OPTEX

Transmitter

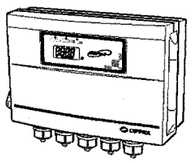
SC-T3

Instruction Manual

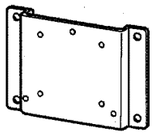
Thank you very much for purchasing OPTEX Transmitter SC-T3.
All of this instruction manual must be read before operation of the Transmitter SC-T3 for safe and proper operation.

This instruction manual should be kept for future reference such as maintenance.

The Contents of Packaging



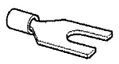
Transmitter



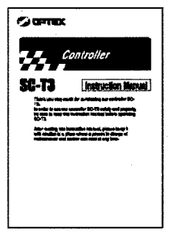
Mounting Bracket

2 Transmitter Fixing screw

2 Unit Seal



20 Y-terminal



Instruction manual

In the unlikely event that there are any missing components or defects, please contact your dealer.

1 For Safe Use

[Be sure to read this instruction manual in order to use the Transmitter SC-T3 properly.]

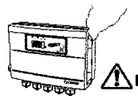
- Please thoroughly read the "For Safe Use" before using the SC-T3 properly.
- Because these precautions are related to failure or malfunction, observe the precautions for use without fail.

⃠ The SC-T3 is used exclusive to Turbidity Checker (Detector). Accordingly, do not connect other equipment.

In order to use the SC-T3 properly, observe the following precautions.

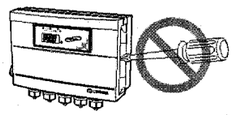
- Precautions which are the cause of failure
- Precautions related to measurement

Precautions which are the cause of failure:
"⃠" denotes "Prohibited action", and "⚠" denotes "Required action".



⚠ Power (OFF)

- Turn off the Power immediately in the unlikely event that there occur any abnormalities such as smoke or abnormal noise. Otherwise it may cause fire or an electric shock.



- Do not disassemble or modify the Transmitter. Disassembly or modification may cause fire or an electric shock because there are high-voltage parts inside the transmitter.

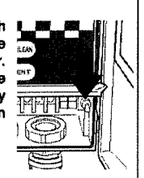
- Do not wipe the Transmitter with solvent. It may cause failure.
- To clean the Transmitter, first wipe away lightly with a clean soft cloth damped by diluted mind detergent solution and then wipe off moisture with a dry clean soft cloth.

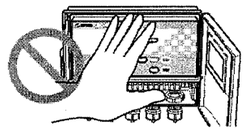
100 to 240 VAC

- Be sure to use the power supply of 100 to 240 VAC. Otherwise it may cause fire or electric shock.

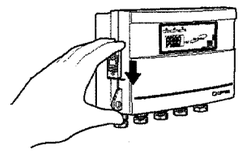
Keep the Power off during installation and wiring operations.

- There are high voltage parts inside the Transmitter. Failure to observe this precaution may cause fire or an electric shock.

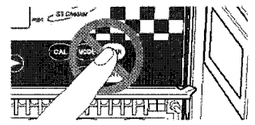




- Do not give a strong shock to the Transmitter.

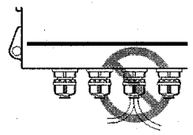


- Make sure that the Cover is locked without fail. Otherwise, protective structure may not function adequately.

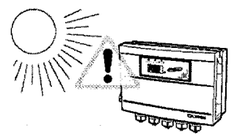


- Do not press the CLEAN button, while the Turbidity Checker (Detector) is in the air.

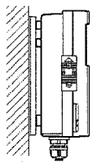
- Use Cable Clamps attached to the transmitter for wiring. When the piping are directly connected with the transmitter, take a corrective action such as caulking against intrusion of gas because corrosive gas is in danger of intruding through the piping, etc. into the Transmitter.



- Do not bind the signal output cable with the power cable or do not put them in the one Cable Clamp.



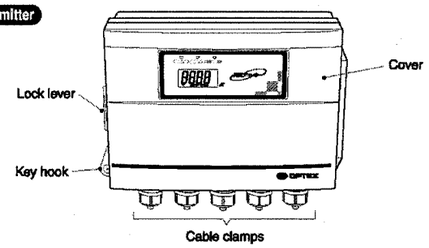
- Install the Transmitter at a place ventilating well and avoiding direct sunlight and rain when using it outdoors.



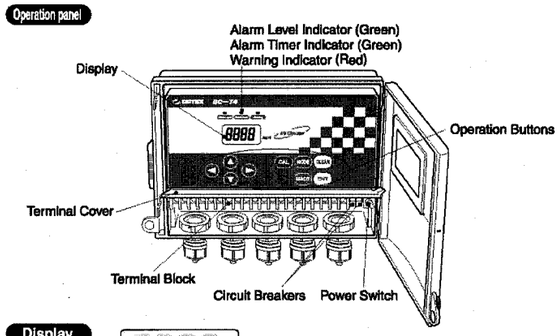
- Install the Transmitter with attached Mounting Bracket.

2 External Features

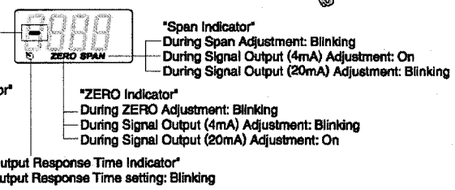
Transmitter



Operation panel

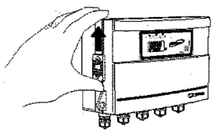


Display

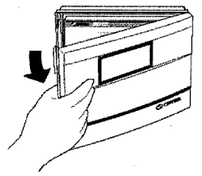


Cover Opening & Closing Procedure

How to open the Cover

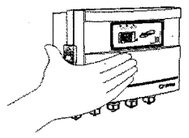


1. Slide up the lock Lever.

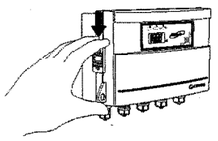


2. Pull the Cover.

How to close the Cover



1. Close the Cover securely.



2. Slide down the Lock Lever until it stops.

CAUTION:

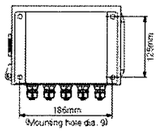
- Make sure that the Cover is locked without fail. Otherwise, protective structure may not function adequately.

3 Installation

CAUTION:

- Install the Transmitter at a place ventilating well and avoiding direct sunlight and rain when using it outdoors.
- Install the Transmitter with Mounting Bracket.
- Close the Cover securely after installation is completed.

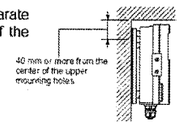
1 Installation



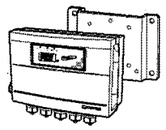
1 Install the Mounting Bracket on the wall and so forth. For mounting pitch, refer to the Fig. to the right.

CAUTION:

- If there is a projection on the mounting surface, separate 40 mm or more from the upper Mounting Holes of the Mounting Bracket (See Fig. to the right).



2 Fit the Mounting Bracket attached to the Transmitter with the Fitting Screws.



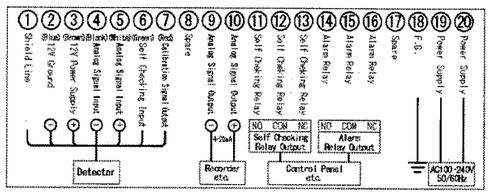
2 Wiring

CAUTION:

- Keep the Power off during wiring operations. Otherwise it may cause fire or an electric shock.
- Wire the Power Cable, at the end of wiring operation.
- Cover shall be closed during operation.

- Make sure that the Circuit Breaker is normal (OFF) position (Refer to [10] Troubleshooting).

Controller Terminal Block



① ~ ⑳ • Compatible cable diameter with the Cable Clamps is 6 to 8 mm.

① ~ ⑦ • Use a shielded cable with nominal sectional area of 0.2 to 1.25 mm^2 for the Detector Cable.
• For extension of the Detector Cable, refer to [3] Detector Cable Extension. Use a device such as a Pull-box if necessary.

⑨ ~ ⑩ • Use a shielded cable with nominal sectional area of 0.75 to 1.25 mm^2 for a Signal Output Cable.
• For connection to the Signal Output terminal, load resistance should be 300 Ω Max (including wiring resistance).

⑪ ~ ⑯ • For connection to the Self Checking Relay Output terminal and Alarm Relay Output terminal, load resistance should be 240 VAC and 1A Max. Although a protective circuit is built in to prevent from overcurrent due to thunderbolt, it is recommended to use fuses with rated current of 2A Max for the purpose of improvement of safety.

⑱ • Carry out grounding work.

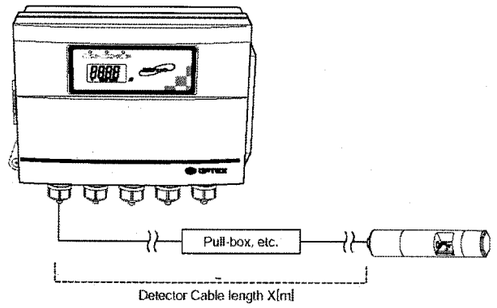
⑲ ~ ⑳ • Use a cross-linked polyethylene insulating vinyl sheath cable with nominal sectional area of 0.75 to 1.25 mm^2 for the power cable.

Reference:

- When the Detector is in the air, Analog (4-20mA) Signal Output becomes of 20mA for TC-100, 8mA for TC-500, and 4.5mA for TC-3000 .

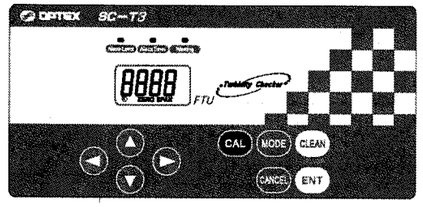
3 Extension of Detector Cable

The standard Detector Cable is 10m. The Detector Cable shall be extended by referring to the Table below. Use a device such as a Pull-box if necessary.



Nominal sectional area	Max. Cable length X[m]
0.2 [mm^2]	10 [m]
0.3 [mm^2]	20 [m]
0.5 [mm^2]	40 [m]
0.75 [mm^2]	50 [m]

4 Operation Panel



◀ ▶ Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.

▲ ▼ Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼ . ▲ button increases a numeric value and ▼ button decreases the value.

CAL The CAL button (CAL) carries out calibration. Press the calibration button for 2 seconds or more to carry out calibration.

MODE The MODE button makes sure of each setting. To change the setting value, select an item and then keep pressing the MODE button for 2 seconds or more.

CLEAN The CLEAN button (CLEAN) wipes the Detector Windows. To wipe the Detector Windows, press the CLEAN button for 2 seconds or more.

CANCEL The CANCEL button (CANCEL) cancels the setting change operation and return to the condition prior to change.

ENT The ENT button (ENT) saves the numerical values entered and terminate the setting change operation.

◀+▶ Press the right and left arrow buttons ◀▶ simultaneously to carry out Fine Adjustment of Signal Output Low Limit (4mA).

▲+▼ Press the upper and lower arrow buttons ▲▼ simultaneously to carry out Fine Adjustment of Signal Output High Limit (20mA).

5 Display Resolution

Display Resolution is as shown in the Table below.

Detector	Display Resolution
TC-100	0.1
TC-500	1
TC-3000	5

6 Operation

1 Calibration

Be sure to carry out Calibration according to the following procedure before using the SC-T3.

1 Clean the Detector and the Detector Windows.

2 Immerse the Detector in distilled water or ion-exchange water.

3 After accustoming the Detector to water temperature for 5 minutes or so, make sure that air bubbles are not attached on the Detector Windows and press CAL for 2 seconds or more.

Note: Air bubbles on the Detector Windows can be removed by wiping.

4 When pressing CAL , "CAL" is displayed. "CAL" blinks during Calibration.

5 When calibration is completed, the operation panel blips twice and the Display turns into normal measurements indication.

2 Each setting

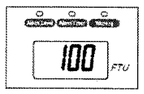
●Every time MODE is pressed, the Display is changed as follows:

Measurements Indication ⟵ Fine Adjustment of (Hi)
↓ ↑
The Detector Selection — Fine Adjustment of (Lo)
↓ ↑
0 (ZERO)-Adjustment — Signal Output Response Time
↓ ↑
Span Adjustment — Alarm Timer
↓ ↑
Alarm Level ⟶

■ Factory setting and setting range are as shown in the Table below.

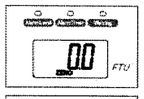
	Factory setting	Setting range
Detector Selection	100	100/500/3000
Alarm Level	OFF	1 to span-adjusted value
Alarm Timer	OFF	1 to 120 min.
Signal Output Response Time	OFF	1 to 120 sec.

Detector Selection



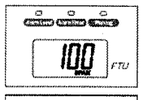
Detector Selection is indicated in the display. TC-100 : 100
TC-500 : 500
TC-3000 : 3000

0 (zero)-Adjustment



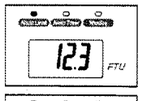
"ZERO" is indicated, and a value (4mA) is displayed when the detector is immersed in clean water.

Span-Adjustment



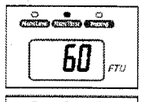
"SPAN" is indicated, and a value (20mA) is displayed when the windows of the detector is completely light-shielded for 30 seconds or more.
Ex: TC-100

Alarm Level



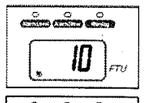
The Alarm Level LED comes on and the setup Alarm Level is displayed.
Ex: Alarm Level: 12.3 degrees

Alarm Timer



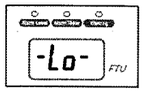
The Alarm Timer LED comes on and the setup Alarm Timer is displayed.
Ex: Alarm Timer: 60 minutes

Signal Output Response time



A timer mark is indicated and the setup Signal Output Response Time is displayed.
Ex: Signal Output Response time: 10 seconds

Fine Adjustment of Low and High Limit.



Fine Adjustment of Signal Output (4 to 20mA) can be set.
Ex: 4mA Output setting display

3 Detector Selection and 0 (zero) / Span Adjustments

Be sure to carry out calibration before setting these operations according to the following procedure.
Ex: Setting Detector is TC-100

1 Wire all the cable including the Detector.

2 Press MODE once to select the Detector Selection.

SEL and Detector type are indicated alternately.

3 Make sure that the detector being connected is either TC-100 or -500 or -3000 before keeping pressing MODE for two seconds or more.

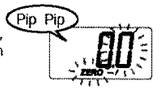
4 When keeping pressing MODE , the operation panel blips twice and "100" blinks.

5 When the TC-100 Detector is connected, press MODE until it blips once. When the TC-500 or 3000 Detector is connected, press the upper ▲ arrow button to change the display into 500 or 3000 blinking and then press MODE until the operation panel blips once.

6 Subsequently, press MODE and select 0-Adjustment.

7 After cleaning the Detector Windows, immerse the Detector in distilled water or ion-exchange water during the operation 3 - 5 .

8 When ENT is kept pressing for two seconds or more, "ZERO" blinks on the display. At this time, the operation panel is placed in the 0-Adjustment mode (4mA).



9 After accustoming the Detector to water temperature for 5 minutes or so, make sure that air bubbles are not attached on the Detector Windows. When the display is not "0", use the up/down arrow ▲▼ buttons to change the display into "0" indication. When the display shows "0", press ENT until the operation panel blips once.

Reference: • While pressing ▲▼ buttons, the values displayed are continuously changed.

CAUTION:

- Before making the 0-Adjustment, be sure to clean the Detector Windows.
- Before making the 0-Adjustment, be sure to carry out Calibration.
- After making the 0-Adjustment, be sure to make the Span-Adjustment.

10 Subsequently, press MODE and select the Span-Adjustment. And cover one of the Detector windows completely for 30 seconds or more.

11 While pressing MODE for 2 seconds or more, "SPAN" blinks on the Display. At this time, the SC-T3 is placed in the Span-Adjustment mode (20mA). When the Detector Windows is completely light-shielded for 30 seconds or more and the display other than full-scale of the detector type (100-degree for TC-100, 500-degree for TC-500, 3000-degree for TC-3000), make an adjustment of the display with the up/down ▲▼ arrow buttons. When the display shows the correct value same to full-scale, press the ENT to terminate the 0/Span-Adjustment.

Reference: • While pressing the up/down ▲▼ arrow buttons, the values displayed are continuously changed.
• The setting units are as follows:
TC-100 : 1
TC-500 : 5
TC-3000 : 50

CAUTION:

- When making sure of 0 Span-Adjustment value, light-shield the Detector Windows completely for 30 seconds or more as described in the procedure.

12 Subsequently, pressing MODE, the SC-T3 is placed in the Alarm Level Setting. If the Alarm Level setting is not carried out, press CANCEL to return to the Measurement mode.

CAUTION:

- When Err4, Err5, or Err6 is displayed, the SC-T3 is out of the setting range, or the Detector is not immersed in clean water during the 0-Adjustment, or the Detector Windows may not completely be light-shielded during the Span-Adjustment.

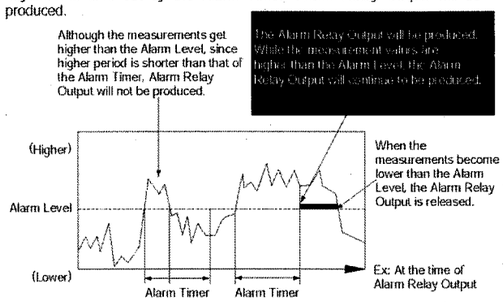
4 Alarm Level, Alarm Timer, Signal Output Response Time, Signal Output Range

These settings are set for "OFF" as a factory setting.
Make settings as occasion demands.

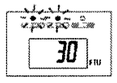
1 Alarm Relay Output Setting

Alarm Relay Output

When the measurements get higher than the Alarm Level continuously beyond the time set by the Alarm Timer, Alarm Relay Output will be produced.



The alarm Level Indicator (Green) appears when the measurements gets higher than the Alarm Level. Both the Alarm Timer Indicator and the Alarm Level Indicator blink when the measurements become equal to or higher than the setting value and in excess of the Alarm Level.

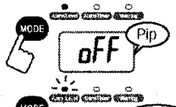


Alarm Level Setting

- Alarm Level can be set for 1 to Span-Adjusted value or OFF.
  - Setting unit are as follows: TC-100:1, TC-500:5, TC-3000: 50
  - The Alarm Level is set for OFF as a factory setting.

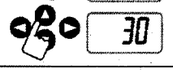
Ex: To set the Alarm Level for 30 FTU (TC-100):

1 Press MODE and select the Alarm Level.



2 Press MODE for 2 seconds or more, the Alarm Level Indicator blinks.

3 Enter "30" on the Display.



Reference
- Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.
- Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼. ▲ button increases a numeric value and ▼ button decreases the value.
- While pressing ▲▼ buttons, the values displayed are continuously changed.
- To cancel the Alarm Level Setting, press CANCEL.

Reference:

- To cut off the Alarm Relay Output, enter "0". Then "OFF"appears on the Display. Next, press ENT.

4 Press ENT to terminate the Alarm Level Setting.

Reference
- To cancel and return to the Display for the Measurements Indication mode, press CANCEL.

Reference:

- When Err6 is displayed, the value is out of the setting range.

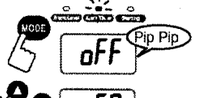
Alarm Timer Setting

- Alarm Timer can be set for 1 to 120 minutes or OFF.
  - Setting unit is 1 minute.
  - The Alarm Timer is set for OFF as a factory setting.

Ex: To set the Alarm Timer for 60 minutes ;

1 Press MODE and select the Alarm Timer.

2 Press MODE for 2 seconds or more, the Alarm Timer Indicator blinks.



3 Enter "60" on the Display.

Reference
- Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.
- Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼. ▲ button increases a numeric value and ▼ button decreases the value.
- While pressing ▲▼ buttons, the values displayed are continuously changed.
- To cancel the Alarm Timer Setting, press CANCEL.

Reference:

- To cut off the Alarm Timer, enter "0". Then "OFF"appears on the Display. Next, press ENT.

4 Press ENT to terminate the Alarm Timer Setting.

Reference
- To change the Display for the Measurements Indication mode, press CANCEL.

Reference:

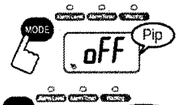
- When Err6 is displayed, the value is out of the setting range.

2 Signal Output Response Time Setting

- Signal Output Response Time can be set for 1 to 120 seconds or OFF.
  - Setting unit is 1 second
  - The Signal Output Response Time is set for OFF as a factory setting.

Ex: To set the The Signal Output Response Time for 10 seconds ;

1 Press MODE and select the The Signal Output Response Time.



2 Press MODE for 2 seconds or more, the The Signal Output Response Time Indicator blinks.

3 Enter "10" on the Display.

Reference
- Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.
- Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼. ▲ button increases a numeric value and ▼ button decreases the value.
- While pressing ▲▼ buttons, the values displayed are continuously changed.
- To cancel the Signal Output Response Time Setting, press CANCEL.

Reference:

- To cut off the Signal Output Response Time, enter "0". Then "OFF"appears on the Display. Next, press ENT.

4 Press ENT to terminate the Signal Output Response Time Setting.

Reference
- To change the Display for the Measurements Indication mode, press CANCEL.

Reference:

- When Err6 is displayed, the value is out of the setting range.

3 Signal Output Range Setting

- Signal output range (4-20mA) can be set as follows:

	< Setting range >	< Setting unit >
TC-100	•"High Limit" - "Low Limit" > 20	1
TC-500	•"High Limit" - "Low Limit" > 200	5
TC-3000	•"High Limit" - "Low Limit" > 200	50

- The Signal Output Range is default at 4mA for 0-Adjustment value and 20mA for the Span-Adjustment value.

Ex: To set the Signal Output Range for 30 - 80 FTU when using the TC-100;

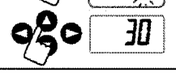
(1) Signal Output Low Limit Setting

1 Press MODE and select the The Signal Output Low Limit.

※ "-Lo-" and "the setting value" comes on alternatively.

2 Press MODE for 2 seconds or more, the The Signal Output Low Limit value is displayed.

3 Enter "30" on the Display.



Reference
- Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.
- Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼. ▲ button increases a numeric value and ▼ button decreases the value.
- While pressing ▲▼ buttons, the values displayed are continuously changed.
- To cancel the Alarm Timer Setting, press CANCEL.

4 Press ENT to terminate the Signal Output Range Low Limit Setting.

Reference
- To change the Display for the Measurements Indication mode, press CANCEL.

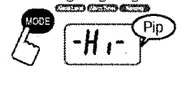
Reference:

- When Err6 is displayed, the value is out of the setting range.

(2) Signal Output High Limit Setting

1 Press MODE and select the The Signal Output High Limit.

※ "-Hi-" and "the setting value" comes on alternatively.



2 Press MODE for 2 seconds or more, the The Signal Output High Limit value is displayed.

3 Enter "80" on the Display.

Reference
- Move the digit to be entered using the right and left arrow buttons ◀▶ (0.1 digit ⇔ 1 digit ⇔ 10 digit ⇔ 100 digit). At this time, the selected digit blinks.
- Enter a numerical value (0, 1, 2, ..., 9) into the selected digit using the upper and lower arrow buttons ▲▼. ▲ button increases a numeric value and ▼ button decreases the value.
- While pressing ▲▼ buttons, the values displayed are continuously changed.
- To cancel the Alarm Timer Setting, press CANCEL.

4 Press ENT to terminate the Signal Output Range High Limit Setting.

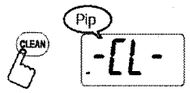
Reference
- To change the Display for the Measurements Indication mode, press CANCEL.

Reference:

- When Err6 is displayed, the value is out of the setting range.

5 Manual Cleaning

When CLEAN is pressed, the Wiper cleaning starts operating.



7 Fine Adjustment of Signal Output

- Fine Adjustment of Lower Limit 4mA and Upper Limit 20mA of Signal Output (4-20mA) can be made.

CAUTION:

- First make the Fine Adjustment of Lower Limit 4mA, and then make the Fine Adjustment of Upper Limit 20mA.
  Otherwise the value of the Upper Limit 20mA cannot be adjusted accurately.

1 Fine Adjustment of Lower Limit 4mA

1 Simultaneously press both right and left arrow buttons ◀▶.
At this time, "-4-" is indicated in the Display. And, "ZERO" blinks and "SPAN" comes on.

2 While making sure of the values displayed by the connecting equipment such as recorder, make the Fine Adjustments of the Lower Limit 4mA with the up and down arrow buttons ▲▼.

4 Press ENT to terminate the Fine Adjustments of the Lower Limit 4mA.

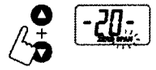
CAUTION:

- When both right and left arrow buttons ◀▶ are pressed simultaneously, Signal Output of 4mA will be produced irrespectively of the measurement value.

Reference
- To cancel the Fine Adjustment of the Lower Limit 4mA, press CANCEL.

2 Fine Adjustment of Upper Limit 20mA

1. Simultaneously press both right and left arrow buttons ▲▼.
   At this time, "-20-" is indicated in the Display. And, "ZERO" comes on and "SPAN" blinks.



2. While making sure of the values displayed by the connecting equipment such as recorder, make the Fine Adjustments of the Upper Limit 20mA with the up and down arrow buttons ▲▼.

4. Press (ENT) to terminate the Fine Adjustments of the Upper Limit 20mA.

CAUTION:

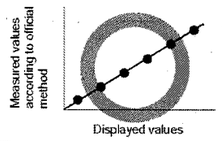
- When both right and left arrow buttons ◀▶ are pressed simultaneously, Signal Output of 4mA will be produced irrespectively of the measurement value.

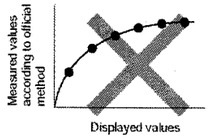
Reference • To cancel the Fine Adjustment of the Upper Limit 20mA, press (CANCEL).

8 How to Use Unit Seal

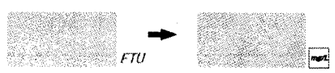
■ When customers hope to use other than Turbidity indication, it is possible to change values using the Span Adjusting function and attached unit seals.
Example: The values displayed by the transmitter are changed into SS (Suspended Solids) using a Turbidity Checker (TC-100).

1. Examine the correlation between the values of measurement water displayed by the transmitter and SS measured values (official measuring method) several times at a place where the SC-T3 is installed.
2. At this time, after making sure that the displayed values and SS measured values have linear relationship as shown below, calculate a span setting value in terms of SS using displayed values and measured values as close as possible to the span setting value.





3. The following calculating formula is used.
   SS span setting value = [Turbidity span setting value] x SS measured value (official measuring method)/Displayed value (transmitter)
   * A "Turbidity span setting value" determines depending on a detector as follows:
   TC-100 : 100 TC-500 : 500 TC-3000 : 3000
4. A span value is changed into the following value by referring to page 13.
   When the displayed value is 80 FTU and the measured value according to official method is 60mg/L:
   SS span setting value =100x60/80=75
   • In the case of TC-100
5. Affix an attached unit seal on the unit (degree) indicated on the operation panel of the transmitter.



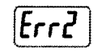
CAUTION:

- When Err4 or Err5 is displayed, the value is out of the setting range.

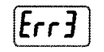
9 Error Indication

● The SC-T3 has an Error Indication function to indicate improper operation and occurrence of problem. There are six kinds of error indications (Err 1 to Err 6), the meaning of which is as follows.

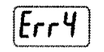
"Err 1" is indicated when the Detector is out of order, and so forth.



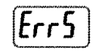
"Err 2" is indicated when calibration is not carried out properly.



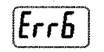
"Err 3" is indicated when the Analog Signal Input (4 to 20mA) from the Detector is out of input range (lower than 3.5mA or upper than 22mA).



"Err 4" is indicated when 4mA Analog Signal Input at the time of the 0-Adjustment is not within ±0.5mA.



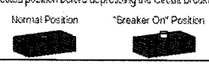
"Err 5" is indicated when 20mA Analog Signal Input at the time of the Span-Adjustment is not within ±2mA.



"Err 6" is indicated when the setting range is exceeded.

10 Troubleshooting

Problem	Cause	Inspection and corrective action
"Err 1" is indicated on the Display, and an alarm indicator is lit up.	The Detector is out of order, and so forth.	Check this according to the "Troubleshooting" in an instruction manual for the Detector.
	A Detector Cable is not wired properly.	After checking the Detector Cable for wiring, wire it properly.
"Err 2" is indicated on the Display.	Calibration turns out a failure.	Carry out calibration once again. If "Err 2" persists in indicating even when carrying out calibration repeatedly, it is necessary to make repairs. Contact your dealer.
	The Detector is out of order.	The Detector needs repair. Contact your dealer.
	A Detector Cable is not wired properly.	After checking the Detector Cable for wiring, wire it properly.
"Err 3" is indicated on the Display.	The Detector is out of order.	The Detector needs repair. Contact your dealer.
	A Detector Cable is not wired properly.	After checking the Detector Cable for wiring, wire it properly.
"Err 4" is indicated on the Display.	The Detector is out of order.	The Detector needs repair. Contact your dealer.
	The Detector Windows are soiled.	By referring to instruction manual of the Detector, clean the Windows and make adjustments again.
	A Detector Cable is not wired properly.	After checking the detector cable for wiring, wire it properly.
"Err 5" is indicated on the Display.	The Detector is out of order.	The Detector needs repair. Contact your dealer.
	The Detector Windows are not light-shielded completely.	Completely light-shield the Detector Windows and make adjustments again.
	A Detector Cable is not wired properly.	After checking the Detector Cable for wiring, wire it properly.
"Err 6" is indicated on the Display.	Each setting is not made properly.	Each setting is out of range. Each setting should be made within the range that Err 6 is not indicated.
The Display is not turned on.	The Transmitter is out of order.	The Transmitter needs repair. Contact your dealer.
	A Power Cable is not wired.	After checking the internal wiring, wire the Power Cable properly.
	A Circuit Breaker is at the "Breaker On" position.	Get rid of possible cause of the circuit breaker being at the projected position before depressing the Circuit Breaker.



11 Maintenance

Maintenance

■ When the Cover or the Display is soiled, first wipe away lightly with a clean soft cloth damped by diluted mild detergent solution and then wipe off moisture with a dry clean soft cloth.

CAUTION:

Do not wipe the transmitter with solvent such as Thinner.

Periodic

■ Inspect the following items every 3 months:
- Make sure that the Transmitter is fixed securely.
- Make sure that the Transmitter is not damaged?
- Make sure that the screws of the Terminal Block are not rusted.

Calibration

■ The SC-T3 is designed so as to make measurements stably for a long time. In order to maintain the reliability of measurement, however, carry out Calibration at least once a year (Refer to (5) Operation).

Long-term storage

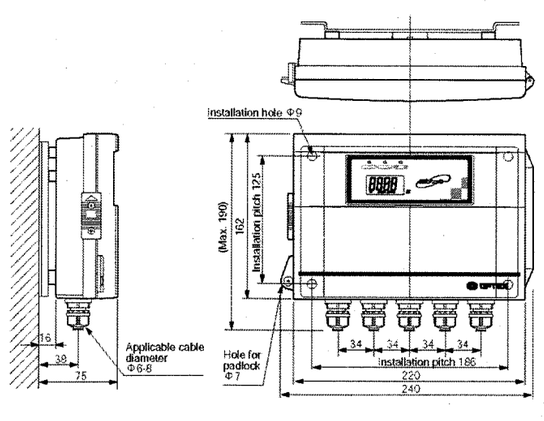
■ When the SC-T3 is not used for a prolonged period, turn off the Power Switch and disconnect the Power Cable from the power supply prior to safekeeping.

12 Specifications

Model No.	SC-T3
Power Supply	AC100 - 240V ±10% 50/60Hz
Power consumption	Normal: 8VA or less, During washing:16VA or less (including Detector, at the time of Analog Signal Input/Output of 20mA)
Display resolution	TC-100:0.1 TC-500:1 TC-3000:5
Output	Calibration Output Power Supply for Detector (12 VDC) Signal Output (Analog 4-20mA, resistance load of 300Ω or less) Self-Checking Relay Output (no-voltage C-contact capacity 240 VAC, 1A resistance load) Alarm Relay Output (no-voltage C-contact capacity 240 VAC, 1A resistance load)
Input (detector)	Detector Signal Input (Analog 4-20mA, input resistance approx.100Ω) Self-Checking input
Operating temperature	-20 to +50 ℃, humidity 95% Rh or less (Avoid direct sunlight)
Operating altitude	Up to 2000m
Pollution degree	Degree 2
Main material	Polycarbonate
Dimensions	HxWxD = approx.162x240x75 mm
Weight	Approx. 1.6kg (including Mounting Bracket)
Degree of Protection	IP65 (jetproof type)
Option	TP-FK2: Hood kit, PS-1: Pole stanchion

The specifications herein are subject to change without prior notice due to improvements.

13 Dimensions



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For more information on OPTEX products, contact your dealer or visit our website listed below;

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