4 to 20 mA

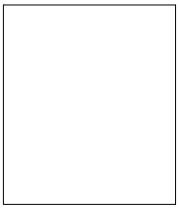
LIGHT TRANSMITTER

Model : TR-LXT1A4

Your purchase of this LIGHT TRANSMITTER marks a step forward for you into the field of precision measurement.
Although this TRANSMITTER is a complex and delicate instrument, its durable structure developed. Please read the following instructions carefully and always keep this manual within easy reach.

OPERATION MANUAL

Caution Symbol



Caution :

* Do not apply the overload voltage, current to the input terminal !
* Power off before
  - @ Disconnecting the " Power Source " from the " AC Power Input Terminal "
  - @ Disconnecting the " Output Signal Wires " from the " Signal Output Terminals "
  - @ Taking away the " Sensor Plug " away from the " Sensor Plug Input Terminal ".
* Cleaning - Only use the dry cloth to clean the plastic case !

Environment Conditions

* Installation categories II.
* Pollution Degree 2.
* Altitude up to 2000 meters.
* Relative humidity 80% max.

TABLE OF CONTENTS

1. SPECIFICATIONS

Measure Range	*Range 1 :* 0 - 2,000 Lux
	Range 2: 2,000 - 20,000 Lux
	Range 3 : 20,000 - 50,000 Lux
Output	4 - 20 mA
	Range 1 : 0 Lux = 4 mA 1,000 Lux = 12 mA 2,000 Lux = 20 mA
	Range 2: 0 Lux = 4 mA 2,000 Lux = 5.6 mA 20,000 Lux = 20 mA
	Range 3 : 0 Lux = 4 mA 20,000 Lux = 10.4 mA 50,000 Lux = 20 mA
Accuracy	(5 % rdg + 0.2 % F.S.) *@ rdg = reading value, F.S. = full scale* *@ 23 5 蚓* *@ Accuracy tested by a standard parallel light tungsten lamp of 2856 K temperature.*

Sensor Structure	Used the exclusive photo diode & color correction filter, spectrum designed to meet C. I. E.
External Adjustment	ZERO VR (4 mA adjust VR) SPAN VR (20 mA adjust VR)
Max. Output Load	200 ohms.
Power Supply	90 - 260 ACV 50 Hz/60 Hz
Power Consumption	AC 110 V : Approx. 1.3 VA. AC 220 V : Approx. 1.6 VA.
Mounting	Din rail or wall.
Case	ABS plastic
Operation Temperature	0 蚓 to 50 蚓 (32 蚌 to 122 蚌)
Operation Humidity	Less than 80 %RH
Dimension	See page 6.
Accessory Included	Light probe..... 1 PC Operation Manual..... 1 PC

2. INSTALLATION

1) Connecting the " Power Supply " (90 to 260 ACV) and the " 4 - 20 mA Output wires " to the " Wires Layout Socket " (3-6, Fig. 1) as following :

Terminal 5, Terminal 6 :

Power supply (90 to 260 ACV, 50/60 Hz)

Terminal 7 (+ output), Terminal 8 (- output) :

4 to 20 mA signal output to the external Indicator, Controller or Data access system... that can accept 4 to 20 mA signal.

2) Plug in the " Transmitter Output Connector " (3-5, Fig. 1) to the " Wires Layout Socket " (3-6, Fig. 1).

3) Insert the " Probe Plug " (3-7, Fig. 1) into the " Plug Input Socket " (3-4, Fig. 1)
4) Switch On the ACV power source, the " Power Indicator " (3-3, Fig. 1) will light.
5) Select the max. range on the " Range Switch " (3-9, Fig. 1).

Considerations :

* The range 2 is designed & to measure the light values 2,000 Lux. If the measured light values less than 2000 Lux, it should select the " Range Switch " to the lower range (Range 1) to get high resolution & precision.
* The range 3 is designed & to measure the light values 20,000 Lux. If the measured light values less than 20,000 Lux, it should select the " Range Switch " to the lower range (Range 2 or Range 1) to get high resolution & precision.

6) Face the " Light Sensor Probe " (3-9, Fig. 1) the direction of the measuring light.
7) The transmitter will generate 4 to 20 mA current output that according the Air velocity value which measuring from " Sensing Head " (3-8, Fig. 1).

Note :

Range 1 : 0 Lux = 4 mA, 1,000 Lux = 12 mA
2,000 Lux = 20 mA
Range 2 : 0 Lux = 4 mA, 2,000 Lux = 5.6 mA
20,000 Lux = 20 mA
Range 3 : 0 Lux = 4 mA, 20,000 Lux = 10.4 mA
50,000 Lux = 20 mA

8) The Max. load for the output terminal is 200 ohm. So the total internal impedance of connecting wire should less than 200 ohm, other wise the accuracy will be changed and beyond the specification.

3. FRONT PANEL DESCRIPTION

Fig. 1

3-1 Zero Adjust VR
3-2 Span adjust VR
3-3 Power Indicator
3-4 Probe Input Socket
3-5 Transmitter Output Connector
3-6 Wires Layout Socket
3-7 Probe Plug
3-8 Light Sensing Probe
3-9 Range Switch
3-10 Windows

4. CALIBRATION

1) The Light Transmitter already made the precision calibration when it is produced. We do not strongly recommend the user to make any calibration again when you receive the unit.
2) After the Light Transmitter already be used for a long period (several years..), if intend to make the new calibration, it should do by the qualify technician people only, the calibration procedures are following :

a. Select the " Range Switch " (3-9, Fig. 1) to Range 1 (0 - 2,000 Lux).
b. No light into the " Light Sensing Probe " (3-8, Fig. 1) just blanking the Light Sensing Probe, tune up " Zero Adjust VR (4 mA adjust VR) " (3-1, Fig. 1) until output terminal generate the 4 mA DC.
c. Face the " Light Sensing Probe " (3-8, Fig. 1) to the 1,600 Lux standard Light source (tungsten light source, 2856 K temperature) tune up " Span Adjust VR (20 mA adjust VR) " (3-2, Fig. 1) until output terminal generate the 16.8 mA DC.
d. Repeat the above procedures three times at least.

5. DIMENSION DIAGRAM

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