

# *SMOKE&DUST MONITOR*

*DSM7000B SERIES*

Light Transmitting Method



*INDICATOR SET*

*LIGHT RECEIVER UNIT*



*LIGHT SOURCE UNIT*



DAITO INSTRUMENT CO.,LTD

# ABSTRACT

This instrument consists of an indicator set and a detector set which includes a light source unit and a light receiver unit. MODEL DSM7000B is able to indicate continuously the relative density of dust by the measuring of the transparency rate of light passing through the smoke duct from the light source unit to the light receiver unit which are fitted at opposite side of duct.

Beam of light is projected directly into the flow of smoke and dust and its light transparency rate is calculated as follows;

$$S_x = (1 - \frac{I_x}{I_o}) \times 100\%$$

Where  $S_x$  : light transparency rate.

$I_o$  : illuminance of the projected light.

$I_x$  : intensity of illumination when the projected light passes through the thickness,  $x$ , of smoke and dust.

Providing two outputs of DC.4-20 mA and a "c" contact (non voltage), any alarm signal setting, continuous recording of figures and the various controls of boundary equipments are capable.

# SPECIFICATION

## CONDITION

Temperature	-10 ~ +50°C
Relative humidity	30~90%

## UTILITY

Power supply	AC110V(85-132V) or AC220V(170-264V) 50 / 60 Hz
Power consumption	35 VA.
Instrument Air supply	0.5-0.7MPa
Air consumption	100-200L/min.

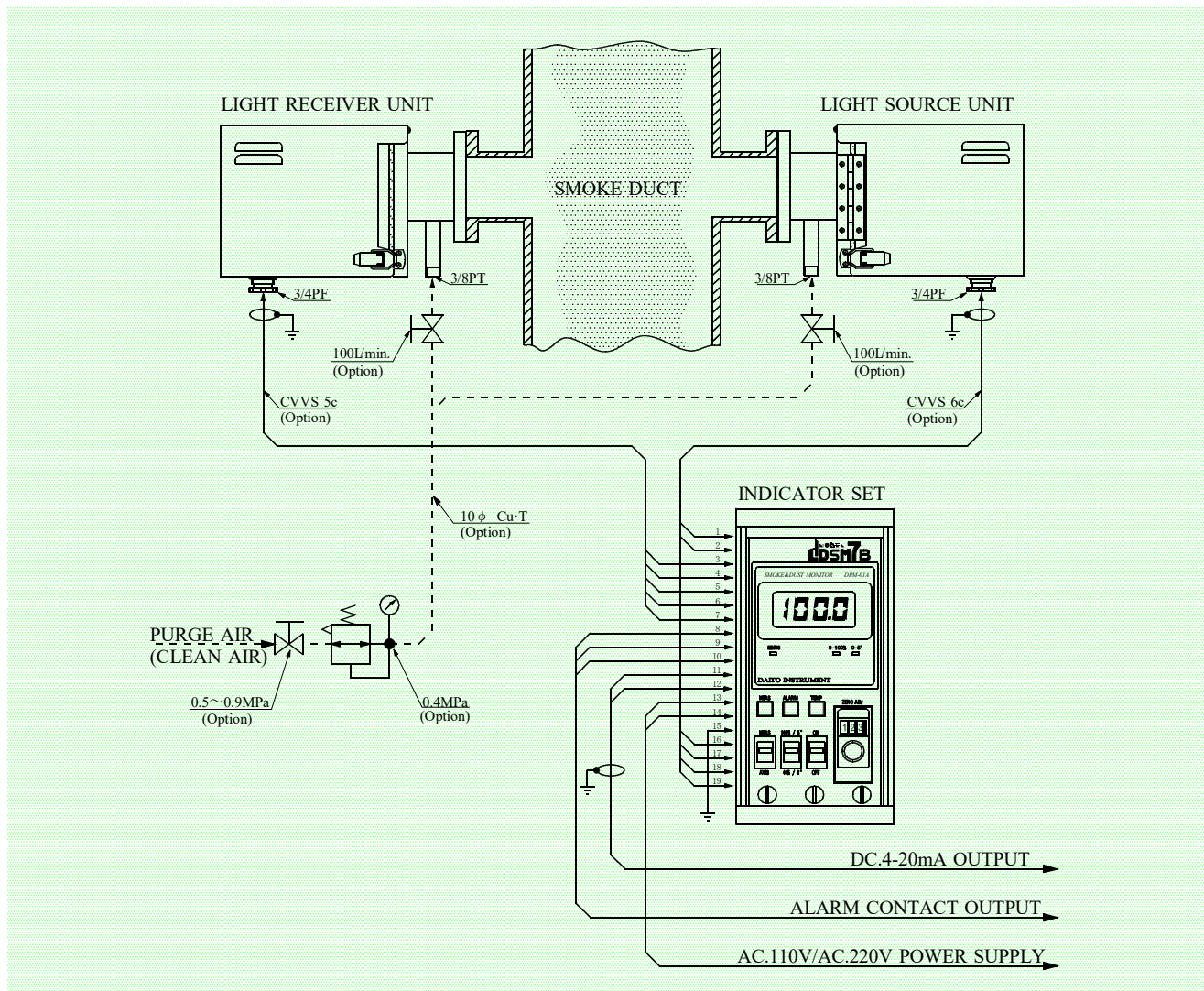
## MEASUREMENT CONDITION

Gas temperature	max. 350 °C
Duct size	max. 8,000mm

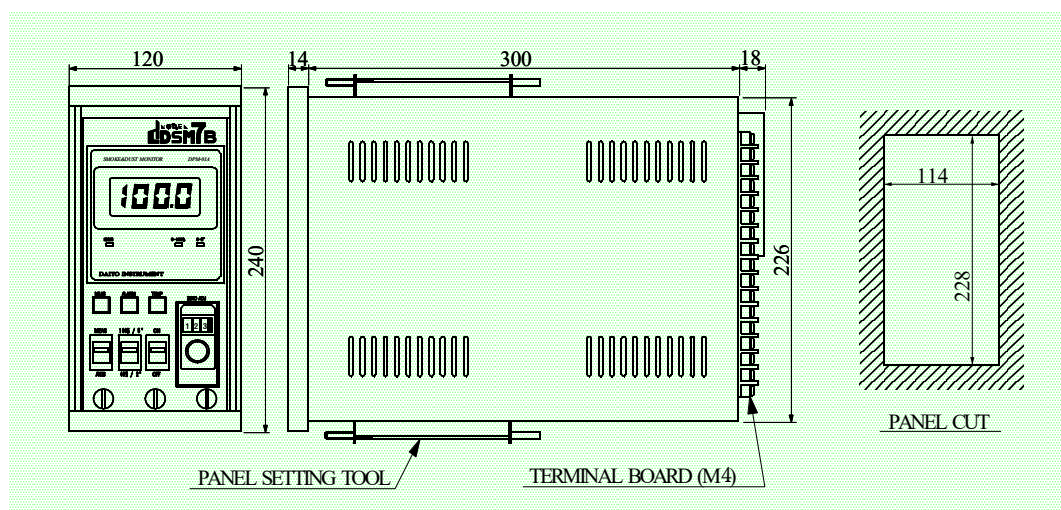
## ELECTRICAL SPECIFICATION

Principle Measurement	Light transmitting method
Measurement Range	Opacity 0-100% / 0-40% Ringelmann 0-5 / 0-2
Output signal	DC.4-20mA
Drift	Zero Drift ±2%/week Span Drift ±1%/week
Response time	100ms
Alarm output	Adjustable alarm set point
Alarm contact rating	AC125V / 0.5A , DC24V / 1A

# SYSTEM DIAGRAM



## INDICATOR SET



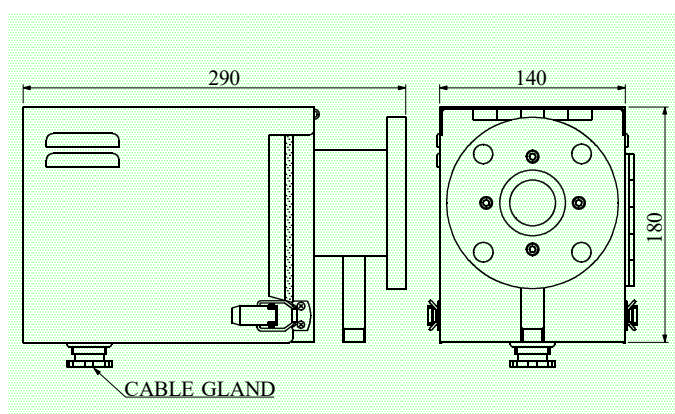
Model  
Meter scale  
Output signal  
Cable connection

DSM-7B (Panel setting type)  
0-100% & 0-40% (2-Ranges)  
DC.4-20mA  
Terminal board 19p

Alarm setting  
Alarm contact  
Alarm contact rating  
Weight

Adjustable setting point.  
"c" contact.  
AC.125V 0.5A / DC.24V 1A  
5 kg.

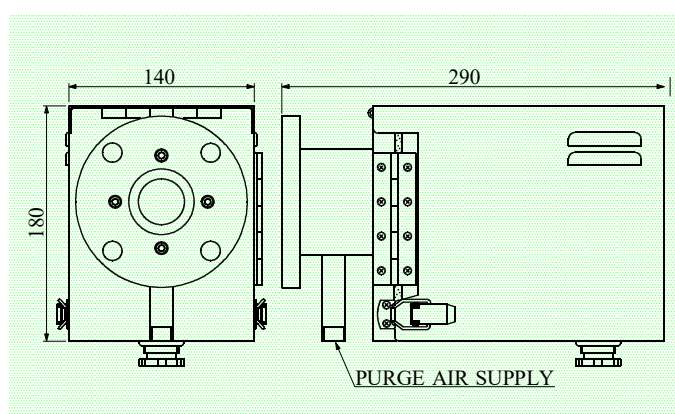
## LIGHT SOURCE UNIT



Model  
Flange  
Lamp  
Light axis adjusting  
Beam of light  
Filter protection  
Air supply  
Cable connection  
Color  
Weight

DET-701E (All weather type)  
JIS5K50A FF (ANSI2B150LB RF)  
24V20W Tungsten filament lamp.  
3 adjusting screws with spring.  
(Maximum incline 2°)  
Variable of the illuminance of light.  
Air purge system (supply port 3/8"PT)  
Over 50mmAq. add to the inside pressure of the duct.  
Terminal board 6P.  
Cable gland (3/4"PF)  
Munsell N-4.0  
10 kg

## LIGHT RECEIVER UNIT



Model  
Flange  
Transducer  
Filter protection  
Air supply  
Cable connection  
Color  
Weight

DET-702E (All weather type)  
JIS5K50A FF (ANSI2B150LB RF)  
Silicone photo-diode.×2  
(Main and auxiliary)  
Air purge system (supply port 3/8"PT)  
Over 50mmAq. add to the inside pressure of the duct.  
Terminal board 5P.  
Cable gland (3/4"PF)  
Munsell N-4.0  
10 kg





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