WORKtime IIIB

USER MANUAL Version 1.0

Contents

Overview

Manuals

The WORKtime online terminal uses the hardware of the TIMEmate to emulate a online concentrator and a WORKmate system. The communication is compatible with the online concentrator. If more than 1 WORKtime terminal is connected the server software must scan all terminals. With a concentrator the server software typically only scan 1 concentrator

Technical specifications

- Power : 220V - 240V AC   15W
- Dimensions: Width 168mm, Height 265mm, Depth 113mm
- Weight: 2 Kg
- Drives up to 2 internal relays and 2 external relay.
- 2 non isolated and 1 isolated input lines for switches.
- LCD display with 4 lines of 20 characters and LED back-lighting.
  The characters are 5.5 mm high.
- Waterproof membrane keyboard with 6x4 keys.
- Stylish waterproof IP54 housing.
- Reads magnetic cards with ISO track 2 cards.
  1 internal reader can be connected.
- Reads proximity cards (RF tags) with magnetic stripe interface.
  1 internal reader and 2 external readers can be connected.
- Reads proximity cards (RF tags) with wiegand interface.
  1 internal reader can be connected.
- Reads 2/5 interleaved, code 39, MSI, UPC and EAN bar-codes.
  1 internal reader and 1 external reader can be connected.
- 496K byte battery backed up RAM for file storage.
- 180K byte flash ROM memory for firmware and application program.
- Internal power supply with over voltage protection and HF filter.
- 2 serial communication ports.
- An optional Ethernet interface can be installed.

Startup warnings and checks

The following things are tested when the TIMEmate starts up:

- If the F1 key is pressed the ethernet setup menu is started.
- If the →] key is pressed the TIMEmate setup menu is started.

Input / Output

Relays

The timemate has the following relays :
- Relays 1 has a normal open (NO) and a normal closed (NC) contact and drives up to 220V 1A.
- Relays 2 has only a normal open (NC) contact.
- Relays 3 driver is a pin on the 'extra connection' connector that can drive an external relay with a 5V Coil.
- Relays 4 driver is a pin on the green terminal block connector located on the processor board, that can drive an external relay with a 5V Coil.

See the drawings at the end of the manual.

Be careful when switching inductive loads with the relays, when the power to a coil is switched off it will generate a large voltage spike that can burn out the relays contacts, especially when switching a DC voltage.
Never switch the primary coil of a 220V transformer, always place the relay contacts in the secondary circuit.

Led's

The timemate can drive 2 LED's typically a green and a red.
Can be used to indicate correct or false input or other special applications.

Inputs

The timemate has 2 non isolated binary inputs located on the 'Extra connection' connector of the power supply. And 1 isolated binary input located on the processor board.
Their main use is for connecting a switches to the timemate.
Connect a powerless switch between 'switch input 1' and '+5V for input'
or 'switch input 2' and '+5V for input'.
The isolated input can handle both powerless contacts or switched external voltages.
See the drawings at the end of the manual.

Card readers

Barcodes :

There are 2 barcodes ports, 1 for an internal reader and 1 for an external reader.
Both ports can be used simultaneously.
These codes are recognized : 2/5 interleaved, code 39, UPC and EAN bar-codes.
A CCD scanner can be programmed to translate other types of barcodes to Code 39.
You can connect :
- Barcode badge reader for infrared or visible light
- Barcode wand
- CCD scanner.

Magnetic cards

The TIMEMate reads magnetic cards with ISO track 2. (ISO 2 ABA)
> Track 2 is 4 bits per character plus a parity bit
> The track format is: START(13) data END(15) LRC

One internal reader can be connected.

Proximity cards (RF tags).

You can connect one internal reader and two external readers to the TIMEmate simultaneously. Readers 2 and 3 have an opto-isolated current loop interface to connect a reader up 50 meter away from the TIMEmate. The reader must be connected through a doorlock interface. This doorlock interface gives power to the reader and drives the current loop interface. The doorlock interface has also 2 relays and a powersupply for AC or DC doorlock coils.

If you close jumper 1,2 and 3 or the power supply board, reader 3 can be connected, for a short distance, directly to the TIMEmate without a doorlock interface. (see the drawings at the end of the manual)

Wiegand proximity cards.

You can connect one internal wiegand reader to the TIMEmate.

The data from a wiegand reader is not in the form of readable characters like a mag. stripe cards or data received though the mag. stripe interface.

Wiegand data is a stream of bits that must be decoded to a decimal card number.

This bit stream is divided into blocks of bits. These blocks need to be converted to a decimal number, in the example below bit 10 to 25 are used to make the card number.

Because there is no standard in the formatting of wiegand cards the decoding of the card number takes place in the application program not in the firmware of the TIMEmate.

Example of a typical wiegand card structure.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
P	F	F	F	F	F	F	F	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P

P=Parity bits
C=card number 16bits   range 0 - 65536
F=facility code 8bits   range 0 - 255

Serial lines

The terminal has 2 serial ports.

The main port is for connection to a computer see the 'TIMEmate III communication manual'
Port 1 can be configured with DIP switches on the powersupply in 3 communication modes:
1) A RS232 connection.
    Max. 50 meters. Only 1 terminal can be connected on 1 computer port.
    Can be directly connected to the computer serial ports.
2) A multidrop RS485 (4 wire) connection
    Max. 1200 meters. Max 32 terminals can be connected to 1 computer port.
    You need to place a RS232 to RS485 converter on the serial port of your computer.
    We recommend the Westermo ACCESS MA-42 it also optically isolates the network from
    your computer.
3) An Ethernet interface can be plugged into the processor board.
    This interface converts the data from serial port 1 to an Ethernet network using the IP
    protocol family.
The cable lengths are for 9600 baud, for lower baud rates the cable can be longer.

The extra port is for special serial connections.
Port 2 can be configured with DIP switches on the processor board in 3 communication modes:
1) A RS232 connection located on the powersupply board.
    The application can use this port to drive a printer or other serial devices.
    This port is also used to program the flash memory.
2) A RS485 connection located on the processor board.
    This is used to connect a network of external MORI interfaces for access control.
3) A TTL level serial connection located on the powersupply board.
    Is special OEM modules that have no full RS232 interface.

Mounting

The timemate is mounted to the wall with a special mounting plate. The timemate hooks into the bent upper part of the plate and is then fixed to the plate with 2 screws. These screws are accessed by removing the bottom lid of the timemate.
Look at the end of this manual for to see the dimensions of the wall plate and where you can make a hole to guide the cables.

The cables to the timemate can go through the back of the timemate and then through the wall. Or the cables can go through the bottom of the timemate with cable glands.

If you drill a hole for cables in the TIMEmate and you still want to keep the IP54 waterproof protection you need to use watertight seals like cable grommets and cable glands.
The cables of the TIMEmate can go trough the back of the TIMEmate and then trough the wall or the cables can go trough the bottom of the TIMEmate.
You can use a cable grommet or a cable gland for each cable with an IP54 protection for cables with a diameter ranging from 3.5 to 8 mm (PG9).
If you use a cable grommet it is recommended to use a strain relief on the cable.

Cable gland

Grommet

The keyboard gives no mechanical feedback, you can't feel if a key is closes or not.
Instead you hear a short beep to give the user an indication if the key is pressed or not.

The backspace and enter key have a fixed function.
Numbers can be entered with the numerical keys, input errors can be corrected with the backspace key and the input can be finished with the enter key.

The other function keys are transmitted as function codes, see table below.

key	ONLINE
|→	96
?	116
→|	100
F1	101
F2	102
F3	103
F4	104
F5	105
F6	106
↑	98
↓	117
←	only for edit
↵	No function code

All codes are the same as the WORKmate II except 116 for ? this is the code for F16 in the WORKmate II

Communication

WRITE to the terminal

The WORKtime terminal accepts this online concentrator compatible communication command to write data to the terminal. The data contains display text and WORKmate compatible terminals codes.

Length	Code	Description
1	STX	2 dec
1	W	87 dec Command
1	0	Always 0
1	Line	Always 5 (indicates a WORKtime)
2	Terminal	0 Asc to 63 Asc
max 100	Data	A string of data for the terminal
2	Checksum	Calculated from W to Data
1	CR	13 dec

The answer to this is ACK CR or
NACK P CR   or NACK C CR during serial line interference.
NACK W CR if the previous data for this terminal is not yet transmitted.

READ from the terminal

The WORKtime terminal accepts this online concentrator compatible communication command to read data from the terminal. The data contains entered data and a function code.
This command must be send continuously to poll if there is new data available in the terminal.

Read the next data in the buffer. (normally used command)

Length	Code	Description
1	STX	2 dec
1	N	78 dec Command
2	Checksum	97 dec 109 dec
1	CR	13 dec

The answer to these commands is the terminal data in this format:

Length	Code	Description
1	STX	2 dec
1	reserved	Always 0 Asc (for future expansion)
1	Line	Always 5 (indicates a WORKtime)
2	Terminal	01
max 42	Data	A string of data from the terminal
2	Checksum	Calculated from reserved to Data
1	CR	13 dec

or
NACK P CR   or NACK C CR during serial line interference.
NACK E CR if there is no data available from the terminals.

WORKmate terminal codes

See the WORKmate II manual for the command codes.

Not all functions of the WORKmate II are supported on the WORKtime:
- No input level detect
- No input counters
- No LED drivers
- No second serial line support.
- No special beep commands, only standard beep.

Trouble shooting

If you can't communicate with the TIMEmate, check following points:
- Check the Baudrate and multidrop address settings of the timemate.
  Default 9600 baud, Address 00
- Check the serial cable, this can be done with a RS232 line tester, which has LED's for the Rxd and Txd lines.
- Check if the DIP switches are correctly configured.
- For network communication see the chapter 'setup Ethernet interface'.

Card reader doesn't work.
- If you hear a beep after your read a card and the timemate gives no further response, means that the timemate reads the card ok, but the software doesn't process the data correctly.
- Use the selftest in the settings menu. You can check if the hardware works and what data is received from the reader.
- If the reader is not a standard reader check if you have the correct version of the firmware.

Press during reset

Hold 5 sec
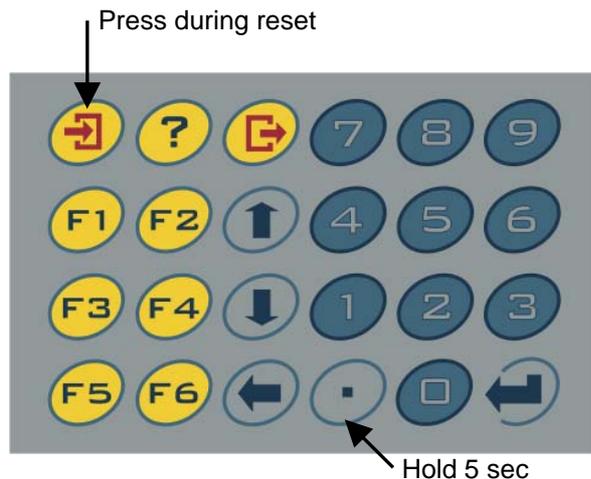
Standard keyboard

To get into the setup menu.
Press and keep pressing the upper left key on
the keyboard, then press and release the reset
button.

The reset button is located on the left side of the processor board (see the drawings at end of
manual). You can also switch the power to the TIMEmate off and on.
If resetting the TIMEmate is not practical. You can also get into the setup menu by pressing the
'**.**' key for 5 seconds during normal operation. You then need to enter the **password 1596.**

1=Setup menu.

By pressing the up arrow go to the next menu item.
By pressing the down arrow go to the previous menu item.
By pressing enter you change the current setting.
By pressing the backspace key you leave the setting menu without saving the changes.

Set TIMEmate terminal address
   Address 00 is the default setting.
   This address is mostly used for multidrop RS485 communication (see next setting)

Set RS485 Multidrop mode.
   0=No RS485   The communication is always active (RS232 of Ethernet)
   1=Activate RS485   The communication is active if the terminal address is used. (RS485)

Set Real Time Clock

The Real Time Clock can be set in this menu.
Enter in the date and time is this order, Year Month Day Hour Minutes Seconds,
all with a 2 digit number.
The Real Time Clock is not used by the WORKtime the time is constantly updated by the
server.

Main communication port 1 settings
Set the baudrate for serial port 1 (the communication port to the computer)
The ethernet interface also talks to the TIMEmate through this serial port. So the Ethernet
interface must be set to the same baudrate.

Extra communication port 2 settings
Set the baudrate,bits and parity for the extra serial port.
This port can be used to connect printers, special card readers and other serial devices to
the TIMEmate.

Daylight saving time mode.
Is not used by the WORKtime.

Save new setup to flash memory.
Stores the setup parameters permanently into flash memory.
You must press enter in this menu item for the parameter you changed to take effect.

2=Selftest menu.

By pressing the up arrow go to the next menu item.
By pressing the down arrow go to the previous menu item.
By pressing enter you start the selected test.
By pressing the backspace key you exit this menu or the current test.

Barcode and Prox. reader test
When reading barcodes the type of barcode is show and the barcode data.
Also when barcode data is received but can not be decoded a BAD SCAN or DECODE
ERROR is shown, this is useful to test the quality or compatibility of your barcode or barcode
reader.

Track 2 magnetic cards or proximity readers with a mag. Stripe interface can be tested.
The received data is shown and which one of the 3 mag stripe 3 ports was used.

Wiegand reader data is a hexadecimal representation of the wiegand bitstream.
The first hex byte represents the amount of bits in the stream.
Example: 1AB81BC4C0   1A means 26 bits of data   B81BC4C0 are the data bits.

Keyboard test

The code of the key pressed is shown.
The following table shows all the keyboard codes for the standard keyboard.

129	131	133	055	056	057
134	135	198	052	053	054
136	137	200	049	050	051
138	139	Exit test	046	048	013

Test the four input ports

Each time one of the four inputs changes a message is shown on the display.
If for example a switch is connected to input 1,
'Input 1 Closed' is shown if the contact goes from open to closed.
'Input 1 Open' is shown if the contact goes from closed to open.

Test the six output ports

Press the number of the output you want to change.
An off output will be switch on.
An on output will be switch off.
If you exit this test with backspace all the output are switched off again.

Test the RS232 serial comm. port

This test acts like a mini serial terminal on the extra serial line.
Character received on serial port 2 are displayed on the display, numbers entered on the
TIMEmate keyboard are send on the serial port. The enter key is transmitted as Carriage Return.
This can be used to test the devices you can connect to this port.

3=Debug mode on.
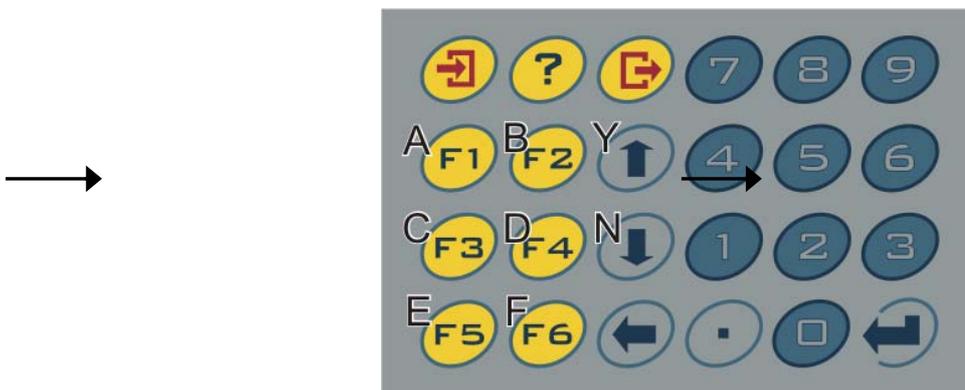
Restart the WORKtime in debug mode.
In this mode the WORKtime beeps every time the 'N' command (read data) is received.
So you can check if the server software is running and if the communication link is OK.

4=Exit menu

Leave the settings and selftest menu and resume normal TIMEmate operation.

To activate the Ethernet interface setup function on the TIMEmate III:

Press and keep pressing the F1 key on the keyboard, then press and release the reset button.

If the text 'Searching for Ethernet interface' appears you can release the F1 key.

If this text doesn't disappear after 10sec, the Ethernet interface is not responding, check following steps:

- Are the DIP switches set to Ethernet operation ?
- Is an Ethernet interface present and is it plugged in OK ?
- Do any LED's light up on the Ethernet interface ?
- Does the Ethernet interface work in another TIMEmate ?
- Does the processor board work in another TIMEmate ?

To leave the Ethernet interface setup screen press the reset button.

If everything is OK this main menu appears:

0=SERVER CONFIG

1=CHANNEL CONFIG

9=SAVE CHANGES

For the Ethernet setup the keyboard of the TIMEmate is defined like this:

Some questions require the input of hexadecimal numbers or a Y or N answer. See the drawings above for a the keyboard mapping of the A,B,C,D,E,F,Y,N letters.

Press the ENTER key to confirm your input.

If you reset the TIMEmate before doing '9 SAVE CHANGES' all changes are lost and the old settings will be used.

To check if you entered the data correctly before doing '9 SAVE CHANGES' go back to the 'server config' or 'channel config' and walk through the settings list by only pressing ENTER. The Ethernet interface settings can later be changed remotely with a Telnet connection to port 9999. For example type this in a dosbox TELNET 10.0.0.18 9999

The 'Ethernet interface setup' mode is actually a simple terminal emulation, key presses are send on serial port 1 and data received from port 1 is displayed on the LCD display.

After you press 9 (exit and save changes) or 8 (exit without saving) in the main menu, the ethernet interface will go into normal communication mode (observe the LED's), if you now send data to the TIMEmate you will see the communication commands on the LCD display. You communication software will time-out because the TIMEmate doesn't react to the commands.

You must press the RESET button to put the TIMEmate back into normal mode!

Here follows a short overview of the parameters that need to be set in the Ethernet interface.
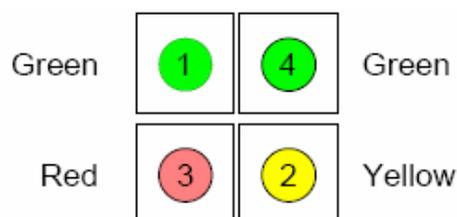See the '**EIK_UG.pdf**' for more detailed information.

0) Server configuration	
IP Address : (10) .(0) .(0) .(16)	IP address of this Ethernet interface. Press '.' between the parts of the IP address and finish with enter.
Set Gateway IP Adress (N) N	**N** If the PC and this Ethernet interface are connected to the same LAN segment. **Y** If they are not on the same segment.
Gateway IP Adr (000).(000).(000).(000)	The gateway address should be the IP address of the router connected to the same LAN segment as the Ethernet interface you are configuring.
Netmask: Number of Bits for Host Part (0=default) (08)	**8** bits host gives 255.255.255.0 as a netmask (Class C) **16** bits host gives 255.255.0.0 as a netmask (Class B)
Change telnet config password (N)	**N**

1) Channel configuration for UDP communication	
Baudrate	Baud rate of RS232 port. This is default **9600** on the TIMEmate III. The baudrate in the TIMEmate setting menu must be the same as this baudrate.
I/F Mode	Serial interface mode **4C** for internal Ethernet interfaces
Flow	Always **00**
Port No	Vicking always uses port number **11333** The computer writes to this port.
ConnectMode	Always **0C** (UDP mode)
Datagram Type	Always **01**
Remote IP Address	**0.0.0.0** Automatic mode. Data is transmitted back to the IP address it received data from. So the computer IP address must not be known. The TIMEmate only sends data, after the computer send a command.
Remote Port	Vicking always uses port number **11240** The computer receives data on this port.
Pack Cntrl	Always **00**
SendChar 1	Always **0D**
SendChar 2	Always **0D**

1) Channel configuration for TCP communication	
Baudrate	Baud rate of RS232 port. This is default **9600** on the TIMEmate III. The baudrate in the TIMEmate setting menu must be the same as this baudrate.
I/F Mode	Serial interface mode **4C** for internal Ethernet interfaces
Flow	Always **00**
Port No	Vicking always uses port number **11333** The computer writes to this port.

ConnectMode	Always **C0** (TCP mode)
Send '+++' in Modem Mode	(Y)
Auto increment in source port	(N)
Remote IP Address	**0.0.0.0** Automatic mode. Data is transmitted back to the IP address it received data from. So the computer IP address must not be known. The TIMEmate only sends data, after the computer send a command.
Remote Port	Vicking always uses port number **11240** The computer receives data on this port.
DisCommMode	(00)
FlushMode	(80)
Pack Cntrl	Always 22
DisConnTime	(00:20) of higher when using slow connections.
SendChar 1	Always **0D**
SendChar 2	Always **0D**

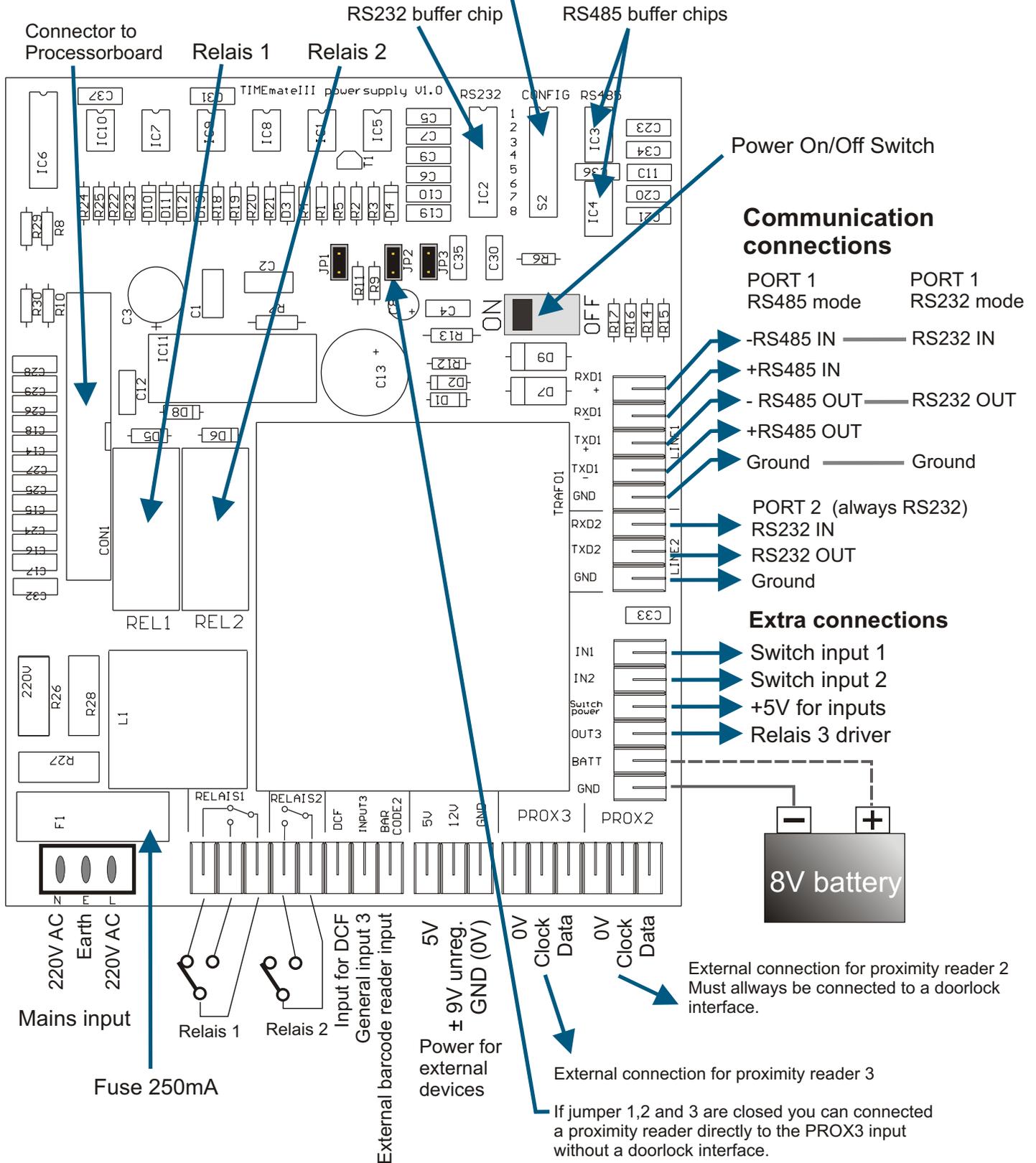## Overview status LED's Ethernet interface

Table 2-2. CoBox-Micro Status LEDs

LED	Description	Location	LED Functions
1	Serial Port (Channel) 1 Status	CON 4, Pin 4	Lights solid green to indicate Channel 1 is *idle*. Blinks green to indicate Channel 1 is connected to the network and *active*.
2	Serial Port (Channel) 2 Status	CON 4, Pin 7	Lights solid yellow to indicate Channel 2 is *idle*. Blinks yellow to indicate Channel 2 is connected to the network and *active*.
3	Diagnostics	CON 4, Pin 3	Blinks or lights solid red in combination with the green (Channel 1) LED to indicate diagnostics and error detection. Red solid, green (Channel 1) blinking: 1x: EPROM checksum error 2x: RAM error 3x: Network controller error 4x: EEPROM checksum error 5x: Duplicated IP address on the network* 6x: Software does not match hardware* Red blinking, green (Channel 1) blinking: 4x: Faulty network connection* 5x: No DHCP response received*
4	Network Link Status	CON 4, Pin 8	Lights solid green to indicate network port is connected to the network.
*non-fatal error			

Overview TIMEmate IIIB powersupply board

With this DIP switch you can select the communication method for port 1:

For RS232	1,2,3,4 ON	5,6,7,8 OFF
For RS485	6,7,8 ON	1,2,3,4,5 OFF
For Ethernet	5 ON	1,2,3,4,6,7,8 OFF

Switch 1,2,3,4   RS232

Switch 5   Ethernet interface

Switch 6,7,8   RS485

RS232 buffer chip

RS485 buffer chips

Connector to Processorboard

Relais 1

Relais 2

Power On/Off Switch

Communication connections

PORT 1 RS485 mode

PORT 1 RS232 mode

-RS485 IN ——— RS232 IN

+RS485 IN

- RS485 OUT ——— RS232 OUT

+RS485 OUT

Ground ——— Ground

PORT 2 (always RS232)

RS232 IN

RS232 OUT

Ground

Extra connections

Switch input 1

Switch input 2

+5V for inputs

Relais 3 driver

8V battery

220V AC

Earth

220V AC

Mains input

Fuse 250mA

Relais 1

Relais 2

Input for DCF

General input 3

External barcode reader input

5V

+ 9V unreg.

GND (0V)

Power for external devices

0V

Clock

Data

0V

Clock

Data

External connection for proximity reader 2 Must allways be connected to a doorlock interface.

External connection for proximity reader 3

If jumper 1,2 and 3 are closed you can connected a proximity reader directly to the PROX3 input without a doorlock interface.

Overview TIMEmate IIIB processor board

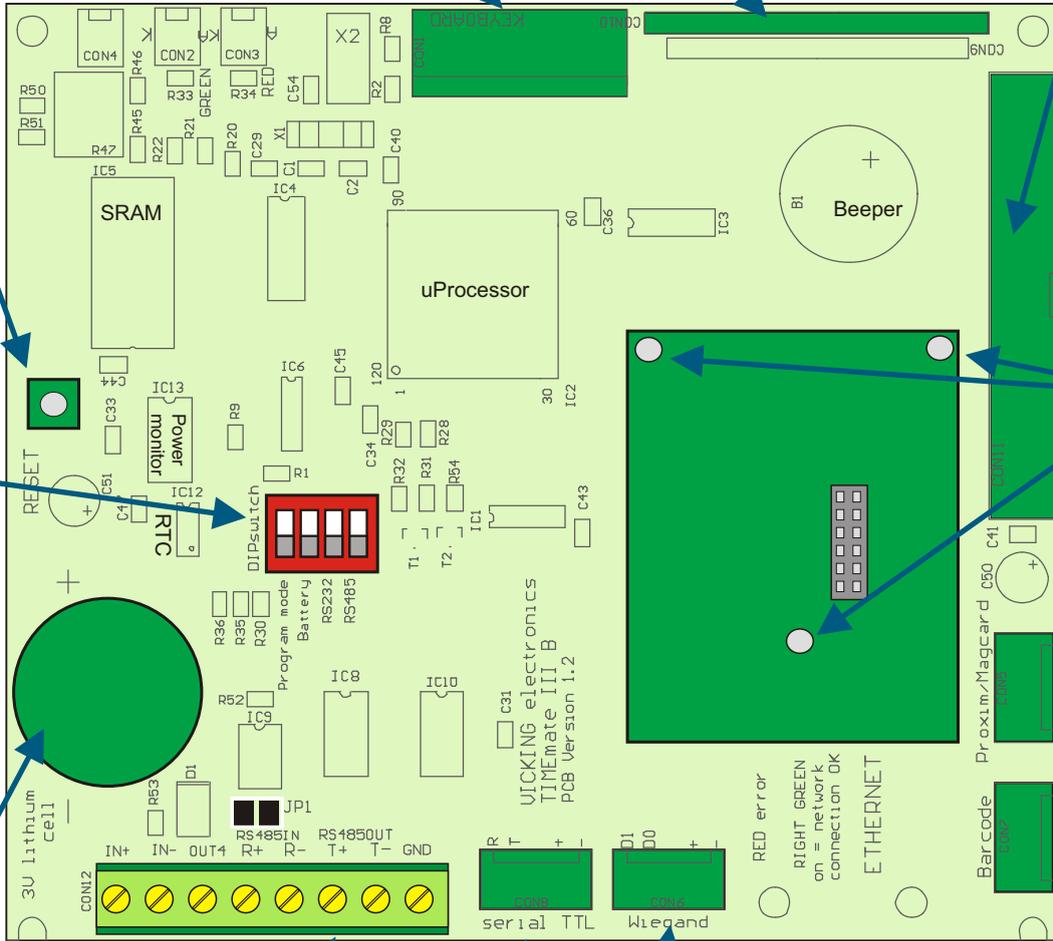TIMEmate II Reset button.
Also resets the
Ethernet interface.

Connector for
keyboard.

Connector for LCD display
4x20 characters includes
back light power.

Flatcable connection
to Powersupply board

DIP switch

Mounting holes
Ethernet interface

SRAM

uProcessor

Beeper

Power monitor

RTC

RESET

DIPswitch

VICKING electronics
TIMEmate III B
PCB Version 1.2

Proxim/Magcard

Barcode

RED error

RIGHT GREEN
on = network
connection OK

ETHERNET

IN+ IN- OUT4 R+ R- T+ T- GND

serial TTL

Wiegand

RS485IN RS4850UT

3V lithium cell

3V Lithium cell to power
the memory and
Real Time Clock when
the TIMEmate is switched off.

Connector for internal
wiegand reader

Connector for internal
magnetic card reader
or proximity reader
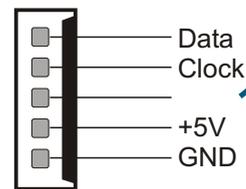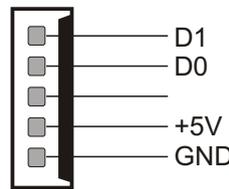
R- R+ T- T+
2nd serial port RS485 output
selected by DIP switch
For proximity reader network

OUT4
Buffered open collector output

IN+ IN-
Opto coupler input

2nd serial port TTL output

Connector for internal
barcode badge reader.

D1
D0

+5V
GND

Data
Clock

+5V
GND

Data

+5V
GND

Follow these steps to program the firmware into the TIMEmate IIIB flash memory.
This is only necessary for a TIMEmate with incorrect or no firmware.
Upgrading a working TIMEmate with newer firmware can be done with the
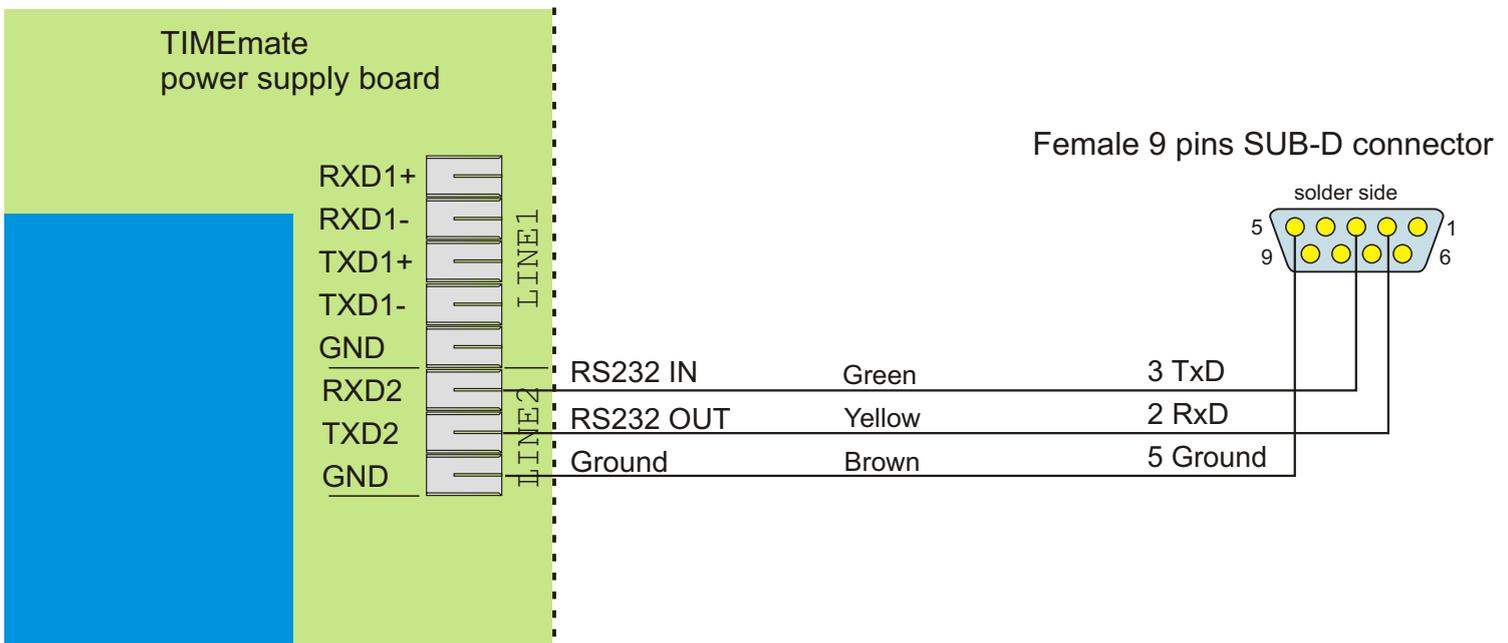standard communication software.

Program
Battery
RS232
RS485

Set the DIP switch to ON,ON,ON,OFF.
Connect the RS232 cable to a computer. (see picture below)

With the program flash.exe you can send a timematexx.mhx file to the TIMEmate
flash memory. Select the file with the "Open" button.

The correct COM port must be selected with the button "Set environment"

Click the button "full operation" to start the programming.
The program must finish without an error message.

Set DIP switch 1 'program' to OFF and reset the TIMEmate
the startup screen should now appear.

TIMEmate
power supply board

Female 9 pins SUB-D connector

solder side

5   1
9   6

RXD1+		LINE1		
RXD1-				
TXD1+				
TXD1-				
GND				
RXD2	RS232 IN	Green	3 TxD	
TXD2	RS232 OUT	Yellow	2 RxD	
GND	Ground	Brown	5 Ground	
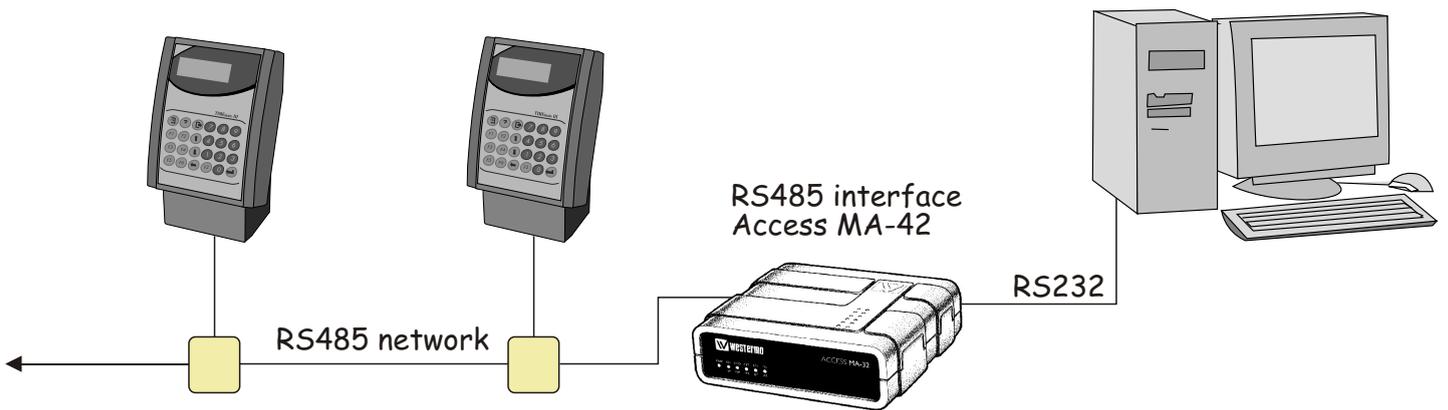
RS232

With RS485 you can connect more than 1 TIMEmate to the same RS232 port of a computer.
You will need an interface that converts the RS232 port to RS485.

Check if the TIMEmate is configured for RS485 operation (DIPswitches)

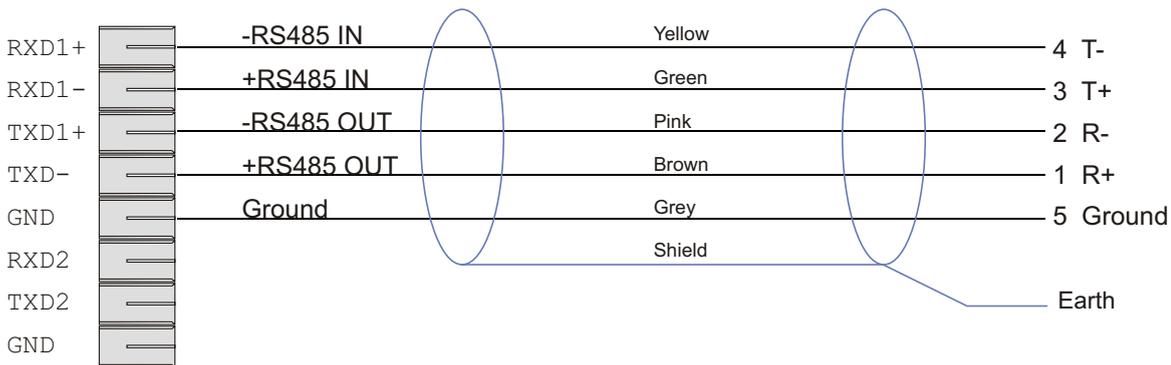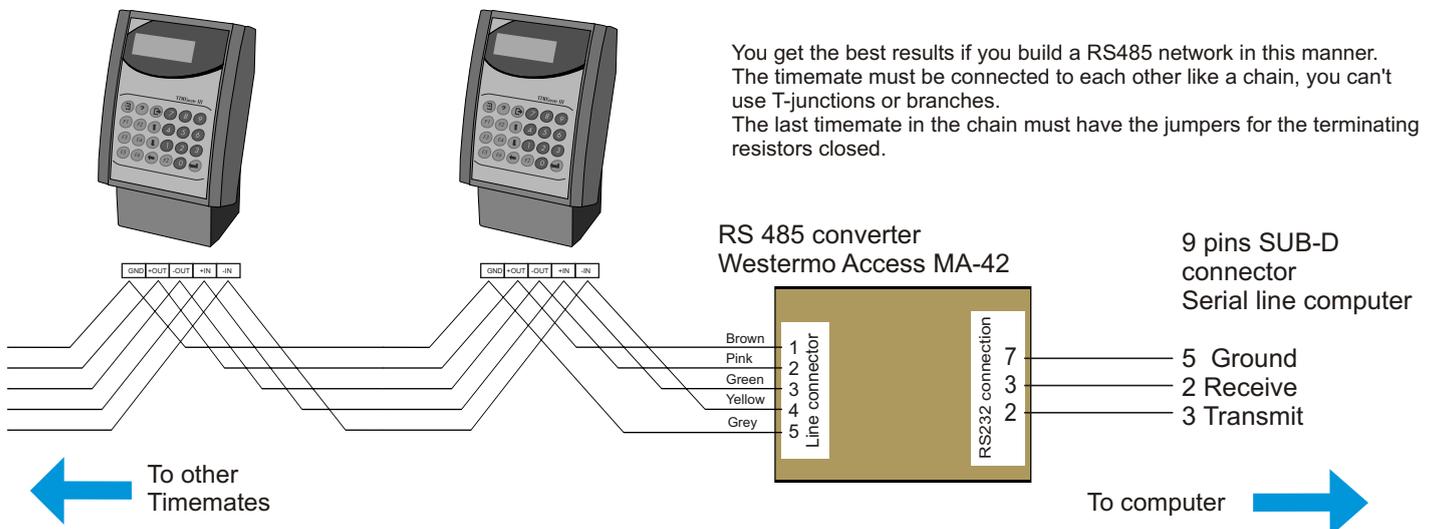RS 485 converter
Westermo Access MA-42

PORT 1 in RS485 mode

TIMEmate	Signal	Wire		Pin	Converter
RXD1+	-RS485 IN	Yellow		4	T-
RXD1–	+RS485 IN	Green		3	T+
TXD1+	-RS485 OUT	Pink		2	R-
TXD–	+RS485 OUT	Brown		1	R+
GND	Ground	Grey		5	Ground
RXD2		Shield			
TXD2					Earth
GND					

You get the best results if you build a RS485 network in this manner.
The timemate must be connected to each other like a chain, you can't use T-junctions or branches.
The last timemate in the chain must have the jumpers for the terminating resistors closed.

RS 485 converter
Westermo Access MA-42

9 pins SUB-D connector
Serial line computer

Line connector		RS232 connection		SUB-D
Brown	1		7	5 Ground
Pink	2		3	2 Receive
Green	3		2	3 Transmit
Yellow	4			
Grey	5			

GND +OUT -OUT +IN -IN

To other
Timemates

To computer

This picture shows how to connect TIMEmate's in a RS485 multidrop network with T-junctions. You will need an extra T-block box for each TIMEmate. If two TIMEmates are close together you can connect them both to the same T-block.
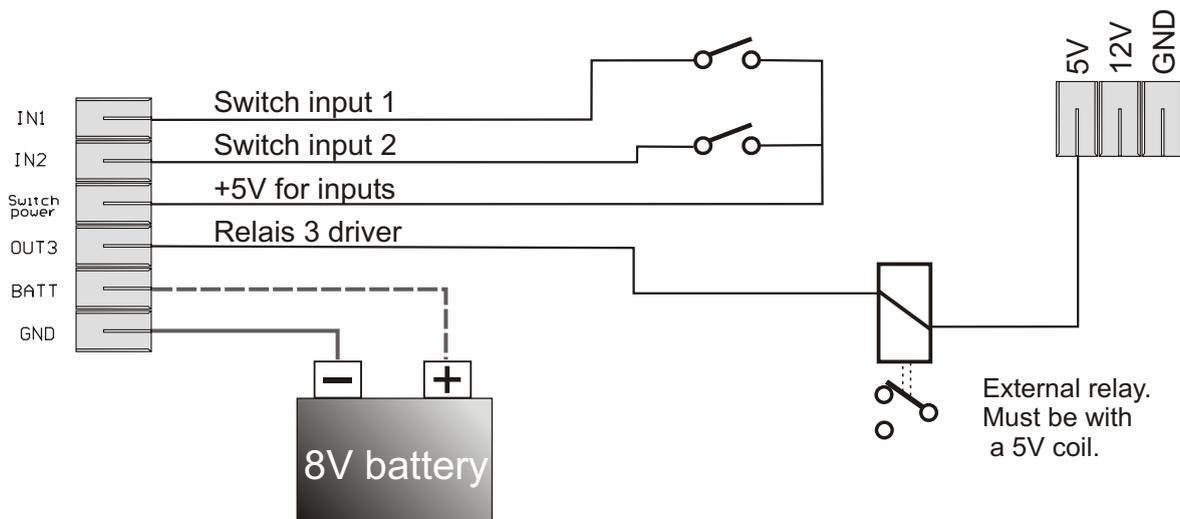The maximum length of the network will decrease and the signal will be slightly more distorted, compared to the method on the previous page.

GND +OUT -OUT +IN -IN

RS 485 converter
Westermo Access MA-42

9 pins SUB-D connector
Serial line computer

Line connector

1
2
3
4
5

RS232 connection

7
3
2

5 Ground
2 Receive
3 Transmit

To next T-block

Shield

Do not remove jumpers

Earth

To computer

T - Block
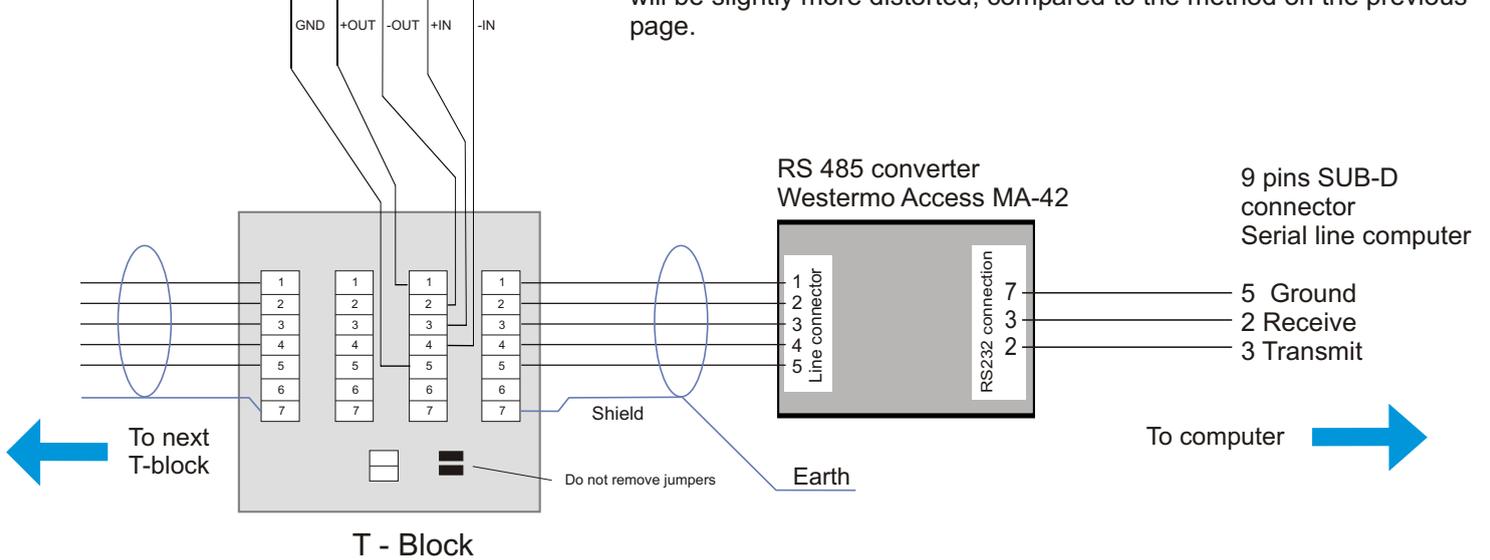
TIMEmate III Special connections

Input 1 and 2 can be used to connect external switches to the timemate..

5V 12V GND

IN1 — Switch input 1
IN2 — Switch input 2
Switch power — +5V for inputs
OUT3 — Relais 3 driver
BATT
GND

8V battery

External relay.
Must be with a 5V coil.

Connect a 8V lead battery to these pins.
It will slowly recharge. This battery will supply the timemate when the 220V power fails.

TIMEmate III RS232 connections

Connecting the communication port (port 1) to a RS232 port of a computer.
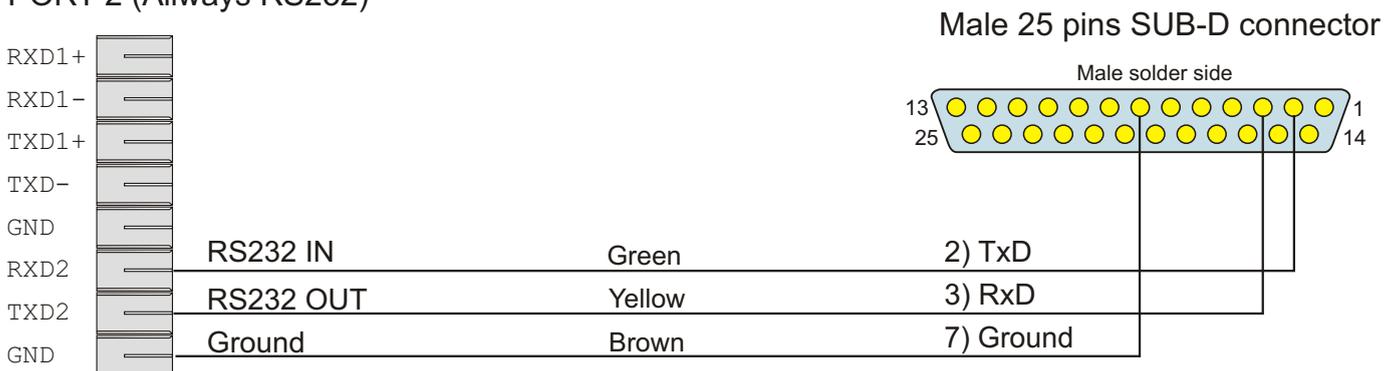This is a point to point connection, only 1 TIMEmate to 1 computer port.

Female 9 pins SUB-D connector

Female solder side

PORT 1 in RS232 mode

RXD1+		RS232 IN	Green	3) TxD
RXD1-				
TXD1+		RS232 OUT	Yellow	2) RxD
TXD-				
GND		Ground	Brown	5) Ground
RXD2				
TXD2				
GND				

Connecting the extra serial port (port 2) to the RS232 port of a printer.

RS232

PORT 2 (Allways RS232)

Male 25 pins SUB-D connector

Male solder side

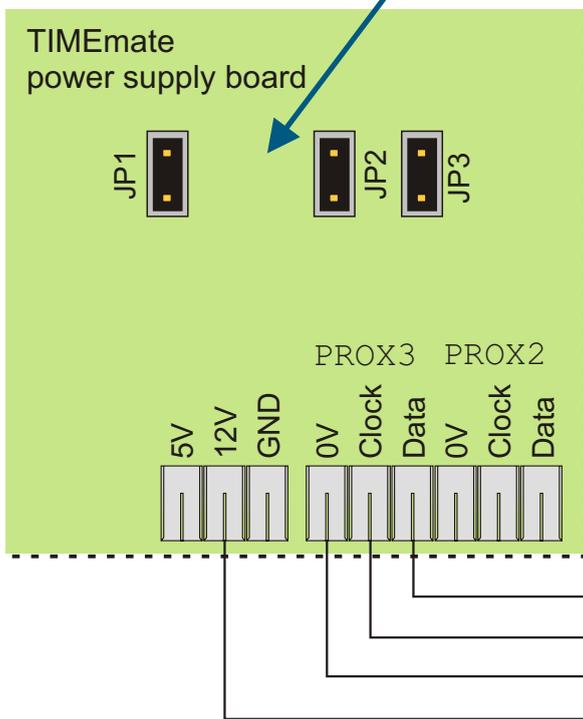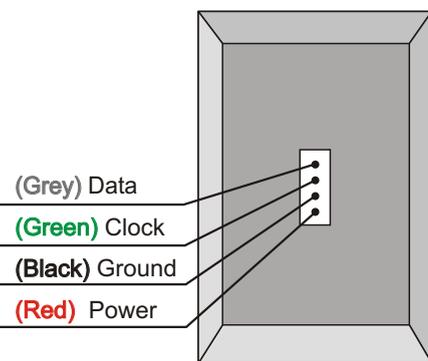| RXD1+ | | | | |
RXD1-				
TXD1+				
TXD-				
GND				
RXD2		RS232 IN	Green	2) TxD
TXD2		RS232 OUT	Yellow	3) RxD
GND		Ground	Brown	7) Ground

Connecting an external proximity reader (short distance)

Close jumper 1,2 and 3

This method is only for short distances, only use the cable already connected to the proximity module. The advantage of this method is that you don't need a doorlock interface.
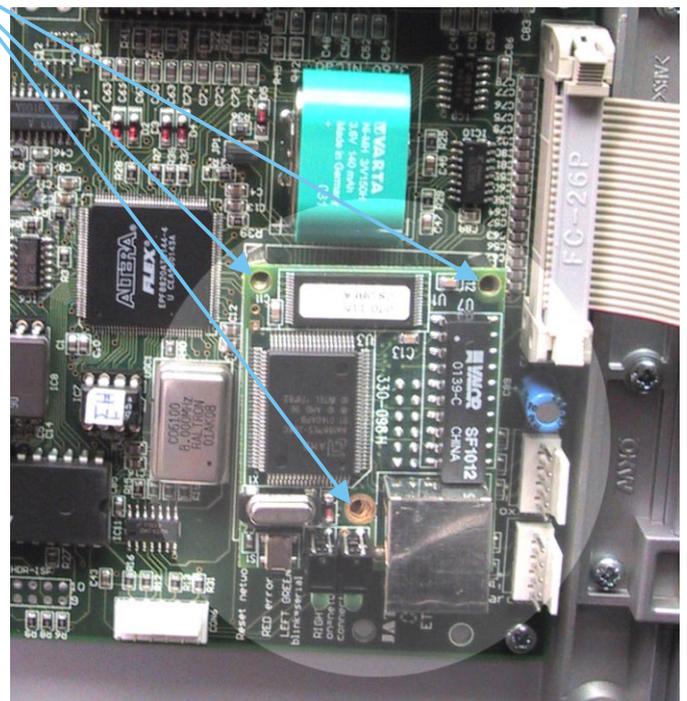
TIMEmate power supply board

JP1   JP2 JP3

PROX3   PROX2

5V 12V GND   0V Clock Data   0V Clock Data

External proximity reader Microprox

(Grey) Data
(Green) Clock
(Black) Ground
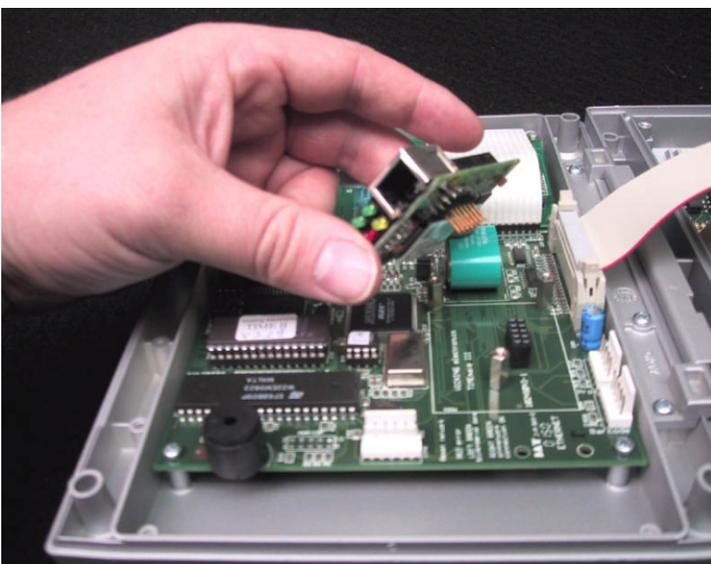(Red) Power

Mounting the internal Ethernet interface

Fix the interface with three M3 bolds.

Two pins at the back of the connector are not used.

This method is for short distances, maximum ± 3 meters.

Below you can see the wiring for a Datalogic DLS2000 infrared barcode badge reader.

TIMEmate
power supply board

Relay1   Relay2   DCF   INPUT 3   BARCODE   5V   12V   GND   PROX3   PROX2
                                                                    0V Clock Data   0V Clock Data

BLACK + SHIELD (GND)

BLUE (+5V)

WHITE (VIDEO OUT)

DATALOGIC   DLS2000

This method is for long distances, maximum ± 50 meter.
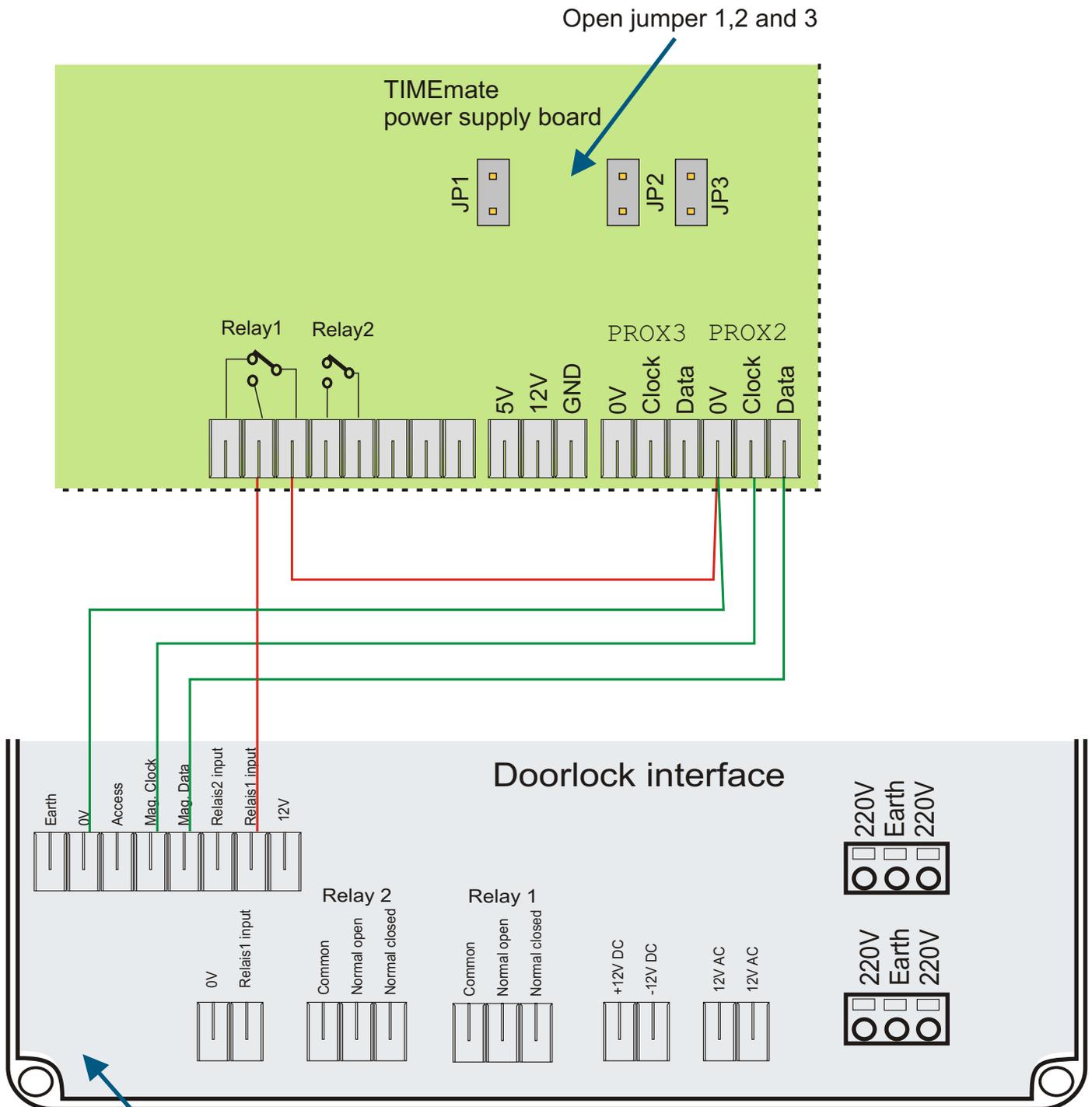The proximity reader is connected to the TIMEmate through a doorlock interface.
The reader is now optically isolated from the TIMEmate and the connected computer.
Make sure to check that the 3 jumpers on the powersupply board are open!

Below you can see the wiring for the TIMEmate to the doorlock interface.
The green wires are needed for the proximity data.
The additional red wires are needed to activated the relay on the doorlock interface,
if you also want to drive an electric doorlock.

Open jumper 1,2 and 3

TIMEmate
power supply board

JP1   JP2 JP3

Relay1   Relay2   PROX3   PROX2

5V 12V GND   0V Clock Data 0V Clock Data

Earth 0V Access Mag. Clock Mag. Data Relais2 input Relais1 input 12V

Doorlock interface

220V Earth 220V

0V Relais1 input   Relay 2   Relay 1   +12V DC -12V DC   12V AC 12V AC   220V Earth 220V

Common Normal open Normal closed   Common Normal open Normal closed

The proximity reader is connected to the doorlock interface.
See doorlock interface manual.

TIMEmate III wallmounting

The timemate hooks
into this rim.

Drill holes for wallplugs here.

TOP

Cables pass here
through the wall

29

Do not cross this line.
The internal circuitbord
starts from here.

170

215

70

20

BOTTOM

80

126

Two 3mm bolds are turned into
these holes to mount the timemate.