

RFID 2000 (Radio Frequency Identification)

Architect's User's Owner's Guide

Note:

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RFID 2000 (Radio Frequency Identification)

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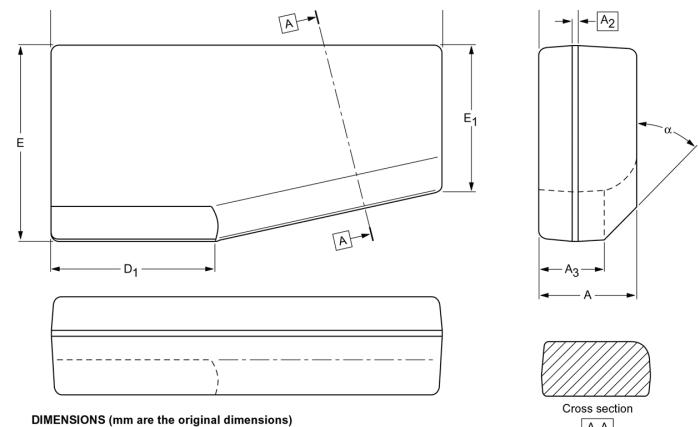
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Data sheets

RFID 2000

Model	RFID 2000
Manufacturer	Sumetzberger GmbH Leberstraße 108; 1110 Vienna
Use	Extension card: Code Tag
Function	<p>By equipping the carrier with passive transponder (no battery), called code tags on both ends, all carries can receive there own identification number and so they can be assigned to a determinate station. The return to this "homestation" is possible without entering the address.</p> <p>Therefor only carriers can be used which are registered to the system and not registered carriers can't be infiltrated in the system.</p> <p>Follow stations can be equipped: DRT110, DRT Front 110, E3S110 MSS110/160 DST160, DST-END160.</p>
Technical description	The RFID 2000 board is a four antenna reader for Philips HITAG2 Chips. The main controller is a PIC16F873A running with 16 MHz, which multi-plexes four tuning devices (Philips HTRC-110) and is connected with an I ² C bus to the main board. Each antenna has an own tuning device (Philips HTRC-110), which produces the 125 kHz antenna signal and reads the chips.
Technical data	Sending frequency: 125kHz Exciting frequency: 125kHz
Picture:	

Code Tag

Model	"Code Tag" (passive Transponder)																				
Item	Identification Transponder for the use in contactless applications																				
Frequency	125kHz operating frequency																				
Power supply	Data transmission and supply energy via RF link, no internal battery The code tag is dedicated for the use in secure access systems (transponder and reader have to identify each other). The transponder requires no internal power supply; it derives its power from magnetic component of the RF carrier frequency generated by the reader antenna.																				
Data storage	EEPROM; guaranteed ten years of non-volatile data retention																				
Programming	Programming via carrier programming unit. More than 100.000 erase/write cycles possible.																				
Mechanical dimensions	12x6x3mm (refer to pic)																				
Temperature	Operating temperature: - 40°C bis 85°C Storage temperature: - 55°C bis 125°C																				
Protection class	IP67																				
Casting material	epoxy resin																				
Picture	 <p>DIMENSIONS (mm are the original dimensions)</p> <table border="1"> <thead> <tr> <th>UNIT</th> <th>A</th> <th>A₁</th> <th>A₂</th> <th>A₃</th> <th>D^(t)</th> <th>D₁^(t)</th> <th>E^(t)</th> <th>E₁^(t)</th> <th>α</th> </tr> </thead> <tbody> <tr> <td>mm</td> <td>3.05 2.90</td> <td>1.2 1.1</td> <td>0.165</td> <td>2.1 1.9</td> <td>12.1 11.9</td> <td>5.1 4.9</td> <td>6.1 5.9</td> <td>4.6 4.4</td> <td>46° 44°</td> </tr> </tbody> </table> <p>Cross section [A-A] (not to scale)</p>	UNIT	A	A ₁	A ₂	A ₃	D ^(t)	D ₁ ^(t)	E ^(t)	E ₁ ^(t)	α	mm	3.05 2.90	1.2 1.1	0.165	2.1 1.9	12.1 11.9	5.1 4.9	6.1 5.9	4.6 4.4	46° 44°
UNIT	A	A ₁	A ₂	A ₃	D ^(t)	D ₁ ^(t)	E ^(t)	E ₁ ^(t)	α												
mm	3.05 2.90	1.2 1.1	0.165	2.1 1.9	12.1 11.9	5.1 4.9	6.1 5.9	4.6 4.4	46° 44°												

Antenna 110

Model	Antenna 110
Manufacturer	Sumetzberger GmbH Leberstraße 108, 1110 Vienna
Use	To identify the coded carrier
Technical data	Ø110mm
Accessories	Antenna holder: RP44965
Picture:	

Antenna 160

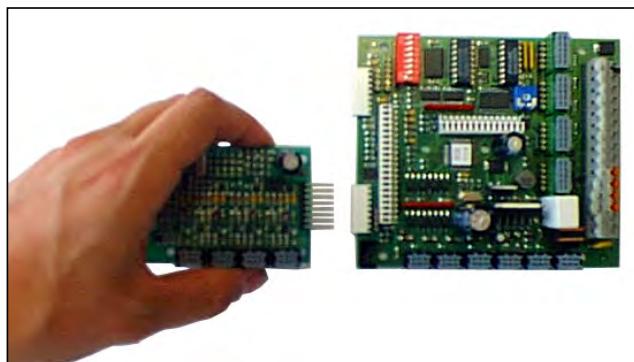
Model	Antenna 160
Manufacturer	Sumetzberger GmbH Leberstraße 108; 1110 Vienna
Use	To identify the coded carrier
Technical data	Ø160mm
Picture:	

Installation

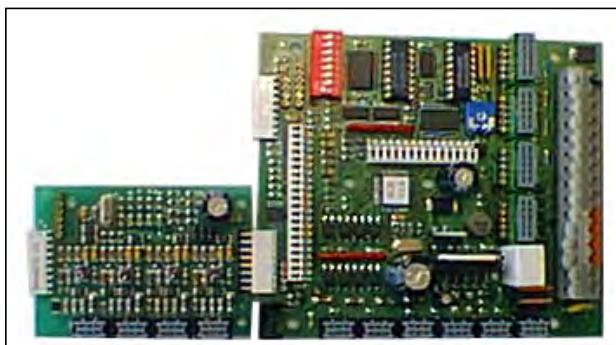
RFID2000

The installation of the RFID2000 on the SCB2000 have to done as follows

Plug the RFID circuit board in the extension board of the SCB2000 circuit board.



Plug the RFID board in the extension board of the SCB2000 circuit board.



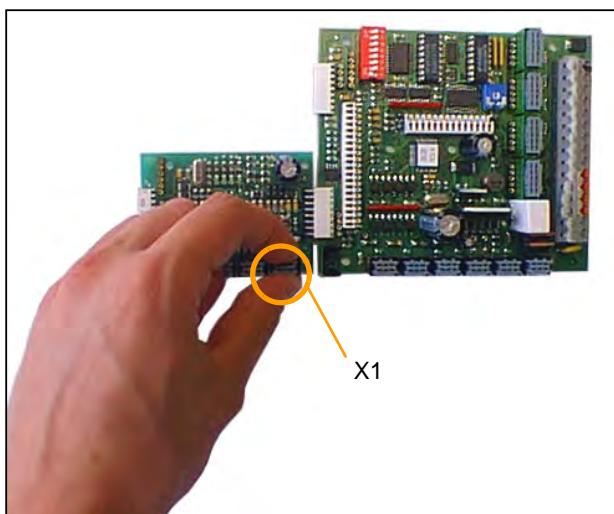
RFID board plugged to DCB

Antenna

Installation of the Antenna

The Installation of the Antenna on the SCB2000 - RFID2000 unit have to done as follows

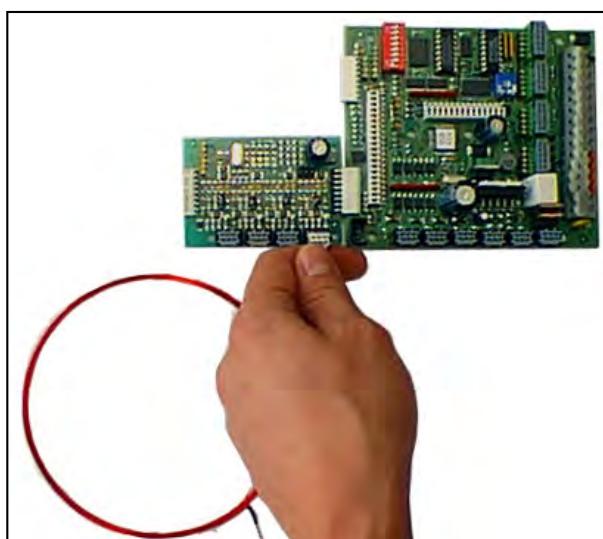
The antenna 110 and 160 are installed as follows.



Remove the **plug X1** from the RFID2000 circuit board (picture1) and put the plug from the antenna in the RFID2000 (picture 2).

Attention!

The white side of the plug from the antenna have to be on the upper side.

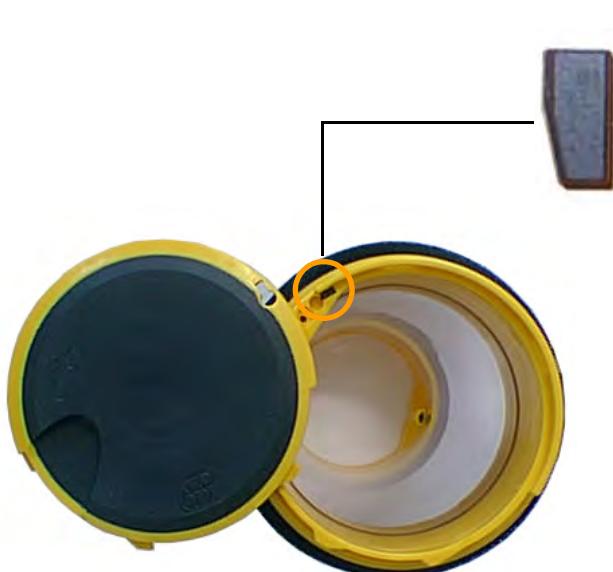


Carrier 160

The Code Tag is put in the carrier as follows:



Open the carrier and put the Code Tag with the thin side down in the carrier (the opening is shown with the circle in the picture)



Flip top carrier 110

The code tag is put in the flip top carrier as follows



Open the carrier and insert the Code Tag with the thin side down in the carrier. (the opening is shown with the circle in the picture).

Application examples of RFID2000 units

The arrows show how the antennas are built in the stations. It is important that these examples can't be used as built in instruction. All antennas are installed by the Sumetzberger company.

Station DRT



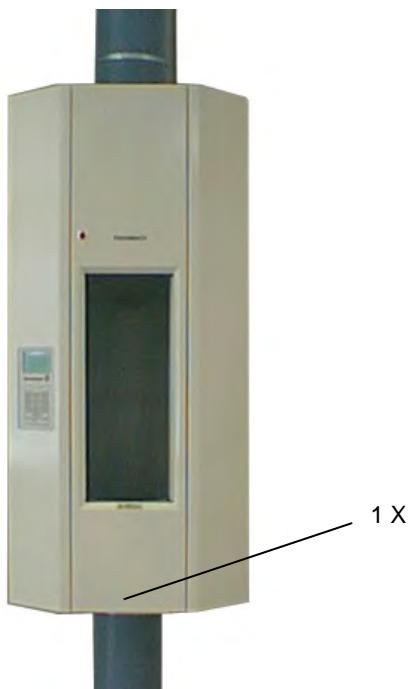
1 X

Station MSS



3 X

DST Pass Through Station



1 X

DST Frontloading Station



1 X

Cabling

General- System cable

When preparing the system cables of the station, please pay attention to the following:

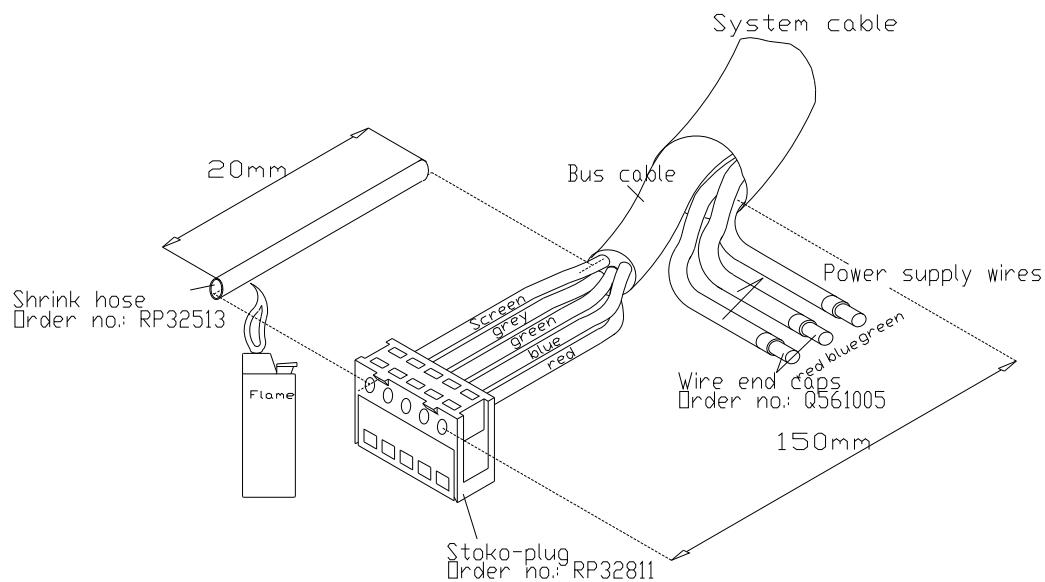
- Strip insulation of the outer cover of the system cable and the impact resistant sheet lying beneath to 150mm.
- Strip the insulation of the outer cover of the system cable and the impact resistant sheet of the data cable ($0,22^2$) to 20mm. Remove the sheet screen. Wrist the screen wire and shrink it with a shrink hose 0,5-1mm (Mat.No.RP32513) over the whole length. The wires of the bus cable ($0,22^2$) are entered according to the colour code into the 5-pole Stoko-plug (Order no.RP32811). The plug is compressed with pliers. (Order no.:RP32146)

Afterwards the outstanding wires are precisely cut with a diagonal cutting nipper (Order no.:RP32148) at the side edges of the plug. (Attention: the used diagonal cutting nipper has to have a flat cutting edge, since outstanding cables may cause errors.)

- The two remaining power supply wires ($2,5^2$) are shortened by 30mm, Strip their insulation on a length of 10mm.

The wire end caps with a collar of synthetic material in blue - $2,5^2$ - (Mat.No.Q561005) are put over the cable ends and pressed with Variocrimp pliers 4 (WAGO).

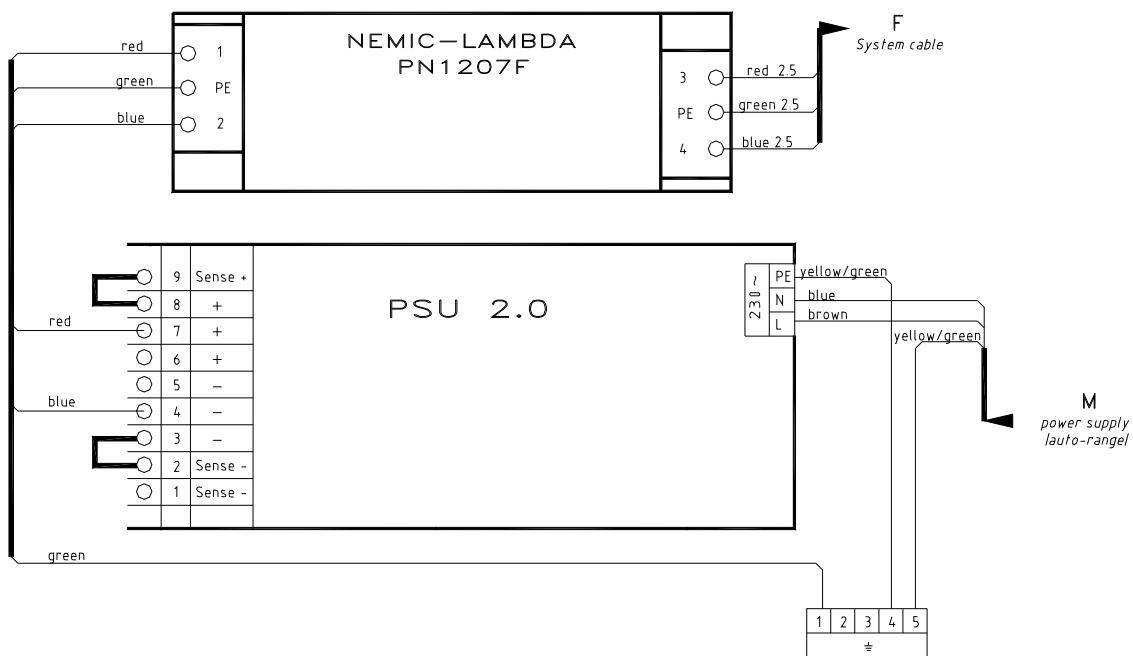
(Order no.:RP41804)



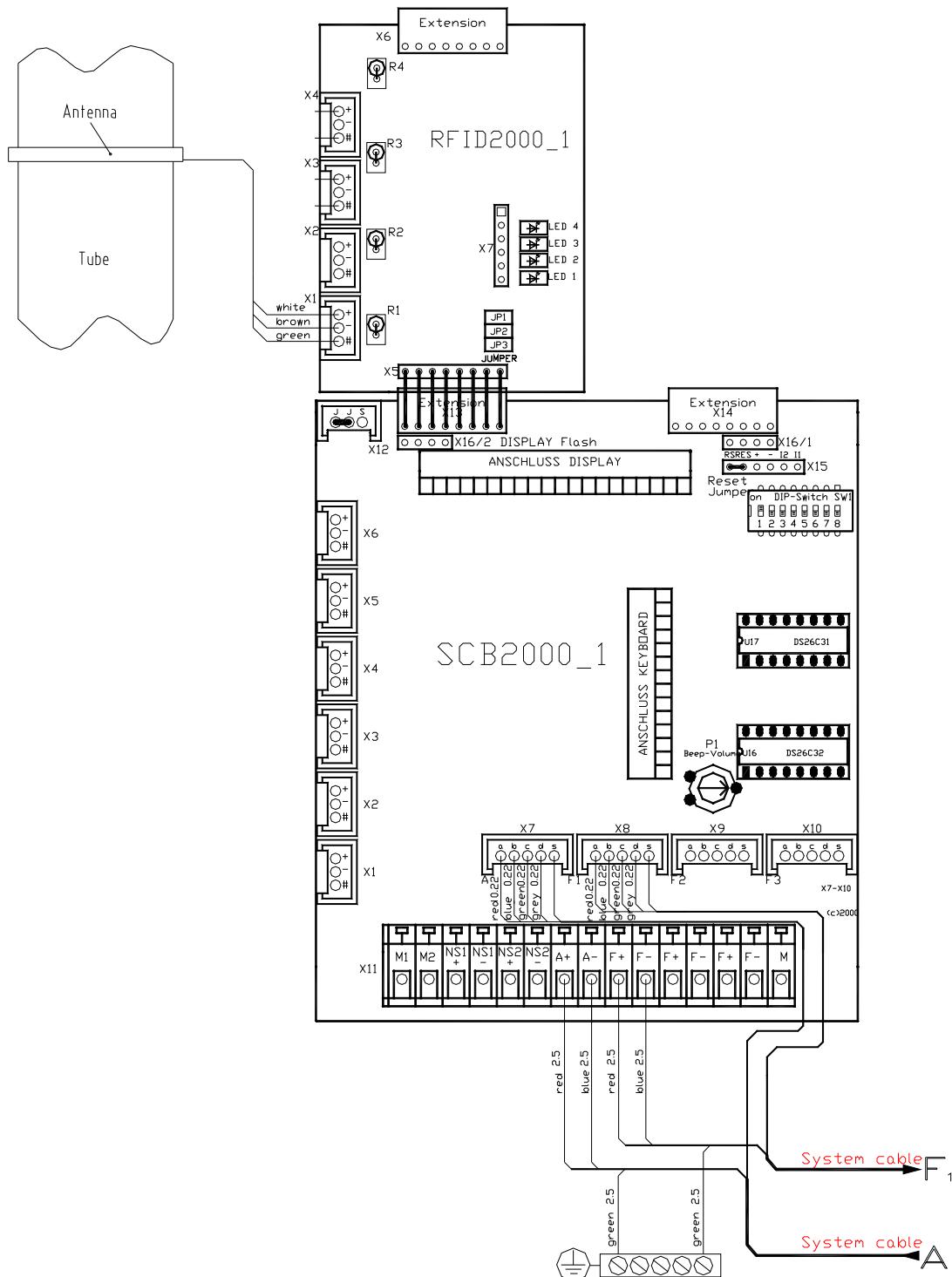
The above description applies to all system cables in the System MP10.000

Power supply with filter modul

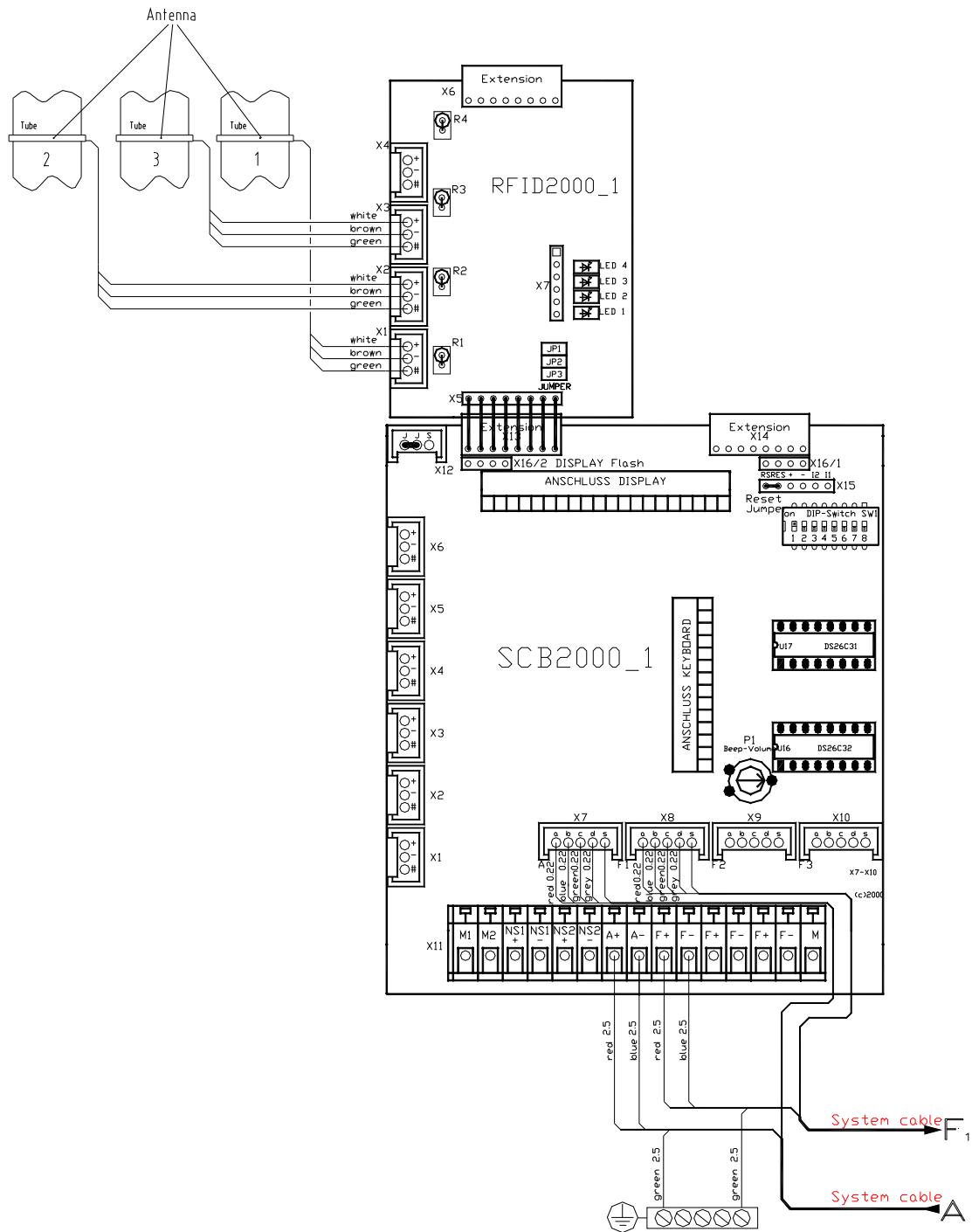
It is necessary equip the power supply with the filter module NEMIC – LAMBDA PN1207F.



SCB2000 with RFID and 1 Antenna



SCB2000 with RFID and 3 Antenna



EU-Conformity Declaration



EC-Conformity Declaration CE 0408

in mind of the Guideline for Radio Equipment and Telecom Terminal Equipment 99/05/EC

Herewith, we

Ing. Sumetzberger GmbH
Leberstrasse 108
1110 Vienna, Austria

declare, that due to it's conception and type of construction, as well as in our distributed versions, the subsequently described product meets the appropriate and elementary safety requirements of the EC-guideline.

This declaration gets invalid, with any modification not arranged and permitted by company Sumetzberger.

Description of the system: System Millenium

System type: RFID 2000

**Appropriate
EC-guideline:** EC-Guideline for Radio and Telecom Terminal
Equipment 99/05/EC

**Applied
harmonised standards:** EN 301 489 – 3 V1.4.1
EN 300 330 – 2 V1.3.1
EN 60950 -1:2006
EN50364:2001

**Product examination was
carried out by:** TÜV – Österreich, Notified Body 0408
Deutschstrasse 10
A-1230 Vienna
Austria

**Appliance of the
CE-marking:** February 2010

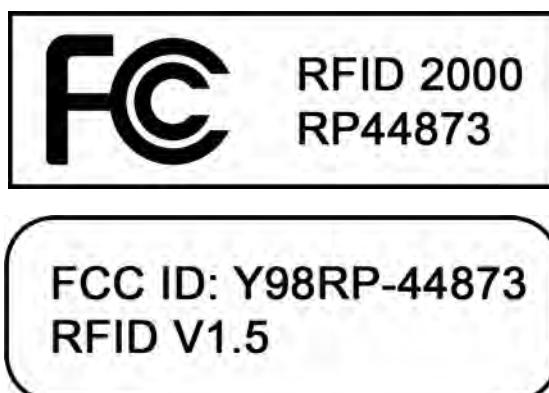
place, date Vienna, 04.02.2010

signature of the producer: Ing. Sumetzberger GMBH.
Rohrpostsysteme
Fördertechnik

1110 Wien, Leberstraße 108
Tel. 74 035-0

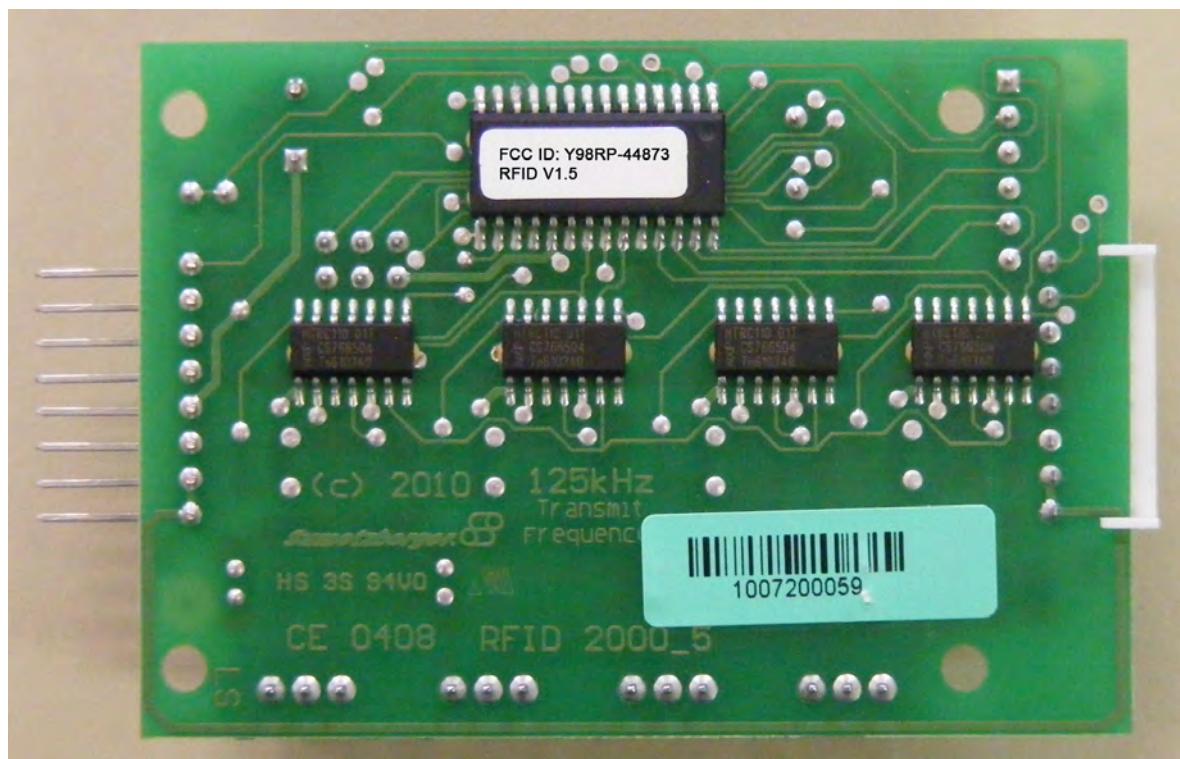
information about the producer: Ing. W. Sumetzberger
(managing director)

FCC Statement



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.



This statement is to caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Confidentiality Request

CONFIDENTIALITY REQUEST

Federal Communication Commission
Equipment Authorization Division, Application Processing Branch
7435 Oakland Mills Road
Columbia, MD 21048

February 22nd, 2011

TO WHOM IT MAY CONCERN

Pursuant to Paragraphs §0.457 and 0.459 of the Commission's Rules (47 C.F.R.) and Section §552(b)(4) of the Freedom of Information Act, *Ing. Sumetzberger GmbH* request confidentiality for the following products:

<i>FCC ID Number</i>	<i>Product</i>	<i>Title/Model</i>
Y98RP-44873	RFID 2000	RP44873

For the product stated above, we request that the following information be held confidential:

1. Circuit diagrams, BOM, and PCBs submitted as Equipment Authorization Electronic Filing attachment: "schematics".
2. Block diagram submitted as Equipment Authorization Electronic Filing Attachment: "blockdiagram".
3. Operational description submitted as Equipment Authorization Electronic Filing attachment: "operational description".

The above exhibits contain *Ing. Sumetzberger GmbH* trade secrets and proprietary information that could be of benefit to our competitors regarding the design of our mobile handset. This material is not customarily available to the general public and we request that it be withheld from public inspection.

If you have any questions, please feel free to contact me at the address shown below.

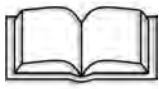
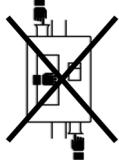
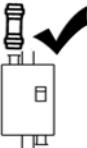
Sincerely,


Ing. Wolfgang Sumetzberger
CEO

Ing. Sumetzberger GmbH
Leberstrasse 108
1110 Vienna, Austria

Sumetzberger 

General Safety Instructions

	<p>Before putting the pneumatic tube system into service, please read the users manual carefully. The system may only be used by persons who are acquaint to the system. Please keep the manual for a later use.</p>
	<p>Don't try to maintain or repair the system by your own. Opening Casings and covers may lead to exposed voltage keeping or mechanical (mobile) parts of the devices. Caution! Leave maintenance works to a qualified service department.</p>
	<p>Never grasp into the tube openings of the station with your hands. Keep station doors closed all the time. Caution: Risk of getting hurt.</p>
	<p>Take care, not to get foreign objects into the pneumatic tube station. Avoid liquids and moisture near the station. If there is a undesired material or liquid in the station, please shut down the system and inform your qualified service department.</p>
	<p>Avoid magnetic fields in the stations area.</p>
	<p>The system is exclusively designed for the sending of suitable Carriers. Please use only Co. Sumetzberger carriers.</p>
	<p>CAUTION: Electronic parts contain CMOS components. Don't touch with your fingers.</p>
	<p>surrounding temperature: 0-50°C.</p>

Label for devices

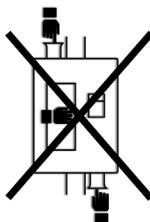
□



CAUTION

Only to be used by trained and authorized persons.

□



CAUTION

Risk of getting hurt.
Never grasp into the tube openings of the station with your hands.

□

□

If this label is needed, it can be ordered with the order number RP45222 from Sumetzberger.

General

The PNEUMATIC TUBE SYSTEM is a network of pipes and stations. Pipes are paths and stations are nodes building the whole system. You enter a CARRIER in a STATION and send it to an other one. The process of sending a carrier from one station to another is called TRANSIT.

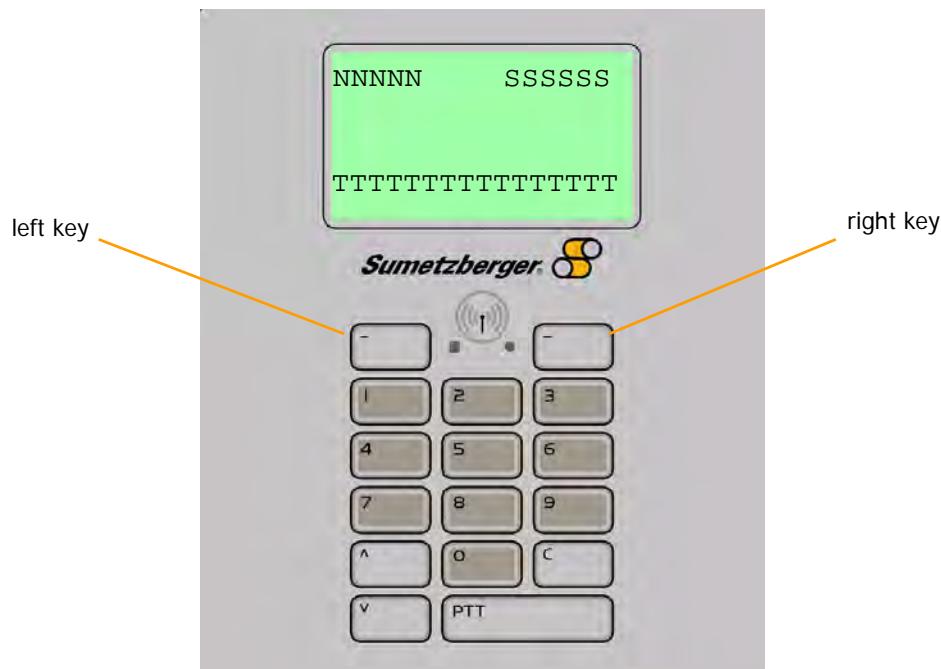
CARRIER

The CARRIER is a cylindrical container (plastic or metallic). It can be loaded with everything what do not damage it and do not exceed the capacity of the system.

STATION

The STATION lets you insert a carrier into, or flush a carrier from the system. Most types of stations are equipped with display and keyboard unit to increase pleasure and easy operating.

Display



The display unit consists from two lines, 16 characters each. It is divided into three fields (look above).

NNNNN five digit number ('00000' for example)

SSSSS system or station status ('READY' for example)

TTTTTTTTTTTTTT text message up to 16 characters

Keyboard

0	to	9	enters digit(s) to NNNNN display field.
C			sets NNNNN field to '00000' and blanks the lower line
PTT			confirms the number in NNNNN field.
C	+	PTT	resets display.
^	v		browsing up/downwards through the target table (user table)
-			LEFT key: Peep on / off (short ton - peep off / long ton peep on)
-			RIGHT key: Auto-Return (back to sender's station)

User numbers

There is a five digit number and an up to 16 characters long text associated with each station in system. According to the system, the first one is called 'user number', the second one is called 'name'.

Several numbers

It is possible assign more than one user number and name to one station. It is recommendable when more than one user share one station.

Special codes

There are a few special code numbers (four, exactly) to enable you the access to additional features of system (see SPECIAL CODES).

Status

The display status field indicates one of following status: RESET INIT TEST READY BUSY CARRIER WAIT SEND RECEIVE. Generally the features of the system as described in this document are available when system remains in READY BUSY CARRIER WAIT or RECEIVE state.

Transponder Mode (Code Tag)

By equipping the carrier with passive transponder (no battery), called code tags on both ends, all the carries can receive there own identification number and so they can be assigned to a determinate station. The return to its "home-station" is possible without entering the address.

Because of this only carriers which are registered to the system can be used and not registered carriers can't be infiltrated into the system.

When you send a carrier you just have to insert the carrier in the station and press PTT. If you want to send a carrier to another station as the programmed you have to type in the number of the desired receiving station and press PTT before you put the carrier in the station.

Making a transit

MAKING A TRANSIT

To make a transit, e.g. send a carrier from one station to an other, you need a working tube post system, a carrier, and an user number of the target station.

12345 Carrier
Mr. John
Carrier

1. Type in the user number and press 'PTT' key ('12345'+'PTT' for example). If you enter a valid number, CARRIER appears in upper display line, the text associated with user number appears in lower display line and you can insert the carrier within the next 15 seconds. If not so, your transit request will be cancelled.

12345 Send
Mr. John
Carrier

2. Put the carrier into the station and the transit goes on. The transit is realized immediately if the system is READY or later when the current running transit is finished.

12345 Carrier
FIXED TARGET

If the target is pre-defined, e.g. the station sends only to one fixed target, you get the message and transit is realized to this fixed target.

12345 BUSY
Wait until
READY

If the sending station is an **open end station** and the line is not READY or the target is an exchange diverter which already keeps a carrier you get the message
or

12345 BUSY
Xchange
OCCUPIED

and the transit request is cancelled.

12345 READY
WRONG NUMBER

If you enter an unknown number you get the message:

12345 READY
ERROR IN PATH!

If you enter an user number and the system recognizes suspect behavior in path (path are pipes, diverters and stations the carrier has to pass) you get the message and the request is cancelled.

12345 READY
Sorry, no pipe

If you enter an user number and there are no pipes connected to the source and target station or incomplete defined connections between the devices, you get the message or

12345 READY
INCOMPLETE X/N/S

and the transit request is cancelled.

12345 READY
ACCESS DENIED!

If you enter the user number and the target station is a lift station with a carrier waiting to be send, you get the message and the transit request is cancelled.

12345 READY
OWN NUMBER

If you enter the number of your own station and there is no arrival signal defined for this number, you

Arrival Signal

12345 READY
SIGNAL OFF

If you enter the number of your own station and there is an arrival signal defined for its number, you get the message and the corresponding arrival signal lamp is turned off.

Special Codes

SPECIAL CODES

- '99999' + **PTT** Starts auto-return (see AUTORETURN).
- '99998' + **PTT** Redirects your station (see REDIRECTION).
- '99997' + **PTT** Sets security code (see SECURITY).
- '99996' + **PTT** Selects list group (see GROUPS).

AUTORETURN

12345 READY
WRONG NUMBER

Every time your station receives a carrier, it saves the user number of the sending station. By entering special code '99999' + **PTT**, you recall this number and start a transit to this target. If the auto-return user number is unknown, you get the message:

REDIRECTION

99998 READY
REDIRECTION NO.?

This feature redirects the sendings to your station to another one. How does it work? The station in your room has a number '12345' for example. You are going on holiday for a week and want all transits to your station sent to the station of your college in another room. The number of its station is '67890' for example. You type in special code '99998' + 'PTT'. The station displays:

Now, you enter the wanted number '67890' + 'PTT'. The system clears the lower display line to indicate the redirection was accepted. Everyone is able to send a carrier to your station now, but the actual target is the station '67890'.

99998 READY
WRONG NUMBER

Returning from holiday, you want to cancel the redirection. You type in special code '99998' + 'PTT'. The station prompts you as above. Press 'PTT' key again and the system clears the lower display line to indicate the redirection is no more valid. Everyone can send a carrier to your station now, and it is the actual target also.

Entering an unknown user number when prompting, you get the message:

Security

99997 READY
 ACCESS NUMBER?

This feature protects your station with an access number. How does it work? There could be a reason, not everybody should be able to send a carrier to your station. You type special code '99997'+'PTT' and the station displays

Now, you enter an access number '24242'+'PTT' for example. The system clears the lower display line to indicate that the access number has been accepted.

If you would like block the access number, type in special code '99997'+'PTT'. The station prompts you as above. Press the 'PTT' key again and the system clears the lower display line to indicate the access number is no more valid.

99997 READY
 WRONG NUMBER

If you try to send a carrier to a station protected by an access number (by entering '12345'+'PTT' for example), you will be prompted to enter corresponding access number

24242 READY
 WRONG ACCESS

The system accepts the request and realizes the transit only by entering the right access number '24242'+'PTT'. Otherwise the message appears.

GROUPS

99996 READY
 LIST GROUP NO.?

Pressing repeatedly the '.' key, you list all user numbers and associated names available in the system and look for some number or name. In large systems, it is useful divide the user numbers and names into groups, to reduce the search process. If groups are defined in your system, it is easy to enable/block wanted group scope. You type special code '99996'+'PTT'. The station displays:

Now, you enter the group number '1'+'PTT' for example. The system clears the lower display line to indicate the group number have been accepted. Pressing repeatedly the '.' key, you just list user numbers and names in group 1.

99996 READY
 WRONG NUMBER

If you would like block the group number type in special code '99996'+'PTT'. The station prompts you as above. Press 'PTT' key again and the system clears the lower display line to indicate the group number is no more valid.

Entering an undefined group number when prompting, you get the message

Note: Valid group numbers are '1'...'9'. User are not able define groups. You can just use groups already defined.

DCU Instruction Special Codes

DCU Instruction Manual

The standard operating instructions for DCU are described in USER INSTRUCTION MANUAL. This part should be understood as its extension and describes two additional features to support system operator.

Special Codes

There are two additional special codes. It is the special code 99991 and special code 99992.

Code 99991

Entering special code '99991' + 'PTT', the system displays:

99997 READY
WRONG NUMBER

Entering the right password (e.g. code) followed by PTT key, the system (LCU) changes to TEST status. This works only when system is in READY status.

Once in TEST status, it is possible to get the control to any station equipped with display and keyboard by entering the right code and PTT key. If so, diagnostic functions are available as described in 3.3.9. The only difference is, that every control key has to be **confirmed by PTT** key.

Entering the special code '99991' + 'PTT' during TEST status, the system changes to INIT (first phase only), followed by REDAY status.

Code 99992

99992 READY
SELFSELECT

Entering special code '99992' + 'PTT', the system displays:

Pressing the PTT key again, starts the station a transit to itself. The carrier enters the system and should return in few moments. This works only when system is in READY status.