ONDUCTIVITY, PRESSURE, AND TEMPERATURE TRANSMITTER UWA-03-LTC

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Enelsan underground water analyzer is a domestically produced transmitter used to measure water quality and water level in industrial environments, treatment plants, lake, pond and well systems. The UWA-03-LTC coded transmitter is a completely domestic product designed with industrial and agricultural needs in mind. In this context, the product; It has the distinction of being the first product whose software and hardware were prepared with the domestic R&D team and produced with domestic facilities.

Enelsan underground water analyzer is a transmitter that measures the liquid level up to 120 meters (Optional 400 meters) with high sensitivity and high accuracy, with internal conductivity and temperature sensors. In the UWA-03-LTC coded transmitter design, a device superior to its counterparts has been created by using the latest technology sensors and components. The product has been made a much more resistant product against corrosion by using a ceramic electrode instead of metal electrode as the sensor material, and by adjusting the AC excitation voltage in the firmware, the corrosion effect has been minimized and a longer-lasting and durable product has been created.

The UWA-03-LTC underground analyzer is a device capable of measuring the parameters necessary to determine the quality of groundwater. It has a technology that detects the measurement accuracy depending on temperature conditions by making temperature compensation in conductivity and level measurements, and enables more accurate and sensitive measurements to be taken. In this way, it is possible to analyze groundwater in the most accurate way. In industrial and agricultural groundwater use, accurate analysis of groundwater is one of the most important factors for efficient water use.

The UWA-03-LTC transmitter has been developed as a product with the features needed for this purpose. The UWA-03-LTC transmitter is designed with the industry standard Modbus communication protocol. The main reason for choosing this protocol and communication method is to exempt users from additional costs such as additional communication modules or usage licenses. With the standard communication protocol and communication method, the device can be operated easily with other systems, devices and automation systems without additional costs.

The general features and innovative aspects of the UWA-03-LTC code underground water analyzer are as follows:

- 120 m level measurement (optional 400 m) and 80 bar pressure resistance
- Temperature compensation in conductivity and pressure measurement
- Easy integration into water management systems
- Water level measurement with +/- 0.05% accuracy
- Direct data transfer to automation systems via Modbus communication
- Easy integration into remote recording control and online monitoring systems.

Innovative Aspects:

- High accuracy of 0.05% in level measurement with pressure
- +/-2% accuracy and 0.0003% measurement resolution in conductivity measurement
- Easy integration to all systems with Modbus communication
- Use of corrosion-resistant ceramic electrode instead of metal sensor electrode
- AC excitation voltage adjustment by software to reduce corrosion effects
- Longer lifetime and more stable measurement over time than its counterparts
- 0-10 ms/cm or 0-200 ms/cm selectable conductivity measurement range

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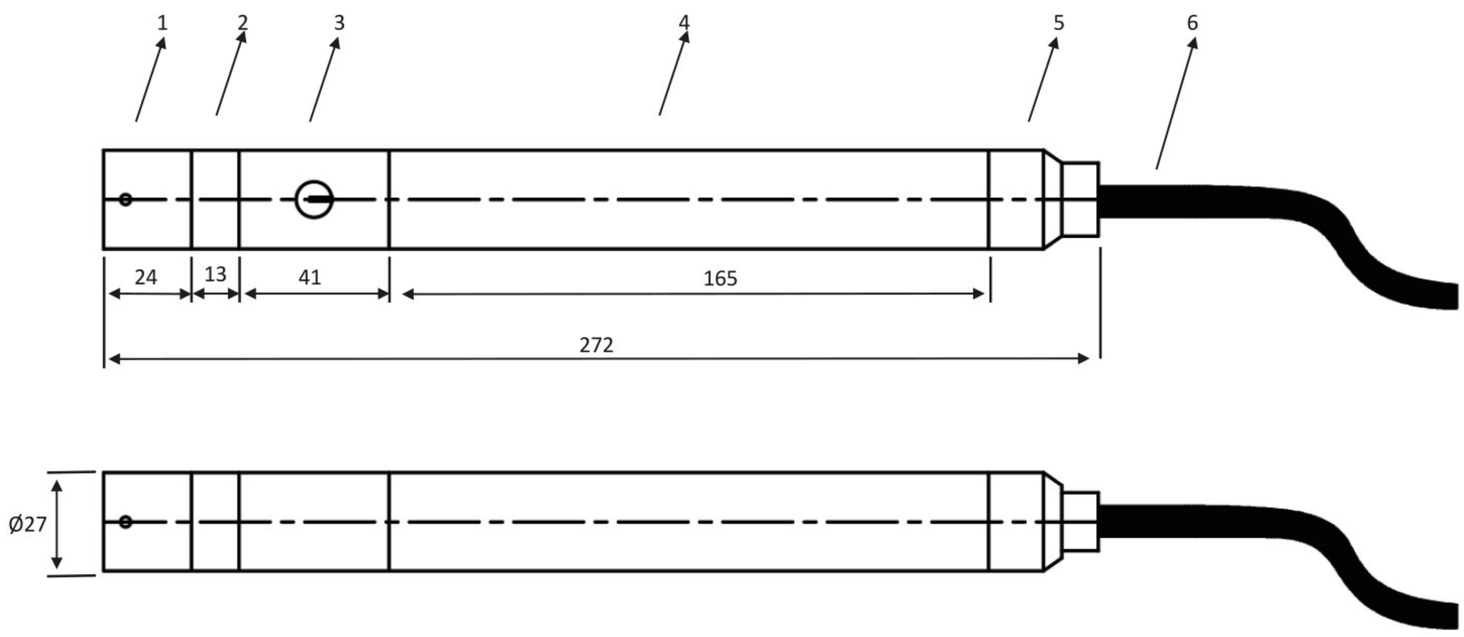
Teknik Özellikler	
Power Supply	6-34 VDC
Output	RS 485 Modbus(standard)
Electrical Connection	4-wire
Repeatibility	0,02% Full Scale
Temperature Measuring Range	-20°C / +85°C
Temperature Measuring Precision	± 0,1°C
Temperature Measuring Resolution	0,01 °C
Tempepature Compensation	0°C / +50°C
Pressure Measuring Range	0-120 mH20 (12 Bar, Ops. 400mH2O)
Pressure Measuring Precision	± 0,05% Full Scale
Pressure Measuring Resolution	0,0005 Bar
Conductivity Measuring Range	0-10 mS/cm or 0-200 mS/cm
Conductivity Measuring Precision	± 2%
Conductivity Measuring Resolution	0,0003 mS/cm
Time Stability	0,8 mBar/Year
Body Material	316L Stainless Steel
Cable Length	130m (Optional 420m.) selectable.
Weight	400gr

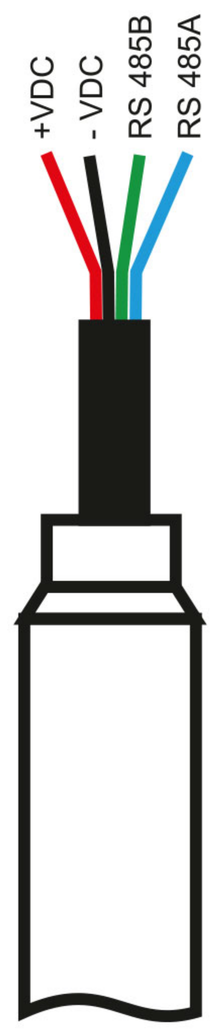
CODE SELECTION TABLE

Product Code	Measuring Scale	Cable Length
UWA-03-LTC-10	10mH20	20m.
UWA-03-LTC-20	20mH20	30m.
UWA-03-LTC-50	50mH20	60m.
UWA-03-LTC-100	100mH20	110m.
UWA-03-LTC-400	400mH20	410m.

*Standard external cable length can be selected.

CODE SELECTION TABLE





1.Sensor Protector
2.Pressure Sensor
3.Conductivity and Temperature Sensor
4.Card Casing Tube
5.Cable Connector
6.Cable

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The device has standard RS485 communication and can be used with all devices and automation systems that have RS485 communication.

UWA-03-LTC Transmitter RS485 communication map is as follows.

Register Adresi	Parametre	Dividing	Veri Tipi	Aralık	R/W	Not
0	conductivity		UInt16	150.0-6000.0	R	(uS/cm)
1	conductivity normalised to 25 °C		UInt16	150.0-6000.0	R	(uS/cm)
2	pressure		UInt16	0-2000.0	R	(kPa)
3	water height		UInt16	0-200.00	R	(m)
4	water temperature		UInt16	-20.00-+90.00	R	(°C)
5	board temperature		UInt16	-20.00-+90.00	R	(°C)
10	conductivity high alarm status		UInt16	0-1	R	
11	conductivity low alarm status		UInt16	0-1	R	
12	pressure high alarm status		UInt16	0-1	R	
13	pressure low alarm status		UInt16	0-1	R	
14	water level high alarm status		UInt16	0-1	R	
15	water level low alarm status		UInt16	0-1	R	
16	temperature high alarm status		UInt16	0-1	R	
17	temperature low alarm status		UInt16	0-1	R	
100	modbus slave id	n/a	UInt16	1-247	R/W	
101	modbus baud	n/a	UInt16	0-4	R/W	0: 4800 1:9600 2:38400 3:57600 4:115200
102	modbus data bits	n/a	UInt16	0-1	R/W	0: 7bits 1: 8-bits
103	modbus parity	n/a	UInt16	0-2	R/W	0: None 1:Even 2:Odd
104	modbus stop bit	n/a	UInt16	0-1	R/W	0: 1bit 1:2bits
105	time seconds		UInt16	0-59	R/W	
106	time mins		UInt16	0-59	R/W	
107	time hour		UInt16	0-23	R/W	
108	time day		UInt16	0-31	R/W	
109	time month		UInt16	1-12	R/W	
110	time year		UInt16	0-255	R/W	
111	conductivity high alarm	10	UInt16	150.0-6000.0	R/W	(uS/cm)
112	conductivity low alarm	10	UInt16	150.0-6000.0	R/W	(uS/cm)
113	pressure high alarm	10	UInt16	0-2000.0	R/W	(kPa)
114	pressure low alarm	10	UInt16	0-2000.0	R/W	(kPa)
115	water level high alarm	100	UInt16	0-200.00	R/W	(m)
116	water level low alarm	100	UInt16	0-200.00	R/W	(m)
117	temperature high alarm	100	Int16	-20.00-+90.00	R/W	(°C)
118	temperature low alarm	100	Int16	-20.00-+90.00	R/W	(°C)
120	Conductivity Coeff	100	Int16		R/W	
121	Temperature	100	Int16		R/W	
122	Water Height	100	Int16		R/W	
123	Water Height	100	Int16		R/W	
	Versiyon	n/a	UInt16	0-65535	R	100: Ver1.00
	Kalibrasyon Tarihi	UNIX TIME	UInt32		R	

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Application with WaterGO GSM Datalogger

Enelsan universal data logger can be used with UWA-03-LTC series transmitter.

The universal data logger both stores the measurement values in its internal memory and sends these data to a customized server that can only be accessed with a username and password.
It can export the information it receives from the transmitter via Rs485 Communication by storing it as a data recorder.

The UWA-03-LTC Transmitter can be used with Enelsan universal data logger as well as with all data logger devices and automation systems with Rs485 ModBus communication.

The general features of the data logger are as follows.

The device is designed to connect measurement equipment such as flowmeter, pressure transmitter, level transmitter and to transfer their data to the central software with a special protocol.

- Recording and web sending times of all data read on the device can be adjusted.
- With the modbus protocol, 16 parameters can be read and recorded in the device.
- 32 alarms can be set on the device.
- All parameters can be assigned independently of the set alarms.
- 4 relays on the device can be configured according to these 32 alarms.
- In alarm situations, it sends an information message to the user via SMS.
- The device works based on GSM.
- The settings of the device with modbus protocol connected to the device can be changed on the website.
- From the logic inputs on the device, on/off information can be obtained from a desired system.
- The desired data from the device can be read quickly via SMS.
- SMS or alarm can be created in line with the information received from the logic inputs.
- All settings of the device can be adjusted on the website. At the same time, desired settings can be made to the device via SMS.
- All data sent by the device to the website can be reported.
- There is a built-in solar energy system on the device.
- In case of power cut, it can send data 24 hours a day at specified intervals.
- Time and date information can be updated over the web.
- Data can be obtained in Graphic - PDF - Excell format.
- There is a real time clock on the device.
- The device can be fully controlled via the website, and all settings can be made online.
- Relay can be turned on/off manually.
- There are 2 Rs485 Communication ports.
- Datalogger protection box is Ip68 class and can be hung on the wall. It is produced from high-strength PC-GFS (polycarbonate) material according to IEC60670-22 and DNV-GL standards.

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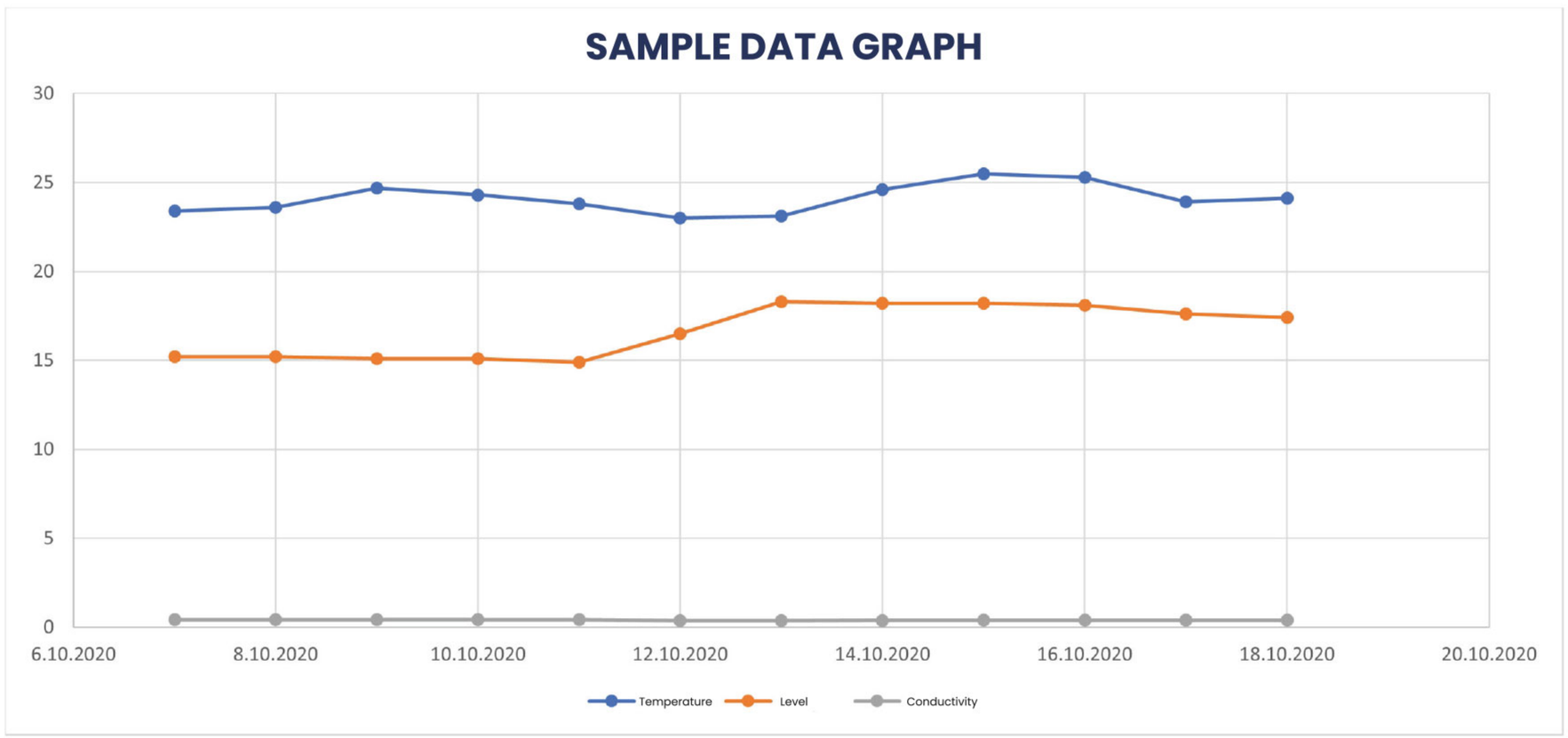
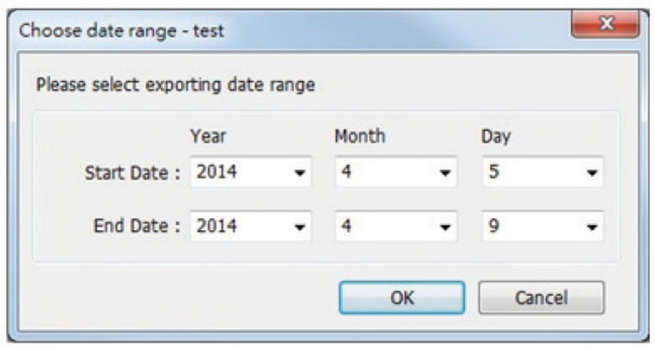
Enelsan universal data logger device sends the recorded data to the server and stores it on the server. Users can only access all these data with their user name and password.

By entering the desired date and time range, the recorded data can be reported in PDF or EXCEL format, and it can also be printed out as a graphic.



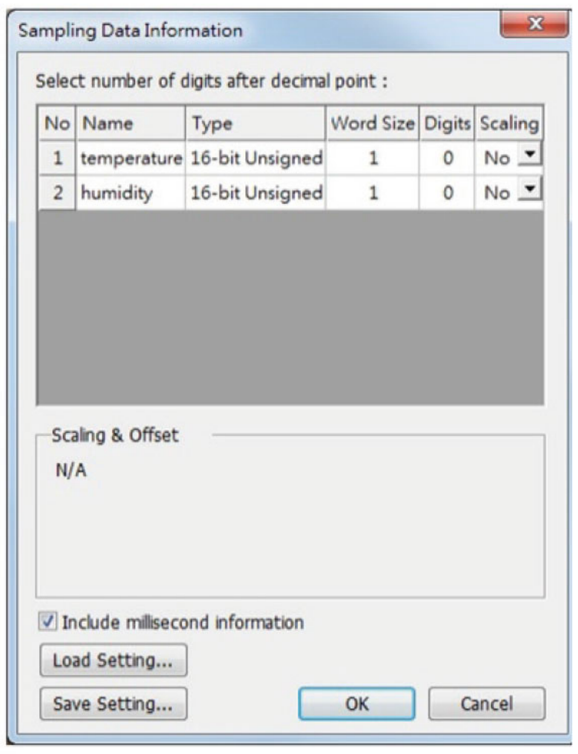
Device internal data can be taken from the device with the help of EasyConvertor program and reported as EXCEL.

1.STEP



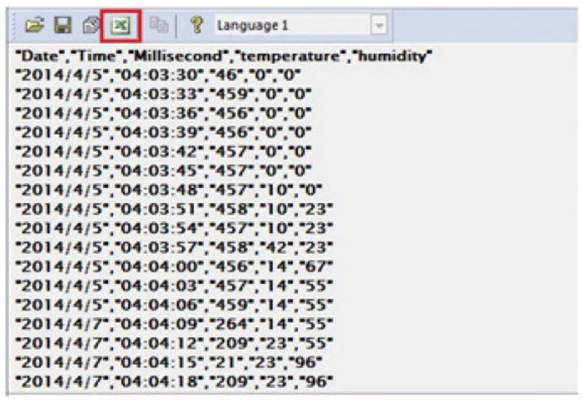
After connecting to the data logger device with EasyConver-tor, the date range to be reported is selected.

2.STEP



On this screen, the sensor parameters to be reported are selected.

3.STEP



Finally, using the raw data EXCEL button, an EXCEL report is obtained.