

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/>

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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.

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.

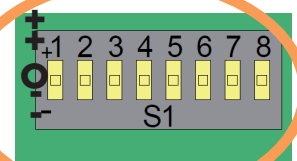
IMPORTANT:
The interlock control system has to be electrically isolated before any works on the central controller are performed.



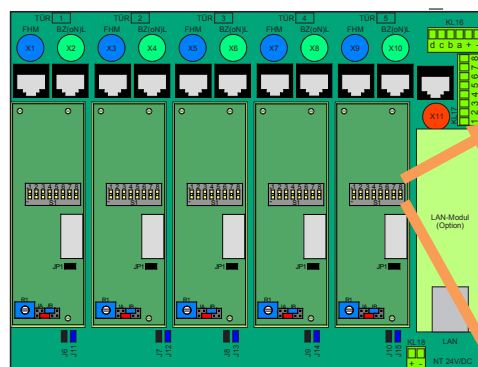
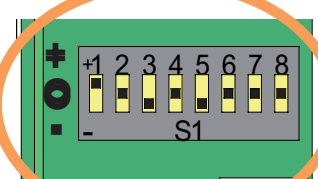
Legend:

- +** 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.

Delivery status

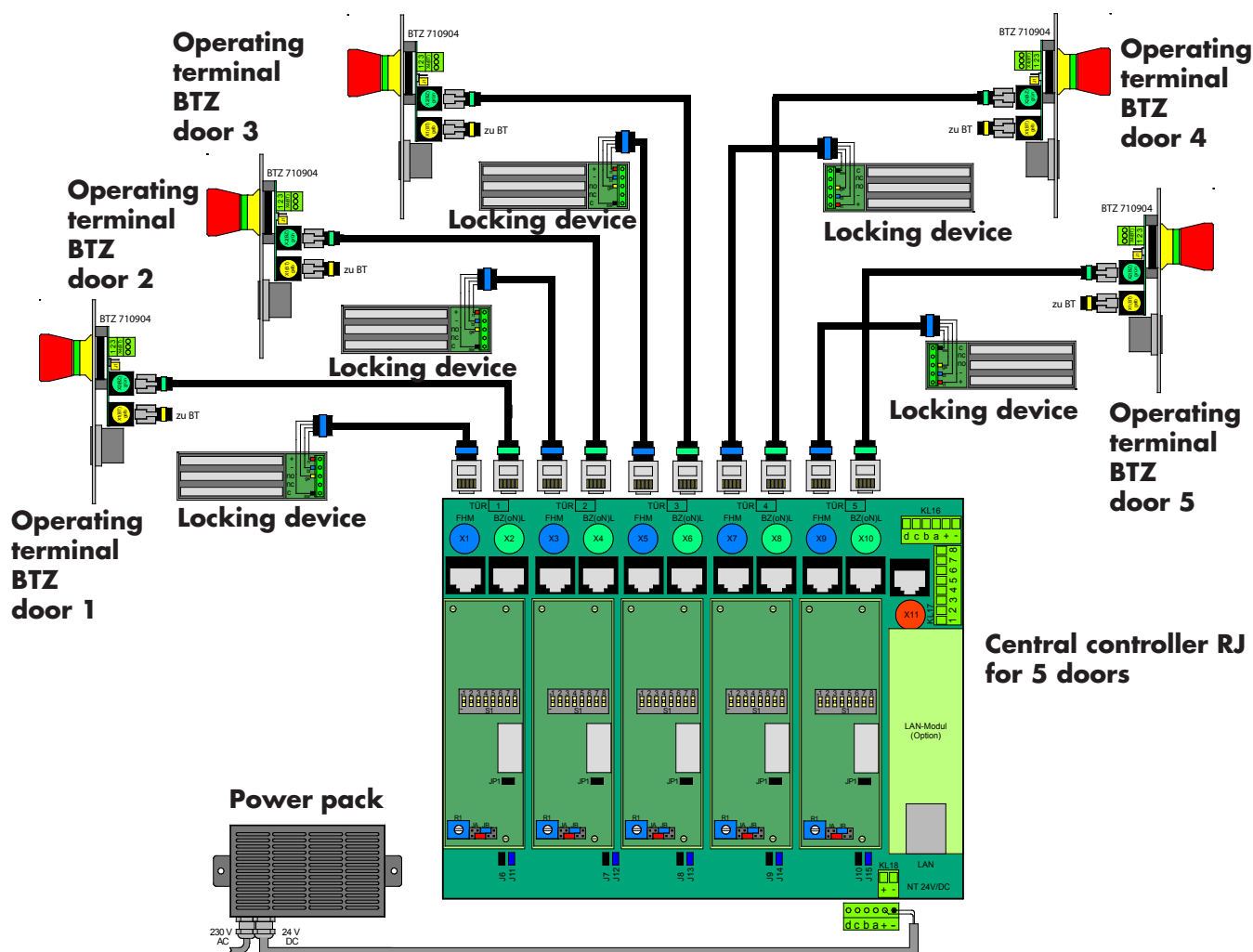


Adjustment according to example



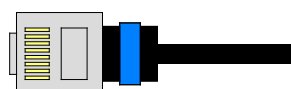
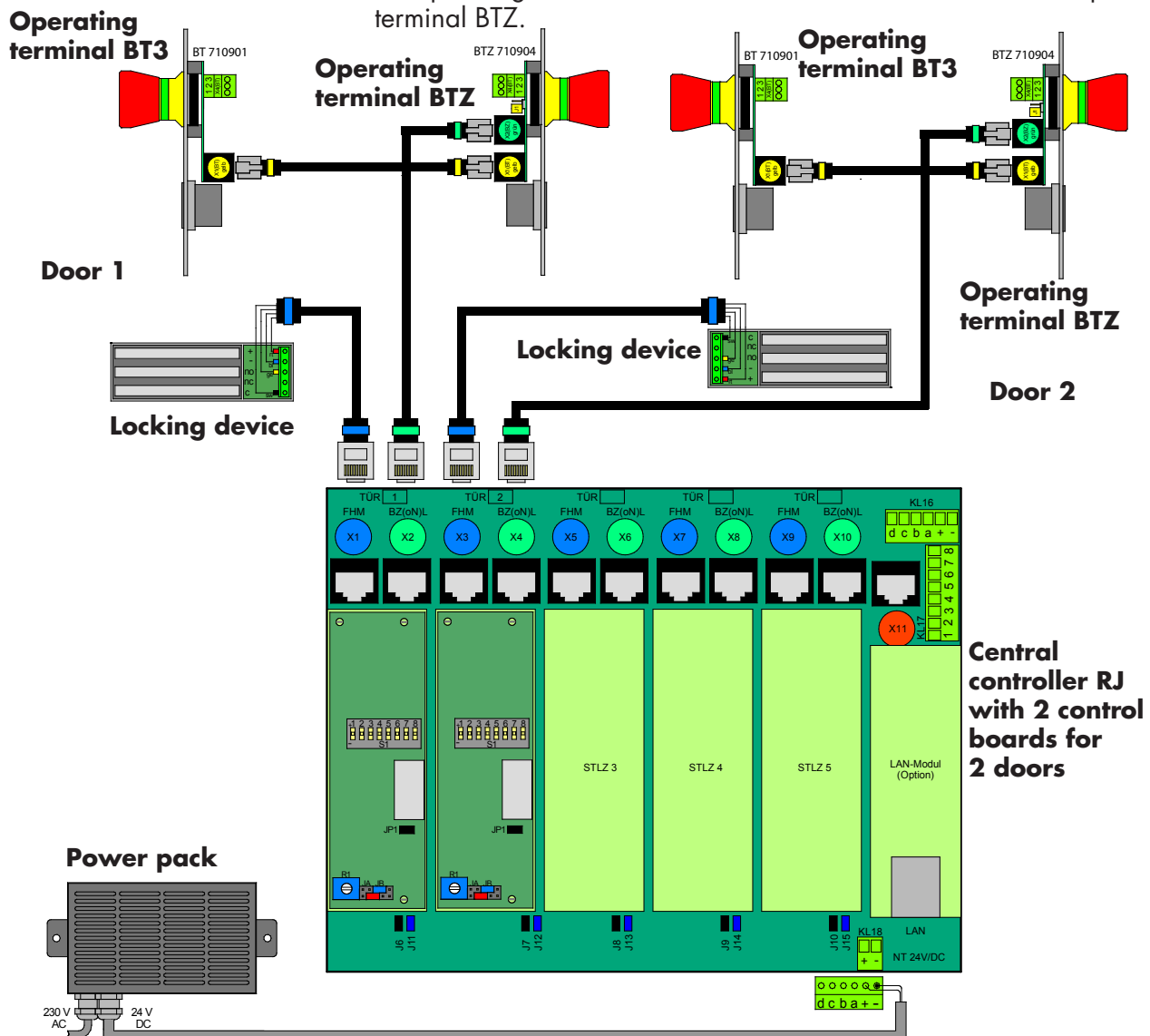
Example Connection Diagram of a System with 5 Doors

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.

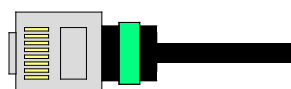


Basis Connection Diagram Central Controller RJ - 2 Doors

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



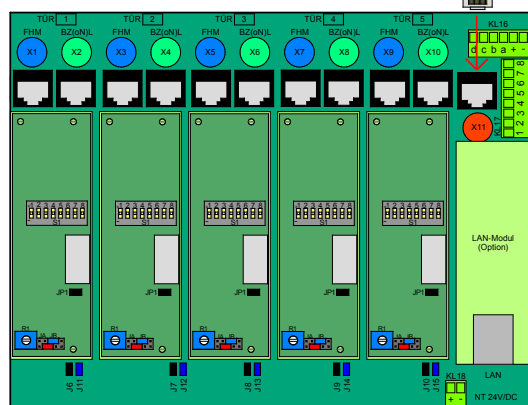
Connection cable operating
terminals BTZ / BT3 -
yellow marking

Basis Connection Diagram - 2 Central Controllers RJ

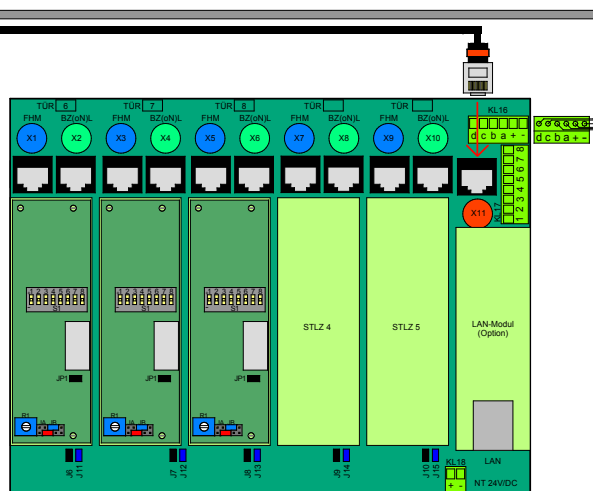
To a central controller RJ for 5 doors can be connected a second central controller RJ. **Maximum number of doors in the interlock system: 8.**

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!!).

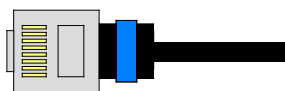
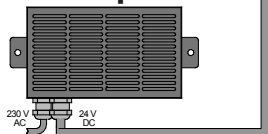
**Central controller RJ 1
with 5 control boards
for 5 doors**



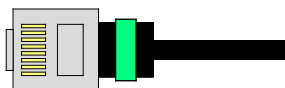
**Central controller RJ 2 with
3 control boards for 3 doors**



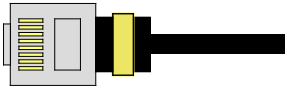
Power pack



**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**



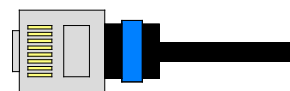
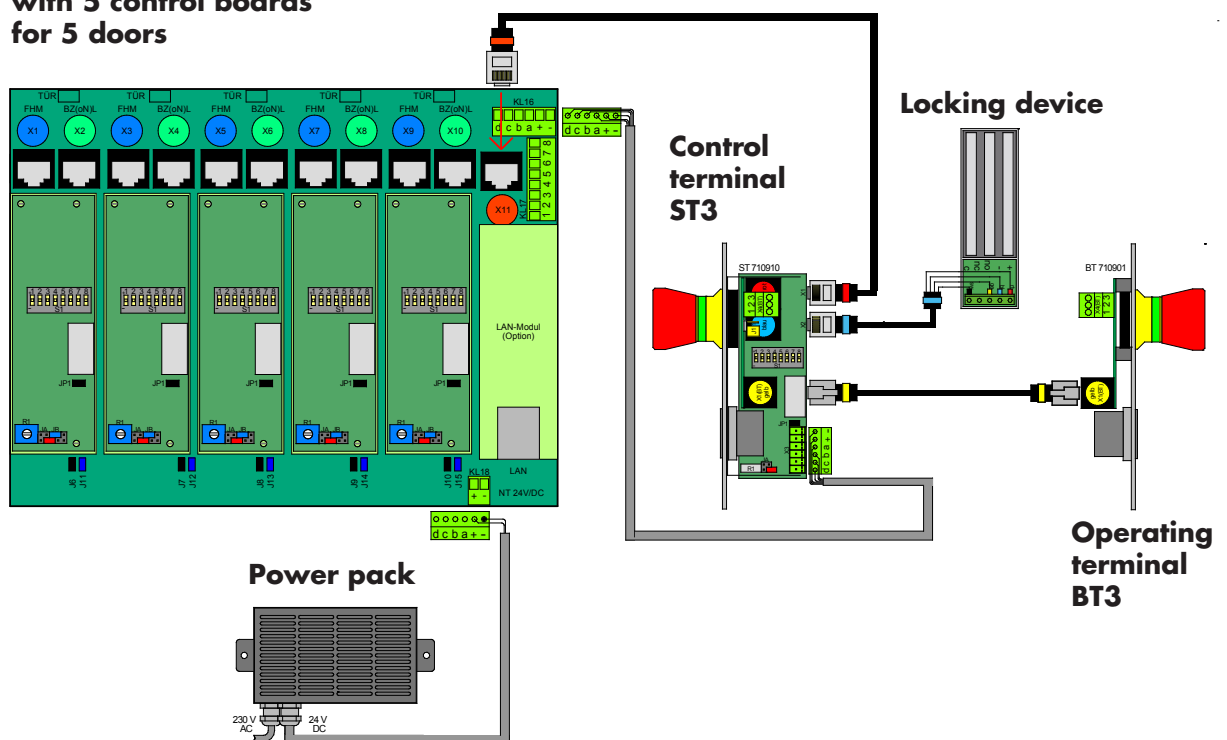
**Connection cable central controller RJ/
central controller RJ - red marking**

**Power cable central controller RJ/cen-
tral controller RJ, 6 cores**

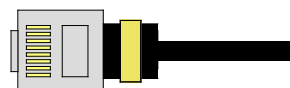
Basis Connection Diagram - 1 Central Controller RJ with 1 Additional Control Terminal ST3 (Peripheral System)

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



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

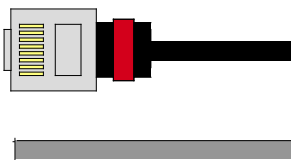
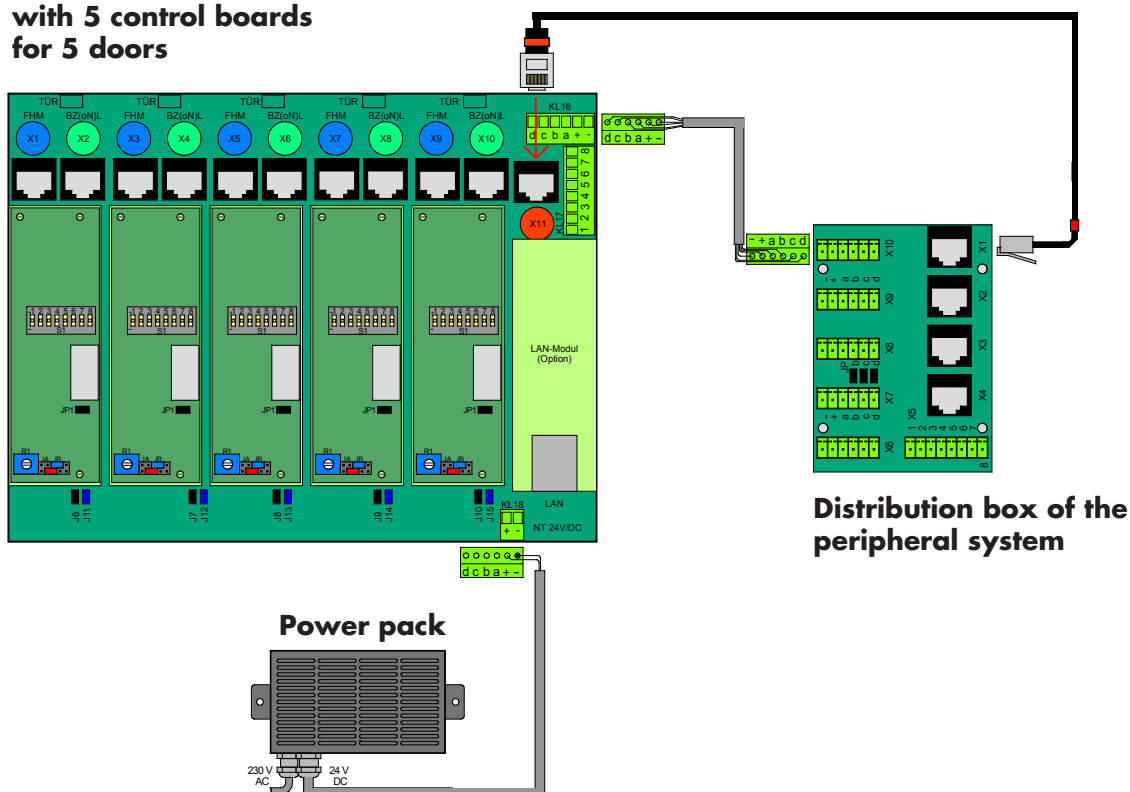


Power cable central controller RJ/
control terminal, 6 cores

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**



**Connection cable central controller RJ/
distribution box - red marking**

**Power cable central controller RJ/
distribution box, 6 cores**

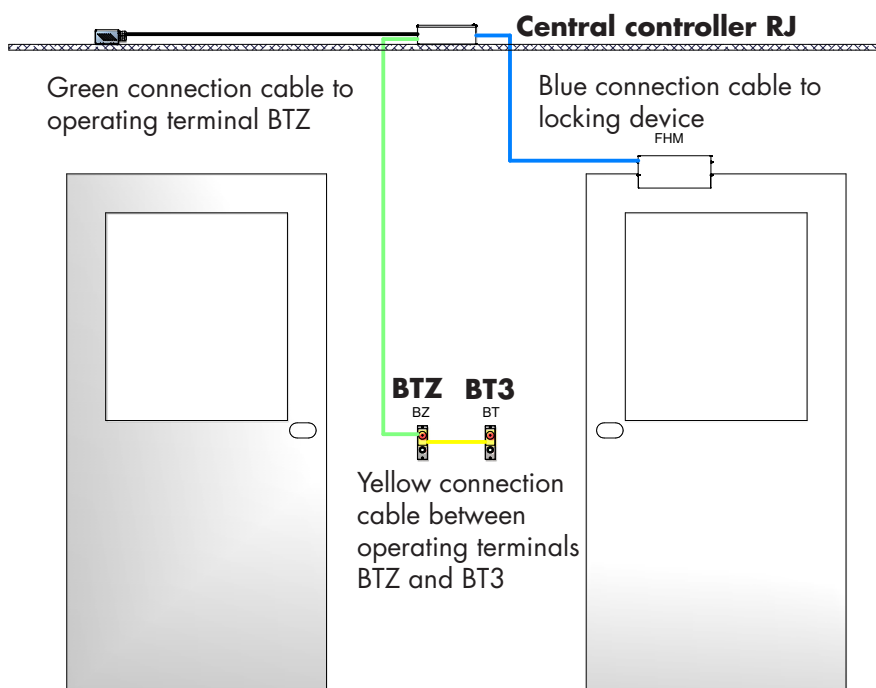
General Instructions Central Controller RJ

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.



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

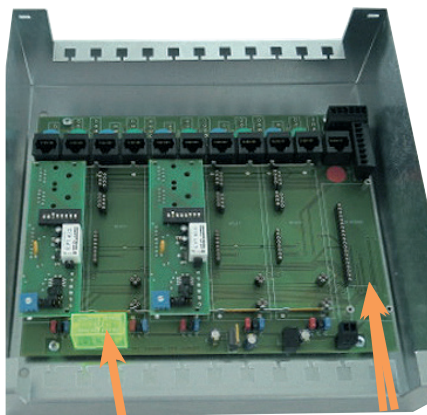
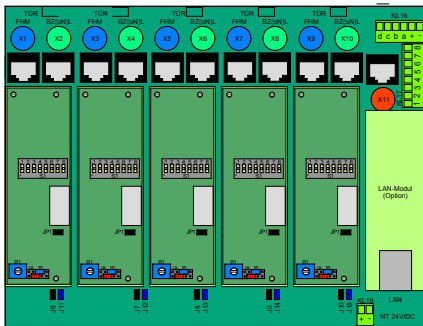
In total there can be connected up to 5 doors to a central controller RJ. Already in factory the central controller RJ is equipped with as many control boards as doors form part of the system (min. 2, max. 5 pieces).

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 central controller RJ controls 4 doors or one 5 and the other only 3 doors.

General Instructions Central Controller RJ - cont.

Cable Introduction

Choosing the Connection Sockets



Socket for
additional relay

Plug-in position
for LAN module

Jumpers

Plug-In Position for Additional Relay

LAN Module

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.

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.

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).

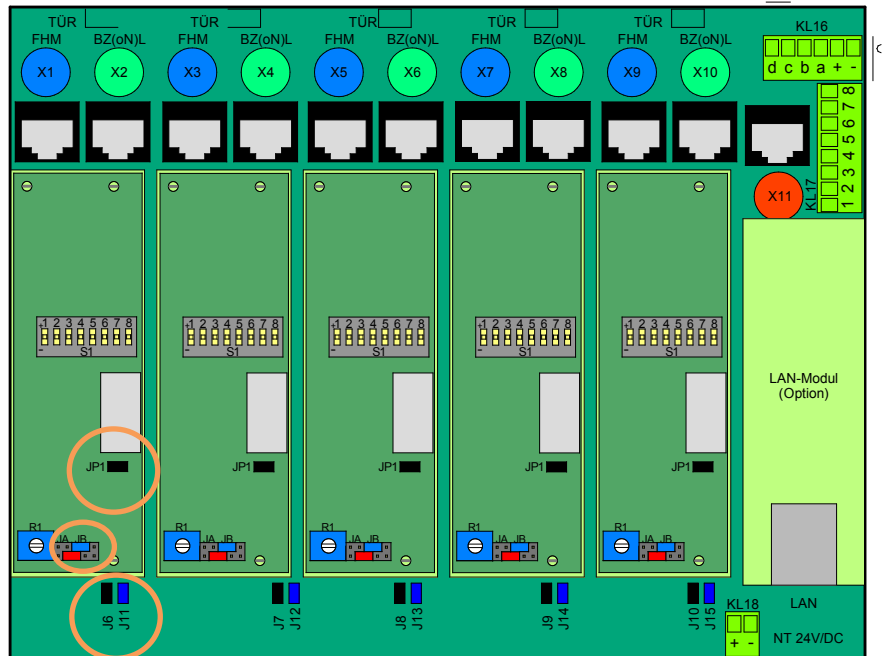
With the **relay** you can plug in below the control boards 1 and 2, it is possible to realize a **global emergency-open** (when pressing the emergency-open switch of one terminal, all doors of the system are released), part no. 710953. It can be retrofitted at any time!

LAN module: 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 Controller 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 Controller RJ - cont.

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

Position 1 (JA) - 1 (JB)

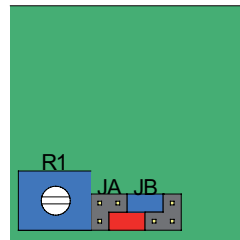
Signal output c:

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)

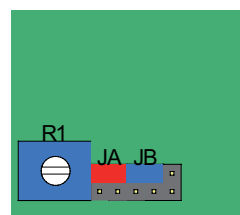
Signal output c:

door open (active: 24 V applied)

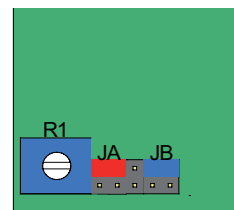
Signal output d:

active during different periods
(active: 24 V applied during the respective period)

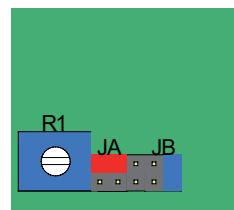
*By this jumper configuration you can realize the temporary locking of doors.
The positions 1 - 5 of the jumper JB determine the period of the locking.*



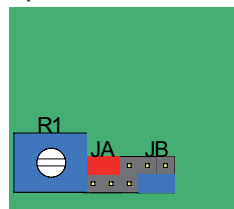
JB in pos. 1: 60 sec



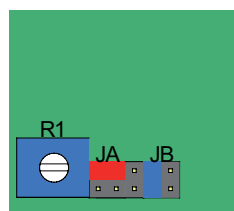
JB in pos. 2: 120 sec



JB in pos. 3: 180 sec



JB in pos. 4: 240 sec



JB in pos. 5: 300 sec

General Instructions Central Controller RJ - cont.

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

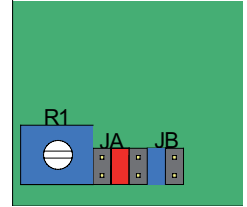
Position 5 (JA) - 5 (JB)

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.

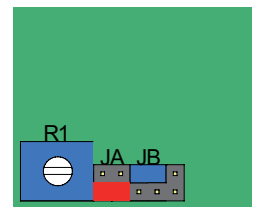


Position 2 (JA) - 1 (JB)

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

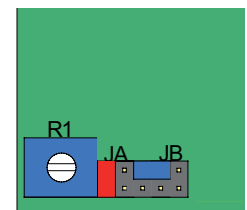


Position 3 (JA) - 1 (JB)

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



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):

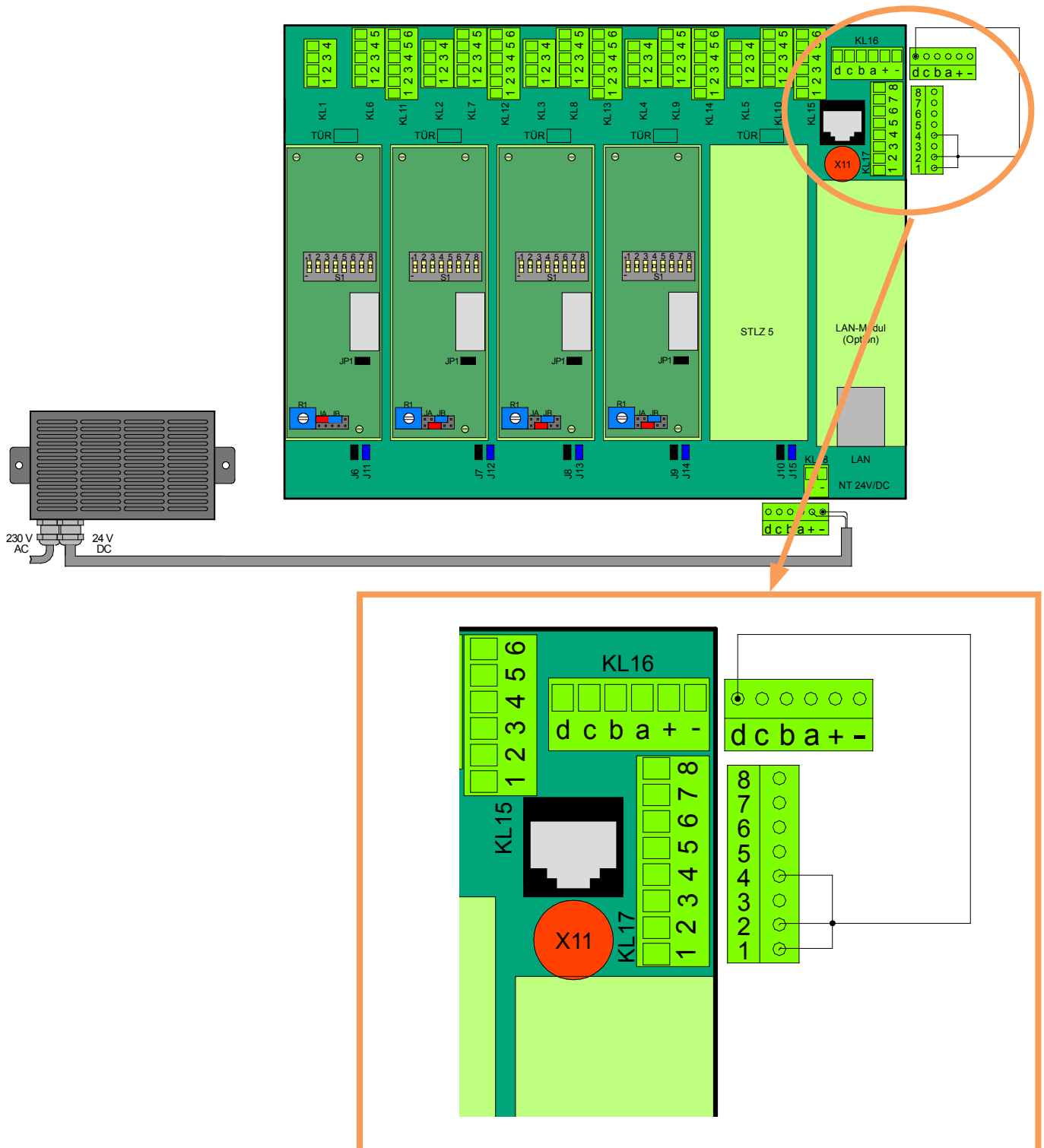
By the jumpers JA/JB a temporary locking of 60 seconds has been adjusted for the control board of door 1. In addition, when opening door 1, also the doors 2 and 4 shall be locked temporarily.

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:



General Instructions Central Controller RJ - cont.

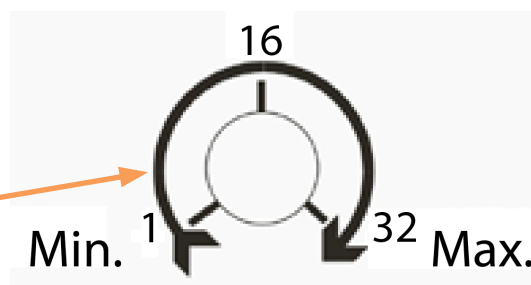
Potentiometer to Adjust the Release Time

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

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



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

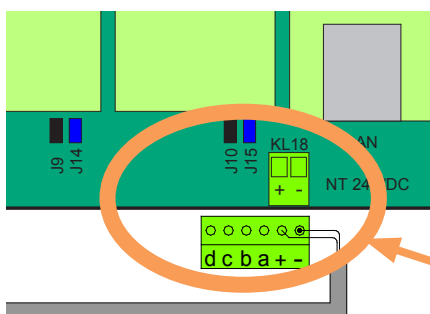
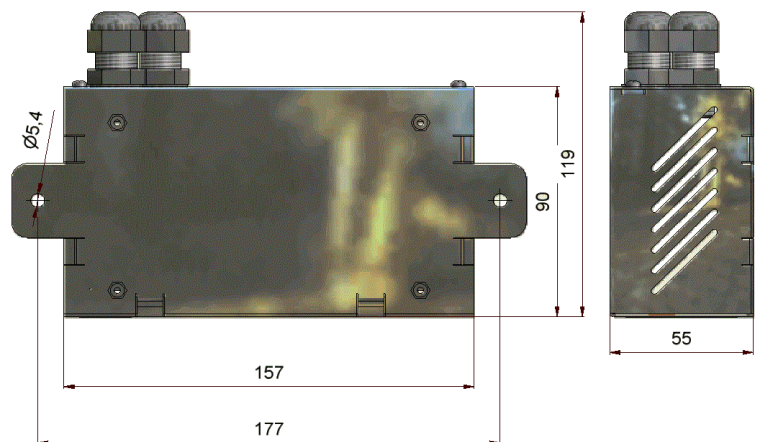
- Mounting only in dry places (IP rating IP 30)
- With operating temperatures (-10 °C to +50 °C are permissible) below 0 °C it has to be made sure the power pack doesn't ice over.
- The lateral ventilation slots have to remain uncovered and the circulation of the air may not be obstructed.
- **The power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

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.

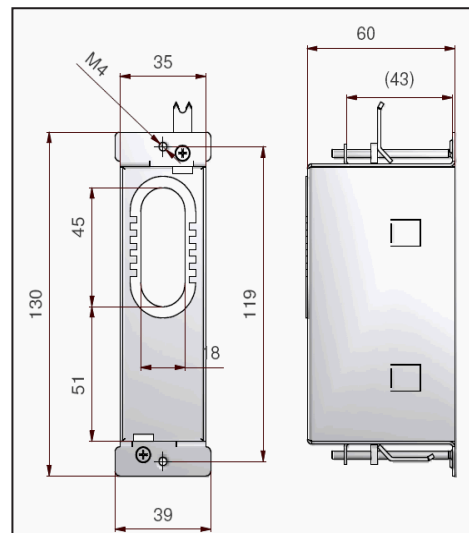
If the interlock system comprises two central controllers RJ, the power pack can be connected to either of them.

General Instructions Operating Terminals - Mounting

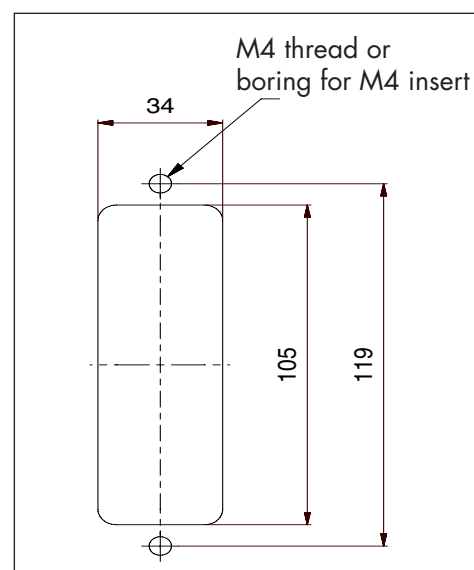
Mounting of the Operating Terminals BTZ and BT3, the Time Control Unit

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.

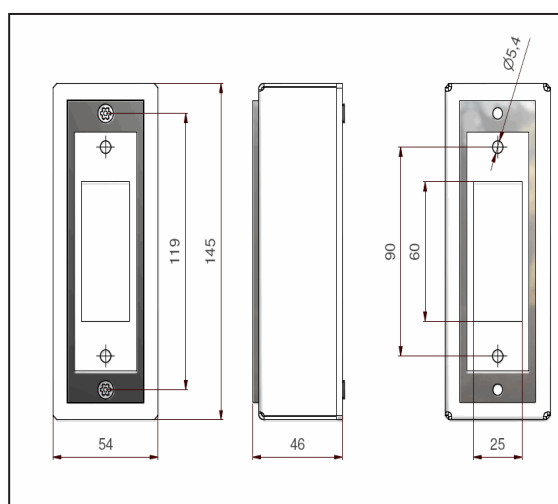


In case the terminal shall be mounted **directly in the frame - without flush box -**, there has to be made an opening according to the adjoining drawing. The front plate of the terminal, however, will then bear on the frame profile, i.e. it protrudes a little.



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.



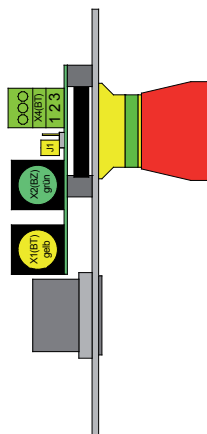
General Instructions Operating Terminals

Models

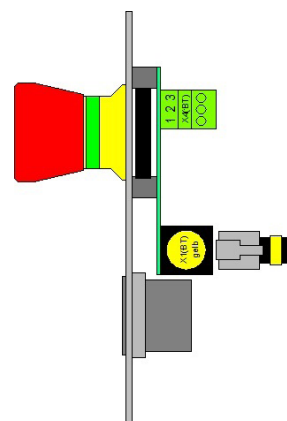
Each door of the interlock control system requires two different models of the operating terminal:

- 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.



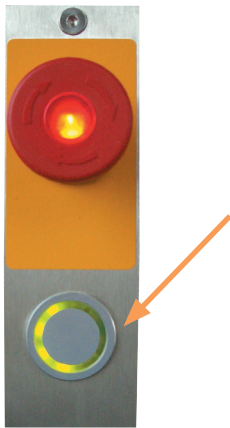
**Operating terminal
BTZ** with green and
yellow socket



**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.

Illuminated Indication on the Operating Key (Piezo-Type)



General Instructions Operating Terminals - cont.

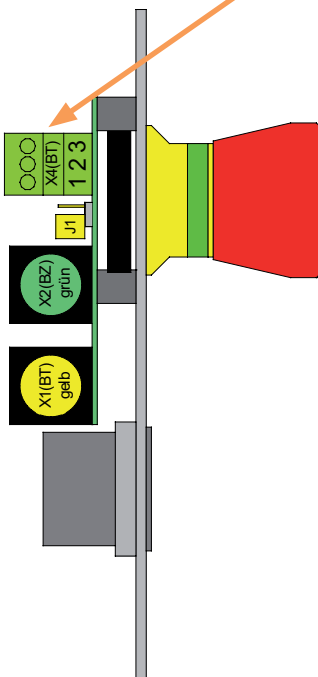
The status of the door (open or locked) is indicated by the illuminated ring around the operating key. The indications have the following meaning:

- **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 is 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

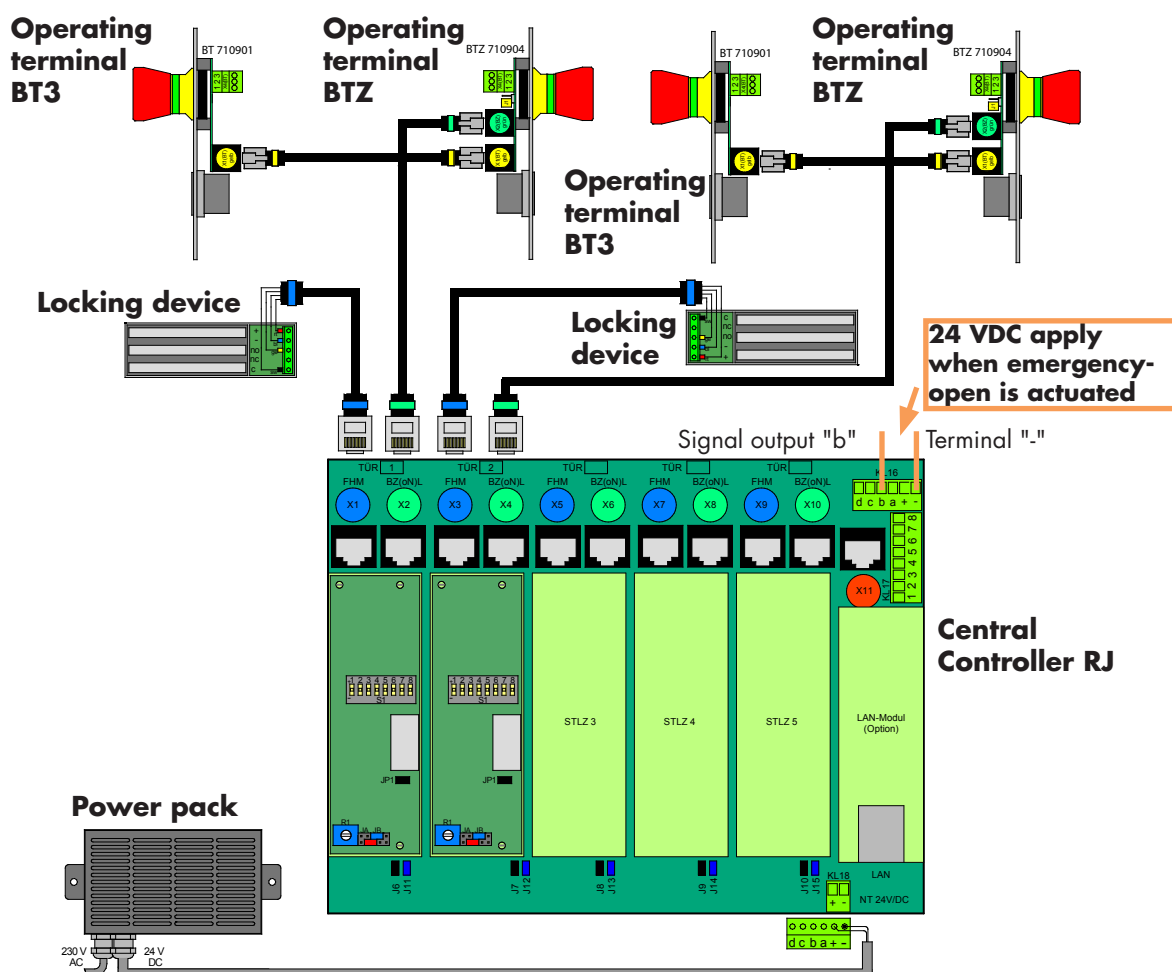
In case of danger the door can be unlocked by pushing the illuminated emergency-open switch even though being locked. After having been pressed the button remains locked in the pushed position.

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.



General Instructions Operating Terminal BTZ

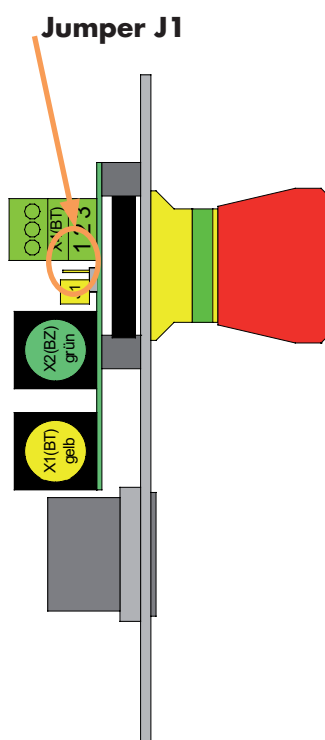
Jumper J1 of the Operating Terminal BTZ

Jumper J1

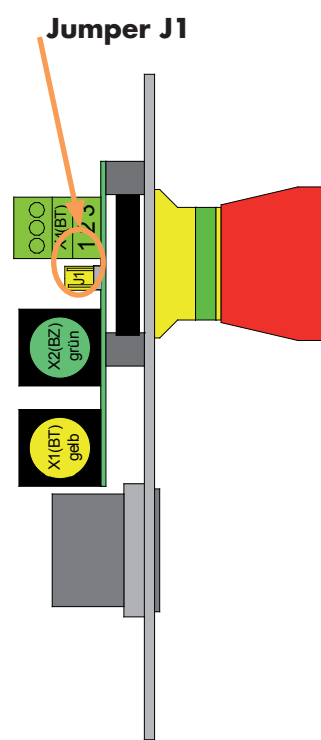
By default the jumper J1 of the operating terminal BTZ is always plugged on 1 pin only and also has to remain in this position.

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.



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



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

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Telefon ++ 49 821 2 46 73-0
Telefax ++ 49 821 2 46 73 90

Sitz Neusäß - HRB Augsburg 10279
Geschäftsführer : Dipl.-Kfm. Karen Stech
 Markus Kalcharuber

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) EU directives

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

B) The following harmonized European standards have been applied:

- **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) The following other standards and directives have been applied:

- **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

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Geschäftsführer : Dipl.-Kfm. Karen Stech
Markus Kalchgruber

Seite 2/2

Troubleshooting



Ring on the terminals is not illuminated.

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.

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).