







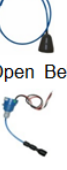




## 1 Short product description

A new High-End Level Transmitting Unit (LTU) has been released - the LTU801 - to compliment the level sensor product range and to replace the LTU 701.

The Flygt LTU 801 is a submersible hydrostatic level transmitting unit, intended for measuring a liquid level.

The LTU 801 combines smart design, performance and price to offer an ideal level sensor to match the water & wastewater needs in today's many different installations the world over.

## Flygt Measuring Devices Product Range 2017

Analog <u>L</u> evel			Semi-Analog / Digital <u>L</u> evel				Flow			
<b>Ultrasonic</b>	<b>Hydrostatic</b>		<b>Conductive</b>	<b>Acc.</b>	<b>Pneumatic</b>	<b>Level Switches &amp; Over Flow</b>		<b>EI.Magnetic</b>		
	High-End 	Mid-End 	Low-Mid End 				Standard 	EX 		
LSU 100	<b>LTU 801</b>	LTU 403	LTU 601	Level Probe	LI 531 etc.	LTU 301	ENM 10	NF 5	003S	MagFlux

### 1.1 Customer values

- The LTU 801 includes all of the innovative features and reliability of our current level sensor assortment
- It adds robustness, performance, quality and a new family look together with the existing LTU 601
- The unique choice of non stainless steel materials for the 601 and 801 makes the two level transmitters stand out amongst the competition, being highly recognisable
- Just like the LTU 601, the LTU 801 adds improvement to important issues like clogging and feel of robustness with the heavy weight
- It further adds ceramic technology with even more accurate, long term stable, durable and reliable liquid level measuring
- The ceramic diaphragm also makes the LTU 801 specifiable to more tenders
- The LTU 801 is very flexible and fit most possible installations since it can be programmed to any desired measurement range from 0-0.3m (0-1ft) to 0-300m (0-984ft, using a PC, a Flygt USB interface and a "Link" software available from TPI (LTU 801).
- The LTU 801 has printed product information for optimal durability



### Features:

- ✓ Installed in thousands of installations under the MJK name – well proven track record
- ✓ The transmitter is suitable for measuring level in wastewater pumping stations, tanks and containers at sewage treatment plants, water works, as well as in industrial applications.
- ✓ Large membrane protection holes for minimum clogging
- ✓ Heavy weight for easy and safer installations
- ✓ Ceramic diaphragm for high accuracy and durability
- ✓ 1" ISO threaded top for pipe mounting available as separate part numbers
- ✓ Very robust
- ✓ Tolerates a wide range of aggressive liquids thanks to the Ryton PPS (polyphenylene sulfide) plastic encapsulation
- ✓ Good for VFD installations (EMC capabilities)
- ✓ Approved for installation in explosion hazardous areas
- ✓ Built in protection for over voltage and transients (Lightning)
- ✓ Reprogrammable measurement ranges with separate USB interface, 850043
- ✓ Steel reinforced PUR cable with high tensile strength (1000kg/2200lbs)
- ✓ Nice white part Information printed on the sensor body (Printed part information withstands harsh media longer than a sticker!)
- ✓ Similar technical specifications as the LTU 701

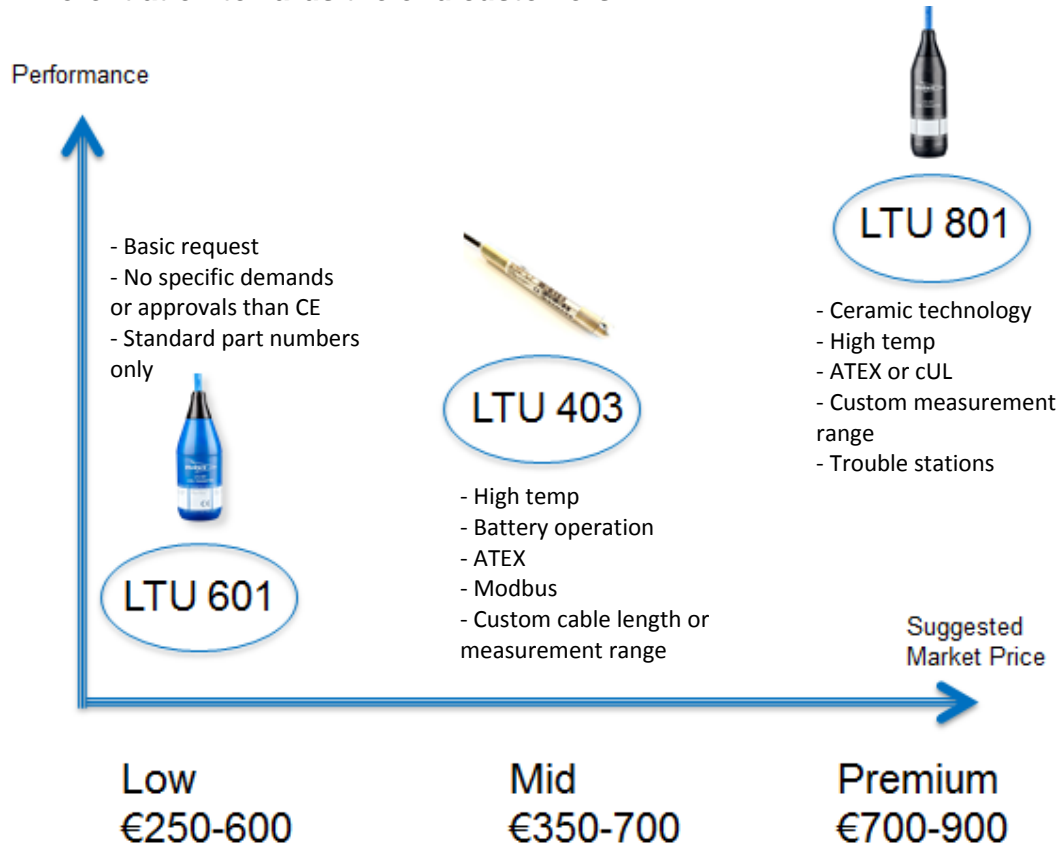
**Sales Arguments**

- More robust design
- Cost effective
- Maintenance prepared
- High performance

**Customer Benefits**

- => Less service visits => less costs & more time for other things
- => With features such as scalability (which lowers the nr of different sensors needed) and improved performance, the LTU 801 can help lowering the level transmitter costs
- => 0 point drift due to wear, deformation and corrosion can be fixed with the PC software and USB interface => less chance of false level measurements => less replacement cases
- => More versatile => cover more applications with less types of level transmitters

**Differentiation towards the end customers**



**Flygt Hydrostatic Level Transmitter Range Differentiation**

	<b>LTU 601</b>	<b>LTU 403</b>	<b>LTU 801</b>
Pricing	Low-Mid	Mid	Premium
Supply voltage range:	10-30VDC	6-27VDC	10-30VDC
Temperature range:	-10 – 60°C	-20-80°C	-10 – 70°C
Accuracy, FS:	0,5%	0,35%	0,1%
Measurement Principle & diaphragm:	Piezo/SS	Piezo/SS	Ceramic
Printed part nr info:	Yes	No	Yes
Suitability for sea water:	Yes	Yes	Yes
Heavy weight for higher chance of no effect of turbulence	Yes	No	Yes
Very large protective holes for less chance of clogging:	Yes	No	Yes
Reprogrammable Ranges:	No	Yes	Yes
Built-in surge protection:	No	No	Yes
ATEX/cUL:	No	ATEX (to come)	Yes
Auto Zero	No	Yes	No
ModBus & 4-20mA output in the same unit	No	Yes	No

## 1.2 Functionality

The Flygt level sensor LTU 801 is used to measure a liquid level and to give a standard 4-20mA direct current output signal, proportional to the measured level, to a control system.

The measurement cell is connected to the measured media by means of a ceramic diaphragm and a capillary tube.

Changes in pressure on the ceramic sensor face causes a microscopic movement in internal capacitive plates, which in turn causes a change in output of the analog signal. Since there is little physical movement in the transducer, capacitive devices tend to be said to be more accurate and have a longer life span than piezo-resistive devices.

The atmospheric pressure on the reverse side of the sensor (used for obtaining reference pressure) is accessed through a capillary/vent tube embedded in the cable. Assure that no moisture or condensation water gets in the tube during installation as that can warrant the function of the transmitter.

When the pressure transmitter is constantly immersed, no further maintenance is required. In installations with very dirty water with a tendency to sedimentation or drying out, cleaning may be necessary. Be careful with the diaphragms - they cannot stand cleaning with sharp or pointed objects, only use a soft brush or wash off the dirt. A 10% hydrochloric acid solution might be used as degreasing agent. To further increase the robustness, the LTU 801 comes with a protection insert with large holes to minimize clogging.



The LTU 801 level transmitters have further more built in protection for over voltage and transients and is very robust. The pulse that enters the LTU 801 transmitter is caught by a spark gap and a double protection transient diode.

## 2 Compatibility

The LTU 801 is specifically engineered to withstand the harsh environmental conditions typically encountered by Flygt pumps: VFDs, sewage, slurry and viscous liquids as well as sea water. The LTU 801 is well adapted to the prevalent control systems on the market including, of course the Flygt range of pump controllers.

## 3 Approvals, testing and results

### 3.1 Approvals

#### **EMC 89/336/EEC:**

89/336/EEC, 2004/108/EC, 1999/EC

EN 61326-1, EN 61326-2-3

EN 55011, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5,

61000-4-6, 61000-4-8

EN 61000-6-4 2007-02-19, EN 61000-6-2 2005-09-08

#### **ATEX 94/9/EC:**

II 2G Ex ia IIC T6 (-20°C≤Ta≤40°C)

II 2G Ex ia IIC T5 (-20°C≤Ta≤50°C)

II 2G Ex ia IIC T4 (-20°C≤Ta≤80°C)

#### **UL:**

Class 1, 2 and 3 Division 1 Group A-D T4/T5/T6

### 3.2 Testing

The LTU 801 has been installed in thousands of installations under the MJK name so it has a well proven track record. The LTU 801 has also been evaluated in the HQ laboratory according to QT-plan where issues such as high pressure hosing, EMC, impact, heat etc. have been tested and documented.

## 4 Known limitations

No known limitations.

## 5 Technical information/data

The LTU 801 is delivered in a complete package containing an LTU 801, cable holder and a description on how to install the level transmitter.

Technical Specifications and Installation Manual in English, French, Spanish, Swedish, German, Dutch and Italian can be found on the site for Technical Product Information (TPI): <http://oasis.xyleminc.com/tpi/tpi.asp>

Measuring range (m)	Cable length (m)	Brand	Type	Mounting type	ATEX/cUL approval	Part number
0-2	12	Flygt	LTU 801	Free-hanging	X	84 62 30
0-5	12	Flygt	LTU 801	Free-hanging	X	84 62 31
0-5	12	Flygt	LTU 801	1" thread for pipe mounting	X	84 62 32
0-5	30	Flygt	LTU 801	Free-hanging	X	84 62 33
0-5	50	Flygt	LTU 801	Free-hanging	X	84 62 34
0-10	12	Flygt	LTU 801	Free-hanging	X	84 62 35
0-10	25	Flygt	LTU 801	Free-hanging	X	84 62 36

## 6 Release, Stock, Price Information and Additional Information

The part numbers will be available for order from today's date 2017. The 2017 IPL-pricing is shown below:

Part number	IPL Price (SEK)	Suggested End Customer Price
84 62 30	10 560	€7-900
84 62 31	10 560	€7-900
84 62 32	10 560	€7-900
84 62 33	13 140	€7-900
84 62 34	15 610	€7-900
84 62 35	10 560	€7-900
84 62 36	12 420	€7-900

The release material can be found on Oasis > Business Units > Transport > Launches and Campaigns > Product releases > <http://oasis.xyleminc.com/en-us/Home/business-segments/transport/launches-campaigns/product-releases/Pages/default.aspx>.

The release package include:

- LTU 801 product presentation
- Pictures for commercial and internal use (MediaBank)
- Newsletter proposal
- Tender Specification/narrative text for the LTU 801
- Xylect update
- Manual (TPI)
- Value Proposition

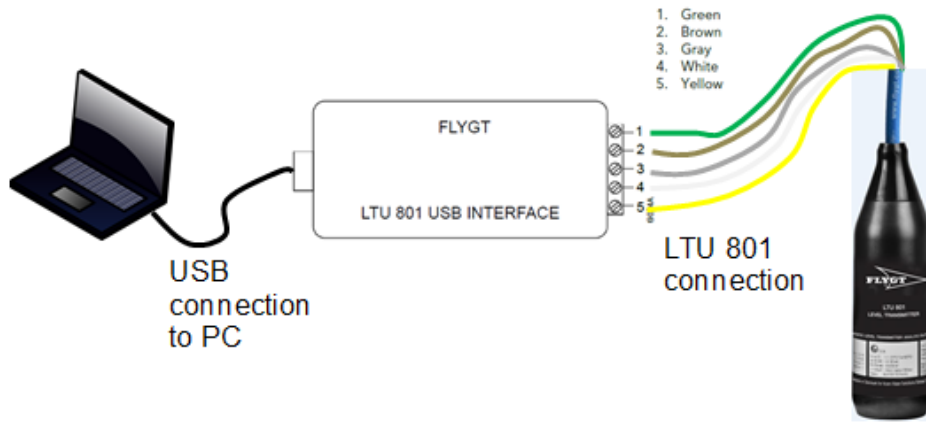
## 7 Accessories



- The 850043 is a Flygt USB interface for setting of customized level measurement ranges and zero offset calibration (even when the LTU 801 is in operation). A PC and a "Link" software is needed. The latter is downloaded from TPI (LTU 801).

The LTU 801 USB interface is connected in one end to a PC using a USB cable and in the other end to an LTU 801 Level Transmitter.

### Installation drawing



Picture showing the LTU 801 cable that is cut and stripped where 6. indicates the five programming wires seen





- The LI 531 Field Level Indicator is an accessory for the indication of the measured level

- 3½-digit easy readable LCD display.
- Delivered as a complete digital indicator in IP65 plastic cabinet
- Supplied from 4-20 mA current signal
- Internal calibration of zero and span with optional placing of the decimal point

Calibration and adjustments are done on the back of the indicator.

Usage of LI 531 demands no need for measuring or test equipment.



- The junction box is an accessory for connecting the Flygt range of analog level sensors: LTU 403, LTU 601 and LTU 801 to a Flygt pump controller. It provides flexibility in both new and existing installations, it is easy to use and install and it has a sturdy aluminium casing to withstand harsh environments. The enclosure's protective rating of IP 67 makes the Junction Box suitable for mounting outdoors.

The junction box further more provides solutions to several practical issues:

- Provides protection for splicing the sensor cable, with extension of the screened control cable to the RTU, including branching of the vent tubing in the sensor cable.
- Lightning protection by means of a surge arrester.
- Noise/interference protection in VFD applications.
- Testing the sensor setup, by means of an internal power control LED.



- The 837388 Cable Holder is a dedicated spare part for cable diameter 6-10mm. Suitable for hydrostatic level transmitters like LTU 801 and LTU 601.

Note: The sensor cable has to be supported without any sharp bends to prevent blocking the small air hose inside.



- Installations in EX-applications for the LTU 801 must be done in accordance with local rules and regulations.

Intrinsically safe circuits are required for the automatic control system. - Use an EX-safety barrier (e.g. Flygt Part. no. 843055).