

A high-speed photograph of a blue liquid splash. The splash is a vertical column of liquid rising from a pool of liquid, with a rounded top. The background is dark, and the liquid has a bright blue hue. The text "Everything all right?" is overlaid on the splash in a white, bold, sans-serif font, slanted upwards from left to right.

Everything all right?

Optical or Acoustic Process measurement of liquids

- **Turbidity**
- **Colour**
- **Oil in Water**
- **Water in Oil**
- **Oil on Water**



TURBIDITY, SUSPENDED SOLIDS, COLOR

- > Up to four sensors / probes
- > 8 point calibration / linearization
- > Mathematical equation of meas. results
- > Menu-based, intuitive user interface
- > Data logger for up to 8000 meas. results
- > Analog output, relay board, digital input
- > RS232 and RS485 interface (Modbus)
- > Compatible with Monitek sensors / probes

THE MONITEK® MESSENGER WAS DEVELOPED TO MEET THE NEEDS OF INDUSTRIAL AND MUNICIPAL APPLICATIONS FOR TURBIDITY, SUSPENDED SOLIDS AND COLOR MONITORING.

COST CONTROL

Most turbidity, concentration or colour transmitters are capable of handling only one probe connected to them. In situations where a number of sensors are required, the cost of multiple transmitters can be high. The Messenger addresses this by allowing up to 4 inputs into one transmitter. All inputs are discrete, allowing control of the sensor and transmission of data on a completely individual basis. One transmitter controlling up to 4 detector signals keeps the cost per data point very low. Also, the Messenger is available in three different versions. Version 1: Panel PC with Touch screen; version 2: 4 line LCD- display; or version 3: with no display. This allows for a cost saving configuration related to your specific application.

COMMUNICATIONS

Today, communications between analytical devices and the data collection system is one of the driving factors in process control. The Messenger provides for a wide range of communications, including (4x) 0/4-20mA, (4x) relay alarms, RS 232, RS 485 Modbus protocols and internal data logging. The four digital inputs allow execution of external control commands.

FLEXIBILITY

Our customers requested flexibility and the Messenger delivers. We provide flexibility in connecting sensors, reporting, displaying data, configuration and implementation.

Sensors for Turbidity, Concentration and Colour can all be connected to a Messenger. One Messenger can handle any combination of sensors, with up to 4 signal outputs. Each sensor is controlled independently.

Reporting can be done in various formats, including data to be output as bar graphs*, line graphs*, or as numeric results. Measurement results are displayed and outputted individually with different units of measurement including NTU, JTU, AU, Hazen, EBC, PPM, g/l, %TS and others. Again, the reporting is individualized for each sensor. The timing of reporting is also controlled for each sensor, allowing for process control or meeting regulatory requirements in one transmitter.

Configuration: The programming / calibration of the Messenger without display and with an LCD display will be done via a PC, Laptop or handheld PDA. The programming / calibration of the Messenger with Panel PC will be done via the integrated touch screen.

Implementation can be a single Messenger on a single sensor, a single Messenger on multiple sensors, or can be a network of Messengers and sensors. Only one PC or Panel PC with RS-484 interface (Modbus protocol) will be required for the configuration / calibration of the instruments in the network. Beyond these general provisions for flexibility are some that are more specialized. An example of this is in the equation of measurement results, e.g., difference (result1 – result2) measurements. Control of chemical dosing is important in waste treatment or in water plants. The Messenger can link incoming and post-dosage measurements to provide for more precise control of the chemical addition.

Environment: ATEX, UL or FM certified enclosures are available for use in hazardous areas zone I and zone II with no display or with LCD display configurations.

SETUP

The Messenger is simple to setup, with a graphical user interface that facilitates this process. The software is the same whether the Messenger is a Panel PC version or one requiring a computer or PDA for setup. Each setup parameter has its own menu page allowing the user to work down the menu for each parameter; sensor selection, measurement units, display format, data logging frequency, cleaning frequency cycles etc. Typically, factory calibration of the sensor with the Messenger is done prior to shipment, using turbidity or colour standards, making most installations quick and simple. If you prefer to have the calibration performed on your own sample, you can provide known concentrations to us and we will calibrate it to arrive in the field nearly ready for use. Additionally, a process calibration curve should be created for correlation to your application. For any parameter being setup, the Instruction Manual is available through the Help Function.

OPERATION

The Messenger is designed for permanent maintenance free operation. All sensors and probes of the Monitek product series are as well designed for permanent operation and require only a minimum of maintenance. The Messenger allows you to program two independent cleaning cycles to purge the sensors and extend the operating time additionally.

APPLICATION

- > Turbidity measurement
- > Colour measurement
- > Absorption measurement

LOCATION

- > Chemical Industry
- > Petrochemical Industry
- > Water & Wastewater
- > Food & Beverage
- > Breweries & Dairies

TECHNICAL DATA

Supply voltages:

90-260 VAC, 50-60 Hz

Power requirement:

Max. 50 VA

Interfaces:

RS 232C /RS485 Modbus

Analogue outputs: (2 optional)

Max. four 0/4-20mA (isolated)

Alarm relays: (optional)

Four Programmable (48V / 2A)

Digital inputs: (optional)

Four Programmable

Ambient temperature:

-10°C to 50°C

Accuracy:

Application specific

Reproducibility:

± 1%

Enclosure material:

1.4301 / 304 ST.ST.

Protection:

IP65 / NEMA 4X

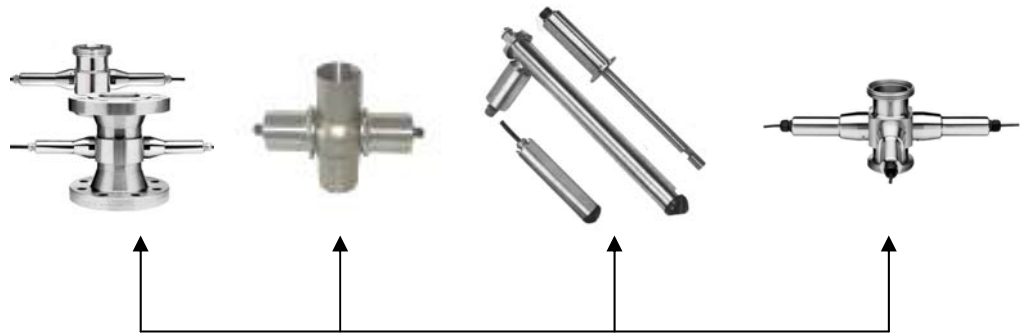
Dimensions:

Blind transmitter: H=235mm, B=160mm, T=91mm

LCD Display: H=235mm, B=160mm, T=105mm

Panel PC: H=345mm, B=280mm, T=141mm

- **Compatible to all optical Monitek sensors**
- **Parallel use of up to four single channel sensors**
- **Parallel use with a combination of different sensors**
- **Data logger to store up to 8000 measurement values**
- **Menu based, easy to use Software**
- **Manual available via software help- function**
- **Calibration with up to eight laboratory samples per sensor**
- **Equation of measurement results to setup dosage systems**



Parallel use of different sensors / probes for turbidity or colour measurement.



Bus- system, allows the configuration of up to 255 transmitters by using one Panel-PC, PC, Laptop or PLC-programmer only.

Units used for configuration and calibration.



Up to four 0/4-20mA outputs

RS-232 C Interface

RS-485 Interface (Modbus RTU protocol)

Up to four relays (programmable)

Up to four digital inputs (programmable)

Sensors & Probes for model Messenger



Actual Monitek Sensors with single detector signal	Actual Monitek Sensors with two detector signals	Actual Monitek Sensors with three detector signals
Model MoniSpec-A (MSA)	Model MoniTurb-F (MTF)	Model MoniTurb-FS (MTFS)
Model 22 (CSW)	Model MoniTurb-S (MTS)	Model MoniSpec-AT (MSAT)
Model LAS (LAS)	Model MoniSpec-AD (MSAD)	
Model 22S (CSN)		
Model 22S-Bio (CSO)		
Model 22S-LC (CSG)		
Model 22E-LC (CSS)		
Model 25E-LC (CSK)		

Green =	Sensors absorption turbidity measurement
Red =	Sensors scatter light turbidity measurement
Blue =	Sensors absorption colour measurement

***The Messenger allows the parallel, mixed use of all listed Sensors up to a maximum of four detector signals.**

Model Messenger Summerize



- Configuration via PDA, PC or Laptop
- Menu - based, intuitive User Interface
- Instruction Manual available via Help Function
- Serial Interface RS 232C / RS 485 (Modbus RTU Protocol)
- Simultaneous Use of up to 4 Sensors
- Sensors for Turbidity, Colour or Absorption measurement
- Fully Programmable Units (ppm, EBC, FTU, g/l, % TS...)
- Two Independent, fully programmable Cleaning Cycles
- Linearization of Measurement Values
- Integrated Data Logger for up to 8000 Measurement Values
- Recovery via Back-up File

Description:

The universal transmitter model Messenger can be used with all optical sensors of the Monitek series. The Messenger allows the simultaneous use of multiple sensors. Hereby you can use up to four single channel sensors. Even different sensors can be used with one transmitter. The measurement results can be linked together using almost any mathematical equation. This ensures an easy setup of e.g. dosage systems. The programming / calibration of the system will be done via a PC, PDA or Laptop using the menu-based software. Only one PC or Panel PC is required to configure an instrument in a network of up to 255 Messengers. Using the Messenger with an integrated Panel- PC allows the paperless recording or displaying of the measurement results as bar- or line graph's and the configuration without external equipment.

Applications:

- Scatter light turbidity measurement
- Absorption turbidity measurement
- Single channel colour measurement
- Dual channel colour measurement

Operational areas:

- Chemical industry
- Petrochemical industry
- Pulp & Paper
- Beer and beverages

Technical Data:

Supply voltage:	90-260 VAC, 50-60 Hz optional: 24 V AC/ DC	Digital inputs:	4x (optional) 5V High
Power consumption:	maximum 50 VA	Reproducibility:	± 1 %
Relay capacity:	4 Relays fully programmable (48V / 2A)	Ambient temperature:	-10°C to 50°C
Analogue output:	Up to 4x 0/4 - 20mA (isolated)	Enclosure / Protection:	1.4301 / IP65 (NEMA 4X)
Interfaces:	RS 232C / RS 485 Modbus RTU	optional hazardous area:	ATEX Zone I / Zone II