USER'S OPERATING MANUAL FOR USB LOGGER

SPECIFICATIONS : -

1. DISPLAY TYPE : 16x2 Blue-White Character LCD

2. INPUT
   Available Units : Refer Table (Table No.1)
   Resolution : 0.1/ 0.01/ 0.001/ 1

3. RELAY OUTPUT
   Contact Type : N/O,CM,N/C
   Contact Rating : 5A @ 250 VAC or 30 VDC
   Life Expectancy : > 5,00,000 operations
   Isolation : Inherent

4. FUNCTION
   Output1/Output2 : Alarm Outputs

8. POWER SUPPLY
   Supply Voltage : 90~270VAC, 50-60Hz.
   Consumption : 4W Maximum.

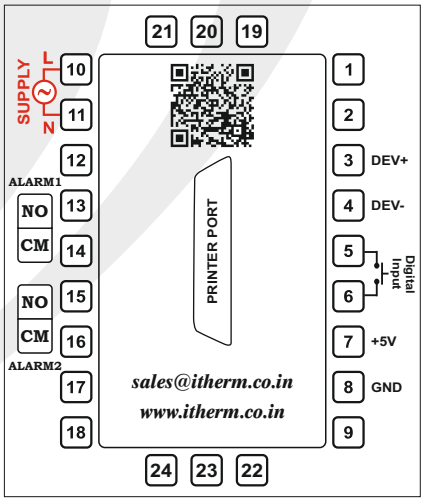
9. PHYSICAL
   Housing : ABS Plastic

7. MEMORY CAPACITY : Upto 2.50 lakh records

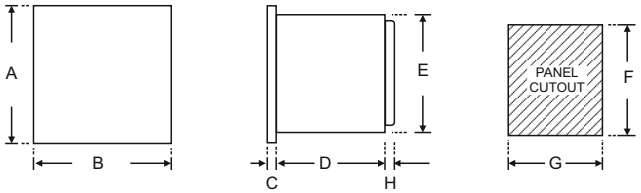
8. PRINTER CONNECTIVITY : Available through RS-485 connector

9. COMMUNICATION : MODBUS protocol is used

BACK PLATE



DIMENSIONS



Dim / Model	A	B	C	D	E	F	G	H
USB-LOG	96	96	8	110	43	44	44	9

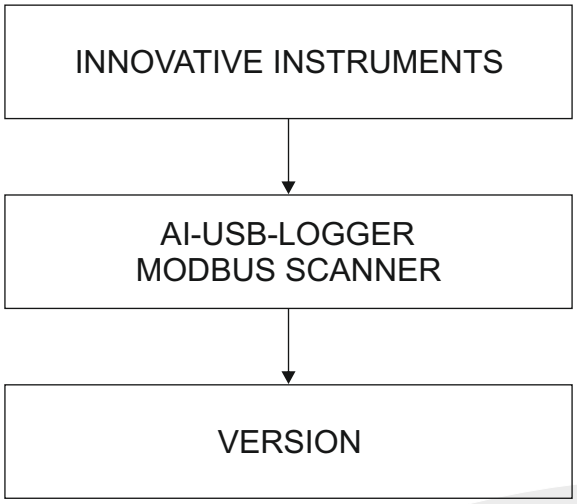
INDEX

1. SETUP

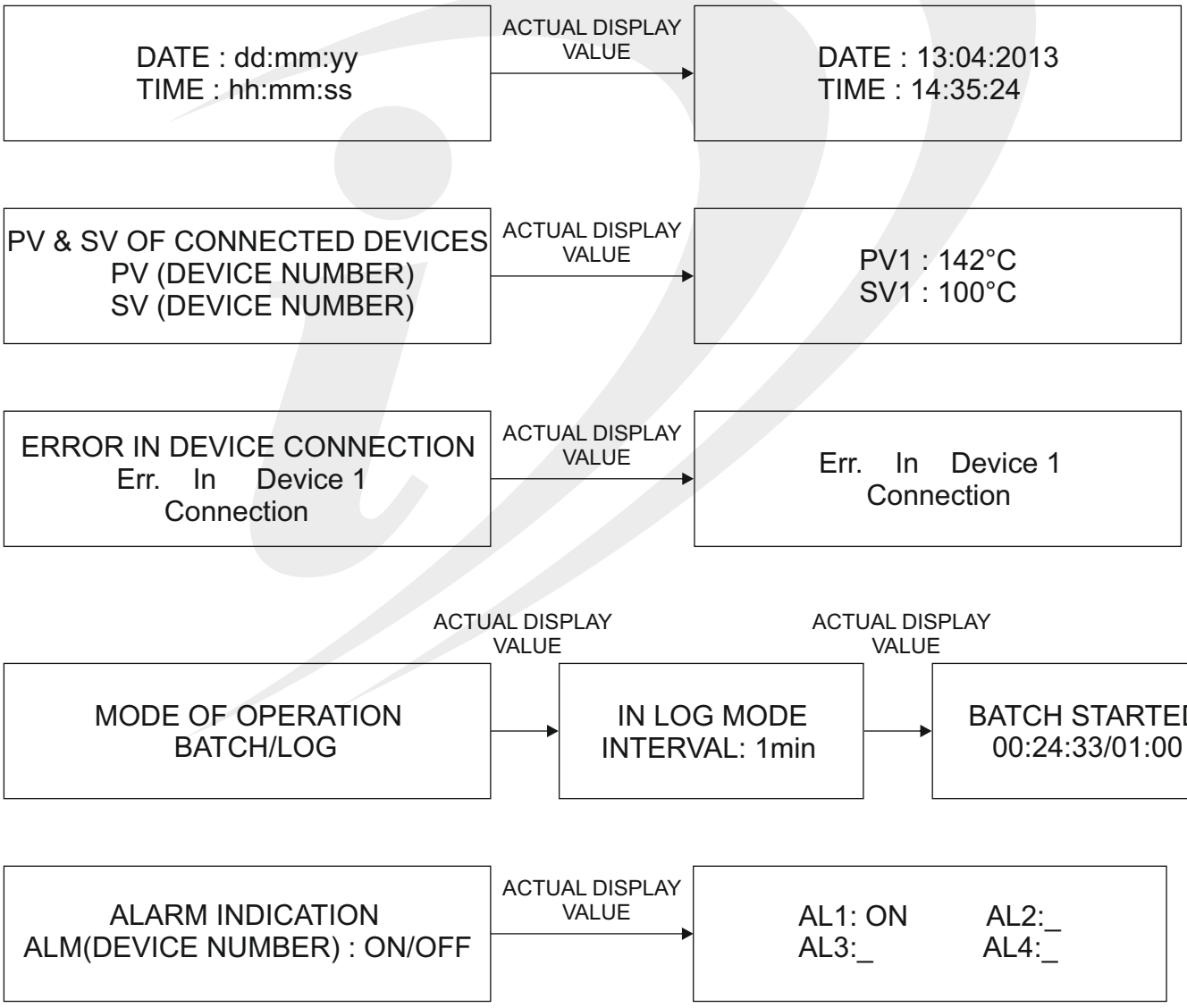
1.1 FRONT PANEL KEYS :

Symbol	Key Name	Use
	SET	It is used to enter in any menu. It is also used to store the changes.
	SHIFT	It is used to shift the cursor and it is also used as a back button.
	UP	It is used to scroll up.
	DOWN	It is used to scroll down.
	PRINT	Refer sec. 2.5
	BATCH START	It is used to start the batch from front panel of the instrument.

1.2 POWER ON SCREEN

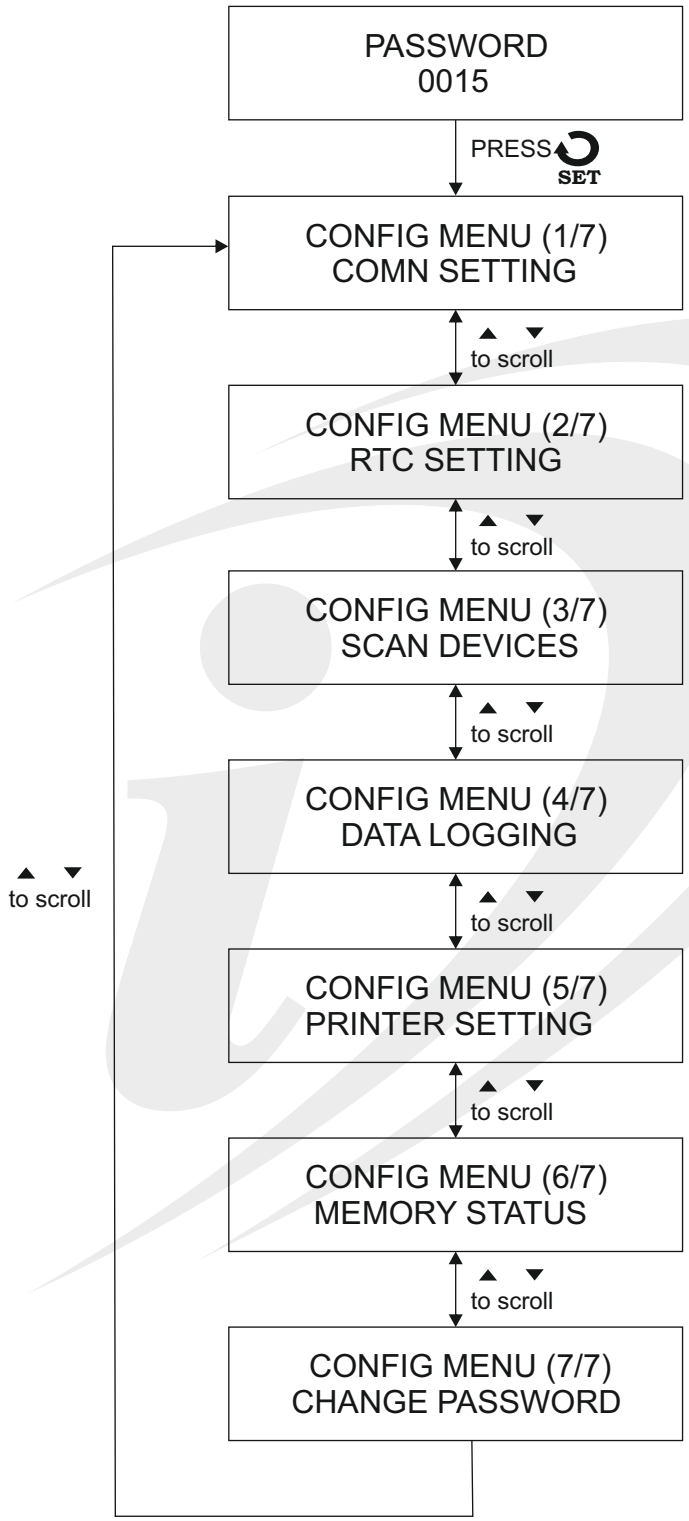


RUN MODE SCREEN



1.3 SYSTEM CONFIGURATION

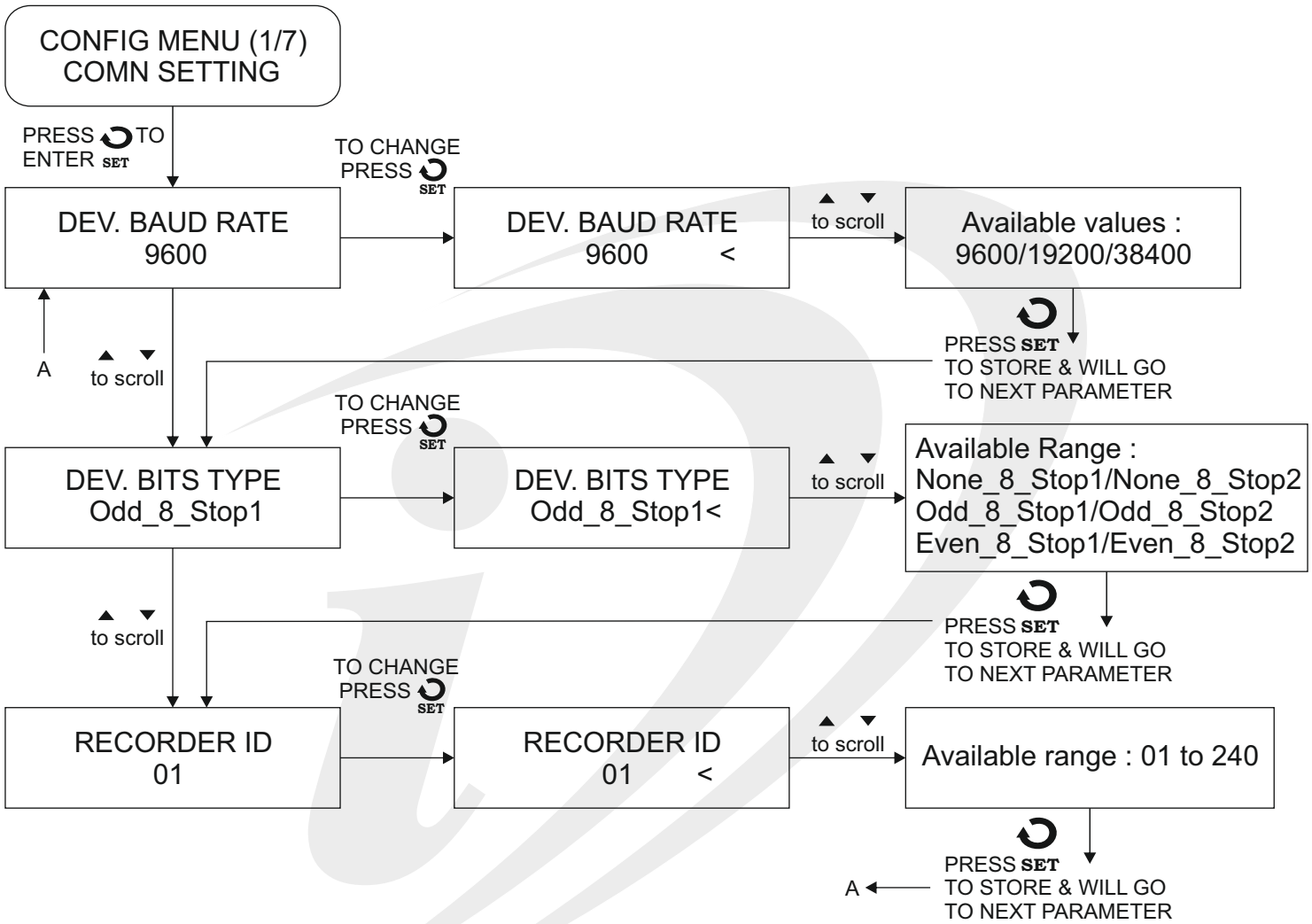
To enter in main menu, press SHIFT & SET key simultaneously for 3 seconds. After doing this following screen will appear



2. COMMUNICATION SETTING

2.1 COMMUNICATION SETTING (Flow Chart)

To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, then press shift key for 3 seconds so that '<' will get removed.



2.2 COMMUNICATION SETTING (Description)

Basically used for communication setting between devices & data logger and between data logger & PC simultaneously. There are different parameters available which are as follow :

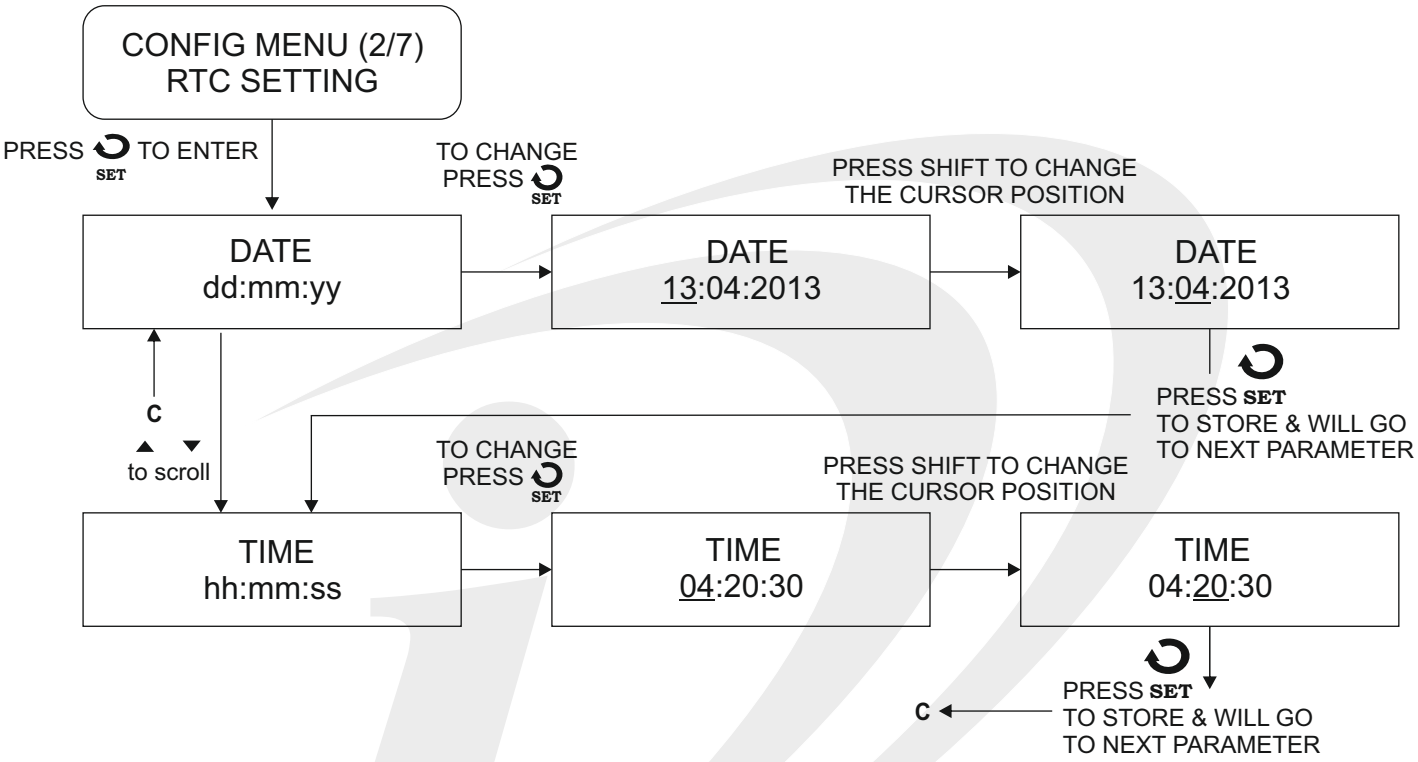
Parameter	Description	Range	Default Value
DEV. BAUD RATE	It is used to define Baud Rate between Device & Data logger to carry out data transfer	9600/19200/38400	9600
DEV. BITS TYPE	It is used to define Bit Type between Device & Data logger to carry out data tranfer.	None_8_Stop1/None_8_Stop2 Odd_8_Stop1/Odd_8_Stop2 Even_8_Stop1/Even_8_Stop2	Odd_8_Stop1
RECORDER ID	In this, we will define the number of data loggers which are going to be connected.	0 to 240	01

3. RTC SETTING (Real Time Clock setting)

3.1 RTC SETTING (Flow Chart)

It is used to set date & time in data logger.

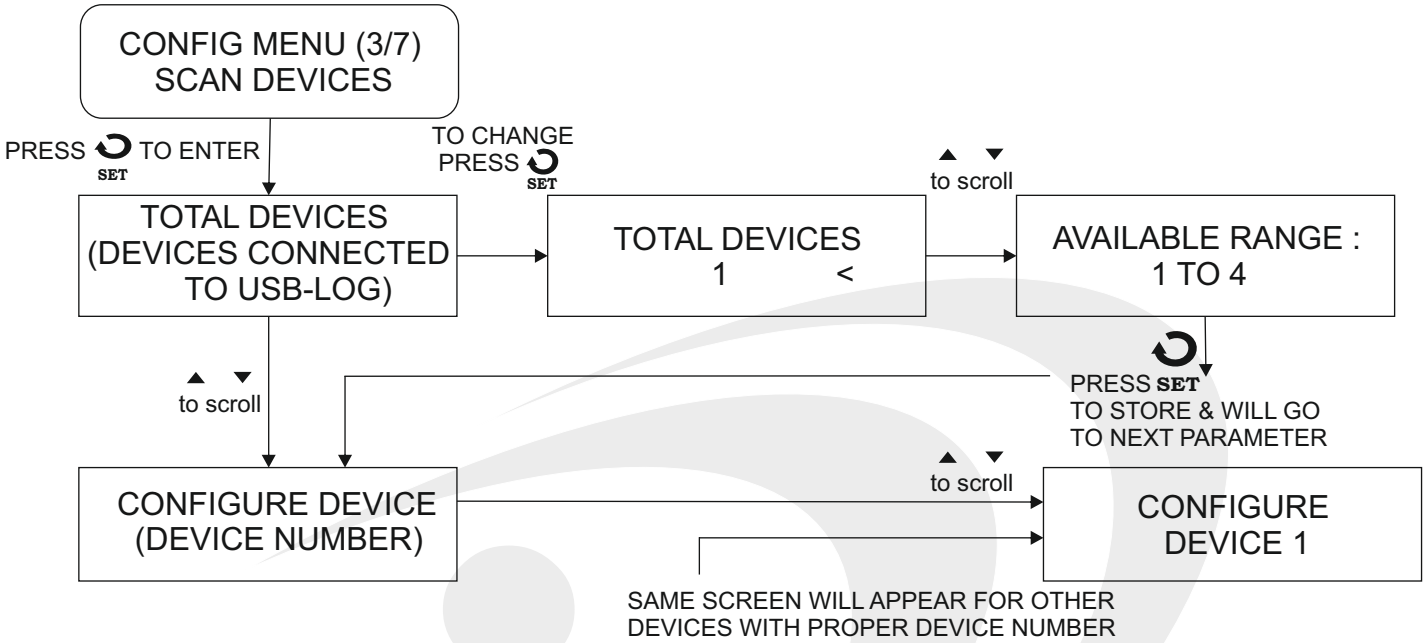
To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this, following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, the press Shift key for some time , so that '<' will get removed.



4. SCAN DEVICES

4.1 SCAN DEVICES (Flow Chart)

To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this, following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, the press Shift key for some time , so that '<' will get removed.



(CONFIGURATION PROCESS WILL BE CARRIED OUT IN FOLLOWING MANNER FOR OTHER DEVICES. HERE WE ARE CONSIDERING DEVICE1)

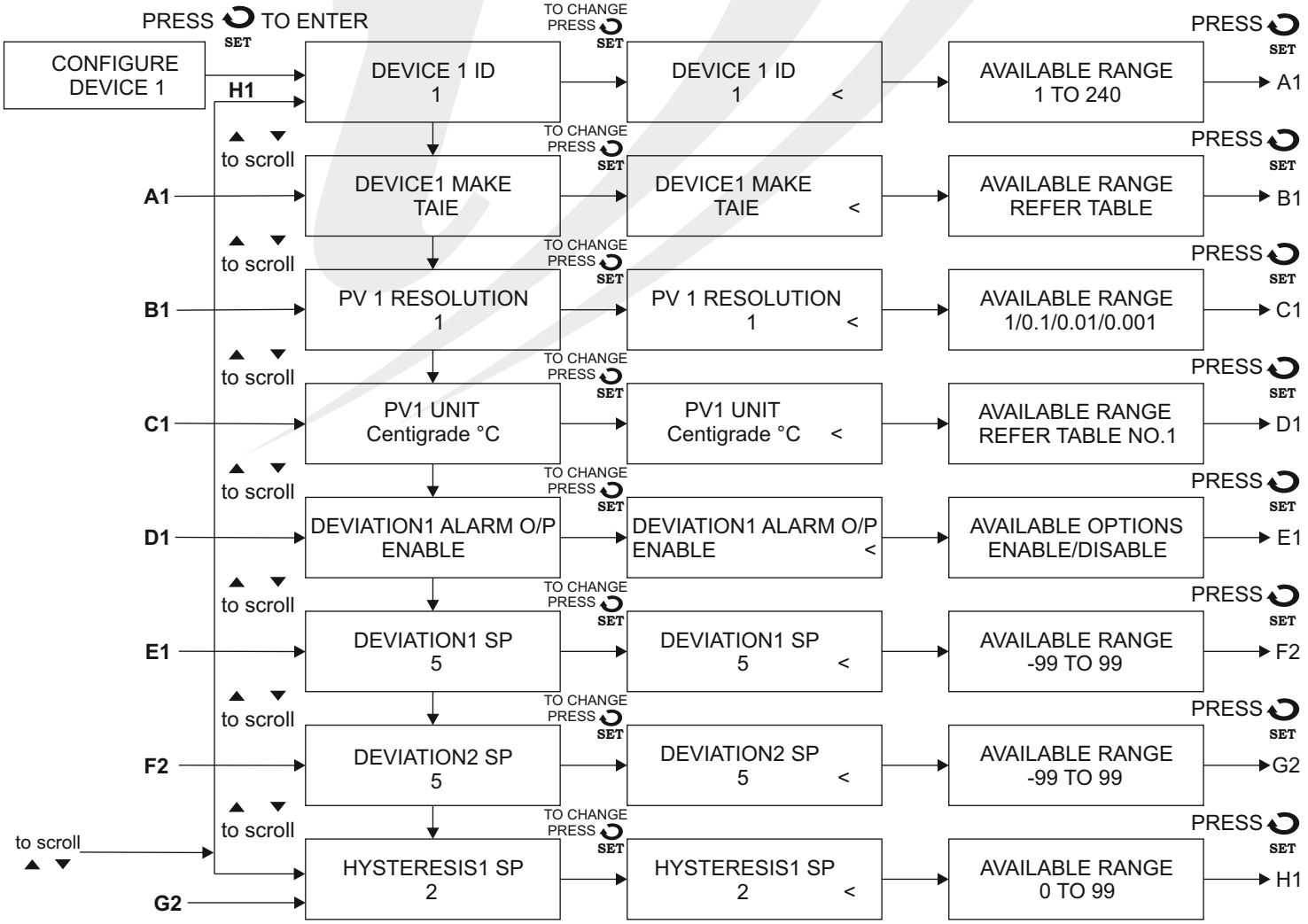


Table No.1 (Available Units) :

Option	Description
°C	Degree Centigrade
°F	Degree Fahreneit
°K	Degree Kelvin
°EU	Engineering Units
%	Percentage
Pa	Pascal
MPa	Mpascal
KPa	Kpascal
bar	Bar
mbar	millibar
psi	PSI
kg/sq.cm	kg/sq.cm
mmH2O	mm water usage
inH2O	inches water gauge
mmHg	mm mercury
Torr	Torr
l/hr	Litre per hour
l/min	Litre per minute
%RH	% Relative Humidity
A	Amps

Option	Description
mA	milliampere
mV	millivolt
ohms	Ohms
ppm	Parts per million
rpm	Revolution per minute
ms	millisecond
Sec	Seconds
min	Minutes
hrs	Hours
PH	PH
%PH	%PH
miles/hr	Miles per hour
mg	milligram
g	Gram
kg	kilogram
%O2	%O2
%Co2	%Co2
%CP	%Carbon
V	Volts

4.2 SCAN DEVICES (DESCRIPTION)

It is used to define number of devices which are connected to the data logger.

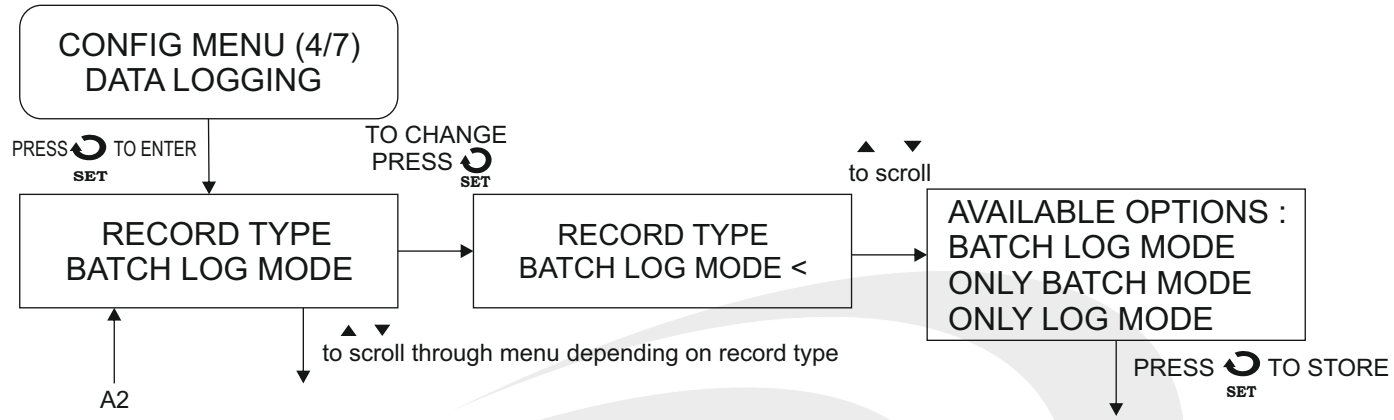
The number of devices that can be connected maximum upto 4.

Parameter	Description	Range	Default Value
DEVICE (X) ID	In this, we are going to set the device ID of the connected device to data logger for identification of that device.	0 to 240	-
DEVICE (X) MAKE	In this, we are going to specify make of the connected device.	I-therm, Taie, Vertex, Fuji, Eurotherm, West	Taie
PV (X) RESOLUTION	It is used to set the resolution of the data logger display io order to display exact reading.	1/0.1/0.01/0.001	1
PV (X) UNIT	It is used to set the unit in data logger in order to display the quantity being measured by the device connected to the logger.	Refer Table.1	Centigrade °C
DEV (X) ALARM O/P	It is used to enable the alarm output	ENABLE/DISABLE	ENABLE
DEVIATION1 SP	It is used to provide 1st alarm deviation.	Positive/Negative/Zero	Zero
DEVIATION2 SP	It is used to provide 2nd alarm deviation.	Positive/Negative/Zero	Zero
HYSTERISIS (X) SP	Depending on the value of the hysterisis, alarm will be acknowlwdged based on the current PV.	0 to 99	0

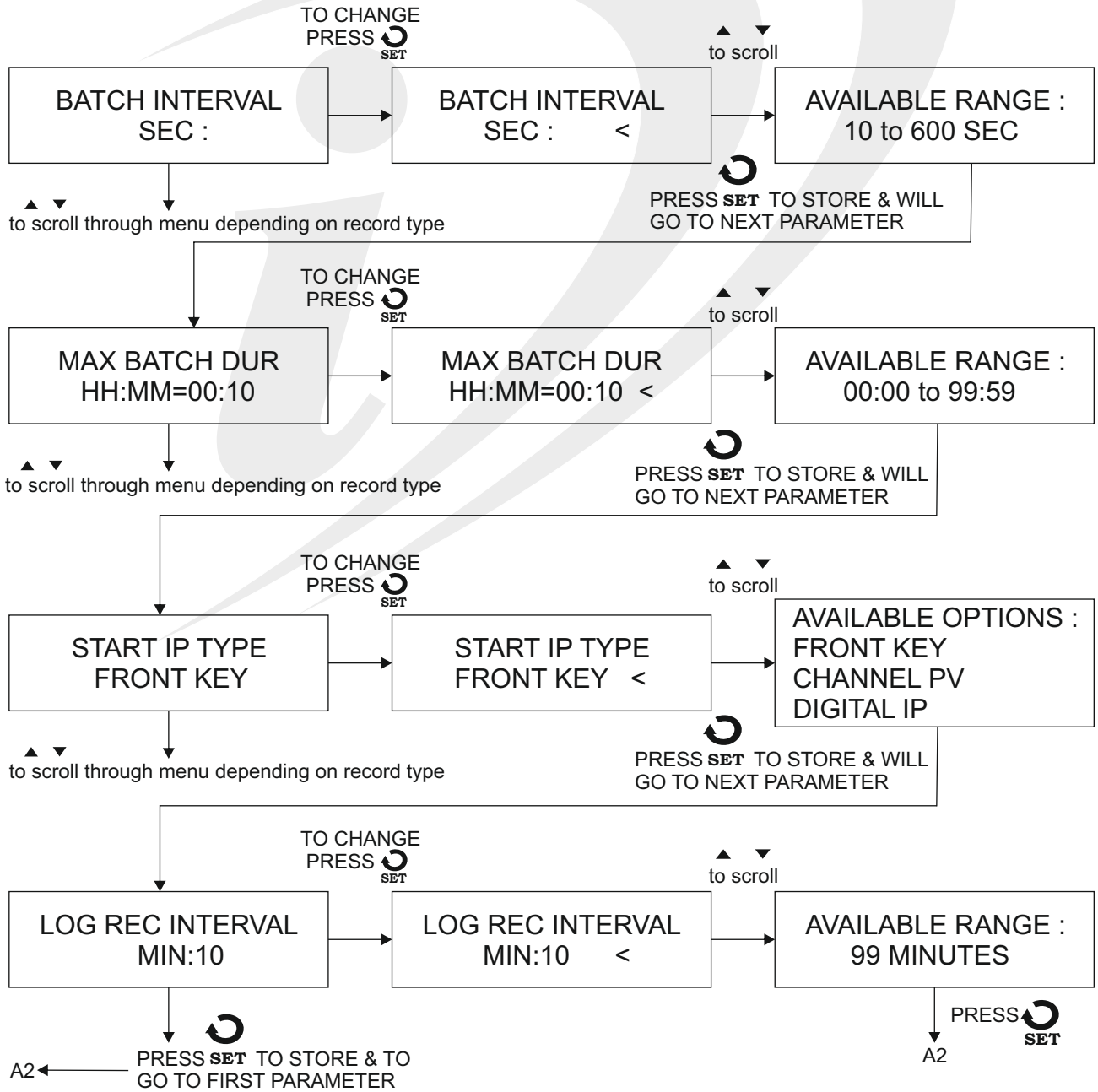
5. DATA LOGGING

5. DATA LOGGING (Flow Chart)

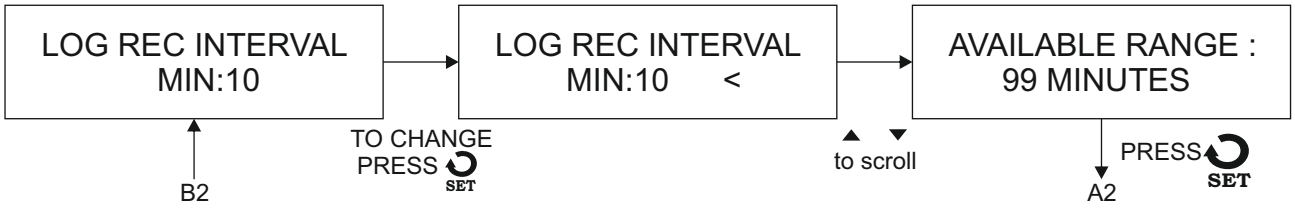
To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this, following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, the press Shift key for some time , so that '<' will get removed.



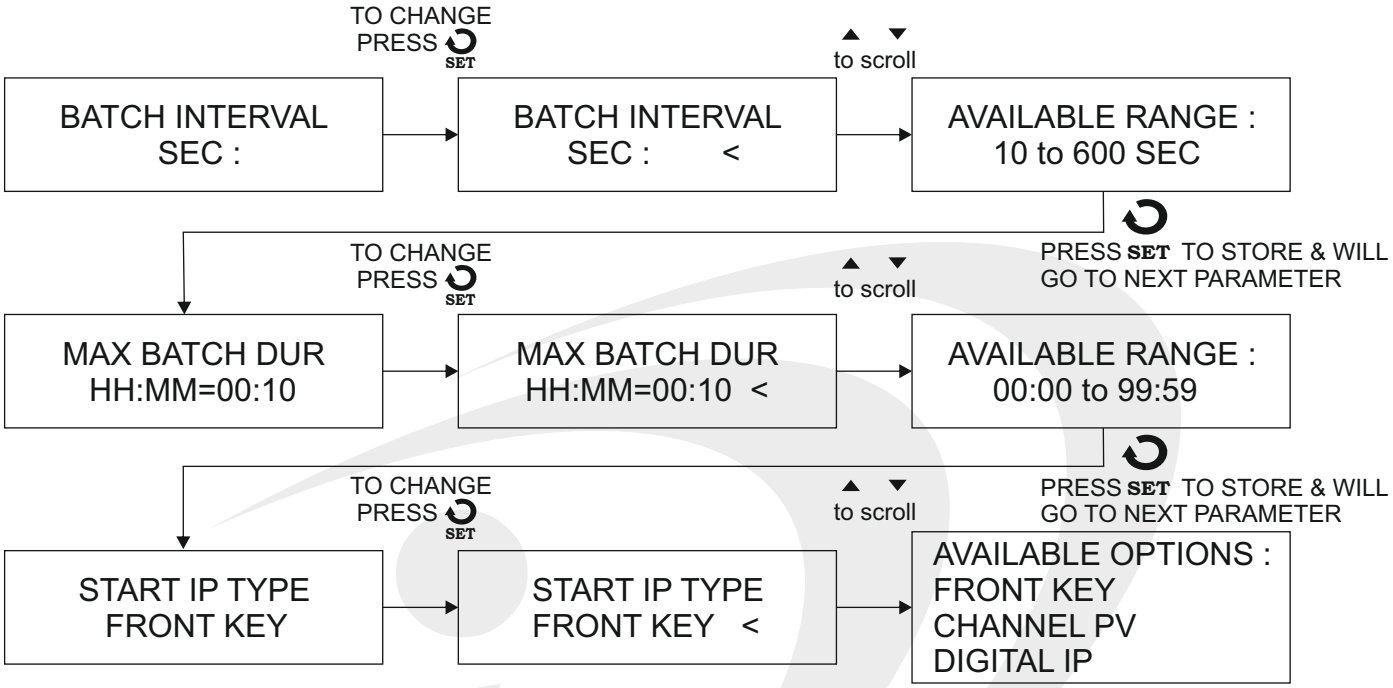
(NOTE : IF WE SELECT BATCH LOG MODE, SCREEN WILL APPEAR AS FOLLOWS)



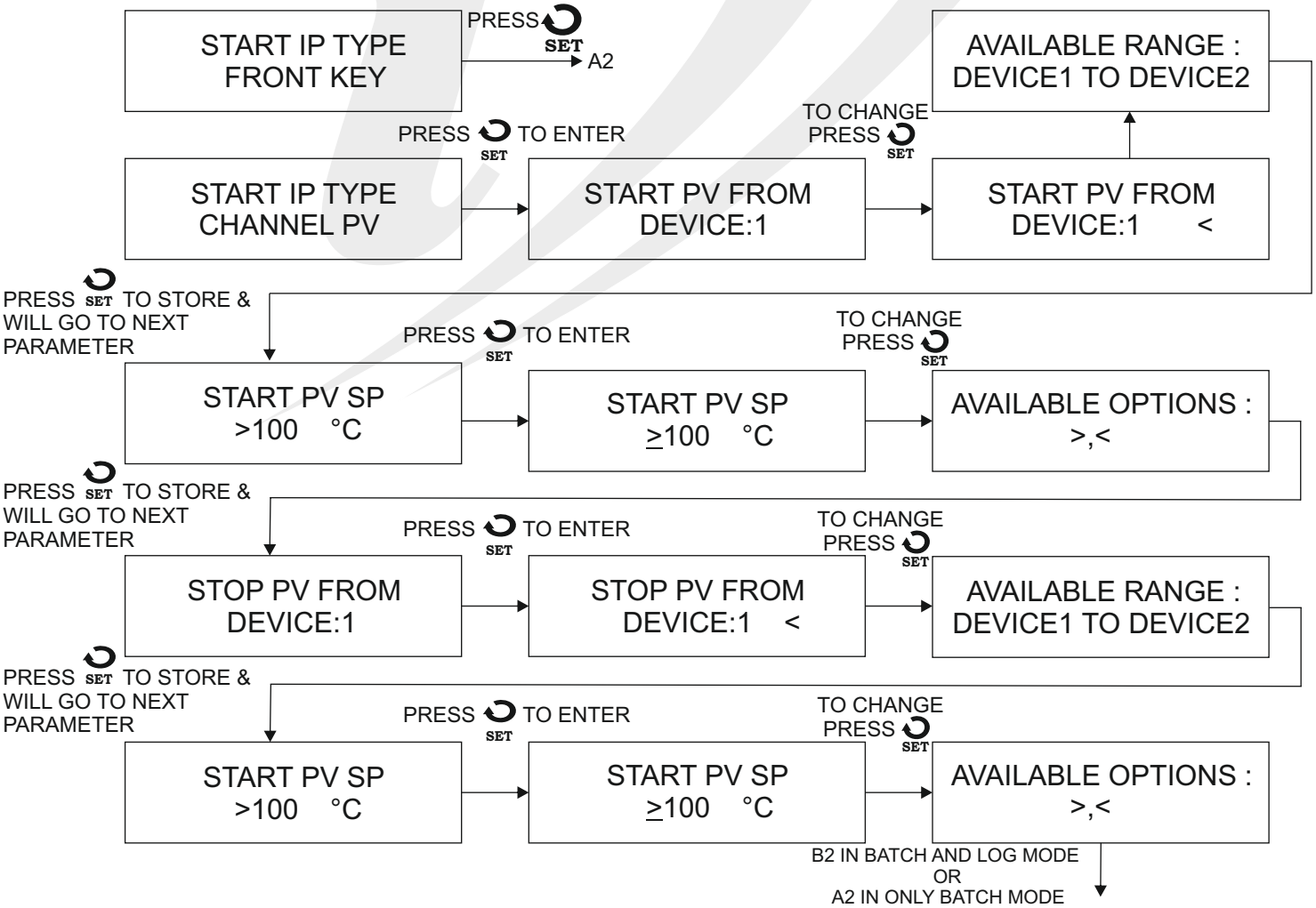
(NOTE : IF WE SELECT ONLY LOG MODE SCREEN WILL APPEAR AS FOLLOWS)

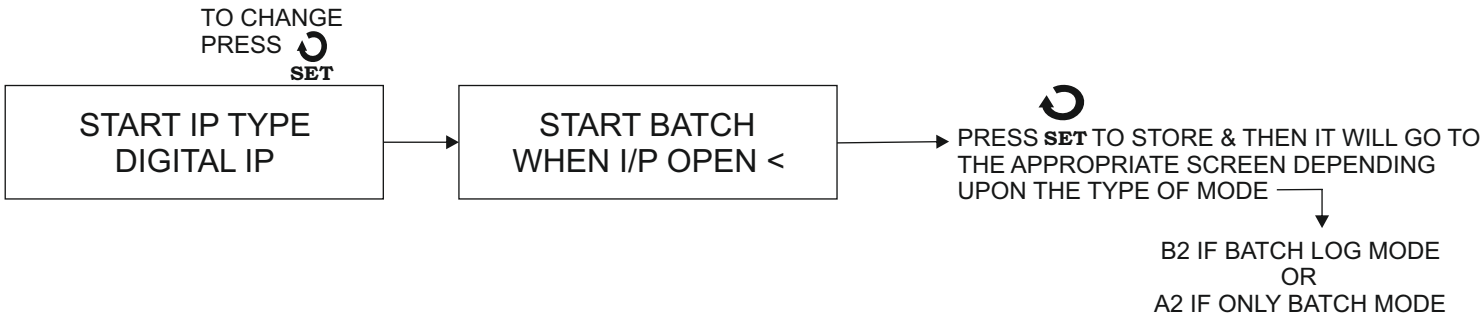


(NOTE : IF WE SELECT BATCH LOG MODE SCREEN WILL APPEAR AS FOLLOWS)



(NOTE : Following screen will appear depending on the type of input)





5.2 DATA LOGGING (DESCRIPTION)

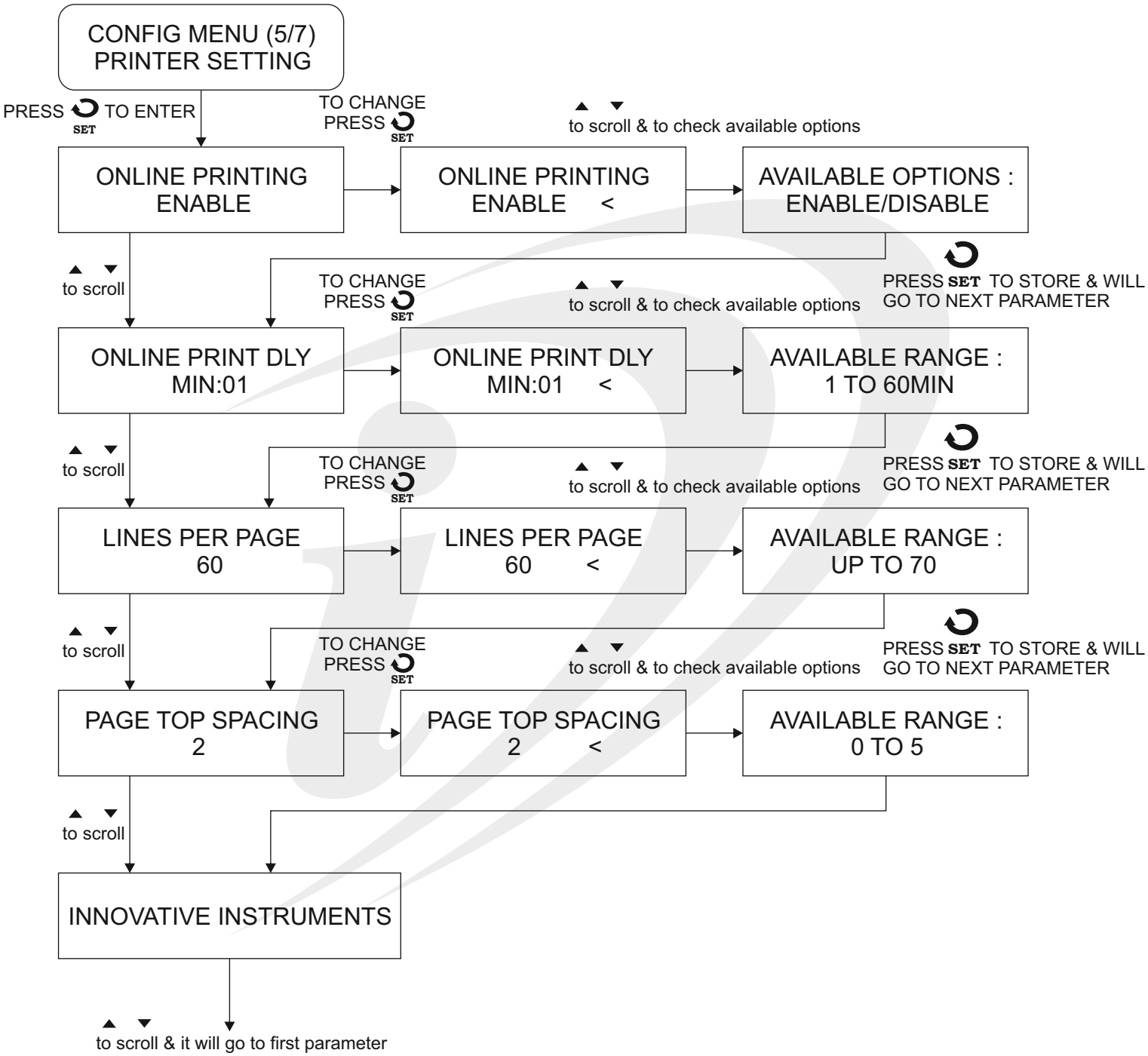
Basically, it is used to keep the track of each devices connected. There are two ways in which we are going to keep the track that is Batch and Log.
BATCH MODE : In this, we are going to provide the start and end of the batch, so that data is going to get logged during that time span only, after that no tracking.
LOG MODE : In this, we are going to log the data after specified duration of time given by us (User).

Parameter	Description	Range	Default Value
RECORD TYPE	In this, we are going to select the recording method.	BATCH-LOG MODE ONLY LOG MODE ONLY BATCH MODE	BATCH-LOG MODE
BATCH INTERVAL (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	It is used to specify the batch interval, based on that interval data will be tracked. Eg : If interval is of 10sec then data will be tracked after every 10sec till the specified duration.	10 to 600 sec	10 sec
MAX BATCH DUR (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	It is used to specify the duration for which batch data recording is going to be carried out.	00:00 to 99:59 (HH:MM)	----
START IP TYPE (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	It is used to provide start and stop condition for batch data recording.	FRONT KEY, CHANNEL PV, DIGITAL INPUT	FRONT KEY
FRONT KEY (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	Start and Stop of the batch can be carried out by the batch key on top left of the instrument.	----	----
CHANNEL PV (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	It is used to give start and stop condition based on the PV of any of the connected device.		
START PV FROM (IF CHANNEL PV SELECTED)	In this, based on the number of given devices, PV of that device is used as a start condition.	Connected devices	
START PV SP (IF CHANNEL PV SELECTED)	Depending on current value of the PV or condition imposed on PV of the specified device, start of batch takes place.	>,<	----
STOP PV FROM (IF CHANNEL PV SELECTED)	Depending on current value of the PV or condition imposed on PV of the specified device, stop of batch takes place.	Connected devices	----
STOP PV SP (IF CHANNEL PV SELECTED)	Depending on current value of the PV or condition imposed on PV of the specified device, stop of batch takes place.	>,<	----
DIGITAL INPUT (IF ONLY BATCH/BATCH-LOG MODE SELECTED)	It is used to provide start and stop condition based on digital input at the back of the instrument.	WHEN IP CLOSED WHEN IP OPEN	----
LOG INTERVAL (IF ONLY LOG/BATCH-LOG MODE SELECTED)	In this, we are going to specify the log recording interval, after every specified interval, data will be tracked.	1 to 90 minutes	----

6. PRINTER SETTING

6.1 PRINTER SETTING (Flow Chart)

To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this, following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, the press Shift key for some time , so that '<' will get removed.



6.2 PRINTER SETTING (DESCRIPTION)

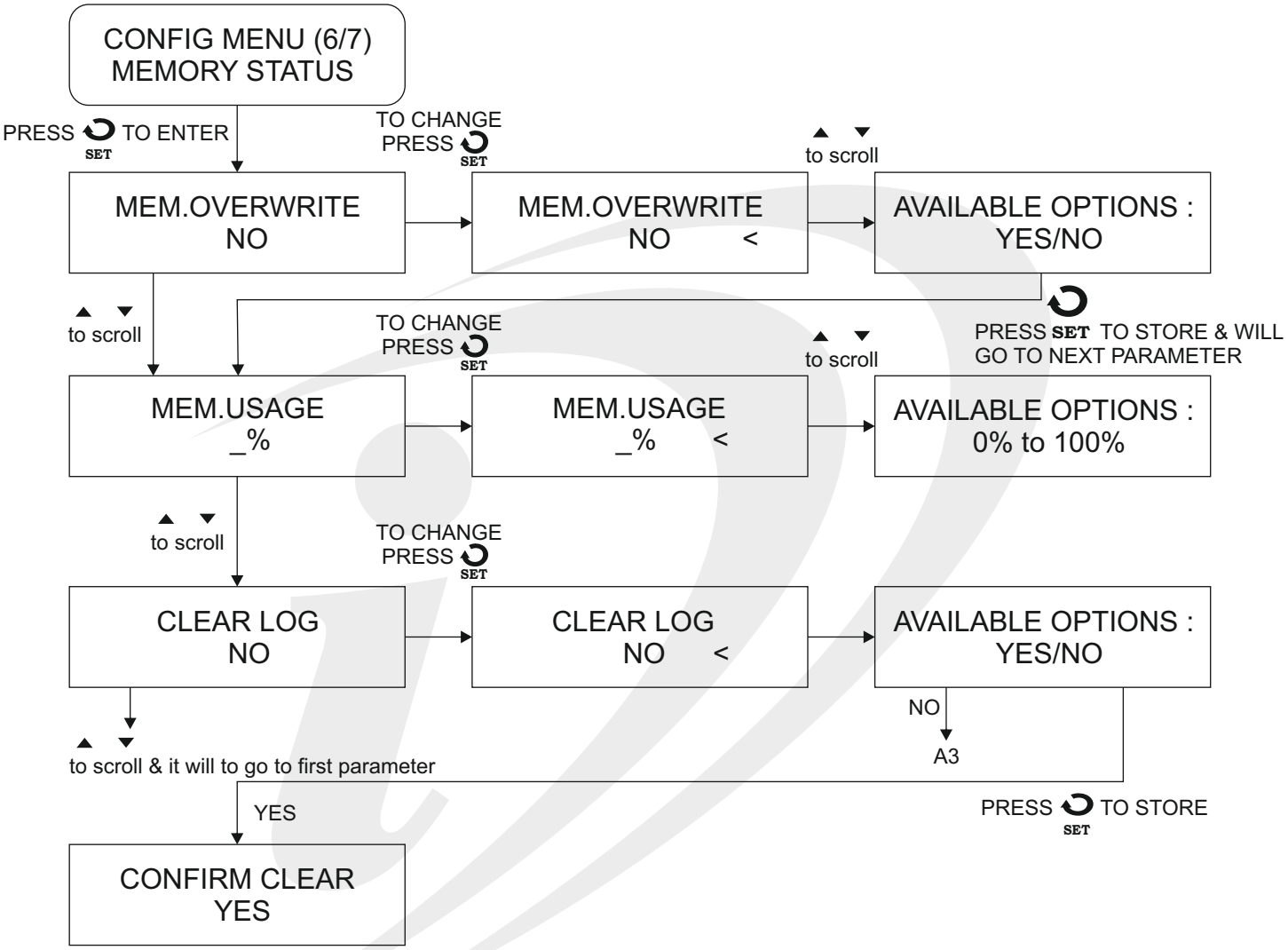
It will provide us options to make use of a printer during the process of data logging based on our convenience.
These are the following options :

Parameter	Description	Range	Default Value
ONLINE PRINTING	It will allow us to do online or continuous printing of the tracked value after every specified interval of time.	ENABLE/DISABLE	ENABLE
ONLINE PRINT DLY	In this, we are going to specify the time interval used for online printing.	Available range : 1 to 60min	-
LINES PER PAGE	In this, we are going to specify the number of lines that are going to get printed on the paper.	Up to 70	60
PAGE TOP SPACING	In this, we are going to specify the line spacing from the top while printing.	0 to 5	2
INNOVATIVE INSTRUMENTS	A name is also going to be printed on the top of the paper that can be anything which user wants to print.	-	-

7. MEMORY STATUS

7.1 MEMORY STATUS (Flow Chart)

To enter in this menu, press SHIFT & SET key simultaneously. After that enter appropriate password. After doing this, following screen will appear.
Screens with '<' indicates that change is allowable.
If you just want to see all the settings (Don't want to change) use ▲ ▼ to have a look.
If you want to see/keep the previous value of the parameter, the press Shift key for some time , so that '<' will get removed.



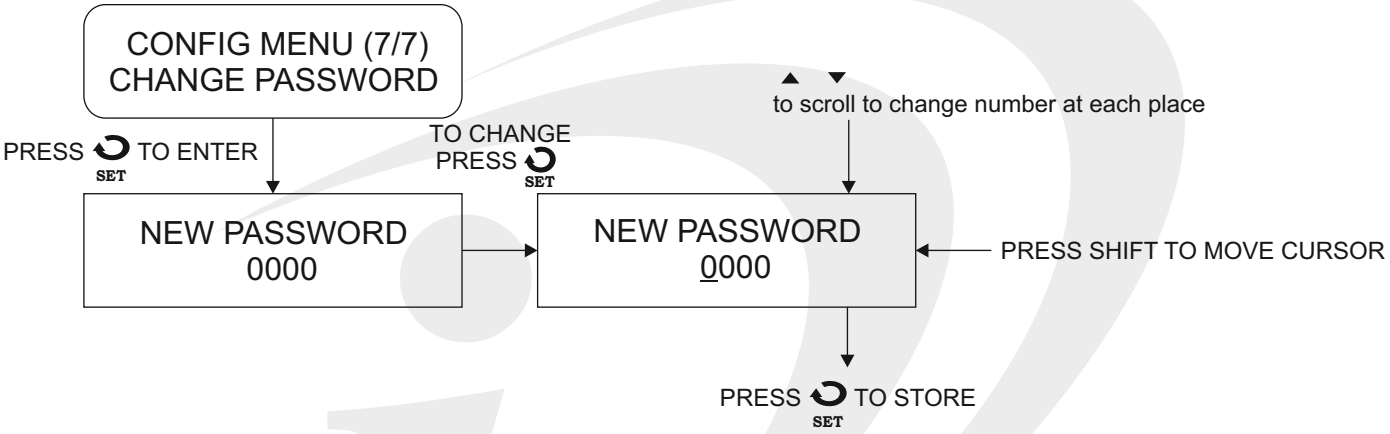
7.2 MEMORY STATUS (DESCRIPTION)

It is used to do some memory settings. Options as follows :

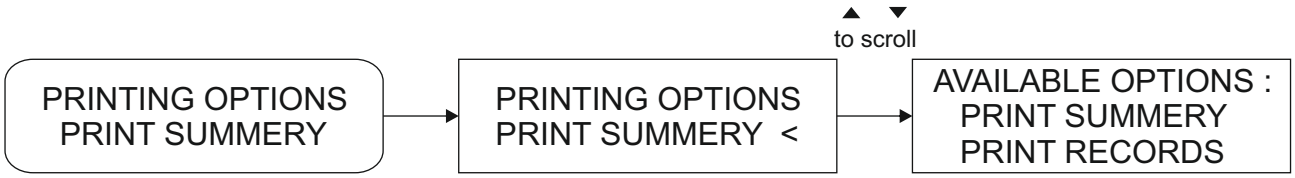
Parameter	Description	Range	Default Value
MEM.OVERWRITE	In this, we are going to decide whether we are going to overwrite on the given memory or not	YES/NO	NO
MEM.USAGE	It will specify the overall memory usage in percentage.	0 to 100%	-
CLEAR LOG	It is used to delete the stored records.	YES/NO	NO

8 CHANGE PASSWORD

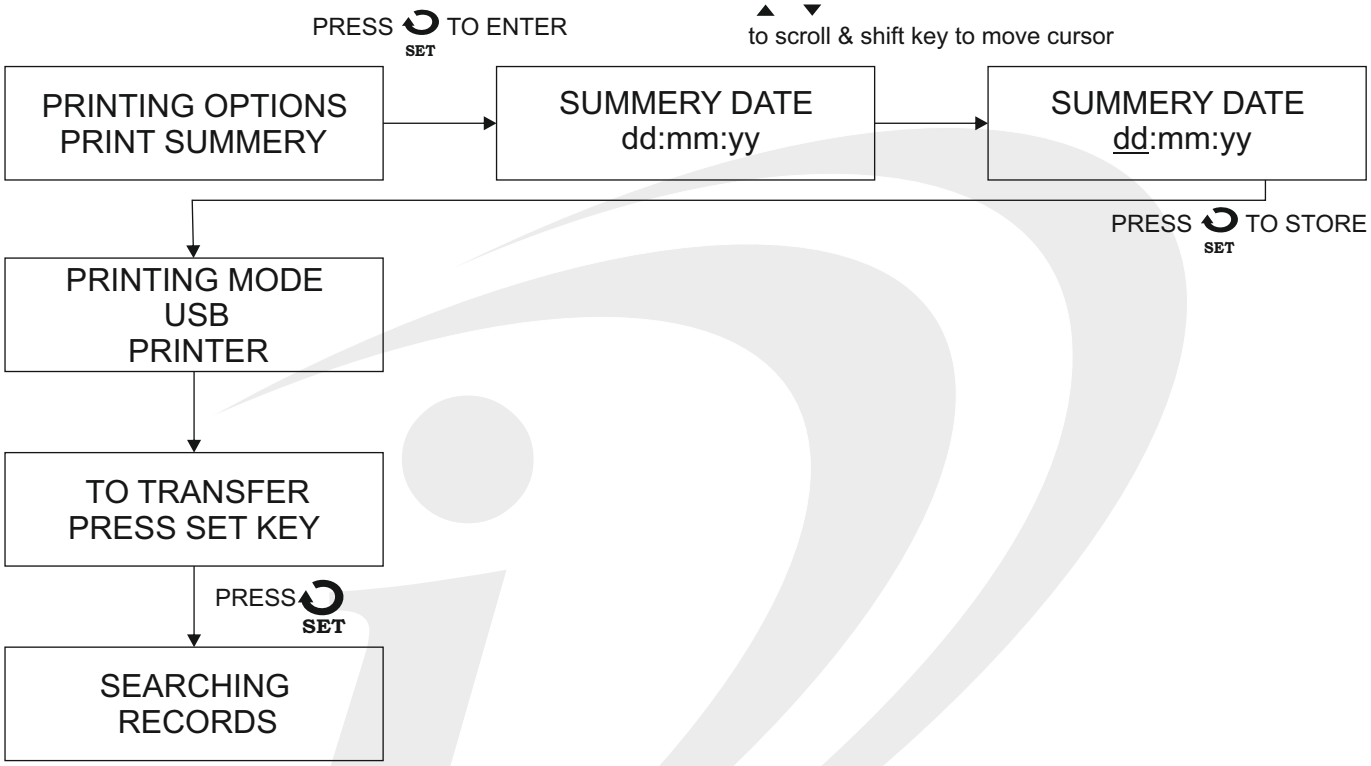
In this, we can change the password which we need to access the main menu.



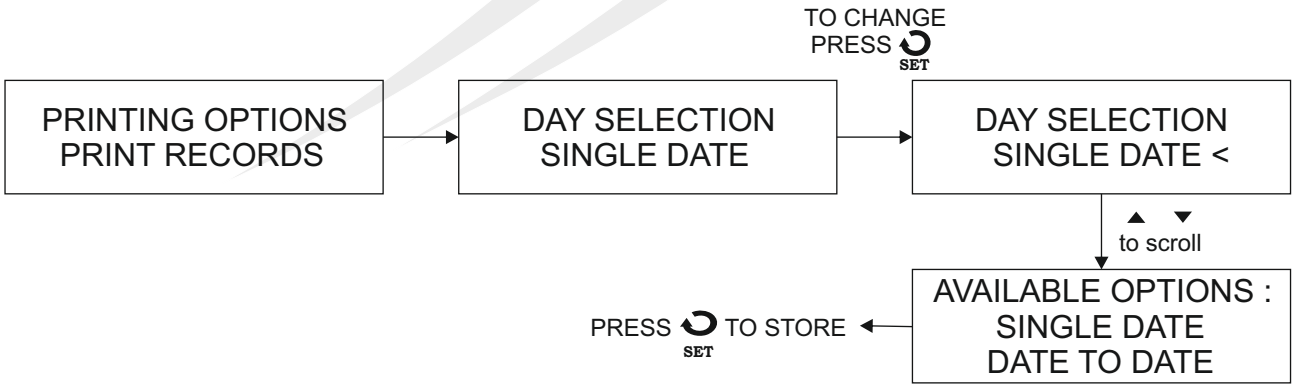
TO ENTER IN THIS MENU, PRESS PRINT KEY FOR 3 SECONDS



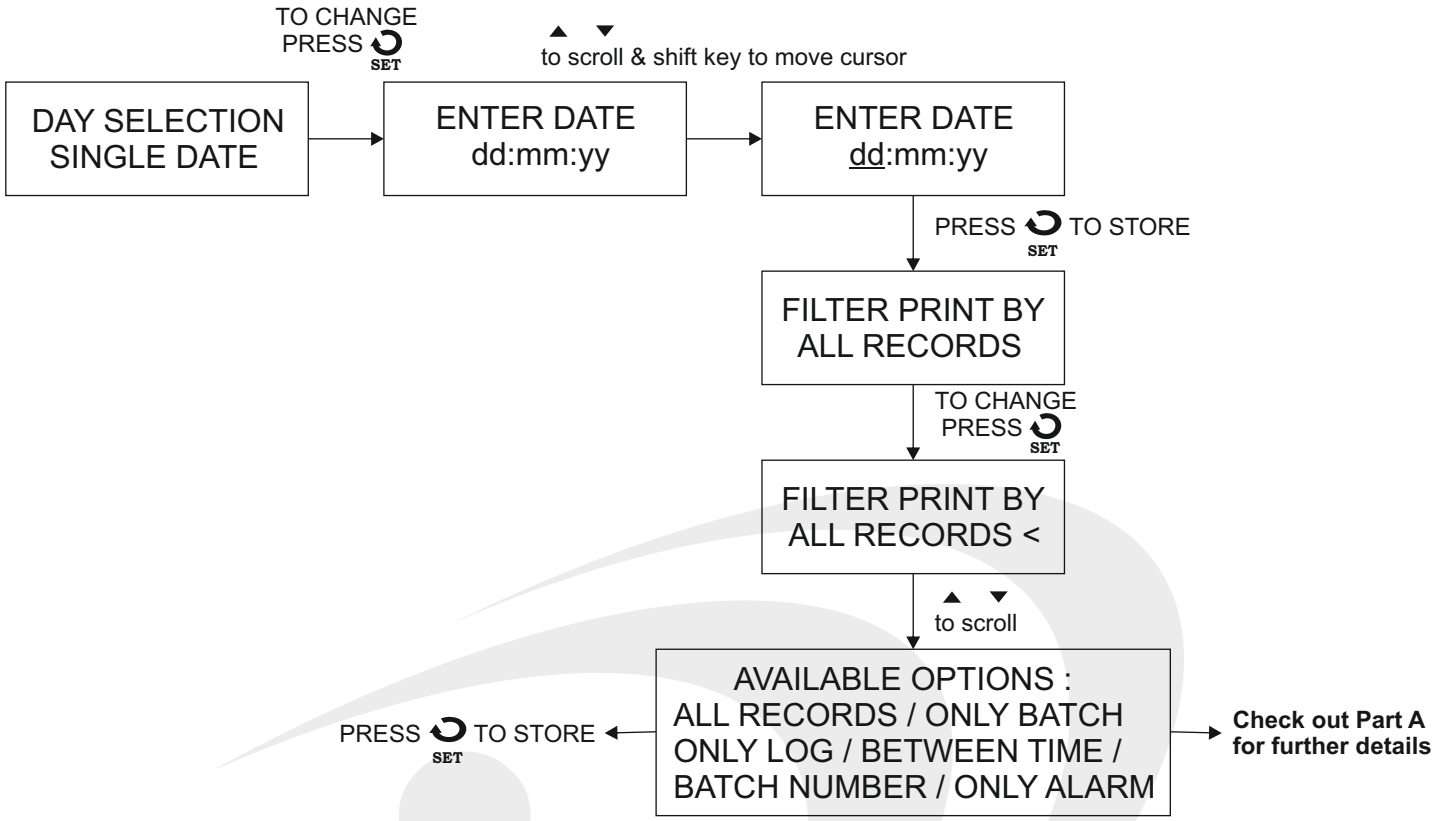
(NOTE : FOR PRINT SUMMERY FOLLOWING SCREENS WILL OCCUR)



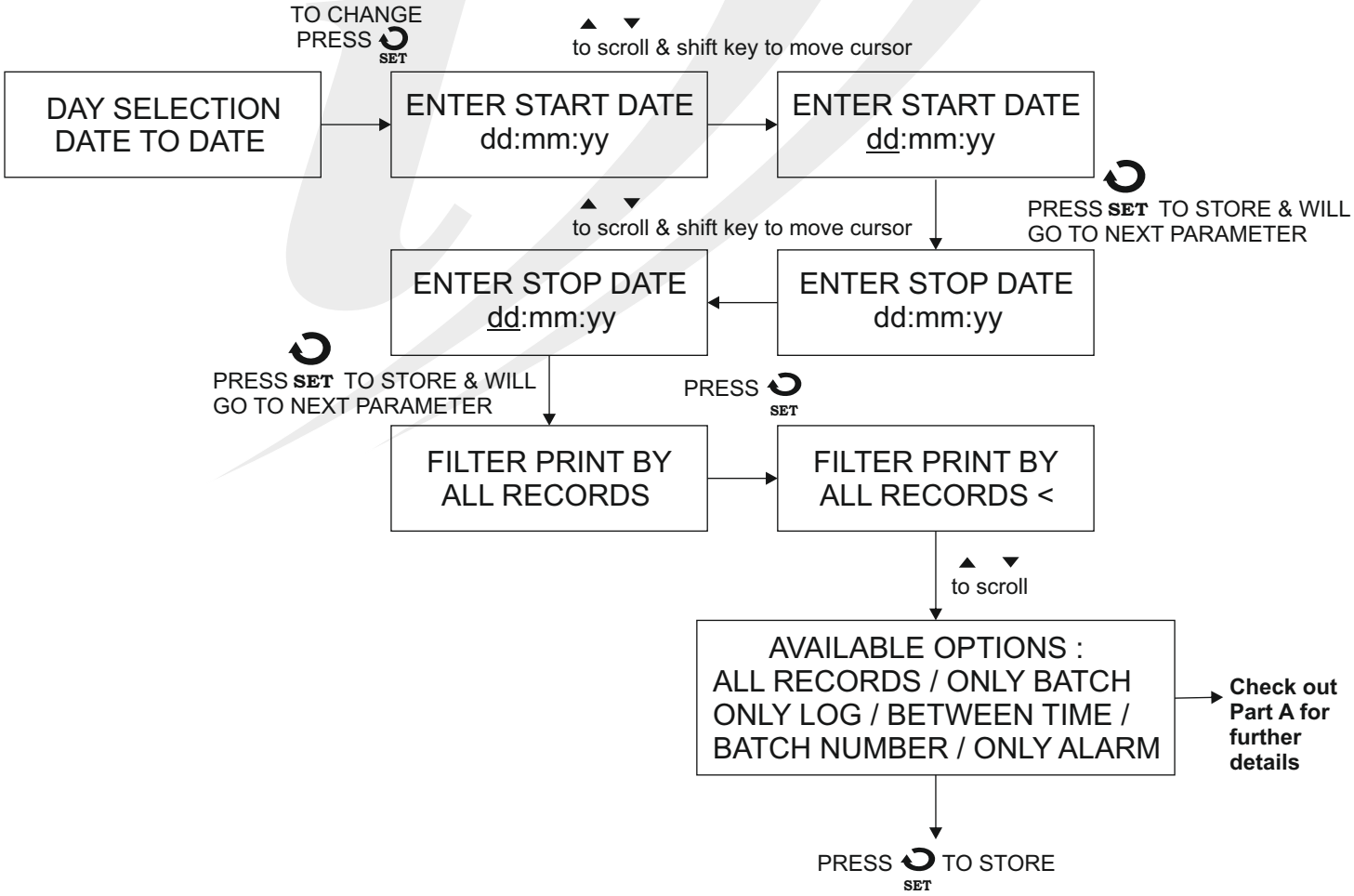
(NOTE : FOR PRINT RECORDS, FOLLOWING SCREEN WILL OCCUR)



(NOTE : FOR SINGLE DATE OPTION, FOLLOWING SCREEN WILL APPEAR)

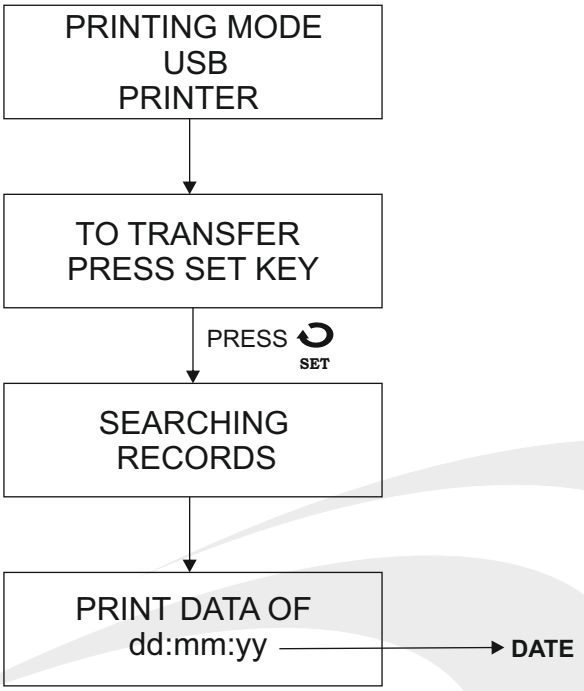


(NOTE : FOR DATE TO DATE DAY SELECTION, FOLLOWING SCREEN WILL APPEAR)

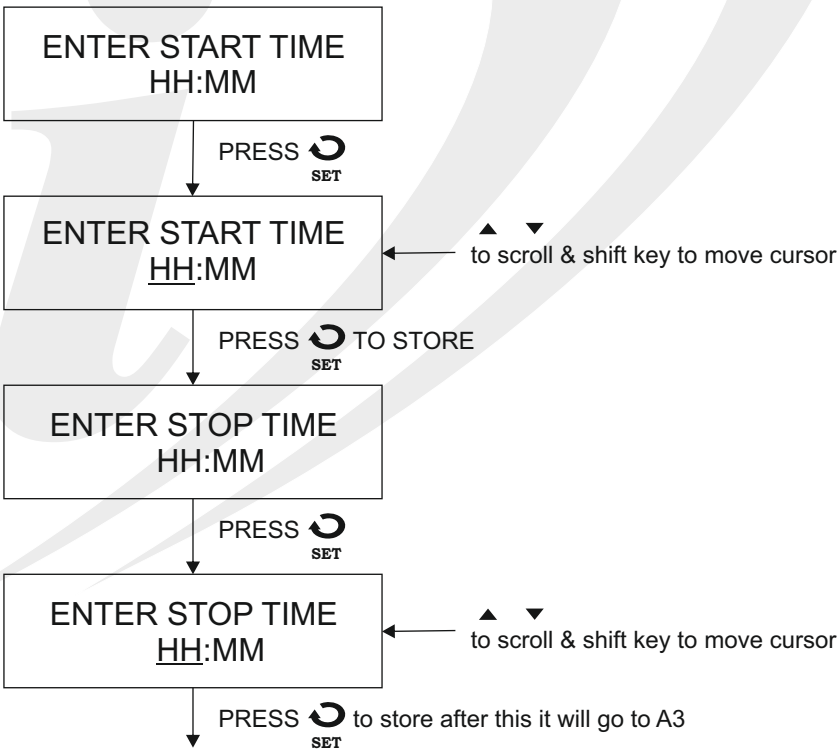


Part A

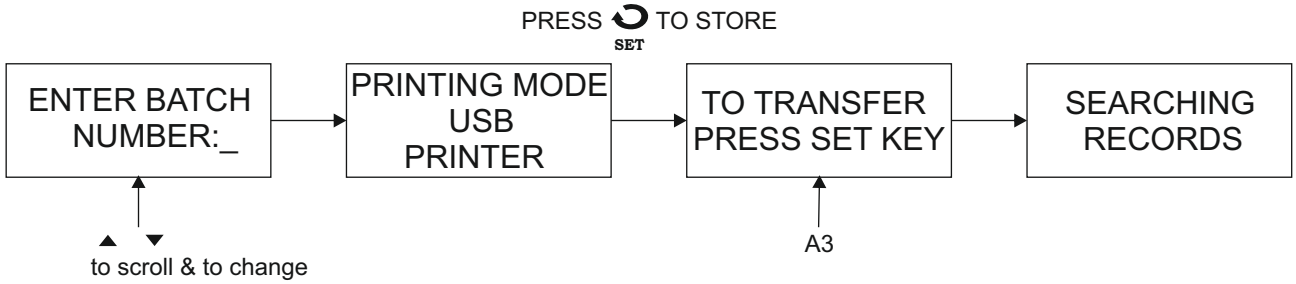
(NOTE : IF WE SELECT ALL RECORDS, ONLY BATCH, ONLY LOG, ONLY ALARM, FOLLOWING SCREEN WILL APPEAR)



(NOTE : IF WE SELECT BETWEEN TIME, FOLLOWING SCREEN WILL APPEAR)



(NOTE IF WE SELECT BATCH NUMBER, FOLLOWING SCREEN WILL APPEAR)



HOLD PRINT KEY FOR 3 SECONDS, YOU WILL COME ACROSS FOLLOWING OPTIONS

Parameter	Description	Range	Default Value
PRINTING OPTIONS	It will provide us facility to print our logged data based.	PRINT SUMMERY PRINT RECORDS	PRINT SUMMERY
PRINT SUMMERY	It will give you overall batch & log occured on specified date along with their number.	-	-
PRINT RECORDS	It will print all records based on date selection.	SINGLE DATE DATE TO DATE	SINGLE DATE
FILTER PRINT BY	In this, we can take print of our records based on available options.	ALL RECORDS / ONLY BATCH / ONLY LOG / BETWEEN TIME / BATCH NUMBER / ONLY ALARM	ALL RECORDS
ALL RECORDS	It will print all records i.e. all the batches, all records.	-	-
ONLY BATCH	It will print only batches for that specified date.	-	-
ONLY LOG	It will print only logged data for that specified date.	-	-
BETWEEN TIME	Here we are going to give time range so that data will get printed within specified time range.	-	-
ONLY ALARM	Here we will print only alarm occurances.	-	-