



Current model from end of 2006



Old model up to end of 2006

LED MANUAL

LED DISPLAY MODULE

53404

EUROLUBE EQUIPMENT

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SWEDISH
RELIABILITY

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1. Introduction

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

It can also be used for other meters with pulse output stand-alone or in systems. To work in other systems than LUBE-Master it may need a change of software, contact LUBE-Master Support Team at lubemaster@alentec.se for information.

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. Part number 53455 is a dispense point based on a LED and a Push-Button box with a power supply. 53457 is a simpler version of 53455.

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 turn able.

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.

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. The LED at (B) indicates incoming pulses and solenoid valve and meter at the LED at (K) indicates valve status. See also chapter “5. Configure the port.”

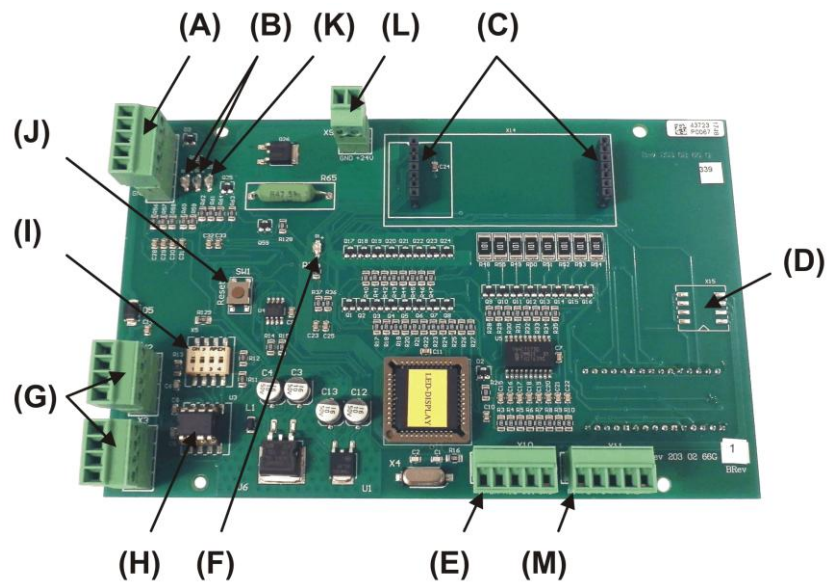
Normally a LED is powered through the communication cable but if the dispense point (A) of the LED should be used external power (24VDC 1.5A) must be applied to the 2-pole connector (L).

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”.

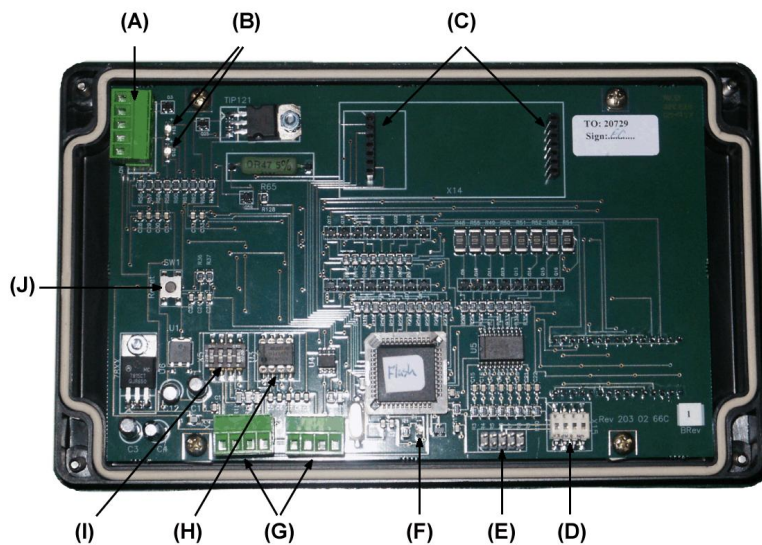
If the LED is used as a “stand-alone” dispense point push buttons could be connected to (E) and (M) (version G), see chapter “8.1. Use a LED-module for stand-alone dispensing.”

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

DIL-switch (D) (optional on version G) can be used to set the LED to work in an OilMon Windows system, see chapter “8.2. Use a LED-module for OilMon800 or OilMonPC.”



203 02 66 G (From 2017)



203 02 66 C and D (Replaced by G)

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 Alentec & Orion AB at

E-mail: lubemaster@alentec.se

Post: Alentec & Orion AB
LUBE-Master Support Team
Grustagsvägen 4
SE-138 40 Älta
SWEDEN

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 the RESET buttons of all modules are pressed at the same time all will get the same address.

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.

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

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

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

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

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

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

```
LED:            ‡
LED MainMenu
```

4.4. Change address [LED//Address]

Enter menu [LED//Address] by pressing ENTER

Press ENTER to get the cursor.

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

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

```
LED:            ‡
LED MainMenu
```

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

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

```
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 – 0FFF | Forbidden |
| 1000 – 1xxx | MPDM |
| 2000 – 2xxx | PM |
| 2999 | PC-database |
| 3000 – 3xxx | KeyPad |
| 4000 – 4xxx | LED-display |
| 5000 – 5xxx | PLC-Modules |
| 6000 – 6xxx | Reserved |
| 7000 – 7xxx | Reserved |
| 8000 – 8xxx | TCM, TSM |
| 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.

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)

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.

Mask=2 disables update missed warning,” blinking”

Mask=4 disables update missed time-out

Mask = 8 to 128 forms PNP update interval in seconds, easiest is to set these bits from the PC graphics.

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

Press **EXIT twice** to exit

LED: ‡
LED MainMenu

Port: ‡
LED MainMenu

VTime:30 ‡
Visual time (s)

Mask:0 ‡
Mask 0-1

Mask:0 ‡
Mask 0-255

Mask:1_ ‡
Mask 0-255

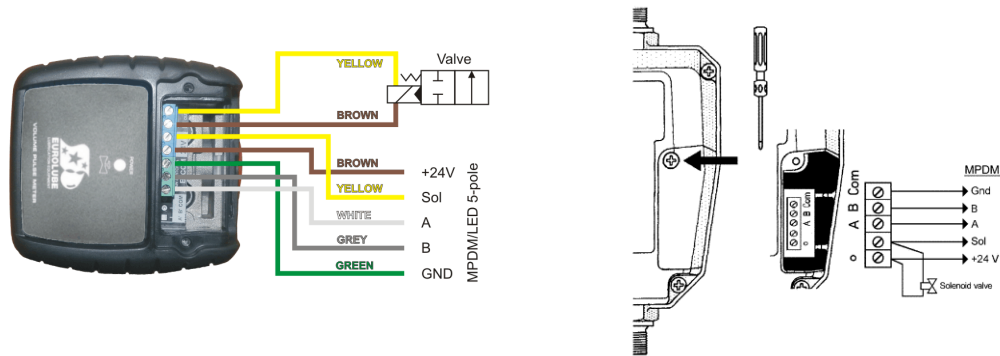
Mask:1 ‡
Mask 0-255

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).



1168804 and similar

1168520 and similar

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 has in stock, (part. Nr. 53393), is used the colours should match the following:

T

h
i
s

w
i

| | | | |
|--------|----|------|---|
| BROWN | to | +24V | |
| YELLOW | to | Sol | |
| WHITE | to | A | |
| GREY | to | B | A meter that has 2 pulse train outputs and cable 53412 (Optional) |
| GREEN | to | GND | |

ll 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 |
|-------|
| A |
| B |
| C |
| D |
| E |
| F |
| G |
| H |

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

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

Scroll to **Group**: using ↑ or ↓.

Press **ENTER** to get the cursor.

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

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

| | |
|---------------|---|
| LED: | ‡ |
| LED Huvudmeny | |

| | |
|---------------|---|
| Port: | ‡ |
| LED Huvudmeny | |

| | |
|----------------|---|
| Reel:X | ‡ |
| Set ReelNr ??? | |

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

| | |
|-----------------|---|
| 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 | No support |

5.4.1. Use PIN code

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

5.4.2. Use JOB no

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

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.

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.

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. 1168804 or 1168520 or similar) is used and "Use two REED switches is enabled the flow direction will be detected.

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 DB address. If it is not set the dispense point will only register the Work order/Job number but not validate it.

| | |
|--------------|---|
| LED: | ± |
| LED MainMenu | |

| | |
|--------------|---|
| PortX: | ± |
| LED MainMenu | |

| | |
|----------------|---|
| Reel:X | ± |
| Set ReelNo ??? | |

| | |
|-----------------|---|
| Mask:XXX | ± |
| Set Mask 0-3567 | |

| | |
|-----------------|---|
| Mask:XXX | ± |
| Set Mask 0-3567 | |

| | |
|-----------------|---|
| Mask:XXX | ± |
| Set Mask 0-3567 | |

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 DB address. 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 LED address 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

Not supported by the LED module.

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 Orion meter 24728 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. Then press ENTER to acknowledge.

| | |
|----------------|---|
| PPU:XXX | ⌵ |
| Set PPU 1-5000 | |

When the cursor disappears it is finished.

| | |
|----------------|---|
| PPU:XXX | ⌵ |
| Set PPU 1-5000 | |

Press EXIT twice to leave Set-Up mode.

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 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 or later

The keypad must have chip software 1.00.010RC17 or later

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

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.

Version 1.00.10RC28 and later always uses float number PPU.

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 by 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 (depends on calibration and set number of decimals), 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 chapter “5.4. Mask [LED//Port/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 ↓.

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

| | |
|--------------|---|
| LED: | ‡ |
| LED MainMenu | |

| | |
|--------------|---|
| Port: | ‡ |
| LED MainMenu | |

| | |
|----------------|---|
| Reel:X | ‡ |
| Set ReelNo ??? | |

| | |
|------------|---|
| Tank:X | ‡ |
| Set TankNo | |

| | |
|------------|---|
| Tank:X | ‡ |
| Set TankNo | |

| | |
|------------|---|
| Tank:X | ‡ |
| Set TankNo | |

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 CE 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.

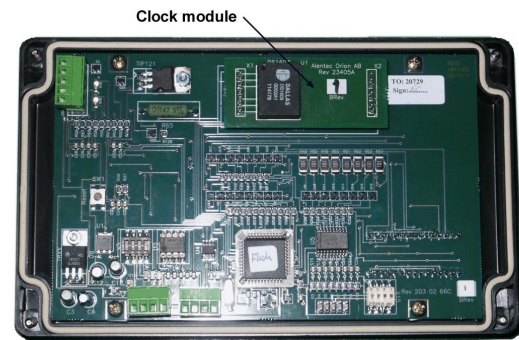
The LED module has connectors for a Clock module (53405).

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.

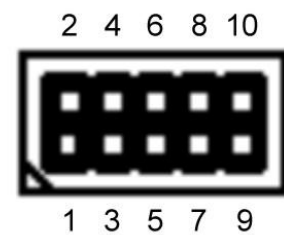


7. Use a LED module for other purposes.

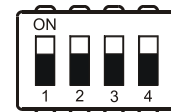
By applying shorts between pins of the 2-row 10-pole connector (**E**) (version D or older) or moving switches on the 4-pole DIL-switch (**D**) (Optional on version G and later) on the LED-module PCB it can be set for different purposes.

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. Use a 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 24 728, 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. If board is version G power +24VDC and GND should instead be connected to just the 2-pole connector(L).

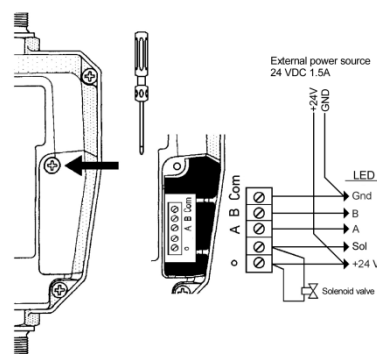
LED is set to pre-set volume 1 if pin (4) is connected to (Gnd). Connecting pin (1) to (Gnd) scrolls pre-set volumes down and pin (2) to (Gnd) scrolls pre-set volumes up. When the desired pre-set volume is shown the dispense is started by connecting pin (4) to (Gnd) again.

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 (PulsesPerUnit) 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.



| Function | Model G | | Models C , D and older | |
|-------------|---------|-----------|------------------------|------------|
| | Pin | Connector | Pin | Connector |
| | | | +5VDC | DIL-10 (E) |
| Scroll Down | Dn | X10 (E) | 1 | DIL-10 (E) |
| Scroll Up | Up | X10 (E) | 2 | DIL-10 (E) |
| RESET | Res | X10 (E) | 3 | DIL-10 (E) |
| SELECT | Sel | X10 (E) | 4 | DIL-10 (E) |
| | GND | X10 (E) | | |
| | | | | |
| Preset 1 | P1 | X11 (M) | 5 | DIL-10 (E) |
| Preset 2 | P2 | X11 (M) | 6 | DIL-10 (E) |
| Preset 3 | P3 | X11 (M) | 7 | DIL-10 (E) |
| Preset 4 | P4 | X11 (M) | 8 | DIL-10 (E) |
| | GNG | X11 (M) | GND | DIL-10 (E) |

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

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 to the scroll list the volume must be set to something else than 0 using an LUBE-Master keypad or LUBE-Master WinTools PC software.

8. Fast Menu codes

With a PC, the OriLink® 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,

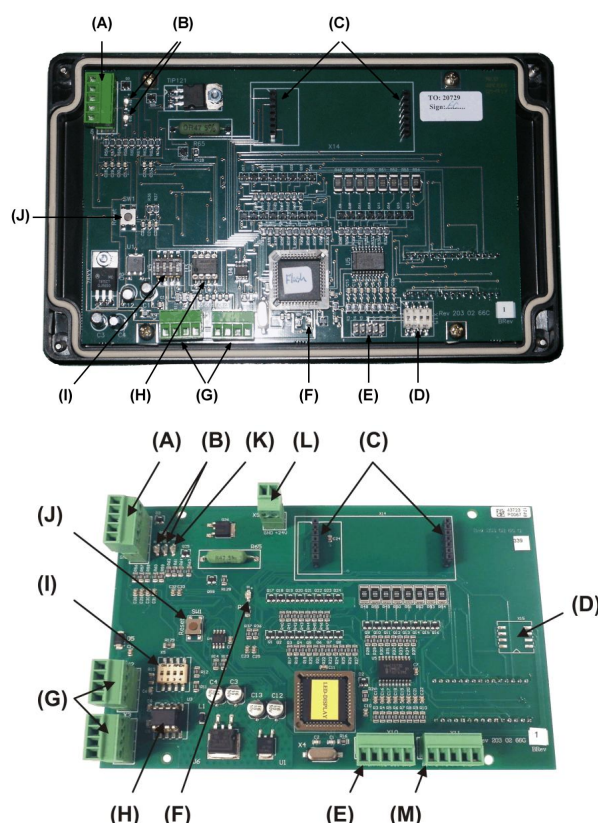
Change Visual Time 40000010 YYYYYY where YYYYYY=password

| Part | Function | Address | Code | Comment |
|-----------|-----------------------------|---------|------|--|
| Main menu | Change Address | | 0800 | |
| | Change Sphere | | 0801 | |
| | | | | |
| 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 | |
| | Change number of decimals | | 0110 | |
| | Change secondary DbAddress | | 0111 | 0 disables secondary database |
| | | | | |
| Pre-Sets | Change Pre-Set volume | | 004X | Where X can be 1, 2,, 9, A, B, C, D, E or F. 0 is Preset 1 and F if Preset 16. |
| | <i>Chip soft needed is</i> | | | LED10104RC16 or later |
| | | | | |
| | | | | |
| VTime | Change Visual Time | | 0010 | |
| Mask | Change Mask | | 0011 | |
| Clone | Change LED address to clone | | 0012 | 0 disables cloning |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

9. Technical specification

Printed circuit board

| | |
|------------------------|---|
| Net ports: | 2 pcs of OriLink® 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) |



Casing

| | Current model | Old model | Comment |
|------------------------|---|---|---|
| Power supply | 24VDC, 250mA as display only. 24VDC, 1.5A using both display and integrated dispense point | 24VDC, 250mA as display only. 24VDC, 1.5A using both display and integrated dispense point | |
| Casing: | Steel, painted black, 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 measures: | 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 | |

Environment

| | |
|-------------------|--|
| Use: | Indoors. Temperature 0 - +55°C Humidity 90-95%, not condensing |
| Transport: | Temperature -40 - +70°C Humidity 90-95%, not condensing |
| Storage: | Temperature -40 - +70°C Humidity 90-95%, not condensing |