IF-80x Outdoor Slave Terminal

Thank you for choosing a product from Interflex. With this product, you have purchased a reliable device for access control.

1.1 Scope of delivery

- IF-80x Outdoor terminal (slave)
- I/O controller board for controlling locking devices
- Material for fastening
- 8-pin terminal strip
- Blue wire for grounding the back panel
- Mortise lock
- Plastic strips for sealing the mortise lock
- Adhesive tape for mounting the I/O controller board

➢ Please check the completeness and condition of the shipment upon receipt.

1.2 CE conformity

CE The device complies with the requirements of the respective EU guidelines (CE conformity).

Modifications to the device are not permitted.

All information contained in this documentation is accurate at the time of printing. All specifications are subject to change without notice.

The product brand names and trademarks specified in this documentation are protected by commercial and patent laws.

1.3 Shielded cables

To ensure malfunction-free operation, we recommend the use of shielded bus cables.

Operation is also possible with unshielded cables. In case of transmission problems, you will have to examine the reasons in each individual case. Where necessary, a shielded cable should be used for the connection of the respective devices.

1.4 Intended use

The device is used for reading RFID credentials, e.g. in access control systems, and also for controlling locking devices. Any other use is not in accordance with the intended purpose and is therefore not permitted.

1.5 Function

Slave terminals of series IF-80x Outdoor are used for:

- controlling the access of people who identify themselves via an RFID credential before entering a security zone.
- controlling and monitoring locking devices that prevent uncontrolled (physical) access to security zones.
- writing NetworkOnCard access rights. The data is used for identification at offline devices, e.g. electronic door fittings.

NOTE The terminals can be operated on terminal controllers or master terminals with the following controller software versions (minimum requirements):

- IF-105x = Version 5.12.4.C2
- IF-107x = Version 5.12.3
- IF-407x = Version 7.12.3.

1.6 Function of the IF-80x outdoor terminal

Terminals of the IF-80x Outdoor series are part of an access control system. They are preferably installed directly next to locking devices. They are generally connected to a master terminal, access manager or terminal controller via an RS485 data cable. These terminals are designed for controlling the access of persons, who identify themselves with RFID credentials, as well as for controlling and monitoring locking devices.

1.7 Storage

The device has to be stored in a dry place.

2 Assembly and Installation

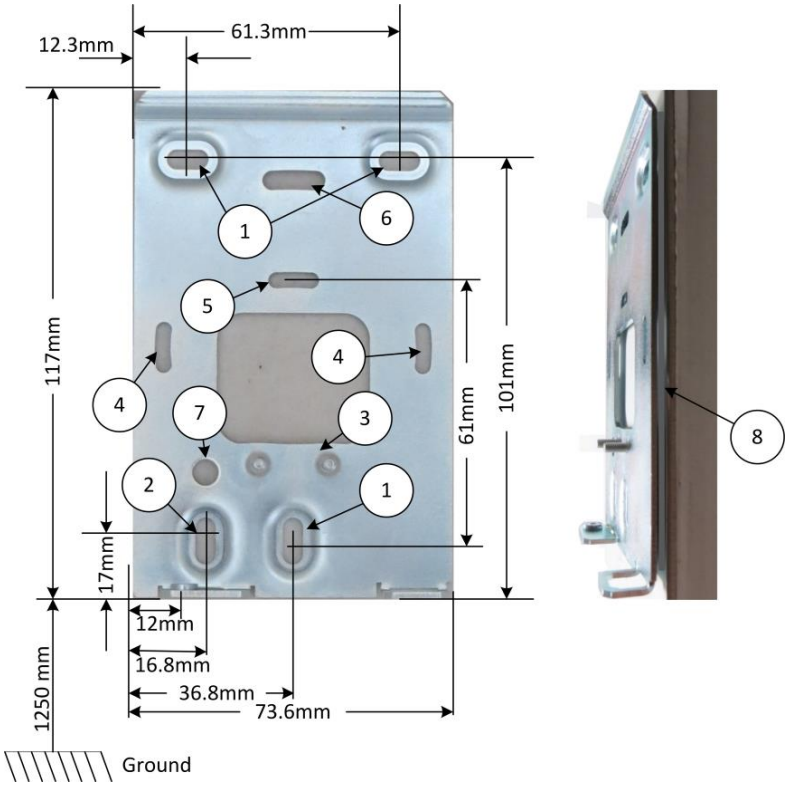
Please carry out the following steps in sequence:

- Install all cables.
- Mount the IF-80x Outdoor terminal.
- Make the electrical connections and switch on the power.
- Adjust the reader.
- Set the hardware address.
- Put the terminal into operation and test its functions.

3 Installation

3.1 Mounting the IF-80x outdoor terminal

➢ **Recommendation:** Install the terminal at a height of approx. 125 cm (distance from floor to bottom edge of the terminal).



1	Mounting holes	5	Vertical mounting option with DIN appliance case
2	Alternative mounting hole for wall-mounted cable inserted from the bottom	6	Mounting holes for US standard
3	Cable gland	7	Hole for adjusting the reader
4	Horizontal mounting option with DIN appliance case	8	Foam rubber

3.2 Important points to note regarding the mounting

⚠ CAUTION **Please observe the following when mounting the terminal:**

➢ **Do not make any changes to the back panel.**

Fastening elements in other places can collide with the circuit board.

➢ **Check for any unevenness in the panel.**

The back panel of the device must be level and flush with the wall.

Mechanical stresses can damage the device.

➢ **Use only the original screws and do not use any washers.**

Screws placed too high can cause collisions with other components and damage the device.

➢ **Ensure short cable routing.**

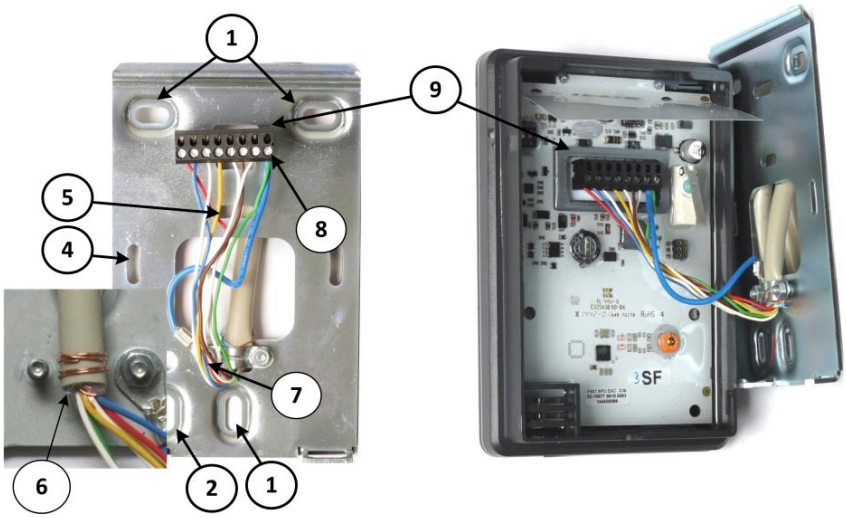
Cable loops can damage the device due to mechanical stresses.

➢ **Tighten the screw only slightly or leave it out.**

Tightening the screw too tightly can result in mechanical stresses which can damage the device.

3.3 Fastening the back panel of the housing using an appliance case

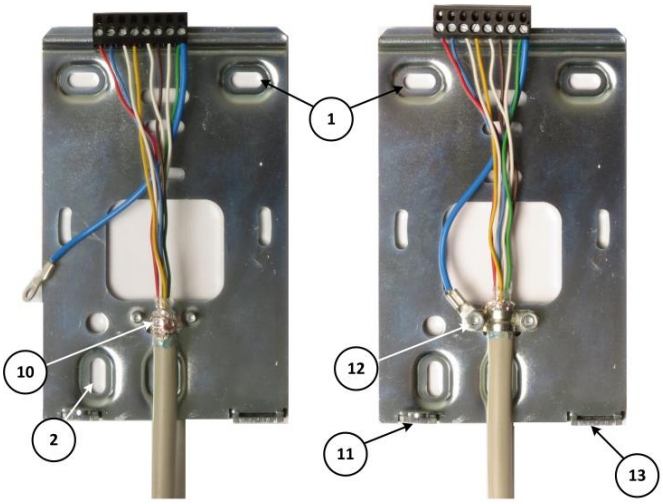
- Using a level, fasten the back panel of the housing by installing the 3 screws included in delivery in the holes marked (1). If the cable is to be inserted from the bottom, use mounting hole (2) instead of the bottom mounting hole (1).
- Depending on how the appliance case is installed, you can additionally secure the back panel of the housing by installing screws in the two horizontal (4) or vertical (5) holes.
- For further steps, please refer to: Attaching the IF-800 Outdoor/IF-801 Terminal.



6	This is how the drain wire is wrapped around the insulation.	8	The blue wire and the PE wire from the I/O controller board are connected to terminal 8 on the terminal strip.
7	The blue wire is connected to the strain relief.	9	Terminal strip

3.4 Fastening the back panel of the housing with cable feed from the bottom

- Using a level, screw in the back panel of the housing by installing 2 screws in the holes marked (1).
- In addition, secure the back panel of the housing by installing a screw in the bottom left hole (2).
- For further steps, please refer to: Attaching the IF-800 Outdoor/IF-801 Terminal



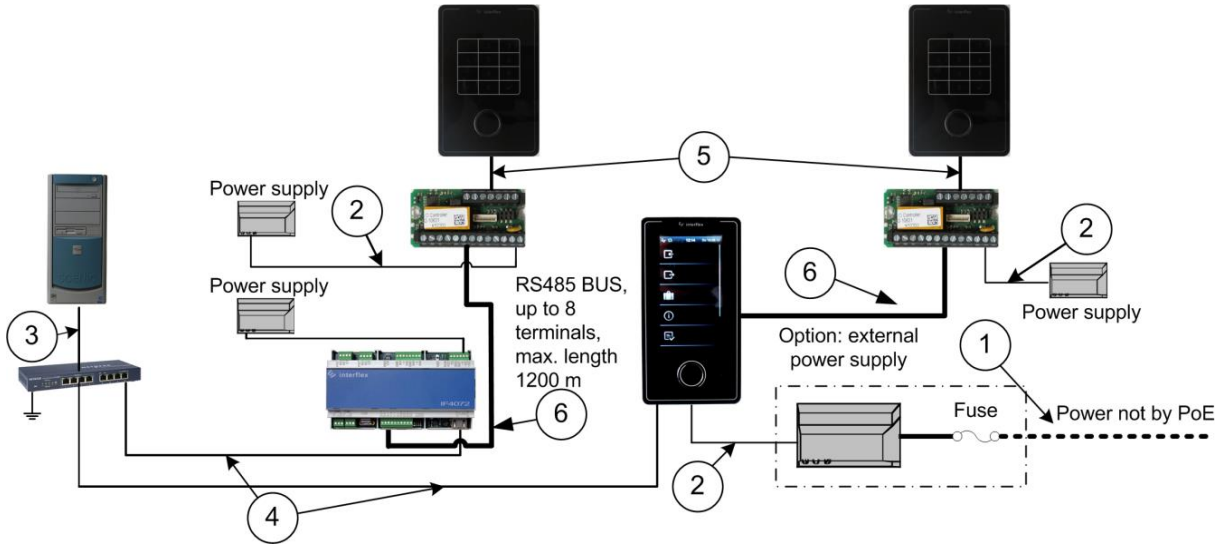
10	The drain wire must have an electrical connection to the back panel of the housing.	12	The cable lug of the blue wire is connected to the strain relief.
11	Lug for fastening the wall reader with the M2x6 mm screw	13	Lug for mortise lock

4 Electrical Connections

ATTENTION Avoid damaging the device by:

- establishing electrical connections only when no voltage is applied.
- changing the position of jumpers or DIP switches only when no voltage is applied.

4.1 Installation overview



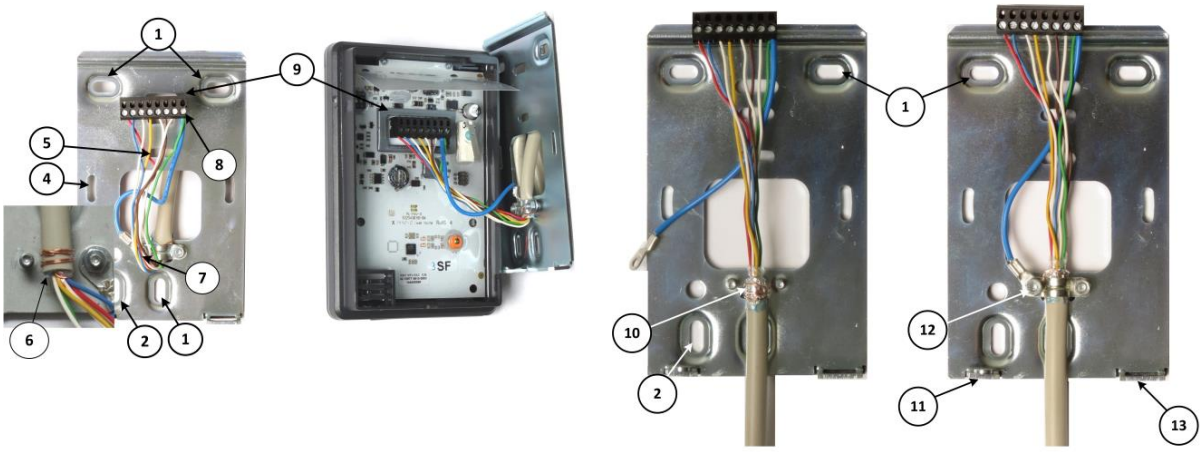
1	Power supply to mounting rail power supply unit (41-10106)	4	Ethernet data cable from switch to controller/master terminal Cable length maximum 100 m. Power is supplied to the master terminal shown here via PoE or from an external power supply unit.
2	Power supply to I/O controller board	5	Data cable from I/O controller board to IF-80x Outdoor terminal
3	Patch cable from computer to switch or hub	6	RS-485 data cable from controller/master terminal to I/O controller board

Please refer to the table "***Function of Cables and Cable Types***" for detailed information on the cable lengths, cable types and their diameters.

4.1.1 Cable functions and cable types

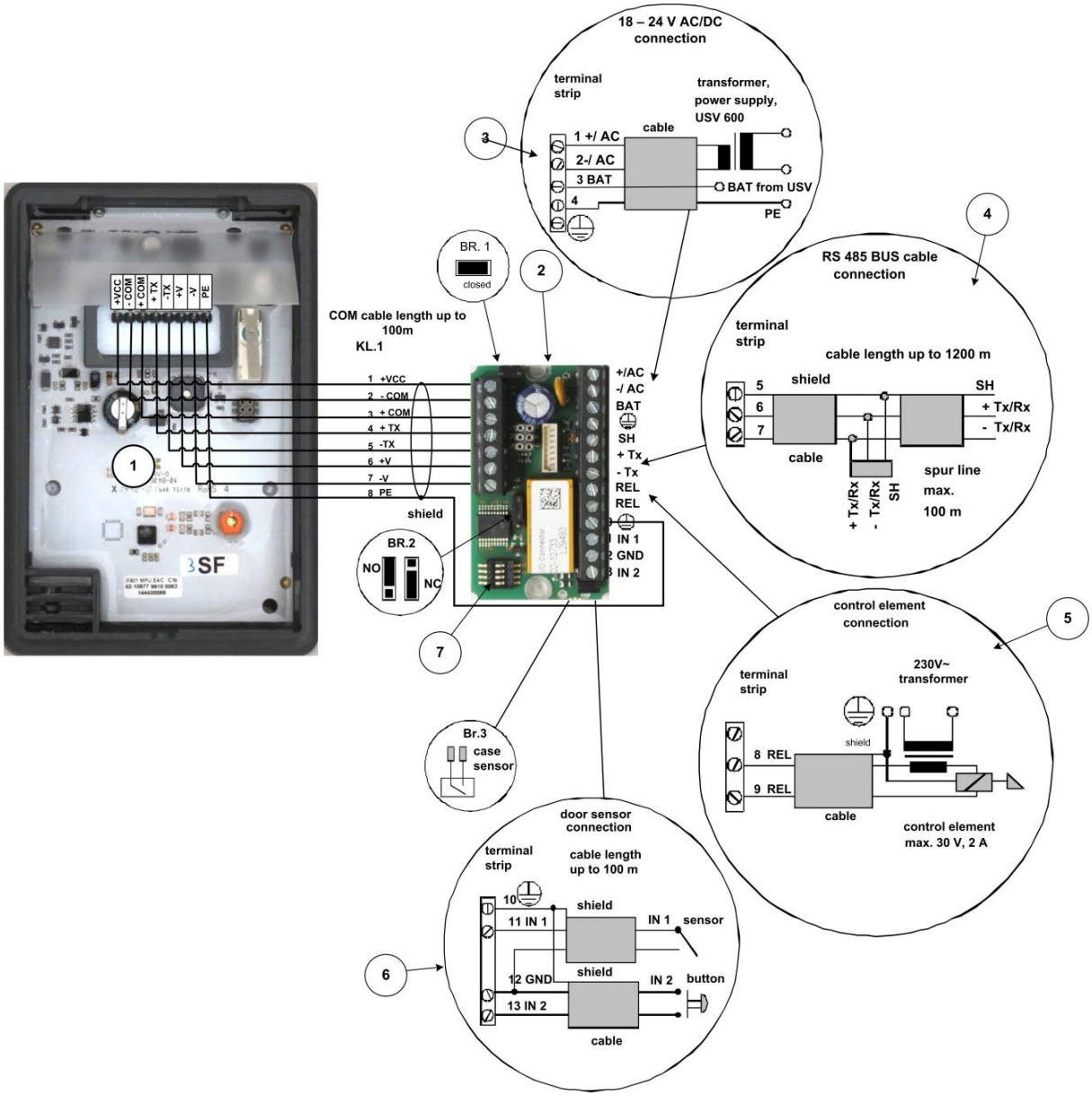
	Cable Function	Max. Length	Recommended Cable Type
1	230 VAC power supply to 20 VAC, 1.5 A power transformer (order no. 41-10106)		NYM 3 x 1.5 mm²
2	Extra low voltage cable		J-Y(ST) Y 4x2x 0.6 mm
3	Ethernet/patch cable from server to switch/hub	max. 100 m	Category 5
4	Ethernet/patch cable from switch/hub to controller/master terminal	max. 100 m	Category 5
5	Shielded cable from IF-80x Outdoor terminal to controller/master terminal	max. 100 m	J-Y(ST) Y 4x2x 0.6 mm
6	RS-485 bus cable	max. 1200 m	J-Y(ST) Y 4x2x 0.6 mm

4.2 Wiring: Step-by-step procedure



- Strip approx. 8 cm of the data cable.
- Wrap the drain wire (6) around the end of the insulation of the data cable.
- Feed the connection cable through the strain relief.
- Install the strain relief in such a way that the end of the insulation with the drain wire is electrically connected to the back panel of the housing (10).
- Clamp the blue wire under a nut of the strain relief (12).
- Now, connect all of the cables coming from the I/O controller board to the terminal strip of the terminal.
- Then, connect the blue wire from the back panel of the housing to the PE terminal.
- Plug the terminal strip into the terminal.
- Hook in the terminal at the top and press it down until it rests against the wall.
- Screw down the terminal on the bottom left side (11) using the M2 x 6 mm countersunk screw included in delivery.
- Insert the mortise lock on the bottom right side and lock the terminal (13).
- Use the enclosed plastic strips to seal the mortise lock.

4.3 Wiring overview

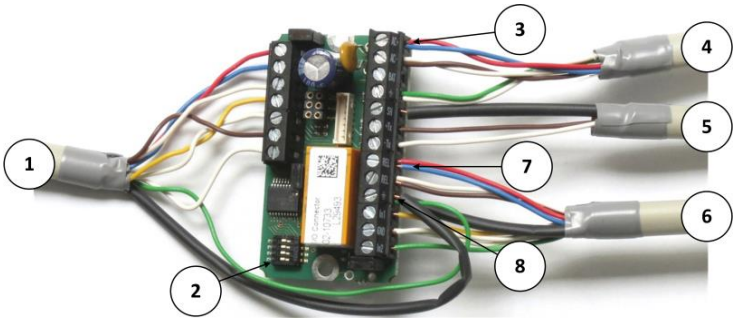


1	IF-80x Outdoor terminal	5	Circuit example: Control of an actuator (door opener). The actuator may only be operated with max. 30 V and 2 A.
2	I/O controller board	6	Circuit example: Connection of both inputs.
3	Circuit example: Power supply	7	Address switch on the I/O controller board
4	Circuit example: RS485 connection. The spur line may not be longer than max. 100 m.		

Bridges:

- **Br. 1:** When one I/O controller board is used, bridge 1 is always plugged in.
- ➢ If a second I/O controller board is used, remove bridge 1 on the second I/O controller board.
- **Br. 2**: Bridge 2 is used to set the switching contacts of the NO/NC relay.
- **Br. 3**: Instead of bridge 3, an anti-tamper switch can be connected.

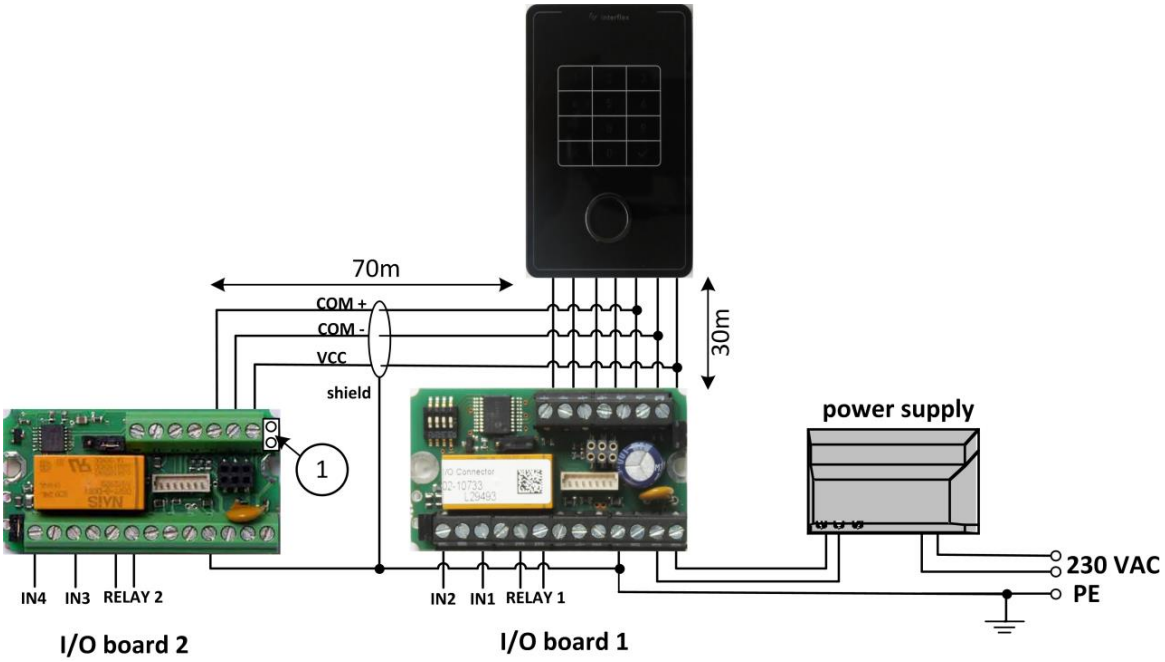
4.4 Connecting the I/O controller board



1	Cable to IF-80x Outdoor terminal	5	RS485 data cable
2	Address switch	6	Control line with 2 floating inputs and 1 relay output. Max. switching power: 30 V, 2 A
3	Here, the power supply is connected with one line pair each.	7	Relay output. Here, the cable is connected with one line pair each.
4	Cable to power supply. Connection voltage: 18 to max. 24 V AC/DC	8	Functional grounding and shield are connected to a terminal together.

NOTE Since the cable run to the IF-80x Outdoor terminal is usually very long, we recommend connecting the power supply and the relay contact with one cable pair each.

4.5 Connecting a further I/O controller board



If more than two inputs or more than one relay are required, you can connect a second I/O controller board (order no. 75-700-0141).

- Remove jumper Br.1 on the second I/O controller board.

Please keep in mind that the total length of the COM cable is limited to a maximum of 100 m.

- Reduce the length of the COM cable, if necessary, to ensure that the total length of 100 m is not exceeded.

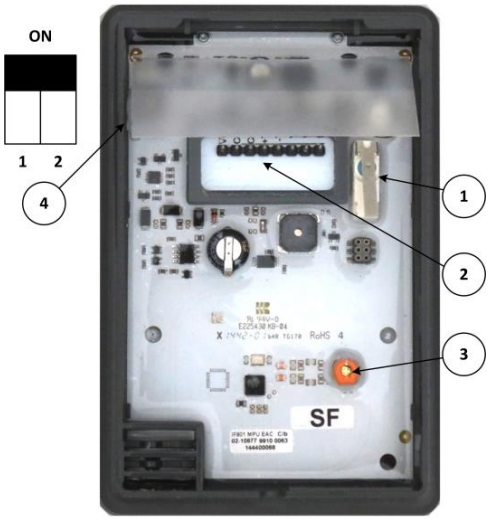
Example:

The IF-80x Outdoor terminal is connected to I/O controller board 1 by a 30-meter-long cable. The cable for the connection of I/O controller board 2 may not be longer than 70 m.

5 Synchronizing the Reader and Setting the LED Color

Structural conditions may make it necessary to fine-tune or readjust the reader. To do so, the adjustment set with the order number 75-99-0004 is required.

➢ In order to achieve the best result, perform fine tuning at the location of use while the back panel is attached.



1	Anti-tamper switch	3	Screw for adjusting the reader
2	Terminal clamps	4	2-pin DIP switch for setting the LEDs

➢ Switch on the power supply.

➢ Turn the adjusting screw (3) until the field indicator reaches maximum.

Setting the LEDs

Use the DIP switch (4) to set the LEDs according to the color of the display. The switch setting is usually preset (factory default).

➢ Check the setting of the DIP switches according to the table specifications.

Design	Switch 1/design color white	Switch 2/design color blue
Glass, white	OFF	ON
Glass, black	ON	ON

➢ Further settings are reserved for other designs.

6 Device Settings

6.1 Setting the hardware address

➢ Use the address switch to set the hardware address of the device.

Switch	4	3	2	1
Address 1	OFF	OFF	OFF	OFF (not required if connected to a master terminal)
Address 2	OFF	OFF	OFF	ON
Address 3	OFF	OFF	ON	OFF
Address 4	OFF	OFF	ON	ON
Address 5	OFF	ON	OFF	OFF
Address 6	OFF	ON	OFF	ON
Address 7	OFF	ON	ON	OFF
Address 8	OFF	ON	ON	ON

6.2 Setting the address without an I/O controller board

If an I/O controller board without an address switch is used, you can set the address of the IF-80x Outdoor terminal via the RS-485 data cable.

Once the terminal is connected to the controller, it responds with host address 8.

Set the address of the terminal with a Telnet connection via the controller as follows:

- Set up the connection to the controller with Telnet.
- Use the command `cfg` to retrieve the terminal number.

Example: `cfg` -> address 8 has been set.

```
root@ep248:~ cfg
Terminal configuration IF-4070/4735 V7.12.7 RC06 Build_20111222.135311  Host: Ethernet
------------------------------------------------------------------------------
No B A HA    TNo     type    HWU   SWU  display  keys  read.1 read.2 In/Out I/O
-- - - -- --------- ------- ----- ----- ------- ------ ------ ------ ------ ---
 1 1 A  1         0
 2 1 B  2         0
 3 1 C  3         0
 4 1 D  4         0
 5 1 E  5         0
 6 1 F  6         0
 7 1 G  7         0
 8 1 H  8         0 IF715    2.04   6.b OL/2x20 ...... LAP4   ...... ......  -+
 9 2 A  9         0
```

- Enter this command: `etp <address> -cx`

```
root@ep248:~ etp 8 -cx
TC-->ET(8)= 344161
TC-->ET(8): OK
```

The controller responds with TC-->ET(8)=

Then, the command 34xxyy is sent directly to the terminal.

Example: Address 1:

xx = New address A (uppercase) corresponds to 41(Hex)

xx = New address a (lowercase) corresponds to 61(Hex)

The command for setting address 1 is: 344161
Correspondingly for address 2: 344262 (see table).

Via a warm boot (command 55), the terminal then recognizes its new address:

```
root@ep248:~ etp 8 -cx
TC-->ET(8)= 55
TC-->ET(8): OK
```

After approximately 10 seconds, the terminal is ready for operation and can be checked via the cfg command:

```
root@ep248:~ cfg
Terminal configuration IF-4070/4735 V7.12.7 RC06 Build_20111222.135311  Host: Ethernet
------------------------------------------------------------------------------
No B A HA    TNo     type    HWU   SWU  display  keys  read.1 read.2 In/Out I/O
-- - - -- --------- ------- ----- ----- ------- ------ ------ ------ ------ ---
 1 1 A  1         0 IF715    2.04   6.b OL/2x20 ...... LAP4   ...... ......  -+
 2 1 B  2         0
 3 1 C  3         0
 4 1 D  4         0
 5 1 E  5         0
 6 1 F  6         0
```

- Make sure that an address is not used twice. The address must be within the address range of the controller (IF-4070).

This table applies to a controller with 8 possible terminals on bus 1:

Old Address	Old HA	Controller Command	Command	New Address	New HA	Bus
H	8	etp 8 -cx	344161	A	1	1
H	8	etp 8 -cx	344262	B	2	1
H	8	etp 8 -cx	344363	C	3	1
H	8	etp 8 -cx	344565	E	5	1
...	8	etp 8 -cx	...	..	...	...
A	1	etp 1 -cx	344868	H	8	1
A	9	etp 9 -cx	344262	B	2	2

6.3 Bridges on the I/O controller board

Check the setting of the bridges and adjust them, if necessary:

- **Br. 1:** When one I/O controller board is used, bridge 1 is always plugged in.
- ➢ If a second I/O controller board is used, remove bridge 1 on the second I/O controller board.
- **Br. 2**: Bridge 2 is used to set the switching contacts of the NO/NC relay.
- **Br. 3**: Instead of bridge 3, an anti-tamper switch can be connected.

See also

Wiring Overview 8

7 Initial Operation

- ➢ Once you have connected the IF-80x Outdoor terminal and set the address, lock it using the mortise lock.
- ➢ Additionally fasten the device with the included M2 x 6 mm countersunk head screw.
- ➢ Switch on the power supply.
- ➢ Configure the terminal in your host software, e.g. the IF-6040 system.
- ➢ Make sure that your software recognizes and controls (online operation) the terminal.
- ➢ Perform a booking at the terminal with a suitable credential.
- ➢ Make sure that the booking reaches your host system where it is further processed.

For further diagnosis purposes, special programs and tools are available to system engineers and consultants.

8 Technical Specifications

IF-80x Outdoor	
Power Supply	- 12 to 27 V AC - 11 to 38 V DC
Power consumption	Max. 4 VA
Protection	via PTC resistor
Interfaces	RS-485, 9600/19200 baud (automatic recognition)
Reader for	RFID credentials (Mifare or LEGIC as per order)
Inputs	2 for floating status contacts (4 with 2 I/O controller boards)
Output relays	1, max. 30 V, 2 A (2 with 2 I/O controller boards)
User information	Buzzer; green/red LEDs and, depending on the display color, blue or white
Data entry	- IF-800 Outdoor: no input facility - IF-801 Outdoor: Keyboard with numeric keypad
Protection against sabotage	Anti-tamper switch. Switches when front panel is removed.

General Data	
Ambient temperature	-25°C to +55°C
Humidity	Max. 95%, non-condensing
Protection category	III
Degree of protection	IP54, provided that the cables are installed according to instructions. The lower cable inlet must be masked using the included adhesive strip.
Dimensions (L x W x D in mm):	130.5 x 87 x 24
Weight	0.5 kg

9 EU Declaration of Conformity

Interflex hereby declares that the products comply with the directives 2014/53/EU and 2011/65/EU.

The complete EU Declaration of Conformity is available at the following Internet address: ***www.interflex.de/en/header/downloads/ce_declaration_of_conformity.html***

10 Disposal

Once its service life comes to an end, the device must be disposed of properly as electronic waste. The owner can dispose of the device himself or return it to the supplier.

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