

DPS-Promatic srl

TCS-PRINTER II

SMS Printer



Instructions manual V 1.3

This page intentionally left blank

TCS-Printer II basic information.....	5
Product description.....	5
Advantages of TCS-Printer.....	5
Theory of operation.....	5
Commands List.....	6
How to use the TCS-Printer.....	8
SIM.....	8
PAPER.....	9
Powering the unit.....	11
Power up sequence.....	12
Sending an SMS to the printer.....	12
Printing Formatted messages.....	13
Printing with different text formats.....	13
Templates.....	13
Acknowledgement and Push Buttons.....	15
Acknowledgement of printed messages.....	15
ACCEPT or REFUSE messages.....	15
Other Functions.....	16
Parameters Reset.....	16
Printout of GSM 03.38 Character Generator.....	16
Feed Button.....	16
LED indications description.....	17

What has changed since previous version?

- 1- Added buzzer to signal incoming SMS
- 2- added the possibility of sending SMS back to the originating telephone
- 3- added the possibility of autonumbering messages (AUTO ID)
- 4- added variable timeout for accept and refuse buttons
- 5- reduced to 1 sec time required to keep buttons down to accept/refuse
- 6- new command to query status of all variables

TCS-Printer II basic information

Product description

TCS-Printer II is a thermal printer, to print on paper 80 mm wide, that will print the SMS it receives with the possibility of storing and printing up to 48 templates, 40 characters long. this will make it possible to print a long ticket using only 1 SMS, as it will be composed by the various templates recalled by it.

Advantages of TCS-Printer

- 1- Simple. It can be used even with a phone, no need of special software to interface it
- 2- Robust. The thermal printer is a reliable device that needs no ink and can provide years of trouble free operation
- 3- International: the 4 band GSM modem enables operation worldwide
- 4- Convenient: it can be used in any messaging system to send information to truck drivers, orders to restaurants etc etc

Theory of operation

The TCS-Printer has few simple and basic function.

- It can be controlled via SMS
- it can store up to 48 templates of 40 characters each
- these templates can be recalled and printed using a simple command and the template number
- every message can have an ID number or the unit itself can generate an AutoID number.
- It is possible to react to a message, pressing the ACCEPT or the REFUSE button, that will send an ACCEPT or REFUSE SMS, or place an ACCEPT or REFUSE call, to 2 numbers that can be programmed.
- It is possible to send the Accept/Refuse SMS or the Print confirmation message to the originating telephone

As a basic function, the TCS-Printer will anyway print any SMS it receives, so even without using its various features, still can be used as an effective SMS printer.

It can be used as a terminal for a centralized service or it can be used as a stand alone unit that will receive orders and send a confirmation to the originating phone.

Commands List

#E: End of message
#N: send 3 digits ID at the beginning of the message (i.e #N001)
#T: Print template (i.e. #T01, #T02 etc)
A template must end with the section character § (GSM 5F)

Printing style commands

#B: start double width
#b: stop double width
#D: start double height (only 1 full line)
#U: start Underline
#u: stop Underline

The following special commands must have a **COMMAND ID** (default #999)

- **#I** : enables (#I1)/ disables(#I0) the AutoID function.
With this function enabled every message received will be assigned a unique ID that will be printed in the ticket and sent in the confirmation SMS to the customer. AutoID start from 100 when the unit is powered on and keep incrementing until the unit is powered off again.
Default value is 1.
- **#J**: Print templates from 01 to 24
- **#L**: Print templates from 25 to 48
These 2 commands are provided as a easy way to check the stored templates
- **#P**: Store new 3 digits COMMAND ID (default 999)
Note: once the COMMAND ID has been changed it will not be possible to send special commands using 999! If you decide to change it make sure you write the new code in a safe place.
- **#Q** : Program value for pushbuttons timeout. Default value is 15 (seconds) and can be changed from 00 to 99.
00 means that there will be no confirmation request (no request to push the buttons)
- **#R**: Read template (i.e. #R01, #R02 etc) into a return SMS
-
- **#S**: Store template (i.e. #S01, #S02 etc)
- **#V**: SMS or CALL option for ACCEPT and REFUSE acknowledgement (#V0 send SMS, #V1 places a call). Default is 0. Works only with Y and Z telephones.
- **#V?**: ask status of SMS or CALL option

- **#W**: enable (1) / disable (0) acknowledgement SMS to the originating phone. Default value is 1.
- **#X** : Program number to which the printer will send an ACKnowledgment SMS to confirm that it has received and printed a message. This works only if the message starts with a valid ID (#N) or if the AutoID function (#11) is enabled. Default is NO NUMBER.

To erase a number after it has been programmed, program a new number or send the command #XZ

- **#Y**: Program number to which ACCEPT SMS will be sent when the ACCEPT button is pressed. This works only if the message starts with a valid ID (#N) or Auto ID function (#11) is enabled. To erase a number after it has been programmed, program a new number or send the command #YZ

Note1: if the CALL option is enabled, the unit will place a call instead, that will last 10 seconds or until the call is rejected or answered.

This works only if the message starts with a valid ID (#N) or Auto ID function (#11) is enabled.

Note2: if the Call option is enabled, no confirmation message will be sent to the originating phone, regardless of the setting of W variable.

- **#Z**: Same as #Y. Works for the REFUSE button

The above commands X Y Z use the format #X+395389998854#E where #X can be #Y or #Z and the number has a maximum of 15 digits and ends with another command or with #E)

- **#X?** (or #Y?,#Z?): ask number of Telephone X,Y,Z
- **#?** : ask status of various variables (I,Q,V,W,X,Y,Z)

How to use the TCS-Printer

SIM

In order to use the TCS-Printer you need to insert an active GSM SIM into the slot provided. You can eject the SIM holder pressing the yellow button. Remove the holder, insert the SIM facing up and reinsert the drawer gently, making sure it enters the guides.

Make sure that the PIN request has been removed from the SIM. To check if this is the case, insert the SIM into a phone and switch on the phone. If it asks for a PIN, it means that the request has not been removed. You will need to remove the PIN request using the security menu of your phone.



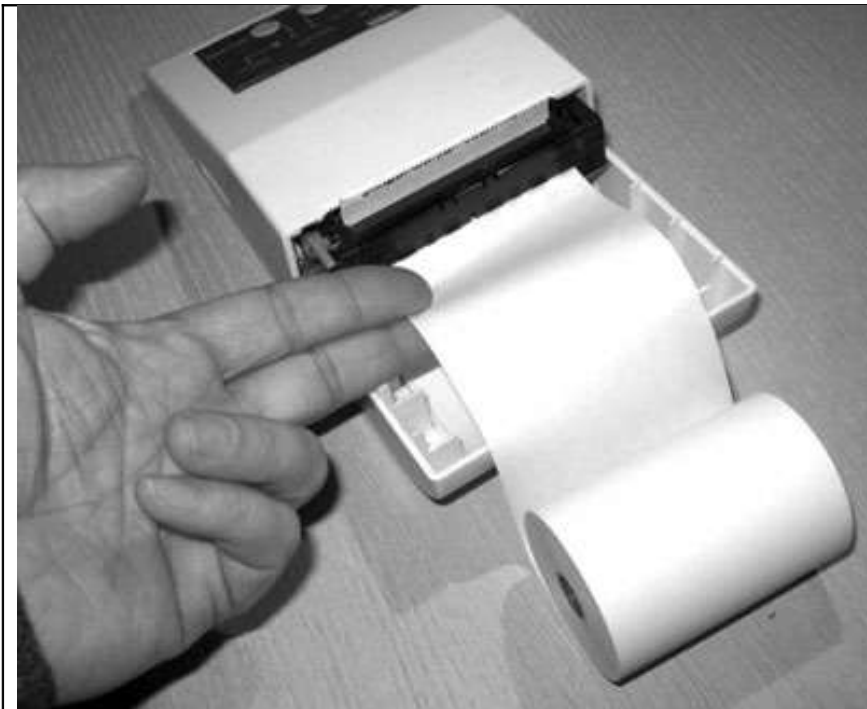
PAPER

The TCS-Printer uses 80 mm wide thermal paper. We can provide this paper (2 rolls come with the printer) or anyway it is available through different suppliers.

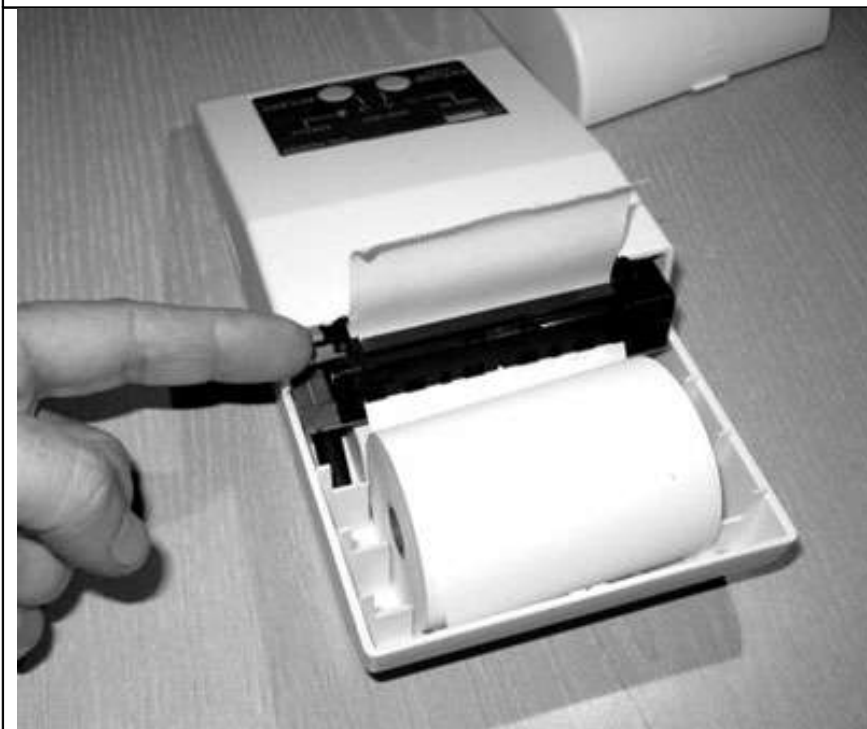
First of all open the back of the printer pushing-in the back of the box. To load the paper you need to remove any piece that may be in the printer, pulling it after you have raised the lever that is on the side of the printer.

Then insert the paper, with printing side (the side which becomes black when exposed to heat) facing down. Pull it out, lower the lever, close the printer box and cut the paper pulling it on the saw-toothed edge.





Pull up the lever and insert paper into the printer with printing side facing downwards



Push down the lever to close the printer head



Powering the unit

To power the unit connect the AC adapter plug (12VDC with positive inside) into the plug that is on the side of the unit.



Power up sequence

When you connect power to the TCS-Printer, the unit will print a welcome message, will beep, and then the green STATUS LED will start blinking.

It will parse any message that may be in the SIM, and doing so it will blink momentarily the SMS-IN LED.

Once the power up sequence is ready, the Status LED will be steady for 3 seconds and then blink very fast.

The printer will now be ready to receive messages.

Sending an SMS to the printer

Let's try to send a generic SMS to the printer. Prepare on your phone a message, such as 'Hello World' and send it to the printer SIM number.

The SMS-IN led will flash and the printer will print the following:

*SMS FROM: +XXXXXXXXXX (your number)
D=09-02-04 T=19:22:45 (date and time in format YY-MM-DD HH-MM-SS)*

Hello World

OK

Note: If the message doesn't start with an ID (#Nxxx) it will not be possible to accept or refuse anything. The printer will print, and that is the end of the process. If the AutoID function is enabled (default) the printer will work as it has an ID, so it will be possible to accept or refuse.

Note: if you send a Special Command, you must use the COMMAND ID (default 999). See command list for details.

Note: if the message ends with a #E (End), the printout will be shorter and many blank lines and the 'OK' will be omitted. So, to save paper, always end messages with #E.

Printing Formatted messages

Printing with different text formats

It is possible to print characters in:
Double Height: #D (valid only for the full line)
Double Width: #B starts, #b ends
Underlined: #U starts, #u ends

Example: To print 'This is an underlined text'
you have to send 'This is an #Uunderlined#u text'

Templates

A template is a sentence, up to 40 characters long (including control characters), that may be recalled with #T and its number.

This allows to store headers, footers, menu items, to be recalled later simply by their numbers.

Examples:

Imagine that you are sending orders to a Pizzeria, that is called PIZZA WEB and that is in via Edison 21, 47100 Forlì, and that you have on the menu 3 types of Pizza, that is: Margherita, Capricciosa, Napoli.

You will store the following templates with only 1 message

```
#N999#S01#D#BPIZZA WEB§  
#S02Via Edison 21 47100 Forlì§  
#S03Order for the following products:§  
#S10Pizza Margherita§  
#S11Pizza Capricciosa§  
#S12Pizza Napoli§
```

Note: Templates end with the § (section) sign

Note: the previous message needs to start with a COMMAND ID that is 999 in the default setup.

Then, to print an order, you will send the following SMS

#T01

#T02

#T03

#T10 + mozzarella

that will result in the following printout

PIZZA WEB

Via Edison 21 47100 Forli

Order for the following products:

Pizza Margherita + mozzarella

To change templates, you simply overwrite them , that is write another one with the same number.

In the example above, we have put a variation, limited to this SMS, that is '+ mozzarella'.

As you have seen, with this system it is possible to print up to 1920 characters with a single SMS.

Acknowledgement and Push Buttons

NOTE: The TCS-Printer will send SMS or place calls only if the messages are properly formatted and have a valid ID, issued with the command #N. It will also perform this function if the AutoID function is enabled (I=1)

Acknowledgement of printed messages

The TCS-Printer can acknowledge a message once it has printed it, sending an SMS with the text 'PRINT OK' and the ID of the SMS.

If the accept / refuse process is enabled (#Q higher than 00), to Accept or Refuse you must push the proper button when the LED above it flashes slowly, and keep it pressed (when pressed, led will blink fast) until the LED stays on. After a programmable time (#Q, default 15 seconds) the led will stop blinking and the unit will send only the 'PRINT OK' message.

If the W option is 1 (default) the SMSs will be sent also to the originating phone.

ACCEPT or REFUSE messages

The TCS-Printer will send an ACCEPT SMS to the number programmed with the command #Y and a REFUSE SMS to the number programmed with the command #Z. It will only send 1 SMS, either ACCEPT or REFUSE, whatever is pushed first.

If the W option is 1 (default) the SMS will be sent also to the originating phone

If the #V option has been activated with command #V1 (default V=0) the unit will not send an SMS for the ACCEPT and REFUSE buttons, but will place a call to the number programmed with #Y (ACCEPT) and #Z (REFUSE).

It will ring for 10 seconds maximum. If no answer, it will anyway terminate after 10 seconds. It will hang up immediately if the call is answered or rejected.

It will only place a call, either for ACCEPT or REFUSE, whatever is pushed first.

If the V option is 1 (place call instead of SMS), no SMS will be sent to the originating phone, even if W=1.

Note again: All of the above will work ONLY if the message had a valid ID (#Nxxx) or if autoID is enabled. The printer will accept the first button pressed only, per each message received.

Other Functions

Parameters Reset

To Reset the TCS-Printer to its factory values, keep both button pressed and power-up the unit. The 4 Leds will start flashing. Keep button pressed until only the STATUS LED is ON and doesn't blink.

Printout of GSM 03.38 Character Generator

This printer uses GSM 03.38 alphabet, that is a little different from ASCII for some special characters. To print the character generator table with indication of the hexadecimal code of each character, keep the ACCEPT button pressed and power-up the printer.

Feed Button

It is always possible to feed the paper when the unit is in the normal working condition (waiting for incoming SMS). To do so, simply press the REFUSE BUTTON (keep it pressed for a few seconds until the printer starts feeding paper)

LED indications description

The printer has 4 LEDs:

SMS IN

This red LED will blink when a message has been received, will be steady after the message has been printed and will switch off after either the ACCEPT or REFUSE button has been pressed.

If the message has no ID, it will switch off after printing.

If the acknowledgment SMS cannot be sent to Tel X for any reason (i.e. no X number programmed) this LED will blink fast for 5 seconds.

During the power up sequence, this LED will blink a few times while the content of the SIM is parsed.

REFUSE

This red LED will blink while the unit sends the SMS or places the call because the REFUSE button has been pressed. This LED will light up while the STATUS led blinks fast in case of Paper out or Printer head lever up.

ACCEPT

This red LED will blink while the unit sends the SMS or places the call because the ACCEPT button has been pressed

STATUS

This green LED will blink when the unit is powering up and when a ACKnowledgement SMS is sent out. During normal operation the LED will be ON for 3 seconds and blink fast for 1 second.



Important note: electronic devices may pollute the environment.
Act according to your local laws when disposing this unit.



The TCS-Printer electronic board complies with EMC regulation.
The Siemens MC55i GSM engine complies with EMC regulation

released on 20-3-09

by

DPS-Promatic srl
via Edison 21
47100 Forlì Italia
e-mail: dps1@dps-promatic.com

For any update or information
please refer to the SUPPORT pages
on <http://www.dpspro.com>