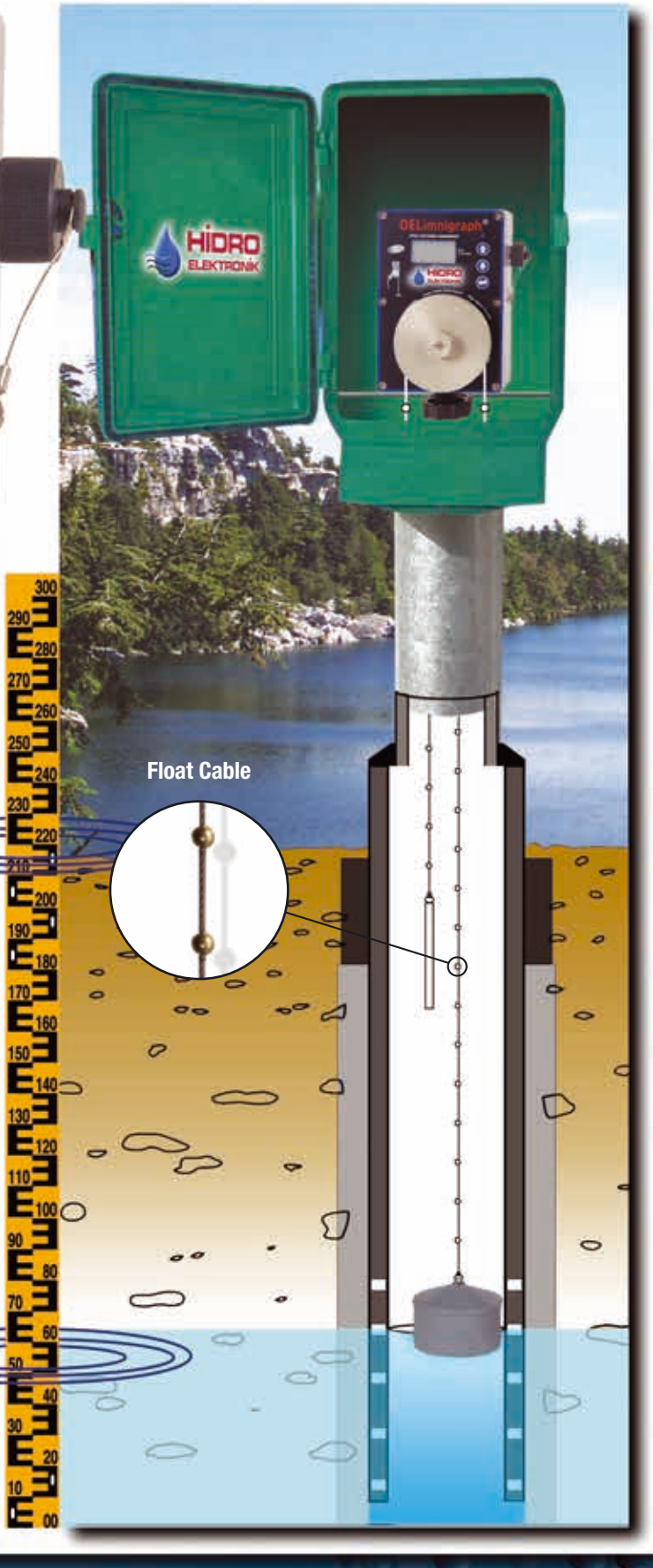
Water Level Recorder
OEL-104
Limnigraf

HİDRO ELEKTRONİK A.Ş.



Water Level Recorder (OEL-104) is used for the continuous monitoring, logging and storage of ground water level and surface water level. **(System works accurately on rivers, irrigation channels, dams, lakes, land drainage, ground-water wells and flood control monitoring).**

With a float-operated shaft Encoder OEL-104, a new generation in water-level measuring technology has been achieved.

- Proven **HIDRO HYDROMETRY** quality with competing prices.
- 3-lines, dot matrix LCD display, each 12 characters. (Water Level, time, date, battery-status, alarm status, setup and measured values)
- RS232 interface for bi-directional data transfer via serial modem, GSM data modem, GPRS data modem, radio modem, flash card, Palm top, satellite, etc.
- Battery life-time > 10 years. No battery change necessary.
- Built-in LCD display for water-level indication in **"cm" , "mm" or "inches"**
- Communication Ports: **RS232** interface, **RS485** interface **SDI-12** interface and **USB.**
- **256** KByte Ring Memory, **EEProm**
- Keypad or remote setup
- Windows Data Management Software
- Flexible installation
- 3 years warranty

Elektronik Limnigraf

Seyhan River, Salbas Station
(018-0028) Adana / TURKEY

Irrigation Channel (YSO)
Adana / TURKEY

Elektronik Limnigraf'lar nehirlerde, barajlarda, göllerde, sulama kanallarında, yeraltı kuyularında, taşkın kontrollerinde, atık su idaresi, kıyı dizaynı ve çevre çalışmalarında su seviye ölçümlerinde kullanılmaktadır.

Mini bilgisayar özelliğinde olan Elektronik Limnigraflar su seviye ölçümlerini otomatik olarak hafızasına kayıt etmekte, bilgileri hafızasında depolamakta ve bu datalar istenildiğinde Limnigraf'ın RS-232 çıkışından Lap-top bilgisayar, Flash Card, Palm Top, GSM data modem ve GPRS data modem aracılığı ile PC'ye transfer edilmekte, datalar Windows ve Excel ortamında tablolar ve grafik halinde değerlendirilmektedir. LCD Display'den Su Seviyesi, tarih, saat, batarya ömrü, Min.-Max. Seviye, setup bilgileri, seri no, Alarm durumu... gibi bilgiler okunabilmektedir.

Tip	**Şamandıralı** (Floating)
Hafıza	**256 KByte** (Ring Memory özelliğinde), **EEProm**
Ring Memory Kodu	256 KByte Memory dolduğunda ilk gün datalarını siler, yeni dataları kayıt eder.
Hafıza Kapasitesi	1 saat kayıt aralığında yaklaşık 15 yıl (seviye, saat, tarih, alarm kayıt eder)
Seviye Kayıt Aralığı	Çözünürlük 1 cm seçildiğinde 0 ile 655 m
LCD Display	3 satırlı dot matrix LCD display, her satır 12 karakter. Display'den seviye, tarih, saat, alarm, kurulum... bilgileri izlenir.
Keypad	3 butonlu, dokunmatik tuşlu. Butonlar ile kurulum yapılabilir.
Sızdırmazlık	Waterproof (IP 67)
İletişim - Haberleşme	Data logger ile veri okuyucu arasındaki bilgi alışverişi, RS232 üzerinden Lap-Top bilgisayar, Desktop, Flash Card, Palm Top, Line modem, (opsiyonel), Uydu (opsiyonel) ve GSM Data Modem aracılığı ile yapılır. Desktop Computer, Notebook GSM Data Modem, GPRS Data Modem, TCP/ IP Palm Top, Data Flash Card (2 MByte) Line Modem (optional) Uydu - Satellite (optional)
İletişim Portları	RS232 Seri port, RS485 Seri Port, USB ve SDI-12
Batarya	1 adet 3.6 Volt DC, 8500 mAh. C size. Lithium Battery
Batarya Ömrü	> 10 yıl
Zaman Formatı	24 saat, hassasiyet ± 1 dakika /1 ay. Gerçek zamanlı saat.
Zaman Ayarı	Otomatik (artık yılları otomatik ayarlar)
Data Kayıt Aralığı	Min. 1 dakika, Max. 1440 dakika (24 saat) 1', 3', 5', 10', 15', 30', 60' ve katları seçilebilir.
*** SMS Alarm Mesajları**	Taşkın yüksek alarmı, seviye düşük alarmı, seviye artma hızı alarmı ve batarya alarmlarını SMS mesaj olarak cep telefonlarına ve PC'lere otomatik olarak gönderilir.
*** Cep Telefonuna SMS Mesaj Gönder**	**"HIDRO LEVEL"** yazıp Limnigraf tarafı modeme gönderildiğinde, cep telefonuna **"SMS SEVİYE"** mesajı gelir.
İletişim Protokolü	RS232 üzerinden hardware hand shaking 8 bit
Data Kaybı	Data Logger arıza yapması, pil bitmesi ve belirli voltajın altına düğmesi durumunda datalar silinmez, kayıp olmaz.
Data Aktarma Hızı	19200 bps (9600 bps seçmeli), Flash seçeneği: 115200 bps
Veri Analiz Programı	Windows tabanlı, Win95/98/2000/ME/NT 4.0, XP ve Vista altında çalışır.
Read Out Ünitesi	4...20 mA, 0 - 5 V, 0 -10 V çıkış
Devre Tasarımı	Optic Encoder, batarya ve elektronik devreler aynı kutu içinde "compact" ve "robust" tasarım.
Çalışma Sıcaklığı	- 30 °C ile + 80 °C arasında
Depolama Sıcaklığı	- 40 °C ile + 85 °C arasında
Nem	% 98 bağıl

* GSM /GPRS Modem Özelliği

Optic / Shaft Encoder

Optic Encoder	Light Pulse Scan Optical Encoder. Accurate and incremental reading on logger. 128 definable sectors and 7 tours
Prensip	Optical scanning 1 turn absolute, multiple turns summing
Işık Kaynağı	IR LED Array
Çözünürlük	1 mm (2 mm, 1 cm-seçilebilir)
Hassasiyet	± 1 mm
Tanbur Çevresi	256 mm = 25.6 cm
Shaft Mili Çapı	7 mm
Shaft - Yükü	Radial = 5 kg (50 N) Axial = 1 kg (10 N)
Veri Giriş Birimi	"mm" veya "cm" setup'tan seçmeli
Optic Encoder Tarama	Su seviye yükseli· ve dü·ü·ünü kotlar
Su seviye Değerleri	LCD ekrandan direk "**mm**" veya "**cm**" olarak izlenir
Çalışma Sıcaklığı	- 30 °C ile + 80 °C
Depolama Sıcaklığı	- 40 °C ile + 85 °C
Nem	% 98 bağıl
Kutu	Basınçlı Alüminyum döküm, boyutlar: (170x120x55 mm)
Sızdırmazlık	Su geçirmez, IP67
Ağırlık	~ 1,5 kg

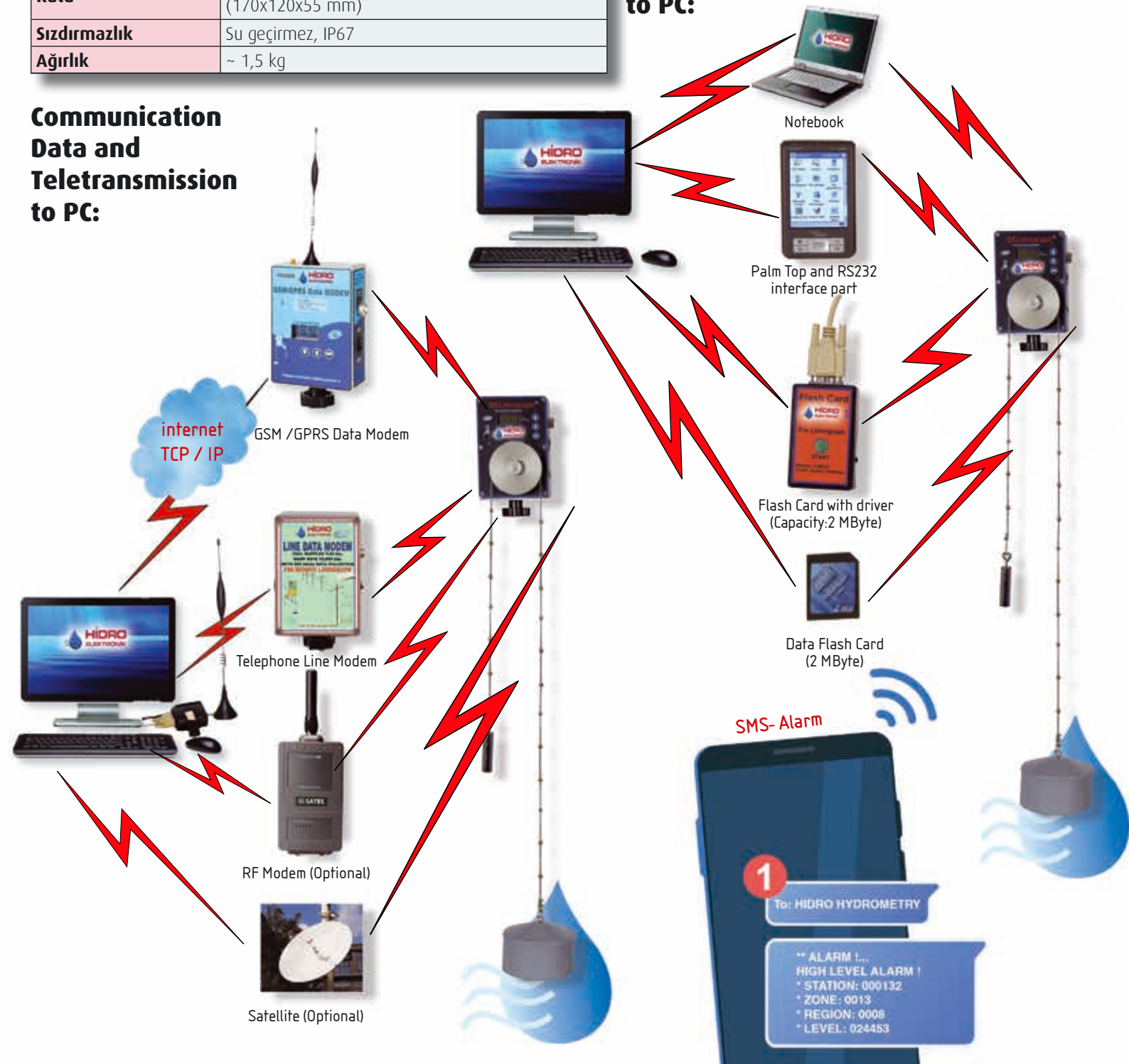
Aksesuarlar

Şamandıra (Bakır)	Çap:120 mm, Uzunluk:100 mm, Ağırlık:540 gr.
Kurşun Ağırlık (Krom)	Çap:20 mm, Uzunluk:90 mm, Ağırlık:180 gr.
Boncuklu Çelik Halat	Paslanmaz, Krom-Nikel Halat Halat Çapı:1 mm, Boncuk Çapı: max.3,2 mm

Opsiyonlar

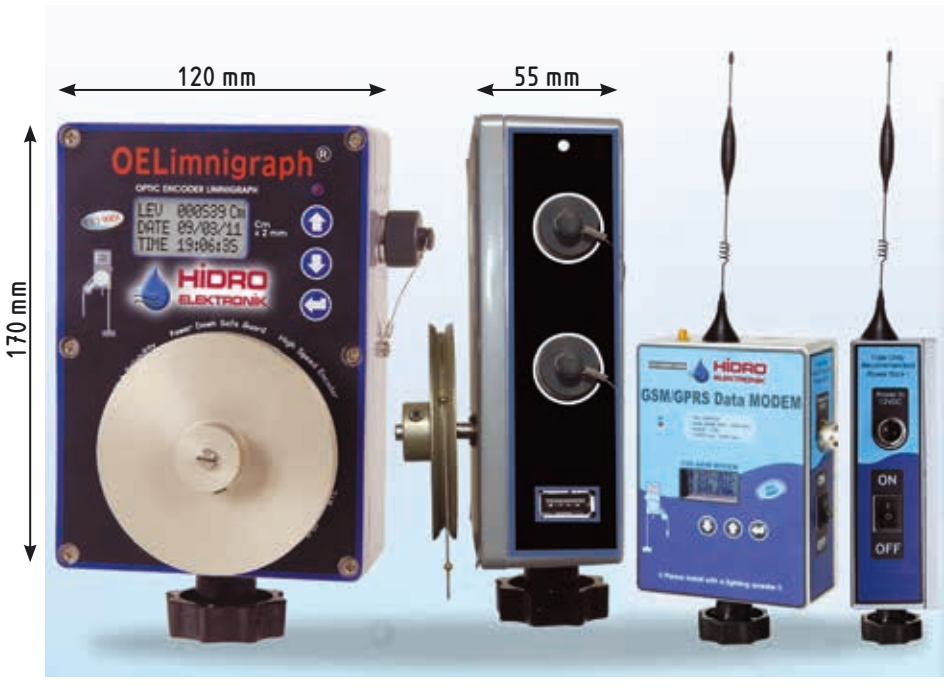
Data Flash Card	Data Aktarma Ünitesi Kapasitesi: 2 MByte
GSM Data Modem GPRS Data Modem	19200 Baut rate, kablosuz, full duplex Data Collector modem
Line Modem	PTT hatlı. V.24 bis full duplex Data Collector modem
Palm Top	Pocket PC, Intel PXA 255,400 MHz
Read Out Ünitesi	4...20 mA, 0 - 5 V, 0 -10 V çıkışlı

Communication Data and Transmission to PC:



Communication Data and Teletransmission to PC:

Kecili Underground Well.
(20603) Sanliurfa / TURKEY



Catalan Dam
Adana / TURKEY

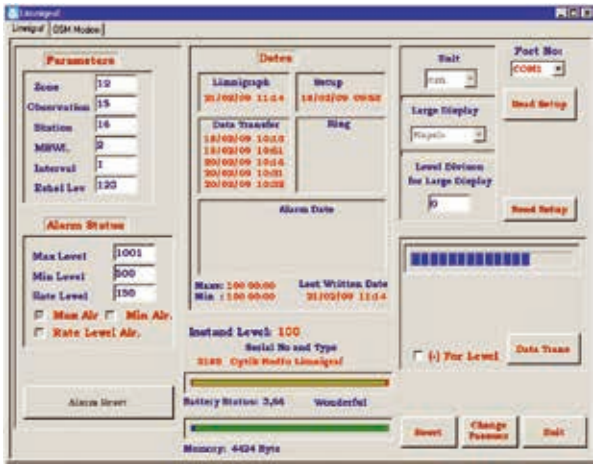
Irrigation Channel (TS1)
Adana / TURKEY

Maritsa River
Edirne / TURKEY

WINDOWS DATA MANAGEMENT SOFTWARE HIDRO 5.1

Windows 95/98/2000/ME/NT 4.0, XP, Vista and Win 7 compatible Windows Data Management Software is developed for graphical and tabular evaluation of the measured hydrometric and hydrogeologic data.

The user - oriented HIDRO 5.1 software is developed as a comprehensive solution for the preparation and evaluation of hydrological and hydrogeological data.



- RS232 Interface
- GSM Data Modem
- GPRS Data Modem
- Flash Card
- Line Modem
- GSM Net
- Palm Top

Communication and transfer of raw data into the data base of measured values. (Automatic or manual)

General View HIDRO 5.1 Functions

The starting package comprises of a transfer and storage program to read the memory of the OEL-I04, PSL-037, PSL-014 data loggers, ... as well as palm top, flash card Data Reading Units.

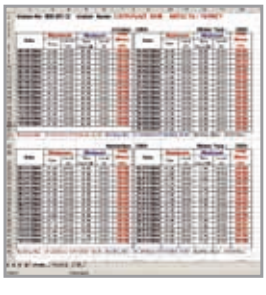
Starting Package (Communication Program)

Reading of the raw data into a PC / Laptop over a RS232 serial interface
- immediately from the measuring point (e.g.via GSM Data Modem, Line Modem)
- From The Flash Card Reading unit
- From a PalmTop Computer
- From diskette, CD

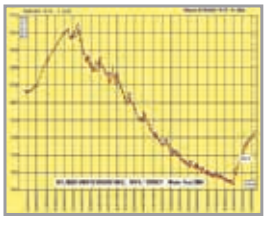
Management of raw data, i.e.
- display
- printing options of ASCII file, txt file,
- copy (transfer) on diskette, CD
- deletion
- output / transfer as ASCII file, txt file

Installation, editing, deletion, or reading all of raw data from the measuring stations via GSM, GPRS modem, Line modem (automatic) or notebook, palm top and flash card.

BASIC PACKAGE (Standard)
The basic package comprises several main function sections, as follows:
-evaluation
-communication
-data management
-configuration
-special programs and help menu.



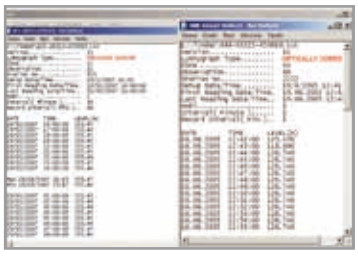
EVALUATION Section
-Evaluation of stored values for any chosen period (from-to), latest period and day
-Numeric display of measured values in tabular form (in Excel format)
-number of values
-maximum
-minimum
-average
-total
-numerical print out on any type of ASCII or laser printers
-graphical display of measured values.
-zoom in/out.



COMMUNICATION Section
-Installation and transfer of raw data into the measured values data base
-Automatic or manual
-Reception of incoming high water level alarm, low water level alarm,rate alarm and battery alarm calls from measuring stations via telephone modem, GSM, GPRS data modem.

DATA MANAGEMENT Section
-Editing of measured values (Changing, inserting, erasing)
-Groups of measured values (new calculation)
-Graphical editing of measured values
-Transfer of measured values to statistical values for further processing programs over ASCII file,txt file (e.g. on diskette, CD)

CONFIGURATION Section
-Installation, editing or deletion of measuring stations, (text, number, type of device, call number)
-Setting of HYDRO
-Display
-Language, selection (Turkish, Farsi and English)



SPECIAL PROGRAMS (Equipment - Specific Programs)

Water Level Recorder Limnigraph

Water Level Recorders measure by means of a conventional float system. Water-Level changes are sensed by a pulley-type contactless magnetic sensing system and are converted into a digital signal. The measured values are stored in the data logger which is an integral part of the optic / shaft encoder.

Water Level Recorder (OEL-104) is used for the continuous monitoring and storage of ground-water and surface water level (of rivers, irrigation channels, dams, lakes, land drainage, ground-water well and flood control).

With a float-operated Optic / Shaft Encoder OEL-104, another breakthrough in Water-Level measurement technology has been achieved. Due to its easy handling and its competing prices, The OEL-104 Optic / Shaft Encoder is the ideal device for modernization of existing measuring locations.

For ground-water-monitoring we offer an optional installation set for 4" well-pipes and bigger.

Data Logger

OEL-104

Type	Floating
Memory	**256 KByte** (Ring Memory), **EEProm**
Memory Storage Mode	Circle Mode (cyclic over writing old data)
Memory Storage Capacity	Storage capacity of data over approximately 15 years at a storage interval of 1 hour
Storage of	Water Level, Real time and date, alarms, manual correction of data (observer) with time and date, observer records. During readout, the sampling process is not interrupted
LCD Display	3-lines dot matrix LCD Display, each 12 characters. Displays actual water level, date/time, Level alarms, storage memory, sampling interval,min./max. value, last battery change, last readout and setup parameters, error messages and measured values. 15 sec. auto shut off
Keypad	3 keys. Built - in touch keypad for operation and set up over keypad
Data Transfer Rate	19200 bps (9600 bps selectable) Flash card Option: 115200 bps
Communication	RS 232 interface via:Desktop Computer, Notebook, Telephone Line Modem, GSM Data Modem, GPRS Data Modem (TCP/IP), Palm top, Flash Card (2 MByte), RF modem (optional) and Satellite (optional)
Communication Ports	RS232 Interface, RS485 Interface , SDI-12 Interface and USB
Power Supply	Single 3.6 Volt DC, 8500 mAh. C size Lithium Battery
Battery Life - Time	> 10 years (No battery change necessary)
Sensor Access	24 hour time, accuracy approx. ± 1 minute per month
Real Time Clock	Quartz - controlled real-time clock. Automatic leap year calculation
Interval time	The sampling and logging intervals can be preset (from 1 minute to 24 hours)
*** SMS Alarm Signals**	High level alarm, Low Level alarm, rate alarm and battery alarms by SMS messages sent to GSM cellphones and PC's (incoming alarms are automatic from measuring stations)
*** SMS Messager**	Text "AKIM LEVEL" and send to Limnigraph side to Cellphones modem and receive "SMS LEVEL" on your cellphone
Read Out Unit	4...20 mA, 0 - 5 V, 0 -10 V outputs
Protected Data	No data loss even if Battery fails, data stored in EEProm memory.
Protection	Not affected by humidity and dust (IP67 protection)
Working Temperature	- 30 °C to + 80 °C
Storage Temperature	- 40 °C to + 85 °C
Humidity	98 % relative

* GSM /GPRS Modem Function

Optic / Shaft Encoder

Sensor	Light Pulse Scan Optical Encoder. Accurate and incremental reading on logger. 128 definable sectors and 7 tours
Principle	Optical scanning 1 turn absolute, multiple turns summing
Light Source	IR LED Array
Resolution	1 mm (2 mm, 1 cm-scalable)
Measuring Range	0 to 655 m max. 1 mm for 0-130 m range 1 cm for 0-655 m range
Accuracy	± 1 mm
Wheel perimeter	256 mm = 25.6 cm per turn
Shaft diameter	7 mm
Shaft - Load	Radial = 5 kg (50 N) Axial = 1 kg (10 N)
Switchable	Built in LCD Display for water level indication in "cm" or "mm" (scalable)
Sense of rotation	Left-hand or right-hand rising view on display
Working Temperature	- 30 °C ile + 80 °C
Storage Temperature	- 40 °C ile + 85 °C
Case	Pressure Cast Aluminium, size: (170x120x55mm)
Housing of shaft Encoder	IP67 protection.(humidity and dust)
Humidity	98 % relative
Weight	Approx. 1,5 kg.

Accessories

Float	Diameter:120 mm,Length:100 mm,Weight:540 gr.
Counter Weight	Diameter:20 mm, Length:90 mm, Weight:180 gr.
For Float Cable	Diameter:1 mm. Stainless steel float cable. Converts water level changes into a rotation

Options

Data Flash Card	Data Reading unit with driver. Capacity of: 2 MByte
GSM Data Modem GPRS Data Modem	Wireless Data, voice and SMS - HS CSD up to 19200 bps alarm monitoring
Line Modem	V. 34 bis full duplex data collector, alarm management, up to 33600 bps
Palm Top	Pocket PC, Intel PXA 255,400 MHz
Read Out Unit	4...20 mA, 0 - 5 V, 0 -10 V outputs

Please contact us for further information

OUR PRODUCTS:

- Data Loggers
- Water Level Recorders
- Water Level Indicators
- Water Meters
- Water Winch
- Water Quality Measurement
- Electronic Rain Gauges
- Remote Data Transmissions
- Current Meters
- Staff Gauges
- Evaporation Pans
- Auto. Meteorological Stations

Quality - Management HiDRO HYDROMETRY ISO 9001 Certificated Per ISO 9001

TÜV DIN EN ISO 9001:2018 Zertifikat: 01 100 083478

CE

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