



ON LINE WATER ANALYSER

UV500





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UV500 IS THE NEWEST GENERATION OF ON LINE WATER ANALYZERS BUILT AND PRODUCED BY **TETHYS INSTRUMENTS**.

IT OFFERS THE POSSIBILITY TO MEASURE THE MAIN POLLUTANTS IN WATER (SUCH AS ORGANIC MATTER, NITRATES, COLOR, HYDROCARBONS, AMMONIA AND H₂S) IN ONE SINGLE ENCLOSURE, USING **UV-VIS** SPECTROSCOPY. THIS METHOD IS WELL-KNOWN FOR ITS RELIABILITY AND STABILITY, AS WELL AS ITS LOW OPERATING COST.

UV500 CAN ALSO **SCAN** THE SAMPLE BETWEEN 180 AND 800 nm IN ORDER TO MEASURE A POLLUTANT IN A COMPLEX MATRIX.

IN ORDER TO COMPLETE ITS OFFER, **TETHYS INSTRUMENTS** FITS IN THE TURBIDITY BY **LASER** NEPHELOMETRY AND SPECIFIC PROBE IN-SITU FOR PHYSICO-CHEMICAL PARAMETERS (CONDUCTIVITY, PH, DISSOLVED OXYGEN).

ADVANTAGES

UV500

UV - Vis SPECTROSCOPY

UV SPECTROSCOPY DOES NOT REQUIRE REAGENT ADDITION, NOR DOES IT REQUIRE DIRECT CONTACT BETWEEN THE DETECTOR/EMITTER AND THE SAMPLE.

ADVANTAGES:

- LOW MAINTENANCE
- NO DRIFT OR PREMATURE AGEING OF THE DETECTOR
- THIS METHOD ALLOWS A BETTER RELIABILITY OF MEASUREMENT IN THE LONG RUN.

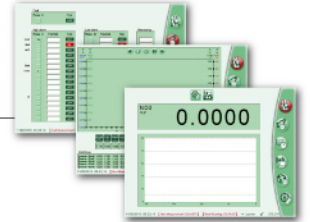
CUSTOMISED

TETHYS INSTRUMENTS DEVELOPS ITS OWN ELECTRONIC BOARD AND THE ASSOCIATED SOFTWARE FOR A BETTER CONTROL OVER INTERVENTION.

THE UV500 OFFERS THE FOLLOWING POSSIBILITIES OF OPERATING LANGUAGE:

- FRENCH
- ITALIAN
- CHINESE
- ENGLISH
- GERMAN
- SPANISH
- DUTCH

THE USE OF THE INSTRUMENTS IS EASY AND USER-FRIENDLY THANKS TO ITS COLOR TOUCH SCREEN AND INTUITIVE INTERFACE. A PROTECTION FILM ON THE TOUCH SCREEN PERMITS UTILIZATION WITHOUT ANY RISK OF DETERIORATION OF THE SURFACE, EVEN BY SOLVENTS OR ACIDS.



COMPACT AND EASY

THE NEW MECHANICAL DESIGN ALLOWS ANALYSIS OF UP TO 12 DIFFERENT PARAMETERS IN A ONE SINGLE ANALYZER, THUS REDUCING ITS SIZE AND ITS COST.

NO PREPARATION OF THE SAMPLE IS REQUIRED EVEN FOR HIGHLY CHARGED EFFLUENT. OUR PATENTED FLOW CELL AND THE DIAMETER OF THE TUBING AVOID THE RISK OF CLOGGING. IN CASE OF HIGH CONCENTRATION OF SUSPENDED SOLID IT IS POSSIBLE TO ADD A SETTLING DOWN TIME BEFORE THE MEASUREMENT TO AVOID INTERFERENCE DUE TO THE PARTICLES.

AN IN-BUILT USB PORT ALLOWS IMMEDIATE AND DIRECT COLLECTION OF THE REGISTERED DATA ON A USB STICK.



ECONOMIC AND DURABLE

THE COST OF OPERATING A UV500 IS LIMITED:

- OUR METHODS REQUIRE LITTLE (IF ANY) REAGENT
- CONSUMABLE PARTS ARE LIMITED TO PUMP HEADS (REPLACEMENT APPROXIMATELY EVERY 6 MONTHS) AND SAMPLE TUBING (REPLACEMENT ABOUT EVERY 3 MONTHS)
- THE UV XENON LAMP IS SPECIFIED FOR 10⁹ FLASHES WHICH CORRESPONDS TO A LIFETIME OF 10 YEARS ON THE BASIS OF ONE MEASUREMENT EVERY MINUTE.

FAST

THE MEASURING TIME IS LESS THAN 10 SECONDS FOR MOST PARAMETERS. FOR AMMONIA AND H₂S (MEASUREMENT IN GAS PHASE), AND FOR PHOSPHATE (MEASUREMENT BY COLORIMETRY), THE MEASURING TIME IS ABOUT 3 MINUTES.

WITHOUT CLOGGING

TO AVOID DEPOSITS BUILDING UP ON TUBING AND ON OPTICAL WINDOWS, THE ANALYZER INTEGRATES TWO AUTOMATIC CLEANING SYSTEMS. THE FIRST ONE IS A FLOW-CELL CLEANING TOOL USING AN ULTRASONIC. THE SECOND ONE IS A CLEANING SYSTEM WITH A PUMP TO INJECT SULFURIC ACID AT 5% INTO THE TUBING AND FLOW CELL. AN AUTOMATIC ZEROING CAN BE DONE TO AVOID DRIFT OF MEASUREMENT. THE ANALYZER CAN HAVE EITHER OF THESE CLEANING SYSTEMS, OR BOTH.

LOW MAINTENANCE

THE UV500 HAS A HARDY AND RESISTANT IP65 ENCLOSURE WALL MOUNTING. IT CAN BE INSTALLED OUTSIDE AND IT CAN RESIST BAD WEATHER. IT IS BOTH WATERPROOF AND DUSTPROOF.

THE UV500 IS FULLY AUTOMATED AND CAN OPERATE ALONE ON SITE WITHOUT INTERVENTION FOR SEVERAL WEEKS..

OPTIONS

UV500

MULTIPLEXING SYSTEM

THE MULTIPLEXING SYSTEM ALLOWS THE CONTROL OF UP TO 6 STREAMS OF MEASUREMENT, BY ADDING UP TO 6 RELAY MODULES. THESE RELAYS CAN COMMAND ELECTRIC VALVES OR EXTERNAL PUMPS.

ALARMS

ALARMS CAN INFORM THE OPERATOR THAT A THRESHOLD HAS BEEN SURPASSED OR ALTERNATIVELY, NOT REACHED, OR IF THE ANALYZER IS IN DEFAULT MODE, BY ADDING RELAY MODULES. THESE RELAYS HAVE A SWITCH FUNCTION.

4-20mA OUTPUT

4-20mA OUTPUT MODULE PERMITS THE TRANSFER OF THE MEASUREMENT DATA FOR ONE PARAMETER IN REAL-TIME. THE CURRENT (BETWEEN 4 TO 20 mA) IS PROPORTIONAL TO THE MEASUREMENT VALUE.

SAMPLING SYSTEM

IF THE PRESSURE OF THE SAMPLE IS NOT SUFFICIENT, AN AUTONOMIC SAMPLING UNIT CAN BE PROVIDED WITH THE ANALYZER. A SAMPLING PUMP, BUILT-IN ON AN EXTERNAL ENCLOSURE, FACILITATES TAKING THE SAMPLE DIRECTLY FROM A RIVER, TANK OR PIPE. THE DISTANCE FROM THE SAMPLING POINT TO THE ANALYZER CAN BE UP TO 5 METERS. THE MECHANICAL DESIGN OF THE PUMP-HEAD ALLOWS THE TUBING TO BE EASILY CHANGED.

A STRAINER, MOUNTED AT THE END OF THE INLET TUBING, AVOIDS THE HYDRAULIC CIRCUIT BECOMING CLOGGED DUE TO FALLEN LEAVES OR BRANCHES.

ANTIFREEZE SYSTEM AND WARMED ENCLOSURE

TO AVOID THE SAMPLE INSIDE THE INLET TUBING BECOMING FROZEN IN THE WINTER, A WARMED WIRE CAN BE INSTALLED AROUND THE TUBING. A HEATER INSIDE THE UV500 ENCLOSURE ENSURES THAT THE TEMPERATURE OF THE HYDRAULIC CIRCUIT REMAINS ABOVE FREEZING POINT.

WIFI, ETHERNET AND MODEM

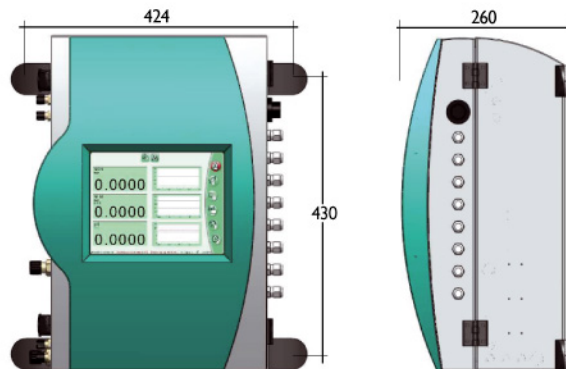
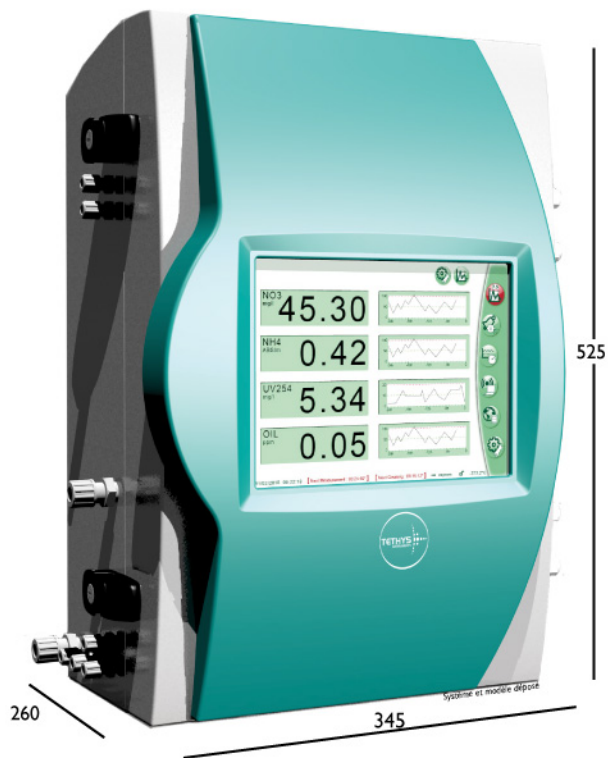
TETHYS INSTRUMENTS OFFERS TWO DIFFERENT KINDS OF COMMUNICATION WITH THE ANALYZER: MODBUS MODE AND NETSCAN SOFTWARE (PROVIDED BY TETHYS INSTRUMENTS). THESE COMMUNICATIONS ALLOW USERS TO DIAGNOSE, FOLLOW AND DOWNLOAD MEASUREMENTS OF UV500 FROM THEIR OFFICE. TETHYS INSTRUMENTS SUGGESTS A WI-FI MODULE, AN ETHERNET MODULE AND A GSM OR PHONE MODEM FOR A LONG- DISTANCE CONNECTION.

ATEX

TO INSTALL IN AN ATEX ZONE, A SPECIAL ENCLOSURE CAN BE ADDED AROUND THE ANALYZER.

TECHNICAL DOCUMENTATION

UV500



PARAMETERS

UV254/DCO/TOC

$\text{NO}_3^- / \text{NO}_2^-$

NH_4^+

H_2S

PO_4^-

HYDROCARBONS

CHLOROPHYLL A

COLOR

TURBIDITY/MES

PH/ORP

CONDUCTIVITY

DISSOLVED OXYGEN

TEMPERATURE

STANDARD RANGE*

0-100 Abs/m

0-100 mg/L

0-100 mg/L (UP TO 5000 mg/L)

0-100 mg/L (UP TO 1000 mg/L)

0-2 mg/L (UP TO 60 mg/L)

0-1 mg/L (UP TO 100 mg/L)

0-100 µg/L

0-100 PT-co (UP TO 1000 PT-co)

0-100 NTU (UP TO 1000 NTU)

1-14

0-2000 µs

0-20 mg/L O_2

0-80°C

SPECIFICATIONS

UV500

NUMBER OF MEASUREMENT IN MEMORY 4000

FLOW 0 – 5 L/MIN

PRESSURE 0 – 5 BAR

TEMPERATURE OF THE SAMPLE 0 – 80°C

AMBIANT TEMPERATURE 0 – 60°C

REAGENT TIME <10s (EXCEPT TO THE H₂S AND THE NH₄ : 3 MIN)

MEASUREMENT INTERVAL MEASUREMENT IN CONTINUOUS OR PERIODIC (ADJUSTABLE FROM 1 TO 720 MIN)

REAGENT CONSUMPTION
CLEANING : ≈220ml
(CORRESPOND TO 6,6L FOR ONE MONTH ON THE BASIS OF ONE CLEANING PER DAY)
H₂S/NH₃ : ≈5,5ml/ MEASUREMENT
(CORRESPOND TO 4L FOR ONE MONTH ON THE BASIS OF ONE CLEANING PER DAY)

MAINTENANCE INTERVAL 6 MONTHS (EXCEPT TO RESTOCK REAGENTS)

POWER SUPPLY 90-264 VAC/50 VA/50-60Hz/24VDC3A

COMMUNICATION USB, RS232, RS485, WIFI(IEEE802,11B), ETHERNET 10 BASE T(IEEE802.3)

PROTOCOLE OF COMMUNICATION BY NETSCAN MODBUS, REMOTE

SCREEN LCD COLOR TOUCH SCREEN (TFT) WITH BACKLIGHT 680x480 PIXELS

CERTIFICATION CEM EN500081-2, EN50082-2, EN55011, CE, ISO 15839

ENCLOSURE IP65, INOX 316L PAINT

FIXING WALL MOUNTING OR FREE-STANDING

DIMENSIONS 525 x 345 x 260 mm

WEIGHT 25 KG