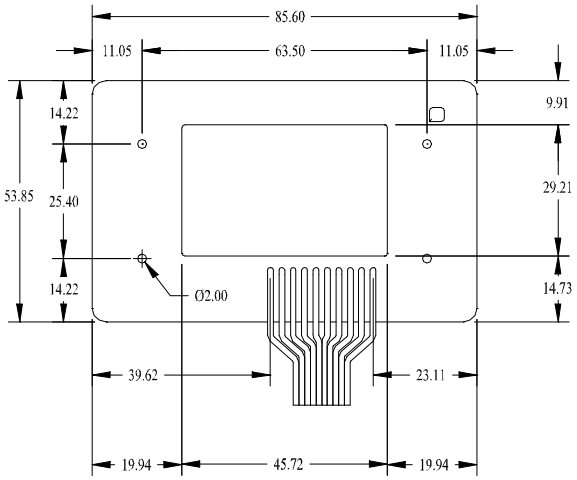
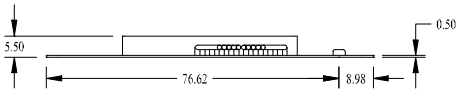
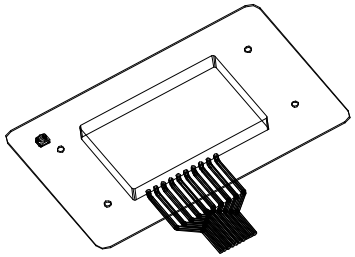
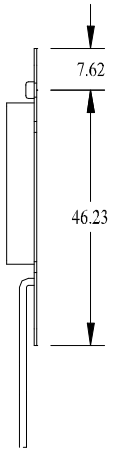
MECHANICAL SPECIFICATIONS









EHAG
ELECTRONIC HARDWARE AG • Industriestr. 8 • CH-8618 Oetwil a/S.
Tel. +41 43 844 94 00 • Fax +41 43 844 94 01 • www.ehag.ch • info@ehag.ch

Softrónica
Ing. electrónica,software y comunicaciones

SERIAL COMMUNICATION PROTOCOL V1.4X

The communication is made through a serial protocol in ASCII format, according to the programming, 8 bits, no parity, one stop bit, no handshake and 9600 baud.

The bite of the CRC is transmitted if this selected the protocol RS485

CONTINOUS READ COMMAND

It is used to configure the RIDEC5000 for continous reading of the tags near the reader antenna. The reader returns nothing when there is no tag near the antenna, and the tag memory contents when it is correctly read.

Command:

cxx

Where xx is the block number to be returned in hex format (00 to 3F).

RIDEC5000 Answer:

- For block number 00, 8 bytes (corresponding to the complete serial number)+CRC+CR+LF.
- For blocks between 0x01 and 0x0F, 4 bytes (corresponding to the block) +CRC+CR+LF.
- For blocks between 0x10 and 0x1F, the whole tag content (as selected in the block reading param.) +CRC+CR+LF.
- For block number 0x20, 8 bytes (corresponding to the complete serial number) +CRC+CR+LF.
- For blocks between 0x21 and 0x2F, 4 bytes (corresponding to the block) +CRC+CR+LF.
- For blocks between 0x30 and 0x3F, the whole tag content (as selected in the block reading param.) +CRC+CR+LF.

If there is not any detected tag, the RIDEC5000 will not return anything. The RIDEC5000 leaves continous read when it receives any character throug the serial port.

READ COMMAND

The RIDEL5000 attempts the reading of a tag once.

If the block number ranges between 0x00 and 0x1F, the RIDEC5000 will try to read the tag. If the tags is correctly read, it will return its contents. If there is no tag, nothing will be returned. In both cases, the RIDEC5000 will wait for a new command.

If the block number ranges between 0x20 and 0x3F, the RIDEC5000 will wait for a tag to be correctly read, returning its contents, and waiting for a new command.

Command:

rxx

Where xx is the block number to be returned in hex format (00 to 3F).

RIDEC5000 Answer:

- For block number 00, 8 bytes (corresponding to the complete serial number) +CRC+CR+LF.-

For blocks between 0x10 and 0x1F, the whole tag content (as selected in the block reading param.) +CRC+CR+LF.

- For block number 0x20, waits for the tag and returns 8 bytes (corresponding to the complete serial number) +CRC+CR+LF.
- For blocks between 0x21 and 0x2F, it waits for the tag, and returns 4 bytes (corresponding to the block) +CRC+CR+LF.
- For blocks between 0x30 and 0x3F, the whole tag content (as selected in the block reading param.).

If there is no tag detected, the RIDEC5000 will return the sequence N+CR+LF, and it will wait for a new command.

CRC CALCULATION

The CRC value is calculated as the Exclusive or of 5A and all the received data (not including CR or LF).

I/O PORT CONTROL

The reader includes 4 ports configurables as inputs or outputs, under software control.

Command (ASCII CHARACTER)

pxy

Where **x** define, in a bitwise mode, the direction of the corresponding port (1 means output and 0 means input). The LSB corresponding to the port 0. As an example, **x**=2 (hexadecimal) or 0010 (binary), will configure the ports 0, 2 and 3 as inputs and port 1 as output.

The parameter **y** define, in a biwise mode, the logic level if the port is configured as an output. If it is an input, a 1 will configure the input with an internal pull-up.

Answer

The reader will answer with the string:

xyzw

Where **x** and **y** are the operators sent with the command, **z** corresponds to the logic level of the outputs, and **w** corresponds to the logic level of the inputs.

VERSION COMMAND

It returns the RIDEC5000 version information.

Command:

x

RIDEC5000 Answer:

Version number+CR+CF.

WRITE COMMAND

It writes the four bytes (32 bits) corresponding to the selected block. It returns the answer from the tag, if the writing is succesful.

Command:

wyyxxxxxxxx

Where yy is the block number to be written (from 0x00 to 0x0F), and x are the data corresponding to the selected block (4 data 8 bits each). It is important to consider the following information.

- The block 00 and 01 correspond to the serial number, so they are **read only.**
- The block number 02 contains the write permission data for the different blocks of the tag. They have to be carefuly writen, in order not to permanently disable the tag for writing.

RIDEC5000 Answer:

If the writing is succesful, the RIDEC5000 will answer Yw+CR +CF.

If there is any error, or there is not any tag present, the RIDEC5000 will answer Nw +CR +CF.

RESET QUIET

This command resets a tag with the QUIET mode active.

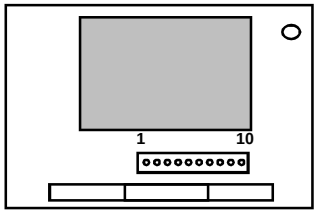
The QUIET bit is in the block 3, byte 0, bits 3 and 4. A 11 written to this position, will put the tag in QUIET state. It will stay in this mode until a Reset Quiet command is received.

Command:

q

The RIDEC5000 will not send any answer.

EXTERNAL CONNECTION



RS232 Version	RS485 Version	TTL Version
1.- +6,5 a 9Vcc	*1.- +6,5 a 9Vcc*	*1.- +6,5 a 9Vcc*
2.- Masa	*2.- Masa*	*2.- Masa*
3.- Power dowm	*3.- Power dowm*	*3.- Power dowm*
4.- RTS	*4.-*	*4.-*
5.- RXD	*5.- A*	*5.- Recepción*
6.- TXD	*6.- B*	*6.- Transmisión*
7.- PD3	*7.- PD3*	*7.- PD3*
8.- PD4	*8.- PD4*	*8.- PD4*
9.- PD2	*9.- PD2*	*9.- PD2*
10.- PD1	*10.- PD1*	*10.- PD1*

RIDEC5000 VERSION CODING

RIDEC5000xy

Where x correspond to the communication bus:

A	*RS232*
B	*RS485*
C	*TTL*

And y is the power supply range:

A	*3.5 to 5V*
B	*6 to 9V*

The standard manufactured models are:

RIDEC5000AB	*RS232 6 to 9 Vcc*
RIDEC5000BD	*RS485 6 to 9 Vcc*
RIDEC5000CA	*TTL 3.5 to 5Vcc*

Ask for availability of other versions.

TECHNICAL SPECIFICATIONS

Operating Frequency		13,56 MHz.
Air protocol		I-CODE
Operating range (with built-in antenna)		8 cm.
Output ports		4 TTL low current
Mute		0 Power
Communication bus	Option A	Serial RS232
	Option B	Serial RS485
	Option C	Serial TTL
ID Key for RS485		4 Bites x 8 bits.
Protocol options		Ascii or binary
		With or W/out access key
Baud Rate		9.600, 14400, 19200, 28800, 38400, 57600
Voltage Supply range	A version	3,5 a 5 Vcc.
	B version	6 a 9Vcc.
Current consumption	A version	@ 3,5 Vcc 48mA
		@ 5 Vcc 80mA
	B version	@ 6 Vcc 74mA
		@ 9 Vcc 93mA.
Factory settings		
Access Key		30 31 32
Data format		Ascii
Baud Rate		9600 Bauds
Protocol		RS232
		No access Key
Block Read		00 64