

Interlock Control System

For the Access Control to e.g. Clean Rooms or Laboratories

In clean rooms, laboratories, hospitals etc. doors may often be opened only when others are closed. The DICTATOR interlock control system facilitates an easy configuration of these **relations**, without a complex PLC control system. The relations are "programmed" directly by DIP switches. Trained persons not requiring any special programming know-how **can modify** them **on site** at any time.

With the newest generation the components are connected as telephones or networks via cables with **RJ45 connectors** (exception: ex-proof version). The power pack for the 24 VDC supply is provided with a safety plug. This makes mounting most easy.

Basically there are three versions of the DICTATOR interlock control system:

- **Peripheral system**: the control boards are placed directly in the control terminals on the respective doors.
- **Central system**: the control boards of all doors are placed in a central controller.
- **Ex-proof** version: the central controller is placed either outside the hazardous area or installed in an ex-proof casing.



System Versions

Peripheral system
beginning on page
08.009.00

Extremely flexible, modular structure, can be extended at any time, complex special functions possible, also for installations with doors far apart.

Central system
beginning on page
08.017.00

For small interlock control systems with up to 5 doors (8 doors with extension module). Max. cable length between door terminals and central controller 15 m. Terminals require only about 27 mm in depth (=> suited also for flatter door profiles).

Ex-proof version
beginning on page
08.025.00

Central controller for mounting outside hazardous area, with additional ex-proof casing also inside hazardous area. For up to 5 doors (8 doors with extension module). There can also be integrated not ex-proof doors.



DICTATOR Interlock Control System - General Information

With the DICTATOR interlock control system all doors of the interlock control system are generally locked and are released only temporarily when the operating key of the terminal is pressed. This offers the highest possible safety within the interlock system.

Every door is controlled by a separate control board. With the peripheral system these are integrated in the control terminal of the respective door, with the central system the control boards of all doors forming part of the system are united in a central controller. The ex-proof interlock control system is a modified version of the central system.

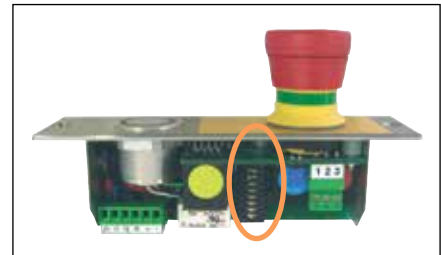
"Programming"



One of the main features of the DICTATOR interlock control system is the very easy "programming" of the relations between the doors. There are needed no computing skills at all.

All relations are adjusted by DIP switches. More detailed information and an example can be found on page 08.007.00.

On the same circuit board you can adjust by a potentiometer the time during which the door will remain unlocked, i.e. the door can be opened after the operating key has been pressed. It is of no importance whether the door is really opened or not. The period to be adjusted depends on whether it is an interlock for people or material.



Indication of the Door Status

An illumination on the terminals clearly signals the user whether the respective door can be used or is blocked at the moment (**indication of the door status**). The terminals of the peripheral and the central system have an illuminated ring around the operating key. The ex-proof terminals have an extra illuminated green/red indicator:

- Green: Door is locked but can be opened using the operating key of the terminal.
- Red: Door is blocked. It cannot be opened as it is blocked by another open door. The illumination of the ring will return to green as soon as the other door is closed again.



Emergency-Open Switch

The door terminals of the peripheral and the central interlock control system are available either with just an operating key or with an additional **emergency-open switch**.

In case of an emergency the door can be unlocked by means of the emergency-open switch even while being locked by the interlock control system. The switch remains locked after having been pressed. In order to reactivate the interlock control system the emergency-open switch has to be unlocked by turning. After a short delay the system is ready to work again.

If necessary, the emergency-open switch can be protected by an extra cover against unauthorised use (cover prepared for a lead seal, see page 08.037.00).

Two different emergency-open functions are possible:

- **Local emergency-open (LNA)**: unlocks only the door of the respective terminal.
- **Global emergency-open (GNA)**: it unlocks all doors of the group.



DICTATOR Interlock Control System - General Information, cont.

The DICTATOR interlock control system is a modular system which can also integrate non-system components. Depending on the chosen version it also offers a great variety of additional possibilities.

Some of the options mentioned in the following are not possible with the ex-proof version of the system. Details about the ex-proof interlock control system and the possible options can be found beginning on page 08.025.00.

Locking Devices

To lock interlock doors there can be used bar magnets, electric strikes etc. A big choice can be found in the catalogue beginning on page 08.039.00.

But already installed locking devices can also be included in the DICTATOR interlock control system. For this purpose they have to meet the following requirements:

- they dispose of a feedback contact which is closed when the door is closed (if necessary it can be mounted separately),
- they function with 24 VDC and
- they are locked with current (requirement of the EltVTR).

Access Controls

There can be connected access controls to all terminals of the interlock control system (only exception are the ex-proof ones). There are two options for their functioning:

- entering the access code automatically releases the door.
- in addition to entering the access code the piezo-type key of the terminal has to be pressed.

A choice of access control systems can be found beginning on page 08.059.00.

Access control systems that are already installed have to have a potential-free make contact (NO) (switching time about 1 sec.).

If possible, the access control system should function with 24 VDC as it then can be fed by the power pack of the interlock control system.

Additional Switches (e.g. Large Surface Switches)

The DICTATOR interlock control system allows also to connect large surface switches or something similar to adapt the interlock control system optimally to the needs of the users. Large surface switches are very convenient when the persons passing through the interlock door have to carry something and don't have empty hands.

Integration of Emergency Exits

Interlock control systems often also include emergency exits. These have to be equipped according to the requirements of the EltVTR (German standard for electrical locking systems on emergency exits).

For this purpose DICTATOR has developed as a special component the emergency exit terminal which has been tested and approved by the TÜV Thüringen. This terminal can easily be integrated in a DICTATOR interlock control system.

Door Operators

Especially in clean rooms interlock control systems form part of a production process. Therefore doors should often open automatically. The DICTATOR interlock control system also easily allows to integrate door operators in the interlock system. The door operator should have the following characteristics:

- automatic closing or a separate control device for a closing command.
- signal output "door closed (NO). (If not available, a separate feedback contact has to be mounted.)

Time Control

Depending on the type of the DICTATOR interlock control system there are different possibilities to reopen certain doors of the interlock system only after an adjustable period. This can be achieved either directly by some terminals or by an additional time control unit.



DICTATOR Interlock Control System - General Information, cont.

The DICTATOR interlock control system is an extremely flexible system. Depending on the type (peripheral, central, ex-proof) it can be combined to different extents with facility management systems and a large number of additional functions can be achieved.

The standard version of the DICTATOR interlock control system (peripheral or central) is very easy to mount and connect. No specialist is needed. All intrasystem components are connected by flat cables with RJ45 connectors. Also the power pack is ready for plug-in in a 230 VAC socket.

Discretion Circuit

The interlock control system allows to establish for any doors a discretion/delaying circuit. These doors cannot be opened from the outside even when all other doors are closed, as long as they are locked from the inside by a separate switch (e.g. for undisturbed changing).

Relay Controlled Additional Functions

The control terminals of the peripheral system and the control boards of the central system dispose of different signal outputs/status indications.

They all can be used for transmission to a facility management system.

The peripheral interlock control system allows also for many relay based additional functions. Among these are:

- Starting a ventilation/heating.
- Switching on/off lighting.
- Controlling a pressure compensation.
- Optical/acoustic warning signals.

Number of Doors in Interlock Systems

The DICTATOR interlock control system has been designed for smaller interlock systems. Due to its very easy mounting, wiring and "programming" the DICTATOR interlock control system represents an ideal solution to the always increasing requirements regarding hygiene and cleanrooms.

The number of doors in the interlock control system depends on the type of the interlock control system.

Peripheral interlock control system

The standard version of the peripheral system has been designed for up to 8 doors. But it also can be used for more doors if the doors can be combined to several groups. At a maximum there can be controlled 8 groups of doors with 8 doors each.

Central interlock control system

The version with the central control system has been designed for installations with up to 5 doors. But also the central system is flexible and can be extended to up to 8 doors. But this system requires that all connected doors have to be within the reach of a 15 m cable to the central control system.

Ex-proof interlock control system

The ex-proof system is based on the central control system and therefore also can control only up to 5 doors. Same as the central interlock control system this system can be extended to a maximum of 8 doors. But here the ex-requirements have to be observed.

Just ask us. We will work out a free of charge offer with a solution proposal.



Interlock Control System - Programming

The following matrix helps you to determine the position of the DIP-switches on the control boards. Just mark for each door which other door(s) may be open at the same time and which one(s) must stay locked (see example below).

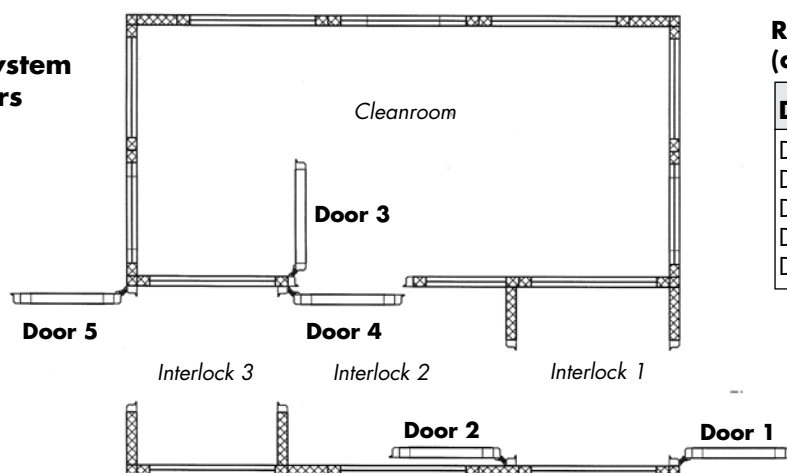
There are 3 positions for the DIP switches:

Position +: defines the door for which the relations are set (basis door)

Position -: this door is locked as long as the "basis door" is open.

Position 0: this door can be opened even though the "basis door" is open, too.

Cleanroom interlock system with 5 doors



Required relations (determined by the customer)

Door open	Door locked
Door 1	Door 2
Door 2	Doors 1, 3 and 4
Door 3	Doors 2 and 4
Door 4	Doors 2, 3 and 5
Door 5	Door 4

Matrix for setting the positions of the DIP switches

Door number No. of the basis door	Admissible 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	0
2	-		-	-	0	0	0	0
3	0	-		-	0	0	0	0
4	0	-	-		-	0	0	0
5	0	0	0	-		0	0	0
6								
7								
8								



DICTATOR Interlock Control System - Summary

On the following pages you will find detailed information about the different types of the DICTATOR interlock control system and the components which can be used for upgrading the peripheral as well as the central version.



Peripheral interlock control system

Overview	page 08.009.00
Components	page 08.010.00
Control terminals ST3	page 08.011.00
Operating terminals BT3	page 08.012.00
Distribution box	page 08.013.00
Connection cables	page 08.015.00
Order information	page 08.016.00



Central interlock control system

Overview	page 08.017.00
Components	page 08.018.00
Central controller	page 08.019.00
Operating terminals BTZ	page 08.021.00
Operating terminals BT3	page 08.022.00
Connection cables	page 08.023.00
Order information	page 08.024.00



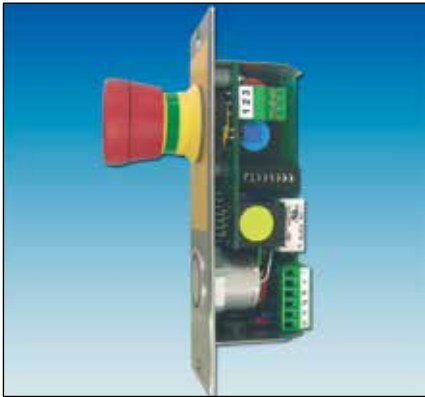
Ex-proof interlock control system

Overview	page 08.025.00
Components	page 08.026.00
EX central controller	page 08.027.00
Operating terminals BTZ EX	page 08.029.00
Ex-proof locking magnet	page 08.030.00
Order information	page 08.033.00



Additional components for the peripheral and the central type

Emergency exit terminal	page 08.035.00
Time control unit	page 08.036.00
Mounting accessories	page 08.037.00
Order information	page 08.038.00



Peripheral Interlock Control System - Overview

The peripheral DICTATOR interlock control system is the most flexible type of the interlock control systems. Its modular structure offers the possibility to meet an extraordinary number of special requirements.

All intrasystem components are connected by pluggable cables. Except for the alimentation these are flat cables with RJ45 connectors.

The peripheral interlock control system has been designed for up to 8 doors respectively groups of doors of **maximum 8 doors each**.

Basic Set-up

The basic set-up of the peripheral DICTATOR interlock control system is very simple:

The doors of the interlock system are directly controlled by the control terminals on the doors. The distribution boxes work as junctions between the control terminals. Depending on the number of doors in the interlock system and their spatial arrangement, 1 to max. 4 doors can be connected to a distribution box (see also page 08.013.00). The distribution boxes are connected by pluggable cables, one for the power supply and one as control cable.

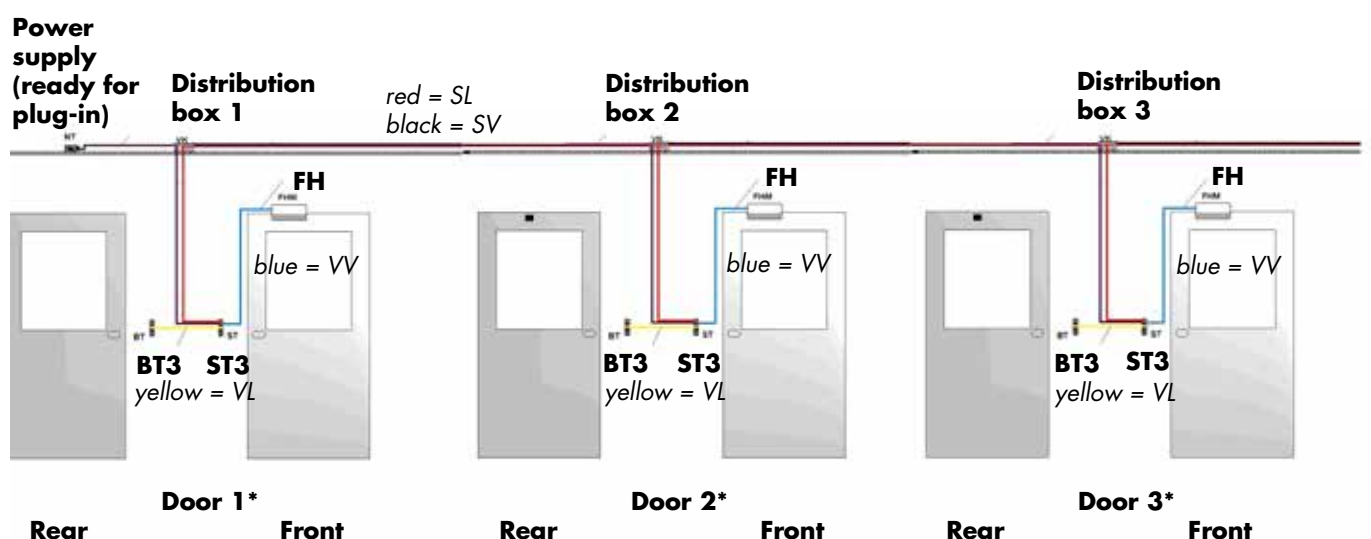
The distribution box is connected to each of its respective doors by a pluggable control cable and power cable.

Every door needs a control terminal. In case the door shall be controlled from both sides, an operating terminal has to be mounted on the other side of the door. As this is controlled by the control terminal, it does not need an elaborate circuit board.

The locking element of the door (bar magnet, electric strike etc.) is connected directly to the control terminal.

All control cables, also the one to the locking element, are simple flat cables with RJ45 connectors. If necessary, it is possible to lengthen them by a connector to a maximum length of 15 m.

The system also offers the possibility to integrate the interlock control system in a facility management system, to realise special functions, to output status information etc.



*: To each distribution box can be connected 1 to maximum 4 doors (4 doors only when in total only 1 distribution box is used, see page 08.013.00)

Legend:

ST3 = control terminal
BT3 = operating terminal
FH = bar magnet/locking device

SL = control cable (red)
SV = power cable (black)
VL = connection cable ST3-BT3 (yellow)
VV = connection cable ST3-FH (blue)



Peripheral Interlock Control System - Components

The peripheral DICTATOR interlock control system consists of a few main components. They are completed by mounting accessories and components for special functions.

The locking elements used have to meet two requirements: A feedback contact that is closed when the door is closed, and to function with 24 VDC quiescent current, i.e. with current they are locked (requirement of the EltVTR = German standard for electrical locking systems on emergency exits).

System Components

Control terminal

Per door there is needed one control terminal. It is the core of the peripheral interlock control system. In the control terminal are determined the relations of this door in reference to the other doors of the interlock system by DIP switches. It can be provided either with a simple operating key or with an additional emergency-open switch.

There are available two versions of the control terminal: Basic and Plus (for additional functions). Further details can be found on the next pages.

Operating terminal

Normally an additional terminal is required for the rear side of the door. This operating terminal comprises corresponding to the used control terminal either only an operating key or also the emergency-open switch. The operating terminal is connected to the control terminal by a flat cable with RJ45 connector.

Connection cable

The connection cables play an essential part in making the DICTATOR interlock control system such an easy to handle system. All control cables and the connection to the locking elements are flat cables with RJ45 connectors. The cables and the corresponding sockets are clearly marked by colours to prevent any faulty connection during installation. In case of need, the cables can easily be lengthened by using simple connectors up to a maximum distance of 15 m between the components.

For the power supply there are available, depending on the required function, 2 core or 6 core cables with connectors on both ends.

Distribution box

The distribution box has been designed for 1 to maximum 4 doors. Both, the control cable and the power cable, are simply clipped to it. In addition it offers space for the relays needed for additional functions.

Central power pack

The 24 VDC power supply of the terminals and the locking units is provided by a central power pack. It is available either with 2.7 A or 5 A power. The power pack is furnished ready for mounting with a mains cable with safety plug and a 2 m long 24 VDC cable with 6-pin connector to one of the distribution boxes of the system, i.e. it doesn't have to be opened for connection.

Locking elements

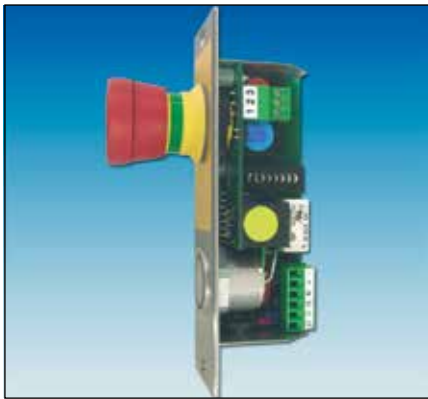
For locking the doors there is available a large choice of bar magnets and electric strikes (see page 08.039.00 and the following). It is essential that the used locking devices dispose of a potential-free feedback contact.

Emergency exit terminal for emergency exit doors according to EltVTR

In case of emergency exits in the interlock system, it is easy to integrate them with the help of the tested emergency exit terminal.

Time control unit

If the interlock system includes doors that shall be free only after a certain time (for decontamination, reaching determined temperatures etc.) and the remaining time should be indicated to the persons in the interlock, the DICTATOR time control unit together with the corresponding secondary indication displays will accomplish this.

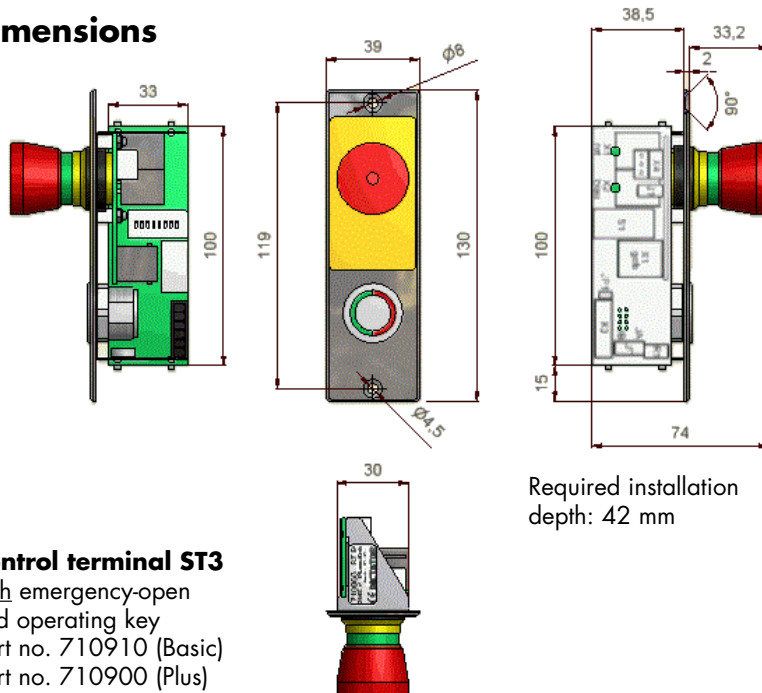


Peripheral Interlock Control System - Control Terminal

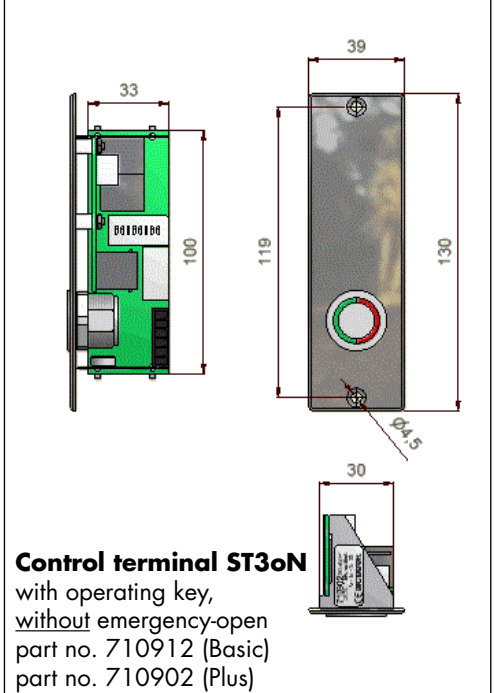
The control terminal is the **central component** of the peripheral DICTATOR interlock control system as it contains the control circuit board where the relations between the different doors are set. There is available a Basic and a Plus version, both versions with or without the emergency-open switch. The DICTATOR terminals meet the requirements of clean rooms. As operating button a piezo-type key is used that reacts on very little pressure. Both front plate and key are made of stainless steel.

The front plates of the terminals have been designed for their mounting in hollow profiles. On demand, front plates with differing measurements and with the customer's logo are available.

Dimensions



Control terminal ST3
with emergency-open
and operating key
part no. 710910 (Basic)
part no. 710900 (Plus)



Control terminal ST3on
with operating key,
without emergency-open
part no. 710912 (Basic)
part no. 710902 (Plus)

Performance

Basic version

- 1 signal output for actuating the emergency-open switch (if included)
- 1 signal output (to be configured by a jumper)

Plus version

- 1 signal output for actuating the emergency-open switch (if included)
- 2 signal outputs (to be configured by jumpers)
- Integrated time control unit without display (adjustable times: 1, 2, 3, 4, 5 minutes. Different times are possible on demand.)

Technical Data

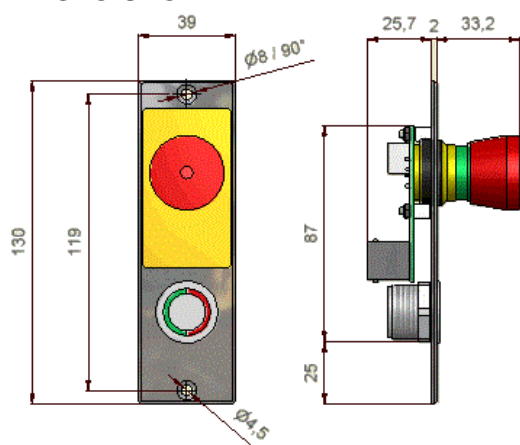
Power consumption <u>with</u> emergency-open	24 VDC +/-15 %, max. 50 mA
<u>without</u> emergency-open	24 VDC +/-15 %, max. 40 mA
IP rating	IP 20 (operating key IP 65)
Capacity per output	250 mA, make contact (NO)
Operating temperature	-10 °C to +40 °C
Operating key	piezo-type with red/green circle illumination
Emergency-open switch	mushroom-type push-to-lock, illuminated
Emergency-open switch contact set (capacity)	1 contact NO: 500 mA
Material front plate	AISI 304 stainless steel



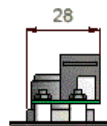
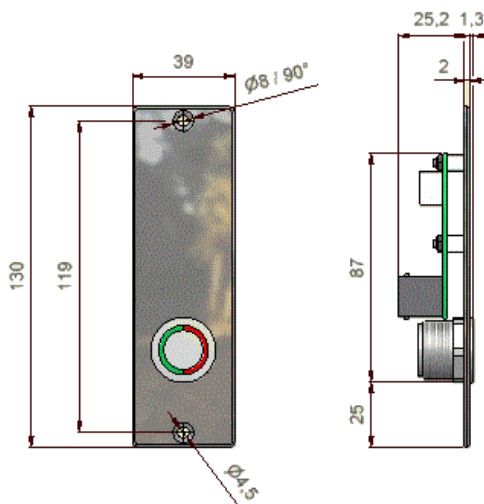
Peripheral Interlock Control System - Operating Terminal

Normally the doors of an interlock system are used from both sides. Therefore, an additional operating terminal (without control board), connected to the control terminal, is required on the rear side of the door. The operating terminal is available only as standard type. The front plates of the terminals have been designed for their mounting in hollow profiles. On demand, front plates with differing measurements and with the customer's logo are available.

Dimensions



Operating terminal BT3
with emergency-open and
operating key
part no. 710901



Operating terminal BT3oN
with operating key,
without emergency-open
part no. 710903

The operating terminal is connected to the control terminal by the connection cable with RJ45 connector (marked yellow). The cable has to be ordered separately. By default two lengths are available:

- 250 mm (part no. 710936)
- 1000 mm (part no. 710937).

The operating terminal can directly be connected to an access control or also a large surface switch for example.

Technical Data

Power consumption	24 VDC +/-15 %
with emergency-open	max. 30 mA
without emergency-open	max. 15 mA
IP rating	IP 20 (operating key IP 65)
Operating temperature	-10 °C to +40 °C
Operating key	piezo-type with red/green illumination
Emergency-open switch	mushroom-type push-to-lock, illuminated
Emergency-open switch contact set (capacity)	1 contact NO: 500 mA
Material front plate	stainless steel AISI 304



Peripheral Interlock Control System - Distribution Box

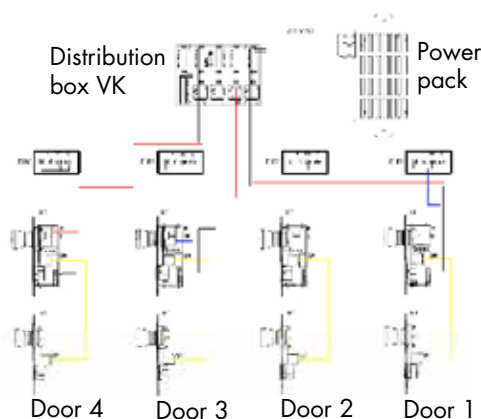
The simple wiring of all the components in the peripheral interlock control system is based on the distribution box(es). If there are several distribution boxes, these are connected with a pluggable control cable and power cable each. The control terminals of the corresponding doors are then connected to the distribution box by also pluggable connection cables.

Number of Required Distribution Boxes

Each distribution box disposes of 4 sockets each for the control and the power cables. These are used to connect the control terminals and, if needed, several distribution boxes.

Example 1: Interlock system with 4 adjoining doors

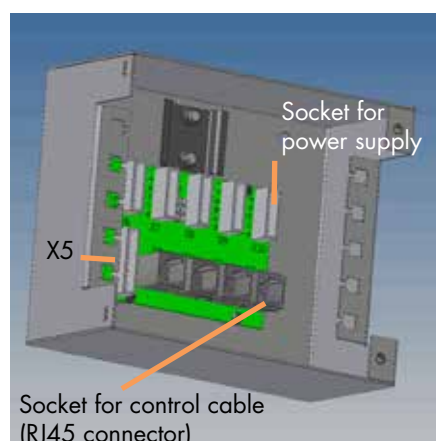
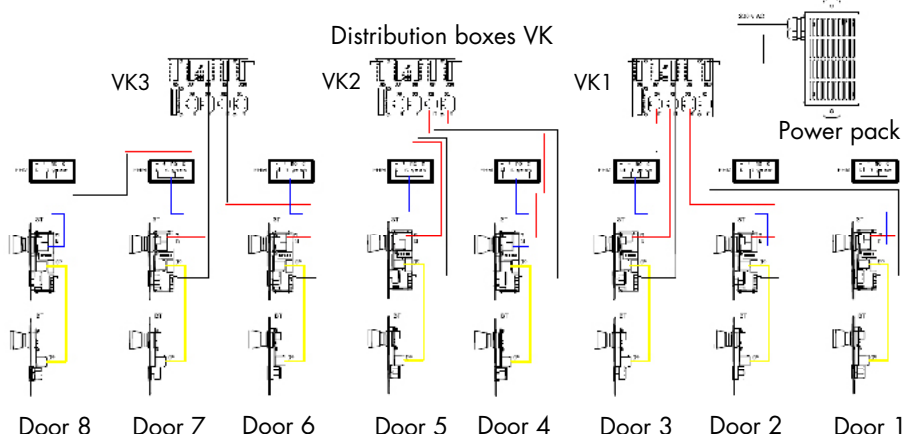
Here one distribution box is sufficient to connect all doors directly.



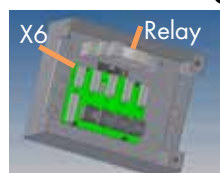
Example 2: Interlock system with 8 doors

To the distribution box 1 can be connected 3 doors. The 4th sockets are needed for the connection cables to the 2nd distribution box.

To the 2nd distribution box can be connected 2 doors as 1 socket each is needed for the incoming and one each for the outgoing cables. To the 3rd distribution box there can again be connected 3 doors as only one socket each is needed for the incoming connection cables.



Function Global Emergency-Open



If required, the **function global emergency-open** (when pressing one emergency-open switch, all doors are unlocked) is adjusted in the distribution box. To achieve this, there is fitted an additional relay (part no. 710921) with pluggable connection cable in only one distribution box of the interlock control system. It is simply clipped to the standard top hat rail in the distribution box. For the connector of this connection cable the additional socket X6 is reserved.

ATTENTION: When choosing the global emergency-open, the 6 core power cable has to be used!



Peripheral Interlock Control System - Distribution Box, cont.

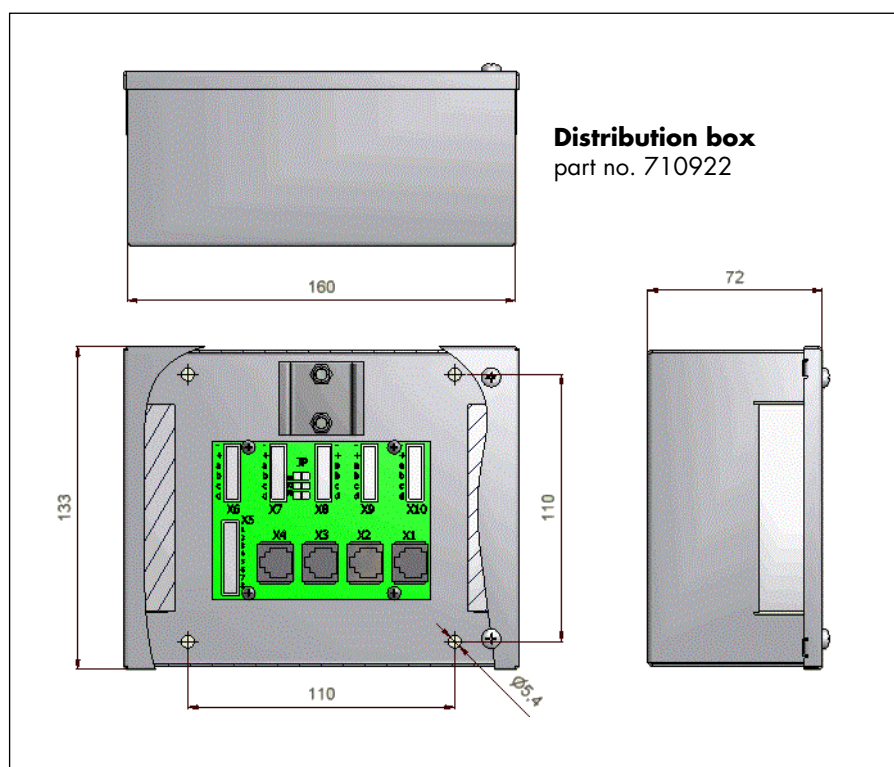
Generally the distribution boxes are fixed in the suspended ceiling or the conductor rail above the corresponding doors. But they can also be mounted at a central place if the distance to the control terminals is not longer than 15 m.

Additional Adjustable Functions

The X5 terminal strip can be used for special functions. For example, to additionally block any doors by a "privacy switch" (changing rooms) and to connect an external time control unit with display.

The delivery of the distribution box includes a connector for the X5 terminal strip which facilitates an easy connection of these devices.

Dimensions



The strain relief of the incoming and outgoing cables is achieved by fixing the cables with tie wraps to the two cable support brackets. The cable inlets are sealed dust proof by cellular material.

For fixing 4 borings of $\varnothing 5.4$ mm are provided in the casing of the distribution boxes.

Technical Data

Material	hot-dip galvanised sheet steel
IP rating	IP 20
Top hat rail	type TS35/7.5 according to EN 60715



Peripheral Interlock Control System - Connection Cables

All components of the peripheral interlock control system are mainly connected by simple flat cables with colour marked RJ45 connectors. Only for the power supply are used 2 or 6 core cables with corresponding connectors, depending on the required additional functions.

This significantly reduces the mounting costs and the danger of errors when connecting the single components.

Connection Cables

Connection cable control - operating terminal (1)

The connection cable between control and operating terminal is a flat cable with **yellow** marked RJ45 connectors on both ends. It is available with 250 mm and 1 m length. In case the door is equipped with both, a control and an operating terminal, it always has to be ordered additionally.

But when only a control terminal is mounted on a door there just has to be put a jumper (J1) in the corresponding place on the circuit board.



Control cable (2)

The control cable is used to connect all the distribution boxes as well as to connect the control terminals to their corresponding distribution box. The control cable is also a flat cable with RJ45 connectors. The control cable connectors and the corresponding plug-in positions are marked **red**.

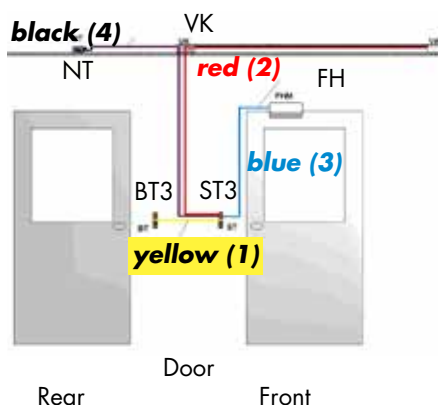
Standard lengths: 3 m, 5 m and 10 m

By means of a connector (part no. 710943) several cables can be linked up to the maximum total length of 15 m between two components.

Connection of door locking device or door operator (3)

As the DICTATOR interlock control system can be combined with a multitude of locking devices the connection cable for the locking device or door operator is furnished only on one end with a RJ45 connector (**blue** colour). This is plugged in the control terminal. On the other end of the cable are 4 free leads which are marked explicitly (2 leads for the feedback contact and 2 leads for the power supply).

Standard lengths: 250 mm, 2 m, 4 m and 15 m.



Power cable (4)

The cable for the power supply is available with 2 or 6 cores. It is used to connect the different distribution boxes as well as to connect the control terminals to the corresponding distribution box.

The 6 core cable has always to be used when a global emergency-open is required, a control terminal of the Plus version is used or special functions shall be realised.

The power cables are provided on both ends with connectors which are simply plugged in the distribution box and the control terminal. For the 2 core cables are used just the plug-in positions that are marked - and +.

Standard lengths: 3 m, 5 m, 10 m and 15 m

Connection of external components

Additional components as access controls or large surface switches have to be connected to the interlock control system by the customer. The control terminal disposes for their connection of a pluggable 3-pin screw terminal.



Peripheral Interlock Control System - Order Information

On this page you will find a summary of the part numbers of all components of the peripheral DICTATOR interlock control system.

Other accessories:

- Boxes for flush and surface mounting of the terminals page 08.037.00
- Emergency exit terminal page 08.035.00
- Time control unit page 08.036.00
- Power packs page 08.063.00 et sqq.
- Locking devices page 08.039.00 et sqq.

Order Information Terminals

(see page 08.011.00 and following)

Distribution Box

(see page 08.013.00 and following)

Time Control Unit

(see page 08.036.00)

Connection Cables

(see page 08.015.00)

Control terminal ST3 Basic		part no. 710910
Control terminal ST3oN Basis, without emergency-open switch		part no. 710912
Control terminal ST3 Plus		part no. 710900
Control terminal ST3oN Plus, without emergency-open switch		part no. 710902
Operating terminal BT3		part no. 710901
Operating terminal BT3oN, without emergency-open switch		part no. 710903
Emergency exit terminal FT P (see page 08.035.00)		part no. 710833
Loose-key switch for emergency exit terminal		part no. 710960
Distribution box VK3		part no. 710922
Additional relay for global emergency-open, pluggable		part no. 710921
Kit of 4 pluggable 6 core screw terminals for VK3		part no. 710923
Time control unit ZS		part no. 710805
Additional display ZA for time control unit		part no. 710806
Extender circuit module for additional displays		part no. 710808
Connection cable control - operating terminal, yellow	250 mm	part no. 710936
Connection cable control - operating terminal, yellow	1 m	part no. 710937
Control cable with RJ45 connector on both ends, red	3 m	part no. 710940
Control cable with RJ45 connector on both ends, red	5 m	part no. 710941
Control cable with RJ45 connector on both ends, red	10 m	part no. 710942
Connection cable locking device/door operator, blue	250 mm	part no. 710939
Connection cable locking device/door operator, blue	2 m	part no. 710938
Connection cable locking device/door operator, blue	4 m	part no. 710928
Connection cable locking device/door operator, blue	15 m	part no. 710946
Power cable with connector, 2 cores	3 m	part no. 710930
Power cable with connector, 2 cores	5 m	part no. 710931
Power cable with connector, 2 cores	10 m	part no. 710932
Power cable with connector, 2 cores	15 m	part no. 710929
Power cable with connector, 6 cores	3 m	part no. 710933
Power cable with connector, 6 cores	5 m	part no. 710934
Power cable with connector, 6 cores	10 m	part no. 710935
Power cable with connector, 6 cores	15 m	part no. 710944
Connector for flat cable with RJ45 connector		part no. 710943



Interlock Control System with Central Controller - Overview

The interlock control system with central controller has especially been designed for installations with up to 5 doors. It can be extended to 8 doors. The central interlock control system is the ideal solution for small systems where all doors are located close to each other. The maximum cable length between terminal and central control system is 15 m.

The control circuit boards which are placed with the peripheral system in the control terminals are located with the central system in a central casing. The basic version of the central controller provides control boards for 2 doors. If the interlock system consists of more doors, the controller will be supplied with the corresponding number of control boards.

Basic Set-up

With the central interlock control system all terminals and locking devices on the doors are directly connected to the central controller.

On both sides of the doors are mounted only operating terminals without controlling function. The operating terminal BTZ which is connected to the central control system has 2 RJ45 sockets:

Green: control cable from the central controller.

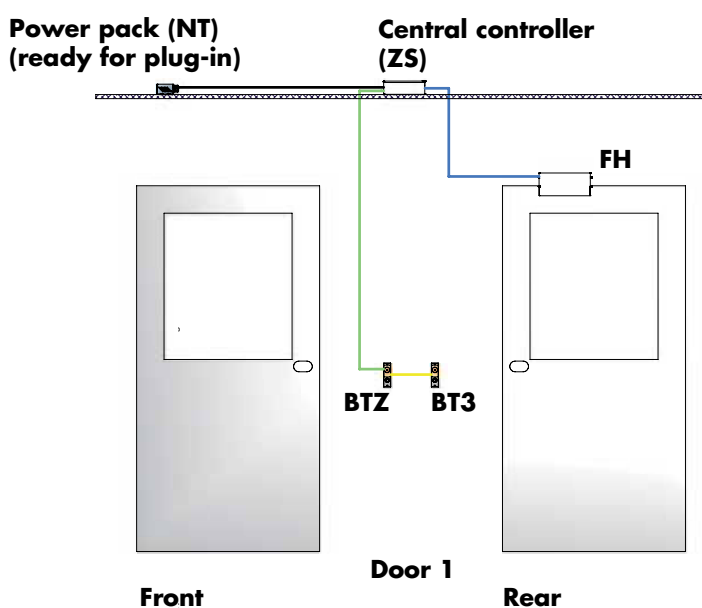
Yellow: connection cable to second operating terminal (BT3) on the rear side of the door.

The second operating terminal is identical to the one of the peripheral system.

The locking device is also directly connected to the central controller. The blue marked cable is plugged in the central controller in the designated RJ45 socket. The other end of the cable has 4 leads of different colours to connect the locking device.

The power is provided by the power pack ready for plug-in. Its safety plug simply has to be plugged in a socket provided on site. In the central controller there is also provided a socket for the power cable of the power pack.

All control cables, also the cable to the locking device, are simple flat cables with RJ45 connectors. An additional power cable to the operating terminals as with the peripheral system is not required.



Legend:

BTZ = operating terminal with 2 RJ45 sockets

BT3 = operating terminal

FH = bar magnet/locking device

green = connection cable ZS - BTZ

black = power cable NT - ZS

yellow = connection cable BTZ - BT3

blue = connection cable ZS - FH



Central Interlock Control System - Components

The DICTATOR interlock control system with central controller consists of a few main components. They can be mounted and "programmed" with extremely little effort.

Beside the basic functions many additional requirements can be met by the central controller of the DICTATOR interlock control system. For some standard components can be used, for others an additional LAN module has to be used.

Mounting accessories can be found on page 08.037.00 and the following.

System Components

Central controller

Each installation requires one central controller. Usually this can control up to 5 doors. But it is possible to enlarge the system. The following options are available:

- Connection of a second central controller. This allows to enlarge the system to up to 8 doors (4 doors per central controller).
- Connection of a distribution box of the peripheral interlock system (see page 08.013.00). This allows to control in total 8 doors: 5 doors by the central controller and 3 more doors by the distribution box of the peripheral system. Each of these 3 doors needs a control terminal of the peripheral system and if necessary an operating terminal BT3 - see page 08.011.00 and following.
- Direct connection of a control terminal of the peripheral system (see page 08.011.00), i.e. there is added 1 door to the system to make it 6 doors in total.

Operating terminal BTZ

On every door an operating terminal BTZ has to be mounted. It provides 2 sockets for RJ45 connectors:

- green socket: connection cable to the central controller
- yellow socket: connection cable to an operating terminal BT3 on the rear side of the door.

Operating terminal BT3

The operating terminal BT3 is also used for the peripheral interlock control system. It completes the operating terminal BTZ on the rear side of the door. The only difference is that the terminal BT3 has only one (yellow) socket.

Connection cables

All doors are easily connected to the central controller by flat cables with RJ45 connectors. The cables and their corresponding sockets are clearly marked by different colours (green, yellow, blue).

Central power pack

The 24 VDC power supply of the terminals and the locking devices is provided by a central power pack. It is available either with 2.7 A or 5 A power. The power pack is furnished ready for mounting with a mains cable with safety plug and a 2 m long 24 VDC cable with 6-pin connector to the central controller of the installation, i.e. it doesn't have to be opened for connection.

Locking devices

For locking the doors there is available a large choice of bar magnets and electric strikes (see page 08.039.00 and the following). It is essential that the used locking devices dispose of a potential-free feedback contact.

Additional components

- Emergency exit terminal according to EltVTR (see page 08.035.00)
- Time control unit (see page 08.036.00)



Central Interlock Control System - Central Controller

With the central interlock control system the central controller is the core of the interlock system. All control boards are placed in a central controller contrary to the peripheral system where they are located in the respective control terminal. The standard version provides 2 control boards for 2 doors. In case the interlock control system consists of more doors the central controller will contain the necessary number of control boards.

The main advantage of the central interlock control system is that there are required even less connection cables to the doors and all relations can be adjusted in the central controller.

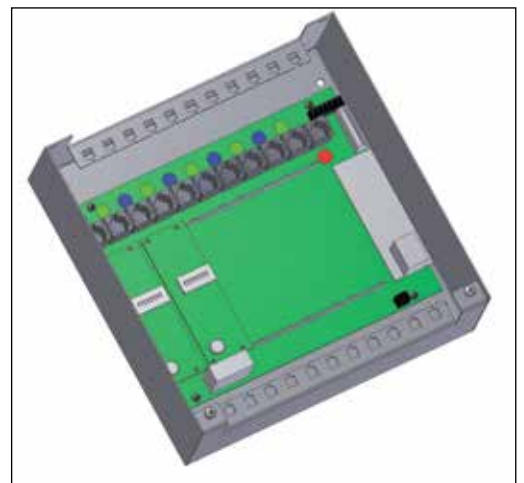
Structure

The central interlock control system has been designed for systems with up to 5 doors. If necessary, it can be used for up to 8 doors.

The central controller consists of a basic circuit board on which are plugged the control boards of the different doors. Above each control board are 2 sockets:

- green socket for green connection cable to the operating terminal BTZ on the door.
- blue socket for the connection cable to the locking device of this door.

The power cable of the power pack is plugged in the 2-pin socket down in the right corner.



Options

Beside the basic functions several additional options can be achieved. The most important ones are listed below, with the necessary accessories.

- **Global emergency-open GNA**

In case all doors of the interlock system should open once the emergency-open switch on one of the operating terminals has been pressed (global emergency-open), this can easily be achieved - also later - by adding a relay (part no. 710953). This relay is simply plugged in the provided socket.

- **LAN module**

It is possible to transmit status information and errors from the central controller to a facility management system. For this purpose the central controller can be upgraded in production with an additional circuit board (part no. 710954). This allows the facility management system e.g. to trigger an alarm, to pass an information to the ventilation system etc.

The LAN module is not included in the standard version!

- **Achieving special functions as e.g. the discretion circuit**

For this purpose an 8-pin screw-type terminal is provided in the central controller.

- **Time-delayed opening**

In case it should be possible to reopen some doors only with a time delay, this can be adjusted by a jumper on the respective control board.

- **Integration of door operators**

It is also possible to integrate door operators on (some) doors of the interlock system. In this case the terminals on the respective doors have to be without emergency-open and a separate emergency-open switch has to be mounted for the operator.

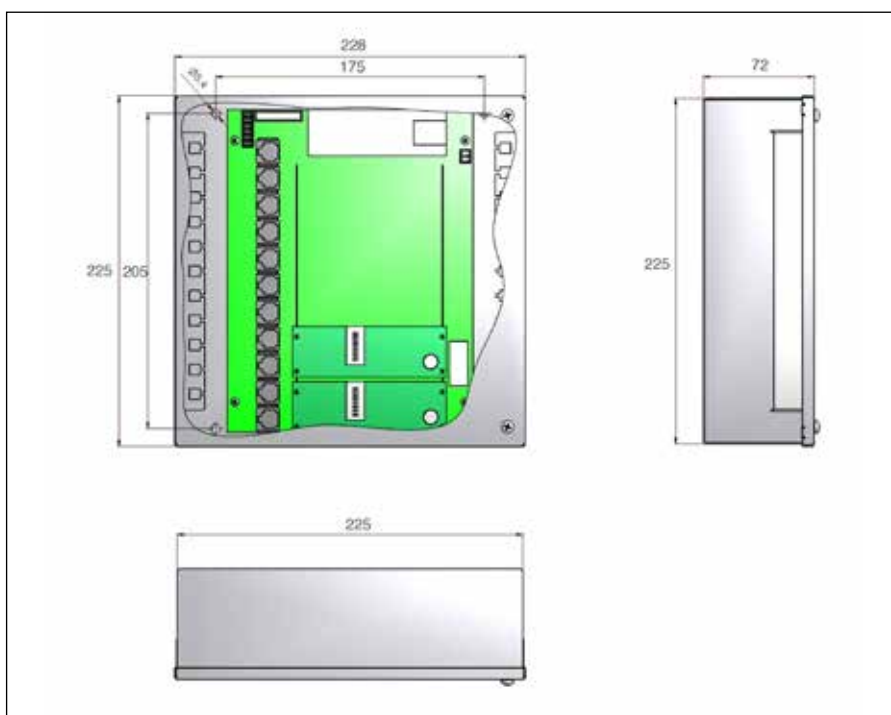


Central Interlock Control System - Central Controller - continuation

For systems with up to 8 doors the central controller can be upgraded in several ways:

- Connection of another central controller: max. 8 doors.
- Connection of a distribution box of the peripheral system. This also allows to control 8 doors in total.
- Direct connection of a control terminal of the peripheral system. This enlarges the system by 1 door to a total of 6 doors.

Dimensions



The strain relief of the incoming and outgoing cables is achieved by fixing the cables with tie wraps to the two cable support brackets. The cable inlets are sealed dust proof by cellular material.

For fixing 4 borings of $\varnothing 5.4$ mm are provided in the casing of the central controller.

Technical Data

Voltage	24 VDC +/-15 %
Power consumption basic version 2 doors	100 mA
Power consumption per additional door	50 mA
Power consumption relay for global emergency-open	30 mA
Power consumption LAN module	100 mA
IP rating	IP 20
Operating temperature	-10 °C up to +40 °C
Material casing	hot-dip galvanised sheet steel
Max. cable length to terminals/locking devices	15 m

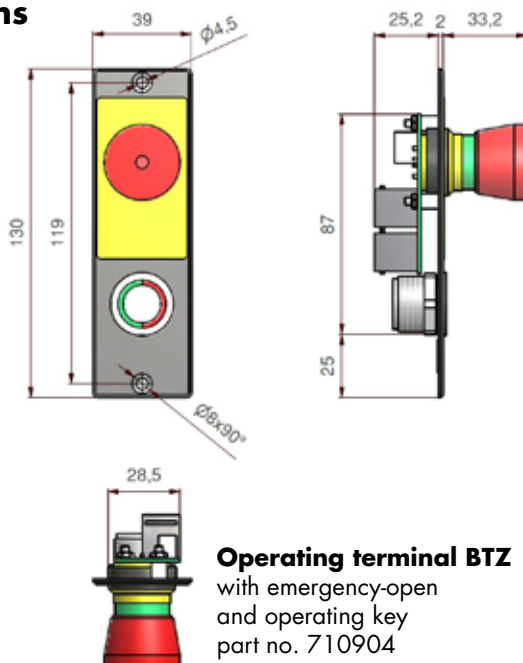


Central Interlock Control System - Operating Terminal BTZ

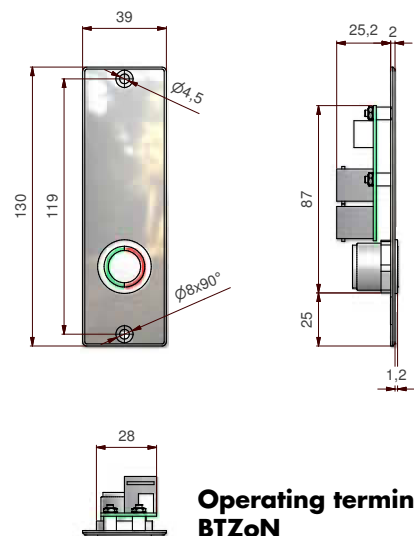
With the DICTATOR central interlock control system only simple operating terminals are mounted on the doors.

The operating terminal BTZ is connected by a flat cable with RJ45 connectors (green) directly to the central controller. Usually on the rear side of the door an operating terminal BT3 (also used with the peripheral system) is connected to the operating terminal BTZ. The only difference between the two terminals is, that the BTZ has two sockets for flat cable (one for the cable from the central controller and one for the cable to the operating terminal BT3).

Dimensions



Operating terminal BTZ
with emergency-open
and operating key
part no. 710904



Operating terminal BTZoN
with operating key,
without emergency-open
part no. 710905

The operating terminal BTZ is available with and without emergency-open switch. The DICTATOR terminals meet the requirements of clean rooms. The operating key is a piezo-type key which already reacts on very little pressure. Front plate and key are from stainless steel.

To the operating terminal BTZ there can directly be connected an access control or a large surface switch, for example.

The flat cable (green) for the connection to the central controller is available in 4 different lengths: 3, 5, 10, 15 m (for part numbers see page 08.024.00).

Technical Data

Power consumption	24 VDC +/-15 %
with emergency-open	max. 30 mA
without emergency-open	max. 15 mA
IP rating	IP 20 (operating key IP 65)
Operating temperature	-10 °C to +40 °C
Operating key	piezo-type with red/green circle illumination
Emergency-open switch	mushroom-type push-to-lock, illuminated
Emergency-open switch contact set (capacity)	1 contact NO: 500 mA
Material front plate	AISI 304 stainless steel



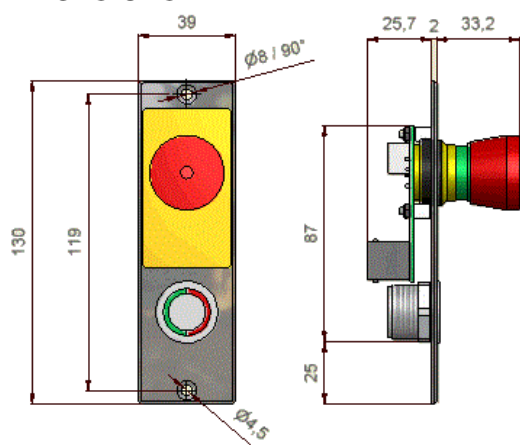
Central Interlock Control System - Operating Terminal BT3

Normally the doors of an interlock system are used from both sides. Therefore, the additional operating terminal BT3, connected to the operating terminal BTZ, is required on the other side of the door.

The operating terminal BT3 is available with and without emergency-open switch.

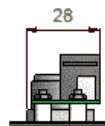
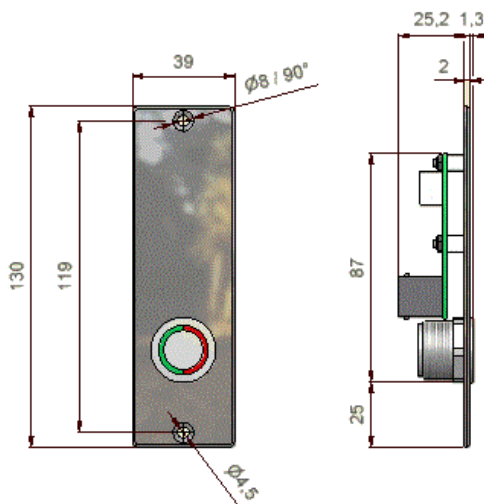
The front plates of all terminals have been designed for their mounting in hollow profiles. On demand, there are available front plates with differing measurements and with the customer's logo.

Dimensions



Operating terminal BT3

with emergency-open
and operating key
part no. 710901



Operating terminal BT3on

with operating key,
without emergency-open
part no. 710903

The operating terminal BT3 is connected to the operating terminal BTZ by the connection cable with RJ45 connector (marked yellow). The cable has to be ordered separately. By default two lengths are available:

- 250 mm (part no. 710936)
- 1000 mm (part no. 710937).

The operating terminal BT3 can directly be connected to an access control or e.g. a large surface switch.

Technical Data

Power consumption	24 VDC +/-15 %
with emergency-open	max. 30 mA
without emergency-open	max. 15 mA
IP rating	IP 20 (operating key IP 65)
Operating temperature	-10 °C to +40 °C
Operating key	piezo-type with red/green illumination
Emergency-open switch	mushroom-type push-to-lock, illuminated
Emergency-open switch contact set (capacity)	1 contact NO: 500 mA
Material front plate	stainless steel AISI 304



Central Interlock Control System - Connection Cables

The components of the central interlock control system are connected by simple flat cables with colour marked RJ45 connectors.

This significantly reduces the mounting costs and the danger of errors when connecting the single components.

Connection Cables

Connection cable central controller - operating terminal BTZ (1)

The connection cable between central controller and the operating terminals BTZ on the respective doors is a flat cable with RJ45 connectors on both ends. The connectors as well as the corresponding sockets are marked **green**.

Standard lengths: 3 m, 5 m, 10 m and 15 m

Connection cable operating terminals BTZ - BT3 (2)

The connection cable between the operating terminals BTZ and BT3 is also a flat cable with RJ45 connectors on both ends. The connectors as well as the corresponding sockets are marked **yellow**.

Available lengths: 250 mm and 1 m

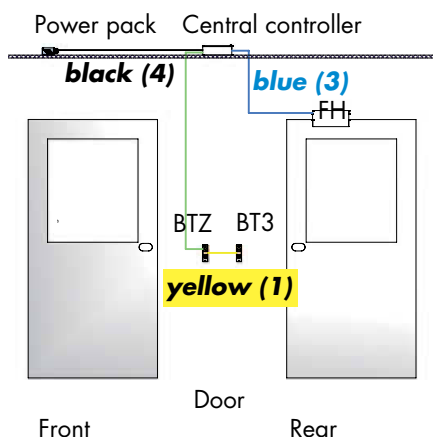
Connectings door locking device or door operator (3)

As the DICTATOR interlock control system can be combined with a multitude of locking devices the connection cable for the locking device or door operator is furnished only on one end with a RJ45 connector (**blue** colour). This is plugged in the central controller. On the other end of the cable are 4 free leads which are marked explicitly (2 leads for the feedback contact and 2 leads for the power supply).

Standard lengths: 250 mm, 2 m, 4m and 15m

Power cable (4)

The standard version of the central interlock control system does not require power cable to the door terminals. The power pack is provided with a 2 m long, pluggable power cable which has just to be plugged in the corresponding socket of the central controller.



Connecting a second central controller

If a central system is upgraded by a second central controller, two cables are needed to connect the two central controllers:

- control cable red
- 6 core power cable

Details about these two types of cables are to be found on page 08.015.00.

Connecting a distribution box VK3 of the peripheral system

For controlling 8 doors also two cables are needed to connect the distribution box:

- control cable red
- 6 core power cable

Details about these two types of cables are to be found on page 08.015.00.

Connecting external components

Additional components as access controls or large surface switches have to be connected to the interlock control system by the customer. The operating terminals BTZ and BT3 dispose for their connection of a pluggable 3-pin screw terminal.



Central Interlock Control System - Order Information

On this page you will find a summary of the part numbers of all components of the DICTATOR central interlock control system.

Other accessories:

- Flush and surface mounting boxes for the terminals page 08.037.00
- Emergency exit terminal page 08.035.00
- Time control unit page 08.036.00
- Power packs page 08.063.00 et sqq.
- Locking devices page 08.039.00 et sqq.

Order Information Terminals

(see page 08.021.00 and following)

Central Controller

(see page 08.019.00 and following)

Connection Cables

(see page 08.023.00)

Operating terminal BTZ		part no. 710904
Operating terminal BTZoN, without emergency-open switch		part no. 710905
Operating terminal BT3		part no. 710901
Operating terminal BT3oN, without emergency-open switch		part no. 710903
Central controller basic version for 2 doors		part no. 710920
Central controller for 3 doors		part no. 710920-3
Central controller for 4 doors		part no. 710920-4
Central controller for 5 doors		part no. 710920-5
Additional relay for global emergency-open, retrofittable, for central controller		part no. 710953
Additional circuit board (LAN module) for connection to facility management system, to be retrofitted in production		part no. 710954
Connection cable operating terminals BTZ - BT3, yellow	250 mm	part no. 710936
Connection cable operating terminals BTZ -BT3, yellow	1 m	part no. 710937
Connection cable central controller - BTZ, green	3 m	part no. 710947
Connection cable central controller - BTZ, green	5 m	part no. 710948
Connection cable central controller - BTZ, green	10 m	part no. 710949
Connection cable central controller - BTZ, green	15 m	part no. 710952
Connection cable locking/door operator, blue	250 mm	part no. 710939
Connection cable locking/door operator, blue	2 m	part no. 710938
Connection cable locking/door operator, blue	4 m	part no. 710928
Connection cable locking/door operator, blue	15 m	part no. 710946
Connector for flat cable with RJ45 connector		part no. 710943



Ex-Proof Interlock Control System - Overview

The interlock control system for hazardous areas functions similar to the system with central controller. The control boards of all doors belonging to the interlock system are united in a casing. Whenever it is possible the central controller should be mounted outside the hazardous area. However, it also can be placed, together with the power pack, in an ex-proof casing and then be mounted within the hazardous area.

The ex-proof interlock control system allows to control a maximum of 5 doors in the hazardous area. But it is possible to extend the ex-proof interlock control system to up to 8 doors.

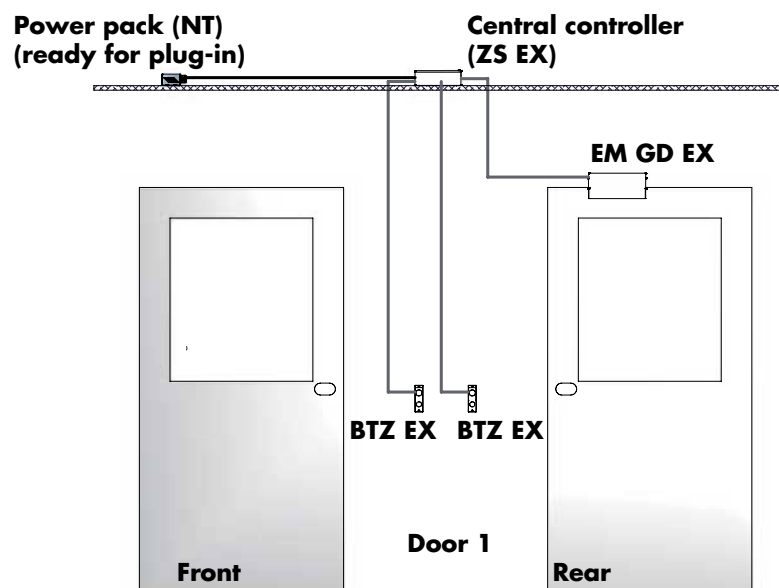
Basic Set-up

With the ex-proof interlock control system all feeding lines from the terminals and locking devices of the doors are directly led to the EX central controller and connected there. In hazardous areas flat cables and RJ45 connectors cannot be used.

On the doors is mounted the ex-proof operating terminal BTZ EX. Contrary to most ex-proof operating devices it is as small and aesthetically attractive as the terminals of the other DICTATOR interlock control system types. There are available two versions of the terminal BTZ EX. It always has an operating key to request the opening of the door and a LED light to indicate the status of the door. The light is either green or red, same as the illuminated ring of the door terminals of the other interlock control systems. On both sides of the door the same type of terminal is mounted. Both are directly connected to the EX central controller. In addition the operating terminal can also be equipped with an emergency-open switch.,

As locking device is used an ex-proof DICTATOR electromagnet with separate feedback contact. Magnet and feedback contact are also directly connected to the central controller of the ex-proof interlock control system.

The power pack which is ready for plug-in supplies the power. Its safety plug is plugged in a socket on site. In the EX central controller is provided a socket for the power cable of the power pack.



Legend:

BTZ EX = ex-proof operating terminal
EM GD EX = ex-proof electromagnet



Ex-Proof Interlock Control System - Components

The ex-proof DICTATOR interlock control system consists of a few main components. Its structure is very simple. The system is also characterised by the extremely simple programming and the attractive, small terminals.

The standard version of the EX central controller and the corresponding power pack are intended for their mounting outside the hazardous area. In case that is not possible, both components can be mounted in an ex-proof casing.

System Components

EX Central controller

There is needed one EX central controller per system. The controller itself is not ex-proof (see above). Usually it can control up to 5 doors. But it is possible to enlarge the system. The following options exist:

- Connection of a second EX central controller. This allows to control 8 doors in the hazardous area.
- Connection of a distribution box of the peripheral interlock control system (see page 08.013.00). This allows to control in total 8 doors: 5 doors from the EX central controller and from the distribution box of the peripheral system 3 more doors which need a control terminal of the peripheral system and if necessary an operating terminal BT3 - see page 08.011.00 et sq.). These 3 doors, however, have to be located outside the hazardous area.
- Direct connection of a control terminal of the peripheral system (see page 08.011.00). This adds 1 door to a total of 6 doors. But also with this version the additional door has to be located outside the hazardous area.

To the EX central controller also doors outside the hazardous area can be connected (see information on peripheral and central interlock control system). But as the cables have to be connected in the EX central controller and cannot be plugged in there is needed an adaptor for the connection of flat cables with RJ45 connector.

Operating terminal BTZ EX

On every door in the hazardous area an operating terminal BTZ EX has to be fitted. The operating terminal is provided with the corresponding connection cables to the EX central controller.

Central power pack

The 24 VDC power supply of the central controller is provided by a power pack. It is available either with a power of 2.7 A or 5 A. The power pack is furnished ready for mounting with a mains cable with safety plug and a 2 m long 24 VDC cable with 6-pin connector to the EX central controller, i.e. it doesn't have to be opened for connection. The power pack is not ex-proof.

Door locking device

In the hazardous area an ex-proof electromagnet is used to lock the doors. Information about the magnet can be found beginning on page 08.030.00. In addition there is required a separate ex-proof feedback contact on the doors.

Time-delayed opening

With the EX central controller it can be adjusted that certain doors of the interlock system are released only after a delay. The remaining time, however, is not indicated in the interlock.

Information about more components for doors outside the hazardous area can be found on the pages about the peripheral resp. central interlock control system.



Ex-Proof Interlock Control System - EX Central Controller

With the ex-proof interlock control system all electrically relevant parts are combined in the EX central controller. The operating terminals are connected by screw terminals as hazardous areas require special cables and the flat cables of the not ex-proof version cannot be used. Apart from that the EX central controller corresponds mostly to the central controller.

The standard version contains 2 control boards for 2 doors. In case the interlock system consists of more doors, the EX central controller will be provided with the corresponding number of control boards.

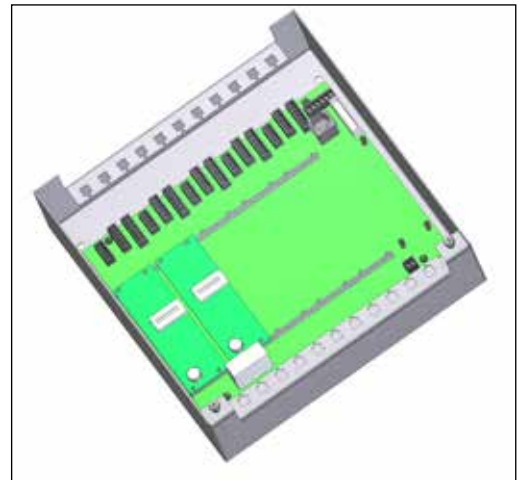
Structure

The EX central controller has been designed for systems with a maximum of 5 doors. But in case of need, with a second EX central controller you can control in total 8 doors in a hazardous area.

The EX central controller contains a basic circuit board on which is attached a control board for every door. Above each control board are 3 terminal strips:

- KL 1 to connect the ex-proof electro-magnet and the separate feedback contact,
- KL 6 to connect the luminous diode of the terminal,
- KL 11 to connect the Emergency-Open switch (of the operating terminal or a separate emergency-open switch)

The connection cable from the power pack is plugged in the 2 pin socket down in the right corner.



Options

Beside the basic functions a number of additional options are possible. Below are listed the most important ones with the necessary accessories.

- **Global Emergency-Open GNA**

In case all doors of the interlock system should open once the emergency-open switch on one of the operating terminals has been pressed (global emergency-open), this can easily be achieved by adding a relay (part no. 710953) in the EX central controller. This relay is simply plugged in the provided socket.

- **LAN module**

It is possible to transmit status information and errors from the EX central controller to a facility management system. For this purpose the EX central controller can be upgraded in production with an additional circuit board (part no. 710954). This allows e.g. the facility management system to trigger an alarm, to pass an information to the ventilation system etc.

The LAN module is not included in the standard version!

- **Achieving special functions as e.g. the discretion circuit**

For this purpose an 8-pin screw-type terminal is provided in the EX central controller.

- **Time-delayed opening**

In case it should be possible to reopen some doors only with a time delay, this can be adjusted by a jumper on the respective control boards.

- **Integration of door operators**

It is also possible to integrate door operators on (some) doors of the interlock system. In this case the terminals on the respective doors have to be without emergency-open and a separate emergency-open switch has to be mounted for the operator (e.g. ex-proof push-to-lock switch, part no. 700254, page 04.071.00).

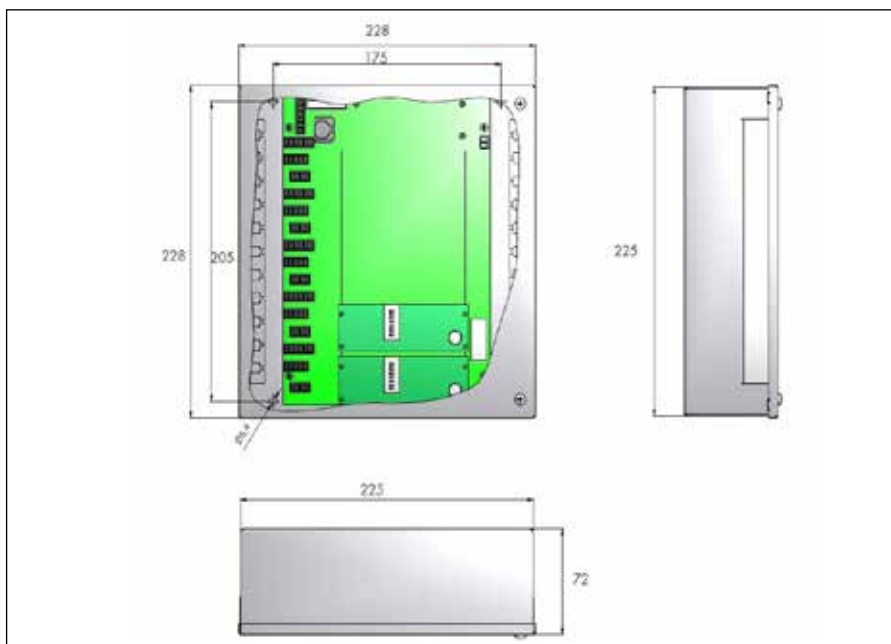


Ex-Proof Interlock Control System - EX Central Controller - continuation

For systems with up to 8 doors the EX central controller can be upgraded in several ways:

- Connection of another EX central controller: max. 8 doors in hazardous area.
- Connection of a not ex-proof central controller: up to 8 doors in total, max. 5 doors in hazardous area, rest outside hazardous area.
- Connection of a distribution box of the peripheral system: up to 8 doors in total, max. 5 doors in hazardous area.
- Direct connection of a control terminal of the peripheral system. This way the system can be enlarged by 1 door to a total of 6 doors, max. 5 doors in hazardous area.

Dimensions



The strain relief of the incoming and outgoing cables is achieved by fixing the cables with tie wraps to the two cable support brackets. The cable inlets are sealed dust proof by cellular material.

To fix the EX central controller 4 borings of $\varnothing 5.4$ mm are provided in the casing.

If the EX central controller has to be mounted within the hazardous area, it is fitted together with the power pack into an ex-proof casing of the ex-protection type Ex II 2G Ex de IIC T6. The dimensions and the exact model depend on the number of doors the ex-proof interlock control system consists of.

Technical Data

Voltage	24 VDC +/-15 %
Power consumption basic version 2 doors	100 mA
Power consumption per additional door	50 mA
Power consumption relay for global emergency-open	30 mA
Power consumption LAN module	100 mA
IP rating	IP 20
Operating temperature	-10 °C up to +40 °C
Material casing	hot-dip galvanised sheet steel
Max. cable length to terminals/locking devices	15 m
Ex-protection type of optional EX casing	Ex II 2G Ex de IIC T6



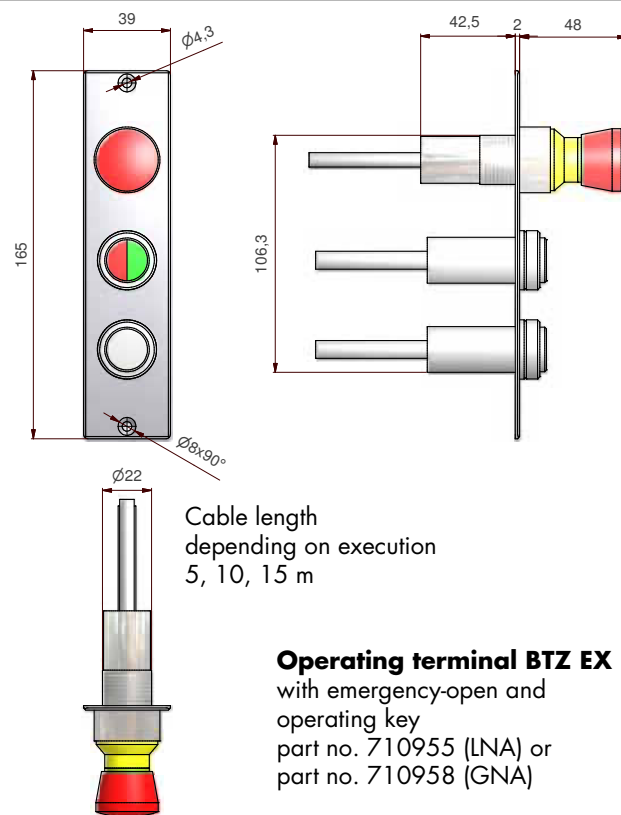
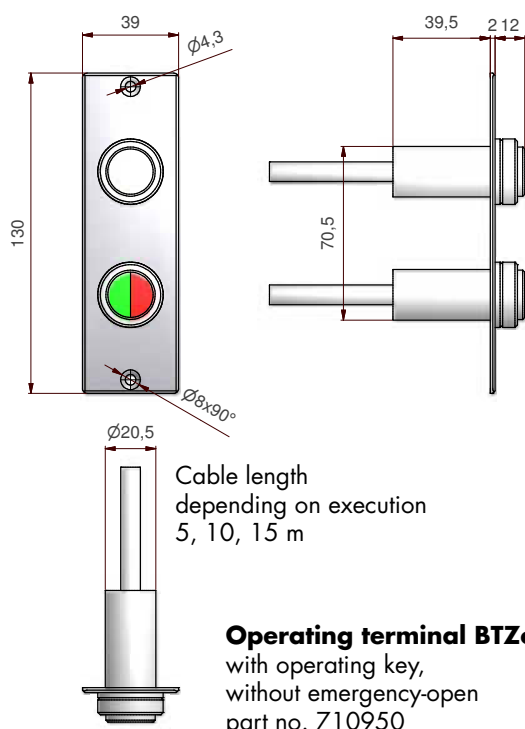
Ex-Proof Interlock Control System - Operating Terminal BTZ EX

A special feature of the ex-proof interlock control system are the operating terminals on the doors. They are as small, unobtrusive, elegant and suitable for clean rooms as the terminals of the "normal" DICTATOR interlock control systems.

With the ex-proof terminals a separate luminous display indicates the status of the door. Depending on the status it shows a green or red light.

The terminals are furnished with cables for their connection to the EX central controller. When ordering the terminals please consider the required length of cable (5, 10 or 15 m).

Dimensions



The operating terminal EX is available with and without emergency-open switch. The type with emergency-open is slightly longer. Its front plate measures 165 mm instead of 130 mm as the type without emergency-open switch. With the terminals with emergency-open switch you have to decide whether this switch should open only this (local) door (LNA) or all doors (GNA).

Technical Data

Power consumption	24 VDC +/-15 %, ca. 17 mA
Ignition protection type	EEx d IIC T6/T5
IP rating	IP 68
Operating temperature	-10 °C to +40 °C
Operating key	key 22
Luminous display	LED 22, two coloured green/red
Emergency-open switch	mushroom-type push-to-lock
Emergency-open switch contact set (capacity)	1 make/break, 1.5 A at 24 VDC
Material front plate	AISI 304 stainless steel



Ex-Proof Interlock Control System - Ex-Proof Electromagnet

As locking device is mounted the tested and approved ex-proof electromagnet DICTATOR EM GD 70 with a holding force of 1450 N. If with special applications the holding force should not be sufficient, several electromagnets can be used.

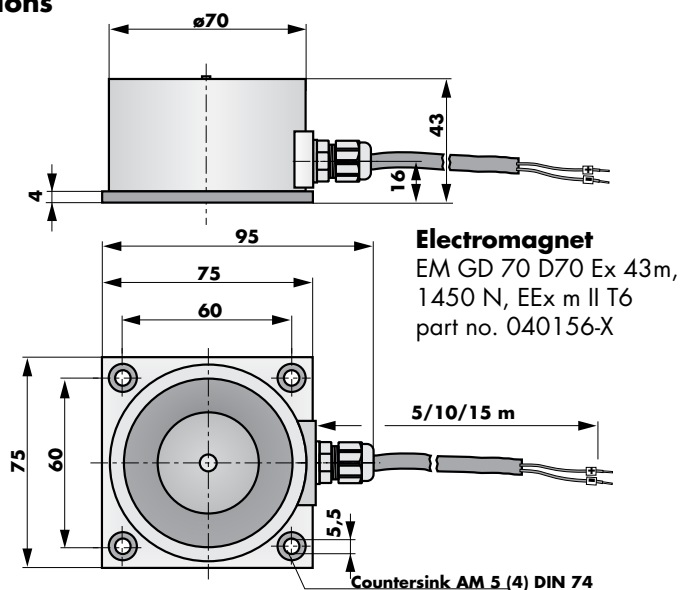
The electromagnet comes with a cable that is connected to the EX central controller. Depending on the distance, cables of 5, 10 and 15 m length are available.

The electromagnet is registered at the PTB (German national metrology institute providing scientific and technical services) under the type-examination certificate PTB 03 ATEX 2174 X and the information of being conform with the PTB design 03 ATEX N060.

Ex-proof Electromagnet



Dimensions



To accomplish the mounting every magnet needs a potential equalisation. On the mounting plates is provided a connection for connecting an equipotential bonding conductor (to be provided on site).

For safety reasons every magnet must have a superposed fuse, max. $3 \times I_b$ according to IEC 60127-2-1, as protection against a short circuit. One fuse per door is already included in the EX central controller.

The ex-proof electromagnet EM GD 70 does not have an integrated feedback contact. This has to be mounted separately.

Technical Data

Voltage	24 VDC, $\pm 15\%$
Max. permitted ripple	20 %
Power consumption ($\pm 15\%$)	70 mA (1.7 W)
Holding force / Remanence	1450 N / 0 N
Ex-protection	II 2G EEx m II T6
IP rating / Duty cycle	IP 66 / 100 %
Operating temperature	-20 to +40 °C
Finishing	magnet zinc-plated



Ex-Proof Interlock Control System - Ex-Proof Electromagnet, continuation

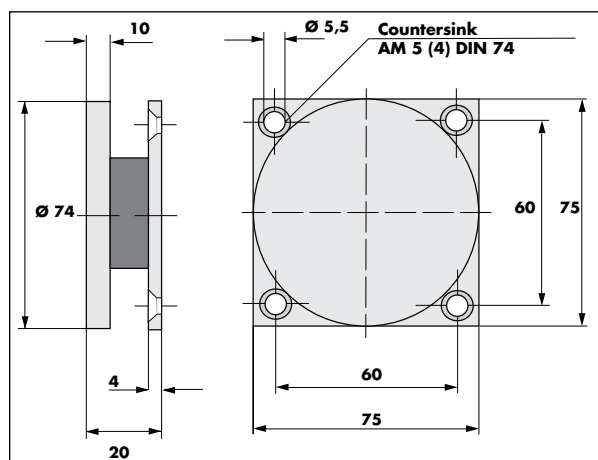
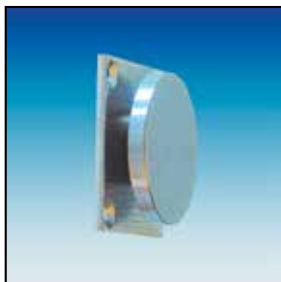
The electromagnet requires a counter plate. It has to be ordered separately.

Depending on the mounting possibilities of magnet and counter plate different types of counter plates are available. They differ in respect of height (distance between mounting plate and counter plate), angle of inclination and type of suspension. The most used model is the flexible counter plate, part no. 040026.

Counter Plate for Ex-Proof Electromagnet

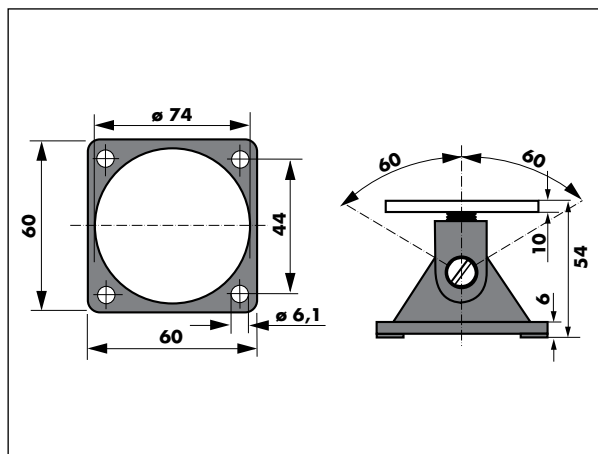
Flexible counter plate AP GD 70 G20

part no. 040026



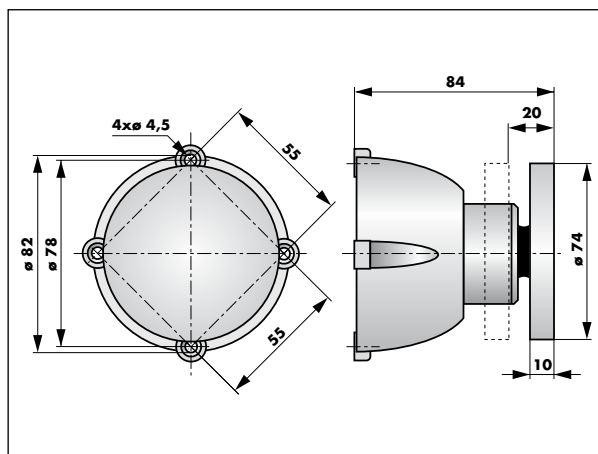
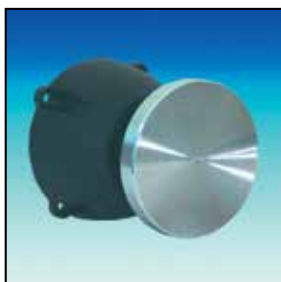
Counter plate with angular joint AP GD 70 W54

part no. 040068



Telescopic counter plate AP GD 70 T84

part no. 040029





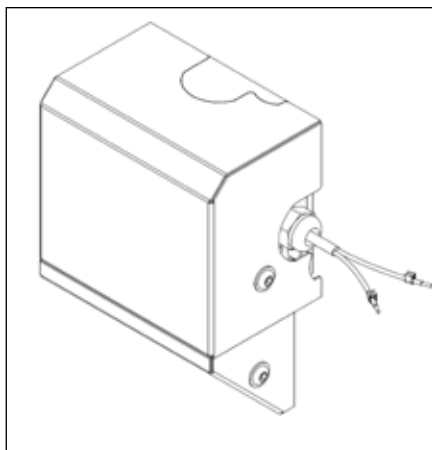
Ex-Proof Interlock Control System - Ex-Proof Electromagnet, continuation

For an easy mounting of the ex-proof magnet and the counter plate on the front side of the door (where the hinges are visible) a mounting kit is available. Once they are mounted magnet and counter plate will be completely covered when the door is closed. This type of mounting is suitable for clean rooms.

Mounting Kit

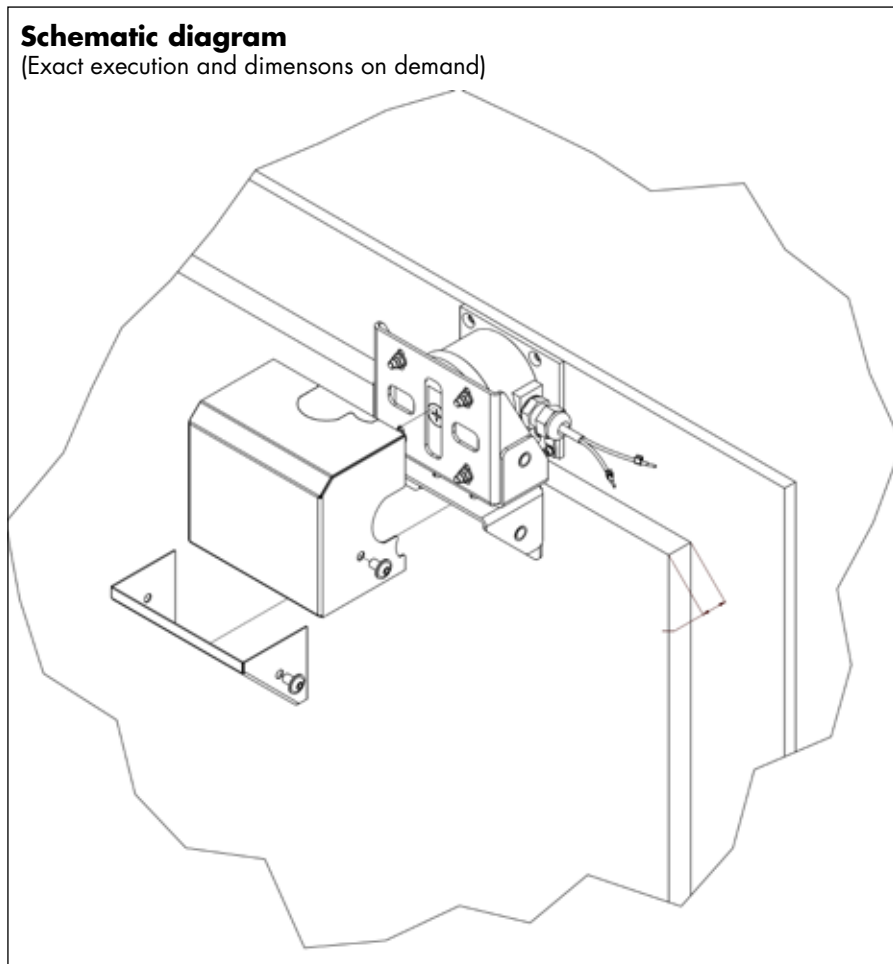
The electromagnet EM GD 70 Ex 43m is fixed to the door frame directly above the door. For the flexible counter plate, part no. 040026, the corresponding mounting bracket of the mounting kit is fixed on the door. To this is screwed the fastening bracket for the counter plate and to this the counter plate. It has to be made sure that it completely covers the electromagnet. Then the covers are fixed.

The surface of the covers is varnished white (RAL 9010).



Schematic diagram

(Exact execution and dimensions on demand)



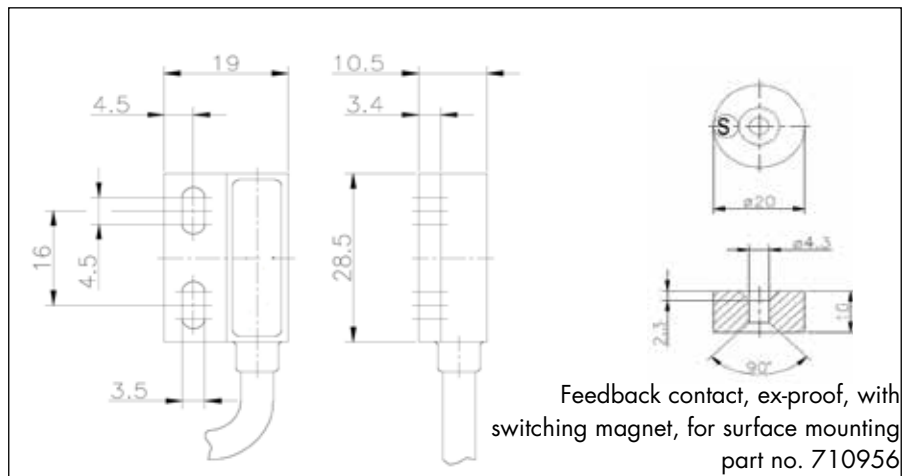


Ex-Proof Interlock Control System - Ex-Proof Electromagnet, continuation

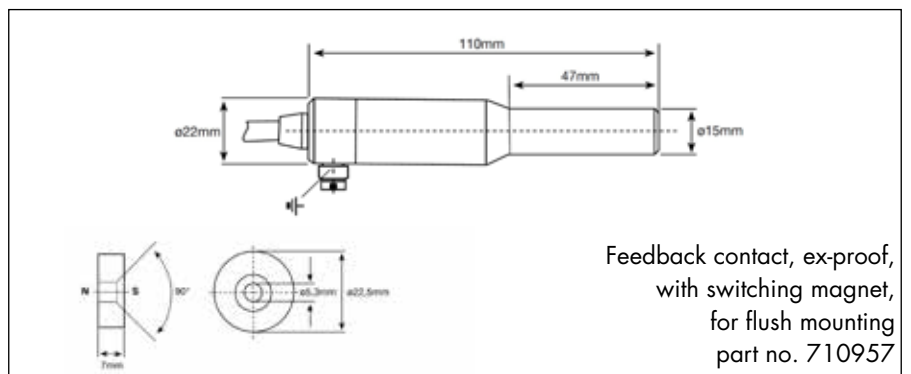
The ex-proof electromagnet has to be completed by a separate, ex-proof feedback contact. It usually consists of a magnetic switch and the corresponding actuating magnet. The feedback contact has to be actuated when the door is completely closed.

The feedback contact is connected directly to the provided clamps in the EX central controller.

Ex-Proof Feedback Contact, Surface Type



Ex-Proof Feedback Contact, Flush Type



Technical Data

	Feedback contact surface, 710956	Feedback contact flush, 710957
Switching contact	1 make/break contact	1 make/break contact
Switching capacity	max. 3 W/VA	max. 50 W/VA
Switching voltage	30 V AC/DC	max. 250 V AC/DC
Switching current	max. 200 mA	max. 1.5 A
Operating temperature	-40 to +70 °C	-20 to +70 °C
Casing	plastics	nickel-plated brass
Connection cable	15 m, 3 x 0.34 mm ²	15 m, 4 x 0.75 mm ²
Ex-protection	II 2G Ex mb IIC T6 Gb	II 2G EEx m II T6
Switching distance	15 mm	8 mm



Ex-Proof Interlock Control System - Order Information

On this page you will find a summary of the part numbers of all components of the ex-proof DICTATOR interlock control system. If doors outside the hazardous area should be integrated in the interlock system, the corresponding part numbers will be found with the information about the peripheral or central system.

Other accessories:

- Power packs

page 08.063.00 et sqq.

Order Information Terminals

(see page 08.029.00)

EX Central Controller

(see page 08.027.00)

Ex-Proof Electromagnet with accessories

(see page 08.030.00 and following)

Operating terminal BTZoN EX with connection cable	5 m	part no. 710950-5
Operating terminal BTZoN EX with connection cable	10 m	part no. 710950-10
Operating terminal BTZoN EX with connection cable	15 m	part no. 710950-15
Operating terminal BTZ EX with connect. cable, LNA	5 m	part no. 710955-5
Operating terminal BTZ EX with connect. cable, LNA	10 m	part no. 710955-10
Operating terminal BTZ EX with connect. cable, LNA	15 m	part no. 710955-15
Operating terminal BTZ EX with connect. cable, GNA	5 m	part no. 710958-5
Operating terminal BTZ EX with connect. cable, GNA	10 m	part no. 710958-10
Operating terminal BTZ EX with connect. cable, GNA	15 m	part no. 710958-15
EX central controller, no EX casing, 2 doors		part no. 710924
EX central controller, no EX casing, 3 doors		part no. 710924-3
EX central controller, no EX casing, 4 doors		part no. 710924-4
EX central controller, no EX casing, 5 doors		part no. 710924-5
EX central controller, <u>in</u> EX casing, 2 doors		part no. 710965
EX central controller, <u>in</u> EX casing, 3 doors		part no. 710966
EX central controller, <u>in</u> EX casing, 4 doors		part no. 710967
EX central controller, <u>in</u> EX casing, 5 doors		part no. 710968
Additional relay for global emergency-open, retrofittable, for central controller		part no. 710953
Additional circuit board (LAN module) for connection to facility management system, to be retrofitted in production		part no. 710954
Electromagnet EMGD70Ex43m, 1450 N EEx m II T6, length of connection cable	5 m	part no. 040156-5
Electromagnet EMGD70Ex43m, 1450 N EEx m II T6, length of connection cable	10 m	part no. 040156-10
Electromagnet EMGD70Ex43m, 1450 N EEx m II T6, length of connection cable	15 m	part no. 040156-15
Counter plate for electromagnet AP GD 70 G20		part no. 040026
Counter plate for electromagnet AP GD 70 W54		part no. 040068
Counter plate for electromagnet AP GD 70 T84		part no. 040029
Mounting cover for electromagnet		on demand
Ex-proof feedback contact, surface mounting		part no. 710956
Ex-proof feedback contact, flush mounting		part no. 710957
Adaptor for connection of flat cables with RJ45 connector		part no. 710959

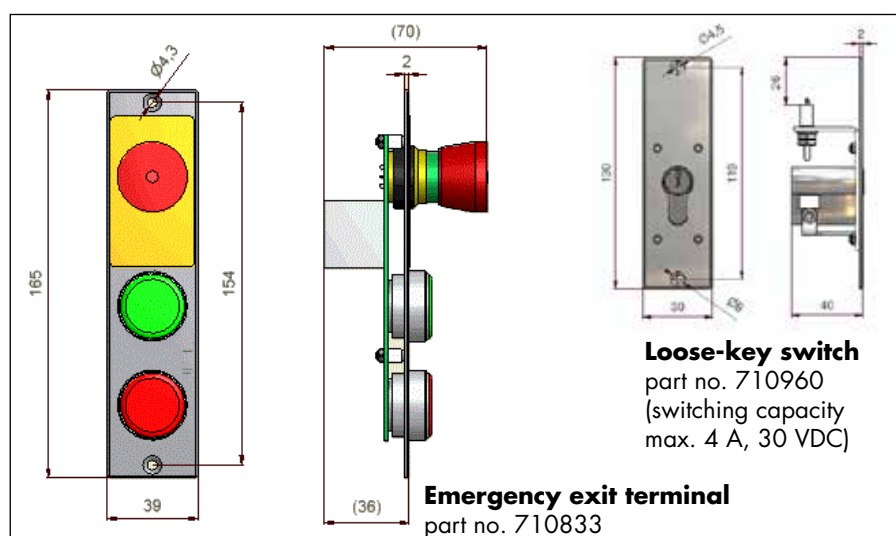


Interlock Control System - Emergency Exit Terminal

The DICTATOR interlock control system provides a terminal designed especially for doors in emergency exits. These doors are equipped both with the normal control terminal and an additional emergency exit terminal. This terminal only serves for unlocking the door during an emergency. Normally the interlock system door is operated by the control terminal (without emergency-open switch).

The emergency exit terminal has been tested by the German TÜV Thüringen and is approved for its use on emergency exit doors (German standard for electrical locking systems on emergency exits EltVTR), certificate no. P-3250/08.

Dimensions



Functioning

The emergency-open switch of the emergency exit terminal permits to unlock the door of the interlock system in case of an emergency. The used locking device has to be an approved one (see DICTATOR bar magnets starting on page 08.039.00, approved magnets are marked with * or electric strikes on pages 08.056.00 and following). The power supply of the connected bar magnet is interrupted and the door unlocked.

The emergency exit terminal is provided with contacts for an external signal (siren, lamp, horn), even supplying a power of up to max. 1.4 A for the signal. (ATTENTION: this power consumption has to be taken into account when calculating the required performance of the power pack).

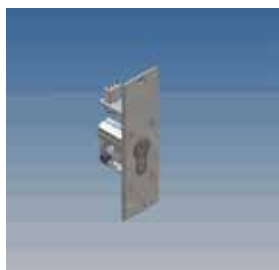
The emergency-open command can also be given directly by a facility management centre.

The door status is indicated by the two lamps on the terminal:

Red LED on: Door is locked electrically.

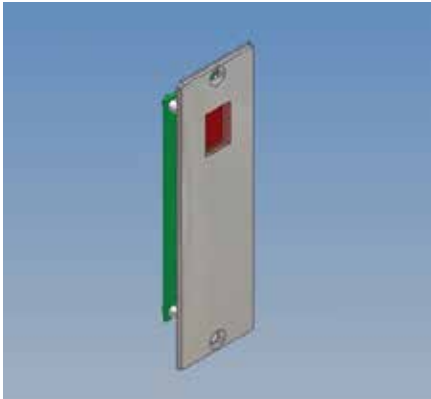
Green LED on: Door is released.

After an emergency unlocking the door has to be locked again by a separate switching device within splitting distance of the door like for instance the loose-key switch with stainless steel front plate (AISI 304), part no. 710960 (see illustration on top and left). The half profile cylinder has to be provided by the customer.



Technical Data Emergency Exit Terminal

Power consumption	24 VDC, approx. 80 mA
IP rating	IP 20
Operating temperature	-10 °C to +40 °C
Emergency-open contact set (capacity)	2 NC contacts: 2.8 A
Input signal from hazard alert system	NC contact
Output to signal (horn etc.)	24 VDC, max. 1.4 A



Interlock Control System - Time Control Unit

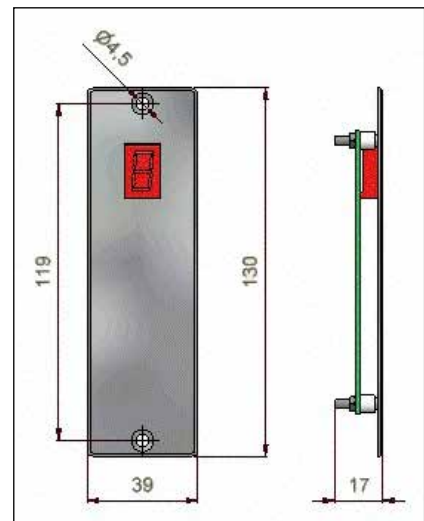
Some interlock systems require that some doors open only after a certain time delay, e.g. if the quality/temperature of the air in the interlock must reach a certain level before the door to the clean room may open. The DICTATOR time control unit permits the blocking of max. 6 clean room doors against up to 6 "blackroom" doors. If one or several of the "blackroom" doors are opened during the locking time, the time control unit starts the count-down again. Only when the adjusted time has elapsed, the door to the clean room can be opened.

Functioning / Dimensions

The type of door (clean room or blackroom) is determined by the connection of the control terminals to different terminal strips of the time control unit.

The required period (16 different values possible) is adjusted in the time control unit with the help of 4 DIP switches. If a time different from the 16 adjusted periods is required, this has to be indicated in the order as it has to be programmed in production.

The time control unit has a 7-segment display and an additional dot. If the time control unit is on, the dot of the display lights up. When the time control unit is activated by one of the connected terminals, the dot starts flashing (one flash per second). When all blackroom doors are closed the countdown starts. The time control unit divides the adjusted period in 10 intervals and the display counts down from 9 to 0, thus indicating the remaining time during which the doors stay locked.



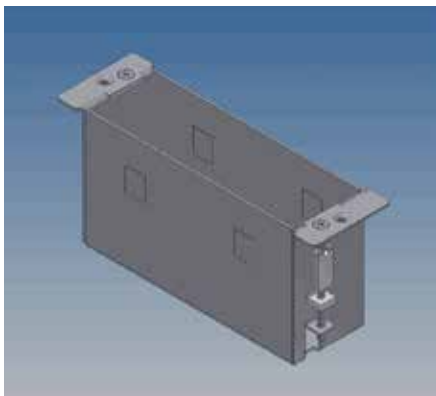
Models / Components

It is possible to connect up to 6 additional displays (part no. 710805) to the time control unit. Independent of the amount of additional displays there is always required one extender circuit module (part no. 710808).

The time control unit is connected with a normal cable to the distribution box. For the connection of the additional displays and the extender circuit module the connection cables, part no. 710809 or 710810, are to be used. If their length is not sufficient, the connection has to be done on site. In this case a set of connection plugs, part no. 710811, is required, one for each additional display.

Technical Data

Power consumption time control unit	24 VDC, max. 20 mA
Power consumption extender circuit module	24 VDC, max. 2 mA
Power consumption additional display	24 VDC, 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. time lag 2.75 hours
Number of connectable doors	6 clean room and max. 6 "blackroom" doors



Interlock Control System - Installation Components

For the installation of the different terminals there are available suitable flush and surface boxes.

Furthermore, the terminals with emergency-open switch can be protected against unauthorised activating of this switch by a cover that is prepared for a lead seal.

Flush and Surface Boxes

Generally the control and operating terminals and also the time control unit are intended for flush mounting in the hollow profiles of the interlock doors. If necessary, a corresponding flush box is available (part no. 710829).

But the terminals can also be mounted on the surface. The surface box has the IP rating IP 65 and is powder-coated. It is available in two colours:

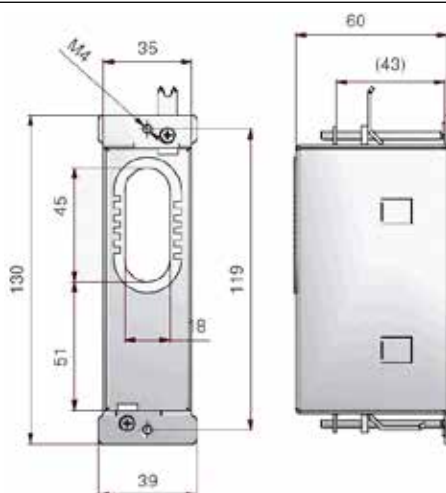
- white RAL 9010 (part no. 710831)
- white aluminium, metallic, RAL 9006 (part no. 710832).

Also for the emergency exit terminal a flush box (part no. 710834) and a surface box in white RAL 9010 (part no. 710835) are available.



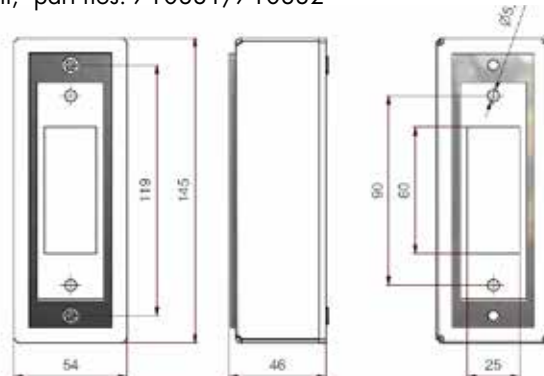
Flush box

for control and operating terminals and the time control unit
part no. 710829

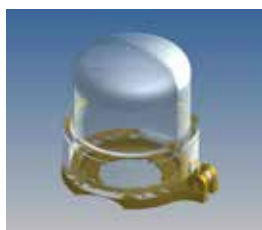


Surface box

for control and operating terminals and the time control unit, part nos. 710831/710832



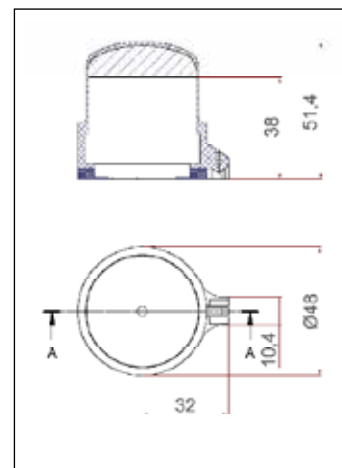
Cover Prepared for a Lead Seal



In case the emergency-open switches in an interlock control system are again and again misused, they can be protected by a cover that is prepared for a lead seal (part no. 710839). This cover can be retrofitted and is from transparent, UV resistant plastics with a yellow collar for fixing.

This cover has a predetermined separation area and can be reused after the emergency-open switch has been activated.

The lead seal is not included in the delivery.





Additional Components for Peripheral and Central Interlock Control System - Order Information

On this page you will find the part numbers of all the additional components for the peripheral and central DICTATOR interlock control system mentioned on the previous pages.

Order Information Emergency Exit Terminal Time Control Unit

(see page 08.036.00)

Mounting Components

(see page 08.037.00)

Emergency exit terminal FT P	part no. 710833
Loose-key switch for emergency exit terminal	part no. 710960
Time control unit ZS	part no. 710805
Additional display ZA for the time control unit	part no. 710806
Extender circuit module for additional displays	part no. 710808
Surface box P for the control/operating terminal, white, RAL 9010	part no. 710829
Surface box P for the control/operating terminal, white, RAL 9010	part no. 710831
Surface box P for control/operating terminal, metallic, RAL 9006	part no. 710832
Flush box P for emergency exit terminal	part no. 710834
Surface box P for emergency exit terminal, white, RAL 9010	part no. 710835
Cover prepared for a lead seal	part no. 710839