



## ORILINK® MONITORING SYSTEM



Current model from end of 2006



Old model up till end of 2006

## LED DISPLAY, 23404

(Covers LED version 101, PCB version 203 02 66 G. Some features may be missing with earlier versions)

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## 1. Introduction

The LED-module can both be connected to **ORILINK®**, OilMon800 and OilMonPC. It can also be used as simple “stand-alone” dispense unit.

Connected to an OriLink®, OilMon800 or OilMonPC 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 OriLink® system multiple dispense points can share the same LED. The active dispense point is shown in the lower left corner.

OilMon800 and OilMonPC require a LED for each dispense point and any Alentec & Orion AB meter can be used since it is possible to calibrate the LED to 100, 328 or optional pulses per litre.

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 23 455 is a dispense point based on a LED and a Push-Button box with a power supply.

**NOTE! The OriLink® 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 OriLink® communication loop. Follow the cable recommendations in the OriLink® 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.”

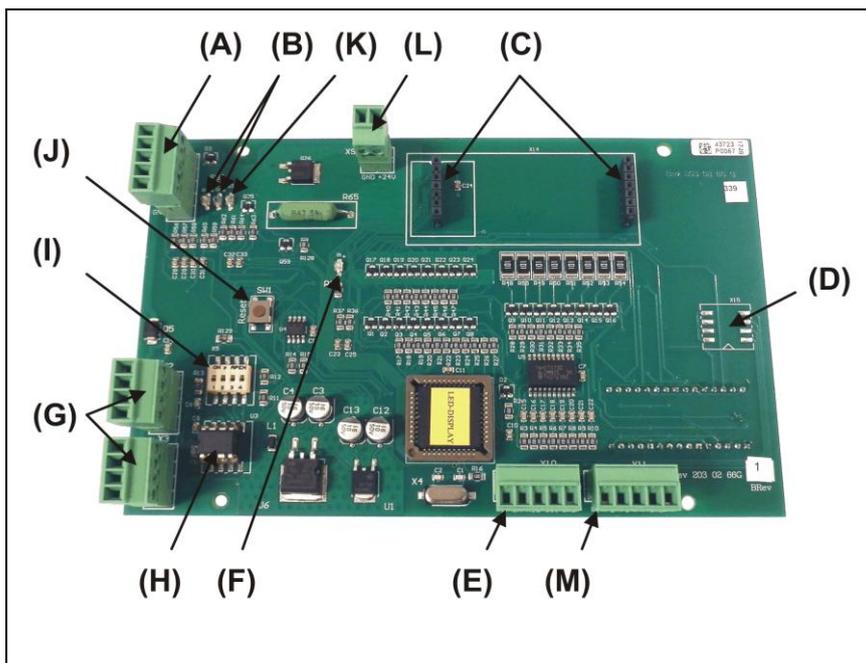
Normally a LED is powered through the communication cable but if the dispense point (A) of the LED should be used external power (24VDC 1.5A) must be applied to the 2-pole connector (L).

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”.

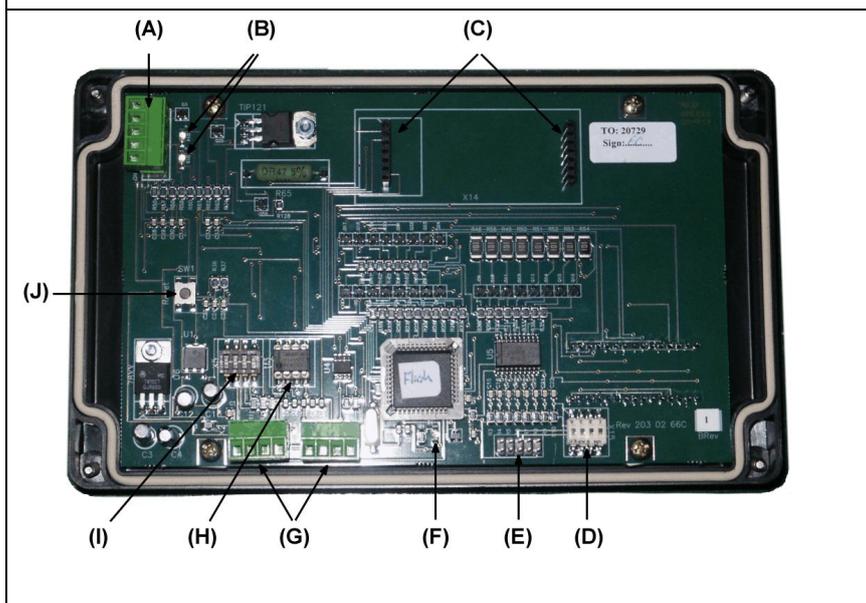
If the LED is used as a “stand-alone” dispense point push buttons could be connected to (E) and (M) (version G), see chapter “8.1. Use a LED-module for stand-alone dispensing.”

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 Orilink® 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

**Alentec & Orion AB  
TECHNICAL SUPPORT  
Grustagsvägen 4  
SE-138 40 ÄLTA  
SWEDEN**

or

**orilink@alentec.se**

### 4.1. Check before configuration

Check that the LED is working and communicating with the system according to the OriLink® Manual, chapter Testing modules.

**NOTE!** Do not forget to check and adjust the termination and BIAS according to OriLink® 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**.

```
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	PLC-Modules
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.

```
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.

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 0-1
```

```
Mask:1_ ‡
Mask 0-1
```

```
Mask:1 ‡
Mask 0-1
```

## 5. Configure the port

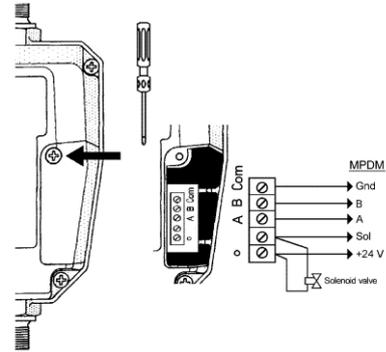
A LED module has a port that can be used to control a dispense point (Reel).

### 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).



24736 and similar



24738 and similar

Solenoid vale 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 Alentec & Orion AB has in stock, (part. Nr. 23393), is used the colours should match the following:

BROWN	to	+24V	
YELLOW	to	Sol	
WHITE	to	A	
GREY	to	B	A meter that has 2 pulse train outputs and cable 23412 (Optional)
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 ↓.

```
LED:                ‡
LED MainMenu
```

At **Port:** press ENTER.

```
Port:                ‡
LED MainMenu
```

Press ENTER to get the cursor.

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

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.

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

Press EXIT twice to leave Set-Up mode.

**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.

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

**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.

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

```
LED:                ‡
LED Huvudmeny
```

At **Port:** press ENTER.

```
Port:                ‡
LED Huvudmeny
```

Scroll to **Group:** using ↑ or ↓.

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

Press ENTER to get the cursor.

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

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.

**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
Qualis Dispense mode	No support

#### 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	

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 (Alentec & Orion AB part no. 24738) 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.*

Mask:XXX	‡
Set Mask 0-3567	

#### 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.

#### 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: <u>X</u>	‡
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.

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 OriLink® 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.

```
LED:                ‡
LED MainMenu
```

Scroll to **DB**: using ↑ or ↓.

```
Port:              ‡
LED MainMenu
```

Press **ENTER** to get the cursor.

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

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

```
DB:2???          ‡
DB Address 2???
```

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

```
DB:2???          ‡
DB Address 2???
```

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

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

```
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.

```
LED:                ‡
LED MainMenu
```

Scroll to **LED**: using ↑ or ↓.

```
Port:              ‡
LED MainMenu
```

Press ENTER to get the cursor.

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

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

```
LED:4???         ‡
LED Address 4???
```

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

```
LED:4???         ‡
LED Address 4???
```

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

```
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.

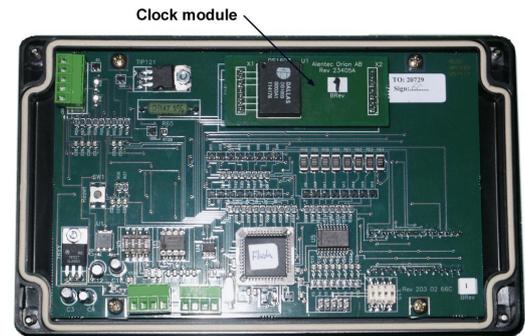
The LED module has connectors for a Clock module (23 405).

**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 OriLink® 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.

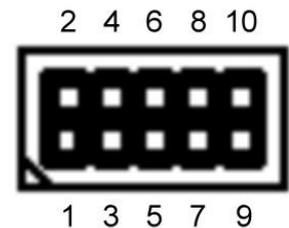


## 7. Use a LED module for other purposes.

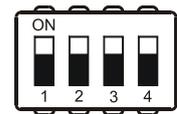
By applying shorts between pins of the 2-row 10-pole connector (**E**) (version D or older) or moving switches on the 4-pole DIL-switch (**D**) (Optional on version G and later) on the LED-module PCB it can be set for different purposes.

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.**

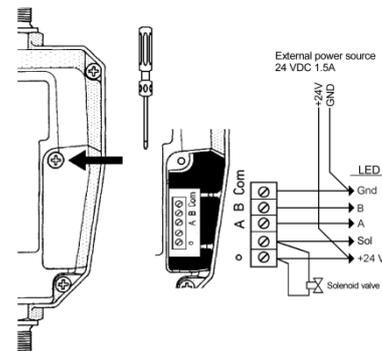
The LED-module can be used as a stand-alone “wall”-mounted pre-set meter if a meter, for example in-line meter 24 728, and a solenoid valve is connected to it. Buttons can control the unit or a PLC connected to the 10-pole connector. There are inputs for setting pre-set volumes, choose pre-set volume, 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.

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 OriLink® 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.

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 OriLink® keypad or OriLink® WinTools PC software.

**7.2. Use a LED-module with OilMon800 or OilMonPC.**

The LED can be used together with a meter connected to either an OilMon800 or OilMonPC system.

**OBSERVE! This requires a chip software version of LED10006RC? / LED10104RC? Or earlier, a software downgrade may be necessary.**

Shorting between pins of the 10-pin connector chooses this set-up. Dependent of used meter, the shorting or DIL-Switch setting should be applied as shown in the table below.

Shorting (E)		DIL-switch X15 (D)	PPU	Meter
None	<b>and</b>	All = Off	Adjustable	Normal OriLink® mode.
8,10	<b>or</b>	Sw4=On, Sw1, 2, 3 = Off	328	24 728, .....
6,8,10	<b>or</b>	Sw2, 4 = On, Sw1, 3 = Off	100	24 722, .....
6,7,8,10	<b>or</b>	Sw2, 3, 4 = On, Sw1 = Off	Adjustable	Set using an OriLink® KP.

Adjustable uses the PPU-value set in LED either by an OriLink® KP see chapter “5.5 Calibrating [LED//Port/PPU]” or by using push buttons connected to the 10-pin connector described in “8.1 LED-module for stand-alone dispensing”. The chosen PPU-value can be seen during a short time when dispense is initiated. It is shown for about 0.5 seconds by the three small figures at the lower left corner of the LED.

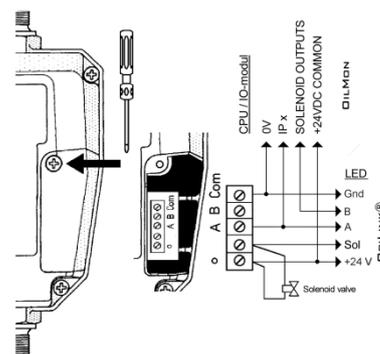
**OBSERVE! The setting must be in place when the module is powered up and must remain there.**

If any of the shorting is removed during operation the module stops working. To make it work again apply shorting and power it up again.

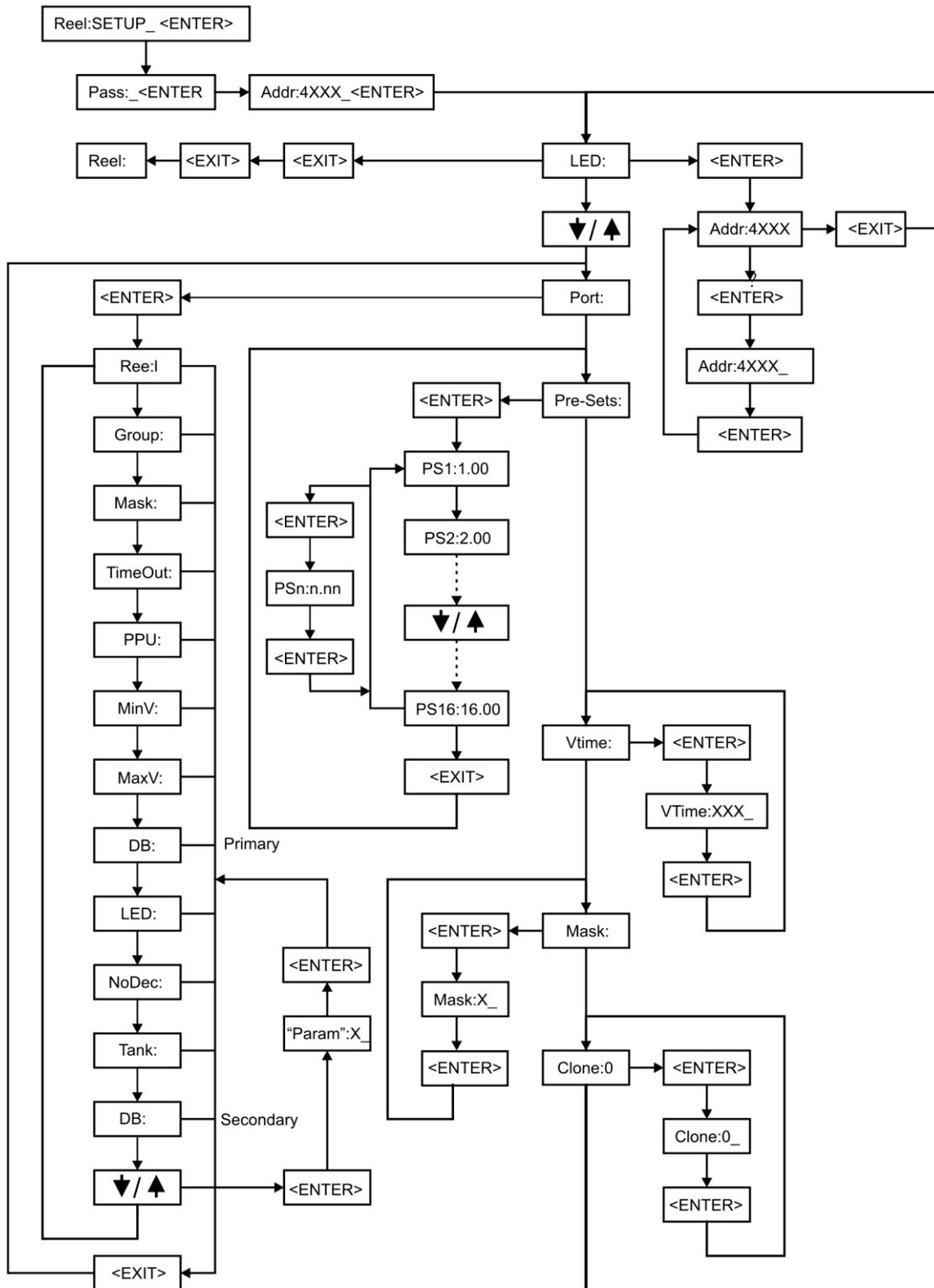
LED module is connected to the OilMon system as shown.

The LED module controls the solenoid valve.

+24VDC of the 5-pole connector should also be connected to +24VDC of one of the communication connectors.



### 8. Menu tree



## 9. 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,

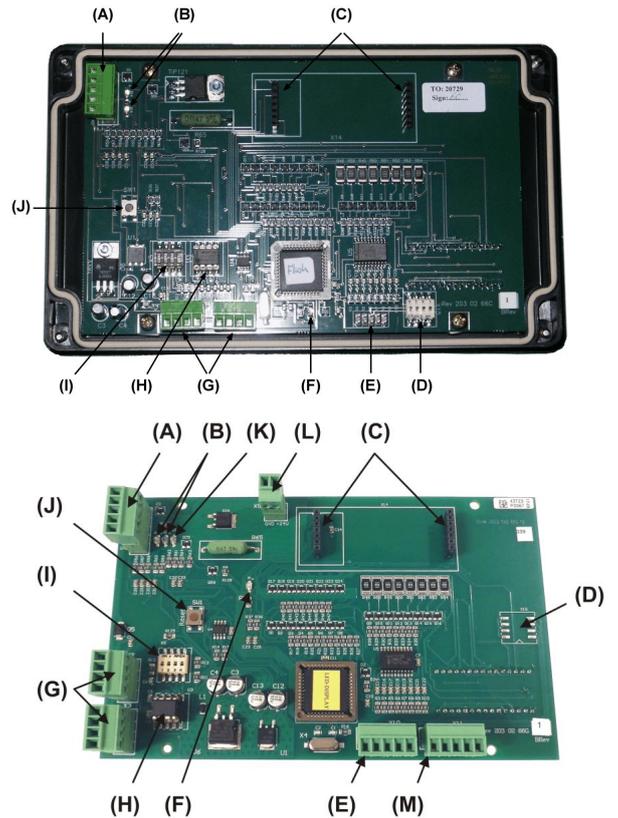
Change Visual Time    40000010    YYYYYY    where YYYYYY=password

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
<i>Chip soft needed is</i>				<i>LED10104RC16 or later</i>
VTime	Change Visual Time		0010	
Mask	Change Mask		0011	
Clone	Change LED address to clone		0012	0 disables cloning

## 10. 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

	<b>Current model</b>	<b>Old model</b>	<b>Comment</b>
<b>Power supply</b>	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	
<b>Casing:</b>	Steel, painted black, Pre prepared with 2 x M4 screws suitable for a short DIN rail.	Black plastic	
<b>Front cover:</b>	Polyester overlay with transparent smoke coloured window.	Transparent red plastic "glass"	
<b>Outer meassures:</b>	185 x 140 x 75	200 x 121 x 90 mm	
<b>Mounting:</b>	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.
<b>Weight:</b>	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