

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.

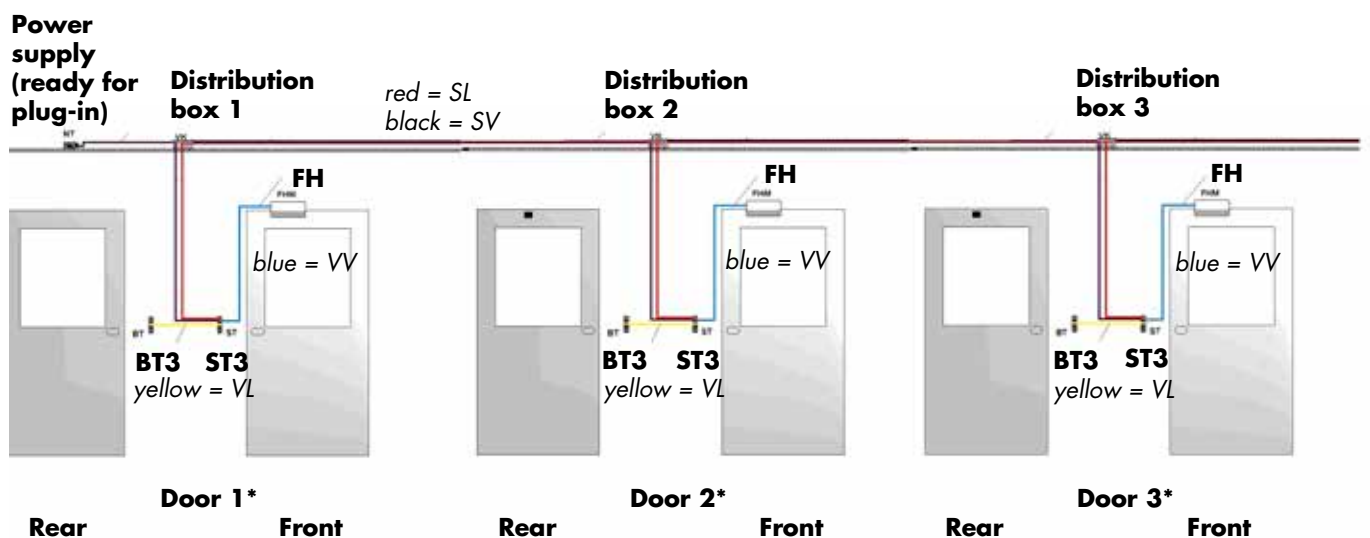
The distribution box is connected to each of its respective doors by a pluggable control cable and power cable.

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

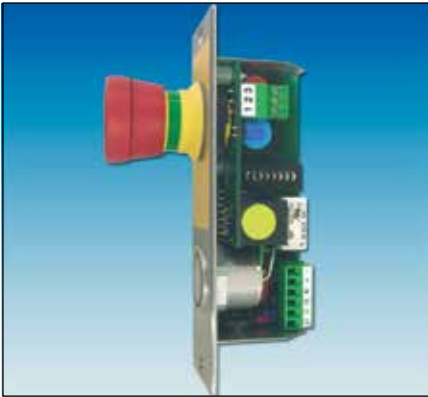
For locking the doors there is available a large choice of bar magnets and electric strikes (see page 08.039.00 and the following). It is essential that the used locking devices dispose of a potential-free feedback contact.

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

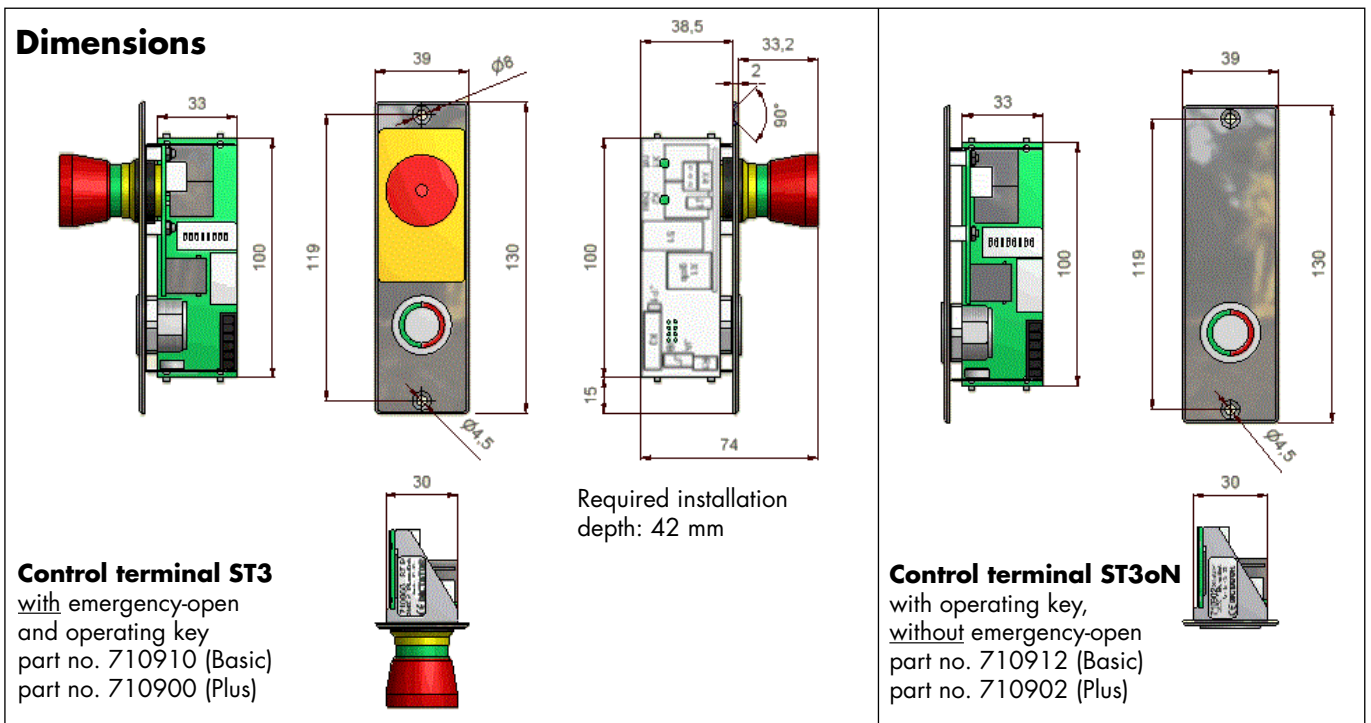
If the interlock system includes doors that shall be free only after a certain time (for decontamination, reaching determined temperatures etc.) and the remaining time should be indicated to the persons in the interlock, the DICTATOR time control unit together with the corresponding secondary indication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



Performance

Basic version

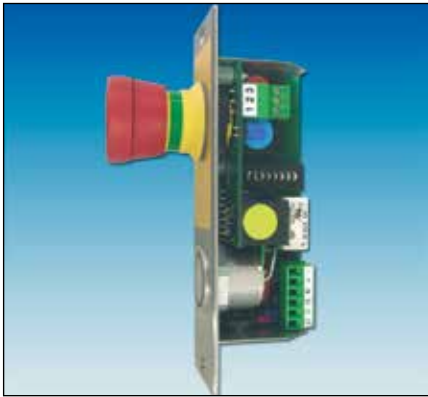
- 1 signal output for actuating the emergency-open switch (if included)
- 1 signal output (to be configured by a jumper)

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.)

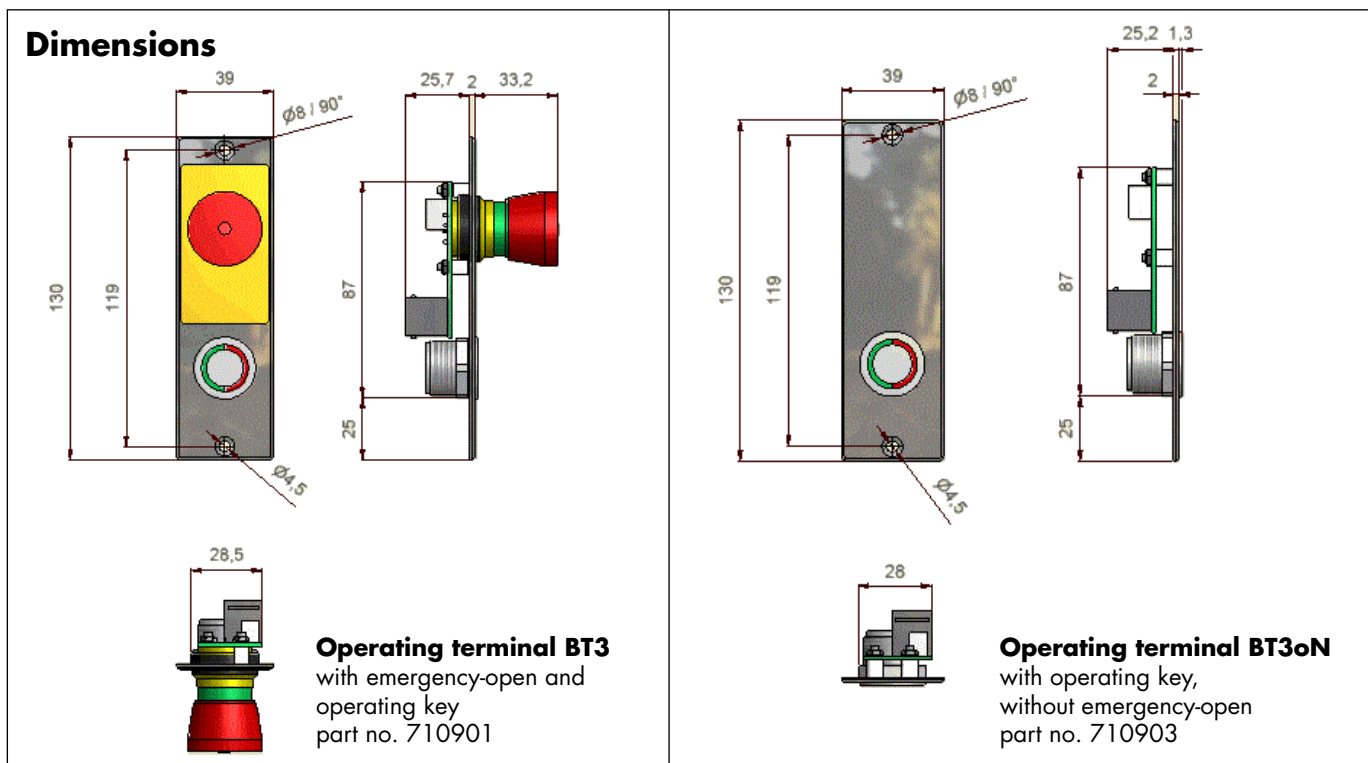
Technical Data

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.



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

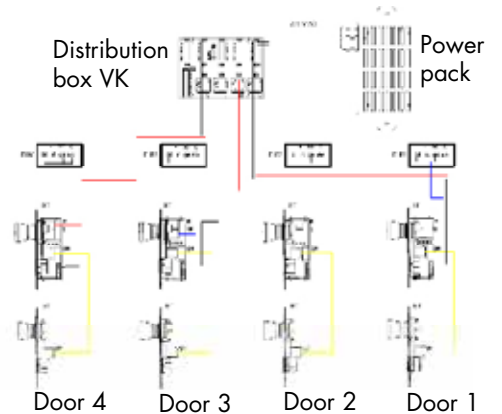
The simple wiring of all the components in the peripheral interlock control system is based on the distribution box(es). If there are several distribution boxes, these are connected with a pluggable control cable and power cable each. The control terminals of the corresponding doors are then connected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

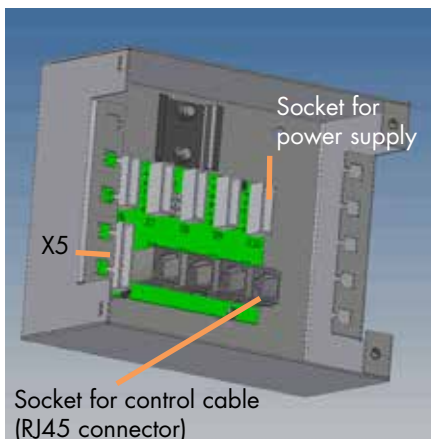
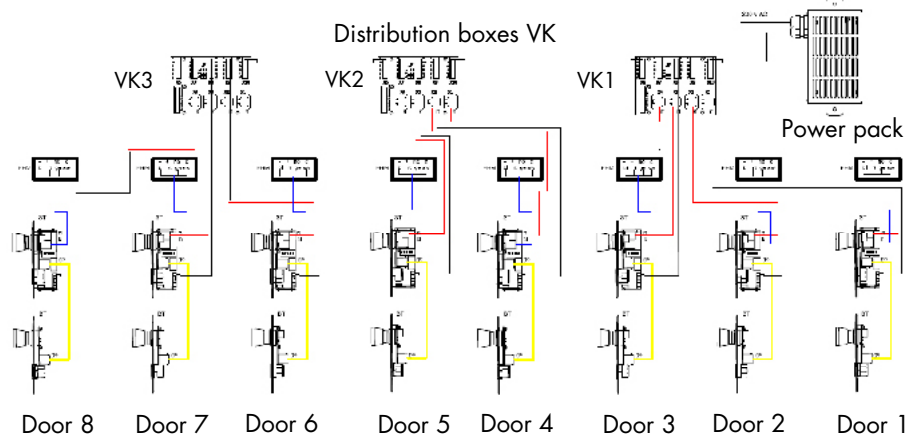
Here one distribution box is sufficient to connect all doors directly.



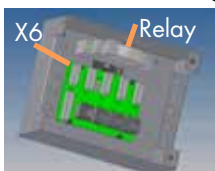
Example 2: Interlock system with 8 doors

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.

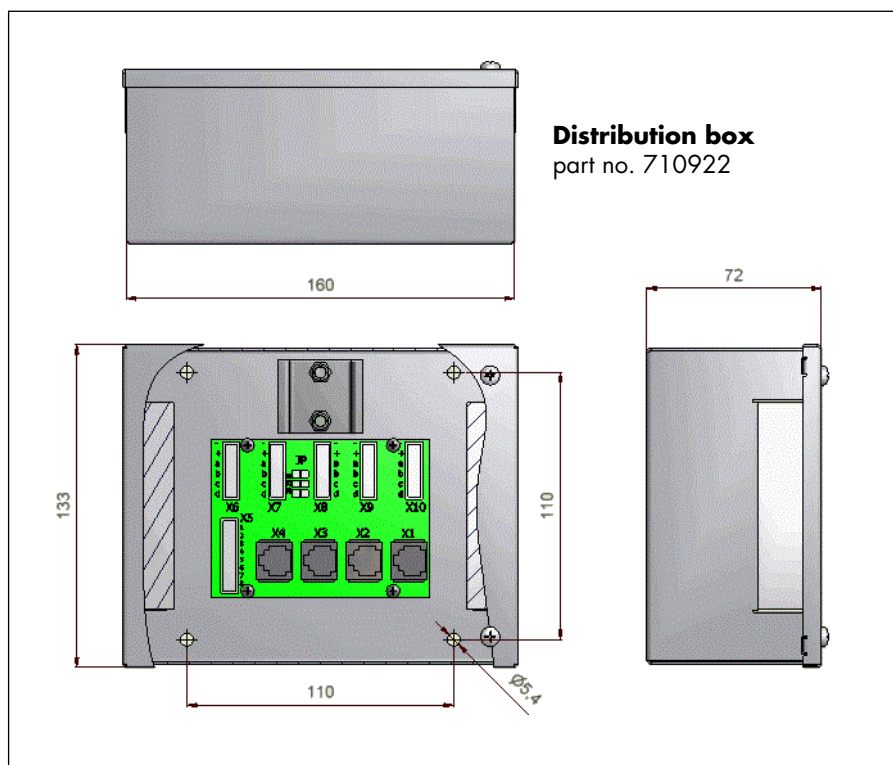
Generally the distribution boxes are fixed in the suspended ceiling or the conductor rail above the corresponding doors. But they can also be mounted at a central place if the distance to the control terminals is not longer than 15 m.

Additional Adjustable Functions

The X5 terminal strip can be used for special functions. For example, to additionally lock 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

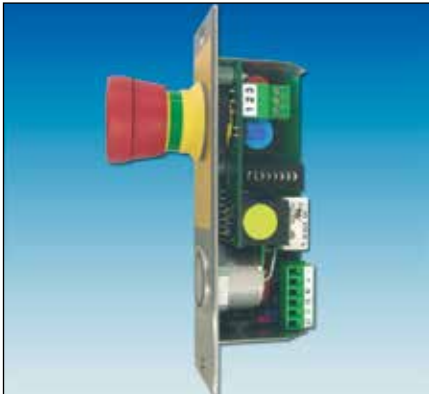


The strain relief of the incoming and outgoing cables is achieved by fixing the cables with tie wraps to the two cable support brackets. The cable inlets are sealed dust proof by cellular material.

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**.

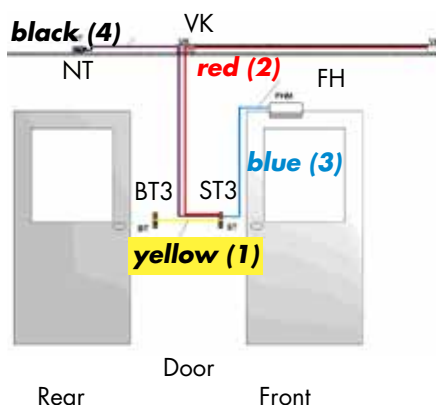
Standard lengths: 3 m, 5 m and 10 m

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