



XLM

Temperature Recorder



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PRINTMAN XLM- USER REFERENCE MANUAL

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1. USER INFORMATION

Congratulations on buying a **Storm Products** Printman XLM Recorder we are sure that it will give you a long and trouble free service.

The unit is designed under stringent BSI ISO 9001:2000 procedures and manufactured under BSI ISO 9002:2000 processes using the latest automatic assembly techniques, processes and technology.

Printman Recorders accept between 1 and 4 temperature sensor inputs, plus 1 magnetic door switch input and 1 defrost input. 6 inputs in total.

Temperature is stored and printed in degrees Celsius.

Important Information

PRINTMAN XL INTERNAL/EXTERNAL RECORDER

PRINTMAN TYPE SPP4P-XLM

The following advice must be followed at all times. Failure to do so may invalidate the recorder warranty:

- * Make sure you disconnect the vehicle battery before starting any wiring alterations.
- * The unit warranty does not allow for users tampering with the unit or gaining access to the internal printed circuit board or components of the unit.
- * Remember to seal any cable entries made through the vehicle body with a suitable water proof sealant in order to ensure that water does not get into the vehicle or recorder interior.
- * Only qualified and Storm approved personnel should attempt to carry out repairs or alterations to the unit or its software.
- * See warranty card for details of warranty returns procedure.

2. FIRST POWER ON

- 2.1 After the installation wiring is complete and the sensors and door switch and defrost connection installed, switch on the unit by plugging the power plug into the Printman XLM unit terminal block.
- 2.2 Leave the unit for at least 30 seconds to allow the unit to configure itself, and automatically check how many sensors are fitted. After 30 seconds the unit is ready for operation .
- 2.3 At this stage the Printman XLM is fully operational and can be left to record information obtained from the attached sensors, door switch or defrost if any.
- 2.4 Providing that the default settings supplied within the unit are acceptable, then the unit is fully operational.
- 2.5 Certain parameters are preset at the factory for your convenience these are called the default values. The default values set within the Printman XL's memory on delivery are listed below:

Company Name:	<i>Storm Products (See section 2.8.1)</i>
Vehicle Registration:	<i>Pxxxxx (See section 2.8.1)</i>
Recording Sample rate:	<i>15 minutes</i>
<i>Time</i>	<i>Current date</i>
<i>Date</i>	<i>Current time</i>
Frozen alarm	<i>-18 to - 25 °C (See section 2.8.1)</i>
Chilled alarm	<i>0 to +8 (See section 2.8.1)</i>
Alarm Delay	<i>15 minutes (See section 2.8.1)</i>
Alarm status:-	<i>Sensor 1 = off, Sensor 2 = off (See section 2.8.1)</i> <i>Sensor 3 = off, Sensor 4 = off</i>

- 2.6 These default values will be operational at the first switch on and throughout the units life unless changed by the user. Any parameter that require changing, can be changed using the user menu . See Pages 10 through 11 for instructions.
- 2.7 Your Printman XLM recorder has an internal battery.The battery is used to keep the internal clock running if the vehicle battery is **disconnected or flat**. The Printman unit will retain the correct time for a period in excess of 5 years with the supply disconnected.

2.8 Defaults Options

Default parameters can be customised in a number of ways to give Clients flexibility in use.

- 2.8.1 **Factory Set:** Parameters can be factory set against specific orders to show your or your Client's Company name and individual vehicle registration. If you are a regular user you may wish Storm to set some of these parameters as standard to your products at each sale.
- 2.8.3 **Changing the defaults values using the Menu :** See Pages 9 through 11.

3. OPERATING INSTRUCTIONS

DESCRIPTION

There are three buttons on the PRINTMAN XLM key pad.
 After initial set up the Display will be on, indicating the unit is recording normally.
 There is no functional set-up as the unit is factory set to operate as follows.

TICKET PRINTING

Pressing the keypad buttons operates the printer to print as follows:-



Pressing this button starts the printing of a DELIVERY TICKET.

The delivery ticket shows Company name and Vehicle identification number (if loaded on initial set-up) then date, time and current values of temperature for sensors S1 (normally return air) & S2 (normally compartment air), and S3, S4 if fitted.
 A space is provided for the drivers signature before handing to customer as proof of temperature at delivery.



Pressing this button starts the printing of a JOURNEY TICKET.

The journey ticket shows the Company name and Vehicle Identification number, date, time and current values of sensors S1 & S2 and S3,S4 if fitted, similar to the delivery ticket then prints the recorded sensor temperature readings back every 15 minutes for 24 hours.

A space is also provided for a signature verifying the results have been checked before daily journey ticket is filed for future reference.
 If this print button is pressed in error, printing can be stopped after some temperatures are printed by simply pressing and holding the button until the printer stops then releasing to allow the printer to print "Signed".



Pressing this button starts the printing of a PRINTALL TICKET.

The Printall ticket shows the same information as the journey ticket but continues beyond 24 hours and will print all stored data if left running. At the end of the data stored in memory the unit will stop printing.
 The Printall ticket is used if a journey ticket is not taken on a journey but a record is still required on return to base or for archive purposes.
 If this print button is pressed in error, printing can be stopped after few lines of print have been done by simply pressing the button again.
 Printing can be stopped at any time by simply pressing and holding the button until the printer stops then releasing to allow the printer to print the "Signed" line.
 There is no limit to the number of Delivery tickets printed during each journey period. Similarly there is no limit to the number of Journey tickets printed. Use the same procedures as above for repeat tickets.

ASTERISKS INDICATE
 OUT OF ALARM
 RANGE ONLY IF
 ALARMS ACTIVATED

SAMPLE OF DELIVERY TICKET

```

STORM PRODUCTS
VEHICLE PMP02000
DATE 25/08/03 TIME 14:37

ALARM RANGES
FROZEN -16.0 TO -24.0
CHILLED 8.0 TO 2.0

ALARM STATUS
S1 OFF      S2 OFF
S3 OFF      S4 OFF

DELIVERY TICKET

CURRENT VALUES
S1  S2  S3  S4
19.5 -19.9 -9.6 -19.9

SIGNED.....
    
```

SAMPLE OF JOURNEY TICKET

```

STORM PRODUCTS
VEHICLE PMP02000
DATE 25/08/03 TIME 14:37

ALARM RANGES
FROZEN -16.0 TO -24.0
CHILLED 8.0 TO 2.0

ALARM STATUS
S1 CHILLED S2 CHILLED
S3 FROZEN  S4 FROZEN

JOURNEY TICKET

S1  S2  S3  S4
    19/11/03 10:00
6.0  6.0 -19.6 -19.9
    09:45
19*5 19*9 -19.6 -19.9
    09:30
19*5 19*9 -19.6 -19.9

SIGNED.....
    
```

4. DISPLAY

4.1 Display

During initial power up the display shows various parameters of the unit.

Immediately after power on:

Display shows " Chans 4

ADT =15

i.e. 4 sensors fitted, alarm delay time =15.

4.2 After initial power up the display reverts to its normal mode, which first displays the current date and time. This is factory set and should be correct unless the unit has been moved through time zones without resetting to local time. The internal clock automatically takes account of local winter/summer time offsets plus leap year correction

Date & Time display looks like:

12/04/03

09:23

4.3 After displaying the date and time of day the display then scans each connected sensor in turn and displays its measured temperature value and sensor number.

Sensor display looks like:

Sensor 2

-10.9

The temperature is displayed in degrees Celsius.

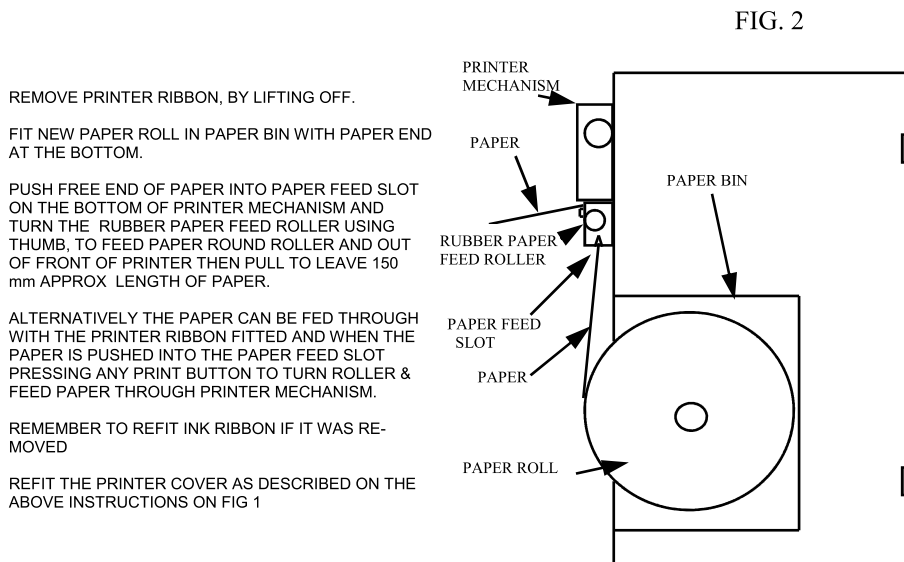
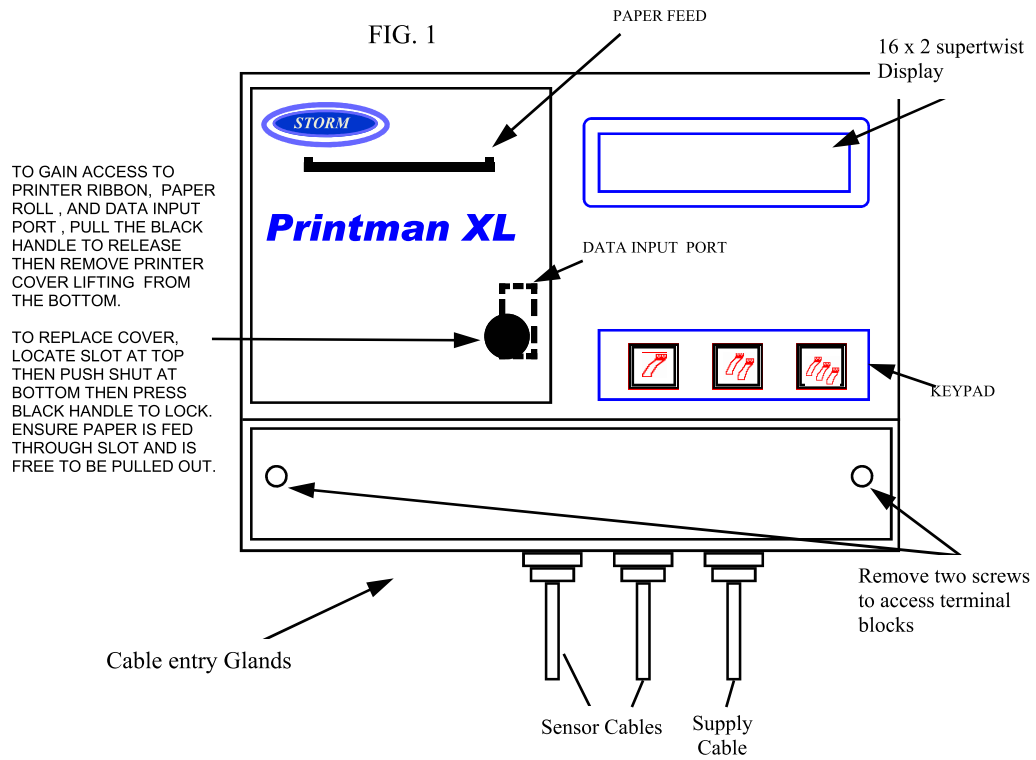
4.4 The display continues to cycle from Date & Time, through each Sensor reading and back to the Time & Date

5. MEMORY STORAGE

5.1 The Printman XLM uses the latest Flash Memory technology to store the Information collected by the sensors, door switch or defrost. The information once stored can be accessed from the Printer using the access key switches (see section 3) . The stored information is kept permanently in memory even if the Printman XLM is switched off for extended periods. The date and time will continue to be updated during a power down or storage period and will be correct when power is restored.

5.2 The Printman XLM has the capability to store up to 3 months of readings when the sample rate is set at 15 minutes and for longer periods if the time between samples is increased. After the memory becomes full the new data rolls over and stores data over the top of the oldest data which then becomes lost.

6. Main Features and User Access



7. INSTALLING THE PRINTMAN SPP4P-XL

PLEASE CHECK THE CONTENTS OF YOUR CARTON AS FOLLOWS

CARTON CONTENTS:-

1 x PRINTMAN XL UNIT
2 x 15 METRE SENSORS
1 x POWER CABLE
1 x SPARE PAPER ROLL
1 x FUSE
1 x INLINE FUSEHOLDER
1 x WARRANTY CARD
1 x USER REFERENCE MANUAL
1 x USER REFERENCE CARD

The Printman XLM is designed to operate from a dc supply of 9 to 36 volts (i.e. a 12v or 24v battery)

The Printman XL range can be fitted inside the vehicle Cab or outside the vehicle, since the XL unit's enclosure is rated at IP65.
IF FITTED OUTSIDE VEHICLE DO NOT WASH DOWN WITH A HIGH PRESSURE HOSE OR THE INTEGRITY OF THE UNIT MAY BE DAMAGED.

The Printman XL is designed to operate with 1 to 4 sensor probes which connect into the Plugs on the Printman XLM unit's internal terminal blocks on the bottom of the unit.
For access to the terminal blocks see Fig 1. Sensors are marked S1,S2,S3,S4.

There are also plugs for our optional door open sensing switch and a defrost input if required..

The sensor wires should be protected and routed through the rear cabin on small vans and to the front, down via the main wiring to the rear for box vans with swinging cabins.

Sensor 1 should be fitted as near as possible to the freezer sensor at the return air duct.
Sensor 2 should be fitted approx. two thirds back towards the rear of the van and secured .

Sensors 3 & 4 are normally used only for dual compartment vehicles.

The power cable should be connected via the inline fuse direct to the battery (brown = +ve & blue = -ve) before plugging into the Printman XLM terminal blocks.



Suitable IP65 glands are provided to allow cables to be run into the unit whilst still allowing the IP65 integrity of the unit to be maintained.



The sensors must be fitted before the unit is powered up to ensure all connected sensors are recognised by the unit software which checks for connected sensor numbers during it's initial boot up sequence...
IF FOR ANY REASON THE NUMBER OF FITTED SENSORS OR EVENT SWITCHES IS CHANGED AFTER INTIAL POWER ON, YOU MUST UNPLUG THE POWER SOURCE AND RE-BOOT THE UNIT TO ALLOW THE CHANGES TO BE RECOGNISED BY THE UNIT SOFTWARE


8. Menu Set-up of Default Parameters

- | |
|--------------------------|
| 1. EXIT |
| 2. PRINT PROG. SETTINGS |
| 3. COMPANY NAME |
| 4. VEHICLE REGISTRATION |
| 5. SET DATE |
| 6. SET TIME |
| 7. SAMPLE RATE |
| 8. SET ALARM RANGES |
| 9. CHANGE ALARM SETTINGS |
| 10. SET ALARM DELAY |

To enter the menu of the recorder, press and hold

the  key and while holding, press the  key then release both keys. The menu item 1. will appear on the display.

Use the  and  keys to scroll either up or down to the desired option.

Press and release the  key to enter the required function.



2: Print Program Settings


Entering this function prints the current set-up parameters.

3: Company Name

STORM PRODUCTS *

This option gives you the facility to print out your company name using up to 15 characters at the start of your data printout.

Use the  and  keys to scroll throughout the characters and numbers above the asterisk (*).

Press and release the  key to accept and move the '*' to the next character.

Note: It is necessary to go to the last character (15th) on the display in order to move to accept and move to the next menu parameter.


4: Vehicle Registration

SC05 WYS *

This option gives you the facility to print out your vehicle registration number using up to 14 characters on your data printout. It is also used for identification of Ramlog Files when data is uploaded to your PC..

Use the  and  keys to scroll

throughout the characters and numbers above the asterisk (*).



Press and release the  key to


accept and move the '*' to the next character.

Note: It is necessary to go to the last character (15th) on the display in order to accept and move to the next menu parameter.

5: Set Date



DATE 1: 1:98
*


Use the  and  keys to scroll throughout the numbers above the asterisk (*).

Press and release the  key to accept and move the '**' to the next character.
Note: It is necessary to go to the last character on the display in order to accept and move to the next menu parameter.

6: Set Time




TIME 12: 1:15

Use the  and  keys to scroll throughout the numbers above the asterisk (*).



Press and release the  key to accept and move the '**' to the next character.
Note: It is necessary to go to the last character on the display in order to accept and move to the next menu parameter.


7: Set Sample

CURRENT SAMPLE
RATE 15 (min)

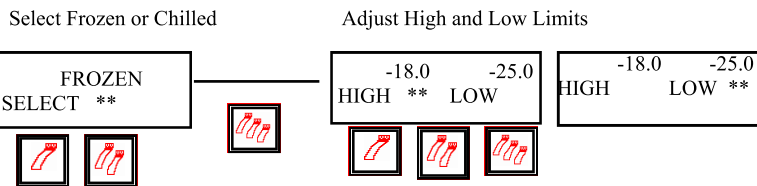
Use the  or  keys to scroll throughout the characters.
Press and release the  key to accept.

8: Set Alarm Ranges



Use the  or  keys to scroll throughout the characters and numbers above the asterisk (*).


Press and release the  key to accept and move the '**' to the next character.

Note: It is necessary to go to the last character on the display in order to accept and move to the next menu parameter.



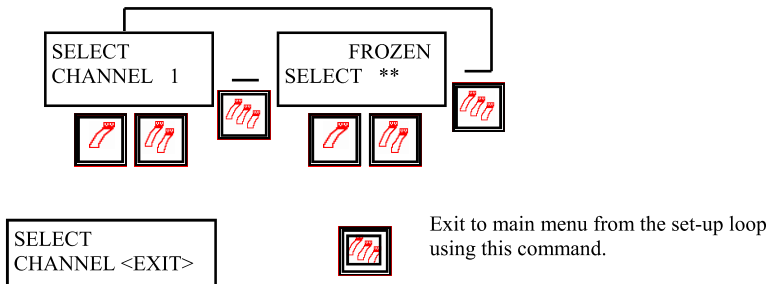
9: Change Alarm Settings The Recorder has 3 alarm settings, this function is used to assign each channel alarm to Frozen, Chilled or Off.

Use the  or  keys to scroll throughout the characters and numbers above the asterisk (*).

Press and release the  key to accept and move the '*' to the next character.



Note: It is necessary to go to the last character on the display in order to accept and move to the next menu parameter.


Select the channel Change to Frozen, Chilled or Off



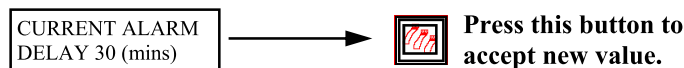
10: Set Alarm Delay

The alarm delay is the time that an error has to be active before it is treated as an alarm.

Use the  or  keys to scroll throughout the characters and numbers above the asterisk (*).

Press and release the  key to accept and move the '*' to the next character.


Note: It is necessary to go to the last character on the display in order to accept and move to the next menu parameter.




Alarms

Should an alarm occur the display will show 'ALARM' at the appropriate channel on the display after the alarm delay time has elapsed and the alarm output will activate providing approx unit Supply voltage (12/24Vdc) @ 1Amp across alarm output terminals.

Exit from main menu

To exit from the main menu and return to normal operation, the menu must be returned to item 1 'EXIT' by pressing the  button.

Then with the item '1 EXIT' on the screen press the  button.

Read Me

THE PRINTMAN XLM STORES THE CONFIGURATION OF SENSORS AND EVENTS WHICH WERE CONNECTED AND OPERATIONAL DURING ITS LAST POWER BOOT UP OR SINCE THE LAST TIME THE USER MENU WAS EXITED.

IF FOR ANY REASON THE NUMBER OF FITTED SENSORS OR DOOR SWITCHES NEEDS TO BE ALTERED, ONCE THE NEW CONFIGURATION HAS BEEN WIRED AND CONNECTED TO THE XLM UNIT YOU MUST:

EITHER:

UNPLUG THE BATTERY POWER SOURCE, WAIT 20 SECONDS AND THEN PLUG THE POWER SOURCE BACK INTO THE PRINTMAN RECORDER. ALLOW A FURTHER 20 SECONDS FOR THE UNIT TO GO THROUGH ITS BOOT UP ROUTINE AND FOR THE SOFTWARE TO INITIALISE TO THE NEW CONFIGURATION BEFORE PRINTING.

OR

ENTER THE USER MENU AND IMMEDIATELY EXIT (See page 9 on how to enter) Press the "PRINTALL" button to exit". ALLOW 20 SECONDS FOR THE UNIT TO GO THROUGH ITS INITIALISATION ROUTINE BEFORE PRINTING. (during this procedure the display will briefly show the number of sensors connected CHANS 1, 2, 3 or 4)

UNLESS ONE OF THESE SIMPLE PROCEDURES IS FOLLOWED THE NEW SENSOR OR DOOR SWITCH CONFIGURATION WILL NOT BE RECOGNISED AND THE UNIT WILL NOT STORE OR PRINT OUT THE ADDITIONAL SENSORS OR DOOR SWITCH EVENTS YOU HAVE JUST INSTALLED.

If only 1 temperature probe is fitted use Sensor position 1

If only 2 temperature probes are fitted use Sensors position 1&2

If only 3 temperature probes are fitted use Sensors position 1&2&3