/60Hz	
External power supply 230V	230VAC ±10% 50/60Hz, fused with a 6.3A slow- acting fuse on the PCB	
Internal power supply 24V	24V <sub>DC</sub> stabilized (±5%) max. 500mA (fused with a semiconductor fuse that resets automatically) for optional accessories	
Motor power [kW]	0.37	
Control inputs	24V <sub>DC</sub> / typ. 4mA < 12 V: inactive -> logical 0 > 18 V: active> logical 1 (galvanically isolated internally)	
Local fuse	max. 10A	
Max. torque [Nm]	80	
Duty cycle [%]	60	
Safety edges	GE 365, GE 3555	GE 499, GE F85SK
Dead man's speed [m/s]	0.25	0.25
Max. speed [m/s]	0.25	0.50
IP category of control cabinet	IPx4	
Temperature range	-16 °C to +40 °C	
Relative humidity range	max. 99% non-condensing	
Weight [kg]	22-26	



The functions described in this manual are designed for the prevailing climatic conditions in Europe.



## Appendix A: Declarations Dop / DoC



### Declaration of Performance

Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration

DoP No: CE-DOP-2021.02-00

<b>Product type</b> - Producttype - Produkttyp - Type de produit - Produkttyp - Produkttype - Produkttype Power operated sliding gates - Elektrisch aangedreven schuifpoorten - Kraftbetätigten Schiebetoren - Portails coulissants à commande électrique - Eldrivna skjutgrindar - Elektrisk drevne skyveporter - El-betjente skydeporte
<b>Identification code</b> - Identificatiecode - Kenncode - Code d'identification - Identifikationskod - Identifikasjonskode - Identifikationskode Delta21 - iGate21 - SHB21 - uGate21 <sup>1</sup>
<b>Serial number</b> - Serienummer - Seriennummer - Numéro de type - Serienummer - Serienummer - Serienummer n/a
<b>Intended use</b> - Beoogd gebruik - Vorgesehener Verwendungszweck - Usage prévu - Avsedd användning - Tiltenkt bruk - Tilsiçtet brug Giving safe access for goods and vehicles accompanied or driven by persons in industrial, commercial or residential premises. Het bieden van een veilige toegang voor goederen en voertuigen begeleid of bestuurd door personen in industriële, commerciële of residentiële ruimten. Eine sichere Zufahrt für Waren und Fahrzeuge, begleitet oder geführt (gesteuert) von Personen, in industriellen, gewerblichen oder Wohnbereichen zu ermöglichen. Permettre l'accès des marchandises et des véhicules accompagnés ou conduits par des personnes, en toute sécurité, dans des locaux industriels et commerciaux ou des garages dans les zones d'habitation. För vilka avsedd användning är att ge säkert tillträde för gods och fordon åtföljda av eller körda av personer på industriområden, kommersiella områden eller bostadsområden. Gir sikker tilgang for varer og kjøretøy ledsaget eller kjørt av personer i industrielle, kommersielle eller boliglokaler. Give sikker adgang til varer og køretøjer, der ledsages eller køres af personer i industrielle, kommersielle eller boliglokaler.
<b>Contact address manufacturer</b> - Contactgegevens fabrikant - Kontaktanschrift des Herstellers - Adresse de contact du fabricant - Tillverkarens kontaktadress - Tillverkarens kontaktadress - Kontaktadresse fabrikant Heras B.V. - Hekdam 1 - 5688JE Oirschot - Netherlands
<b>System of assessment and verification of constancy of performance</b> Systeem voor beoordeling en verificatie van de prestatiebestendigheid System zur Bewertung und Überprüfung der Leistungsbeständigkeit Système d'évaluation et de vérification de la constance des performances System för bedömning och fortlöpande kontroll av byggprodukternas prestanda System for vurdering og verifisering av prestasjonsbestandighet System til vurdering og kontrol af ydeevnens konstant System 3 - Systeem 3 - System 3 - Système 3 - System 3 - System 3 - System 3



## Declaration of Performance

**Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration**

DoP No: CE-DOP-2021.02-00

**Report number** - Rapportnummer - Reportnummer - Numéro de rapport - Rapportnummer - Rapportnummer - Rapportnummer

130901400, 713043095

**Identification number notified body** - Nummer van de controle instantie - Kennnummer der notifizierten Stelle - Numéro d'identification de l'organisme notifié - Det anmeldte organets identifikationsnummer - Kontrollinstansens nummer - Identifikationsnummer bemyndiget organ

0063 Kiwa  
0123 TÜV SÜD Product Service GmbH Zertifizierstellen<sup>1</sup>

**Harmonised standard** - Geharmoniseerde norm - Harmonisierte Norm - Norme harmonisée - Harmoniserad standard - Harmonisert standard - Harmoniseret standard

EN 13241:2003+A2:2016

Declared performance Aangegeven prestaties Erklärte Leistung Performances déclarées Prestanda som intygas Angitte prestasjoner Deklareret ydeevne	Essential characteristics Essentielle kenmerken Wesentliche Merkmale Caractéristiques essentielles Väsentliga egenskaper Grunnleggende kjennetegn Væsentlige egenskaber	Performance Prestaties Leistung Performances Prestanda Prestasjoner Ydeevne	Requirements Eisen Anforderungen Exigences Krav Krav Krav
	Watertightness	NPD	4.4.1
	Release of dangerous substances	NPD	4.2.9
	Resistance to wind load	class 3*	4.4.3
	Thermal resistance (where relevant)	NPD	4.4.5
	Air permeability	NPD	4.4.6
	Safe opening (for vertically moving doors)	NPD	4.2.8
	Definition of geometry of glass	NPD	4.2.5
	Mechanical resistance and stability	PASS	4.2.3
	Operating forces (for power operated doors)	PASS	4.3.3
	Durability of watertightness, thermal resistance and air permeability against degradation	NPD	4.4.7

**Signed by**  
Ondertekend door  
Unterzeichnet von  
Signé par  
Undertecknad av  
Undertegnet av  
Underskrevet af

Gilles Rabot  
Chief Executive Officer  
Oirschot  
27-05-2021

### Declaration of Performance



Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration

DoP No: CE-DOP-2021.02-00

<b>Assessed products</b> - Beoordeelde producten - Bewertete Produkte - Produits évalués - Produkter som bedömts - Vurderes produkter - Vurderede produkter		
<b>uGate21</b>		
Technical data	Version: Type: Drive: Control unit: Safety edge:	single, double Heracles, Atlas HGD230S, HGD230A HMD 230SISK7 ASO 35.55CT, ASO 35.85CT
*Wind Class 3	Opening x Height: (single version)	≤12m x ≤2,5m
<b>Delta21</b>		
Technical data	Version: Type: Drive:  Control unit: Safety edge:	single, double Heracles, Atlas, Olympus, Pegasus HMDLP230S, HMDLP230A, HMD24 (HMD Basic) 100/SL1524SB (Heras version) 100/SLX1524SB (Heras version) HMD 230SISK7, HMD24ISK7 ASO 35.55CT, ASO 35.85CT
*Wind Class 3	Opening x Height: (single version)	≤9,5m x ≤2,3m (Heracles / Atlas / Olympus) ≤8,5m x ≤2,5m (Heracles / Atlas / Olympus) ≤9,5m x ≤1,8m (Pegasus) ≤8,5m x ≤2m (Pegasus) ≤7m x ≤2,5m (Pegasus)
<b>iGate21</b>		
Technical data	Version: Type: Drive: Control unit: Safety edge:	single, double Perforated sheet infill IGD230P, IGD230E HMD 230SISK7 ASO GEF85SK
Wind Class 2	Opening x Height: (single version)	≤9m x ≤2m
<b>SHB21</b>		
Technical data	Version: Type: Drive: Control unit: Safety edge:	single, double Heracles, Atlas, Orpheus** HMDLP230S HMD 230SISK7 ASO 35.55CT
*Wind Class 3	Opening x Height: (single version)	≤13,3m x ≤2m ≤8,5m x ≤2,5m**
Wind Class 2	Opening x Height: (single version)	≤13,3m x 2,5m



## Declaration of Performance

**Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration**

DoP No: UKCA-DOP-2021.02-00

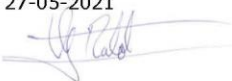
<b>Product type</b> - Producttype - Produkttyp - Type de produit - Produkttyp - Produkttype - Produkttype Power operated sliding gates - Elektrisch aangedreven schuifpoorten - Kraftbetätigten Schiebetoren - Portails coulissants à commande électrique - Eldrivna skjutgrindar - Elektrisk drevne skyveporter - El-betjente skydeporte
<b>Identification code</b> - Identificatiecode - Kenncode - Code d'identification - Identifikationskod - Identifikasjonskode - Identifikationskode Delta21 - iGate21 - SHB21 - uGate21 <sup>1</sup>
<b>Serial number</b> - Serienummer - Seriennummer - Numéro de type - Serienummer - Serienummer - Serienummer n/a
<b>Intended use</b> - Beoogd gebruik - Vorgesehener Verwendungszweck - Usage prévu - Avsedd användning - Tiltent bruk - Tilsigtet brug Giving safe access for goods and vehicles accompanied or driven by persons in industrial, commercial or residential premises. Het bieden van een veilige toegang voor goederen en voertuigen begeleid of bestuurd door personen in industriële, commerciële of residentiële ruimten. Eine sichere Zufahrt für Waren und Fahrzeuge, begleitet oder geführt (gesteuert) von Personen, in industriellen, gewerblichen oder Wohnbereichen zu ermöglichen. Permettre l'accès des marchandises et des véhicules accompagnés ou conduits par des personnes, en toute sécurité, dans des locaux industriels et commerciaux ou des garages dans les zones d'habitation. För vilka avsedd användning är att ge säkert tillträde för gods och fordon åtföljda av eller körda av personer på industriområden, kommersiella områden eller bostadsområden. Gir sikker tilgang for varer og kjøretøy ledsaget eller kjørt av personer i industrielle, kommersielle eller boliglokaler. Give sikker adgang til varer og køretøjer, der ledsages eller køres af personer i industrielle, kommercielle eller boliglokaler.
<b>Contact address manufacturer</b> - Contactgegevens fabrikant - Kontaktanschrift des Herstellers - Adresse de contact du fabricant - Tillverkarens kontaktadress - Tillverkarens kontaktadress - Kontaktadresse fabrikant Heras B.V. - Hekdam 1 - 5688JE Oirschot - Netherlands
<b>System of assessment and verification of constancy of performance</b> Systeem voor beoordeling en verificatie van de prestatiebestendigheid System zur Bewertung und Überprüfung der Leistungsbeständigkeit Système d'évaluation et de vérification de la constance des performances System för bedömning och fortlöpande kontroll av byggprodukternas prestanda System for vurdering og verifisering av prestasjonsbestandighet System til vurdering og kontrol af ydeevnens konstans System 3 - Systeem 3 - System 3 - Système 3 - System 3 - System 3 - System 3



## Declaration of Performance

Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration

DoP No: UKCA-DOP-2021.02-00

<b>Report number</b> - Rapportnummer - Reportnummer - Numéro de rapport - Rapportnummer - Rapportnummer - Rapportnummer 130901400, 713043095			
<b>Identification number notified body</b> - Nummer van de controle instantie - Kennnummer der notifizierten Stelle - Numéro d'identification de l'organisme notifié - Det anmälde organets identifikationsnummer Kontrollinstansens nummer - Identifikationsnummer bemyndiget organ 0063 Kiwa 0123 TÜV SÜD Product Service GmbH Zertifizierstellen <sup>1</sup>			
<b>Harmonised standard</b> - Geharmoniseerde norm - Harmonisierte Norm - Norme harmonisée - Harmoniserad standard - Harmonisert standard - Harmoniseret standard EN 13241:2003+A2:2016			
<b>Declared performance</b> Aangegeven prestaties Erklärte Leistung Performances déclarées Prestanda som intygas Angitte prestasjoner Deklareret ydeevne	<b>Essential characteristics</b> Essentielle kenmerken Wesentliche Merkmale Caractéristiques essentielles Väsentliga egenskaper Grunnleggende kjennetegn Væsentlige egenskaber	<b>Performance</b> Prestaties Leistung Performances Prestanda Prestasjoner Ydeevne	<b>Requirements</b> Eisen Anforderungen Exigences Krav Krav Krav
	Watertightness	NPD	4.4.1
	Release of dangerous substances	NPD	4.2.9
	Resistance to wind load	class 3*	4.4.3
	Thermal resistance (where relevant)	NPD	4.4.5
	Air permeability	NPD	4.4.6
	Safe opening (for vertically moving doors)	NPD	4.2.8
	Definition of geometry of glass	NPD	4.2.5
	Mechanical resistance and stability	PASS	4.2.3
	Operating forces (for power operated doors)	PASS	4.3.3
	Durability of watertightness, thermal resistance and air permeability against degradation	NPD	4.4.7
<b>Signed by</b> Ondertekend door Unterzeichnet von Signé par Undertecknad av Undertegnet av Underskrevet af		Gilles Rabot Chief Executive Officer Oirschot 27-05-2021 	

## Declaration of Performance

Prestatieverklaring - Leistungserklärung - Déclaration des performances Prestandadeklaration - Ytelseserklæring - Ydeevnedeklaration

DoP No: UKCA-DOP-2021.02-00

<b>Assessed products</b> - Beoordeelde producten - Bewertete Produkte - Produits évalués - Produkter som bedömts - Vurderes produkter - Vurderede produkter		
<b>uGate21</b>		
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<b>Delta21</b>		
Technical data	Version: Type: Drive:  Control unit: Safety edge:	single, double Heracles, Atlas, Olympus, Pegasus HMDLP230S, HMDLP230A, HMD24 (HMD Basic) 100/SL1524SB (Heras version) 100/SLX1524SB (Heras version) HMD 230SISK7, HMD24ISK7 ASO 35.55CT, ASO 35.85CT
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<b>iGate21</b>		
Technical data	Version: Type: Drive: Control unit: Safety edge:	single, double Perforated sheet infill IGD230P, IGD230E HMD 230SISK7 ASO GEF85SK
Wind Class 2	Opening x Height: (single version)	≤9m x ≤2m
<b>SHB21</b>		
Technical data	Version: Type: Drive: Control unit: Safety edge:	single, double Heracles, Atlas, Orpheus** HMDLP230S HMD 230SISK7 ASO 35.55CT
*Wind Class 3	Opening x Height: (single version)	≤13,3m x ≤2m ≤8,5m x ≤2,5m**
Wind Class 2	Opening x Height: (single version)	≤13,3m x 2,5m





## Declaration of Conformity

**Verklaring van overeenstemming - Konformitätserklärung - Déclaration de conformité - Deklaration om överensstämmelse - Konformitetserklæring - Overensstemmelseserklæringen**

DoC No: CE-DOC-2021.02-02

**EN** We herewith declare that the product complies with the following directives and standards.  
**NL** Hiermee verklaren wij dat het product in overeenstemming is met de volgende richtlijnen en normen.  
**DE** Hiermit erklären wir, dass die Produkte der nachfolgenden Richtlinien und Normen entspricht.  
**FR** Par la présente nous déclarons que le produit est conforme aux directives et normes suivantes.  
**SV** Vi deklarerar härmed att produkten överensstämmer med följande riktlinjer och normer.  
**NO** Vi erklærer med dette at dette produktet er konformt med følgende direktiv og normer.  
**DA** Vi erklærer hermed, at produktet er i overensstemmelse med følgende direktiver og standarder.

**Product type** - Producttype - Produkttyp - Type de produit - Produkttyp - Produkttype - Produkttype

Power operated sliding gates - Elektrisch aangedreven schuifpoorten - Kraftbetätigten Schiebetoren - Portails coulissants à commande électrique - Eldrivna skjutgrindar - Elektrisk drevne skyveporter - El-betjente skydeporte

**Identification code** - Identificatiecode - Kenncode - Code d'identification - Identifikationskod - Identifikasjonskode - Identifikationskode

Delta21 - iGate21 - SHB21 - uGate21 - SHB PI Light - Axel

**Contact address manufacturer** - Contactgegevens fabrikant - Kontaktanschrift des Herstellers - Adresse de contact du fabricant - Tillverkarens kontaktadress - Tillverkarens kontaktadress - Kontaktadresse fabrikant

Heras B.V. - Hekdam 1 - 5688JE Oirschot - Netherlands

**Directives** - Richtlijnen - Richtlinien - Directives - Direktiven - Direktiver - Direktiver

2006/42/EC Machine Directive  
305/2011 Construction Products Regulation  
2014/30/EU EMC Directive

**Standards** - Normen - Normen - Normes - Standarder - Standarder - Standarder

EN 13241:2003+A2:2016 - EN 12604:2017+A1:2020  
EN 12453:2017+A1:2021 - EN-IEC 60335-2-103:2015

**Signed by**  
Ondertekend door  
Unterzeichnet von  
Signé par  
Undertecknad av  
Undertegnet av  
Underskrevet af

Gilles Rabot  
Chief Executive Officer  
Oirschot  
11-02-2022



## Declaration of Conformity

**Verklaring van overeenstemming - Konformitätserklärung - Déclaration de conformité - Deklaration om överensstämmelse - Konformitetserklæring - Overensstemmelseserklæringen**

DoC No: UKCA-DOC-2021.02-02

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Delta21 - iGate21 - SHB21 - uGate21 - SHB PI Light - Axel

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Heras B.V. - Hekdam 1 - 5688JE Oirschot - Netherlands

**Directives** - Richtlijnen - Richtlinien - Directives - Direktiven - Direktiver - Direktiver

Supply of Machinery (Safety) Regulations 2008  
Electromagnetic Compatibility Regulations 2016  
Construction Products Regulations 2013

**Standards** - Normen - Normen - Normes - Standarder - Standarder - Standarder

EN 13241:2003+A2:2016 - EN 12604:2017+A1:2020  
EN 12453:2017+A1:2021 - EN-IEC 60335-2-103:2015

**Signed by**

Ondertekend door  
Unterzeichnet von  
Signé par  
Undertecknad av  
Undertegnet av  
Underskrevet af

Gilles Rabot  
Chief Executive Officer  
Oirschot  
11-02-2022





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**Heras B.V.  
Hekdam 1  
P.O. box 30  
5688 ZG Oirschot**

**Tel: +31 499 55 12 55  
E-mail: [infoNL@heras.nl](mailto:infoNL@heras.nl)**

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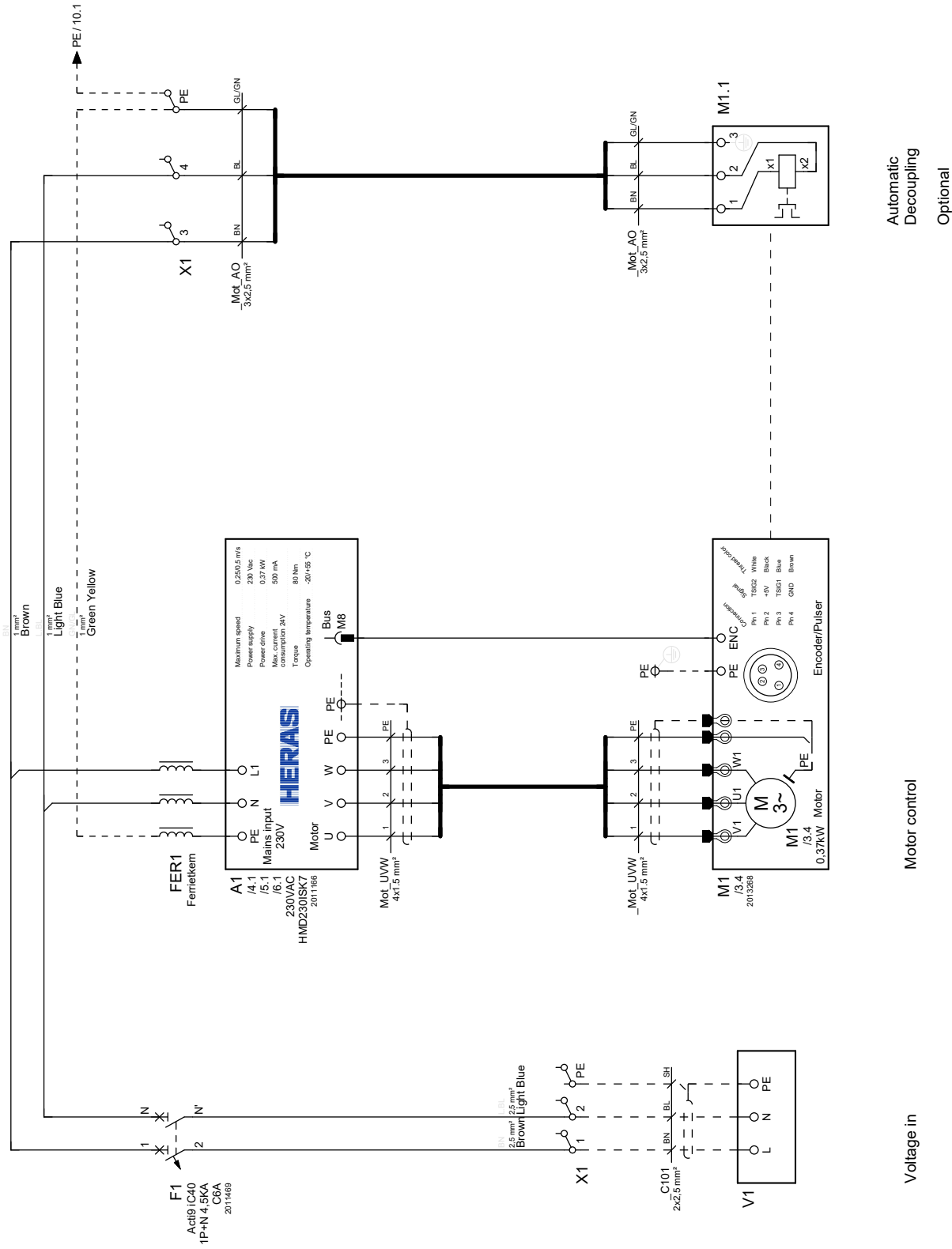
Local supplier stamp

Language: en EN

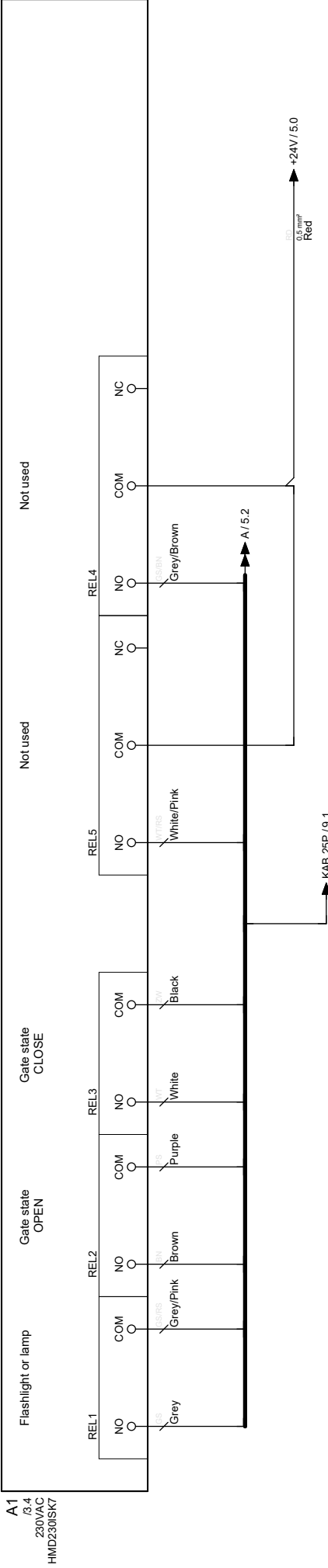


<b>Rev. date:</b> 24-03-2022	<b>Type:</b> HMDLP230	<b>Project name</b> dr-unit diverse	<b>Page title:</b>	<b>HERAS</b>	<b>Page</b> 1 / 12
<b>Version no:</b> 4.0	<b>Language:</b> en_EN	<b>Group code</b> HMD	<b>Description</b> Heras Motor Drive		
<b>Drawn by:</b> WWI			<b>Title Sheet / Front Sheet</b>		

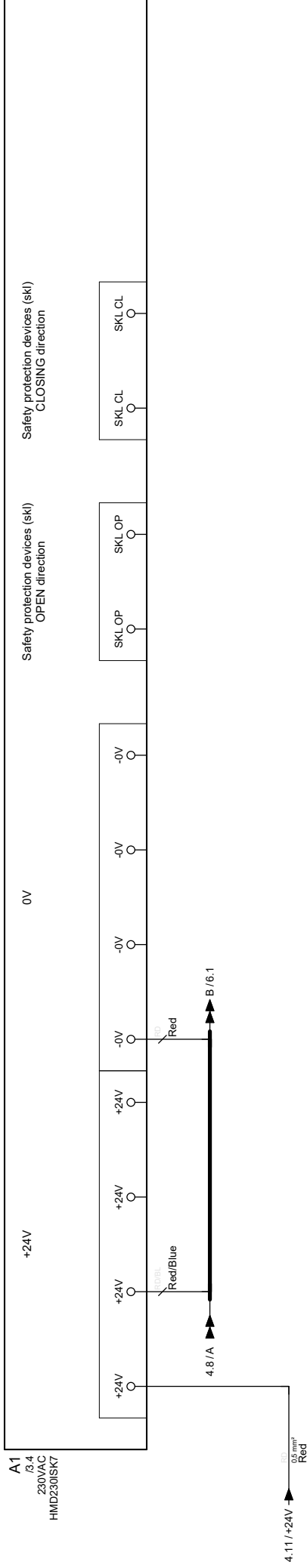




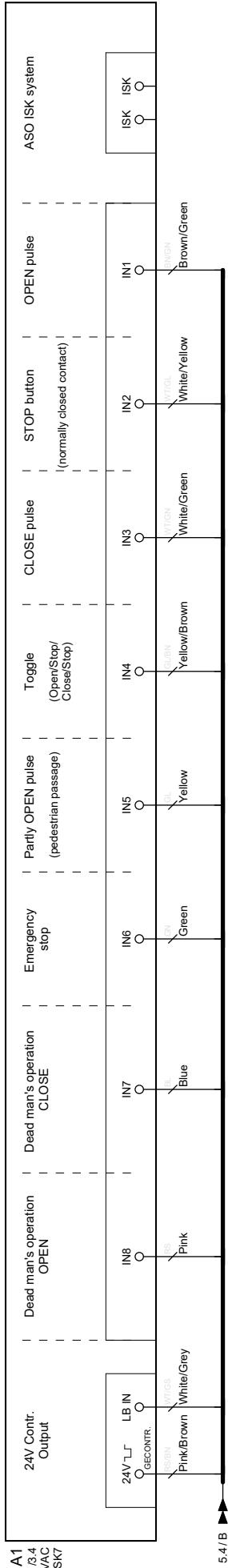
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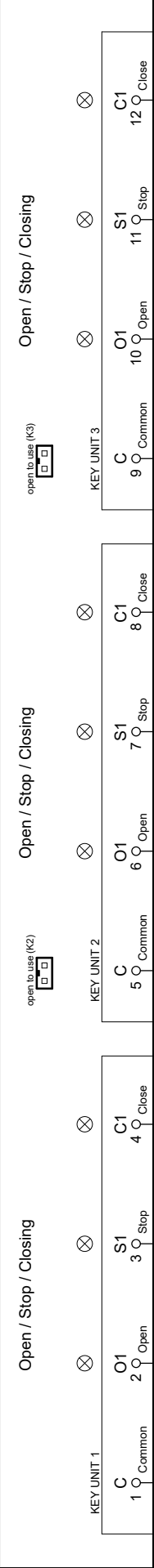


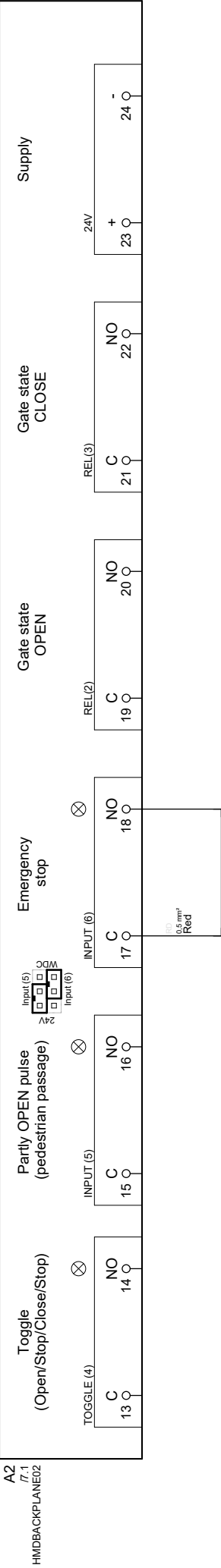


<b>Rev. date:</b> 24-03-2022	<b>Type:</b> HMDLP230	<b>Project name</b> dr-unit diverse	<b>Page title:</b> HMD230ISK7	<b>HERAS</b>	<b>Page</b> 5 / 12
<b>Version no:</b> 4.0	<b>Language:</b> en_EN	<b>Group code</b> HMD	<b>Description</b> Heras Motor Drive		
<b>Drawn by:</b> WWI					



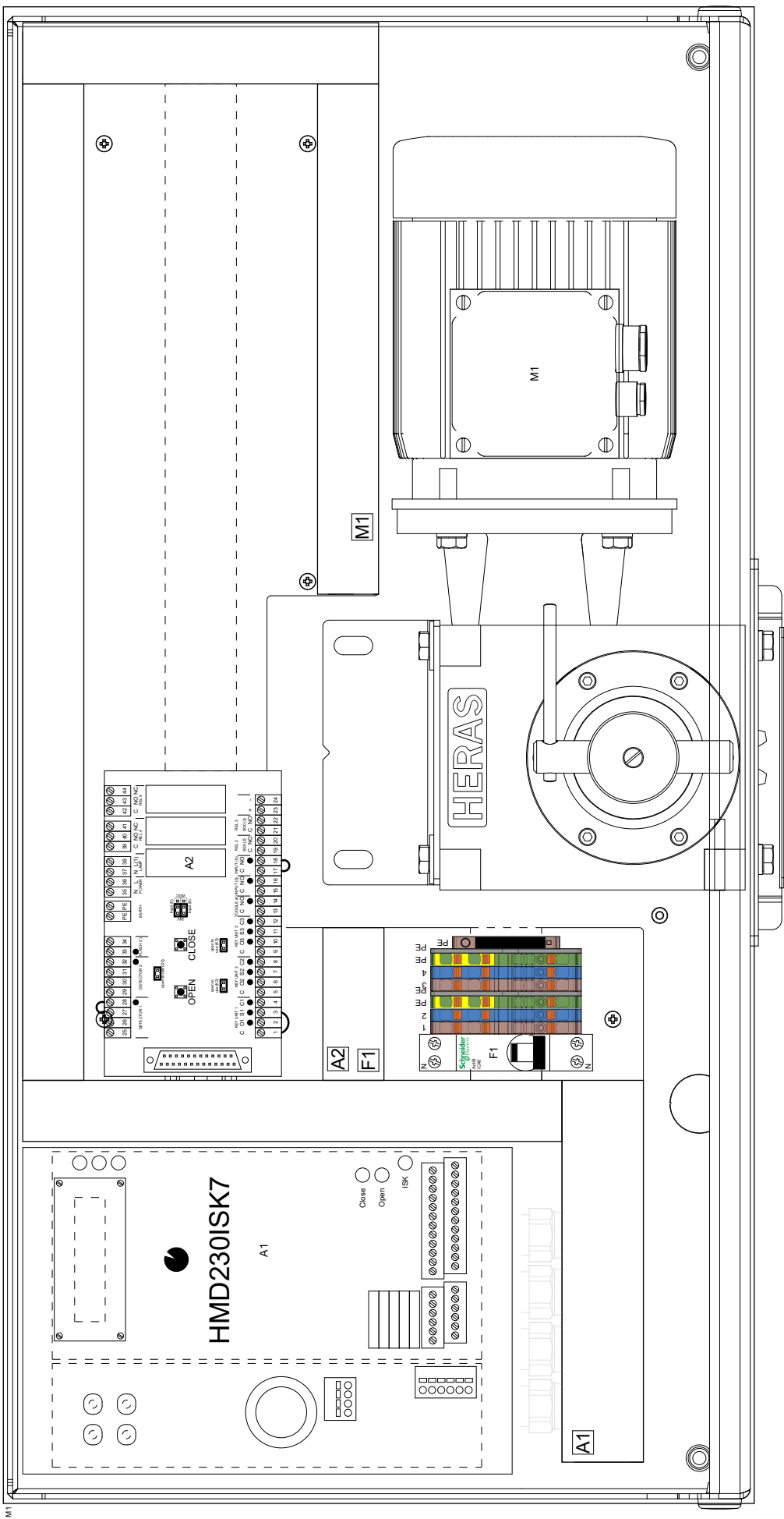
<b>Rev. date:</b> 24-03-2022 <b>Version no:</b> 4.0 <b>Drawn by:</b> WWI	<b>Type:</b> HMDLP230  <b>Language:</b> en_EN	<b>Project name</b> dr-unit diverse  <b>Group code</b> HMD	<b>Page title:</b> HMD230/ISK7		<b>Page</b> 6 / 12
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# Terminals connection list

From Connection code

Function text

No. Cable Type. Wire

Bridge Level

Bridge

Page

X1

Industrialization\_klemmenaansluitlijst\_Voorwaardelijk

Voltage in	-V1:L	Voltage in
=	-V1:N	
=	-V1:PE	
Automatic Decoupling		
=		
=	-A2:PE AARDE:PE	HMDBACKPLANE02

_C101	2x2.5 mm²	BN				1			=HMD+HMDLP230/3
_C101	2x2.5 mm²	BL				2			=HMD+HMDLP230/3
_C101	2x2.5 mm²	SH				PE			=HMD+HMDLP230/3
						3			=HMD+HMDLP230/3
						4			=HMD+HMDLP230/3
		GL/GN				PE			=HMD+HMDLP230/3

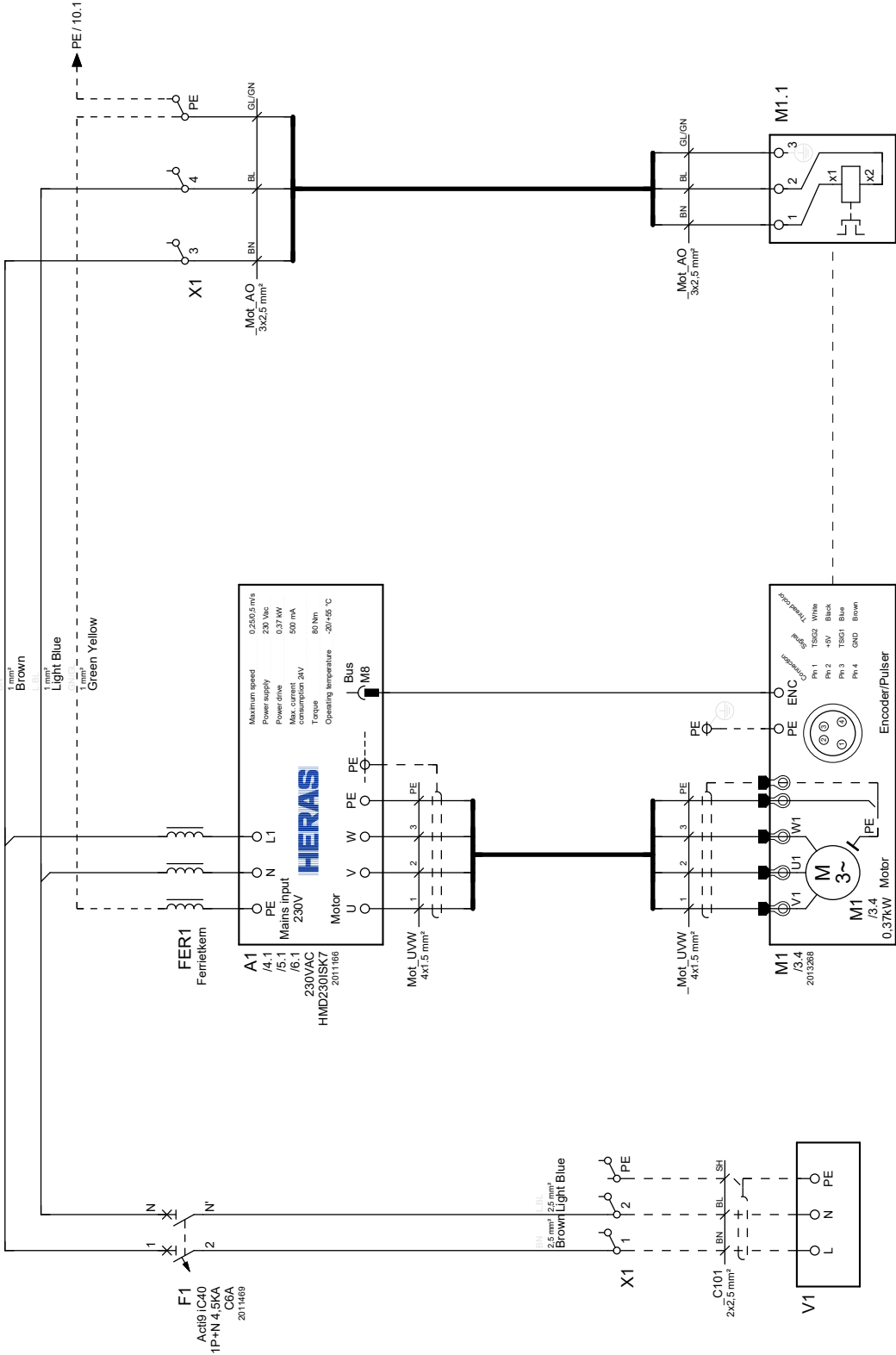




**ePLAN®**  
*electric8*

<b>Rev. date:</b> 24-03-2022	<b>Type:</b> HGD230	<b>Project name</b> dr-unit diverse	<b>Page title:</b>	<b>HERAS</b>	<b>Page</b> 1 / 12
<b>Version no:</b> 4.0	<b>Language:</b> en_EN	<b>Group code</b> HMD	<b>Description</b> Heras Motor Drive		
<b>Drawn by:</b> WWI			Title Sheet / Front Sheet		

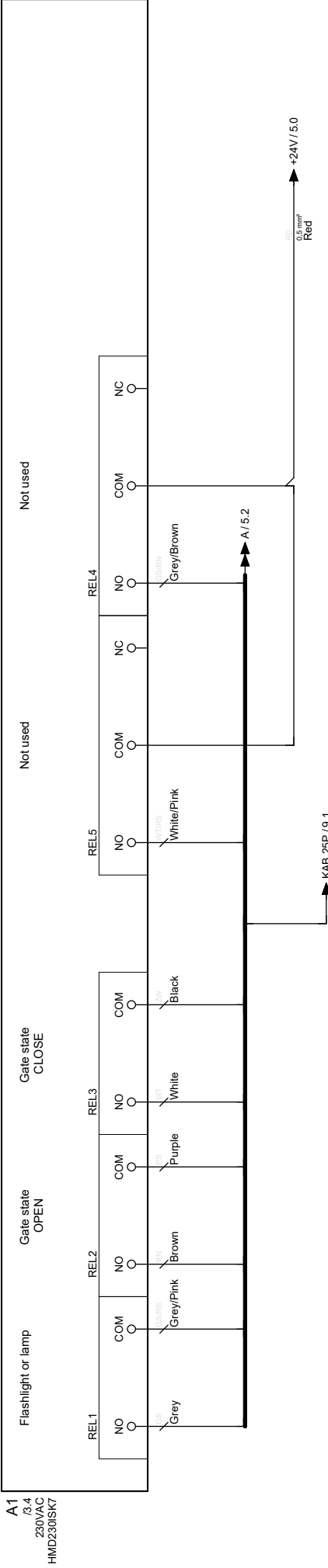


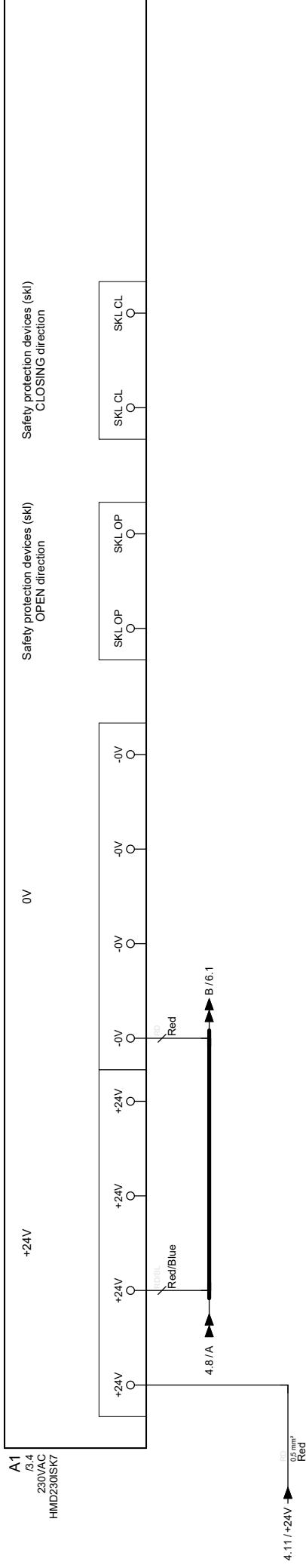


Automatic  
Decoupling  
Optional

Motor control

Voltage in





<b>Rev. date:</b> 24-03-2022	<b>Type:</b> HGD230	<b>Project name</b> dr-unit diverse	<b>Page title:</b> HMD230ISK7	<b>Page</b> 5 / 12
<b>Version no:</b> 4.0	<b>Language:</b> en_EN	<b>Group code</b> HMD	<b>Description</b> Heras Motor Drive	
<b>Drawn by:</b> WWI				

