

## Installation Instructions for IF-473x Master Terminals

Thank you for purchasing an IF473x master terminal.

### Scope of Delivery

The following is included in the package:

- ☞ IF-473x master terminal
- ☞ Key for bolt lock

- ✓ Please check the goods for completeness upon receipt.

**Intended Use:** Master terminals of the series IF-473x are used for recording time data, controlling access and controlling locking devices. Any other use is not in accordance with the intended purpose and is therefore not permitted.

The device is designed for stationary operation outdoors or in damp rooms. Operation in explosion endangered environments is not permitted.

### Storage

Store the master terminal in a dry place.

**Master terminals may only be operated via electrical systems** that comply with currently valid EN standards, e.g. DIN VDE 0100. To guarantee trouble-free operation, we recommend carrying out the electrical installation according to the principles of a TN-S system. This means you should use separate neutral and protective earth conductors.

## Installation and Wiring Instructions

Detailed information on installation, connection and initial operation can be found in the manual EN\_LI-95-10278.

### System Wiring

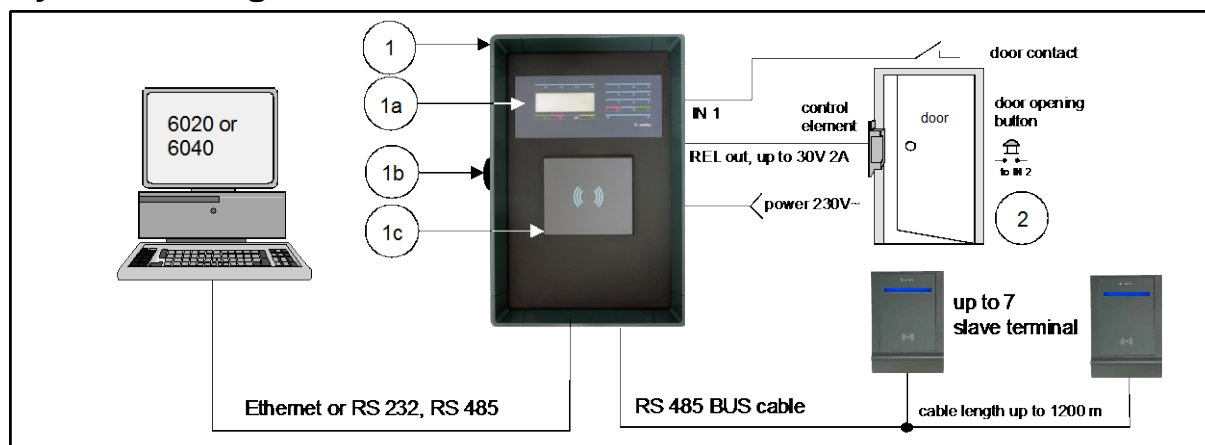


Figure 1: Time/ access control systems with master terminal 473X AT 3 and slave terminal

1	Master terminal in AT 3 housing	1c	RFID reader
1a	Operating unit with display with IF-473X	2	Lock secured with electric actuator
1b	Lockable bolt lock		

### Installation Site

Select:

- ⇒ A location near the workplaces for devices used primarily for recording time data.
- ⇒ A location within view of the locking device, if the device is used for access control. The device should not impede people walking through or restrict their freedom of movement.



#### Tip:

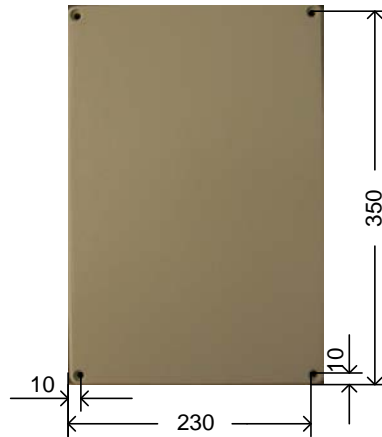
- ⇒ Ambient light can cause reflections on the display and impair the visual reading of it. Avoid locations with direct bright lighting or sunshine.
- ⇒ Devices with RFID reading technology can affect each other. Maintain a distance of at least 30 cm to other devices with RFID reading technology.

## Installation height

We recommend a height of 1.1 m above the floor.

## Mounting

The device is fastened to flat walls or pillars, preferably with the fastening elements of accessory 75-0016.



## Connecting the Power Supply



### **WARNING**

**Electric shock can cause severe injuries or death.**

**De-energize the device.**

Please observe the accident prevention regulations and take all precautionary measures to ensure the safe installation of the devices.

- Connection to power supply voltage and initial operation may therefore only be carried out by people trained in electrical engineering.
- The electrical installation, in which the device is to be operated, must comply with national standards. To guarantee trouble-free operation, we recommend carrying out the electrical installation according to the principles of a TN-S system, which means using separate neutral and grounding conductors.
- Secure the power cable with a strain relief.
- The device must be equipped with an external separator to ensure that the device can be de-energized.
- The device must be equipped with an external fuse protection with a maximum nominal current of 16 A.

A specification of the cables required for operation can be found in the chapter on [Electrical Wiring](#).

**To ensure trouble-free operation** as well as compliance with EMC radiation values, you must:

- provide an operative protective conductor in the power cable and connect it to the terminal block provided for this purpose.
- use only appropriately shielded data cables, such as cable type J-Y (ST) Y.
- adhere to the maximum allowed cable lengths. Cable extensions can have an effect on the function and possibly cause faults.
- ground the shielding of the data cables. The shielding braid can be connected to the cable strain relief for grounding.
- lead the cables through the screwed cable glands and secure them.
- close unused threaded holes with the blind stoppers included with the accessories.

## Electrical Wiring

To operate the illustrated devices, i.e. systems, the illustrated cables must be laid and connected.

10 Slave terminal	13 Electrical push-button <sup>1</sup>	16 Relay 2 (Option)
11 Electric handle contact <sup>1</sup>	14 Monitoring contact	17 Inputs IN 3, 4 (option)
12 Electric actuator	15 Junction box, power supply <sup>2</sup>	

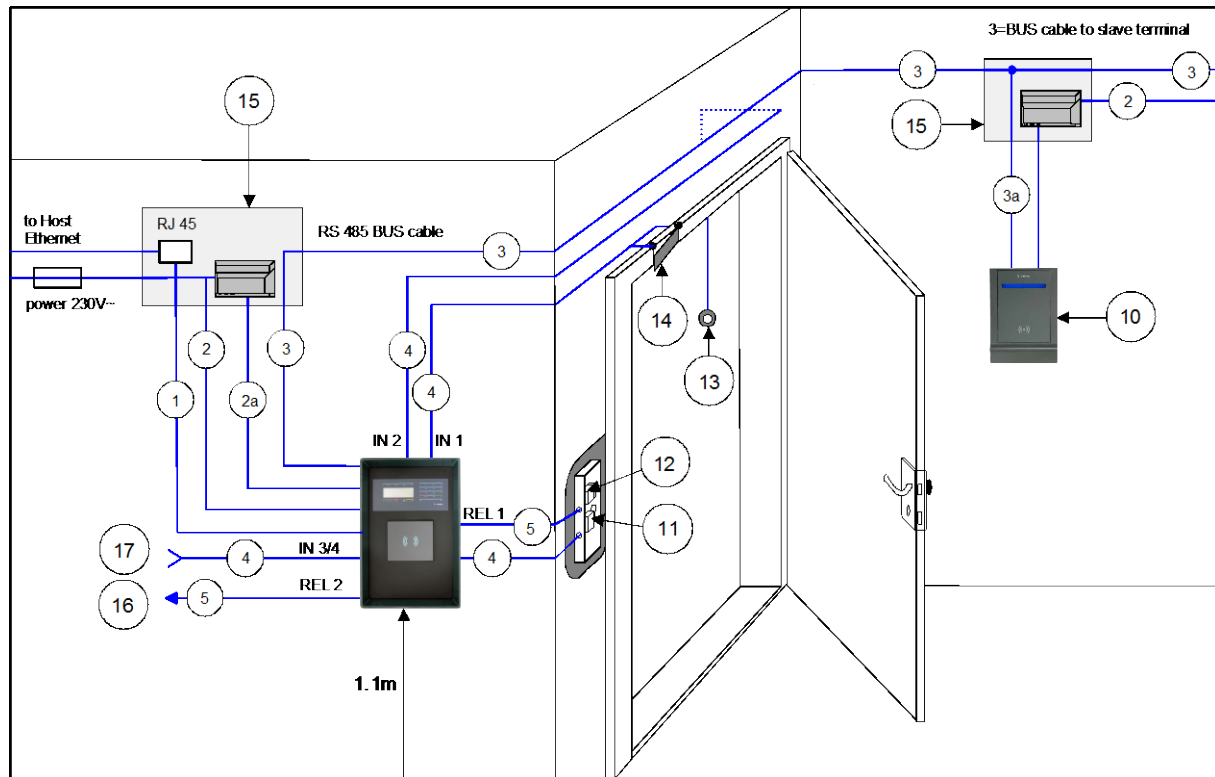


Figure 2: Electrical wiring to the devices and systems

No.:		Max. Cable Length	Recommended Cable Type
1	Ethernet patch cable RJ 45		Cat5 cable
2	230 VAC mains cable		NYM 3x 1.5 mm
2a	Power cable for actuator		J-Y(ST) Y 4x 2x 0.6 mm <sup>2</sup>
3a	RS485 bus cable to slave terminals	1,200	J-Y(ST) Y 4x 2x 0.6 mm <sup>2</sup>
3a	RS 485 stub line	100	J-Y(ST) Y 4x 2x 0.6 mm <sup>2</sup>
4	Signaling cable from sensors <sup>3</sup>	100 m	J-Y(ST) Y 2x 2x 0.6 mm <sup>2</sup>
5	Control cable to actuators		J-Y(ST) Y 4x 2x 0.6 mm <sup>2</sup>

We recommend:

- Maintaining a distance of 30 cm to other devices with RFID reading technology.
- Maintaining a distance of 10 cm between connecting cables and power lines.
- The installation of a separate, fuse-protected 230 VAC circuit.
- The installation of a floating monitoring contact (14) for surveillance of the locking device.
- The installation of a floating handle contact<sup>1</sup> (11) or opening push-button (13) if locking devices are to be monitored. The contact should be installed in such a way that it switches before the monitoring contact is actuated.

<sup>1</sup> A handle contact or an opening push-button must be installed to make it possible to leave the secured area without setting off an alarm.

<sup>2</sup> Power supply for the electric actuator.

<sup>3</sup> Common connection of monitoring contact, opening push-button or handle contact with a 4x2x0.6 mm cable is possible.

## Check Device Functions

To check device functions, the following must be configured in the time/ access control program:

- ⇒ Credential with booking authorization.
- ⇒ The permitted door release time (activation time of actuator) for devices with access control.
- ⇒ The function of the monitoring sensor and the permitted door open time for devices with door monitoring.

We recommend:

1. Lock the housing before starting the check.
2. Check the RFID reading function. Use an RFID identification medium with booking authorization. The device must confirm the identification by displaying an account.
3. Check the function of the actuator. After identification, the electric actuator must switch for the set time interval.
4. Check the function of the monitoring contact. The device must give an acoustical signal if the locking device is opened without identification.
5. Check the handle contact or NC contact push-button. After the contact switches, the locking device must open without giving an acoustical signal.
6. After the check is finished, lock the housing and deposit the key in a safe place<sup>1</sup>.



### Tip:

If a fault occurs, check the connections and the settings.

## Check the Display Contrast

The display contrast can be changed with the potentiometer R46 and adapted to the ambient light conditions. Information on the position of the potentiometer can be found in the manual EN\_LI-95-10278.

Turn the potentiometer until the intensity of the backlighting is correct.

## Maintenance:

To ensure trouble-free, safe operation of the device, we recommend the following maintenance:

- ⇒ Every 4 years: - Device maintenance in compliance with the Ordinance on Industrial Safety § 10.



**WARNING**

### Electric shock

- Switch off the operating voltage prior to opening the housing.

## Accessories

For mounting the AT3 housing, we recommend using accessory no. 75-0016.

All parts necessary for mounting the AT3 housing are included.



<sup>1</sup> A spare key is not available. If the key is lost, the lock has to be destructively opened via drilling.

## Technical Specifications

<b>Power Supply</b>	
- Mains voltage	230 VAC +/- 10 %, 50 Hz (40 W)
- Fuse protection for electronics	0.5A, slow-blowing Housing form Tr. 5 (48-10013)
- Fuse protection for heating	2.5A, slow-blowing Housing form Tr. 5 (48-10003)
<b>Internal emergency power supply (optional)</b>	For approx. 0.5 hours
<b>Interfaces</b>	
- Interface to host PC	10MBit /100MBit Ethernet 10 Base T, as per IEEE 802.3, TCP/ IP, optionally RS232 or RS485
- Interface to service devices	Ethernet with TELNET or SSH, RS232 with 115200 baud
- to slave terminals	RS485 (2-wire)
<b>Reader</b>	Reader with RFID technology (according to order)
- Read range	Up to 5 cm <sup>1</sup>
<b>I/ O (optional)</b>	
- Inputs for sensors	2
- Output relay	1
- Switching power of the contacts:	Up to 30 V, 2 A
<b>User Information</b>	LCD, 4x 20-digit display Audio feedback with all devices
<b>Keypad</b>	Membrane keypad with numeric and function keys
<b>Device Protection</b>	
- Protection class	I
- Degree of protection	IP65
<b>General Data</b>	
- Ambient temperature	-20 °C to +55 °C (thermostat-controlled heating)
- Humidity	Max. 95%, non-condensing
- Compatibility (EMC)	EN 60950, EN 61000-6-1/2, EN 61000-6-3/4, CE 0682
- Dimensions (HxWxD in mm/inch)	240 x 360 x 154 mm (W x H x D)
- Weight	Approx. 7.5 kg
- Housing material	Aluminum die casting
- Color of housing	RAL 7035 (light gray, structure lacquer), front panel: RAL 7016 (anthracite)
<b>Installation type</b>	Wall or pillar mounting
- Cable feed	From below via screwed cable glands

## Program Package under General Public License (GPL)

This product uses program packages that are subject to **GNU GPL License Version 2**.

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Interflex Datensysteme GmbH

Grosswiesenstrasse 24  
D-78591 Durchhausen, Germany  
Tel. + 49 7464 382-0  
Email: [info@interflex.de](mailto:info@interflex.de)

If you have any questions, please contact your Interflex sales office.

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<sup>1</sup> The actual read range depends on the reading technology and the size of the identification medium.