Technical Manual
Interlock Control System
with Central Controller

You can find the current version of our manual on our website under «Downloads»:
https://en.dictator.de/products/interlock-control-systems/central-system/

DICTATOR

Contents

Safety Instructions

The installation and operation of electric interlock control systems is subject to the relevant legal stipulations for the installation and operation of electric installations. They have to be maintained and if necessary controlled by a person instructed by the manufacturer.

Before opening covers or disassembling components of the interlock control system these have to be separated from the power line, i.e. the power packs have to be isolated electrically!

The power supply has also to be interrupted before all adjusting and connection works on components of the system, i.e. the power pack(s) have to be isolated electrically.

In case there are to be integrated components provided by the customer (e.g. access control systems, locking systems, large surface switches etc.) it has to be checked with DICTATOR in advance if these devices meet the relevant requirements.

Before placing the system into operation, check if all screw and plug connections are firmly tightened/attached.

DICTATOR

Establishing the "Programming Matrix"

Listing of the Required Dependencies of the Doors

1. step: Number the doors of the interlock system consecutively.

2. step: In the following table there is noted for every door of the interlock system which other door(s) of the system have to be locked when the respective door is open.

Example*: When door 1 is open the doors 3 and 5 have to remain locked. All other doors of the interlock system are free, i.e. they could be opened. Therefore for door 1 is entered in the column "Doors that then have to remain locked" only no. 3 and 5.*

Door open (basis door)	Doors that then have to remain locked
Door 1	
Door 2	
Door 3	
Door 4	
Door 5	
Door 6	
Door 7	
Door 8	

3. step: Enter the dependencies of the above table in the matrix below. The codes to be entered (see "legend" below on the left) are also the required positions of the DIP switches on the control boards in the central controller which correspond to the respective basis door. *Following the above* **example**, *the programming of the DIP switches of the control board for door 1 would be as follows:*

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
DIP switches door 1:	+	0	-	0	-	0	0	0

Matrix to Determine the Positions of the DIP Switches

Legend:

+ Defines the door for which the dependencies are set (basis door).

- This door is locked when the basis door is open.

0 This door may be opened even when the basis door is open.

Door number / Number of basis door	Permissible state of the other doors of the interlock system depending on the open basis door							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	+							
2		+						
3			+					
4				+				
5					+			
6						+		
7							+	
8								+

"Programming" the Control Boards per Door

Adjusting the Values of the Matrix (see previous page)

By default all 8 DIP switches (see marked area in the diagram below) are in the middle position **0**.

First you should **assign every control board a door number**. This number should be marked in the blue or green label above the control board.

Then the DIP switches are brought to the positions determined for this door number.

Example: The control board in question is the one that has been assigned to door 1. In total the interlock control system comprises 5 doors. When door 1 is open, doors 3 and 5 have to be locked, doors 2 and 4 are irrelevant for door 1.

Door number / Number of basis door	Permissible state of the other doors of the interlock system depending on the open basis door							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	**+**	**0**	**-**	**0**	**-**	**0**	**0**	**0**

Therefore DIP switch 1 is turned up to the position +, the DIP switches 3 and 5 are turned down to the position - and the DIP switches 2 and 4 remain in the position 0. The free DIP switches 5 - 8 (not assigned to a door) remain in the position 0, too.

IMPORTANT (especially with modifications): To memorise the new settings the whole system has to be switched off and then turned on again.

IMPORTANT:
The interlock control system has to be electrically isolated before any works on the central controller are performed.

Delivery status
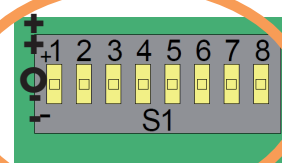
Adjustment according to example

Legend:

+ Defines the door for which the dependencies are set (basis door).

- This door is locked when the basis door is open.

0 This door may be opened even when the basis door is open.

DICTATOR
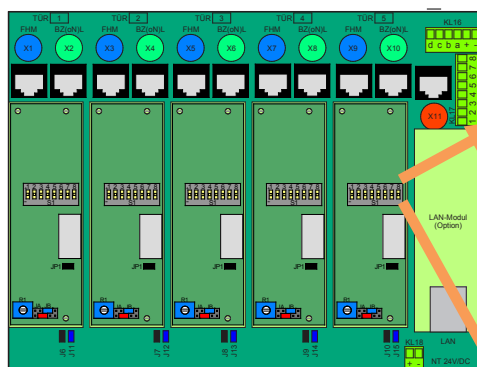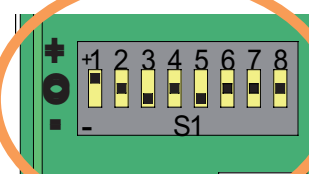
Example Connection Diagram of a System with 5 Doors

The following illustration shows all standard components that have to be connected directly to the central controller RJ. The additional operating terminals BT3 for the rear side of the door are not shown here.
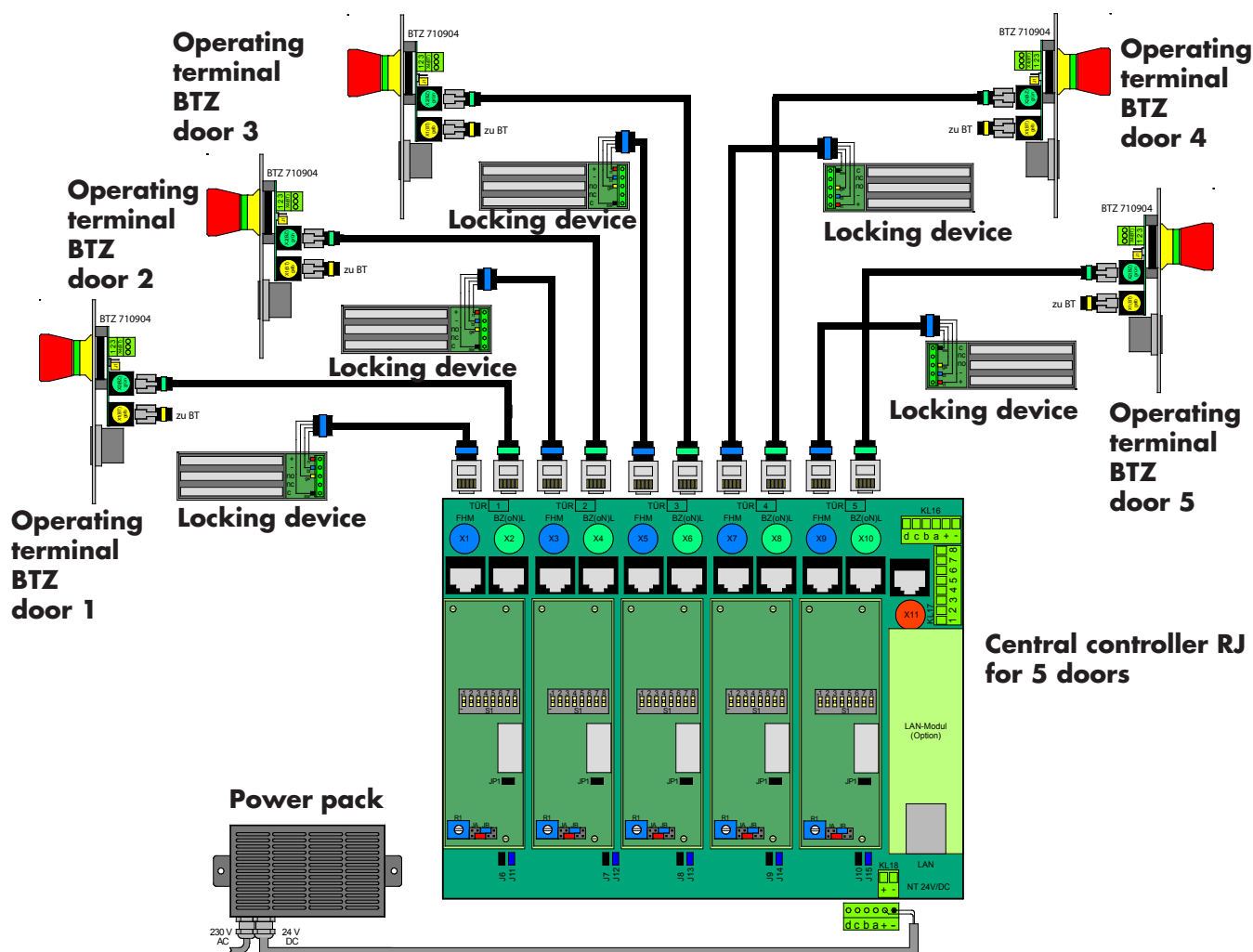
Basis Connection Diagram Central Controller RJ - 2 Doors

The central controller RJ is supplied with the number of control boards that corresponds to the number of doors. The following example shows the connection of all components in an interlock system with 2 doors. The operating terminal BTZ directly connects to the central controller RJ, the operating terminal BT3 on the other side of the door to the operating terminal BTZ.
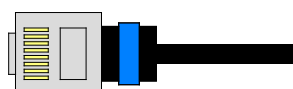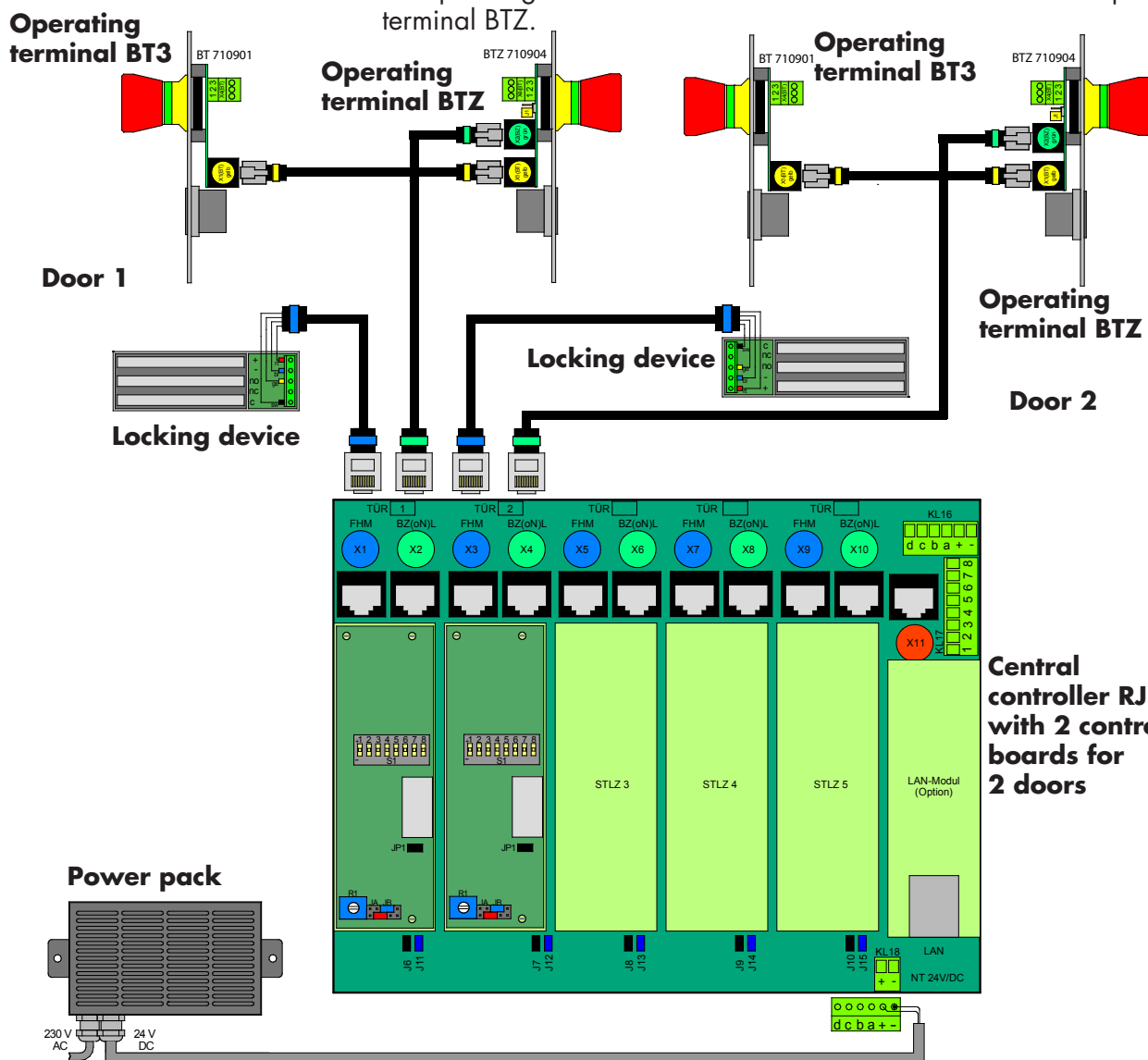
Connection cable to the locking device - blue marking
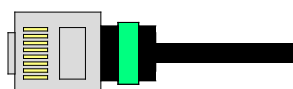
Connection cable to the operating terminal BTZ - green marking

Connection cable operating terminals BTZ / BT3 - yellow marking

DICTATOR

Basis Connection Diagram - 2 Central Controllers RJ

To a central controller RJ for 5 doors can be connected a second central controller RJ. **Maximum number of doors in the interlock system: 8.**

It doesn't matter whether both central controllers RJ contain 4 control boards each or one 5 and the other 3 control boards. When deciding on this you should consider the distances between doors and central controllers RJ (max. cable length is 15 m!!).

Central controller RJ 2 with 3 control boards for 3 doors
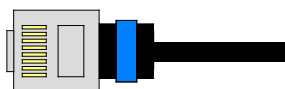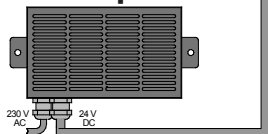
Central controller RJ 1 with 5 control boards for 5 doors

Power pack

230 V AC   24 V DC

Connection cable to the locking device - blue marking

Connection cable to the operating terminal BTZ - green marking

Connection cable operating terminals BTZ / BT3 - yellow marking

Connection cable central controller RJ/ central controller RJ - red marking

Power cable central controller RJ/central controller RJ, 6 cores

Basis Connection Diagram - 1 Central Controller RJ with 1 Additional Control Terminal ST3 (Peripheral System)

It is possible to connect (also subsequently) to a central controller RJ for 5 doors one more door with the components of the peripheral system. This allows to control **6 doors** in total.

Central controller RJ with 5 control boards for 5 doors
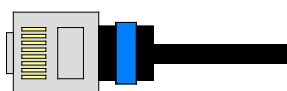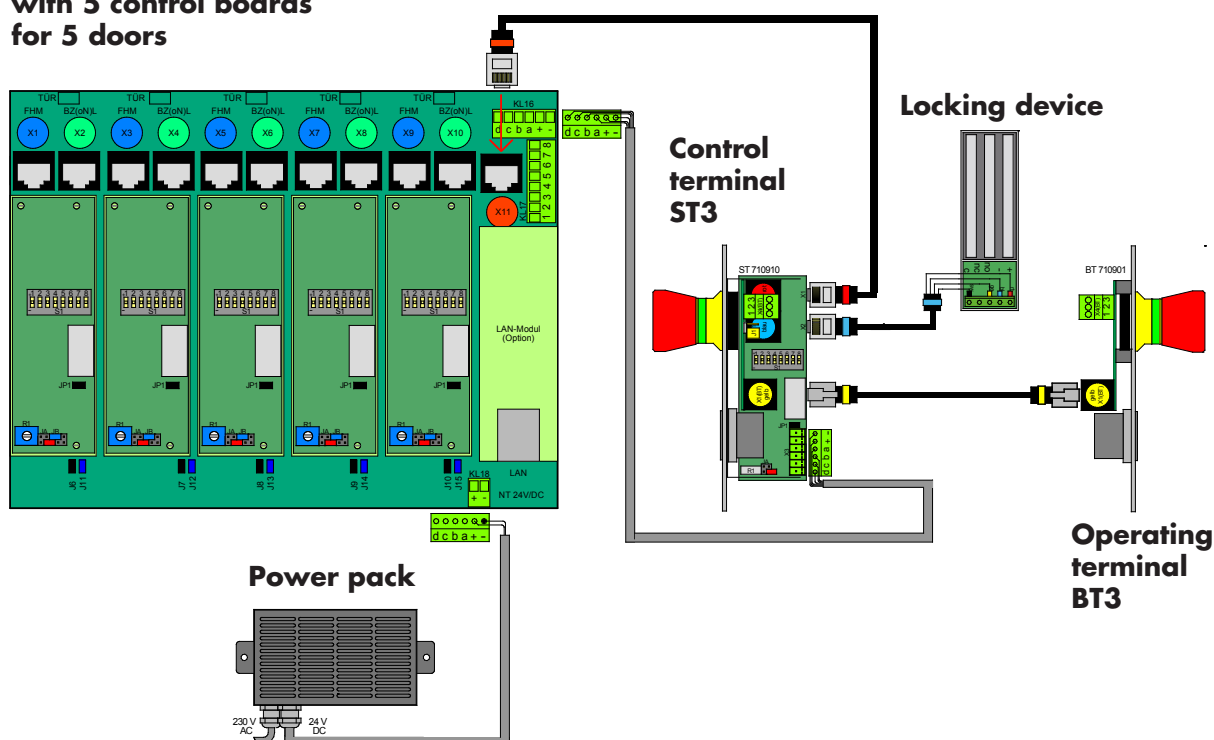
Locking device

Control terminal ST3

Operating terminal BT3

Power pack

Connection cable to the locking device - blue marking

Connection cable operating terminals BTZ / BT3 - yellow marking

Connection cable central controller RJ/ control terminal - red marking

Power cable central controller RJ/ control terminal, 6 cores

DICTATOR

Basis Connection Diagram - 1 Central Controller RJ with 1 Distribution Box (Peripheral System)

It is also possible to connect to a central controller RJ a distribution box of the peripheral system. This may be necessary when the system should be extended but the additional doors are too far away (the maximum cable length between terminals and central controller RJ is 15 m!). In total **8 doors** are possible.

Central controller RJ with 5 control boards for 5 doors

Power pack

Distribution box of the peripheral system
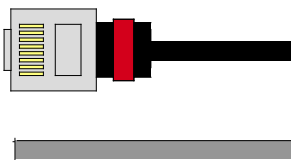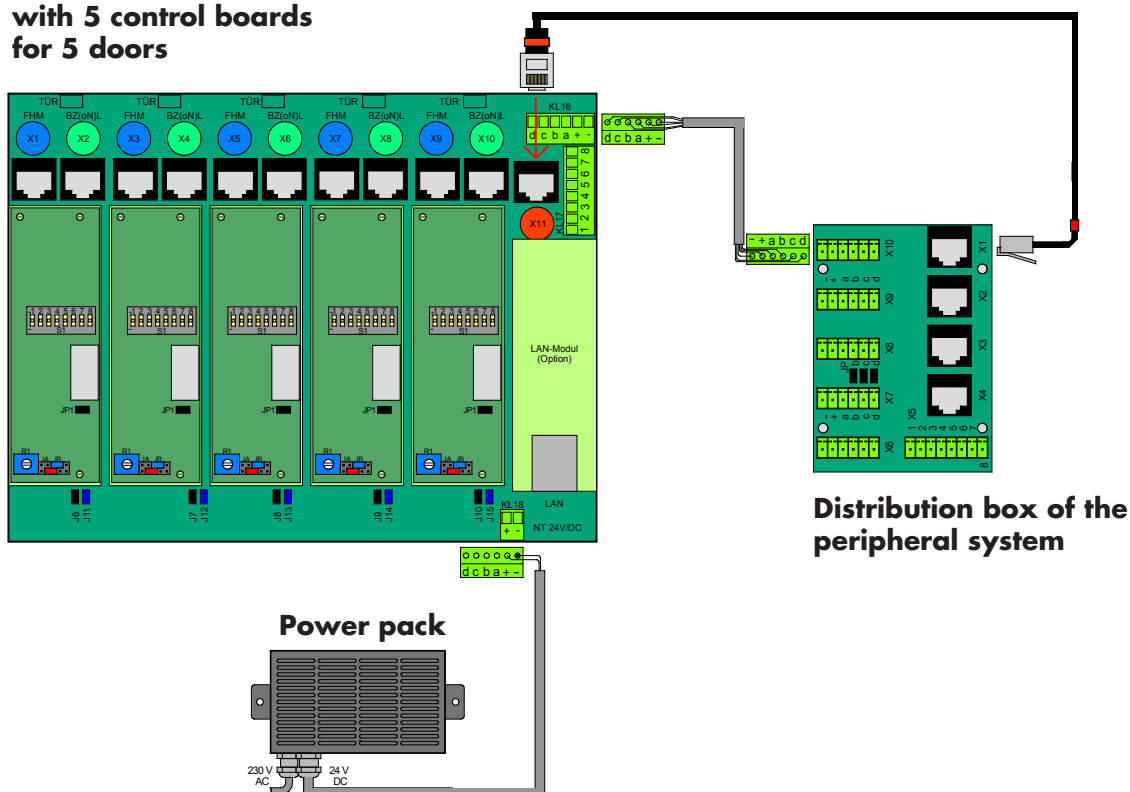
Connection cable central controller RJ/ distribution box - red marking

Power cable central controller RJ/ distribution box, 6 cores

General Instructions Central Controller RJ

Place of Installation

When choosing the place where to install the central controller(s) RJ, you should consider the following:

- Mounting only in dry places (IP rating IP 20)

- Distance to the doors to be connected: the **distance** between central controller RJ, terminals BTZ and locking devices or between two central controllers RJ may not exceed **15 m**.

The green connection cables to the operating terminals BTZ are available with 3, 5, 10 and 15 m. The blue connection cables to the locking devices with 4 and 15 m.

Central controller RJ

Green connection cable to operating terminal BTZ

Blue connection cable to locking device

FHM

BTZ   BT3
BZ   BT

Yellow connection cable between operating terminals BTZ and BT3
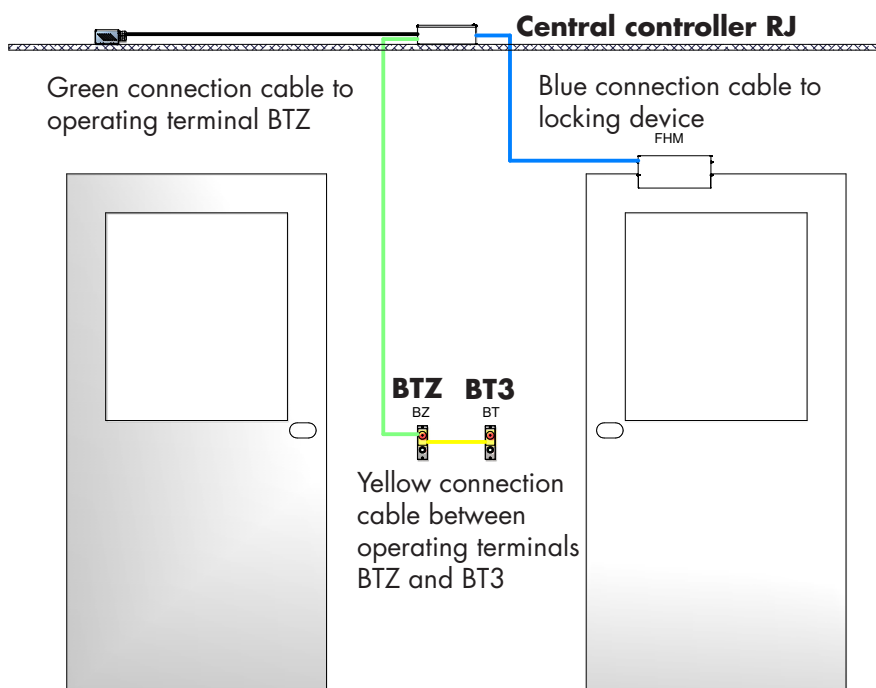
In case a **second central controller RJ is connected**, the maximum distance is 15 m (cable length), too. Connecting two central controllers RJ requires the red connection cable (control cable) (lengths 3, 5, 10 m). If you need a control cable of 15 m, you simply join one of 10 m and one of 5 m with the help of the connector (part no. 710943).

It also requires a 6 core power cable. Available lengths are 3, 5, 10 and 15 m.

Possible Number of Doors

In total there can be connected up to 5 doors to a central controller RJ. Already in factory the central controller RJ is equipped with as many control boards as doors form part of the system (min. 2, max. 5 pieces).

By means of a second central controller RJ you can connect 3 more doors, i.e. the total number of doors increases to **a maximum of 8 doors**. It doesn't matter, if each centrol controller RJ controls 4 doors or one 5 and the other only 3 doors.

General Instructions Central Controller RJ - cont.

Cable Introduction

After having taken off the cover (fixed with 2 screws and hooked in on the other side) the cables to be connected are put on the lateral cable support brackets. To make sure there is no strain on the cables they are fixed with tie wraps to the holes in the cable support brackets. When the connection work is finished the top cover is put back and fixed again. The blocks of cellular material on the cover protect the interior of the central controller against dust.

Choosing the Connection Sockets

Before plugging in the connection cables every control board in the central controller RJ has to be assigned to a certain door. For better clarity you should mark the number of the door on the blue or green labels above each control board. You are absolutely free in assigning the doors to the control boards.

Sockets X1, X3, X5, X7, X9 (blue marking): These are intended for the blue connection cables to the locking devices.

Sockets X2, X4, X6, X8, X10 (green marking): Intended for the green connection cable to the operating terminals BTZ.

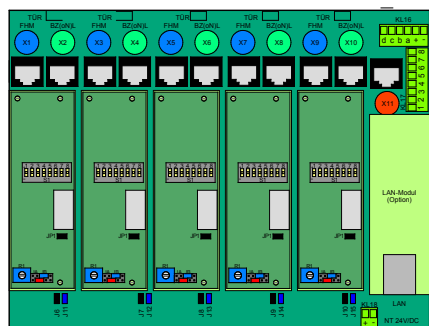*Socket X11 (red marking):* For connecting a second central controller RJ (or a control terminal or a distribution box of the peripheral system). Here the red connection (control) cable is plugged in.

Socket KL16: For connecting a second central controller RJ (or a control terminal or a distribution box of the peripheral system). Here the 6 core power cable is plugged in. Additionally you can use the socket KL16 for transmitting signals.

Socket KL18: For the pluggable connection cable of the power pack. ATTENTION: Make sure the 6-pin connector is plugged in only with the areas marked "+" and "-"!

Terminal strip KL17: This terminal strip is intended for realizing special functions as there are e.g. the discretion circuit (see page DiskrZ01), connecting a time control unit (see pages ZMZ01/02), connection of measuring and control systems provided by the customer (locking until a certain air quality or room pressure has been achieved) etc.
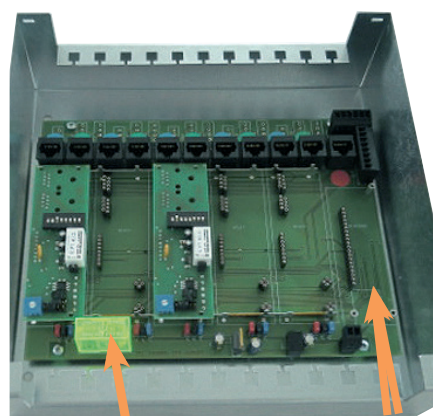
Socket for additional relay

Plug-in position for LAN module

Jumpers

Below every control board are two jumpers each (black and blue). They allow to realize certain transmitting functions by the contacts c and d of the terminal strip KL16 (see next page).

Plug-In Position for Additional Relay

With the **relay** you can plug in below the control boards 1 and 2, it is possible to realize a **global emergency-open** (when pressing the emergency-open switch of one terminal, all doors of the system are released), part no. 710953. It can be retrofitted at any time!

LAN Module

LAN module: In production the central controller RJ can be equipped with a LAN module that serves as an interface to a facility management system. For more information please contact our technical department.

General Instructions Central Controler RJ - cont.

Jumper

> Please use a precision mechanic flat nose plier to remove or reposition the jumpers.
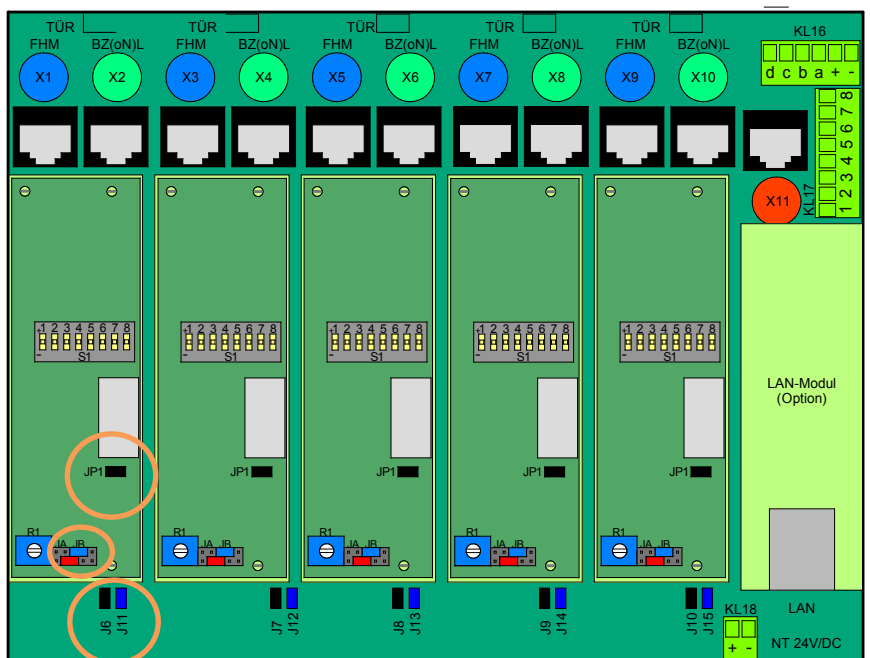
Functions of the Jumpers

Jumper JP1

By default the jumper JP1 is always plugged in and has to remain there. **EXCEPTION**: In the interlock control system there is realized a global emergency-open (when pressing the emergency-open switch on one door all doors of the interlock system will be released). In this case on all control boards of the system the jumper JP1 has to be removed (see also function global emergency-open on page GNAZ01).

Jumpers J6 - J10 (black)

The jumpers J6 - J10 are always assigned to the control board being directly above the respective jumper.

When the jumper(s) J6 - J10 is/are plugged, the information adjusted in jumper JA of the respective door is relayed to the terminal KL16 (**signal output c**).

For deciding on which type of door status is being relayed, the jumper JA is plugged as described on the following pages.

Jumpers J11 - J15 (blue)

The jumpers J11 - J15 are always assigned to the control board being directly above the respective jumper.

When the jumper(s) J11 - J15 is/are plugged, the information adjusted in jumper JB of the respective door is relayed to the terminal KL16 (**signal output d**).

For deciding on which type of door status is being relayed, the jumper JB is plugged as described on the following pages.

> The signal output "c" and/or "d" is scanned **at KL16** at the terminals "c" and/or "d" always in connection with "+".

General Instructions Central Controler RJ - cont.

Jumpers JA and JB - Possible Positions and Functions Feasible with them

Position 1 (JA) - 1 (JB)

Signal output c:
door open (active: 24 V applied)

Signal output d:
active when actuating the piezo-type key
(active: 24 V applied for a short period)
This allows to lock other doors before this door is released.
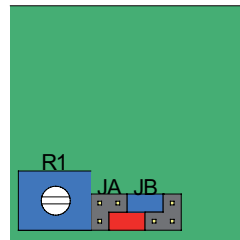
Position 4 (JA) - 1 bis 5 (JB)

Signal output c:
door open (active: 24 V applied)

Signal output d:
active during different periods
(active: 24 V applied during the respective period)
By this jumper configuration you can realize the temporary locking of doors. The positions 1 - 5 of the jumper JB determine the period ot the locking.
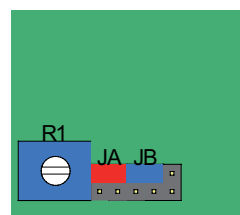
JB in pos. 1: 60 sec
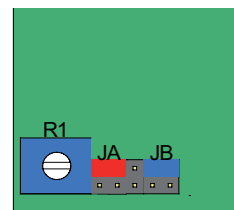
JB in pos. 2: 120 sec
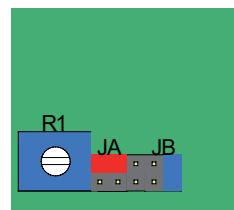
JB in pos. 3: 180 sec
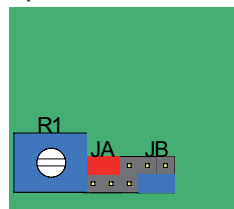
JB in pos. 4: 240 sec
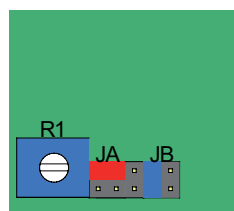
JB in pos. 5: 300 sec

General Instructions Central Controler RJ - cont.

Jumpers JA and JB - Possible Positions and Functions Feasible with them - suite

Position 5 (JA) - 5 (JB)
Signal output c:
door released (active: 24 V falling off)
This door is released and the time during which the door can be opened has not yet run out.
Signal output d:
active when key being actuated
(active: 24 V applied for a short period)
This allows to lock other doors before this door is released.
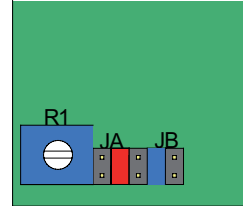
Position 2 (JA) - 1 (JB)
Signal output c:
time exceeded during which the door can be opened
(active: 24 V applied)
This signal is used e.g. to control via the release time the maximum time span during which the door can be opened, e.g. with a particular air quality).
Signal output d: not active
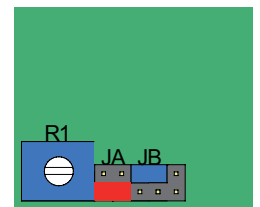
Position 3 (JA) - 1 (JB)
Signal output c:
door locked
(active: 24 V applied)
A door of the interlock system is open which is depending on this door.
Signal output d: not active
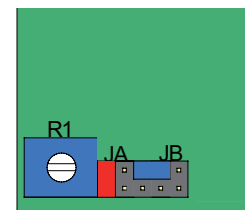
DICTATOR

General Instructions SK Central Controller - cont.

Temporary Locking of Doors (Adjusted by the Jumpers JA and JB)

Functioning:
The temporary locking is activated when the door ("door 1") is opened, for the control board of which it has been adjusted by the jumpers (see preceding pages). The adjusted time starts to run the moment the door is closed.
During this time the contact switch d is activated.

IMPORTANT: The temporary locking also locks the door ("door 1") during the adjusted time, for the control board of which the temporary locking has been adjusted by the jumpers. **This allows also to lock a single door for a certain time, without dependance on another door.**

Connection:
In the SK central controller the connection of the signal output "d" of the door, on the control board of which the temporary locking had been adjusted, has to be continued from the terminal strip KL16 to the corresponding terminal of the terminal strip KL 17. To this terminal you then have to bridge the terminals of the other doors that have to be locked. The red light on the terminal signals the temporary locking.

Note: If only the door shall be locked temporarily for the control board of which the temporary locking has been adjusted, the connection to the terminal strip KL17 is not obligatory for the functioning. In this case, however, the temporary locking will not be signalled by the red light.

Example connection diagram (see next page):
By the jumpers JA/JB a temporary locking of 60 seconds has been adjusted for the control board of door 1. In addition, when opening door 1, also the doors 2 and 4 shall be locked temporarily.
Connection in the SK central controller: The contact switch "d" of the terminal strip KL 16 is connected with the terminal 1 of the terminal strip KL 17. Then terminal 1 is bridged to terminals 2 (for door 2) and 4 (for door 4) (see connection diagram on the next page).

General Instructions SK Central Controller - cont.

Temporary Locking of Doors (Adjusted by the Jumpers JA and JB) - cont.

Connection diagram:

DICTATOR
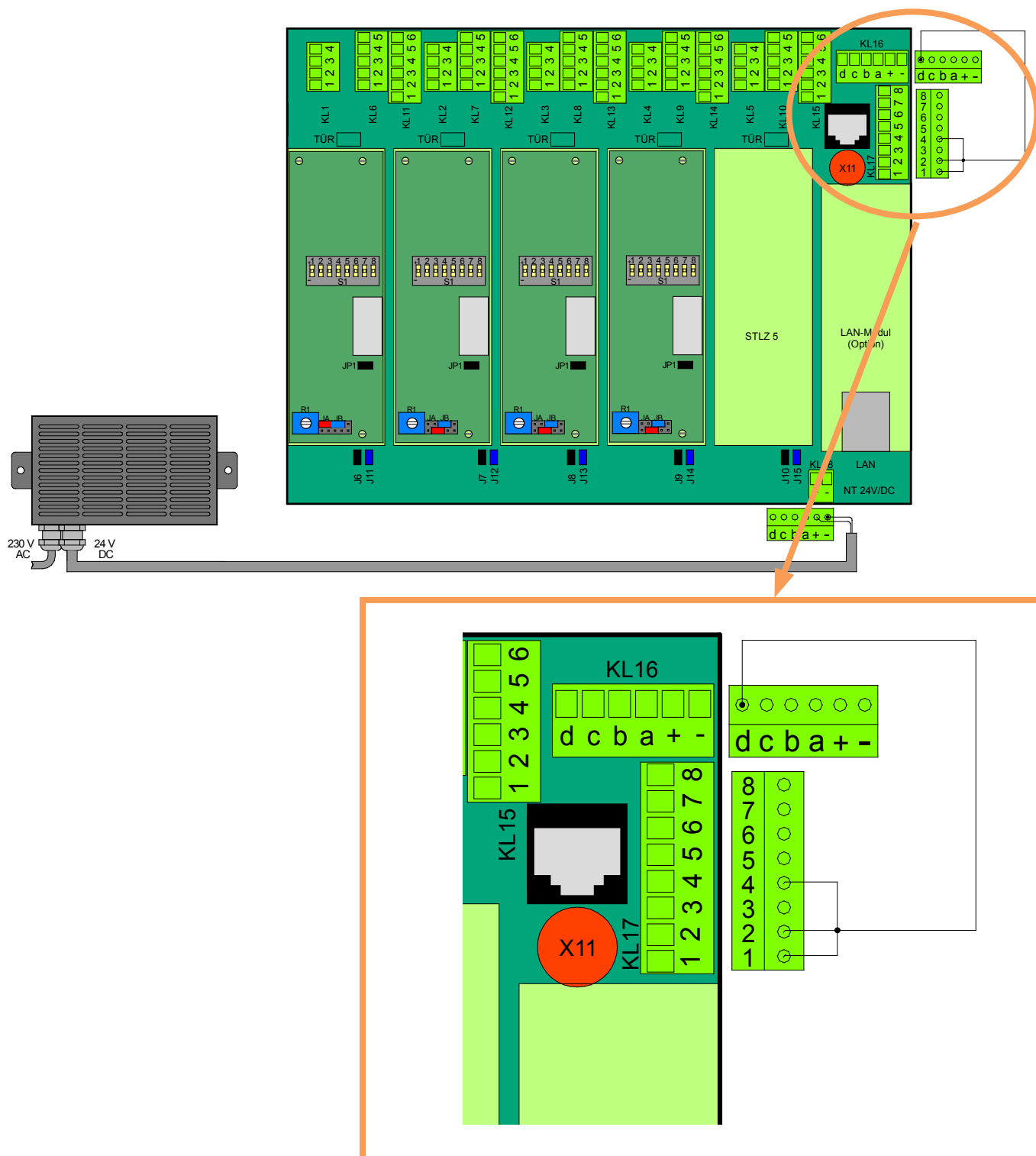
General Instructions Central Controler RJ - cont.

Potentiometer to Adjust the Release Time

After pressing the piezo-type key on the operating terminal the door is released during an adjustable time. This period is adjusted by the potentiometer on the respective control board in the central controller RJ. It determines the span of time after pressing the operating key during which the door can be opened. As soon as this period has passed the door is locked again. It doesn't matter if the door had really been opened. The period of time to be adjusted is influenced among others by the fact the interlock being one for persons or material or whether there should also be linked a surveying function with this span of time (see Positioning of jumper JA on page BZ014/015).

Adjustable time: 1 - 32 seconds

Potentiometer
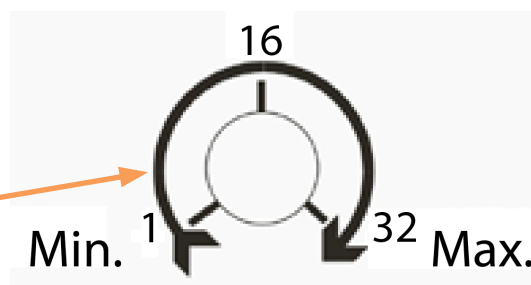
Saving of Adjustment Changes on the Control Boards

After every modification of adjustments on the control boards in the central controller RJ the whole system has to be switched off for a short time and then turned on again. Otherwise the modified settings will not be applied. This applies to the above described changing of the time the door is released as well as to modifications of the door dependencies by the DIP switches.

General Mounting Instructions Power Pack

Mounting of the Power Pack

When choosing the place for the power pack you should consider the following:

- Mounting only in dry places (IP rating IP 30)
- With operating temperatures (-10 °C to +50 °C are permissible) below 0 °C it has to be made sure the power pack doesn't ice over.
- The lateral ventilation slots have to remain uncovered and the circulation of the air may not be obstructed.
- **The power pack is ready to plug in and doesn't have to be opened for mounting.**

  The length of the connectorised, plug-in cables influences choosing the mounting place:

  Maximum distance to a 230 VAC socket-outlet: 1.5 m
  Maximum distance to the central controller RJ of the system: 2.0 m

The power pack is fixed with M5 screws at the two lateral ears.

IMPORTANT:
The power pack may only be opened by an electrician!
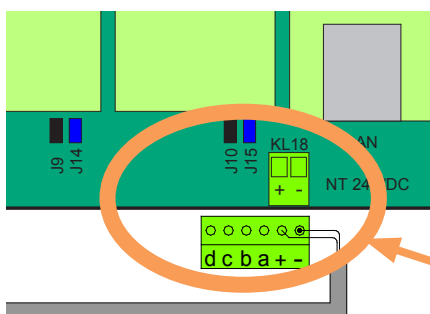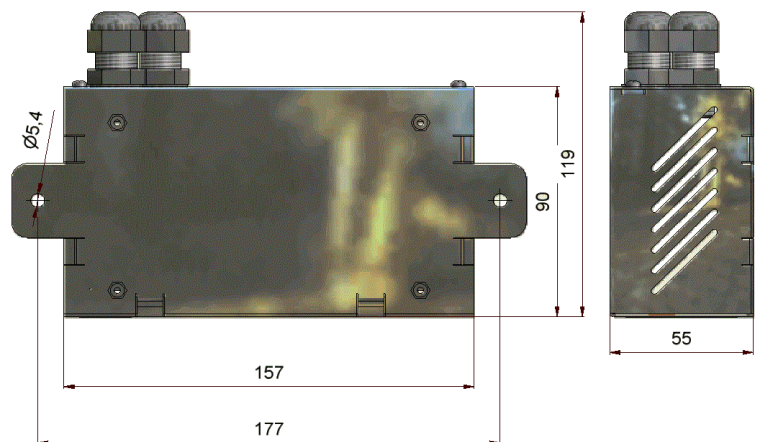
IMPORTANT:

When connecting the pluggable cable to the central controller RJ, you have to make sure the 6-pin connector is plugged with the "+" and "-" side in the 2-pin socket of the central controller RJ.

If the interlock system comprises two central controllers RJ, the power pack can be connected to either of them.

DICTATOR

General Instructions Operating Terminals - Mounting

Mounting of the Operating Terminals BTZ and BT3, the Time Control Unit

The operating terminals are usually **"flush"** mounted directly in the door frames. Especially in clean room areas the front plates should be flush with the frame surface.

The standard flush box (part no. 710829 (see adjoining dimensioned drawing) is suitable for mounting the operating terminal and the time control unit. The emergency exit terminal requires due to its greater height the special flush box with the part no. 710834.
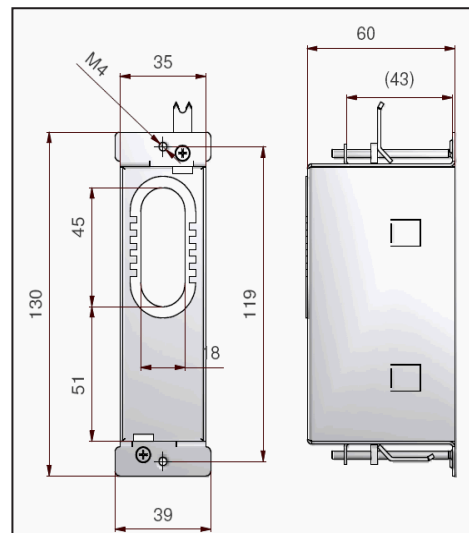
In case the terminal shall be mounted **directly in the frame - without flush box -**, there has to be made an opening according to the adjoining drawing. The front plate of the terminal, however, will then bear on the frame profile, i.e. it protrudes a little.
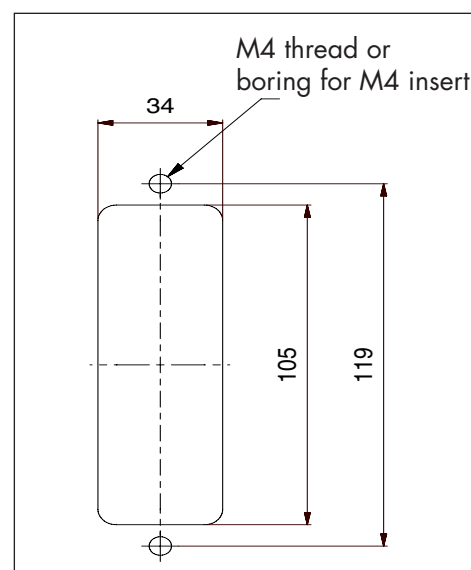
For those cases where a flush mounting or an installation in the frame is not possible, there are **surface** boxes available. They are powder-coated.

They are designed for the cables entering from behind.

The adjoining drawing shows the surface box for the operating terminals and the time control unit.
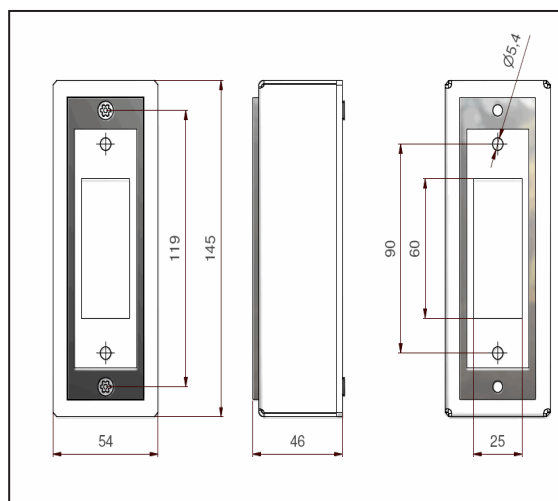
General Instructions Operating Terminals

Models

Each door of the interlock control system requires two different models of the operating terminal:

- Operating terminal BTZ (connection to the central controller RJ)
- Operating terminal BT3 (connection to the operating terminal BTZ)

There is only one difference between both operating terminal models: Other than the operating terminal BT3 (that is also used with the peripheral system), the operating terminal BTZ has an additional socket for the green connection cable to the central controller RJ.
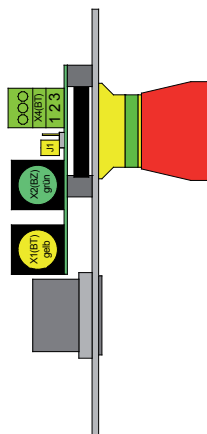
Operating terminal BTZ with green and yellow socket
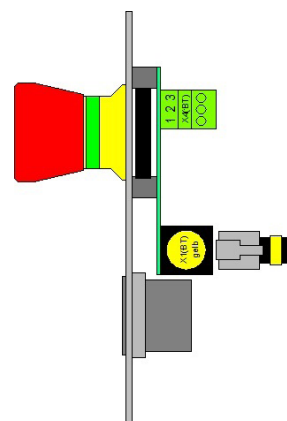
Operating terminal BT3 with yellow socket only

The terminals are available with and without emergency-open key. You are free to combine them as required.

General Instructions Operating Terminals - cont.

Illuminated Indication on the Operating Key (Piezo-Type)
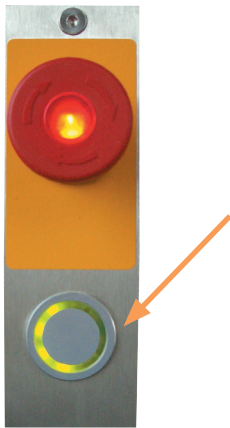
The status of the door (open or locked) is indicated by the illuminated ring around the operating key. The indications have the following meaning:

- **Illuminated ring "green"**: The door is locked properly. It can be unlocked by pressing the piezo-type key and thus be opened.

- **Illuminated ring "red"**: The door is locked properly. At the moment it cannot be opened as it is locked by another open door. The colour of the indication will change to "green" only when the other door will have been closed.

- **No illumination of the ring:** This always happens when there is no feedback from the locking device to the control terminal. *Normal function:* the door is released or open.

Error status:
- The door is open although it is not released.
- The emergency shut-off is activated.
- The system is out of order.
- The feedback contact of the locking device doesn't switch (e.g. the counter plate adheres not completely to the magnet).

Connections to the Operating Terminals
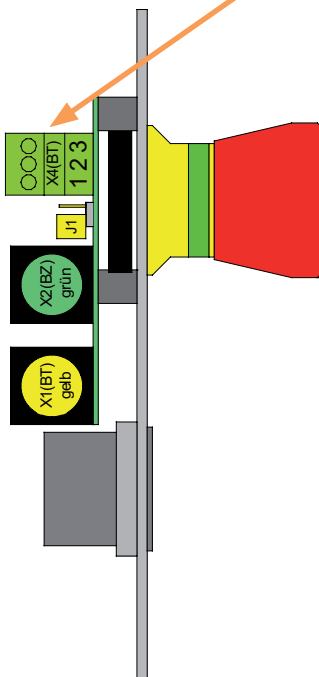
Terminal strip X4

There can be connected large surface switches or access controls to this terminal strip (condition: they have a potential-free contact).

Normal function:
X4/1 - X4/2	jumpered (by default)
X4/2 - X4/3	open

Connection of large surface switch (having equal rights as the piezo-type key):
X4/1 - X4/2	jumpered
X4/1 - X4/3	connection of a large surface switch

Connection of access control

Option 1: The access control assumes the function of the piezo-type key
X4/1 - X4/3	connection of access control

Option 2: The access control releases the piezo-type key which then has to be pressed to unlock the door (under the condition that the ring illumination is green)
X4/1 - X4/2	connection of access control

IMPORTANT: When an access control ist connected, the jumper between X4/1 and X4/2 has to be removed. The cable between terminal and access control may not be longer than 5 meters (see also page BZ029).

General Instructions Operating Terminals - cont.

Emergency-Open Switch

In case of danger the door can be unlocked by pushing the illuminated emergency-open switch even though being locked. After having been pressed the button remains locked in the pushed position.

To reset the interlock control system, the emergency-open switch has to be unlocked by turning it. After a short delay the interlock control system will be working again.

Normally the emergency-open switch unlocks only the respective door (local emergency-open). But it is also possible to install emergency-open switches that, when being pressed, unlock all doors of the interlock system (global emergency-open). Please also see information on page GNAZ01.

Relaying the actuation of an emergency-open switch

To relay when the emergency-open switch on a door of the interlock control system has been actuated, you can wire the system according to the following circuit diagram. However, it is not possible to identify the door where the key has been pressed.

DICTATOR
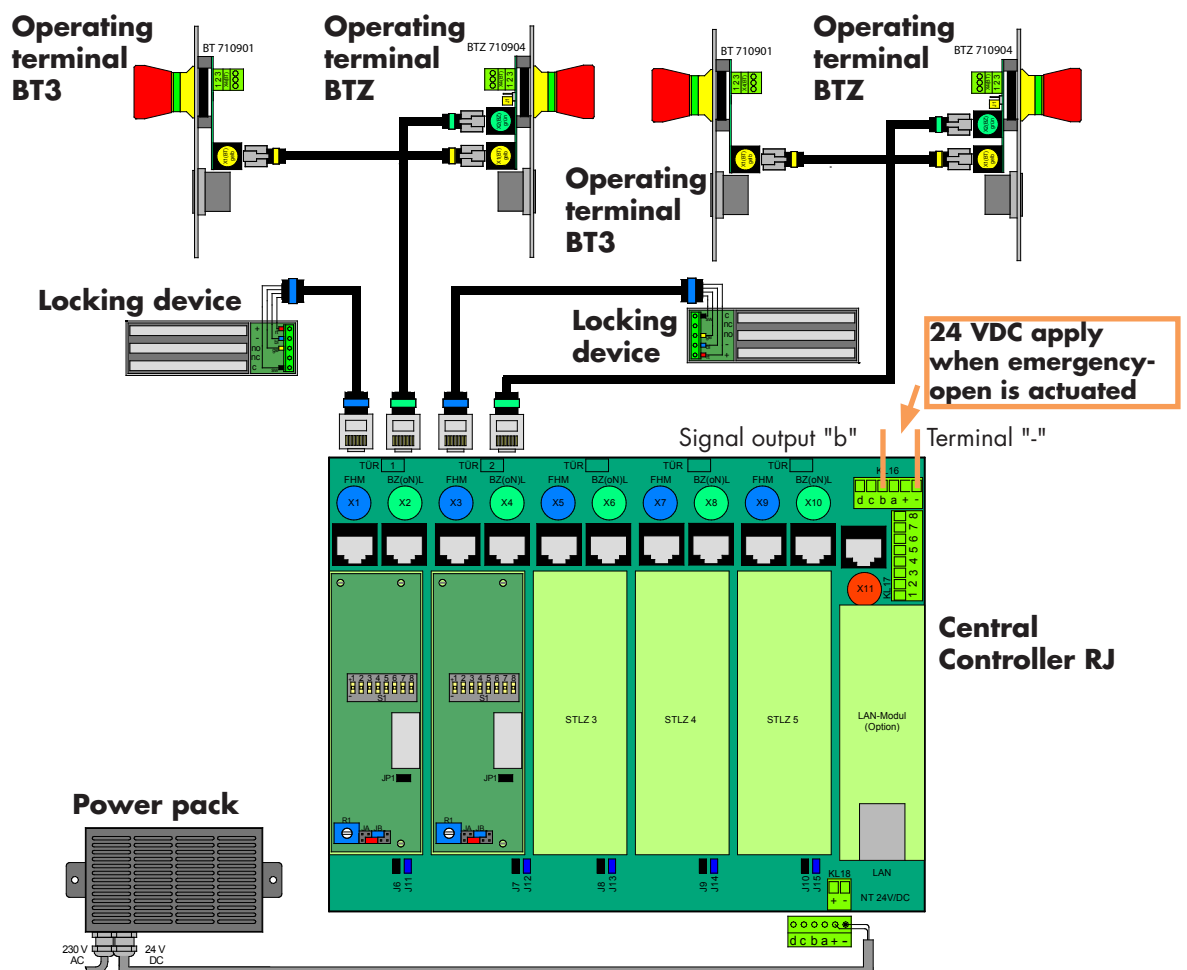
General Instructions Operating Terminal BTZ

Jumper J1 of the Operating Terminal BTZ

Jumper J1
By default the jumper J1 of the operating terminal BTZ is always plugged on 1 pin only and also has to remain in this position.

EXCEPTION: The jumper has to be plugged on both pins when the operating terminal BTZ is used as a **stand-alone terminal**, i.e. there is connected no operating terminal BT3 on the other side of the door (e.g. in materials locks which are charged only from one side).

> Please use a precision mechanic flat nose plier to remove or reposition the jumpers.
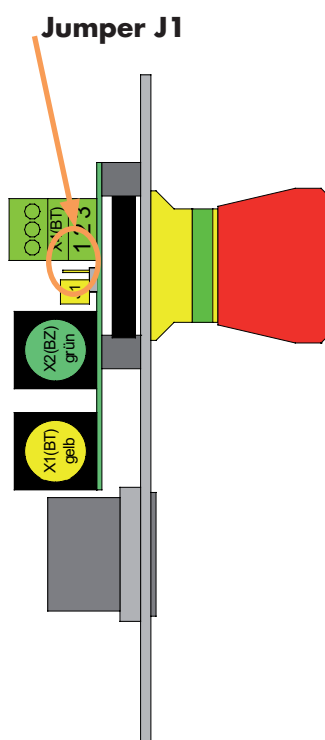
Jumper J1

Jumper J1

Default setting
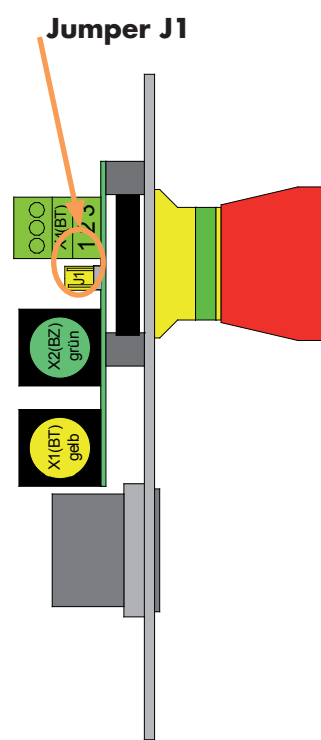
Position of jumper J1 for stand-alone

General Instructions Operating Terminal BT3

Connection Operating Terminal BT3

The operating terminal BT3 is connected by the yellow pluggable flat cable to the operating terminal BTZ. The operating terminal BT3 requires no adjustments.

If no operating terminal BT3 is connected (***stand-alone installation of the operating terminal BTZ***), only the position of the jumper J1 is changed in the operating terminal BTZ (see page BZ022).

Technical Data of the Components

Central Controller RJ

Supply voltage	24 VDC +/-15 %
Power consumption basic configuration for 2 doors	100 mA
Power consumption per additional door	50 mA
Power consumption relay global emergency-open	30 mA
Power consumption LAN module	100 mA
IP rating	IP 20
Operating temperature	-10 °C to +40 °C
Max. length of cable to terminals	15 m

Operating Terminal BTZ

Supply voltage	24 VDC +/-15 %
Power consumption <u>with</u> e.-open <u>without</u> emergency-open	max. 30 mA max. 15 mA
IP rating	IP 20 (operating key IP 65)
Operating key	piezo-type key with red/green illuminated ring
Emergency-open switch	push-to-lock mushroom-type palm-button, illuminated
Emergency-open contact set	1 make contact (NO): 500 mA
Operating temperature	-10 °C to +40 °C

Operating Terminal BT3

Supply voltage	24 VDC +/-15 %
Power consumption <u>with</u> e.-open <u>without</u> emergency-open	max. 30 mA max. 15 mA
IP rating	IP 20 (operating key IP 65)
Operating key	piezo-type key with red/green illuminated ring
Emergency-open switch	push-to-lock mushroom-type palm-button, illuminated
Emergency-open contact set	1 make contact (NO): 500 mA
Operating temperature	-10 °C to +40 °C

Technical Data of the Components - cont.

Power Packs

Voltage	100 - 240 VAC / 46 - 63 Hz
Power consumption max.	0.9 A (version 2.7 A) 1 A (version 5 A)
Output voltage	24 VDC (+/-10 %)
Output current	2.7 A (65 W) respectively 5 A (120 W)
IP rating	IP 30 (only for dry surroundings)
Operating temperature	-10 °C to +50 °C

Time Control Unit

Supply voltage	24 VDC +/-15 %
Power consumption time control unit	max. 20 mA
Power consumption additional display - extension circuit module	max. 2 mA
Power consumption time control unit - additional display	max. 10 mA
IP rating	IP 20
Operating temperature	-10 °C to +40 °C
Periods	16 different periods adjustable 0, 15, 20, 25, 30, 35, 40, 50, 60, 120, 180, 240, 300, 420, 540, 660 seconds) max. period 2.75 hours
Number of doors to be controlled	6 clean room and max. 6 "black room" doors

Emergency Exit Terminal

Supply voltage	24 VDC +/-15 %
Power consumption	max. 80 mA
IP rating	IP 20
Emergency-open switch	push-to-lock mushroom-type palm-button, illuminated
Emergency-open contact set	2 break contacts (NC): 2.8 A
Input hazard alert system	break contact
Output signaller (e.g. horn)	24 VDC, max. 1.4 A
Operating temperature	-10 °C to +40 °C

DICTATOR

EU Declaration of Conformity

This Declaration of Conformity is only valid as complete appendix, including power packs (part nos. 710762, 710763, 710780, 710718, 710782, 710783)

Manufacturer   **DICTATOR Technik GmbH**
Gutenbergstraße 9
86356 Neusäß, GERMANY

Product Description

Control and operating terminals

710759 Control terminal ST1
710761 Control terminal ST3
710764 Control terminal ST 1 ZK
710767 Control terminal ST 1 oN
710768 Control terminal ST 1 SA
710775 Control terminal ST 1 SA oN
710800 (I) Control terminal ST P
710801 (I) Operating terminal BT P
710802 (I) Control terminal SToN P
710803 (I) Control terminal BToN P
710825 Control terminal ST U
710826 Operating terminal BT U
710827 Control terminal SToN U
710900 (I) Control terminal ST3 Plus
710901 (I) Operating terminal BT3
710902 (I) Control terminal ST3oN Plus
710903 (I) Operating terminal BT3oN
710904 Operating terminal BTZ for central controller
710905 Operating terminal BTZoN for central controller
710910 (I)) Control terminal ST3 Basic
710912 (I)) Control terminal ST3oN Basic
710833 Emergency-open terminal FT P
710860 Emergency-open terminal FT3

710980 Control terminal ST3 T RFID
710981 Operating terminal BT3 T RFID
710982 Control terminal ST3 ToN RFID
710983 Operating terminal BT3 ToN RFID
710984 Operating terminal BTZ T RFID
710985 Operating terminal BTZ ToN RFID
710986 Control terminal ST3 T Plus RFID
710987 Control terminal ST3 ToN Plus RFID

Distribution boxes, central controllers, accessories

710807 Distribution box VK1
710821 Distribution box VK2
710922 Distribution box VK3
710920 Central controller RJ
710924 Central controller SK
710769 Time control unit ZS
710805 (I) Time control unit ZS
710806 (I) Secondary display ZA
710808 Extension module ZE

DICTATOR

The provider herewith declares that the mentioned components of the interlock control system comply with the listed EU directives and the relevant Community harmonization legislation – including their changes valid at the date of this declaration.

A) <u>EU directives</u>

- 2014/35/EU low voltage directive
- 2014/30/EU EMC directive
- 2011/65/EU RoHS directive

B) <u>The following harmonized European standards have been applied:</u>

- **EN 60950-1:2006+A11+A1+A12:** : Information technology equipment - Safety - part 1: General requirements
- **DIN EN 61000-6-2:2006-03:** Electromagnetic compatibility (EMC) - part 6-2: Generic standards – Immunity to interference for industrial sectors (IEC 61000-6-2:2005)
- **DIN EN 61000-6-4:2011-09:** Electromagnetic compatibility (EMC) - part 6-4: Generic standards – Transient emissions for industrial sectors (IEC 61000-6-4:2006 + A1:2010)

C) <u>The following other standards and directives have been applied:</u>

- **VDE 0701:** Maintenance, changing and testing of electrical devices

Addendum to the EMC directive 2014/30/EU:
When there are effects of bursts, for improving the HF shielding we recommend to use a mains filter (type: Schaffner FN 2070 6 06 or similar) in the mains cable of the power pack or to earth the casing of the power pack also externally.

Authorized person for documents:
Stephan Lang, Gutenbergstraße 9, 86356 Neusäß

Neusäß, 9 May 2016

Dipl.-Kfm. Karen Stech
Managing Director

Hausanschrift	Gutenbergstr. 9 • D-86356 Neusäß	Sitz Neusäß - HRB Augsburg 10279	
Telefon	++ 49 821 2 46 73-0	Geschäftsführer :	Dipl.-Kfm. Karen Stech
Telefax	++ 49 821 2 46 73 90		Markus Kalchgruber
Internet	http://www.dictator.de		
E – Mail	info@dictator.de	Seite 2/2	

Troubleshooting

Before opening covers or disassembling components of the interlock control system these have to be separated from the power line, i.e. the power packs have to be isolated electrically!

The power supply has also to be interrupted before all adjusting and connection works on components of the system, i.e. the power pack(s) have to be isolated electrically.

Ring on the terminals is not illuminated.

IMPORTANT: This is not always a fault. Normally the ring is not illuminated whenever there is no feedback from the locking device to the respective control board, i.e. the door is released or open.

But if this state does not apply, this may indicate an error.

Error status:
- The door is open although it is not released.
- The emergency-open is pressed.
- The system is out of order.
- The feedback contact of the locking device does not switch (e.g. the counter plate rests not completely on the magnet).

The operating terminal BT3 is connected but doesn't work.

The operating terminal BT3 has been connected with the yellow flat cable to the operating terminal BTZ, but when pressing the piezo-type key or the emergency-open switch nothing at all happens: Check the position of jumper J1 on the corresponding operating terminal BTZ. The jumper has to be placed on **one** pin only, not on both (see page BZ022).

A door is equipped with an operating terminal BTZ only (no operating terminal BT3), but it doesn't work.

If an operating terminal BTZ is used as stand-alone terminal, i.e. there is no operating terminal BT3 on the other side of the door, the jumper J1 of the operating terminal BTZ has to be placed on **both** pins (see page BZ022).

Piezo-type key is illuminated but without function.

If the piezo-type key is illuminated but pressing doesn't release the door: Check the terminal strip X4 of the operating terminal. In this terminal strip there has to be placed a jumper between X4/1 and X4/2.

No 24 VDC power supply

Please check whether the connection cable of the power pack has been plugged in the socket of the central controller RJ with the part of the connector marked +/-.

Troubleshooting - continuation

The door unlocks on its own - without the piezo-type key having been pressed.

- Check whether surges can cause parasitic coupling on the power pack or by induction directly on the connection cables to the terminals. If necessary, install a mains filter (type: Schaffner FN 2070-6-06 or similar) in the mains cable of the power pack or in addition externally earth the casing of the power pack. Or equip cables which are exposed to particularly strong induction voltage with a clamp-on ferrite.

The locking devices don't work properly.

- Check whether the locking devices are suitable for 24 VDC or whether the jumper of the bar magnets has been placed on 24 VDC.
- Check whether the counter plate of the bar magnets lies completely and even on the bar magnet - without any mechanical tensions (check possibly with a separate counter plate). If necessary, correct the mounting of the bar magnet and the counter plate.
- Check with electric strikes whether the door latch functions properly (with too tight seals it may happen that the latch cannot engage correctly).
- Check the feedback contact (there has always to be connected the make contact NO). With bar magnets with Hall sensor the feedback contact can be checked only under tension. Electric strikes should be switched mechanically and also be checked with a measuring instrument. The functioning of a separate magnetic contact should be controlled with a permanent magnet.

The interlock control system doesn't work at all or not reliably.

- Check the power pack: Fuse okay, is the output power supply sufficient for the connected devices?
ATTENTION: Before any works, always isolate the devices electrically!!!
- Are the jumpers in the central controller RJ placed correctly?
- Check the secure and firm connection of the cables to the locking devices.
- Measure if there apply 24 VDC (power pack, central controller RJ, locking devices).

When closing the door at the end of the release time, the locking device is locked shortly and then immediately released again.

Check whether in the terminal strip X4 of one of the terminals (control/operating terminal) of this door an access control or a large surface switch is connected. In this case the connection cable provided on site may not be longer than 5 meters.

In case it is longer than 5 meters, the leads connected in terminals 1 and 3 (terminal strip X4) have to be guided apart from each other or a relay has to be interconnected (at a maximum distance of 5 meters cable length to the terminal strip X4).

Important Advice for RFID Terminals

Important Advice

The order in which the transponder chips are programmed, determines their future function (see below "Transponder Functions")

Before starting the programming, all transponders are the same. You also can use transponders which are available on site. They only have to meet the below listed technical requirements.

The order of programming determines the function of the transponder. Therefore they also should have different colours to be always able to tell them apart. **There is no other possibility of distinguishing them than by the colour or another external marking!**

Transponder Functions

1) Necessary administration transponders

All three transponders described in the following are mandatory. In case one is missing, it is not possible to put the system into operation!!!

> **IMPORTANT**
> It is recommended to use the same delete, admin and general transponder in one interlock system with RFID terminals!

- **Delete transponder** (recommended colour: **red**)
  This deletes all programming effected in a terminal and restores it to its delivery status.
- **Admin transponder** (recommended colour: **yellow**)
  By means of this transponder you can program or delete the user transponders per terminal.
- **General transponder** (recommended colour: **green**)
  This functions with all RFID terminals in the interlock control system.

2) User transponders (max. 99 pieces per terminal)
(Recommended colour: **black**)
User transponders can be programmed individually in every RFID terminal. As a user transponder you also can use e.g. transponders which are already used in the building for other doors than those in the interlock system.
Important: Mark the user transponders accordingly and document the programming!!!

Technical Data
RFID Transponder Chips

- Type EM 4100, EM 4102 or EM 4200
- 125 kHz
- 64 Bit
- Optimum working distance approx. 1 cm

LED Indicators of the RFID Terminal

LED Indicators

In total the RFID terminals feature 3 LED indicators:

a) Standard indication of the door status

LED "**green**": The door is correctly locked. It can be unlocked by holding the user transponder in front of the terminal and then be opened.

LED "**red**": The door is locked. At the moment it is not possible to open it. The indication will change to green as soon as it will be possible to request the opening by a transponder.

Both the red and the green LED are off : This always happens when the control terminal gets no feedback from the locking device.

On this point, see also the basic manual of the interlock control system.
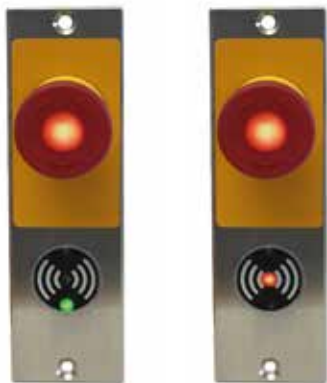
b) LED blue

The blue LED informs about the operating state of the terminal by blinking in different sequences or by a different duration of being on.

Basicly there are three different "operation modes":

- Programming the transponder chips
- Normal operating state
- Error
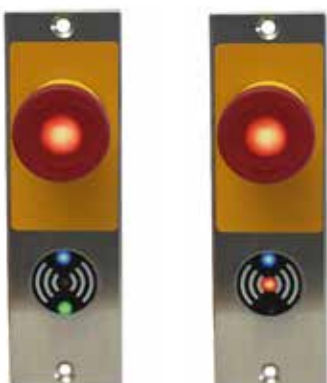
Indication	Meaning
2 sec on, 0.2 sec off	Terminal isn't programmed yet. You have to begin with programming the administration transponders.
Blinking 5 sec	Successful programming of the respective transponder
Blinking 2 sec	Registration of the admin or delete transponder and rejection of not programmed user transponders
2 sec on, 1 sec off	Delete transponder has been programmed, next step is to program the admin transponder
1 sec on, 1 sec off	Admin transponder has been programmed, next step is to program the general transponder.
0.2 sec on, 1 sec off	Normal **operation mode**
On during 10 sec	The user transponder is programmed or deleted by holding it to the terminal during this period.
Blue LED off or permanently on	Terminal not working

Setting Up the RFID Terminals - Programming the Administration Transponders

Step 1

Connect the terminal as described in the basic manual and then switch on its power supply.

The first power supply will cause the terminal to automatically initialize all functionally relevant components.

(If there is an error, the blue LED will be permanently on, the terminal is defective.)

If the test is successful, the terminal will automatically change to the programming mode.

The **blue LED** blinks: **2 sec on, 0.2 sec off**

Step 2 - Programming the Administration Transponders

Blue LED blinks: **2 sec on, 0.2 sec off**

1. Programming - delete transponder
   Now hold the delete transponder to the terminal. When the programming has been successful:
   the **blue LED flashes quickly**: **5 sec**

Subsequently the system changes automatically to the 2nd programming step, indicated by:
the **blue LED** blinks: **2 sec on, 1 sec off**

2. Programming - admin transponder
   Now hold the admin transponder to the terminal. When the programming has been successful:
   the **blue LED flashes quickly**: **5 sec**

Subsequently the system changes automatically to the 3rd programming step, indicated by:
the **blue LED** blinks: **1 sec on, 1 sec off**

3. Programming - general transponder
   Now hold the general transponder to the terminal. When the programming has been successful:
   the **blue LED flashes quickly**: **5 sec**

Subsequently the system changes automatically to the **operating mode**, indicated by:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

Now you can program the user transponders for the respective terminal.

See also the overview on page RFID06.

IMPORTANT

During programming it is **MANDATORY to observe** the **order**. In case there has happened e.g. a mistake in colours of the administration transponders, the programming can be reset by means of the delete transponder, see page 05, and the programming, including the delete transponder, has to be started again.

The described steps have to be effected on all RFID terminals of the interlock control system!!!

DICTATOR

Programming/Deleting the User Transponders

Note

User transponders can be programmed or deleted at any time, also later!

Programming the User Transponders

Check whether the terminal is in the operating mode:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

To begin with now hold the **admin transponder** to the terminal. When the registration has been successful:
the **blue LED flashes quickly: 2 sec**

Subsequently the system changes automatically to the programming mode for the user transponders, indicated by:
the **blue LED is on: 10 sec**

Please hold one of the **user transponders during this period** to the terminal. When the programming has been successful, the terminal will again change to the operating mode:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

If several user transponders have to be programmed, this procedure is repeated: always start with holding the admin transponder to the terminal and then when the blue LED is on for 10 seconds, hold the next user transponder to the terminal for programming.

See also the overview on page RFID06.

Deleting a User Transponder

Check whether the terminal is in the operating mode:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

Now begin with holding the **admin transponder** to the terminal. When the registration has been successful:
the **blue LED flashes quickly: 2 sec**

Subsequently the system changes automatically to the programming/ deleting mode for the user transponders, indicated by:
the **blue LED is on: 10 sec**

Please hold the (programmed) **user transponder**, which you want to delete, during this period to the terminal. When the deleting has been successful, the terminal will again change to the operating mode:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

See also the overview on page RFID06.

Other Programming Advice

Resetting a Terminal to the Delivery Status

Check whether the terminal is in the operating mode:
the **blue LED** blinks: **0.2 sec on, 1 sec off**

Now hold the **delete transponder** to the terminal. The blue LED blinks for confirming the successful deletion.
The **blue LED** blinks: **2 sec**

After this the blue LED will again signal the delivery status:
the **blue LED** blinks: **2 sec on, 0.2 sec off**

Now you have AGAIN to programm all the transponders, including the delete transponder, in this terminal, see page RFID03 "1. Programming".

Other Advice

During all programming or deleting actions the door opener is shortly activated, i.e. the door is temporarily unlocked!

The administration transponders (**delete**, **admin** and **general** **transponder**) have always to be kept in a safe place!

Overview of Programming the Transponders

Order	Action of Operator	Reaction of Terminal
1	Connection to the power supply	**Blue Led**: 2 sec on, 0.2 s off
2	**Delete transponder** (red)	**Blue Led**: flashing quickly 5 s => 2 sec on, 1 s off
3	**Admin transponder** (yellow)	**Blue Led**: flashing quickly 5 s => 1 sec on, 1 s off
4	**General transponder** (green)	**Blue Led**: flashing quickly 5 s => 0.2 sec on, 1 s off
5	**Operating mode**	**Blue Led**: 0.2 sec on, 1 s off
6	**Admin transponder** (yellow)	**Blue Led**: flashing quickly 5 s => on for 10 s
7	User transponder 1	**Blue Led**: flashing quickly 5 s => 0.2 sec on, 1 s off ADVICE: The user transponder has to be held to the terminal when the LED is on for 10 seconds.
8	**Operating mode**	**Blue Led**: 0.2 sec on, 1 s off

Note:
Please always wait until the terminal has processed the programming!
Deleting a user transponder is effected in the analogue way (order numbers 6/7).

Connection of the Locking Devices

Bar Magnet

All locking devices are connected with the connection cable "blue". There are always connected the feedback contact (NO and C) and the 24 VDC power supply (ATTENTION: If necessary, put the jumper of the magnet in the position for 24 VDC!).
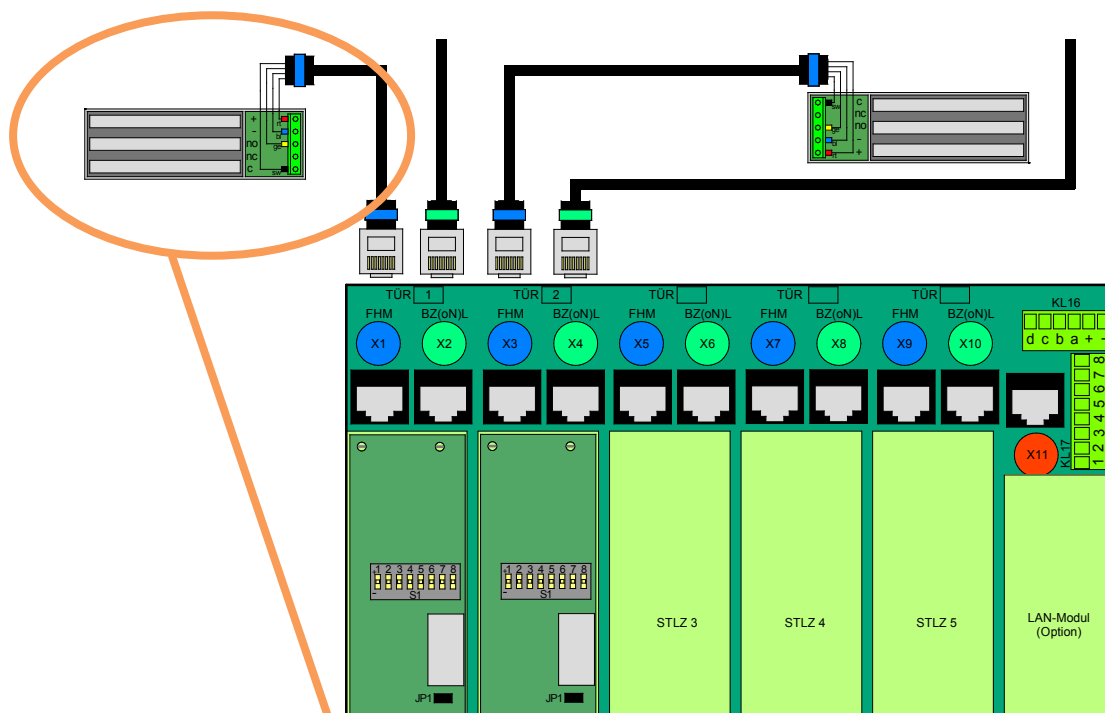
12 V DC
24 V DC

Connection cable "blue" end with free leads

Connection of the bar magnet FHM (always with feedback contact!!) with the connection cable "blue"

Black lead:	**C**
Yellow lead:	**NO**
Blue lead:	**-**
Red lead:	**+**

Abbreviations:

rt	red
bl	blue
ge	yellow
sw	black

DICTATOR

Connection of the Locking Devices - cont.

Double Bar Magnets FH300-2K and FH550-2K

All locking devices are connected with the connection cable "blue".

In the case of the double bar magnets FH300-2K and FH550-2K the 24VDC power supply is parallel connected to the terminals + and - of both magnets.

The feedback contact is connected in series to both magnets. For this purpose an extra line (0.75 mm²) has to be provided on site.

(ATTENTION: If necessary, put the jumper of the magnet in the position for 24 VDC!).

12 V DC

24 V DC
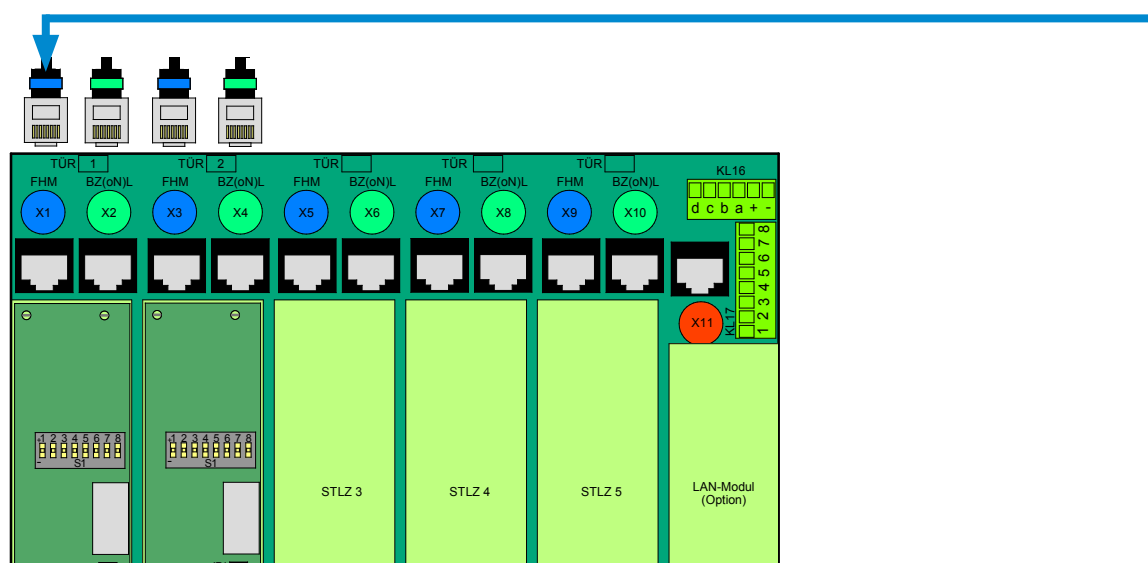
Magnet 1

Magnet 2

Connection cable "blue", end with free leads
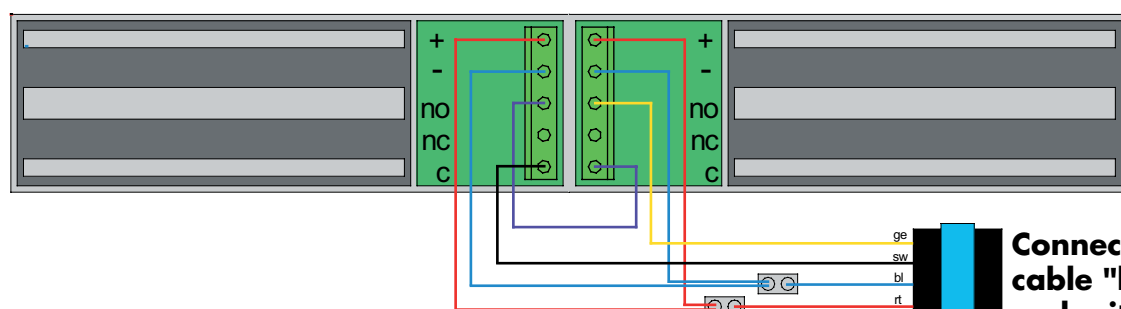
Connection of the bar magnet FHM (always with feedback contact!!) by means of the connection cable "blue"

Black lead:	**C** (magnet 1)
Yellow lead:	**NO** (magnet 2)
Blue lead:	**-**
Red lead:	**+**
Violet lead:	**from NO** (magnet 1)
	to C (magnet 2)
	(0.75 mm² cable provided on site)

Abbreviations:

rt	red
bl	blue
ge	yellow
sw	black

Connection of the Locking Devices - cont.

Electric Strike Roureg 3 (Part no. 041780)

All locking devices are connected with the connection cable "blue".

With the electric strike Roureg the 24 VDC power supply is connected to the terminals 1 and 2 and the feedback contact to the terminals 5 (NO) and 4 (C).

Central controller RJ

Connection cable blue, end with free leads

Roureg 3

1	+	} **Inductor 24 VDC**
2	-	
3	nc	}
4	c	} **Feedback contact**
5	no	

Abbreviations:

rt	red
bl	blue
ge	yellow
sw	black

DICTATOR
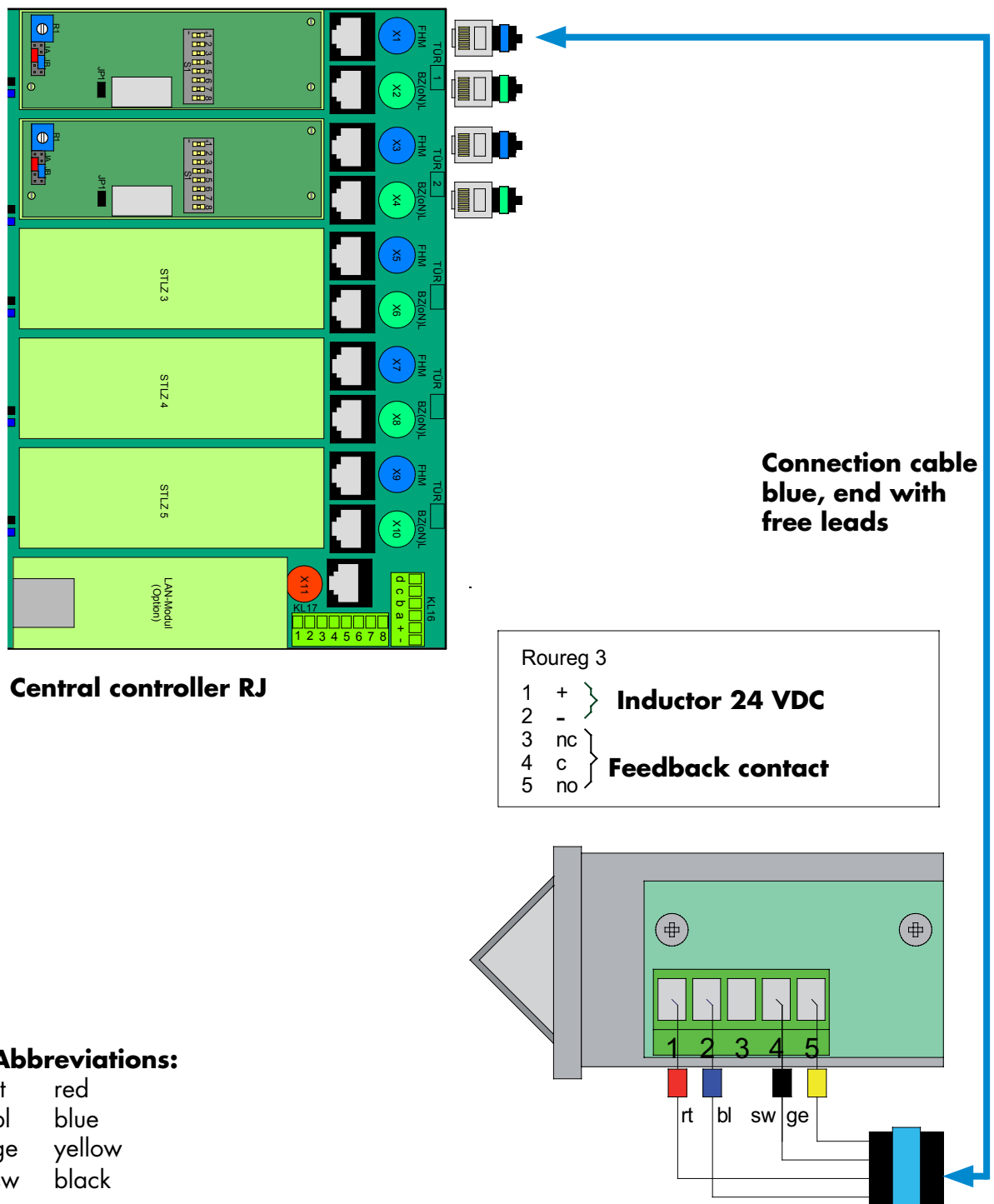
Connection of the Locking Devices - cont.

Electric Strike for Escape Routes (Part no. AA332.80-F91)

All locking devices are connected with the connection cable "blue".

With the electric strike for escape routes the 24 VDC power supply is connected to the terminals 1 and 2 and the feedback contact to the terminals 4 (NO) and 5 (C).

Central controller RJ
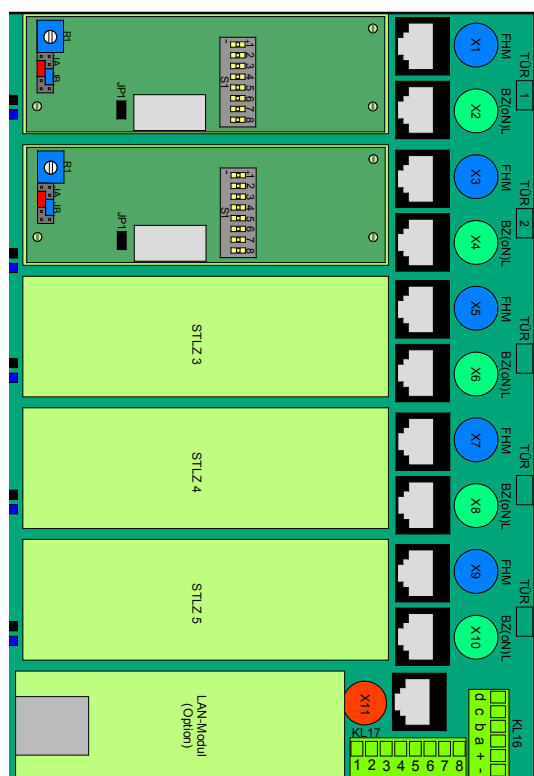
Connection cable blue, end with free leads

1	+	} **Inductor 24 VDC**
2	–	
3		**Counter plate feedback contact**
4	no	} **Feedback contact**
5	c	
6	nc	

Abbreviations:

rt	red
bl	blue
ge	yellow
sw	black
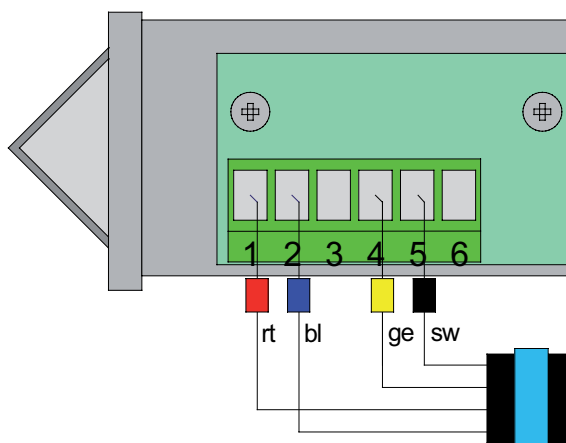
DICTATOR

Connection of the Locking Devices - cont.

Electric Strike for Fire Protection Doors in Escape Routes (Part nos. AA331U80-F94 and -F95)

All locking devices are connected with the connection cable "blue".

With the electric strike for fire protection doors in escape routes the 24 VDC power supply is connected to the terminals 1 and 2 and the feedback contact to the terminals 4 (C) and 5 (NO). The terminals for the feedback contact of the counter plate are not used. The default jumper is not removed.
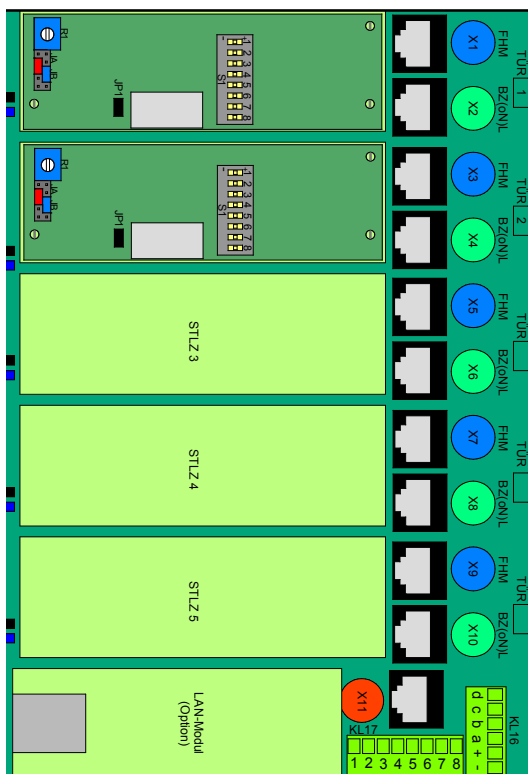
Central controller RJ
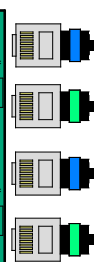
Connection cable blue, end with free leads

```
331U80F RR AKRR

1   +    Inductor 24 VDC  ┐
2   -                     │  Jumper*
3   nc   Feedback         │
4   c    contact          │
5   no                    │
6   nc   Counter plate    │
7   c    feedback contact │
8   no                    ┘
```

*Jumper needs not to be removed.

Jumper

Abbreviations:

rt	red
bl	blue
ge	yellow
sw	black

DICTATOR
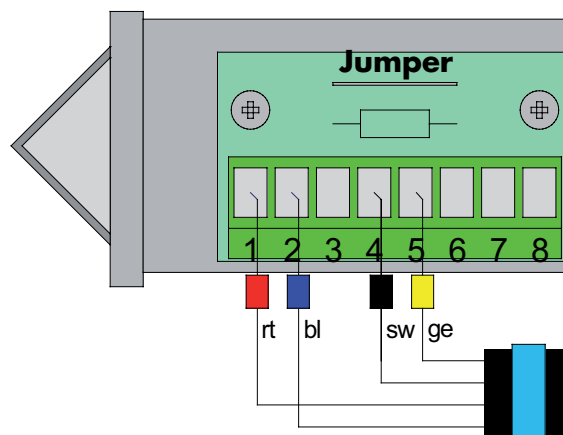
Connection of the Locking Devices - cont.

Electric Strike for Swing Doors (Type 351URR)

All locking devices are connected with the connection cable "blue".

With the electric strike for swing doors is the 24 VDC power supply connected to the terminals 2 and 4 and the feedback contact to the terminals 7 (C) and 8 (NO).

The default jumper between the terminals 1/2 and the feedback contact of the counter plate is cut through or removed. Instead there has to be placed a jumper between the terminals 1 and 5.
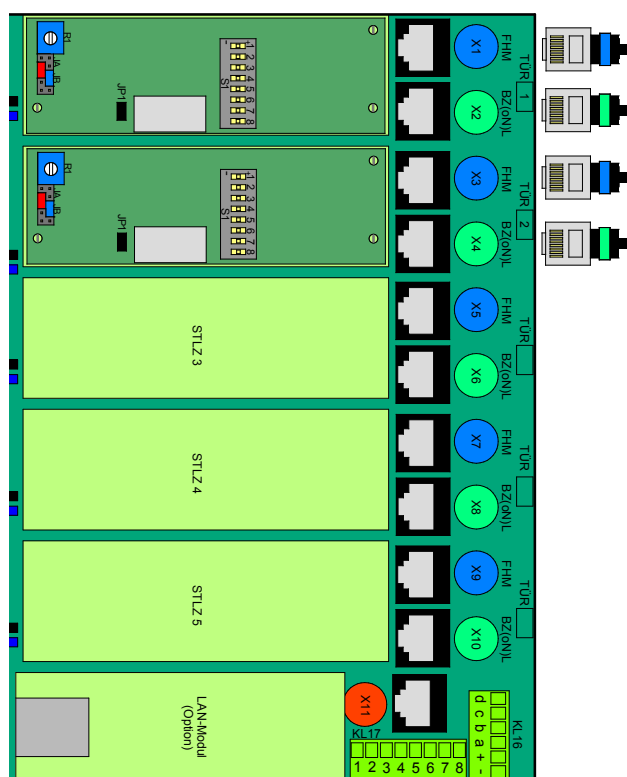
Central controller RJ

Connection cable blue, end with free leads

Existing jumper to be cut through.
New jumper to be placed from contact 1 to contact 5.

351U RR

1	+	**Inductor 24 VDC**
2	–	
3	nc	**Feedback contact**
4	c	
5	no	
6	nc	**Counter plate feedback contact**
7	c	
8	no	

Jumper to be cut through

Jumper to be placed

1 2 3 4 5 6 7 8

bl   rt   sw ge
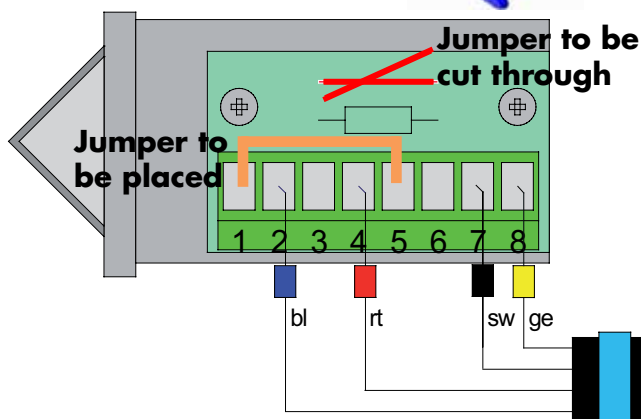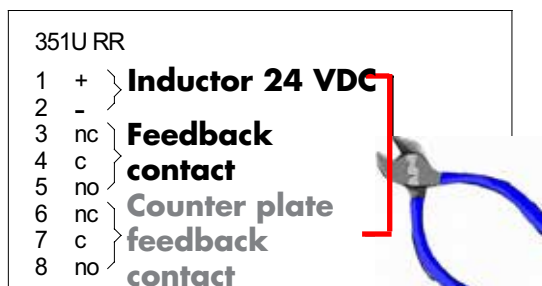
Abbreviations:

rt   red
bl   blue
ge   yellow
sw   black

Connection of Doors in Escape Routes

Doors in Escape Routes Being Part of an Interlock System

If the interlock system includes doors which also form part of defined escape routes and have to be equipped according to the EltVTR (German standard for electrical locking systems on emergency exits), there has to be installed together with an operating terminal BTZ without emergency-open the emergency exit terminal which has been approved according to the EltVTR (**certificate P-3250/08**, TÜV Thüringen/Germany).

Functioning

Pressing the emergency-open switch of the emergency exit terminal releases the door. At the same time there can be triggered via the terminal strip K3 an extern signaller for optical and/or acoustic signals.

If necessary, the emergency-open switch can also be controlled by a separate hazard alert system. This is also adjusted in the terminal strip K3.

IMPORTANT: In this case there has to be choosen the global emergency-open for the interlock system (see page GNAZ01).

Indications of the emergency exit terminal:
- red: Door is electrically locked.
- green: Door is released (emergency-open had been pressed).
          (This signal can also be transmitted to a separate signaller.)

Locking again
After having released the door in an emergency, the door has to be locked again by a separate control element directly beside the door, e.g. the loose-key switch with stainless steel front plate (AISI 304), part no. 710960.

IMPORTANT:
Together with the emergency exit terminal there may be used approved locking devices only. In case of need, please contact us!

Mounting Instructions

Height of installation of the emergency exit terminal: between 850 and 1200 mm above the floor.

Marking the emergency key: Sign according to DIN 4844-2 which points to the emergency switch.

The **control element to relock** has to be directly beside the emergency exit terminal.

For the optional connections in terminal strip K3 you have to provide the **cables yourself**.

Connection of Doors in Escape Routes - cont.
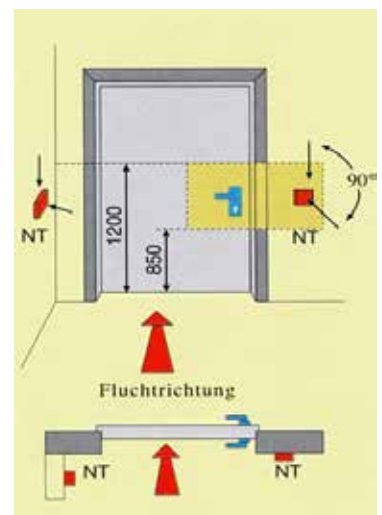
Connection of the Emergency Exit Terminal

Operating terminal BTZ without emergency-open switch

BTZoN 710905

Locking device

c
nc
no
-
+

ge sw

K1 1
    2
K2 1
    2

rt
bl

K3 1 -24V
    2 +24V
    3 int. +24V
    4 Me. Not-Aus
    5 GMA
    6 -24V GMA
    7 - 24V
    8 Reset

e.g. signaller*

Jumper when not used

e.g. key switch

Emergency exit terminal

Central controller RJ

TÜR 1
FHM BZ(oN)L   FHM BZ(oN)L   FHM BZ(oN)L   FHM BZ(oN)L   FHM BZ(oN)L   KL16
X1   X2   X3   X4   X5   X6   X7   X8   X9   X10   d c b a + -

X11

S1 12345678

STLZ 2   STLZ 3   STLZ 4   STLZ 5   LAN-Modul (Option)

JP1

R1

J6   J7   J8   J9   J10   KL18   LAN
J11 J12 J13 J14 J15   NT 24V/DC

d c b a + -

Power pack

230 V AC   24 V DC

Connection cable to the locking device - blue marking

Connection cable to operating terminal BTZ - green marking

Connection cable operating elements BZT/BT3 - yellow marking

Connection cable power pack/ central controller RJ

Cable to be provided by customer, 2x0.75 mm²

Explanations regarding the possibilities of connection:
- Signaller*: power consumption when fed by the emergency exit terminal max. 1.4 A (when siren is activated)
- Key switch: There has to be used a key switch with impulse make contact (NO).

Connection of the Time Control Unit with Indication

The time control unit allows to set a time. Only when this adjustable time has run out the access doors (max. 6 clean room doors) are released. This depends on the closed corresponding "black room" doors (max. 6 pieces).

The time control unit is always connected in one central controller RJ only, even if two central controllers RJ are used in the system.

The indication shows the time in a countdown from 9 to 0 in approximately equal time segments of the total time.

Locking device door 1 (clean room)

Locking device door 2 (black room)

Locking device door 3 (black room)

Time control unit

Door 1 (clean room)

Central controller RJ

Power pack

DICTATOR

Connection of the Time Control Unit with Indication - cont.
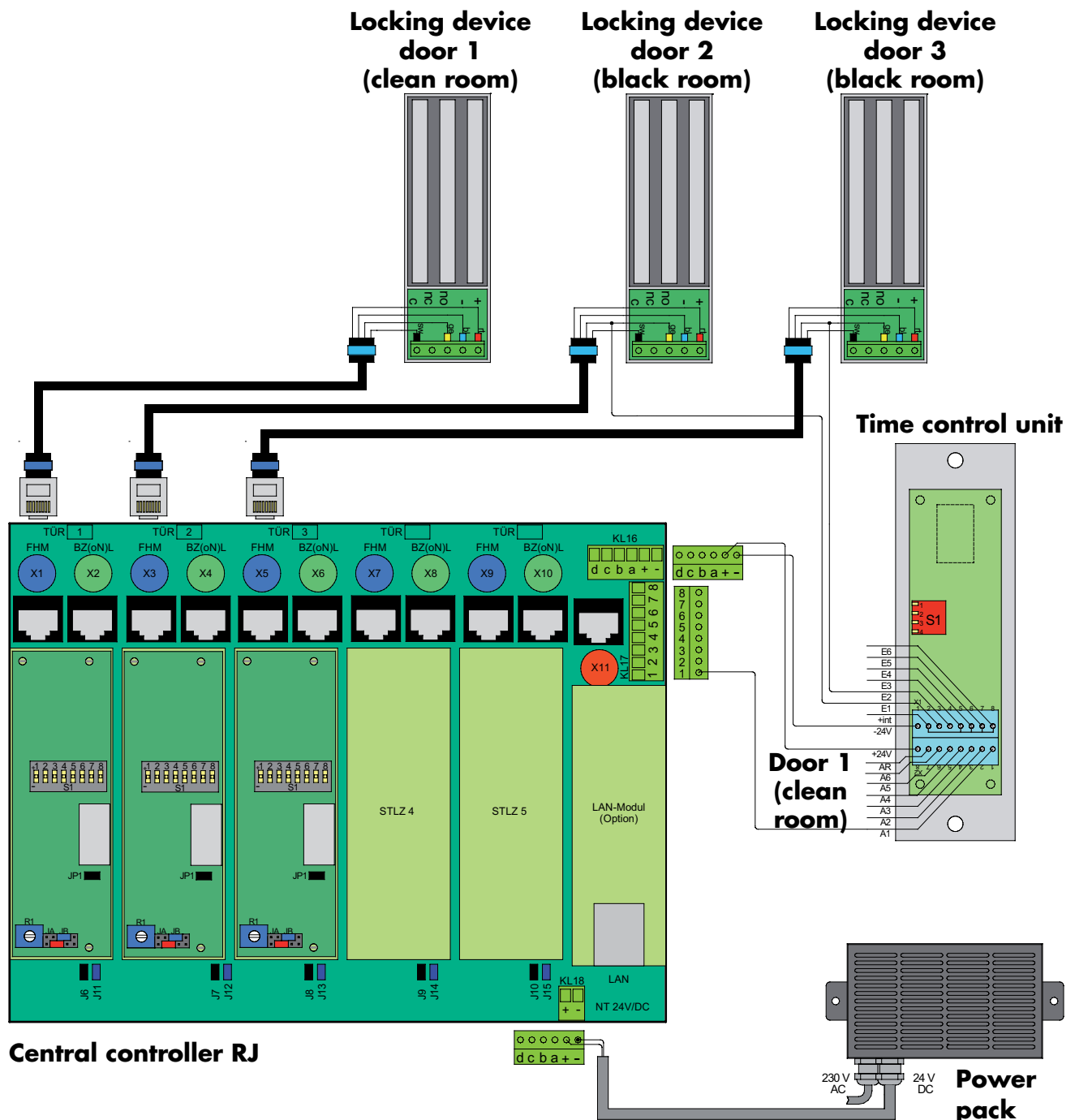
Example on the Previous Page

When door 2 or door 3 (black room doors) are released or opened door 1 (clean room door) is locked.

When both black room doors are closed the time control unit starts. If during this time one of the black room doors is opened, the countdown starts again. Only when the adjusted time has run out door 1 (clean room door) is released - e.g. to achieve a certain air quality/temperature in the clean room.

Connection of Black Room Doors - Terminal Strip X1

Doors defined as black room doors are always connected to the entrances E1 - E6. By default all entrances E1 - E6 with X1 terminal 2 are connected by a jumper. At the used entrances this jumper has to be cut through. At all not used entrances, however, the jumper to the X1 terminal 2 ("+int") has to remain as the time control unit only starts when all black room doors or entrances are closed.

Connection of Clean Room Door - Terminal Strip X2

The clean room door(s) depending on the black room doors is/are connected to the terminals A1 - A6 of the X2 terminal strip. Not needed exits remain free!

The AR exit can be used to control an additional 24 V relay (max. 50 mA). It switches to GND.

Adjusting the Time

By default the following 15 times are programmed in the EEPROM. They are adjusted by DIP switch S1:
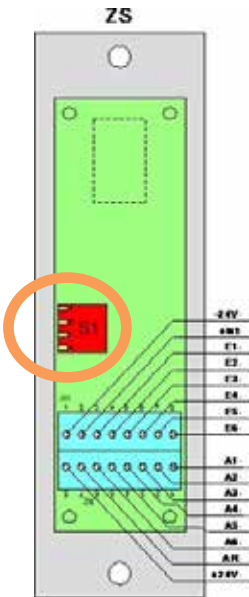
Position	1	2	3	4	Time	
	off	off	off	off	15s	(default setting)
	on	off	off	off	20s	
	off	**on**	off	off	25s	
	on	**on**	off	off	30s	
	off	off	**on**	off	35s	
	on	off	**on**	off	40s	
	off	**on**	**on**	off	50s	
	on	**on**	**on**	off	60s	
	off	off	off	**on**	120s	
	on	off	off	**on**	180s	
	off	**on**	off	**on**	240s	
	on	**on**	off	**on**	300s	
	off	off	**on**	**on**	420s	
	on	off	**on**	**on**	540s	
	off	**on**	**on**	**on**	660s	
	on	**on**	**on**	**on**	0s	(time control not working, LED indicator "n"**)**

Connection of Door Operator(s)

General Notes

If there is integrated a door operator in the interlock control system, the emergency-open function for the door operator has to be realized by a separate switch which will interrupt the complete power supply (230 VAC) of the door operator!

The type of terminals to be used are those <u>without</u> emergency-open switch.

To connect the door operator there is interconnected a separate coupling relay (part no. 710945) between control board in the central controller RJ and door operator. When there is triggered an opening command a contact closes in the coupling relay. The coupling relay and the electric strike are connected by the connection cable blue to the corresponding socket X1, X3, X5, X7 or X9 in the central controller RJ.

The cables to the electric strike and the coupling relay have to be provided on site.

Requirements the Door Operator Has to Meet

- The door operator offers an automatic closing (the terminal of the interlock control system only gives an opening pulse) or it has a separate control device for a closing command.
- The door operator should have a signal outpout "door closed" (NO) => connection of the yellow and black lead of the blue connection cable.

If the door operator doesn't have a feedback contact, the yellow and black lead are connected either to the feedback contact of the door locking device or of a separate feedback contact (door closed - NO) as shown in the wiring diagram on the next page.

Adjusting the Control Board in the Central Controller RJ (see also the basic manual)
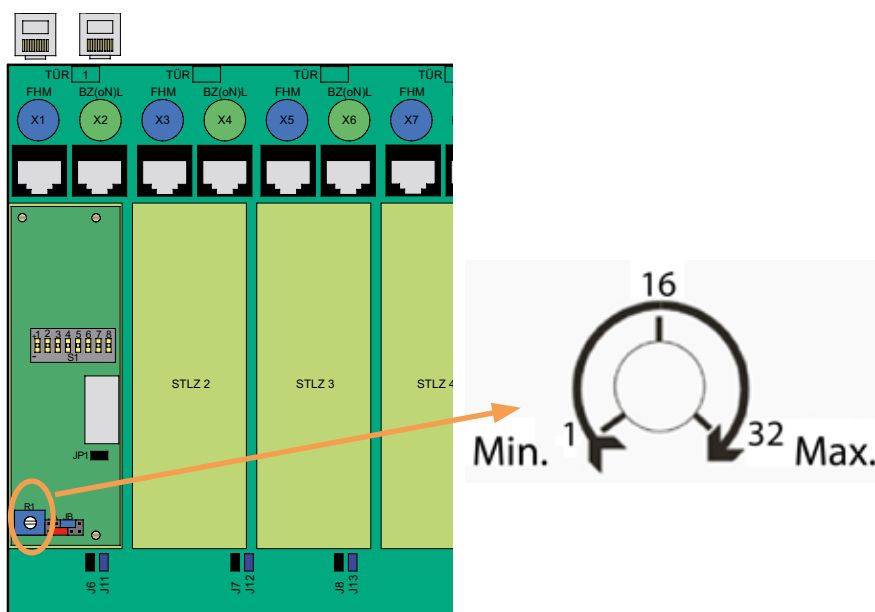
Adjust the time with the potentiometer R1 to the shortest period (minutes).

DICTATOR

Connection of Door Operator(s) - cont.

Wiring Diagram for Door Operator with Separate Electric Strike

Operating terminal BTZ <u>without</u> emergency-open

BTZ 710905

Connection cable to operating terminal BT3

Electric strike

Door operator

Connection electric strike

AKI = interior release contact
AKA = exterior release contact

Coupling relay

Power pack

TÜR 1
FHM BZ(oN)L
X1 X2

TÜR
FHM BZ(oN)L
X3 X4

TÜR
FHM BZ(oN)L
X5 X6

TÜR
FHM BZ(oN)L
X7 X8

TÜR
FHM BZ(oN)L
X9 X10

KL16
d c b a + -

X11

STLZ 2   STLZ 3   STLZ 4   STLZ 5

LAN-Modul (Option)

J6 J11   J7 J12   J8 J13   J9 J14   J10 J15

KL18   LAN
+ -   NT 24V/DC

230 V AC   24 V DC

d c b a + -

■■■■ **Cable to be provided on site**

Global Emergency-Open

To establish the global emergency-open function (when pressing the emergency-open switch on one door all doors of the interlock system are released) you have to retrofit the pluggable additional relay, part no. 710953. It is simply plugged in the provided socket (see below!).

Besides that you have to remove on all control boards of the central controller RJ the jumper JP1 (respectively plug in on one pin only).

Operating terminal BT3
BT 710901

Operating terminal BTZ
BTZ 710904

Operating terminal BT3
BT 710901

Operating terminal BTZ
BTZ 710904

Locking device

Central controller RJ
(example with 2 control boards for 2 doors)

Remove jumper JP1 (respectively plug it on 1 pin only) - on all control boards of the central controller RJ

STLZ 3 STLZ 4 STLZ 5

LAN-Modul (Option)

Power pack

Socket for **additional relay** (part no. 710921)

230 V AC   24 V DC

Discretion Circuit

In case a room of the interlock system is also used e.g. as changing room a separate (discretion) switch allows to lock the doors to this room during changing. Only when the switch is pressed again, the doors are released. The doors to be locked are defined on the terminal strip KL17. When the discretion switch is activated these defined doors are connected to "-" (minus) (terminal strip KL16) and thus locked.

If there are used two central controllers RJ in the interlock system, this circuit has to be realized in ONE central controller RJ only!

Example

In the above shown wiring diagram the doors 1, 2 and 4 are locked when the discretion switch is activated. Door 3 is not included in the discretion circuit and therefore not locked.

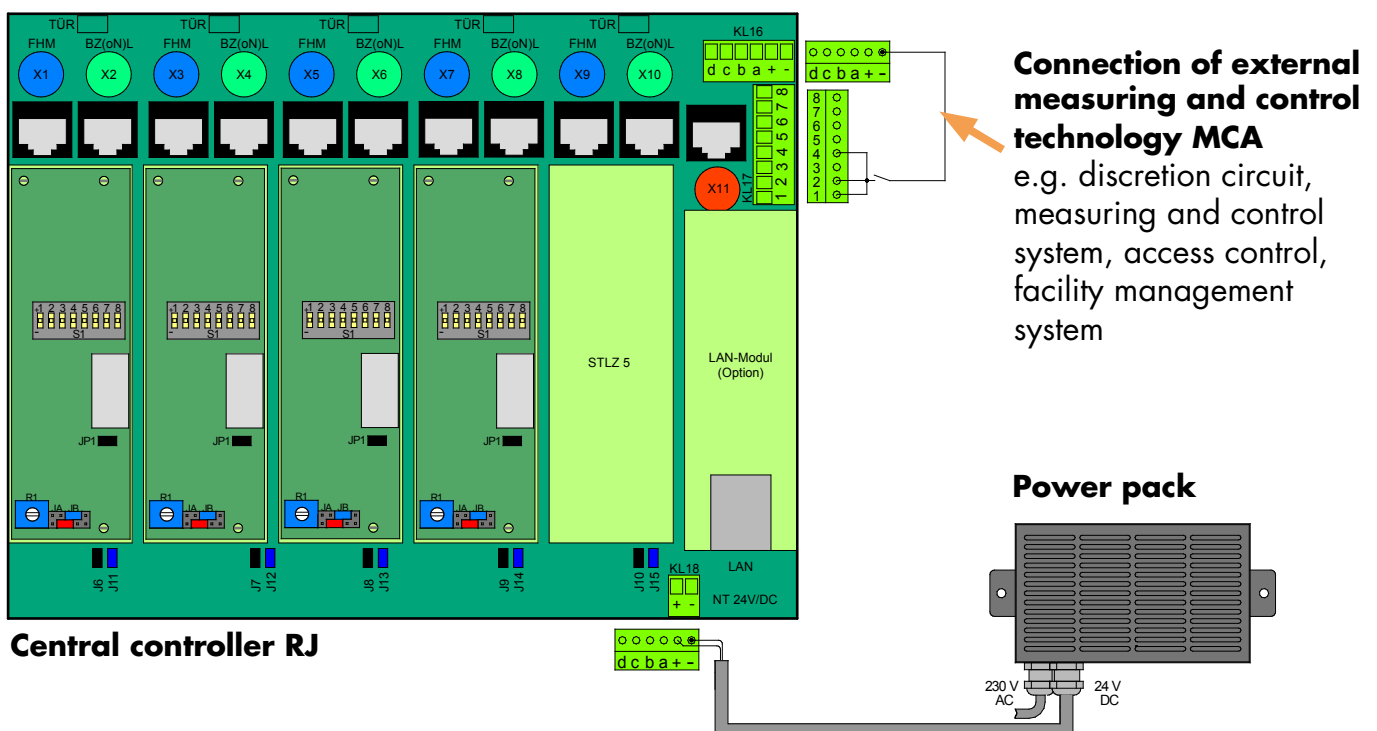The corresponding placing of the jumpers allows any combination.

Connection of External Measuring and Control Technology (MCA)

In interlock systems it can be necessary that certain doors are temporarily locked by external control systems. Examples are:
- Doors may only be opened after there is a certain air quality, temperature or similar inside the room.
- Systems for access control that lock certain doors, if there is more than one person in the lock.
- A management facility system locks certain doors at certain times of day.

The doors that have to be locked temporarily by the external measuring and control system are determined on the terminal strip KL17. When the measuring and control system sends a locking command, the determined doors are connected to "-" (minus) (terminal strip KL16) and thus locked.

In case there are installed two central controllers RJ in the interlock system, this circuit has to be realized in ONE central controller RJ only!

Connection of external measuring and control technology MCA
e.g. discretion circuit, measuring and control system, access control, facility management system

Power pack

Central controller RJ

Example

In the above shown wiring diagram the doors 1, 2 and 4 can be locked by the measuring and control system MCA. Door 3 is not included and therefore will not be locked.

The corresponding placing of jumpers allows any combination.
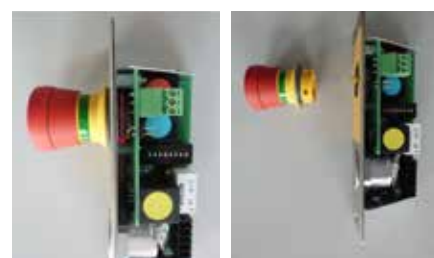
Mounting the Sealing Cover

Function

The sealing cover can be attached to every control and operating terminal with an emergency-open switch. It prevents the arbitrary and unauthorised use of the emergency-open switch.
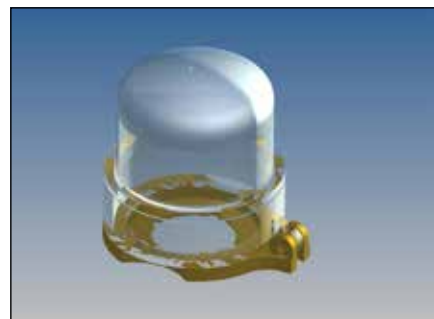
Mounting

Step 1: To remove the emergency-open switch you have to loosen the black ring below the front plate by turning it anticlockwise. Then the emergency-open switch can be taken off.

Step 2: Take off the yellow lower part of the sealing cover.

Step 3: Fit the yellow lower part from below on the emergency-open switch.

Step 4: Fix the emergency-open switch again on the terminal and cover it with the plastic cap.

Step 5: The sealing cover has to be protected against unauthorised use with a lead seal to be provided on site. Now the emergency-open switch is protected.

Measures to be Taken After an Activation

After the emergency-open switch has been activated the lead seal is removed and the plastic cover opened. The switch is unlocked, the cover put back and secured again with a lead seal.