YOKOGAWA

Co-innovating tomorrow™


TB820D, FLXA402T

OpreX™ Analyzers

# TB820D

Right Angle Scattered Light Turbidity Detector

# TB830D

Surface Scattering Light Turbidity Detector

# FLXA402T

Liquid Analyzer for Turbidity and Chlorine

Bulletin 12E01B00-01EN

# Providing reliable turbidity measurements in Water Treatment Plants since 1959

No.1 Process analyzer supplier to Japanese market.(*)

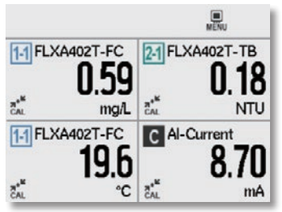
- Longer light source life time and eco-friendly by LED
- Easy maintenance
  - Easy to change parts structure
  - Easy to clean measurement cell structure
- Advanced diagnostics functions
  - LED wellness check, desiccant lifetime check
  - Maintenance prediction
- Multi sensor input
- Various communication
  - 4-20 mA Analog output
  - Modbus TCP/IP and Modbus RTU

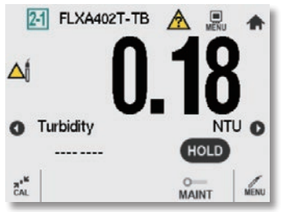
(*) Based on a Yokogawa survey in 2019

TB830D, FLXA402T

## Excellent visibility and operability analyzer

- Color touch screen realizes intuitive operation
- Short cut menu for regular maintenance
- Display error details and no need to open instruction manual
- 8 languages are available (English, German, French, Chinese, Korean, Spanish, Portuguese, Japanese)



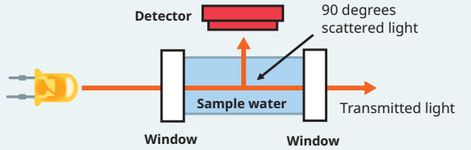

## Multi sensor input

Not only Turbidity Detector but also Chlorine Sensor Unit, pH sensor and conductivity sensor are connectable to one transmitter

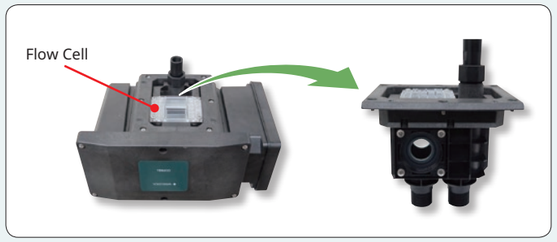



## TB820D Right Angle Scattered Light Turbidity Detector

### Easy to clean measurement cell structure

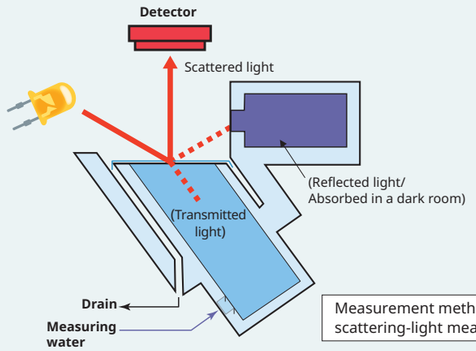



Measurement method:Right angle light scattering method




## TB830D Surface Scattering Light Turbidity Detector

### Less susceptible to contamination due to non-contact with the sample
### Compatible with various applications




Measurement method:Surface scattering-light measurement

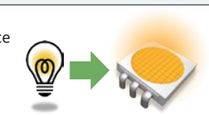

Heater with built-in cell: Prevents dew condensation and maintains a stable measurement environment

## Common TB820 and TB830

### Easy maintenance Turbidity analyzer

- Long light source life time by LED
- Plug and play lamp changes. No adjustment necessary.

Lamp maintenance Recommended interval : Yearly

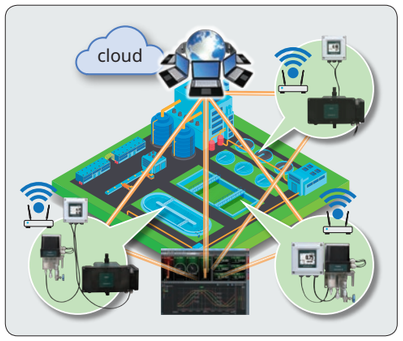


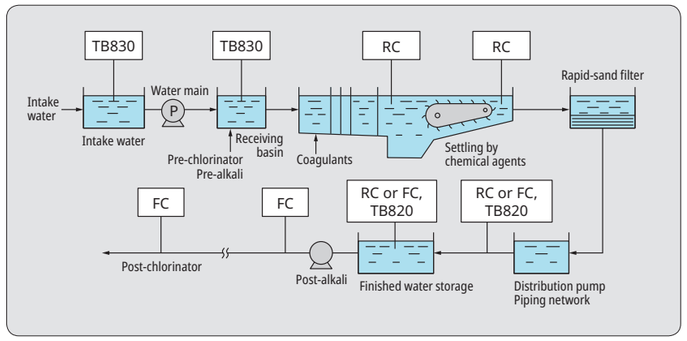
New lamp (LED) maintenance Recommended interval : 3 Years

## SENCOM 4.0 platform for Turbidity and Chlorine Analyzer

### Remote operation made simple

SENCOM 4.0 platform empowers you.
Digital technology gives you insight into field based problems. You can look into and understand causes before heading to site. This reduces maintenance time and increases efficiency.



## Application for Turbidity Analyzers

| Application | Application detail | TB820D | TB830D |
|---|---|---|---|
| Water purification plant | Tap water/municipal water/drinking water/potable water | ✓ | ✓(*2) |
| | Raw water | N/A | ✓ |
| Industrial water | Same level of drinking water | ✓ | ✓ |
| Food & Beverage | Water measurement for beer/soft drinks/juice | ✓ | ✓ |
| | Disinfectant / Sanitizer | – | – |
| Wastewater treatment | Discharge point | (*1) | (*1) |
| | Treatment plant, coagulation | N/A | ✓ |
| Process industries as Bleaching agent | Chemicals, Pharma, Textiles, Pulp and Paper | – | – |
| Desalination plant | After RO membrane | ✓ | ✓ |
| | Drinking water | ✓ | ✓(*2) |

(*1) If allowed by correlation between SS and Turbidity
(*2) If EPA, ISO is not required

| Specification | | TB820D | TB830D |
|---|---|---|---|
| Measuring method | | Right angle scattered light method | Surface scattering method |
| Measuring Range (Turbidity standard:Formazin) | | 0-0.2 to 0-500 NTU (660 nm)<br>0-0.2 to 0-700 FNU/NTU (860 nm/ Compliant standard: ISO7027) | 0-2 NTU to 0-2000 NTU (White LED)<br>0-2 FNU/NTU to 0-2000 FNU/NTU (860 nm) |
| Sample Conditions | Temperature | 0 to 50°C (The ambient temperature should not exceed 30°C.) | 0 to 50°C (The ambient temperature should not exceed 30°C.) |
| | Flow Rate (*) | 0.05 to 20 L/min | 1.5 to 2 L/min |
| | Pressure (*) | 500 kPa max | 500 kPa max |
| Power supply | | 100 to 240 VAC, 50/60 Hz | 100 to 240 VAC, 50/60 Hz |
| Digital Communication | | Modbus TCP/IP, Modbus RTU | Modbus TCP/IP, Modbus RTU |
| Installation | | Indoor (Outdoor use requires protection against rain. Direct sunlight must be avoided.) | Indoor (Outdoor use requires protection against rain. Direct sunlight must be avoided.) |
| Cleaning system | | Ultrasonic cleaning, automatic wash | Automatic wash |
| **Performance** | | | |
| Linearity | | 0-40 NTU: ±2% of reading or ±0.01 NTU whichever is greater<br>over 40 NTU to 100 NTU: ±5% of reading<br>over 100 NTU: ±10% of reading | Upper range limit of 1000 NTU or less: ±2% F.S. or ±0.04 NTU whichever is greater<br>Over 1000 NTU and 2000 NTU or less: ±4% F.S. |
| Repeatability | | 0-100 NTU range: ±1% of reading or ±0.002 NTU whichever is greater<br>over 100 NTU: ±2% of reading when Check tool is used | ±1% of reading or ±0.02 NTU whichever is greater |

(*) Without the sampling system

| FLXA402T | |
|---|---|
| Sensor input | Up to 3 sensors from Turbidity Detector, Chlorine Sensor Unit, pH sensor and Conductivity sensor |
| Analog Output | 4-20 mA DC (2 or 4) |
| Contact Output | 4 |
| Digital Communication | Modbus RTU or Modbus TCP/IP |
| Diagnostics functions | Lamp condition, Inside dryness monitoring by temperature and humidity sensor |
| Display | QVGA color touch LCD<br>8 languages (English, German, French, Chinese, Korean, Spanish, Portuguese, Japanese) |

Please refer to the general specifications for details.
It could be downloaded from the following site.
**https://www.yokogawa.com/an/flxa402t/download/**



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