

53404



New model from end of 2006



Old model up till end of 2006

(Covers LED version 101 (PCB version 203 02 66 D), some features may be missing in earlier versions)

1. INTRODUCTION.....	3
2. MECHANICAL INSTALLATION.....	3
3. ELECTRICAL INSTALLATION.....	3
4. CONFIGURATION.....	4
4.1. CHECK BEFORE CONFIGURATION	4
4.2. ADDRESSING THE LED	4
4.3. SET-UP MODE	4
4.4. CHANGE ADDRESS [<i>LED//ADDRESS</i>]	4
4.5. RECOMMENDATIONS FOR SETTING ADDRESSES	5
4.6. SET TIME [<i>LED//VTIME</i>]	5
4.7. SET FUNCTIONAL MASK [<i>LED//MASK</i>]	5
5. CONFIGURE THE PORT.....	6
5.1. USING THE ON-BOARD DISPENSE POINT.	6
5.2. CONNECT A DISPENSE POINT TO THE PORT [<i>LED//PORT/REELNo</i>]	6
5.3. GROUP [<i>LED//PORT/GROUP</i>]	7
5.4. MASK [<i>LED//PORT/MASK</i>]	8
5.4.1. Use PIN code	8
5.4.2. Use JOB no	8
5.4.3. Use Volume	8
5.4.4. Use Pulse compensation	8
5.4.5. Use two REED switches.....	8
5.4.6. Use external User Validation.....	8
5.4.7. Use external JOB validation.....	8
5.4.8. Use external Tank validation.....	8
5.4.9. Use Input B as a trigger.....	9
5.4.10. LED counts down.....	9
5.4.11. Dual/Quadra pulse count.....	9
5.4.12. Cyclic Dispense mode	9
5.5. SET "TIME-OUT" FUNCTION [<i>LED//PORT/TIMEOUT</i>]	9
5.6. CALIBRATING [<i>LED//PORT/PPU</i>]	10
5.6.1. Manual.....	10
5.6.2. Semi automatic.....	10
5.6.3. Decimal PPU	11
5.7. SET VOLUME INTERVALS [<i>LED//PORT/MINV</i>] AND [<i>LED//PORT/MAXV</i>]	11
5.8. VALIDATION OF JOB NUMBER	11
5.9. CONNECT THE DISPENSE POINT TO A DATABASE [<i>LED//PORT/DB</i>]	12
5.10. CONNECT THE DISPENSE POINT TO A LED MODULE [<i>LED//PORT/LED</i>]	12
5.11. CONNECT THE DISPENSE POINT TO A TANK [<i>LED//PORT/TANK</i>]	12
5.12. SET DATE [<i>CLOCK/DATE</i>] AND [<i>CLOCK/TIME</i>].	13
6. INSTALLING A CLOCK MODULE.	14
7. LED MODULE FOR OTHER PURPOSES.....	14
7.1. LED MODULE FOR STAND-ALONE DISPENSING.	15
8. MENU TREE.....	16
9. FAST MENU CODES.....	17
10. TECHNICAL SPECIFICATION.....	18

1. Introduction

The LED-module can both be connected to LUBE-Master and it can also be used as simple “stand-alone” dispense unit.

Connected to an LUBE-Master system it operates as large visible display that shows the dispensed volume. A red dot in the upper right corner indicates when the solenoid valve is open.

If connected to an LUBE-Master system multiple dispense points can share the same LED. The active dispense point is shown in the lower left corner.

Used “stand-alone” the LED module has the ability to control a solenoid valve and read the pulses from a meter. It is programmed with a number of ports.

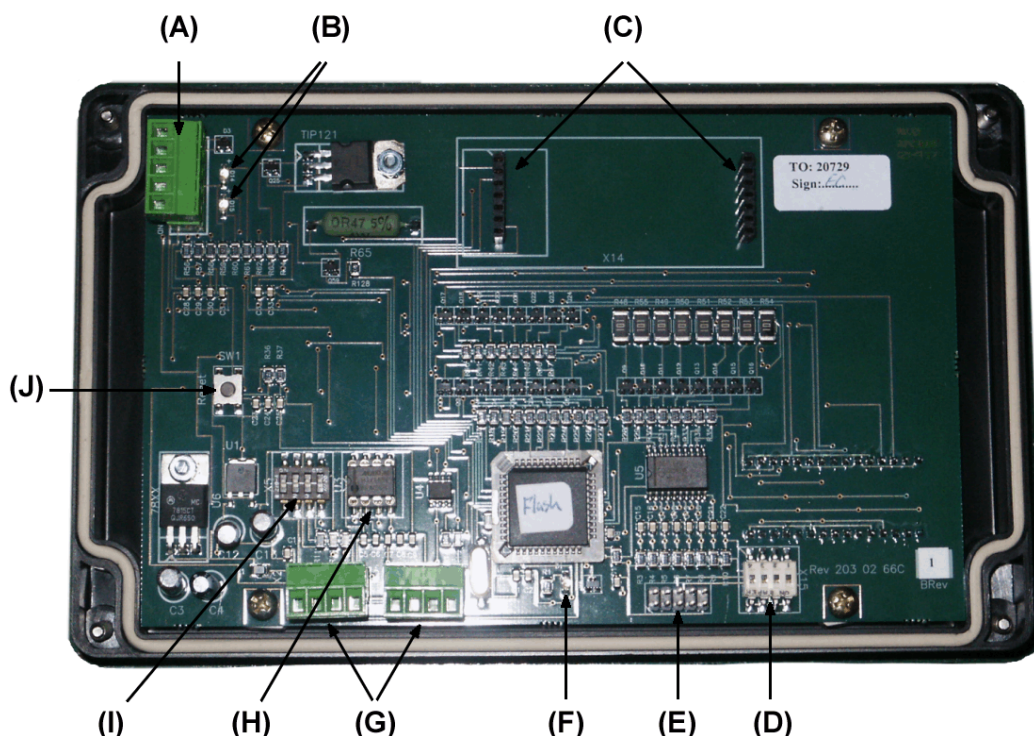
NOTE! The LUBE-Master installation manual should be available when installing and configuring a module.

2. Mechanical installation

The module is mounted on a wall or similar using the four holes in the bottom of the box or by using the bracket with two holes. If the bracket is used the LED will be turnable.

3. Electrical installation

The LED has two 4-pole connectors (G) each marked with **A**, **B**, **+24 V** and **Gnd**, which are used for the LUBE-Master communication loop. Follow the cable recommendations in the LUBE-Master installation manual. Normally a LED is powered through the communication cable. DIL switches for termination and BIAS are marked (I). The RESET button is marked (J).



On LED version 101 (PCB version 203 02 66 C or later) the Port (A) can be used as a standard monitoring dispense point, see chapter “5.Configure the port.”

Optionally the LED can be equipped with a clock chip at position (C), it then shows the time when no dispense is made, see chapter “7. Installing a Clock module”.

If the LED is used as a “stand-alone” dispense point push buttons could be connected to (E) and a solenoid valve and a meter at port (A). The LED’s (B) indicates incoming pulses on respective input, see chapter “8.1. LED-module for stand-alone dispensing.”

If the LED (F) is flashing the module is working properly. If lit all the time or unlit something is wrong.

4. Configuration

An LUBE-Master configuration sheet *should* always be filled or altered during the configuration.

NOTE! To obtain technical support a copy of the configuration sheet for the complete installation must be sent to Eurolube Equipment AB at

**Eurolube Equipment AB
BOX 36
S-71121 LINDESBERG
SWEDEN**

Or

Eurolube@eurolube.com

4.1. Check before configuration

Check that the LED is working and communicating with the system according to the LUBE-Master *Manual* chapter *Testing modules*.

NOTE! Do not forget to check and adjust the termination and BIAS according to LUBE-Master *Manual*.

4.2. Addressing the LED

A new LED does not have any address when delivered. To set an address for a new LED or a LED with unknown address press and hold it's RESET button for 5 seconds to set a temporary address. Immediately enter Set-Up mode from a LED and type 0 and then ENTER to get to the Main menu of the LED, see below.

NOTE! If more than one new LED is added at the same time their addresses must be set one at a time. If all RESET buttons are pressed only the most recently pressed will be active.

TIP! Follow preferably "Recommendation for setting addresses" when setting addresses.

4.3. Set-Up Mode

Type the word "SETUP" on a KeyPad and press ENTER.

Type the password and press ENTER.

```
REEL:SETUP      ‡  
EXIT STOP CE ENT
```

Type the address for the LED that is to be configured and press ENTER to access its main menu.

```
PASS:_          ‡  
Enter Password
```

It is possible to add the 4-digit menu code to go directly to the desired menu.

```
Addr:4???_     ‡  
Address[CODE]
```

Scroll through the LED sub menus by pressing ↑ or ↓. When the desired menu is shown press ENTER etc.

```
LED:           ‡  
LED MainMenu
```

4.4. Change address [LED//Address]

Enter menu [LED//Address] by pressing ENTER

```
LED:           ‡  
LED MainMenu
```

Press ENTER to get the cursor.

```
Addr:4????     ‡  
Set Address 4???
```

Type in the desired address and acknowledge by pressing ENTER. When the cursor disappears it is finished.

```
Addr:4XXX      ‡  
Set Address 4???
```

Press EXIT twice to leave Set-Up mode.

```
Addr:4????     ‡  
Set Address 4???
```

TIP! Follow preferably "Recommendation for setting addresses" when setting addresses.

4.5. Recommendations for setting addresses

Each module demands a unique 16 bit hexadecimal address. There are some forbidden and some reserved addresses but it is possible to use all addresses between 0001 and 9999. To make it easier to upgrade and support the system we recommend using the chart to the right.

This means that the first LED should have the address 4001 and the next one 4002 etc. It is a good idea to not use the default address 4000, it makes it easier to add new LED's.

NOTE! It is essential to add modules to the configuration sheet continuously as they are configured to avoid collisions.

NOTE! Address 0000 is forbidden and addresses above 9999 are reserved for the system.

Adress	Module
0000	Forbidden
1000 – 1xxx	MPDM
2000 – 2xxx	PM
2999	PC-database
3000 – 3xxx	KeyPad
4000 – 4xxx	LED-display
5000 – 5xxx	Reserved
6000 – 6xxx	Reserved
7000 – 7xxx	Reserved
8000 – 8xxx	Other
A000 – FFFF	Forbidden

4.6. Set time [LED/VTime]

During a dispense the amount will be shown on a LED. When the dispense is completed the result will be shown on the LED for a period of time which can be set to 3-258 seconds. You can also choose to never show the clock by entering 0.

Enter menu [LED//VTime] by scrolling with ↑ or ↓.

At **VTime**: press **ENTER**.

Press **ENTER** to get the cursor.

When the cursor is visible type the desired time minus three seconds (Type 57 to set the time to 1 minute). Press **ENTER**.

When the new time is displayed and the cursor is gone it is updated.

Press **EXIT** twice to exit set-up.

4.7. Set functional Mask [LED//Mask]

The functional mask is used to set basic functions of the LED display. For now only one if it should time-out to show the time or only a "--" sign.

Enter menu [LED//Mask] by scrolling with ↑ or ↓.

At **Mask**: press **ENTER**

Press **ENTER** to get the cursor.

When the cursor is visible type the desired value for the mask and press **ENTER**.

Mask=0 (default) makes the LED time-out to showing the time.

Mask=1 makes the LED time-out to showing a "--" sign.

```
LED:          ‡
LED MainMenu
```

```
Visual time: ‡
LED MainMenu (s)
```

```
VTime:30     ‡
Visual time (s)
```

```
VTid:30      ‡
Visual time (s)
```

```
VTid:57_     ‡
Visual time (s)
```

```
VTid:57      ‡
Visual time (s)
```

```
LED:          ‡
LED MainMenu
```

```
Port:        ‡
LED MainMenu
```

```
VTime:30     ‡
Visual time (s)
```

```
Mask:0       ‡
Mask 0-1
```

```
Mask:0       ‡
Mask 0-1
```

```
Mask:1_      ‡
Mask 0-1
```

```
Mask:1       ‡
Mask 0-1
```

When the new value is displayed and the cursor is gone it is completed.

Press **EXIT** twice to exit

5. Configure the port

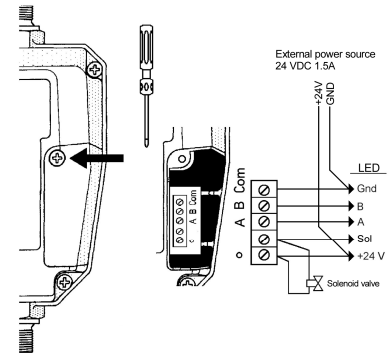
A LED module has a port that can be used to control a dispense point (Reel).

5.1. Using the on-board dispense point.

To be able to use the on-board dispense point an external power source is needed. This power source should be 24 VDC and at least 1,5 A. The power source should be applied between +24V and GND on the dispense point connector (A).

Solenoid valve and meter is connected to the LED-module as shown in figure to the right.

The dispense point is Set-Up as for a normal MPDM dispense point with one exception the only working LED address is the address of the module itself.



TIP! If the cable Eurolube Equipment AB has in stock, (part. Nr. 53393), is used the colours should match the following:

BROWN	to	+24V
WHITE	to	A
(GREY	to	B for 2-pulses train use)
YELLOW	to	Sol
GREEN	to	GND.

This will make service and support much faster.

5.2. Connect a dispense point to the port [LED//Port/ReelNo]

Enter menu [LED//Port] by scrolling with ↑ or ↓.

At **Port:** press **ENTER**.

Press **ENTER** to get the cursor.

Check the number of the reel that is connected to the port, type that number in and press **ENTER** to acknowledge. When the cursor disappears it is finished. Press **EXIT** twice to leave Set-Up mode.

```
LED: †
LED MainMenu
```

```
Port: †
LED MainMenu
```

```
Reel:X †
Set ReelNo ???
```

```
Reel:X †
Set ReelNo ???
```



5.3. Group [LED//Port/Group]

A user can be a member of eight different groups named A-H. It is possible to make advanced and complex user rights for dispense points.

EXAMPLE: "Bob" is a member of groups AB, user "Stan" is a member of groups BC and the dispense points is divided into three bays A, B and C. In this case both users can open dispense points in bay B but only "Bob" can open dispense points in bay A and only "Stan" can open dispense points in bay C.

Each group is represented by a value shown in the chart to the right. The group value is calculated by adding the values for each desired group. Group A and E give a group value of (1+16) which are 17.

Group	Value
A	1
B	2
C	4
D	8
E	16
F	32
G	64
H	128

Enter menu [LED//Port/] by scrolling with ↑ or ↓.

At **Port:** press **ENTER**.

```
LED:                ‡
LED Huvudmeny
```

Scroll to **Group:** using ↑ or ↓.

```
Port:                ‡
LED Huvudmeny
```

Press **ENTER** to get the cursor.

```
Reel:X              ‡
Set ReelNr ???
```

Type the **group value** and press **ENTER** to acknowledge. When the cursor disappears it is finished.

```
Group:XXX           ‡
Set Group 0-255
```

Press **EXIT** twice to leave Set-Up mode.

```
Group:XXX           ‡
Set Group 0-255
```

NOTE: Which group a user is a member of is set when administrating users.

5.4. Mask [LED//Port/Mask]

How a dispense point should work is controlled by a mask. This is done by adding the values for the desired functions, in the chart to the right.

EXAMPLE: At a dispense point you want to use JOB number but you do not want to type in a desired volume or a PIN code. The meter has two reed switches and you want to use them. In this case you should add the values 2 and 16. 2+16=18. The mask should be set to 18.

Enter menu [LED//PortX] by scrolling with ↑ or ↓.

At **PortX:** press **ENTER**.

Scroll to **Mask:** using ↑ or ↓.

Press **ENTER** to get the cursor.

Type the **mask value** and press **ENTER** to acknowledge. When the cursor disappears it is finished.

Press **EXIT** twice to leave Set-Up mode.

Name	Value
Use PIN-code	1
Use JOB-no	2
Use Volume	4
Use Pulse compensation	8
Use two REED switches	16
Use Ext User Validation	32
Use Ext JOB Validation	64
Use Ext Tank Validation	128
Use Input B as a trigger	256
LED counts down	512
Dual/Quadra pulse count	1024
Cyclic Dispense mode	2048

5.4.1. Use PIN code

Sets if the dispense point should ask for a PIN code input or not.

LED:	‡
LED MainMenu	

5.4.2. Use JOB no

Sets if the dispense point should ask for a Work order/JOB code input or not.

PortX:	‡
LED MainMenu	

5.4.3. Use Volume

Sets if the dispense point should ask for a volume input or not. If set the dispense point will ask for a volume to dispense. If not set the dispense point will open for the volume defined in MaxVol.

Reel:X	‡
Set ReelNo ???	

5.4.4. Use Pulse compensation

Sets if the dispense point should auto adjust for after run. If it is set the dispense point will adjust the valve shut-of to compensate for flow and temperature changes.

Mask:XXX	‡
Set Mask 0-3567	

5.4.5. Use two REED switches

Enables/Disables the use of a meter with two REED switches (Two pulse train output). If a meter with two pulse trains (Eurolube part no. 1168520) is used and “Use two REED switches is enabled the flow direction will be detected.

Mask:XXX	‡
Set Mask 0-3567	

This cannot be used if “Use Input B as a trigger” is set.

5.4.6. Use external User Validation

If this is set the dispense point will validate the PIN code to the source specified in DBAddress. If it is not set the dispense point will validate the PIN code to the internal PIN code database of the LED and the LED does not have an internal database so the validation would fail.

5.4.7. Use external JOB validation

If this is set the dispense point will validate the Work order/Job number to the source specified in DBAddress. If it is not set the dispense point will only register the Work order/Job number but not validate it.

5.4.8. Use external Tank validation

If this is set the dispense point will validate the Requested volume to the specified Tank number at the source specified in DBAddress. If the “Current Stock” minus the “Requested Volume” is above the specified “Stop Volume” the dispense point will open.

5.4.9. Use Input B as a trigger

If this parameter is set it enables the use of an external signal connected to the Input B pin of the port connector.

The function is active low and can be done with a push button connected between Input B and GND of the port connector.

When Input B goes low the dispense point will open for the volume specified by the MaxVol parameter.

This cannot be used if “Use two REED switches” is set.

5.4.10. LED counts down

Sets if the LED specified by the parameter LEDAddress should count the dispensed volume forwards or backwards, 0 -> Requested volume or Requested volume ->0.

5.4.11. Dual/Quadra pulse count

This sets if the pulse input of the dispense point should count only rising edge or rising and falling edge of the pulse train. If a single pulse train meter is used the PPU will be doubled and if a two pulses train meter is used the PPU will increased 4 times.

This can be used to increase accuracy for grease dispensing and large meters with low PPU.

5.4.12. Cyclic Dispense mode

If this is set the dispense point dispenses the volume specified by the MaxVol parameter with a time interval specified by the Time-Out parameter in minutes. Then the normal Time-Out for the dispense point is hard coded to 30 seconds.

5.5. Set "Time-Out" function [LED//Port/TimeOut]

The function Time-Out set the time for how long a dispense point should be open if no fluid is taken. After the time-out time the solenoid valve shuts automatically. As soon as fluid is passing the meter the time will start from 0.

Enter menu [LED//Port] by scrolling with ↑ or ↓.

At **Port:** press **ENTER**.

Scroll to **Timer:** using ↑ or ↓.

Press **ENTER** to get the cursor.

Type the number of minutes, 0=OFF max 255, the dispense point should be open without being used press **ENTER** to acknowledge. When the cursor disappears it is finished.

Press **EXIT twice** to leave Set-Up mode.

```
LED:                ‡
LED MainMenu
```

```
Port:               ‡
LED MainMenu
```

```
Reel:X              ‡
Set ReelNo ???
```

```
Timer:X             ‡
1-255 Min 0=Off
```

```
Timer:X             ‡
1-255 Min 0=Off
```

```
Timer:X             ‡
1-255 Min 0=Off
```

5.6. Calibrating [LED//Port/PPU]

For the LED module two ways of calibration is possible.

5.6.1. Manual

Meters generate pulses according to the amount of fluid that has passed. By opening a dispense point for a certain amount of fluid and then compare how much that has been dispensed (RECORDED) to how much fluid you really received (RECEIVED) you will know if the meter is calibrated or not. If you receive more than the requested amount the PPU value should be decreased and increased if you received less (see formula below). The system default is set to the Eurolube meter 1168520 which generate 328 pulses per litre. If another meter is connected it must be calibrated to dispense the correct requested amount.

$$PPU_{New} = PPU_{Present} \cdot \frac{RECORDED}{RECEIVED}$$

NOTE! Be very thorough when the received volume is measured because a small error at calibration can result in a large volume error at large volume. Use an accurate measuring vessel that is completely empty and make sure that all visible air is gone before the vessel is read.

Enter menu [MPDM//PortX] by scrolling with ↑ or ↓.

MPDM:	⌵
MPDM MainMenu	

At **PortX**: press **ENTER**.

PortX:	⌵
MPDM MainMenu	

Scroll to **PPU**: using ↑ or ↓.

Reel:X	⌵
Set ReelNo ???	

Press **ENTER** to get the cursor.

PPU:XXX	⌵
Set PPU 1-5000	

Type the **number of pulses per unit**, max 5000, for the meter connected to the port and press **ENTER** to acknowledge.

PPU:XXX	⌵
Set PPU 1-5000	

When the cursor disappears it is finished.

Press **EXIT** twice to leave Set-Up mode.

PPU:XXX	⌵
Set PPU 1-5000	

5.6.2. Semi automatic

The semi automatic method was developed after that LUBE-Master WinTools R8 was released. To use it the following must be present.

The MPDM must have Chip software 1.00.10RC19 recommended version is 1.00.10RC32

The LED100 (old type without clock module sockets) must have chip software 1.00.06RC12 recommended version is 1.00.06RC27

The LED101 must have chip software 1.01.04RC12 recommended version is 1.01.04RC27.

The keypad must have chip software 1.00.010RC17

The PC must have REEL100.ocx version 1.09RC3 and KP100.ocx version 1.09RC3

Open the dispense point for a volume (normally not less than 2 L) and dispense. When the dispense point is closed, and before it is used again, go to the **PPU**: value for this dispense point either on a keypad or in properties on the PC. Type in the received volume with a leading “-“ sign like “-1.45” followed by <ENTER>. The dispense point will then calculate the proper PPU value.

For keypad “-“ is two times ↓ (yellow arrow down) and then the “?” button.

Make one more dispense to verify that it is now correct.

5.6.3. Decimal PPU

If a MPDM is flashed with a chip software named MPDM.....(PPUFloat).bin it will support the use of decimal (float number) PPU.

Decimal PPU: looks like this “326.54” compared to integer PPU: like 326.

To be able to set decimal PPU the keypad must have chip software 1.00.10RC17 and the PC must have the REEL100.ocx version 1.09RC3.

5.7. Set volume intervals [LED//Port/MinV] and [LED//Port/MaxV]

Enter menu [LED//Port] by scrolling with ↑ or ↓.

LED:	‡
LED MainMenu	

At **Port:** press **ENTER**.

Port:	‡
LED MainMenu	

Scroll to **MinV:** using ↑ or ↓. (Or scroll directly to MaxV:)

Reel:X	‡
Set ReelNo ???	

Press **ENTER** to get the cursor.

MinV:X.XX	‡
Min Vol ??.??	

Type the **smallest volume**, min 0,5, to be dispensed from this dispense point and press **ENTER**. When the cursor disappears it is finished.

MinV: <u>X</u> .XX	‡
Min Vol ??.??	

Press **EXIT twice** to leave Set-Up mode.

MinV:X.XX	‡
Min Vol ??.??	

Press ↓ to **MaxV:** (Or press EXIT two times to leave Set-Up mode.)

MaxV:X.XX	‡
Max Vol ?????.??	

Press **ENTER** to get the cursor.

MaxV: <u>X</u> .XX	‡
Max Vol ?????.??	

Type the **largest volume**, min 0,5 max 9999,99, to be from this dispense point and press **ENTER** to acknowledge. When the cursor disappears it is finished.

MaxV:X.XX	‡
Max Vol ?????.??	

Press **EXIT twice** to leave Set-Up mode.

5.8. Validation of JOB number

A LED dispense point can internally log JOB numbers entered when dispenses is done. If there is a printer/database module in the system or WinDB service is loaded in a PC system dispenses demanded can be validated from a JOB number database, Se also **5.3. Mask**.

5.9. Connect the dispense point to a Database [LED//Port/DB]

Enter menu [LED//Port] by scrolling with ↑ or ↓.

At Port: press ENTER.

Scroll to **DB**: using ↑ or ↓.

Press **ENTER** to get the cursor.

Type the **address** to the desired database and press **ENTER** to acknowledge. When the cursor disappears it is finished.

For a PC database type 2999, for a PM database type the proper address.

Press **EXIT** twice to leave Set-Up mode.

NOTE! Each information module can be connected to multiple ports.

LED:	‡
LED MainMenu	

Port:	‡
LED MainMenu	

Reel:X	‡
Set ReelNo ???	

DB:2???	‡
DB Address 2???	

DB:2???	‡
DB Address 2???	

DB:2???	‡
DB Address 2???	

5.10. Connect the dispense point to a LED module [LED//Port/LED]

Enter menu [LED//Port] by scrolling with ↑ or ↓.

At Port: press ENTER.

Scroll to **LED**: using ↑ or ↓.

Press ENTER to get the cursor.

Type the **address** to the desired LED module and press **ENTER** to acknowledge. When the cursor disappears it is finished.

Note: The only possible address is the modules own address !

Press **EXIT** twice to leave Set-Up mode.

LED:	‡
LED MainMenu	

Port:	‡
LED MainMenu	

Reel:X	‡
Set ReelNo ???	

LED:4???	‡
LED Address 4???	

LED:4???	‡
LED Address 4???	

LED:4???	‡
LED Address 4???	

5.11. Connect the dispense point to a tank [LED//Port/Tank]

If there is a printer module in the system or if it is a PC system a dispense point can be connected to a database tank, max 8 tanks per PM. In this case the system will be able to check if there is enough oil in the tank and subtract the oil dispensed from it.

Enter menu [LED//Port], scroll with ↑ or ↓.

Press **ENTER**.

Scroll to Tank: using ↑ or ↓.

LED:	‡
LED MainMenu	

Port:	‡
LED MainMenu	

Reel:X	‡
Set ReelNo ???	

Tank:X	‡
Set TankNo	

Tank: <u>X</u>	‡
Set TankNo	

Tank:X	‡
Set TankNo 12(18)	

Press **ENTER** to get the cursor

Type which tank is connected to the port and press **ENTER** to acknowledge.

When the cursor disappears it is finished.

Press **EXIT** twice to exit Mode-mode

5.12. Set date [CLOCK/Date] and [CLOCK/Time].

Type "CLOCK" on a KeyPad and press **ENTER**.

The current system date is displayed. Press **ENTER** to set date or ↓ and **ENTER** to set time.

When the cursor is visible type the correct date or time and press **ENTER**.

When the cursor is gone the time is updated

NOTE! Do not forget the dots between HH.MM.SS/YY.MM.DD

Press **EXIT** twice to exit.

NOTE! It may take up to five minutes before all modules are updated.

```
REEL:CLOCK_  ‡  
EXIT STOP ĆE ENT
```

```
Date:01.11.28  ‡  
FORMAT YY.MM.DD
```

```
Date:01.11.28  ‡  
FORMAT YY.MM.DD
```

```
Time:09.30.25  ‡  
FORMAT HH.MM.SS
```

```
Time:09.30.25  ‡  
FORMAT HH.MM.SS
```

6. Installing a Clock module.

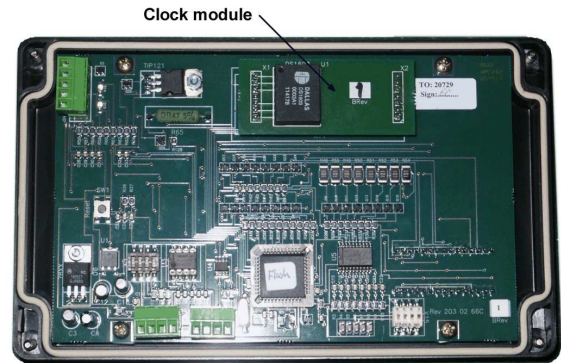
The LED module has connectors for a Clock module (53405).

NOTE! You can only use one Clock Module (Time Source) in a system.

Before installing any clock module make sure that you do not have a Clock module in another module (LED/PM) or loaded Clock service in a PC running LUBE-Master WinTools.

Disconnect the LED from the system before installing the clock module.

Install the clock module as in picture below, make sure that all pins in the right places.

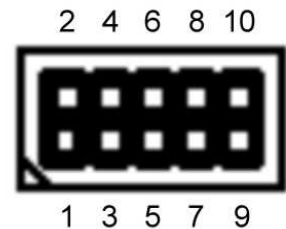


7. LED module for other purposes.

By applying shorts between pins of the 2-row 10-pole connector (E) or moving switches on the 4-pole DIL-switch (D) on the LED-module PCB it can be set for different purposes.

Push-button switches connected between certain pins of this connector can be used to control the module.

The pin layout for the 10-pole connector is shown in figure to the right. **Pin 10 is GND.**



The switch layout for the 4-pole DIL-Switch is shown in figure to the right.



7.1. LED module for stand-alone dispensing.

The LED-module can be used as a stand-alone “wall”-mounted pre-set meter if a meter, for example in-line meter 1168520, and a solenoid valve is connected to it. Buttons can control the unit or a PLC connected to the 10-pole connector. There are inputs for setting pre-set volumes, choose pre-set volume, start, stop and calibration.

Solenoid valve and meter is connected to the LED-module as shown in figure to the right. +24VDC of the 5-pole connector should also be connected to +24VDC of one of the communication connectors.

LED is set to pre-set volume 1 if pin (4) is connected to (Gnd). Connecting pin (1) to (Gnd) scrolls pre-set volumes down and pin (2) to (Gnd) scrolls pre-set volumes up. When the desired pre-set volume is shown the dispense is started by connecting pin (4) to (Gnd) again.

Connecting pin (3) to (Gnd) does stop.

If pin (3) and (4) simultaneous are connected to (Gnd) when a pre-set volume is shown this pre-set can be edited. The figure that is to be altered is chosen by connecting pin (1) to (Gnd), when the desired figure is brighter it is altered by connecting pin (2) to (Gnd). The changes are applied by connecting pin (4) to (Gnd).

Calibration is done either by an LUBE-Master KP see chapter “5.5 Calibrating [LED//Port/PPU]” or by first connecting pin (3) and (4) simultaneous to (Gnd). When the PPU-value (**P**ulses**P**er**U**nit) is shown pin (1) and (2) should be simultaneous connected to (Gnd) to put the module in calibration mode. Connecting pin (1) to (Gnd) chooses the figure that is to be altered. When the desired figure is brighter connecting pin (2) to (Gnd) alters it. The changes are applied by connecting pin (4) to (Gnd). Connecting pin (3) to (Gnd) makes the module to leave calibration mode.

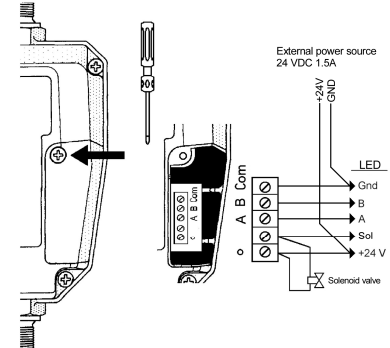
The connections (pin) to (Gnd) should be momentary, for example a spring loaded push-button.

Tip! **The four inputs – buttons can be named**
 1 – Gnd SCROLL DOWN
 2 – Gnd SCROLL UP
 3 – Gnd RESET
 4 – Gnd SELECT

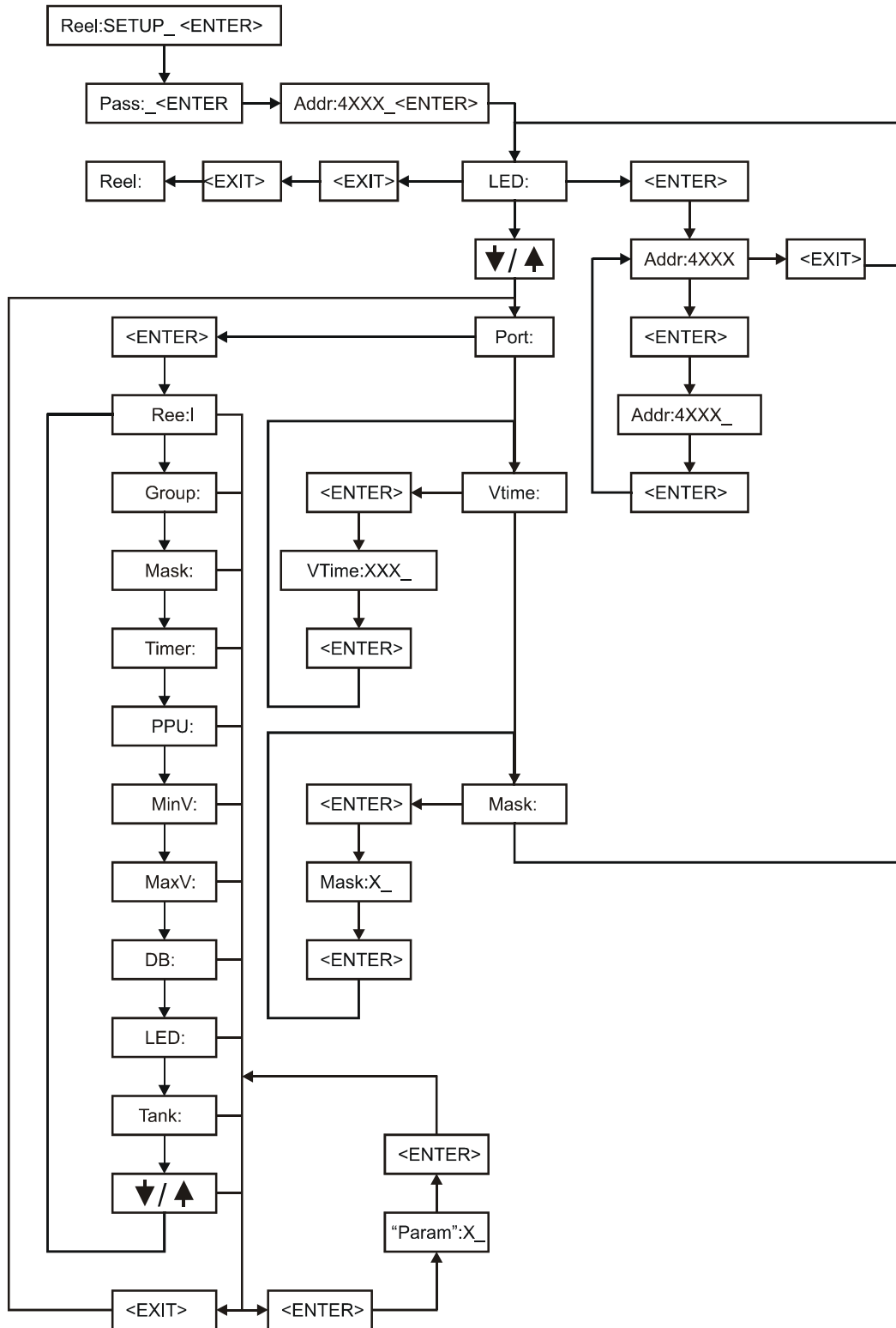
If the chip software is LED10006RC16 / LED10104RC16 or later 4 instant start pre-set dispense buttons can be added as follows.

Pin **5 – Pre-Set 1**
 6 – Pre-Set 2
 7 – Pre-Set 3
 8 – Pre-Set 4

NOTE! **For this chip software version or later a Pre-Set will disappear from the scroll list if the corresponding volume is set to 0. To get it back in the scroll list the volume must be set to something else than 0 using an LUBE-Master keypad.**



8. Menu tree



9. Fast Menu codes

With a PC, the LUBE-Master WinTools software and a SIO, you can customize the quick menu that appear when you press ”?”. To do this, assign a name to the menu, a module address and then a code. Password is optional. This code can also be used together with the address after you have typed SETUP followed by the password.

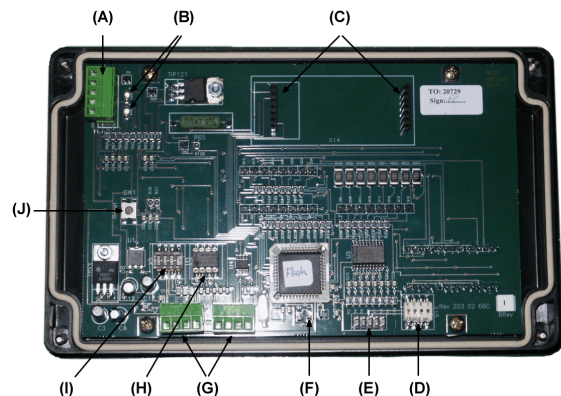
For a LED-module it will look like this,

Change Visual Time 40000010 YYYYYY where YYYYYY=password

Part	Function	Address	Code	Comment
Main menu	Change Address		0800	
	Change Sphere		0801	
LED	Change Visual Time		0010	
	Change Mask		0011	
Port	Change Dispense point Nr.		0100	
	Change Group		0101	
	Change Mask		0102	
	Change Time-Out		0103	
	Change PPU		0104	
	Change Min Volume		0105	
	Change Max Volume		0106	
	Change DB address		0107	
	Change LED address		0108	Is always the module address
	Change Tank number		0109	
Chip soft	LED10104RC16 or later			
Pre-Set	Change Pre-Set volume		004X	Where 0<= x <=F, 0 is Pre-Set 1 and F if Pre-Set 16

10. Technical specification

Net ports:	2 pcs of LUBE-Master ports (G) for data communication.
Meter input:	1 pcs (A) 32 bit for one or two pulse trains. Breaking or active signal max 50 V. Can detect flow direction and phase errors.
Control input:	1 pcs of 10-pin connector for push buttons (E).
Control output:	1 (A) for solenoid valve 24 VDC max 1,25 A. External power supply connected to +24VDC and GND of the 5-pole connector needed.
Max current:	As display only 250 mA, as a display with dispense point 1,5 A.
Other:	RISC-based microprocessor EEPROM, 64KB. Port for real-time clock module (C)



	Current model	Old model	Comment
Casing:	Steel, painted, Pre prepared with 2 x M4 screws suitable for a short DIN rail.	Black plastic	
Front cover:	Polyester overlay with transparent smoke coloured window.	Transparent red plastic “glass”	
Outer meassures:	185 x 140 x 75	200 x 121 x 90 mm	
Mounting:	4 x ø5mm, CC = 97 x 145	4 x ø4.3 mm CC = 88,5 x 188,5 mm or 2 x ø5.8 mm, CC = 62,5 mm with pivot mounting bracket	Pivot mounting bracket for New model not available yet.
Weight:	1.5 kg	0,8 kg	