



Badger Meter

Fluid Management System

Model FMS-3, 2.4 GHz Standalone Keypad



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STANDALONE KEYPAD DESCRIPTION

Disclaimer

The user/purchaser is expected to read and understand the information provided in this manual, follow any listed Safety Precautions and Instructions and keep this manual with the equipment for future reference.

The information in this manual has been carefully checked and is believed to be entirely reliable and consistent with the product described. However, no responsibility is assumed for inaccuracies, nor does Badger Meter Inc. assume any liability arising out of the application and use of the equipment described.

Product Identification Information

Record the product identification numbers from the nameplate here.

Model Number _____

Serial Number _____

Tag Number _____ (if applicable)

Keypad Installation

- Mount the keypad upright with the antenna pointing upward, near a 120V AC electrical outlet.
- Mount the keypad to a structurally sound wall through the two holes on the top of the keypad case and one hole on the bottom of the keypad.
- Height on the wall should be 5 feet to 6 feet.
- Avoid direct, significant, heat sources.
- Do not mount the keypad behind any steel objects (tool storage cabinets or metal chain link fences) that may block the RF communication signals.

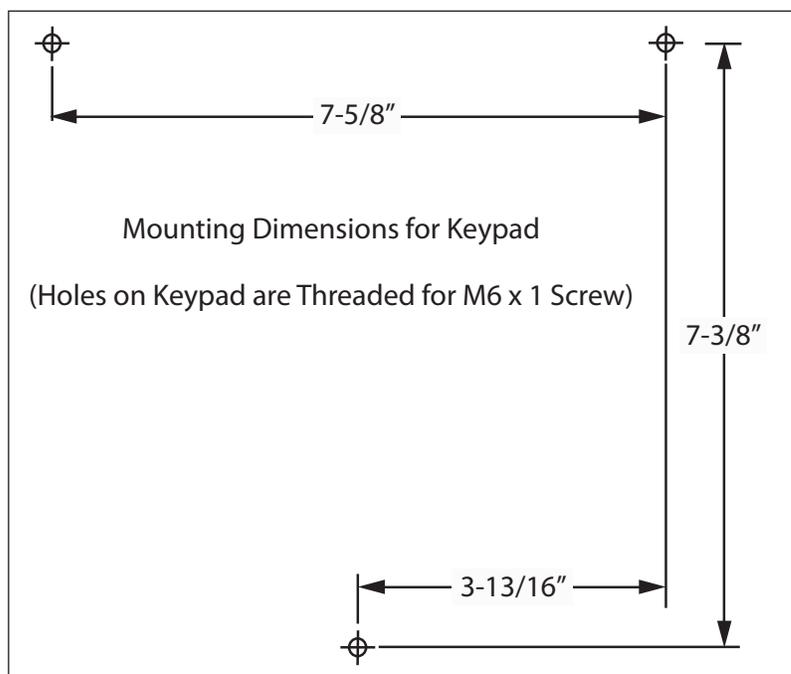


Figure 1: Keypad Installation

Specifications

Power Requirements	120V AC 50/60 Hz
RF Communications	2-way, 2.4...2.5 GHz Direct Sequence Spread Spectrum
RF Network	Self-healing Mesh Network
Operating Temperature	14...140° F (–10...60° C)

Certification

- Contains FCC ID: S4GEM35XB
- Contains IC: 8735A-EM35XB
- FCC CERTIFIED, PART 15, SUB-PART C
- CE0681 EC-R&TTE Certified

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ WARNING

TO SATISFY FCC RF EXPOSURE REQUIREMENTS FOR MOBILE TRANSMITTING DEVICES, A SEPARATION DISTANCE OF 20 CM OR MORE SHOULD BE MAINTAINED BETWEEN THE ANTENNA OF THIS DEVICE AND PERSONS DURING OPERATION. TO ENSURE COMPLIANCE, OPERATIONS AT CLOSER DISTANCES THAN THIS ARE NOT RECOMMENDED.

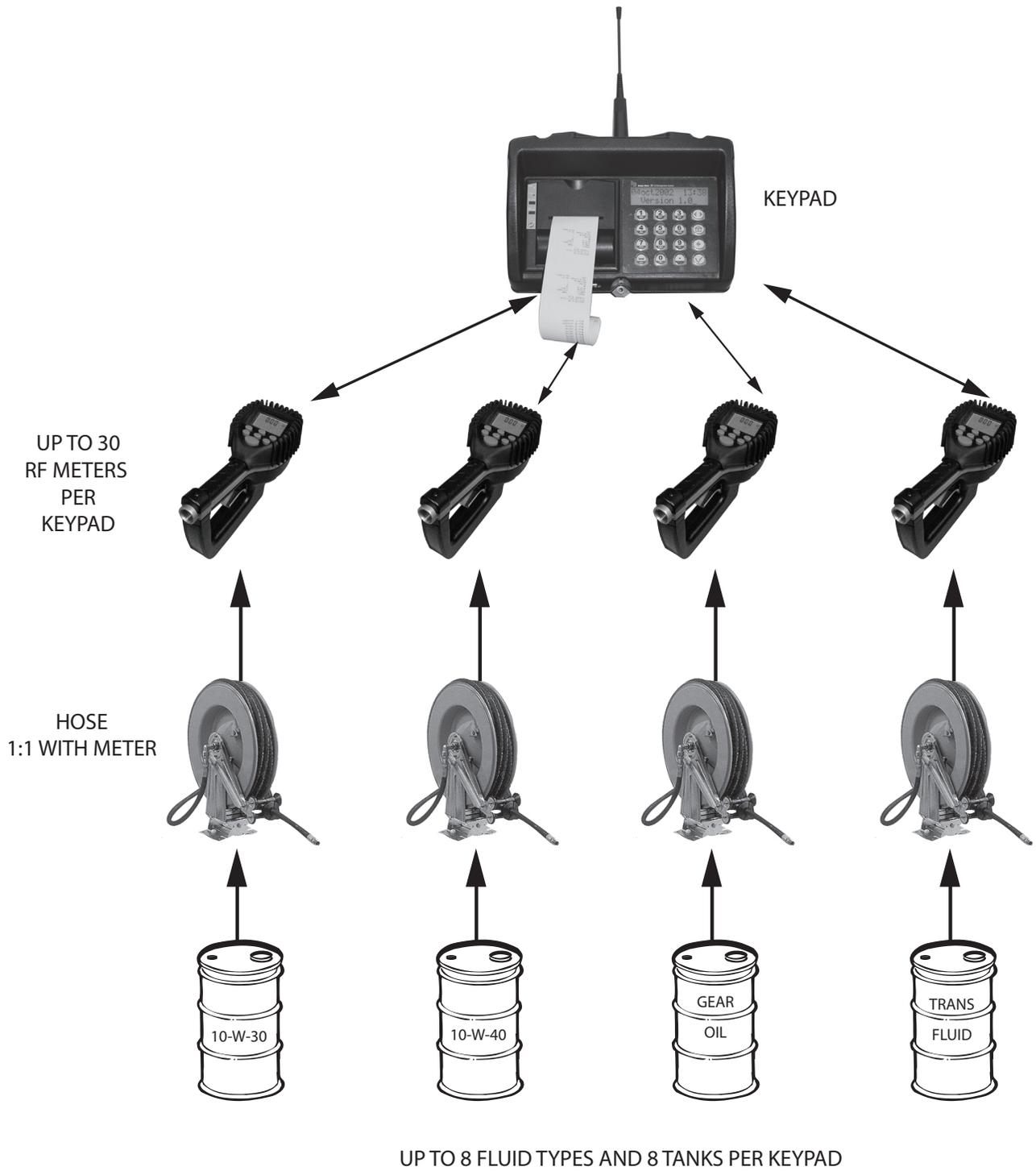


Figure 2: Setup Diagram

Standalone Keypad Keys



The **Scroll** key selects options on the active display.



The **Home** key returns the display to the default screen.



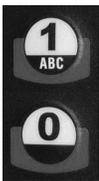
The **Backspace** key deletes one character to the left of the cursor each time it is pressed.



The **Enter** key completes the current action then displays the next screen.



The **Space** key adds a blank space to the right of the data just entered.



The **Alphanumeric** keys enter numbers and alpha characters (letters).

- To enter a number, press and release a key.
- To enter a letter, press and hold the key until the letter you want displays, then release the key.

STANDALONE KEYPAD SCREEN TYPES

The remainder of this document shows only the actual display, not the entire keypad.

Default Screens

The Default screens toggle between the *System Version* screen and the *Enter PIN Number* screen. The *System Version* screen displays for 2 seconds, then the *Enter PIN Number* screen displays for 3 seconds. The cycle repeats until a PIN number is entered.

System Version

```
16aug2012 08:35
V3.00 2.4GHz
```

The first default screen is informational. It shows the software version number.

Enter PIN Number

```
Enter Pin No.
- - - -
```

The second default screen is used by the supervisor to access the management screens: Initialization, Configuration, Meter, Report (External Printer), 190 (Internal Printer) and Radio. There can be only one supervisor account per keypad.

The Personal Identification Number (PIN) is four digits. To access management screens, enter the supervisor PIN number. The default is 0000 at initial power-up.

Management Screens

The Management screens are available after the supervisor PIN number has been entered. The Management screens are:

- Initialization (INI)
- Configuration (CNF)
- Meter (MET)
- Report (REP) External Printer
- 190 Report Internal Printer (FT190 is the model number of the internal printer)
- Radio (RAD)

```
Select
INI CNF MET REP
```

To select a *Management* screen, press the **Scroll** key to move through the menu options until the screen you want is highlighted, then press **Enter**.

```
Select
190 RAD . . . . .
```

Multiple-Choice Screens



Mileage Info
YES / NO

For Multiple-Choice screens, use the **Scroll** key to move the cursor to either **YES** or **NO**, then press **Enter**.

Input Screens



Tank Unit
Tank No =

To enter or change information on the input screens, press the **Backspace** key to delete the current information, then use the keypad keys to type the new information, then press **Enter** to save the change.

INITIALIZATION (INI) MENU

The Initialization screens appear in this order:

- Time and Date
- Tank Initialization
- Fluid Initialization
- Adding or Deleting RF Meters/Hoses
- Adding or Deleting Operators



The *INI* menu can be accessed only when the Dispense Order (WO) list is empty. The supervisor must clear all transactions through *Configure (CNF)* before the *INI* menu becomes available. Refer to "*Configuration (CNF) Menu*" on page 15 for details on clearing transactions.

The parameters are:

- System date and time are initially blank
- System time is in military standard

NOTE: System date is in format DD/MMM/YYYY (in English). If you do not want to change the Time and Date settings, press **Enter** to advance to the *Tank Unit* screen.

Time and Date Screens



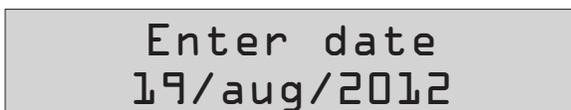
To change or set the system time:

1. Use the numeric keys to set a 24-hour military time of day.
2. Press **Enter** to save the setting and move to the *Enter Date* screen.



To change or set the system date:

1. Use the numeric keys to enter the two-digit day. The cursor automatically moves to the month.
2. Press the **Scroll** key to select a month.
3. Use the numeric keys to enter the four-digit year.
4. Press **Enter** to save the setting and advance to the *Tank Initialization* screens.



Tank Initialization

The *Tank Initialization* screens are used to set up tanks in the system. Each tank is assigned a number and a starting quantity level in the desired unit of measure. The parameters are:

- Maximum of 8 Tanks.
- Tank ID's are numbered 1 through 8.
- Tank unit of measure can be quarts, liter, pints or gallons.
- Set the dispensing unit of measure to the desired unit.
- The tank stock level setting is updated after each dispense from the associated tank.
- The tank stock level quantity setting format is 5.3 digits (99999.999).
- The remaining tank stock level quantity is printed to the nearest whole number after each dispense on a ticket.
- The Supervisor updates the tank level quantity setting at any time by entering these screens to change stock levels.

```
Tank Unit
Tank No =
```

```
Tank Unit
Tank No 5
```

```
Tank Unit No 5
← QUARTS →
```

```
Tank Stock Level
No 5: 85604----
```

To install a Tank:

1. Select **Tank Unit Number**.
 - a. Enter a numeric value from 1 to 8 and press **Enter**.
 - b. Pressing the **Enter** key with no entry advances to *Fluids* screens.
2. Select **Fluid Quantity** or **Remove a Tank**.
 - a. Use the **Scroll** key to select **LITER, GALLONS, PINTS, QUARTS** or **REMOVE**.
(The REMOVE option deletes a tank from the system.)
 - b. Press **Enter** to advance to the *Tank Stock Level* screen.
3. Select a Tank Stock Level.
 - a. Use the numeric keys to enter a stock level from 00000.000 to 99999.999.
 - b. Press **Enter** to move to next screen.
 - c. When all tanks have been added, press **Enter** to advance to the *Select Fluid* screen.

Fluid Initialization

The *Field Initialization* screen is used to set initial tank stock level or whenever a supplier delivers fluid. The fluid screens allow a supervisor to set Fluid Names used in the system.

The parameters are:

- Maximum of 8 fluid types
- The fluid type ID number ranges from 1 to 8
- The fluid type name is a 16-character alphanumeric string
- Initially, the fluid type name is blank

Tank-Fluid Relationship

The relationship between tank ID and fluid type ID is 1:1 (one tank assigned to one fluid type). For example, a supervisor may associate tank #1 with fluid #3 or tank #5 with fluid #5. Each tank must be associated with one, and only one, fluid type.

```
Select Fluid
No =
```

```
Fluid No. 5
10W40-----
```

```
Tank-Fluid
Fluid No =
```

```
Tank-Fluid
Tank No 5_
```

To associate a tank with a fluid:

1. Enter a valid *number* for the fluid and press **Enter**.
2. Enter a *name* for the fluid and press **Enter**.
3. Enter a valid number for the tank and press **Enter**.
The *Tank-Fluid, Fluid No.* screen displays again.

Pressing **Enter** while the *Tank-Fluid, Tank No.* screen is blank advances to the *Adding Hoses* screen.

Pressing **Enter** with no entry advances to the *Create Hose* screen.

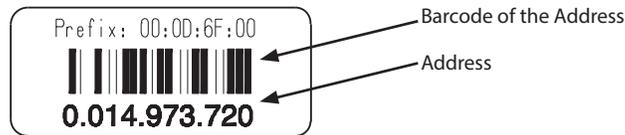
4. Enter a valid *number* for the fluid in the tank press **Enter**.

Pressing **Enter** after a entering valid tank number displays the *Tank-Fluid, Fluid No.* screen again.

Creating or Deleting an RF Meter/Hose (Meter and Hose are Synonymous)

This set of screens allows a supervisor to create or delete RF Meters/Hoses from the keypad.

- The RF Meter/Hose identification number is listed on the RF Meter/Hose under the battery pack or on an attached tag.



- The RF Meter/Hose Address identification number format is 10 decimal digits (X.XXX.XXX.XXX). The Hose Prefix number format is 8 hexa-decimal (0-9, A-F) digits (XX.XX.XX.XX). Leading zeros must be entered.
- Maximum of 30 RF Meters/Hoses in the system.
- Initially, the RF Meter/Hose address list is empty.
- A keypad can exchange data only with RF Meters/Hoses that have identification numbers entered into the keypad.
- All RF Meter/Hose addresses and IDs are unique.
- The relationship between a tank and RF Meters/Hoses is 1:n (one *tank* is assigned to *n* RF Meter/Hoses). Due to the relationship between tank and fluid type, an RF Meter/Hose is assigned to only one fluid type.

Creating an RF Meter/Hose

- After a valid RF Meter/Hose address is entered, the *Tank-Hose* screen displays.
- If the RF Meter/Hose address entered is already used, *Hose Address Already Used* screen displays.
- Pressing the **Enter** key with no entry moves to the *Delete Hose* screen

Create Hose
YES / NO

On the *Create Hose* screen:

- Use the **Scroll** key to move the cursor to select **YES**.
- Press **Enter** to advance to the *Hose Prefix* screen.
- If you need to change the hose prefix, press the **Backspace** key repeatedly until the cursor is positioned on the first digit.
- Type the Hose Prefix and press **Enter**.

Hose Prefix
xx:xx:xx:xx

Save Prefix?
YES / NO

- Use the **Scroll** key to move the cursor to select **YES**.
- Press **Enter** to save the prefix and advance to the *Hose Address* screen.

Hose Address
- . - - . - - . - - . - -

- Type the Hose Address and press **Enter** to advance to the *Hose ID* screen.

Hose ID
14_

The *Hose ID* screen identifies which hose is assigned to the tank and fluid.

NOTE: Hose ID is the number used to create dispense orders for a meter by an operator.

Tank-Hose
Tank No 5_

On the *Tank-Hose* screen:

- Enter the number corresponding to the tank and hose and press **Enter**.

The relationship between tank and RF Meter/Hose is 1:n (*one* tank is assigned to *n* meters). There is a relationship between tank and fluid type. The RF Meter/Hose is assigned to one fluid type. Assign the RF Meter/Hose to the tank to which it is connected.

Hose Address Already Used

Hose Address
Already Used

This screen displays if another RF Meter/Hose already uses the same prefix and address. If this screen displays, check the RF Meters in the system to make sure duplicate RF Meters do not exist. Then check to see if this RF Meter/Hose has already been created in the system.

The message displays for 3 seconds then returns to *Create Hose* screen.

Deleting an RF Meter/Hose

The supervisor has the option to delete an RF Meter/Hose through this screen. This is necessary when there is a change to the system or when an RF Meter/Hose needs replacement for any reason.

The supervisor should delete from the keypad the removed RF Meter/Hose prior to creating a new RF Meter/Hose. This puts the new RF Meter/Hose in the same logical position with the keypad and the dispense order process remaining the same.

Delete Hose
YES / NO

1. Use the **Scroll** key to move the cursor to select **YES**.
2. Press **Enter** to advance to the *Hose Prefix* screen.

Hose Prefix
xx:xx:xx:xx

3. Type the Hose Prefix and press **Enter**.

Hose Address
- . - - - . - - - . - - -

4. Type the Hose Address and press **Enter**.

Pressing the **Enter** key with no entry displays the *New Operator* screen.

5. The screen displays the Hose ID of the deleted RF Meter/Hose.

Adding and Deleting Operators

- Only an operator with a valid PIN can dispense fluid.
- A maximum of 49 operators may be active in the system at one time.
- The operator ID (PIN number) format is 4 numeric digits.
- The operator name format is 16 alphanumeric digits. Initially, the operator list is empty.

Adding an Operator

The *New Operator* screen displays if you press the **Enter** key when there is no entry.

New operator
- - - -

1. Type in the operator's 4 digit ID PIN number and press **Enter** to add it to the list.
2. Type in the operator's name using the keypad and then press **Enter** to add it.
3. Repeat steps 1 and 2 to add more operators.
4. When finished adding operators, press **Enter** while *New Operator* is blank.

Deleting an Operator

The *Delete Operator* screen displays if you press the **Enter** key when there is no entry.

Delete operator
- - - -

1. Type in the operator's 4 digit ID PIN number and press **Enter** to delete it from the list.
2. Repeat step 1 to delete more operators.
3. When finished deleting operators, press **Enter** while *Delete Operator* is blank.

CONFIGURATION (CNF) MENU

The *Configuration (CNF) Menu* allows a supervisor to set up all parameters for the keypad operation. A supervisor is the only user with access to these screens. When everything is complete in the *Configuration Menu*, the supervisor should print the settings from the keypad and put them in a safe place. Refer to "*Report (REP) Menu (External Printer)*" on page 21 or "*190 Menu (Internal Printer)*" on page 21 for information on printing reports.



1. Press the **Scroll** key until **CNF** is highlighted.
2. Press **Enter**.

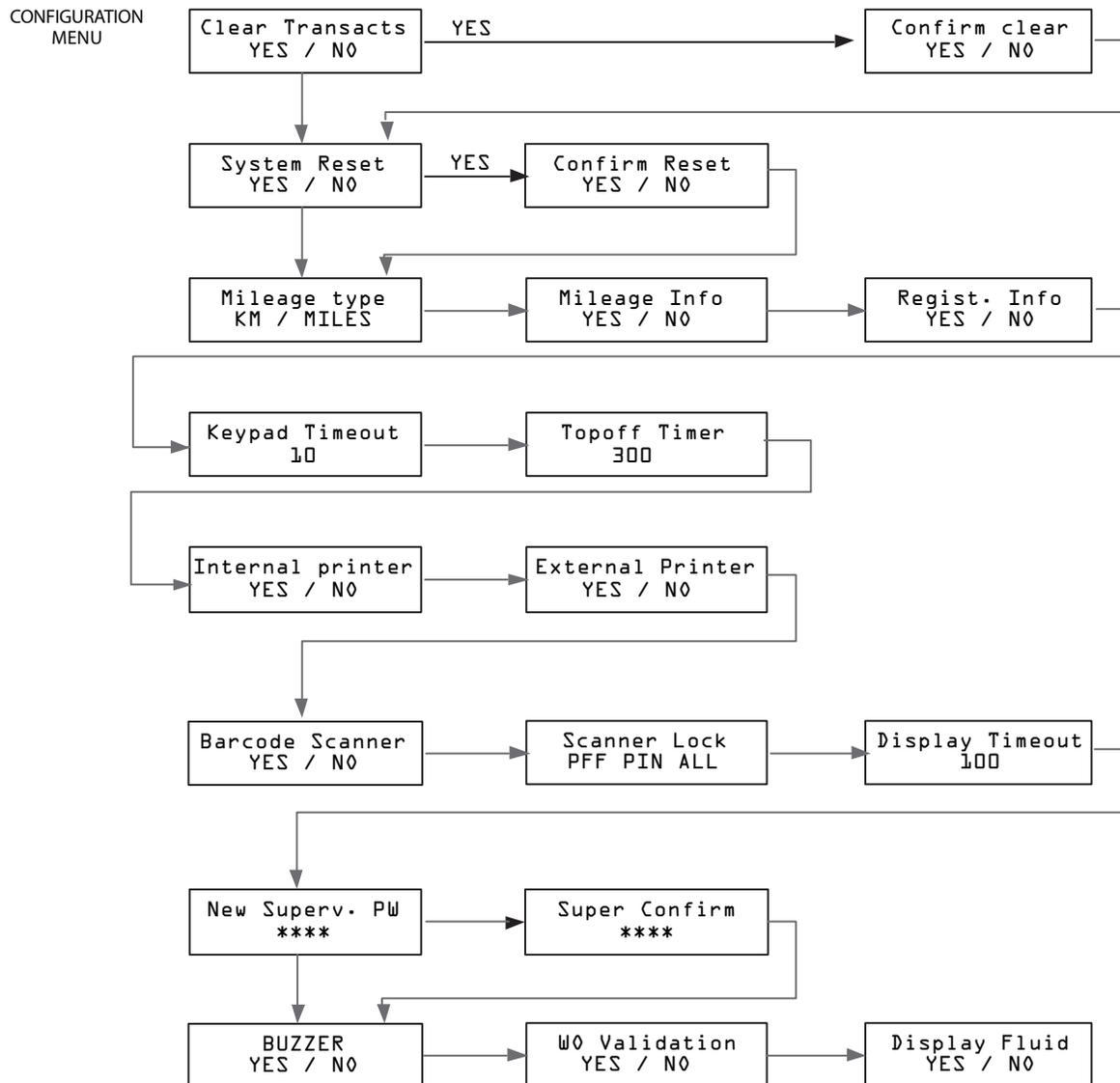


Figure 3: Configuration Menu Flowchart

Clearing Transactions from Keypad Memory

- Removes all transactions (Dispense Orders) previously recorded in memory.
- Clear transactions erases WO results data.

Clear Transacts
YES / NO

Use the **Scroll** key to move the cursor to either **YES** or **NO** and press **Enter**.

Print WO?
YES / NO

- If you select **YES** and the external printer is enabled (refer to "External Printer" on page 17), the display asks if you want to print the WO results.

Confirm Clear
YES / NO

- If you select **YES** and the external printer is *not* enabled, you are asked to confirm the clear.
- If you select **NO**, the menu advances to the *System Reset* screen.

System Reset

The *System Reset* allows a supervisor to reset all configuration parameters to default values.

System Reset
YES / NO

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.

Confirm Reset
YES / NO

- a. If you select **YES**, the keypad asks you to Confirm Reset.
 - b. If you select **NO**, the keypad advances to the *Mileage Type* screen.
2. Press **Enter**.

Mileage Type

The *Mileage Type* allows a supervisor to select how vehicle mileage is stored in the keypad. The options are KM (default) and MILES

Mileage Type
KM / MILES

1. Use the **Scroll** key to move the cursor to either **KM** or **Miles**.
2. Press **Enter** to advance to the *Mileage Info* screen.

Mileage Information

The *Mileage Information* screen selects the option to collect vehicle mileage information for each dispense order. The options are YES and NO (default)

Mileage Info
YES / NO

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
2. Press **Enter** to advance to the *Registration Information* screen.

Registration Information

The *Registration Information* screen selects the option to collect registration information for each dispense order. The options are YES and NO (default).

```

  Regist. Info
  YES / NO
  
```

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
2. Press **Enter** to advance to the *Keypad Timeout* screen.

Keypad Timeout

- Timeout parameter corresponds to the time it takes to validate after all dispense order data has been entered. If the Enter button is not pressed within the time allocated, the keypad display goes back to initial menu and the input data is erased.
- The Keypad Timeout is between zero to 255 seconds (0 = no timeout) and the default for this feature is 10 seconds.

```

  Keypad timeout
  10-
  
```

1. Press the **Backspace** key to erase the current setting.
2. Type in the new setting.
3. Press **Enter** to advance to the *Topoff Timer* screen.

Topoff Timer

- This is the time a user has to top-off a dispense after the complete preset batch has been dispensed.
- If a user has not pressed reset on an RF Meter/Hose within the topoff period, the RF Meter/Hose transmits the dispensed order quantity to the keypad and locks out the RF Meter/Hose.
- The topoff time is equal to one second for each count. For example, 600= 600 seconds or 10 minutes.
- The topoff timer can be set from zero to 15 minutes.

```

  Topoff Timer
  0--
  
```

1. Press the **Backspace** key to erase the current setting.
2. Type in the new setting.
3. Press **Enter** to advance to the *Internal Printer* screen.

Internal Printer

Use the *Internal Printer* screen to print dispense ticket information.

```

  Internal Printer
  YES / NO
  
```

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
To print the dispense ticket on the keypad printer, set this option to **YES**.
To print to a remote printer or to not print a ticket, set this option to **NO**.
2. Press **Enter** to advance to the *External Printer* screen.

External Printer

The *External Printer* (EPSON LX-300) screen is used to print the report information. This must be set to YES to print reports.

```

  External Printer
  YES / NO
  
```

NOTE: External printer must be set to **No** to select the Barcode Scanner.

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
2. Press **Enter** to accept the setting and advance to the next screen.
 - If you select **YES**, the display advances to the *New Superv. PW* screen.
 - If you select **NO**, the display advances to the *Barcode Scanner* screen.

Barcode Scanner



1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
2. Press **Enter** to accept the setting and advance to the next screen.
 - If you select **YES**, the display advances to the *Scanner Lock* screen.
 - If you select **NO**, the display advances to the *Scanner* screen.

Hardware Requirements

The barcode scanner must support an RS-232 output interface for use in the RF FMS. The barcode scanner serial output must support standard RS-232 levels of $\pm 3V$ DC to $\pm 12V$ DC. Logic level or TTL output signals are not supported by the RF FMS. The barcode scanner is connected to the RF FMS Dispense Keypad via the external printer RS-232 port with DSUB9 connector on the bottom of the Standalone Keypad. The RS-232 port on the Standalone Keypad is configured for a Device Circuit-Terminating Equipment (DCE) pin out configuration. A null modem adapter is required for barcode scanners that are also terminated with a DCE pin out configuration. The required RS-232 port settings for the barcode scanner input are as follows:

Baud Rate	9600 Baud
Data Bits	8 bits
Stop Bits	1 bit
Parity	Odd
Hardware Flow Control	None

The data output of the barcode scanner is required to be a stream of ASCII characters representing the barcode. To identify the end of transmission, the stream of ASCII characters should be terminated by a carriage return and line feed ASCII characters.

- Barcode Scanner cannot be used with Remote Printer.
- External Printer setting must be set to **NO**.

Scanner Lock



The *Scanner Lock* screen has three selectable settings: OFF, PIN, and ALL. Depending on the setting chosen, different user input screens will allow input from the keypad or barcode scanner. .

The table below outlines the screens where the keypad is active or disabled based on the three different settings for the Scanner Lock feature.

Screen	OFF	PIN	ALL
PIN Entry User	Both	Scanner	Scanner
PIN Entry Supervisor	Both	Both	Both
WO Number	Both	Both	Scanner
Meter ID	Both	Both	Scanner
Quantity	Both	Both	Scanner
AN Field	Both	Both	Scanner
N Field	Both	Both	Scanner

Pin Number Prefix Code

When PIN or ALL is selected for the Scanner Lock, you can choose an additional prefix character. The prefix character will not be displayed and cannot be entered on the keypad.

PIN Encoded
YES / NO

1. Use the **Scroll** key to move the cursor to either **YES** or **NO**.
2. Press **Enter** to move to *Encode Prefix* screen.

Encode Prefix #

3. Press the **Scroll** key until the desired prefix displays. Available characters are: # \$ % & ' () * + , - Space / ; < = > ? @ [] ^ ` { | } ! #
4. Press **Enter** to advance to the *Display Timeout* screen..

Display Timeout
100_

The Display Timeout determines how long an entry will remain on the display before it automatically advances to the next entry screen. Each count provides a 1/100 of a second delay. A value of 100 is equal to 1 second.

1. Press the **Backspace** key to erase the current setting.
2. Type in the new setting.
3. Press **Enter** to advance to the *New Supervisor Password* screen.

New Supervisor Password

- The default Supervisor Password is 0000.
- A supervisor can change this password during initial system setup.
- A maximum of one Supervisor login password is allowed.

New Superv. PW

1. Press the **Backspace** key to delete the active password.
2. Use the numeric keys to enter a new password.
3. Press **Enter**.
(Pressing **Enter** with no entry just advances to the *Buzzer* screen without changing the password.)
4. Re-enter the new password to confirm.

NOTE: If the password is lost, consult the factory for the procedure to reset it.

Buzzer

This screen provides a user with the option to have a beep on every key entry. The default is YES.

Buzzer
YES / NO

1. Use the **Scroll** key to move the cursor to **YES** or **NO**.
2. Press **Enter** to advance to the *Work Order* screen.

Work Order

The *Work Order* screen elects the option to require a work order number to be entered. The options are YES (default) and NO.

WO Validation
YES / NO

1. Use the **Scroll** key to move the cursor to **YES** or **NO**.
2. Press **Enter** to advance to the *Display Fluid* screen.

Display Fluid

The *Display Fluid* screen selects the option to display the fluid selected. The options are YES (default) and NO.

```

Display Fluid
YES / NO
    
```

1. Use the **Scroll** key to move the cursor to **YES** or **NO**.
2. Press **Enter** to move back to the main *Select* screen.

METER RESET (MET) MENU

- Only the supervisor has access to MET.
- The supervisor may delete a dispense order in the keypad queue for a single hose or for all hoses in the system.
- If the supervisor selects all RF Meters, all dispense orders in the queue are deleted.

```

Select
INI CNF MET REP
    
```

1. From the *Select* menu, use the **Scroll** key to move the cursor to **MET**.
2. Press **Enter** to advance to the *Init All Hose* screen.

```

Init All Hose
YES / NO
    
```

3. Use the **Scroll** key to move the cursor to **YES** and press **Enter** to advance to the *Start Hoses Init* screen.

```

Start Hoses Init
Press enter
    
```

4. Press **Enter** to Start Hoses Initiation. The display then returns to the *Select* menu.

If you select **NO** at step 2 above, you will be prompted for a hose number to reset.

```

Hose Init
Hose no --
    
```

1. Type in a hose number.
2. Press **Enter** to reset the hose screen.
3. Repeat steps 1 and 2 for all the hoses that require initiation.
4. Press the **Home** key to return to the *Select* screen.

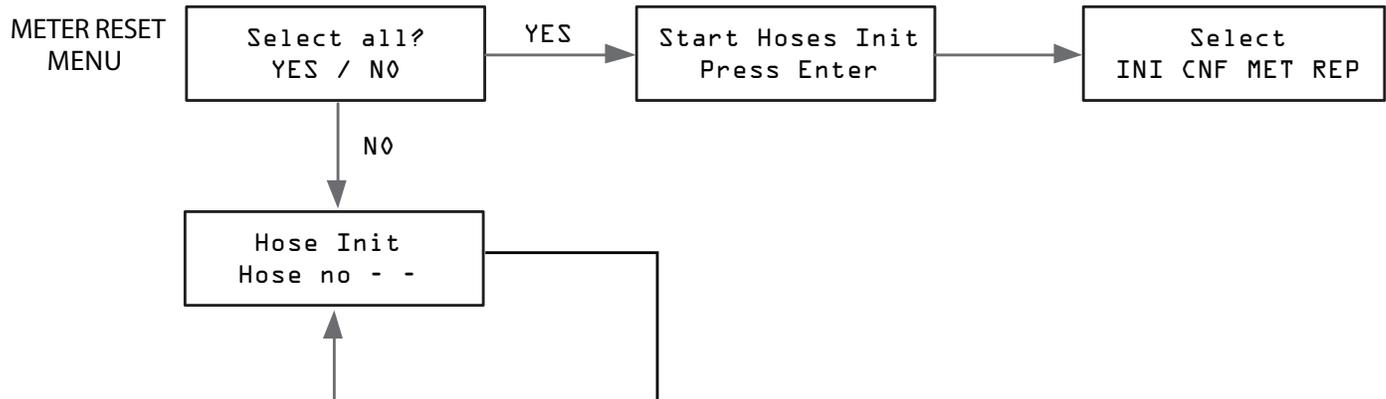


Figure 4: Meter Reset Menu Flowchart

REPORTS

When everything is complete in the *Configuration Menu*, the supervisor should print the settings from the keypad and put them in a safe place.

You can print reports:

- From an external printer via the *Report* menu.
- From the internal printer via the *190* menu.

190 Menu (Internal Printer)

The *190* menu screens allow you to print these reports from the internal keypad printer:

- Initialization (INI)
- Configuration (CNF)
- Communication (COM)
- Work Order (WO)



1. Use the **Scroll** key to move the cursor to the **190** selection.
2. Press **Enter** to display the *Select Report* screen.



3. Use the **Scroll** key to move the cursor to the report you want to print.
4. Press **Enter** to print the report.
5. Tear off the ticket from the keypad.
6. Press **Home** to go back to the default screens.

Report (REP) Menu (External Printer)

The supervisor has the opportunity to print out a variety of reports to the External Printer.

- **INI** prints all parameters associated with the system initialization
- **CNF** prints all parameters selected for a keypad configuration
- **MET** prints the status of all hoses/meters
- **WO** prints the dispense order history

To print reports the External Printer option must be set to **YES** (see "*Configuration (CNF) Menu*" on page 15).



1. Use the **Scroll** key to move the cursor to **REP**.
2. Press **Enter** to advance to the *Select Report* screen.
3. Use the **Scroll** key to select a report.
4. Press **Enter** to print the report.

Initialization Report



1. From the *Select Report* screen, use the **Scroll** key to move the cursor to **INI**.
2. Press **Enter** to print the report.

Configuration Report

```
Select report →  
INI CNF COM WO
```

1. From the *Select Report* screen, use the **Scroll** key to move the cursor to **CNF**.
2. Press **Enter** to print the report.

Communications Report

```
Select report →  
INI CNF COM WO
```

1. From the *Select Report* screen, use the **Scroll** key to move the cursor to **COM**.
2. Press **Enter** to print the report.

Completed Work Order Report

```
Select report →  
INI CNF COM WO
```

1. Use the **Scroll** key to move the cursor to **WO**.
2. Press **Enter** to advance to the *Select Report* screen.
3. Use the **Scroll** key to select a report.
4. Press **Enter** to print the report.

Completed Work Order Reports – Sorted

- **USR** prints the dispense orders by User.
- **PRO** prints the dispense orders by Fluid Type.
- **HOS** prints the dispense orders by Hose/Meter.
- **TNK** prints the dispense orders by Tank.

After printing the Work Order List Reports, the Work Order list memory is erased automatically.

User (USR) Report

```
Stat report →  
USR PRO HOS TNK
```

1. Use the Scroll key to move the cursor to INI.
2. Press **Enter** to print the report.

Fluid Type (PRO) Report

```
Stat report →  
USR PRO HOS TNK
```

1. Use the **Scroll** key to move the cursor to **PRO**.
2. Press **Enter** to print the report.

Hose/Meter (HOS) Report

```
Stat report →  
USR PRO HOS TNK
```

1. Use the **Scroll** key to move the cursor to **HOS**.
2. Press **Enter** to print the report.

Tank (TNK) Report

```
Stat report →  
USR PRO HOS TNK
```

1. Use the **Scroll** key to move the cursor to **TNK**.
2. Press **Enter** to print the report.

RADIO (RAD) MENU

The *RAD* menu screens are:

- Address (ADR) – toggles the display between the Radio Address and the Radio Prefix screens.
- Network (NWK) – allows you to select the Radio Network.
- Power (PWR) – displays the radio's transmit (Tx) output power.
- Station (STA) – displays the Radio Network Status.

```
Select
INI CNF MET REP
```

To use the internal keypad printer:

1. Use the **Scroll** key to move the cursor to **REP**.

```
Select
190 RAD . . . . .
```

2. Press **Scroll** two more times to move the cursor to the **RAD** selection.
3. Press **Enter** to display the *RAD* screen.

```
Select
ADR NWK PWR STA
```

4. Use the **Scroll** key to move the cursor to the information you want to display.
5. Press **Home** to go back to the default screens.

Radio Address/Radio Prefix

Once you select **ADR**, you can use the **Scroll** key to toggle between the *Radio Address* and the *Radio Prefix* screens.

```
Select
ADR NWK PWR STA
```

1. Use the **Scroll** key to move the cursor to **ADR**.

```
RADIO PREFIX
00:0D:6F:00
```

2. Press **Scroll** again to display the *Radio Prefix* screen.

```
RADIO ADDRESS
01:80:A5:63
```

3. Press **Enter** to display the *Radio Address* screen.
4. Press **Enter** to return to the selection screen.

Radio Network

The *Radio Network* default is zero. You need to change this setting only if you have multiple RF FMS systems. All RF Meter/Hose *Radio Network* settings must match the Standalone Keypad setting.

```
Select
ADR NWK PWR STA
```

1. Use the **Scroll** key to move the cursor to **NWK**.
2. Press **Enter** to display the *Radio Network* screen.

```
RADIO NETWORK
0 - -
```

3. Press **Enter** to return to the selection screen.

Radio Power



Select
ADR NWK **PWR** STA

1. Use the **Scroll** key to move the cursor to **PWR**.
2. Press **Enter** to display the *Radio Power Level* screen.



RADIO PWR LEVEL
20 dBm

3. Press **Enter** to return to the selection screen.

Radio Status

The Radio Status options are:

- NWK CONNECTED – The network is connected and operational.
- SERIAL ERROR – There is a radio communication error on the serial bus between the keypad and the radio.



Select
ADR NWK PWR **STA**

1. Use the **Scroll** key to move the cursor to **STA**.
2. Press **Enter** to display the *Radio Status* screen.



RADIO STATUS
NWK CONNECTED

3. Press **Enter** to return to the selection screen.

FLUID / TANK DEFINITIONS

- Maximum of 8 Tanks and Fluids.
- The Tank capacity value is formatted xxxxx.xxx.
- Fluid name can be up to 16 alphanumeric characters.

Tank Identification	Fluid Identification or Name	Tank Level	Tank Capacity
1			
2			
3			
4			
5			
6			
7			
8			

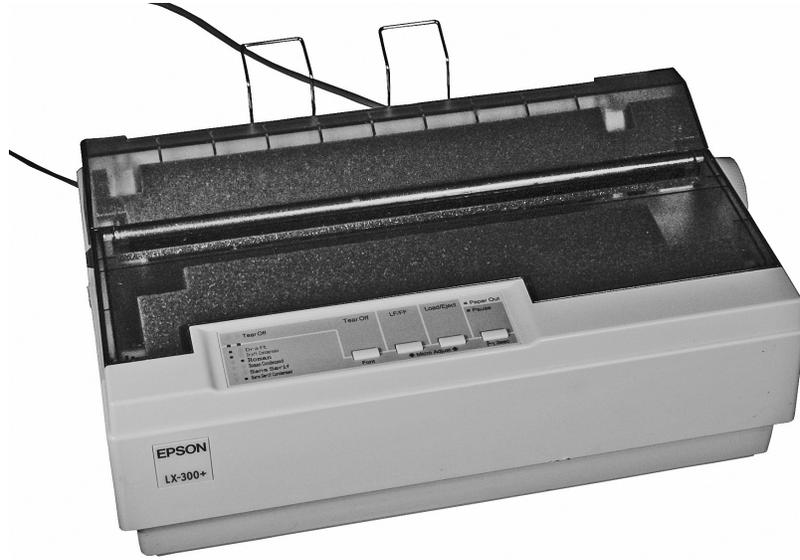
HOSE / METER DEFINITIONS

- Maximum of 30 Hose / Meters.
- Hose Prefix data format is xx.xx.xx.xx (8 digits).
- Hose Address data format is x.xxx.xxx.xxx (10 digits).

Hose / Meter Identification	Hose Prefix xx.xx.xx.xx	Hose Address x.xxx.xxx.xxx	Tank Number
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

APPENDIX A – EPSON LX-300+II PRINTER OR COMPATIBLE

An Epson LX-300+II printer, or compatible, must be used with the Standalone Keypad. Badger Meter takes no responsibility for, and does not support, any printer except an Epson LX-300+II.




```

Font LEDs
!!! Pause LED
!!!
** High speed draft **
■■■□ Off
■□■■ On

** I/F mode **
■■■□ Auto
■□■■ Parallel
■□□■ Serial

** Auto I/F wait time **
■■■□ 10 seconds
■□■■ 30 seconds

** Baud rate **
■■■□ 19200BPS
■□■■ 9600BPS
■□□■ 4800BPS
□■■■ 2400BPS
□■■□ 1200BPS
□□■■ 600BPS
■■■□ 300BPS

** Parity **
■■■□ None
■□■■ Even
■□□■ Odd
□■■■ Ignore

** Data length **
■■■□ 8bit
■□■■ 7bit

** Parallel I/F bidirectional mode **
■■■□ Off
■□■■ On

** Packet mode **
■■■□ Auto
■□■■ Off

** Character table **
■■■□ Italic
■□■■ PC 437
■□□■ PC 850
□■■■ PC 860
□■■□ PC 863
□□■■ PC 865
■■■□ PC 861
■■■□ BRASCI
■□■■ Abicomp
■□□■ Roman 8
□■■■ ISO Latin 1
□■■□ PC 858
■■■□ ISO 8859-15

** International character set for Italic table **
■■■□ Italic U.S.A.
■□■■ Italic France
■□□■ Italic Germany
□■■■ Italic U.K.
■■■□ Italic Denmark 1
■□■■ Italic Sweden
■□□■ Italic Italy
■■■□ Italic Spain 1

** Manual feed wait time **
■■■□ 1 seconds
■□■■ 1.5 seconds
■□□■ 2 seconds
□■■■ 3 seconds
    
```

- (1) Select menu by pressing the Tear Off switch.
 Following LEDs show menu selected at that time.

```

Font LEDs
::: Pause LED
:::
::: ** Menu **
■■■□ Page length for tractor
■■■□ Skip over perforation
■■■□ Auto tear Off
□■■■ Auto line feed
□■■■ Print direction
□■■■ Software
■■■□ 0 slash
■■■□ High speed draft
■■■□ I/F mode
□■■■ Auto I/F wait time
□■■■ Baud rate
□■■■ Parity
□■■■ Data length
□■■■ Parallel I/F bidirectional mode
□■■■ Packet mode
□■■■ Character table
□■■■ International character set for Italic table
□■■■ Manual feed wait time
□■■■ Buzzer
□■■■ Auto CR (IBM 2380 Plus)
□■■■ IBM character table
    
```

- (2) Change setting value pressing the LF/FF switch.
 Following LEDs show setting value selected at that time.

- (3) Repeat (1) and (2) according to following guide printing.

<pre> Font LEDs ::: Pause LED ::: ::: ** Page length for tractor ** ■■■□ 3 inch ■■■□ 3.5 inch ■■■□ 4 inch □■■■ 5.5 inch □■■■ 6 inch □■■■ 7 inch ■■■□ 8 inch ** Skip over perforation ** ■■■□ Off ■■■□ On ** Auto tear Off ** ■■■□ Off ■■■□ On ** Auto line feed ** ■■■□ Off ■■■□ On ** Print direction ** ■■■□ Bi-D ■■■□ Uni-D ** Software ** ■■■□ ESC/F ■■■□ IBM 2380 Plus ** 0 slash ** ■■■□ 0 ■■■□ Ø </pre>	<pre> Font LEDs ::: Pause LED ::: ■■■□ 8.5 inch ■■■□ 11 inch □■■■ 70/6 inch □■■■ 12 inch □■■■ 14 inch □■■■ 17 inch □■■■ Others </pre>
--	---

Current settings	
Page length for tractor	5.5 inch
Skip over perforation	On
Auto tear Off	On
Auto line feed	Off
Print direction	Bi-D
Software	ESC/P
0 slash	Ø
High speed draft	On
I/F mode	Serial
Auto I/F wait time	30 seconds
Baud rate	9600BPS
Parity	Odd
Data length	8bit
Parallel I/F bidirectional mode	On
Packet mode	Auto
Character table	PC 437
International character set for Italic table	Italic U.S.A.
Manual feed wait time	1.5 seconds
Buzzer	On
Auto CR (IBM 2380 Plus)	Off
IBM character table	Table2

If you want to change any setting, press the Tear Off switch.
 If you want not to change any settings, turn off the printer.

Font LEDs	Pause LED	
** Buzzer **		
■■■□		Off
■□■■		On
** Auto CR (IBM 2380 Plus) **		
■■■□		Off
■□■■		On
** IBM character table **		
■■■□		Table2
■□■■		Table1

(4) Turn off the printer to finish setting.

Changing LX-300+II Settings

1. Go to Google.com.
2. In Google Search, type in LX-300+II.
3. Click on Epson LX-300+II, Overview - Technical Support - Epson America, Inc.
4. On the screen LX-300II Impact Printer, click on Documents & Manuals.
5. On the next screen click on Product information Guide.
6. Go to page 14 (Default Settings).
7. On the right side of the page is a segment titled "Changing Default Settings". Follow the instructions to change settings.

Control. Manage. Optimize.

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www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400
México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882
Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0
Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503
Czech Republic | Badger Meter Czech Republic s.r.o. | Mařikova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411
Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01
Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836
China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412