

Tech Notes:



MDE-3860AH Programming Quick Reference Guide March 2019

Software Versions

This card is intended for Encore® and Eclipse® series units. For more details on programming and errors, refer to *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

Security/PIN Code Entry

It is strongly recommended that the appropriate station authority change/reset the security codes to enhance security. The security codes are default factory settings.

Level 1: 2222	Level 2: 1503	Level 3: 1309	Level 4: 0128
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Programming Steps

(In standalone mode, programming can be entered at any time by going to step 3.)

1. Authorize pump from POS or FCC.
2. Send PUMP STOP from POS or FCC (repeat step 2 three times).
Note: Once unlocked, the unit will remain unlocked for five minutes to allow access.
3. Press **F1**.
4. Enter PIN code for higher-level programming as required.
5. Toggle the Weights and Measures (W&M) switch to ON position, if required.
6. Program the unit as required.
7. When finished programming, toggle W&M switch to OFF position.
8. Press **F2** to exit programming.

From Level 1:

Command Code 1: Software Information

(Only available for V03.0.39 or later.)

Function Code 1: View Pump Software Version

Function Code 2: View Pump Software CRC

Command Code 20: Set PPU

(Only available in standalone for V02.9.06 or later.)

1. Select Side 1, 2, or 3 (both sides).
2. Select Grade.
3. Select Price Level.
4. Enter new PPU.

Command Code 22: Preset Types and Values

Note: Use of this programming mode is affected by the default setting of Function Code 1 in Command Code 91, and any mismatch will cause improper operation or an Error Code will be displayed.

Keypad Type	Function Code	Option Value
1 = 5-button 2 = Incremental 3 = PPP	1 = Set Preset Type <i>Note: 5-button and Incremental Keypad only.</i>	1 = Money* 2 = Volume
	2 = Set Preset Key Values <i>Note: 5-button and Incremental Keypad only.</i>	1 = Button 1 2 = Button 2 3 = Button 3 4 = Button 4 5 = Button 5
	3 = PPP Keypad Mode (Option 2: Only available for V01.8.40 or later.) (Option 3/4: Only available for V03.0.38 or later.)	0 = OFF 1 = ON*, P1/P2 Enabled 2 = ON, P1/P2 Disabled 3 = ON, P1/P2 Volume Totals 4 = ON, P1 Money Totals, P2 Volume Totals
	4 = Volume Rounding Digit 5 = Money Rounding Digit <i>Note: X indicates digit for transaction rounding. (Only available for V01.8.20 or later.)</i>	0 = Disabled/Default* 1 = xxxxXx 2 = xxxXxx 3 = xxXxxx 4 = xXxxxx 5 = Xxxxxx
	6 = PPP Volume First Digit Entry Point 7 = PPP Money First Digit Entry Point <i>Note: X indicates first digit on PPP key press. (Only available for V03.0.38 or later.)</i>	

Command Code 24: Operations Mode

- 1 = Two-wire*
- 2 = Standalone

Command Code 25: Volume Allocation

1. Select Grade.
2. Enter Allocation Volume Amount.
(Default = 0, No Volume Allocation)

*Default

†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.

††This requires security switch when set to Mexico or OIML Security.

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Command Code 27: Review ATC

Function Code	Option Function
2	Display Volume Correction Factor
3	Display Fuel Density
4	Display Current Fuel Temperature
5	Display Gross Volume Totals
6	Display Software Version
7	Real-time Transaction <i>Note: No longer available after V01.8.30.</i>
8	Engineering Audit

Command Code 28: Change First Level PIN

1 = 1st pass
2 = 2nd pass
3 = New PIN accepted
0 = New PIN not accepted

Command Code 31: Money Allocation

(Only available for V03.0.32 or later.)
1. Select Grade.
2. Enter Allocation Money Amount.
(Default=0, No Money Allocation)

From Level 2:

Command Code 40: Two-wire ID (Pump Number)

1. Select side 1 (A) or 2 (B).
2. Enter ID 1 - 16: Side 1 = 7; Side 2 = 11*.

Command Code 41†: PPU Display Options

(All listed options available after V03.1.01 or later.)

Level Code	L1 Display(s)	L2 Display(s)
1*	From POS/FCC	N/A
2	Price Level 1	Price Level 2
3	Price Level 2	Price Level 1
4	N/A	From POS/FCC
5	Price Level 1	N/A
6	N/A	Price Level 1
7	Price Level 2	N/A
8	N/A	Price Level 2

Command Code 42†: Decimal Point Options

Function Code	Display Option
1	Main Display Money
2	Main Display Volume
3	PPU for Calculations
4	PPU for Display

Options: Decimal Point

1 = X
2 = X.X
3 = X.XX (Default: Function Code 1)
4 = X.XXX (Default: Function Code 2 - 4)

Command Code 43: PPU Blinking Options

(Options as described available for V03.2.12 or later.)
1 = Enabled (see [Note](#))
2 = Disabled
3 = Enabled - PPU Backlight as Grade Indicator
Note: Command Code 96 controls the function of this option.
When configured for Encore 500 S/700 S, the enabled setting controls the Grade Select Indicators. When configured for Encore 500, the enabled feature uses the PPU price to indicate grades. The PPU backlight grade indicator is available only when Door Node 5 is in use.

Command Code 45: Segment (Lamp) Test Time

Options = 3* to 9 Seconds

Command Code 46††: Comma/Decimal Point

1 = Decimal Point*
2 = Comma

Command Code 47: Reported Money Size

(Only available before V02.9.06.)
1 = 5 Digit Money*
2 = 6 Digit Money

Command Code 47: Two-wire Options

(Only available for V02.9.06 or later.)

Function Code 1†: Reported Money Size

1 = 5 Digit Money*
2 = 6 Digit Money
3 = 7 Digit Money (Extended Two-wire)
4 = 8 Digit Money (Extended Two-wire)

Function Code 2†: Reported Volume Format

1 = Transaction Volume as Display Volume
2 = Transaction Volume as XXX.XXX*
Note: 5 and 6 Digit Money Mode only.

Function Code 3: VRC States in Transaction Data

1 = Disabled*
2 = Enabled
Note: Used with VMC/VAPORIX only.

Function Code 4: Status Response Format

1 = Standard Status Response*
2 = Extended Status Response

Function Code 5: Baud Rate

1 = 5787*
2 = 1200
3 = 2400
4 = 4800
5 = 9600
6 = 19200
7 = 38400
8 = 57600

Function Code 6†: Lost Communication Function

1 = Suspend Transaction*
2 = Continue Transaction

Function Code 7†: Real-time Data Format

1 = Real-time Money*
2 = Real-time Volume
3 = Real-time All Data
4 = Real-time Money/Alternate Real-time Volume

Function Code 8: Preset Method Without Pump Stop

1 = One Preset Allowed*
2 = Multiple Presets Allowed

Function Code 9†: Remote Preset Display

(Only available for V03.0.38 or later.)
1 = Disabled*
2 = Enabled

Function Code 10†: Special Preset Function

(Only available for V03.1.01 or later.)
1 = Normal Preset Operation*
2 = Special Preset Method 1
3 = Special Preset Method 2

Function Code 11: Pump Totals Format

(Only available for V03.2.34 or later.)
1 = USA Pump Totals Format*
2 = Europe Pump Totals Format
Note: This option only applies to units with less than 3 grades.

Command Code 48††: Zero Previous Transaction

(All listed options available after V01.8.40 or later.)
1 = After Segment (Lamp) Test*
2 = Before Segment (Lamp) Test (New Jersey)
3 = Before Segment (Lamp) Test and After Preset Keypad Use (Chile/Uruguay)

*Default

†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.

††This requires security switch when set to Mexico or OIML Security.

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Command Code 46††: Comma/Decimal Point		
1 = Decimal Point*		
2 = Comma		
Command Code 47: Reported Money Size		
<i>(Only available before V02.9.06.)</i>		
1 = 5 Digit Money*		
2 = 6 Digit Money		
Command Code 47: Two-wire Options		
<i>(Only available for V02.9.06 or later.)</i>		
Function Code 1†: Reported Money Size		
1 = 5 Digit Money*		
2 = 6 Digit Money		
3 = 7 Digit Money (Extended Two-wire)		
4 = 8 Digit Money (Extended Two-wire)		
Function Code 2†: Reported Volume Format		
1 = Transaction Volume as Display Volume		
2 = Transaction Volume as XXX.XXX*		
<i>Note: 5 and 6 Digit Money Mode only.</i>		
Function Code 3: VRC States in Transaction Data		
1 = Disabled*		
2 = Enabled		
<i>Note: Used with VMC/VAPORIX only.</i>		
Function Code 4: Status Response Format		
1 = Standard Status Response*		
2 = Extended Status Response		
Function Code 5: Baud Rate		
1 = 5787*		
2 = 1200		
3 = 2400		
4 = 4800		
5 = 9600		
6 = 19200		
7 = 38400		
8 = 57600		
Function Code 6†: Lost Communication Function		
1 = Suspend Transaction*		
2 = Continue Transaction		
Function Code 7†: Real-time Data Format		
1 = Real-time Money*		
2 = Real-time Volume		
3 = Real-time All Data		
4 = Real-time Money/Alternate Real-time Volume		
Function Code 8: Preset Method Without Pump Stop		
1 = One Preset Allowed*		
2 = Multiple Presets Allowed		
Function Code 9†: Remote Preset Display		
<i>(Only available for V03.0.38 or later.)</i>		
1 = Disabled*		
2 = Enabled		
Function Code 10†: Special Preset Function		
<i>(Only available for V03.1.01 or later.)</i>		
1 = Normal Preset Operation*		
2 = Special Preset Method 1		
3 = Special Preset Method 2		
Function Code 11: Pump Totals Format		
<i>(Only available for V03.2.34 or later.)</i>		
1 = USA Pump Totals Format*		
2 = Europe Pump Totals Format		
<i>Note: This option only applies to units with less than 3 grades.</i>		
Command Code 48††: Zero Previous Transaction		
<i>(All listed options available after V01.8.40 or later.)</i>		
1 = After Segment (Lamp) Test*		
2 = Before Segment (Lamp) Test (New Jersey)		
3 = Before Segment (Lamp) Test and After Preset Keypad Use (Chile/Uruguay)		

Code	Description	Corrective Action
5092	ATC Node detected, but option not set	Program the ATC option in Command Code 91, Function Code 6.
5098	ATC T-meter not connected	See Note .
5101	ATC T-meter pulse train not detected	See Note .
5111	Door node communication failure	See Note .
5115	Door node download error	Check door node cabling, connections and address setting, and restart the dispenser.
5116	Door node download incomplete	Check door node cabling, connections and address setting, and restart the dispenser.
5118	PPU communication failure	See Note .
5120	PPU pump handle not detected	See Note .
5121	PPU grade select button not detected	See Note .
5131	PPP keypad option set, but not present	See Note .
5137	Push-to-stop option set, but not detected	Check keypad hardware and cable.
5139	Push-to-stop button stuck	Check keypad hardware and cable. Disconnect keypad from door node if installed but unused.
5140	Push-to-start option set, but not detected	Check keypad hardware and cable.
5142	Push-to-start button stuck	Check keypad hardware and cable. Disconnect keypad from door node if installed but unused.
5150	PPU(s) not addressed correctly	Power off the unit, set jumpers/DIP switch correctly and power on the unit. For +1 unit types OPT jumper (JP6) should be installed on Door Node(s).
5151	Door Node not addressed correctly	Power off the unit, set jumpers correctly, and power on the unit.
5174	Totalizer node communication failure	See Note .
5181	Totalizer not present	See Note .
5300	PPU value changed	Information in Event Log only. Indicates that a PPU value has been changed from a POS or FCC.
5378	Door node configuration not received	See Note .
5413	Zero PPU set, but not allowed	See Note .
5414	PPU type mismatch	Ensure all same type PPUs are connected to one door node and restart the dispenser.
5416	Door node type changed	See Note .
5417	Door Node(s) 5 firmware is not compatible with PCN firmware	Update Door Node(s) 5 to V02.0.59 or later firmware version.
5600	Fuel density not programmed	Program Fuel Density in Command Code 75.
Code	Description	Corrective Action
5602	Door node software updated, security switch NOT ON	Open security switch and restart the dispenser.
5603	ATC node software updated, security switch NOT ON	Open security switch and restart the dispenser.
5606	ATC node communication failure	See Note .
5607	Door node communication failure	See Note .
5721	Door Opened	Refer to upper door sensor configuration in Command Code 91.
5722	Door Closed	Refer to upper door sensor configuration in Command Code 91.
5723	Hydraulics Panel Opened	Refer to lower panel sensor configuration in Command Code 91.
5724	Hydraulics Panel Closed	Refer to lower panel sensor configuration in Command Code 91.
6031	Hose Leak Test Failed	See Note .
6042	VMC/VAPORIX alarm Side A	See Note .
6043	VMC/VAPORIX alarm Side B	See Note .
6044	VAPORIX/VMC option set, but board not detected	See Note .
6047	VAPORIX/VMC board detected, but option not set	See Note .
8025	Encrypted pulser: ID mismatch	Encrypted pulsers are required to be redetected. Open security switch and reconfigure encrypted pulsers with Command Code 84.
8040	Encrypted pulser: Missing clock and data	Diagnose pulser hardware and cabling and reboot the dispenser.
8041	Encrypted pulser: Missing data	Diagnose pulser hardware and cabling and reboot the dispenser.
8042	Encrypted pulser: Missing clock	Diagnose pulser hardware and cabling and reboot the dispenser.
8044	Encrypted pulser: Invalid data	Diagnose pulser hardware and cabling and reboot the dispenser.
8046	Encrypted pulser: Lift off detection	Diagnose pulser hardware and cabling. Press F1, enter a valid PIN code, and press F2 to start the dispenser.
8050	Encrypted pulser: Sensor failure/Improper magnet field	Diagnose pulser hardware and cabling. Press F1, enter a valid PIN code, and press F2 to start the dispenser.
8051	Encrypted pulser: Lid or Cover removed	Diagnose pulser hardware and cabling. Press F1, enter a valid PIN code, and press F2 to restart the dispenser.
Note: For complete list of error codes, refer to the following documents: - MDE-3804 Encore and Eclipse Start-up/Service Manual. - "Encore 500 Troubleshooting Guide" distributed with Laptop Tool.		

*Default
†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.
††This requires security switch when set to Mexico or OIML Security.

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Function Code 43[†]: Hose Leak Test
(Only available for V03.2.35 or later.)
1 = Disabled*
2 = Reserved
3 = Reserved
4 = Gilbarco® Leak Test
When enabled:
Select Number of Occurrences for Error
Select Leak Detect Volume

Function Code 45: Special Option for Door Security
(Only available for V03.3.21 or later.)
1 = Disabled*
2 = Enabled
Note: Allowed only for Persistent Door Switch Reporting options.

Command Code 92[†]: Set Side Exists
1 = Both Sides Exist*
2 = Side 1 Only
3 = Side 2 Only

Command Code 94[†]: Zero PPU Option
1 = Disabled*
2 = Enabled

Command Code 96[†]: Feature Set
(Option 7 only available for V03.0.39 or later.)
1 = Encore 500/Eclipse (Blinking PPU)
5 = Encore 500 S (Blinking Grade Indicator)
7 = Encore 700 S (Blinking Grade Indicator)
Command Code 98[†]: Inlet Assignment Per Grade for Universal Blender
(V04.0.7 or later only). No default; must program for Universal Blender.

1 -6 = Grade Selection; Index selection as per list below.

Index Number	Product 1 Inlet Position	Product 2 Inlet Position
1	1(W)	2(X)
2	1(W)	3(Y)
3	2(X)	3(Y)
4!	1(W)	4(Z)
5!	2(X)	4(Z)
6!	3(Y)	4(Z)

Common Error Codes

Code	Description	Corrective Action
E1	Database corrupted	See Note .
E2	Flash corrupted. Press F1/F2 to clear.	See Note .
E3	LON configuration error	See Note .
E4	One or more tasks not started	See Note .
E5	Coldstart was forced	Information only, remove coldstart jumper and restart.
E6	Redundant data storage error	See Note .
E10	Software updated, security switch NOT ON	See Note .
E11	Software DSS changed, security switch NOT ON	See Note .
E12	Restore calibration from door node	See Note .
20	Pulser disconnected/error	Refer to <i>Service Bulletin 2464</i> , <i>Service Bulletin 2540</i> , and <i>Service Bulletin 2551</i> .
24	Volume unit type not set	Program Volume Unit Type in Command Code 71.
26	Pump not calibrated	Follow calibration procedure in <i>MDE-4281 Calibration Quick Reference Card Encore 300/500/500 S/700 S and Eclipse Units</i> .
29	Valve not open	See Note .

Code	Description	Corrective Action
30	VaporVac power supply or cabling failure	See Note .
31	DEF dispenser lines frozen	Information only. The dispenser will require a reboot to clear the error when DEF thaws. Refer to <i>Service Bulletin 2513</i> and <i>Service Bulletin 2532</i> .
33	Push-to-stop activated	See Note .
42	Fill/Authorization time-out	See Note .
44	Pump handle on at power up	Information only. Will clear when nozzle is replaced after power up.
46	Minimum preset	Information only. Will clear when nozzle is replaced.
50	Two-wire communications offline	Diagnose the two-wire cabling to the dispenser and POS or FCC configurations.
99	Running database check failure	See Note .
100	Running flash check failure	See Note .
4307	Blends not programmed	Program Blend Ratios in Command Code 72.
4311	Low Pure Product, Low Flow Rate	See Note .
4312	High Pure Product, Low Flow Rate	See Note .
4313	Low Pure Product, No Flow	See Note .
4314	High Pure Product, No Flow	See Note .
4315	Low Pure Product, but High is Flowing	See Note .
4316	High Pure Product, but Lot is flowing	See Note .
4320	Valve configured for, but not responding	See Note .
4321	Valve stuck	See Note .
4322	Valve board not responding	Check connections to valve board and all valves and restart.
4342	NF Model - CC 98 is not programmed	Set the Command Code 98 for all possible blend grades.
5047	Pulser reverse flow	Diagnose meter, valves, pulser, and meter check valve. Refer to <i>Service Bulletin 2551</i> .
5049	Unauthorized flow detected	Diagnose entire system for tampering, and that pulsers and valves are connected to the correct positions.
5050	Standard pulser sequence error	Diagnose pulser connections, cabling, and PCN for connection problems. Refer to <i>Service Bulletin 2551</i> .
5056	Security switch ON	Close the Security Switch and restart the dispenser.
5070	Vapor Recovery option set, but board not detected	See Note .
5071	Vapor Recovery board detected, but option not set	Program Vapor Recovery in Command Code 91, FC 3.
5074	VaporVac motor not responding	See Note .
5091	ATC option set, but ATC node not detected	See Note .

*Default
†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.
††This requires security switch when set to Mexico or OIML Security.
!Only for 2 out of 4 product blending.

Command Code 49: STP/Motor Controls
Function Code 1: STP/Motor Prestart
1 = Disabled*
2 = Enabled

Function Code 2: STP/Motor Control
1 = Turn on ONLY selected STP/Motor*
2 = Turn on ALL STPs/Motors

Function Code 3: STP/Motor Mapping
(Only available for V01.8.40 or later for Unit Type 1, V03.1.01 or later for Unit Type 2, v03.3.01 for Super-Hi™ models)

Unit Type 1 (Ultra-Hi™):

Value	Side 1 Grade 1	Side 2 Grade 1
1* (Standard Mapping)	Motor 1	Motor 1
2 (Special Mapping)	Motor 1	Motor 2

Unit Type 2 (Ultra-Hi™):

Value	Side 1 Grade 1	Side 1 Grade 2	Side 2 Grade 1	Side 2 Grade 2
1* (Standard Mapping)	Motor 1	Motor 2	Motor 1	Motor 2
2 (Special Mapping)	Motor 1	Motor 2	Motor 3	Motor 2

Super-Hi Models:

Value	Side 1 Meter 1	Side 1 Meter 2	Side 2 Meter 1	Side 2 Meter 2
1* (Standard Mapping)	Motor 1	Motor 1	Motor 1	Motor 1
2 (Special Mapping)	Motor 1	Motor 2	Motor 1	Motor 2

Command Code 51: Pump Beeper
1 = Enabled*
2 = Disabled

Command Code 52: VaporVac® Alarm
1 = Enabled*
2 = Disabled

Command Code 53: Set Time-outs

Function Code	Range (Seconds)	Time-out Value
1*	0-999	Beeper Time-out (Default = 0)
2	0-999	Pre-select Time-out (Default = 15)
3	0-999	Dispenser Time-out (Default = 0) <i>Note: Default = 90, when set to OIML protection.</i>
4	0-999	Initial Dispenser Time-out (Default = 0)
5	0-999	Initial Beeper Timeout (Default = 0)
6	0-999	Two-wire No Communications Time-out (Default = 30) <i>Note: Refer to "Function Code 6[†]: Lost Communication Function" on page 2 of Command Code 47.</i>
7	0-999	Display Backlight Time-out (Default = 0)
8	0-2500	Maximum Authorize Timeout (Default = 0), Entered in increments of 10
9	0-2500	Maximum Dispense Timeout (Default = 0), Entered in increments of 10
10	0-9990 (Minutes)	Disable the Dispenser Timeout (Default = 0)
11	0-9990	Stop Door Security Alarms Timeout (Default = 0)

Command Code 54: Slowdown Volume
Gallons: 0.20-9.99 (Default = 0.20)
Note: Set slowdown volume to 0.80 minimum for Ultra-Hi units.
Liters: 0.60-9.99 (Default = 0.80)
Note: Set slowdown volume to 3.00 minimum for Ultra-Hi units.

*Default
†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.
††This requires security switch when set to Mexico or OIML Security.

Command Code 55[†]: Hose Pressurization
Note: This feature is not normally programmable in US gallons or Hawaii gallons. These configurations are normally enabled after 10 minutes.
1 = Disabled*
2 = Enabled After 10 Minutes
3 = Enabled After 30 Minutes
4 = Enabled After 1 Hour
5 = Enabled After 2 Hours
6 = Enabled After 4 Hours
7 = Enabled After 8 Hours

Command Code 56: Stop Button Control
1 = Stops One Side ONLY*
2 = Stops Both Sides

Command Code 58: Steering Valve to Nozzle Assignment
1. Select Side 1 or 2.
2. Select Steering Valve Position (1, 2, or 3) to match the pump handle position shown in PPU.
3. Repeat for both sides and all valves.
Note: Only valid for Unit Type 8, 9, 24, and 25.

Command Code 59: Special Operations
(Only available for V03.2.12 or later.)
1 = Reserved
2 = Reset/Clear Event Log
3 = Reboot

Command Code 60[†]: Date/Time Functions
Function Code 1: Set Time (00.00-24.00)
Function Code 2: Set Date (MMDDYY)
Function Code 3: Daylight Savings Time
(Only available for V03.0.38 or later.)
1 = Disabled*
2 = United States
3 = Canada
4 = Mexico

Command Code 62: Two-wire Special Grade Remapping
Note: Unavailable for other unit types.

Value	2+0, 2+1 Blender Mapping	3+0, 3+1 Blender Mapping	2+2 Blender Mapping	3+2 Blender Mapping
1*	1-2 (6)*	1-2-3 (6)*	1-2-3-6*	1-2-3-4-6*
2	1-3 (6)	1-3-5 (6)	1-2-3-4	1-2-3-4-5

From Level 3:

Command Code 71[†]: Volume Unit Type
0 = None*
1 = US Gallons
2 = Liters
3 = Imperial (UK) Gallons
4 = Reserved
5 = Hawaii Gallons

Command Code 72[†]: Blend Ratios
1 - 6 = Grade Selection
0 -100% = Blend of LOW product
Notes: 1) No Default - MUST be programmed for blenders.
2) For Ethanol Blenders values 1, 2, 3, 4, 96, 97, 98, and 99 are not allowed.

Command Code 73[†]: Set/Display Money Totals
1. Select Side/Select Grade (1 - 6).
2. Set Total (*only when total is less than 250 gallons or liters*).

Command Code 74[†]: Set/Display Volume Totals
1. Select Side/Select Grade (1 - 6).
(1 - 8 or 1 - 10 for Blenders based on Unit Type)
2. Set Total (*only when total is less than 250 gallons or liters*).

Command Code 75†: Fuel Density

Note: Fuel density is used to set ATC and Vapor Recovery function as mentioned in the following table:

Value	Type	Vapor Recovery	ATC
0	Not Set*	No	No
1	Gasoline (730)	Yes	Yes
2	Diesel (840)	No	Yes
3	DEF/Adblue®/ARLA (1087)	No	No
4	Ethanol (785)	Yes	No

Notes: 1) For V02.9.27 or later:

- Select Side.
- Select Product.
- Select Value.

2) For V02.9.26 or earlier:

- Select Meter Number.
- Select Value.

Meter Layout Chart

Product Code	Meter Number (Side 1, 2)
1	1, 2
2	5, 6
3	4, 3
4	8, 7

Command Code 76†: Display Rounding Method

0 = Round to nearest 0.001*

1 = Round to nearest 0.005 (Kuwait)

Note: This option requires the Main Display Money decimal position to be set to XXX.XXX.

Command Code 77: Change PIN

Change Level 1, 2, 3, and 4 PIN Codes

Note: PIN Code MUST be entered twice. Refer to "Command Code 28: Change First Level PIN" on page 2.

Function Code	Change PIN Code
1*	Level 1
2	Level 2
3	Level 3
4	Level 4

Command Code 78†: Electronic Calibration

Note: No longer supported for V01.7.58 and later. Refer to MDE-3804 Encore and Eclipse Start-up/Service Manual and MDE-4281 Calibration Quick Reference Card Encore 300/500/500 S/700 S and Eclipse Units.

Command Code 80†: Maximum Flow Rate

Note: Flow Control must be set to 98 for Ultra-Hi units.

1. Select Side 1 or 2.

2. Select Grade.

Options: 1 - 98 volume units per minute
(Default = 10 gallons or 40 liters per minute)

Command Code 82†: Calibration Can Size

Refer to MDE-4281 Calibration Quick Reference Card Encore 300/500/500 S/700 S and Eclipse Units.
(Default = 5 gallons or 20 liters)

Command Code 83†: Alternate Fuel Mode

(Only available before V03.1.01.)

1 = Not Programmed/Standard Fuels*

2 = Third-party Fuel Mode

3 = Diesel Exhaust Fluid (DEF/Adblue/ARLA)

4 = Diesel + Diesel Exhaust Fluid (DEF/Adblue/ARLA)

5 = Third-party CNG/LNG (GGE to Pounds)

6 = Third-party CNG/LNG (GGE to Kilograms)

7 = Third-party CNG/LNG (GLE to Pounds)

8 = Third-party CNG/LNG (GLE to Kilograms)

9 = Third-party LPG with Proportional Valve

Command Code 83†: Alternate and Third-party Fuel Modes

(Only available for V03.1.01 or later.)

Function Code 1†: Set Alternate Fuel Hydraulics Setup

1 = Not Programmed/Standard Fuels*

2 = Third-party Fuels Two-stage Valve Control

3 = Diesel Exhaust Fluid (DEF/Adblue/ARLA)

4 = Diesel + Diesel Exhaust Fluid (DEF/Adblue/ARLA)

5 = Reserved

6 = Reserved

7 = Reserved

8 = Reserved

9 = Third-party Fuels with Proportional Valve Control

Function Code 2†: Set Alternative Fuel Type

1 = Standard Fuel, DEF, LPG, or Hydrogen

2 = CNG

3 = LNG

Note: Changing the Alternative Fuel Type will set the Alternative Fuel Equivalency to Standard.

Function Code 3†: Alternative Fuel Equivalency

1 = Standard/No Equivalency

2 = Reserved

3 = GGE to Pounds

4 = GGE to Kilograms

5 = GLE to Pounds

6 = GLE to Kilograms

7 = DGE to Pounds

8 = DGE to Kilograms

9 = DLE to Pounds

10 = DLE to Kilograms

Note: Equivalency cannot be changed unless Alternative Fuel Type is CNG or LNG. GGE and GLE are only available for CNG.

From Level 4:**Command Code 84†: Pulsar Type**

Note: Encrypted pulsers require V02.9.42 or later.

0 = Standard Pulsar*

1 = Encrypted Pulsar***

2 = Encrypted Pulsar for Ultra-Hi

Warning: Once set for Encrypted Pulsar, the pulser type cannot be set back to Standard Pulsar.

Command Code 90†: Unit Type

1* = 1 Grade, 1 Hose MPD® (also Ultra-Hi)

2 = 2 Grade, 2 Hose MPD (also Ultra-Hi)

3 = 3 Grade, 3 Hose MPD (also Ultra-Hi)

4 = 4 Grade, 4 Hose MPD

5 = 2 Grade, 1 Hose MPD

6 = 3 Grade, 1 Hose MPD

7 = 3 Grade, 1 Hose + 1 MPD

8 = 3 Grade, 3 Hose Blender

9 = 3 Grade, 3 Hose Blender + 1

12 = 2 Grade, 1 Hose Blender

13 = 3 Grade, 1 Hose Blender

14 = 4 Grade, 1 Hose Blender

15 = 5 Grade, 1 Hose Blender

16 = 2 Grade, 1 Hose Blender + 1

17 = 3 Grade, 1 Hose Blender + 1

18 = 4 Grade, 1 Hose Blender + 1

19 = 5 Grade, 1 Hose Blender + 1

20 = 2 Grade, 1 Hose Blender + 2 Grade, 1 Hose Blender

21 = 3 Grade, 1 Hose Blender + 2 Grade, 1 Hose Blender

22 = 2 Grade, 1 Hose Blender + 1 + 1

23 = 3 Grade, 1 Hose Blender + 1 + 1

24 = 2 Grade, 1 Hose Blender + 2 Grade, 2 Hose Blender

25 = 3 Grade, 1 Hose Blender + 2 Grade, 2 Hose Blender

26 = Super-Hi

27 = Super-Hi (Super-Hi and Standard Speed Nozzles)

60 = ~Multi-Hose Hybrid Blender 5 Grade (Standard)

61 = ~Multi-Hose Hybrid Blender 4 Grade +1 (Standard)

62 = ~Multi-Hose Hybrid Blender 5 Grade (Alternate)

63 = ~Multi-Hose Hybrid Blender 4 Grade +1 (Alternate)

64 - 69 Multi-Hose Universal Blenders (NF Series)

64 = (NF0) 3 Grades + 2 Grades

65 = (NF1) 3 Grades + 1 Grade + 1 Grade

66 = (NF2/NF4) 3 Grades + 1 Grade + 1

67 = (NF6) 3 Grades + 1 Grade + 1 Grade + 1

68 = (NF7) 4 Grades + 1 Grade + 1

69 = (NF8) 3 Grades + 1 Grade + 1 Grade

~ Not available in V04.0.20 or later.

Command Code 91: Select Installed Options**Function Code 1: Preset Keypad Type**

1 = Disabled*

2 = 5-button Preset

3 = Incremental Preset

4 = Programmable Pump Preset

Function Code 2†: Push-to-start

1 = Disabled*

2 = Enabled

Function Code 3†: Set Vapor Recovery

(VAPORIX only available for V02.8.74 or later.)

1 = Disabled*

2 = VaporVac

3 = VMC/VAPORIX without Shutdown

4 = VMC/VAPORIX with Shutdown

Note: VMC/VAPORIX systems cannot be used with DEF/Adblue/ARLA dispensers installed with Cold Weather Warning kits.

Function Code 5: Push-to-stop

1 = Disabled*

2 = Enabled

Function Code 6: ATC

1 = Disabled*

2 = Enabled

Function Code 7†: Grade Select Function

(All listed options available for V01.8.67 or later.)

1 = Grade Selection/Grade Change Allowed only before Pump Handle/Nozzle*

2 = Grade Selection/Grade Change Allowed until fueling starts (after Segment Test)

3 = Only One Grade Selection Allowed

4 = Grade Selection/Grade Change Allowed until Segment Test

Note: This functionality only applies to MPD and Blender

Dispensers that use Grade Selection Buttons.

Function Code 8†: Protection Method

(All listed options available after V03.0.32.)

1 = Standard (NCWM/MC Category 2)*

2 = Mexico Protection (NOM-185)

3 = Reserved

4 = OIIML Protection (OIIML R117)

Function Code 9: Preset Indicator

(All listed options available after V03.1.61 or later.)

1 = Disabled*

2 = Display 0.00 or equivalent (Chile)

3 = Display "PPPPPP"

4 = Display "Preset"

5 = Display "-----"

(Option 4 is only available with Door Node 5 or later.)

Function Code 11†: Electro-mechanical Totalizer

1 = Disabled*

2 = Enabled (one per meter/side)

3 = Enabled (one per inlet/unit)

Note: Enabling this feature allows Grade Select Buttons to be used on Multi-hose MPDs and Multi-hose blenders. This should not be used on other models.

Note: Enabling this feature allows Grade Select Buttons to be used on Multi-hose MPDs and Multi-hose blenders. This should not be used on other models.

Function Code 26†: Operation Mode Protection

(Only available for V02.9.06 or later.)

1 = Disabled*

2 = Security Switch Required

Function Code 30: Pulsar Error Reporting

(Options as described available for V03.1.01 or later.)

1 = Disable Side (Persistent)*

2 = Disable Side

3 = Stop Current Transaction Only

*Default

†This entry requires the security switch to be moved to the unsealed position before entry, otherwise the unit will respond with a double beep.

††This requires security switch when set to Mexico or OIIML Security.

4 = Disable Grade(s) Only

5 = Disable Grade(s) Only (Persistent)

Function Code 31: Unauthorized Flow Error Reporting

(Options as described available for V03.0.38 or later.)

1 = Logging/Information Only*

2 = Disable Transaction

3 = Disable Transaction and Two-wire Offline for 10 Minutes

Function Code 32†: Preset Roundup Minimum

(Only available for V02.9.72 or later.)

1 = 0.100 Minimum*

2 = 0.075 Minimum

3 = 0.050 Minimum

4 = 0.030 Minimum

Function Code 33†: Price Change Method

(Only available for V03.0.32 or later.)

1 = Price Change Immediate*

2 = Price Change Immediate (OIIML)

Function Code 34: Door Switch Method

(Only available for V03.2.12 or later.)

1 = Disabled*

2 = Enabled

3 = Clear Last Transaction Switch

Note: Options 1 and 3 are not available when configured for Mexico Security.

Function Code 37: Door Switch Reporting

(Only available for V03.2.12 or later.)

1 = Logging/Information Only*

2 = Stop Current Transaction Only

3 = Disable Side

4 = Disable Side (Persistent)

5 = Disable Pump

6 = Disable Pump (Persistent)

Note: Only available when Door Switch Method is Enabled.

Function Code 38: Door and Hydraulics Panel Alarms

(Only available for V03.2.12 or later.)

1 = Disabled*

2 = Enabled

Note: Only available when Door and/or Hydraulics Panel Switch Methods are enabled and Function Code 37 and 42 are NOT set for logging/information only. To silence alarm (but retain the error) enter the Level 4 PIN Code.

Function Code 39: DEF/ARLA/Adblue Cold Weather Warning

(Only available for V03.2.20 or later.)

1 = Disabled*

2 = Enabled

Note: Only available for DEF/ARLA/Adblue dispensers.

Function Code 40†: Log Language

(Only available for V03.2.20 or later.)

1 = English*

2 = Spanish

3 = French

Function Code 41: Hydraulics Panel Switch Monitoring

(Only available for V03.3.10 or later.)

1 = Disabled*

2 = Enabled

Function Code 42: Hydraulics Panel Switch Reporting

(Only available for V03.3.10 or later.)

1 = Logging/Information Only*

2 = Stop Current Transaction Only

3 = Disable Side

4 = Disable Side (Persistent)

5 = Disable Pump

6 = Disable Pump (Persistent)

Note: Only available when Hydraulics Panel Switch Monitoring is Enabled.